



Engineering
& Design

Stormwater Management Report

September 16, 2024

Proposed Residential Improvements

Block 106, Lot 20.03

Township of West Orange, Essex County, NJ

Prepared for:

The Waymaker LLC
40 Eagle Ridge Way
West Orange, NJ 07052

Prepared by:

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Project No. 24006174A

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Limitation

The sole purpose of this report and the associated services performed by Colliers Engineering & Design, Inc., is to undertake a hydrologic assessment for the proposed residential development in accordance with the scope of services set out in the contract between Colliers Engineering & Design and The Waymaker, LLC.

Colliers Engineering & Design derived the data in this report from a variety of sources. The sources are identified at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the project and subsequent data analysis, and re-evaluation of the data, findings, observations, and conclusions expressed in this report. Colliers Engineering & Design has prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose of the project and by reference to applicable standards, procedures, and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report.

This report should be read in full, and no excerpts are to be taken as representative of the findings. No responsibility is accepted by Colliers Engineering & Design for use of any part of this report in any other context.

This report has been prepared on behalf of, and for the exclusive use of The Waymaker, LLC and is subject to, and issued in connection with, the provisions of the agreement between Colliers Engineering & Design and The Waymaker, LLC.

Introduction

This Stormwater Management Report for the proposed project has been prepared by Colliers Engineering & Design for The Waymaker, LLC. Colliers Engineering & Design performed a hydrological assessment for the property located at 40 Eagle Ridge Way, West Orange, New Jersey, also defined as Block 106, Lot 20.03. The site is currently ± 2.07 -acres in size and consists of a single-family home and associated driveways and site improvements. The owner previously obtained permits for and constructed a pool and pool house as part of a minor development, however due to unforeseen site conditions the project disturbed greater than 1 acre and therefore became a major development. The current project consists of the construction of a stormwater management system to bring the site into compliance as a major development, as well as the reconstruction of the existing paved driveway with pervious pavers. For the purposes of this report, the completed construction of the pool and associated improvements are considered as part of the proposed project. The proposed development results in a total disturbance of approximately 1.88 acres and a total impervious area of approximately 0.46 acres (0.13-acre increase) within the proposed development area.

Purpose

This report assesses the hydrologic aspects, and the stormwater drainage conditions as a result of the pool construction, including the pool, pool house, landscaping areas, stormwater management facilities, associated utilities, and related site improvements.

The focus of the study is the identification of the existing drainage characteristics prior to the construction of the pool in comparison to post-development conditions. Calculations documenting the design of the stormwater management system are illustrated on the Site Plan drawing documents, prepared by Colliers Engineering & Design.

Method

Generally, stormwater runoff from the site flows from west to east and discharges to an existing drainage channel located at the southern end of the site. A drainage pipe is located at the southeastern corner of the site which conveys runoff from the portion of the existing drainage channel located onsite to the portion of the existing drainage channel located downstream. The western portion of the existing site drains overland and via an existing storm sewer system to the portion of the channel located upstream of the pipe. The central portion of the existing site drains overland to the portion of the channel located downstream of the pipe. The remainder of the site drains overland to the east. The existing site is analyzed at the top of pipe (Design Point 1), at the beginning of the downstream channel (Design Point 2), and for the overall site (Design Point 3). The area, curve number, and time of concentration for each existing watershed can be seen on the Existing Drainage Area Map included in the appendix. For the purposes of this analysis in order to adequately account for the existing building's roof runoff the existing drainage areas do not include the buildings impervious area which is accounted for under proposed conditions as if it were proposed to be constructed.

Under proposed conditions, the site will generally mimic the existing drainage pattern; however, the majority of the proposed development will be captured and routed through a subsurface infiltration basin to attenuate peak flows. New inlets and pipes will be installed to convey the stormwater runoff from certain areas to the infiltration basin. Tributary areas to the infiltration basin are outlined on the Proposed Drainage Area Map and include the house, the pool house, and surrounding lawn area. The previously installed drywell system is also included within this model and has a tributary area including the surrounding impervious areas around the Pool house and pool area. The area, curve number, and time of concentration for each proposed watershed can be found on the Proposed Drainage Area Map and HydroCAD output included in the appendix.

Stormwater Quantity

1.1 Stormwater Management

As mentioned above, a subsurface infiltration basin has been designed to provide water quantity mitigation for the runoff discharging to the existing drainage channel. As the site is located in HSG 'C' soils, infiltration is anticipated to be the minimum allowable 1 in/hr. Soil testing, including groundwater elevation determination, will be performed prior to construction. Full HydroCAD output calculations are provided in the appendix. The results are summarized in the table below.

1.2 Summary Table

<i>Description</i>	<i>2 Year Storm</i>	<i>10 Year Storm</i>	<i>100 Year Storm</i>
A. Existing Conditions			
Design Point 1	1.41 cfs	2.64 cfs	5.22 cfs
Required Reductions (50%, 75%, 80%)	0.70 cfs	2.23 cfs	4.10 cfs
Design Point 2	2.08 cfs	4.38 cfs	9.04 cfs
Required Reductions (50%, 75%, 80%)	1.04 cfs	3.28 cfs	7.23 cfs
Design Point 3	2.47 cfs	5.16 cfs	10.82 cfs
Required Reductions (50%, 75%, 80%)	1.23 cfs	3.87 cfs	8.65 cfs
B. Proposed Conditions			
Design Point 1	0.65 cfs	1.37 cfs	2.88 cfs
Design Point 2	0.99 cfs	1.97 cfs	4.04 cfs
Design Point 3	1.23 cfs	2.53 cfs	5.44 cfs

According to §25-29.4.r of the Township of West Orange, stormwater management measures shall be designed so that the post-construction peak runoff rates for the 2-, 10-, and 100-year storm events are 50%, 75%, and 80%, respectively, of the preconstruction peak runoff rates. As can be seen in the Summary Table above, the post-construction peak runoff rates for the 2-, 10-, and 100-year storm events have been reduced below the required peak runoff rates.

1.3 Stormwater Management Facility Operations and Maintenance

The long-term operations and maintenance of the proposed stormwater management facilities shall be performed in accordance with the Stormwater Management Facility Operations & Maintenance Manual prepared by Colliers Engineering & Design (under separate cover). This Manual explains how often maintenance should be performed and how long it should take for the proposed on-site stormwater management systems (porous pavement) to drain to ensure proper operation. Tables showing the data to support the listed drain times are included in the appendix of this report.

1.4 Conveyance System

Pipe sizing calculations have been performed using the Rational Method and 25-year design storm for capacity verification. Calculations supporting pipe sizing are attached in the appendix of this report.

Stormwater Quality

As per NJDEP Regulations, stormwater management measures shall only be required for water quality control if an additional $\frac{1}{4}$ acre of regulated motor vehicle surface is being proposed on a development site. For this project, the existing motor vehicle surface area totals approximately 0.22 acres and the proposed motor vehicle surface area totals approximately 0.21 acres, which results in a decrease of 0.01 acres. Therefore, as the proposed improvements result in less than $\frac{1}{4}$ acre of new regulated motor vehicle surfaces, water quality treatment is not required.

Groundwater Recharge (N.J.A.C. 7:8-5.4)

To meet Township and NJDEP requirements for groundwater recharge, the proposed development is designed to maintain 100 percent of the average annual pre-construction groundwater recharge volume for the site. As the entire subject property falls within one (1) HUC-14 sub-watershed, compliance with the groundwater recharge standard is met by analyzing the site as a whole. The site is within the Passaic River Lower (Nwk Bay to Saddle) HUC-14 drainage area.

The New Jersey Groundwater Recharge Spreadsheet, Version 2.0, November 2003 is utilized to calculate the post-development annual recharge deficit for the project site and annual recharge volume for each proposed BMP. The following table provides a summary of the post-development deficit and proposed recharge volume. Full calculation spreadsheets and a summary of the proposed recharge volume for each BMP are provided in the Appendix.

Groundwater Recharge Summary

HUC-14 Drainage Area	Pre-Development Total Annual Recharge (cubic feet)	Proposed Annual Recharge Volume (cubic feet)	Percentage of Average Annual Pre-Construction Groundwater Recharge Volume

Passaic River Lower (Nwk Bay to Saddle)	97,738	126,642	129.57%
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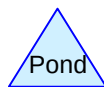
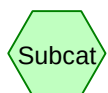
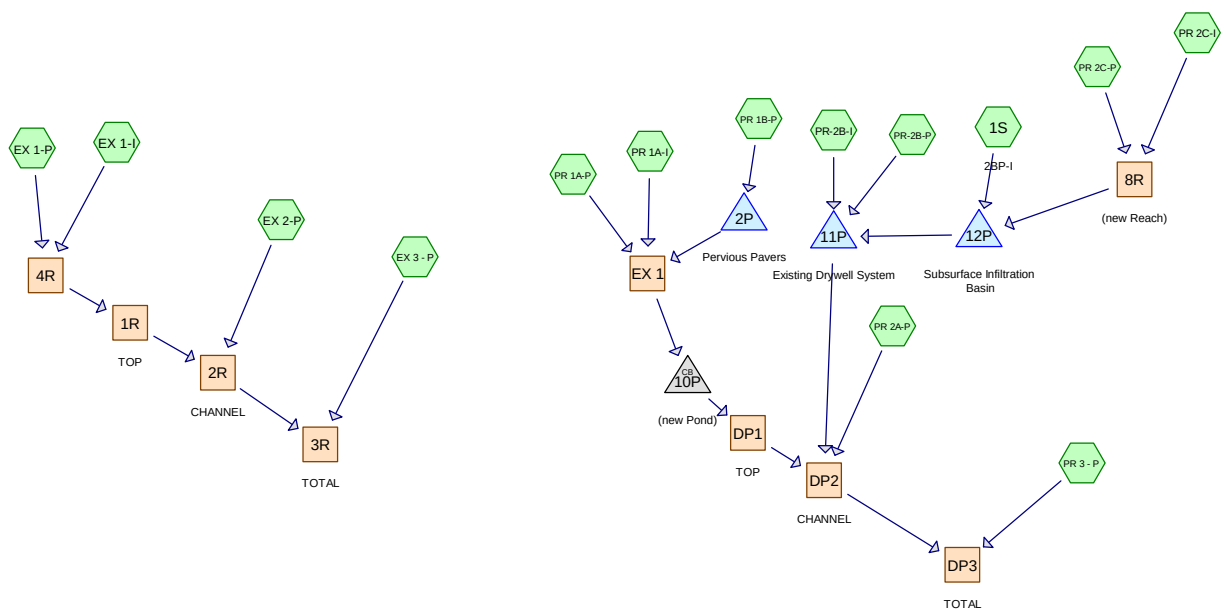
As shown in the above table, the proposed development is designed to maintain 100 percent of the average annual pre-construction groundwater recharge volume for the site.

Conclusion

As discussed above, water quantity mitigation is provided for all watersheds for all storm events studied in accordance with NJDEP and Township of West Orange regulations. A subsurface infiltration basin was utilized to achieve the required reductions for all Design Points. Furthermore, water quality treatment is not required for this project site. As such, there should be no adverse impacts due to stormwater, on-site or off-site, as a result of the proposed development. Included in the appendix of this report is the HydroCAD output for back-up on both the existing and proposed conditions. Additionally, the aforementioned Existing and Proposed Drainage Area Maps, an Inlet Area Map and a Pipe Capacity Report are provided in the appendix of this report.

Appendix

Appendix #01 | HydroCAD Output



Routing Diagram for 240913_40 ERW Waymaker Proposed
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240913_40 ERW Waymaker Proposed

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	NOAA 24-hr	D	Default	24.00	1	3.44	2
2	10-Year	NOAA 24-hr	D	Default	24.00	1	5.22	2
3	100-Year	NOAA 24-hr	D	Default	24.00	1	8.66	2
4	WQ	NJ DEP 2-hr		Default	2.00	1	1.25	2

240913_40 ERW Waymaker Proposed

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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.163	74	>75% Grass cover, Good, HSG C (EX 1-P, EX 2-P, EX 3 - P, PR 1A-P, PR 2A-P, PR 2C-P, PR 3 - P, PR-2B-P)
0.239	89	Gravel roads, HSG C (EX 1-P, EX 2-P, EX 3 - P, PR 1B-P)
0.264	98	Paved parking, HSG C (1S, PR-2B-I)
0.285	98	Paved roads w/curbs & sewers, HSG C (EX 1-I, PR 1A-I)
0.130	98	Unconnected pavement, HSG A (PR 2C-I)
4.082	79	TOTAL AREA

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: 2BP-I	Runoff Area=2,878 sf 100.00% Impervious Runoff Depth=3.21" Flow Length=75' Slope=0.0140 '/' Tc=1.1 min CN=98 Runoff=0.24 cfs 0.018 af
Subcatchment EX 1-I:	Runoff Area=9,508 sf 100.00% Impervious Runoff Depth=3.21" Flow Length=149' Tc=1.6 min CN=98 Runoff=0.78 cfs 0.058 af
Subcatchment EX 1-P:	Runoff Area=34,310 sf 0.00% Impervious Runoff Depth=1.26" Flow Length=233' Tc=10.4 min CN=75 Runoff=0.95 cfs 0.083 af
Subcatchment EX 2-P:	Runoff Area=33,427 sf 0.00% Impervious Runoff Depth=1.20" Flow Length=251' Tc=10.1 min CN=74 Runoff=0.88 cfs 0.077 af
Subcatchment EX 3 - P:	Runoff Area=12,817 sf 0.00% Impervious Runoff Depth=1.32" Flow Length=109' Tc=7.8 min CN=76 Runoff=0.42 cfs 0.032 af
Subcatchment PR 1A-I:	Runoff Area=2,919 sf 100.00% Impervious Runoff Depth=3.21" Flow Length=149' Tc=1.6 min CN=98 Runoff=0.24 cfs 0.018 af
Subcatchment PR 1A-P:	Runoff Area=21,722 sf 0.00% Impervious Runoff Depth=1.20" Flow Length=395' Tc=10.5 min CN=74 Runoff=0.57 cfs 0.050 af
Subcatchment PR 1B-P:	Runoff Area=6,622 sf 0.00% Impervious Runoff Depth=2.30" Tc=6.0 min CN=89 Runoff=0.39 cfs 0.029 af
Subcatchment PR 2A-P:	Runoff Area=6,039 sf 0.00% Impervious Runoff Depth=1.20" Flow Length=81' Slope=0.3000 '/' Tc=2.7 min CN=74 Runoff=0.21 cfs 0.014 af
Subcatchment PR 2C-I:	Runoff Area=5,659 sf 100.00% Impervious Runoff Depth=3.21" Flow Length=86' Slope=0.0230 '/' Tc=1.0 min CN=98 Runoff=0.47 cfs 0.035 af
Subcatchment PR 2C-P:	Runoff Area=21,408 sf 0.00% Impervious Runoff Depth=1.20" Flow Length=100' Slope=0.0200 '/' Tc=9.4 min CN=74 Runoff=0.58 cfs 0.049 af
Subcatchment PR 3 - P:	Runoff Area=10,406 sf 0.00% Impervious Runoff Depth=1.20" Flow Length=109' Tc=7.8 min CN=74 Runoff=0.30 cfs 0.024 af
Subcatchment PR-2B-I:	Runoff Area=8,642 sf 100.00% Impervious Runoff Depth=3.21" Flow Length=75' Slope=0.0140 '/' Tc=1.1 min CN=98 Runoff=0.71 cfs 0.053 af
Subcatchment PR-2B-P:	Runoff Area=1,446 sf 0.00% Impervious Runoff Depth=1.20" Flow Length=114' Tc=8.0 min CN=74 Runoff=0.04 cfs 0.003 af
Reach 1R: TOP	Inflow=1.41 cfs 0.141 af Outflow=1.41 cfs 0.141 af
Reach 2R: CHANNEL	Inflow=2.08 cfs 0.218 af Outflow=2.08 cfs 0.218 af
Reach 3R: TOTAL	Inflow=2.47 cfs 0.250 af Outflow=2.47 cfs 0.250 af

240913 40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

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Reach 4R:

Inflow=1.41 cfs 0.141 af

Outflow=1.41 cfs 0.141 af

Reach 8R: (new Reach)

Inflow=0.84 cfs 0.084 af

Outflow=0.84 cfs 0.084 af

Reach DP1: TOP

Avg. Flow Depth=0.10' Max Vel=7.18 fps Inflow=0.65 cfs 0.068 af

34.0" x 22.0", R=24.9" Elliptical Pipe n=0.011 L=100.0' S=0.1000 ' Capacity=118.41 cfs Outflow=0.65 cfs 0.068 af

Reach DP2: CHANNEL

Inflow=0.99 cfs 0.100 af

Outflow=0.99 cfs 0.100 af

Reach DP3: TOTAL

Inflow=1.23 cfs 0.124 af

Outflow=1.23 cfs 0.124 af

Reach EX 1:

Inflow=0.65 cfs 0.068 af

Outflow=0.65 cfs 0.068 af

Pond 2P: Pervious Pavers

Peak Elev=624.53' Storage=0.007 af Inflow=0.39 cfs 0.029 af

Outflow=0.08 cfs 0.029 af

Pond 10P: (new Pond)

Peak Elev=0.29' Inflow=0.65 cfs 0.068 af

Outflow=0.65 cfs 0.068 af

Pond 11P: Existing Drywell System

Peak Elev=608.65' Storage=0.019 af Inflow=0.74 cfs 0.058 af

Discarded=0.03 cfs 0.039 af Primary=0.17 cfs 0.018 af Outflow=0.20 cfs 0.058 af

Pond 12P: Subsurface Infiltration Basin

Peak Elev=622.57' Storage=0.041 af Inflow=1.06 cfs 0.101 af

Discarded=0.09 cfs 0.100 af Primary=0.01 cfs 0.001 af Outflow=0.10 cfs 0.101 af

Total Runoff Area = 4.082 ac Runoff Volume = 0.542 af Average Runoff Depth = 1.59"**83.35% Pervious = 3.402 ac 16.65% Impervious = 0.680 ac**

Summary for Subcatchment 1S: 2BP-I

Runoff = 0.24 cfs @ 12.06 hrs, Volume= 0.018 af, Depth= 3.21"
 Routed to Pond 12P : Subsurface Infiltration Basin

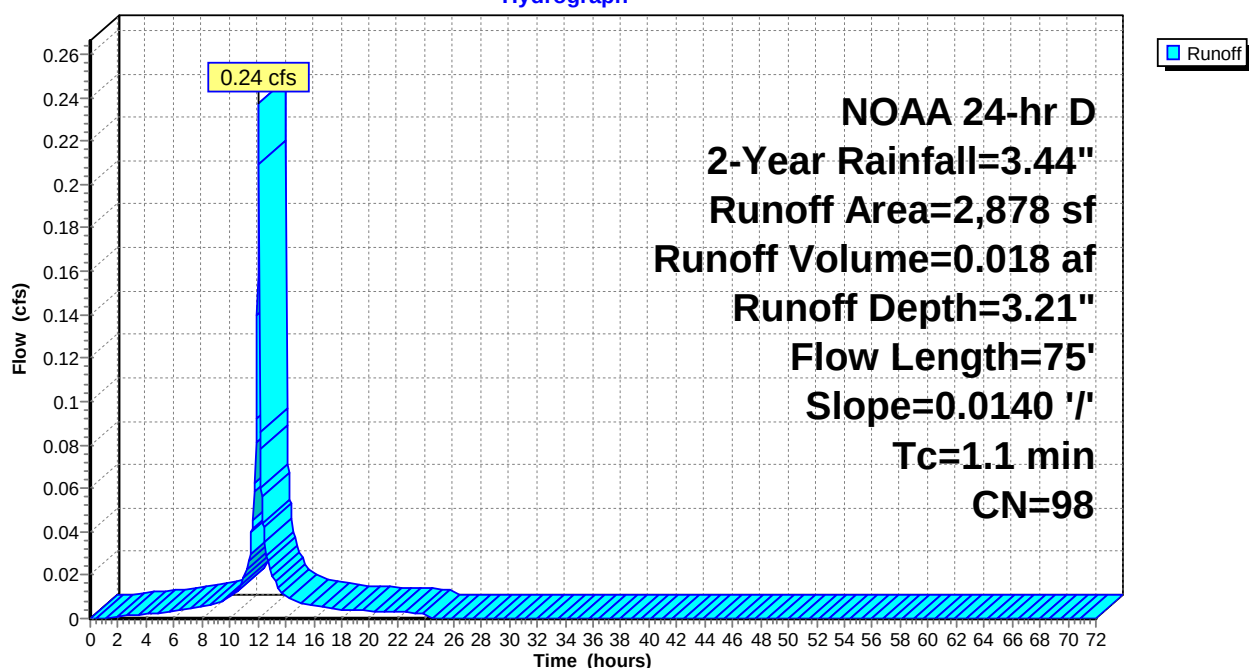
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
2,878	98	Paved parking, HSG C
2,878		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	75	0.0140	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"

Subcatchment 1S: 2BP-I

Hydrograph



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NOAA 24-hr D 2-Year Rainfall=3.44"

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Hydrograph for Subcatchment 1S: 2BP-I

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	3.21	0.00
1.00	0.04	0.00	0.00	59.00	3.44	3.21	0.00
2.00	0.08	0.01	0.00	60.00	3.44	3.21	0.00
3.00	0.13	0.03	0.00	61.00	3.44	3.21	0.00
4.00	0.18	0.06	0.00	62.00	3.44	3.21	0.00
5.00	0.24	0.09	0.00	63.00	3.44	3.21	0.00
6.00	0.29	0.14	0.00	64.00	3.44	3.21	0.00
7.00	0.36	0.20	0.00	65.00	3.44	3.21	0.00
8.00	0.45	0.27	0.01	66.00	3.44	3.21	0.00
9.00	0.55	0.36	0.01	67.00	3.44	3.21	0.00
10.00	0.68	0.49	0.01	68.00	3.44	3.21	0.00
11.00	0.89	0.69	0.02	69.00	3.44	3.21	0.00
12.00	1.65	1.43	0.16	70.00	3.44	3.21	0.00
13.00	2.55	2.32	0.02	71.00	3.44	3.21	0.00
14.00	2.76	2.53	0.01	72.00	3.44	3.21	0.00
15.00	2.89	2.66	0.01				
16.00	2.99	2.76	0.01				
17.00	3.08	2.85	0.01				
18.00	3.15	2.91	0.00				
19.00	3.20	2.97	0.00				
20.00	3.26	3.03	0.00				
21.00	3.31	3.08	0.00				
22.00	3.36	3.12	0.00				
23.00	3.40	3.17	0.00				
24.00	3.44	3.21	0.00				
25.00	3.44	3.21	0.00				
26.00	3.44	3.21	0.00				
27.00	3.44	3.21	0.00				
28.00	3.44	3.21	0.00				
29.00	3.44	3.21	0.00				
30.00	3.44	3.21	0.00				
31.00	3.44	3.21	0.00				
32.00	3.44	3.21	0.00				
33.00	3.44	3.21	0.00				
34.00	3.44	3.21	0.00				
35.00	3.44	3.21	0.00				
36.00	3.44	3.21	0.00				
37.00	3.44	3.21	0.00				
38.00	3.44	3.21	0.00				
39.00	3.44	3.21	0.00				
40.00	3.44	3.21	0.00				
41.00	3.44	3.21	0.00				
42.00	3.44	3.21	0.00				
43.00	3.44	3.21	0.00				
44.00	3.44	3.21	0.00				
45.00	3.44	3.21	0.00				
46.00	3.44	3.21	0.00				
47.00	3.44	3.21	0.00				
48.00	3.44	3.21	0.00				
49.00	3.44	3.21	0.00				
50.00	3.44	3.21	0.00				
51.00	3.44	3.21	0.00				
52.00	3.44	3.21	0.00				
53.00	3.44	3.21	0.00				
54.00	3.44	3.21	0.00				
55.00	3.44	3.21	0.00				
56.00	3.44	3.21	0.00				
57.00	3.44	3.21	0.00				

Summary for Subcatchment EX 1-I:

Runoff = 0.78 cfs @ 12.07 hrs, Volume= 0.058 af, Depth= 3.21"
 Routed to Reach 4R :

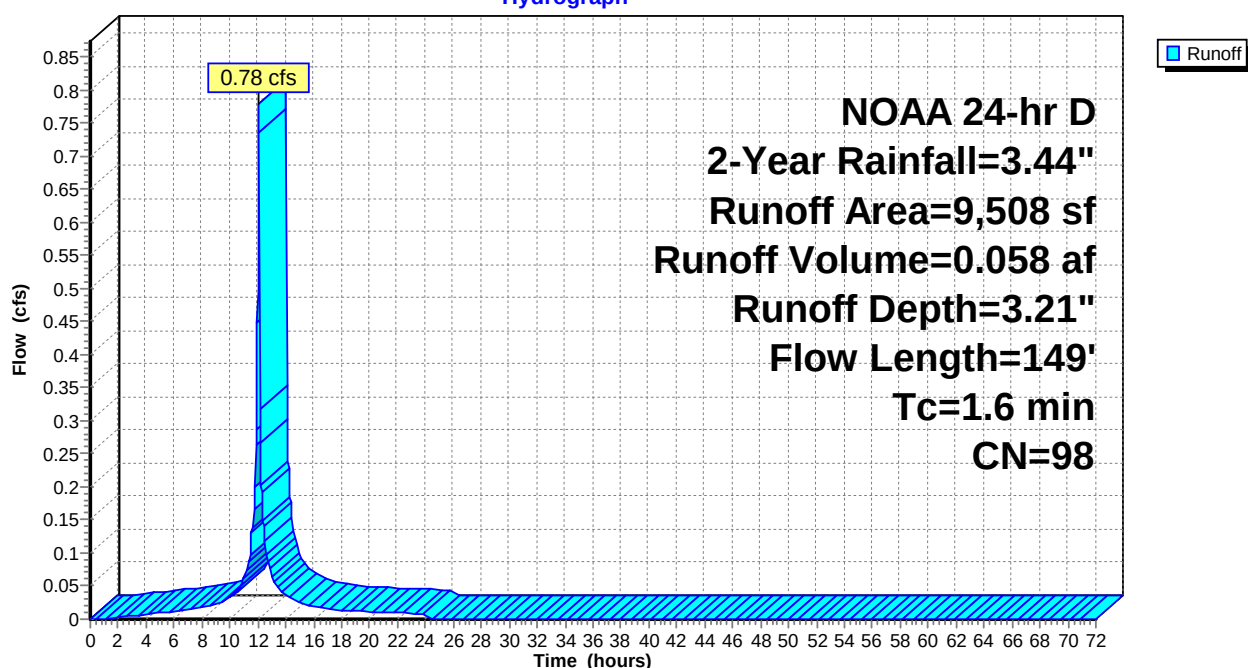
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
9,508	98	Paved roads w/curbs & sewers, HSG C
9,508		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0140	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"
0.3	49	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.6	149	Total			

Subcatchment EX 1-I:

Hydrograph



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Hydrograph for Subcatchment EX 1-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	3.21	0.00
1.00	0.04	0.00	0.00	59.00	3.44	3.21	0.00
2.00	0.08	0.01	0.00	60.00	3.44	3.21	0.00
3.00	0.13	0.03	0.01	61.00	3.44	3.21	0.00
4.00	0.18	0.06	0.01	62.00	3.44	3.21	0.00
5.00	0.24	0.09	0.01	63.00	3.44	3.21	0.00
6.00	0.29	0.14	0.01	64.00	3.44	3.21	0.00
7.00	0.36	0.20	0.01	65.00	3.44	3.21	0.00
8.00	0.45	0.27	0.02	66.00	3.44	3.21	0.00
9.00	0.55	0.36	0.02	67.00	3.44	3.21	0.00
10.00	0.68	0.49	0.03	68.00	3.44	3.21	0.00
11.00	0.89	0.69	0.06	69.00	3.44	3.21	0.00
12.00	1.65	1.43	0.50	70.00	3.44	3.21	0.00
13.00	2.55	2.32	0.07	71.00	3.44	3.21	0.00
14.00	2.76	2.53	0.04	72.00	3.44	3.21	0.00
15.00	2.89	2.66	0.02				
16.00	2.99	2.76	0.02				
17.00	3.08	2.85	0.02				
18.00	3.15	2.91	0.01				
19.00	3.20	2.97	0.01				
20.00	3.26	3.03	0.01				
21.00	3.31	3.08	0.01				
22.00	3.36	3.12	0.01				
23.00	3.40	3.17	0.01				
24.00	3.44	3.21	0.01				
25.00	3.44	3.21	0.00				
26.00	3.44	3.21	0.00				
27.00	3.44	3.21	0.00				
28.00	3.44	3.21	0.00				
29.00	3.44	3.21	0.00				
30.00	3.44	3.21	0.00				
31.00	3.44	3.21	0.00				
32.00	3.44	3.21	0.00				
33.00	3.44	3.21	0.00				
34.00	3.44	3.21	0.00				
35.00	3.44	3.21	0.00				
36.00	3.44	3.21	0.00				
37.00	3.44	3.21	0.00				
38.00	3.44	3.21	0.00				
39.00	3.44	3.21	0.00				
40.00	3.44	3.21	0.00				
41.00	3.44	3.21	0.00				
42.00	3.44	3.21	0.00				
43.00	3.44	3.21	0.00				
44.00	3.44	3.21	0.00				
45.00	3.44	3.21	0.00				
46.00	3.44	3.21	0.00				
47.00	3.44	3.21	0.00				
48.00	3.44	3.21	0.00				
49.00	3.44	3.21	0.00				
50.00	3.44	3.21	0.00				
51.00	3.44	3.21	0.00				
52.00	3.44	3.21	0.00				
53.00	3.44	3.21	0.00				
54.00	3.44	3.21	0.00				
55.00	3.44	3.21	0.00				
56.00	3.44	3.21	0.00				
57.00	3.44	3.21	0.00				

Summary for Subcatchment EX 1-P:

Runoff = 0.95 cfs @ 12.19 hrs, Volume= 0.083 af, Depth= 1.26"
 Routed to Reach 4R :

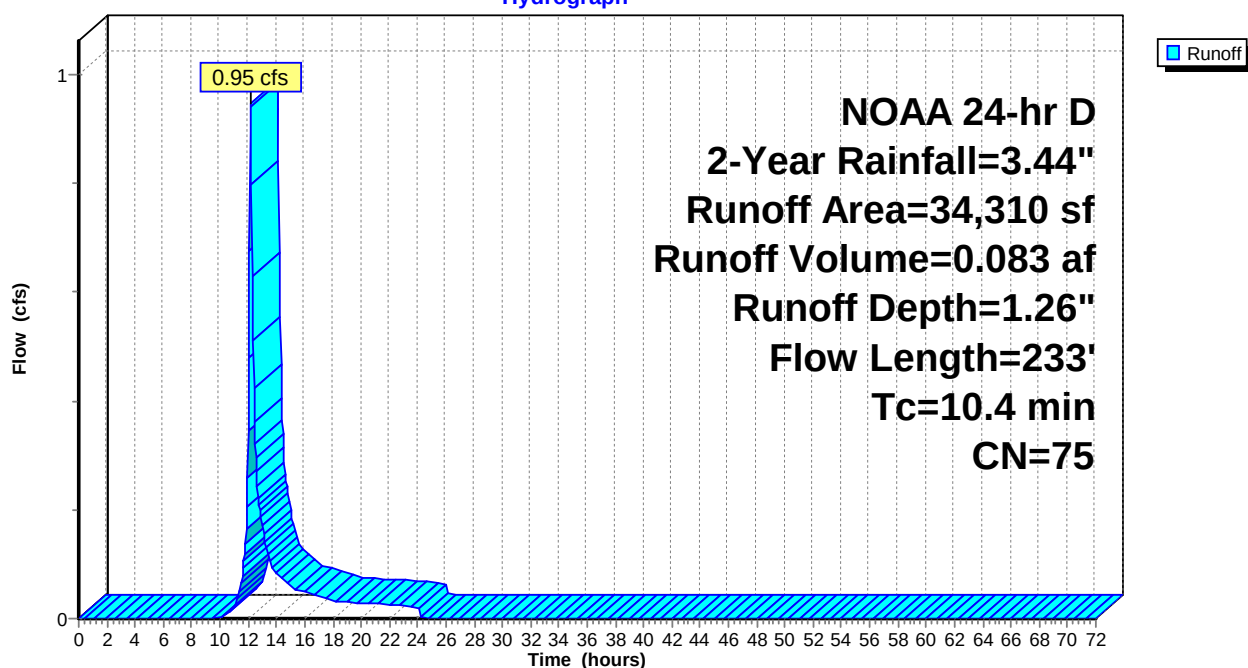
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
32,830	74	>75% Grass cover, Good, HSG C
1,480	89	Gravel roads, HSG C
34,310	75	Weighted Average
34,310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.0175	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.4	133	0.1070	5.27		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.4	233	Total			

Subcatchment EX 1-P:

Hydrograph



240913_40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

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Hydrograph for Subcatchment EX 1-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	1.26	0.00
1.00	0.04	0.00	0.00	59.00	3.44	1.26	0.00
2.00	0.08	0.00	0.00	60.00	3.44	1.26	0.00
3.00	0.13	0.00	0.00	61.00	3.44	1.26	0.00
4.00	0.18	0.00	0.00	62.00	3.44	1.26	0.00
5.00	0.24	0.00	0.00	63.00	3.44	1.26	0.00
6.00	0.29	0.00	0.00	64.00	3.44	1.26	0.00
7.00	0.36	0.00	0.00	65.00	3.44	1.26	0.00
8.00	0.45	0.00	0.00	66.00	3.44	1.26	0.00
9.00	0.55	0.00	0.00	67.00	3.44	1.26	0.00
10.00	0.68	0.00	0.00	68.00	3.44	1.26	0.00
11.00	0.89	0.01	0.02	69.00	3.44	1.26	0.00
12.00	1.65	0.22	0.35	70.00	3.44	1.26	0.00
13.00	2.55	0.68	0.17	71.00	3.44	1.26	0.00
14.00	2.76	0.81	0.08	72.00	3.44	1.26	0.00
15.00	2.89	0.89	0.06				
16.00	2.99	0.96	0.05				
17.00	3.08	1.01	0.04				
18.00	3.15	1.06	0.03				
19.00	3.20	1.10	0.03				
20.00	3.26	1.13	0.03				
21.00	3.31	1.17	0.03				
22.00	3.36	1.20	0.03				
23.00	3.40	1.23	0.02				
24.00	3.44	1.26	0.02				
25.00	3.44	1.26	0.00				
26.00	3.44	1.26	0.00				
27.00	3.44	1.26	0.00				
28.00	3.44	1.26	0.00				
29.00	3.44	1.26	0.00				
30.00	3.44	1.26	0.00				
31.00	3.44	1.26	0.00				
32.00	3.44	1.26	0.00				
33.00	3.44	1.26	0.00				
34.00	3.44	1.26	0.00				
35.00	3.44	1.26	0.00				
36.00	3.44	1.26	0.00				
37.00	3.44	1.26	0.00				
38.00	3.44	1.26	0.00				
39.00	3.44	1.26	0.00				
40.00	3.44	1.26	0.00				
41.00	3.44	1.26	0.00				
42.00	3.44	1.26	0.00				
43.00	3.44	1.26	0.00				
44.00	3.44	1.26	0.00				
45.00	3.44	1.26	0.00				
46.00	3.44	1.26	0.00				
47.00	3.44	1.26	0.00				
48.00	3.44	1.26	0.00				
49.00	3.44	1.26	0.00				
50.00	3.44	1.26	0.00				
51.00	3.44	1.26	0.00				
52.00	3.44	1.26	0.00				
53.00	3.44	1.26	0.00				
54.00	3.44	1.26	0.00				
55.00	3.44	1.26	0.00				
56.00	3.44	1.26	0.00				
57.00	3.44	1.26	0.00				

Summary for Subcatchment EX 2-P:

Runoff = 0.88 cfs @ 12.18 hrs, Volume= 0.077 af, Depth= 1.20"
 Routed to Reach 2R : CHANNEL

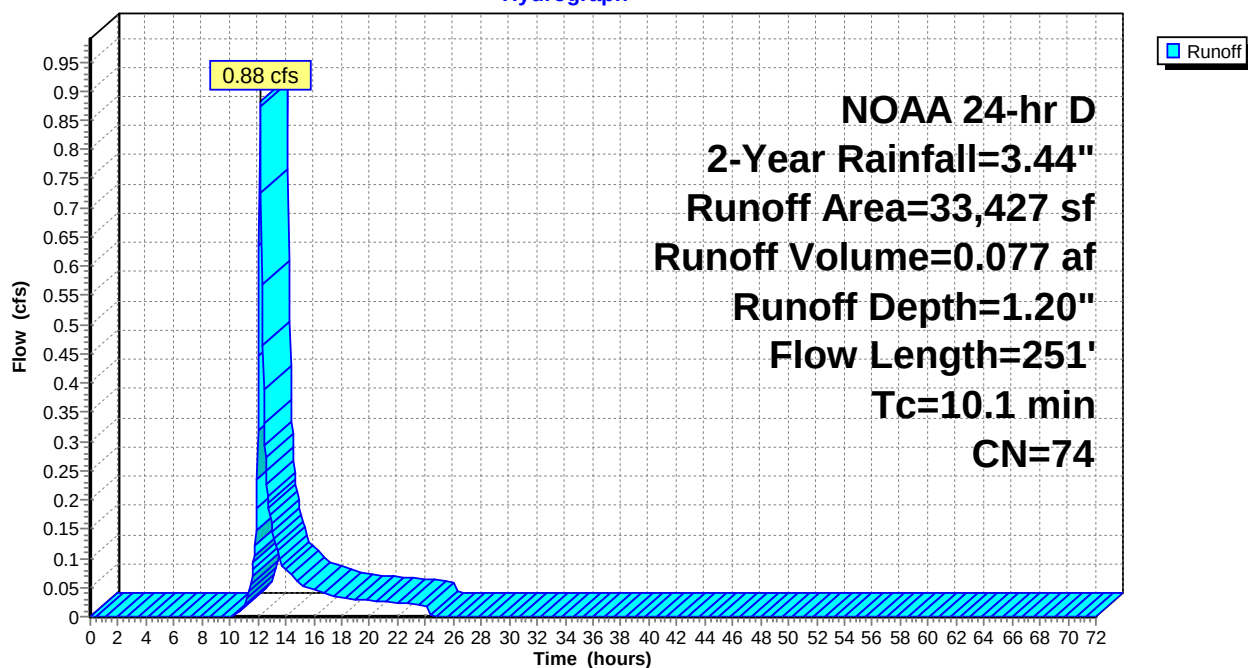
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
32,438	74	>75% Grass cover, Good, HSG C
989	89	Gravel roads, HSG C
33,427	74	Weighted Average
33,427		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.0200	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.4	47	0.0170	2.10		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	88	0.0680	4.20		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.0	16	0.4200	10.43		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.1	251	Total			

Subcatchment EX 2-P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

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Hydrograph for Subcatchment EX 2-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	1.20	0.00
1.00	0.04	0.00	0.00	59.00	3.44	1.20	0.00
2.00	0.08	0.00	0.00	60.00	3.44	1.20	0.00
3.00	0.13	0.00	0.00	61.00	3.44	1.20	0.00
4.00	0.18	0.00	0.00	62.00	3.44	1.20	0.00
5.00	0.24	0.00	0.00	63.00	3.44	1.20	0.00
6.00	0.29	0.00	0.00	64.00	3.44	1.20	0.00
7.00	0.36	0.00	0.00	65.00	3.44	1.20	0.00
8.00	0.45	0.00	0.00	66.00	3.44	1.20	0.00
9.00	0.55	0.00	0.00	67.00	3.44	1.20	0.00
10.00	0.68	0.00	0.00	68.00	3.44	1.20	0.00
11.00	0.89	0.01	0.02	69.00	3.44	1.20	0.00
12.00	1.65	0.20	0.32	70.00	3.44	1.20	0.00
13.00	2.55	0.63	0.16	71.00	3.44	1.20	0.00
14.00	2.76	0.76	0.08	72.00	3.44	1.20	0.00
15.00	2.89	0.84	0.06				
16.00	2.99	0.90	0.05				
17.00	3.08	0.96	0.04				
18.00	3.15	1.00	0.03				
19.00	3.20	1.04	0.03				
20.00	3.26	1.08	0.03				
21.00	3.31	1.11	0.03				
22.00	3.36	1.14	0.02				
23.00	3.40	1.17	0.02				
24.00	3.44	1.20	0.02				
25.00	3.44	1.20	0.00				
26.00	3.44	1.20	0.00				
27.00	3.44	1.20	0.00				
28.00	3.44	1.20	0.00				
29.00	3.44	1.20	0.00				
30.00	3.44	1.20	0.00				
31.00	3.44	1.20	0.00				
32.00	3.44	1.20	0.00				
33.00	3.44	1.20	0.00				
34.00	3.44	1.20	0.00				
35.00	3.44	1.20	0.00				
36.00	3.44	1.20	0.00				
37.00	3.44	1.20	0.00				
38.00	3.44	1.20	0.00				
39.00	3.44	1.20	0.00				
40.00	3.44	1.20	0.00				
41.00	3.44	1.20	0.00				
42.00	3.44	1.20	0.00				
43.00	3.44	1.20	0.00				
44.00	3.44	1.20	0.00				
45.00	3.44	1.20	0.00				
46.00	3.44	1.20	0.00				
47.00	3.44	1.20	0.00				
48.00	3.44	1.20	0.00				
49.00	3.44	1.20	0.00				
50.00	3.44	1.20	0.00				
51.00	3.44	1.20	0.00				
52.00	3.44	1.20	0.00				
53.00	3.44	1.20	0.00				
54.00	3.44	1.20	0.00				
55.00	3.44	1.20	0.00				
56.00	3.44	1.20	0.00				
57.00	3.44	1.20	0.00				

Summary for Subcatchment EX 3 - P:

Runoff = 0.42 cfs @ 12.15 hrs, Volume= 0.032 af, Depth= 1.32"
 Routed to Reach 3R : TOTAL

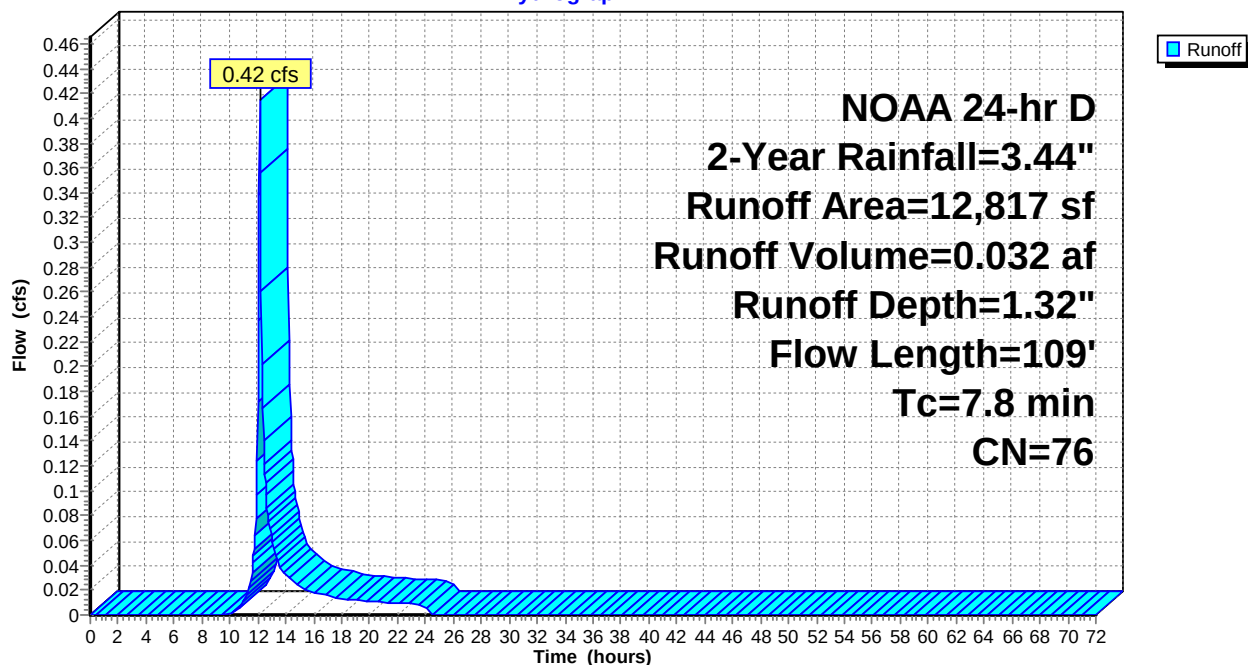
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
11,505	74	>75% Grass cover, Good, HSG C
1,312	89	Gravel roads, HSG C
12,817	76	Weighted Average
12,817		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	72	0.0280	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
1.4	28	0.1790	0.33		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.0	9	0.2220	7.59		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
7.8	109	Total			

Subcatchment EX 3 - P:

Hydrograph



240913_40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

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Hydrograph for Subcatchment EX 3 - P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	1.32	0.00
1.00	0.04	0.00	0.00	59.00	3.44	1.32	0.00
2.00	0.08	0.00	0.00	60.00	3.44	1.32	0.00
3.00	0.13	0.00	0.00	61.00	3.44	1.32	0.00
4.00	0.18	0.00	0.00	62.00	3.44	1.32	0.00
5.00	0.24	0.00	0.00	63.00	3.44	1.32	0.00
6.00	0.29	0.00	0.00	64.00	3.44	1.32	0.00
7.00	0.36	0.00	0.00	65.00	3.44	1.32	0.00
8.00	0.45	0.00	0.00	66.00	3.44	1.32	0.00
9.00	0.55	0.00	0.00	67.00	3.44	1.32	0.00
10.00	0.68	0.00	0.00	68.00	3.44	1.32	0.00
11.00	0.89	0.02	0.01	69.00	3.44	1.32	0.00
12.00	1.65	0.25	0.17	70.00	3.44	1.32	0.00
13.00	2.55	0.72	0.06	71.00	3.44	1.32	0.00
14.00	2.76	0.86	0.03	72.00	3.44	1.32	0.00
15.00	2.89	0.94	0.02				
16.00	2.99	1.01	0.02				
17.00	3.08	1.07	0.02				
18.00	3.15	1.11	0.01				
19.00	3.20	1.16	0.01				
20.00	3.26	1.19	0.01				
21.00	3.31	1.23	0.01				
22.00	3.36	1.26	0.01				
23.00	3.40	1.29	0.01				
24.00	3.44	1.32	0.01				
25.00	3.44	1.32	0.00				
26.00	3.44	1.32	0.00				
27.00	3.44	1.32	0.00				
28.00	3.44	1.32	0.00				
29.00	3.44	1.32	0.00				
30.00	3.44	1.32	0.00				
31.00	3.44	1.32	0.00				
32.00	3.44	1.32	0.00				
33.00	3.44	1.32	0.00				
34.00	3.44	1.32	0.00				
35.00	3.44	1.32	0.00				
36.00	3.44	1.32	0.00				
37.00	3.44	1.32	0.00				
38.00	3.44	1.32	0.00				
39.00	3.44	1.32	0.00				
40.00	3.44	1.32	0.00				
41.00	3.44	1.32	0.00				
42.00	3.44	1.32	0.00				
43.00	3.44	1.32	0.00				
44.00	3.44	1.32	0.00				
45.00	3.44	1.32	0.00				
46.00	3.44	1.32	0.00				
47.00	3.44	1.32	0.00				
48.00	3.44	1.32	0.00				
49.00	3.44	1.32	0.00				
50.00	3.44	1.32	0.00				
51.00	3.44	1.32	0.00				
52.00	3.44	1.32	0.00				
53.00	3.44	1.32	0.00				
54.00	3.44	1.32	0.00				
55.00	3.44	1.32	0.00				
56.00	3.44	1.32	0.00				
57.00	3.44	1.32	0.00				

Summary for Subcatchment PR 1A-I:

Runoff = 0.24 cfs @ 12.07 hrs, Volume= 0.018 af, Depth= 3.21"
 Routed to Reach EX 1 :

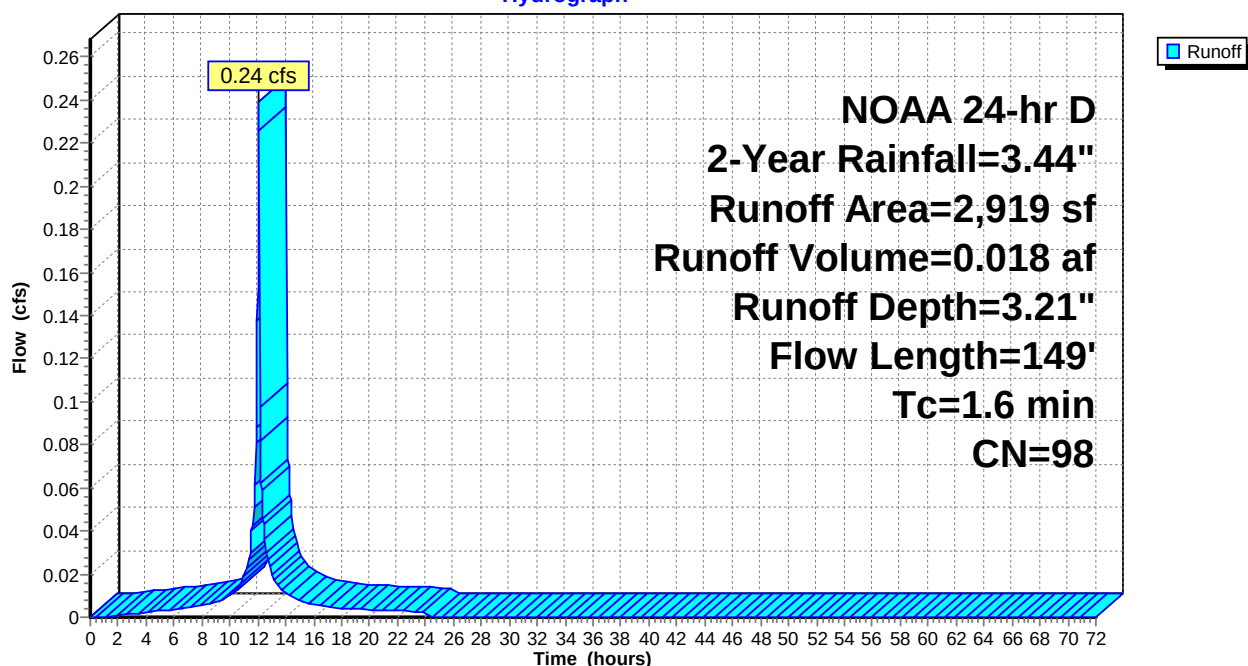
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
2,919	98	Paved roads w/curbs & sewers, HSG C
2,919		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0140	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"
0.3	49	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.6	149	Total			

Subcatchment PR 1A-I:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

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Hydrograph for Subcatchment PR 1A-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	3.21	0.00
1.00	0.04	0.00	0.00	59.00	3.44	3.21	0.00
2.00	0.08	0.01	0.00	60.00	3.44	3.21	0.00
3.00	0.13	0.03	0.00	61.00	3.44	3.21	0.00
4.00	0.18	0.06	0.00	62.00	3.44	3.21	0.00
5.00	0.24	0.09	0.00	63.00	3.44	3.21	0.00
6.00	0.29	0.14	0.00	64.00	3.44	3.21	0.00
7.00	0.36	0.20	0.00	65.00	3.44	3.21	0.00
8.00	0.45	0.27	0.01	66.00	3.44	3.21	0.00
9.00	0.55	0.36	0.01	67.00	3.44	3.21	0.00
10.00	0.68	0.49	0.01	68.00	3.44	3.21	0.00
11.00	0.89	0.69	0.02	69.00	3.44	3.21	0.00
12.00	1.65	1.43	0.15	70.00	3.44	3.21	0.00
13.00	2.55	2.32	0.02	71.00	3.44	3.21	0.00
14.00	2.76	2.53	0.01	72.00	3.44	3.21	0.00
15.00	2.89	2.66	0.01				
16.00	2.99	2.76	0.01				
17.00	3.08	2.85	0.01				
18.00	3.15	2.91	0.00				
19.00	3.20	2.97	0.00				
20.00	3.26	3.03	0.00				
21.00	3.31	3.08	0.00				
22.00	3.36	3.12	0.00				
23.00	3.40	3.17	0.00				
24.00	3.44	3.21	0.00				
25.00	3.44	3.21	0.00				
26.00	3.44	3.21	0.00				
27.00	3.44	3.21	0.00				
28.00	3.44	3.21	0.00				
29.00	3.44	3.21	0.00				
30.00	3.44	3.21	0.00				
31.00	3.44	3.21	0.00				
32.00	3.44	3.21	0.00				
33.00	3.44	3.21	0.00				
34.00	3.44	3.21	0.00				
35.00	3.44	3.21	0.00				
36.00	3.44	3.21	0.00				
37.00	3.44	3.21	0.00				
38.00	3.44	3.21	0.00				
39.00	3.44	3.21	0.00				
40.00	3.44	3.21	0.00				
41.00	3.44	3.21	0.00				
42.00	3.44	3.21	0.00				
43.00	3.44	3.21	0.00				
44.00	3.44	3.21	0.00				
45.00	3.44	3.21	0.00				
46.00	3.44	3.21	0.00				
47.00	3.44	3.21	0.00				
48.00	3.44	3.21	0.00				
49.00	3.44	3.21	0.00				
50.00	3.44	3.21	0.00				
51.00	3.44	3.21	0.00				
52.00	3.44	3.21	0.00				
53.00	3.44	3.21	0.00				
54.00	3.44	3.21	0.00				
55.00	3.44	3.21	0.00				
56.00	3.44	3.21	0.00				
57.00	3.44	3.21	0.00				

Summary for Subcatchment PR 1A-P:

Runoff = 0.57 cfs @ 12.19 hrs, Volume= 0.050 af, Depth= 1.20"
 Routed to Reach EX 1 :

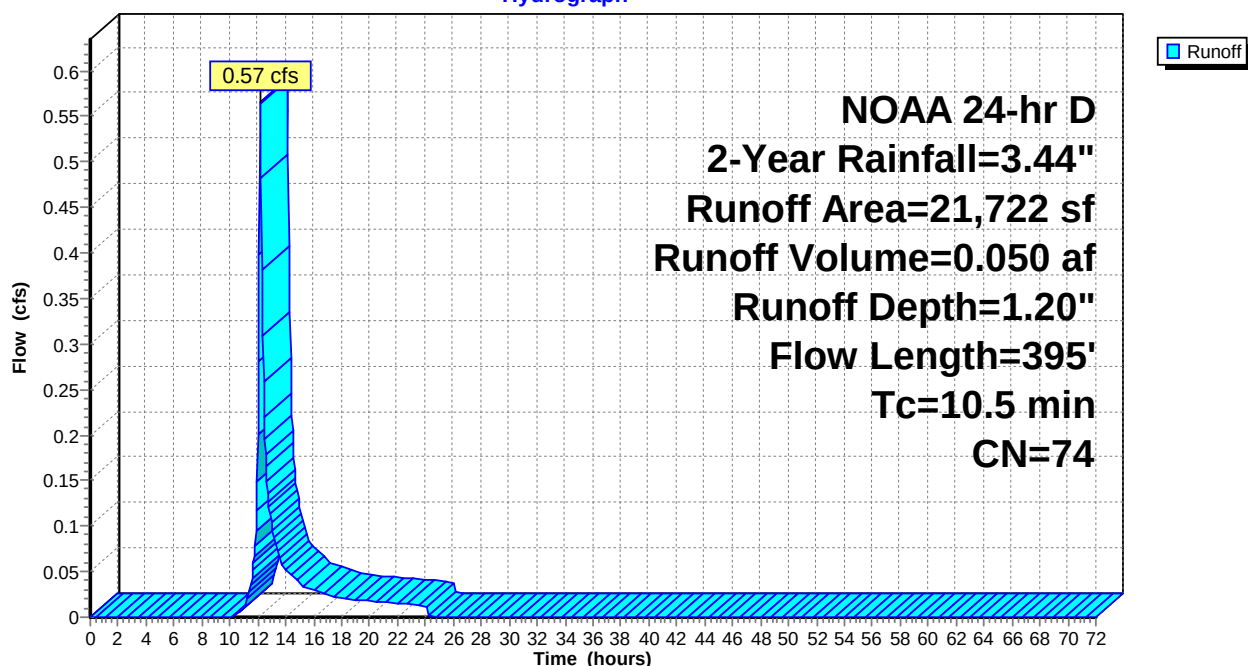
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
21,722	74	>75% Grass cover, Good, HSG C
21,722		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0220	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
1.4	295	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.5	395	Total			

Subcatchment PR 1A-P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

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Hydrograph for Subcatchment PR 1A-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	1.20	0.00
1.00	0.04	0.00	0.00	59.00	3.44	1.20	0.00
2.00	0.08	0.00	0.00	60.00	3.44	1.20	0.00
3.00	0.13	0.00	0.00	61.00	3.44	1.20	0.00
4.00	0.18	0.00	0.00	62.00	3.44	1.20	0.00
5.00	0.24	0.00	0.00	63.00	3.44	1.20	0.00
6.00	0.29	0.00	0.00	64.00	3.44	1.20	0.00
7.00	0.36	0.00	0.00	65.00	3.44	1.20	0.00
8.00	0.45	0.00	0.00	66.00	3.44	1.20	0.00
9.00	0.55	0.00	0.00	67.00	3.44	1.20	0.00
10.00	0.68	0.00	0.00	68.00	3.44	1.20	0.00
11.00	0.89	0.01	0.01	69.00	3.44	1.20	0.00
12.00	1.65	0.20	0.20	70.00	3.44	1.20	0.00
13.00	2.55	0.63	0.10	71.00	3.44	1.20	0.00
14.00	2.76	0.76	0.05	72.00	3.44	1.20	0.00
15.00	2.89	0.84	0.04				
16.00	2.99	0.90	0.03				
17.00	3.08	0.96	0.03				
18.00	3.15	1.00	0.02				
19.00	3.20	1.04	0.02				
20.00	3.26	1.08	0.02				
21.00	3.31	1.11	0.02				
22.00	3.36	1.14	0.02				
23.00	3.40	1.17	0.01				
24.00	3.44	1.20	0.01				
25.00	3.44	1.20	0.00				
26.00	3.44	1.20	0.00				
27.00	3.44	1.20	0.00				
28.00	3.44	1.20	0.00				
29.00	3.44	1.20	0.00				
30.00	3.44	1.20	0.00				
31.00	3.44	1.20	0.00				
32.00	3.44	1.20	0.00				
33.00	3.44	1.20	0.00				
34.00	3.44	1.20	0.00				
35.00	3.44	1.20	0.00				
36.00	3.44	1.20	0.00				
37.00	3.44	1.20	0.00				
38.00	3.44	1.20	0.00				
39.00	3.44	1.20	0.00				
40.00	3.44	1.20	0.00				
41.00	3.44	1.20	0.00				
42.00	3.44	1.20	0.00				
43.00	3.44	1.20	0.00				
44.00	3.44	1.20	0.00				
45.00	3.44	1.20	0.00				
46.00	3.44	1.20	0.00				
47.00	3.44	1.20	0.00				
48.00	3.44	1.20	0.00				
49.00	3.44	1.20	0.00				
50.00	3.44	1.20	0.00				
51.00	3.44	1.20	0.00				
52.00	3.44	1.20	0.00				
53.00	3.44	1.20	0.00				
54.00	3.44	1.20	0.00				
55.00	3.44	1.20	0.00				
56.00	3.44	1.20	0.00				
57.00	3.44	1.20	0.00				

Summary for Subcatchment PR 1B-P:

Runoff = 0.39 cfs @ 12.13 hrs, Volume= 0.029 af, Depth= 2.30"
 Routed to Pond 2P : Pervious Pavers

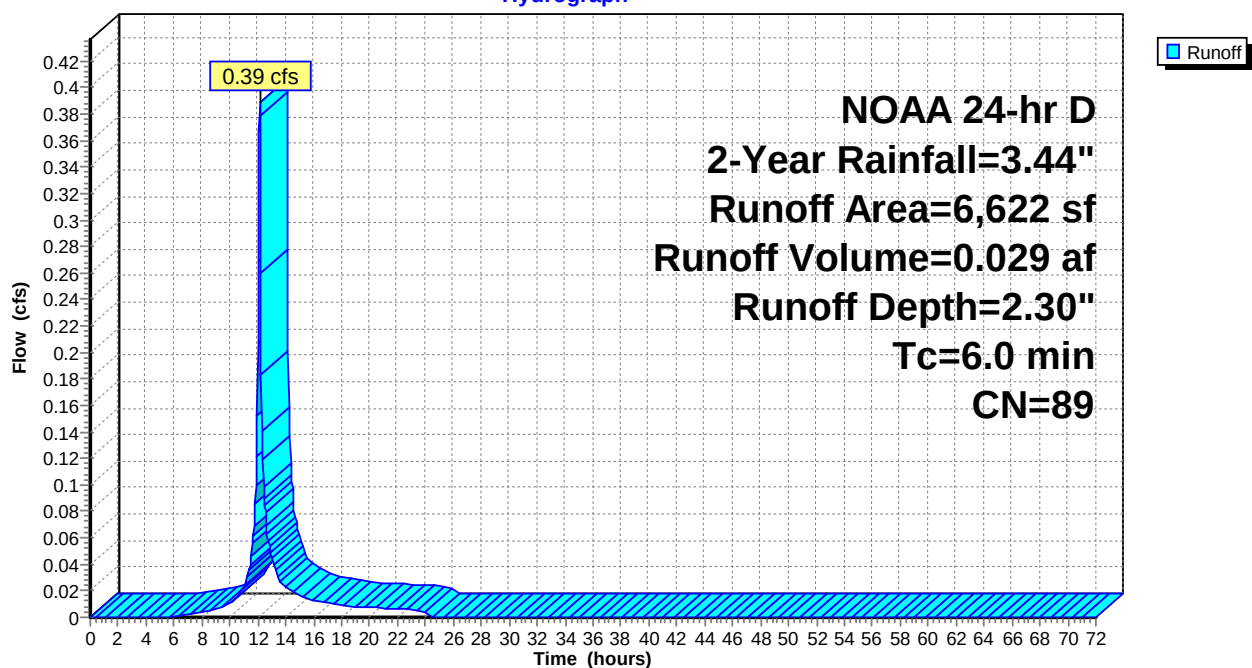
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
6,622	89	Gravel roads, HSG C
6,622		100.00% Pervious Area

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

Subcatchment PR 1B-P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

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Hydrograph for Subcatchment PR 1B-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	2.30	0.00
1.00	0.04	0.00	0.00	59.00	3.44	2.30	0.00
2.00	0.08	0.00	0.00	60.00	3.44	2.30	0.00
3.00	0.13	0.00	0.00	61.00	3.44	2.30	0.00
4.00	0.18	0.00	0.00	62.00	3.44	2.30	0.00
5.00	0.24	0.00	0.00	63.00	3.44	2.30	0.00
6.00	0.29	0.00	0.00	64.00	3.44	2.30	0.00
7.00	0.36	0.01	0.00	65.00	3.44	2.30	0.00
8.00	0.45	0.03	0.00	66.00	3.44	2.30	0.00
9.00	0.55	0.06	0.01	67.00	3.44	2.30	0.00
10.00	0.68	0.11	0.01	68.00	3.44	2.30	0.00
11.00	0.89	0.22	0.02	69.00	3.44	2.30	0.00
12.00	1.65	0.74	0.21	70.00	3.44	2.30	0.00
13.00	2.55	1.49	0.05	71.00	3.44	2.30	0.00
14.00	2.76	1.68	0.02	72.00	3.44	2.30	0.00
15.00	2.89	1.80	0.02				
16.00	2.99	1.89	0.01				
17.00	3.08	1.97	0.01				
18.00	3.15	2.03	0.01				
19.00	3.20	2.09	0.01				
20.00	3.26	2.14	0.01				
21.00	3.31	2.18	0.01				
22.00	3.36	2.23	0.01				
23.00	3.40	2.27	0.01				
24.00	3.44	2.30	0.01				
25.00	3.44	2.30	0.00				
26.00	3.44	2.30	0.00				
27.00	3.44	2.30	0.00				
28.00	3.44	2.30	0.00				
29.00	3.44	2.30	0.00				
30.00	3.44	2.30	0.00				
31.00	3.44	2.30	0.00				
32.00	3.44	2.30	0.00				
33.00	3.44	2.30	0.00				
34.00	3.44	2.30	0.00				
35.00	3.44	2.30	0.00				
36.00	3.44	2.30	0.00				
37.00	3.44	2.30	0.00				
38.00	3.44	2.30	0.00				
39.00	3.44	2.30	0.00				
40.00	3.44	2.30	0.00				
41.00	3.44	2.30	0.00				
42.00	3.44	2.30	0.00				
43.00	3.44	2.30	0.00				
44.00	3.44	2.30	0.00				
45.00	3.44	2.30	0.00				
46.00	3.44	2.30	0.00				
47.00	3.44	2.30	0.00				
48.00	3.44	2.30	0.00				
49.00	3.44	2.30	0.00				
50.00	3.44	2.30	0.00				
51.00	3.44	2.30	0.00				
52.00	3.44	2.30	0.00				
53.00	3.44	2.30	0.00				
54.00	3.44	2.30	0.00				
55.00	3.44	2.30	0.00				
56.00	3.44	2.30	0.00				
57.00	3.44	2.30	0.00				

Summary for Subcatchment PR 2A-P:

Runoff = 0.21 cfs @ 12.09 hrs, Volume= 0.014 af, Depth= 1.20"
 Routed to Reach DP2 : CHANNEL

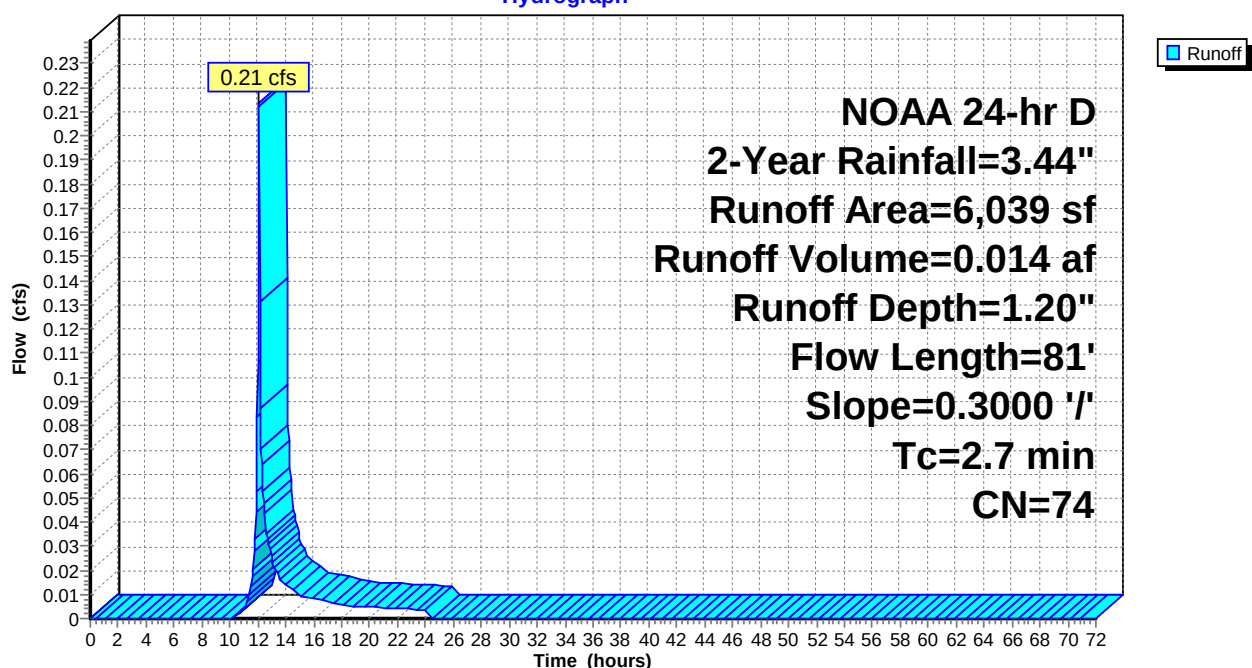
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
6,039	74	>75% Grass cover, Good, HSG C
6,039		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	81	0.3000	0.50		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"

Subcatchment PR 2A-P:

Hydrograph



240913 40 ERW Waymaker Proposed

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NOAA 24-hr D 2-Year Rainfall=3.44"

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Hydrograph for Subcatchment PR 2A-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	1.20	0.00
1.00	0.04	0.00	0.00	59.00	3.44	1.20	0.00
2.00	0.08	0.00	0.00	60.00	3.44	1.20	0.00
3.00	0.13	0.00	0.00	61.00	3.44	1.20	0.00
4.00	0.18	0.00	0.00	62.00	3.44	1.20	0.00
5.00	0.24	0.00	0.00	63.00	3.44	1.20	0.00
6.00	0.29	0.00	0.00	64.00	3.44	1.20	0.00
7.00	0.36	0.00	0.00	65.00	3.44	1.20	0.00
8.00	0.45	0.00	0.00	66.00	3.44	1.20	0.00
9.00	0.55	0.00	0.00	67.00	3.44	1.20	0.00
10.00	0.68	0.00	0.00	68.00	3.44	1.20	0.00
11.00	0.89	0.01	0.00	69.00	3.44	1.20	0.00
12.00	1.65	0.20	0.11	70.00	3.44	1.20	0.00
13.00	2.55	0.63	0.03	71.00	3.44	1.20	0.00
14.00	2.76	0.76	0.01	72.00	3.44	1.20	0.00
15.00	2.89	0.84	0.01				
16.00	2.99	0.90	0.01				
17.00	3.08	0.96	0.01				
18.00	3.15	1.00	0.01				
19.00	3.20	1.04	0.01				
20.00	3.26	1.08	0.00				
21.00	3.31	1.11	0.00				
22.00	3.36	1.14	0.00				
23.00	3.40	1.17	0.00				
24.00	3.44	1.20	0.00				
25.00	3.44	1.20	0.00				
26.00	3.44	1.20	0.00				
27.00	3.44	1.20	0.00				
28.00	3.44	1.20	0.00				
29.00	3.44	1.20	0.00				
30.00	3.44	1.20	0.00				
31.00	3.44	1.20	0.00				
32.00	3.44	1.20	0.00				
33.00	3.44	1.20	0.00				
34.00	3.44	1.20	0.00				
35.00	3.44	1.20	0.00				
36.00	3.44	1.20	0.00				
37.00	3.44	1.20	0.00				
38.00	3.44	1.20	0.00				
39.00	3.44	1.20	0.00				
40.00	3.44	1.20	0.00				
41.00	3.44	1.20	0.00				
42.00	3.44	1.20	0.00				
43.00	3.44	1.20	0.00				
44.00	3.44	1.20	0.00				
45.00	3.44	1.20	0.00				
46.00	3.44	1.20	0.00				
47.00	3.44	1.20	0.00				
48.00	3.44	1.20	0.00				
49.00	3.44	1.20	0.00				
50.00	3.44	1.20	0.00				
51.00	3.44	1.20	0.00				
52.00	3.44	1.20	0.00				
53.00	3.44	1.20	0.00				
54.00	3.44	1.20	0.00				
55.00	3.44	1.20	0.00				
56.00	3.44	1.20	0.00				
57.00	3.44	1.20	0.00				

Summary for Subcatchment PR 2C-I:

Runoff = 0.47 cfs @ 12.06 hrs, Volume= 0.035 af, Depth= 3.21"
 Routed to Reach 8R : (new Reach)

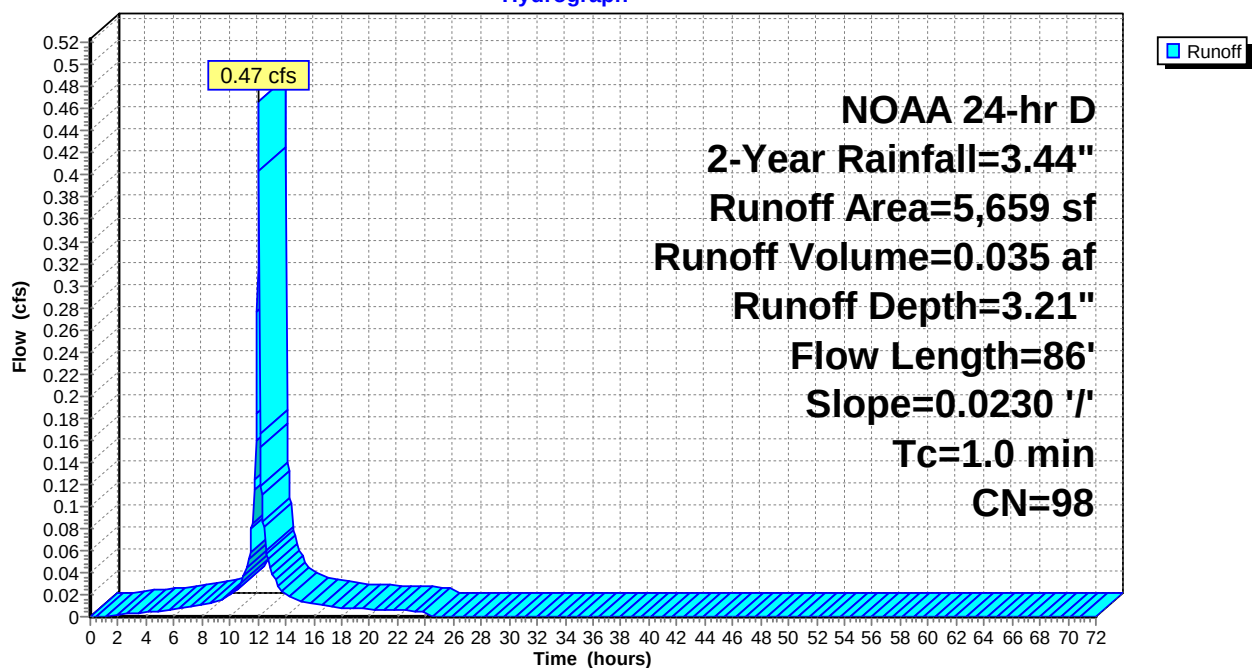
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
5,659	98	Unconnected pavement, HSG A
5,659		100.00% Impervious Area
5,659		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	86	0.0230	1.46		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"

Subcatchment PR 2C-I:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

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Hydrograph for Subcatchment PR 2C-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	3.21	0.00
1.00	0.04	0.00	0.00	59.00	3.44	3.21	0.00
2.00	0.08	0.01	0.00	60.00	3.44	3.21	0.00
3.00	0.13	0.03	0.00	61.00	3.44	3.21	0.00
4.00	0.18	0.06	0.00	62.00	3.44	3.21	0.00
5.00	0.24	0.09	0.01	63.00	3.44	3.21	0.00
6.00	0.29	0.14	0.01	64.00	3.44	3.21	0.00
7.00	0.36	0.20	0.01	65.00	3.44	3.21	0.00
8.00	0.45	0.27	0.01	66.00	3.44	3.21	0.00
9.00	0.55	0.36	0.01	67.00	3.44	3.21	0.00
10.00	0.68	0.49	0.02	68.00	3.44	3.21	0.00
11.00	0.89	0.69	0.04	69.00	3.44	3.21	0.00
12.00	1.65	1.43	0.32	70.00	3.44	3.21	0.00
13.00	2.55	2.32	0.04	71.00	3.44	3.21	0.00
14.00	2.76	2.53	0.02	72.00	3.44	3.21	0.00
15.00	2.89	2.66	0.01				
16.00	2.99	2.76	0.01				
17.00	3.08	2.85	0.01				
18.00	3.15	2.91	0.01				
19.00	3.20	2.97	0.01				
20.00	3.26	3.03	0.01				
21.00	3.31	3.08	0.01				
22.00	3.36	3.12	0.01				
23.00	3.40	3.17	0.01				
24.00	3.44	3.21	0.00				
25.00	3.44	3.21	0.00				
26.00	3.44	3.21	0.00				
27.00	3.44	3.21	0.00				
28.00	3.44	3.21	0.00				
29.00	3.44	3.21	0.00				
30.00	3.44	3.21	0.00				
31.00	3.44	3.21	0.00				
32.00	3.44	3.21	0.00				
33.00	3.44	3.21	0.00				
34.00	3.44	3.21	0.00				
35.00	3.44	3.21	0.00				
36.00	3.44	3.21	0.00				
37.00	3.44	3.21	0.00				
38.00	3.44	3.21	0.00				
39.00	3.44	3.21	0.00				
40.00	3.44	3.21	0.00				
41.00	3.44	3.21	0.00				
42.00	3.44	3.21	0.00				
43.00	3.44	3.21	0.00				
44.00	3.44	3.21	0.00				
45.00	3.44	3.21	0.00				
46.00	3.44	3.21	0.00				
47.00	3.44	3.21	0.00				
48.00	3.44	3.21	0.00				
49.00	3.44	3.21	0.00				
50.00	3.44	3.21	0.00				
51.00	3.44	3.21	0.00				
52.00	3.44	3.21	0.00				
53.00	3.44	3.21	0.00				
54.00	3.44	3.21	0.00				
55.00	3.44	3.21	0.00				
56.00	3.44	3.21	0.00				
57.00	3.44	3.21	0.00				

Summary for Subcatchment PR 2C-P:

Runoff = 0.58 cfs @ 12.17 hrs, Volume= 0.049 af, Depth= 1.20"
 Routed to Reach 8R : (new Reach)

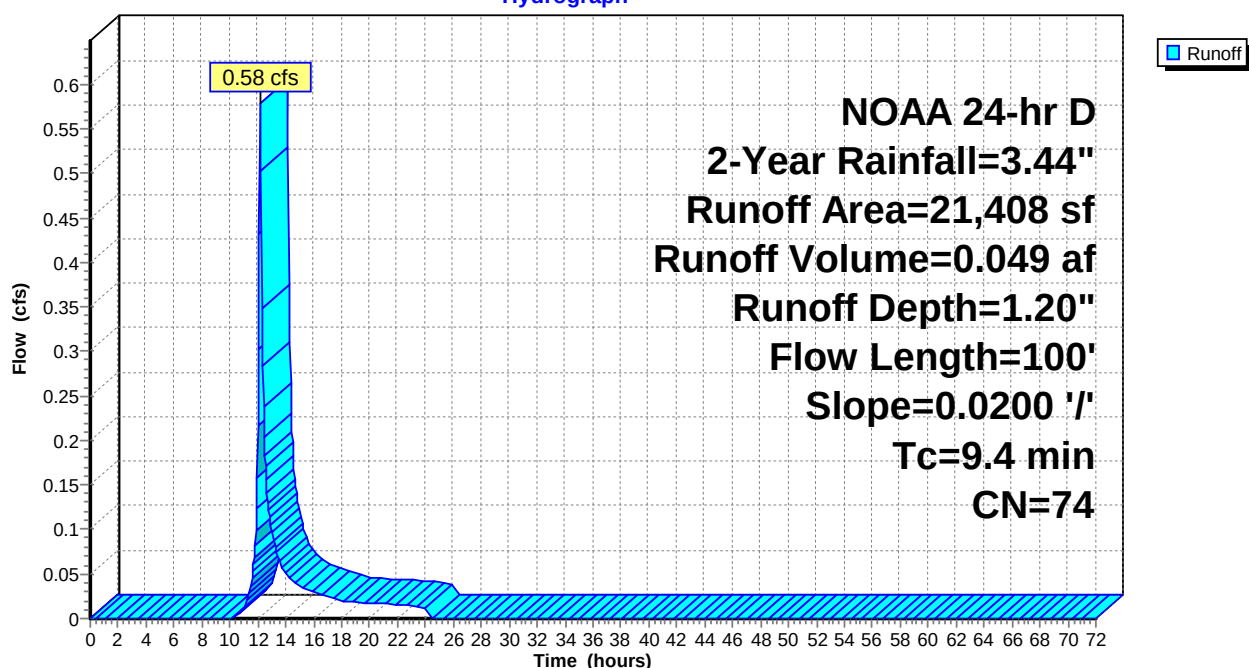
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
21,408	74	>75% Grass cover, Good, HSG C
21,408		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.0200	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"

Subcatchment PR 2C-P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

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Hydrograph for Subcatchment PR 2C-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	1.20	0.00
1.00	0.04	0.00	0.00	59.00	3.44	1.20	0.00
2.00	0.08	0.00	0.00	60.00	3.44	1.20	0.00
3.00	0.13	0.00	0.00	61.00	3.44	1.20	0.00
4.00	0.18	0.00	0.00	62.00	3.44	1.20	0.00
5.00	0.24	0.00	0.00	63.00	3.44	1.20	0.00
6.00	0.29	0.00	0.00	64.00	3.44	1.20	0.00
7.00	0.36	0.00	0.00	65.00	3.44	1.20	0.00
8.00	0.45	0.00	0.00	66.00	3.44	1.20	0.00
9.00	0.55	0.00	0.00	67.00	3.44	1.20	0.00
10.00	0.68	0.00	0.00	68.00	3.44	1.20	0.00
11.00	0.89	0.01	0.01	69.00	3.44	1.20	0.00
12.00	1.65	0.20	0.22	70.00	3.44	1.20	0.00
13.00	2.55	0.63	0.10	71.00	3.44	1.20	0.00
14.00	2.76	0.76	0.05	72.00	3.44	1.20	0.00
15.00	2.89	0.84	0.04				
16.00	2.99	0.90	0.03				
17.00	3.08	0.96	0.03				
18.00	3.15	1.00	0.02				
19.00	3.20	1.04	0.02				
20.00	3.26	1.08	0.02				
21.00	3.31	1.11	0.02				
22.00	3.36	1.14	0.02				
23.00	3.40	1.17	0.01				
24.00	3.44	1.20	0.01				
25.00	3.44	1.20	0.00				
26.00	3.44	1.20	0.00				
27.00	3.44	1.20	0.00				
28.00	3.44	1.20	0.00				
29.00	3.44	1.20	0.00				
30.00	3.44	1.20	0.00				
31.00	3.44	1.20	0.00				
32.00	3.44	1.20	0.00				
33.00	3.44	1.20	0.00				
34.00	3.44	1.20	0.00				
35.00	3.44	1.20	0.00				
36.00	3.44	1.20	0.00				
37.00	3.44	1.20	0.00				
38.00	3.44	1.20	0.00				
39.00	3.44	1.20	0.00				
40.00	3.44	1.20	0.00				
41.00	3.44	1.20	0.00				
42.00	3.44	1.20	0.00				
43.00	3.44	1.20	0.00				
44.00	3.44	1.20	0.00				
45.00	3.44	1.20	0.00				
46.00	3.44	1.20	0.00				
47.00	3.44	1.20	0.00				
48.00	3.44	1.20	0.00				
49.00	3.44	1.20	0.00				
50.00	3.44	1.20	0.00				
51.00	3.44	1.20	0.00				
52.00	3.44	1.20	0.00				
53.00	3.44	1.20	0.00				
54.00	3.44	1.20	0.00				
55.00	3.44	1.20	0.00				
56.00	3.44	1.20	0.00				
57.00	3.44	1.20	0.00				

Summary for Subcatchment PR 3 - P:

Runoff = 0.30 cfs @ 12.15 hrs, Volume= 0.024 af, Depth= 1.20"
 Routed to Reach DP3 : TOTAL

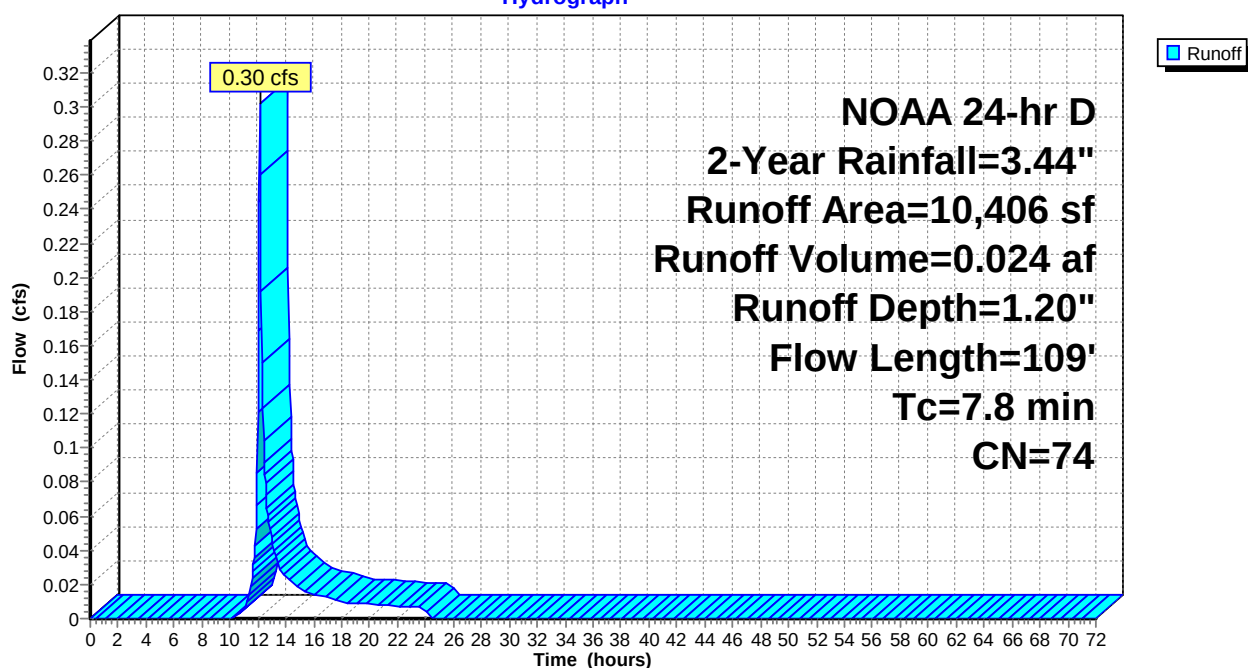
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
10,406	74	>75% Grass cover, Good, HSG C
10,406		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	72	0.0280	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
1.4	28	0.1790	0.33		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.0	9	0.2220	7.59		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
7.8	109	Total			

Subcatchment PR 3 - P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

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Hydrograph for Subcatchment PR 3 - P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	1.20	0.00
1.00	0.04	0.00	0.00	59.00	3.44	1.20	0.00
2.00	0.08	0.00	0.00	60.00	3.44	1.20	0.00
3.00	0.13	0.00	0.00	61.00	3.44	1.20	0.00
4.00	0.18	0.00	0.00	62.00	3.44	1.20	0.00
5.00	0.24	0.00	0.00	63.00	3.44	1.20	0.00
6.00	0.29	0.00	0.00	64.00	3.44	1.20	0.00
7.00	0.36	0.00	0.00	65.00	3.44	1.20	0.00
8.00	0.45	0.00	0.00	66.00	3.44	1.20	0.00
9.00	0.55	0.00	0.00	67.00	3.44	1.20	0.00
10.00	0.68	0.00	0.00	68.00	3.44	1.20	0.00
11.00	0.89	0.01	0.01	69.00	3.44	1.20	0.00
12.00	1.65	0.20	0.12	70.00	3.44	1.20	0.00
13.00	2.55	0.63	0.05	71.00	3.44	1.20	0.00
14.00	2.76	0.76	0.02	72.00	3.44	1.20	0.00
15.00	2.89	0.84	0.02				
16.00	2.99	0.90	0.01				
17.00	3.08	0.96	0.01				
18.00	3.15	1.00	0.01				
19.00	3.20	1.04	0.01				
20.00	3.26	1.08	0.01				
21.00	3.31	1.11	0.01				
22.00	3.36	1.14	0.01				
23.00	3.40	1.17	0.01				
24.00	3.44	1.20	0.01				
25.00	3.44	1.20	0.00				
26.00	3.44	1.20	0.00				
27.00	3.44	1.20	0.00				
28.00	3.44	1.20	0.00				
29.00	3.44	1.20	0.00				
30.00	3.44	1.20	0.00				
31.00	3.44	1.20	0.00				
32.00	3.44	1.20	0.00				
33.00	3.44	1.20	0.00				
34.00	3.44	1.20	0.00				
35.00	3.44	1.20	0.00				
36.00	3.44	1.20	0.00				
37.00	3.44	1.20	0.00				
38.00	3.44	1.20	0.00				
39.00	3.44	1.20	0.00				
40.00	3.44	1.20	0.00				
41.00	3.44	1.20	0.00				
42.00	3.44	1.20	0.00				
43.00	3.44	1.20	0.00				
44.00	3.44	1.20	0.00				
45.00	3.44	1.20	0.00				
46.00	3.44	1.20	0.00				
47.00	3.44	1.20	0.00				
48.00	3.44	1.20	0.00				
49.00	3.44	1.20	0.00				
50.00	3.44	1.20	0.00				
51.00	3.44	1.20	0.00				
52.00	3.44	1.20	0.00				
53.00	3.44	1.20	0.00				
54.00	3.44	1.20	0.00				
55.00	3.44	1.20	0.00				
56.00	3.44	1.20	0.00				
57.00	3.44	1.20	0.00				

Summary for Subcatchment PR-2B-I:

Runoff = 0.71 cfs @ 12.06 hrs, Volume= 0.053 af, Depth= 3.21"
 Routed to Pond 11P : Existing Drywell System

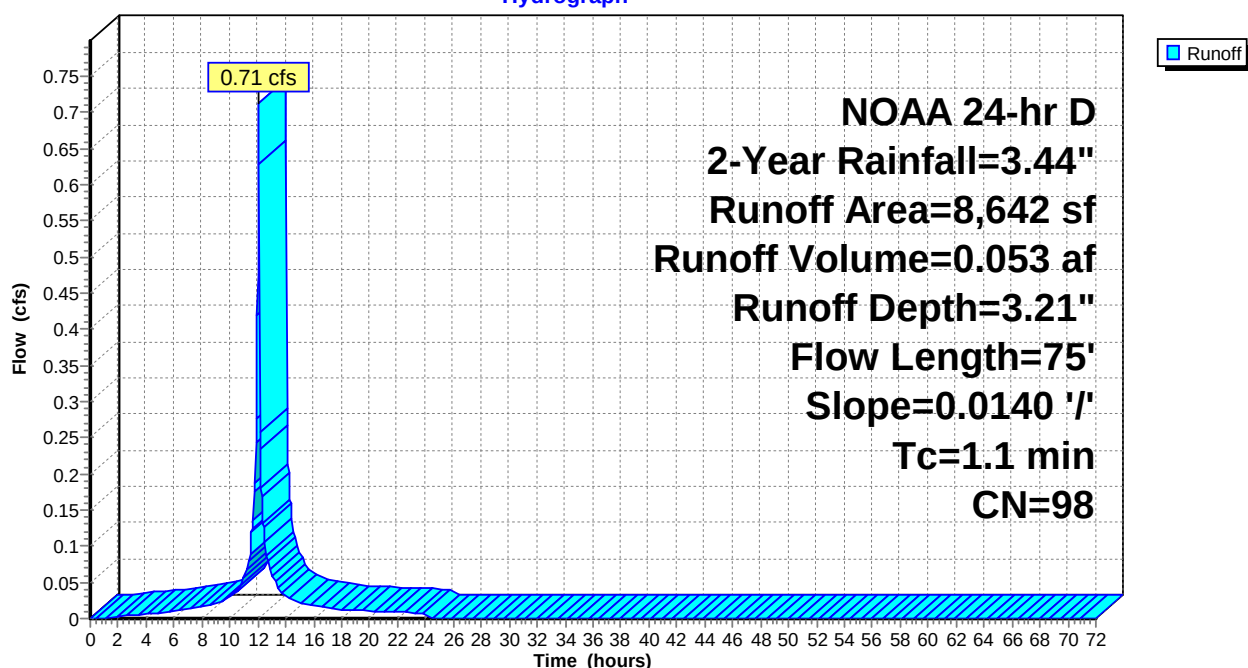
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
8,642	98	Paved parking, HSG C
8,642		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	75	0.0140	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"

Subcatchment PR-2B-I:

Hydrograph



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NOAA 24-hr D 2-Year Rainfall=3.44"

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Hydrograph for Subcatchment PR-2B-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	3.21	0.00
1.00	0.04	0.00	0.00	59.00	3.44	3.21	0.00
2.00	0.08	0.01	0.00	60.00	3.44	3.21	0.00
3.00	0.13	0.03	0.00	61.00	3.44	3.21	0.00
4.00	0.18	0.06	0.01	62.00	3.44	3.21	0.00
5.00	0.24	0.09	0.01	63.00	3.44	3.21	0.00
6.00	0.29	0.14	0.01	64.00	3.44	3.21	0.00
7.00	0.36	0.20	0.01	65.00	3.44	3.21	0.00
8.00	0.45	0.27	0.02	66.00	3.44	3.21	0.00
9.00	0.55	0.36	0.02	67.00	3.44	3.21	0.00
10.00	0.68	0.49	0.03	68.00	3.44	3.21	0.00
11.00	0.89	0.69	0.06	69.00	3.44	3.21	0.00
12.00	1.65	1.43	0.48	70.00	3.44	3.21	0.00
13.00	2.55	2.32	0.06	71.00	3.44	3.21	0.00
14.00	2.76	2.53	0.03	72.00	3.44	3.21	0.00
15.00	2.89	2.66	0.02				
16.00	2.99	2.76	0.02				
17.00	3.08	2.85	0.02				
18.00	3.15	2.91	0.01				
19.00	3.20	2.97	0.01				
20.00	3.26	3.03	0.01				
21.00	3.31	3.08	0.01				
22.00	3.36	3.12	0.01				
23.00	3.40	3.17	0.01				
24.00	3.44	3.21	0.01				
25.00	3.44	3.21	0.00				
26.00	3.44	3.21	0.00				
27.00	3.44	3.21	0.00				
28.00	3.44	3.21	0.00				
29.00	3.44	3.21	0.00				
30.00	3.44	3.21	0.00				
31.00	3.44	3.21	0.00				
32.00	3.44	3.21	0.00				
33.00	3.44	3.21	0.00				
34.00	3.44	3.21	0.00				
35.00	3.44	3.21	0.00				
36.00	3.44	3.21	0.00				
37.00	3.44	3.21	0.00				
38.00	3.44	3.21	0.00				
39.00	3.44	3.21	0.00				
40.00	3.44	3.21	0.00				
41.00	3.44	3.21	0.00				
42.00	3.44	3.21	0.00				
43.00	3.44	3.21	0.00				
44.00	3.44	3.21	0.00				
45.00	3.44	3.21	0.00				
46.00	3.44	3.21	0.00				
47.00	3.44	3.21	0.00				
48.00	3.44	3.21	0.00				
49.00	3.44	3.21	0.00				
50.00	3.44	3.21	0.00				
51.00	3.44	3.21	0.00				
52.00	3.44	3.21	0.00				
53.00	3.44	3.21	0.00				
54.00	3.44	3.21	0.00				
55.00	3.44	3.21	0.00				
56.00	3.44	3.21	0.00				
57.00	3.44	3.21	0.00				

Summary for Subcatchment PR-2B-P:

Runoff = 0.04 cfs @ 12.16 hrs, Volume= 0.003 af, Depth= 1.20"
 Routed to Pond 11P : Existing Drywell System

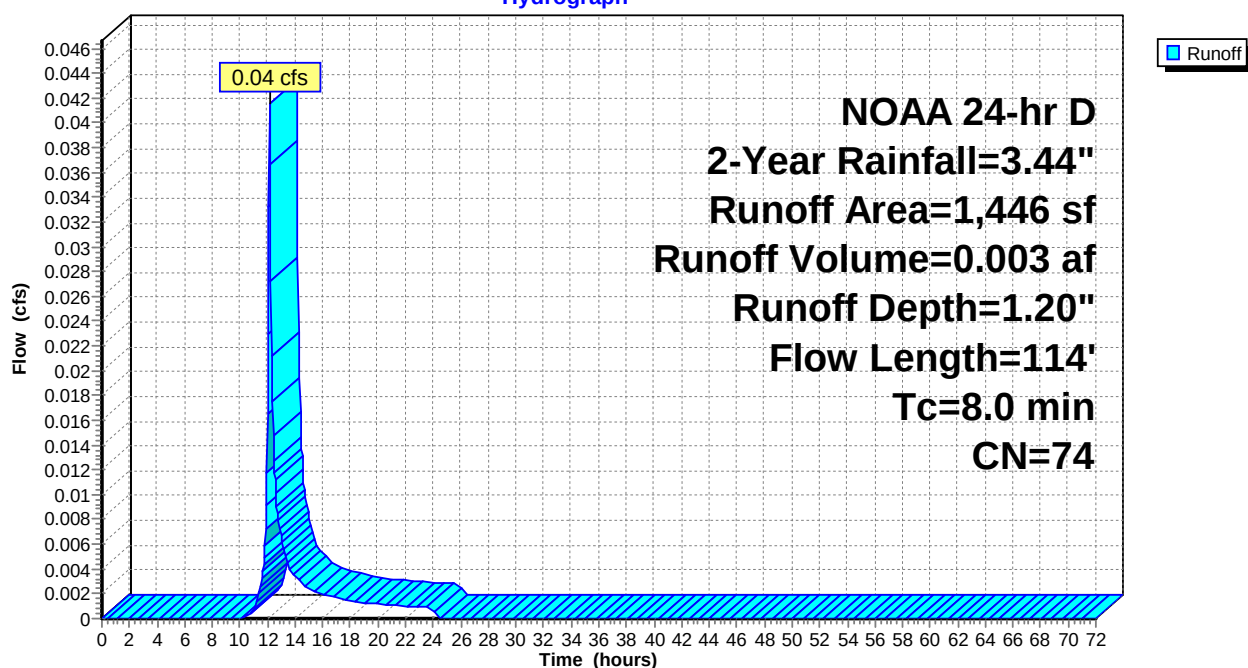
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
1,446	74	>75% Grass cover, Good, HSG C
1,446		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	69	0.0170	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.4	31	0.0220	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"
0.1	14	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.0	114	Total			

Subcatchment PR-2B-P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

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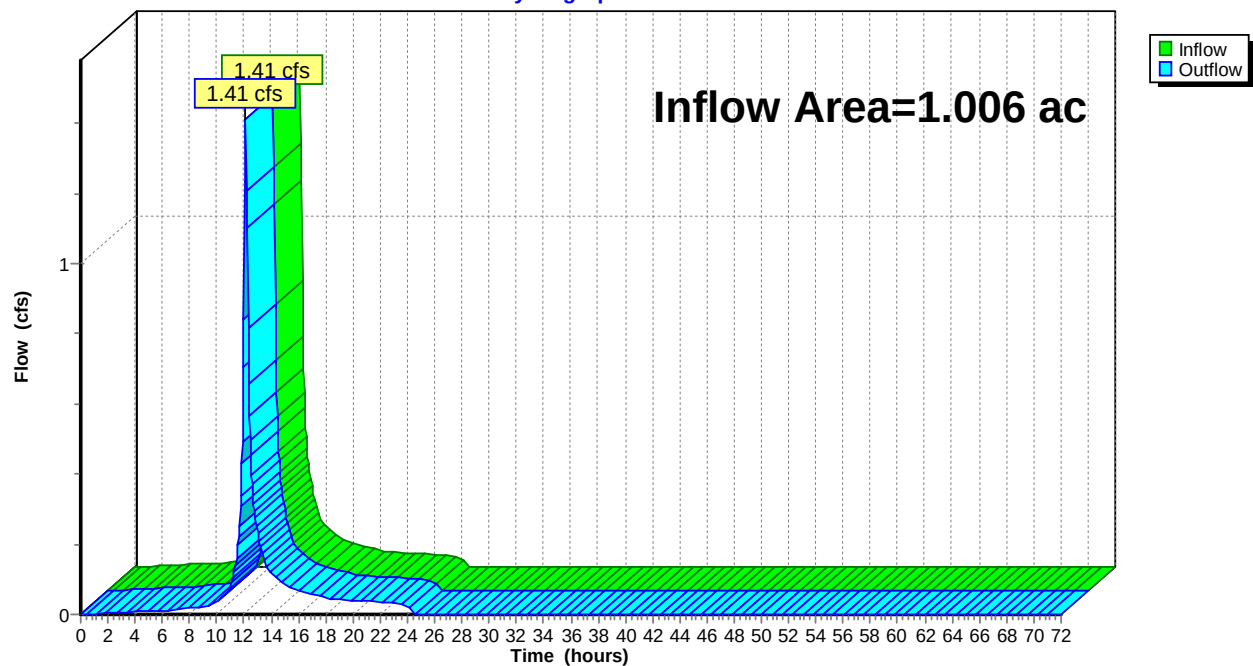
Hydrograph for Subcatchment PR-2B-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	3.44	1.20	0.00
1.00	0.04	0.00	0.00	59.00	3.44	1.20	0.00
2.00	0.08	0.00	0.00	60.00	3.44	1.20	0.00
3.00	0.13	0.00	0.00	61.00	3.44	1.20	0.00
4.00	0.18	0.00	0.00	62.00	3.44	1.20	0.00
5.00	0.24	0.00	0.00	63.00	3.44	1.20	0.00
6.00	0.29	0.00	0.00	64.00	3.44	1.20	0.00
7.00	0.36	0.00	0.00	65.00	3.44	1.20	0.00
8.00	0.45	0.00	0.00	66.00	3.44	1.20	0.00
9.00	0.55	0.00	0.00	67.00	3.44	1.20	0.00
10.00	0.68	0.00	0.00	68.00	3.44	1.20	0.00
11.00	0.89	0.01	0.00	69.00	3.44	1.20	0.00
12.00	1.65	0.20	0.02	70.00	3.44	1.20	0.00
13.00	2.55	0.63	0.01	71.00	3.44	1.20	0.00
14.00	2.76	0.76	0.00	72.00	3.44	1.20	0.00
15.00	2.89	0.84	0.00				
16.00	2.99	0.90	0.00				
17.00	3.08	0.96	0.00				
18.00	3.15	1.00	0.00				
19.00	3.20	1.04	0.00				
20.00	3.26	1.08	0.00				
21.00	3.31	1.11	0.00				
22.00	3.36	1.14	0.00				
23.00	3.40	1.17	0.00				
24.00	3.44	1.20	0.00				
25.00	3.44	1.20	0.00				
26.00	3.44	1.20	0.00				
27.00	3.44	1.20	0.00				
28.00	3.44	1.20	0.00				
29.00	3.44	1.20	0.00				
30.00	3.44	1.20	0.00				
31.00	3.44	1.20	0.00				
32.00	3.44	1.20	0.00				
33.00	3.44	1.20	0.00				
34.00	3.44	1.20	0.00				
35.00	3.44	1.20	0.00				
36.00	3.44	1.20	0.00				
37.00	3.44	1.20	0.00				
38.00	3.44	1.20	0.00				
39.00	3.44	1.20	0.00				
40.00	3.44	1.20	0.00				
41.00	3.44	1.20	0.00				
42.00	3.44	1.20	0.00				
43.00	3.44	1.20	0.00				
44.00	3.44	1.20	0.00				
45.00	3.44	1.20	0.00				
46.00	3.44	1.20	0.00				
47.00	3.44	1.20	0.00				
48.00	3.44	1.20	0.00				
49.00	3.44	1.20	0.00				
50.00	3.44	1.20	0.00				
51.00	3.44	1.20	0.00				
52.00	3.44	1.20	0.00				
53.00	3.44	1.20	0.00				
54.00	3.44	1.20	0.00				
55.00	3.44	1.20	0.00				
56.00	3.44	1.20	0.00				
57.00	3.44	1.20	0.00				

Summary for Reach 1R: TOP

Inflow Area = 1.006 ac, 21.70% Impervious, Inflow Depth = 1.68" for 2-Year event
Inflow = 1.41 cfs @ 12.10 hrs, Volume= 0.141 af
Outflow = 1.41 cfs @ 12.10 hrs, Volume= 0.141 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 2R : CHANNEL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 1R: TOP**Hydrograph**

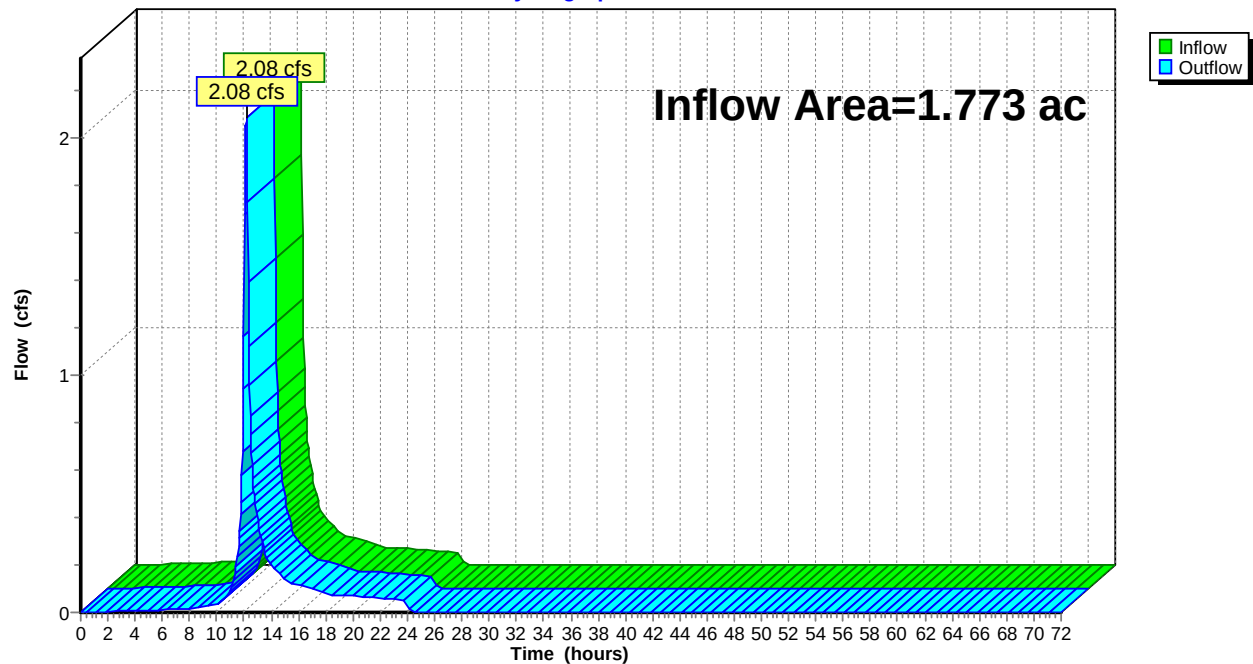
Hydrograph for Reach 1R: TOP

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.00		0.00	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.01		0.01	62.00	0.00		0.00
5.00	0.01		0.01	63.00	0.00		0.00
6.00	0.01		0.01	64.00	0.00		0.00
7.00	0.01		0.01	65.00	0.00		0.00
8.00	0.02		0.02	66.00	0.00		0.00
9.00	0.02		0.02	67.00	0.00		0.00
10.00	0.03		0.03	68.00	0.00		0.00
11.00	0.08		0.08	69.00	0.00		0.00
12.00	0.84		0.84	70.00	0.00		0.00
13.00	0.24		0.24	71.00	0.00		0.00
14.00	0.12		0.12	72.00	0.00		0.00
15.00	0.08		0.08				
16.00	0.07		0.07				
17.00	0.06		0.06				
18.00	0.05		0.05				
19.00	0.04		0.04				
20.00	0.04		0.04				
21.00	0.04		0.04				
22.00	0.04		0.04				
23.00	0.03		0.03				
24.00	0.03		0.03				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Reach 2R: CHANNEL

Inflow Area = 1.773 ac, 12.31% Impervious, Inflow Depth = 1.47" for 2-Year event
Inflow = 2.08 cfs @ 12.20 hrs, Volume= 0.218 af
Outflow = 2.08 cfs @ 12.20 hrs, Volume= 0.218 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : TOTAL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 2R: CHANNEL**Hydrograph**

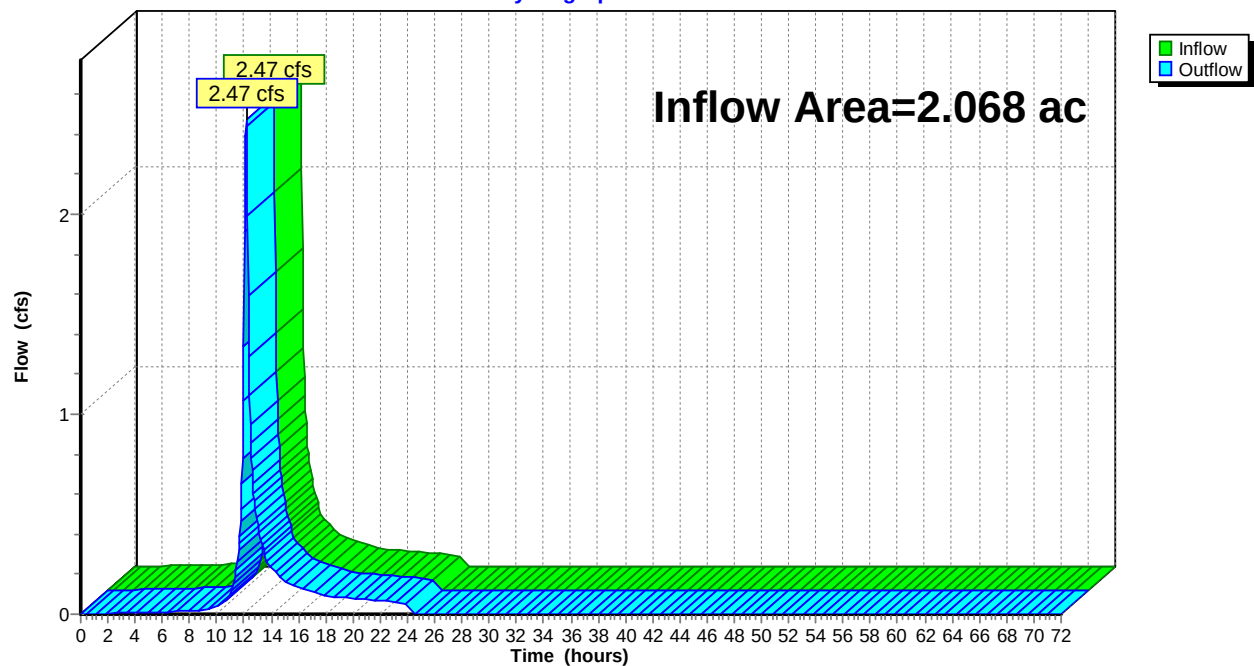
Hydrograph for Reach 2R: CHANNEL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.00		0.00	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.01		0.01	62.00	0.00		0.00
5.00	0.01		0.01	63.00	0.00		0.00
6.00	0.01		0.01	64.00	0.00		0.00
7.00	0.01		0.01	65.00	0.00		0.00
8.00	0.02		0.02	66.00	0.00		0.00
9.00	0.02		0.02	67.00	0.00		0.00
10.00	0.03		0.03	68.00	0.00		0.00
11.00	0.10		0.10	69.00	0.00		0.00
12.00	1.16		1.16	70.00	0.00		0.00
13.00	0.39		0.39	71.00	0.00		0.00
14.00	0.20		0.20	72.00	0.00		0.00
15.00	0.14		0.14				
16.00	0.11		0.11				
17.00	0.10		0.10				
18.00	0.08		0.08				
19.00	0.07		0.07				
20.00	0.07		0.07				
21.00	0.06		0.06				
22.00	0.06		0.06				
23.00	0.05		0.05				
24.00	0.05		0.05				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Reach 3R: TOTAL

Inflow Area = 2.068 ac, 10.56% Impervious, Inflow Depth = 1.45" for 2-Year event
Inflow = 2.47 cfs @ 12.16 hrs, Volume= 0.250 af
Outflow = 2.47 cfs @ 12.16 hrs, Volume= 0.250 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 3R: TOTAL**Hydrograph**

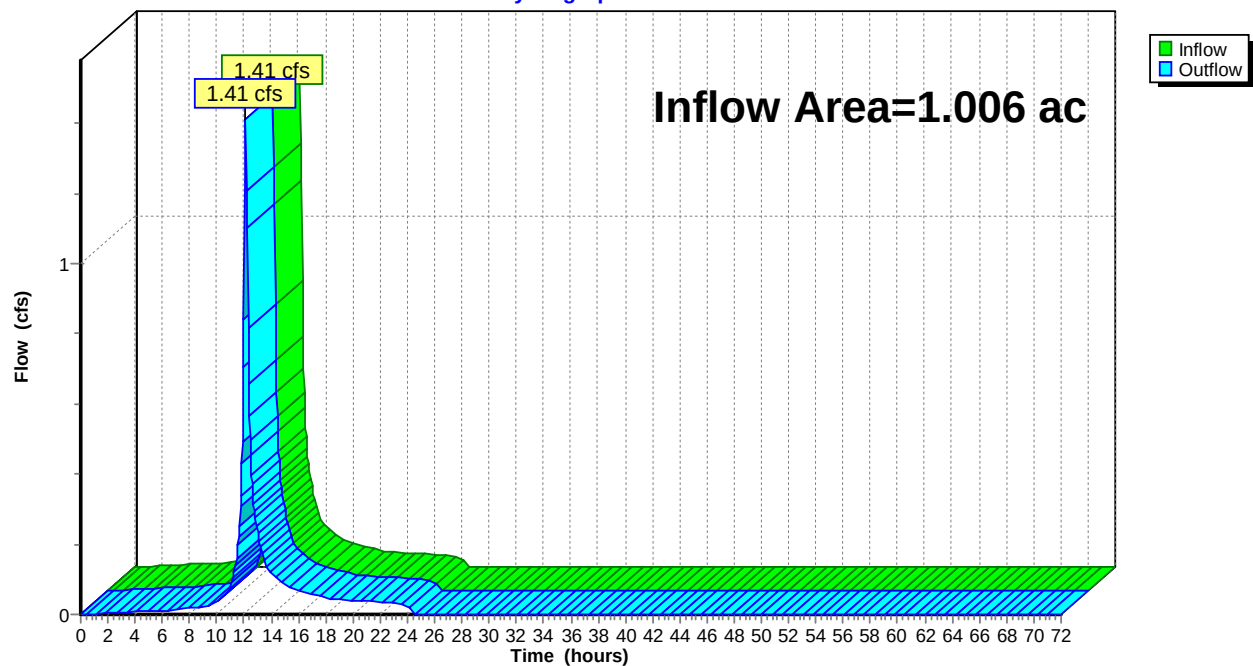
Hydrograph for Reach 3R: TOTAL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.00		0.00	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.01		0.01	62.00	0.00		0.00
5.00	0.01		0.01	63.00	0.00		0.00
6.00	0.01		0.01	64.00	0.00		0.00
7.00	0.01		0.01	65.00	0.00		0.00
8.00	0.02		0.02	66.00	0.00		0.00
9.00	0.02		0.02	67.00	0.00		0.00
10.00	0.03		0.03	68.00	0.00		0.00
11.00	0.11		0.11	69.00	0.00		0.00
12.00	1.33		1.33	70.00	0.00		0.00
13.00	0.46		0.46	71.00	0.00		0.00
14.00	0.23		0.23	72.00	0.00		0.00
15.00	0.16		0.16				
16.00	0.13		0.13				
17.00	0.11		0.11				
18.00	0.09		0.09				
19.00	0.08		0.08				
20.00	0.08		0.08				
21.00	0.07		0.07				
22.00	0.07		0.07				
23.00	0.06		0.06				
24.00	0.06		0.06				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Reach 4R:

Inflow Area = 1.006 ac, 21.70% Impervious, Inflow Depth = 1.68" for 2-Year event
Inflow = 1.41 cfs @ 12.10 hrs, Volume= 0.141 af
Outflow = 1.41 cfs @ 12.10 hrs, Volume= 0.141 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 1R : TOP

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 4R:**Hydrograph**

240913_40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

Prepared by Colliers Engineering & Design

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Hydrograph for Reach 4R:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.00		0.00	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.01		0.01	62.00	0.00		0.00
5.00	0.01		0.01	63.00	0.00		0.00
6.00	0.01		0.01	64.00	0.00		0.00
7.00	0.01		0.01	65.00	0.00		0.00
8.00	0.02		0.02	66.00	0.00		0.00
9.00	0.02		0.02	67.00	0.00		0.00
10.00	0.03		0.03	68.00	0.00		0.00
11.00	0.08		0.08	69.00	0.00		0.00
12.00	0.84		0.84	70.00	0.00		0.00
13.00	0.24		0.24	71.00	0.00		0.00
14.00	0.12		0.12	72.00	0.00		0.00
15.00	0.08		0.08				
16.00	0.07		0.07				
17.00	0.06		0.06				
18.00	0.05		0.05				
19.00	0.04		0.04				
20.00	0.04		0.04				
21.00	0.04		0.04				
22.00	0.04		0.04				
23.00	0.03		0.03				
24.00	0.03		0.03				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

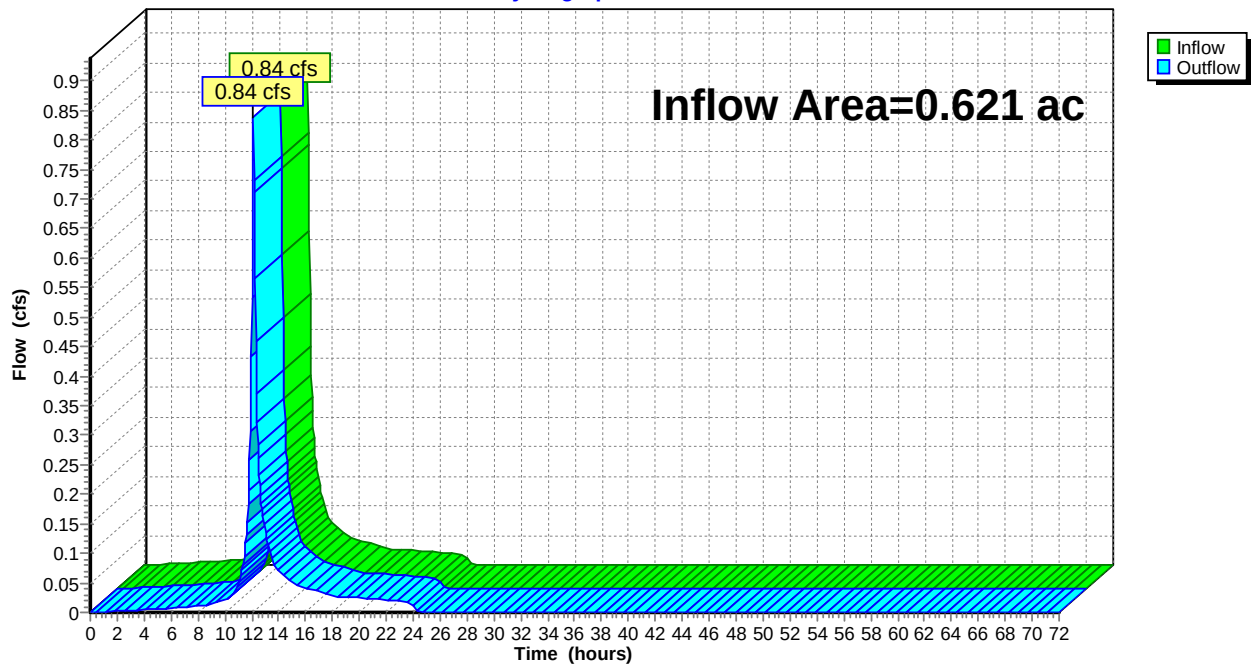
Summary for Reach 8R: (new Reach)

Inflow Area = 0.621 ac, 20.91% Impervious, Inflow Depth = 1.62" for 2-Year event
Inflow = 0.84 cfs @ 12.10 hrs, Volume= 0.084 af
Outflow = 0.84 cfs @ 12.10 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 12P : Subsurface Infiltration Basin

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 8R: (new Reach)

Hydrograph



Hydrograph for Reach 8R: (new Reach)

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.00		0.00	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.01		0.01	63.00	0.00		0.00
6.00	0.01		0.01	64.00	0.00		0.00
7.00	0.01		0.01	65.00	0.00		0.00
8.00	0.01		0.01	66.00	0.00		0.00
9.00	0.01		0.01	67.00	0.00		0.00
10.00	0.02		0.02	68.00	0.00		0.00
11.00	0.05		0.05	69.00	0.00		0.00
12.00	0.53		0.53	70.00	0.00		0.00
13.00	0.14		0.14	71.00	0.00		0.00
14.00	0.07		0.07	72.00	0.00		0.00
15.00	0.05		0.05				
16.00	0.04		0.04				
17.00	0.04		0.04				
18.00	0.03		0.03				
19.00	0.03		0.03				
20.00	0.02		0.02				
21.00	0.02		0.02				
22.00	0.02		0.02				
23.00	0.02		0.02				
24.00	0.02		0.02				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Reach DP1: TOP

Inflow Area = 0.718 ac, 9.34% Impervious, Inflow Depth = 1.13" for 2-Year event
 Inflow = 0.65 cfs @ 12.18 hrs, Volume= 0.068 af
 Outflow = 0.65 cfs @ 12.18 hrs, Volume= 0.068 af, Atten= 1%, Lag= 0.1 min
 Routed to Reach DP2 : CHANNEL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 7.18 fps, Min. Travel Time= 0.2 min

Avg. Velocity= 2.78 fps, Avg. Travel Time= 0.6 min

Peak Storage= 9 cf @ 12.18 hrs

Average Depth at Peak Storage= 0.10' , Surface Width= 1.30'

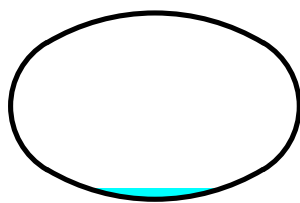
Bank-Full Depth= 1.83' Flow Area= 4.1 sf, Capacity= 118.41 cfs

34.0" W x 22.0" H, R=24.9" Elliptical Pipe

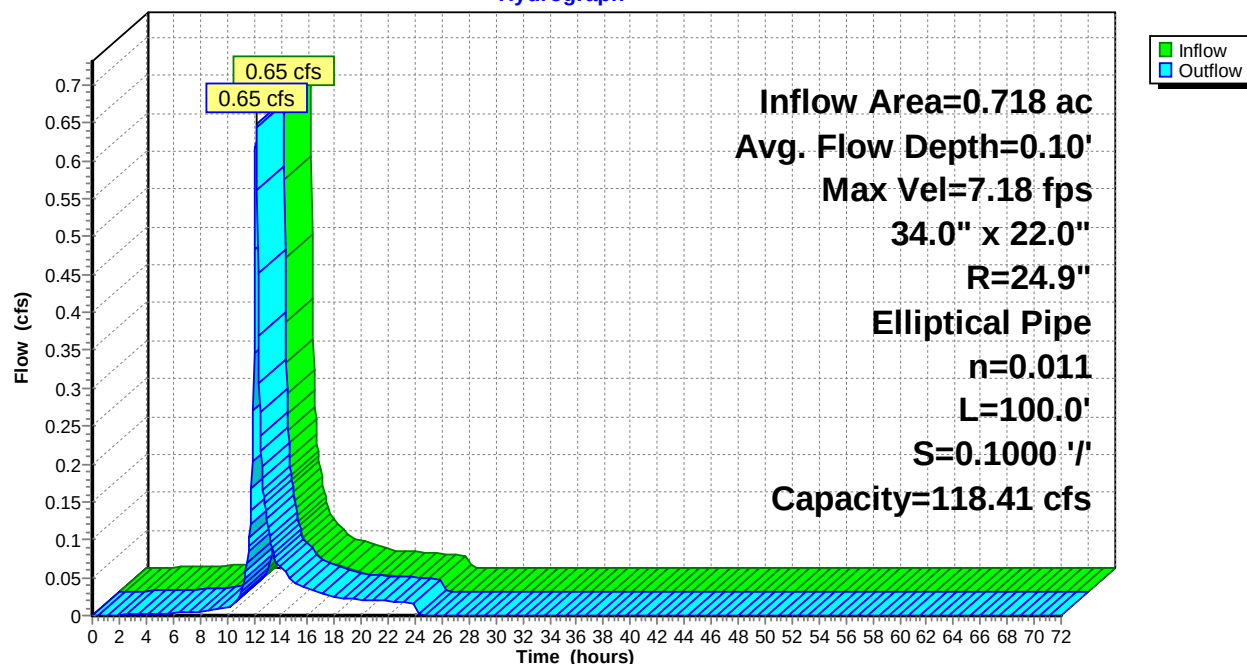
n= 0.011 Concrete pipe, straight & clean

Length= 100.0' Slope= 0.1000 '/'

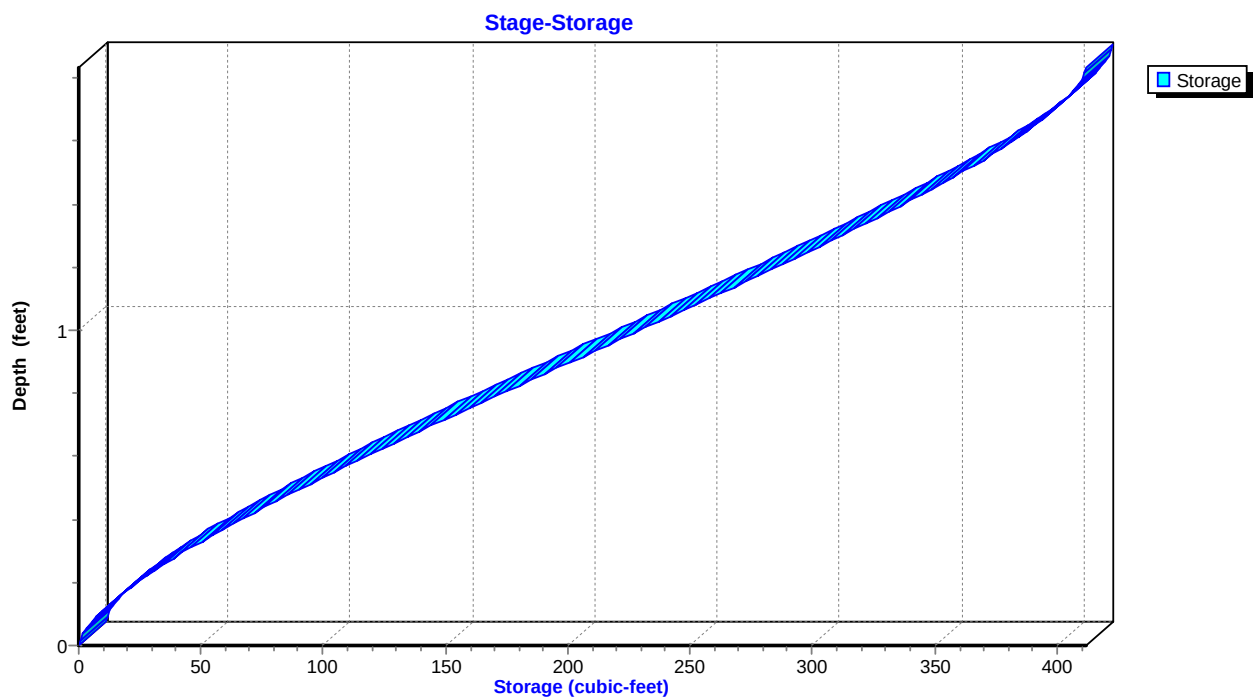
Inlet Invert= 0.00', Outlet Invert= -10.00'

**Reach DP1: TOP**

Hydrograph



Reach DP1: TOP



240913_40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

Prepared by Colliers Engineering & Design

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Hydrograph for Reach DP1: TOP

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	0.00	0.00
2.50	0.00	0	0.00	0.00
5.00	0.00	0	0.00	0.00
7.50	0.00	0	0.01	0.00
10.00	0.01	0	0.01	0.01
12.50	0.24	4	0.06	0.24
15.00	0.04	1	0.03	0.04
17.50	0.03	1	0.02	0.03
20.00	0.02	1	0.02	0.02
22.50	0.02	1	0.02	0.02
25.00	0.00	0	0.00	0.00
27.50	0.00	0	0.00	0.00
30.00	0.00	0	0.00	0.00
32.50	0.00	0	0.00	0.00
35.00	0.00	0	0.00	0.00
37.50	0.00	0	0.00	0.00
40.00	0.00	0	0.00	0.00
42.50	0.00	0	0.00	0.00
45.00	0.00	0	0.00	0.00
47.50	0.00	0	0.00	0.00
50.00	0.00	0	0.00	0.00
52.50	0.00	0	0.00	0.00
55.00	0.00	0	0.00	0.00
57.50	0.00	0	0.00	0.00
60.00	0.00	0	0.00	0.00
62.50	0.00	0	0.00	0.00
65.00	0.00	0	0.00	0.00
67.50	0.00	0	0.00	0.00
70.00	0.00	0	0.00	0.00

Stage-Area-Storage for Reach DP1: TOP

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
0.00	0.0	0	1.16	2.7	274
0.02	0.0	1	1.18	2.8	280
0.04	0.0	2	1.20	2.9	285
0.06	0.0	4	1.22	2.9	291
0.08	0.1	6	1.24	3.0	296
0.10	0.1	9	1.26	3.0	301
0.12	0.1	11	1.28	3.1	307
0.14	0.1	14	1.30	3.1	312
0.16	0.2	17	1.32	3.2	317
0.18	0.2	20	1.34	3.2	322
0.20	0.2	24	1.36	3.3	327
0.22	0.3	28	1.38	3.3	332
0.24	0.3	31	1.40	3.4	337
0.26	0.4	35	1.42	3.4	342
0.28	0.4	39	1.44	3.5	347
0.30	0.4	44	1.46	3.5	352
0.32	0.5	48	1.48	3.6	356
0.34	0.5	52	1.50	3.6	361
0.36	0.6	57	1.52	3.7	365
0.38	0.6	62	1.54	3.7	370
0.40	0.7	67	1.56	3.7	374
0.42	0.7	71	1.58	3.8	378
0.44	0.8	76	1.60	3.8	382
0.46	0.8	81	1.62	3.9	386
0.48	0.9	86	1.64	3.9	389
0.50	0.9	91	1.66	3.9	393
0.52	1.0	97	1.68	4.0	396
0.54	1.0	102	1.70	4.0	399
0.56	1.1	107	1.72	4.0	402
0.58	1.1	112	1.74	4.0	404
0.60	1.2	118	1.76	4.1	407
0.62	1.2	123	1.78	4.1	409
0.64	1.3	129	1.80	4.1	410
0.66	1.3	134	1.82	4.1	411
0.68	1.4	140			
0.70	1.5	145			
0.72	1.5	151			
0.74	1.6	156			
0.76	1.6	162			
0.78	1.7	167			
0.80	1.7	173			
0.82	1.8	179			
0.84	1.8	184			
0.86	1.9	190			
0.88	2.0	196			
0.90	2.0	201			
0.92	2.1	207			
0.94	2.1	213			
0.96	2.2	218			
0.98	2.2	224			
1.00	2.3	230			
1.02	2.4	235			
1.04	2.4	241			
1.06	2.5	246			
1.08	2.5	252			
1.10	2.6	258			
1.12	2.6	263			
1.14	2.7	269			

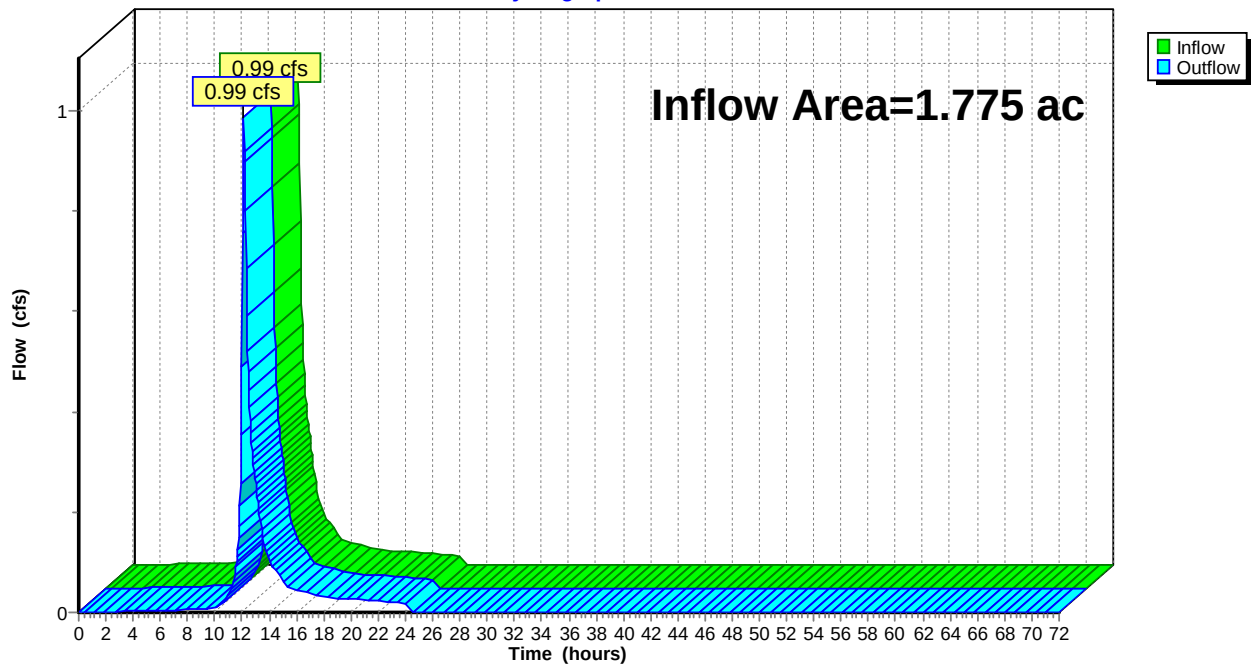
Summary for Reach DP2: CHANNEL

Inflow Area = 1.775 ac, 25.99% Impervious, Inflow Depth = 0.67" for 2-Year event
Inflow = 0.99 cfs @ 12.12 hrs, Volume= 0.100 af
Outflow = 0.99 cfs @ 12.12 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min
Routed to Reach DP3 : TOTAL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach DP2: CHANNEL

Hydrograph



Hydrograph for Reach DP2: CHANNEL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.00		0.00	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.00		0.00	64.00	0.00		0.00
7.00	0.00		0.00	65.00	0.00		0.00
8.00	0.01		0.01	66.00	0.00		0.00
9.00	0.01		0.01	67.00	0.00		0.00
10.00	0.01		0.01	68.00	0.00		0.00
11.00	0.03		0.03	69.00	0.00		0.00
12.00	0.49		0.49	70.00	0.00		0.00
13.00	0.26		0.26	71.00	0.00		0.00
14.00	0.10		0.10	72.00	0.00		0.00
15.00	0.06		0.06				
16.00	0.04		0.04				
17.00	0.04		0.04				
18.00	0.03		0.03				
19.00	0.03		0.03				
20.00	0.03		0.03				
21.00	0.02		0.02				
22.00	0.02		0.02				
23.00	0.02		0.02				
24.00	0.02		0.02				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

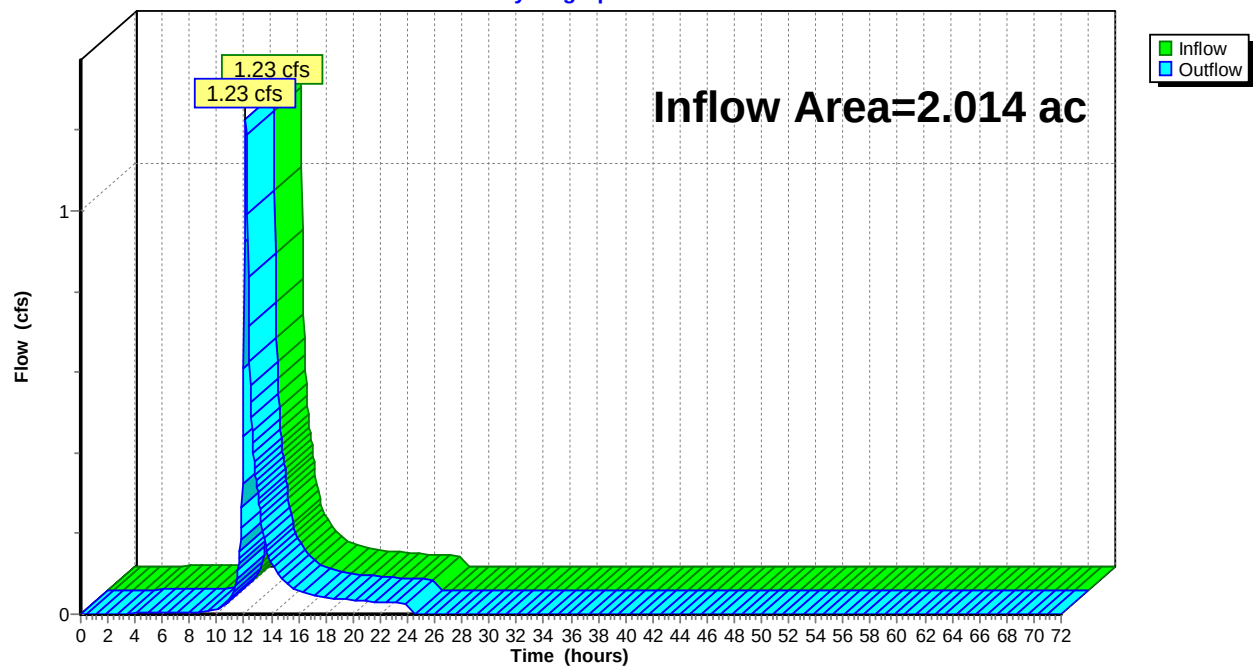
Summary for Reach DP3: TOTAL

Inflow Area = 2.014 ac, 22.91% Impervious, Inflow Depth = 0.74" for 2-Year event
Inflow = 1.23 cfs @ 12.13 hrs, Volume= 0.124 af
Outflow = 1.23 cfs @ 12.13 hrs, Volume= 0.124 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach DP3: TOTAL

Hydrograph



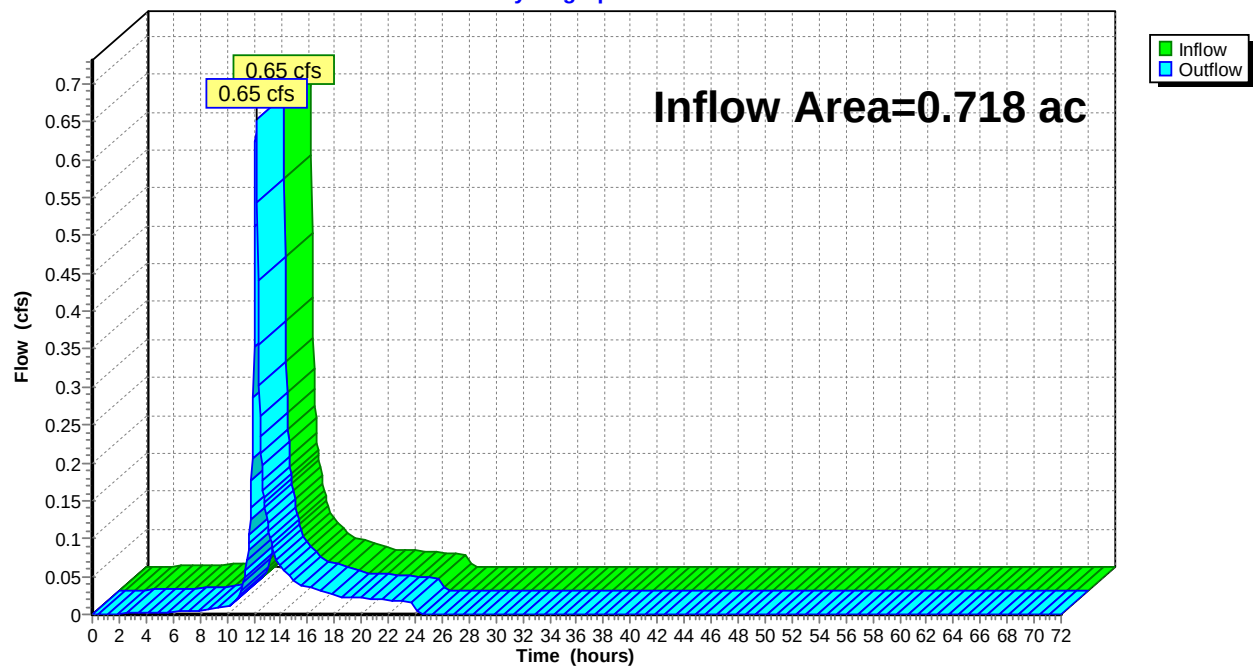
Hydrograph for Reach DP3: TOTAL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.00		0.00	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.00		0.00	64.00	0.00		0.00
7.00	0.00		0.00	65.00	0.00		0.00
8.00	0.01		0.01	66.00	0.00		0.00
9.00	0.01		0.01	67.00	0.00		0.00
10.00	0.01		0.01	68.00	0.00		0.00
11.00	0.04		0.04	69.00	0.00		0.00
12.00	0.61		0.61	70.00	0.00		0.00
13.00	0.30		0.30	71.00	0.00		0.00
14.00	0.13		0.13	72.00	0.00		0.00
15.00	0.08		0.08				
16.00	0.06		0.06				
17.00	0.05		0.05				
18.00	0.04		0.04				
19.00	0.04		0.04				
20.00	0.03		0.03				
21.00	0.03		0.03				
22.00	0.03		0.03				
23.00	0.03		0.03				
24.00	0.03		0.03				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Reach EX 1:

Inflow Area = 0.718 ac, 9.34% Impervious, Inflow Depth = 1.13" for 2-Year event
Inflow = 0.65 cfs @ 12.18 hrs, Volume= 0.068 af
Outflow = 0.65 cfs @ 12.18 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 10P : (new Pond)

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach EX 1:**Hydrograph**

Hydrograph for Reach EX 1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.00		0.00	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.00		0.00	64.00	0.00		0.00
7.00	0.00		0.00	65.00	0.00		0.00
8.00	0.01		0.01	66.00	0.00		0.00
9.00	0.01		0.01	67.00	0.00		0.00
10.00	0.01		0.01	68.00	0.00		0.00
11.00	0.03		0.03	69.00	0.00		0.00
12.00	0.35		0.35	70.00	0.00		0.00
13.00	0.12		0.12	71.00	0.00		0.00
14.00	0.06		0.06	72.00	0.00		0.00
15.00	0.04		0.04				
16.00	0.04		0.04				
17.00	0.03		0.03				
18.00	0.02		0.02				
19.00	0.02		0.02				
20.00	0.02		0.02				
21.00	0.02		0.02				
22.00	0.02		0.02				
23.00	0.02		0.02				
24.00	0.02		0.02				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Pond 2P: Pervious Pavers

Inflow Area = 0.152 ac, 0.00% Impervious, Inflow Depth = 2.30" for 2-Year event
 Inflow = 0.39 cfs @ 12.13 hrs, Volume= 0.029 af
 Outflow = 0.08 cfs @ 12.55 hrs, Volume= 0.029 af, Atten= 80%, Lag= 25.4 min
 Discarded = 0.08 cfs @ 12.55 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 624.53' @ 12.55 hrs Surf.Area= 0.151 ac Storage= 0.007 af

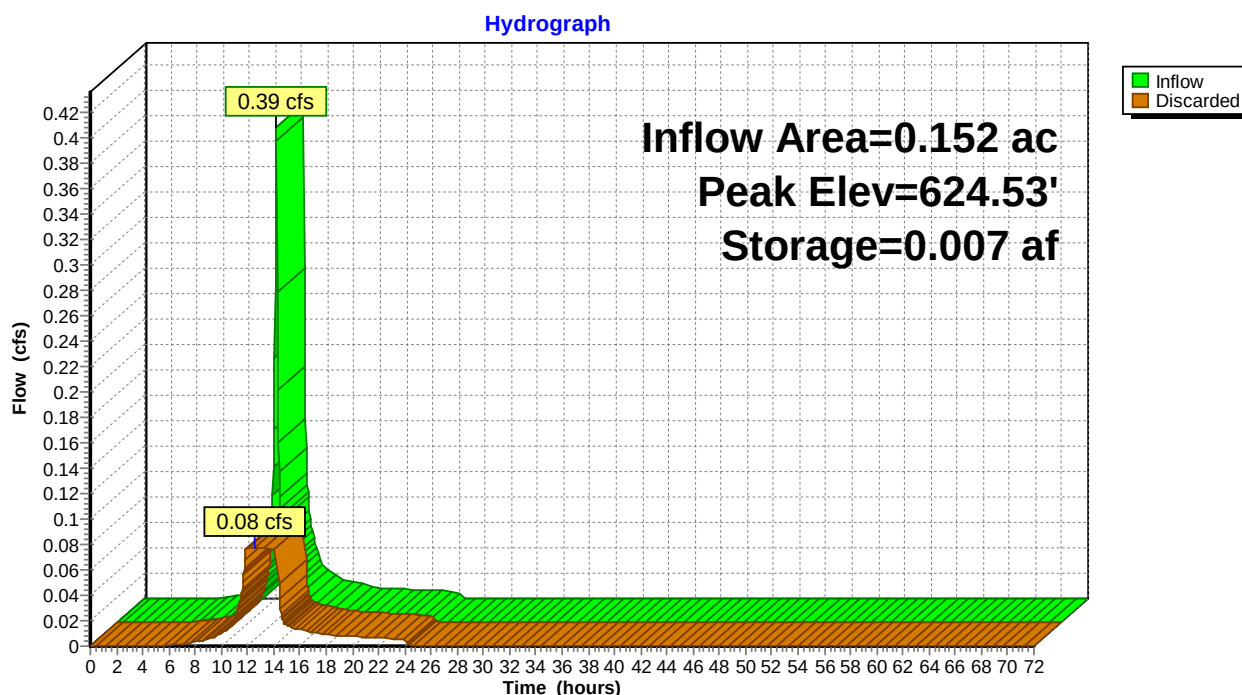
Plug-Flow detention time= 24.4 min calculated for 0.029 af (100% of inflow)
 Center-of-Mass det. time= 24.4 min (840.1 - 815.8)

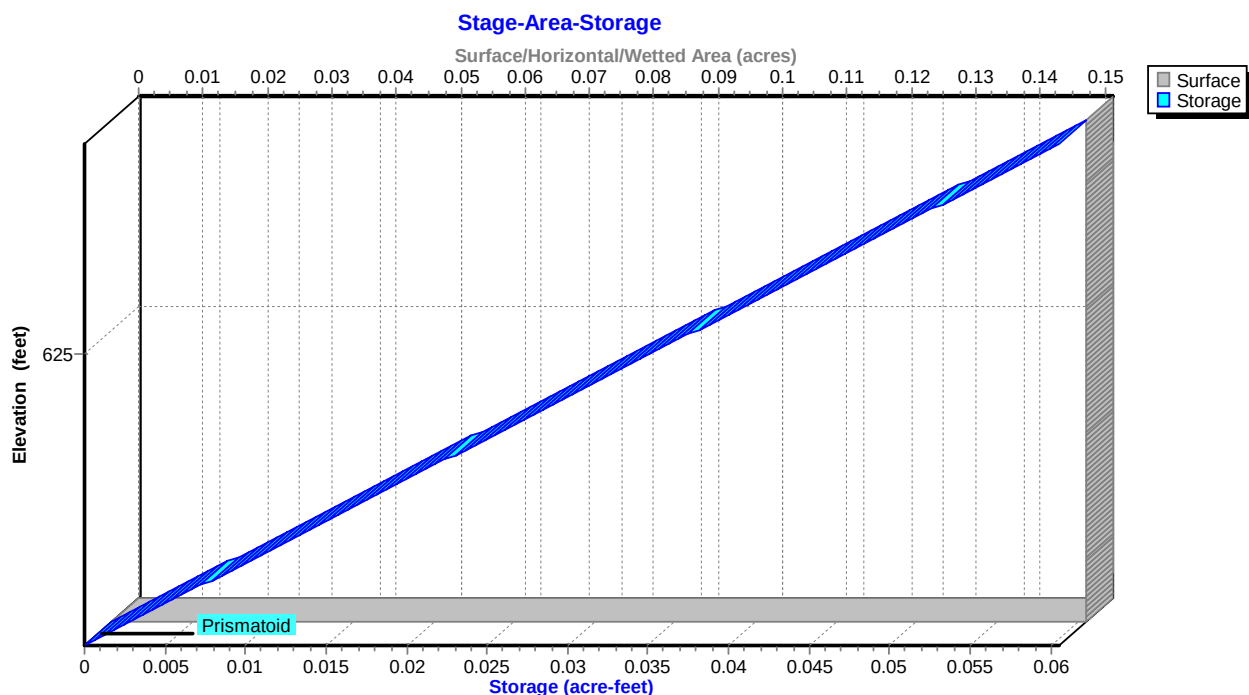
Volume	Invert	Avail.Storage	Storage Description
#1	624.42'	0.061 af	65.91'W x 100.00'L x 1.00'H Prismatic 0.151 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	624.42'	0.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 619.00'

Discarded OutFlow Max=0.08 cfs @ 12.55 hrs HW=624.53' (Free Discharge)

↑1=Exfiltration (Controls 0.08 cfs)

Pond 2P: Pervious Pavers

Pond 2P: Pervious Pavers

240913_40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

Prepared by Colliers Engineering & Design

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Hydrograph for Pond 2P: Pervious Pavers

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0.000	624.42	0.00
2.50	0.00	0.000	624.42	0.00
5.00	0.00	0.000	624.42	0.00
7.50	0.00	0.000	624.42	0.00
10.00	0.01	0.000	624.42	0.01
12.50	0.08	0.007	624.53	0.08
15.00	0.02	0.000	624.42	0.02
17.50	0.01	0.000	624.42	0.01
20.00	0.01	0.000	624.42	0.01
22.50	0.01	0.000	624.42	0.01
25.00	0.00	0.000	624.42	0.00
27.50	0.00	0.000	624.42	0.00
30.00	0.00	0.000	624.42	0.00
32.50	0.00	0.000	624.42	0.00
35.00	0.00	0.000	624.42	0.00
37.50	0.00	0.000	624.42	0.00
40.00	0.00	0.000	624.42	0.00
42.50	0.00	0.000	624.42	0.00
45.00	0.00	0.000	624.42	0.00
47.50	0.00	0.000	624.42	0.00
50.00	0.00	0.000	624.42	0.00
52.50	0.00	0.000	624.42	0.00
55.00	0.00	0.000	624.42	0.00
57.50	0.00	0.000	624.42	0.00
60.00	0.00	0.000	624.42	0.00
62.50	0.00	0.000	624.42	0.00
65.00	0.00	0.000	624.42	0.00
67.50	0.00	0.000	624.42	0.00
70.00	0.00	0.000	624.42	0.00

240913 40 ERW Waymaker Proposed

NOAA 24-hr D 2-Year Rainfall=3.44"

Prepared by Colliers Engineering & Design

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Stage-Area-Storage for Pond 2P: Pervious Pavers

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
624.42	0.151	0.000	625.00	0.151	0.035
624.43	0.151	0.001	625.01	0.151	0.036
624.44	0.151	0.001	625.02	0.151	0.036
624.45	0.151	0.002	625.03	0.151	0.037
624.46	0.151	0.002	625.04	0.151	0.038
624.47	0.151	0.003	625.05	0.151	0.038
624.48	0.151	0.004	625.06	0.151	0.039
624.49	0.151	0.004	625.07	0.151	0.039
624.50	0.151	0.005	625.08	0.151	0.040
624.51	0.151	0.005	625.09	0.151	0.041
624.52	0.151	0.006	625.10	0.151	0.041
624.53	0.151	0.007	625.11	0.151	0.042
624.54	0.151	0.007	625.12	0.151	0.042
624.55	0.151	0.008	625.13	0.151	0.043
624.56	0.151	0.008	625.14	0.151	0.044
624.57	0.151	0.009	625.15	0.151	0.044
624.58	0.151	0.010	625.16	0.151	0.045
624.59	0.151	0.010	625.17	0.151	0.045
624.60	0.151	0.011	625.18	0.151	0.046
624.61	0.151	0.011	625.19	0.151	0.047
624.62	0.151	0.012	625.20	0.151	0.047
624.63	0.151	0.013	625.21	0.151	0.048
624.64	0.151	0.013	625.22	0.151	0.048
624.65	0.151	0.014	625.23	0.151	0.049
624.66	0.151	0.015	625.24	0.151	0.050
624.67	0.151	0.015	625.25	0.151	0.050
624.68	0.151	0.016	625.26	0.151	0.051
624.69	0.151	0.016	625.27	0.151	0.051
624.70	0.151	0.017	625.28	0.151	0.052
624.71	0.151	0.018	625.29	0.151	0.053
624.72	0.151	0.018	625.30	0.151	0.053
624.73	0.151	0.019	625.31	0.151	0.054
624.74	0.151	0.019	625.32	0.151	0.054
624.75	0.151	0.020	625.33	0.151	0.055
624.76	0.151	0.021	625.34	0.151	0.056
624.77	0.151	0.021	625.35	0.151	0.056
624.78	0.151	0.022	625.36	0.151	0.057
624.79	0.151	0.022	625.37	0.151	0.057
624.80	0.151	0.023	625.38	0.151	0.058
624.81	0.151	0.024	625.39	0.151	0.059
624.82	0.151	0.024	625.40	0.151	0.059
624.83	0.151	0.025	625.41	0.151	0.060
624.84	0.151	0.025	625.42	0.151	0.061
624.85	0.151	0.026			
624.86	0.151	0.027			
624.87	0.151	0.027			
624.88	0.151	0.028			
624.89	0.151	0.028			
624.90	0.151	0.029			
624.91	0.151	0.030			
624.92	0.151	0.030			
624.93	0.151	0.031			
624.94	0.151	0.031			
624.95	0.151	0.032			
624.96	0.151	0.033			
624.97	0.151	0.033			
624.98	0.151	0.034			
624.99	0.151	0.034			

Summary for Pond 10P: (new Pond)

Inflow Area = 0.718 ac, 9.34% Impervious, Inflow Depth = 1.13" for 2-Year event
 Inflow = 0.65 cfs @ 12.18 hrs, Volume= 0.068 af
 Outflow = 0.65 cfs @ 12.18 hrs, Volume= 0.068 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.65 cfs @ 12.18 hrs, Volume= 0.068 af
 Routed to Reach DP1 : TOP

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

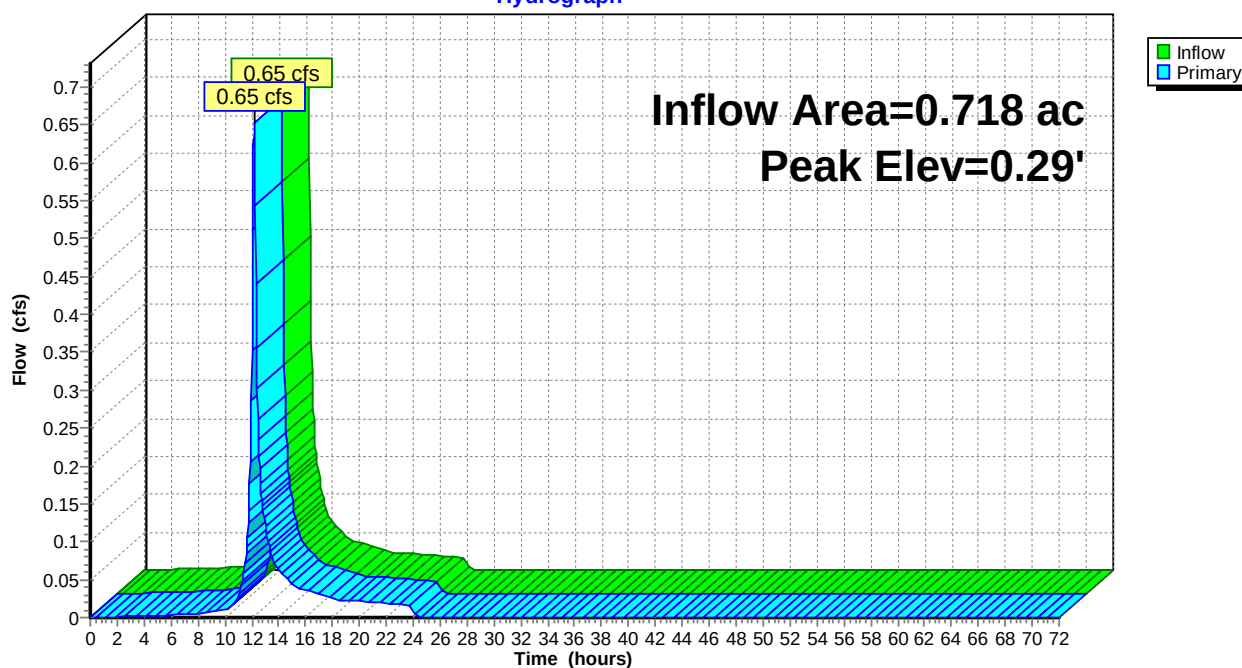
Peak Elev= 0.29' @ 12.18 hrs

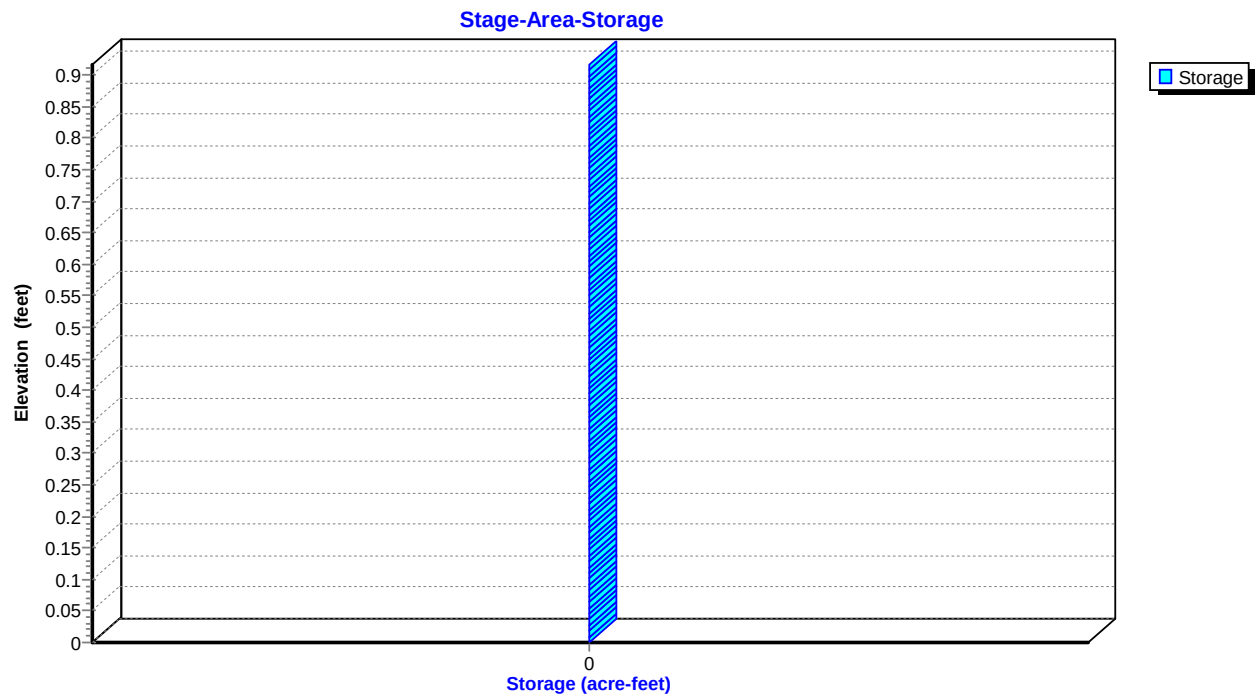
Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	11.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.64 cfs @ 12.18 hrs HW=0.29' (Free Discharge)
 ↳ **1=Orifice/Grate** (Orifice Controls 0.64 cfs @ 1.82 fps)

Pond 10P: (new Pond)

Hydrograph



Pond 10P: (new Pond)

Hydrograph for Pond 10P: (new Pond)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
2.00	0.00	0.01	0.00	60.00	0.00	0.00	0.00
3.00	0.00	0.01	0.00	61.00	0.00	0.00	0.00
4.00	0.00	0.02	0.00	62.00	0.00	0.00	0.00
5.00	0.00	0.02	0.00	63.00	0.00	0.00	0.00
6.00	0.00	0.02	0.00	64.00	0.00	0.00	0.00
7.00	0.00	0.02	0.00	65.00	0.00	0.00	0.00
8.00	0.01	0.02	0.01	66.00	0.00	0.00	0.00
9.00	0.01	0.03	0.01	67.00	0.00	0.00	0.00
10.00	0.01	0.03	0.01	68.00	0.00	0.00	0.00
11.00	0.03	0.06	0.03	69.00	0.00	0.00	0.00
12.00	0.35	0.21	0.35	70.00	0.00	0.00	0.00
13.00	0.12	0.12	0.12	71.00	0.00	0.00	0.00
14.00	0.06	0.09	0.06	72.00	0.00	0.00	0.00
15.00	0.04	0.07	0.04				
16.00	0.04	0.07	0.04				
17.00	0.03	0.06	0.03				
18.00	0.02	0.05	0.02				
19.00	0.02	0.05	0.02				
20.00	0.02	0.05	0.02				
21.00	0.02	0.05	0.02				
22.00	0.02	0.05	0.02				
23.00	0.02	0.04	0.02				
24.00	0.02	0.04	0.02				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				
53.00	0.00	0.00	0.00				
54.00	0.00	0.00	0.00				
55.00	0.00	0.00	0.00				
56.00	0.00	0.00	0.00				
57.00	0.00	0.00	0.00				

Stage-Area-Storage for Pond 10P: (new Pond)

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
0.00	0.000	0.58	0.000
0.01	0.000	0.59	0.000
0.02	0.000	0.60	0.000
0.03	0.000	0.61	0.000
0.04	0.000	0.62	0.000
0.05	0.000	0.63	0.000
0.06	0.000	0.64	0.000
0.07	0.000	0.65	0.000
0.08	0.000	0.66	0.000
0.09	0.000	0.67	0.000
0.10	0.000	0.68	0.000
0.11	0.000	0.69	0.000
0.12	0.000	0.70	0.000
0.13	0.000	0.71	0.000
0.14	0.000	0.72	0.000
0.15	0.000	0.73	0.000
0.16	0.000	0.74	0.000
0.17	0.000	0.75	0.000
0.18	0.000	0.76	0.000
0.19	0.000	0.77	0.000
0.20	0.000	0.78	0.000
0.21	0.000	0.79	0.000
0.22	0.000	0.80	0.000
0.23	0.000	0.81	0.000
0.24	0.000	0.82	0.000
0.25	0.000	0.83	0.000
0.26	0.000	0.84	0.000
0.27	0.000	0.85	0.000
0.28	0.000	0.86	0.000
0.29	0.000	0.87	0.000
0.30	0.000	0.88	0.000
0.31	0.000	0.89	0.000
0.32	0.000	0.90	0.000
0.33	0.000	0.91	0.000
0.34	0.000	0.92	0.000
0.35	0.000		
0.36	0.000		
0.37	0.000		
0.38	0.000		
0.39	0.000		
0.40	0.000		
0.41	0.000		
0.42	0.000		
0.43	0.000		
0.44	0.000		
0.45	0.000		
0.46	0.000		
0.47	0.000		
0.48	0.000		
0.49	0.000		
0.50	0.000		
0.51	0.000		
0.52	0.000		
0.53	0.000		
0.54	0.000		
0.55	0.000		
0.56	0.000		
0.57	0.000		

Summary for Pond 11P: Existing Drywell System

Inflow Area = 0.919 ac, 42.91% Impervious, Inflow Depth = 0.75" for 2-Year event
 Inflow = 0.74 cfs @ 12.06 hrs, Volume= 0.058 af
 Outflow = 0.20 cfs @ 12.27 hrs, Volume= 0.058 af, Atten= 73%, Lag= 12.5 min
 Discarded = 0.03 cfs @ 12.27 hrs, Volume= 0.039 af
 Primary = 0.17 cfs @ 12.27 hrs, Volume= 0.018 af
 Routed to Reach DP2 : CHANNEL

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 608.65' @ 12.27 hrs Surf.Area= 0.020 ac Storage= 0.019 af

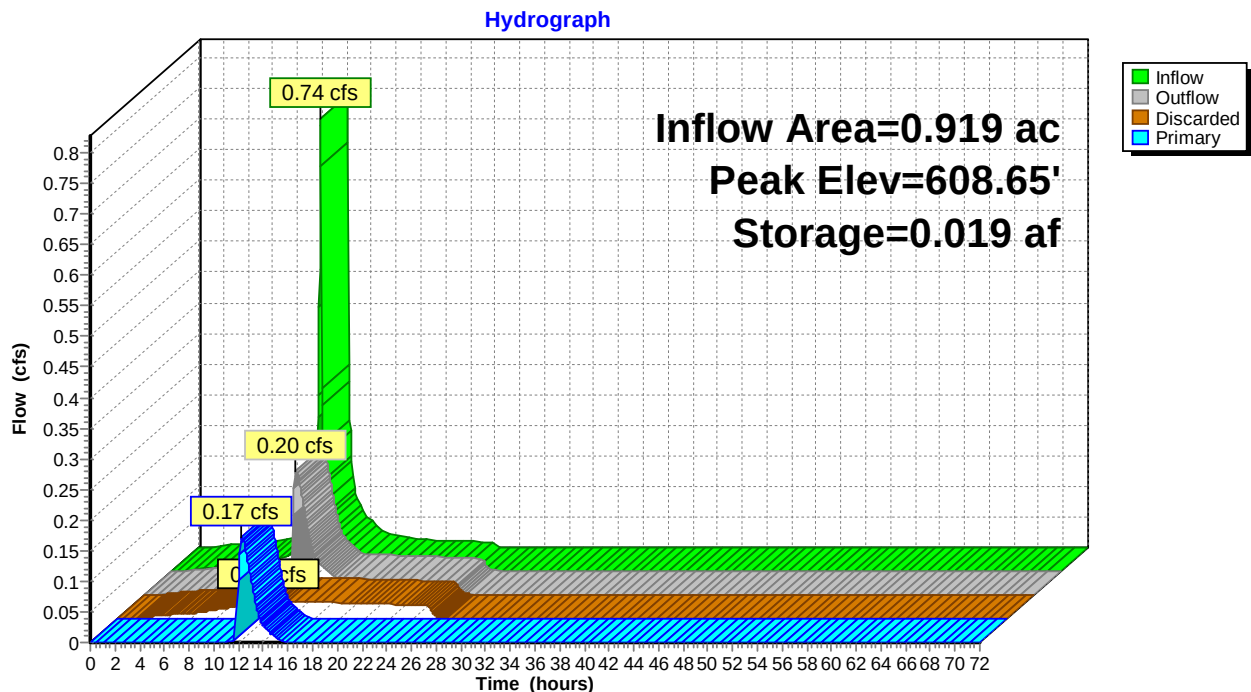
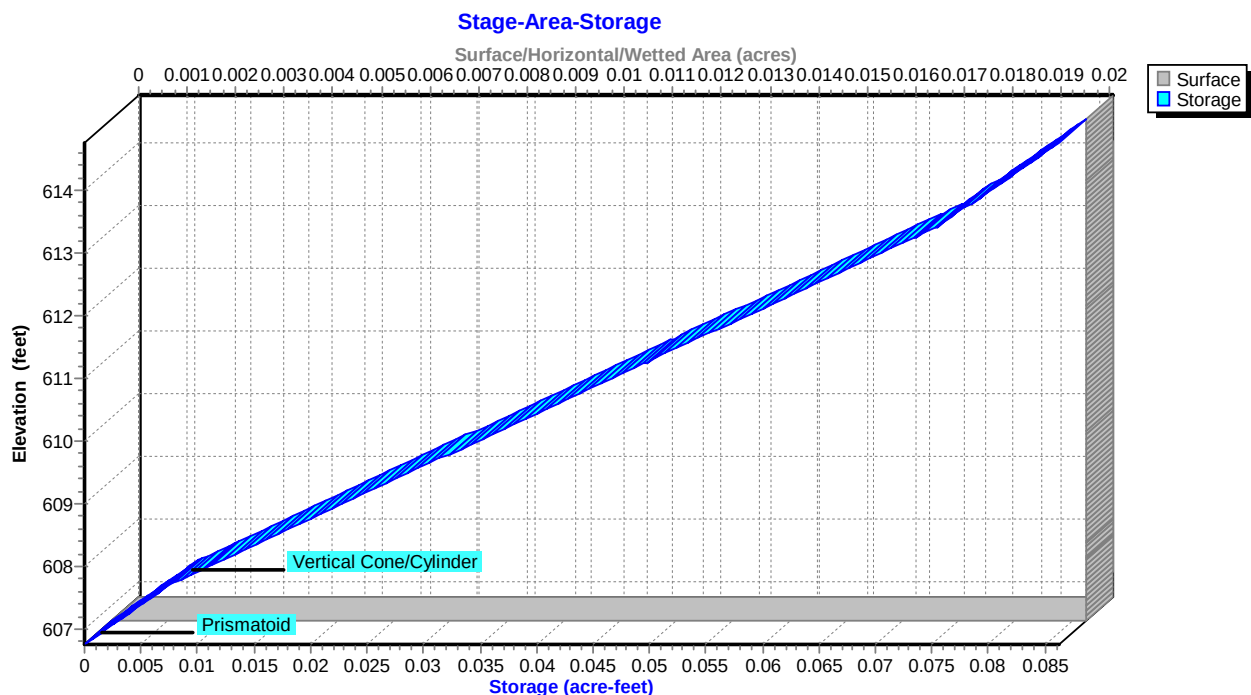
Plug-Flow detention time= 128.4 min calculated for 0.058 af (100% of inflow)
 Center-of-Mass det. time= 128.4 min (889.2 - 760.8)

Volume	Invert	Avail.Storage	Storage Description
#1	606.75'	0.050 af	19.00'W x 46.00'L x 8.00'H Prismatic 0.161 af Overall - 0.037 af Embedded = 0.124 af x 40.0% Voids
#2	607.75'	0.037 af	6.00'D x 5.66'H Vertical Cone/Cylinder x 10 Inside #1
		0.086 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	606.75'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 603.00'
#2	Primary	608.00'	15.0" Round Culvert L= 16.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 608.00' / 607.75' S= 0.0156 ' / Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#3	Device 2	608.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	611.25'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 2	613.25'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.03 cfs @ 12.27 hrs HW=608.65' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.17 cfs @ 12.27 hrs HW=608.65' (Free Discharge)
 ↑ **2=Culvert** (Passes 0.17 cfs of 1.38 cfs potential flow)
 ↑ **3=Orifice/Grate** (Orifice Controls 0.17 cfs @ 3.48 fps)
 ↑ **4=Orifice/Grate** (Controls 0.00 cfs)
 ↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 11P: Existing Drywell System**Pond 11P: Existing Drywell System**

Hydrograph for Pond 11P: Existing Drywell System

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	606.75	0.00	0.00	0.00
2.50	0.00	0.000	606.76	0.00	0.00	0.00
5.00	0.01	0.000	606.78	0.01	0.01	0.00
7.50	0.01	0.000	606.80	0.01	0.01	0.00
10.00	0.03	0.001	606.87	0.02	0.02	0.00
12.50	0.13	0.018	608.58	0.19	0.03	0.16
15.00	0.03	0.012	608.05	0.04	0.03	0.01
17.50	0.02	0.010	607.91	0.03	0.03	0.00
20.00	0.01	0.007	607.65	0.03	0.03	0.00
22.50	0.01	0.004	607.31	0.02	0.02	0.00
25.00	0.00	0.001	606.88	0.02	0.02	0.00
27.50	0.00	0.000	606.75	0.00	0.00	0.00
30.00	0.00	0.000	606.75	0.00	0.00	0.00
32.50	0.00	0.000	606.75	0.00	0.00	0.00
35.00	0.00	0.000	606.75	0.00	0.00	0.00
37.50	0.00	0.000	606.75	0.00	0.00	0.00
40.00	0.00	0.000	606.75	0.00	0.00	0.00
42.50	0.00	0.000	606.75	0.00	0.00	0.00
45.00	0.00	0.000	606.75	0.00	0.00	0.00
47.50	0.00	0.000	606.75	0.00	0.00	0.00
50.00	0.00	0.000	606.75	0.00	0.00	0.00
52.50	0.00	0.000	606.75	0.00	0.00	0.00
55.00	0.00	0.000	606.75	0.00	0.00	0.00
57.50	0.00	0.000	606.75	0.00	0.00	0.00
60.00	0.00	0.000	606.75	0.00	0.00	0.00
62.50	0.00	0.000	606.75	0.00	0.00	0.00
65.00	0.00	0.000	606.75	0.00	0.00	0.00
67.50	0.00	0.000	606.75	0.00	0.00	0.00
70.00	0.00	0.000	606.75	0.00	0.00	0.00

Stage-Area-Storage for Pond 11P: Existing Drywell System

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
606.75	0.020	0.000	612.55	0.020	0.065
606.85	0.020	0.001	612.65	0.020	0.066
606.95	0.020	0.002	612.75	0.020	0.068
607.05	0.020	0.002	612.85	0.020	0.069
607.15	0.020	0.003	612.95	0.020	0.070
607.25	0.020	0.004	613.05	0.020	0.071
607.35	0.020	0.005	613.15	0.020	0.072
607.45	0.020	0.006	613.25	0.020	0.074
607.55	0.020	0.006	613.35	0.020	0.075
607.65	0.020	0.007	613.45	0.020	0.076
607.75	0.020	0.008	613.55	0.020	0.077
607.85	0.020	0.009	613.65	0.020	0.077
607.95	0.020	0.010	613.75	0.020	0.078
608.05	0.020	0.012	613.85	0.020	0.079
608.15	0.020	0.013	613.95	0.020	0.080
608.25	0.020	0.014	614.05	0.020	0.081
608.35	0.020	0.015	614.15	0.020	0.081
608.45	0.020	0.016	614.25	0.020	0.082
608.55	0.020	0.018	614.35	0.020	0.083
608.65	0.020	0.019	614.45	0.020	0.084
608.75	0.020	0.020	614.55	0.020	0.085
608.85	0.020	0.021	614.65	0.020	0.085
608.95	0.020	0.022	614.75	0.020	0.086
609.05	0.020	0.024			
609.15	0.020	0.025			
609.25	0.020	0.026			
609.35	0.020	0.027			
609.45	0.020	0.028			
609.55	0.020	0.029			
609.65	0.020	0.031			
609.75	0.020	0.032			
609.85	0.020	0.033			
609.95	0.020	0.034			
610.05	0.020	0.035			
610.15	0.020	0.037			
610.25	0.020	0.038			
610.35	0.020	0.039			
610.45	0.020	0.040			
610.55	0.020	0.041			
610.65	0.020	0.043			
610.75	0.020	0.044			
610.85	0.020	0.045			
610.95	0.020	0.046			
611.05	0.020	0.047			
611.15	0.020	0.049			
611.25	0.020	0.050			
611.35	0.020	0.051			
611.45	0.020	0.052			
611.55	0.020	0.053			
611.65	0.020	0.055			
611.75	0.020	0.056			
611.85	0.020	0.057			
611.95	0.020	0.058			
612.05	0.020	0.059			
612.15	0.020	0.060			
612.25	0.020	0.062			
612.35	0.020	0.063			
612.45	0.020	0.064			

Summary for Pond 12P: Subsurface Infiltration Basin

Inflow Area = 0.687 ac, 28.51% Impervious, Inflow Depth = 1.77" for 2-Year event
 Inflow = 1.06 cfs @ 12.08 hrs, Volume= 0.101 af
 Outflow = 0.10 cfs @ 13.57 hrs, Volume= 0.101 af, Atten= 91%, Lag= 89.4 min
 Discarded = 0.09 cfs @ 13.57 hrs, Volume= 0.100 af
 Primary = 0.01 cfs @ 13.57 hrs, Volume= 0.001 af
 Routed to Pond 11P : Existing Drywell System

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 622.57' @ 13.57 hrs Surf.Area= 0.061 ac Storage= 0.041 af

Plug-Flow detention time= 188.2 min calculated for 0.101 af (100% of inflow)
 Center-of-Mass det. time= 188.1 min (998.9 - 810.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	621.50'	0.056 af	39.50'W x 67.70'L x 3.50'H Field A 0.215 af Overall - 0.076 af Embedded = 0.139 af x 40.0% Voids
#2A	622.00'	0.076 af	ADS StormTech SC-740 +Cap x 72 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 72 Chambers in 8 Rows
0.132 af			Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	621.50'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 619.00'
#2	Primary	619.43'	12.0" Round Culvert L= 42.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 619.43' / 613.00' S= 0.1531 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	622.50'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	623.25'	10.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 2	624.50'	0.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Discarded OutFlow Max=0.09 cfs @ 13.57 hrs HW=622.57' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.09 cfs)

Primary OutFlow Max=0.01 cfs @ 13.57 hrs HW=622.57' (Free Discharge)

↑ **2=Culvert** (Passes 0.01 cfs of 5.42 cfs potential flow)

↑ **3=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.92 fps)

↑ **4=Orifice/Grate** (Controls 0.00 cfs)

↑ **5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 12P: Subsurface Infiltration Basin - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

9 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 65.70' Row Length +12.0" End Stone x 2 = 67.70' Base Length

8 Rows x 51.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 39.50' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

72 Chambers x 45.9 cf = 3,307.7 cf Chamber Storage

9,359.1 cf Field - 3,307.7 cf Chambers = 6,051.4 cf Stone x 40.0% Voids = 2,420.6 cf Stone Storage

Chamber Storage + Stone Storage = 5,728.2 cf = 0.132 af

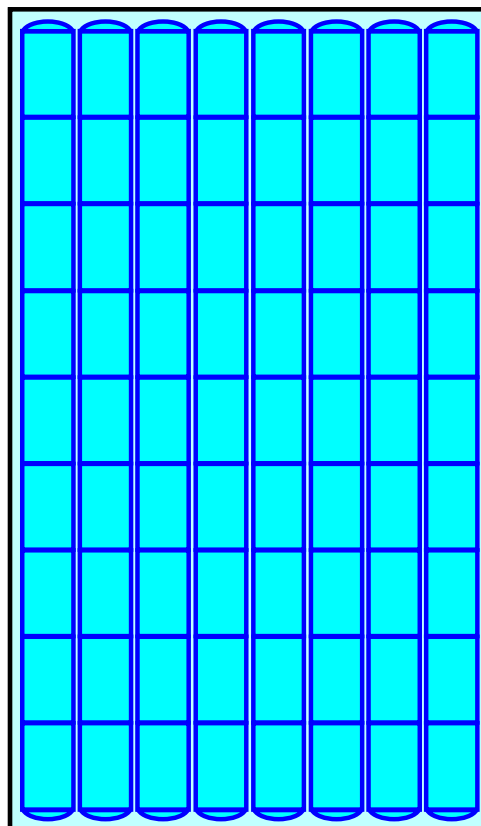
Overall Storage Efficiency = 61.2%

Overall System Size = 67.70' x 39.50' x 3.50'

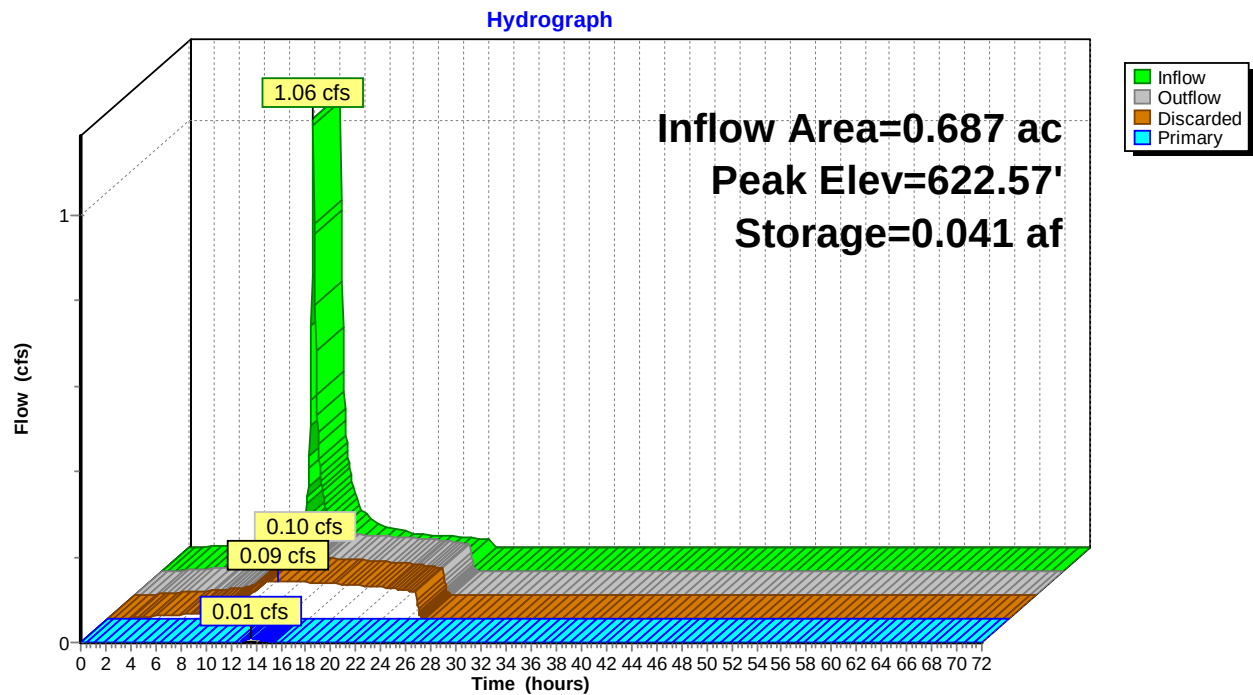
72 Chambers

346.6 cy Field

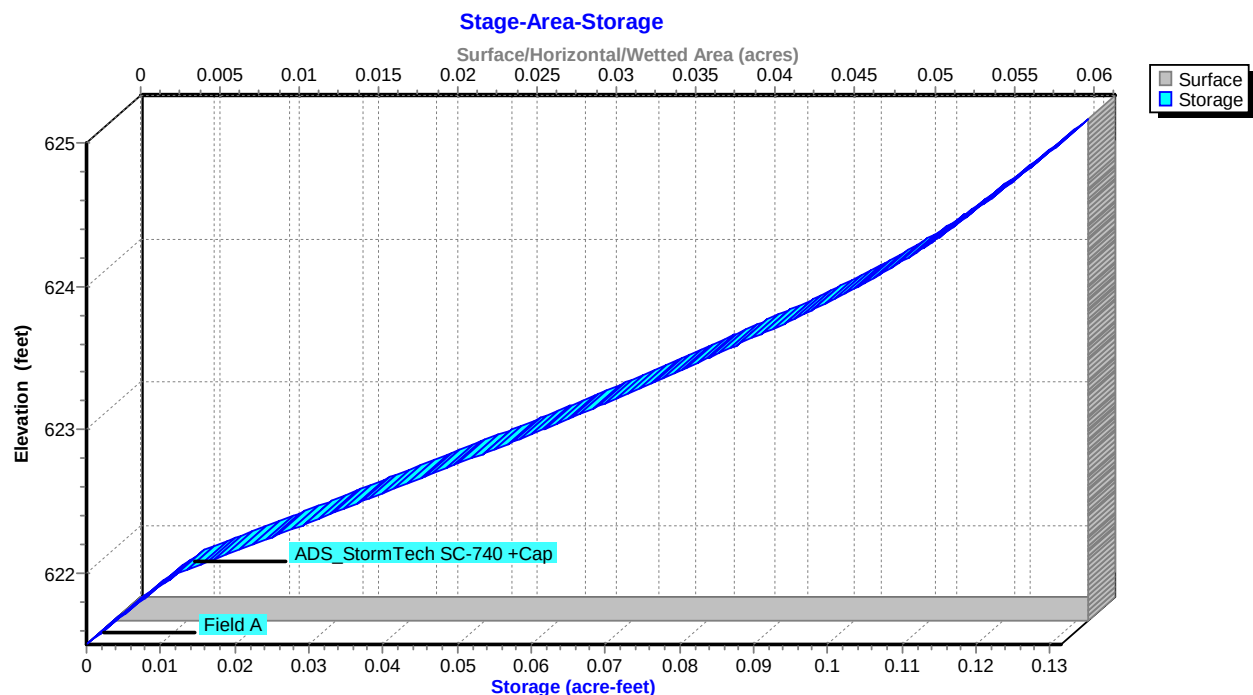
224.1 cy Stone



Pond 12P: Subsurface Infiltration Basin



Pond 12P: Subsurface Infiltration Basin



Hydrograph for Pond 12P: Subsurface Infiltration Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	621.50	0.00	0.00	0.00
2.50	0.00	0.000	621.50	0.00	0.00	0.00
5.00	0.01	0.000	621.50	0.01	0.01	0.00
7.50	0.01	0.000	621.51	0.01	0.01	0.00
10.00	0.03	0.000	621.52	0.03	0.03	0.00
12.50	0.30	0.035	622.44	0.09	0.09	0.00
15.00	0.06	0.039	622.53	0.09	0.09	0.00
17.50	0.04	0.031	622.36	0.08	0.08	0.00
20.00	0.03	0.020	622.16	0.08	0.08	0.00
22.50	0.02	0.010	621.90	0.07	0.07	0.00
25.00	0.00	0.000	621.50	0.01	0.01	0.00
27.50	0.00	0.000	621.50	0.00	0.00	0.00
30.00	0.00	0.000	621.50	0.00	0.00	0.00
32.50	0.00	0.000	621.50	0.00	0.00	0.00
35.00	0.00	0.000	621.50	0.00	0.00	0.00
37.50	0.00	0.000	621.50	0.00	0.00	0.00
40.00	0.00	0.000	621.50	0.00	0.00	0.00
42.50	0.00	0.000	621.50	0.00	0.00	0.00
45.00	0.00	0.000	621.50	0.00	0.00	0.00
47.50	0.00	0.000	621.50	0.00	0.00	0.00
50.00	0.00	0.000	621.50	0.00	0.00	0.00
52.50	0.00	0.000	621.50	0.00	0.00	0.00
55.00	0.00	0.000	621.50	0.00	0.00	0.00
57.50	0.00	0.000	621.50	0.00	0.00	0.00
60.00	0.00	0.000	621.50	0.00	0.00	0.00
62.50	0.00	0.000	621.50	0.00	0.00	0.00
65.00	0.00	0.000	621.50	0.00	0.00	0.00
67.50	0.00	0.000	621.50	0.00	0.00	0.00
70.00	0.00	0.000	621.50	0.00	0.00	0.00

Stage-Area-Storage for Pond 12P: Subsurface Infiltration Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
621.50	0.061	0.000	624.40	0.061	0.117
621.55	0.061	0.001	624.45	0.061	0.118
621.60	0.061	0.002	624.50	0.061	0.119
621.65	0.061	0.004	624.55	0.061	0.120
621.70	0.061	0.005	624.60	0.061	0.122
621.75	0.061	0.006	624.65	0.061	0.123
621.80	0.061	0.007	624.70	0.061	0.124
621.85	0.061	0.009	624.75	0.061	0.125
621.90	0.061	0.010	624.80	0.061	0.127
621.95	0.061	0.011	624.85	0.061	0.128
622.00	0.061	0.012	624.90	0.061	0.129
622.05	0.061	0.015	624.95	0.061	0.130
622.10	0.061	0.017	625.00	0.061	0.132
622.15	0.061	0.020			
622.20	0.061	0.022			
622.25	0.061	0.025			
622.30	0.061	0.027			
622.35	0.061	0.030			
622.40	0.061	0.032			
622.45	0.061	0.035			
622.50	0.061	0.037			
622.55	0.061	0.040			
622.60	0.061	0.042			
622.65	0.061	0.045			
622.70	0.061	0.047			
622.75	0.061	0.050			
622.80	0.061	0.052			
622.85	0.061	0.054			
622.90	0.061	0.057			
622.95	0.061	0.059			
623.00	0.061	0.062			
623.05	0.061	0.064			
623.10	0.061	0.066			
623.15	0.061	0.068			
623.20	0.061	0.071			
623.25	0.061	0.073			
623.30	0.061	0.075			
623.35	0.061	0.077			
623.40	0.061	0.080			
623.45	0.061	0.082			
623.50	0.061	0.084			
623.55	0.061	0.086			
623.60	0.061	0.088			
623.65	0.061	0.090			
623.70	0.061	0.092			
623.75	0.061	0.094			
623.80	0.061	0.096			
623.85	0.061	0.098			
623.90	0.061	0.100			
623.95	0.061	0.102			
624.00	0.061	0.104			
624.05	0.061	0.106			
624.10	0.061	0.108			
624.15	0.061	0.109			
624.20	0.061	0.111			
624.25	0.061	0.113			
624.30	0.061	0.114			
624.35	0.061	0.115			

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: 2BP-I	Runoff Area=2,878 sf 100.00% Impervious Runoff Depth=4.98" Flow Length=75' Slope=0.0140 '/' Tc=1.1 min CN=98 Runoff=0.36 cfs 0.027 af
Subcatchment EX 1-I:	Runoff Area=9,508 sf 100.00% Impervious Runoff Depth=4.98" Flow Length=149' Tc=1.6 min CN=98 Runoff=1.19 cfs 0.091 af
Subcatchment EX 1-P:	Runoff Area=34,310 sf 0.00% Impervious Runoff Depth=2.63" Flow Length=233' Tc=10.4 min CN=75 Runoff=2.02 cfs 0.173 af
Subcatchment EX 2-P:	Runoff Area=33,427 sf 0.00% Impervious Runoff Depth=2.54" Flow Length=251' Tc=10.1 min CN=74 Runoff=1.92 cfs 0.162 af
Subcatchment EX 3 - P:	Runoff Area=12,817 sf 0.00% Impervious Runoff Depth=2.72" Flow Length=109' Tc=7.8 min CN=76 Runoff=0.86 cfs 0.067 af
Subcatchment PR 1A-I:	Runoff Area=2,919 sf 100.00% Impervious Runoff Depth=4.98" Flow Length=149' Tc=1.6 min CN=98 Runoff=0.37 cfs 0.028 af
Subcatchment PR 1A-P:	Runoff Area=21,722 sf 0.00% Impervious Runoff Depth=2.54" Flow Length=395' Tc=10.5 min CN=74 Runoff=1.23 cfs 0.106 af
Subcatchment PR 1B-P:	Runoff Area=6,622 sf 0.00% Impervious Runoff Depth=3.98" Tc=6.0 min CN=89 Runoff=0.65 cfs 0.050 af
Subcatchment PR 2A-P:	Runoff Area=6,039 sf 0.00% Impervious Runoff Depth=2.54" Flow Length=81' Slope=0.3000 '/' Tc=2.7 min CN=74 Runoff=0.46 cfs 0.029 af
Subcatchment PR 2C-I:	Runoff Area=5,659 sf 100.00% Impervious Runoff Depth=4.98" Flow Length=86' Slope=0.0230 '/' Tc=1.0 min CN=98 Runoff=0.71 cfs 0.054 af
Subcatchment PR 2C-P:	Runoff Area=21,408 sf 0.00% Impervious Runoff Depth=2.54" Flow Length=100' Slope=0.0200 '/' Tc=9.4 min CN=74 Runoff=1.26 cfs 0.104 af
Subcatchment PR 3 - P:	Runoff Area=10,406 sf 0.00% Impervious Runoff Depth=2.54" Flow Length=109' Tc=7.8 min CN=74 Runoff=0.66 cfs 0.051 af
Subcatchment PR-2B-I:	Runoff Area=8,642 sf 100.00% Impervious Runoff Depth=4.98" Flow Length=75' Slope=0.0140 '/' Tc=1.1 min CN=98 Runoff=1.09 cfs 0.082 af
Subcatchment PR-2B-P:	Runoff Area=1,446 sf 0.00% Impervious Runoff Depth=2.54" Flow Length=114' Tc=8.0 min CN=74 Runoff=0.09 cfs 0.007 af
Reach 1R: TOP	Inflow=2.64 cfs 0.263 af Outflow=2.64 cfs 0.263 af
Reach 2R: CHANNEL	Inflow=4.38 cfs 0.426 af Outflow=4.38 cfs 0.426 af
Reach 3R: TOTAL	Inflow=5.16 cfs 0.492 af Outflow=5.16 cfs 0.492 af

240913 40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

Prepared by Colliers Engineering & Design

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Reach 4R:

Inflow=2.64 cfs 0.263 af

Outflow=2.64 cfs 0.263 af

Reach 8R: (new Reach)

Inflow=1.60 cfs 0.158 af

Outflow=1.60 cfs 0.158 af

Reach DP1: TOP

Avg. Flow Depth=0.15' Max Vel=8.96 fps Inflow=1.37 cfs 0.133 af

34.0" x 22.0", R=24.9" Elliptical Pipe n=0.011 L=100.0' S=0.1000 ' Capacity=118.41 cfs Outflow=1.36 cfs 0.133 af

Reach DP2: CHANNEL

Inflow=1.97 cfs 0.250 af

Outflow=1.97 cfs 0.250 af

Reach DP3: TOTAL

Inflow=2.53 cfs 0.300 af

Outflow=2.53 cfs 0.300 af

Reach EX 1:

Inflow=1.37 cfs 0.133 af

Outflow=1.37 cfs 0.133 af

Pond 2P: Pervious Pavers

Peak Elev=624.68' Storage=0.016 af Inflow=0.65 cfs 0.050 af

Outflow=0.08 cfs 0.050 af

Pond 10P: (new Pond)

Peak Elev=0.43' Inflow=1.37 cfs 0.133 af

Outflow=1.37 cfs 0.133 af

Pond 11P: Existing Drywell System

Peak Elev=609.66' Storage=0.031 af Inflow=1.15 cfs 0.138 af

Discarded=0.04 cfs 0.051 af Primary=0.29 cfs 0.087 af Outflow=0.33 cfs 0.138 af

Pond 12P: Subsurface Infiltration Basin

Peak Elev=623.31' Storage=0.076 af Inflow=1.93 cfs 0.185 af

Discarded=0.11 cfs 0.137 af Primary=0.18 cfs 0.048 af Outflow=0.28 cfs 0.185 af

Total Runoff Area = 4.082 ac Runoff Volume = 1.031 af Average Runoff Depth = 3.03"**83.35% Pervious = 3.402 ac 16.65% Impervious = 0.680 ac**

Summary for Subcatchment 1S: 2BP-I

Runoff = 0.36 cfs @ 12.06 hrs, Volume= 0.027 af, Depth= 4.98"
 Routed to Pond 12P : Subsurface Infiltration Basin

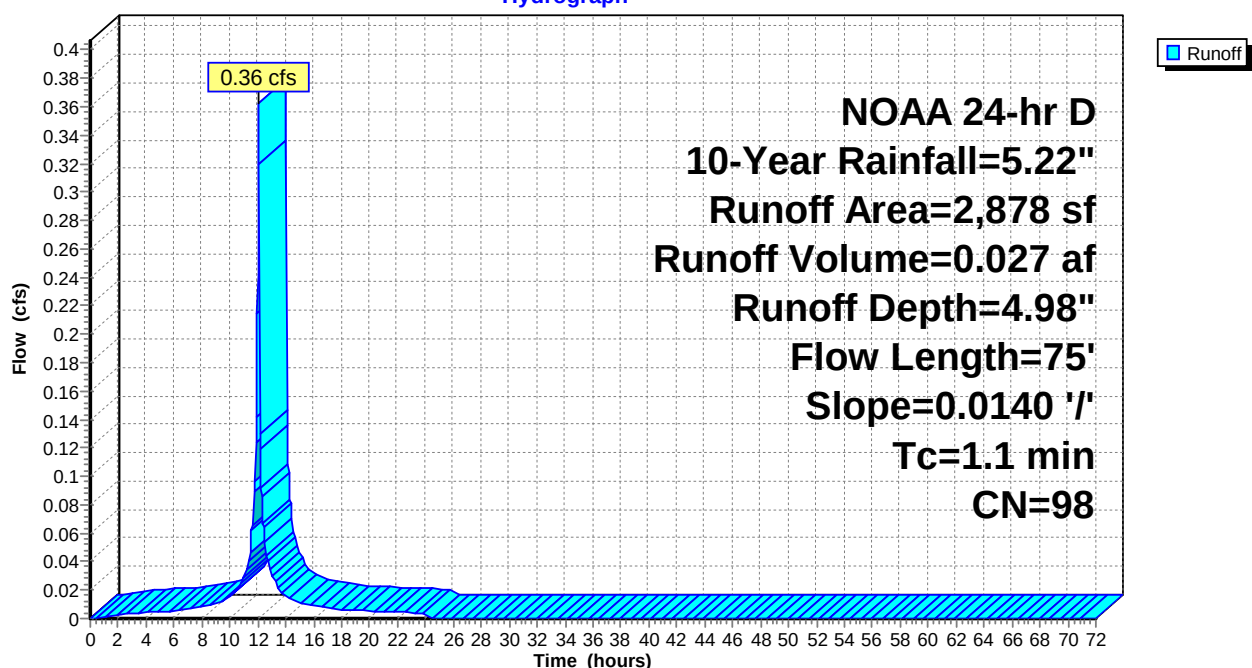
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
2,878	98	Paved parking, HSG C
2,878		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	75	0.0140	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"

Subcatchment 1S: 2BP-I

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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Hydrograph for Subcatchment 1S: 2BP-I

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	4.98	0.00
1.00	0.06	0.00	0.00	59.00	5.22	4.98	0.00
2.00	0.13	0.02	0.00	60.00	5.22	4.98	0.00
3.00	0.20	0.07	0.00	61.00	5.22	4.98	0.00
4.00	0.27	0.12	0.00	62.00	5.22	4.98	0.00
5.00	0.36	0.19	0.00	63.00	5.22	4.98	0.00
6.00	0.45	0.27	0.01	64.00	5.22	4.98	0.00
7.00	0.55	0.36	0.01	65.00	5.22	4.98	0.00
8.00	0.68	0.48	0.01	66.00	5.22	4.98	0.00
9.00	0.83	0.63	0.01	67.00	5.22	4.98	0.00
10.00	1.03	0.82	0.02	68.00	5.22	4.98	0.00
11.00	1.36	1.14	0.03	69.00	5.22	4.98	0.00
12.00	2.50	2.27	0.24	70.00	5.22	4.98	0.00
13.00	3.86	3.63	0.03	71.00	5.22	4.98	0.00
14.00	4.19	3.95	0.02	72.00	5.22	4.98	0.00
15.00	4.39	4.16	0.01				
16.00	4.54	4.31	0.01				
17.00	4.67	4.43	0.01				
18.00	4.77	4.54	0.01				
19.00	4.86	4.63	0.01				
20.00	4.95	4.71	0.01				
21.00	5.02	4.79	0.00				
22.00	5.09	4.86	0.00				
23.00	5.16	4.92	0.00				
24.00	5.22	4.98	0.00				
25.00	5.22	4.98	0.00				
26.00	5.22	4.98	0.00				
27.00	5.22	4.98	0.00				
28.00	5.22	4.98	0.00				
29.00	5.22	4.98	0.00				
30.00	5.22	4.98	0.00				
31.00	5.22	4.98	0.00				
32.00	5.22	4.98	0.00				
33.00	5.22	4.98	0.00				
34.00	5.22	4.98	0.00				
35.00	5.22	4.98	0.00				
36.00	5.22	4.98	0.00				
37.00	5.22	4.98	0.00				
38.00	5.22	4.98	0.00				
39.00	5.22	4.98	0.00				
40.00	5.22	4.98	0.00				
41.00	5.22	4.98	0.00				
42.00	5.22	4.98	0.00				
43.00	5.22	4.98	0.00				
44.00	5.22	4.98	0.00				
45.00	5.22	4.98	0.00				
46.00	5.22	4.98	0.00				
47.00	5.22	4.98	0.00				
48.00	5.22	4.98	0.00				
49.00	5.22	4.98	0.00				
50.00	5.22	4.98	0.00				
51.00	5.22	4.98	0.00				
52.00	5.22	4.98	0.00				
53.00	5.22	4.98	0.00				
54.00	5.22	4.98	0.00				
55.00	5.22	4.98	0.00				
56.00	5.22	4.98	0.00				
57.00	5.22	4.98	0.00				

Summary for Subcatchment EX 1-I:

Runoff = 1.19 cfs @ 12.07 hrs, Volume= 0.091 af, Depth= 4.98"
 Routed to Reach 4R :

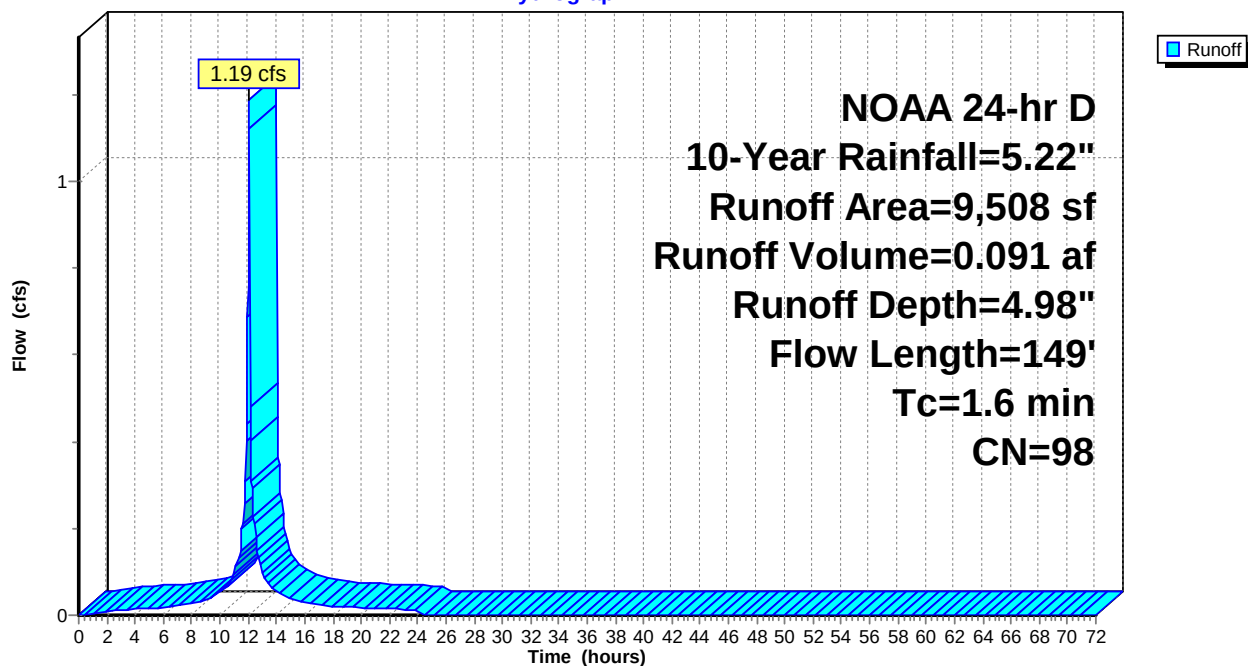
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
9,508	98	Paved roads w/curbs & sewers, HSG C
9,508		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0140	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"
0.3	49	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.6	149	Total			

Subcatchment EX 1-I:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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Hydrograph for Subcatchment EX 1-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	4.98	0.00
1.00	0.06	0.00	0.00	59.00	5.22	4.98	0.00
2.00	0.13	0.02	0.01	60.00	5.22	4.98	0.00
3.00	0.20	0.07	0.01	61.00	5.22	4.98	0.00
4.00	0.27	0.12	0.01	62.00	5.22	4.98	0.00
5.00	0.36	0.19	0.02	63.00	5.22	4.98	0.00
6.00	0.45	0.27	0.02	64.00	5.22	4.98	0.00
7.00	0.55	0.36	0.02	65.00	5.22	4.98	0.00
8.00	0.68	0.48	0.03	66.00	5.22	4.98	0.00
9.00	0.83	0.63	0.03	67.00	5.22	4.98	0.00
10.00	1.03	0.82	0.05	68.00	5.22	4.98	0.00
11.00	1.36	1.14	0.10	69.00	5.22	4.98	0.00
12.00	2.50	2.27	0.76	70.00	5.22	4.98	0.00
13.00	3.86	3.63	0.11	71.00	5.22	4.98	0.00
14.00	4.19	3.95	0.06	72.00	5.22	4.98	0.00
15.00	4.39	4.16	0.04				
16.00	4.54	4.31	0.03				
17.00	4.67	4.43	0.03				
18.00	4.77	4.54	0.02				
19.00	4.86	4.63	0.02				
20.00	4.95	4.71	0.02				
21.00	5.02	4.79	0.02				
22.00	5.09	4.86	0.02				
23.00	5.16	4.92	0.01				
24.00	5.22	4.98	0.01				
25.00	5.22	4.98	0.00				
26.00	5.22	4.98	0.00				
27.00	5.22	4.98	0.00				
28.00	5.22	4.98	0.00				
29.00	5.22	4.98	0.00				
30.00	5.22	4.98	0.00				
31.00	5.22	4.98	0.00				
32.00	5.22	4.98	0.00				
33.00	5.22	4.98	0.00				
34.00	5.22	4.98	0.00				
35.00	5.22	4.98	0.00				
36.00	5.22	4.98	0.00				
37.00	5.22	4.98	0.00				
38.00	5.22	4.98	0.00				
39.00	5.22	4.98	0.00				
40.00	5.22	4.98	0.00				
41.00	5.22	4.98	0.00				
42.00	5.22	4.98	0.00				
43.00	5.22	4.98	0.00				
44.00	5.22	4.98	0.00				
45.00	5.22	4.98	0.00				
46.00	5.22	4.98	0.00				
47.00	5.22	4.98	0.00				
48.00	5.22	4.98	0.00				
49.00	5.22	4.98	0.00				
50.00	5.22	4.98	0.00				
51.00	5.22	4.98	0.00				
52.00	5.22	4.98	0.00				
53.00	5.22	4.98	0.00				
54.00	5.22	4.98	0.00				
55.00	5.22	4.98	0.00				
56.00	5.22	4.98	0.00				
57.00	5.22	4.98	0.00				

Summary for Subcatchment EX 1-P:

Runoff = 2.02 cfs @ 12.18 hrs, Volume= 0.173 af, Depth= 2.63"
 Routed to Reach 4R :

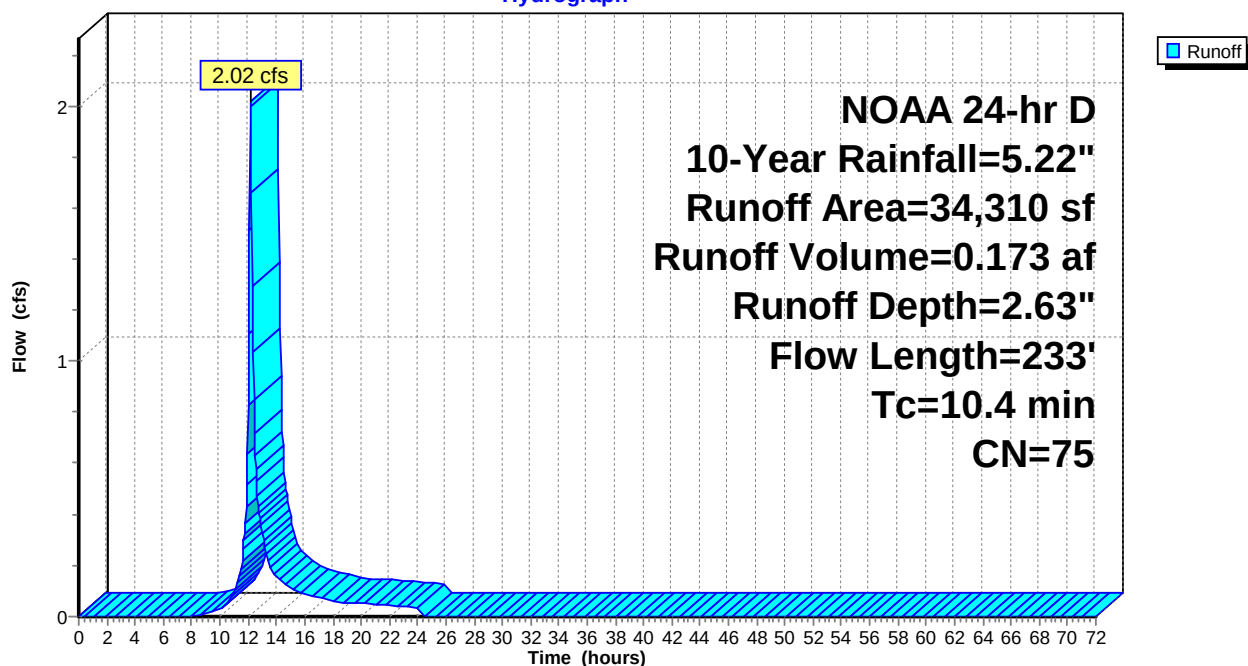
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
32,830	74	>75% Grass cover, Good, HSG C
1,480	89	Gravel roads, HSG C
34,310	75	Weighted Average
34,310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.0175	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.4	133	0.1070	5.27		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.4	233	Total			

Subcatchment EX 1-P:

Hydrograph



240913_40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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Hydrograph for Subcatchment EX 1-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	2.63	0.00
1.00	0.06	0.00	0.00	59.00	5.22	2.63	0.00
2.00	0.13	0.00	0.00	60.00	5.22	2.63	0.00
3.00	0.20	0.00	0.00	61.00	5.22	2.63	0.00
4.00	0.27	0.00	0.00	62.00	5.22	2.63	0.00
5.00	0.36	0.00	0.00	63.00	5.22	2.63	0.00
6.00	0.45	0.00	0.00	64.00	5.22	2.63	0.00
7.00	0.55	0.00	0.00	65.00	5.22	2.63	0.00
8.00	0.68	0.00	0.00	66.00	5.22	2.63	0.00
9.00	0.83	0.01	0.01	67.00	5.22	2.63	0.00
10.00	1.03	0.04	0.03	68.00	5.22	2.63	0.00
11.00	1.36	0.12	0.09	69.00	5.22	2.63	0.00
12.00	2.50	0.65	0.83	70.00	5.22	2.63	0.00
13.00	3.86	1.56	0.32	71.00	5.22	2.63	0.00
14.00	4.19	1.81	0.16	72.00	5.22	2.63	0.00
15.00	4.39	1.97	0.11				
16.00	4.54	2.08	0.09				
17.00	4.67	2.18	0.08				
18.00	4.77	2.27	0.06				
19.00	4.86	2.34	0.06				
20.00	4.95	2.41	0.05				
21.00	5.02	2.47	0.05				
22.00	5.09	2.53	0.04				
23.00	5.16	2.58	0.04				
24.00	5.22	2.63	0.04				
25.00	5.22	2.63	0.00				
26.00	5.22	2.63	0.00				
27.00	5.22	2.63	0.00				
28.00	5.22	2.63	0.00				
29.00	5.22	2.63	0.00				
30.00	5.22	2.63	0.00				
31.00	5.22	2.63	0.00				
32.00	5.22	2.63	0.00				
33.00	5.22	2.63	0.00				
34.00	5.22	2.63	0.00				
35.00	5.22	2.63	0.00				
36.00	5.22	2.63	0.00				
37.00	5.22	2.63	0.00				
38.00	5.22	2.63	0.00				
39.00	5.22	2.63	0.00				
40.00	5.22	2.63	0.00				
41.00	5.22	2.63	0.00				
42.00	5.22	2.63	0.00				
43.00	5.22	2.63	0.00				
44.00	5.22	2.63	0.00				
45.00	5.22	2.63	0.00				
46.00	5.22	2.63	0.00				
47.00	5.22	2.63	0.00				
48.00	5.22	2.63	0.00				
49.00	5.22	2.63	0.00				
50.00	5.22	2.63	0.00				
51.00	5.22	2.63	0.00				
52.00	5.22	2.63	0.00				
53.00	5.22	2.63	0.00				
54.00	5.22	2.63	0.00				
55.00	5.22	2.63	0.00				
56.00	5.22	2.63	0.00				
57.00	5.22	2.63	0.00				

Summary for Subcatchment EX 2-P:

Runoff = 1.92 cfs @ 12.18 hrs, Volume= 0.162 af, Depth= 2.54"
 Routed to Reach 2R : CHANNEL

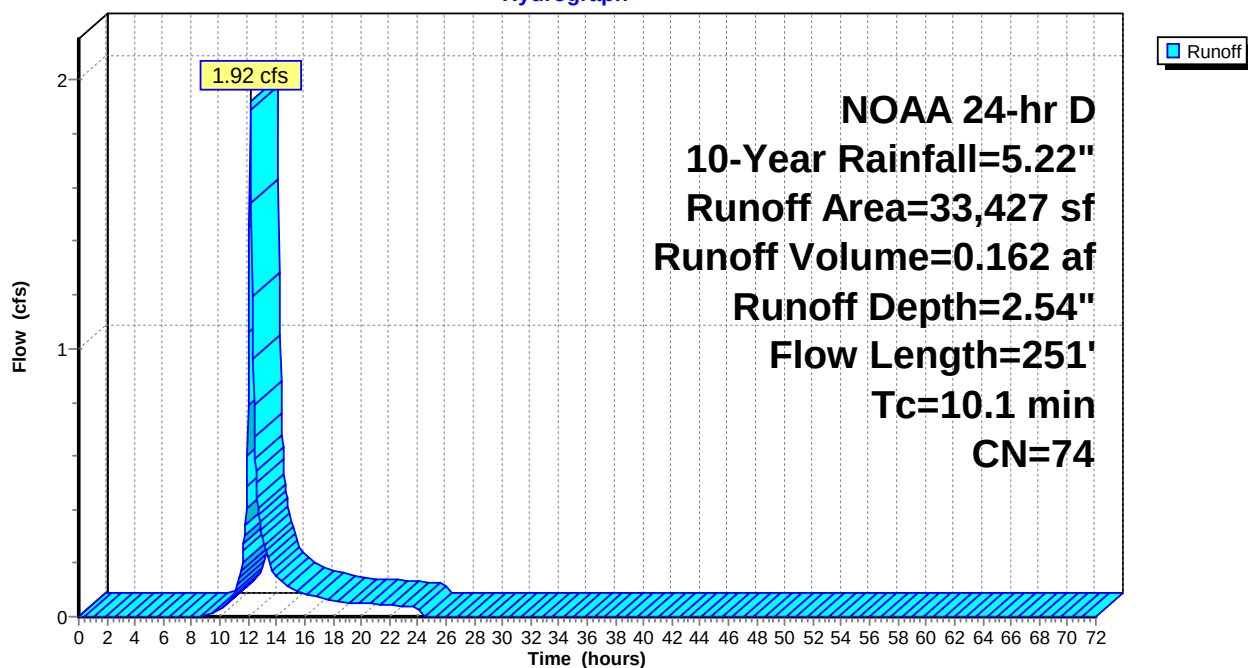
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
32,438	74	>75% Grass cover, Good, HSG C
989	89	Gravel roads, HSG C
33,427	74	Weighted Average
33,427		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.0200	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.4	47	0.0170	2.10		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	88	0.0680	4.20		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.0	16	0.4200	10.43		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.1	251	Total			

Subcatchment EX 2-P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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Hydrograph for Subcatchment EX 2-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	2.54	0.00
1.00	0.06	0.00	0.00	59.00	5.22	2.54	0.00
2.00	0.13	0.00	0.00	60.00	5.22	2.54	0.00
3.00	0.20	0.00	0.00	61.00	5.22	2.54	0.00
4.00	0.27	0.00	0.00	62.00	5.22	2.54	0.00
5.00	0.36	0.00	0.00	63.00	5.22	2.54	0.00
6.00	0.45	0.00	0.00	64.00	5.22	2.54	0.00
7.00	0.55	0.00	0.00	65.00	5.22	2.54	0.00
8.00	0.68	0.00	0.00	66.00	5.22	2.54	0.00
9.00	0.83	0.00	0.01	67.00	5.22	2.54	0.00
10.00	1.03	0.03	0.03	68.00	5.22	2.54	0.00
11.00	1.36	0.10	0.08	69.00	5.22	2.54	0.00
12.00	2.50	0.61	0.79	70.00	5.22	2.54	0.00
13.00	3.86	1.50	0.30	71.00	5.22	2.54	0.00
14.00	4.19	1.73	0.15	72.00	5.22	2.54	0.00
15.00	4.39	1.89	0.10				
16.00	4.54	2.01	0.09				
17.00	4.67	2.10	0.07				
18.00	4.77	2.19	0.06				
19.00	4.86	2.26	0.05				
20.00	4.95	2.32	0.05				
21.00	5.02	2.38	0.05				
22.00	5.09	2.44	0.04				
23.00	5.16	2.49	0.04				
24.00	5.22	2.54	0.04				
25.00	5.22	2.54	0.00				
26.00	5.22	2.54	0.00				
27.00	5.22	2.54	0.00				
28.00	5.22	2.54	0.00				
29.00	5.22	2.54	0.00				
30.00	5.22	2.54	0.00				
31.00	5.22	2.54	0.00				
32.00	5.22	2.54	0.00				
33.00	5.22	2.54	0.00				
34.00	5.22	2.54	0.00				
35.00	5.22	2.54	0.00				
36.00	5.22	2.54	0.00				
37.00	5.22	2.54	0.00				
38.00	5.22	2.54	0.00				
39.00	5.22	2.54	0.00				
40.00	5.22	2.54	0.00				
41.00	5.22	2.54	0.00				
42.00	5.22	2.54	0.00				
43.00	5.22	2.54	0.00				
44.00	5.22	2.54	0.00				
45.00	5.22	2.54	0.00				
46.00	5.22	2.54	0.00				
47.00	5.22	2.54	0.00				
48.00	5.22	2.54	0.00				
49.00	5.22	2.54	0.00				
50.00	5.22	2.54	0.00				
51.00	5.22	2.54	0.00				
52.00	5.22	2.54	0.00				
53.00	5.22	2.54	0.00				
54.00	5.22	2.54	0.00				
55.00	5.22	2.54	0.00				
56.00	5.22	2.54	0.00				
57.00	5.22	2.54	0.00				

Summary for Subcatchment EX 3 - P:

Runoff = 0.86 cfs @ 12.15 hrs, Volume= 0.067 af, Depth= 2.72"
 Routed to Reach 3R : TOTAL

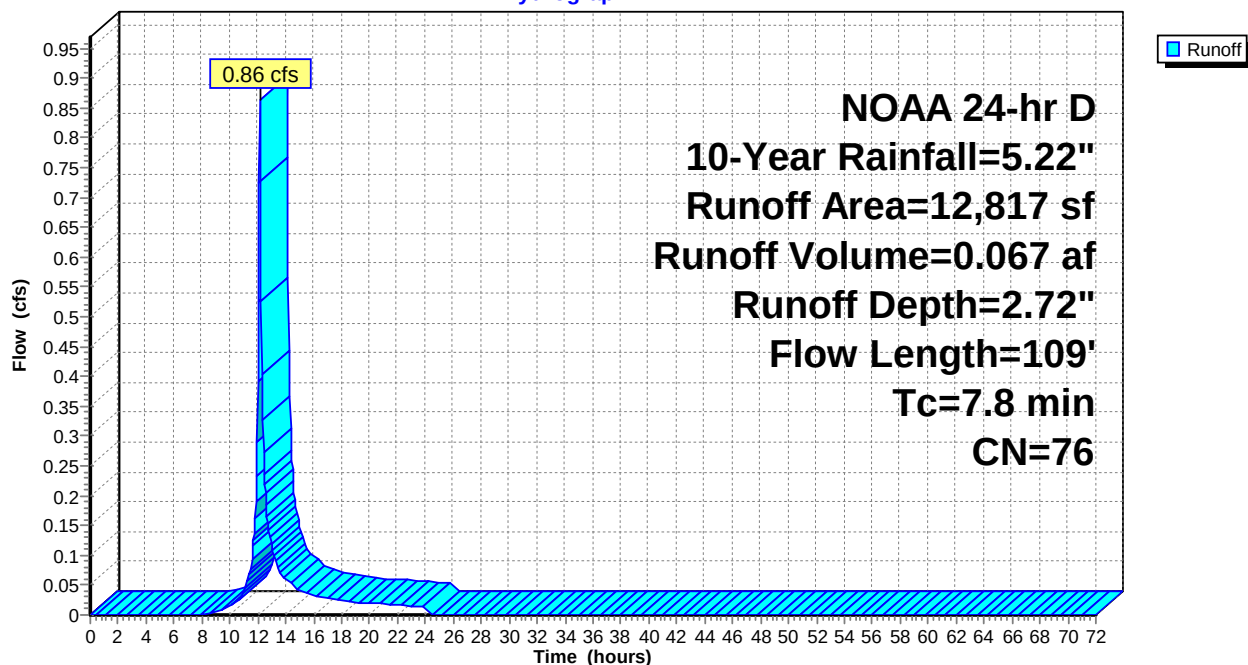
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
11,505	74	>75% Grass cover, Good, HSG C
1,312	89	Gravel roads, HSG C
12,817	76	Weighted Average
12,817		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	72	0.0280	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
1.4	28	0.1790	0.33		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.0	9	0.2220	7.59		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
7.8	109	Total			

Subcatchment EX 3 - P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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Hydrograph for Subcatchment EX 3 - P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	2.72	0.00
1.00	0.06	0.00	0.00	59.00	5.22	2.72	0.00
2.00	0.13	0.00	0.00	60.00	5.22	2.72	0.00
3.00	0.20	0.00	0.00	61.00	5.22	2.72	0.00
4.00	0.27	0.00	0.00	62.00	5.22	2.72	0.00
5.00	0.36	0.00	0.00	63.00	5.22	2.72	0.00
6.00	0.45	0.00	0.00	64.00	5.22	2.72	0.00
7.00	0.55	0.00	0.00	65.00	5.22	2.72	0.00
8.00	0.68	0.00	0.00	66.00	5.22	2.72	0.00
9.00	0.83	0.01	0.00	67.00	5.22	2.72	0.00
10.00	1.03	0.05	0.01	68.00	5.22	2.72	0.00
11.00	1.36	0.14	0.04	69.00	5.22	2.72	0.00
12.00	2.50	0.70	0.39	70.00	5.22	2.72	0.00
13.00	3.86	1.63	0.12	71.00	5.22	2.72	0.00
14.00	4.19	1.88	0.06	72.00	5.22	2.72	0.00
15.00	4.39	2.04	0.04				
16.00	4.54	2.16	0.03				
17.00	4.67	2.27	0.03				
18.00	4.77	2.35	0.02				
19.00	4.86	2.42	0.02				
20.00	4.95	2.49	0.02				
21.00	5.02	2.55	0.02				
22.00	5.09	2.61	0.02				
23.00	5.16	2.67	0.02				
24.00	5.22	2.72	0.01				
25.00	5.22	2.72	0.00				
26.00	5.22	2.72	0.00				
27.00	5.22	2.72	0.00				
28.00	5.22	2.72	0.00				
29.00	5.22	2.72	0.00				
30.00	5.22	2.72	0.00				
31.00	5.22	2.72	0.00				
32.00	5.22	2.72	0.00				
33.00	5.22	2.72	0.00				
34.00	5.22	2.72	0.00				
35.00	5.22	2.72	0.00				
36.00	5.22	2.72	0.00				
37.00	5.22	2.72	0.00				
38.00	5.22	2.72	0.00				
39.00	5.22	2.72	0.00				
40.00	5.22	2.72	0.00				
41.00	5.22	2.72	0.00				
42.00	5.22	2.72	0.00				
43.00	5.22	2.72	0.00				
44.00	5.22	2.72	0.00				
45.00	5.22	2.72	0.00				
46.00	5.22	2.72	0.00				
47.00	5.22	2.72	0.00				
48.00	5.22	2.72	0.00				
49.00	5.22	2.72	0.00				
50.00	5.22	2.72	0.00				
51.00	5.22	2.72	0.00				
52.00	5.22	2.72	0.00				
53.00	5.22	2.72	0.00				
54.00	5.22	2.72	0.00				
55.00	5.22	2.72	0.00				
56.00	5.22	2.72	0.00				
57.00	5.22	2.72	0.00				

Summary for Subcatchment PR 1A-I:

Runoff = 0.37 cfs @ 12.07 hrs, Volume= 0.028 af, Depth= 4.98"
 Routed to Reach EX 1 :

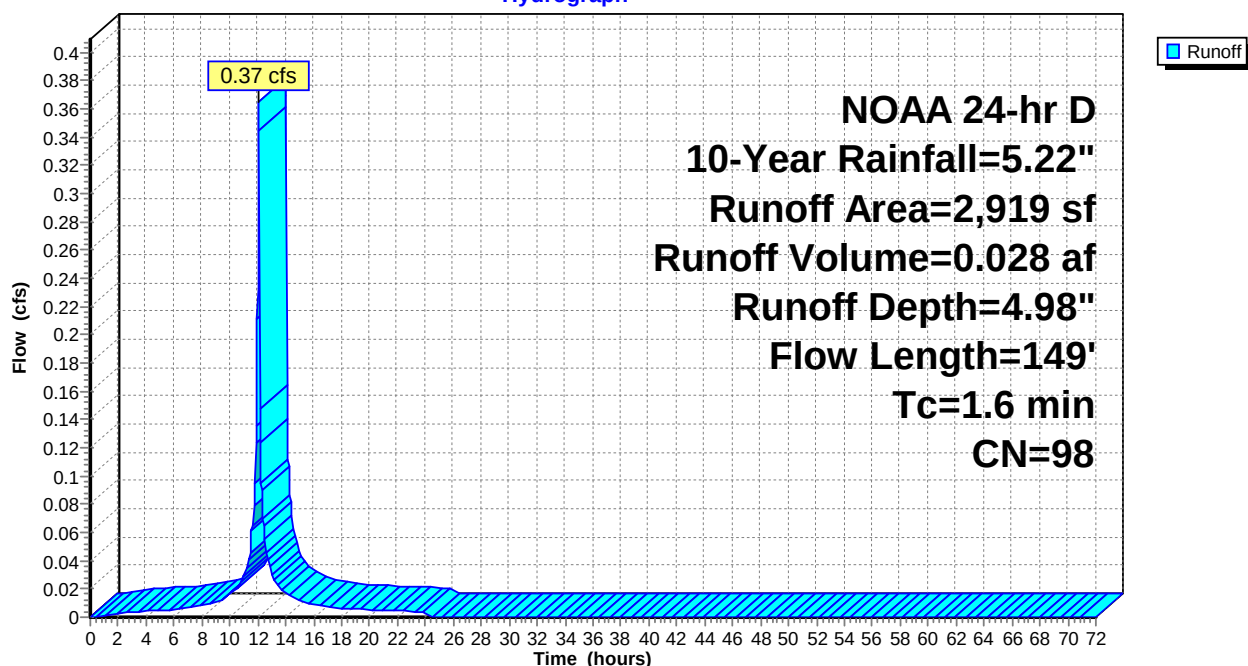
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
2,919	98	Paved roads w/curbs & sewers, HSG C
2,919		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0140	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"
0.3	49	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.6	149	Total			

Subcatchment PR 1A-I:

Hydrograph



240913_40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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Hydrograph for Subcatchment PR 1A-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	4.98	0.00
1.00	0.06	0.00	0.00	59.00	5.22	4.98	0.00
2.00	0.13	0.02	0.00	60.00	5.22	4.98	0.00
3.00	0.20	0.07	0.00	61.00	5.22	4.98	0.00
4.00	0.27	0.12	0.00	62.00	5.22	4.98	0.00
5.00	0.36	0.19	0.00	63.00	5.22	4.98	0.00
6.00	0.45	0.27	0.01	64.00	5.22	4.98	0.00
7.00	0.55	0.36	0.01	65.00	5.22	4.98	0.00
8.00	0.68	0.48	0.01	66.00	5.22	4.98	0.00
9.00	0.83	0.63	0.01	67.00	5.22	4.98	0.00
10.00	1.03	0.82	0.02	68.00	5.22	4.98	0.00
11.00	1.36	1.14	0.03	69.00	5.22	4.98	0.00
12.00	2.50	2.27	0.23	70.00	5.22	4.98	0.00
13.00	3.86	3.63	0.03	71.00	5.22	4.98	0.00
14.00	4.19	3.95	0.02	72.00	5.22	4.98	0.00
15.00	4.39	4.16	0.01				
16.00	4.54	4.31	0.01				
17.00	4.67	4.43	0.01				
18.00	4.77	4.54	0.01				
19.00	4.86	4.63	0.01				
20.00	4.95	4.71	0.01				
21.00	5.02	4.79	0.01				
22.00	5.09	4.86	0.00				
23.00	5.16	4.92	0.00				
24.00	5.22	4.98	0.00				
25.00	5.22	4.98	0.00				
26.00	5.22	4.98	0.00				
27.00	5.22	4.98	0.00				
28.00	5.22	4.98	0.00				
29.00	5.22	4.98	0.00				
30.00	5.22	4.98	0.00				
31.00	5.22	4.98	0.00				
32.00	5.22	4.98	0.00				
33.00	5.22	4.98	0.00				
34.00	5.22	4.98	0.00				
35.00	5.22	4.98	0.00				
36.00	5.22	4.98	0.00				
37.00	5.22	4.98	0.00				
38.00	5.22	4.98	0.00				
39.00	5.22	4.98	0.00				
40.00	5.22	4.98	0.00				
41.00	5.22	4.98	0.00				
42.00	5.22	4.98	0.00				
43.00	5.22	4.98	0.00				
44.00	5.22	4.98	0.00				
45.00	5.22	4.98	0.00				
46.00	5.22	4.98	0.00				
47.00	5.22	4.98	0.00				
48.00	5.22	4.98	0.00				
49.00	5.22	4.98	0.00				
50.00	5.22	4.98	0.00				
51.00	5.22	4.98	0.00				
52.00	5.22	4.98	0.00				
53.00	5.22	4.98	0.00				
54.00	5.22	4.98	0.00				
55.00	5.22	4.98	0.00				
56.00	5.22	4.98	0.00				
57.00	5.22	4.98	0.00				

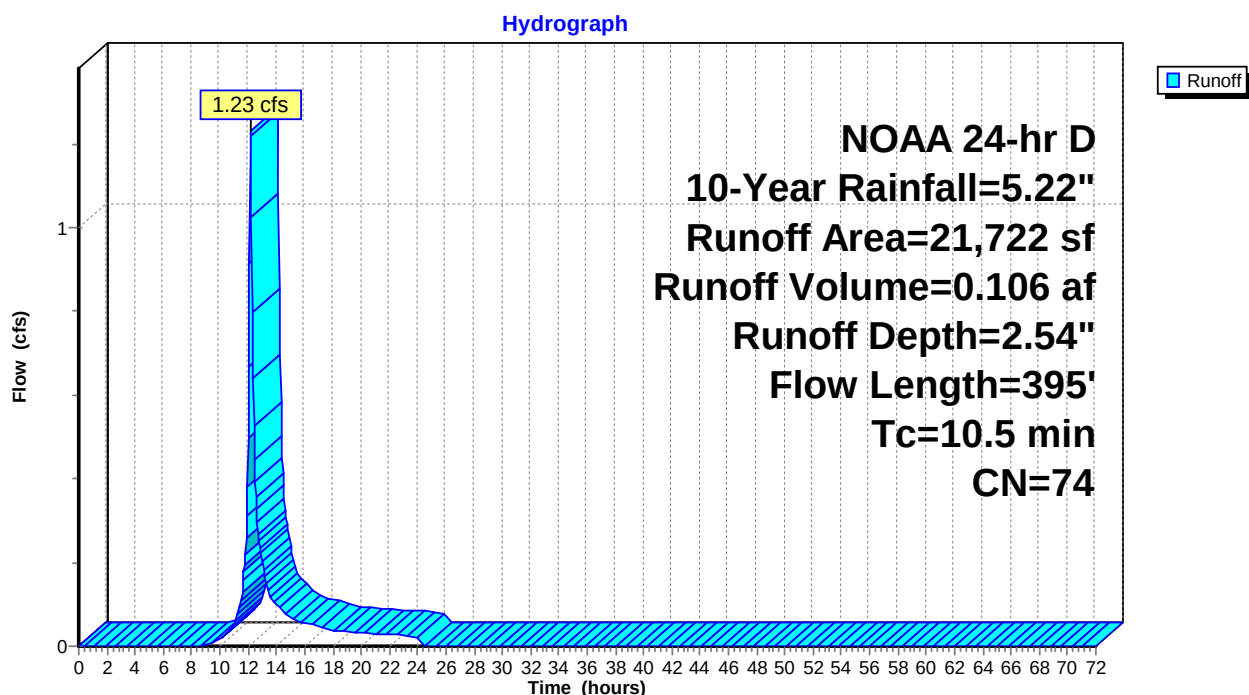
Summary for Subcatchment PR 1A-P:

Runoff = 1.23 cfs @ 12.18 hrs, Volume= 0.106 af, Depth= 2.54"
 Routed to Reach EX 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
21,722	74	>75% Grass cover, Good, HSG C
21,722		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0220	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
1.4	295	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.5	395	Total			

Subcatchment PR 1A-P:

240913_40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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Hydrograph for Subcatchment PR 1A-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	2.54	0.00
1.00	0.06	0.00	0.00	59.00	5.22	2.54	0.00
2.00	0.13	0.00	0.00	60.00	5.22	2.54	0.00
3.00	0.20	0.00	0.00	61.00	5.22	2.54	0.00
4.00	0.27	0.00	0.00	62.00	5.22	2.54	0.00
5.00	0.36	0.00	0.00	63.00	5.22	2.54	0.00
6.00	0.45	0.00	0.00	64.00	5.22	2.54	0.00
7.00	0.55	0.00	0.00	65.00	5.22	2.54	0.00
8.00	0.68	0.00	0.00	66.00	5.22	2.54	0.00
9.00	0.83	0.00	0.00	67.00	5.22	2.54	0.00
10.00	1.03	0.03	0.02	68.00	5.22	2.54	0.00
11.00	1.36	0.10	0.05	69.00	5.22	2.54	0.00
12.00	2.50	0.61	0.50	70.00	5.22	2.54	0.00
13.00	3.86	1.50	0.20	71.00	5.22	2.54	0.00
14.00	4.19	1.73	0.10	72.00	5.22	2.54	0.00
15.00	4.39	1.89	0.07				
16.00	4.54	2.01	0.06				
17.00	4.67	2.10	0.05				
18.00	4.77	2.19	0.04				
19.00	4.86	2.26	0.03				
20.00	4.95	2.32	0.03				
21.00	5.02	2.38	0.03				
22.00	5.09	2.44	0.03				
23.00	5.16	2.49	0.03				
24.00	5.22	2.54	0.02				
25.00	5.22	2.54	0.00				
26.00	5.22	2.54	0.00				
27.00	5.22	2.54	0.00				
28.00	5.22	2.54	0.00				
29.00	5.22	2.54	0.00				
30.00	5.22	2.54	0.00				
31.00	5.22	2.54	0.00				
32.00	5.22	2.54	0.00				
33.00	5.22	2.54	0.00				
34.00	5.22	2.54	0.00				
35.00	5.22	2.54	0.00				
36.00	5.22	2.54	0.00				
37.00	5.22	2.54	0.00				
38.00	5.22	2.54	0.00				
39.00	5.22	2.54	0.00				
40.00	5.22	2.54	0.00				
41.00	5.22	2.54	0.00				
42.00	5.22	2.54	0.00				
43.00	5.22	2.54	0.00				
44.00	5.22	2.54	0.00				
45.00	5.22	2.54	0.00				
46.00	5.22	2.54	0.00				
47.00	5.22	2.54	0.00				
48.00	5.22	2.54	0.00				
49.00	5.22	2.54	0.00				
50.00	5.22	2.54	0.00				
51.00	5.22	2.54	0.00				
52.00	5.22	2.54	0.00				
53.00	5.22	2.54	0.00				
54.00	5.22	2.54	0.00				
55.00	5.22	2.54	0.00				
56.00	5.22	2.54	0.00				
57.00	5.22	2.54	0.00				

Summary for Subcatchment PR 1B-P:

Runoff = 0.65 cfs @ 12.13 hrs, Volume= 0.050 af, Depth= 3.98"
 Routed to Pond 2P : Pervious Pavers

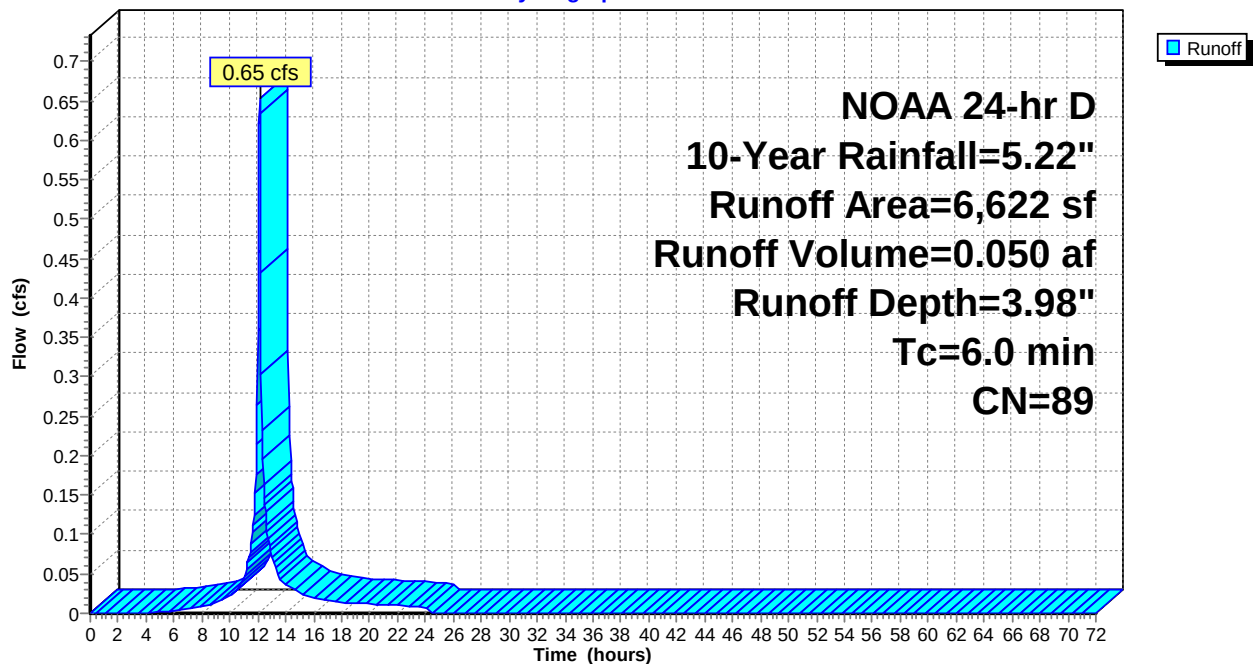
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
6,622	89	Gravel roads, HSG C
6,622		100.00% Pervious Area

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

Subcatchment PR 1B-P:

Hydrograph



Hydrograph for Subcatchment PR 1B-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	3.98	0.00
1.00	0.06	0.00	0.00	59.00	5.22	3.98	0.00
2.00	0.13	0.00	0.00	60.00	5.22	3.98	0.00
3.00	0.20	0.00	0.00	61.00	5.22	3.98	0.00
4.00	0.27	0.00	0.00	62.00	5.22	3.98	0.00
5.00	0.36	0.01	0.00	63.00	5.22	3.98	0.00
6.00	0.45	0.03	0.00	64.00	5.22	3.98	0.00
7.00	0.55	0.06	0.01	65.00	5.22	3.98	0.00
8.00	0.68	0.11	0.01	66.00	5.22	3.98	0.00
9.00	0.83	0.19	0.01	67.00	5.22	3.98	0.00
10.00	1.03	0.31	0.02	68.00	5.22	3.98	0.00
11.00	1.36	0.53	0.05	69.00	5.22	3.98	0.00
12.00	2.50	1.46	0.36	70.00	5.22	3.98	0.00
13.00	3.86	2.69	0.07	71.00	5.22	3.98	0.00
14.00	4.19	3.00	0.04	72.00	5.22	3.98	0.00
15.00	4.39	3.19	0.03				
16.00	4.54	3.34	0.02				
17.00	4.67	3.46	0.02				
18.00	4.77	3.56	0.01				
19.00	4.86	3.64	0.01				
20.00	4.95	3.72	0.01				
21.00	5.02	3.79	0.01				
22.00	5.09	3.86	0.01				
23.00	5.16	3.93	0.01				
24.00	5.22	3.98	0.01				
25.00	5.22	3.98	0.00				
26.00	5.22	3.98	0.00				
27.00	5.22	3.98	0.00				
28.00	5.22	3.98	0.00				
29.00	5.22	3.98	0.00				
30.00	5.22	3.98	0.00				
31.00	5.22	3.98	0.00				
32.00	5.22	3.98	0.00				
33.00	5.22	3.98	0.00				
34.00	5.22	3.98	0.00				
35.00	5.22	3.98	0.00				
36.00	5.22	3.98	0.00				
37.00	5.22	3.98	0.00				
38.00	5.22	3.98	0.00				
39.00	5.22	3.98	0.00				
40.00	5.22	3.98	0.00				
41.00	5.22	3.98	0.00				
42.00	5.22	3.98	0.00				
43.00	5.22	3.98	0.00				
44.00	5.22	3.98	0.00				
45.00	5.22	3.98	0.00				
46.00	5.22	3.98	0.00				
47.00	5.22	3.98	0.00				
48.00	5.22	3.98	0.00				
49.00	5.22	3.98	0.00				
50.00	5.22	3.98	0.00				
51.00	5.22	3.98	0.00				
52.00	5.22	3.98	0.00				
53.00	5.22	3.98	0.00				
54.00	5.22	3.98	0.00				
55.00	5.22	3.98	0.00				
56.00	5.22	3.98	0.00				
57.00	5.22	3.98	0.00				

Summary for Subcatchment PR 2A-P:

Runoff = 0.46 cfs @ 12.09 hrs, Volume= 0.029 af, Depth= 2.54"
 Routed to Reach DP2 : CHANNEL

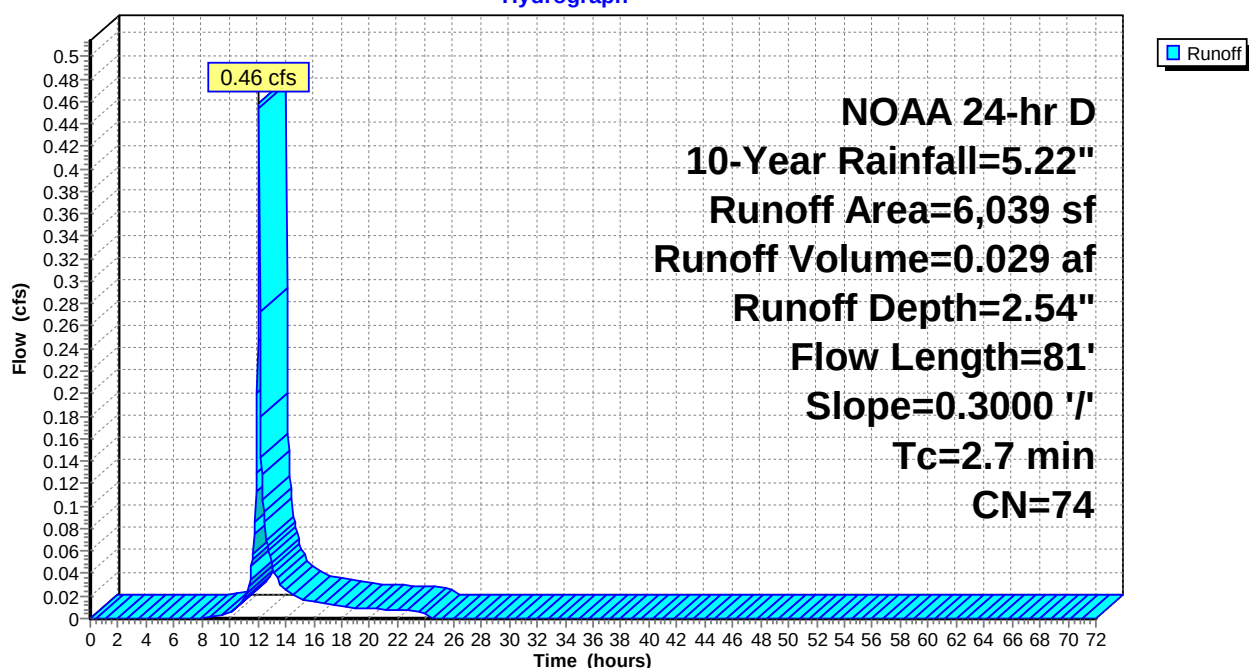
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
6,039	74	>75% Grass cover, Good, HSG C
6,039		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	81	0.3000	0.50		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"

Subcatchment PR 2A-P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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Hydrograph for Subcatchment PR 2A-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	2.54	0.00
1.00	0.06	0.00	0.00	59.00	5.22	2.54	0.00
2.00	0.13	0.00	0.00	60.00	5.22	2.54	0.00
3.00	0.20	0.00	0.00	61.00	5.22	2.54	0.00
4.00	0.27	0.00	0.00	62.00	5.22	2.54	0.00
5.00	0.36	0.00	0.00	63.00	5.22	2.54	0.00
6.00	0.45	0.00	0.00	64.00	5.22	2.54	0.00
7.00	0.55	0.00	0.00	65.00	5.22	2.54	0.00
8.00	0.68	0.00	0.00	66.00	5.22	2.54	0.00
9.00	0.83	0.00	0.00	67.00	5.22	2.54	0.00
10.00	1.03	0.03	0.01	68.00	5.22	2.54	0.00
11.00	1.36	0.10	0.02	69.00	5.22	2.54	0.00
12.00	2.50	0.61	0.25	70.00	5.22	2.54	0.00
13.00	3.86	1.50	0.05	71.00	5.22	2.54	0.00
14.00	4.19	1.73	0.03	72.00	5.22	2.54	0.00
15.00	4.39	1.89	0.02				
16.00	4.54	2.01	0.02				
17.00	4.67	2.10	0.01				
18.00	4.77	2.19	0.01				
19.00	4.86	2.26	0.01				
20.00	4.95	2.32	0.01				
21.00	5.02	2.38	0.01				
22.00	5.09	2.44	0.01				
23.00	5.16	2.49	0.01				
24.00	5.22	2.54	0.01				
25.00	5.22	2.54	0.00				
26.00	5.22	2.54	0.00				
27.00	5.22	2.54	0.00				
28.00	5.22	2.54	0.00				
29.00	5.22	2.54	0.00				
30.00	5.22	2.54	0.00				
31.00	5.22	2.54	0.00				
32.00	5.22	2.54	0.00				
33.00	5.22	2.54	0.00				
34.00	5.22	2.54	0.00				
35.00	5.22	2.54	0.00				
36.00	5.22	2.54	0.00				
37.00	5.22	2.54	0.00				
38.00	5.22	2.54	0.00				
39.00	5.22	2.54	0.00				
40.00	5.22	2.54	0.00				
41.00	5.22	2.54	0.00				
42.00	5.22	2.54	0.00				
43.00	5.22	2.54	0.00				
44.00	5.22	2.54	0.00				
45.00	5.22	2.54	0.00				
46.00	5.22	2.54	0.00				
47.00	5.22	2.54	0.00				
48.00	5.22	2.54	0.00				
49.00	5.22	2.54	0.00				
50.00	5.22	2.54	0.00				
51.00	5.22	2.54	0.00				
52.00	5.22	2.54	0.00				
53.00	5.22	2.54	0.00				
54.00	5.22	2.54	0.00				
55.00	5.22	2.54	0.00				
56.00	5.22	2.54	0.00				
57.00	5.22	2.54	0.00				

Summary for Subcatchment PR 2C-I:

Runoff = 0.71 cfs @ 12.06 hrs, Volume= 0.054 af, Depth= 4.98"
 Routed to Reach 8R : (new Reach)

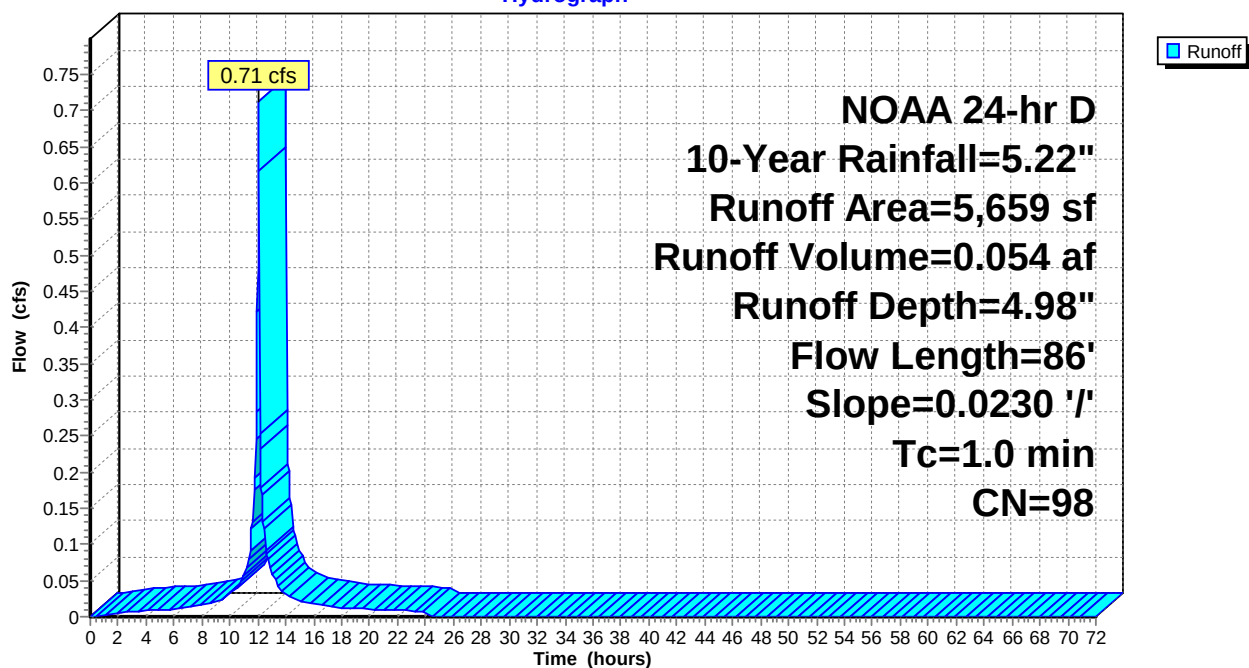
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
5,659	98	Unconnected pavement, HSG A
5,659		100.00% Impervious Area
5,659		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	86	0.0230	1.46		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"

Subcatchment PR 2C-I:

Hydrograph



240913_40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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Hydrograph for Subcatchment PR 2C-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	4.98	0.00
1.00	0.06	0.00	0.00	59.00	5.22	4.98	0.00
2.00	0.13	0.02	0.00	60.00	5.22	4.98	0.00
3.00	0.20	0.07	0.01	61.00	5.22	4.98	0.00
4.00	0.27	0.12	0.01	62.00	5.22	4.98	0.00
5.00	0.36	0.19	0.01	63.00	5.22	4.98	0.00
6.00	0.45	0.27	0.01	64.00	5.22	4.98	0.00
7.00	0.55	0.36	0.01	65.00	5.22	4.98	0.00
8.00	0.68	0.48	0.02	66.00	5.22	4.98	0.00
9.00	0.83	0.63	0.02	67.00	5.22	4.98	0.00
10.00	1.03	0.82	0.03	68.00	5.22	4.98	0.00
11.00	1.36	1.14	0.06	69.00	5.22	4.98	0.00
12.00	2.50	2.27	0.48	70.00	5.22	4.98	0.00
13.00	3.86	3.63	0.06	71.00	5.22	4.98	0.00
14.00	4.19	3.95	0.03	72.00	5.22	4.98	0.00
15.00	4.39	4.16	0.02				
16.00	4.54	4.31	0.02				
17.00	4.67	4.43	0.02				
18.00	4.77	4.54	0.01				
19.00	4.86	4.63	0.01				
20.00	4.95	4.71	0.01				
21.00	5.02	4.79	0.01				
22.00	5.09	4.86	0.01				
23.00	5.16	4.92	0.01				
24.00	5.22	4.98	0.01				
25.00	5.22	4.98	0.00				
26.00	5.22	4.98	0.00				
27.00	5.22	4.98	0.00				
28.00	5.22	4.98	0.00				
29.00	5.22	4.98	0.00				
30.00	5.22	4.98	0.00				
31.00	5.22	4.98	0.00				
32.00	5.22	4.98	0.00				
33.00	5.22	4.98	0.00				
34.00	5.22	4.98	0.00				
35.00	5.22	4.98	0.00				
36.00	5.22	4.98	0.00				
37.00	5.22	4.98	0.00				
38.00	5.22	4.98	0.00				
39.00	5.22	4.98	0.00				
40.00	5.22	4.98	0.00				
41.00	5.22	4.98	0.00				
42.00	5.22	4.98	0.00				
43.00	5.22	4.98	0.00				
44.00	5.22	4.98	0.00				
45.00	5.22	4.98	0.00				
46.00	5.22	4.98	0.00				
47.00	5.22	4.98	0.00				
48.00	5.22	4.98	0.00				
49.00	5.22	4.98	0.00				
50.00	5.22	4.98	0.00				
51.00	5.22	4.98	0.00				
52.00	5.22	4.98	0.00				
53.00	5.22	4.98	0.00				
54.00	5.22	4.98	0.00				
55.00	5.22	4.98	0.00				
56.00	5.22	4.98	0.00				
57.00	5.22	4.98	0.00				

Summary for Subcatchment PR 2C-P:

Runoff = 1.26 cfs @ 12.17 hrs, Volume= 0.104 af, Depth= 2.54"
 Routed to Reach 8R : (new Reach)

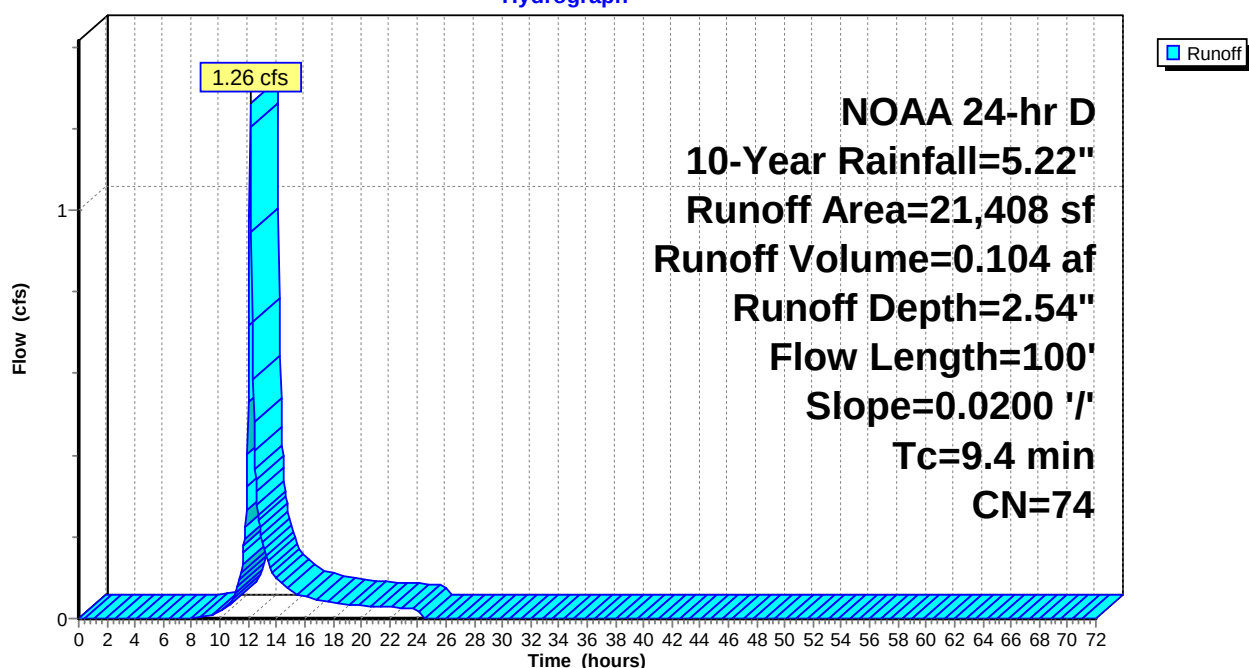
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
21,408	74	>75% Grass cover, Good, HSG C
21,408		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.0200	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"

Subcatchment PR 2C-P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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Hydrograph for Subcatchment PR 2C-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	2.54	0.00
1.00	0.06	0.00	0.00	59.00	5.22	2.54	0.00
2.00	0.13	0.00	0.00	60.00	5.22	2.54	0.00
3.00	0.20	0.00	0.00	61.00	5.22	2.54	0.00
4.00	0.27	0.00	0.00	62.00	5.22	2.54	0.00
5.00	0.36	0.00	0.00	63.00	5.22	2.54	0.00
6.00	0.45	0.00	0.00	64.00	5.22	2.54	0.00
7.00	0.55	0.00	0.00	65.00	5.22	2.54	0.00
8.00	0.68	0.00	0.00	66.00	5.22	2.54	0.00
9.00	0.83	0.00	0.00	67.00	5.22	2.54	0.00
10.00	1.03	0.03	0.02	68.00	5.22	2.54	0.00
11.00	1.36	0.10	0.05	69.00	5.22	2.54	0.00
12.00	2.50	0.61	0.53	70.00	5.22	2.54	0.00
13.00	3.86	1.50	0.19	71.00	5.22	2.54	0.00
14.00	4.19	1.73	0.10	72.00	5.22	2.54	0.00
15.00	4.39	1.89	0.07				
16.00	4.54	2.01	0.05				
17.00	4.67	2.10	0.05				
18.00	4.77	2.19	0.04				
19.00	4.86	2.26	0.03				
20.00	4.95	2.32	0.03				
21.00	5.02	2.38	0.03				
22.00	5.09	2.44	0.03				
23.00	5.16	2.49	0.03				
24.00	5.22	2.54	0.02				
25.00	5.22	2.54	0.00				
26.00	5.22	2.54	0.00				
27.00	5.22	2.54	0.00				
28.00	5.22	2.54	0.00				
29.00	5.22	2.54	0.00				
30.00	5.22	2.54	0.00				
31.00	5.22	2.54	0.00				
32.00	5.22	2.54	0.00				
33.00	5.22	2.54	0.00				
34.00	5.22	2.54	0.00				
35.00	5.22	2.54	0.00				
36.00	5.22	2.54	0.00				
37.00	5.22	2.54	0.00				
38.00	5.22	2.54	0.00				
39.00	5.22	2.54	0.00				
40.00	5.22	2.54	0.00				
41.00	5.22	2.54	0.00				
42.00	5.22	2.54	0.00				
43.00	5.22	2.54	0.00				
44.00	5.22	2.54	0.00				
45.00	5.22	2.54	0.00				
46.00	5.22	2.54	0.00				
47.00	5.22	2.54	0.00				
48.00	5.22	2.54	0.00				
49.00	5.22	2.54	0.00				
50.00	5.22	2.54	0.00				
51.00	5.22	2.54	0.00				
52.00	5.22	2.54	0.00				
53.00	5.22	2.54	0.00				
54.00	5.22	2.54	0.00				
55.00	5.22	2.54	0.00				
56.00	5.22	2.54	0.00				
57.00	5.22	2.54	0.00				

Summary for Subcatchment PR 3 - P:

Runoff = 0.66 cfs @ 12.15 hrs, Volume= 0.051 af, Depth= 2.54"
 Routed to Reach DP3 : TOTAL

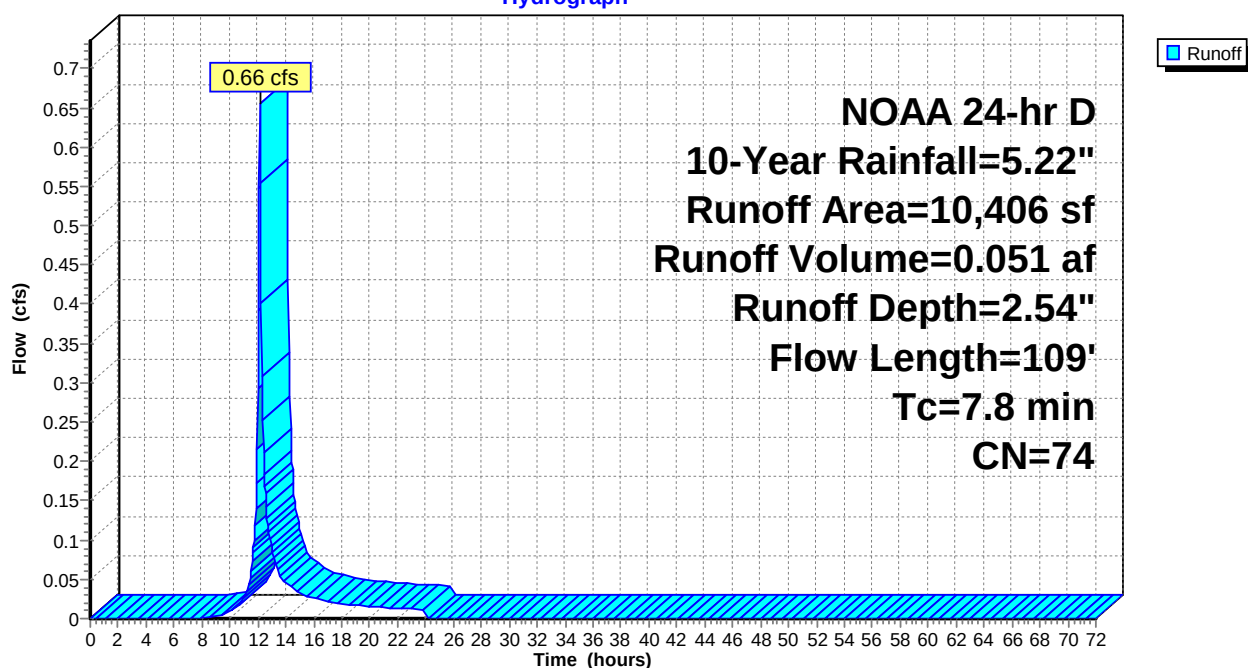
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
10,406	74	>75% Grass cover, Good, HSG C
10,406		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	72	0.0280	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
1.4	28	0.1790	0.33		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.0	9	0.2220	7.59		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
7.8	109	Total			

Subcatchment PR 3 - P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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Hydrograph for Subcatchment PR 3 - P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	2.54	0.00
1.00	0.06	0.00	0.00	59.00	5.22	2.54	0.00
2.00	0.13	0.00	0.00	60.00	5.22	2.54	0.00
3.00	0.20	0.00	0.00	61.00	5.22	2.54	0.00
4.00	0.27	0.00	0.00	62.00	5.22	2.54	0.00
5.00	0.36	0.00	0.00	63.00	5.22	2.54	0.00
6.00	0.45	0.00	0.00	64.00	5.22	2.54	0.00
7.00	0.55	0.00	0.00	65.00	5.22	2.54	0.00
8.00	0.68	0.00	0.00	66.00	5.22	2.54	0.00
9.00	0.83	0.00	0.00	67.00	5.22	2.54	0.00
10.00	1.03	0.03	0.01	68.00	5.22	2.54	0.00
11.00	1.36	0.10	0.03	69.00	5.22	2.54	0.00
12.00	2.50	0.61	0.29	70.00	5.22	2.54	0.00
13.00	3.86	1.50	0.09	71.00	5.22	2.54	0.00
14.00	4.19	1.73	0.05	72.00	5.22	2.54	0.00
15.00	4.39	1.89	0.03				
16.00	4.54	2.01	0.03				
17.00	4.67	2.10	0.02				
18.00	4.77	2.19	0.02				
19.00	4.86	2.26	0.02				
20.00	4.95	2.32	0.02				
21.00	5.02	2.38	0.01				
22.00	5.09	2.44	0.01				
23.00	5.16	2.49	0.01				
24.00	5.22	2.54	0.01				
25.00	5.22	2.54	0.00				
26.00	5.22	2.54	0.00				
27.00	5.22	2.54	0.00				
28.00	5.22	2.54	0.00				
29.00	5.22	2.54	0.00				
30.00	5.22	2.54	0.00				
31.00	5.22	2.54	0.00				
32.00	5.22	2.54	0.00				
33.00	5.22	2.54	0.00				
34.00	5.22	2.54	0.00				
35.00	5.22	2.54	0.00				
36.00	5.22	2.54	0.00				
37.00	5.22	2.54	0.00				
38.00	5.22	2.54	0.00				
39.00	5.22	2.54	0.00				
40.00	5.22	2.54	0.00				
41.00	5.22	2.54	0.00				
42.00	5.22	2.54	0.00				
43.00	5.22	2.54	0.00				
44.00	5.22	2.54	0.00				
45.00	5.22	2.54	0.00				
46.00	5.22	2.54	0.00				
47.00	5.22	2.54	0.00				
48.00	5.22	2.54	0.00				
49.00	5.22	2.54	0.00				
50.00	5.22	2.54	0.00				
51.00	5.22	2.54	0.00				
52.00	5.22	2.54	0.00				
53.00	5.22	2.54	0.00				
54.00	5.22	2.54	0.00				
55.00	5.22	2.54	0.00				
56.00	5.22	2.54	0.00				
57.00	5.22	2.54	0.00				

Summary for Subcatchment PR-2B-I:

Runoff = 1.09 cfs @ 12.06 hrs, Volume= 0.082 af, Depth= 4.98"
 Routed to Pond 11P : Existing Drywell System

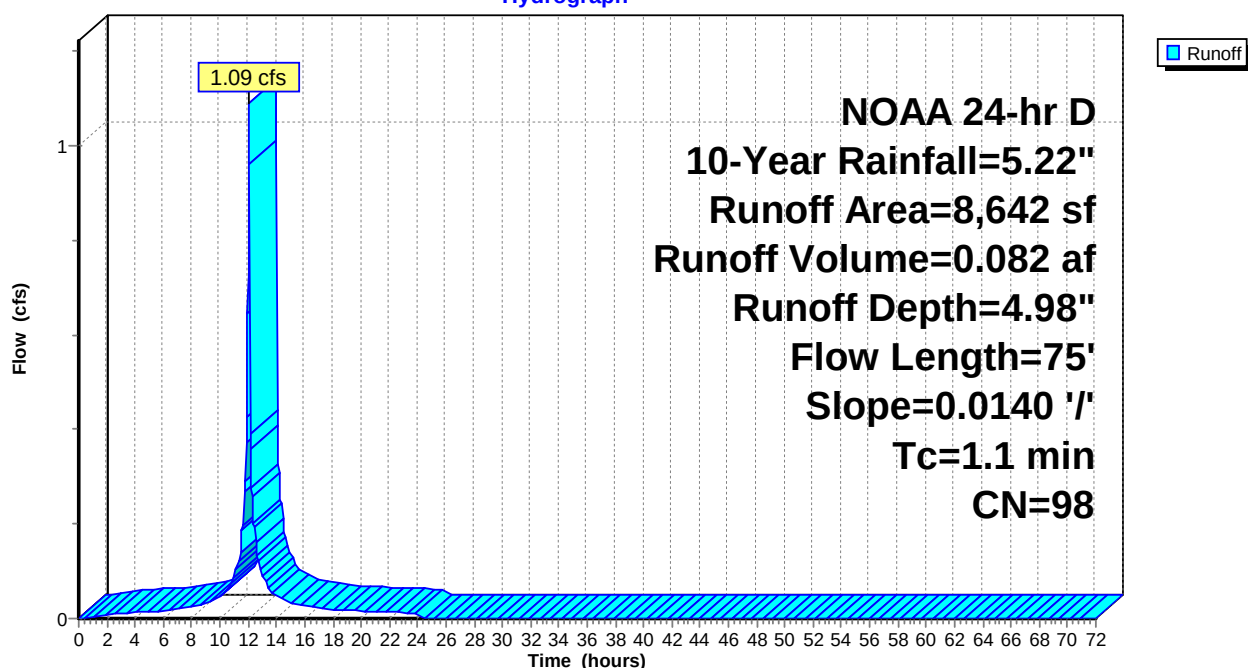
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
8,642	98	Paved parking, HSG C
8,642		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	75	0.0140	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"

Subcatchment PR-2B-I:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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Hydrograph for Subcatchment PR-2B-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	4.98	0.00
1.00	0.06	0.00	0.00	59.00	5.22	4.98	0.00
2.00	0.13	0.02	0.01	60.00	5.22	4.98	0.00
3.00	0.20	0.07	0.01	61.00	5.22	4.98	0.00
4.00	0.27	0.12	0.01	62.00	5.22	4.98	0.00
5.00	0.36	0.19	0.01	63.00	5.22	4.98	0.00
6.00	0.45	0.27	0.02	64.00	5.22	4.98	0.00
7.00	0.55	0.36	0.02	65.00	5.22	4.98	0.00
8.00	0.68	0.48	0.03	66.00	5.22	4.98	0.00
9.00	0.83	0.63	0.03	67.00	5.22	4.98	0.00
10.00	1.03	0.82	0.05	68.00	5.22	4.98	0.00
11.00	1.36	1.14	0.09	69.00	5.22	4.98	0.00
12.00	2.50	2.27	0.73	70.00	5.22	4.98	0.00
13.00	3.86	3.63	0.10	71.00	5.22	4.98	0.00
14.00	4.19	3.95	0.05	72.00	5.22	4.98	0.00
15.00	4.39	4.16	0.03				
16.00	4.54	4.31	0.03				
17.00	4.67	4.43	0.02				
18.00	4.77	4.54	0.02				
19.00	4.86	4.63	0.02				
20.00	4.95	4.71	0.02				
21.00	5.02	4.79	0.01				
22.00	5.09	4.86	0.01				
23.00	5.16	4.92	0.01				
24.00	5.22	4.98	0.01				
25.00	5.22	4.98	0.00				
26.00	5.22	4.98	0.00				
27.00	5.22	4.98	0.00				
28.00	5.22	4.98	0.00				
29.00	5.22	4.98	0.00				
30.00	5.22	4.98	0.00				
31.00	5.22	4.98	0.00				
32.00	5.22	4.98	0.00				
33.00	5.22	4.98	0.00				
34.00	5.22	4.98	0.00				
35.00	5.22	4.98	0.00				
36.00	5.22	4.98	0.00				
37.00	5.22	4.98	0.00				
38.00	5.22	4.98	0.00				
39.00	5.22	4.98	0.00				
40.00	5.22	4.98	0.00				
41.00	5.22	4.98	0.00				
42.00	5.22	4.98	0.00				
43.00	5.22	4.98	0.00				
44.00	5.22	4.98	0.00				
45.00	5.22	4.98	0.00				
46.00	5.22	4.98	0.00				
47.00	5.22	4.98	0.00				
48.00	5.22	4.98	0.00				
49.00	5.22	4.98	0.00				
50.00	5.22	4.98	0.00				
51.00	5.22	4.98	0.00				
52.00	5.22	4.98	0.00				
53.00	5.22	4.98	0.00				
54.00	5.22	4.98	0.00				
55.00	5.22	4.98	0.00				
56.00	5.22	4.98	0.00				
57.00	5.22	4.98	0.00				

Summary for Subcatchment PR-2B-P:

Runoff = 0.09 cfs @ 12.15 hrs, Volume= 0.007 af, Depth= 2.54"
 Routed to Pond 11P : Existing Drywell System

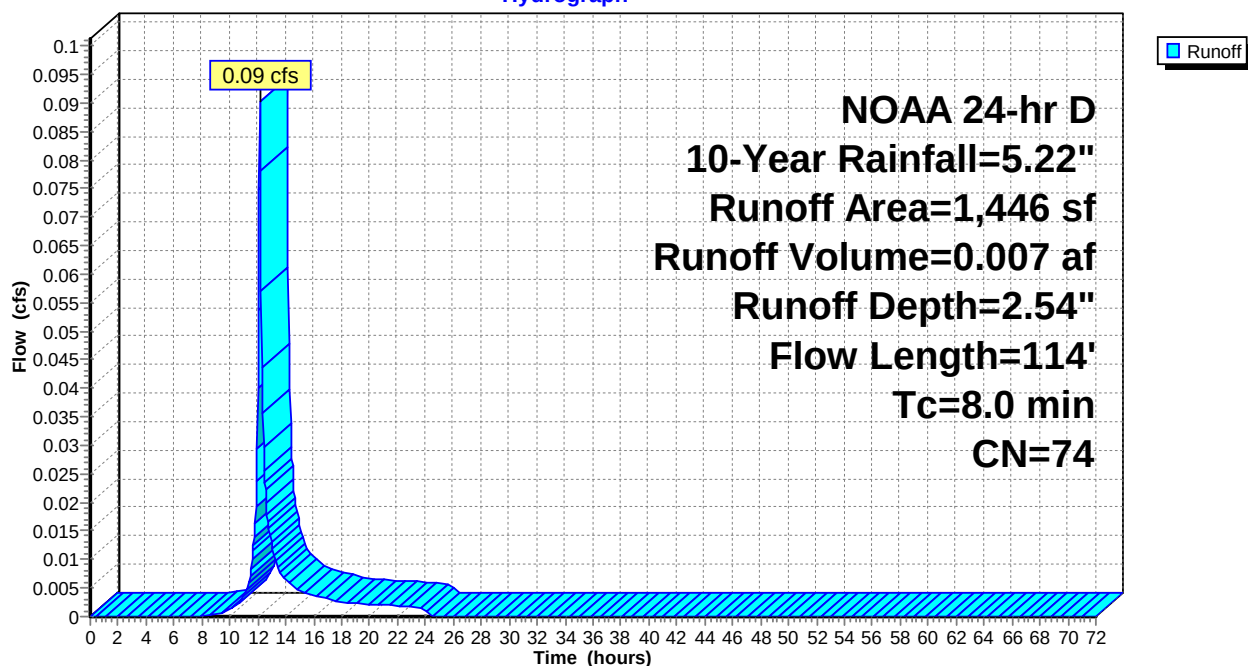
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
1,446	74	>75% Grass cover, Good, HSG C
1,446		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	69	0.0170	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.4	31	0.0220	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"
0.1	14	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.0	114	Total			

Subcatchment PR-2B-P:

Hydrograph



240913_40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

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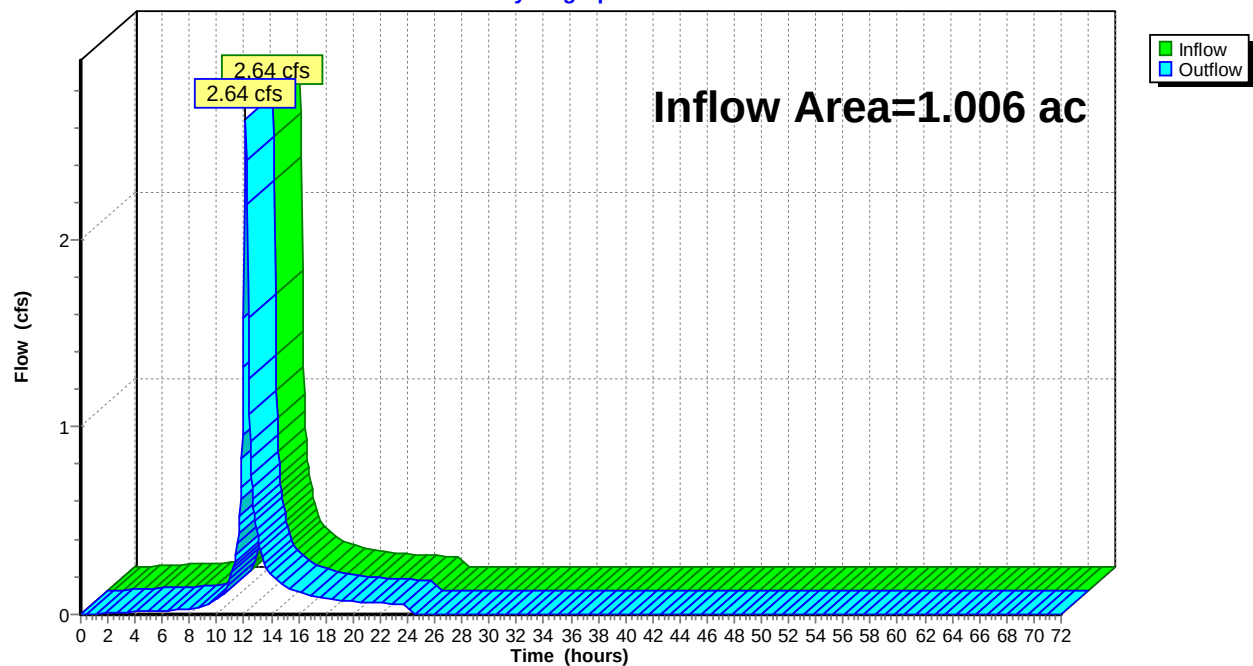
Hydrograph for Subcatchment PR-2B-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	5.22	2.54	0.00
1.00	0.06	0.00	0.00	59.00	5.22	2.54	0.00
2.00	0.13	0.00	0.00	60.00	5.22	2.54	0.00
3.00	0.20	0.00	0.00	61.00	5.22	2.54	0.00
4.00	0.27	0.00	0.00	62.00	5.22	2.54	0.00
5.00	0.36	0.00	0.00	63.00	5.22	2.54	0.00
6.00	0.45	0.00	0.00	64.00	5.22	2.54	0.00
7.00	0.55	0.00	0.00	65.00	5.22	2.54	0.00
8.00	0.68	0.00	0.00	66.00	5.22	2.54	0.00
9.00	0.83	0.00	0.00	67.00	5.22	2.54	0.00
10.00	1.03	0.03	0.00	68.00	5.22	2.54	0.00
11.00	1.36	0.10	0.00	69.00	5.22	2.54	0.00
12.00	2.50	0.61	0.04	70.00	5.22	2.54	0.00
13.00	3.86	1.50	0.01	71.00	5.22	2.54	0.00
14.00	4.19	1.73	0.01	72.00	5.22	2.54	0.00
15.00	4.39	1.89	0.00				
16.00	4.54	2.01	0.00				
17.00	4.67	2.10	0.00				
18.00	4.77	2.19	0.00				
19.00	4.86	2.26	0.00				
20.00	4.95	2.32	0.00				
21.00	5.02	2.38	0.00				
22.00	5.09	2.44	0.00				
23.00	5.16	2.49	0.00				
24.00	5.22	2.54	0.00				
25.00	5.22	2.54	0.00				
26.00	5.22	2.54	0.00				
27.00	5.22	2.54	0.00				
28.00	5.22	2.54	0.00				
29.00	5.22	2.54	0.00				
30.00	5.22	2.54	0.00				
31.00	5.22	2.54	0.00				
32.00	5.22	2.54	0.00				
33.00	5.22	2.54	0.00				
34.00	5.22	2.54	0.00				
35.00	5.22	2.54	0.00				
36.00	5.22	2.54	0.00				
37.00	5.22	2.54	0.00				
38.00	5.22	2.54	0.00				
39.00	5.22	2.54	0.00				
40.00	5.22	2.54	0.00				
41.00	5.22	2.54	0.00				
42.00	5.22	2.54	0.00				
43.00	5.22	2.54	0.00				
44.00	5.22	2.54	0.00				
45.00	5.22	2.54	0.00				
46.00	5.22	2.54	0.00				
47.00	5.22	2.54	0.00				
48.00	5.22	2.54	0.00				
49.00	5.22	2.54	0.00				
50.00	5.22	2.54	0.00				
51.00	5.22	2.54	0.00				
52.00	5.22	2.54	0.00				
53.00	5.22	2.54	0.00				
54.00	5.22	2.54	0.00				
55.00	5.22	2.54	0.00				
56.00	5.22	2.54	0.00				
57.00	5.22	2.54	0.00				

Summary for Reach 1R: TOP

Inflow Area = 1.006 ac, 21.70% Impervious, Inflow Depth = 3.14" for 10-Year event
Inflow = 2.64 cfs @ 12.11 hrs, Volume= 0.263 af
Outflow = 2.64 cfs @ 12.11 hrs, Volume= 0.263 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 2R : CHANNEL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 1R: TOP**Hydrograph**

Hydrograph for Reach 1R: TOP

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.01		0.01	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.01		0.01	62.00	0.00		0.00
5.00	0.02		0.02	63.00	0.00		0.00
6.00	0.02		0.02	64.00	0.00		0.00
7.00	0.02		0.02	65.00	0.00		0.00
8.00	0.03		0.03	66.00	0.00		0.00
9.00	0.04		0.04	67.00	0.00		0.00
10.00	0.08		0.08	68.00	0.00		0.00
11.00	0.19		0.19	69.00	0.00		0.00
12.00	1.59		1.59	70.00	0.00		0.00
13.00	0.43		0.43	71.00	0.00		0.00
14.00	0.21		0.21	72.00	0.00		0.00
15.00	0.15		0.15				
16.00	0.12		0.12				
17.00	0.10		0.10				
18.00	0.08		0.08				
19.00	0.07		0.07				
20.00	0.07		0.07				
21.00	0.06		0.06				
22.00	0.06		0.06				
23.00	0.06		0.06				
24.00	0.05		0.05				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

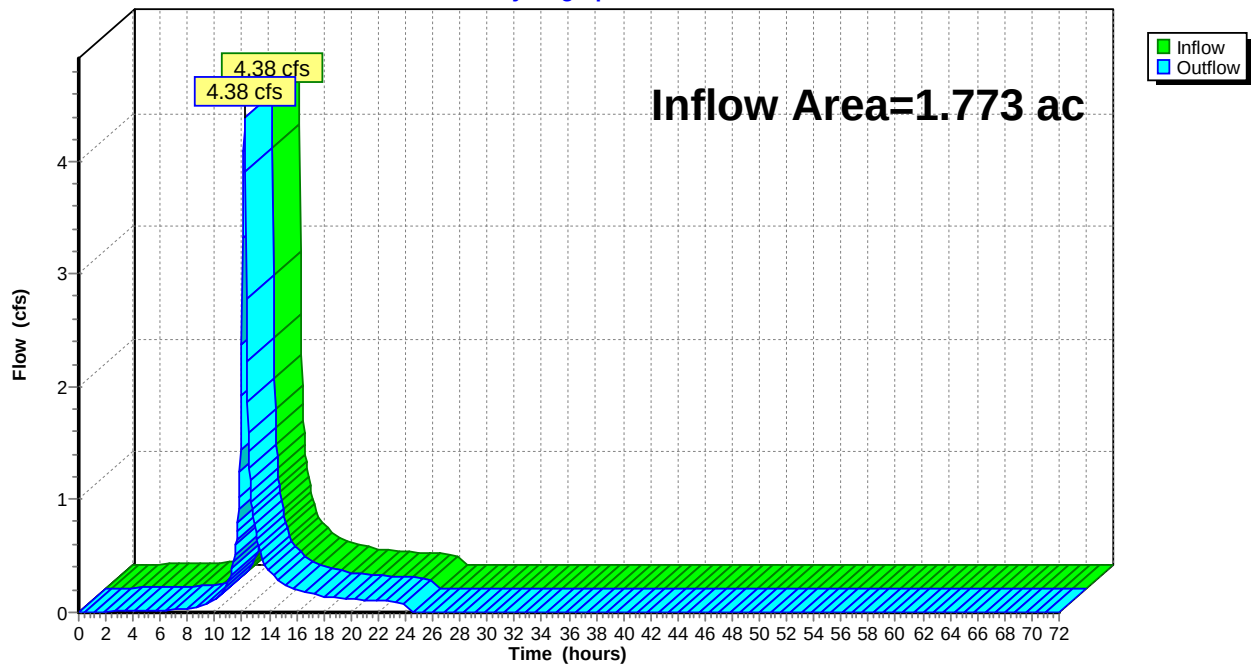
Summary for Reach 2R: CHANNEL

Inflow Area = 1.773 ac, 12.31% Impervious, Inflow Depth = 2.88" for 10-Year event
Inflow = 4.38 cfs @ 12.18 hrs, Volume= 0.426 af
Outflow = 4.38 cfs @ 12.18 hrs, Volume= 0.426 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : TOTAL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 2R: CHANNEL

Hydrograph



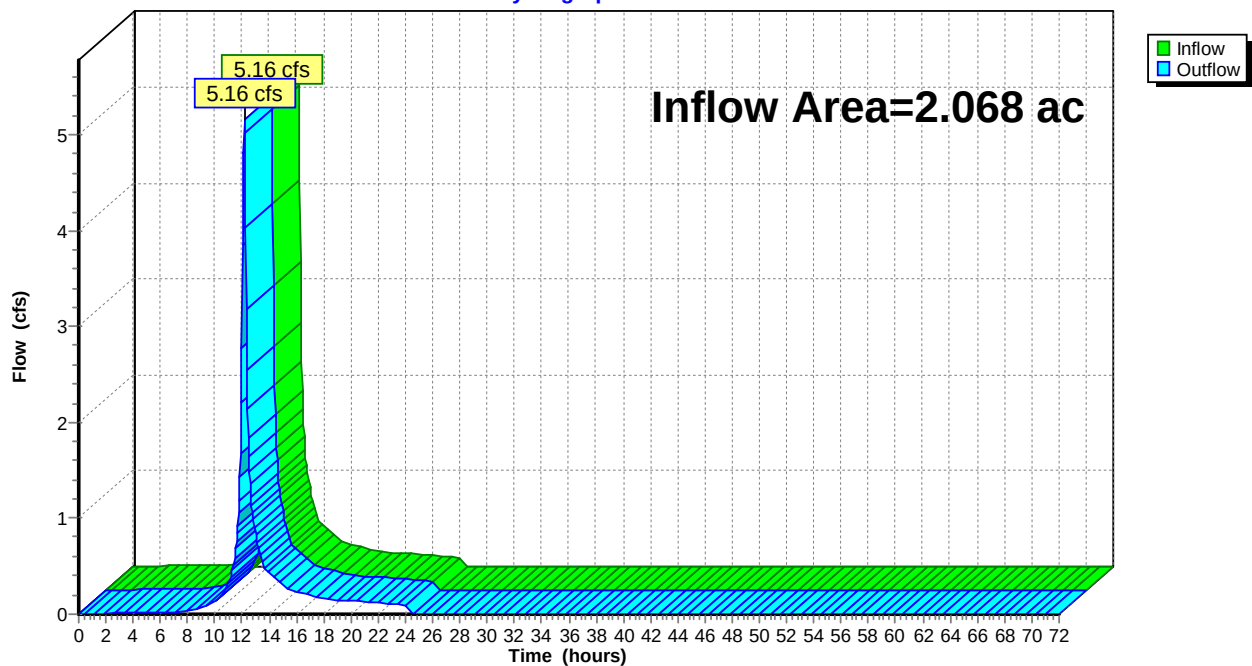
Hydrograph for Reach 2R: CHANNEL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.01		0.01	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.01		0.01	62.00	0.00		0.00
5.00	0.02		0.02	63.00	0.00		0.00
6.00	0.02		0.02	64.00	0.00		0.00
7.00	0.02		0.02	65.00	0.00		0.00
8.00	0.03		0.03	66.00	0.00		0.00
9.00	0.05		0.05	67.00	0.00		0.00
10.00	0.11		0.11	68.00	0.00		0.00
11.00	0.27		0.27	69.00	0.00		0.00
12.00	2.37		2.37	70.00	0.00		0.00
13.00	0.73		0.73	71.00	0.00		0.00
14.00	0.36		0.36	72.00	0.00		0.00
15.00	0.25		0.25				
16.00	0.20		0.20				
17.00	0.17		0.17				
18.00	0.14		0.14				
19.00	0.13		0.13				
20.00	0.12		0.12				
21.00	0.11		0.11				
22.00	0.10		0.10				
23.00	0.09		0.09				
24.00	0.09		0.09				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Reach 3R: TOTAL

Inflow Area = 2.068 ac, 10.56% Impervious, Inflow Depth = 2.86" for 10-Year event
Inflow = 5.16 cfs @ 12.16 hrs, Volume= 0.492 af
Outflow = 5.16 cfs @ 12.16 hrs, Volume= 0.492 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 3R: TOTAL**Hydrograph**

Hydrograph for Reach 3R: TOTAL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.01		0.01	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.01		0.01	62.00	0.00		0.00
5.00	0.02		0.02	63.00	0.00		0.00
6.00	0.02		0.02	64.00	0.00		0.00
7.00	0.02		0.02	65.00	0.00		0.00
8.00	0.03		0.03	66.00	0.00		0.00
9.00	0.06		0.06	67.00	0.00		0.00
10.00	0.13		0.13	68.00	0.00		0.00
11.00	0.31		0.31	69.00	0.00		0.00
12.00	2.77		2.77	70.00	0.00		0.00
13.00	0.85		0.85	71.00	0.00		0.00
14.00	0.42		0.42	72.00	0.00		0.00
15.00	0.29		0.29				
16.00	0.24		0.24				
17.00	0.20		0.20				
18.00	0.16		0.16				
19.00	0.15		0.15				
20.00	0.14		0.14				
21.00	0.13		0.13				
22.00	0.12		0.12				
23.00	0.11		0.11				
24.00	0.10		0.10				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

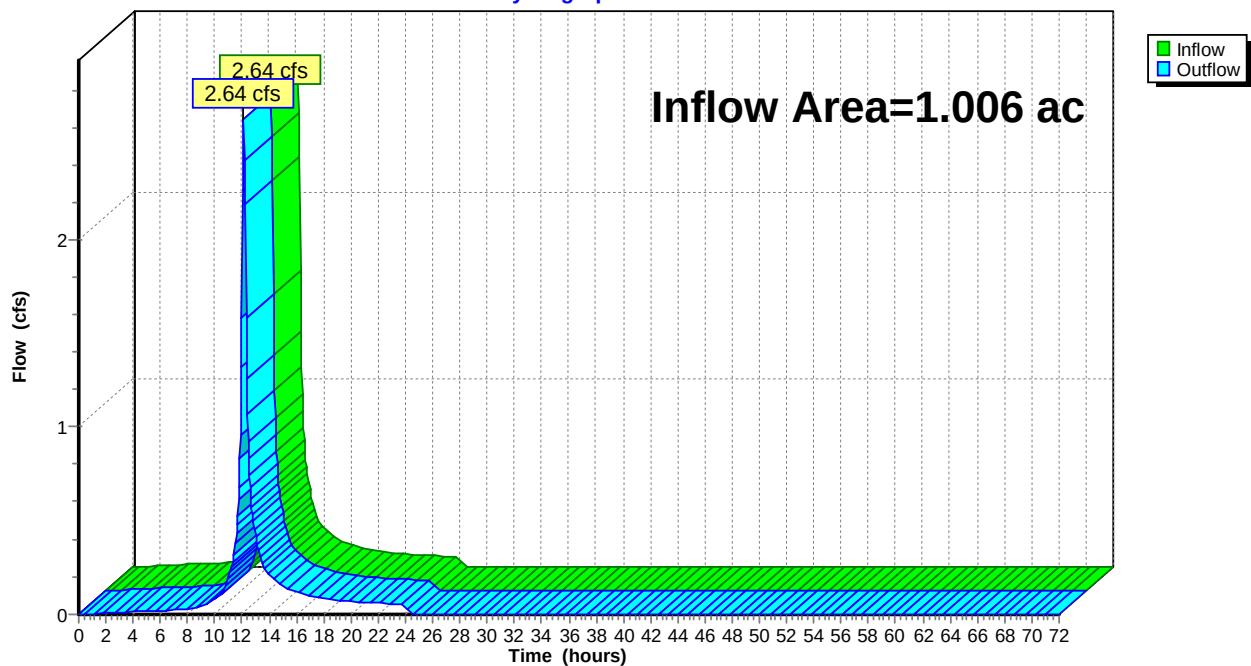
Summary for Reach 4R:

Inflow Area = 1.006 ac, 21.70% Impervious, Inflow Depth = 3.14" for 10-Year event
Inflow = 2.64 cfs @ 12.11 hrs, Volume= 0.263 af
Outflow = 2.64 cfs @ 12.11 hrs, Volume= 0.263 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 1R : TOP

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 4R:

Hydrograph



240913_40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

Prepared by Colliers Engineering & Design

Printed 9/16/2024

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Hydrograph for Reach 4R:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.01		0.01	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.01		0.01	62.00	0.00		0.00
5.00	0.02		0.02	63.00	0.00		0.00
6.00	0.02		0.02	64.00	0.00		0.00
7.00	0.02		0.02	65.00	0.00		0.00
8.00	0.03		0.03	66.00	0.00		0.00
9.00	0.04		0.04	67.00	0.00		0.00
10.00	0.08		0.08	68.00	0.00		0.00
11.00	0.19		0.19	69.00	0.00		0.00
12.00	1.59		1.59	70.00	0.00		0.00
13.00	0.43		0.43	71.00	0.00		0.00
14.00	0.21		0.21	72.00	0.00		0.00
15.00	0.15		0.15				
16.00	0.12		0.12				
17.00	0.10		0.10				
18.00	0.08		0.08				
19.00	0.07		0.07				
20.00	0.07		0.07				
21.00	0.06		0.06				
22.00	0.06		0.06				
23.00	0.06		0.06				
24.00	0.05		0.05				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

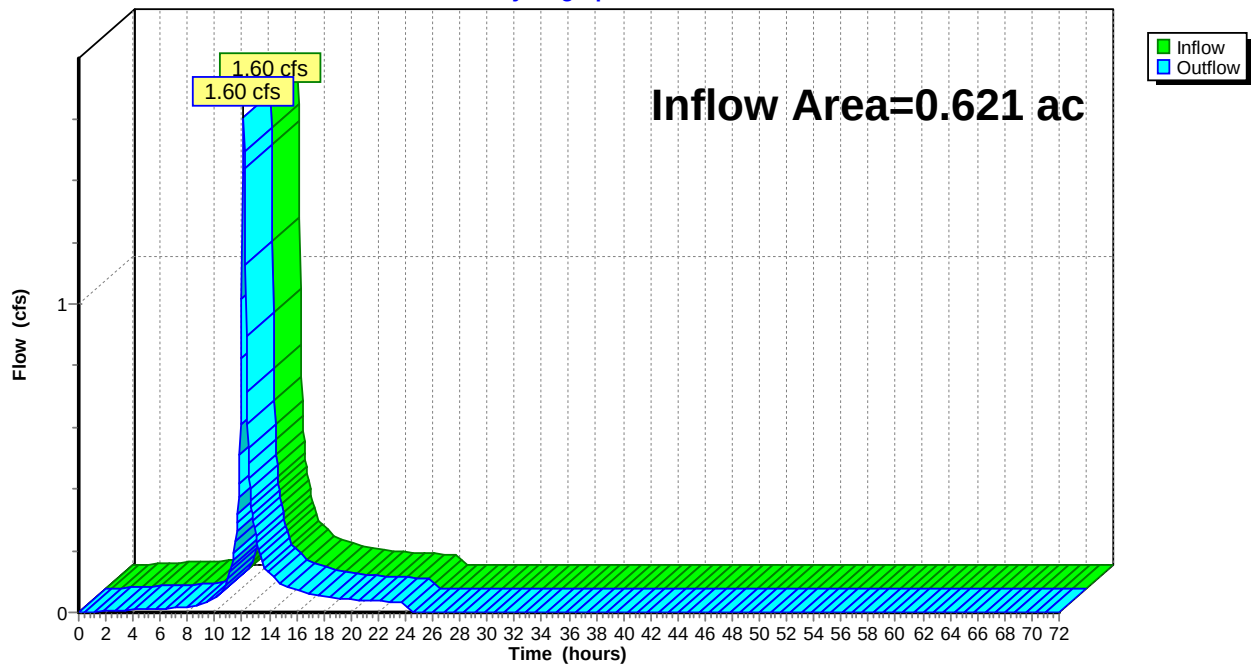
Summary for Reach 8R: (new Reach)

Inflow Area = 0.621 ac, 20.91% Impervious, Inflow Depth = 3.05" for 10-Year event
Inflow = 1.60 cfs @ 12.11 hrs, Volume= 0.158 af
Outflow = 1.60 cfs @ 12.11 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 12P : Subsurface Infiltration Basin

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 8R: (new Reach)

Hydrograph



Hydrograph for Reach 8R: (new Reach)

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.00		0.00	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.01		0.01	62.00	0.00		0.00
5.00	0.01		0.01	63.00	0.00		0.00
6.00	0.01		0.01	64.00	0.00		0.00
7.00	0.01		0.01	65.00	0.00		0.00
8.00	0.02		0.02	66.00	0.00		0.00
9.00	0.02		0.02	67.00	0.00		0.00
10.00	0.05		0.05	68.00	0.00		0.00
11.00	0.11		0.11	69.00	0.00		0.00
12.00	1.01		1.01	70.00	0.00		0.00
13.00	0.25		0.25	71.00	0.00		0.00
14.00	0.13		0.13	72.00	0.00		0.00
15.00	0.09		0.09				
16.00	0.07		0.07				
17.00	0.06		0.06				
18.00	0.05		0.05				
19.00	0.05		0.05				
20.00	0.04		0.04				
21.00	0.04		0.04				
22.00	0.04		0.04				
23.00	0.03		0.03				
24.00	0.03		0.03				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Reach DP1: TOP

Inflow Area = 0.718 ac, 9.34% Impervious, Inflow Depth = 2.23" for 10-Year event
 Inflow = 1.37 cfs @ 12.18 hrs, Volume= 0.133 af
 Outflow = 1.36 cfs @ 12.18 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.2 min
 Routed to Reach DP2 : CHANNEL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Max. Velocity= 8.96 fps, Min. Travel Time= 0.2 min

Avg. Velocity= 3.19 fps, Avg. Travel Time= 0.5 min

Peak Storage= 15 cf @ 12.18 hrs

Average Depth at Peak Storage= 0.15', Surface Width= 1.54'

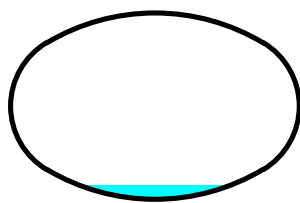
Bank-Full Depth= 1.83' Flow Area= 4.1 sf, Capacity= 118.41 cfs

34.0" W x 22.0" H, R=24.9" Elliptical Pipe

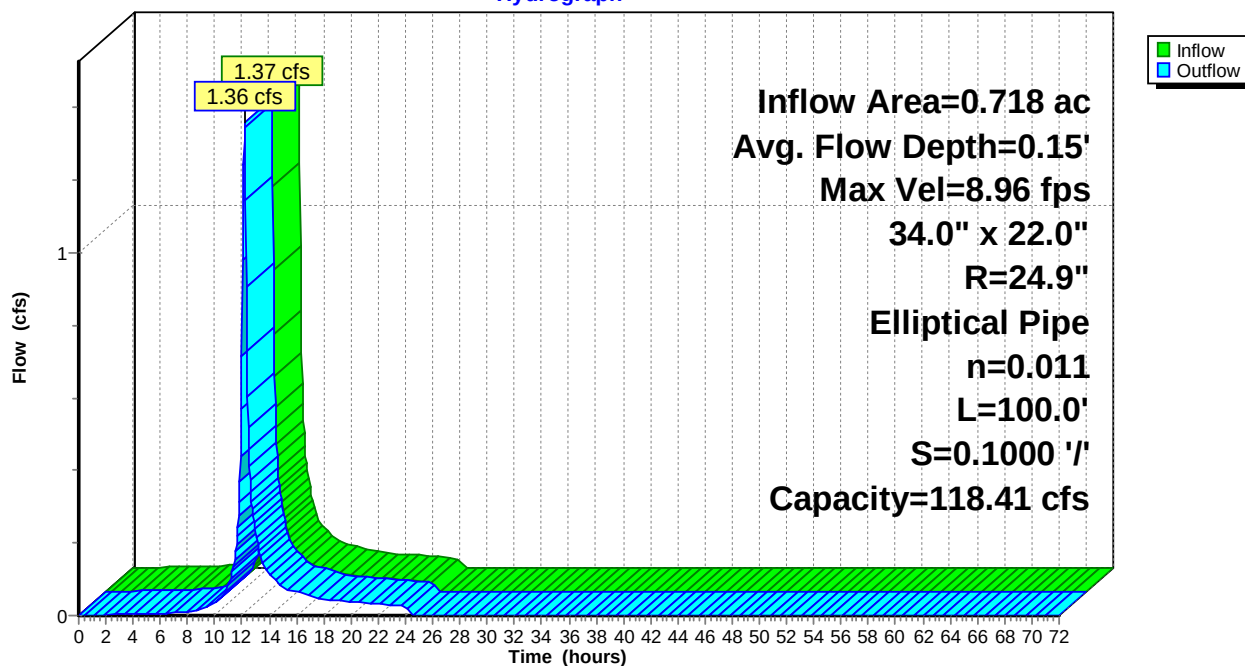
n= 0.011 Concrete pipe, straight & clean

Length= 100.0' Slope= 0.1000 '/'

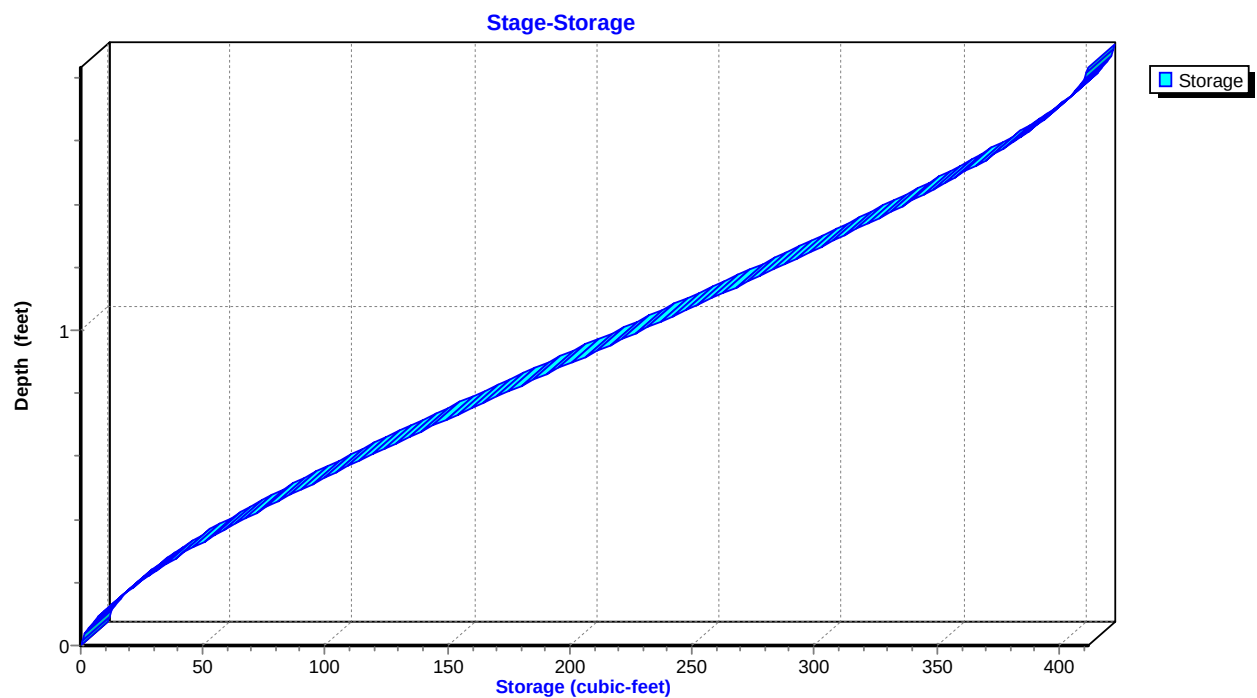
Inlet Invert= 0.00', Outlet Invert= -10.00'

**Reach DP1: TOP**

Hydrograph



Reach DP1: TOP



Hydrograph for Reach DP1: TOP

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	0.00	0.00
2.50	0.00	0	0.00	0.00
5.00	0.00	0	0.01	0.00
7.50	0.01	0	0.01	0.01
10.00	0.03	1	0.02	0.03
12.50	0.45	7	0.09	0.46
15.00	0.08	2	0.04	0.08
17.50	0.05	1	0.03	0.05
20.00	0.04	1	0.03	0.04
22.50	0.03	1	0.02	0.03
25.00	0.00	0	0.00	0.00
27.50	0.00	0	0.00	0.00
30.00	0.00	0	0.00	0.00
32.50	0.00	0	0.00	0.00
35.00	0.00	0	0.00	0.00
37.50	0.00	0	0.00	0.00
40.00	0.00	0	0.00	0.00
42.50	0.00	0	0.00	0.00
45.00	0.00	0	0.00	0.00
47.50	0.00	0	0.00	0.00
50.00	0.00	0	0.00	0.00
52.50	0.00	0	0.00	0.00
55.00	0.00	0	0.00	0.00
57.50	0.00	0	0.00	0.00
60.00	0.00	0	0.00	0.00
62.50	0.00	0	0.00	0.00
65.00	0.00	0	0.00	0.00
67.50	0.00	0	0.00	0.00
70.00	0.00	0	0.00	0.00

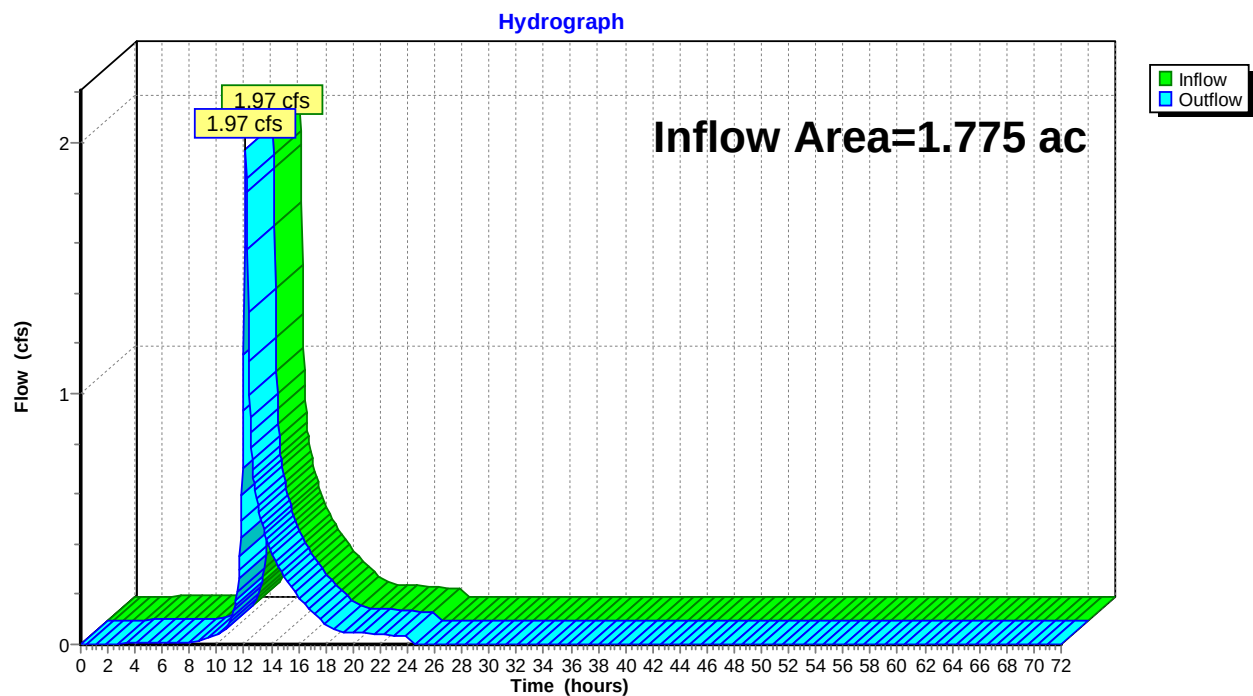
Stage-Area-Storage for Reach DP1: TOP

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
0.00	0.0	0	1.16	2.7	274
0.02	0.0	1	1.18	2.8	280
0.04	0.0	2	1.20	2.9	285
0.06	0.0	4	1.22	2.9	291
0.08	0.1	6	1.24	3.0	296
0.10	0.1	9	1.26	3.0	301
0.12	0.1	11	1.28	3.1	307
0.14	0.1	14	1.30	3.1	312
0.16	0.2	17	1.32	3.2	317
0.18	0.2	20	1.34	3.2	322
0.20	0.2	24	1.36	3.3	327
0.22	0.3	28	1.38	3.3	332
0.24	0.3	31	1.40	3.4	337
0.26	0.4	35	1.42	3.4	342
0.28	0.4	39	1.44	3.5	347
0.30	0.4	44	1.46	3.5	352
0.32	0.5	48	1.48	3.6	356
0.34	0.5	52	1.50	3.6	361
0.36	0.6	57	1.52	3.7	365
0.38	0.6	62	1.54	3.7	370
0.40	0.7	67	1.56	3.7	374
0.42	0.7	71	1.58	3.8	378
0.44	0.8	76	1.60	3.8	382
0.46	0.8	81	1.62	3.9	386
0.48	0.9	86	1.64	3.9	389
0.50	0.9	91	1.66	3.9	393
0.52	1.0	97	1.68	4.0	396
0.54	1.0	102	1.70	4.0	399
0.56	1.1	107	1.72	4.0	402
0.58	1.1	112	1.74	4.0	404
0.60	1.2	118	1.76	4.1	407
0.62	1.2	123	1.78	4.1	409
0.64	1.3	129	1.80	4.1	410
0.66	1.3	134	1.82	4.1	411
0.68	1.4	140			
0.70	1.5	145			
0.72	1.5	151			
0.74	1.6	156			
0.76	1.6	162			
0.78	1.7	167			
0.80	1.7	173			
0.82	1.8	179			
0.84	1.8	184			
0.86	1.9	190			
0.88	2.0	196			
0.90	2.0	201			
0.92	2.1	207			
0.94	2.1	213			
0.96	2.2	218			
0.98	2.2	224			
1.00	2.3	230			
1.02	2.4	235			
1.04	2.4	241			
1.06	2.5	246			
1.08	2.5	252			
1.10	2.6	258			
1.12	2.6	263			
1.14	2.7	269			

Summary for Reach DP2: CHANNEL

Inflow Area = 1.775 ac, 25.99% Impervious, Inflow Depth = 1.69" for 10-Year event
Inflow = 1.97 cfs @ 12.12 hrs, Volume= 0.250 af
Outflow = 1.97 cfs @ 12.12 hrs, Volume= 0.250 af, Atten= 0%, Lag= 0.0 min
Routed to Reach DP3 : TOTAL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach DP2: CHANNEL

Hydrograph for Reach DP2: CHANNEL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.00		0.00	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.01		0.01	64.00	0.00		0.00
7.00	0.01		0.01	65.00	0.00		0.00
8.00	0.01		0.01	66.00	0.00		0.00
9.00	0.02		0.02	67.00	0.00		0.00
10.00	0.04		0.04	68.00	0.00		0.00
11.00	0.10		0.10	69.00	0.00		0.00
12.00	1.15		1.15	70.00	0.00		0.00
13.00	0.56		0.56	71.00	0.00		0.00
14.00	0.37		0.37	72.00	0.00		0.00
15.00	0.26		0.26				
16.00	0.19		0.19				
17.00	0.13		0.13				
18.00	0.08		0.08				
19.00	0.05		0.05				
20.00	0.05		0.05				
21.00	0.04		0.04				
22.00	0.04		0.04				
23.00	0.04		0.04				
24.00	0.03		0.03				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

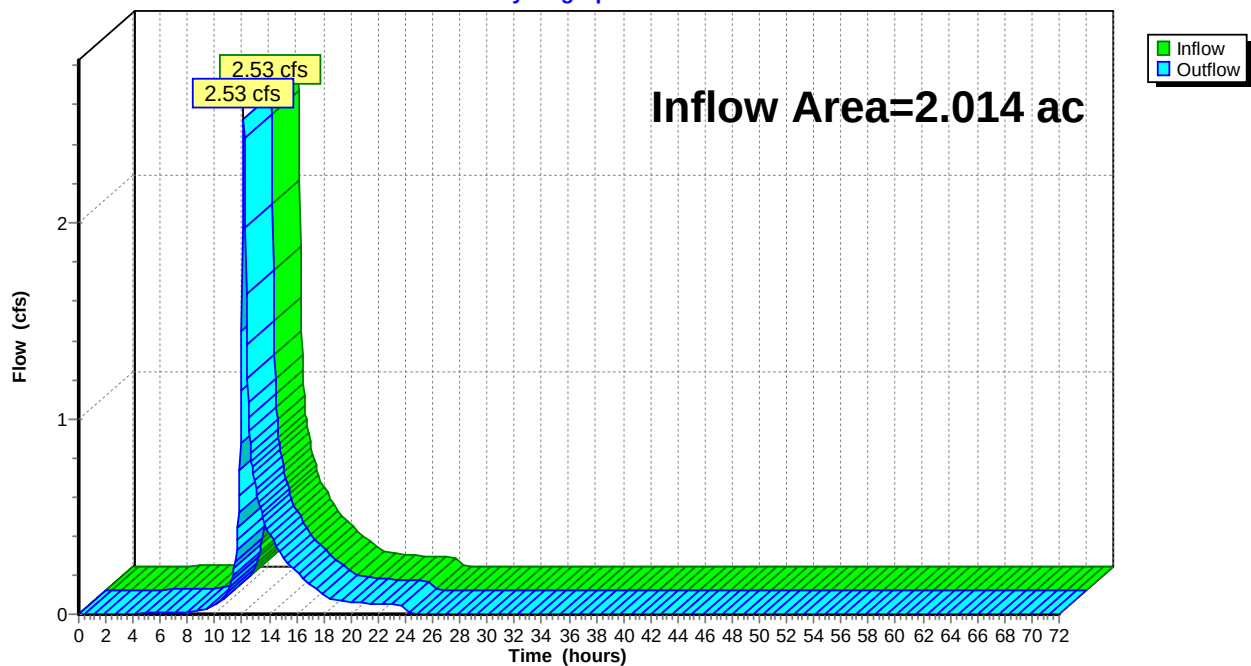
Summary for Reach DP3: TOTAL

Inflow Area = 2.014 ac, 22.91% Impervious, Inflow Depth = 1.79" for 10-Year event
Inflow = 2.53 cfs @ 12.13 hrs, Volume= 0.300 af
Outflow = 2.53 cfs @ 12.13 hrs, Volume= 0.300 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach DP3: TOTAL

Hydrograph



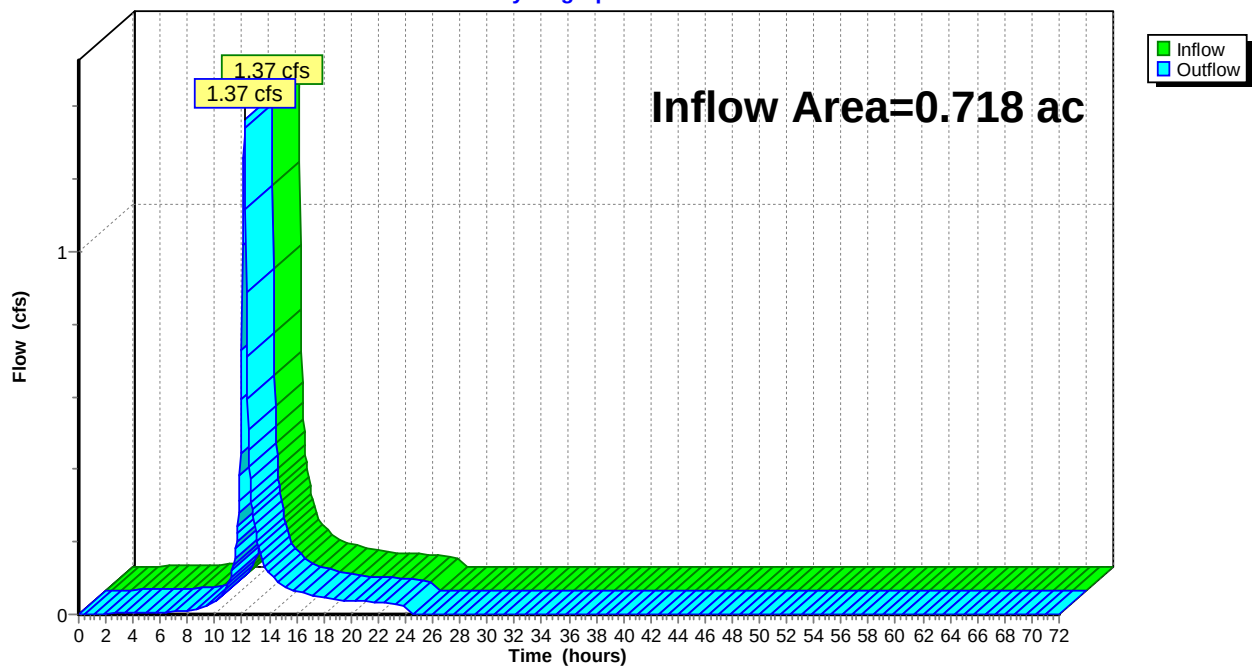
Hydrograph for Reach DP3: TOTAL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.00		0.00	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.01		0.01	64.00	0.00		0.00
7.00	0.01		0.01	65.00	0.00		0.00
8.00	0.01		0.01	66.00	0.00		0.00
9.00	0.02		0.02	67.00	0.00		0.00
10.00	0.05		0.05	68.00	0.00		0.00
11.00	0.13		0.13	69.00	0.00		0.00
12.00	1.45		1.45	70.00	0.00		0.00
13.00	0.65		0.65	71.00	0.00		0.00
14.00	0.42		0.42	72.00	0.00		0.00
15.00	0.30		0.30				
16.00	0.22		0.22				
17.00	0.15		0.15				
18.00	0.10		0.10				
19.00	0.07		0.07				
20.00	0.06		0.06				
21.00	0.06		0.06				
22.00	0.05		0.05				
23.00	0.05		0.05				
24.00	0.04		0.04				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Reach EX 1:

Inflow Area = 0.718 ac, 9.34% Impervious, Inflow Depth = 2.23" for 10-Year event
Inflow = 1.37 cfs @ 12.18 hrs, Volume= 0.133 af
Outflow = 1.37 cfs @ 12.18 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 10P : (new Pond)

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach EX 1:**Hydrograph**

Hydrograph for Reach EX 1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.00		0.00	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.01		0.01	64.00	0.00		0.00
7.00	0.01		0.01	65.00	0.00		0.00
8.00	0.01		0.01	66.00	0.00		0.00
9.00	0.01		0.01	67.00	0.00		0.00
10.00	0.03		0.03	68.00	0.00		0.00
11.00	0.08		0.08	69.00	0.00		0.00
12.00	0.73		0.73	70.00	0.00		0.00
13.00	0.23		0.23	71.00	0.00		0.00
14.00	0.11		0.11	72.00	0.00		0.00
15.00	0.08		0.08				
16.00	0.06		0.06				
17.00	0.05		0.05				
18.00	0.04		0.04				
19.00	0.04		0.04				
20.00	0.04		0.04				
21.00	0.04		0.04				
22.00	0.03		0.03				
23.00	0.03		0.03				
24.00	0.03		0.03				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Pond 2P: Pervious Pavers

Inflow Area = 0.152 ac, 0.00% Impervious, Inflow Depth = 3.98" for 10-Year event
 Inflow = 0.65 cfs @ 12.13 hrs, Volume= 0.050 af
 Outflow = 0.08 cfs @ 12.91 hrs, Volume= 0.050 af, Atten= 88%, Lag= 47.0 min
 Discarded = 0.08 cfs @ 12.91 hrs, Volume= 0.050 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 624.68' @ 12.91 hrs Surf.Area= 0.151 ac Storage= 0.016 af

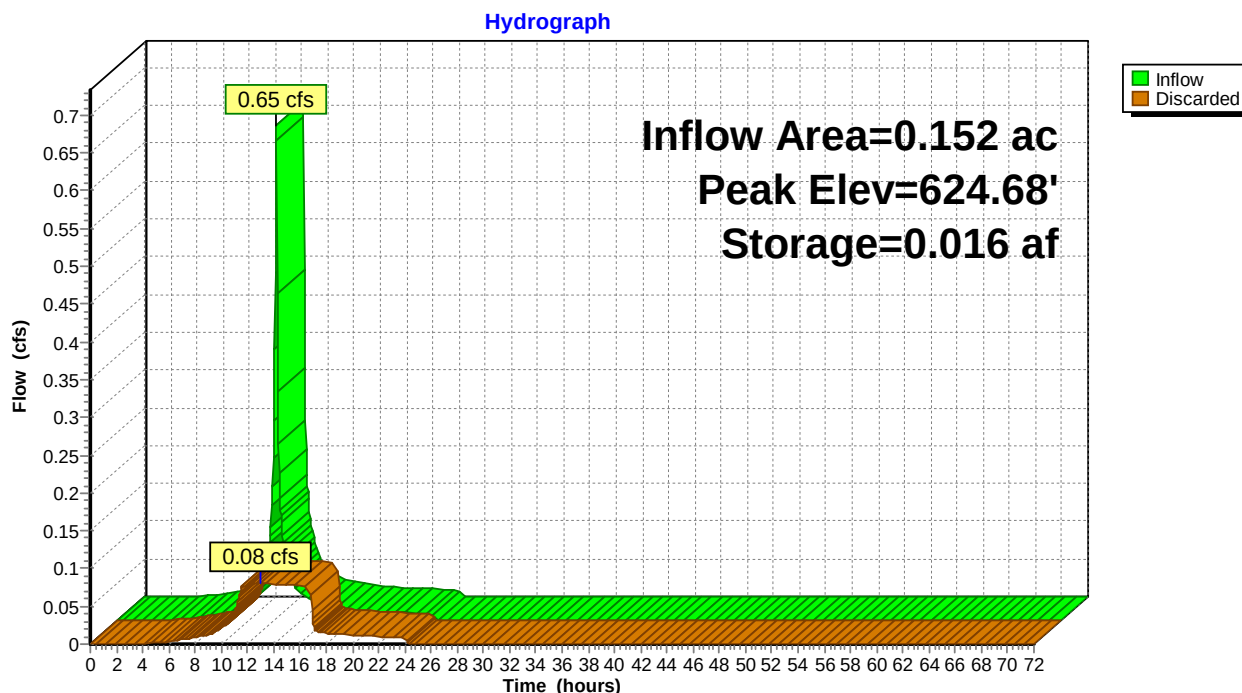
Plug-Flow detention time= 59.9 min calculated for 0.050 af (100% of inflow)
 Center-of-Mass det. time= 59.9 min (858.6 - 798.7)

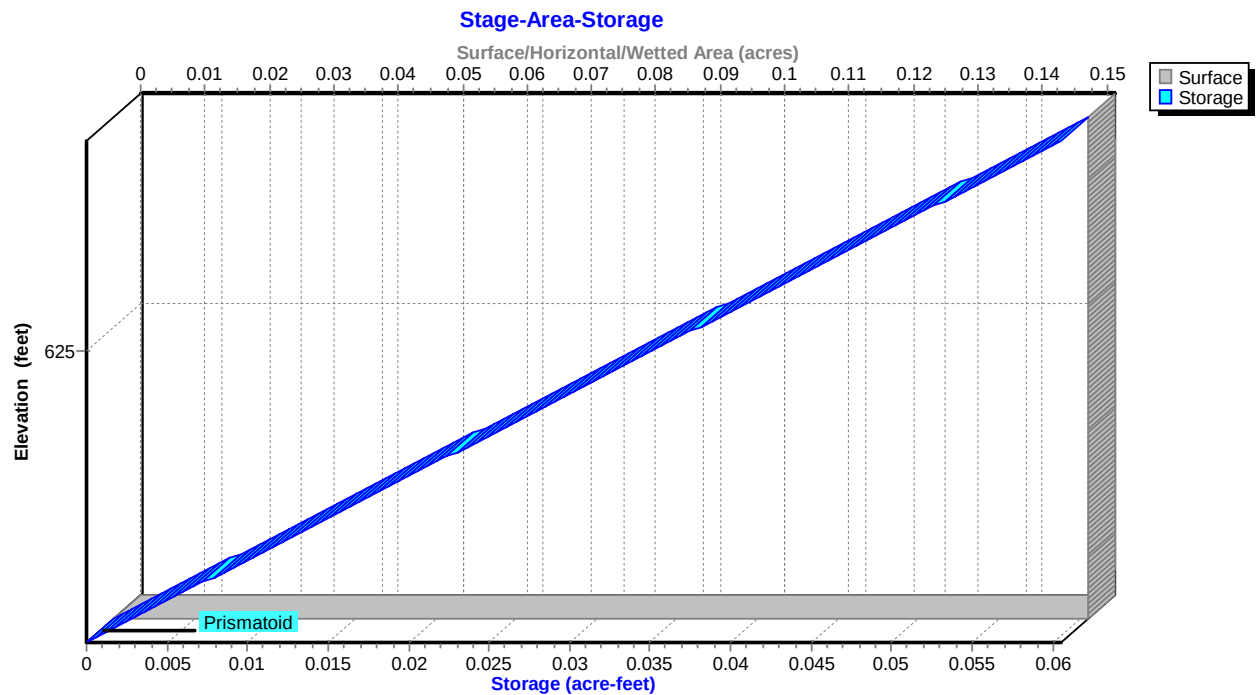
Volume	Invert	Avail.Storage	Storage Description
#1	624.42'	0.061 af	65.91'W x 100.00'L x 1.00'H Prismatic 0.151 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	624.42'	0.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 619.00'

Discarded OutFlow Max=0.08 cfs @ 12.91 hrs HW=624.68' (Free Discharge)

↑**1=Exfiltration** (Controls 0.08 cfs)

Pond 2P: Pervious Pavers

Pond 2P: Pervious Pavers

Hydrograph for Pond 2P: Pervious Pavers

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0.000	624.42	0.00
2.50	0.00	0.000	624.42	0.00
5.00	0.00	0.000	624.42	0.00
7.50	0.01	0.000	624.42	0.01
10.00	0.02	0.000	624.42	0.02
12.50	0.14	0.015	624.67	0.08
15.00	0.03	0.009	624.57	0.08
17.50	0.02	0.000	624.42	0.02
20.00	0.01	0.000	624.42	0.01
22.50	0.01	0.000	624.42	0.01
25.00	0.00	0.000	624.42	0.00
27.50	0.00	0.000	624.42	0.00
30.00	0.00	0.000	624.42	0.00
32.50	0.00	0.000	624.42	0.00
35.00	0.00	0.000	624.42	0.00
37.50	0.00	0.000	624.42	0.00
40.00	0.00	0.000	624.42	0.00
42.50	0.00	0.000	624.42	0.00
45.00	0.00	0.000	624.42	0.00
47.50	0.00	0.000	624.42	0.00
50.00	0.00	0.000	624.42	0.00
52.50	0.00	0.000	624.42	0.00
55.00	0.00	0.000	624.42	0.00
57.50	0.00	0.000	624.42	0.00
60.00	0.00	0.000	624.42	0.00
62.50	0.00	0.000	624.42	0.00
65.00	0.00	0.000	624.42	0.00
67.50	0.00	0.000	624.42	0.00
70.00	0.00	0.000	624.42	0.00

240913 40 ERW Waymaker Proposed

NOAA 24-hr D 10-Year Rainfall=5.22"

Prepared by Colliers Engineering & Design

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Stage-Area-Storage for Pond 2P: Pervious Pavers

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
624.42	0.151	0.000	625.00	0.151	0.035
624.43	0.151	0.001	625.01	0.151	0.036
624.44	0.151	0.001	625.02	0.151	0.036
624.45	0.151	0.002	625.03	0.151	0.037
624.46	0.151	0.002	625.04	0.151	0.038
624.47	0.151	0.003	625.05	0.151	0.038
624.48	0.151	0.004	625.06	0.151	0.039
624.49	0.151	0.004	625.07	0.151	0.039
624.50	0.151	0.005	625.08	0.151	0.040
624.51	0.151	0.005	625.09	0.151	0.041
624.52	0.151	0.006	625.10	0.151	0.041
624.53	0.151	0.007	625.11	0.151	0.042
624.54	0.151	0.007	625.12	0.151	0.042
624.55	0.151	0.008	625.13	0.151	0.043
624.56	0.151	0.008	625.14	0.151	0.044
624.57	0.151	0.009	625.15	0.151	0.044
624.58	0.151	0.010	625.16	0.151	0.045
624.59	0.151	0.010	625.17	0.151	0.045
624.60	0.151	0.011	625.18	0.151	0.046
624.61	0.151	0.011	625.19	0.151	0.047
624.62	0.151	0.012	625.20	0.151	0.047
624.63	0.151	0.013	625.21	0.151	0.048
624.64	0.151	0.013	625.22	0.151	0.048
624.65	0.151	0.014	625.23	0.151	0.049
624.66	0.151	0.015	625.24	0.151	0.050
624.67	0.151	0.015	625.25	0.151	0.050
624.68	0.151	0.016	625.26	0.151	0.051
624.69	0.151	0.016	625.27	0.151	0.051
624.70	0.151	0.017	625.28	0.151	0.052
624.71	0.151	0.018	625.29	0.151	0.053
624.72	0.151	0.018	625.30	0.151	0.053
624.73	0.151	0.019	625.31	0.151	0.054
624.74	0.151	0.019	625.32	0.151	0.054
624.75	0.151	0.020	625.33	0.151	0.055
624.76	0.151	0.021	625.34	0.151	0.056
624.77	0.151	0.021	625.35	0.151	0.056
624.78	0.151	0.022	625.36	0.151	0.057
624.79	0.151	0.022	625.37	0.151	0.057
624.80	0.151	0.023	625.38	0.151	0.058
624.81	0.151	0.024	625.39	0.151	0.059
624.82	0.151	0.024	625.40	0.151	0.059
624.83	0.151	0.025	625.41	0.151	0.060
624.84	0.151	0.025	625.42	0.151	0.061
624.85	0.151	0.026			
624.86	0.151	0.027			
624.87	0.151	0.027			
624.88	0.151	0.028			
624.89	0.151	0.028			
624.90	0.151	0.029			
624.91	0.151	0.030			
624.92	0.151	0.030			
624.93	0.151	0.031			
624.94	0.151	0.031			
624.95	0.151	0.032			
624.96	0.151	0.033			
624.97	0.151	0.033			
624.98	0.151	0.034			
624.99	0.151	0.034			

Summary for Pond 10P: (new Pond)

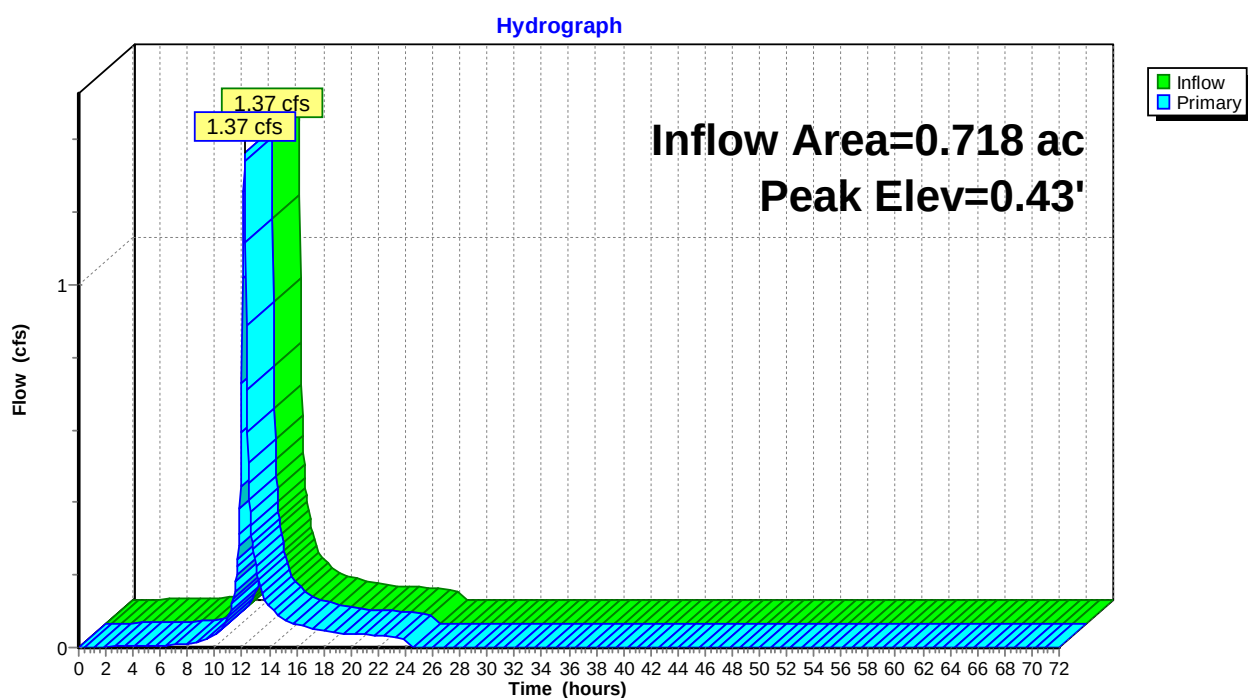
Inflow Area = 0.718 ac, 9.34% Impervious, Inflow Depth = 2.23" for 10-Year event
 Inflow = 1.37 cfs @ 12.18 hrs, Volume= 0.133 af
 Outflow = 1.37 cfs @ 12.18 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min
 Primary = 1.37 cfs @ 12.18 hrs, Volume= 0.133 af
 Routed to Reach DP1 : TOP

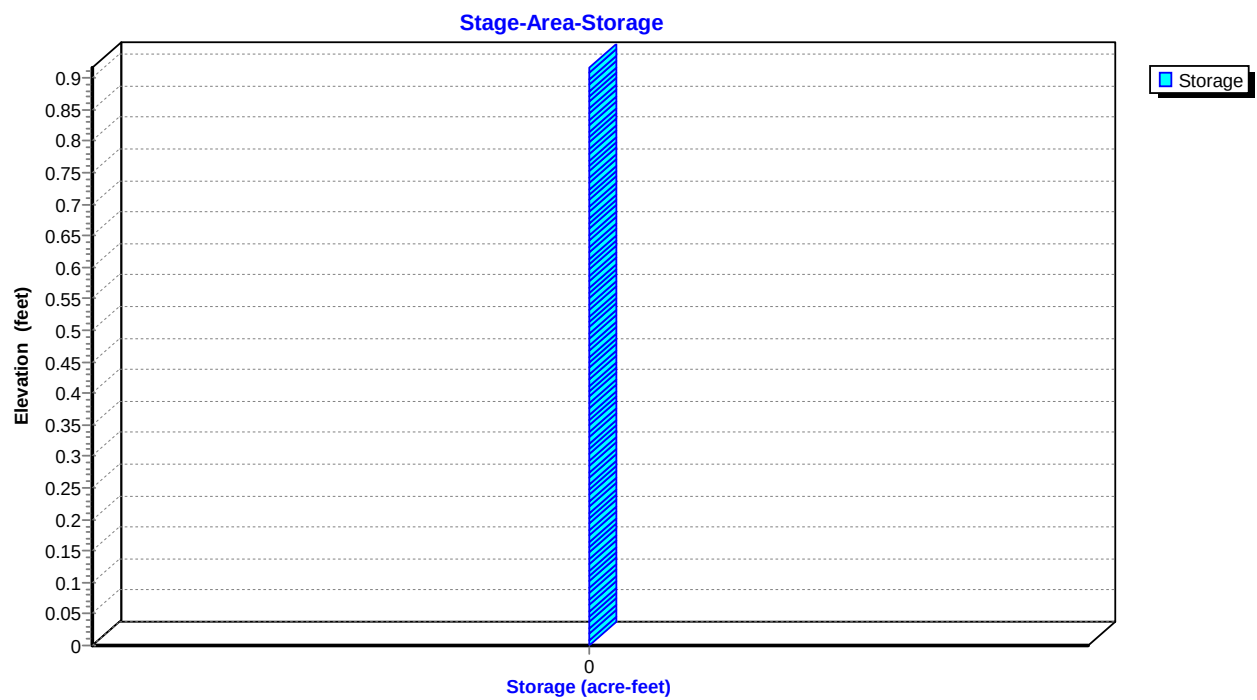
Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 0.43' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	11.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.34 cfs @ 12.18 hrs HW=0.43' (Free Discharge)
 ↳ **1=Orifice/Grate** (Orifice Controls 1.34 cfs @ 2.22 fps)

Pond 10P: (new Pond)

Pond 10P: (new Pond)

Hydrograph for Pond 10P: (new Pond)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
1.00	0.00	0.01	0.00	59.00	0.00	0.00	0.00
2.00	0.00	0.02	0.00	60.00	0.00	0.00	0.00
3.00	0.00	0.02	0.00	61.00	0.00	0.00	0.00
4.00	0.00	0.02	0.00	62.00	0.00	0.00	0.00
5.00	0.00	0.02	0.00	63.00	0.00	0.00	0.00
6.00	0.01	0.02	0.01	64.00	0.00	0.00	0.00
7.00	0.01	0.03	0.01	65.00	0.00	0.00	0.00
8.00	0.01	0.03	0.01	66.00	0.00	0.00	0.00
9.00	0.01	0.04	0.01	67.00	0.00	0.00	0.00
10.00	0.03	0.06	0.03	68.00	0.00	0.00	0.00
11.00	0.08	0.10	0.08	69.00	0.00	0.00	0.00
12.00	0.73	0.31	0.73	70.00	0.00	0.00	0.00
13.00	0.23	0.17	0.23	71.00	0.00	0.00	0.00
14.00	0.11	0.12	0.11	72.00	0.00	0.00	0.00
15.00	0.08	0.10	0.08				
16.00	0.06	0.09	0.06				
17.00	0.05	0.08	0.05				
18.00	0.04	0.07	0.04				
19.00	0.04	0.07	0.04				
20.00	0.04	0.07	0.04				
21.00	0.04	0.06	0.04				
22.00	0.03	0.06	0.03				
23.00	0.03	0.06	0.03				
24.00	0.03	0.06	0.03				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				
53.00	0.00	0.00	0.00				
54.00	0.00	0.00	0.00				
55.00	0.00	0.00	0.00				
56.00	0.00	0.00	0.00				
57.00	0.00	0.00	0.00				

Stage-Area-Storage for Pond 10P: (new Pond)

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
0.00	0.000	0.58	0.000
0.01	0.000	0.59	0.000
0.02	0.000	0.60	0.000
0.03	0.000	0.61	0.000
0.04	0.000	0.62	0.000
0.05	0.000	0.63	0.000
0.06	0.000	0.64	0.000
0.07	0.000	0.65	0.000
0.08	0.000	0.66	0.000
0.09	0.000	0.67	0.000
0.10	0.000	0.68	0.000
0.11	0.000	0.69	0.000
0.12	0.000	0.70	0.000
0.13	0.000	0.71	0.000
0.14	0.000	0.72	0.000
0.15	0.000	0.73	0.000
0.16	0.000	0.74	0.000
0.17	0.000	0.75	0.000
0.18	0.000	0.76	0.000
0.19	0.000	0.77	0.000
0.20	0.000	0.78	0.000
0.21	0.000	0.79	0.000
0.22	0.000	0.80	0.000
0.23	0.000	0.81	0.000
0.24	0.000	0.82	0.000
0.25	0.000	0.83	0.000
0.26	0.000	0.84	0.000
0.27	0.000	0.85	0.000
0.28	0.000	0.86	0.000
0.29	0.000	0.87	0.000
0.30	0.000	0.88	0.000
0.31	0.000	0.89	0.000
0.32	0.000	0.90	0.000
0.33	0.000	0.91	0.000
0.34	0.000	0.92	0.000
0.35	0.000		
0.36	0.000		
0.37	0.000		
0.38	0.000		
0.39	0.000		
0.40	0.000		
0.41	0.000		
0.42	0.000		
0.43	0.000		
0.44	0.000		
0.45	0.000		
0.46	0.000		
0.47	0.000		
0.48	0.000		
0.49	0.000		
0.50	0.000		
0.51	0.000		
0.52	0.000		
0.53	0.000		
0.54	0.000		
0.55	0.000		
0.56	0.000		
0.57	0.000		

Summary for Pond 11P: Existing Drywell System

Inflow Area = 0.919 ac, 42.91% Impervious, Inflow Depth = 1.80" for 10-Year event
 Inflow = 1.15 cfs @ 12.07 hrs, Volume= 0.138 af
 Outflow = 0.33 cfs @ 12.49 hrs, Volume= 0.138 af, Atten= 71%, Lag= 25.3 min
 Discarded = 0.04 cfs @ 12.49 hrs, Volume= 0.051 af
 Primary = 0.29 cfs @ 12.49 hrs, Volume= 0.087 af
 Routed to Reach DP2 : CHANNEL

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 609.66' @ 12.49 hrs Surf.Area= 0.020 ac Storage= 0.031 af

Plug-Flow detention time= 93.6 min calculated for 0.137 af (100% of inflow)
 Center-of-Mass det. time= 93.7 min (886.3 - 792.6)

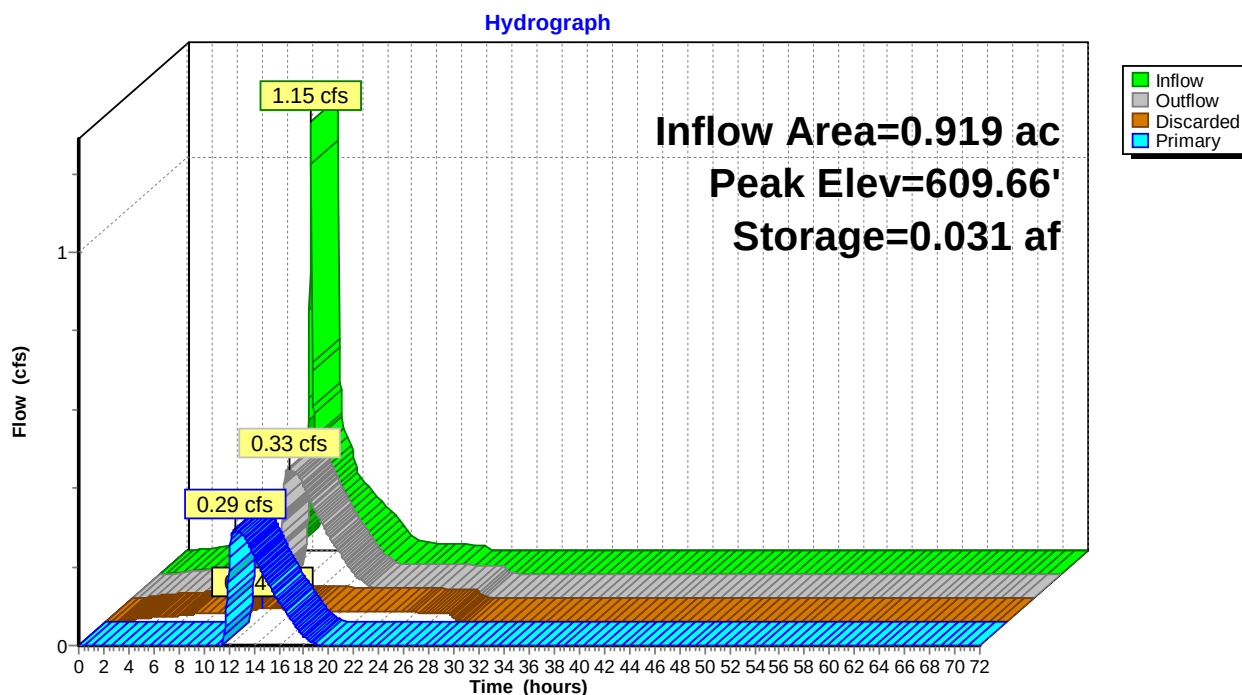
Volume	Invert	Avail.Storage	Storage Description
#1	606.75'	0.050 af	19.00'W x 46.00'L x 8.00'H Prismatic 0.161 af Overall - 0.037 af Embedded = 0.124 af x 40.0% Voids
#2	607.75'	0.037 af	6.00'D x 5.66'H Vertical Cone/Cylinder x 10 Inside #1
		0.086 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	606.75'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 603.00'
#2	Primary	608.00'	15.0" Round Culvert L= 16.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 608.00' / 607.75' S= 0.0156 '/ Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#3	Device 2	608.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	611.25'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 2	613.25'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

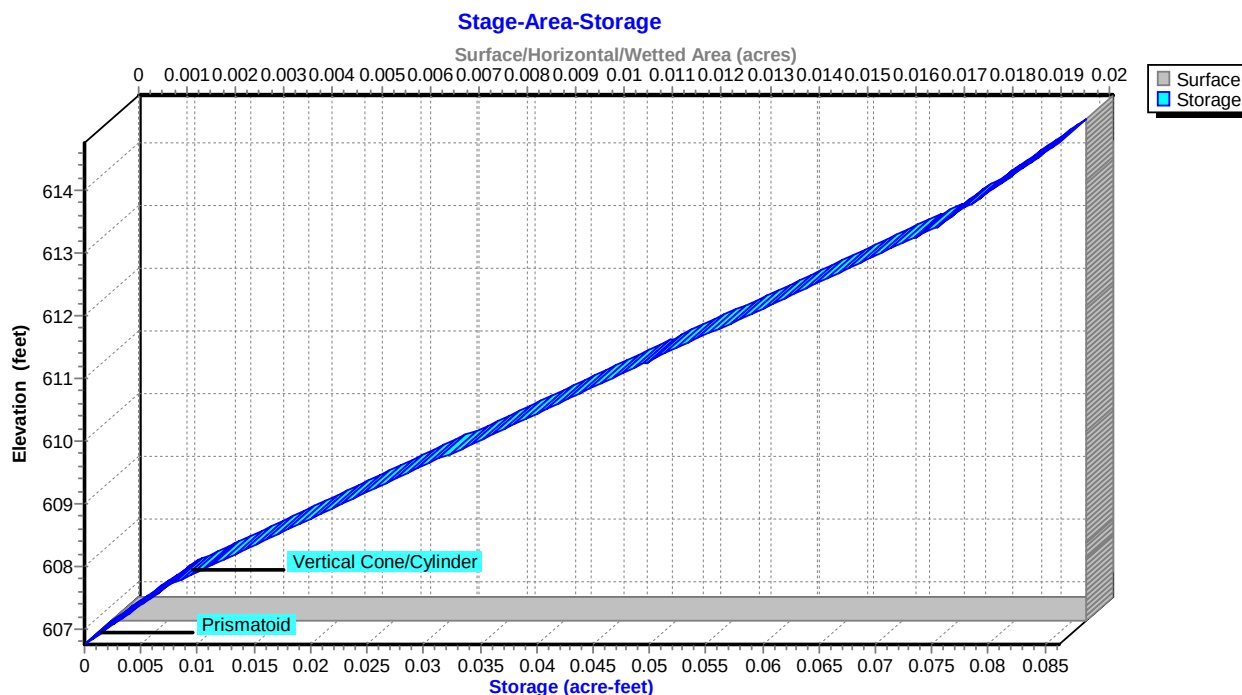
Discarded OutFlow Max=0.04 cfs @ 12.49 hrs HW=609.66' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=0.29 cfs @ 12.49 hrs HW=609.66' (Free Discharge)
 ↑ **2=Culvert** (Passes 0.29 cfs of 4.74 cfs potential flow)
 ↑ **3=Orifice/Grate** (Orifice Controls 0.29 cfs @ 5.96 fps)
 ↑ **4=Orifice/Grate** (Controls 0.00 cfs)
 ↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 11P: Existing Drywell System



Pond 11P: Existing Drywell System



Hydrograph for Pond 11P: Existing Drywell System

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	606.75	0.00	0.00	0.00
2.50	0.01	0.000	606.78	0.01	0.01	0.00
5.00	0.01	0.000	606.80	0.01	0.01	0.00
7.50	0.02	0.001	606.84	0.02	0.02	0.00
10.00	0.05	0.003	607.13	0.02	0.02	0.00
12.50	0.33	0.031	609.66	0.33	0.04	0.29
15.00	0.14	0.018	608.62	0.20	0.03	0.17
17.50	0.06	0.013	608.15	0.07	0.03	0.04
20.00	0.02	0.011	607.97	0.03	0.03	0.00
22.50	0.01	0.009	607.80	0.03	0.03	0.00
25.00	0.00	0.005	607.40	0.02	0.02	0.00
27.50	0.00	0.001	606.83	0.02	0.02	0.00
30.00	0.00	0.000	606.75	0.00	0.00	0.00
32.50	0.00	0.000	606.75	0.00	0.00	0.00
35.00	0.00	0.000	606.75	0.00	0.00	0.00
37.50	0.00	0.000	606.75	0.00	0.00	0.00
40.00	0.00	0.000	606.75	0.00	0.00	0.00
42.50	0.00	0.000	606.75	0.00	0.00	0.00
45.00	0.00	0.000	606.75	0.00	0.00	0.00
47.50	0.00	0.000	606.75	0.00	0.00	0.00
50.00	0.00	0.000	606.75	0.00	0.00	0.00
52.50	0.00	0.000	606.75	0.00	0.00	0.00
55.00	0.00	0.000	606.75	0.00	0.00	0.00
57.50	0.00	0.000	606.75	0.00	0.00	0.00
60.00	0.00	0.000	606.75	0.00	0.00	0.00
62.50	0.00	0.000	606.75	0.00	0.00	0.00
65.00	0.00	0.000	606.75	0.00	0.00	0.00
67.50	0.00	0.000	606.75	0.00	0.00	0.00
70.00	0.00	0.000	606.75	0.00	0.00	0.00

Stage-Area-Storage for Pond 11P: Existing Drywell System

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
606.75	0.020	0.000	612.55	0.020	0.065
606.85	0.020	0.001	612.65	0.020	0.066
606.95	0.020	0.002	612.75	0.020	0.068
607.05	0.020	0.002	612.85	0.020	0.069
607.15	0.020	0.003	612.95	0.020	0.070
607.25	0.020	0.004	613.05	0.020	0.071
607.35	0.020	0.005	613.15	0.020	0.072
607.45	0.020	0.006	613.25	0.020	0.074
607.55	0.020	0.006	613.35	0.020	0.075
607.65	0.020	0.007	613.45	0.020	0.076
607.75	0.020	0.008	613.55	0.020	0.077
607.85	0.020	0.009	613.65	0.020	0.077
607.95	0.020	0.010	613.75	0.020	0.078
608.05	0.020	0.012	613.85	0.020	0.079
608.15	0.020	0.013	613.95	0.020	0.080
608.25	0.020	0.014	614.05	0.020	0.081
608.35	0.020	0.015	614.15	0.020	0.081
608.45	0.020	0.016	614.25	0.020	0.082
608.55	0.020	0.018	614.35	0.020	0.083
608.65	0.020	0.019	614.45	0.020	0.084
608.75	0.020	0.020	614.55	0.020	0.085
608.85	0.020	0.021	614.65	0.020	0.085
608.95	0.020	0.022	614.75	0.020	0.086
609.05	0.020	0.024			
609.15	0.020	0.025			
609.25	0.020	0.026			
609.35	0.020	0.027			
609.45	0.020	0.028			
609.55	0.020	0.029			
609.65	0.020	0.031			
609.75	0.020	0.032			
609.85	0.020	0.033			
609.95	0.020	0.034			
610.05	0.020	0.035			
610.15	0.020	0.037			
610.25	0.020	0.038			
610.35	0.020	0.039			
610.45	0.020	0.040			
610.55	0.020	0.041			
610.65	0.020	0.043			
610.75	0.020	0.044			
610.85	0.020	0.045			
610.95	0.020	0.046			
611.05	0.020	0.047			
611.15	0.020	0.049			
611.25	0.020	0.050			
611.35	0.020	0.051			
611.45	0.020	0.052			
611.55	0.020	0.053			
611.65	0.020	0.055			
611.75	0.020	0.056			
611.85	0.020	0.057			
611.95	0.020	0.058			
612.05	0.020	0.059			
612.15	0.020	0.060			
612.25	0.020	0.062			
612.35	0.020	0.063			
612.45	0.020	0.064			

Summary for Pond 12P: Subsurface Infiltration Basin

Inflow Area = 0.687 ac, 28.51% Impervious, Inflow Depth = 3.24" for 10-Year event
 Inflow = 1.93 cfs @ 12.09 hrs, Volume= 0.185 af
 Outflow = 0.28 cfs @ 13.01 hrs, Volume= 0.185 af, Atten= 85%, Lag= 54.9 min
 Discarded = 0.11 cfs @ 13.01 hrs, Volume= 0.137 af
 Primary = 0.18 cfs @ 13.01 hrs, Volume= 0.048 af
 Routed to Pond 11P : Existing Drywell System

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 623.31' @ 13.01 hrs Surf.Area= 0.061 ac Storage= 0.076 af

Plug-Flow detention time= 196.3 min calculated for 0.185 af (100% of inflow)
 Center-of-Mass det. time= 196.2 min (999.1 - 802.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	621.50'	0.056 af	39.50'W x 67.70'L x 3.50'H Field A 0.215 af Overall - 0.076 af Embedded = 0.139 af x 40.0% Voids
#2A	622.00'	0.076 af	ADS StormTech SC-740 +Cap x 72 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 72 Chambers in 8 Rows
0.132 af			Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	621.50'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 619.00'
#2	Primary	619.43'	12.0" Round Culvert L= 42.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 619.43' / 613.00' S= 0.1531 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	622.50'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	623.25'	10.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 2	624.50'	0.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Discarded OutFlow Max=0.11 cfs @ 13.01 hrs HW=623.31' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.11 cfs)

Primary OutFlow Max=0.18 cfs @ 13.01 hrs HW=623.31' (Free Discharge)

↑ **2=Culvert** (Passes 0.18 cfs of 6.13 cfs potential flow)

↑ **3=Orifice/Grate** (Orifice Controls 0.14 cfs @ 4.04 fps)

↑ **4=Orifice/Grate** (Orifice Controls 0.04 cfs @ 0.77 fps)

↑ **5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 12P: Subsurface Infiltration Basin - Chamber Wizard Field A**Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)**

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

9 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 65.70' Row Length +12.0" End Stone x 2 = 67.70' Base Length

8 Rows x 51.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 39.50' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

72 Chambers x 45.9 cf = 3,307.7 cf Chamber Storage

9,359.1 cf Field - 3,307.7 cf Chambers = 6,051.4 cf Stone x 40.0% Voids = 2,420.6 cf Stone Storage

Chamber Storage + Stone Storage = 5,728.2 cf = 0.132 af

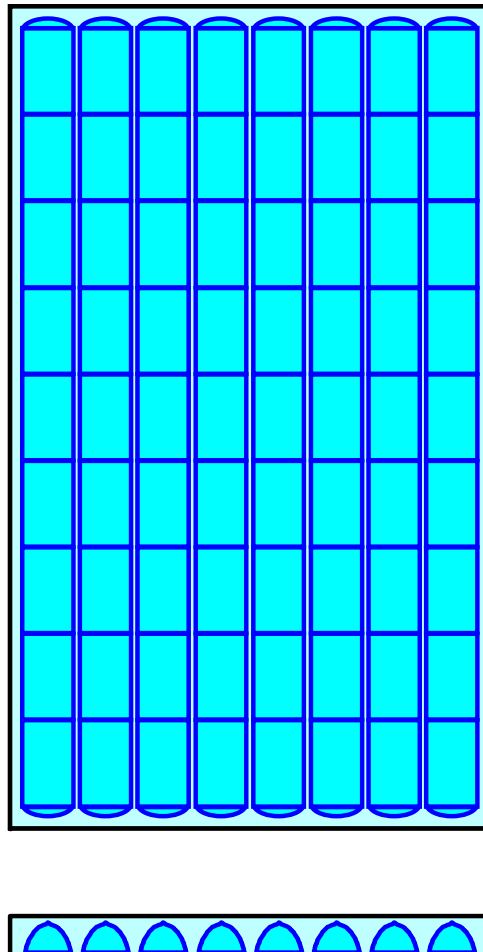
Overall Storage Efficiency = 61.2%

Overall System Size = 67.70' x 39.50' x 3.50'

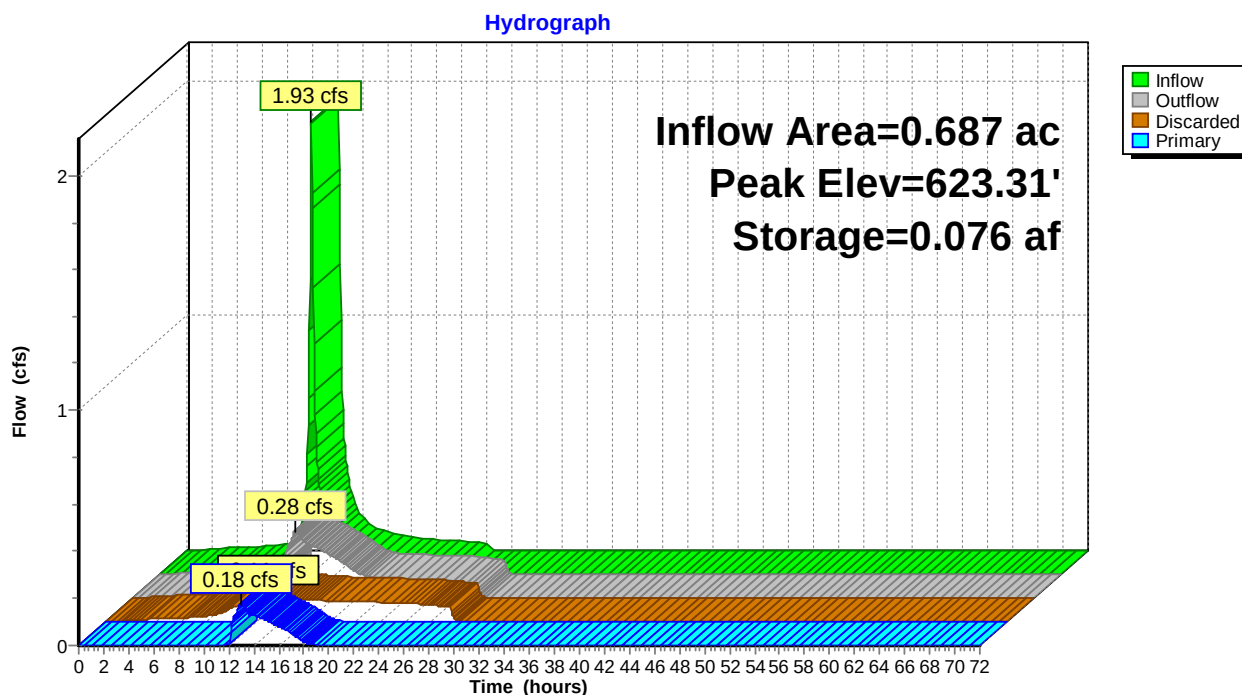
72 Chambers

346.6 cy Field

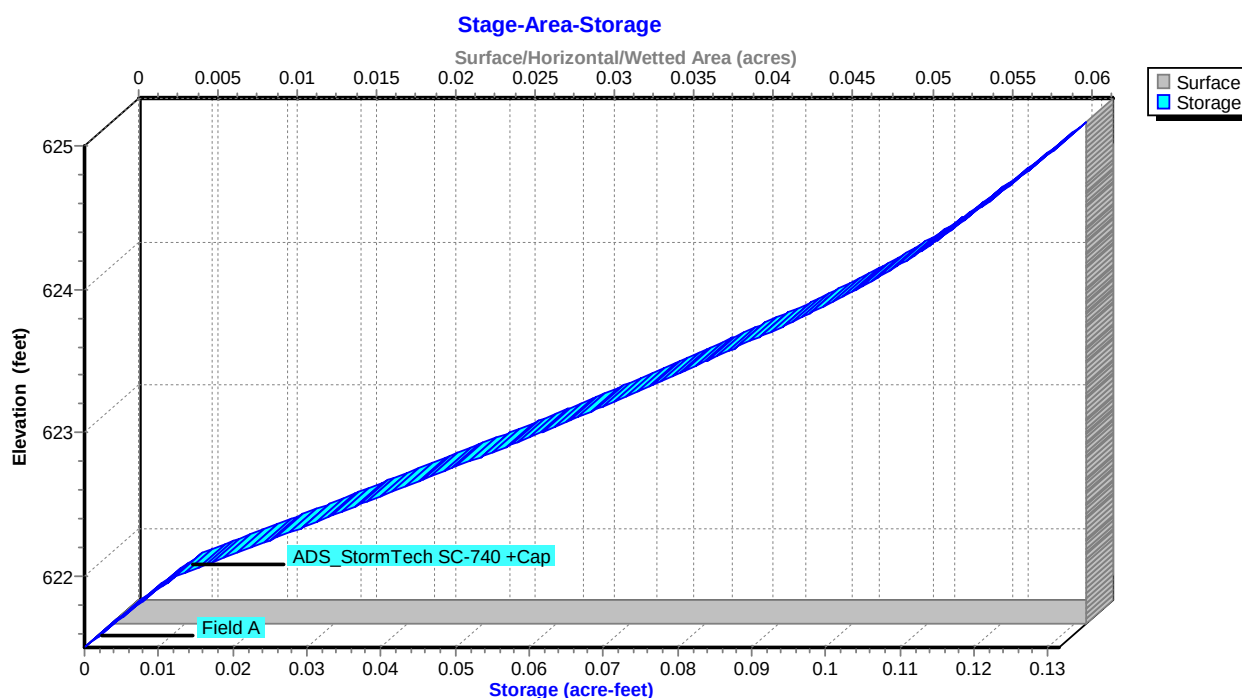
224.1 cy Stone



Pond 12P: Subsurface Infiltration Basin



Pond 12P: Subsurface Infiltration Basin



Hydrograph for Pond 12P: Subsurface Infiltration Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	621.50	0.00	0.00	0.00
2.50	0.01	0.000	621.50	0.01	0.01	0.00
5.00	0.01	0.000	621.51	0.01	0.01	0.00
7.50	0.02	0.000	621.51	0.02	0.02	0.00
10.00	0.06	0.001	621.53	0.06	0.06	0.00
12.50	0.54	0.071	623.20	0.23	0.10	0.13
15.00	0.10	0.063	623.03	0.21	0.10	0.11
17.50	0.06	0.045	622.64	0.12	0.09	0.03
20.00	0.05	0.036	622.46	0.09	0.09	0.00
22.50	0.04	0.027	622.30	0.08	0.08	0.00
25.00	0.00	0.016	622.07	0.08	0.08	0.00
27.50	0.00	0.001	621.55	0.06	0.06	0.00
30.00	0.00	0.000	621.50	0.00	0.00	0.00
32.50	0.00	0.000	621.50	0.00	0.00	0.00
35.00	0.00	0.000	621.50	0.00	0.00	0.00
37.50	0.00	0.000	621.50	0.00	0.00	0.00
40.00	0.00	0.000	621.50	0.00	0.00	0.00
42.50	0.00	0.000	621.50	0.00	0.00	0.00
45.00	0.00	0.000	621.50	0.00	0.00	0.00
47.50	0.00	0.000	621.50	0.00	0.00	0.00
50.00	0.00	0.000	621.50	0.00	0.00	0.00
52.50	0.00	0.000	621.50	0.00	0.00	0.00
55.00	0.00	0.000	621.50	0.00	0.00	0.00
57.50	0.00	0.000	621.50	0.00	0.00	0.00
60.00	0.00	0.000	621.50	0.00	0.00	0.00
62.50	0.00	0.000	621.50	0.00	0.00	0.00
65.00	0.00	0.000	621.50	0.00	0.00	0.00
67.50	0.00	0.000	621.50	0.00	0.00	0.00
70.00	0.00	0.000	621.50	0.00	0.00	0.00

Stage-Area-Storage for Pond 12P: Subsurface Infiltration Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
621.50	0.061	0.000	624.40	0.061	0.117
621.55	0.061	0.001	624.45	0.061	0.118
621.60	0.061	0.002	624.50	0.061	0.119
621.65	0.061	0.004	624.55	0.061	0.120
621.70	0.061	0.005	624.60	0.061	0.122
621.75	0.061	0.006	624.65	0.061	0.123
621.80	0.061	0.007	624.70	0.061	0.124
621.85	0.061	0.009	624.75	0.061	0.125
621.90	0.061	0.010	624.80	0.061	0.127
621.95	0.061	0.011	624.85	0.061	0.128
622.00	0.061	0.012	624.90	0.061	0.129
622.05	0.061	0.015	624.95	0.061	0.130
622.10	0.061	0.017	625.00	0.061	0.132
622.15	0.061	0.020			
622.20	0.061	0.022			
622.25	0.061	0.025			
622.30	0.061	0.027			
622.35	0.061	0.030			
622.40	0.061	0.032			
622.45	0.061	0.035			
622.50	0.061	0.037			
622.55	0.061	0.040			
622.60	0.061	0.042			
622.65	0.061	0.045			
622.70	0.061	0.047			
622.75	0.061	0.050			
622.80	0.061	0.052			
622.85	0.061	0.054			
622.90	0.061	0.057			
622.95	0.061	0.059			
623.00	0.061	0.062			
623.05	0.061	0.064			
623.10	0.061	0.066			
623.15	0.061	0.068			
623.20	0.061	0.071			
623.25	0.061	0.073			
623.30	0.061	0.075			
623.35	0.061	0.077			
623.40	0.061	0.080			
623.45	0.061	0.082			
623.50	0.061	0.084			
623.55	0.061	0.086			
623.60	0.061	0.088			
623.65	0.061	0.090			
623.70	0.061	0.092			
623.75	0.061	0.094			
623.80	0.061	0.096			
623.85	0.061	0.098			
623.90	0.061	0.100			
623.95	0.061	0.102			
624.00	0.061	0.104			
624.05	0.061	0.106			
624.10	0.061	0.108			
624.15	0.061	0.109			
624.20	0.061	0.111			
624.25	0.061	0.113			
624.30	0.061	0.114			
624.35	0.061	0.115			

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: 2BP-I	Runoff Area=2,878 sf 100.00% Impervious Runoff Depth=8.42" Flow Length=75' Slope=0.0140 '/' Tc=1.1 min CN=98 Runoff=0.60 cfs 0.046 af
Subcatchment EX 1-I:	Runoff Area=9,508 sf 100.00% Impervious Runoff Depth=8.42" Flow Length=149' Tc=1.6 min CN=98 Runoff=1.98 cfs 0.153 af
Subcatchment EX 1-P:	Runoff Area=34,310 sf 0.00% Impervious Runoff Depth=5.64" Flow Length=233' Tc=10.4 min CN=75 Runoff=4.28 cfs 0.370 af
Subcatchment EX 2-P:	Runoff Area=33,427 sf 0.00% Impervious Runoff Depth=5.52" Flow Length=251' Tc=10.1 min CN=74 Runoff=4.14 cfs 0.353 af
Subcatchment EX 3 - P:	Runoff Area=12,817 sf 0.00% Impervious Runoff Depth=5.76" Flow Length=109' Tc=7.8 min CN=76 Runoff=1.80 cfs 0.141 af
Subcatchment PR 1A-I:	Runoff Area=2,919 sf 100.00% Impervious Runoff Depth=8.42" Flow Length=149' Tc=1.6 min CN=98 Runoff=0.61 cfs 0.047 af
Subcatchment PR 1A-P:	Runoff Area=21,722 sf 0.00% Impervious Runoff Depth=5.52" Flow Length=395' Tc=10.5 min CN=74 Runoff=2.65 cfs 0.229 af
Subcatchment PR 1B-P:	Runoff Area=6,622 sf 0.00% Impervious Runoff Depth=7.34" Tc=6.0 min CN=89 Runoff=1.16 cfs 0.093 af
Subcatchment PR 2A-P:	Runoff Area=6,039 sf 0.00% Impervious Runoff Depth=5.52" Flow Length=81' Slope=0.3000 '/' Tc=2.7 min CN=74 Runoff=0.98 cfs 0.064 af
Subcatchment PR 2C-I:	Runoff Area=5,659 sf 100.00% Impervious Runoff Depth=8.42" Flow Length=86' Slope=0.0230 '/' Tc=1.0 min CN=98 Runoff=1.19 cfs 0.091 af
Subcatchment PR 2C-P:	Runoff Area=21,408 sf 0.00% Impervious Runoff Depth=5.52" Flow Length=100' Slope=0.0200 '/' Tc=9.4 min CN=74 Runoff=2.72 cfs 0.226 af
Subcatchment PR 3 - P:	Runoff Area=10,406 sf 0.00% Impervious Runoff Depth=5.52" Flow Length=109' Tc=7.8 min CN=74 Runoff=1.41 cfs 0.110 af
Subcatchment PR-2B-I:	Runoff Area=8,642 sf 100.00% Impervious Runoff Depth=8.42" Flow Length=75' Slope=0.0140 '/' Tc=1.1 min CN=98 Runoff=1.81 cfs 0.139 af
Subcatchment PR-2B-P:	Runoff Area=1,446 sf 0.00% Impervious Runoff Depth=5.52" Flow Length=114' Tc=8.0 min CN=74 Runoff=0.19 cfs 0.015 af
Reach 1R: TOP	Inflow=5.22 cfs 0.523 af Outflow=5.22 cfs 0.523 af
Reach 2R: CHANNEL	Inflow=9.04 cfs 0.876 af Outflow=9.04 cfs 0.876 af
Reach 3R: TOTAL	Inflow=10.82 cfs 1.018 af Outflow=10.82 cfs 1.018 af

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NOAA 24-hr D 100-Year Rainfall=8.66"

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Reach 4R:

Inflow=5.22 cfs 0.523 af

Outflow=5.22 cfs 0.523 af

Reach 8R: (new Reach)

Inflow=3.23 cfs 0.317 af

Outflow=3.23 cfs 0.317 af

Reach DP1: TOP

Avg. Flow Depth=0.21' Max Vel=11.24 fps Inflow=2.88 cfs 0.276 af

34.0" x 22.0", R=24.9" Elliptical Pipe n=0.011 L=100.0' S=0.1000 ' Capacity=118.41 cfs Outflow=2.87 cfs 0.276 af

Reach DP2: CHANNEL

Inflow=4.04 cfs 0.620 af

Outflow=4.04 cfs 0.620 af

Reach DP3: TOTAL

Inflow=5.44 cfs 0.729 af

Outflow=5.44 cfs 0.729 af

Reach EX 1:

Inflow=2.88 cfs 0.276 af

Outflow=2.88 cfs 0.276 af

Pond 2P: Pervious Pavers

Peak Elev=625.03' Storage=0.037 af Inflow=1.16 cfs 0.093 af

Outflow=0.08 cfs 0.093 af

Pond 10P: (new Pond)

Peak Elev=0.67' Inflow=2.88 cfs 0.276 af

Outflow=2.88 cfs 0.276 af

Pond 11P: Existing Drywell System

Peak Elev=613.41' Storage=0.076 af Inflow=2.70 cfs 0.344 af

Discarded=0.06 cfs 0.064 af Primary=1.86 cfs 0.279 af Outflow=1.92 cfs 0.344 af

Pond 12P: Subsurface Infiltration Basin

Peak Elev=624.47' Storage=0.119 af Inflow=3.73 cfs 0.364 af

Discarded=0.14 cfs 0.174 af Primary=1.60 cfs 0.189 af Outflow=1.73 cfs 0.364 af

Total Runoff Area = 4.082 ac Runoff Volume = 2.079 af Average Runoff Depth = 6.11"**83.35% Pervious = 3.402 ac 16.65% Impervious = 0.680 ac**

Summary for Subcatchment 1S: 2BP-I

Runoff = 0.60 cfs @ 12.06 hrs, Volume= 0.046 af, Depth= 8.42"
 Routed to Pond 12P : Subsurface Infiltration Basin

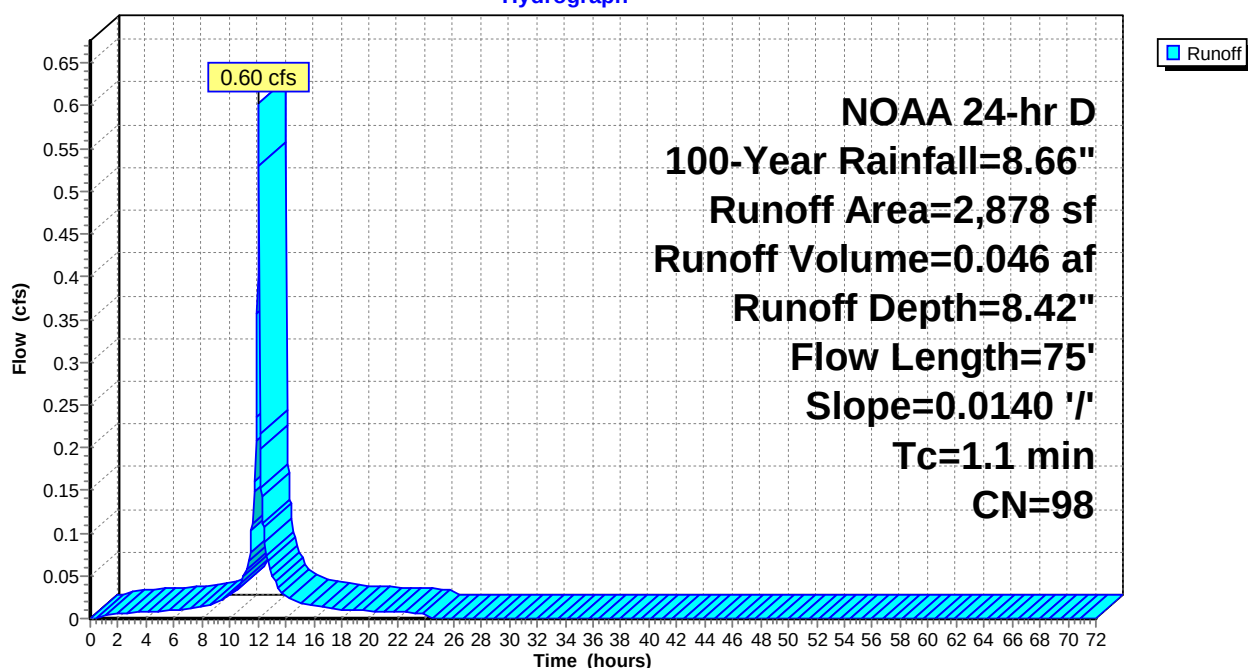
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
2,878	98	Paved parking, HSG C
2,878		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	75	0.0140	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"

Subcatchment 1S: 2BP-I

Hydrograph



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Hydrograph for Subcatchment 1S: 2BP-I

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	8.42	0.00
1.00	0.10	0.01	0.00	59.00	8.66	8.42	0.00
2.00	0.21	0.08	0.01	60.00	8.66	8.42	0.00
3.00	0.33	0.17	0.01	61.00	8.66	8.42	0.00
4.00	0.45	0.28	0.01	62.00	8.66	8.42	0.00
5.00	0.59	0.40	0.01	63.00	8.66	8.42	0.00
6.00	0.74	0.54	0.01	64.00	8.66	8.42	0.00
7.00	0.91	0.71	0.01	65.00	8.66	8.42	0.00
8.00	1.12	0.91	0.01	66.00	8.66	8.42	0.00
9.00	1.37	1.16	0.02	67.00	8.66	8.42	0.00
10.00	1.72	1.49	0.03	68.00	8.66	8.42	0.00
11.00	2.25	2.02	0.05	69.00	8.66	8.42	0.00
12.00	4.15	3.91	0.40	70.00	8.66	8.42	0.00
13.00	6.41	6.17	0.05	71.00	8.66	8.42	0.00
14.00	6.94	6.70	0.03	72.00	8.66	8.42	0.00
15.00	7.29	7.05	0.02				
16.00	7.54	7.30	0.02				
17.00	7.75	7.51	0.01				
18.00	7.92	7.68	0.01				
19.00	8.07	7.83	0.01				
20.00	8.21	7.97	0.01				
21.00	8.33	8.09	0.01				
22.00	8.45	8.21	0.01				
23.00	8.56	8.32	0.01				
24.00	8.66	8.42	0.01				
25.00	8.66	8.42	0.00				
26.00	8.66	8.42	0.00				
27.00	8.66	8.42	0.00				
28.00	8.66	8.42	0.00				
29.00	8.66	8.42	0.00				
30.00	8.66	8.42	0.00				
31.00	8.66	8.42	0.00				
32.00	8.66	8.42	0.00				
33.00	8.66	8.42	0.00				
34.00	8.66	8.42	0.00				
35.00	8.66	8.42	0.00				
36.00	8.66	8.42	0.00				
37.00	8.66	8.42	0.00				
38.00	8.66	8.42	0.00				
39.00	8.66	8.42	0.00				
40.00	8.66	8.42	0.00				
41.00	8.66	8.42	0.00				
42.00	8.66	8.42	0.00				
43.00	8.66	8.42	0.00				
44.00	8.66	8.42	0.00				
45.00	8.66	8.42	0.00				
46.00	8.66	8.42	0.00				
47.00	8.66	8.42	0.00				
48.00	8.66	8.42	0.00				
49.00	8.66	8.42	0.00				
50.00	8.66	8.42	0.00				
51.00	8.66	8.42	0.00				
52.00	8.66	8.42	0.00				
53.00	8.66	8.42	0.00				
54.00	8.66	8.42	0.00				
55.00	8.66	8.42	0.00				
56.00	8.66	8.42	0.00				
57.00	8.66	8.42	0.00				

Summary for Subcatchment EX 1-I:

Runoff = 1.98 cfs @ 12.07 hrs, Volume= 0.153 af, Depth= 8.42"
 Routed to Reach 4R :

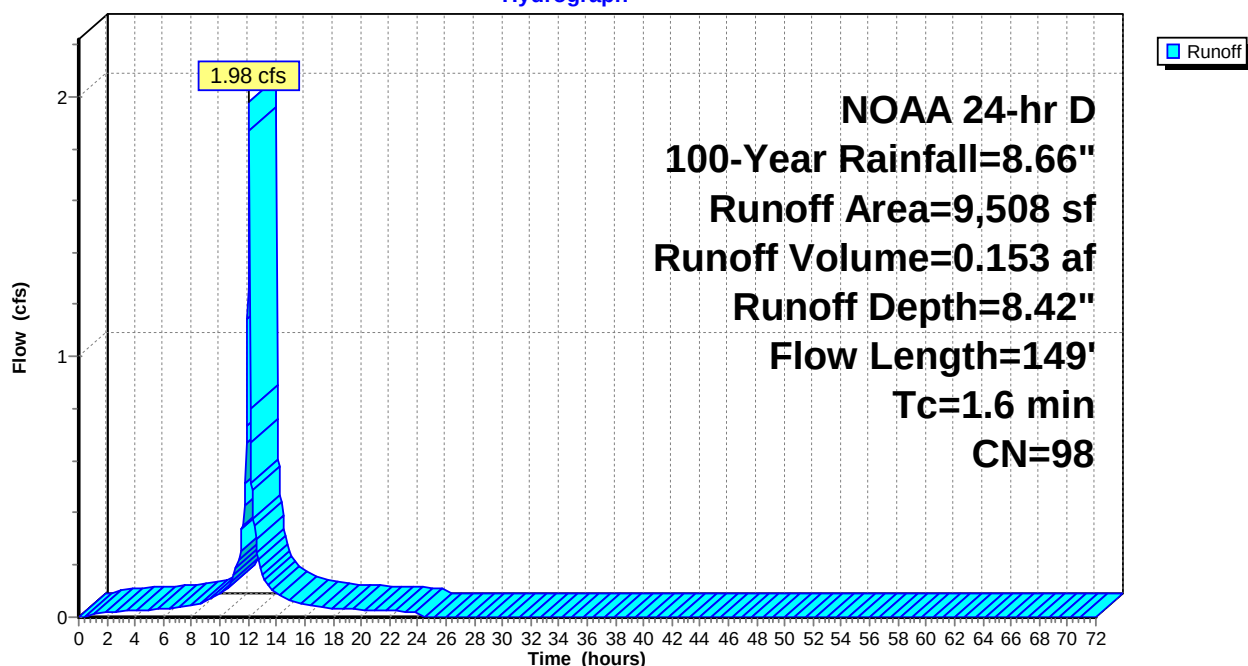
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
9,508	98	Paved roads w/curbs & sewers, HSG C
9,508		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0140	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"
0.3	49	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.6	149	Total			

Subcatchment EX 1-I:

Hydrograph



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Hydrograph for Subcatchment EX 1-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	8.42	0.00
1.00	0.10	0.01	0.01	59.00	8.66	8.42	0.00
2.00	0.21	0.08	0.02	60.00	8.66	8.42	0.00
3.00	0.33	0.17	0.02	61.00	8.66	8.42	0.00
4.00	0.45	0.28	0.03	62.00	8.66	8.42	0.00
5.00	0.59	0.40	0.03	63.00	8.66	8.42	0.00
6.00	0.74	0.54	0.03	64.00	8.66	8.42	0.00
7.00	0.91	0.71	0.04	65.00	8.66	8.42	0.00
8.00	1.12	0.91	0.05	66.00	8.66	8.42	0.00
9.00	1.37	1.16	0.06	67.00	8.66	8.42	0.00
10.00	1.72	1.49	0.09	68.00	8.66	8.42	0.00
11.00	2.25	2.02	0.16	69.00	8.66	8.42	0.00
12.00	4.15	3.91	1.26	70.00	8.66	8.42	0.00
13.00	6.41	6.17	0.18	71.00	8.66	8.42	0.00
14.00	6.94	6.70	0.09	72.00	8.66	8.42	0.00
15.00	7.29	7.05	0.06				
16.00	7.54	7.30	0.05				
17.00	7.75	7.51	0.04				
18.00	7.92	7.68	0.03				
19.00	8.07	7.83	0.03				
20.00	8.21	7.97	0.03				
21.00	8.33	8.09	0.03				
22.00	8.45	8.21	0.03				
23.00	8.56	8.32	0.02				
24.00	8.66	8.42	0.02				
25.00	8.66	8.42	0.00				
26.00	8.66	8.42	0.00				
27.00	8.66	8.42	0.00				
28.00	8.66	8.42	0.00				
29.00	8.66	8.42	0.00				
30.00	8.66	8.42	0.00				
31.00	8.66	8.42	0.00				
32.00	8.66	8.42	0.00				
33.00	8.66	8.42	0.00				
34.00	8.66	8.42	0.00				
35.00	8.66	8.42	0.00				
36.00	8.66	8.42	0.00				
37.00	8.66	8.42	0.00				
38.00	8.66	8.42	0.00				
39.00	8.66	8.42	0.00				
40.00	8.66	8.42	0.00				
41.00	8.66	8.42	0.00				
42.00	8.66	8.42	0.00				
43.00	8.66	8.42	0.00				
44.00	8.66	8.42	0.00				
45.00	8.66	8.42	0.00				
46.00	8.66	8.42	0.00				
47.00	8.66	8.42	0.00				
48.00	8.66	8.42	0.00				
49.00	8.66	8.42	0.00				
50.00	8.66	8.42	0.00				
51.00	8.66	8.42	0.00				
52.00	8.66	8.42	0.00				
53.00	8.66	8.42	0.00				
54.00	8.66	8.42	0.00				
55.00	8.66	8.42	0.00				
56.00	8.66	8.42	0.00				
57.00	8.66	8.42	0.00				

Summary for Subcatchment EX 1-P:

Runoff = 4.28 cfs @ 12.18 hrs, Volume= 0.370 af, Depth= 5.64"
 Routed to Reach 4R :

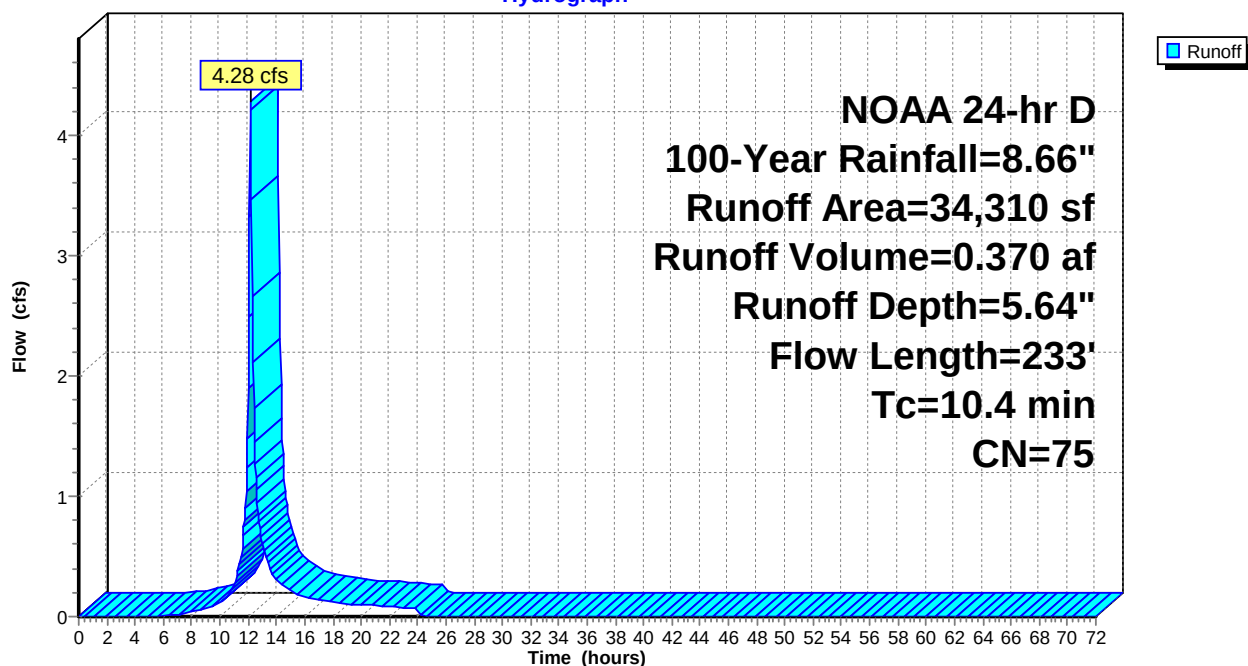
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
32,830	74	>75% Grass cover, Good, HSG C
1,480	89	Gravel roads, HSG C
34,310	75	Weighted Average
34,310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.0175	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.4	133	0.1070	5.27		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.4	233	Total			

Subcatchment EX 1-P:

Hydrograph



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NOAA 24-hr D 100-Year Rainfall=8.66"

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Hydrograph for Subcatchment EX 1-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	5.64	0.00
1.00	0.10	0.00	0.00	59.00	8.66	5.64	0.00
2.00	0.21	0.00	0.00	60.00	8.66	5.64	0.00
3.00	0.33	0.00	0.00	61.00	8.66	5.64	0.00
4.00	0.45	0.00	0.00	62.00	8.66	5.64	0.00
5.00	0.59	0.00	0.00	63.00	8.66	5.64	0.00
6.00	0.74	0.00	0.00	64.00	8.66	5.64	0.00
7.00	0.91	0.02	0.02	65.00	8.66	5.64	0.00
8.00	1.12	0.06	0.04	66.00	8.66	5.64	0.00
9.00	1.37	0.12	0.06	67.00	8.66	5.64	0.00
10.00	1.72	0.25	0.13	68.00	8.66	5.64	0.00
11.00	2.25	0.51	0.28	69.00	8.66	5.64	0.00
12.00	4.15	1.78	1.89	70.00	8.66	5.64	0.00
13.00	6.41	3.63	0.62	71.00	8.66	5.64	0.00
14.00	6.94	4.10	0.30	72.00	8.66	5.64	0.00
15.00	7.29	4.40	0.21				
16.00	7.54	4.63	0.17				
17.00	7.75	4.81	0.14				
18.00	7.92	4.97	0.11				
19.00	8.07	5.10	0.10				
20.00	8.21	5.23	0.10				
21.00	8.33	5.34	0.09				
22.00	8.45	5.45	0.08				
23.00	8.56	5.55	0.08				
24.00	8.66	5.64	0.07				
25.00	8.66	5.64	0.00				
26.00	8.66	5.64	0.00				
27.00	8.66	5.64	0.00				
28.00	8.66	5.64	0.00				
29.00	8.66	5.64	0.00				
30.00	8.66	5.64	0.00				
31.00	8.66	5.64	0.00				
32.00	8.66	5.64	0.00				
33.00	8.66	5.64	0.00				
34.00	8.66	5.64	0.00				
35.00	8.66	5.64	0.00				
36.00	8.66	5.64	0.00				
37.00	8.66	5.64	0.00				
38.00	8.66	5.64	0.00				
39.00	8.66	5.64	0.00				
40.00	8.66	5.64	0.00				
41.00	8.66	5.64	0.00				
42.00	8.66	5.64	0.00				
43.00	8.66	5.64	0.00				
44.00	8.66	5.64	0.00				
45.00	8.66	5.64	0.00				
46.00	8.66	5.64	0.00				
47.00	8.66	5.64	0.00				
48.00	8.66	5.64	0.00				
49.00	8.66	5.64	0.00				
50.00	8.66	5.64	0.00				
51.00	8.66	5.64	0.00				
52.00	8.66	5.64	0.00				
53.00	8.66	5.64	0.00				
54.00	8.66	5.64	0.00				
55.00	8.66	5.64	0.00				
56.00	8.66	5.64	0.00				
57.00	8.66	5.64	0.00				

Summary for Subcatchment EX 2-P:

Runoff = 4.14 cfs @ 12.17 hrs, Volume= 0.353 af, Depth= 5.52"
 Routed to Reach 2R : CHANNEL

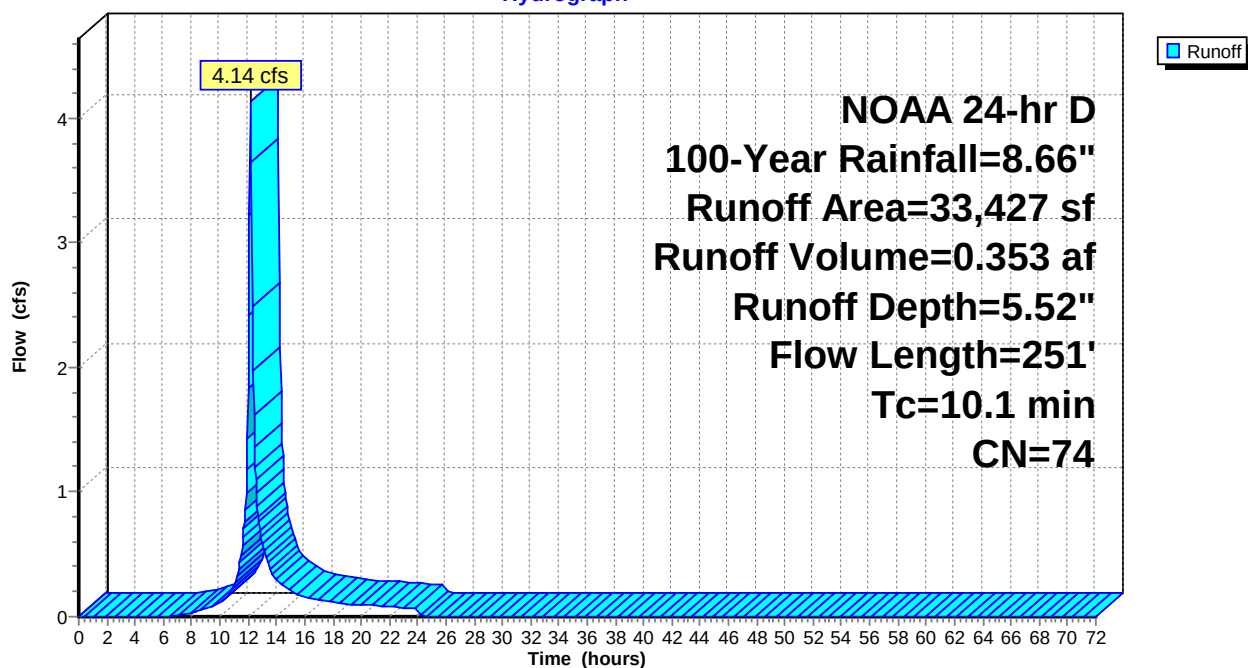
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
32,438	74	>75% Grass cover, Good, HSG C
989	89	Gravel roads, HSG C
33,427	74	Weighted Average
33,427		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.0200	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.4	47	0.0170	2.10		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	88	0.0680	4.20		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.0	16	0.4200	10.43		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.1	251	Total			

Subcatchment EX 2-P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 100-Year Rainfall=8.66"

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Hydrograph for Subcatchment EX 2-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	5.52	0.00
1.00	0.10	0.00	0.00	59.00	8.66	5.52	0.00
2.00	0.21	0.00	0.00	60.00	8.66	5.52	0.00
3.00	0.33	0.00	0.00	61.00	8.66	5.52	0.00
4.00	0.45	0.00	0.00	62.00	8.66	5.52	0.00
5.00	0.59	0.00	0.00	63.00	8.66	5.52	0.00
6.00	0.74	0.00	0.00	64.00	8.66	5.52	0.00
7.00	0.91	0.01	0.01	65.00	8.66	5.52	0.00
8.00	1.12	0.05	0.03	66.00	8.66	5.52	0.00
9.00	1.37	0.11	0.06	67.00	8.66	5.52	0.00
10.00	1.72	0.23	0.11	68.00	8.66	5.52	0.00
11.00	2.25	0.47	0.26	69.00	8.66	5.52	0.00
12.00	4.15	1.71	1.84	70.00	8.66	5.52	0.00
13.00	6.41	3.53	0.60	71.00	8.66	5.52	0.00
14.00	6.94	3.99	0.29	72.00	8.66	5.52	0.00
15.00	7.29	4.29	0.20				
16.00	7.54	4.51	0.16				
17.00	7.75	4.70	0.14				
18.00	7.92	4.85	0.11				
19.00	8.07	4.99	0.10				
20.00	8.21	5.11	0.09				
21.00	8.33	5.23	0.09				
22.00	8.45	5.33	0.08				
23.00	8.56	5.43	0.07				
24.00	8.66	5.52	0.07				
25.00	8.66	5.52	0.00				
26.00	8.66	5.52	0.00				
27.00	8.66	5.52	0.00				
28.00	8.66	5.52	0.00				
29.00	8.66	5.52	0.00				
30.00	8.66	5.52	0.00				
31.00	8.66	5.52	0.00				
32.00	8.66	5.52	0.00				
33.00	8.66	5.52	0.00				
34.00	8.66	5.52	0.00				
35.00	8.66	5.52	0.00				
36.00	8.66	5.52	0.00				
37.00	8.66	5.52	0.00				
38.00	8.66	5.52	0.00				
39.00	8.66	5.52	0.00				
40.00	8.66	5.52	0.00				
41.00	8.66	5.52	0.00				
42.00	8.66	5.52	0.00				
43.00	8.66	5.52	0.00				
44.00	8.66	5.52	0.00				
45.00	8.66	5.52	0.00				
46.00	8.66	5.52	0.00				
47.00	8.66	5.52	0.00				
48.00	8.66	5.52	0.00				
49.00	8.66	5.52	0.00				
50.00	8.66	5.52	0.00				
51.00	8.66	5.52	0.00				
52.00	8.66	5.52	0.00				
53.00	8.66	5.52	0.00				
54.00	8.66	5.52	0.00				
55.00	8.66	5.52	0.00				
56.00	8.66	5.52	0.00				
57.00	8.66	5.52	0.00				

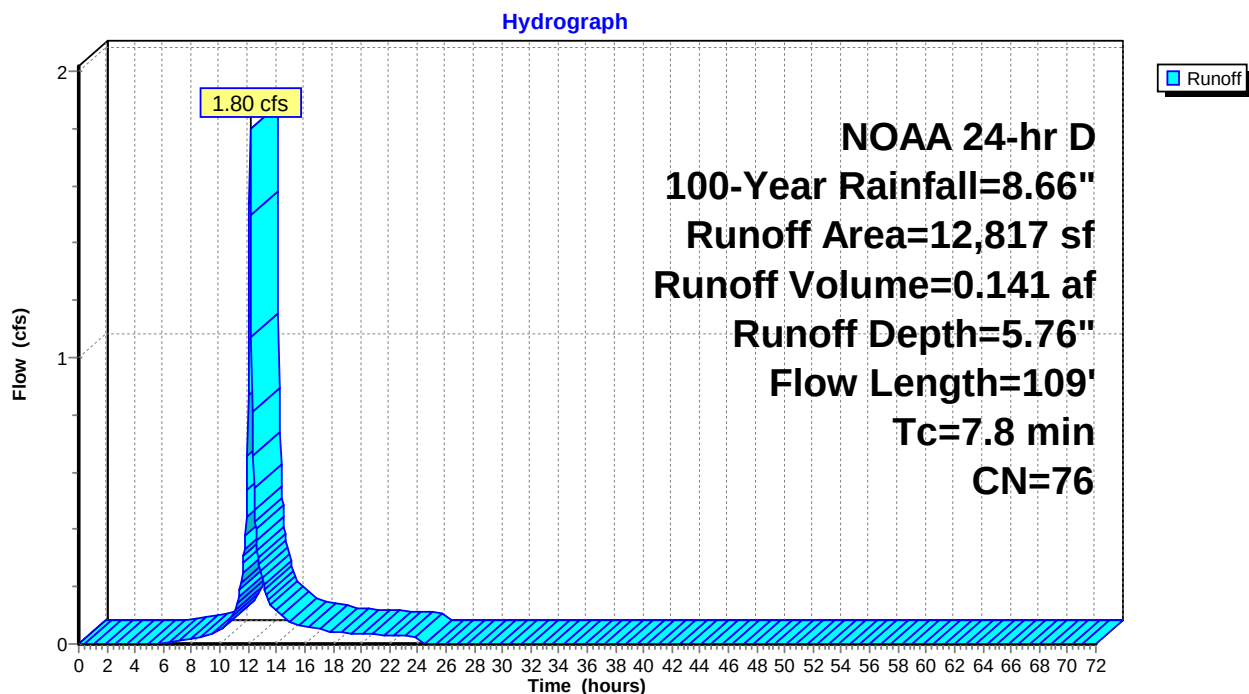
Summary for Subcatchment EX 3 - P:

Runoff = 1.80 cfs @ 12.15 hrs, Volume= 0.141 af, Depth= 5.76"
 Routed to Reach 3R : TOTAL

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
11,505	74	>75% Grass cover, Good, HSG C
1,312	89	Gravel roads, HSG C
12,817	76	Weighted Average
12,817		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	72	0.0280	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
1.4	28	0.1790	0.33		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.0	9	0.2220	7.59		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
7.8	109	Total			

Subcatchment EX 3 - P:

240913 40 ERW Waymaker Proposed

NOAA 24-hr D 100-Year Rainfall=8.66"

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Hydrograph for Subcatchment EX 3 - P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	5.76	0.00
1.00	0.10	0.00	0.00	59.00	8.66	5.76	0.00
2.00	0.21	0.00	0.00	60.00	8.66	5.76	0.00
3.00	0.33	0.00	0.00	61.00	8.66	5.76	0.00
4.00	0.45	0.00	0.00	62.00	8.66	5.76	0.00
5.00	0.59	0.00	0.00	63.00	8.66	5.76	0.00
6.00	0.74	0.00	0.00	64.00	8.66	5.76	0.00
7.00	0.91	0.02	0.01	65.00	8.66	5.76	0.00
8.00	1.12	0.07	0.02	66.00	8.66	5.76	0.00
9.00	1.37	0.14	0.03	67.00	8.66	5.76	0.00
10.00	1.72	0.28	0.05	68.00	8.66	5.76	0.00
11.00	2.25	0.55	0.11	69.00	8.66	5.76	0.00
12.00	4.15	1.85	0.87	70.00	8.66	5.76	0.00
13.00	6.41	3.74	0.23	71.00	8.66	5.76	0.00
14.00	6.94	4.21	0.11	72.00	8.66	5.76	0.00
15.00	7.29	4.51	0.08				
16.00	7.54	4.74	0.06				
17.00	7.75	4.93	0.05				
18.00	7.92	5.09	0.04				
19.00	8.07	5.22	0.04				
20.00	8.21	5.35	0.04				
21.00	8.33	5.46	0.03				
22.00	8.45	5.57	0.03				
23.00	8.56	5.67	0.03				
24.00	8.66	5.76	0.03				
25.00	8.66	5.76	0.00				
26.00	8.66	5.76	0.00				
27.00	8.66	5.76	0.00				
28.00	8.66	5.76	0.00				
29.00	8.66	5.76	0.00				
30.00	8.66	5.76	0.00				
31.00	8.66	5.76	0.00				
32.00	8.66	5.76	0.00				
33.00	8.66	5.76	0.00				
34.00	8.66	5.76	0.00				
35.00	8.66	5.76	0.00				
36.00	8.66	5.76	0.00				
37.00	8.66	5.76	0.00				
38.00	8.66	5.76	0.00				
39.00	8.66	5.76	0.00				
40.00	8.66	5.76	0.00				
41.00	8.66	5.76	0.00				
42.00	8.66	5.76	0.00				
43.00	8.66	5.76	0.00				
44.00	8.66	5.76	0.00				
45.00	8.66	5.76	0.00				
46.00	8.66	5.76	0.00				
47.00	8.66	5.76	0.00				
48.00	8.66	5.76	0.00				
49.00	8.66	5.76	0.00				
50.00	8.66	5.76	0.00				
51.00	8.66	5.76	0.00				
52.00	8.66	5.76	0.00				
53.00	8.66	5.76	0.00				
54.00	8.66	5.76	0.00				
55.00	8.66	5.76	0.00				
56.00	8.66	5.76	0.00				
57.00	8.66	5.76	0.00				

Summary for Subcatchment PR 1A-I:

Runoff = 0.61 cfs @ 12.07 hrs, Volume= 0.047 af, Depth= 8.42"
 Routed to Reach EX 1 :

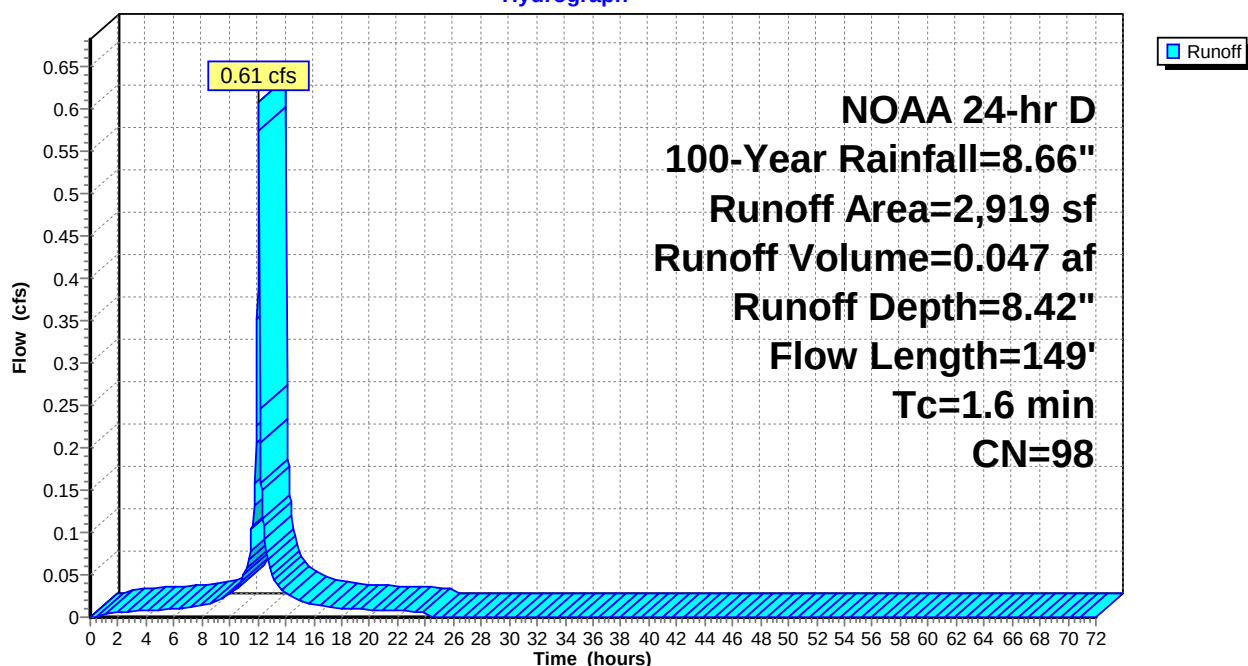
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
2,919	98	Paved roads w/curbs & sewers, HSG C
2,919		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0140	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"
0.3	49	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.6	149	Total			

Subcatchment PR 1A-I:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 100-Year Rainfall=8.66"

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Hydrograph for Subcatchment PR 1A-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	8.42	0.00
1.00	0.10	0.01	0.00	59.00	8.66	8.42	0.00
2.00	0.21	0.08	0.01	60.00	8.66	8.42	0.00
3.00	0.33	0.17	0.01	61.00	8.66	8.42	0.00
4.00	0.45	0.28	0.01	62.00	8.66	8.42	0.00
5.00	0.59	0.40	0.01	63.00	8.66	8.42	0.00
6.00	0.74	0.54	0.01	64.00	8.66	8.42	0.00
7.00	0.91	0.71	0.01	65.00	8.66	8.42	0.00
8.00	1.12	0.91	0.02	66.00	8.66	8.42	0.00
9.00	1.37	1.16	0.02	67.00	8.66	8.42	0.00
10.00	1.72	1.49	0.03	68.00	8.66	8.42	0.00
11.00	2.25	2.02	0.05	69.00	8.66	8.42	0.00
12.00	4.15	3.91	0.39	70.00	8.66	8.42	0.00
13.00	6.41	6.17	0.05	71.00	8.66	8.42	0.00
14.00	6.94	6.70	0.03	72.00	8.66	8.42	0.00
15.00	7.29	7.05	0.02				
16.00	7.54	7.30	0.02				
17.00	7.75	7.51	0.01				
18.00	7.92	7.68	0.01				
19.00	8.07	7.83	0.01				
20.00	8.21	7.97	0.01				
21.00	8.33	8.09	0.01				
22.00	8.45	8.21	0.01				
23.00	8.56	8.32	0.01				
24.00	8.66	8.42	0.01				
25.00	8.66	8.42	0.00				
26.00	8.66	8.42	0.00				
27.00	8.66	8.42	0.00				
28.00	8.66	8.42	0.00				
29.00	8.66	8.42	0.00				
30.00	8.66	8.42	0.00				
31.00	8.66	8.42	0.00				
32.00	8.66	8.42	0.00				
33.00	8.66	8.42	0.00				
34.00	8.66	8.42	0.00				
35.00	8.66	8.42	0.00				
36.00	8.66	8.42	0.00				
37.00	8.66	8.42	0.00				
38.00	8.66	8.42	0.00				
39.00	8.66	8.42	0.00				
40.00	8.66	8.42	0.00				
41.00	8.66	8.42	0.00				
42.00	8.66	8.42	0.00				
43.00	8.66	8.42	0.00				
44.00	8.66	8.42	0.00				
45.00	8.66	8.42	0.00				
46.00	8.66	8.42	0.00				
47.00	8.66	8.42	0.00				
48.00	8.66	8.42	0.00				
49.00	8.66	8.42	0.00				
50.00	8.66	8.42	0.00				
51.00	8.66	8.42	0.00				
52.00	8.66	8.42	0.00				
53.00	8.66	8.42	0.00				
54.00	8.66	8.42	0.00				
55.00	8.66	8.42	0.00				
56.00	8.66	8.42	0.00				
57.00	8.66	8.42	0.00				

Summary for Subcatchment PR 1A-P:

Runoff = 2.65 cfs @ 12.18 hrs, Volume= 0.229 af, Depth= 5.52"
 Routed to Reach EX 1 :

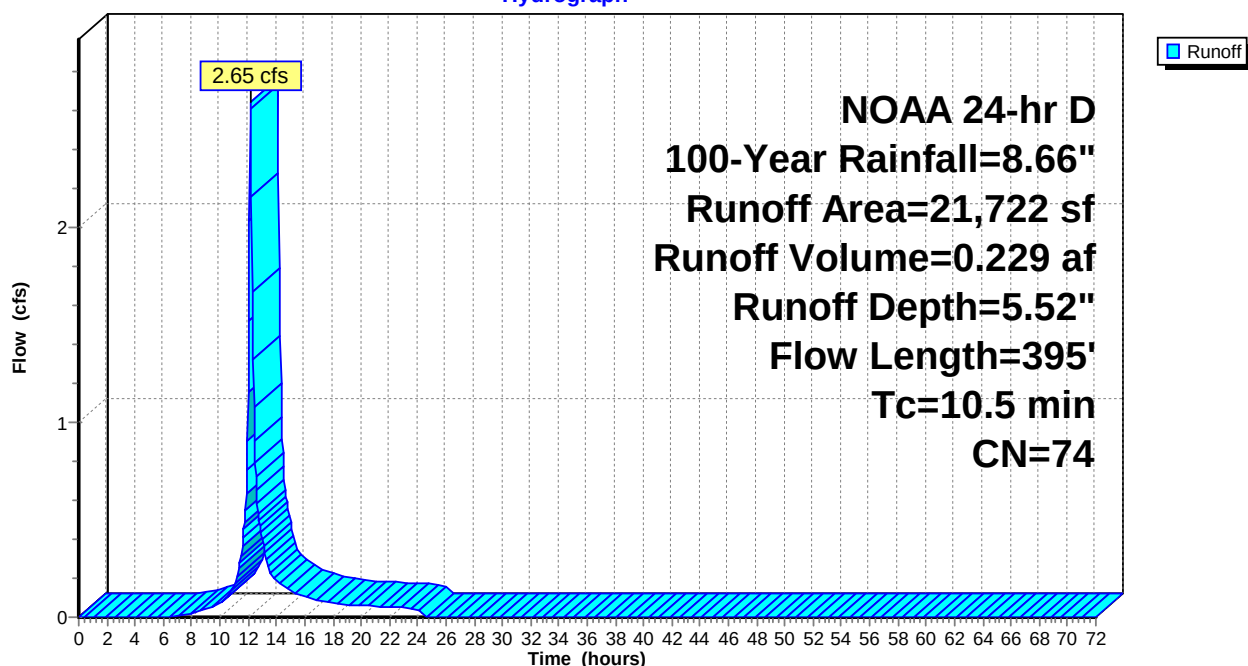
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
21,722	74	>75% Grass cover, Good, HSG C
21,722		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0220	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
1.4	295	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.5	395	Total			

Subcatchment PR 1A-P:

Hydrograph



Hydrograph for Subcatchment PR 1A-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	5.52	0.00
1.00	0.10	0.00	0.00	59.00	8.66	5.52	0.00
2.00	0.21	0.00	0.00	60.00	8.66	5.52	0.00
3.00	0.33	0.00	0.00	61.00	8.66	5.52	0.00
4.00	0.45	0.00	0.00	62.00	8.66	5.52	0.00
5.00	0.59	0.00	0.00	63.00	8.66	5.52	0.00
6.00	0.74	0.00	0.00	64.00	8.66	5.52	0.00
7.00	0.91	0.01	0.01	65.00	8.66	5.52	0.00
8.00	1.12	0.05	0.02	66.00	8.66	5.52	0.00
9.00	1.37	0.11	0.04	67.00	8.66	5.52	0.00
10.00	1.72	0.23	0.07	68.00	8.66	5.52	0.00
11.00	2.25	0.47	0.17	69.00	8.66	5.52	0.00
12.00	4.15	1.71	1.16	70.00	8.66	5.52	0.00
13.00	6.41	3.53	0.39	71.00	8.66	5.52	0.00
14.00	6.94	3.99	0.19	72.00	8.66	5.52	0.00
15.00	7.29	4.29	0.13				
16.00	7.54	4.51	0.11				
17.00	7.75	4.70	0.09				
18.00	7.92	4.85	0.07				
19.00	8.07	4.99	0.06				
20.00	8.21	5.11	0.06				
21.00	8.33	5.23	0.06				
22.00	8.45	5.33	0.05				
23.00	8.56	5.43	0.05				
24.00	8.66	5.52	0.04				
25.00	8.66	5.52	0.00				
26.00	8.66	5.52	0.00				
27.00	8.66	5.52	0.00				
28.00	8.66	5.52	0.00				
29.00	8.66	5.52	0.00				
30.00	8.66	5.52	0.00				
31.00	8.66	5.52	0.00				
32.00	8.66	5.52	0.00				
33.00	8.66	5.52	0.00				
34.00	8.66	5.52	0.00				
35.00	8.66	5.52	0.00				
36.00	8.66	5.52	0.00				
37.00	8.66	5.52	0.00				
38.00	8.66	5.52	0.00				
39.00	8.66	5.52	0.00				
40.00	8.66	5.52	0.00				
41.00	8.66	5.52	0.00				
42.00	8.66	5.52	0.00				
43.00	8.66	5.52	0.00				
44.00	8.66	5.52	0.00				
45.00	8.66	5.52	0.00				
46.00	8.66	5.52	0.00				
47.00	8.66	5.52	0.00				
48.00	8.66	5.52	0.00				
49.00	8.66	5.52	0.00				
50.00	8.66	5.52	0.00				
51.00	8.66	5.52	0.00				
52.00	8.66	5.52	0.00				
53.00	8.66	5.52	0.00				
54.00	8.66	5.52	0.00				
55.00	8.66	5.52	0.00				
56.00	8.66	5.52	0.00				
57.00	8.66	5.52	0.00				

Summary for Subcatchment PR 1B-P:

Runoff = 1.16 cfs @ 12.13 hrs, Volume= 0.093 af, Depth= 7.34"
 Routed to Pond 2P : Pervious Pavers

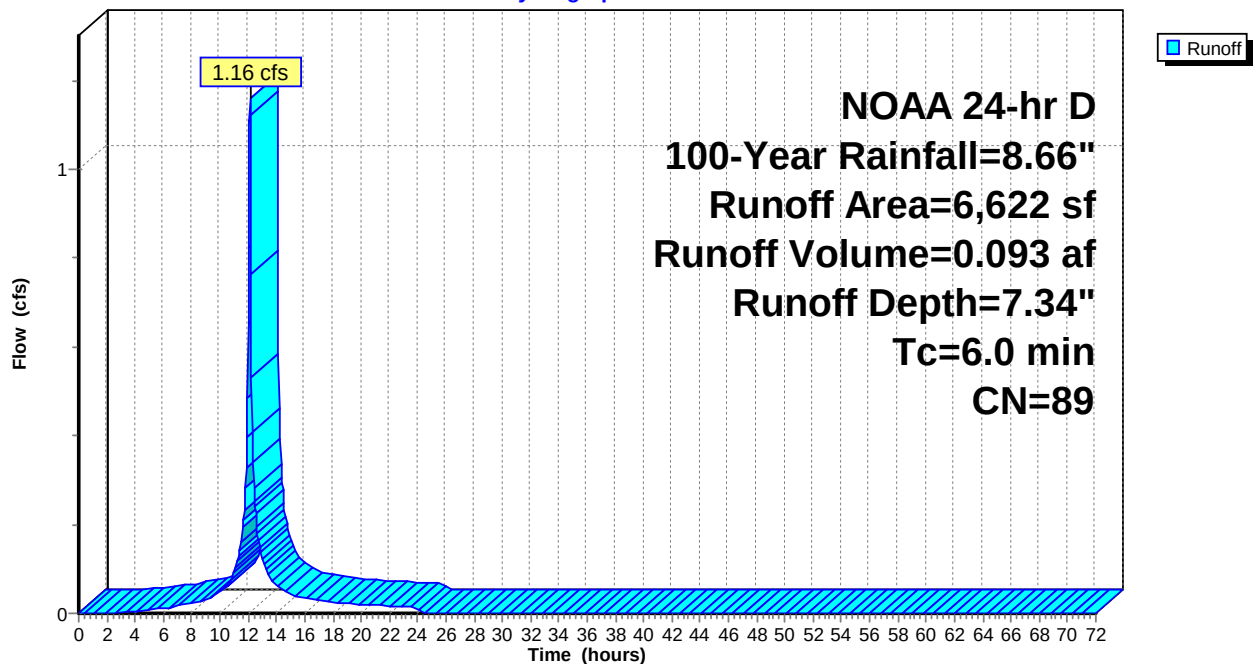
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
6,622	89	Gravel roads, HSG C
6,622		100.00% Pervious Area

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

Subcatchment PR 1B-P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 100-Year Rainfall=8.66"

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Hydrograph for Subcatchment PR 1B-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	7.34	0.00
1.00	0.10	0.00	0.00	59.00	8.66	7.34	0.00
2.00	0.21	0.00	0.00	60.00	8.66	7.34	0.00
3.00	0.33	0.00	0.00	61.00	8.66	7.34	0.00
4.00	0.45	0.03	0.01	62.00	8.66	7.34	0.00
5.00	0.59	0.08	0.01	63.00	8.66	7.34	0.00
6.00	0.74	0.14	0.01	64.00	8.66	7.34	0.00
7.00	0.91	0.23	0.02	65.00	8.66	7.34	0.00
8.00	1.12	0.36	0.02	66.00	8.66	7.34	0.00
9.00	1.37	0.54	0.03	67.00	8.66	7.34	0.00
10.00	1.72	0.80	0.05	68.00	8.66	7.34	0.00
11.00	2.25	1.24	0.09	69.00	8.66	7.34	0.00
12.00	4.15	2.96	0.65	70.00	8.66	7.34	0.00
13.00	6.41	5.13	0.13	71.00	8.66	7.34	0.00
14.00	6.94	5.65	0.06	72.00	8.66	7.34	0.00
15.00	7.29	5.99	0.04				
16.00	7.54	6.23	0.04				
17.00	7.75	6.44	0.03				
18.00	7.92	6.61	0.02				
19.00	8.07	6.75	0.02				
20.00	8.21	6.89	0.02				
21.00	8.33	7.01	0.02				
22.00	8.45	7.13	0.02				
23.00	8.56	7.24	0.02				
24.00	8.66	7.34	0.01				
25.00	8.66	7.34	0.00				
26.00	8.66	7.34	0.00				
27.00	8.66	7.34	0.00				
28.00	8.66	7.34	0.00				
29.00	8.66	7.34	0.00				
30.00	8.66	7.34	0.00				
31.00	8.66	7.34	0.00				
32.00	8.66	7.34	0.00				
33.00	8.66	7.34	0.00				
34.00	8.66	7.34	0.00				
35.00	8.66	7.34	0.00				
36.00	8.66	7.34	0.00				
37.00	8.66	7.34	0.00				
38.00	8.66	7.34	0.00				
39.00	8.66	7.34	0.00				
40.00	8.66	7.34	0.00				
41.00	8.66	7.34	0.00				
42.00	8.66	7.34	0.00				
43.00	8.66	7.34	0.00				
44.00	8.66	7.34	0.00				
45.00	8.66	7.34	0.00				
46.00	8.66	7.34	0.00				
47.00	8.66	7.34	0.00				
48.00	8.66	7.34	0.00				
49.00	8.66	7.34	0.00				
50.00	8.66	7.34	0.00				
51.00	8.66	7.34	0.00				
52.00	8.66	7.34	0.00				
53.00	8.66	7.34	0.00				
54.00	8.66	7.34	0.00				
55.00	8.66	7.34	0.00				
56.00	8.66	7.34	0.00				
57.00	8.66	7.34	0.00				

Summary for Subcatchment PR 2A-P:

Runoff = 0.98 cfs @ 12.09 hrs, Volume= 0.064 af, Depth= 5.52"
 Routed to Reach DP2 : CHANNEL

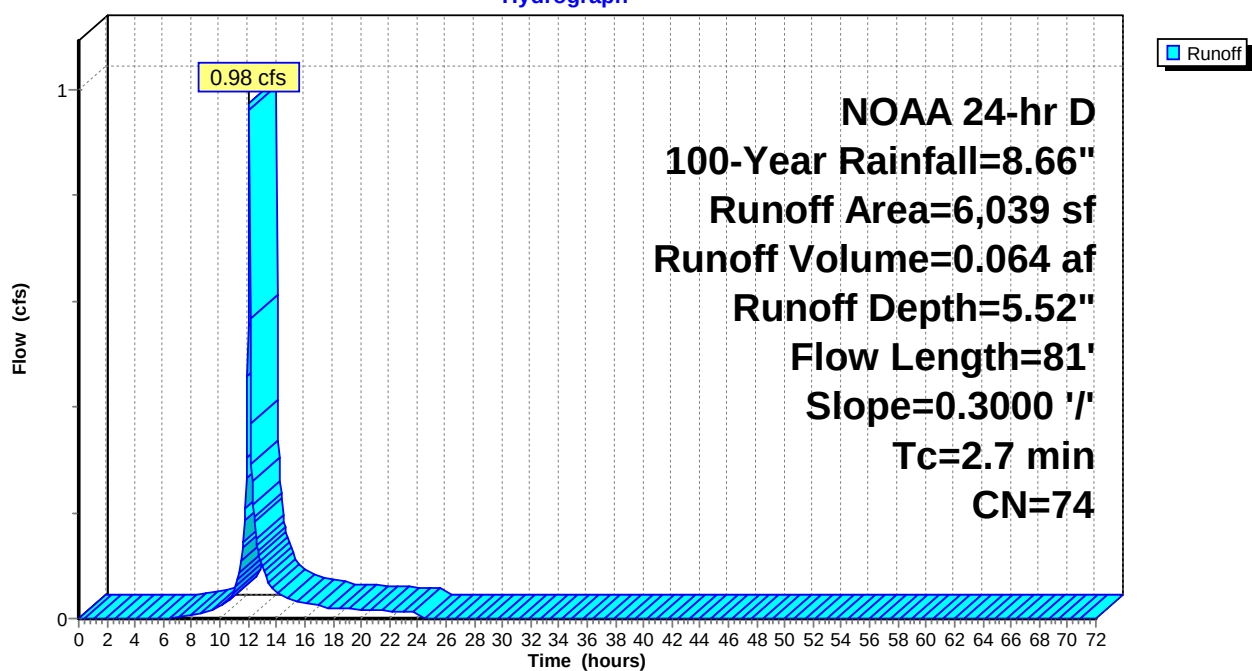
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
6,039	74	>75% Grass cover, Good, HSG C
6,039		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	81	0.3000	0.50		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"

Subcatchment PR 2A-P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 100-Year Rainfall=8.66"

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Hydrograph for Subcatchment PR 2A-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	5.52	0.00
1.00	0.10	0.00	0.00	59.00	8.66	5.52	0.00
2.00	0.21	0.00	0.00	60.00	8.66	5.52	0.00
3.00	0.33	0.00	0.00	61.00	8.66	5.52	0.00
4.00	0.45	0.00	0.00	62.00	8.66	5.52	0.00
5.00	0.59	0.00	0.00	63.00	8.66	5.52	0.00
6.00	0.74	0.00	0.00	64.00	8.66	5.52	0.00
7.00	0.91	0.01	0.00	65.00	8.66	5.52	0.00
8.00	1.12	0.05	0.01	66.00	8.66	5.52	0.00
9.00	1.37	0.11	0.01	67.00	8.66	5.52	0.00
10.00	1.72	0.23	0.02	68.00	8.66	5.52	0.00
11.00	2.25	0.47	0.05	69.00	8.66	5.52	0.00
12.00	4.15	1.71	0.55	70.00	8.66	5.52	0.00
13.00	6.41	3.53	0.10	71.00	8.66	5.52	0.00
14.00	6.94	3.99	0.05	72.00	8.66	5.52	0.00
15.00	7.29	4.29	0.03				
16.00	7.54	4.51	0.03				
17.00	7.75	4.70	0.02				
18.00	7.92	4.85	0.02				
19.00	8.07	4.99	0.02				
20.00	8.21	5.11	0.02				
21.00	8.33	5.23	0.02				
22.00	8.45	5.33	0.01				
23.00	8.56	5.43	0.01				
24.00	8.66	5.52	0.01				
25.00	8.66	5.52	0.00				
26.00	8.66	5.52	0.00				
27.00	8.66	5.52	0.00				
28.00	8.66	5.52	0.00				
29.00	8.66	5.52	0.00				
30.00	8.66	5.52	0.00				
31.00	8.66	5.52	0.00				
32.00	8.66	5.52	0.00				
33.00	8.66	5.52	0.00				
34.00	8.66	5.52	0.00				
35.00	8.66	5.52	0.00				
36.00	8.66	5.52	0.00				
37.00	8.66	5.52	0.00				
38.00	8.66	5.52	0.00				
39.00	8.66	5.52	0.00				
40.00	8.66	5.52	0.00				
41.00	8.66	5.52	0.00				
42.00	8.66	5.52	0.00				
43.00	8.66	5.52	0.00				
44.00	8.66	5.52	0.00				
45.00	8.66	5.52	0.00				
46.00	8.66	5.52	0.00				
47.00	8.66	5.52	0.00				
48.00	8.66	5.52	0.00				
49.00	8.66	5.52	0.00				
50.00	8.66	5.52	0.00				
51.00	8.66	5.52	0.00				
52.00	8.66	5.52	0.00				
53.00	8.66	5.52	0.00				
54.00	8.66	5.52	0.00				
55.00	8.66	5.52	0.00				
56.00	8.66	5.52	0.00				
57.00	8.66	5.52	0.00				

Summary for Subcatchment PR 2C-I:

Runoff = 1.19 cfs @ 12.06 hrs, Volume= 0.091 af, Depth= 8.42"
 Routed to Reach 8R : (new Reach)

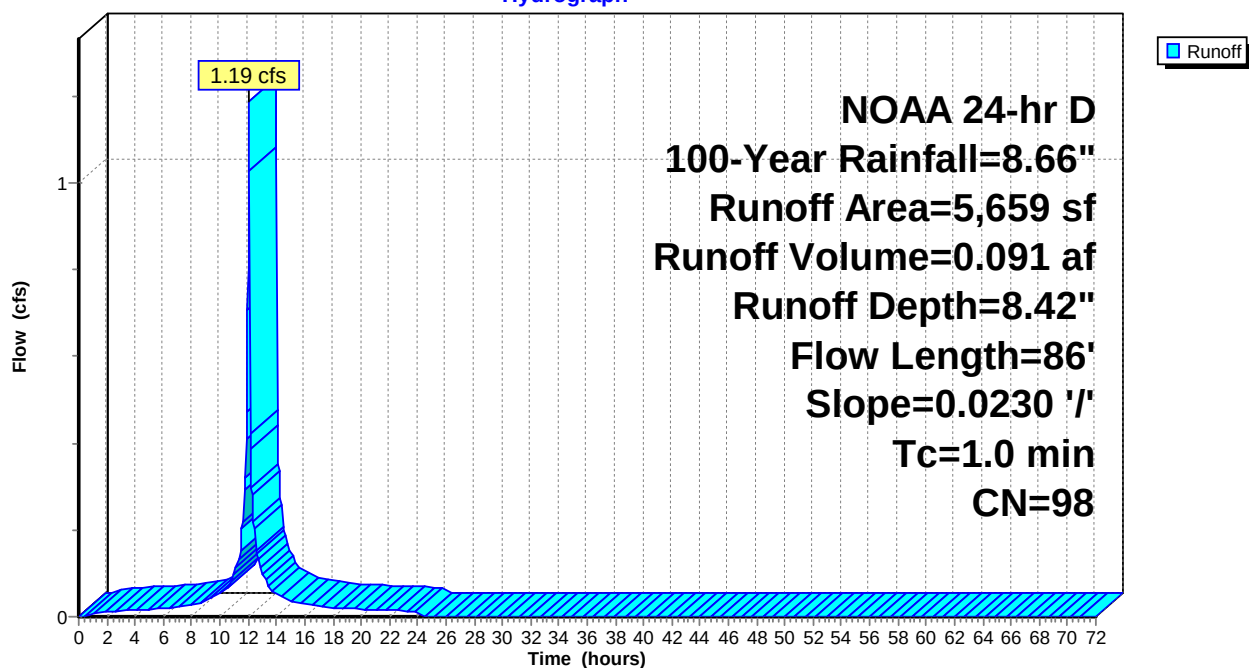
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
5,659	98	Unconnected pavement, HSG A
5,659		100.00% Impervious Area
5,659		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	86	0.0230	1.46		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"

Subcatchment PR 2C-I:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 100-Year Rainfall=8.66"

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Hydrograph for Subcatchment PR 2C-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	8.42	0.00
1.00	0.10	0.01	0.01	59.00	8.66	8.42	0.00
2.00	0.21	0.08	0.01	60.00	8.66	8.42	0.00
3.00	0.33	0.17	0.01	61.00	8.66	8.42	0.00
4.00	0.45	0.28	0.02	62.00	8.66	8.42	0.00
5.00	0.59	0.40	0.02	63.00	8.66	8.42	0.00
6.00	0.74	0.54	0.02	64.00	8.66	8.42	0.00
7.00	0.91	0.71	0.02	65.00	8.66	8.42	0.00
8.00	1.12	0.91	0.03	66.00	8.66	8.42	0.00
9.00	1.37	1.16	0.03	67.00	8.66	8.42	0.00
10.00	1.72	1.49	0.05	68.00	8.66	8.42	0.00
11.00	2.25	2.02	0.10	69.00	8.66	8.42	0.00
12.00	4.15	3.91	0.80	70.00	8.66	8.42	0.00
13.00	6.41	6.17	0.10	71.00	8.66	8.42	0.00
14.00	6.94	6.70	0.05	72.00	8.66	8.42	0.00
15.00	7.29	7.05	0.04				
16.00	7.54	7.30	0.03				
17.00	7.75	7.51	0.03				
18.00	7.92	7.68	0.02				
19.00	8.07	7.83	0.02				
20.00	8.21	7.97	0.02				
21.00	8.33	8.09	0.02				
22.00	8.45	8.21	0.01				
23.00	8.56	8.32	0.01				
24.00	8.66	8.42	0.01				
25.00	8.66	8.42	0.00				
26.00	8.66	8.42	0.00				
27.00	8.66	8.42	0.00				
28.00	8.66	8.42	0.00				
29.00	8.66	8.42	0.00				
30.00	8.66	8.42	0.00				
31.00	8.66	8.42	0.00				
32.00	8.66	8.42	0.00				
33.00	8.66	8.42	0.00				
34.00	8.66	8.42	0.00				
35.00	8.66	8.42	0.00				
36.00	8.66	8.42	0.00				
37.00	8.66	8.42	0.00				
38.00	8.66	8.42	0.00				
39.00	8.66	8.42	0.00				
40.00	8.66	8.42	0.00				
41.00	8.66	8.42	0.00				
42.00	8.66	8.42	0.00				
43.00	8.66	8.42	0.00				
44.00	8.66	8.42	0.00				
45.00	8.66	8.42	0.00				
46.00	8.66	8.42	0.00				
47.00	8.66	8.42	0.00				
48.00	8.66	8.42	0.00				
49.00	8.66	8.42	0.00				
50.00	8.66	8.42	0.00				
51.00	8.66	8.42	0.00				
52.00	8.66	8.42	0.00				
53.00	8.66	8.42	0.00				
54.00	8.66	8.42	0.00				
55.00	8.66	8.42	0.00				
56.00	8.66	8.42	0.00				
57.00	8.66	8.42	0.00				

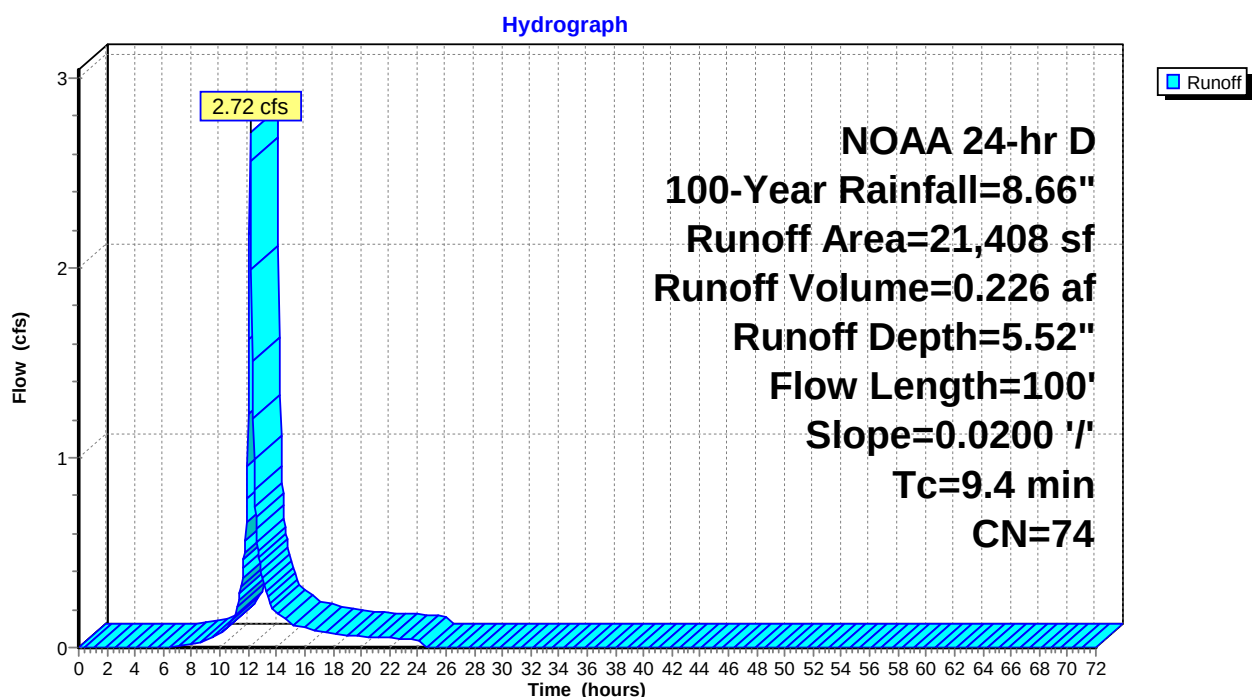
Summary for Subcatchment PR 2C-P:

Runoff = 2.72 cfs @ 12.16 hrs, Volume= 0.226 af, Depth= 5.52"
 Routed to Reach 8R : (new Reach)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
21,408	74	>75% Grass cover, Good, HSG C
21,408		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.0200	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"

Subcatchment PR 2C-P:

240913 40 ERW Waymaker Proposed

NOAA 24-hr D 100-Year Rainfall=8.66"

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Hydrograph for Subcatchment PR 2C-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	5.52	0.00
1.00	0.10	0.00	0.00	59.00	8.66	5.52	0.00
2.00	0.21	0.00	0.00	60.00	8.66	5.52	0.00
3.00	0.33	0.00	0.00	61.00	8.66	5.52	0.00
4.00	0.45	0.00	0.00	62.00	8.66	5.52	0.00
5.00	0.59	0.00	0.00	63.00	8.66	5.52	0.00
6.00	0.74	0.00	0.00	64.00	8.66	5.52	0.00
7.00	0.91	0.01	0.01	65.00	8.66	5.52	0.00
8.00	1.12	0.05	0.02	66.00	8.66	5.52	0.00
9.00	1.37	0.11	0.04	67.00	8.66	5.52	0.00
10.00	1.72	0.23	0.07	68.00	8.66	5.52	0.00
11.00	2.25	0.47	0.17	69.00	8.66	5.52	0.00
12.00	4.15	1.71	1.23	70.00	8.66	5.52	0.00
13.00	6.41	3.53	0.38	71.00	8.66	5.52	0.00
14.00	6.94	3.99	0.19	72.00	8.66	5.52	0.00
15.00	7.29	4.29	0.13				
16.00	7.54	4.51	0.10				
17.00	7.75	4.70	0.09				
18.00	7.92	4.85	0.07				
19.00	8.07	4.99	0.06				
20.00	8.21	5.11	0.06				
21.00	8.33	5.23	0.06				
22.00	8.45	5.33	0.05				
23.00	8.56	5.43	0.05				
24.00	8.66	5.52	0.04				
25.00	8.66	5.52	0.00				
26.00	8.66	5.52	0.00				
27.00	8.66	5.52	0.00				
28.00	8.66	5.52	0.00				
29.00	8.66	5.52	0.00				
30.00	8.66	5.52	0.00				
31.00	8.66	5.52	0.00				
32.00	8.66	5.52	0.00				
33.00	8.66	5.52	0.00				
34.00	8.66	5.52	0.00				
35.00	8.66	5.52	0.00				
36.00	8.66	5.52	0.00				
37.00	8.66	5.52	0.00				
38.00	8.66	5.52	0.00				
39.00	8.66	5.52	0.00				
40.00	8.66	5.52	0.00				
41.00	8.66	5.52	0.00				
42.00	8.66	5.52	0.00				
43.00	8.66	5.52	0.00				
44.00	8.66	5.52	0.00				
45.00	8.66	5.52	0.00				
46.00	8.66	5.52	0.00				
47.00	8.66	5.52	0.00				
48.00	8.66	5.52	0.00				
49.00	8.66	5.52	0.00				
50.00	8.66	5.52	0.00				
51.00	8.66	5.52	0.00				
52.00	8.66	5.52	0.00				
53.00	8.66	5.52	0.00				
54.00	8.66	5.52	0.00				
55.00	8.66	5.52	0.00				
56.00	8.66	5.52	0.00				
57.00	8.66	5.52	0.00				

Summary for Subcatchment PR 3 - P:

Runoff = 1.41 cfs @ 12.15 hrs, Volume= 0.110 af, Depth= 5.52"
 Routed to Reach DP3 : TOTAL

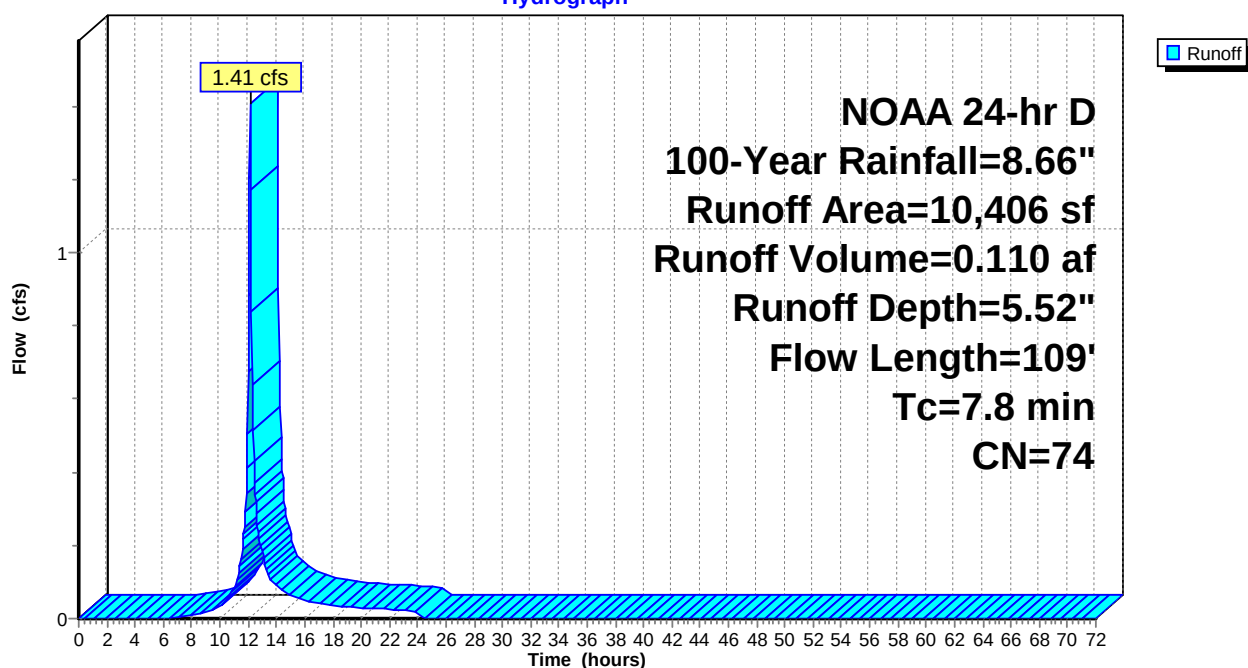
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
10,406	74	>75% Grass cover, Good, HSG C
10,406		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	72	0.0280	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
1.4	28	0.1790	0.33		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.0	9	0.2220	7.59		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
7.8	109	Total			

Subcatchment PR 3 - P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 100-Year Rainfall=8.66"

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Hydrograph for Subcatchment PR 3 - P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	5.52	0.00
1.00	0.10	0.00	0.00	59.00	8.66	5.52	0.00
2.00	0.21	0.00	0.00	60.00	8.66	5.52	0.00
3.00	0.33	0.00	0.00	61.00	8.66	5.52	0.00
4.00	0.45	0.00	0.00	62.00	8.66	5.52	0.00
5.00	0.59	0.00	0.00	63.00	8.66	5.52	0.00
6.00	0.74	0.00	0.00	64.00	8.66	5.52	0.00
7.00	0.91	0.01	0.00	65.00	8.66	5.52	0.00
8.00	1.12	0.05	0.01	66.00	8.66	5.52	0.00
9.00	1.37	0.11	0.02	67.00	8.66	5.52	0.00
10.00	1.72	0.23	0.04	68.00	8.66	5.52	0.00
11.00	2.25	0.47	0.08	69.00	8.66	5.52	0.00
12.00	4.15	1.71	0.67	70.00	8.66	5.52	0.00
13.00	6.41	3.53	0.18	71.00	8.66	5.52	0.00
14.00	6.94	3.99	0.09	72.00	8.66	5.52	0.00
15.00	7.29	4.29	0.06				
16.00	7.54	4.51	0.05				
17.00	7.75	4.70	0.04				
18.00	7.92	4.85	0.03				
19.00	8.07	4.99	0.03				
20.00	8.21	5.11	0.03				
21.00	8.33	5.23	0.03				
22.00	8.45	5.33	0.02				
23.00	8.56	5.43	0.02				
24.00	8.66	5.52	0.02				
25.00	8.66	5.52	0.00				
26.00	8.66	5.52	0.00				
27.00	8.66	5.52	0.00				
28.00	8.66	5.52	0.00				
29.00	8.66	5.52	0.00				
30.00	8.66	5.52	0.00				
31.00	8.66	5.52	0.00				
32.00	8.66	5.52	0.00				
33.00	8.66	5.52	0.00				
34.00	8.66	5.52	0.00				
35.00	8.66	5.52	0.00				
36.00	8.66	5.52	0.00				
37.00	8.66	5.52	0.00				
38.00	8.66	5.52	0.00				
39.00	8.66	5.52	0.00				
40.00	8.66	5.52	0.00				
41.00	8.66	5.52	0.00				
42.00	8.66	5.52	0.00				
43.00	8.66	5.52	0.00				
44.00	8.66	5.52	0.00				
45.00	8.66	5.52	0.00				
46.00	8.66	5.52	0.00				
47.00	8.66	5.52	0.00				
48.00	8.66	5.52	0.00				
49.00	8.66	5.52	0.00				
50.00	8.66	5.52	0.00				
51.00	8.66	5.52	0.00				
52.00	8.66	5.52	0.00				
53.00	8.66	5.52	0.00				
54.00	8.66	5.52	0.00				
55.00	8.66	5.52	0.00				
56.00	8.66	5.52	0.00				
57.00	8.66	5.52	0.00				

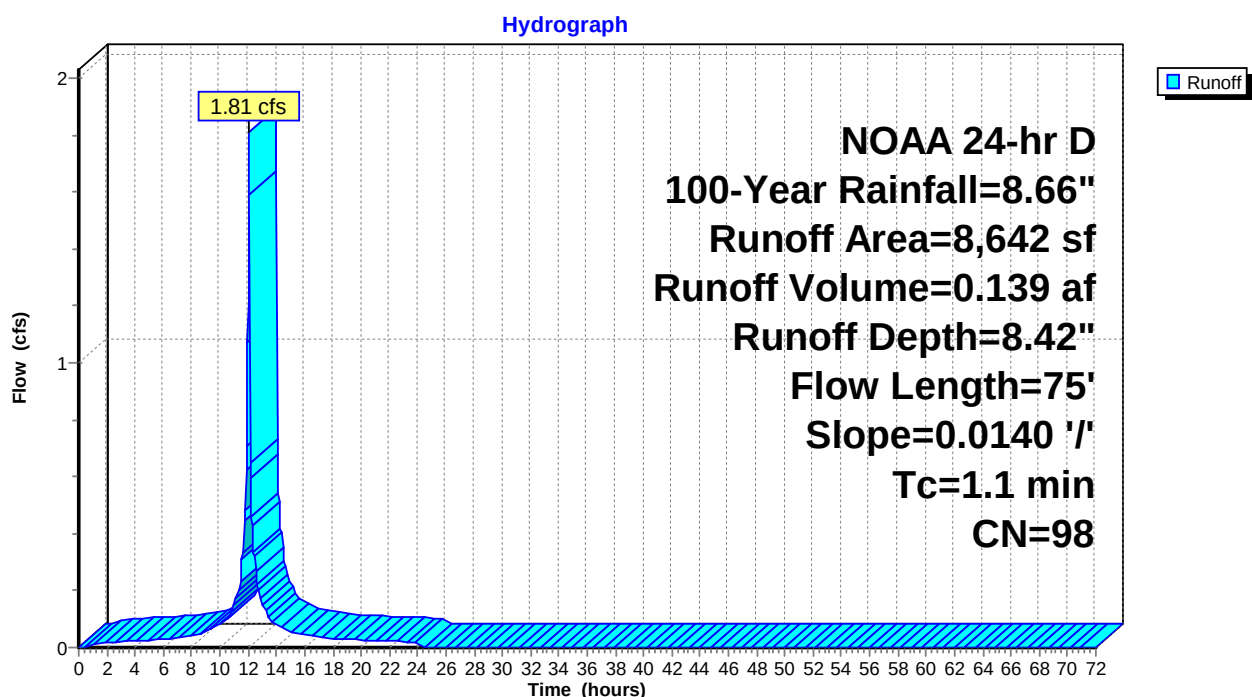
Summary for Subcatchment PR-2B-I:

Runoff = 1.81 cfs @ 12.06 hrs, Volume= 0.139 af, Depth= 8.42"
 Routed to Pond 11P : Existing Drywell System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
8,642	98	Paved parking, HSG C
8,642		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	75	0.0140	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"

Subcatchment PR-2B-I:

Hydrograph for Subcatchment PR-2B-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	8.42	0.00
1.00	0.10	0.01	0.01	59.00	8.66	8.42	0.00
2.00	0.21	0.08	0.02	60.00	8.66	8.42	0.00
3.00	0.33	0.17	0.02	61.00	8.66	8.42	0.00
4.00	0.45	0.28	0.02	62.00	8.66	8.42	0.00
5.00	0.59	0.40	0.03	63.00	8.66	8.42	0.00
6.00	0.74	0.54	0.03	64.00	8.66	8.42	0.00
7.00	0.91	0.71	0.04	65.00	8.66	8.42	0.00
8.00	1.12	0.91	0.04	66.00	8.66	8.42	0.00
9.00	1.37	1.16	0.05	67.00	8.66	8.42	0.00
10.00	1.72	1.49	0.08	68.00	8.66	8.42	0.00
11.00	2.25	2.02	0.15	69.00	8.66	8.42	0.00
12.00	4.15	3.91	1.21	70.00	8.66	8.42	0.00
13.00	6.41	6.17	0.16	71.00	8.66	8.42	0.00
14.00	6.94	6.70	0.08	72.00	8.66	8.42	0.00
15.00	7.29	7.05	0.06				
16.00	7.54	7.30	0.05				
17.00	7.75	7.51	0.04				
18.00	7.92	7.68	0.03				
19.00	8.07	7.83	0.03				
20.00	8.21	7.97	0.03				
21.00	8.33	8.09	0.02				
22.00	8.45	8.21	0.02				
23.00	8.56	8.32	0.02				
24.00	8.66	8.42	0.02				
25.00	8.66	8.42	0.00				
26.00	8.66	8.42	0.00				
27.00	8.66	8.42	0.00				
28.00	8.66	8.42	0.00				
29.00	8.66	8.42	0.00				
30.00	8.66	8.42	0.00				
31.00	8.66	8.42	0.00				
32.00	8.66	8.42	0.00				
33.00	8.66	8.42	0.00				
34.00	8.66	8.42	0.00				
35.00	8.66	8.42	0.00				
36.00	8.66	8.42	0.00				
37.00	8.66	8.42	0.00				
38.00	8.66	8.42	0.00				
39.00	8.66	8.42	0.00				
40.00	8.66	8.42	0.00				
41.00	8.66	8.42	0.00				
42.00	8.66	8.42	0.00				
43.00	8.66	8.42	0.00				
44.00	8.66	8.42	0.00				
45.00	8.66	8.42	0.00				
46.00	8.66	8.42	0.00				
47.00	8.66	8.42	0.00				
48.00	8.66	8.42	0.00				
49.00	8.66	8.42	0.00				
50.00	8.66	8.42	0.00				
51.00	8.66	8.42	0.00				
52.00	8.66	8.42	0.00				
53.00	8.66	8.42	0.00				
54.00	8.66	8.42	0.00				
55.00	8.66	8.42	0.00				
56.00	8.66	8.42	0.00				
57.00	8.66	8.42	0.00				

Summary for Subcatchment PR-2B-P:

Runoff = 0.19 cfs @ 12.15 hrs, Volume= 0.015 af, Depth= 5.52"
 Routed to Pond 11P : Existing Drywell System

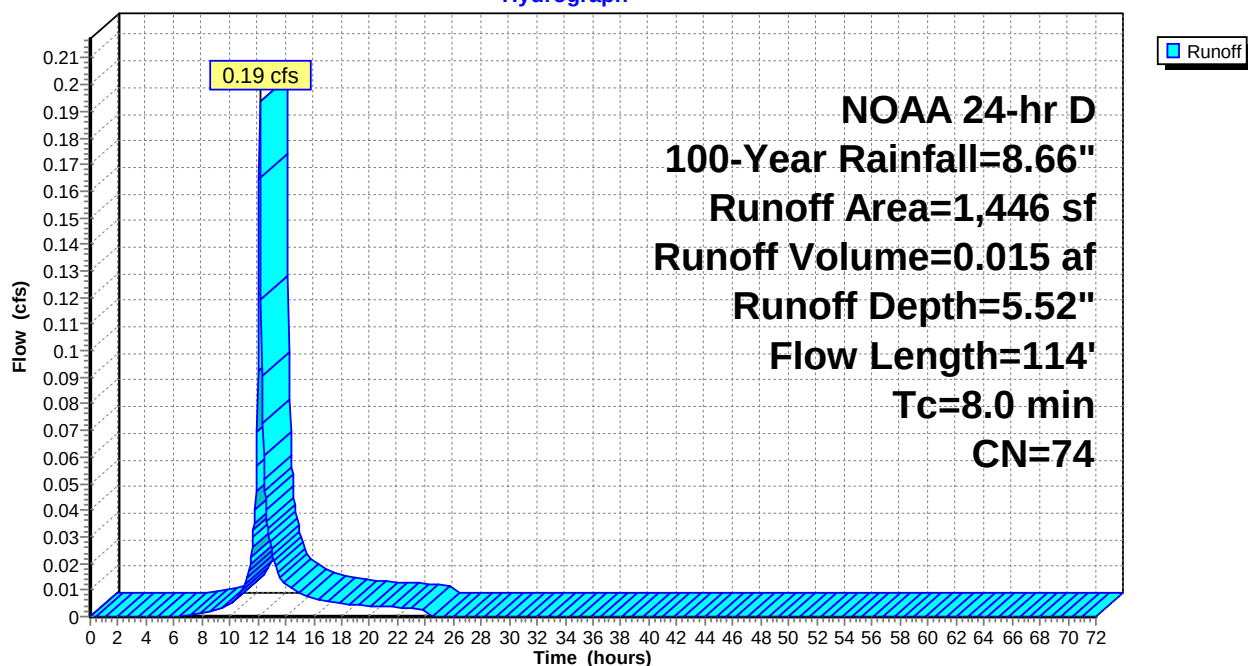
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
1,446	74	>75% Grass cover, Good, HSG C
1,446		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	69	0.0170	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.4	31	0.0220	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"
0.1	14	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.0	114	Total			

Subcatchment PR-2B-P:

Hydrograph



240913 40 ERW Waymaker Proposed

NOAA 24-hr D 100-Year Rainfall=8.66"

Prepared by Colliers Engineering & Design

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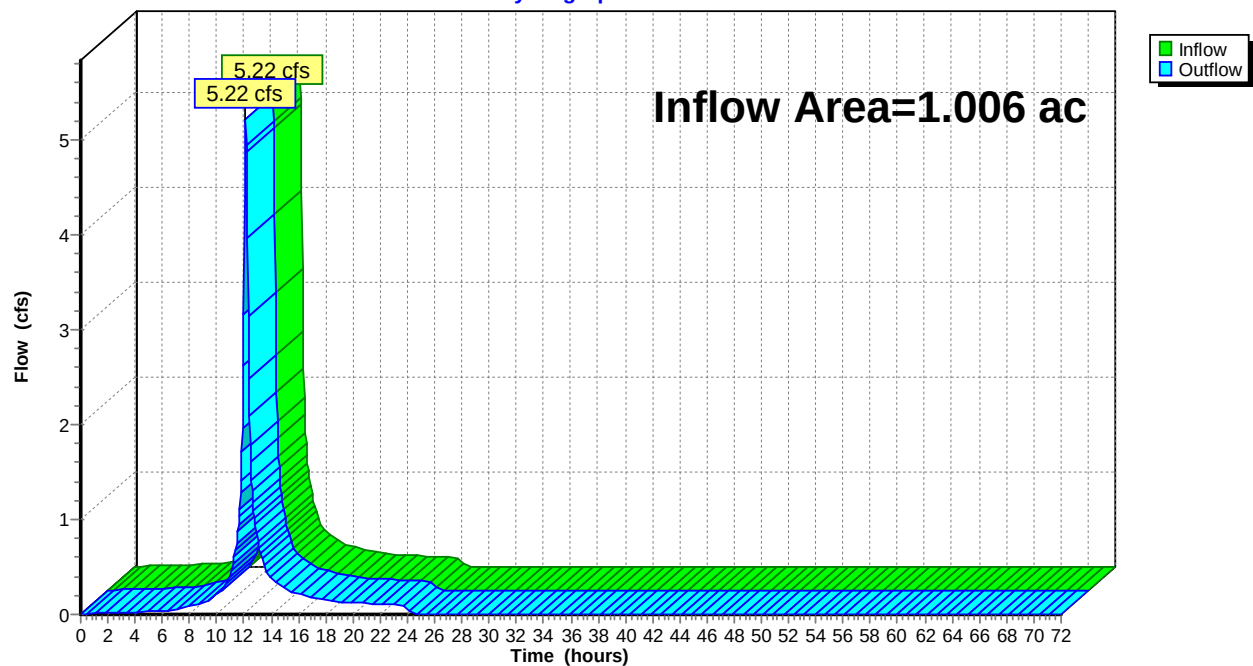
Hydrograph for Subcatchment PR-2B-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	8.66	5.52	0.00
1.00	0.10	0.00	0.00	59.00	8.66	5.52	0.00
2.00	0.21	0.00	0.00	60.00	8.66	5.52	0.00
3.00	0.33	0.00	0.00	61.00	8.66	5.52	0.00
4.00	0.45	0.00	0.00	62.00	8.66	5.52	0.00
5.00	0.59	0.00	0.00	63.00	8.66	5.52	0.00
6.00	0.74	0.00	0.00	64.00	8.66	5.52	0.00
7.00	0.91	0.01	0.00	65.00	8.66	5.52	0.00
8.00	1.12	0.05	0.00	66.00	8.66	5.52	0.00
9.00	1.37	0.11	0.00	67.00	8.66	5.52	0.00
10.00	1.72	0.23	0.01	68.00	8.66	5.52	0.00
11.00	2.25	0.47	0.01	69.00	8.66	5.52	0.00
12.00	4.15	1.71	0.09	70.00	8.66	5.52	0.00
13.00	6.41	3.53	0.02	71.00	8.66	5.52	0.00
14.00	6.94	3.99	0.01	72.00	8.66	5.52	0.00
15.00	7.29	4.29	0.01				
16.00	7.54	4.51	0.01				
17.00	7.75	4.70	0.01				
18.00	7.92	4.85	0.00				
19.00	8.07	4.99	0.00				
20.00	8.21	5.11	0.00				
21.00	8.33	5.23	0.00				
22.00	8.45	5.33	0.00				
23.00	8.56	5.43	0.00				
24.00	8.66	5.52	0.00				
25.00	8.66	5.52	0.00				
26.00	8.66	5.52	0.00				
27.00	8.66	5.52	0.00				
28.00	8.66	5.52	0.00				
29.00	8.66	5.52	0.00				
30.00	8.66	5.52	0.00				
31.00	8.66	5.52	0.00				
32.00	8.66	5.52	0.00				
33.00	8.66	5.52	0.00				
34.00	8.66	5.52	0.00				
35.00	8.66	5.52	0.00				
36.00	8.66	5.52	0.00				
37.00	8.66	5.52	0.00				
38.00	8.66	5.52	0.00				
39.00	8.66	5.52	0.00				
40.00	8.66	5.52	0.00				
41.00	8.66	5.52	0.00				
42.00	8.66	5.52	0.00				
43.00	8.66	5.52	0.00				
44.00	8.66	5.52	0.00				
45.00	8.66	5.52	0.00				
46.00	8.66	5.52	0.00				
47.00	8.66	5.52	0.00				
48.00	8.66	5.52	0.00				
49.00	8.66	5.52	0.00				
50.00	8.66	5.52	0.00				
51.00	8.66	5.52	0.00				
52.00	8.66	5.52	0.00				
53.00	8.66	5.52	0.00				
54.00	8.66	5.52	0.00				
55.00	8.66	5.52	0.00				
56.00	8.66	5.52	0.00				
57.00	8.66	5.52	0.00				

Summary for Reach 1R: TOP

Inflow Area = 1.006 ac, 21.70% Impervious, Inflow Depth = 6.24" for 100-Year event
Inflow = 5.22 cfs @ 12.11 hrs, Volume= 0.523 af
Outflow = 5.22 cfs @ 12.11 hrs, Volume= 0.523 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 2R : CHANNEL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 1R: TOP**Hydrograph**

Hydrograph for Reach 1R: TOP

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.01		0.01	59.00	0.00		0.00
2.00	0.02		0.02	60.00	0.00		0.00
3.00	0.02		0.02	61.00	0.00		0.00
4.00	0.03		0.03	62.00	0.00		0.00
5.00	0.03		0.03	63.00	0.00		0.00
6.00	0.04		0.04	64.00	0.00		0.00
7.00	0.06		0.06	65.00	0.00		0.00
8.00	0.09		0.09	66.00	0.00		0.00
9.00	0.12		0.12	67.00	0.00		0.00
10.00	0.21		0.21	68.00	0.00		0.00
11.00	0.44		0.44	69.00	0.00		0.00
12.00	3.16		3.16	70.00	0.00		0.00
13.00	0.80		0.80	71.00	0.00		0.00
14.00	0.39		0.39	72.00	0.00		0.00
15.00	0.27		0.27				
16.00	0.22		0.22				
17.00	0.18		0.18				
18.00	0.15		0.15				
19.00	0.13		0.13				
20.00	0.13		0.13				
21.00	0.12		0.12				
22.00	0.11		0.11				
23.00	0.10		0.10				
24.00	0.09		0.09				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

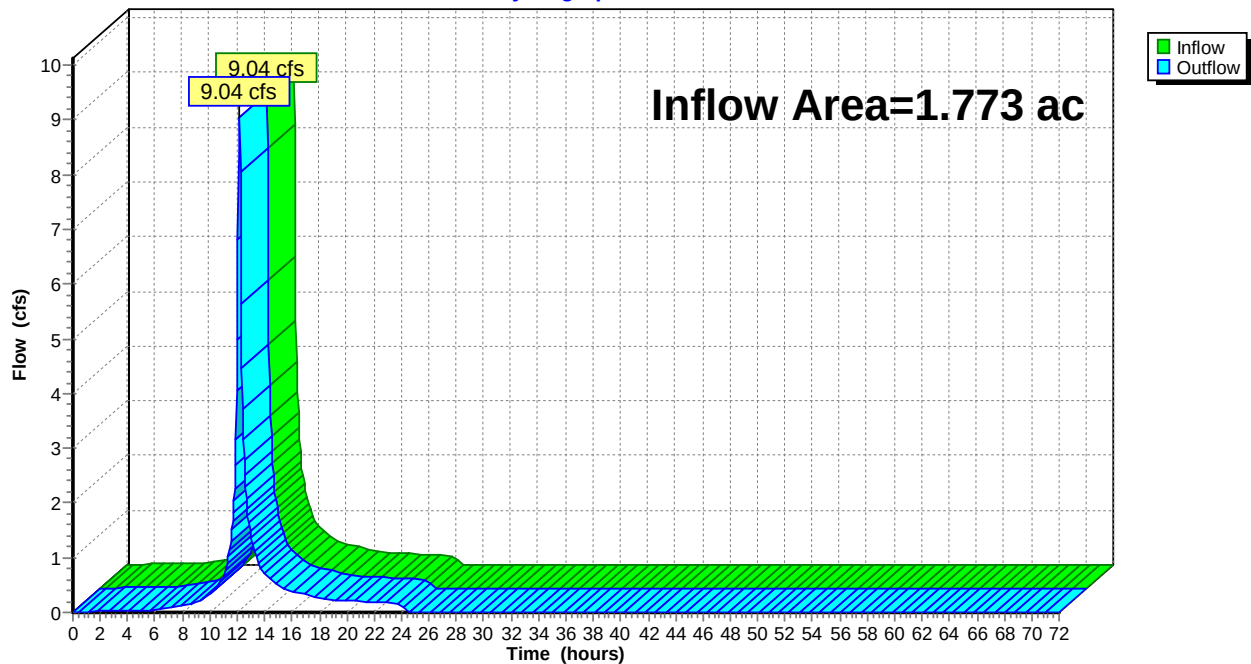
Summary for Reach 2R: CHANNEL

Inflow Area = 1.773 ac, 12.31% Impervious, Inflow Depth = 5.93" for 100-Year event
Inflow = 9.04 cfs @ 12.17 hrs, Volume= 0.876 af
Outflow = 9.04 cfs @ 12.17 hrs, Volume= 0.876 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : TOTAL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 2R: CHANNEL

Hydrograph



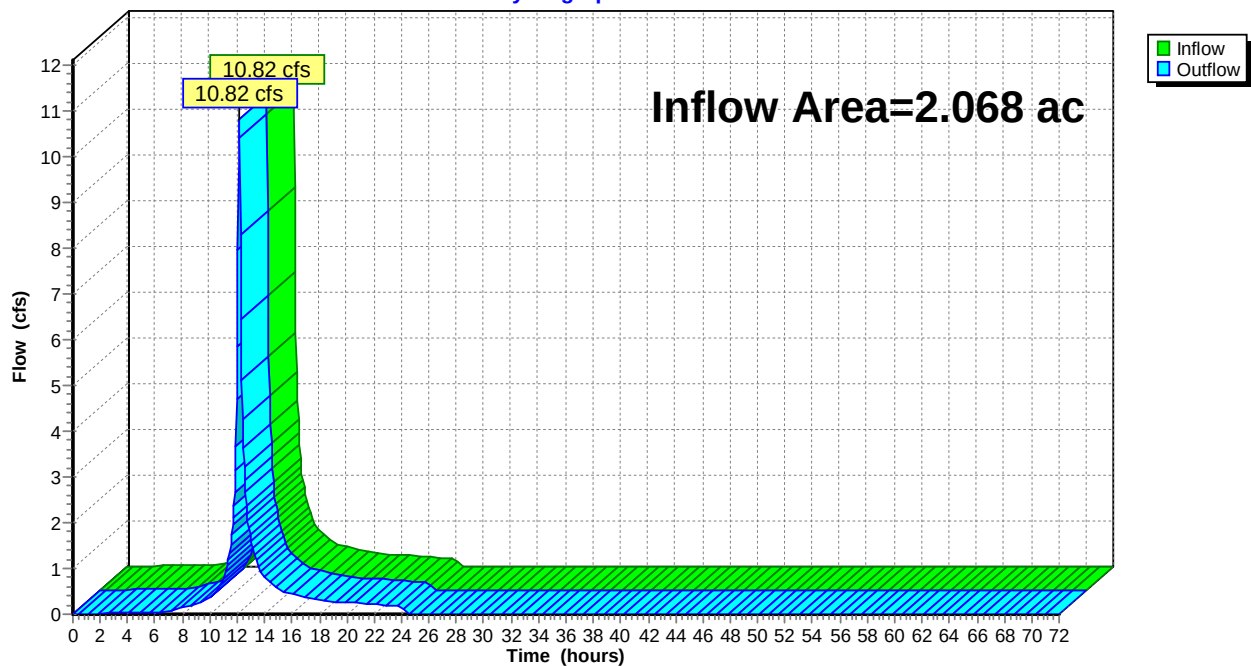
Hydrograph for Reach 2R: CHANNEL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.01		0.01	59.00	0.00		0.00
2.00	0.02		0.02	60.00	0.00		0.00
3.00	0.02		0.02	61.00	0.00		0.00
4.00	0.03		0.03	62.00	0.00		0.00
5.00	0.03		0.03	63.00	0.00		0.00
6.00	0.04		0.04	64.00	0.00		0.00
7.00	0.07		0.07	65.00	0.00		0.00
8.00	0.12		0.12	66.00	0.00		0.00
9.00	0.18		0.18	67.00	0.00		0.00
10.00	0.33		0.33	68.00	0.00		0.00
11.00	0.69		0.69	69.00	0.00		0.00
12.00	4.99		4.99	70.00	0.00		0.00
13.00	1.39		1.39	71.00	0.00		0.00
14.00	0.68		0.68	72.00	0.00		0.00
15.00	0.47		0.47				
16.00	0.38		0.38				
17.00	0.32		0.32				
18.00	0.26		0.26				
19.00	0.23		0.23				
20.00	0.22		0.22				
21.00	0.20		0.20				
22.00	0.19		0.19				
23.00	0.17		0.17				
24.00	0.16		0.16				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Reach 3R: TOTAL

Inflow Area = 2.068 ac, 10.56% Impervious, Inflow Depth = 5.91" for 100-Year event
Inflow = 10.82 cfs @ 12.16 hrs, Volume= 1.018 af
Outflow = 10.82 cfs @ 12.16 hrs, Volume= 1.018 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 3R: TOTAL**Hydrograph**

Hydrograph for Reach 3R: TOTAL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.01		0.01	59.00	0.00		0.00
2.00	0.02		0.02	60.00	0.00		0.00
3.00	0.02		0.02	61.00	0.00		0.00
4.00	0.03		0.03	62.00	0.00		0.00
5.00	0.03		0.03	63.00	0.00		0.00
6.00	0.04		0.04	64.00	0.00		0.00
7.00	0.08		0.08	65.00	0.00		0.00
8.00	0.14		0.14	66.00	0.00		0.00
9.00	0.21		0.21	67.00	0.00		0.00
10.00	0.38		0.38	68.00	0.00		0.00
11.00	0.81		0.81	69.00	0.00		0.00
12.00	5.86		5.86	70.00	0.00		0.00
13.00	1.62		1.62	71.00	0.00		0.00
14.00	0.80		0.80	72.00	0.00		0.00
15.00	0.55		0.55				
16.00	0.44		0.44				
17.00	0.37		0.37				
18.00	0.30		0.30				
19.00	0.27		0.27				
20.00	0.26		0.26				
21.00	0.24		0.24				
22.00	0.22		0.22				
23.00	0.20		0.20				
24.00	0.18		0.18				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

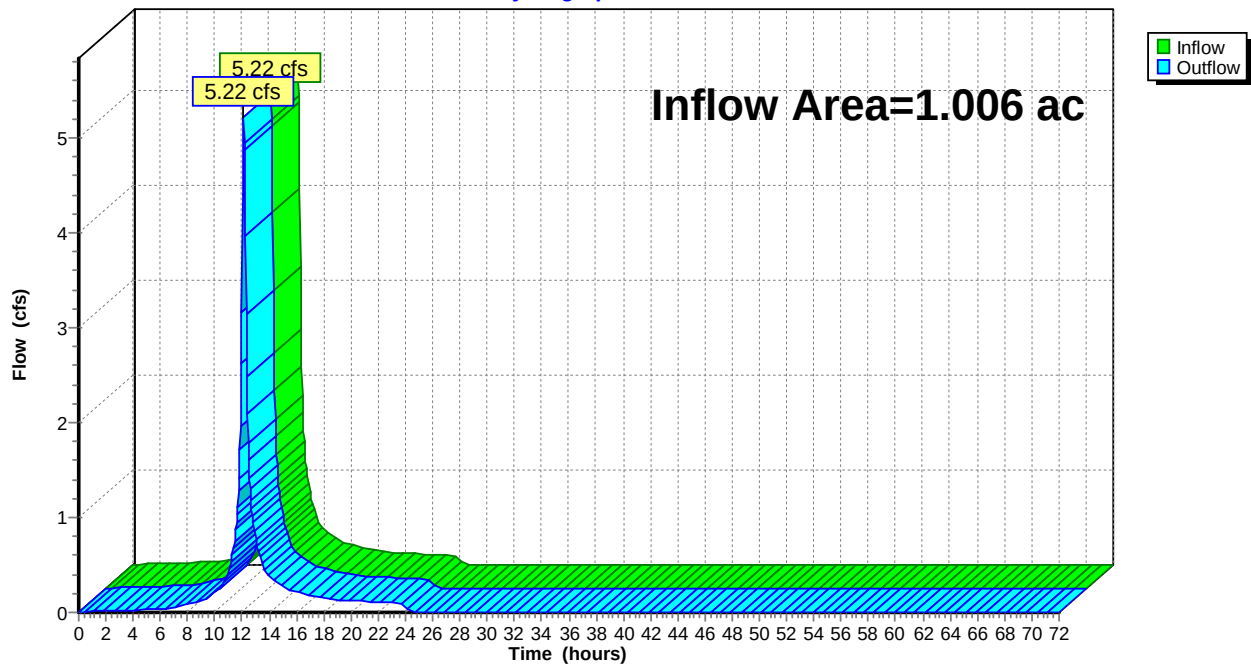
Summary for Reach 4R:

Inflow Area = 1.006 ac, 21.70% Impervious, Inflow Depth = 6.24" for 100-Year event
Inflow = 5.22 cfs @ 12.11 hrs, Volume= 0.523 af
Outflow = 5.22 cfs @ 12.11 hrs, Volume= 0.523 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 1R : TOP

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 4R:

Hydrograph



Hydrograph for Reach 4R:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.01		0.01	59.00	0.00		0.00
2.00	0.02		0.02	60.00	0.00		0.00
3.00	0.02		0.02	61.00	0.00		0.00
4.00	0.03		0.03	62.00	0.00		0.00
5.00	0.03		0.03	63.00	0.00		0.00
6.00	0.04		0.04	64.00	0.00		0.00
7.00	0.06		0.06	65.00	0.00		0.00
8.00	0.09		0.09	66.00	0.00		0.00
9.00	0.12		0.12	67.00	0.00		0.00
10.00	0.21		0.21	68.00	0.00		0.00
11.00	0.44		0.44	69.00	0.00		0.00
12.00	3.16		3.16	70.00	0.00		0.00
13.00	0.80		0.80	71.00	0.00		0.00
14.00	0.39		0.39	72.00	0.00		0.00
15.00	0.27		0.27				
16.00	0.22		0.22				
17.00	0.18		0.18				
18.00	0.15		0.15				
19.00	0.13		0.13				
20.00	0.13		0.13				
21.00	0.12		0.12				
22.00	0.11		0.11				
23.00	0.10		0.10				
24.00	0.09		0.09				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

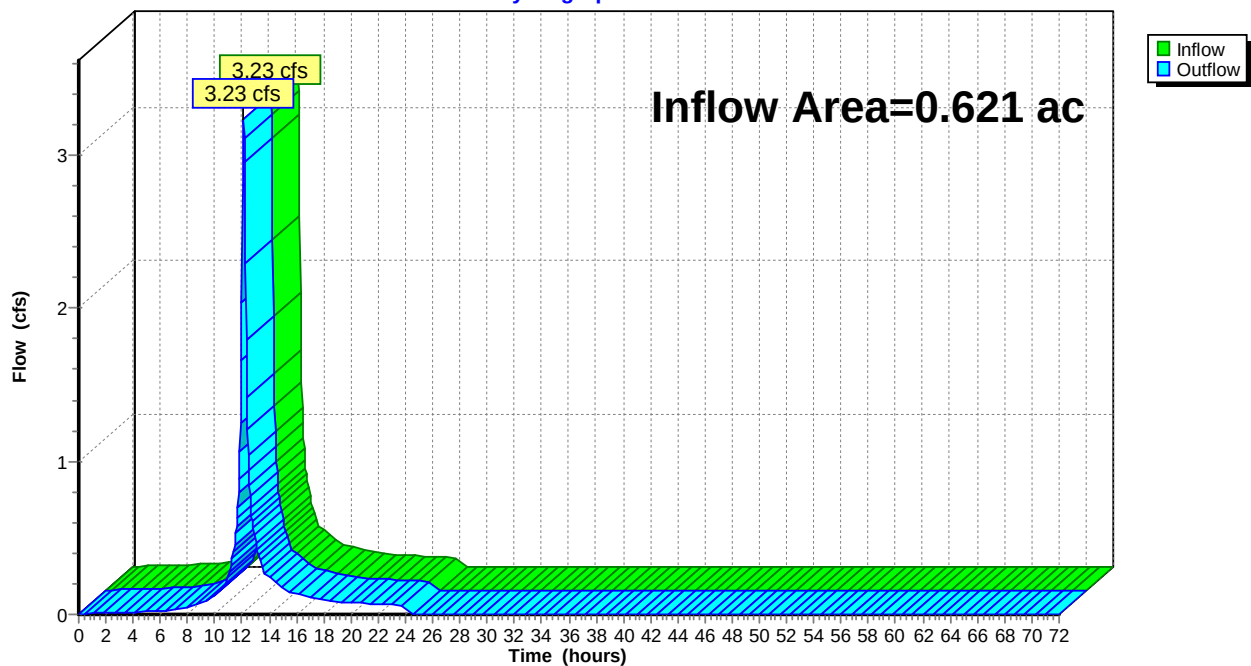
Summary for Reach 8R: (new Reach)

Inflow Area = 0.621 ac, 20.91% Impervious, Inflow Depth = 6.13" for 100-Year event
Inflow = 3.23 cfs @ 12.12 hrs, Volume= 0.317 af
Outflow = 3.23 cfs @ 12.12 hrs, Volume= 0.317 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 12P : Subsurface Infiltration Basin

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 8R: (new Reach)

Hydrograph



Hydrograph for Reach 8R: (new Reach)

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.01		0.01	59.00	0.00		0.00
2.00	0.01		0.01	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.02		0.02	62.00	0.00		0.00
5.00	0.02		0.02	63.00	0.00		0.00
6.00	0.02		0.02	64.00	0.00		0.00
7.00	0.03		0.03	65.00	0.00		0.00
8.00	0.05		0.05	66.00	0.00		0.00
9.00	0.07		0.07	67.00	0.00		0.00
10.00	0.13		0.13	68.00	0.00		0.00
11.00	0.26		0.26	69.00	0.00		0.00
12.00	2.04		2.04	70.00	0.00		0.00
13.00	0.48		0.48	71.00	0.00		0.00
14.00	0.24		0.24	72.00	0.00		0.00
15.00	0.16		0.16				
16.00	0.13		0.13				
17.00	0.11		0.11				
18.00	0.09		0.09				
19.00	0.08		0.08				
20.00	0.08		0.08				
21.00	0.07		0.07				
22.00	0.07		0.07				
23.00	0.06		0.06				
24.00	0.05		0.05				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

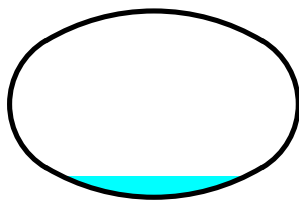
Summary for Reach DP1: TOP

Inflow Area = 0.718 ac, 9.34% Impervious, Inflow Depth = 4.62" for 100-Year event
Inflow = 2.88 cfs @ 12.18 hrs, Volume= 0.276 af
Outflow = 2.87 cfs @ 12.18 hrs, Volume= 0.276 af, Atten= 0%, Lag= 0.2 min
Routed to Reach DP2 : CHANNEL

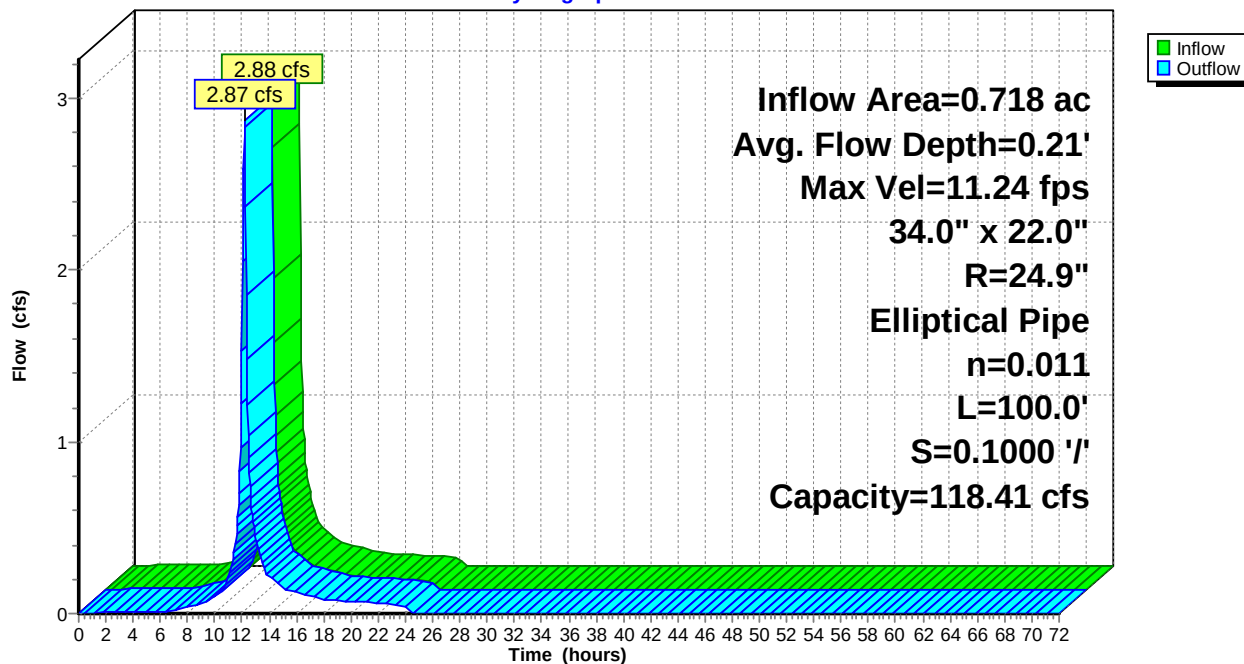
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 11.24 fps, Min. Travel Time= 0.1 min
Avg. Velocity= 3.76 fps, Avg. Travel Time= 0.4 min

Peak Storage= 25 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.21', Surface Width= 1.81'
Bank-Full Depth= 1.83' Flow Area= 4.1 sf, Capacity= 118.41 cfs

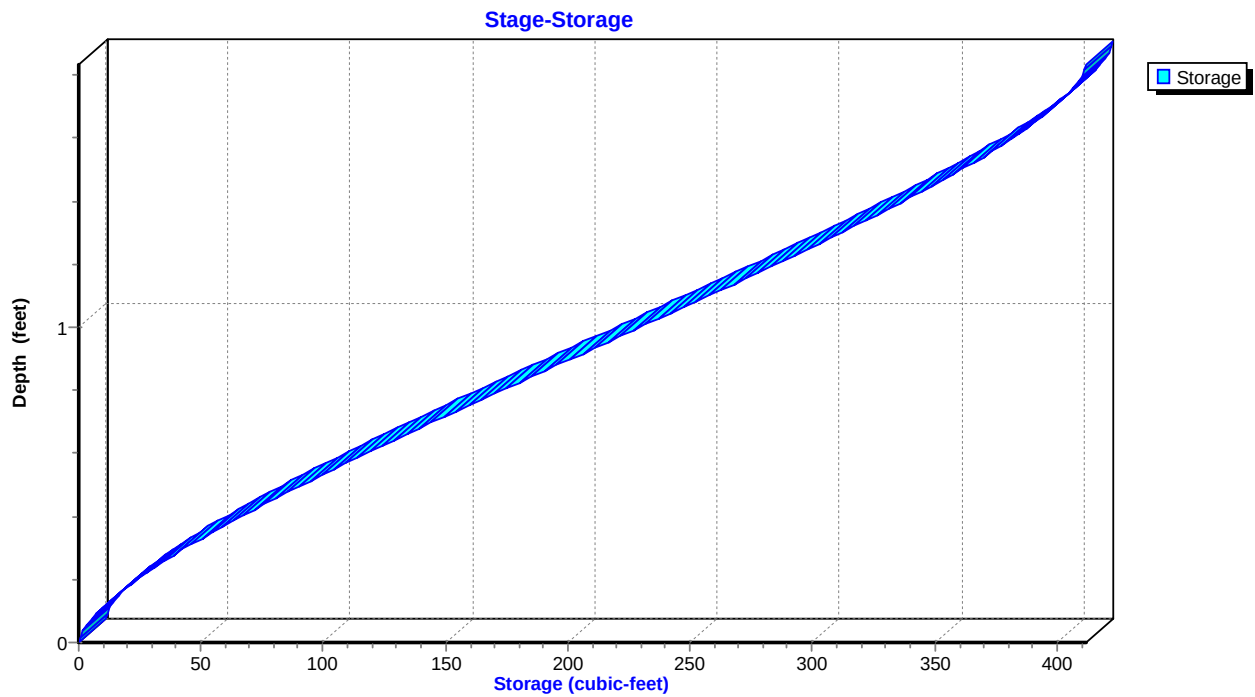
34.0" W x 22.0" H, R=24.9" Elliptical Pipe
n= 0.011 Concrete pipe, straight & clean
Length= 100.0' Slope= 0.1000 '/'
Inlet Invert= 0.00', Outlet Invert= -10.00'

**Reach DP1: TOP**

Hydrograph



Reach DP1: TOP



Hydrograph for Reach DP1: TOP

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	0.00	0.00
2.50	0.01	0	0.01	0.01
5.00	0.01	0	0.01	0.01
7.50	0.03	1	0.02	0.03
10.00	0.10	2	0.04	0.10
12.50	0.90	11	0.12	0.90
15.00	0.15	3	0.05	0.15
17.50	0.09	2	0.04	0.09
20.00	0.07	2	0.04	0.07
22.50	0.06	2	0.03	0.06
25.00	0.00	0	0.00	0.00
27.50	0.00	0	0.00	0.00
30.00	0.00	0	0.00	0.00
32.50	0.00	0	0.00	0.00
35.00	0.00	0	0.00	0.00
37.50	0.00	0	0.00	0.00
40.00	0.00	0	0.00	0.00
42.50	0.00	0	0.00	0.00
45.00	0.00	0	0.00	0.00
47.50	0.00	0	0.00	0.00
50.00	0.00	0	0.00	0.00
52.50	0.00	0	0.00	0.00
55.00	0.00	0	0.00	0.00
57.50	0.00	0	0.00	0.00
60.00	0.00	0	0.00	0.00
62.50	0.00	0	0.00	0.00
65.00	0.00	0	0.00	0.00
67.50	0.00	0	0.00	0.00
70.00	0.00	0	0.00	0.00

Stage-Area-Storage for Reach DP1: TOP

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
0.00	0.0	0	1.16	2.7	274
0.02	0.0	1	1.18	2.8	280
0.04	0.0	2	1.20	2.9	285
0.06	0.0	4	1.22	2.9	291
0.08	0.1	6	1.24	3.0	296
0.10	0.1	9	1.26	3.0	301
0.12	0.1	11	1.28	3.1	307
0.14	0.1	14	1.30	3.1	312
0.16	0.2	17	1.32	3.2	317
0.18	0.2	20	1.34	3.2	322
0.20	0.2	24	1.36	3.3	327
0.22	0.3	28	1.38	3.3	332
0.24	0.3	31	1.40	3.4	337
0.26	0.4	35	1.42	3.4	342
0.28	0.4	39	1.44	3.5	347
0.30	0.4	44	1.46	3.5	352
0.32	0.5	48	1.48	3.6	356
0.34	0.5	52	1.50	3.6	361
0.36	0.6	57	1.52	3.7	365
0.38	0.6	62	1.54	3.7	370
0.40	0.7	67	1.56	3.7	374
0.42	0.7	71	1.58	3.8	378
0.44	0.8	76	1.60	3.8	382
0.46	0.8	81	1.62	3.9	386
0.48	0.9	86	1.64	3.9	389
0.50	0.9	91	1.66	3.9	393
0.52	1.0	97	1.68	4.0	396
0.54	1.0	102	1.70	4.0	399
0.56	1.1	107	1.72	4.0	402
0.58	1.1	112	1.74	4.0	404
0.60	1.2	118	1.76	4.1	407
0.62	1.2	123	1.78	4.1	409
0.64	1.3	129	1.80	4.1	410
0.66	1.3	134	1.82	4.1	411
0.68	1.4	140			
0.70	1.5	145			
0.72	1.5	151			
0.74	1.6	156			
0.76	1.6	162			
0.78	1.7	167			
0.80	1.7	173			
0.82	1.8	179			
0.84	1.8	184			
0.86	1.9	190			
0.88	2.0	196			
0.90	2.0	201			
0.92	2.1	207			
0.94	2.1	213			
0.96	2.2	218			
0.98	2.2	224			
1.00	2.3	230			
1.02	2.4	235			
1.04	2.4	241			
1.06	2.5	246			
1.08	2.5	252			
1.10	2.6	258			
1.12	2.6	263			
1.14	2.7	269			

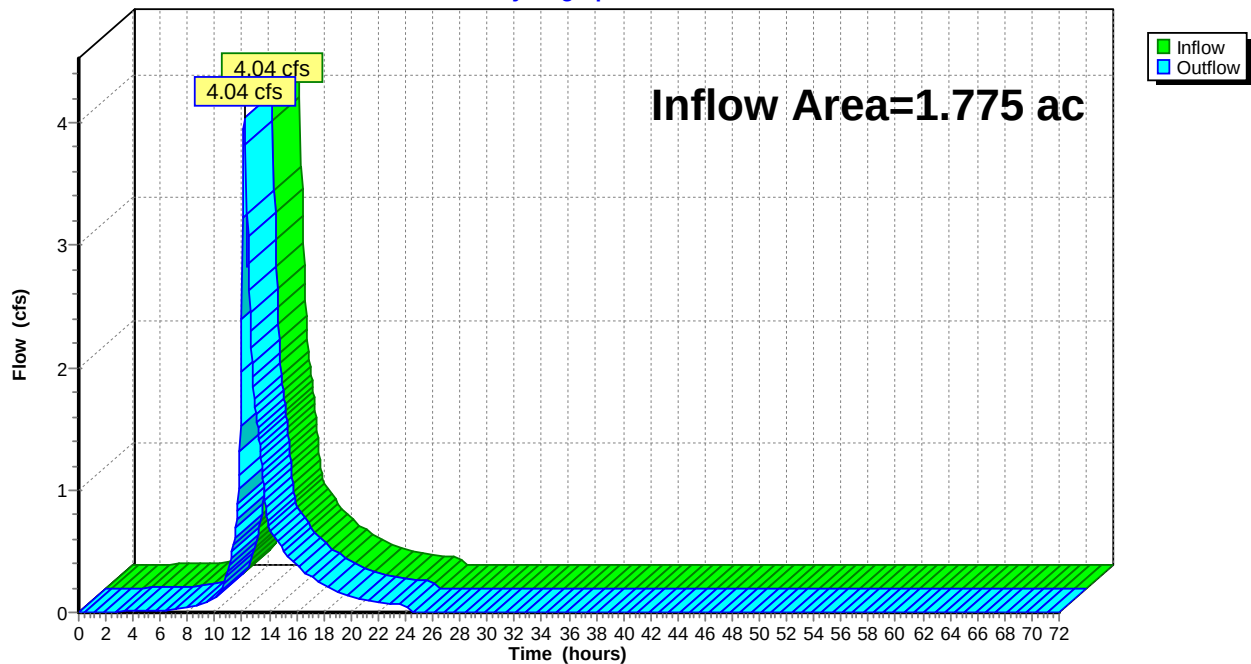
Summary for Reach DP2: CHANNEL

Inflow Area = 1.775 ac, 25.99% Impervious, Inflow Depth = 4.19" for 100-Year event
Inflow = 4.04 cfs @ 12.17 hrs, Volume= 0.620 af
Outflow = 4.04 cfs @ 12.17 hrs, Volume= 0.620 af, Atten= 0%, Lag= 0.0 min
Routed to Reach DP3 : TOTAL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach DP2: CHANNEL

Hydrograph



Hydrograph for Reach DP2: CHANNEL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.01		0.01	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.01		0.01	62.00	0.00		0.00
5.00	0.01		0.01	63.00	0.00		0.00
6.00	0.01		0.01	64.00	0.00		0.00
7.00	0.02		0.02	65.00	0.00		0.00
8.00	0.04		0.04	66.00	0.00		0.00
9.00	0.07		0.07	67.00	0.00		0.00
10.00	0.12		0.12	68.00	0.00		0.00
11.00	0.36		0.36	69.00	0.00		0.00
12.00	2.39		2.39	70.00	0.00		0.00
13.00	1.64		1.64	71.00	0.00		0.00
14.00	0.68		0.68	72.00	0.00		0.00
15.00	0.51		0.51				
16.00	0.39		0.39				
17.00	0.29		0.29				
18.00	0.22		0.22				
19.00	0.17		0.17				
20.00	0.13		0.13				
21.00	0.10		0.10				
22.00	0.09		0.09				
23.00	0.07		0.07				
24.00	0.06		0.06				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

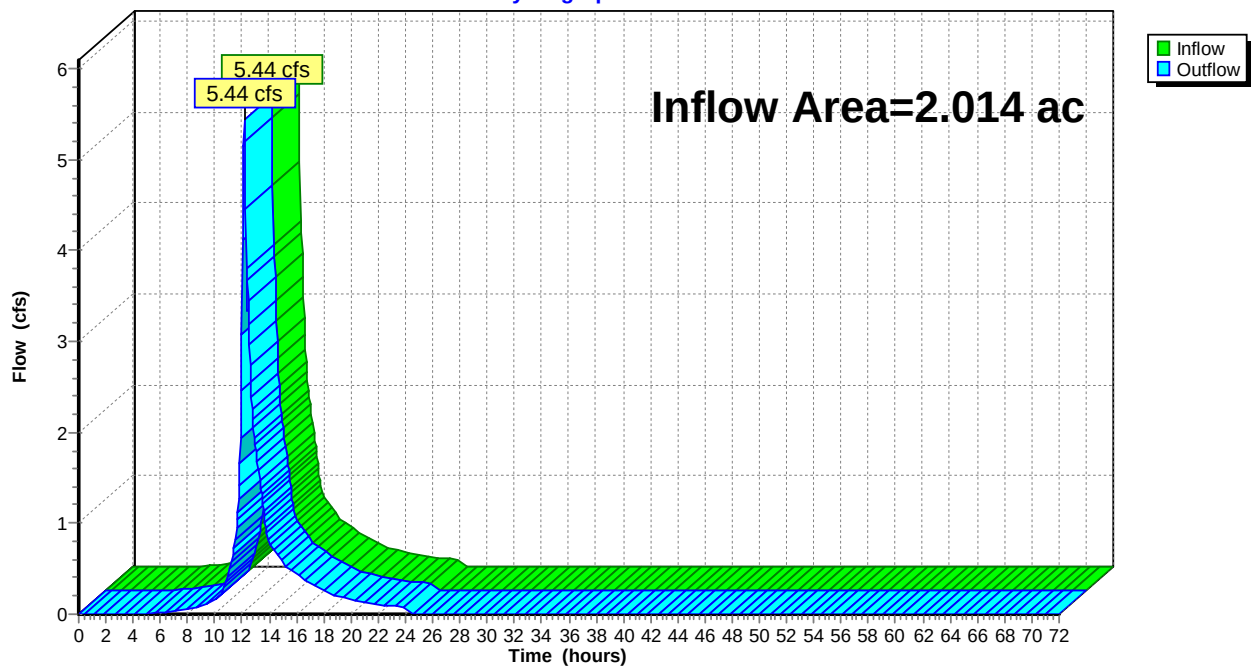
Summary for Reach DP3: TOTAL

Inflow Area = 2.014 ac, 22.91% Impervious, Inflow Depth = 4.35" for 100-Year event
Inflow = 5.44 cfs @ 12.15 hrs, Volume= 0.729 af
Outflow = 5.44 cfs @ 12.15 hrs, Volume= 0.729 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach DP3: TOTAL

Hydrograph



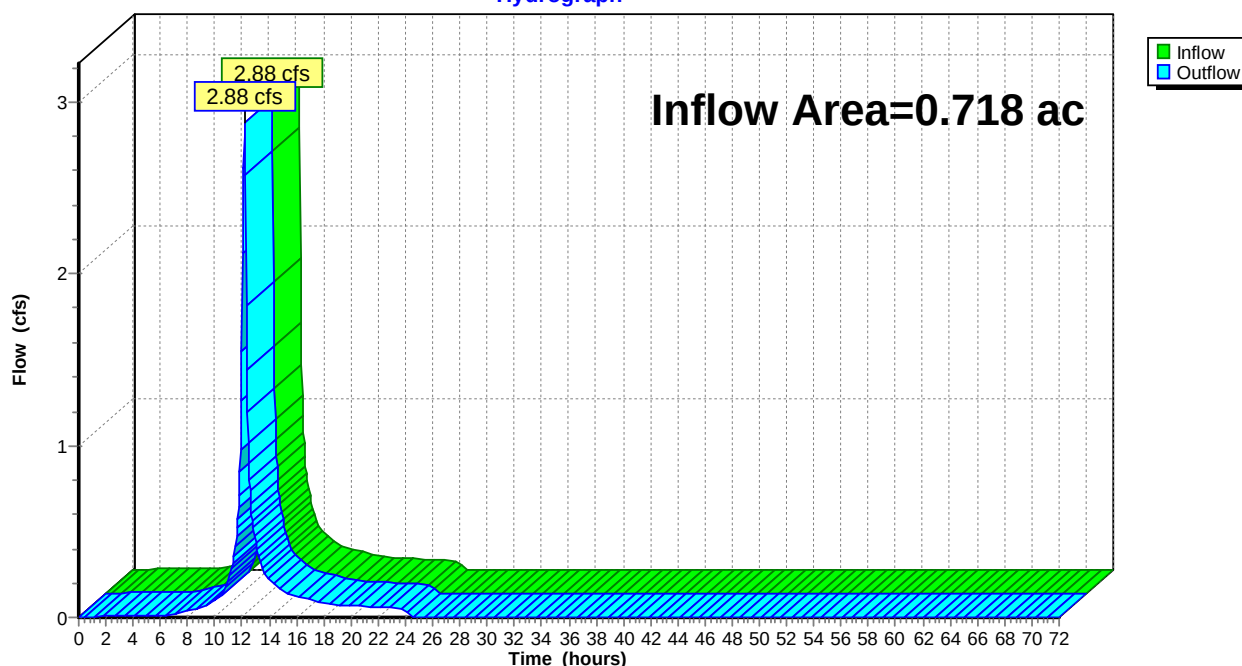
Hydrograph for Reach DP3: TOTAL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.01		0.01	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.01		0.01	62.00	0.00		0.00
5.00	0.01		0.01	63.00	0.00		0.00
6.00	0.01		0.01	64.00	0.00		0.00
7.00	0.03		0.03	65.00	0.00		0.00
8.00	0.05		0.05	66.00	0.00		0.00
9.00	0.08		0.08	67.00	0.00		0.00
10.00	0.16		0.16	68.00	0.00		0.00
11.00	0.44		0.44	69.00	0.00		0.00
12.00	3.07		3.07	70.00	0.00		0.00
13.00	1.81		1.81	71.00	0.00		0.00
14.00	0.77		0.77	72.00	0.00		0.00
15.00	0.58		0.58				
16.00	0.44		0.44				
17.00	0.34		0.34				
18.00	0.25		0.25				
19.00	0.20		0.20				
20.00	0.16		0.16				
21.00	0.13		0.13				
22.00	0.11		0.11				
23.00	0.09		0.09				
24.00	0.08		0.08				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Reach EX 1:

Inflow Area = 0.718 ac, 9.34% Impervious, Inflow Depth = 4.62" for 100-Year event
Inflow = 2.88 cfs @ 12.18 hrs, Volume= 0.276 af
Outflow = 2.88 cfs @ 12.18 hrs, Volume= 0.276 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 10P : (new Pond)

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach EX 1:**Hydrograph**

Hydrograph for Reach EX 1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.00		0.00	59.00	0.00		0.00
2.00	0.01		0.01	60.00	0.00		0.00
3.00	0.01		0.01	61.00	0.00		0.00
4.00	0.01		0.01	62.00	0.00		0.00
5.00	0.01		0.01	63.00	0.00		0.00
6.00	0.01		0.01	64.00	0.00		0.00
7.00	0.02		0.02	65.00	0.00		0.00
8.00	0.04		0.04	66.00	0.00		0.00
9.00	0.05		0.05	67.00	0.00		0.00
10.00	0.10		0.10	68.00	0.00		0.00
11.00	0.22		0.22	69.00	0.00		0.00
12.00	1.55		1.55	70.00	0.00		0.00
13.00	0.44		0.44	71.00	0.00		0.00
14.00	0.22		0.22	72.00	0.00		0.00
15.00	0.15		0.15				
16.00	0.12		0.12				
17.00	0.10		0.10				
18.00	0.08		0.08				
19.00	0.07		0.07				
20.00	0.07		0.07				
21.00	0.06		0.06				
22.00	0.06		0.06				
23.00	0.06		0.06				
24.00	0.05		0.05				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Pond 2P: Pervious Pavers

Inflow Area = 0.152 ac, 0.00% Impervious, Inflow Depth = 7.34" for 100-Year event
 Inflow = 1.16 cfs @ 12.13 hrs, Volume= 0.093 af
 Outflow = 0.08 cfs @ 13.45 hrs, Volume= 0.093 af, Atten= 93%, Lag= 79.5 min
 Discarded = 0.08 cfs @ 13.45 hrs, Volume= 0.093 af

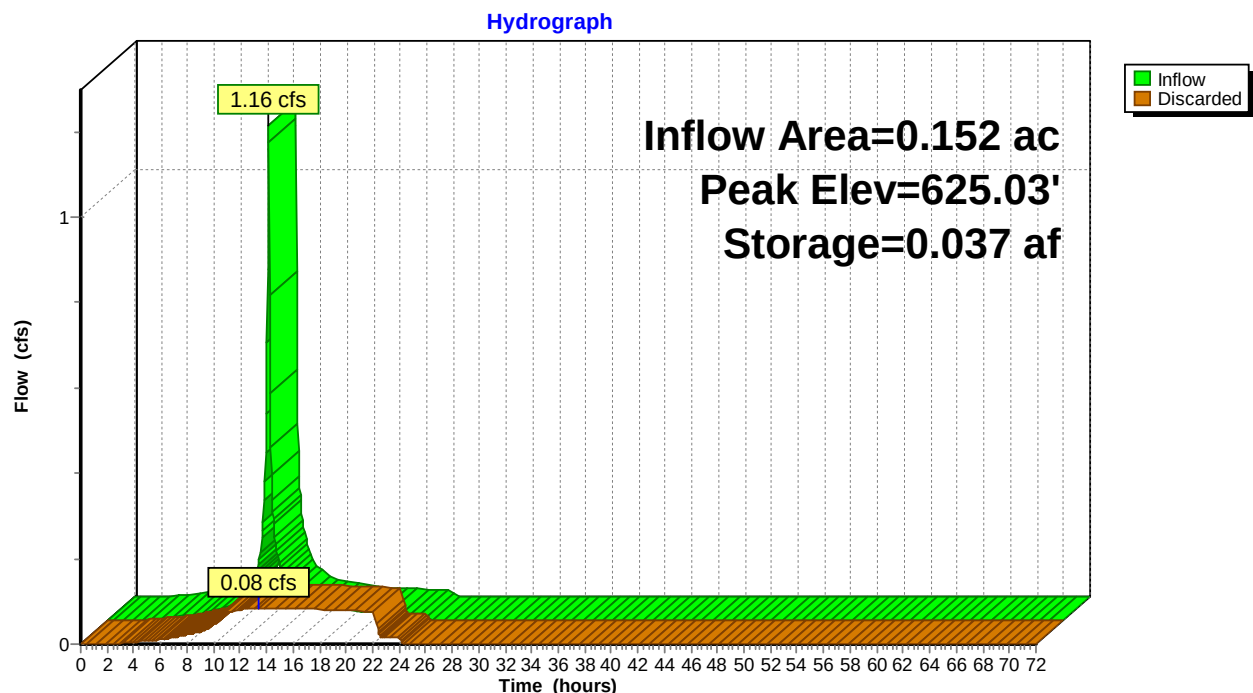
Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 625.03' @ 13.45 hrs Surf.Area= 0.151 ac Storage= 0.037 af

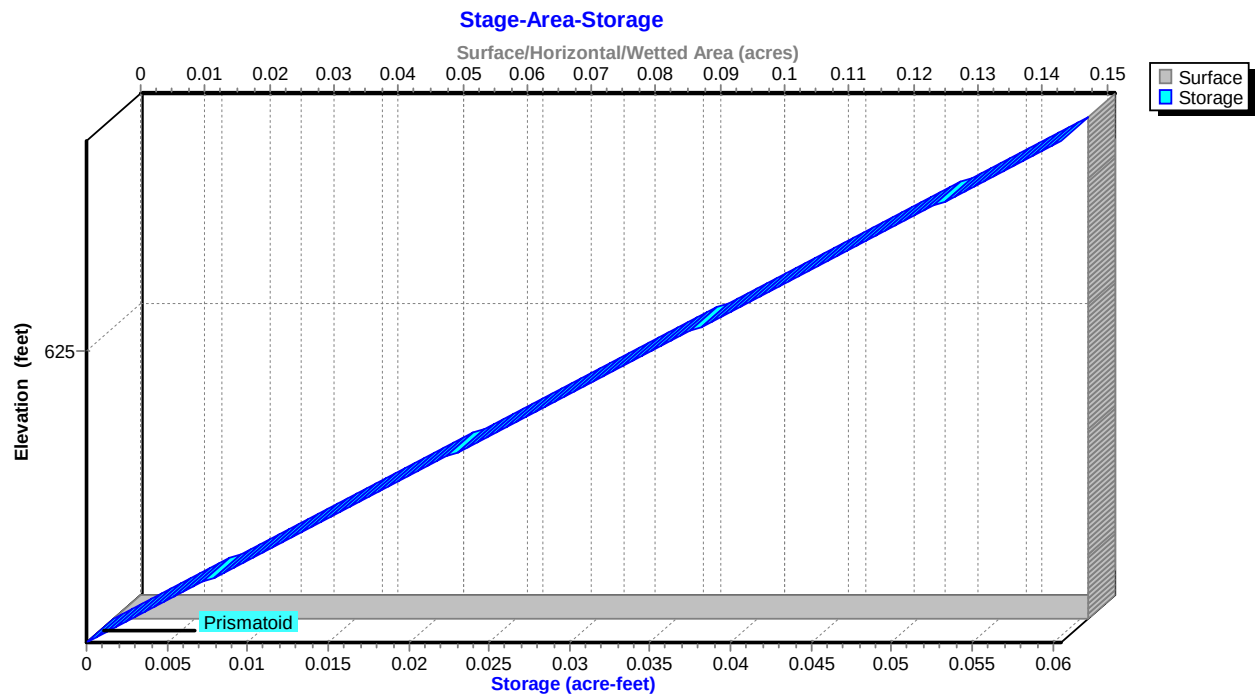
Plug-Flow detention time= 154.7 min calculated for 0.093 af (100% of inflow)
 Center-of-Mass det. time= 154.6 min (935.3 - 780.7)

Volume	Invert	Avail.Storage	Storage Description
#1	624.42'	0.061 af	65.91'W x 100.00'L x 1.00'H Prismatic 0.151 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	624.42'	0.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 619.00'

Discarded OutFlow Max=0.08 cfs @ 13.45 hrs HW=625.03' (Free Discharge)
 ↑1=Exfiltration (Controls 0.08 cfs)

Pond 2P: Pervious Pavers

Pond 2P: Pervious Pavers

Hydrograph for Pond 2P: Pervious Pavers

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0.000	624.42	0.00
2.50	0.00	0.000	624.42	0.00
5.00	0.01	0.000	624.42	0.01
7.50	0.02	0.000	624.42	0.02
10.00	0.05	0.000	624.43	0.05
12.50	0.24	0.033	624.97	0.08
15.00	0.04	0.034	624.98	0.08
17.50	0.03	0.024	624.81	0.08
20.00	0.02	0.012	624.61	0.08
22.50	0.02	0.000	624.42	0.02
25.00	0.00	0.000	624.42	0.00
27.50	0.00	0.000	624.42	0.00
30.00	0.00	0.000	624.42	0.00
32.50	0.00	0.000	624.42	0.00
35.00	0.00	0.000	624.42	0.00
37.50	0.00	0.000	624.42	0.00
40.00	0.00	0.000	624.42	0.00
42.50	0.00	0.000	624.42	0.00
45.00	0.00	0.000	624.42	0.00
47.50	0.00	0.000	624.42	0.00
50.00	0.00	0.000	624.42	0.00
52.50	0.00	0.000	624.42	0.00
55.00	0.00	0.000	624.42	0.00
57.50	0.00	0.000	624.42	0.00
60.00	0.00	0.000	624.42	0.00
62.50	0.00	0.000	624.42	0.00
65.00	0.00	0.000	624.42	0.00
67.50	0.00	0.000	624.42	0.00
70.00	0.00	0.000	624.42	0.00

Stage-Area-Storage for Pond 2P: Pervious Pavers

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
624.42	0.151	0.000	625.00	0.151	0.035
624.43	0.151	0.001	625.01	0.151	0.036
624.44	0.151	0.001	625.02	0.151	0.036
624.45	0.151	0.002	625.03	0.151	0.037
624.46	0.151	0.002	625.04	0.151	0.038
624.47	0.151	0.003	625.05	0.151	0.038
624.48	0.151	0.004	625.06	0.151	0.039
624.49	0.151	0.004	625.07	0.151	0.039
624.50	0.151	0.005	625.08	0.151	0.040
624.51	0.151	0.005	625.09	0.151	0.041
624.52	0.151	0.006	625.10	0.151	0.041
624.53	0.151	0.007	625.11	0.151	0.042
624.54	0.151	0.007	625.12	0.151	0.042
624.55	0.151	0.008	625.13	0.151	0.043
624.56	0.151	0.008	625.14	0.151	0.044
624.57	0.151	0.009	625.15	0.151	0.044
624.58	0.151	0.010	625.16	0.151	0.045
624.59	0.151	0.010	625.17	0.151	0.045
624.60	0.151	0.011	625.18	0.151	0.046
624.61	0.151	0.011	625.19	0.151	0.047
624.62	0.151	0.012	625.20	0.151	0.047
624.63	0.151	0.013	625.21	0.151	0.048
624.64	0.151	0.013	625.22	0.151	0.048
624.65	0.151	0.014	625.23	0.151	0.049
624.66	0.151	0.015	625.24	0.151	0.050
624.67	0.151	0.015	625.25	0.151	0.050
624.68	0.151	0.016	625.26	0.151	0.051
624.69	0.151	0.016	625.27	0.151	0.051
624.70	0.151	0.017	625.28	0.151	0.052
624.71	0.151	0.018	625.29	0.151	0.053
624.72	0.151	0.018	625.30	0.151	0.053
624.73	0.151	0.019	625.31	0.151	0.054
624.74	0.151	0.019	625.32	0.151	0.054
624.75	0.151	0.020	625.33	0.151	0.055
624.76	0.151	0.021	625.34	0.151	0.056
624.77	0.151	0.021	625.35	0.151	0.056
624.78	0.151	0.022	625.36	0.151	0.057
624.79	0.151	0.022	625.37	0.151	0.057
624.80	0.151	0.023	625.38	0.151	0.058
624.81	0.151	0.024	625.39	0.151	0.059
624.82	0.151	0.024	625.40	0.151	0.059
624.83	0.151	0.025	625.41	0.151	0.060
624.84	0.151	0.025	625.42	0.151	0.061
624.85	0.151	0.026			
624.86	0.151	0.027			
624.87	0.151	0.027			
624.88	0.151	0.028			
624.89	0.151	0.028			
624.90	0.151	0.029			
624.91	0.151	0.030			
624.92	0.151	0.030			
624.93	0.151	0.031			
624.94	0.151	0.031			
624.95	0.151	0.032			
624.96	0.151	0.033			
624.97	0.151	0.033			
624.98	0.151	0.034			
624.99	0.151	0.034			

Summary for Pond 10P: (new Pond)

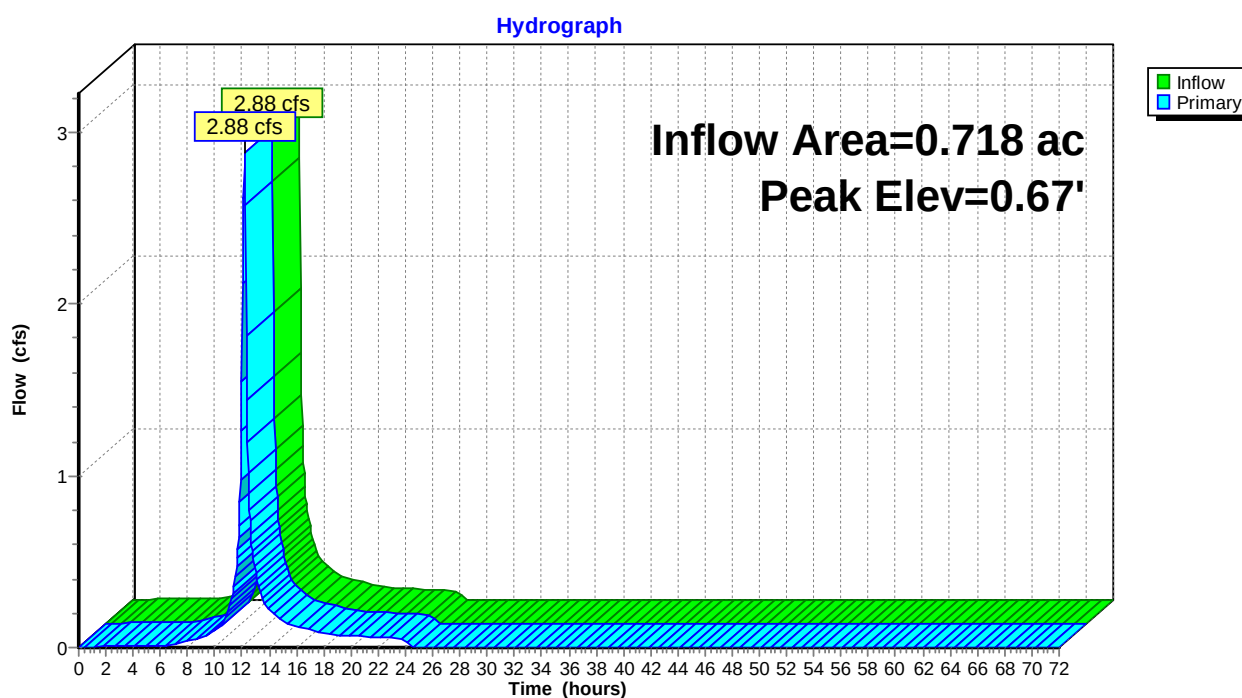
Inflow Area = 0.718 ac, 9.34% Impervious, Inflow Depth = 4.62" for 100-Year event
 Inflow = 2.88 cfs @ 12.18 hrs, Volume= 0.276 af
 Outflow = 2.88 cfs @ 12.18 hrs, Volume= 0.276 af, Atten= 0%, Lag= 0.0 min
 Primary = 2.88 cfs @ 12.18 hrs, Volume= 0.276 af
 Routed to Reach DP1 : TOP

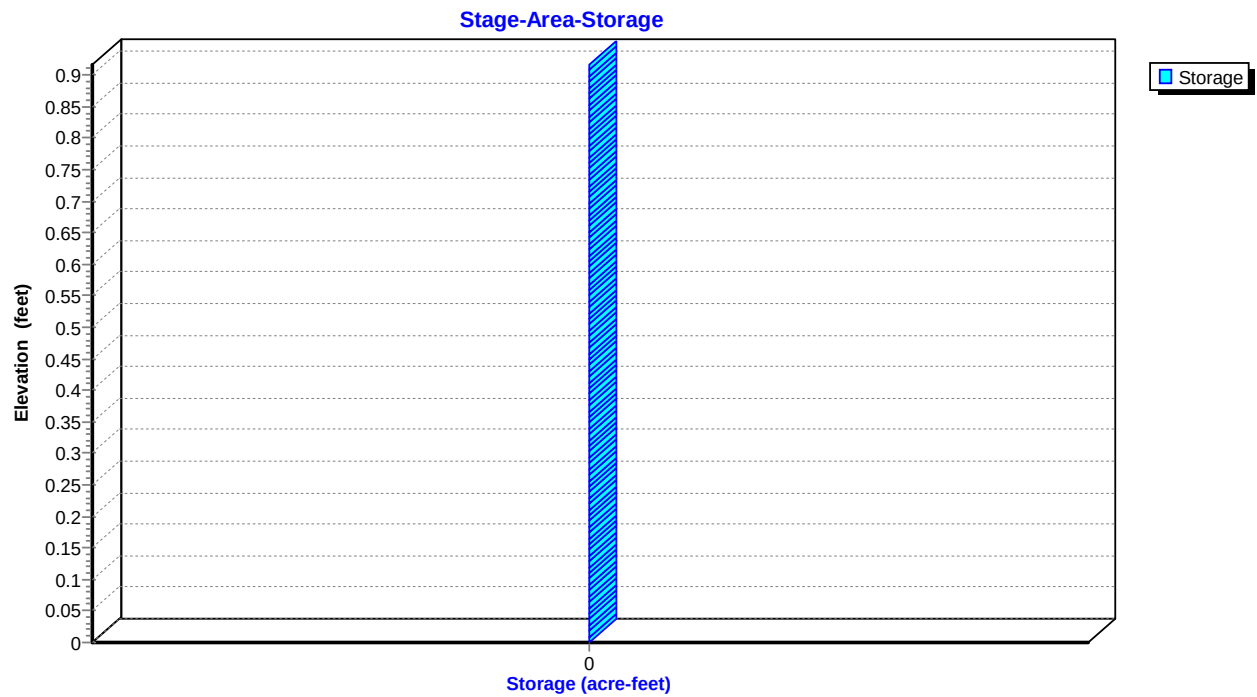
Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 0.67' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	11.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.81 cfs @ 12.18 hrs HW=0.66' (Free Discharge)
 ↑ **1=Orifice/Grate** (Orifice Controls 2.81 cfs @ 2.77 fps)

Pond 10P: (new Pond)

Pond 10P: (new Pond)

Hydrograph for Pond 10P: (new Pond)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
1.00	0.00	0.02	0.00	59.00	0.00	0.00	0.00
2.00	0.01	0.02	0.01	60.00	0.00	0.00	0.00
3.00	0.01	0.03	0.01	61.00	0.00	0.00	0.00
4.00	0.01	0.03	0.01	62.00	0.00	0.00	0.00
5.00	0.01	0.03	0.01	63.00	0.00	0.00	0.00
6.00	0.01	0.03	0.01	64.00	0.00	0.00	0.00
7.00	0.02	0.05	0.02	65.00	0.00	0.00	0.00
8.00	0.04	0.07	0.04	66.00	0.00	0.00	0.00
9.00	0.05	0.08	0.05	67.00	0.00	0.00	0.00
10.00	0.10	0.11	0.10	68.00	0.00	0.00	0.00
11.00	0.22	0.16	0.22	69.00	0.00	0.00	0.00
12.00	1.55	0.46	1.55	70.00	0.00	0.00	0.00
13.00	0.44	0.24	0.44	71.00	0.00	0.00	0.00
14.00	0.22	0.16	0.22	72.00	0.00	0.00	0.00
15.00	0.15	0.13	0.15				
16.00	0.12	0.12	0.12				
17.00	0.10	0.11	0.10				
18.00	0.08	0.10	0.08				
19.00	0.07	0.09	0.07				
20.00	0.07	0.09	0.07				
21.00	0.06	0.09	0.06				
22.00	0.06	0.08	0.06				
23.00	0.06	0.08	0.06				
24.00	0.05	0.08	0.05				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				
53.00	0.00	0.00	0.00				
54.00	0.00	0.00	0.00				
55.00	0.00	0.00	0.00				
56.00	0.00	0.00	0.00				
57.00	0.00	0.00	0.00				

Stage-Area-Storage for Pond 10P: (new Pond)

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
0.00	0.000	0.58	0.000
0.01	0.000	0.59	0.000
0.02	0.000	0.60	0.000
0.03	0.000	0.61	0.000
0.04	0.000	0.62	0.000
0.05	0.000	0.63	0.000
0.06	0.000	0.64	0.000
0.07	0.000	0.65	0.000
0.08	0.000	0.66	0.000
0.09	0.000	0.67	0.000
0.10	0.000	0.68	0.000
0.11	0.000	0.69	0.000
0.12	0.000	0.70	0.000
0.13	0.000	0.71	0.000
0.14	0.000	0.72	0.000
0.15	0.000	0.73	0.000
0.16	0.000	0.74	0.000
0.17	0.000	0.75	0.000
0.18	0.000	0.76	0.000
0.19	0.000	0.77	0.000
0.20	0.000	0.78	0.000
0.21	0.000	0.79	0.000
0.22	0.000	0.80	0.000
0.23	0.000	0.81	0.000
0.24	0.000	0.82	0.000
0.25	0.000	0.83	0.000
0.26	0.000	0.84	0.000
0.27	0.000	0.85	0.000
0.28	0.000	0.86	0.000
0.29	0.000	0.87	0.000
0.30	0.000	0.88	0.000
0.31	0.000	0.89	0.000
0.32	0.000	0.90	0.000
0.33	0.000	0.91	0.000
0.34	0.000	0.92	0.000
0.35	0.000		
0.36	0.000		
0.37	0.000		
0.38	0.000		
0.39	0.000		
0.40	0.000		
0.41	0.000		
0.42	0.000		
0.43	0.000		
0.44	0.000		
0.45	0.000		
0.46	0.000		
0.47	0.000		
0.48	0.000		
0.49	0.000		
0.50	0.000		
0.51	0.000		
0.52	0.000		
0.53	0.000		
0.54	0.000		
0.55	0.000		
0.56	0.000		
0.57	0.000		

Summary for Pond 11P: Existing Drywell System

Inflow Area = 0.919 ac, 42.91% Impervious, Inflow Depth = 4.49" for 100-Year event
 Inflow = 2.70 cfs @ 12.09 hrs, Volume= 0.344 af
 Outflow = 1.92 cfs @ 12.43 hrs, Volume= 0.344 af, Atten= 29%, Lag= 20.2 min
 Discarded = 0.06 cfs @ 12.43 hrs, Volume= 0.064 af
 Primary = 1.86 cfs @ 12.43 hrs, Volume= 0.279 af
 Routed to Reach DP2 : CHANNEL

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 613.41' @ 12.43 hrs Surf.Area= 0.020 ac Storage= 0.076 af

Plug-Flow detention time= 69.1 min calculated for 0.344 af (100% of inflow)
 Center-of-Mass det. time= 69.3 min (861.5 - 792.2)

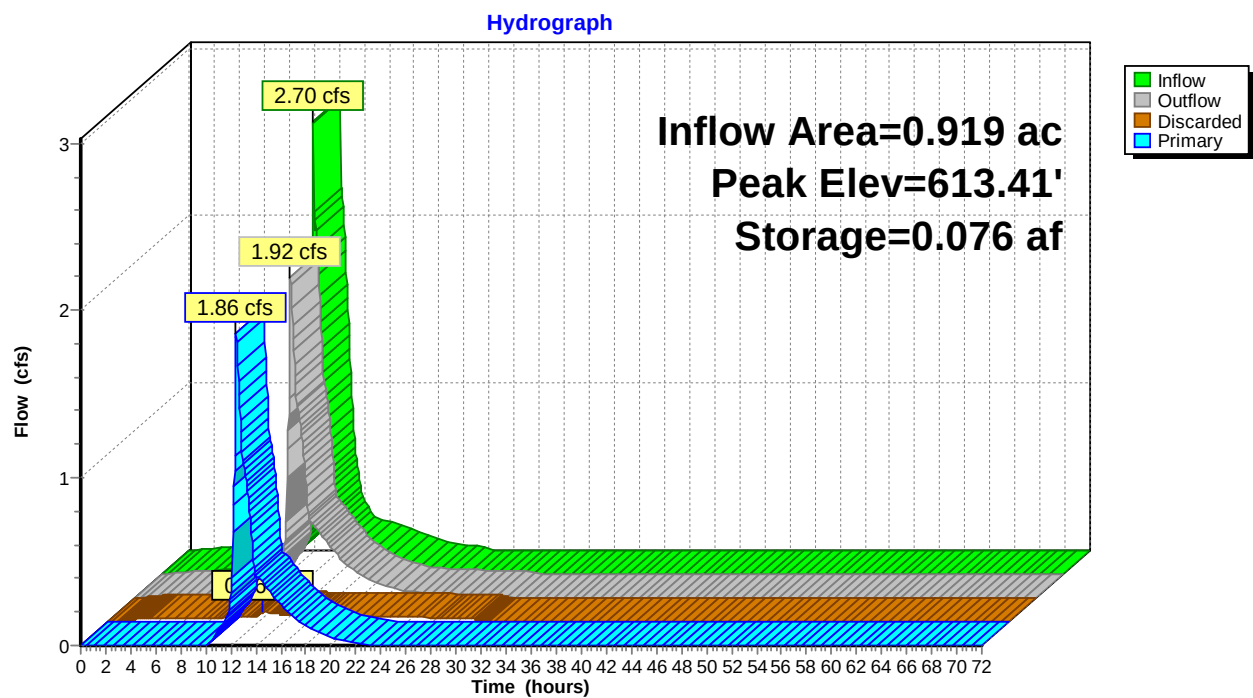
Volume	Invert	Avail.Storage	Storage Description
#1	606.75'	0.050 af	19.00'W x 46.00'L x 8.00'H Prismatic 0.161 af Overall - 0.037 af Embedded = 0.124 af x 40.0% Voids
#2	607.75'	0.037 af	6.00'D x 5.66'H Vertical Cone/Cylinder x 10 Inside #1
		0.086 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	606.75'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 603.00'
#2	Primary	608.00'	15.0" Round Culvert L= 16.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 608.00' / 607.75' S= 0.0156 ' /' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#3	Device 2	608.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	611.25'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 2	613.25'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

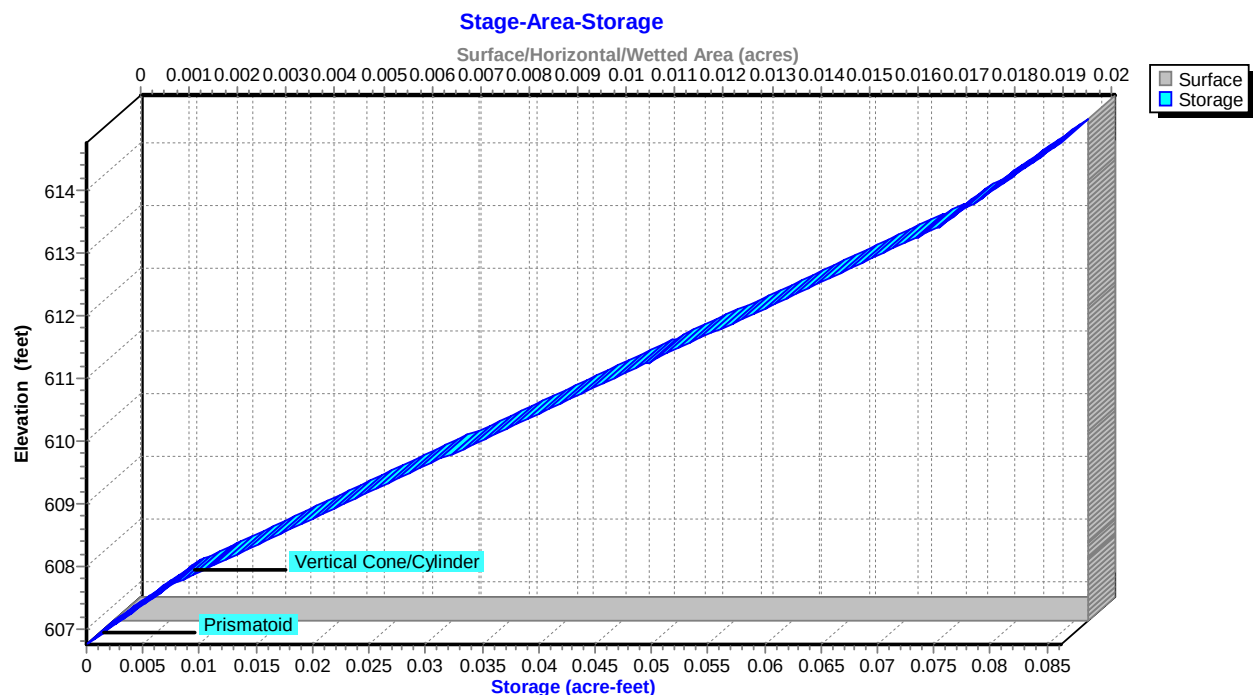
Discarded OutFlow Max=0.06 cfs @ 12.43 hrs HW=613.41' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.06 cfs)

Primary OutFlow Max=1.85 cfs @ 12.43 hrs HW=613.41' (Free Discharge)
 ↑ **2=Culvert** (Passes 1.85 cfs of 10.20 cfs potential flow)
 ↑ **3=Orifice/Grate** (Orifice Controls 0.54 cfs @ 11.07 fps)
 ↑ **4=Orifice/Grate** (Orifice Controls 0.59 cfs @ 6.80 fps)
 ↑ **5=Broad-Crested Rectangular Weir** (Weir Controls 0.71 cfs @ 1.12 fps)

Pond 11P: Existing Drywell System



Pond 11P: Existing Drywell System



Hydrograph for Pond 11P: Existing Drywell System

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	606.75	0.00	0.00	0.00
2.50	0.02	0.001	606.81	0.02	0.02	0.00
5.00	0.03	0.001	606.88	0.02	0.02	0.00
7.50	0.04	0.003	607.16	0.02	0.02	0.00
10.00	0.09	0.010	607.93	0.03	0.03	0.00
12.50	1.79	0.075	613.40	1.83	0.06	1.77
15.00	0.20	0.036	610.07	0.37	0.04	0.33
17.50	0.13	0.017	608.48	0.17	0.03	0.14
20.00	0.07	0.013	608.16	0.08	0.03	0.05
22.50	0.03	0.012	608.05	0.03	0.03	0.01
25.00	0.00	0.009	607.82	0.03	0.03	0.00
27.50	0.00	0.004	607.22	0.02	0.02	0.00
30.00	0.00	0.000	606.76	0.00	0.00	0.00
32.50	0.00	0.000	606.75	0.00	0.00	0.00
35.00	0.00	0.000	606.75	0.00	0.00	0.00
37.50	0.00	0.000	606.75	0.00	0.00	0.00
40.00	0.00	0.000	606.75	0.00	0.00	0.00
42.50	0.00	0.000	606.75	0.00	0.00	0.00
45.00	0.00	0.000	606.75	0.00	0.00	0.00
47.50	0.00	0.000	606.75	0.00	0.00	0.00
50.00	0.00	0.000	606.75	0.00	0.00	0.00
52.50	0.00	0.000	606.75	0.00	0.00	0.00
55.00	0.00	0.000	606.75	0.00	0.00	0.00
57.50	0.00	0.000	606.75	0.00	0.00	0.00
60.00	0.00	0.000	606.75	0.00	0.00	0.00
62.50	0.00	0.000	606.75	0.00	0.00	0.00
65.00	0.00	0.000	606.75	0.00	0.00	0.00
67.50	0.00	0.000	606.75	0.00	0.00	0.00
70.00	0.00	0.000	606.75	0.00	0.00	0.00

Stage-Area-Storage for Pond 11P: Existing Drywell System

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
606.75	0.020	0.000	612.55	0.020	0.065
606.85	0.020	0.001	612.65	0.020	0.066
606.95	0.020	0.002	612.75	0.020	0.068
607.05	0.020	0.002	612.85	0.020	0.069
607.15	0.020	0.003	612.95	0.020	0.070
607.25	0.020	0.004	613.05	0.020	0.071
607.35	0.020	0.005	613.15	0.020	0.072
607.45	0.020	0.006	613.25	0.020	0.074
607.55	0.020	0.006	613.35	0.020	0.075
607.65	0.020	0.007	613.45	0.020	0.076
607.75	0.020	0.008	613.55	0.020	0.077
607.85	0.020	0.009	613.65	0.020	0.077
607.95	0.020	0.010	613.75	0.020	0.078
608.05	0.020	0.012	613.85	0.020	0.079
608.15	0.020	0.013	613.95	0.020	0.080
608.25	0.020	0.014	614.05	0.020	0.081
608.35	0.020	0.015	614.15	0.020	0.081
608.45	0.020	0.016	614.25	0.020	0.082
608.55	0.020	0.018	614.35	0.020	0.083
608.65	0.020	0.019	614.45	0.020	0.084
608.75	0.020	0.020	614.55	0.020	0.085
608.85	0.020	0.021	614.65	0.020	0.085
608.95	0.020	0.022	614.75	0.020	0.086
609.05	0.020	0.024			
609.15	0.020	0.025			
609.25	0.020	0.026			
609.35	0.020	0.027			
609.45	0.020	0.028			
609.55	0.020	0.029			
609.65	0.020	0.031			
609.75	0.020	0.032			
609.85	0.020	0.033			
609.95	0.020	0.034			
610.05	0.020	0.035			
610.15	0.020	0.037			
610.25	0.020	0.038			
610.35	0.020	0.039			
610.45	0.020	0.040			
610.55	0.020	0.041			
610.65	0.020	0.043			
610.75	0.020	0.044			
610.85	0.020	0.045			
610.95	0.020	0.046			
611.05	0.020	0.047			
611.15	0.020	0.049			
611.25	0.020	0.050			
611.35	0.020	0.051			
611.45	0.020	0.052			
611.55	0.020	0.053			
611.65	0.020	0.055			
611.75	0.020	0.056			
611.85	0.020	0.057			
611.95	0.020	0.058			
612.05	0.020	0.059			
612.15	0.020	0.060			
612.25	0.020	0.062			
612.35	0.020	0.063			
612.45	0.020	0.064			

Summary for Pond 12P: Subsurface Infiltration Basin

Inflow Area = 0.687 ac, 28.51% Impervious, Inflow Depth = 6.35" for 100-Year event
 Inflow = 3.73 cfs @ 12.10 hrs, Volume= 0.364 af
 Outflow = 1.73 cfs @ 12.33 hrs, Volume= 0.364 af, Atten= 54%, Lag= 13.7 min
 Discarded = 0.14 cfs @ 12.33 hrs, Volume= 0.174 af
 Primary = 1.60 cfs @ 12.33 hrs, Volume= 0.189 af
 Routed to Pond 11P : Existing Drywell System

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 624.47' @ 12.33 hrs Surf.Area= 0.061 ac Storage= 0.119 af

Plug-Flow detention time= 144.3 min calculated for 0.363 af (100% of inflow)
 Center-of-Mass det. time= 144.5 min (935.5 - 791.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	621.50'	0.056 af	39.50'W x 67.70'L x 3.50'H Field A 0.215 af Overall - 0.076 af Embedded = 0.139 af x 40.0% Voids
#2A	622.00'	0.076 af	ADS StormTech SC-740 +Cap x 72 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 72 Chambers in 8 Rows
0.132 af			Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	621.50'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 619.00'
#2	Primary	619.43'	12.0" Round Culvert L= 42.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 619.43' / 613.00' S= 0.1531 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	622.50'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	623.25'	10.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 2	624.50'	0.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Discarded OutFlow Max=0.14 cfs @ 12.33 hrs HW=624.47' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.14 cfs)

Primary OutFlow Max=1.59 cfs @ 12.33 hrs HW=624.47' (Free Discharge)

↑ **2=Culvert** (Passes 1.59 cfs of 7.11 cfs potential flow)

↑ **3=Orifice/Grate** (Orifice Controls 0.22 cfs @ 6.57 fps)

↑ **4=Orifice/Grate** (Orifice Controls 1.37 cfs @ 4.93 fps)

↑ **5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 12P: Subsurface Infiltration Basin - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

9 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 65.70' Row Length +12.0" End Stone x 2 = 67.70' Base Length

8 Rows x 51.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 39.50' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

72 Chambers x 45.9 cf = 3,307.7 cf Chamber Storage

9,359.1 cf Field - 3,307.7 cf Chambers = 6,051.4 cf Stone x 40.0% Voids = 2,420.6 cf Stone Storage

Chamber Storage + Stone Storage = 5,728.2 cf = 0.132 af

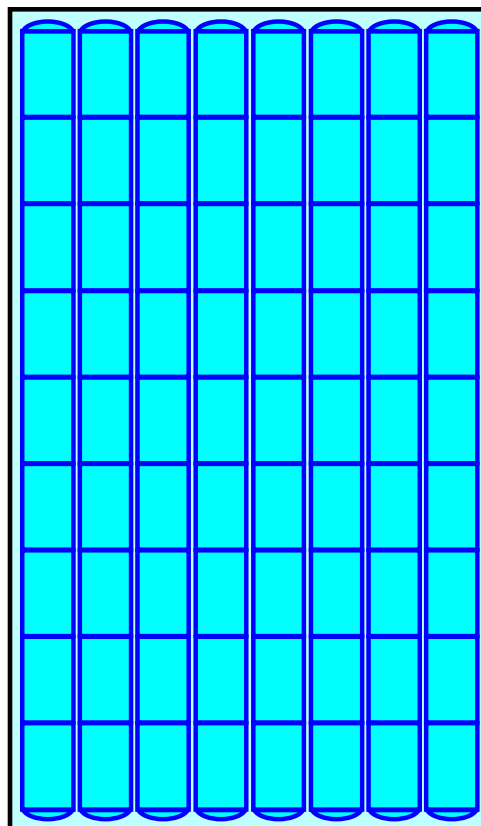
Overall Storage Efficiency = 61.2%

Overall System Size = 67.70' x 39.50' x 3.50'

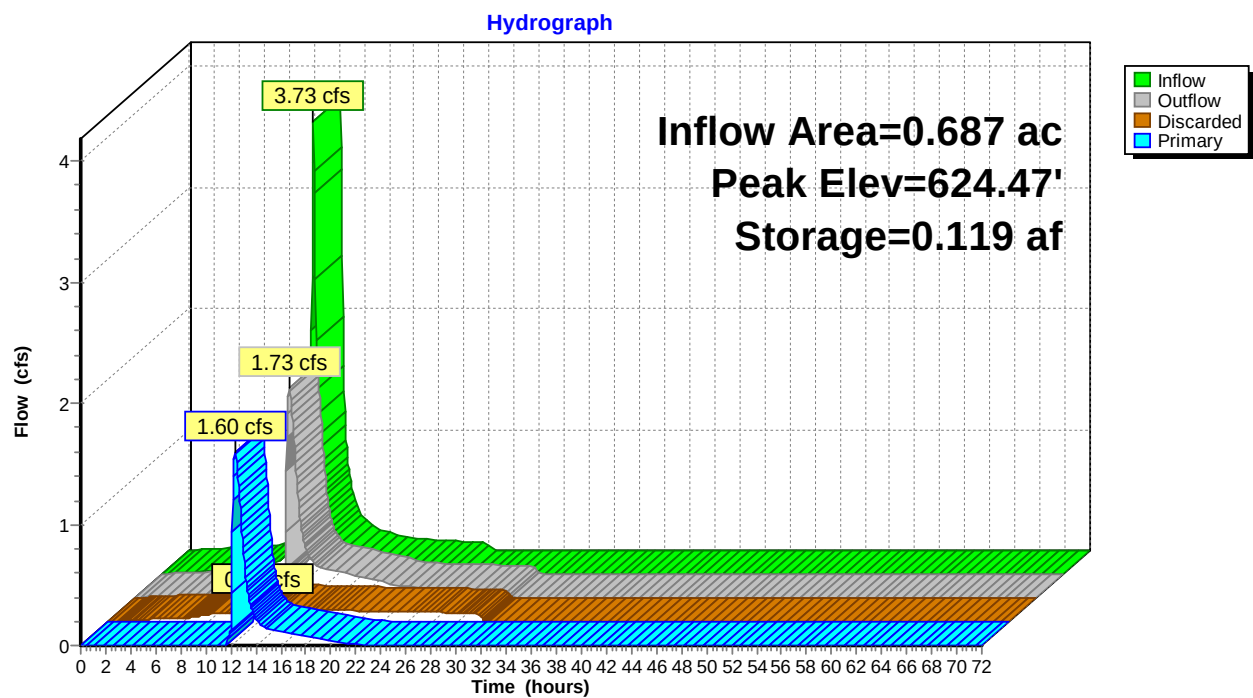
72 Chambers

346.6 cy Field

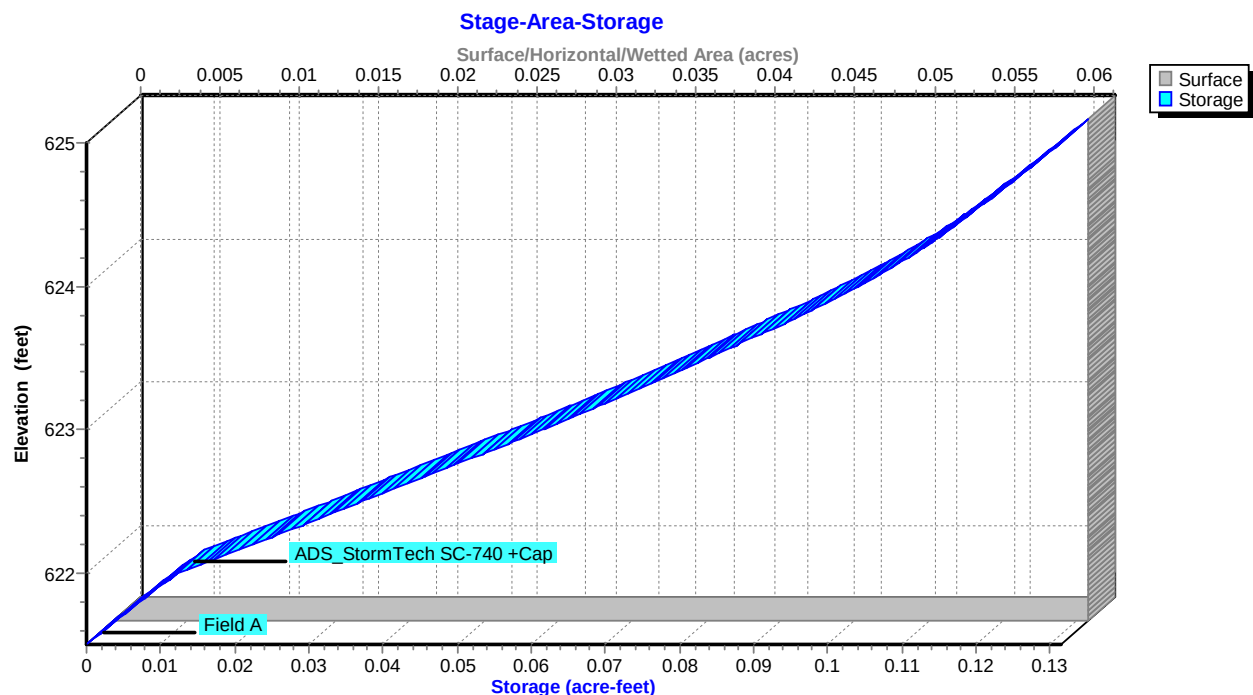
224.1 cy Stone



Pond 12P: Subsurface Infiltration Basin



Pond 12P: Subsurface Infiltration Basin



Hydrograph for Pond 12P: Subsurface Infiltration Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	621.50	0.00	0.00	0.00
2.50	0.02	0.000	621.51	0.02	0.02	0.00
5.00	0.03	0.000	621.51	0.03	0.03	0.00
7.50	0.05	0.001	621.53	0.05	0.05	0.00
10.00	0.15	0.006	621.76	0.07	0.07	0.00
12.50	1.03	0.113	624.27	1.58	0.13	1.45
15.00	0.18	0.073	623.25	0.24	0.11	0.13
17.50	0.11	0.058	622.93	0.19	0.10	0.09
20.00	0.09	0.045	622.65	0.13	0.09	0.04
22.50	0.07	0.039	622.54	0.09	0.09	0.00
25.00	0.00	0.030	622.36	0.08	0.08	0.00
27.50	0.00	0.014	622.03	0.08	0.08	0.00
30.00	0.00	0.000	621.51	0.02	0.02	0.00
32.50	0.00	0.000	621.50	0.00	0.00	0.00
35.00	0.00	0.000	621.50	0.00	0.00	0.00
37.50	0.00	0.000	621.50	0.00	0.00	0.00
40.00	0.00	0.000	621.50	0.00	0.00	0.00
42.50	0.00	0.000	621.50	0.00	0.00	0.00
45.00	0.00	0.000	621.50	0.00	0.00	0.00
47.50	0.00	0.000	621.50	0.00	0.00	0.00
50.00	0.00	0.000	621.50	0.00	0.00	0.00
52.50	0.00	0.000	621.50	0.00	0.00	0.00
55.00	0.00	0.000	621.50	0.00	0.00	0.00
57.50	0.00	0.000	621.50	0.00	0.00	0.00
60.00	0.00	0.000	621.50	0.00	0.00	0.00
62.50	0.00	0.000	621.50	0.00	0.00	0.00
65.00	0.00	0.000	621.50	0.00	0.00	0.00
67.50	0.00	0.000	621.50	0.00	0.00	0.00
70.00	0.00	0.000	621.50	0.00	0.00	0.00

Stage-Area-Storage for Pond 12P: Subsurface Infiltration Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
621.50	0.061	0.000	624.40	0.061	0.117
621.55	0.061	0.001	624.45	0.061	0.118
621.60	0.061	0.002	624.50	0.061	0.119
621.65	0.061	0.004	624.55	0.061	0.120
621.70	0.061	0.005	624.60	0.061	0.122
621.75	0.061	0.006	624.65	0.061	0.123
621.80	0.061	0.007	624.70	0.061	0.124
621.85	0.061	0.009	624.75	0.061	0.125
621.90	0.061	0.010	624.80	0.061	0.127
621.95	0.061	0.011	624.85	0.061	0.128
622.00	0.061	0.012	624.90	0.061	0.129
622.05	0.061	0.015	624.95	0.061	0.130
622.10	0.061	0.017	625.00	0.061	0.132
622.15	0.061	0.020			
622.20	0.061	0.022			
622.25	0.061	0.025			
622.30	0.061	0.027			
622.35	0.061	0.030			
622.40	0.061	0.032			
622.45	0.061	0.035			
622.50	0.061	0.037			
622.55	0.061	0.040			
622.60	0.061	0.042			
622.65	0.061	0.045			
622.70	0.061	0.047			
622.75	0.061	0.050			
622.80	0.061	0.052			
622.85	0.061	0.054			
622.90	0.061	0.057			
622.95	0.061	0.059			
623.00	0.061	0.062			
623.05	0.061	0.064			
623.10	0.061	0.066			
623.15	0.061	0.068			
623.20	0.061	0.071			
623.25	0.061	0.073			
623.30	0.061	0.075			
623.35	0.061	0.077			
623.40	0.061	0.080			
623.45	0.061	0.082			
623.50	0.061	0.084			
623.55	0.061	0.086			
623.60	0.061	0.088			
623.65	0.061	0.090			
623.70	0.061	0.092			
623.75	0.061	0.094			
623.80	0.061	0.096			
623.85	0.061	0.098			
623.90	0.061	0.100			
623.95	0.061	0.102			
624.00	0.061	0.104			
624.05	0.061	0.106			
624.10	0.061	0.108			
624.15	0.061	0.109			
624.20	0.061	0.111			
624.25	0.061	0.113			
624.30	0.061	0.114			
624.35	0.061	0.115			

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: 2BP-I	Runoff Area=2,878 sf 100.00% Impervious Runoff Depth=1.03" Flow Length=75' Slope=0.0140 '/' Tc=1.1 min CN=98 Runoff=0.21 cfs 0.006 af
Subcatchment EX 1-I:	Runoff Area=9,508 sf 100.00% Impervious Runoff Depth=1.03" Flow Length=149' Tc=1.6 min CN=98 Runoff=0.68 cfs 0.019 af
Subcatchment EX 1-P:	Runoff Area=34,310 sf 0.00% Impervious Runoff Depth=0.09" Flow Length=233' Tc=10.4 min CN=75 Runoff=0.13 cfs 0.006 af
Subcatchment EX 2-P:	Runoff Area=33,427 sf 0.00% Impervious Runoff Depth=0.07" Flow Length=251' Tc=10.1 min CN=74 Runoff=0.10 cfs 0.005 af
Subcatchment EX 3 - P:	Runoff Area=12,817 sf 0.00% Impervious Runoff Depth=0.10" Flow Length=109' Tc=7.8 min CN=76 Runoff=0.06 cfs 0.002 af
Subcatchment PR 1A-I:	Runoff Area=2,919 sf 100.00% Impervious Runoff Depth=1.03" Flow Length=149' Tc=1.6 min CN=98 Runoff=0.21 cfs 0.006 af
Subcatchment PR 1A-P:	Runoff Area=21,722 sf 0.00% Impervious Runoff Depth=0.07" Flow Length=395' Tc=10.5 min CN=74 Runoff=0.06 cfs 0.003 af
Subcatchment PR 1B-P:	Runoff Area=6,622 sf 0.00% Impervious Runoff Depth=0.45" Tc=6.0 min CN=89 Runoff=0.21 cfs 0.006 af
Subcatchment PR 2A-P:	Runoff Area=6,039 sf 0.00% Impervious Runoff Depth=0.07" Flow Length=81' Slope=0.3000 '/' Tc=2.7 min CN=74 Runoff=0.02 cfs 0.001 af
Subcatchment PR 2C-I:	Runoff Area=5,659 sf 100.00% Impervious Runoff Depth=1.03" Flow Length=86' Slope=0.0230 '/' Tc=1.0 min CN=98 Runoff=0.41 cfs 0.011 af
Subcatchment PR 2C-P:	Runoff Area=21,408 sf 0.00% Impervious Runoff Depth=0.07" Flow Length=100' Slope=0.0200 '/' Tc=9.4 min CN=74 Runoff=0.07 cfs 0.003 af
Subcatchment PR 3 - P:	Runoff Area=10,406 sf 0.00% Impervious Runoff Depth=0.07" Flow Length=109' Tc=7.8 min CN=74 Runoff=0.03 cfs 0.001 af
Subcatchment PR-2B-I:	Runoff Area=8,642 sf 100.00% Impervious Runoff Depth=1.03" Flow Length=75' Slope=0.0140 '/' Tc=1.1 min CN=98 Runoff=0.62 cfs 0.017 af
Subcatchment PR-2B-P:	Runoff Area=1,446 sf 0.00% Impervious Runoff Depth=0.07" Flow Length=114' Tc=8.0 min CN=74 Runoff=0.00 cfs 0.000 af
Reach 1R: TOP	Inflow=0.67 cfs 0.025 af Outflow=0.67 cfs 0.025 af
Reach 2R: CHANNEL	Inflow=0.67 cfs 0.029 af Outflow=0.67 cfs 0.029 af
Reach 3R: TOTAL	Inflow=0.67 cfs 0.032 af Outflow=0.67 cfs 0.032 af

240913_40 ERW Waymaker Proposed

NJ DEP 2-hr WQ Rainfall=1.25"

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Reach 4R:

Inflow=0.67 cfs 0.025 af

Outflow=0.67 cfs 0.025 af

Reach 8R: (new Reach)

Inflow=0.41 cfs 0.014 af

Outflow=0.41 cfs 0.014 af

Reach DP1: TOP

Avg. Flow Depth=0.06' Max Vel=5.06 fps Inflow=0.21 cfs 0.009 af

34.0" x 22.0", R=24.9" Elliptical Pipe n=0.011 L=100.0' S=0.1000 ' Capacity=118.41 cfs Outflow=0.20 cfs 0.009 af

Reach DP2: CHANNEL

Inflow=0.20 cfs 0.012 af

Outflow=0.20 cfs 0.012 af

Reach DP3: TOTAL

Inflow=0.21 cfs 0.014 af

Outflow=0.21 cfs 0.014 af

Reach EX 1:

Inflow=0.21 cfs 0.009 af

Outflow=0.21 cfs 0.009 af

Pond 2P: Pervious Pavers

Peak Elev=624.45' Storage=0.002 af Inflow=0.21 cfs 0.006 af

Outflow=0.08 cfs 0.006 af

Pond 10P: (new Pond)

Peak Elev=0.16' Inflow=0.21 cfs 0.009 af

Outflow=0.21 cfs 0.009 af

Pond 11P: Existing Drywell System

Peak Elev=608.15' Storage=0.013 af Inflow=0.62 cfs 0.017 af

Discarded=0.03 cfs 0.015 af Primary=0.04 cfs 0.002 af Outflow=0.07 cfs 0.017 af

Pond 12P: Subsurface Infiltration Basin

Peak Elev=622.00' Storage=0.012 af Inflow=0.62 cfs 0.020 af

Discarded=0.07 cfs 0.020 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.020 af

Total Runoff Area = 4.082 ac Runoff Volume = 0.086 af Average Runoff Depth = 0.25"**83.35% Pervious = 3.402 ac 16.65% Impervious = 0.680 ac**

Summary for Subcatchment 1S: 2BP-I

Runoff = 0.21 cfs @ 1.03 hrs, Volume= 0.006 af, Depth= 1.03"
 Routed to Pond 12P : Subsurface Infiltration Basin

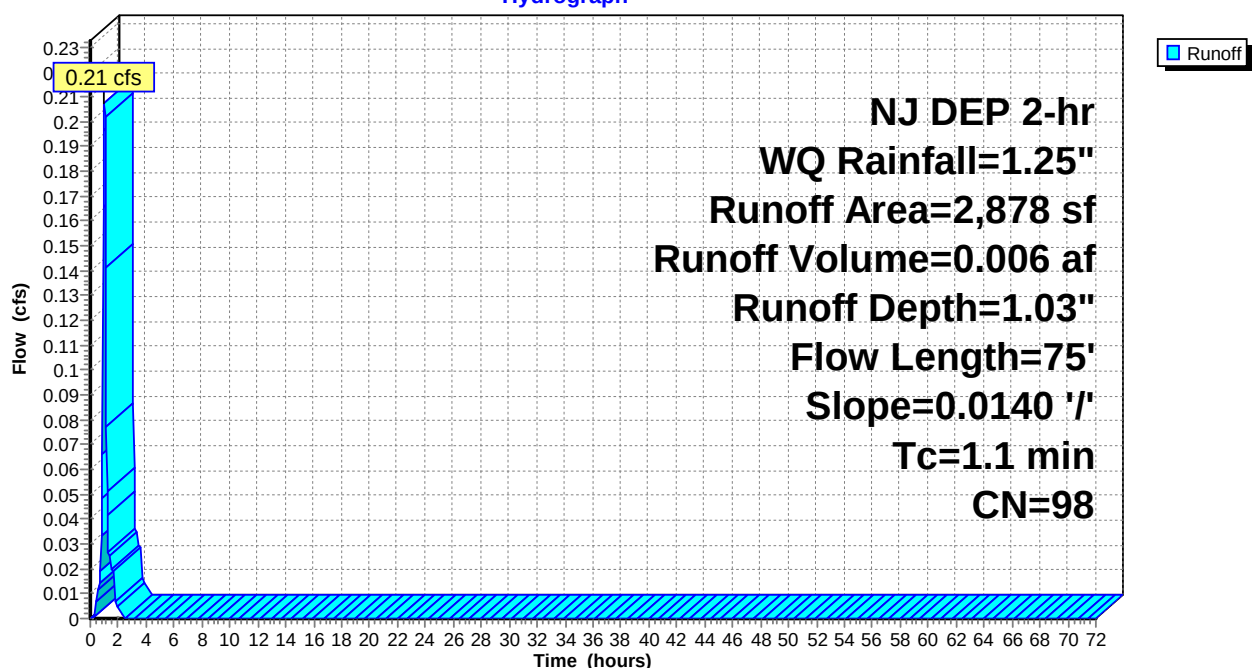
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
2,878	98	Paved parking, HSG C
2,878		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	75	0.0140	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"

Subcatchment 1S: 2BP-I

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment 1S: 2BP-I

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	1.03	0.00
1.00	0.63	0.43	0.20	59.00	1.25	1.03	0.00
2.00	1.25	1.03	0.01	60.00	1.25	1.03	0.00
3.00	1.25	1.03	0.00	61.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	62.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00	63.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00	64.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00	65.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	66.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00	67.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00	68.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00	69.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	70.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00	71.00	1.25	1.03	0.00
14.00	1.25	1.03	0.00	72.00	1.25	1.03	0.00
15.00	1.25	1.03	0.00				
16.00	1.25	1.03	0.00				
17.00	1.25	1.03	0.00				
18.00	1.25	1.03	0.00				
19.00	1.25	1.03	0.00				
20.00	1.25	1.03	0.00				
21.00	1.25	1.03	0.00				
22.00	1.25	1.03	0.00				
23.00	1.25	1.03	0.00				
24.00	1.25	1.03	0.00				
25.00	1.25	1.03	0.00				
26.00	1.25	1.03	0.00				
27.00	1.25	1.03	0.00				
28.00	1.25	1.03	0.00				
29.00	1.25	1.03	0.00				
30.00	1.25	1.03	0.00				
31.00	1.25	1.03	0.00				
32.00	1.25	1.03	0.00				
33.00	1.25	1.03	0.00				
34.00	1.25	1.03	0.00				
35.00	1.25	1.03	0.00				
36.00	1.25	1.03	0.00				
37.00	1.25	1.03	0.00				
38.00	1.25	1.03	0.00				
39.00	1.25	1.03	0.00				
40.00	1.25	1.03	0.00				
41.00	1.25	1.03	0.00				
42.00	1.25	1.03	0.00				
43.00	1.25	1.03	0.00				
44.00	1.25	1.03	0.00				
45.00	1.25	1.03	0.00				
46.00	1.25	1.03	0.00				
47.00	1.25	1.03	0.00				
48.00	1.25	1.03	0.00				
49.00	1.25	1.03	0.00				
50.00	1.25	1.03	0.00				
51.00	1.25	1.03	0.00				
52.00	1.25	1.03	0.00				
53.00	1.25	1.03	0.00				
54.00	1.25	1.03	0.00				
55.00	1.25	1.03	0.00				
56.00	1.25	1.03	0.00				
57.00	1.25	1.03	0.00				

240913 40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment EX 1-I:

Runoff = 0.68 cfs @ 1.03 hrs, Volume= 0.019 af, Depth= 1.03"
 Routed to Reach 4R :

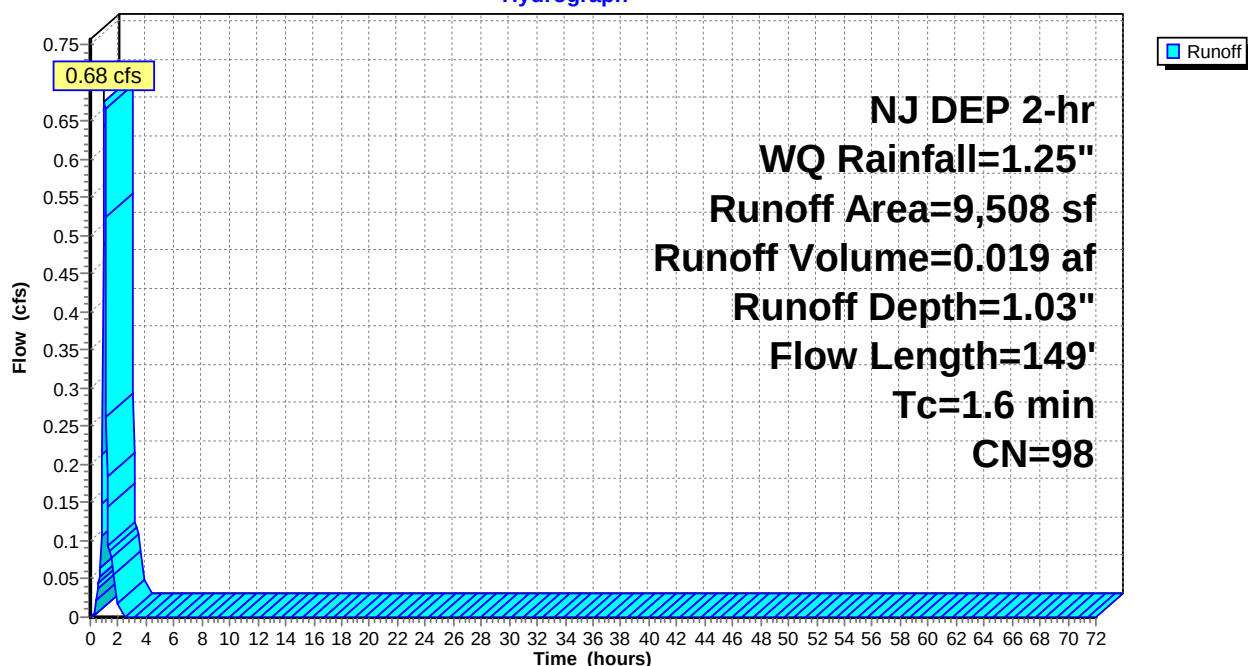
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
9,508	98	Paved roads w/curbs & sewers, HSG C
9,508		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0140	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"
0.3	49	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.6	149	Total			

Subcatchment EX 1-I:

Hydrograph



240913_40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment EX 1-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	1.03	0.00
1.00	0.63	0.43	0.64	59.00	1.25	1.03	0.00
2.00	1.25	1.03	0.02	60.00	1.25	1.03	0.00
3.00	1.25	1.03	0.00	61.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	62.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00	63.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00	64.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00	65.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	66.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00	67.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00	68.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00	69.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	70.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00	71.00	1.25	1.03	0.00
14.00	1.25	1.03	0.00	72.00	1.25	1.03	0.00
15.00	1.25	1.03	0.00				
16.00	1.25	1.03	0.00				
17.00	1.25	1.03	0.00				
18.00	1.25	1.03	0.00				
19.00	1.25	1.03	0.00				
20.00	1.25	1.03	0.00				
21.00	1.25	1.03	0.00				
22.00	1.25	1.03	0.00				
23.00	1.25	1.03	0.00				
24.00	1.25	1.03	0.00				
25.00	1.25	1.03	0.00				
26.00	1.25	1.03	0.00				
27.00	1.25	1.03	0.00				
28.00	1.25	1.03	0.00				
29.00	1.25	1.03	0.00				
30.00	1.25	1.03	0.00				
31.00	1.25	1.03	0.00				
32.00	1.25	1.03	0.00				
33.00	1.25	1.03	0.00				
34.00	1.25	1.03	0.00				
35.00	1.25	1.03	0.00				
36.00	1.25	1.03	0.00				
37.00	1.25	1.03	0.00				
38.00	1.25	1.03	0.00				
39.00	1.25	1.03	0.00				
40.00	1.25	1.03	0.00				
41.00	1.25	1.03	0.00				
42.00	1.25	1.03	0.00				
43.00	1.25	1.03	0.00				
44.00	1.25	1.03	0.00				
45.00	1.25	1.03	0.00				
46.00	1.25	1.03	0.00				
47.00	1.25	1.03	0.00				
48.00	1.25	1.03	0.00				
49.00	1.25	1.03	0.00				
50.00	1.25	1.03	0.00				
51.00	1.25	1.03	0.00				
52.00	1.25	1.03	0.00				
53.00	1.25	1.03	0.00				
54.00	1.25	1.03	0.00				
55.00	1.25	1.03	0.00				
56.00	1.25	1.03	0.00				
57.00	1.25	1.03	0.00				

Summary for Subcatchment EX 1-P:

Runoff = 0.13 cfs @ 1.26 hrs, Volume= 0.006 af, Depth= 0.09"
 Routed to Reach 4R :

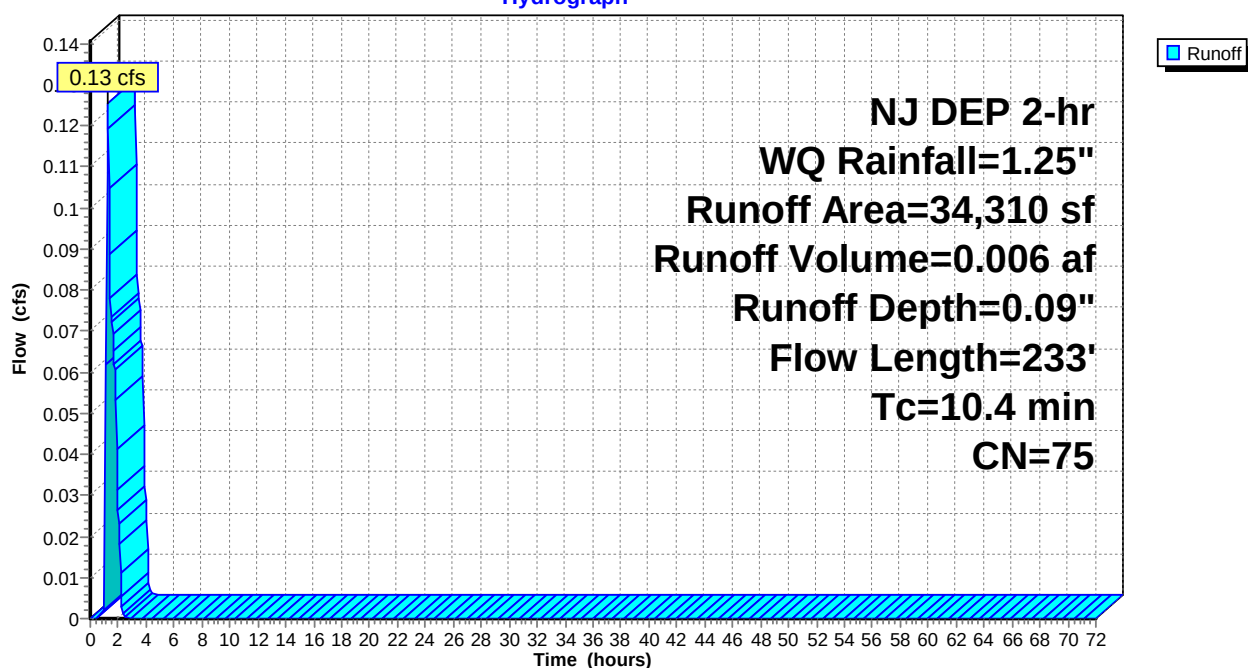
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
32,830	74	>75% Grass cover, Good, HSG C
1,480	89	Gravel roads, HSG C
34,310	75	Weighted Average
34,310		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.0175	0.17		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.4	133	0.1070	5.27		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.4	233	Total			

Subcatchment EX 1-P:

Hydrograph



240913_40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment EX 1-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	0.09	0.00
1.00	0.63	0.00	0.00	59.00	1.25	0.09	0.00
2.00	1.25	0.09	0.03	60.00	1.25	0.09	0.00
3.00	1.25	0.09	0.00	61.00	1.25	0.09	0.00
4.00	1.25	0.09	0.00	62.00	1.25	0.09	0.00
5.00	1.25	0.09	0.00	63.00	1.25	0.09	0.00
6.00	1.25	0.09	0.00	64.00	1.25	0.09	0.00
7.00	1.25	0.09	0.00	65.00	1.25	0.09	0.00
8.00	1.25	0.09	0.00	66.00	1.25	0.09	0.00
9.00	1.25	0.09	0.00	67.00	1.25	0.09	0.00
10.00	1.25	0.09	0.00	68.00	1.25	0.09	0.00
11.00	1.25	0.09	0.00	69.00	1.25	0.09	0.00
12.00	1.25	0.09	0.00	70.00	1.25	0.09	0.00
13.00	1.25	0.09	0.00	71.00	1.25	0.09	0.00
14.00	1.25	0.09	0.00	72.00	1.25	0.09	0.00
15.00	1.25	0.09	0.00				
16.00	1.25	0.09	0.00				
17.00	1.25	0.09	0.00				
18.00	1.25	0.09	0.00				
19.00	1.25	0.09	0.00				
20.00	1.25	0.09	0.00				
21.00	1.25	0.09	0.00				
22.00	1.25	0.09	0.00				
23.00	1.25	0.09	0.00				
24.00	1.25	0.09	0.00				
25.00	1.25	0.09	0.00				
26.00	1.25	0.09	0.00				
27.00	1.25	0.09	0.00				
28.00	1.25	0.09	0.00				
29.00	1.25	0.09	0.00				
30.00	1.25	0.09	0.00				
31.00	1.25	0.09	0.00				
32.00	1.25	0.09	0.00				
33.00	1.25	0.09	0.00				
34.00	1.25	0.09	0.00				
35.00	1.25	0.09	0.00				
36.00	1.25	0.09	0.00				
37.00	1.25	0.09	0.00				
38.00	1.25	0.09	0.00				
39.00	1.25	0.09	0.00				
40.00	1.25	0.09	0.00				
41.00	1.25	0.09	0.00				
42.00	1.25	0.09	0.00				
43.00	1.25	0.09	0.00				
44.00	1.25	0.09	0.00				
45.00	1.25	0.09	0.00				
46.00	1.25	0.09	0.00				
47.00	1.25	0.09	0.00				
48.00	1.25	0.09	0.00				
49.00	1.25	0.09	0.00				
50.00	1.25	0.09	0.00				
51.00	1.25	0.09	0.00				
52.00	1.25	0.09	0.00				
53.00	1.25	0.09	0.00				
54.00	1.25	0.09	0.00				
55.00	1.25	0.09	0.00				
56.00	1.25	0.09	0.00				
57.00	1.25	0.09	0.00				

240913 40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment EX 2-P:

Runoff = 0.10 cfs @ 1.27 hrs, Volume= 0.005 af, Depth= 0.07"
 Routed to Reach 2R : CHANNEL

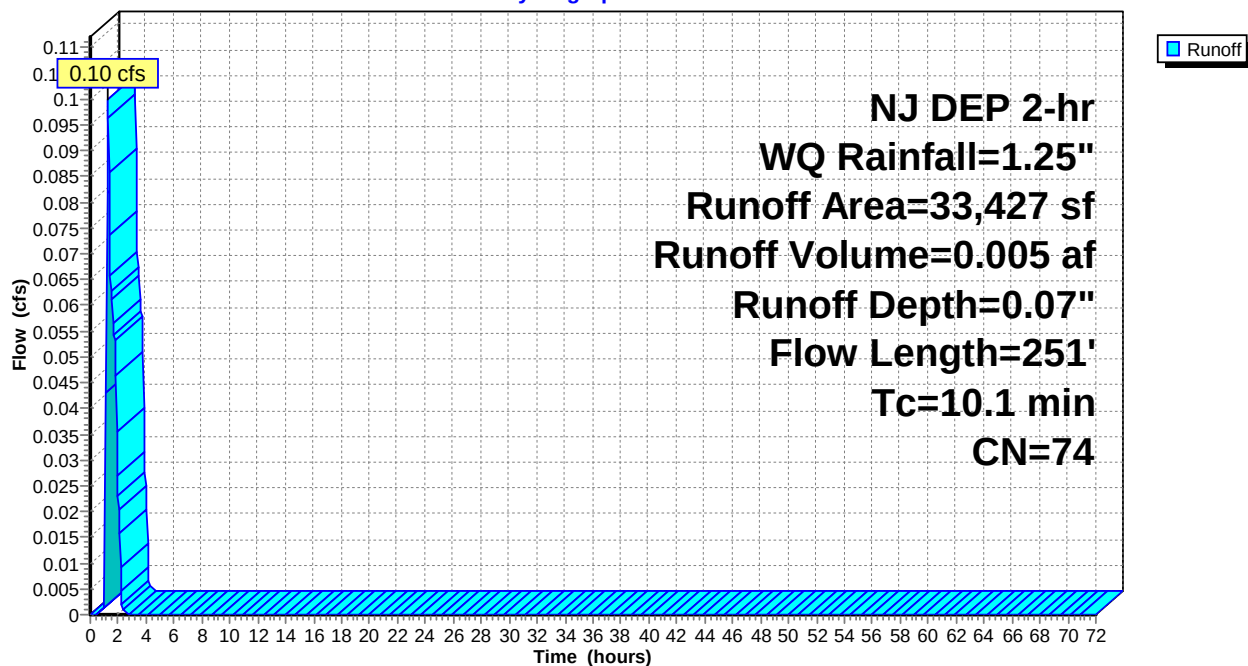
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
32,438	74	>75% Grass cover, Good, HSG C
989	89	Gravel roads, HSG C
33,427	74	Weighted Average
33,427		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.0200	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.4	47	0.0170	2.10		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.3	88	0.0680	4.20		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.0	16	0.4200	10.43		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.1	251	Total			

Subcatchment EX 2-P:

Hydrograph



240913_40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment EX 2-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	0.07	0.00
1.00	0.63	0.00	0.00	59.00	1.25	0.07	0.00
2.00	1.25	0.07	0.02	60.00	1.25	0.07	0.00
3.00	1.25	0.07	0.00	61.00	1.25	0.07	0.00
4.00	1.25	0.07	0.00	62.00	1.25	0.07	0.00
5.00	1.25	0.07	0.00	63.00	1.25	0.07	0.00
6.00	1.25	0.07	0.00	64.00	1.25	0.07	0.00
7.00	1.25	0.07	0.00	65.00	1.25	0.07	0.00
8.00	1.25	0.07	0.00	66.00	1.25	0.07	0.00
9.00	1.25	0.07	0.00	67.00	1.25	0.07	0.00
10.00	1.25	0.07	0.00	68.00	1.25	0.07	0.00
11.00	1.25	0.07	0.00	69.00	1.25	0.07	0.00
12.00	1.25	0.07	0.00	70.00	1.25	0.07	0.00
13.00	1.25	0.07	0.00	71.00	1.25	0.07	0.00
14.00	1.25	0.07	0.00	72.00	1.25	0.07	0.00
15.00	1.25	0.07	0.00				
16.00	1.25	0.07	0.00				
17.00	1.25	0.07	0.00				
18.00	1.25	0.07	0.00				
19.00	1.25	0.07	0.00				
20.00	1.25	0.07	0.00				
21.00	1.25	0.07	0.00				
22.00	1.25	0.07	0.00				
23.00	1.25	0.07	0.00				
24.00	1.25	0.07	0.00				
25.00	1.25	0.07	0.00				
26.00	1.25	0.07	0.00				
27.00	1.25	0.07	0.00				
28.00	1.25	0.07	0.00				
29.00	1.25	0.07	0.00				
30.00	1.25	0.07	0.00				
31.00	1.25	0.07	0.00				
32.00	1.25	0.07	0.00				
33.00	1.25	0.07	0.00				
34.00	1.25	0.07	0.00				
35.00	1.25	0.07	0.00				
36.00	1.25	0.07	0.00				
37.00	1.25	0.07	0.00				
38.00	1.25	0.07	0.00				
39.00	1.25	0.07	0.00				
40.00	1.25	0.07	0.00				
41.00	1.25	0.07	0.00				
42.00	1.25	0.07	0.00				
43.00	1.25	0.07	0.00				
44.00	1.25	0.07	0.00				
45.00	1.25	0.07	0.00				
46.00	1.25	0.07	0.00				
47.00	1.25	0.07	0.00				
48.00	1.25	0.07	0.00				
49.00	1.25	0.07	0.00				
50.00	1.25	0.07	0.00				
51.00	1.25	0.07	0.00				
52.00	1.25	0.07	0.00				
53.00	1.25	0.07	0.00				
54.00	1.25	0.07	0.00				
55.00	1.25	0.07	0.00				
56.00	1.25	0.07	0.00				
57.00	1.25	0.07	0.00				

240913 40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment EX 3 - P:

Runoff = 0.06 cfs @ 1.21 hrs, Volume= 0.002 af, Depth= 0.10"
 Routed to Reach 3R : TOTAL

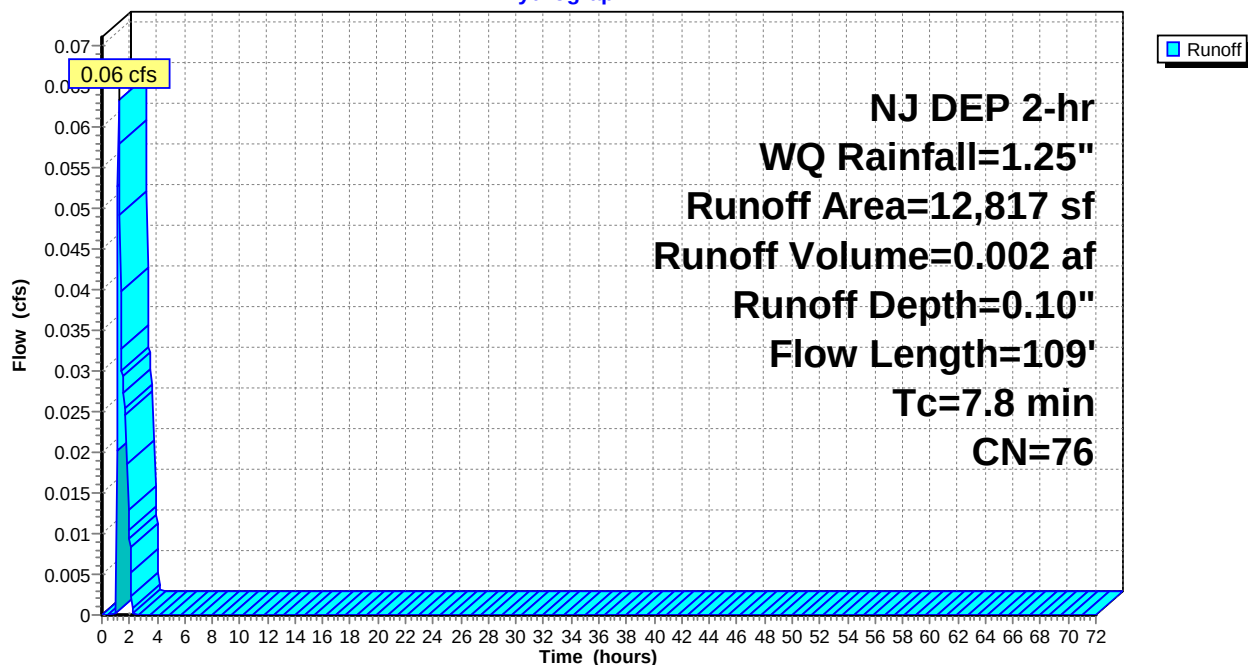
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
11,505	74	>75% Grass cover, Good, HSG C
1,312	89	Gravel roads, HSG C
12,817	76	Weighted Average
12,817		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	72	0.0280	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
1.4	28	0.1790	0.33		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.0	9	0.2220	7.59		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
7.8	109	Total			

Subcatchment EX 3 - P:

Hydrograph



240913_40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment EX 3 - P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	0.10	0.00
1.00	0.63	0.00	0.00	59.00	1.25	0.10	0.00
2.00	1.25	0.10	0.01	60.00	1.25	0.10	0.00
3.00	1.25	0.10	0.00	61.00	1.25	0.10	0.00
4.00	1.25	0.10	0.00	62.00	1.25	0.10	0.00
5.00	1.25	0.10	0.00	63.00	1.25	0.10	0.00
6.00	1.25	0.10	0.00	64.00	1.25	0.10	0.00
7.00	1.25	0.10	0.00	65.00	1.25	0.10	0.00
8.00	1.25	0.10	0.00	66.00	1.25	0.10	0.00
9.00	1.25	0.10	0.00	67.00	1.25	0.10	0.00
10.00	1.25	0.10	0.00	68.00	1.25	0.10	0.00
11.00	1.25	0.10	0.00	69.00	1.25	0.10	0.00
12.00	1.25	0.10	0.00	70.00	1.25	0.10	0.00
13.00	1.25	0.10	0.00	71.00	1.25	0.10	0.00
14.00	1.25	0.10	0.00	72.00	1.25	0.10	0.00
15.00	1.25	0.10	0.00				
16.00	1.25	0.10	0.00				
17.00	1.25	0.10	0.00				
18.00	1.25	0.10	0.00				
19.00	1.25	0.10	0.00				
20.00	1.25	0.10	0.00				
21.00	1.25	0.10	0.00				
22.00	1.25	0.10	0.00				
23.00	1.25	0.10	0.00				
24.00	1.25	0.10	0.00				
25.00	1.25	0.10	0.00				
26.00	1.25	0.10	0.00				
27.00	1.25	0.10	0.00				
28.00	1.25	0.10	0.00				
29.00	1.25	0.10	0.00				
30.00	1.25	0.10	0.00				
31.00	1.25	0.10	0.00				
32.00	1.25	0.10	0.00				
33.00	1.25	0.10	0.00				
34.00	1.25	0.10	0.00				
35.00	1.25	0.10	0.00				
36.00	1.25	0.10	0.00				
37.00	1.25	0.10	0.00				
38.00	1.25	0.10	0.00				
39.00	1.25	0.10	0.00				
40.00	1.25	0.10	0.00				
41.00	1.25	0.10	0.00				
42.00	1.25	0.10	0.00				
43.00	1.25	0.10	0.00				
44.00	1.25	0.10	0.00				
45.00	1.25	0.10	0.00				
46.00	1.25	0.10	0.00				
47.00	1.25	0.10	0.00				
48.00	1.25	0.10	0.00				
49.00	1.25	0.10	0.00				
50.00	1.25	0.10	0.00				
51.00	1.25	0.10	0.00				
52.00	1.25	0.10	0.00				
53.00	1.25	0.10	0.00				
54.00	1.25	0.10	0.00				
55.00	1.25	0.10	0.00				
56.00	1.25	0.10	0.00				
57.00	1.25	0.10	0.00				

Summary for Subcatchment PR 1A-I:

Runoff = 0.21 cfs @ 1.03 hrs, Volume= 0.006 af, Depth= 1.03"
 Routed to Reach EX 1 :

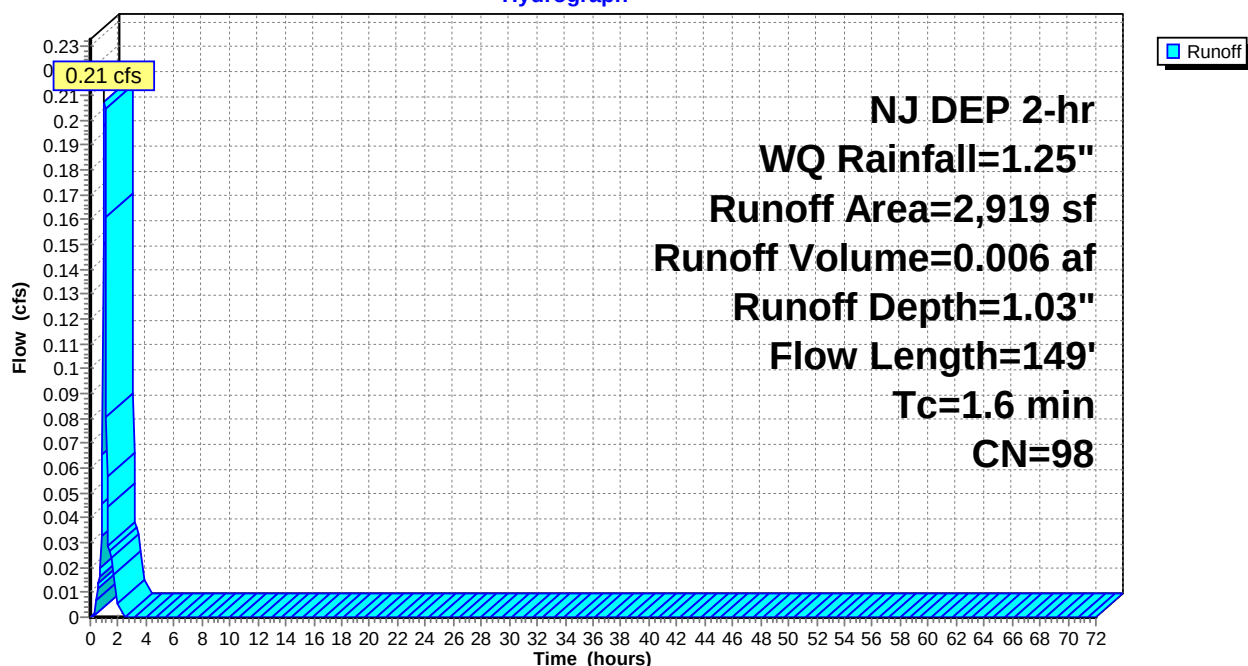
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
2,919	98	Paved roads w/curbs & sewers, HSG C
2,919		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0140	1.24		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"
0.3	49	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
1.6	149	Total			

Subcatchment PR 1A-I:

Hydrograph



240913_40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment PR 1A-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	1.03	0.00
1.00	0.63	0.43	0.20	59.00	1.25	1.03	0.00
2.00	1.25	1.03	0.01	60.00	1.25	1.03	0.00
3.00	1.25	1.03	0.00	61.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	62.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00	63.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00	64.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00	65.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	66.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00	67.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00	68.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00	69.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	70.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00	71.00	1.25	1.03	0.00
14.00	1.25	1.03	0.00	72.00	1.25	1.03	0.00
15.00	1.25	1.03	0.00				
16.00	1.25	1.03	0.00				
17.00	1.25	1.03	0.00				
18.00	1.25	1.03	0.00				
19.00	1.25	1.03	0.00				
20.00	1.25	1.03	0.00				
21.00	1.25	1.03	0.00				
22.00	1.25	1.03	0.00				
23.00	1.25	1.03	0.00				
24.00	1.25	1.03	0.00				
25.00	1.25	1.03	0.00				
26.00	1.25	1.03	0.00				
27.00	1.25	1.03	0.00				
28.00	1.25	1.03	0.00				
29.00	1.25	1.03	0.00				
30.00	1.25	1.03	0.00				
31.00	1.25	1.03	0.00				
32.00	1.25	1.03	0.00				
33.00	1.25	1.03	0.00				
34.00	1.25	1.03	0.00				
35.00	1.25	1.03	0.00				
36.00	1.25	1.03	0.00				
37.00	1.25	1.03	0.00				
38.00	1.25	1.03	0.00				
39.00	1.25	1.03	0.00				
40.00	1.25	1.03	0.00				
41.00	1.25	1.03	0.00				
42.00	1.25	1.03	0.00				
43.00	1.25	1.03	0.00				
44.00	1.25	1.03	0.00				
45.00	1.25	1.03	0.00				
46.00	1.25	1.03	0.00				
47.00	1.25	1.03	0.00				
48.00	1.25	1.03	0.00				
49.00	1.25	1.03	0.00				
50.00	1.25	1.03	0.00				
51.00	1.25	1.03	0.00				
52.00	1.25	1.03	0.00				
53.00	1.25	1.03	0.00				
54.00	1.25	1.03	0.00				
55.00	1.25	1.03	0.00				
56.00	1.25	1.03	0.00				
57.00	1.25	1.03	0.00				

240913 40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment PR 1A-P:

Runoff = 0.06 cfs @ 1.27 hrs, Volume= 0.003 af, Depth= 0.07"
 Routed to Reach EX 1 :

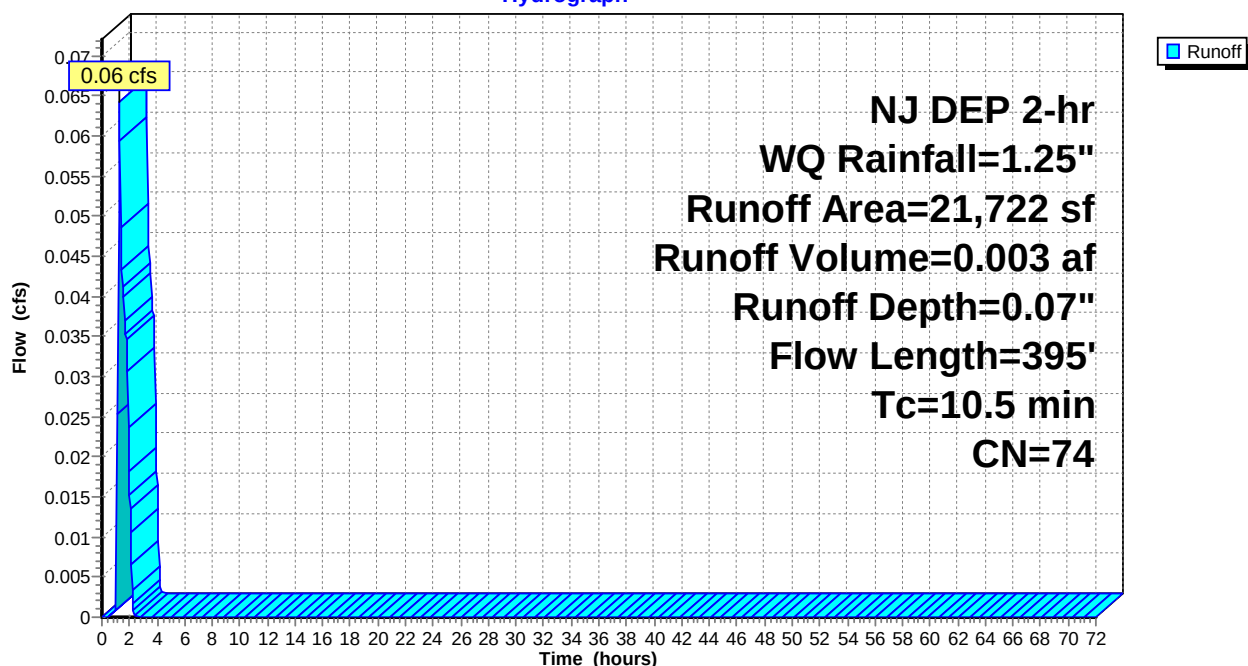
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
21,722	74	>75% Grass cover, Good, HSG C
21,722		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0220	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
1.4	295	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
10.5	395	Total			

Subcatchment PR 1A-P:

Hydrograph



240913_40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment PR 1A-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	0.07	0.00
1.00	0.63	0.00	0.00	59.00	1.25	0.07	0.00
2.00	1.25	0.07	0.02	60.00	1.25	0.07	0.00
3.00	1.25	0.07	0.00	61.00	1.25	0.07	0.00
4.00	1.25	0.07	0.00	62.00	1.25	0.07	0.00
5.00	1.25	0.07	0.00	63.00	1.25	0.07	0.00
6.00	1.25	0.07	0.00	64.00	1.25	0.07	0.00
7.00	1.25	0.07	0.00	65.00	1.25	0.07	0.00
8.00	1.25	0.07	0.00	66.00	1.25	0.07	0.00
9.00	1.25	0.07	0.00	67.00	1.25	0.07	0.00
10.00	1.25	0.07	0.00	68.00	1.25	0.07	0.00
11.00	1.25	0.07	0.00	69.00	1.25	0.07	0.00
12.00	1.25	0.07	0.00	70.00	1.25	0.07	0.00
13.00	1.25	0.07	0.00	71.00	1.25	0.07	0.00
14.00	1.25	0.07	0.00	72.00	1.25	0.07	0.00
15.00	1.25	0.07	0.00				
16.00	1.25	0.07	0.00				
17.00	1.25	0.07	0.00				
18.00	1.25	0.07	0.00				
19.00	1.25	0.07	0.00				
20.00	1.25	0.07	0.00				
21.00	1.25	0.07	0.00				
22.00	1.25	0.07	0.00				
23.00	1.25	0.07	0.00				
24.00	1.25	0.07	0.00				
25.00	1.25	0.07	0.00				
26.00	1.25	0.07	0.00				
27.00	1.25	0.07	0.00				
28.00	1.25	0.07	0.00				
29.00	1.25	0.07	0.00				
30.00	1.25	0.07	0.00				
31.00	1.25	0.07	0.00				
32.00	1.25	0.07	0.00				
33.00	1.25	0.07	0.00				
34.00	1.25	0.07	0.00				
35.00	1.25	0.07	0.00				
36.00	1.25	0.07	0.00				
37.00	1.25	0.07	0.00				
38.00	1.25	0.07	0.00				
39.00	1.25	0.07	0.00				
40.00	1.25	0.07	0.00				
41.00	1.25	0.07	0.00				
42.00	1.25	0.07	0.00				
43.00	1.25	0.07	0.00				
44.00	1.25	0.07	0.00				
45.00	1.25	0.07	0.00				
46.00	1.25	0.07	0.00				
47.00	1.25	0.07	0.00				
48.00	1.25	0.07	0.00				
49.00	1.25	0.07	0.00				
50.00	1.25	0.07	0.00				
51.00	1.25	0.07	0.00				
52.00	1.25	0.07	0.00				
53.00	1.25	0.07	0.00				
54.00	1.25	0.07	0.00				
55.00	1.25	0.07	0.00				
56.00	1.25	0.07	0.00				
57.00	1.25	0.07	0.00				

Summary for Subcatchment PR 1B-P:

Runoff = 0.21 cfs @ 1.12 hrs, Volume= 0.006 af, Depth= 0.45"
 Routed to Pond 2P : Pervious Pavers

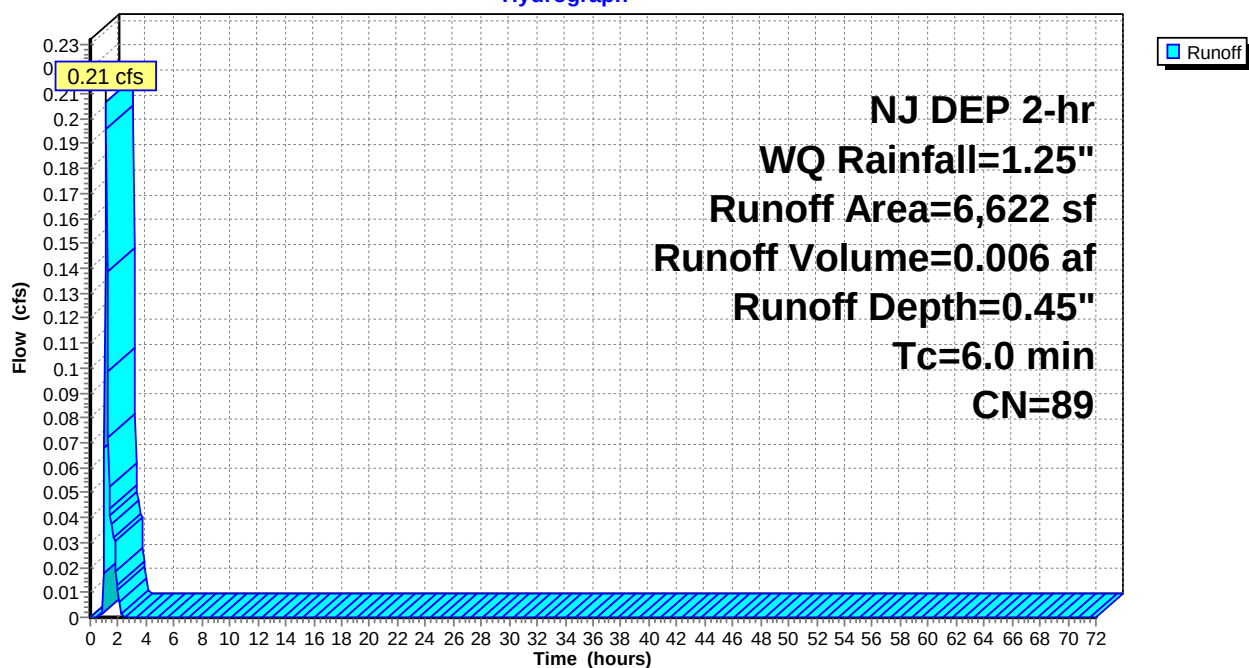
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
6,622	89	Gravel roads, HSG C
6,622		100.00% Pervious Area

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

Subcatchment PR 1B-P:

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment PR 1B-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	0.45	0.00
1.00	0.63	0.09	0.07	59.00	1.25	0.45	0.00
2.00	1.25	0.45	0.01	60.00	1.25	0.45	0.00
3.00	1.25	0.45	0.00	61.00	1.25	0.45	0.00
4.00	1.25	0.45	0.00	62.00	1.25	0.45	0.00
5.00	1.25	0.45	0.00	63.00	1.25	0.45	0.00
6.00	1.25	0.45	0.00	64.00	1.25	0.45	0.00
7.00	1.25	0.45	0.00	65.00	1.25	0.45	0.00
8.00	1.25	0.45	0.00	66.00	1.25	0.45	0.00
9.00	1.25	0.45	0.00	67.00	1.25	0.45	0.00
10.00	1.25	0.45	0.00	68.00	1.25	0.45	0.00
11.00	1.25	0.45	0.00	69.00	1.25	0.45	0.00
12.00	1.25	0.45	0.00	70.00	1.25	0.45	0.00
13.00	1.25	0.45	0.00	71.00	1.25	0.45	0.00
14.00	1.25	0.45	0.00	72.00	1.25	0.45	0.00
15.00	1.25	0.45	0.00				
16.00	1.25	0.45	0.00				
17.00	1.25	0.45	0.00				
18.00	1.25	0.45	0.00				
19.00	1.25	0.45	0.00				
20.00	1.25	0.45	0.00				
21.00	1.25	0.45	0.00				
22.00	1.25	0.45	0.00				
23.00	1.25	0.45	0.00				
24.00	1.25	0.45	0.00				
25.00	1.25	0.45	0.00				
26.00	1.25	0.45	0.00				
27.00	1.25	0.45	0.00				
28.00	1.25	0.45	0.00				
29.00	1.25	0.45	0.00				
30.00	1.25	0.45	0.00				
31.00	1.25	0.45	0.00				
32.00	1.25	0.45	0.00				
33.00	1.25	0.45	0.00				
34.00	1.25	0.45	0.00				
35.00	1.25	0.45	0.00				
36.00	1.25	0.45	0.00				
37.00	1.25	0.45	0.00				
38.00	1.25	0.45	0.00				
39.00	1.25	0.45	0.00				
40.00	1.25	0.45	0.00				
41.00	1.25	0.45	0.00				
42.00	1.25	0.45	0.00				
43.00	1.25	0.45	0.00				
44.00	1.25	0.45	0.00				
45.00	1.25	0.45	0.00				
46.00	1.25	0.45	0.00				
47.00	1.25	0.45	0.00				
48.00	1.25	0.45	0.00				
49.00	1.25	0.45	0.00				
50.00	1.25	0.45	0.00				
51.00	1.25	0.45	0.00				
52.00	1.25	0.45	0.00				
53.00	1.25	0.45	0.00				
54.00	1.25	0.45	0.00				
55.00	1.25	0.45	0.00				
56.00	1.25	0.45	0.00				
57.00	1.25	0.45	0.00				

Summary for Subcatchment PR 2A-P:

Runoff = 0.02 cfs @ 1.12 hrs, Volume= 0.001 af, Depth= 0.07"
 Routed to Reach DP2 : CHANNEL

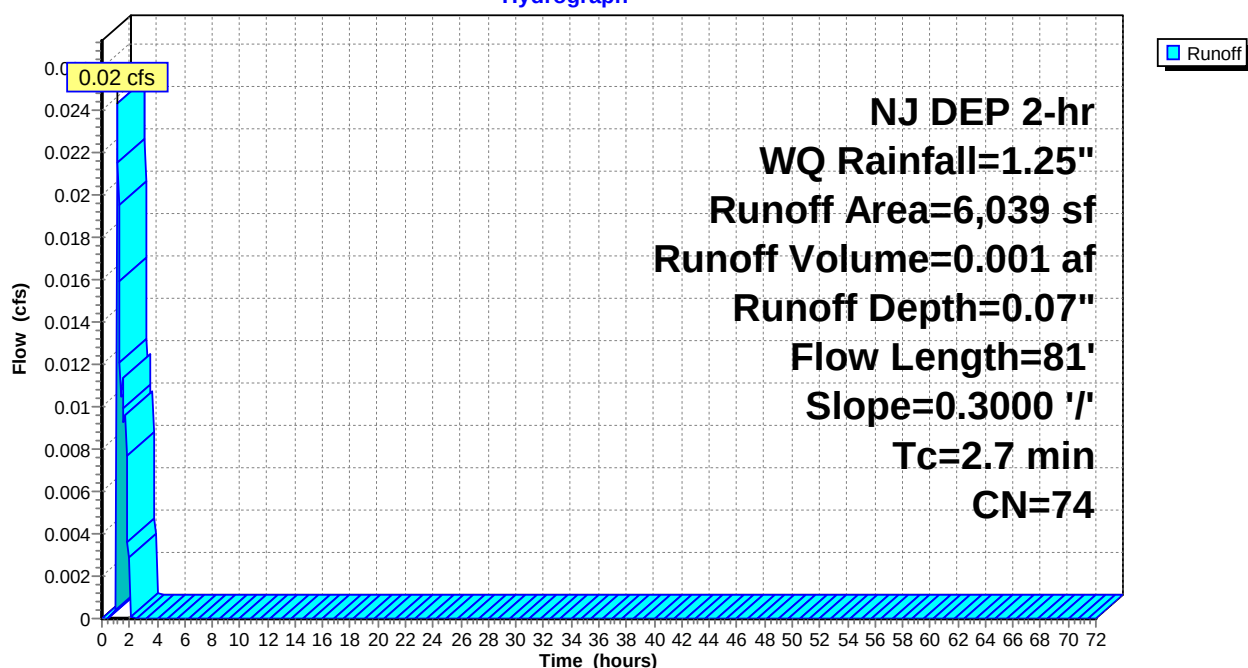
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
6,039	74	>75% Grass cover, Good, HSG C
6,039		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.7	81	0.3000	0.50		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"

Subcatchment PR 2A-P:

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment PR 2A-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	0.07	0.00
1.00	0.63	0.00	0.00	59.00	1.25	0.07	0.00
2.00	1.25	0.07	0.00	60.00	1.25	0.07	0.00
3.00	1.25	0.07	0.00	61.00	1.25	0.07	0.00
4.00	1.25	0.07	0.00	62.00	1.25	0.07	0.00
5.00	1.25	0.07	0.00	63.00	1.25	0.07	0.00
6.00	1.25	0.07	0.00	64.00	1.25	0.07	0.00
7.00	1.25	0.07	0.00	65.00	1.25	0.07	0.00
8.00	1.25	0.07	0.00	66.00	1.25	0.07	0.00
9.00	1.25	0.07	0.00	67.00	1.25	0.07	0.00
10.00	1.25	0.07	0.00	68.00	1.25	0.07	0.00
11.00	1.25	0.07	0.00	69.00	1.25	0.07	0.00
12.00	1.25	0.07	0.00	70.00	1.25	0.07	0.00
13.00	1.25	0.07	0.00	71.00	1.25	0.07	0.00
14.00	1.25	0.07	0.00	72.00	1.25	0.07	0.00
15.00	1.25	0.07	0.00				
16.00	1.25	0.07	0.00				
17.00	1.25	0.07	0.00				
18.00	1.25	0.07	0.00				
19.00	1.25	0.07	0.00				
20.00	1.25	0.07	0.00				
21.00	1.25	0.07	0.00				
22.00	1.25	0.07	0.00				
23.00	1.25	0.07	0.00				
24.00	1.25	0.07	0.00				
25.00	1.25	0.07	0.00				
26.00	1.25	0.07	0.00				
27.00	1.25	0.07	0.00				
28.00	1.25	0.07	0.00				
29.00	1.25	0.07	0.00				
30.00	1.25	0.07	0.00				
31.00	1.25	0.07	0.00				
32.00	1.25	0.07	0.00				
33.00	1.25	0.07	0.00				
34.00	1.25	0.07	0.00				
35.00	1.25	0.07	0.00				
36.00	1.25	0.07	0.00				
37.00	1.25	0.07	0.00				
38.00	1.25	0.07	0.00				
39.00	1.25	0.07	0.00				
40.00	1.25	0.07	0.00				
41.00	1.25	0.07	0.00				
42.00	1.25	0.07	0.00				
43.00	1.25	0.07	0.00				
44.00	1.25	0.07	0.00				
45.00	1.25	0.07	0.00				
46.00	1.25	0.07	0.00				
47.00	1.25	0.07	0.00				
48.00	1.25	0.07	0.00				
49.00	1.25	0.07	0.00				
50.00	1.25	0.07	0.00				
51.00	1.25	0.07	0.00				
52.00	1.25	0.07	0.00				
53.00	1.25	0.07	0.00				
54.00	1.25	0.07	0.00				
55.00	1.25	0.07	0.00				
56.00	1.25	0.07	0.00				
57.00	1.25	0.07	0.00				

Summary for Subcatchment PR 2C-I:

Runoff = 0.41 cfs @ 1.03 hrs, Volume= 0.011 af, Depth= 1.03"
 Routed to Reach 8R : (new Reach)

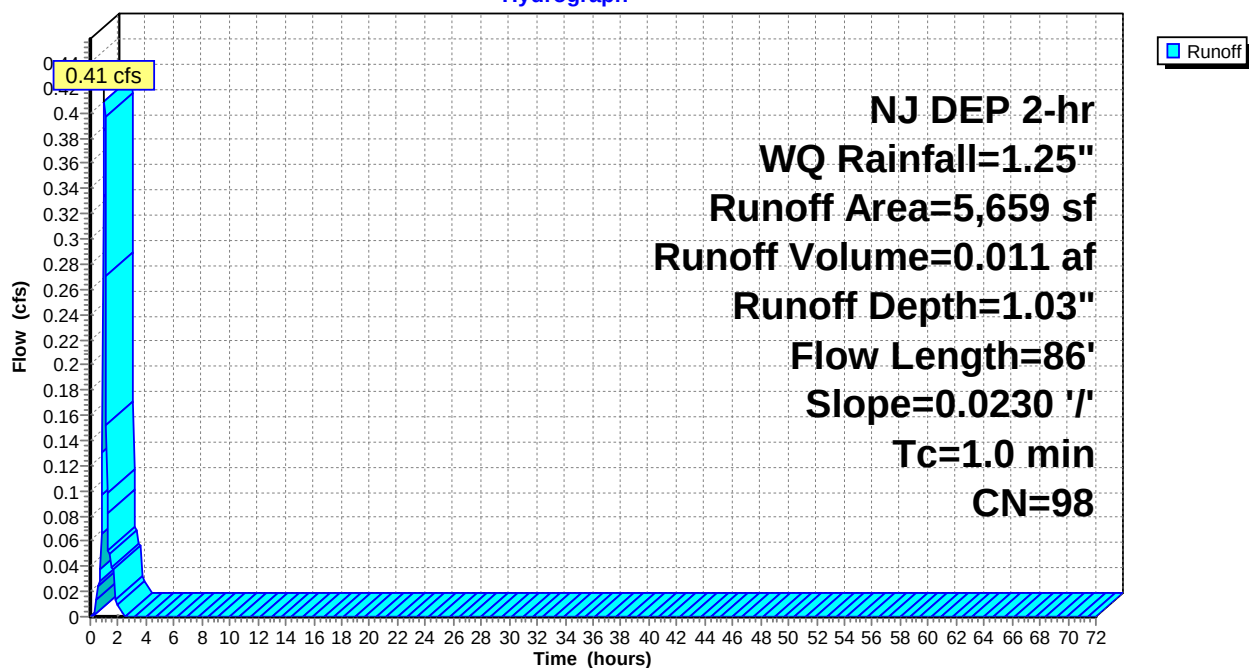
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
5,659	98	Unconnected pavement, HSG A
5,659		100.00% Impervious Area
5,659		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	86	0.0230	1.46		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"

Subcatchment PR 2C-I:

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment PR 2C-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	1.03	0.00
1.00	0.63	0.43	0.39	59.00	1.25	1.03	0.00
2.00	1.25	1.03	0.01	60.00	1.25	1.03	0.00
3.00	1.25	1.03	0.00	61.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	62.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00	63.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00	64.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00	65.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	66.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00	67.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00	68.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00	69.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	70.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00	71.00	1.25	1.03	0.00
14.00	1.25	1.03	0.00	72.00	1.25	1.03	0.00
15.00	1.25	1.03	0.00				
16.00	1.25	1.03	0.00				
17.00	1.25	1.03	0.00				
18.00	1.25	1.03	0.00				
19.00	1.25	1.03	0.00				
20.00	1.25	1.03	0.00				
21.00	1.25	1.03	0.00				
22.00	1.25	1.03	0.00				
23.00	1.25	1.03	0.00				
24.00	1.25	1.03	0.00				
25.00	1.25	1.03	0.00				
26.00	1.25	1.03	0.00				
27.00	1.25	1.03	0.00				
28.00	1.25	1.03	0.00				
29.00	1.25	1.03	0.00				
30.00	1.25	1.03	0.00				
31.00	1.25	1.03	0.00				
32.00	1.25	1.03	0.00				
33.00	1.25	1.03	0.00				
34.00	1.25	1.03	0.00				
35.00	1.25	1.03	0.00				
36.00	1.25	1.03	0.00				
37.00	1.25	1.03	0.00				
38.00	1.25	1.03	0.00				
39.00	1.25	1.03	0.00				
40.00	1.25	1.03	0.00				
41.00	1.25	1.03	0.00				
42.00	1.25	1.03	0.00				
43.00	1.25	1.03	0.00				
44.00	1.25	1.03	0.00				
45.00	1.25	1.03	0.00				
46.00	1.25	1.03	0.00				
47.00	1.25	1.03	0.00				
48.00	1.25	1.03	0.00				
49.00	1.25	1.03	0.00				
50.00	1.25	1.03	0.00				
51.00	1.25	1.03	0.00				
52.00	1.25	1.03	0.00				
53.00	1.25	1.03	0.00				
54.00	1.25	1.03	0.00				
55.00	1.25	1.03	0.00				
56.00	1.25	1.03	0.00				
57.00	1.25	1.03	0.00				

Summary for Subcatchment PR 2C-P:

Runoff = 0.07 cfs @ 1.26 hrs, Volume= 0.003 af, Depth= 0.07"
 Routed to Reach 8R : (new Reach)

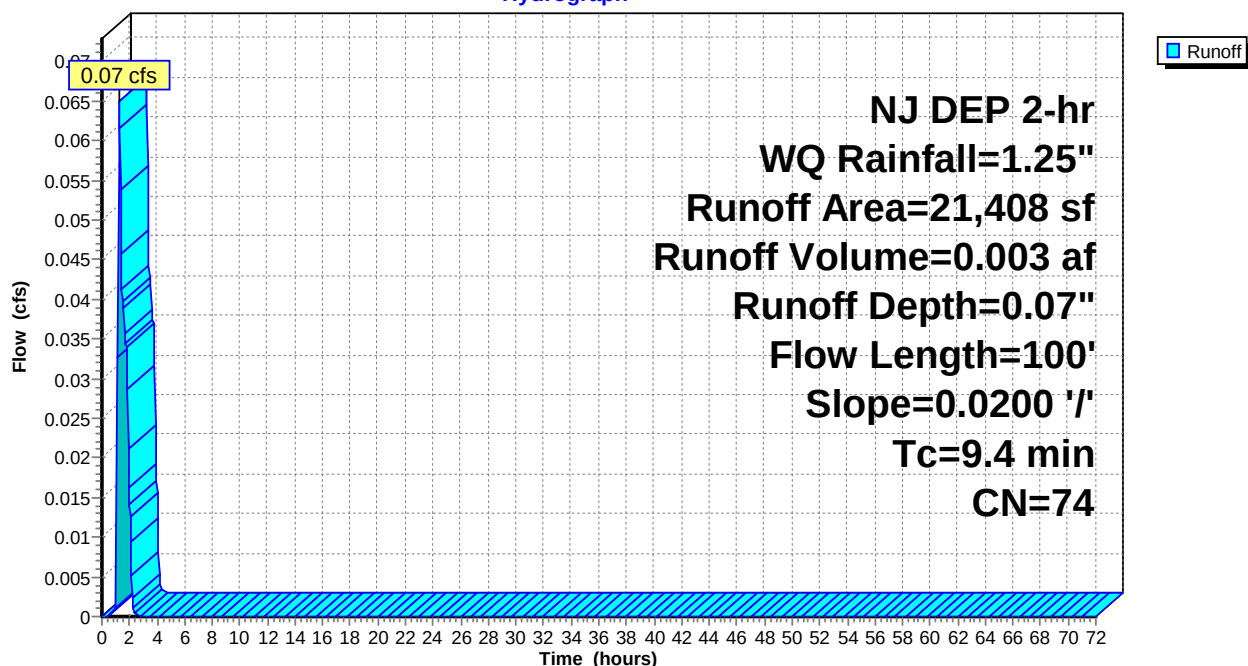
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
21,408	74	>75% Grass cover, Good, HSG C
21,408		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	100	0.0200	0.18		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"

Subcatchment PR 2C-P:

Hydrograph



240913 40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment PR 2C-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	0.07	0.00
1.00	0.63	0.00	0.00	59.00	1.25	0.07	0.00
2.00	1.25	0.07	0.01	60.00	1.25	0.07	0.00
3.00	1.25	0.07	0.00	61.00	1.25	0.07	0.00
4.00	1.25	0.07	0.00	62.00	1.25	0.07	0.00
5.00	1.25	0.07	0.00	63.00	1.25	0.07	0.00
6.00	1.25	0.07	0.00	64.00	1.25	0.07	0.00
7.00	1.25	0.07	0.00	65.00	1.25	0.07	0.00
8.00	1.25	0.07	0.00	66.00	1.25	0.07	0.00
9.00	1.25	0.07	0.00	67.00	1.25	0.07	0.00
10.00	1.25	0.07	0.00	68.00	1.25	0.07	0.00
11.00	1.25	0.07	0.00	69.00	1.25	0.07	0.00
12.00	1.25	0.07	0.00	70.00	1.25	0.07	0.00
13.00	1.25	0.07	0.00	71.00	1.25	0.07	0.00
14.00	1.25	0.07	0.00	72.00	1.25	0.07	0.00
15.00	1.25	0.07	0.00				
16.00	1.25	0.07	0.00				
17.00	1.25	0.07	0.00				
18.00	1.25	0.07	0.00				
19.00	1.25	0.07	0.00				
20.00	1.25	0.07	0.00				
21.00	1.25	0.07	0.00				
22.00	1.25	0.07	0.00				
23.00	1.25	0.07	0.00				
24.00	1.25	0.07	0.00				
25.00	1.25	0.07	0.00				
26.00	1.25	0.07	0.00				
27.00	1.25	0.07	0.00				
28.00	1.25	0.07	0.00				
29.00	1.25	0.07	0.00				
30.00	1.25	0.07	0.00				
31.00	1.25	0.07	0.00				
32.00	1.25	0.07	0.00				
33.00	1.25	0.07	0.00				
34.00	1.25	0.07	0.00				
35.00	1.25	0.07	0.00				
36.00	1.25	0.07	0.00				
37.00	1.25	0.07	0.00				
38.00	1.25	0.07	0.00				
39.00	1.25	0.07	0.00				
40.00	1.25	0.07	0.00				
41.00	1.25	0.07	0.00				
42.00	1.25	0.07	0.00				
43.00	1.25	0.07	0.00				
44.00	1.25	0.07	0.00				
45.00	1.25	0.07	0.00				
46.00	1.25	0.07	0.00				
47.00	1.25	0.07	0.00				
48.00	1.25	0.07	0.00				
49.00	1.25	0.07	0.00				
50.00	1.25	0.07	0.00				
51.00	1.25	0.07	0.00				
52.00	1.25	0.07	0.00				
53.00	1.25	0.07	0.00				
54.00	1.25	0.07	0.00				
55.00	1.25	0.07	0.00				
56.00	1.25	0.07	0.00				
57.00	1.25	0.07	0.00				

240913 40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Summary for Subcatchment PR 3 - P:

Runoff = 0.03 cfs @ 1.23 hrs, Volume= 0.001 af, Depth= 0.07"
 Routed to Reach DP3 : TOTAL

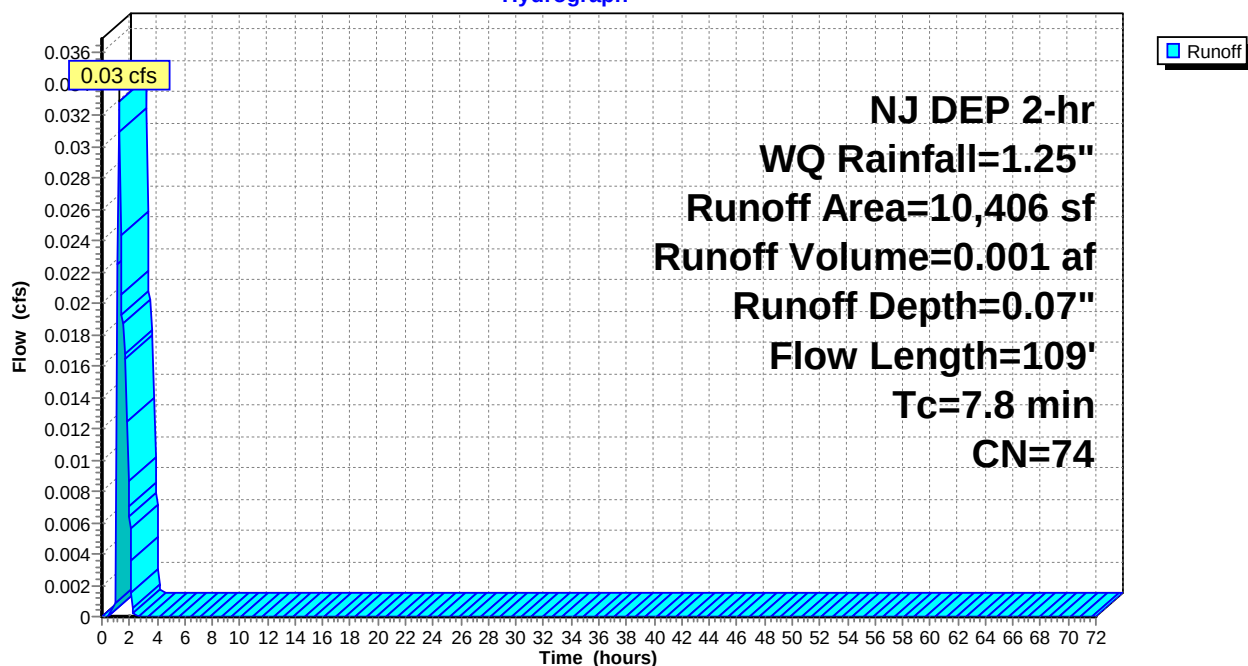
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
10,406	74	>75% Grass cover, Good, HSG C
10,406		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	72	0.0280	0.19		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
1.4	28	0.1790	0.33		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.0	9	0.2220	7.59		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
7.8	109	Total			

Subcatchment PR 3 - P:

Hydrograph



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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment PR 3 - P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	0.07	0.00
1.00	0.63	0.00	0.00	59.00	1.25	0.07	0.00
2.00	1.25	0.07	0.01	60.00	1.25	0.07	0.00
3.00	1.25	0.07	0.00	61.00	1.25	0.07	0.00
4.00	1.25	0.07	0.00	62.00	1.25	0.07	0.00
5.00	1.25	0.07	0.00	63.00	1.25	0.07	0.00
6.00	1.25	0.07	0.00	64.00	1.25	0.07	0.00
7.00	1.25	0.07	0.00	65.00	1.25	0.07	0.00
8.00	1.25	0.07	0.00	66.00	1.25	0.07	0.00
9.00	1.25	0.07	0.00	67.00	1.25	0.07	0.00
10.00	1.25	0.07	0.00	68.00	1.25	0.07	0.00
11.00	1.25	0.07	0.00	69.00	1.25	0.07	0.00
12.00	1.25	0.07	0.00	70.00	1.25	0.07	0.00
13.00	1.25	0.07	0.00	71.00	1.25	0.07	0.00
14.00	1.25	0.07	0.00	72.00	1.25	0.07	0.00
15.00	1.25	0.07	0.00				
16.00	1.25	0.07	0.00				
17.00	1.25	0.07	0.00				
18.00	1.25	0.07	0.00				
19.00	1.25	0.07	0.00				
20.00	1.25	0.07	0.00				
21.00	1.25	0.07	0.00				
22.00	1.25	0.07	0.00				
23.00	1.25	0.07	0.00				
24.00	1.25	0.07	0.00				
25.00	1.25	0.07	0.00				
26.00	1.25	0.07	0.00				
27.00	1.25	0.07	0.00				
28.00	1.25	0.07	0.00				
29.00	1.25	0.07	0.00				
30.00	1.25	0.07	0.00				
31.00	1.25	0.07	0.00				
32.00	1.25	0.07	0.00				
33.00	1.25	0.07	0.00				
34.00	1.25	0.07	0.00				
35.00	1.25	0.07	0.00				
36.00	1.25	0.07	0.00				
37.00	1.25	0.07	0.00				
38.00	1.25	0.07	0.00				
39.00	1.25	0.07	0.00				
40.00	1.25	0.07	0.00				
41.00	1.25	0.07	0.00				
42.00	1.25	0.07	0.00				
43.00	1.25	0.07	0.00				
44.00	1.25	0.07	0.00				
45.00	1.25	0.07	0.00				
46.00	1.25	0.07	0.00				
47.00	1.25	0.07	0.00				
48.00	1.25	0.07	0.00				
49.00	1.25	0.07	0.00				
50.00	1.25	0.07	0.00				
51.00	1.25	0.07	0.00				
52.00	1.25	0.07	0.00				
53.00	1.25	0.07	0.00				
54.00	1.25	0.07	0.00				
55.00	1.25	0.07	0.00				
56.00	1.25	0.07	0.00				
57.00	1.25	0.07	0.00				

Summary for Subcatchment PR-2B-I:

Runoff = 0.62 cfs @ 1.03 hrs, Volume= 0.017 af, Depth= 1.03"
 Routed to Pond 11P : Existing Drywell System

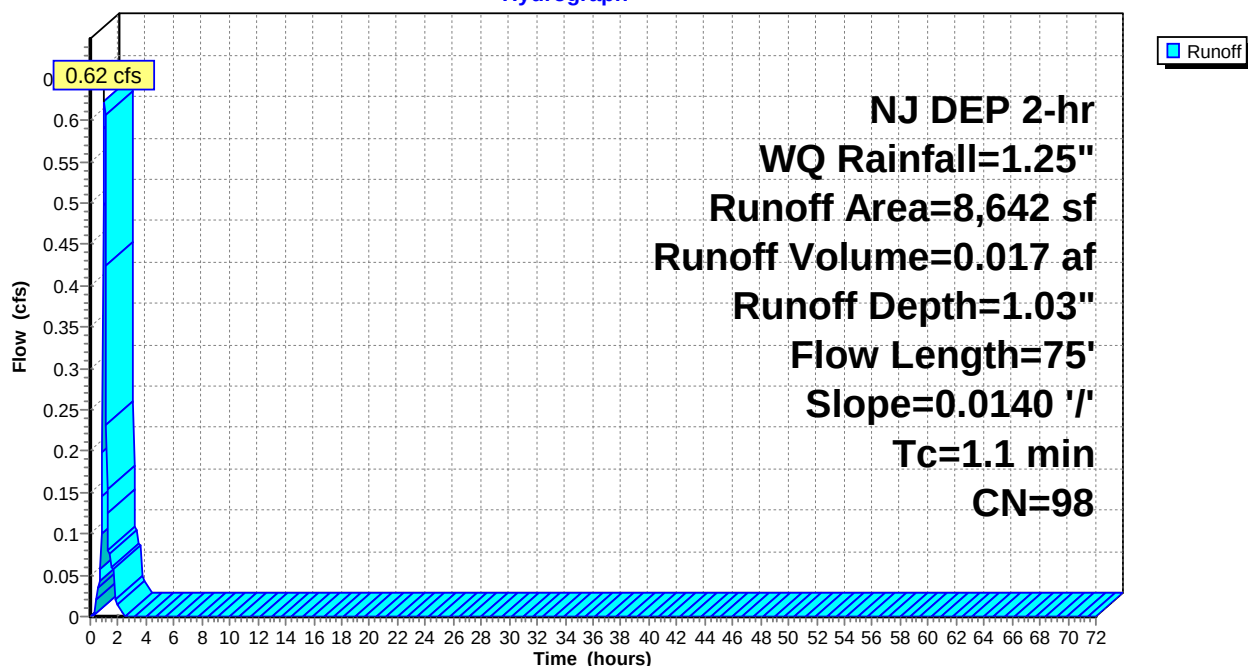
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
8,642	98	Paved parking, HSG C
8,642		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	75	0.0140	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"

Subcatchment PR-2B-I:

Hydrograph



240913_40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment PR-2B-I:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	1.03	0.00
1.00	0.63	0.43	0.59	59.00	1.25	1.03	0.00
2.00	1.25	1.03	0.02	60.00	1.25	1.03	0.00
3.00	1.25	1.03	0.00	61.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	62.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00	63.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00	64.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00	65.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	66.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00	67.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00	68.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00	69.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	70.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00	71.00	1.25	1.03	0.00
14.00	1.25	1.03	0.00	72.00	1.25	1.03	0.00
15.00	1.25	1.03	0.00				
16.00	1.25	1.03	0.00				
17.00	1.25	1.03	0.00				
18.00	1.25	1.03	0.00				
19.00	1.25	1.03	0.00				
20.00	1.25	1.03	0.00				
21.00	1.25	1.03	0.00				
22.00	1.25	1.03	0.00				
23.00	1.25	1.03	0.00				
24.00	1.25	1.03	0.00				
25.00	1.25	1.03	0.00				
26.00	1.25	1.03	0.00				
27.00	1.25	1.03	0.00				
28.00	1.25	1.03	0.00				
29.00	1.25	1.03	0.00				
30.00	1.25	1.03	0.00				
31.00	1.25	1.03	0.00				
32.00	1.25	1.03	0.00				
33.00	1.25	1.03	0.00				
34.00	1.25	1.03	0.00				
35.00	1.25	1.03	0.00				
36.00	1.25	1.03	0.00				
37.00	1.25	1.03	0.00				
38.00	1.25	1.03	0.00				
39.00	1.25	1.03	0.00				
40.00	1.25	1.03	0.00				
41.00	1.25	1.03	0.00				
42.00	1.25	1.03	0.00				
43.00	1.25	1.03	0.00				
44.00	1.25	1.03	0.00				
45.00	1.25	1.03	0.00				
46.00	1.25	1.03	0.00				
47.00	1.25	1.03	0.00				
48.00	1.25	1.03	0.00				
49.00	1.25	1.03	0.00				
50.00	1.25	1.03	0.00				
51.00	1.25	1.03	0.00				
52.00	1.25	1.03	0.00				
53.00	1.25	1.03	0.00				
54.00	1.25	1.03	0.00				
55.00	1.25	1.03	0.00				
56.00	1.25	1.03	0.00				
57.00	1.25	1.03	0.00				

Summary for Subcatchment PR-2B-P:

Runoff = 0.00 cfs @ 1.23 hrs, Volume= 0.000 af, Depth= 0.07"
 Routed to Pond 11P : Existing Drywell System

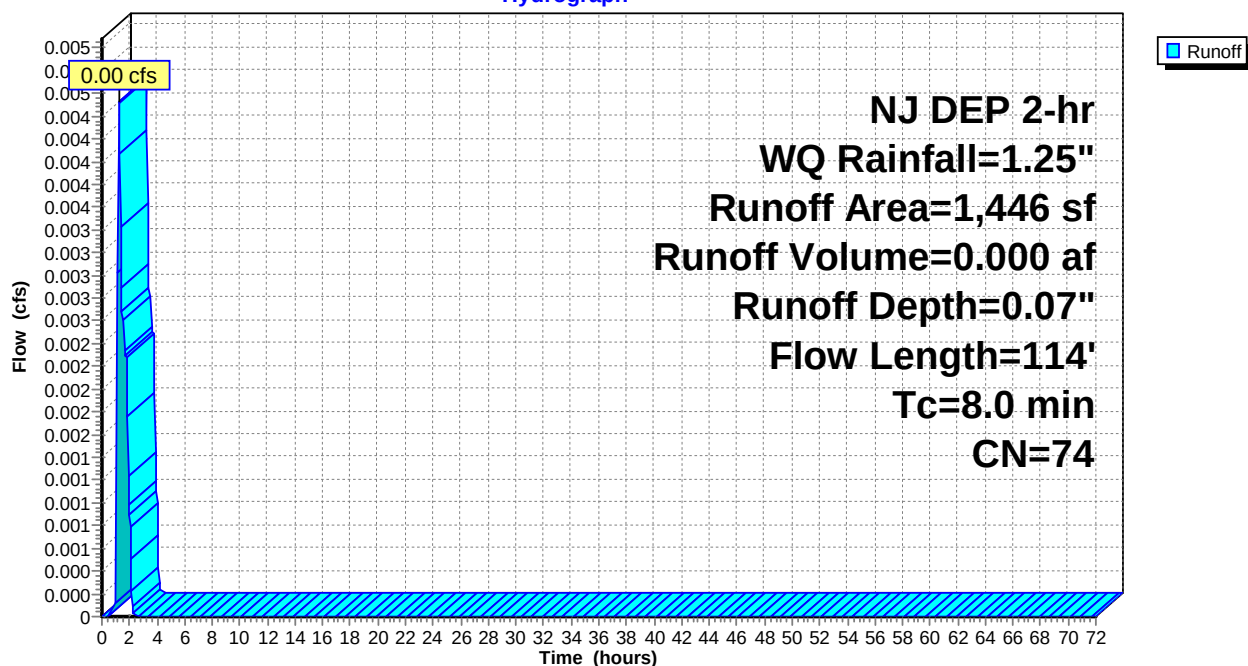
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
1,446	74	>75% Grass cover, Good, HSG C
1,446		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.5	69	0.0170	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.44"
0.4	31	0.0220	1.17		Sheet Flow, Smooth surfaces n= 0.011 P2= 3.44"
0.1	14	0.0180	2.72		Shallow Concentrated Flow, Paved Kv= 20.3 fps
8.0	114	Total			

Subcatchment PR-2B-P:

Hydrograph



240913_40 ERW Waymaker Proposed

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Subcatchment PR-2B-P:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	58.00	1.25	0.07	0.00
1.00	0.63	0.00	0.00	59.00	1.25	0.07	0.00
2.00	1.25	0.07	0.00	60.00	1.25	0.07	0.00
3.00	1.25	0.07	0.00	61.00	1.25	0.07	0.00
4.00	1.25	0.07	0.00	62.00	1.25	0.07	0.00
5.00	1.25	0.07	0.00	63.00	1.25	0.07	0.00
6.00	1.25	0.07	0.00	64.00	1.25	0.07	0.00
7.00	1.25	0.07	0.00	65.00	1.25	0.07	0.00
8.00	1.25	0.07	0.00	66.00	1.25	0.07	0.00
9.00	1.25	0.07	0.00	67.00	1.25	0.07	0.00
10.00	1.25	0.07	0.00	68.00	1.25	0.07	0.00
11.00	1.25	0.07	0.00	69.00	1.25	0.07	0.00
12.00	1.25	0.07	0.00	70.00	1.25	0.07	0.00
13.00	1.25	0.07	0.00	71.00	1.25	0.07	0.00
14.00	1.25	0.07	0.00	72.00	1.25	0.07	0.00
15.00	1.25	0.07	0.00				
16.00	1.25	0.07	0.00				
17.00	1.25	0.07	0.00				
18.00	1.25	0.07	0.00				
19.00	1.25	0.07	0.00				
20.00	1.25	0.07	0.00				
21.00	1.25	0.07	0.00				
22.00	1.25	0.07	0.00				
23.00	1.25	0.07	0.00				
24.00	1.25	0.07	0.00				
25.00	1.25	0.07	0.00				
26.00	1.25	0.07	0.00				
27.00	1.25	0.07	0.00				
28.00	1.25	0.07	0.00				
29.00	1.25	0.07	0.00				
30.00	1.25	0.07	0.00				
31.00	1.25	0.07	0.00				
32.00	1.25	0.07	0.00				
33.00	1.25	0.07	0.00				
34.00	1.25	0.07	0.00				
35.00	1.25	0.07	0.00				
36.00	1.25	0.07	0.00				
37.00	1.25	0.07	0.00				
38.00	1.25	0.07	0.00				
39.00	1.25	0.07	0.00				
40.00	1.25	0.07	0.00				
41.00	1.25	0.07	0.00				
42.00	1.25	0.07	0.00				
43.00	1.25	0.07	0.00				
44.00	1.25	0.07	0.00				
45.00	1.25	0.07	0.00				
46.00	1.25	0.07	0.00				
47.00	1.25	0.07	0.00				
48.00	1.25	0.07	0.00				
49.00	1.25	0.07	0.00				
50.00	1.25	0.07	0.00				
51.00	1.25	0.07	0.00				
52.00	1.25	0.07	0.00				
53.00	1.25	0.07	0.00				
54.00	1.25	0.07	0.00				
55.00	1.25	0.07	0.00				
56.00	1.25	0.07	0.00				
57.00	1.25	0.07	0.00				

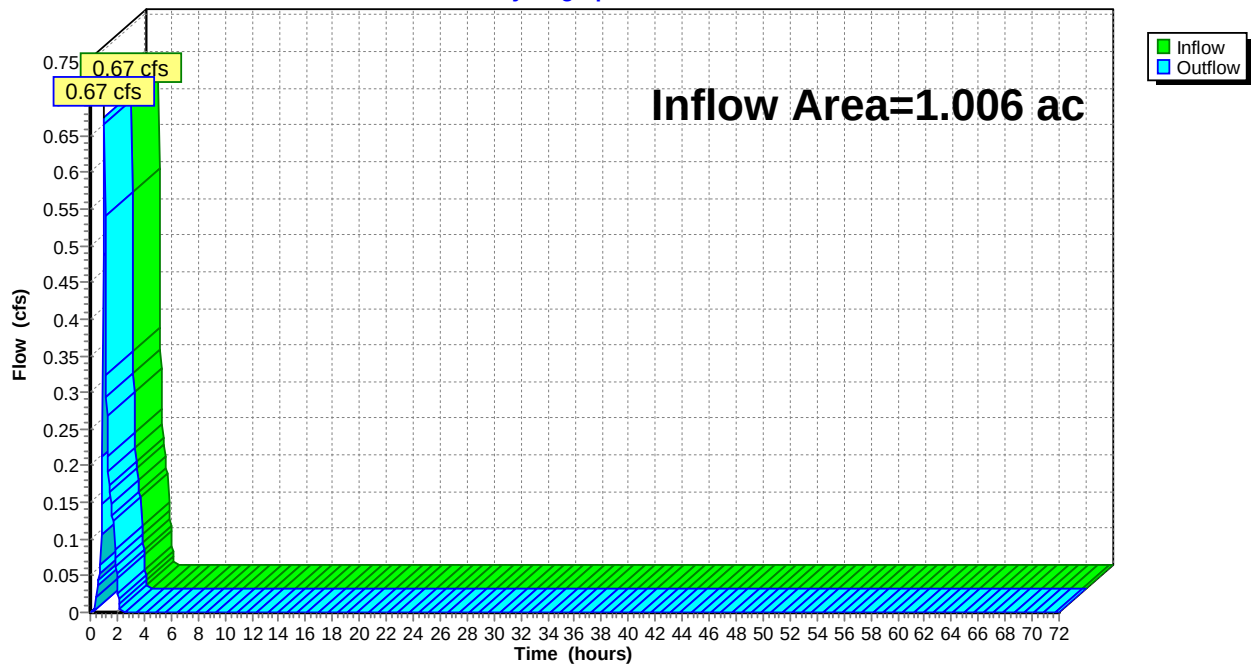
Summary for Reach 1R: TOP

Inflow Area = 1.006 ac, 21.70% Impervious, Inflow Depth = 0.29" for WQ event
Inflow = 0.67 cfs @ 1.03 hrs, Volume= 0.025 af
Outflow = 0.67 cfs @ 1.03 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 2R : CHANNEL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 1R: TOP

Hydrograph



Hydrograph for Reach 1R: TOP

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.64		0.64	59.00	0.00		0.00
2.00	0.05		0.05	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.00		0.00	64.00	0.00		0.00
7.00	0.00		0.00	65.00	0.00		0.00
8.00	0.00		0.00	66.00	0.00		0.00
9.00	0.00		0.00	67.00	0.00		0.00
10.00	0.00		0.00	68.00	0.00		0.00
11.00	0.00		0.00	69.00	0.00		0.00
12.00	0.00		0.00	70.00	0.00		0.00
13.00	0.00		0.00	71.00	0.00		0.00
14.00	0.00		0.00	72.00	0.00		0.00
15.00	0.00		0.00				
16.00	0.00		0.00				
17.00	0.00		0.00				
18.00	0.00		0.00				
19.00	0.00		0.00				
20.00	0.00		0.00				
21.00	0.00		0.00				
22.00	0.00		0.00				
23.00	0.00		0.00				
24.00	0.00		0.00				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

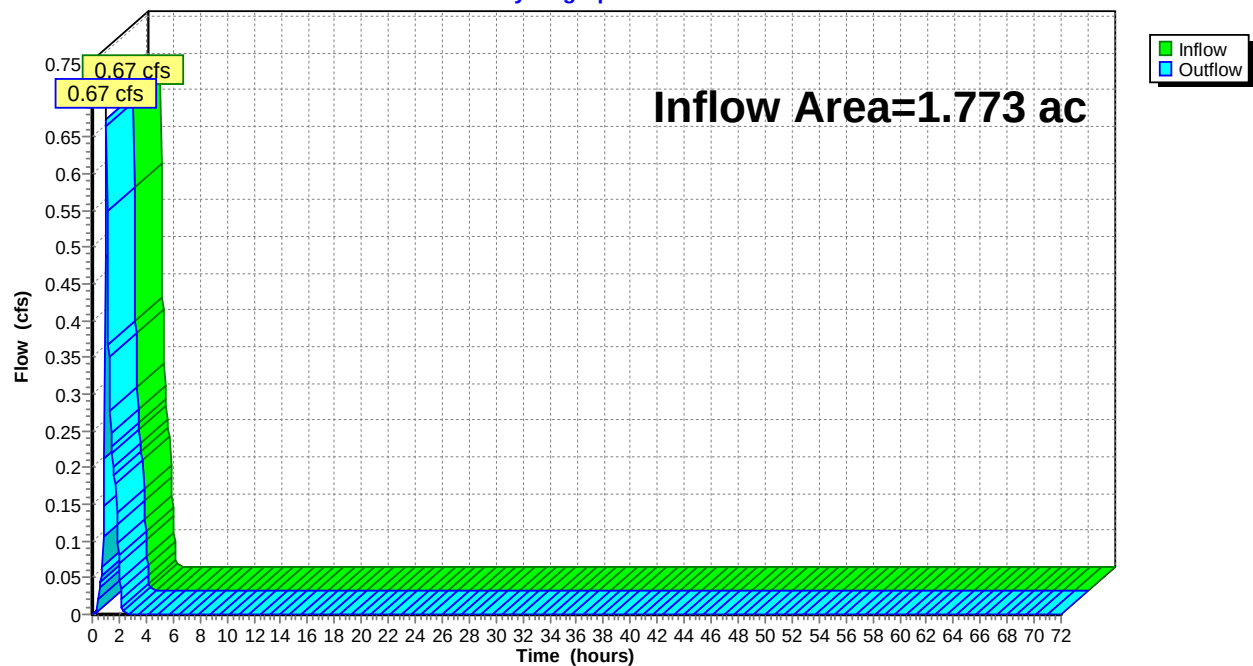
Summary for Reach 2R: CHANNEL

Inflow Area = 1.773 ac, 12.31% Impervious, Inflow Depth = 0.20" for WQ event
Inflow = 0.67 cfs @ 1.03 hrs, Volume= 0.029 af
Outflow = 0.67 cfs @ 1.03 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : TOTAL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 2R: CHANNEL

Hydrograph



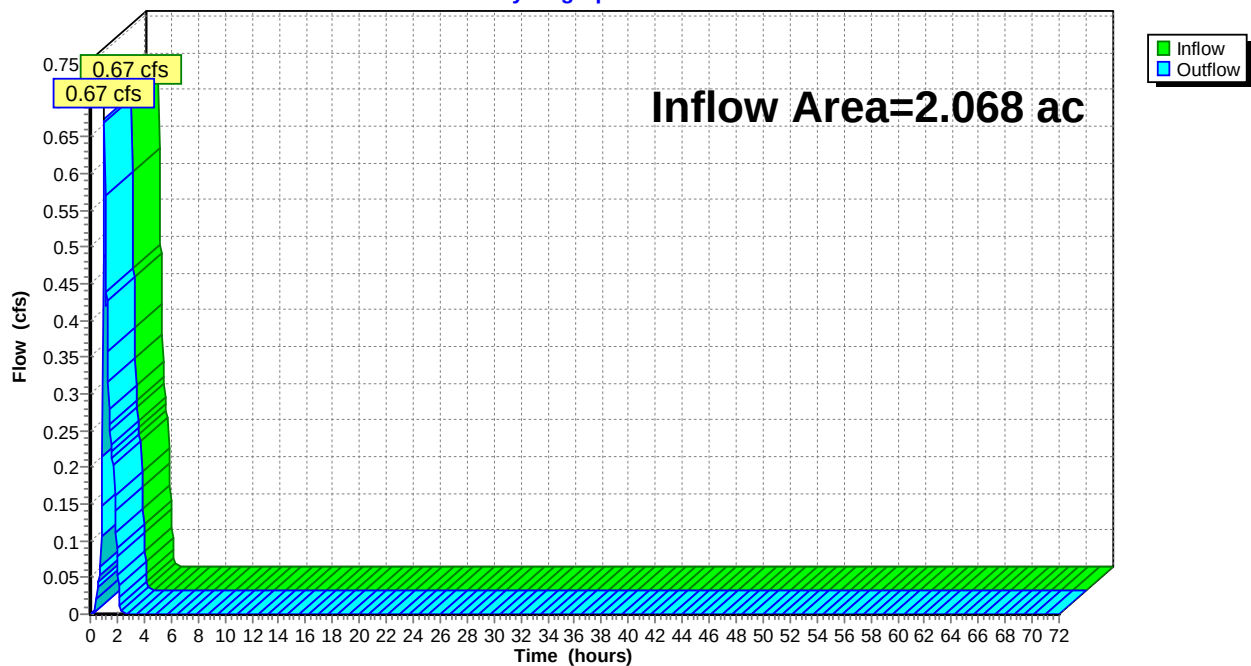
Hydrograph for Reach 2R: CHANNEL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.64		0.64	59.00	0.00		0.00
2.00	0.07		0.07	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.00		0.00	64.00	0.00		0.00
7.00	0.00		0.00	65.00	0.00		0.00
8.00	0.00		0.00	66.00	0.00		0.00
9.00	0.00		0.00	67.00	0.00		0.00
10.00	0.00		0.00	68.00	0.00		0.00
11.00	0.00		0.00	69.00	0.00		0.00
12.00	0.00		0.00	70.00	0.00		0.00
13.00	0.00		0.00	71.00	0.00		0.00
14.00	0.00		0.00	72.00	0.00		0.00
15.00	0.00		0.00				
16.00	0.00		0.00				
17.00	0.00		0.00				
18.00	0.00		0.00				
19.00	0.00		0.00				
20.00	0.00		0.00				
21.00	0.00		0.00				
22.00	0.00		0.00				
23.00	0.00		0.00				
24.00	0.00		0.00				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Reach 3R: TOTAL

Inflow Area = 2.068 ac, 10.56% Impervious, Inflow Depth = 0.18" for WQ event
Inflow = 0.67 cfs @ 1.03 hrs, Volume= 0.032 af
Outflow = 0.67 cfs @ 1.03 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 3R: TOTAL**Hydrograph**

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Hydrograph for Reach 3R: TOTAL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.64		0.64	59.00	0.00		0.00
2.00	0.08		0.08	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.00		0.00	64.00	0.00		0.00
7.00	0.00		0.00	65.00	0.00		0.00
8.00	0.00		0.00	66.00	0.00		0.00
9.00	0.00		0.00	67.00	0.00		0.00
10.00	0.00		0.00	68.00	0.00		0.00
11.00	0.00		0.00	69.00	0.00		0.00
12.00	0.00		0.00	70.00	0.00		0.00
13.00	0.00		0.00	71.00	0.00		0.00
14.00	0.00		0.00	72.00	0.00		0.00
15.00	0.00		0.00				
16.00	0.00		0.00				
17.00	0.00		0.00				
18.00	0.00		0.00				
19.00	0.00		0.00				
20.00	0.00		0.00				
21.00	0.00		0.00				
22.00	0.00		0.00				
23.00	0.00		0.00				
24.00	0.00		0.00				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

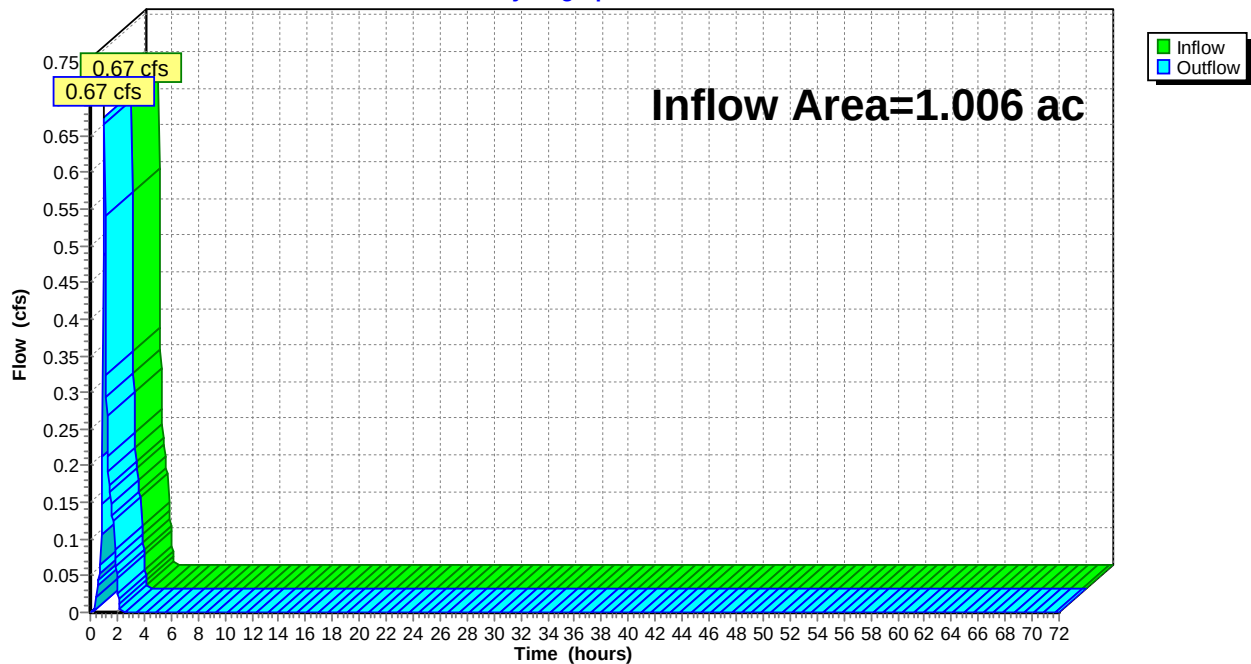
Summary for Reach 4R:

Inflow Area = 1.006 ac, 21.70% Impervious, Inflow Depth = 0.29" for WQ event
Inflow = 0.67 cfs @ 1.03 hrs, Volume= 0.025 af
Outflow = 0.67 cfs @ 1.03 hrs, Volume= 0.025 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 1R : TOP

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 4R:

Hydrograph



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Hydrograph for Reach 4R:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.64		0.64	59.00	0.00		0.00
2.00	0.05		0.05	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.00		0.00	64.00	0.00		0.00
7.00	0.00		0.00	65.00	0.00		0.00
8.00	0.00		0.00	66.00	0.00		0.00
9.00	0.00		0.00	67.00	0.00		0.00
10.00	0.00		0.00	68.00	0.00		0.00
11.00	0.00		0.00	69.00	0.00		0.00
12.00	0.00		0.00	70.00	0.00		0.00
13.00	0.00		0.00	71.00	0.00		0.00
14.00	0.00		0.00	72.00	0.00		0.00
15.00	0.00		0.00				
16.00	0.00		0.00				
17.00	0.00		0.00				
18.00	0.00		0.00				
19.00	0.00		0.00				
20.00	0.00		0.00				
21.00	0.00		0.00				
22.00	0.00		0.00				
23.00	0.00		0.00				
24.00	0.00		0.00				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

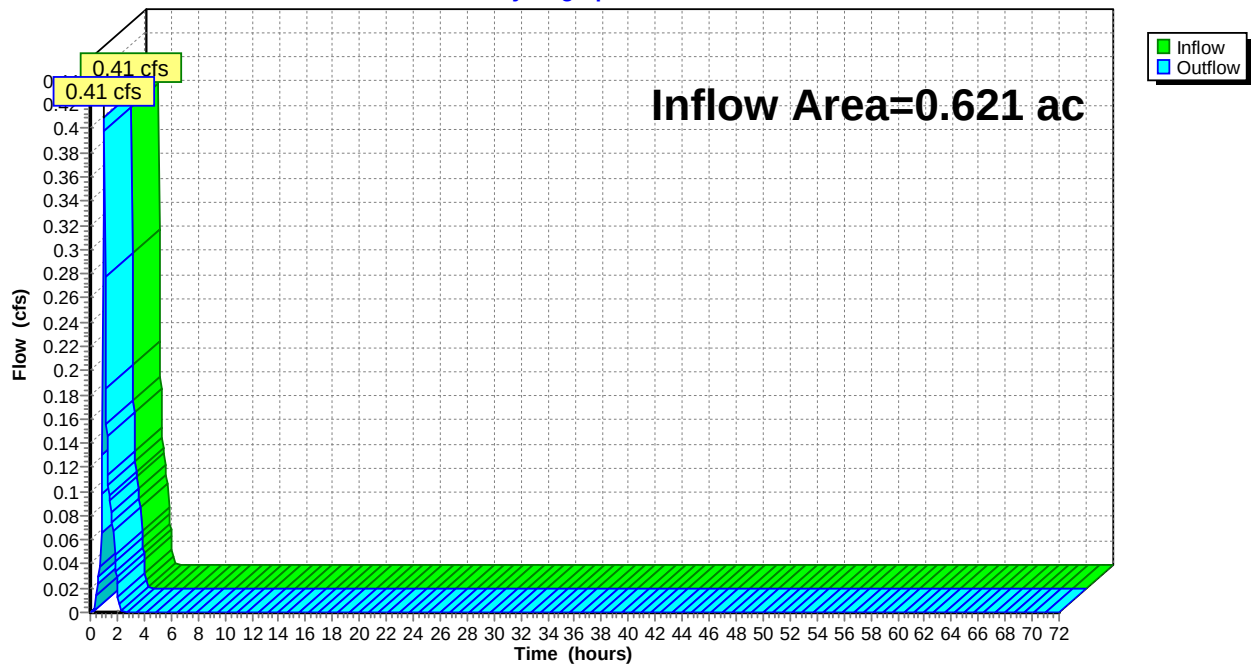
Summary for Reach 8R: (new Reach)

Inflow Area = 0.621 ac, 20.91% Impervious, Inflow Depth = 0.27" for WQ event
Inflow = 0.41 cfs @ 1.03 hrs, Volume= 0.014 af
Outflow = 0.41 cfs @ 1.03 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 12P : Subsurface Infiltration Basin

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach 8R: (new Reach)

Hydrograph



Hydrograph for Reach 8R: (new Reach)

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.39		0.39	59.00	0.00		0.00
2.00	0.02		0.02	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.00		0.00	64.00	0.00		0.00
7.00	0.00		0.00	65.00	0.00		0.00
8.00	0.00		0.00	66.00	0.00		0.00
9.00	0.00		0.00	67.00	0.00		0.00
10.00	0.00		0.00	68.00	0.00		0.00
11.00	0.00		0.00	69.00	0.00		0.00
12.00	0.00		0.00	70.00	0.00		0.00
13.00	0.00		0.00	71.00	0.00		0.00
14.00	0.00		0.00	72.00	0.00		0.00
15.00	0.00		0.00				
16.00	0.00		0.00				
17.00	0.00		0.00				
18.00	0.00		0.00				
19.00	0.00		0.00				
20.00	0.00		0.00				
21.00	0.00		0.00				
22.00	0.00		0.00				
23.00	0.00		0.00				
24.00	0.00		0.00				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Reach DP1: TOP

Inflow Area = 0.718 ac, 9.34% Impervious, Inflow Depth = 0.15" for WQ event
 Inflow = 0.21 cfs @ 1.03 hrs, Volume= 0.009 af
 Outflow = 0.20 cfs @ 1.04 hrs, Volume= 0.009 af, Atten= 2%, Lag= 0.4 min
 Routed to Reach DP2 : CHANNEL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Max. Velocity= 5.06 fps, Min. Travel Time= 0.3 min
 Avg. Velocity= 3.16 fps, Avg. Travel Time= 0.5 min

Peak Storage= 4 cf @ 1.03 hrs

Average Depth at Peak Storage= 0.06' , Surface Width= 0.99'

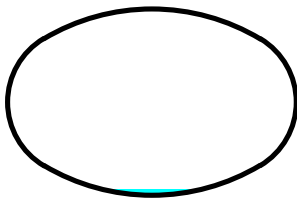
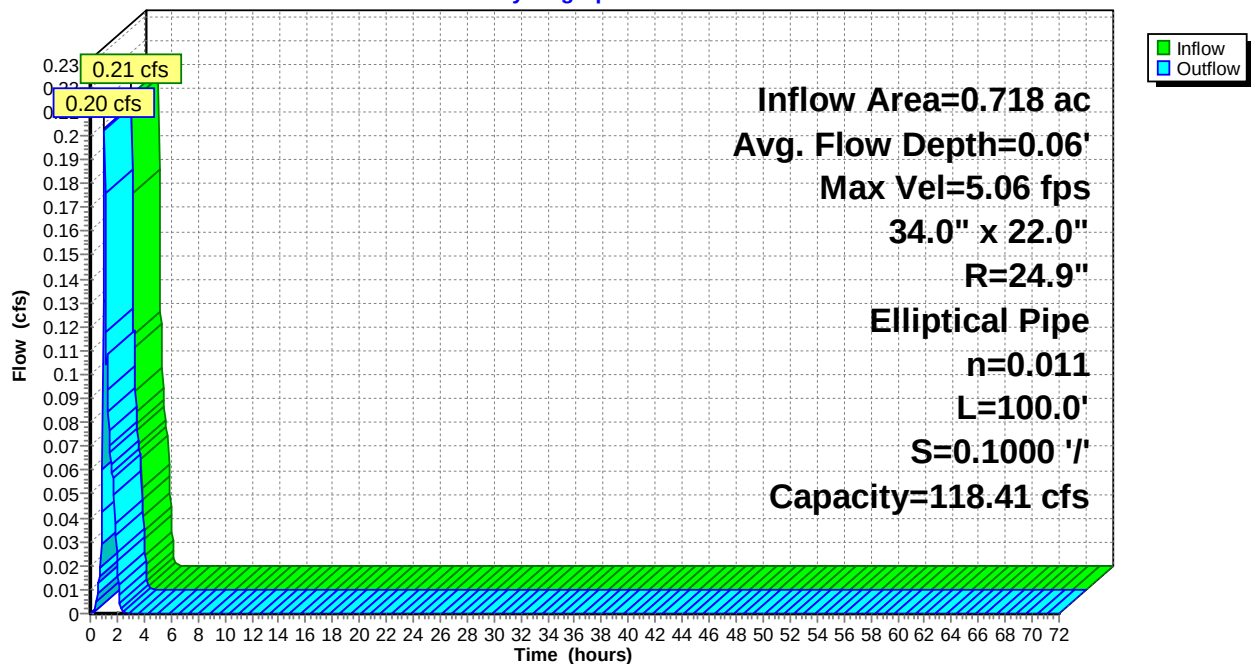
Bank-Full Depth= 1.83' Flow Area= 4.1 sf, Capacity= 118.41 cfs

34.0" W x 22.0" H, R=24.9" Elliptical Pipe

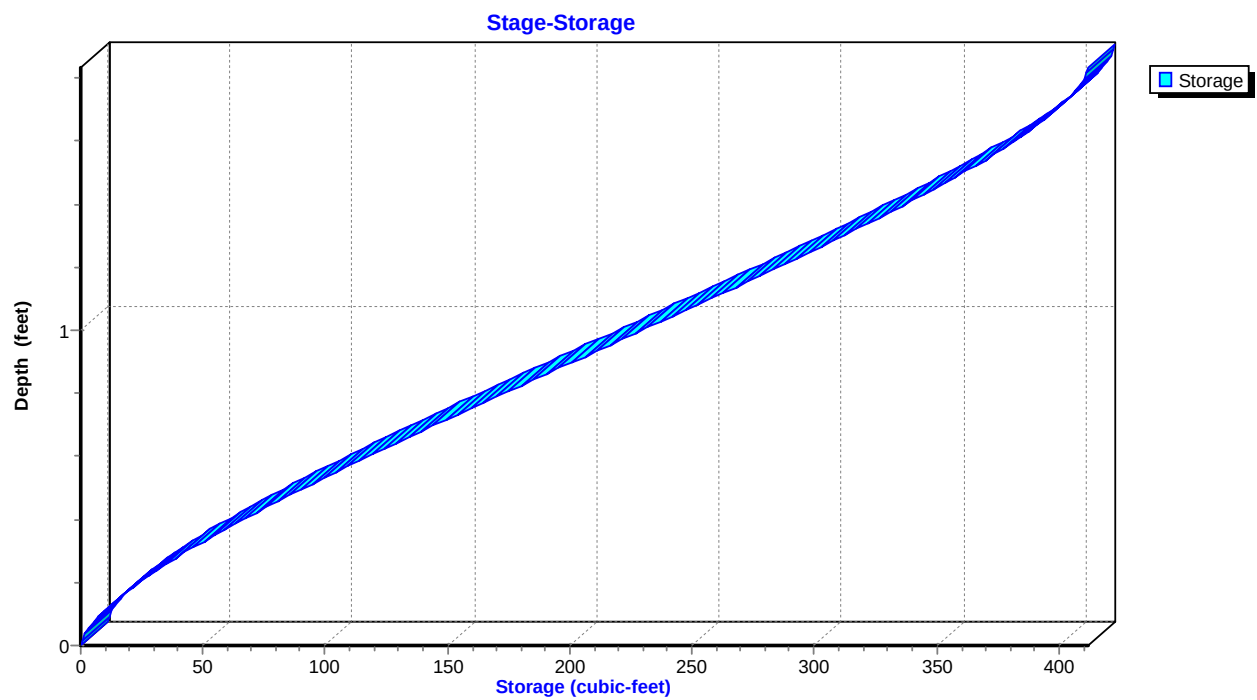
n= 0.011 Concrete pipe, straight & clean

Length= 100.0' Slope= 0.1000 '/'

Inlet Invert= 0.00', Outlet Invert= -10.00'

**Reach DP1: TOP****Hydrograph**

Reach DP1: TOP



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Hydrograph for Reach DP1: TOP

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	0.00	0.00
2.50	0.00	0	0.00	0.00
5.00	0.00	0	0.00	0.00
7.50	0.00	0	0.00	0.00
10.00	0.00	0	0.00	0.00
12.50	0.00	0	0.00	0.00
15.00	0.00	0	0.00	0.00
17.50	0.00	0	0.00	0.00
20.00	0.00	0	0.00	0.00
22.50	0.00	0	0.00	0.00
25.00	0.00	0	0.00	0.00
27.50	0.00	0	0.00	0.00
30.00	0.00	0	0.00	0.00
32.50	0.00	0	0.00	0.00
35.00	0.00	0	0.00	0.00
37.50	0.00	0	0.00	0.00
40.00	0.00	0	0.00	0.00
42.50	0.00	0	0.00	0.00
45.00	0.00	0	0.00	0.00
47.50	0.00	0	0.00	0.00
50.00	0.00	0	0.00	0.00
52.50	0.00	0	0.00	0.00
55.00	0.00	0	0.00	0.00
57.50	0.00	0	0.00	0.00
60.00	0.00	0	0.00	0.00
62.50	0.00	0	0.00	0.00
65.00	0.00	0	0.00	0.00
67.50	0.00	0	0.00	0.00
70.00	0.00	0	0.00	0.00

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Stage-Area-Storage for Reach DP1: TOP

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
0.00	0.0	0	1.16	2.7	274
0.02	0.0	1	1.18	2.8	280
0.04	0.0	2	1.20	2.9	285
0.06	0.0	4	1.22	2.9	291
0.08	0.1	6	1.24	3.0	296
0.10	0.1	9	1.26	3.0	301
0.12	0.1	11	1.28	3.1	307
0.14	0.1	14	1.30	3.1	312
0.16	0.2	17	1.32	3.2	317
0.18	0.2	20	1.34	3.2	322
0.20	0.2	24	1.36	3.3	327
0.22	0.3	28	1.38	3.3	332
0.24	0.3	31	1.40	3.4	337
0.26	0.4	35	1.42	3.4	342
0.28	0.4	39	1.44	3.5	347
0.30	0.4	44	1.46	3.5	352
0.32	0.5	48	1.48	3.6	356
0.34	0.5	52	1.50	3.6	361
0.36	0.6	57	1.52	3.7	365
0.38	0.6	62	1.54	3.7	370
0.40	0.7	67	1.56	3.7	374
0.42	0.7	71	1.58	3.8	378
0.44	0.8	76	1.60	3.8	382
0.46	0.8	81	1.62	3.9	386
0.48	0.9	86	1.64	3.9	389
0.50	0.9	91	1.66	3.9	393
0.52	1.0	97	1.68	4.0	396
0.54	1.0	102	1.70	4.0	399
0.56	1.1	107	1.72	4.0	402
0.58	1.1	112	1.74	4.0	404
0.60	1.2	118	1.76	4.1	407
0.62	1.2	123	1.78	4.1	409
0.64	1.3	129	1.80	4.1	410
0.66	1.3	134	1.82	4.1	411
0.68	1.4	140			
0.70	1.5	145			
0.72	1.5	151			
0.74	1.6	156			
0.76	1.6	162			
0.78	1.7	167			
0.80	1.7	173			
0.82	1.8	179			
0.84	1.8	184			
0.86	1.9	190			
0.88	2.0	196			
0.90	2.0	201			
0.92	2.1	207			
0.94	2.1	213			
0.96	2.2	218			
0.98	2.2	224			
1.00	2.3	230			
1.02	2.4	235			
1.04	2.4	241			
1.06	2.5	246			
1.08	2.5	252			
1.10	2.6	258			
1.12	2.6	263			
1.14	2.7	269			

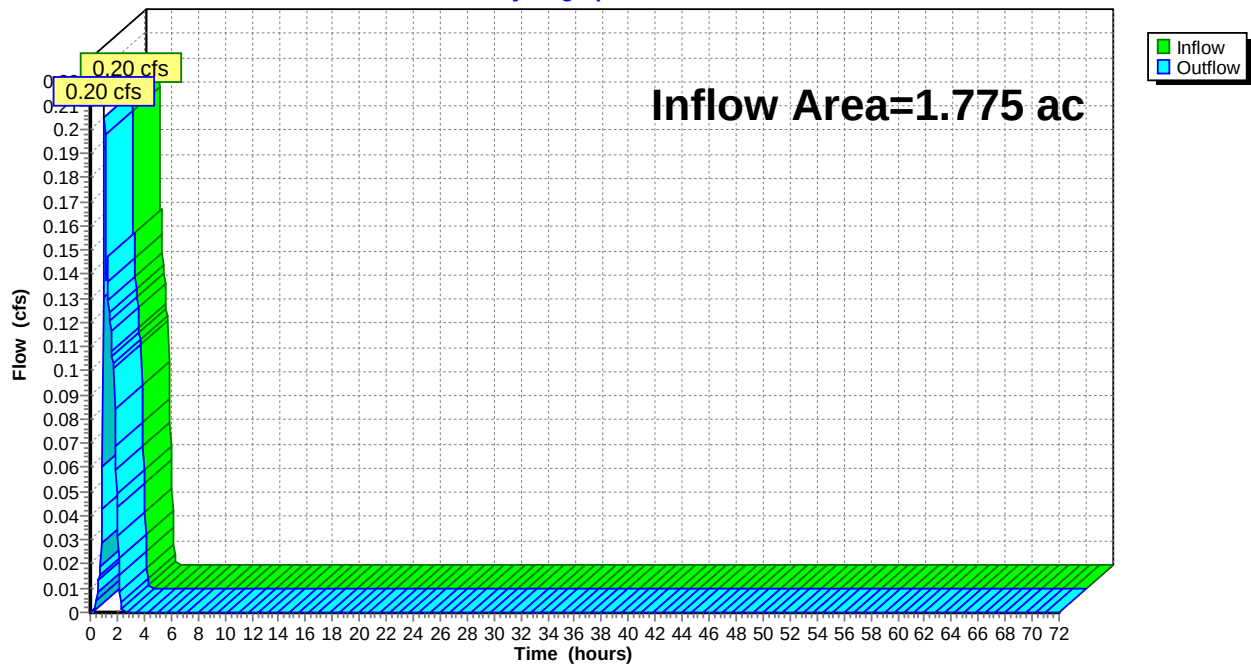
Summary for Reach DP2: CHANNEL

Inflow Area = 1.775 ac, 25.99% Impervious, Inflow Depth = 0.08" for WQ event
Inflow = 0.20 cfs @ 1.06 hrs, Volume= 0.012 af
Outflow = 0.20 cfs @ 1.06 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min
Routed to Reach DP3 : TOTAL

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach DP2: CHANNEL

Hydrograph



Hydrograph for Reach DP2: CHANNEL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.19		0.19	59.00	0.00		0.00
2.00	0.04		0.04	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.00		0.00	64.00	0.00		0.00
7.00	0.00		0.00	65.00	0.00		0.00
8.00	0.00		0.00	66.00	0.00		0.00
9.00	0.00		0.00	67.00	0.00		0.00
10.00	0.00		0.00	68.00	0.00		0.00
11.00	0.00		0.00	69.00	0.00		0.00
12.00	0.00		0.00	70.00	0.00		0.00
13.00	0.00		0.00	71.00	0.00		0.00
14.00	0.00		0.00	72.00	0.00		0.00
15.00	0.00		0.00				
16.00	0.00		0.00				
17.00	0.00		0.00				
18.00	0.00		0.00				
19.00	0.00		0.00				
20.00	0.00		0.00				
21.00	0.00		0.00				
22.00	0.00		0.00				
23.00	0.00		0.00				
24.00	0.00		0.00				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

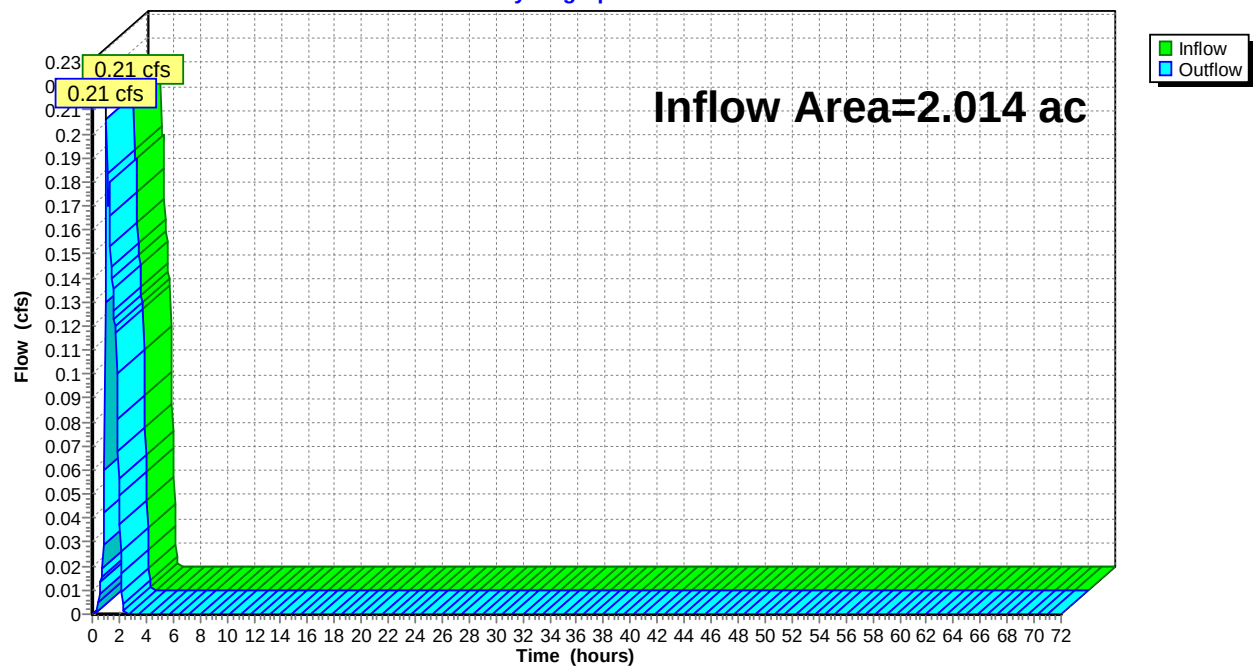
Summary for Reach DP3: TOTAL

Inflow Area = 2.014 ac, 22.91% Impervious, Inflow Depth = 0.08" for WQ event
Inflow = 0.21 cfs @ 1.07 hrs, Volume= 0.014 af
Outflow = 0.21 cfs @ 1.07 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach DP3: TOTAL

Hydrograph



Hydrograph for Reach DP3: TOTAL

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.19		0.19	59.00	0.00		0.00
2.00	0.05		0.05	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.00		0.00	64.00	0.00		0.00
7.00	0.00		0.00	65.00	0.00		0.00
8.00	0.00		0.00	66.00	0.00		0.00
9.00	0.00		0.00	67.00	0.00		0.00
10.00	0.00		0.00	68.00	0.00		0.00
11.00	0.00		0.00	69.00	0.00		0.00
12.00	0.00		0.00	70.00	0.00		0.00
13.00	0.00		0.00	71.00	0.00		0.00
14.00	0.00		0.00	72.00	0.00		0.00
15.00	0.00		0.00				
16.00	0.00		0.00				
17.00	0.00		0.00				
18.00	0.00		0.00				
19.00	0.00		0.00				
20.00	0.00		0.00				
21.00	0.00		0.00				
22.00	0.00		0.00				
23.00	0.00		0.00				
24.00	0.00		0.00				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

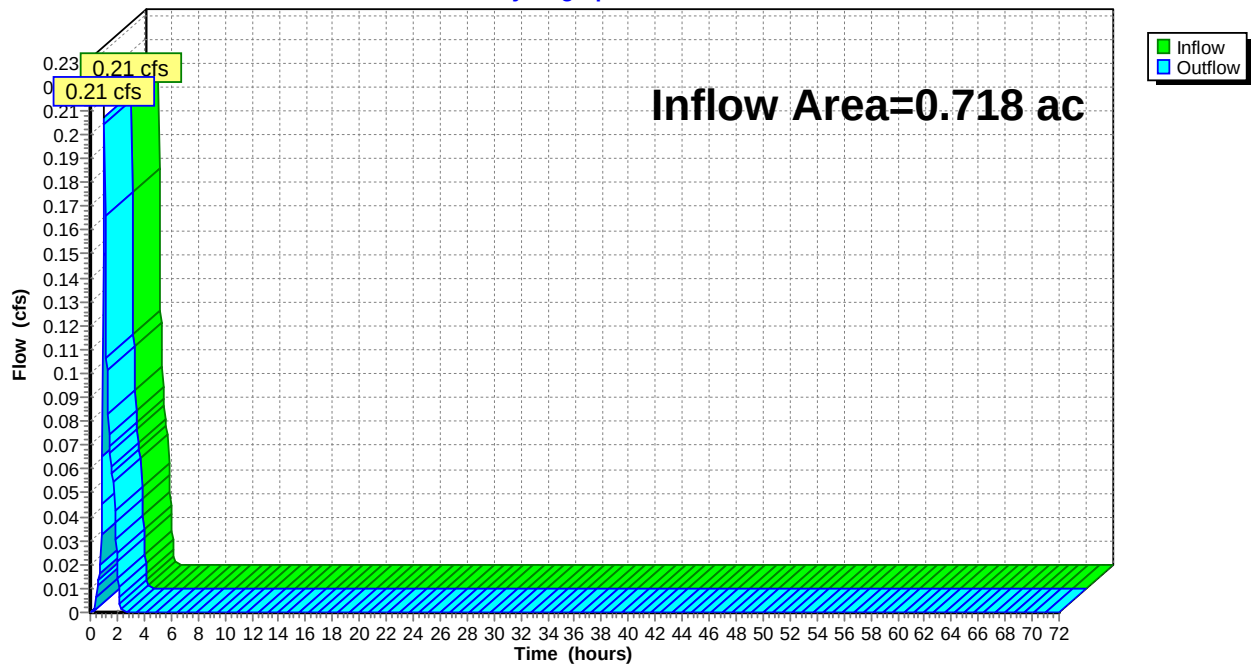
Summary for Reach EX 1:

Inflow Area = 0.718 ac, 9.34% Impervious, Inflow Depth = 0.15" for WQ event
Inflow = 0.21 cfs @ 1.03 hrs, Volume= 0.009 af
Outflow = 0.21 cfs @ 1.03 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 10P : (new Pond)

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Reach EX 1:

Hydrograph



Hydrograph for Reach EX 1:

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)
0.00	0.00		0.00	58.00	0.00		0.00
1.00	0.20		0.20	59.00	0.00		0.00
2.00	0.02		0.02	60.00	0.00		0.00
3.00	0.00		0.00	61.00	0.00		0.00
4.00	0.00		0.00	62.00	0.00		0.00
5.00	0.00		0.00	63.00	0.00		0.00
6.00	0.00		0.00	64.00	0.00		0.00
7.00	0.00		0.00	65.00	0.00		0.00
8.00	0.00		0.00	66.00	0.00		0.00
9.00	0.00		0.00	67.00	0.00		0.00
10.00	0.00		0.00	68.00	0.00		0.00
11.00	0.00		0.00	69.00	0.00		0.00
12.00	0.00		0.00	70.00	0.00		0.00
13.00	0.00		0.00	71.00	0.00		0.00
14.00	0.00		0.00	72.00	0.00		0.00
15.00	0.00		0.00				
16.00	0.00		0.00				
17.00	0.00		0.00				
18.00	0.00		0.00				
19.00	0.00		0.00				
20.00	0.00		0.00				
21.00	0.00		0.00				
22.00	0.00		0.00				
23.00	0.00		0.00				
24.00	0.00		0.00				
25.00	0.00		0.00				
26.00	0.00		0.00				
27.00	0.00		0.00				
28.00	0.00		0.00				
29.00	0.00		0.00				
30.00	0.00		0.00				
31.00	0.00		0.00				
32.00	0.00		0.00				
33.00	0.00		0.00				
34.00	0.00		0.00				
35.00	0.00		0.00				
36.00	0.00		0.00				
37.00	0.00		0.00				
38.00	0.00		0.00				
39.00	0.00		0.00				
40.00	0.00		0.00				
41.00	0.00		0.00				
42.00	0.00		0.00				
43.00	0.00		0.00				
44.00	0.00		0.00				
45.00	0.00		0.00				
46.00	0.00		0.00				
47.00	0.00		0.00				
48.00	0.00		0.00				
49.00	0.00		0.00				
50.00	0.00		0.00				
51.00	0.00		0.00				
52.00	0.00		0.00				
53.00	0.00		0.00				
54.00	0.00		0.00				
55.00	0.00		0.00				
56.00	0.00		0.00				
57.00	0.00		0.00				

Summary for Pond 2P: Pervious Pavers

Inflow Area = 0.152 ac, 0.00% Impervious, Inflow Depth = 0.45" for WQ event
 Inflow = 0.21 cfs @ 1.12 hrs, Volume= 0.006 af
 Outflow = 0.08 cfs @ 1.29 hrs, Volume= 0.006 af, Atten= 63%, Lag= 10.4 min
 Discarded = 0.08 cfs @ 1.29 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 624.45' @ 1.29 hrs Surf.Area= 0.151 ac Storage= 0.002 af

Plug-Flow detention time= 11.6 min calculated for 0.006 af (100% of inflow)

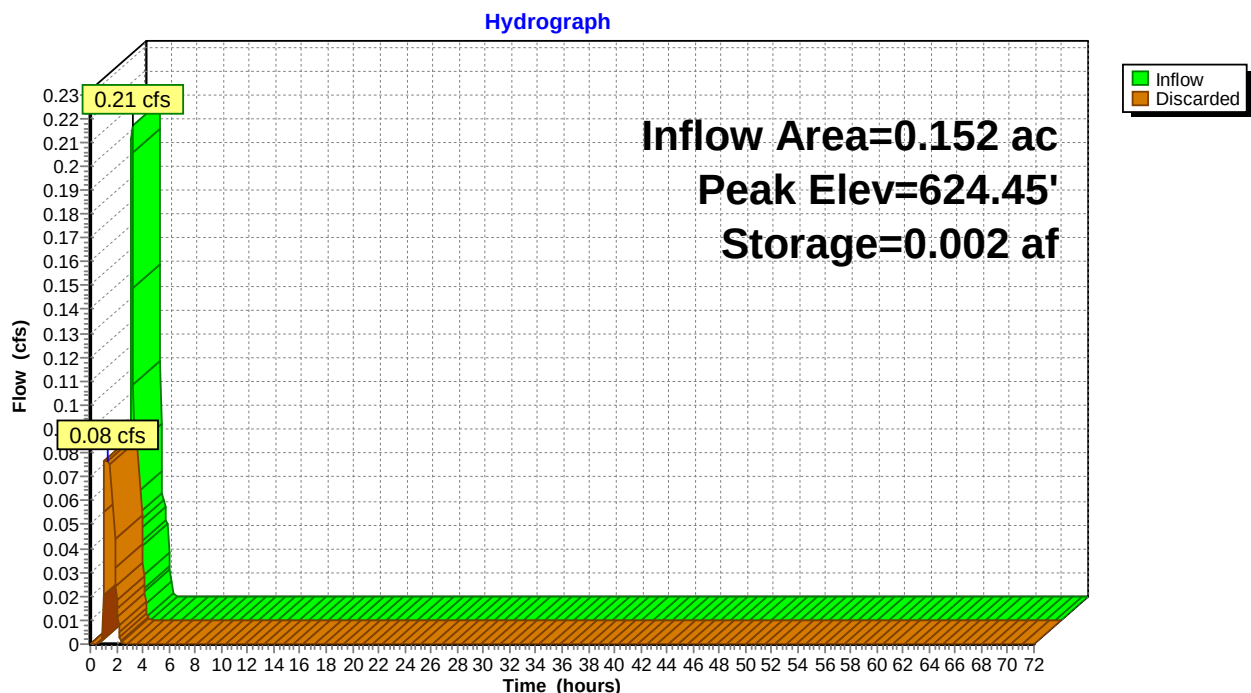
Center-of-Mass det. time= 11.6 min (89.0 - 77.3)

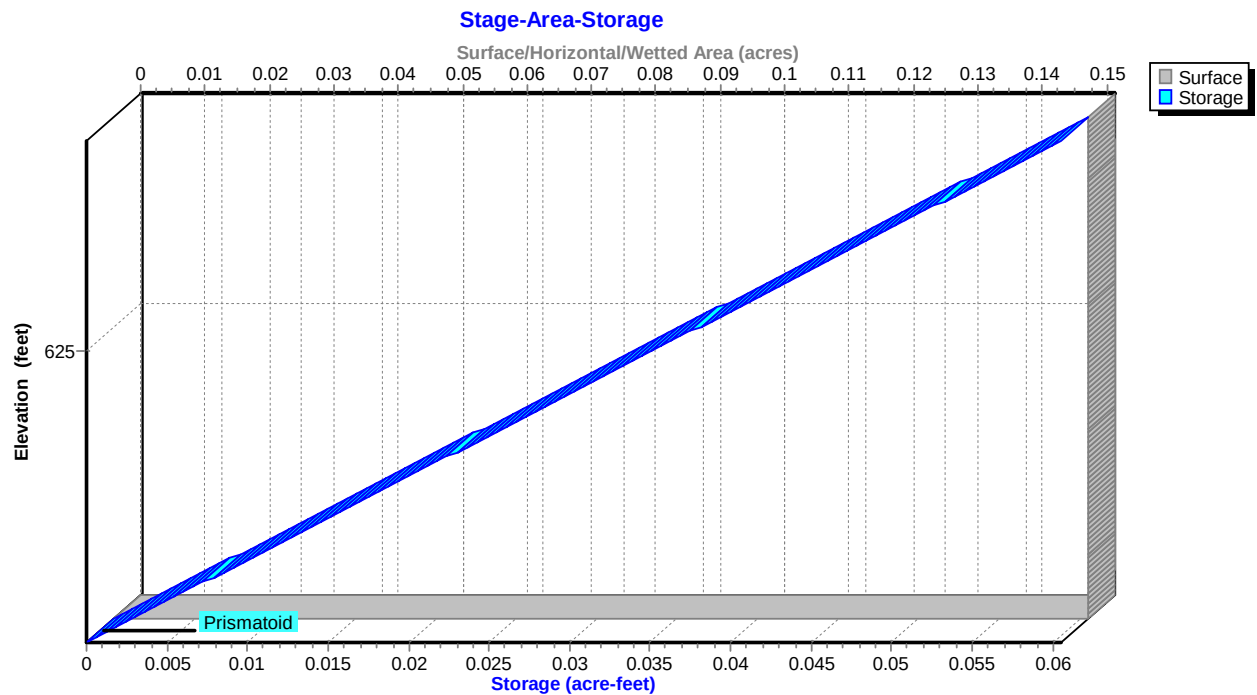
Volume	Invert	Avail.Storage	Storage Description
#1	624.42'	0.061 af	65.91'W x 100.00'L x 1.00'H Prismatic 0.151 af Overall x 40.0% Voids

Device	Routing	Invert	Outlet Devices
#1	Discarded	624.42'	0.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 619.00'

Discarded OutFlow Max=0.08 cfs @ 1.29 hrs HW=624.45' (Free Discharge)

↑1=Exfiltration (Controls 0.08 cfs)

Pond 2P: Pervious Pavers

Pond 2P: Pervious Pavers

240913_40 ERW Waymaker Proposed

Prepared by Colliers Engineering & Design

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NJ DEP 2-hr WQ Rainfall=1.25"

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Hydrograph for Pond 2P: Pervious Pavers

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0.000	624.42	0.00
2.50	0.00	0.000	624.42	0.00
5.00	0.00	0.000	624.42	0.00
7.50	0.00	0.000	624.42	0.00
10.00	0.00	0.000	624.42	0.00
12.50	0.00	0.000	624.42	0.00
15.00	0.00	0.000	624.42	0.00
17.50	0.00	0.000	624.42	0.00
20.00	0.00	0.000	624.42	0.00
22.50	0.00	0.000	624.42	0.00
25.00	0.00	0.000	624.42	0.00
27.50	0.00	0.000	624.42	0.00
30.00	0.00	0.000	624.42	0.00
32.50	0.00	0.000	624.42	0.00
35.00	0.00	0.000	624.42	0.00
37.50	0.00	0.000	624.42	0.00
40.00	0.00	0.000	624.42	0.00
42.50	0.00	0.000	624.42	0.00
45.00	0.00	0.000	624.42	0.00
47.50	0.00	0.000	624.42	0.00
50.00	0.00	0.000	624.42	0.00
52.50	0.00	0.000	624.42	0.00
55.00	0.00	0.000	624.42	0.00
57.50	0.00	0.000	624.42	0.00
60.00	0.00	0.000	624.42	0.00
62.50	0.00	0.000	624.42	0.00
65.00	0.00	0.000	624.42	0.00
67.50	0.00	0.000	624.42	0.00
70.00	0.00	0.000	624.42	0.00

240913 40 ERW Waymaker Proposed

Prepared by Colliers Engineering & Design

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NJ DEP 2-hr WQ Rainfall=1.25"

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Stage-Area-Storage for Pond 2P: Pervious Pavers

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
624.42	0.151	0.000	625.00	0.151	0.035
624.43	0.151	0.001	625.01	0.151	0.036
624.44	0.151	0.001	625.02	0.151	0.036
624.45	0.151	0.002	625.03	0.151	0.037
624.46	0.151	0.002	625.04	0.151	0.038
624.47	0.151	0.003	625.05	0.151	0.038
624.48	0.151	0.004	625.06	0.151	0.039
624.49	0.151	0.004	625.07	0.151	0.039
624.50	0.151	0.005	625.08	0.151	0.040
624.51	0.151	0.005	625.09	0.151	0.041
624.52	0.151	0.006	625.10	0.151	0.041
624.53	0.151	0.007	625.11	0.151	0.042
624.54	0.151	0.007	625.12	0.151	0.042
624.55	0.151	0.008	625.13	0.151	0.043
624.56	0.151	0.008	625.14	0.151	0.044
624.57	0.151	0.009	625.15	0.151	0.044
624.58	0.151	0.010	625.16	0.151	0.045
624.59	0.151	0.010	625.17	0.151	0.045
624.60	0.151	0.011	625.18	0.151	0.046
624.61	0.151	0.011	625.19	0.151	0.047
624.62	0.151	0.012	625.20	0.151	0.047
624.63	0.151	0.013	625.21	0.151	0.048
624.64	0.151	0.013	625.22	0.151	0.048
624.65	0.151	0.014	625.23	0.151	0.049
624.66	0.151	0.015	625.24	0.151	0.050
624.67	0.151	0.015	625.25	0.151	0.050
624.68	0.151	0.016	625.26	0.151	0.051
624.69	0.151	0.016	625.27	0.151	0.051
624.70	0.151	0.017	625.28	0.151	0.052
624.71	0.151	0.018	625.29	0.151	0.053
624.72	0.151	0.018	625.30	0.151	0.053
624.73	0.151	0.019	625.31	0.151	0.054
624.74	0.151	0.019	625.32	0.151	0.054
624.75	0.151	0.020	625.33	0.151	0.055
624.76	0.151	0.021	625.34	0.151	0.056
624.77	0.151	0.021	625.35	0.151	0.056
624.78	0.151	0.022	625.36	0.151	0.057
624.79	0.151	0.022	625.37	0.151	0.057
624.80	0.151	0.023	625.38	0.151	0.058
624.81	0.151	0.024	625.39	0.151	0.059
624.82	0.151	0.024	625.40	0.151	0.059
624.83	0.151	0.025	625.41	0.151	0.060
624.84	0.151	0.025	625.42	0.151	0.061
624.85	0.151	0.026			
624.86	0.151	0.027			
624.87	0.151	0.027			
624.88	0.151	0.028			
624.89	0.151	0.028			
624.90	0.151	0.029			
624.91	0.151	0.030			
624.92	0.151	0.030			
624.93	0.151	0.031			
624.94	0.151	0.031			
624.95	0.151	0.032			
624.96	0.151	0.033			
624.97	0.151	0.033			
624.98	0.151	0.034			
624.99	0.151	0.034			

Summary for Pond 10P: (new Pond)

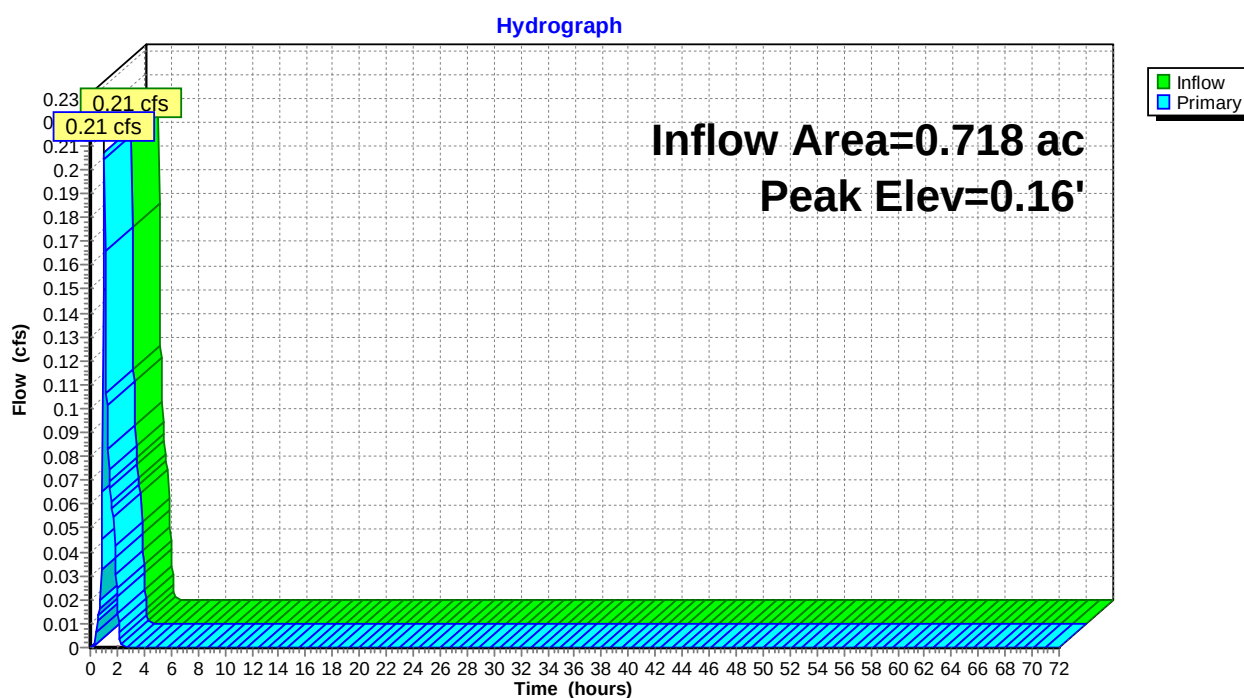
Inflow Area = 0.718 ac, 9.34% Impervious, Inflow Depth = 0.15" for WQ event
 Inflow = 0.21 cfs @ 1.03 hrs, Volume= 0.009 af
 Outflow = 0.21 cfs @ 1.03 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.21 cfs @ 1.03 hrs, Volume= 0.009 af
 Routed to Reach DP1 : TOP

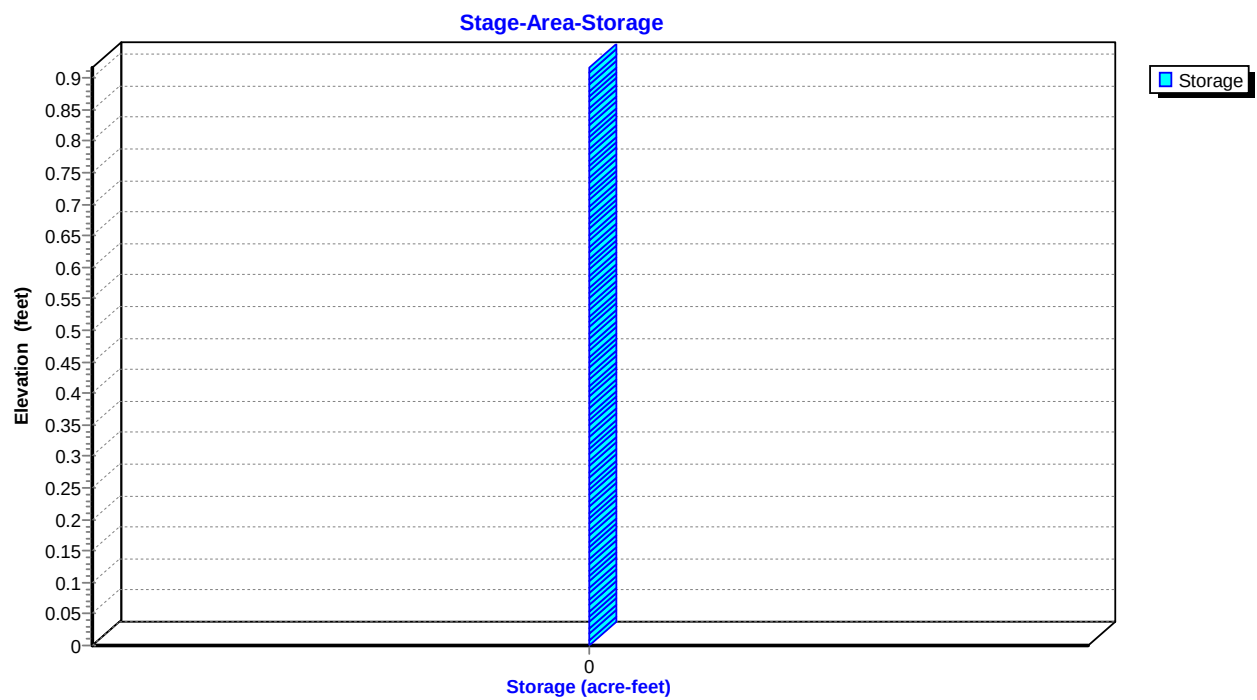
Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Peak Elev= 0.16' @ 1.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	11.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.20 cfs @ 1.03 hrs HW=0.16' (Free Discharge)
 ↑1=Orifice/Grate (Orifice Controls 0.20 cfs @ 1.35 fps)

Pond 10P: (new Pond)

Pond 10P: (new Pond)

Hydrograph for Pond 10P: (new Pond)

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
1.00	0.20	0.15	0.20	59.00	0.00	0.00	0.00
2.00	0.02	0.05	0.02	60.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	65.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	66.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	67.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	68.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	69.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	70.00	0.00	0.00	0.00
13.00	0.00	0.00	0.00	71.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	72.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00				
16.00	0.00	0.00	0.00				
17.00	0.00	0.00	0.00				
18.00	0.00	0.00	0.00				
19.00	0.00	0.00	0.00				
20.00	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
27.00	0.00	0.00	0.00				
28.00	0.00	0.00	0.00				
29.00	0.00	0.00	0.00				
30.00	0.00	0.00	0.00				
31.00	0.00	0.00	0.00				
32.00	0.00	0.00	0.00				
33.00	0.00	0.00	0.00				
34.00	0.00	0.00	0.00				
35.00	0.00	0.00	0.00				
36.00	0.00	0.00	0.00				
37.00	0.00	0.00	0.00				
38.00	0.00	0.00	0.00				
39.00	0.00	0.00	0.00				
40.00	0.00	0.00	0.00				
41.00	0.00	0.00	0.00				
42.00	0.00	0.00	0.00				
43.00	0.00	0.00	0.00				
44.00	0.00	0.00	0.00				
45.00	0.00	0.00	0.00				
46.00	0.00	0.00	0.00				
47.00	0.00	0.00	0.00				
48.00	0.00	0.00	0.00				
49.00	0.00	0.00	0.00				
50.00	0.00	0.00	0.00				
51.00	0.00	0.00	0.00				
52.00	0.00	0.00	0.00				
53.00	0.00	0.00	0.00				
54.00	0.00	0.00	0.00				
55.00	0.00	0.00	0.00				
56.00	0.00	0.00	0.00				
57.00	0.00	0.00	0.00				

240913 40 ERW Waymaker Proposed

Prepared by Colliers Engineering & Design

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NJ DEP 2-hr WQ Rainfall=1.25"

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Stage-Area-Storage for Pond 10P: (new Pond)

Elevation (feet)	Storage (acre-feet)	Elevation (feet)	Storage (acre-feet)
0.00	0.000	0.58	0.000
0.01	0.000	0.59	0.000
0.02	0.000	0.60	0.000
0.03	0.000	0.61	0.000
0.04	0.000	0.62	0.000
0.05	0.000	0.63	0.000
0.06	0.000	0.64	0.000
0.07	0.000	0.65	0.000
0.08	0.000	0.66	0.000
0.09	0.000	0.67	0.000
0.10	0.000	0.68	0.000
0.11	0.000	0.69	0.000
0.12	0.000	0.70	0.000
0.13	0.000	0.71	0.000
0.14	0.000	0.72	0.000
0.15	0.000	0.73	0.000
0.16	0.000	0.74	0.000
0.17	0.000	0.75	0.000
0.18	0.000	0.76	0.000
0.19	0.000	0.77	0.000
0.20	0.000	0.78	0.000
0.21	0.000	0.79	0.000
0.22	0.000	0.80	0.000
0.23	0.000	0.81	0.000
0.24	0.000	0.82	0.000
0.25	0.000	0.83	0.000
0.26	0.000	0.84	0.000
0.27	0.000	0.85	0.000
0.28	0.000	0.86	0.000
0.29	0.000	0.87	0.000
0.30	0.000	0.88	0.000
0.31	0.000	0.89	0.000
0.32	0.000	0.90	0.000
0.33	0.000	0.91	0.000
0.34	0.000	0.92	0.000
0.35	0.000		
0.36	0.000		
0.37	0.000		
0.38	0.000		
0.39	0.000		
0.40	0.000		
0.41	0.000		
0.42	0.000		
0.43	0.000		
0.44	0.000		
0.45	0.000		
0.46	0.000		
0.47	0.000		
0.48	0.000		
0.49	0.000		
0.50	0.000		
0.51	0.000		
0.52	0.000		
0.53	0.000		
0.54	0.000		
0.55	0.000		
0.56	0.000		
0.57	0.000		

Summary for Pond 11P: Existing Drywell System

Inflow Area = 0.919 ac, 42.91% Impervious, Inflow Depth = 0.23" for WQ event
 Inflow = 0.62 cfs @ 1.03 hrs, Volume= 0.017 af
 Outflow = 0.07 cfs @ 1.53 hrs, Volume= 0.017 af, Atten= 89%, Lag= 29.9 min
 Discarded = 0.03 cfs @ 1.53 hrs, Volume= 0.015 af
 Primary = 0.04 cfs @ 1.53 hrs, Volume= 0.002 af
 Routed to Reach DP2 : CHANNEL

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 608.15' @ 1.53 hrs Surf.Area= 0.020 ac Storage= 0.013 af

Plug-Flow detention time= 161.8 min calculated for 0.017 af (100% of inflow)
 Center-of-Mass det. time= 162.0 min (228.0 - 66.0)

Volume	Invert	Avail.Storage	Storage Description
#1	606.75'	0.050 af	19.00'W x 46.00'L x 8.00'H Prismaoid 0.161 af Overall - 0.037 af Embedded = 0.124 af x 40.0% Voids
#2	607.75'	0.037 af	6.00'D x 5.66'H Vertical Cone/Cylinder x 10 Inside #1
		0.086 af	Total Available Storage

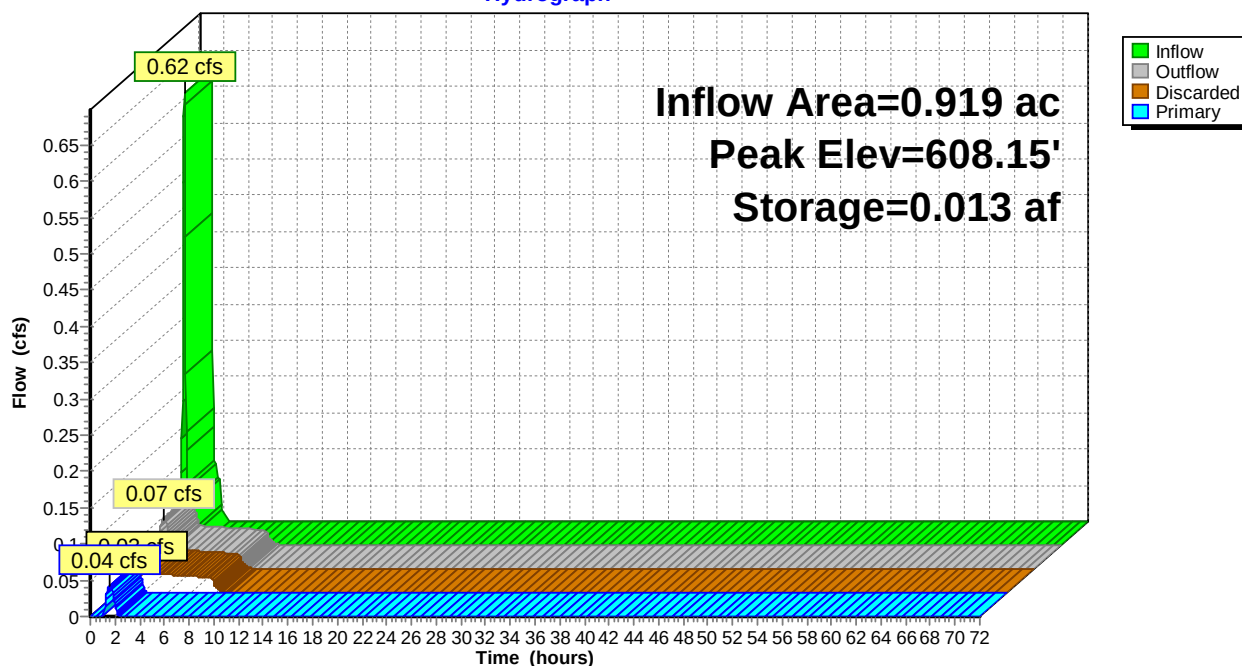
Device	Routing	Invert	Outlet Devices
#1	Discarded	606.75'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 603.00'
#2	Primary	608.00'	15.0" Round Culvert L= 16.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 608.00' / 607.75' S= 0.0156 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 1.23 sf
#3	Device 2	608.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	611.25'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 2	613.25'	4.0' long x 0.5' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Discarded OutFlow Max=0.03 cfs @ 1.53 hrs HW=608.15' (Free Discharge)
 ↑ **1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.04 cfs @ 1.53 hrs HW=608.15' (Free Discharge)
 ↑ **2=Culvert** (Passes 0.04 cfs of 0.09 cfs potential flow)
 ↑ **3=Orifice/Grate** (Orifice Controls 0.04 cfs @ 1.31 fps)
 ↑ **4=Orifice/Grate** (Controls 0.00 cfs)
 ↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

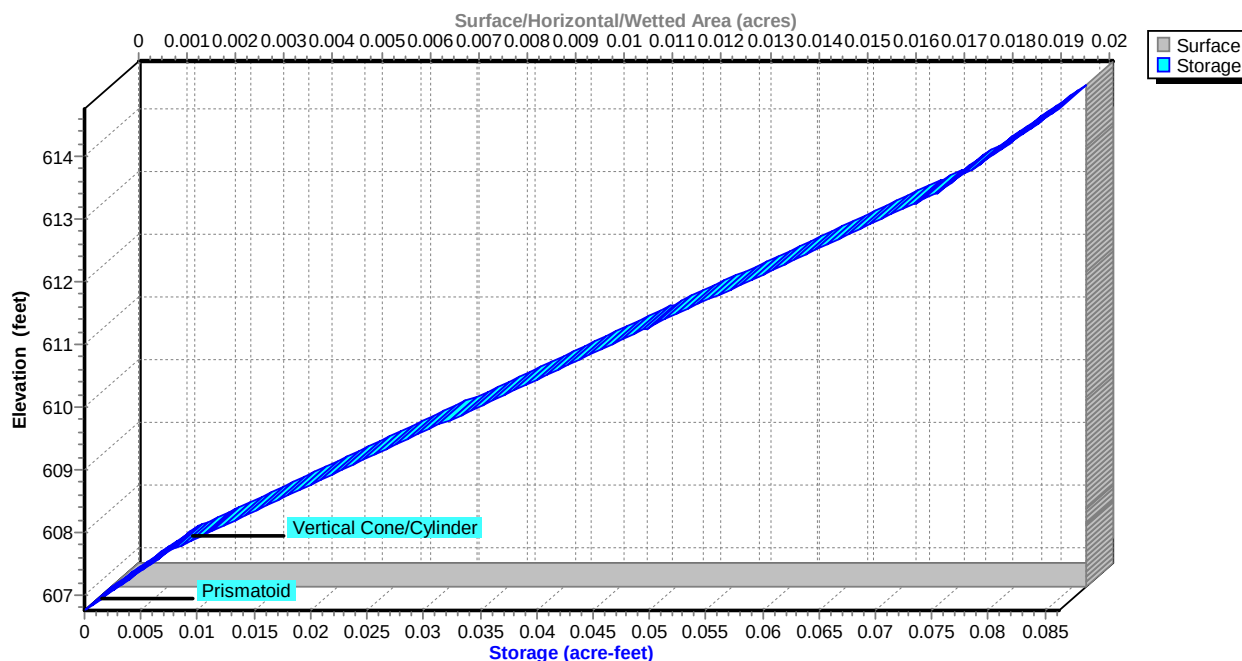
Pond 11P: Existing Drywell System

Hydrograph



Pond 11P: Existing Drywell System

Stage-Area-Storage



Hydrograph for Pond 11P: Existing Drywell System

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	606.75	0.00	0.00	0.00
2.50	0.00	0.011	607.98	0.03	0.03	0.00
5.00	0.00	0.006	607.44	0.02	0.02	0.00
7.50	0.00	0.001	606.86	0.02	0.02	0.00
10.00	0.00	0.000	606.75	0.00	0.00	0.00
12.50	0.00	0.000	606.75	0.00	0.00	0.00
15.00	0.00	0.000	606.75	0.00	0.00	0.00
17.50	0.00	0.000	606.75	0.00	0.00	0.00
20.00	0.00	0.000	606.75	0.00	0.00	0.00
22.50	0.00	0.000	606.75	0.00	0.00	0.00
25.00	0.00	0.000	606.75	0.00	0.00	0.00
27.50	0.00	0.000	606.75	0.00	0.00	0.00
30.00	0.00	0.000	606.75	0.00	0.00	0.00
32.50	0.00	0.000	606.75	0.00	0.00	0.00
35.00	0.00	0.000	606.75	0.00	0.00	0.00
37.50	0.00	0.000	606.75	0.00	0.00	0.00
40.00	0.00	0.000	606.75	0.00	0.00	0.00
42.50	0.00	0.000	606.75	0.00	0.00	0.00
45.00	0.00	0.000	606.75	0.00	0.00	0.00
47.50	0.00	0.000	606.75	0.00	0.00	0.00
50.00	0.00	0.000	606.75	0.00	0.00	0.00
52.50	0.00	0.000	606.75	0.00	0.00	0.00
55.00	0.00	0.000	606.75	0.00	0.00	0.00
57.50	0.00	0.000	606.75	0.00	0.00	0.00
60.00	0.00	0.000	606.75	0.00	0.00	0.00
62.50	0.00	0.000	606.75	0.00	0.00	0.00
65.00	0.00	0.000	606.75	0.00	0.00	0.00
67.50	0.00	0.000	606.75	0.00	0.00	0.00
70.00	0.00	0.000	606.75	0.00	0.00	0.00

Stage-Area-Storage for Pond 11P: Existing Drywell System

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
606.75	0.020	0.000	612.55	0.020	0.065
606.85	0.020	0.001	612.65	0.020	0.066
606.95	0.020	0.002	612.75	0.020	0.068
607.05	0.020	0.002	612.85	0.020	0.069
607.15	0.020	0.003	612.95	0.020	0.070
607.25	0.020	0.004	613.05	0.020	0.071
607.35	0.020	0.005	613.15	0.020	0.072
607.45	0.020	0.006	613.25	0.020	0.074
607.55	0.020	0.006	613.35	0.020	0.075
607.65	0.020	0.007	613.45	0.020	0.076
607.75	0.020	0.008	613.55	0.020	0.077
607.85	0.020	0.009	613.65	0.020	0.077
607.95	0.020	0.010	613.75	0.020	0.078
608.05	0.020	0.012	613.85	0.020	0.079
608.15	0.020	0.013	613.95	0.020	0.080
608.25	0.020	0.014	614.05	0.020	0.081
608.35	0.020	0.015	614.15	0.020	0.081
608.45	0.020	0.016	614.25	0.020	0.082
608.55	0.020	0.018	614.35	0.020	0.083
608.65	0.020	0.019	614.45	0.020	0.084
608.75	0.020	0.020	614.55	0.020	0.085
608.85	0.020	0.021	614.65	0.020	0.085
608.95	0.020	0.022	614.75	0.020	0.086
609.05	0.020	0.024			
609.15	0.020	0.025			
609.25	0.020	0.026			
609.35	0.020	0.027			
609.45	0.020	0.028			
609.55	0.020	0.029			
609.65	0.020	0.031			
609.75	0.020	0.032			
609.85	0.020	0.033			
609.95	0.020	0.034			
610.05	0.020	0.035			
610.15	0.020	0.037			
610.25	0.020	0.038			
610.35	0.020	0.039			
610.45	0.020	0.040			
610.55	0.020	0.041			
610.65	0.020	0.043			
610.75	0.020	0.044			
610.85	0.020	0.045			
610.95	0.020	0.046			
611.05	0.020	0.047			
611.15	0.020	0.049			
611.25	0.020	0.050			
611.35	0.020	0.051			
611.45	0.020	0.052			
611.55	0.020	0.053			
611.65	0.020	0.055			
611.75	0.020	0.056			
611.85	0.020	0.057			
611.95	0.020	0.058			
612.05	0.020	0.059			
612.15	0.020	0.060			
612.25	0.020	0.062			
612.35	0.020	0.063			
612.45	0.020	0.064			

Summary for Pond 12P: Subsurface Infiltration Basin

Inflow Area = 0.687 ac, 28.51% Impervious, Inflow Depth = 0.35" for WQ event
 Inflow = 0.62 cfs @ 1.03 hrs, Volume= 0.020 af
 Outflow = 0.07 cfs @ 1.76 hrs, Volume= 0.020 af, Atten= 88%, Lag= 44.0 min
 Discarded = 0.07 cfs @ 1.76 hrs, Volume= 0.020 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond 11P : Existing Drywell System

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
 Peak Elev= 622.00' @ 1.76 hrs Surf.Area= 0.061 ac Storage= 0.012 af

Plug-Flow detention time= 73.5 min calculated for 0.020 af (100% of inflow)
 Center-of-Mass det. time= 73.5 min (143.1 - 69.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	621.50'	0.056 af	39.50'W x 67.70'L x 3.50'H Field A 0.215 af Overall - 0.076 af Embedded = 0.139 af x 40.0% Voids
#2A	622.00'	0.076 af	ADS StormTech SC-740 +Cap x 72 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 72 Chambers in 8 Rows
0.132 af			Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	621.50'	1.000 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 619.00'
#2	Primary	619.43'	12.0" Round Culvert L= 42.0' CPP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 619.43' / 613.00' S= 0.1531 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.79 sf
#3	Device 2	622.50'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	623.25'	10.0" W x 4.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Device 2	624.50'	0.5' long Sharp-Crested Rectangular Weir 2 End Contraction(s)

Discarded OutFlow Max=0.07 cfs @ 1.76 hrs HW=622.00' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=621.50' (Free Discharge)

↑ **2=Culvert** (Passes 0.00 cfs of 4.18 cfs potential flow)

↑ **3=Orifice/Grate** (Controls 0.00 cfs)

↑ **4=Orifice/Grate** (Controls 0.00 cfs)

↑ **5=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 12P: Subsurface Infiltration Basin - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)

Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf

Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

9 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 65.70' Row Length +12.0" End Stone x 2 = 67.70' Base Length

8 Rows x 51.0" Wide + 6.0" Spacing x 7 + 12.0" Side Stone x 2 = 39.50' Base Width

6.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 3.50' Field Height

72 Chambers x 45.9 cf = 3,307.7 cf Chamber Storage

9,359.1 cf Field - 3,307.7 cf Chambers = 6,051.4 cf Stone x 40.0% Voids = 2,420.6 cf Stone Storage

Chamber Storage + Stone Storage = 5,728.2 cf = 0.132 af

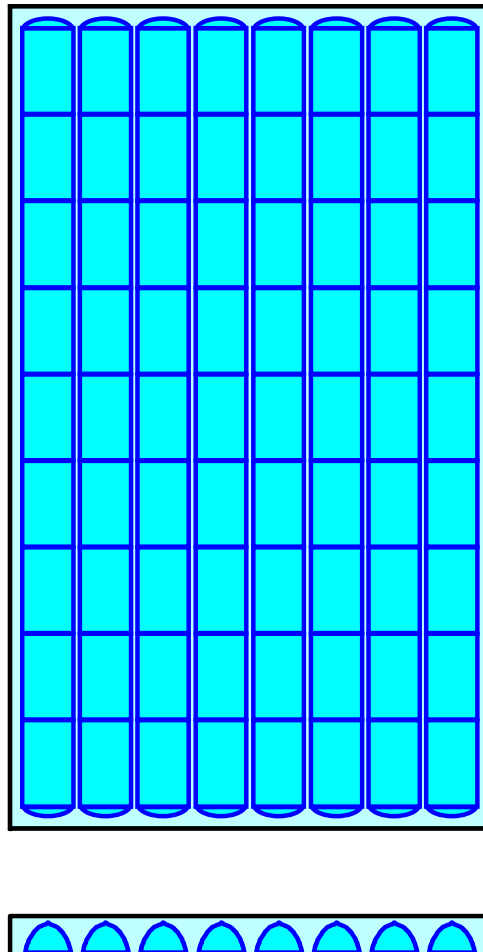
Overall Storage Efficiency = 61.2%

Overall System Size = 67.70' x 39.50' x 3.50'

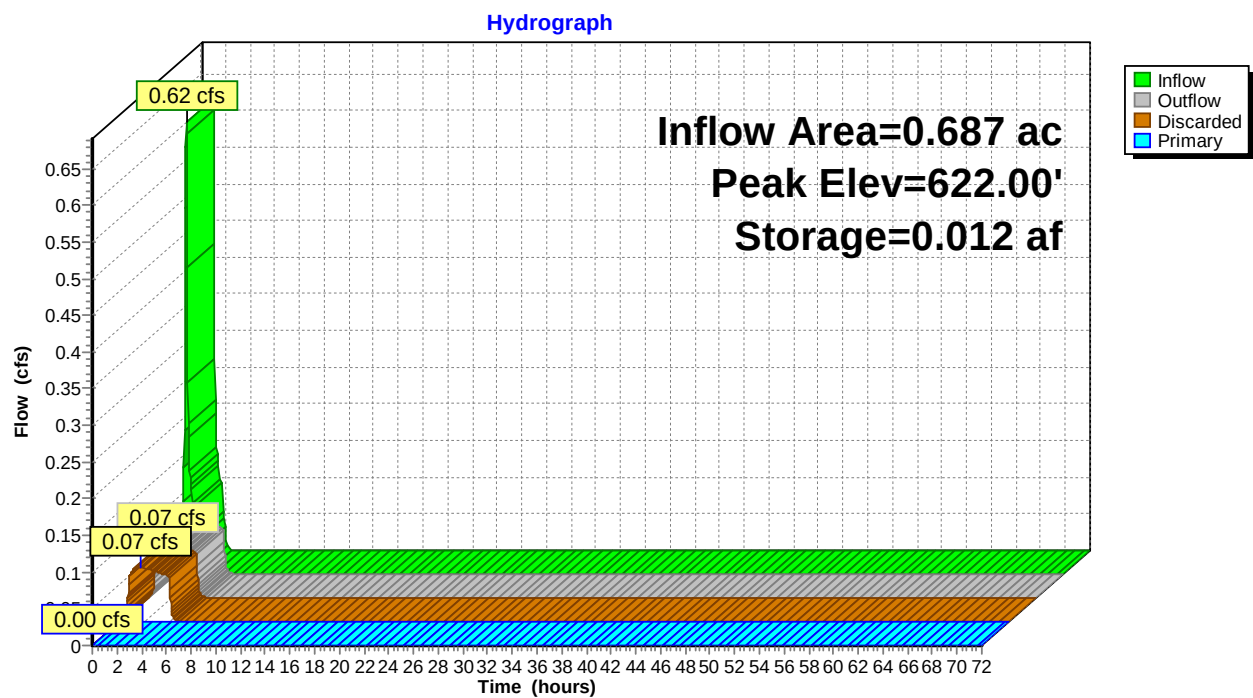
72 Chambers

346.6 cy Field

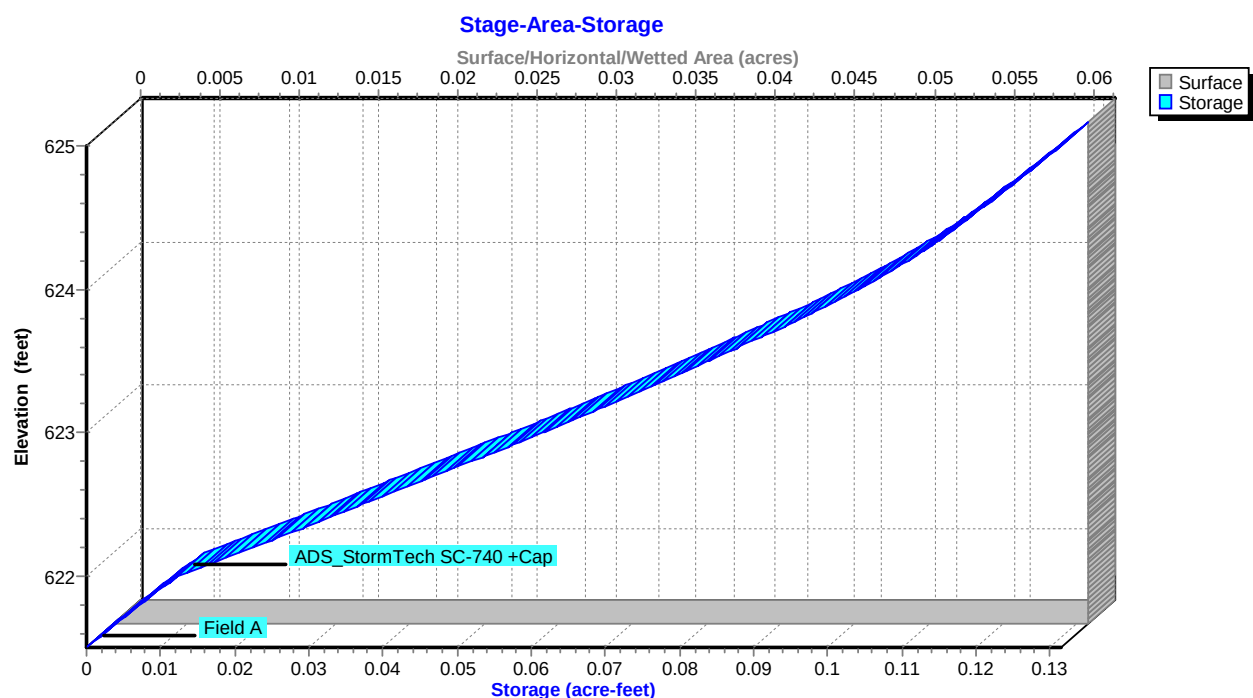
224.1 cy Stone



Pond 12P: Subsurface Infiltration Basin



Pond 12P: Subsurface Infiltration Basin



Hydrograph for Pond 12P: Subsurface Infiltration Basin

Time (hours)	Inflow (cfs)	Storage (acre-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0.000	621.50	0.00	0.00	0.00
2.50	0.00	0.009	621.87	0.07	0.07	0.00
5.00	0.00	0.000	621.50	0.00	0.00	0.00
7.50	0.00	0.000	621.50	0.00	0.00	0.00
10.00	0.00	0.000	621.50	0.00	0.00	0.00
12.50	0.00	0.000	621.50	0.00	0.00	0.00
15.00	0.00	0.000	621.50	0.00	0.00	0.00
17.50	0.00	0.000	621.50	0.00	0.00	0.00
20.00	0.00	0.000	621.50	0.00	0.00	0.00
22.50	0.00	0.000	621.50	0.00	0.00	0.00
25.00	0.00	0.000	621.50	0.00	0.00	0.00
27.50	0.00	0.000	621.50	0.00	0.00	0.00
30.00	0.00	0.000	621.50	0.00	0.00	0.00
32.50	0.00	0.000	621.50	0.00	0.00	0.00
35.00	0.00	0.000	621.50	0.00	0.00	0.00
37.50	0.00	0.000	621.50	0.00	0.00	0.00
40.00	0.00	0.000	621.50	0.00	0.00	0.00
42.50	0.00	0.000	621.50	0.00	0.00	0.00
45.00	0.00	0.000	621.50	0.00	0.00	0.00
47.50	0.00	0.000	621.50	0.00	0.00	0.00
50.00	0.00	0.000	621.50	0.00	0.00	0.00
52.50	0.00	0.000	621.50	0.00	0.00	0.00
55.00	0.00	0.000	621.50	0.00	0.00	0.00
57.50	0.00	0.000	621.50	0.00	0.00	0.00
60.00	0.00	0.000	621.50	0.00	0.00	0.00
62.50	0.00	0.000	621.50	0.00	0.00	0.00
65.00	0.00	0.000	621.50	0.00	0.00	0.00
67.50	0.00	0.000	621.50	0.00	0.00	0.00
70.00	0.00	0.000	621.50	0.00	0.00	0.00

Stage-Area-Storage for Pond 12P: Subsurface Infiltration Basin

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
621.50	0.061	0.000	624.40	0.061	0.117
621.55	0.061	0.001	624.45	0.061	0.118
621.60	0.061	0.002	624.50	0.061	0.119
621.65	0.061	0.004	624.55	0.061	0.120
621.70	0.061	0.005	624.60	0.061	0.122
621.75	0.061	0.006	624.65	0.061	0.123
621.80	0.061	0.007	624.70	0.061	0.124
621.85	0.061	0.009	624.75	0.061	0.125
621.90	0.061	0.010	624.80	0.061	0.127
621.95	0.061	0.011	624.85	0.061	0.128
622.00	0.061	0.012	624.90	0.061	0.129
622.05	0.061	0.015	624.95	0.061	0.130
622.10	0.061	0.017	625.00	0.061	0.132
622.15	0.061	0.020			
622.20	0.061	0.022			
622.25	0.061	0.025			
622.30	0.061	0.027			
622.35	0.061	0.030			
622.40	0.061	0.032			
622.45	0.061	0.035			
622.50	0.061	0.037			
622.55	0.061	0.040			
622.60	0.061	0.042			
622.65	0.061	0.045			
622.70	0.061	0.047			
622.75	0.061	0.050			
622.80	0.061	0.052			
622.85	0.061	0.054			
622.90	0.061	0.057			
622.95	0.061	0.059			
623.00	0.061	0.062			
623.05	0.061	0.064			
623.10	0.061	0.066			
623.15	0.061	0.068			
623.20	0.061	0.071			
623.25	0.061	0.073			
623.30	0.061	0.075			
623.35	0.061	0.077			
623.40	0.061	0.080			
623.45	0.061	0.082			
623.50	0.061	0.084			
623.55	0.061	0.086			
623.60	0.061	0.088			
623.65	0.061	0.090			
623.70	0.061	0.092			
623.75	0.061	0.094			
623.80	0.061	0.096			
623.85	0.061	0.098			
623.90	0.061	0.100			
623.95	0.061	0.102			
624.00	0.061	0.104			
624.05	0.061	0.106			
624.10	0.061	0.108			
624.15	0.061	0.109			
624.20	0.061	0.111			
624.25	0.061	0.113			
624.30	0.061	0.114			
624.35	0.061	0.115			

Appendix #02 | Recharge Worksheet



Annual Groundwater Recharge Analysis (based on GSR-32)

Select Township ↓

ESSEX CO., WEST ORANGE TOWN

Average Annual P (in)

49.0

Climatic Factor

1.67

Project Name:

Waymaker

Description:

Proposed Site Improvements

Analysis Date:

09/16/24

Pre-Developed Conditions

Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	0.22	Impervious areas	Boonton	0.0	-
2	1.76	Open space	Boonton	14.9	95,500
3	0.09	Gravel, dirt	Boonton	6.9	2,238
4					
5					
6					
7					
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	2.1			Total Annual Recharge (in)	Total Annual Recharge (cu-ft)
				13.0	97,738

Post-Developed Conditions

Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	0.46	Impervious areas	Boonton	0.0	-
2	1.48	Open space	Boonton	14.9	80,307
3	0.16	Gravel, dirt	Boonton	6.9	3,979
4					
5	0				
6	0				
7	0				
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	2.1	Warning: make total area equal to Pre-Developed Conditions		Total Annual Recharge (in)	Total Annual Recharge (cu.ft)
				11.2	84,286
% of Pre-Developed Annual Recharge to Preserve =			100%	Total Impervious Area (sq.ft)	20,038
Post-Development Annual Recharge Deficit=				13,453	(cubic feet)
Recharge Efficiency Parameters Calculations (area averages)					
RWC=	3.58	(in)	DRWC=	0.94	(in)
ERWC =	0.59	(in)	EDRWC=	0.15	(in)

Procedure to fill the Pre-Development and Post-Development Conditions Tables

For each land segment, first enter the area, then select TR-55 Land Cover, then select Soil. Start from the top of the table and proceed downward. Don't leave blank rows (with A=0) in between your segment entries. Rows with A=0 will not be displayed or used in calculations. For impervious areas outside of standard lots select "Impervious Areas" as the Land Cover. Soil type for impervious areas are only required if an infiltration facility will be built within these areas.

Project Name		Description		Analysis Date		BMP or LID Type					
Waymaker		Proposed Site Improvements		09/16/24		Subsurface Infiltration Basin					
Recharge BMP Input Parameters				Root Zone Water capacity Calculated Parameters				Recharge Design Parameters			
Parameter	Symbol	Value	Unit	Parameter	Symbol	Value	Unit	Parameter	Symbol	Value	Unit
BMP Area	ABMP	2674.0	sq.ft	Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.61	in	Inches of Runoff to capture	Qdesign	1.84	in
BMP Effective Depth, this is the design variable Upper level of the BMP surface (negative if above ground)	dBMP	7.2	in	ERWC Modified to consider dEXC	EDRWC	0.18	in	Inches of Rainfall to capture	Pdesign	2.07	in
	dBMPu	0.0	in	Empty Portion of RWC under Infiltr. BMP	RERWC	0.14	in	Recharge Provided Avg. over Imp. Area		33.8	in
Depth of lower surface of BMP, must be >= dBMPu	dEXC	42.0	in					Runoff Captured Avg. over imp. Area		36.5	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	2	unitless								
				BMP Calculated Size Parameters				CALCULATION CHECK MESSAGES			
				ABMP/Aimp	Aratio	0.24	unitless	Volume Balance--> Solve Problem to satisfy Annual Recharge dBMP Check---> OK dEXC Check---> OK BMP Location---> OK			
				BMP Volume	VBMP	1,604	cu.ft				
Parameters from Annual Recharge Worksheet				System Performance Calculated Parameters							
Post-D Deficit Recharge (or desired recharge volume)	Vdef	7,121	cu.ft	Annual BMP Recharge Volume		31,922	cu.ft	OTHER NOTES Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensitive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.			
Post-D Impervious Area (or target Impervious Area)	Aimp	11,326	sq.ft	Avg BMP Recharge Efficiency		92.7%	Represents % Infiltration Recharged				
Root Zone Water Capacity	RWC	3.69	in	%Rainfall became Runoff		78.5%	%				
RWC Modified to consider dEXC	DRWC	1.11	in	%Runoff Infiltrated		94.9%	%				
Climatic Factor	C-factor	1.67	no units	%Runoff Recharged		49.7%	%				
Average Annual P	Pavg	49.0	in	%Rainfall Recharged		39.0%	%				
Recharge Requirement over Imp. Area	dr	4.3	in								
How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP. To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration click the "Default Vdef & Aimp" button.											

Project Name		Description		Analysis Date		BMP or LID Type	
Waymaker		Proposed Site Improvements		09/16/24		Drywell System	

Recharge BMP Input Parameters				Root Zone Water capacity Calculated Parameters				Recharge Design Parameters			
Parameter	Symbol	Value	Unit	Parameter	Symbol	Value	Unit	Parameter	Symbol	Value	Unit
BMP Area	ABMP	874.0	sq.ft	Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.61	in	Inches of Runoff to capture	Qdesign	1.84	in
BMP Effective Depth, this is the design variable Upper level of the BMP surface (negative if above ground)	dBMP	6.6	in	ERWC Modified to consider dEXC	EDRWC	0.18	in	Inches of Rainfall to capture	Pdesign	2.07	in
	dBMPu	0.0	in	Empty Portion of RWC under Infiltr. BMP	RERWC	0.14	in	Recharge Provided Avg. over Imp. Area		33.8	in
Depth of lower surface of BMP, must be >= dBMPu	dEXC	96.0	in					Runoff Captured Avg. over imp. Area		36.5	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	2	unitless								

BMP Calculated Size Parameters				CALCULATION CHECK MESSAGES	
ABMP/Aimp	Aratio	0.10	unitless	Volume Balance--> Solve Problem to satisfy Annual Recharge dBMP Check---> OK dEXC Check---> OK BMP Location---> OK	
BMP Volume	VBMP	481	cu.ft		

Parameters from Annual Recharge Worksheet				System Performance Calculated Parameters			
Post-D Deficit Recharge (or desired recharge volume)	Vdef	6,332	cu.ft	Annual BMP Recharge Volume		10,434	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	8,712	sq.ft	Avg BMP Recharge Efficiency		92.7%	Represents % Infiltration Recharged
Root Zone Water Capacity	RWC	3.69	in	%Rainfall became Runoff		78.5%	%
RWC Modified to consider dEXC	DRWC	1.11	in	%Runoff Infiltrated		40.3%	%
Climatic Factor	C-factor	1.67	no units	%Runoff Recharged		16.2%	%
Average Annual P	Pavg	49.0	in	%Rainfall Recharged		12.8%	%
Recharge Requirement over Imp. Area	dr	3.8	in				

OTHER NOTES

Pdesign is accurate only after BMP dimensions are updated to make rech volume= deficit volume. The portion of BMP infiltration prior to filling and the area occupied by BMP are ignored in these calculations. Results are sensitive to dBMP, make sure dBMP selected is small enough for BMP to empty in less than 3 days. For land Segment Location of BMP if you select "impervious areas" RWC will be minimal but not zero as determined by the soil type and a shallow root zone for this Land Cover allowing consideration of lateral flow and other losses.

How to solve for different recharge volumes: By default the spreadsheet assigns the values of total deficit recharge volume "Vdef" and total proposed impervious area "Aimp" from the "Annual Recharge" sheet to "Vdef" and "Aimp" on this page. This allows solution for a single BMP to handle the entire recharge requirement assuming the runoff from entire impervious area is available to the BMP. To solve for a smaller BMP or a LID-IMP to recharge only part of the recharge requirement, set Vdef to your target value and Aimp to impervious area directly connected to your infiltration facility and then solve for ABMP or dBMP. To go back to the default configuration click the "Default Vdef & Aimp" button.

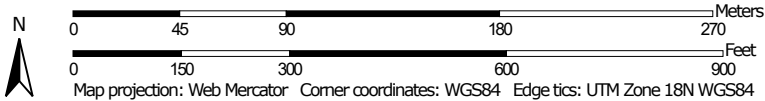
Appendix #03 | Existing and Proposed Drainage Area Map

Appendix #04 | USGS, HUC-11, Soil Survey Location Map

Hydrologic Soil Group—Essex County, New Jersey



Map Scale: 1:3,190 if printed on A landscape (11" x 8.5") sheet.



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

6/24/2024
Page 1 of 4

MAP LEGEND**Area of Interest (AOI)**
 Area of Interest (AOI)
Soils**Soil Rating Polygons**

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Lines

-  A
-  A/D
-  B
-  B/D
-  C
-  C/D
-  D
-  Not rated or not available

Soil Rating Points

-  A
-  A/D
-  B
-  B/D

-  C
-  C/D
-  D
-  Not rated or not available

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 1:12,000.

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: Essex County, New Jersey
Survey Area Data: Version 19, Aug 29, 2023

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

Date(s) aerial images were photographed: Oct 10, 2022—Oct 16, 2022

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BooBc	Boonton silt loam, red sandstone lowland, 0 to 8 percent slopes, extremely stony	C	0.6	1.7%
BooCc	Boonton silt loam, red sandstone lowland, 8 to 15 percent slopes, extremely stony	C	8.1	22.1%
BouB	Boonton - Urban land, Boonton substratum complex, 0 to 8 percent slopes	C	1.4	3.8%
BowrB	Boonton - Urban land, Boonton substratum complex, red sandstone lowland, 0 to 8 percent slopes	C	1.6	4.4%
BowrC	Boonton - Urban land, Boonton substratum complex, red sandstone lowland, 8 to 15 percent slopes	C	5.6	15.1%
RNAAC	Rock outcrop		0.9	2.4%
USBONB	Urban land, Boonton substratum - Boonton complex, 0 to 8 percent slopes		3.2	8.7%
YamnBc	Yalesville loam, 0 to 8 percent slopes, extremely stony	C	10.2	27.7%
YaohEh	Yalesville - Holyoke complex, 35 to 60 percent slopes, very rocky	C	5.2	14.1%
Totals for Area of Interest			36.8	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher