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Anderson Consulting Services LLC

Stormwater Management Report
(formerly Drainage Report)
West Essex Highlands
Block 179, Lot 32
West Orange NJ

March 12, 2023
Rev 1 April 27, 2023
Rev Sept 7, 2023
Rev Oct 3, 2023
Rev October 24, 2023
Rev 10-30-23
Rev 6-24-24
Rev 7-9-24
Rev 8-30-24
Rev 10-01-24
Rev 10-28-24



Paul W. Anderson PE PP CME
NJ PE Lic. No. 33410

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Appendix

Drainage area maps (full size maps provided separately)

Hydrocad Output Existing Conditions
- POA-1
- POA-2
- POA-3

Hydrocad Output POA-1
- Basin 1
- Basin 5
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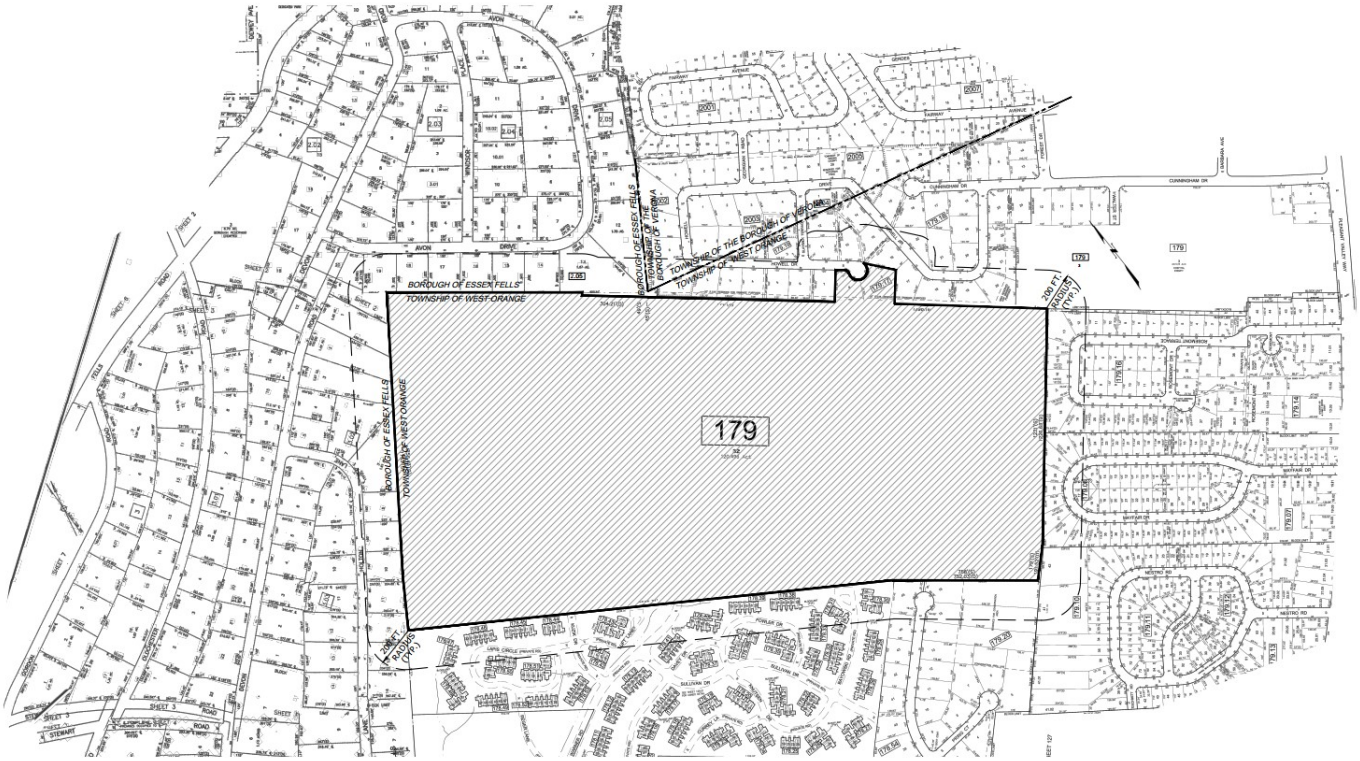
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- Existing Conditions
- Basin 2
- Basin 3
- Basin 4
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- Basin 9
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- Basin 11

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- Recharge Spreadsheet
- Theissens Polygon soil type analysis
- Pipe sizing calculations
- Riprap sizing calculations
- Water Quality MTD' calculations

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Location Map

1

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Introduction

The West Essex Highlands property has been designated as the location for multifamily housing as part of a court approved settlement agreement which is part of the affordable housing requirements for the Township of West Orange. Part of the Settlement Agreement provides that disturbance on the 120-acre parcel is limited to 30 acres leaving the remainder as open space to be utilized as passive recreation in its natural condition.

The initial submittal to NJDEP relied heavily on three stormwater basins in the southern area of the property where deeper soil and seasonal high ground water prevailed. Reviews of this submission and subsequent modifications to it found that the NJDEP preferred a design that managed stormwater more broadly over the entire site.

Several video conferences were held with NJDEP to review in more detail the existing site soil conditions, the overall soil testing that had been performed to date and to develop a conceptual plan for the re-design of the stormwater management system with stormwater managed neared to it source. The concept plan required new soil testing within the approved soil testing window to establish the seasonal high-water table at each proposed stormwater system.

The testing resulted in areas with high water tables, shallow bedrock and poor soil permeability in many of the tested areas. As a result, the site grading design was raised to achieve a greater distance to groundwater and bedrock and soil replacement was used to address permeability issues. A video conference was held with NJDEP to review the new concept, and the consensus was to proceed to full design of the new concept.

Previous soil testing results reviewed by the NJDEP have resulted in the designation of some areas of the project as type D soils. Thiessens Polygon Method has been utilized to determine the limits of the D soils. The plan showing this analysis is included in the Appendix.

The project design includes a stormwater management design in accordance with the concept plan review with NJDEP. It meets state stormwater standards for water quality, groundwater recharge and discharge rate. The drainage design has a combination of small-scale infiltration basins, porous pavement systems and a large-scale infiltration basin. The systems have been located throughout the disturbed area to manage the stormwater near its source.

The calculations utilize Hydrocad, version 9.10, NJDEP approved intensity curves, and the SCS TR-20 methodology to calculate the pre-and post-development runoff.

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Methodology

The drainage for the development area of the property is calculated for the existing and proposed conditions for each of the three Points of Analysis. The proposed analysis is broken down into the overall un-detained in the analysis area and the flow to each of the stormwater management systems.

The existing conditions for the site are considered wooded in good conditions per NJDEP guidance documents. Discharge rates for the existing conditions under the 2, 10 and 100-year storm events are calculated with The Hydrocad drainage program and the SCS TR-20 method. Hydrographs for the proposed conditions for areas detained and un-detained are developed. Allowable discharge rates for the detention system are calculated and the proposed hydrograph is routed through a proposed detention system until the desired discharge rate is achieved for each storm.

Discussion

Water Quality

Each drainage basin uses green technology to achieve the required 80% suspended solid removal rate. Small-scale infiltration basins are paired with a pre-treatment separator to achieve 90% removal rate. Chapter 9.8 permits non-GI Approved MTD's to be used as pre-treatment as noted on page 10. "Pretreatment may consist of a forebay or an BMPs found in chapter 9 or 11". Porous pavement systems remove 80% per the BMP manual. Roof areas with roof leaders connecting directly to the porous pavement systems will have pre-treatment in the form of a cascade separator or leaf guard. The large-scale basin utilizes a green technology approved MTD (filterra) at its inlets to achieve the 80% water quality requirement.

Water Quantity

The stormwater system proposed has been designed to reduce the discharge from the site for the 2-, 10- and 100-year storms as required by the stormwater regulations. Each of the drainage/detention areas has been designed to control stormwater to below its current discharge rate. The results of the stormwater analysis for existing and proposed discharge are provided in the summary tables for each point of analysis. Detailed Hydrocad output is also included in the appendix of this report.

Existing Conditions

The analysis of the existing conditions was completed for the 3 points of analysis on the project. The 3 points are the Canoe Brook, The Canoe Brook Tributary and to the Howell Drive drainage system. Each point of analysis assumes the surface condition of wood in good condition. The Tc for each POA drainage area is shown on the existing conditions drainage area map and utilizes type C soils except where a modification of the soil type has been verified by soil testing and reviewed by the NJDEP. In these instances, area of the site have been determined to be type D. The Theissens Polygon soil type map for the soil type determination is included in the appendix of this report.

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POA#1 (Point of Analysis) Existing Conditions
Tc Computations.
This drainage area has a forested cover with very light underbrush due to deer over browsing. The path of the existing conditions Tc is shown on the Existing Conditions Drainage Area Map. The Tc (Time of Concentration) is calculated in the Hydrocad program with the factors shown on the map and is as follows:

The Basin 1 contributing area is 395796.5 sf of Woods in good condition.
The initial 100 lf (linear feet) is sheet flow with a slope of 4.5% in woods with light underbrush. Tc=14.9 min
The next segment is shallow concentrated flow 1625 lf with a slope of 5.4% through woods with light underbrush. There is no discernable channel in the field along this path that would change the categorization of the flow type. Tc = 7.2 min.
Total pre-development Tc= 22.1 minutes

POA#2 Existing Conditions
Tc Computations.
This drainage area is in a forested cover with very light underbrush due to deer over browsing. The path of the existing conditions Tc is shown on the
Existing Conditions Drainage Area Map. The Tc is calculated in the Hydrocad program with the factors shown on the map and is as follows.

The Basin 2 contributing area is 808221.9 sf of Woods in good condition.
The initial 100LF is sheet flow with a slope of 4.5% in woods with light underbrush. Tc=9.0 min
The next segment is shallow concentrated flow 564 lf with a slope of 9.2% through woods with light underbrush. There is no discernable channel in the field along this path that would change the categorization of the flow type. Tc = 1.9 minutes.

Total pre-development Tc= 16.8 minutes

POA#3 Existing Conditions
Point of analysis 3 discharges to an existing drainage system in Howell Drive. This municipal system flows to the east away from the onsite streams. This drainage area is only for disturbance associated with one half of the emergency access road .

Existing Conditions are: woods with light underbrush. The existing Tc is calculated with the following factors.
100 LF. Of sheet flow @ 4% with woods coverage Tc= 15.8 minutes
70 lf of shallow concentrated Flow @ 11.5% woods cover. Tc= .2
Total Tc = 15.8 minutes

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The summary of the existing conditions discharges is as follows. Hydrocad output for the existing conditions is provided in the appendix of this report.

	POA-1	POA-2	POA-3
2 YR	7.08	17.53	.13
10YR	15.93	38.43	.32
100 YR	35.21	83.14	.75

Proposed Conditions

Point of Analysis 1 (POA#1)

POA#1 is the area of the site that drains to the Canoe Brook in the western portion of the property. The stormwater management systems designed for this are Large Scale Basin #1, and porous pavement systems 5&6.

Large Scale Infiltration Basin #1

This stormwater system collects water from Kusik Drive some new building roof areas and the lawn areas adjacent.

The proposed Tc for the area flowing to Detention 1 uses the following input
Sheet flow 59 lf @2% over grass Tc= 9 minutes
Shallow concentrated flow 425 lf over pavement @ 6.5% Tc = 1.7 minutes
Pipe flow 425 lf pipe , 2.5 fps Tc = 3.4 minutes
Total Tc = 14.1 minutes

Basin 1 is designed as a large scale basin without exfiltration as an outlet. The Basin details do include soil replacement with a permeable sand to allow infiltration to occur.

Water quality is achieved with MTD's at each inlet location to meet the water quality requirement.

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Porous Pavement system #5

Porous pavement #5 collects stormwater from the Building B parking lot, Building B roof and grass areas around the building. The total drainage area is 1.07 acres with the majority of that area the building roof or the porous pavement surface. The ratio of other contributing areas to the Porous pavement area is 4:1
The areas contributing to the Porous pavement system are 46,607.8sf

Roof 26,232 sf connected directly
Porous pavement 14,590.0 sf
Overland flow area 5785.8 sf
Ratio 2.19:1
The system will have soil replacement with a permeability of 4 inches per hour with a factor of safety of 2.

The proposed Tc for the area flowing to PP5 uses the following input
Sheet flow 40 lf @2% over pavement Tc= .6 minutes
Pipe flow 182 lf pipe , 2.5 fps Tc = 1.2 minutes
Total Tc = 1.8 minutes
The porous pavement system is considered green technology for both groundwater recharge and water quality. The roof area will connect directly with the underground system with pre-treatment before.

Porous Pavement system #6

Porous pavement #6 collects stormwater from the parking lot between Buildings B and C, and grass areas around the building. The ratio of total areas to the porous pavement area is 1.9:1
The system will have soil replacement with a permeability of 4 inches per hour with a factor of safety of 2.
The areas contributing are 108077.0 sf
Porous pavement 37197.0 sf
Lawn and other contributing areas 70,879.7 sf
Ratio 1.91:1

The proposed Tc for the area flowing to PP6 uses the following input
Sheet flow 40 lf @2% over pavement Tc= .6 minutes
Pipe flow 450 lf pipe , 2.5 fps Tc = 3 minutes
Total Tc = 3.6 minutes

The porous pavement system is considered green technology for both groundwater recharge and water quality.

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PA-1 Discharge Summary

STORM	EXISTING	PERMITTED	#1	#5	#6	OVERLAND FLOW	POA 1
WQ			0	0	0	.43	.43
2 YR	7.08	3.54	.75	0	0	2.33	2.36
10 YR	15.93	11.15	3.24	1.06	.13	4.75	5.27
100 YR	35.21	28.17	12.27	4.67	3.02	9.71	14.86

Point of Analysis 2

This drainage area discharges to the Canoe Brook Tributary which exists at the site between the Kusik Dr and Warner Road entrance to the property. The stormwater management systems in this drainage area are small scale infiltration basins 2 , 7 & 10 and porous pavement systems 3,4, 8, &11. Each of these systems are considered green technology for quantity, quality and recharge.

Small Scale Infiltration Basin 2

This stormwater system collects water from the parking lot and grass areas behind Building A. The total contributory area is 2.49 acres. The system will have soil replacement with a permeability of 4 inches per hour with a factor of safety of 2.

The proposed Tc for the area flowing to Basin 2 uses the following input
Sheet flow 93lf @5% over grass Tc= 9 minutes
Shallow concentrated flow 370 lf over pavement @ 6.5% Tc = 1.5 minutes

Total Tc = 10.5 minutes

The small-scale infiltration basin is considered green technology for both groundwater recharge and water quality.

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Porous Pavement #3

System 3 collects water from the Kennel parking lot and adjacent grass areas. The ratio of other contributing areas to the porous pavement area is 2.97: 1
Areas contributing 21910 sf
Porous Pavement 5500 sf
Lawn and other contributing areas 16,410 sf ratio 2.98:1

The system will have soil replacement with a permeability of 20 inches per hour with a factor of safety of 2.

The proposed Tc for the area flowing to PP3 uses the following input
Sheet flow 75 lf. @ 4% over grass 8.3 minutes
Total Tc = 8.3 minutes

The porous pavement system is considered green technology for both groundwater recharge and water quality.

Porous Pavement system 4

Tc Computations

System 4 collects water from half of the Building A parking lot as well as adjacent grass areas. The ratio of the total areas to the porous pavement area is 2.99 The system will have soil replacement with a permeability of 4 inches per hour with a factor of safety of 2: 1
Areas Contributing 49050.0 sf

Porous pavement 12,268.7 sf
Lawn and other contributing areas 36781.3 sf Ratio 2.99

The proposed Tc for the area flowing to PP3 uses the following input
Sheet flow 70 lf @ 2% over roof .9 minutes
Pipe flow 685 lf @ 2.5 fps 4.6 minutes
Total Tc = 5.5 minutes

The porous pavement system is considered green technology for both groundwater recharge and water quality.

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Small Scale Infiltration Basin 7

This stormwater system collects water from the parking lot and grass areas behind the clubhouse as well as Warner Road. The total contributory area is 2.45 acres. The system will have soil replacement with a permeability of 4 in/hr with a factor of safety of 2.

The proposed Tc for the area flowing to Basin 7 uses the following input
Sheet flow 83 lf @4% over grass Tc= 8.9 min
Shallow concentrated flow 277 lf over grass @ 6 % Tc = 1.1 minutes
Shallow concentrated flow 40 lf over pavement @ 6.7 % Tc =.1 minutes
Pipe Flow 365 lf @ 2.5 fps 2.4 minutes

Total Tc = 12.5 minutes

The small-scale infiltration basin is considered green technology for both groundwater recharge and water quality.

Porous Pavement system 8

System 8 collects water from part of the clubhouse roof, and portions of Kusik Drive and Warner Road. The ratio of non-roof contributing areas to the porous pavement area is 2.92: 1. The system will have soil replacement with a permeability of 4 in/hr with a factor of safety of 2.
Contributing areas 61042.8
Roof 11,475 sf
Porous Pavement 15,545.0
Lawn and other contributing areas 34022.8 sf Ratio 2.92:1

The proposed Tc for the area flowing to PP8 uses the following input
Sheet flow 100 lf @ 7% over grass 8.3 minutes
Shallow Concentrated Flow 65 lf @ 6% over grass.3 minutes
Total Tc = 8.6 minutes

The porous pavement system is considered green technology for both groundwater recharge and water quality.

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Porous Pavement system 9

System 9 collects stormwater from Road D from the clubhouse area past the Bridge crossing of the stream and a small section nof roof from the clubhouse. The ratio of contributing areas to the porous pavement area is 2.54 :1. The system is above natural grade and backfill will be permeable soil meeting the permeability rate of 4 inches per hour with a factor of safety of 2.
Contributing Areas 26376.6
Roof 1146.6 sf
Porous Pavement 7443 sf
Lawn and other contributing areas 17,787.0 sf Ratio 2.54:1

The proposed Tc for the area flowing to PP9 uses the following input
Sheet flow 100 lf @ 10% over grass 7.2 minutes
Shallow Concentrated Flow 40 lf @ 7.5% over grass 2 minutes
Total Tc = 7.4 minutes

The porous pavement system is considered green technology for both groundwater recharge and water quality.

Small Scale Infiltration Basin 10

This stormwater system collects water from the roof of building D and the roadway/ parking area in front of Building D and some adjacent grass areas. The total contributory area is 2.2 acres. The system will have soil replacement with a permeability of 10 in/hr with a factor of safety of 2.

The proposed Tc for the area flowing to Basin 10 uses the following input
Sheet flow 59 lf @2% over grass Tc= 9 minutes
Shallow concentrated flow 210 lf over grass @ 4.8 % Tc = 1 minutes
Pipe Flow 110 lf @ 2.5 fps .7 minutes

Total Tc = 10.7 minutes

Basin 10 is designed as a small scale basin with exfiltration at the rate of the replacement soil. Exfiltration is set at the replacement soil rate.

Pre-treatment is achieved with MTD that is approved for 50% removal prior to discharge to the basin

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Porous Pavement system 11

System 11 collects stormwater from Road D, half of the Building D roof and adjacent grass areas The ratio of contributing areas to the Porous pavement area is 2.78 : 1 The system will have soil replacement with a permeability rate of 10 inches per hour with a factor of safety of 2.
Contributing areas 84102.7
Roof 32,202.6 sf
Porous Pavement 22269.7 sf
Lawn and other contributing areas 29630.4 sf Ratio 2.78:1

The proposed Tc for the area flowing to PP11 uses the following input
Sheet flow 83 lf @ 4% over grass 8.9 minutes
Shallow Concentrated Flow 150 lf @ 3.3% over grass 9 minutes
Total Tc = 9.8 minutes

The porous pavement system is considered green technology for both groundwater recharge and water quality.

PA-2 Discharge Summary

STORM	EX	PER	2	3	4	7	8	9	10	11	UD	T
WQ			0	0	0	0	0	0	0	0	3.61	3.61
2	17.53	8.77	.19	0	0	.53	0	0	0	.1	7.21	7.24
10	38.43	26.90	.93	0	.10	1.73	0	0	.93	2.25	13.00	15.29
100	83.14	66.51	5.38	1.15	.81	3.65	.68	.16	5.31	7.54	24.70	38.99

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Point of Analysis 3

Point of analysis 3 discharges to an existing drainage system in Howell Drive. This municipal system flows to the east away from the onsite streams. This drainage area is only for disturbance associated with one half of the emergency access road which will be gated closed and will have little vehicle traffic. The design achieves stormwater management standards of quality, quantity and recharge with the use of filterra water quality devices discharging to a small scale subsurface infiltration basin with soil replacement. The system recharges the entire volume of the 100 yr storm to the ground. An emergency overflow to the municipal system is provided.

The proposed Tc is calculated as follows:
50 lf sheet flow @ 12% grass Tc = 3.8
60 lf @ 12% grass swale Tc= .2
Total Tc = 4 minutes.

PA-3 Summary

STORM	EXISTING	PERMITTED	BASIN 12	TOTAL
2	.13	.07	0	0
10	.32	.22	0	0
100	.75	.60	0	0

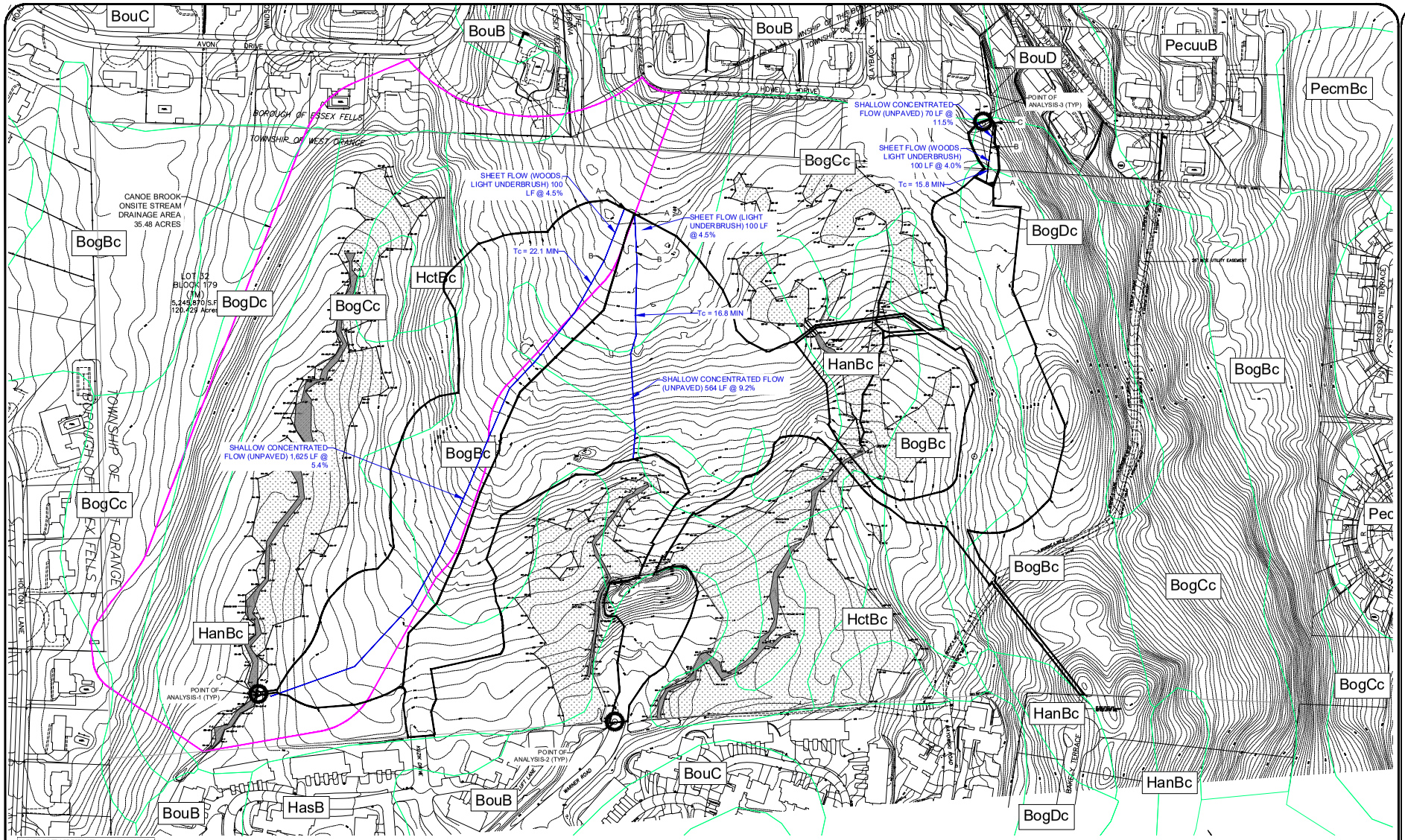
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Conclusion

The design of the West Essex Highlands Project has been completed in accordance with the court approved resolution with the limiting of the area of disturbance below 30 acres and the inclusion of environmentally friendly designs that are sensitive to the existing environmental constraints.

The stormwater design includes green technology for water quantity, quality and seeks to optimize the volume groundwater recharge with green technology. The overall discharge has been conservatively calculated for each drainage basin and overall and meet the discharge standards as required in the state standards and municipal ordinance.

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UNDISTURBED / PRESERVED:	4,034, 100.3 SF	92.61 Acres
DISTURBED:	1,21 1,769.7 SF	27.82 Acres
TOTAL IMPERVIOUS:	595,540.7 SF	13.68 Acres
MOTOR VEHICLE SURFACE AREA:	273,689.0 SF	6.28 Acres

TOTAL AREA TO POA-1 - **395,796.5 SF**

TOTAL AREA TO POA-2 - 808,221.9 **SF**

TOTAL AREA TO POA-3 - **7,751.3 SF**

GRAPHIC SCALE

120 0 60 120 240 480

(IN FEET)

1 inch = 120 ft.

⊙ - POINT OF ANALYSIS

NORTH

MAP REFERENCE:

1. "TOPOGRAPHIC INFORMATION BASED ON SURVEY ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY" TAX LOTS 1, 2.04, & 3 - BLOCK 161 TAX LOT 3.01 – BLOCK 161, 1701-1711 ROUTE 10, TOWNSHIP OF MORRIS PLAINS, MORRIS COUNTY, NEW JERSEY" DATED 1/15/16 AND LAST REVISED 1-20-20 PREPARED BY LAKELAND SURVEYING, ROCKAWAY NJ. SIGNED BY MARC J. CIFONE, PLS
2. VERTICAL DATUM IS NAVD 1988
3. NGVD29 TO NGVD1988 = + 1.03 FT
4. FRESHWATERS WETLANDS/BOUNDARY LINE AS VERIFIED BY NJDEP FILE No. 1423-07-0001.1, FWW190001

811 Know what's below. Call before you dig.

NEW JERSEY STATE LAW REQUIRES NOTIFICATION 3 BUSINESS DAYS PRIOR TO ANY LAND DISTURBANCE. CONTRACTOR IS RESPONSIBLE FOR CALLING 811 OR 1-800-272-1000 FOR UTILITY MARKOUTS. UTILITY INFORMATION SHOWN IS PROVIDED BY THE SURVEYOR AND IS CURRENT AT THE TIME OF THE SURVEY. ANDERSON CONSULTING SERVICES IS NOT RESPONSIBLE FOR THE ACCURACY OF THE DATA.

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER LICENSED
SIGNATURE INVALID UNLESS SEAL OF P.E.

Issued	
10/28/24	NJDEP RESUBMISSION
10/01/24	PER NJDEP COMMENTS
07/09/24	NJDEP RESUBMISSION
05/29/24	PER NJDEP COMMENTS
04/25/24	REVISED GRADING & DRAINAGE
10/30/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/31/23	PER NJDEP WETLANDS COMMENTS
6/07/23	PER NJDEP COMMENTS

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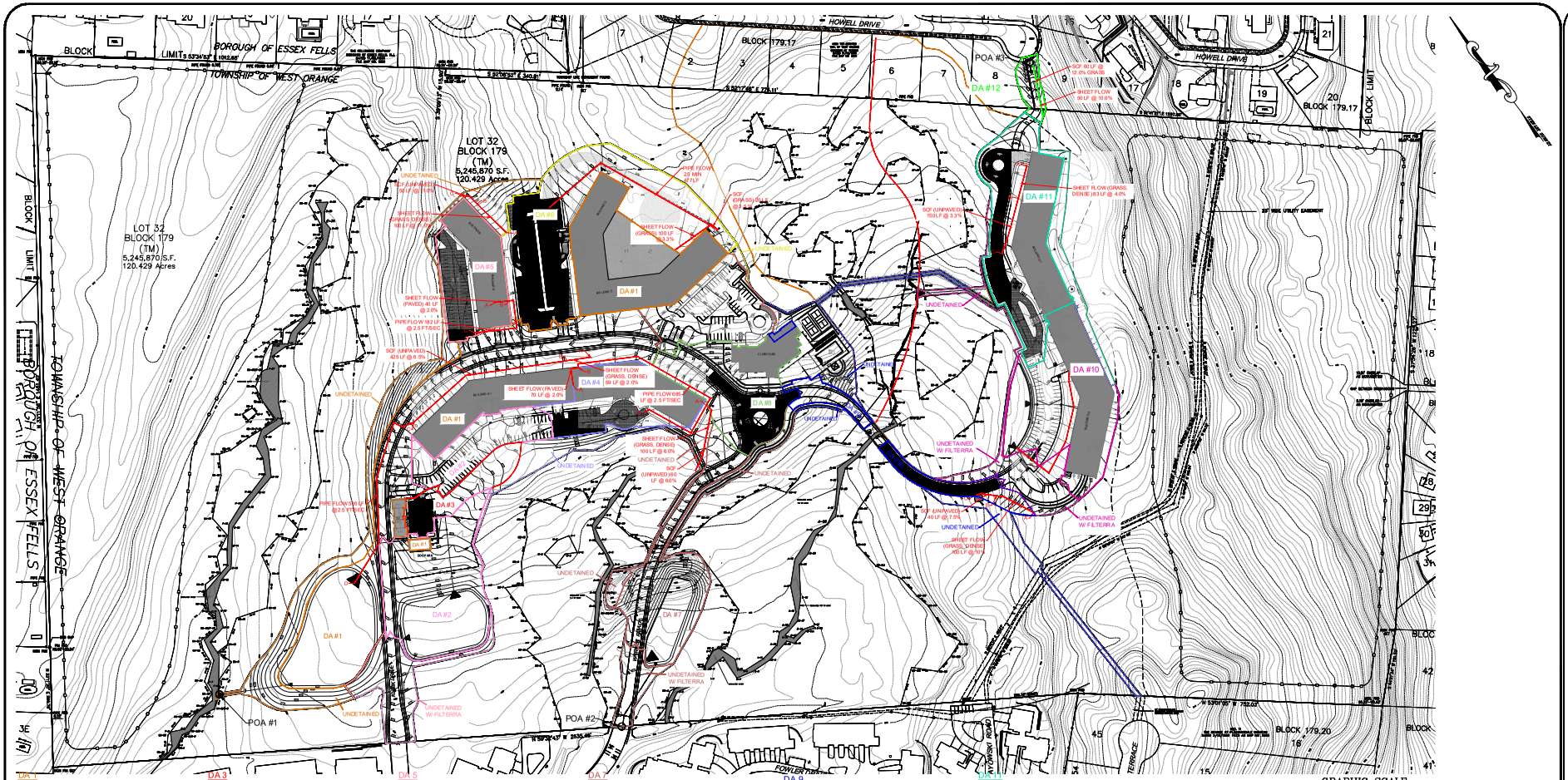
Proj. No.	NEWF-2A
Date	1-24-23
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
BLOCK 179.17 LOTS 8 & 9
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

PRE-DEVELOPMENT DRAINAGE AREA

DA-1

SHEET 1 OF 2



GRAPHIC SCALE

(IN FEET)
1 inch = 120 ft.

DA 1

TOTAL:	262,161.0 SF
IMPERVIOUS:	147,571.0 SF
PERVIOUS:	114,590.0 SF
ROOF AREA:	110,386.1 SF
Tc = 14.1 MIN	

DA 3

TOTAL:	21,910.0 SF
IMPERVIOUS:	6,824.4 SF
PERVIOUS:	15,085.6 SF
CONTRIBUTING AREA:	16,410.0 SF
POROUS PAVEMENT:	5,500.0 SF
POROUS PAVEMENT RATIO:	2.98
Tc = 8.3 MIN	

DA 5

TOTAL:	46,607.8 SF
IMPERVIOUS:	43,167.8 SF
PERVIOUS:	3,440.0 SF
CONTRIBUTING AREA:	5,785.8 SF
POROUS PAVEMENT:	14,590.0 SF
ROOF AREA:	26,232.0 SF
POROUS PAVEMENT RATIO:	2.19
Tc = 1.8 MIN	

DA 7

TOTAL:	104,455.3 SF
IMPERVIOUS:	45,777.6 SF
PERVIOUS:	58,677.7 SF
Tc = 12.5 MIN	

DA 9

TOTAL:	26,376.6 SF
IMPERVIOUS:	17,461.1 SF
PERVIOUS:	8,915.5 SF
CONTRIBUTING AREA:	17,787.0 SF
POROUS PAVEMENT:	7,443.0 SF
ROOF AREA:	1,146.6 SF
POROUS PAVEMENT RATIO:	2.54
Tc = 7.4 MIN	

DA 11

TOTAL:	84,102.7 SF
IMPERVIOUS:	59,900.4 SF
PERVIOUS:	24,202.3 SF
CONTRIBUTING AREA:	29,630.4 SF
POROUS PAVEMENT:	22,269.7 SF
ROOF AREA:	32,202.6 SF
POROUS PAVEMENT RATIO:	2.78
Tc = 9.8 MIN	

DA 2

TOTAL:	112,433.6 SF
IMPERVIOUS:	30,173.4 SF
PERVIOUS:	82,260.2 SF
Tc = 10.5 MIN	

DA 4

TOTAL:	49,050.0 SF
IMPERVIOUS:	41,523.5 SF
PERVIOUS:	7,526.5 SF
CONTRIBUTING AREA:	9,877.2 SF
POROUS PAVEMENT:	12,268.7 SF
ROOF AREA:	26,904.1 SF
POROUS PAVEMENT RATIO:	2.99
Tc = 5.5 MIN	

DA 6

TOTAL:	108,077.0 SF
IMPERVIOUS:	56,858.0 SF
PERVIOUS:	51,219.0 SF
CONTRIBUTING AREA:	70,880.0 SF
POROUS PAVEMENT:	37,197.0 SF
POROUS PAVEMENT RATIO:	1.91
Tc = 3.6 MIN	

DA 8

TOTAL:	61,042.8 SF
IMPERVIOUS:	38,256.5 SF
PERVIOUS:	22,786.3 SF
CONTRIBUTING AREA:	34,022.4 SF
POROUS PAVEMENT:	15,545.0 SF
ROOF AREA:	11,477.5 SF
POROUS PAVEMENT RATIO:	2.92
Tc = 8.6 MIN	

DA 10

TOTAL:	90,349.5 SF
IMPERVIOUS:	53,114.0 SF
PERVIOUS:	37,235.5 SF
ROOF AREA:	34,541.0 SF
Tc = 10.7 MIN	

DA 12

TOTAL:	7,751.3 SF
IMPERVIOUS:	2,500 SF
PERVIOUS:	5,251.3 SF
Tc = 4.0 MIN	

TOTAL UNDETAINED TO POA-1

TOTAL:	64,987.0 SF
IMPERVIOUS:	300.0 SF
PERVIOUS:	64,687.0 SF

TOTAL AREA TO POA-1

TOTAL:	481,832.8 SF
IMPERVIOUS:	247,896.8 SF
PERVIOUS:	233,936.0 SF

TOTAL UNDETAINED TO POA-2

TOTAL:	172,465.1 SF
IMPERVIOUS:	52,513.0 SF
PERVIOUS:	119,952.1 SF

TOTAL AREA TO POA-2

TOTAL:	722,185.6 SF
IMPERVIOUS:	345,543.9 SF
PERVIOUS:	376,641.7 SF

TOTAL UNDETAINED TO POA-3

TOTAL:	0.0 SF
IMPERVIOUS:	0.0 SF
PERVIOUS:	0.0 SF

TOTAL AREA TO POA-3

TOTAL:	7,751.3 SF
IMPERVIOUS:	2,500.0 SF
PERVIOUS:	5,251.3 SF

811 Know what's below. Call before you dig.

NEW JERSEY STATE LAW REQUIRES NOTIFICATION 3 BUSINESS DAYS PRIOR TO ANY LAND DISTURBANCE. CONTRACTOR IS RESPONSIBLE FOR CALLING 811 OR 1-800-272-1000 FOR UTILITY MARKOUTS. UTILITY INFORMATION SHOWN IS PROVIDED BY THE SURVEYOR AND IS CURRENT AT THE TIME OF THE SURVEY. ANDERSON CONSULTING SERVICES IS NOT RESPONSIBLE FOR THE ACCURACY OF THE DATA.

KUZIK DRIVE UNDETAINED MOTOR VEHICLE SURFACE TO FILTERRAS
7,165.2 SF

WARNER ROAD UNDETAINED MOTOR VEHICLE SURFACE TO FILTERRAS
5,165.9 SF

ROAD 'D' UNDETAINED MOTOR VEHICLE SURFACE TO FILTERRAS
7,988.9 SF

TOTAL MOTOR VEHICLE SURFACE AREA
273,689.0 SF 6.28 ACRES

TOTAL SITE LIMIT OF DISTURBANCE	1,211,769.7 SF
	27.82 Acres

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
SIGNATURE INVALID WITHOUT RAISED SEAL OF P.E.

12/18/24	NJDEP RESUBMISSION
10/01/24	PER NJDEP COMMENTS
07/09/24	NJDEP RESUBMISSION
05/03/24	PLANNING BOARD RESUBMISSION
04/29/24	REVISED GRADING & DRAINAGE
10/30/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/31/23	PER NJDEP WETLANDS COMMENTS
6/07/23	PER NJDEP COMMENTS
Revision	

I, SURVEYOR NAMED AT RIGHT HEREBY CERTIFY THAT THE BOUNDARY LINES AND THE LOCATION OF ALL BUILDINGS AND STRUCTURES AS SHOWN ON THIS PLAN ARE CORRECT AS SURVEYED BY ME OR UNDER MY SUPERVISION AND THAT ALL MONUMENTS AND LOT MARKERS SHOWN HEREON EXIST AS LOCATED AND THAT THIS PLAN CONFORMS TO THE REQUIREMENTS OF THE MAP FILING LAW, P.L. 1960, CHAPTER 141 AND THE AMENDMENTS THERETO AND THE REGULATIONS ADOPTED BY THE BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS PURSUANT THERETO.

CERTIFICATE OF AUTHORIZATION
24GA28182400

ACS
Anderson Consulting Services LLC
40 Miller Drive
Boonton, NJ 07005
TEL: 973.975.0703
FAX: 973.975.0703
www.pwanderson-cs.com

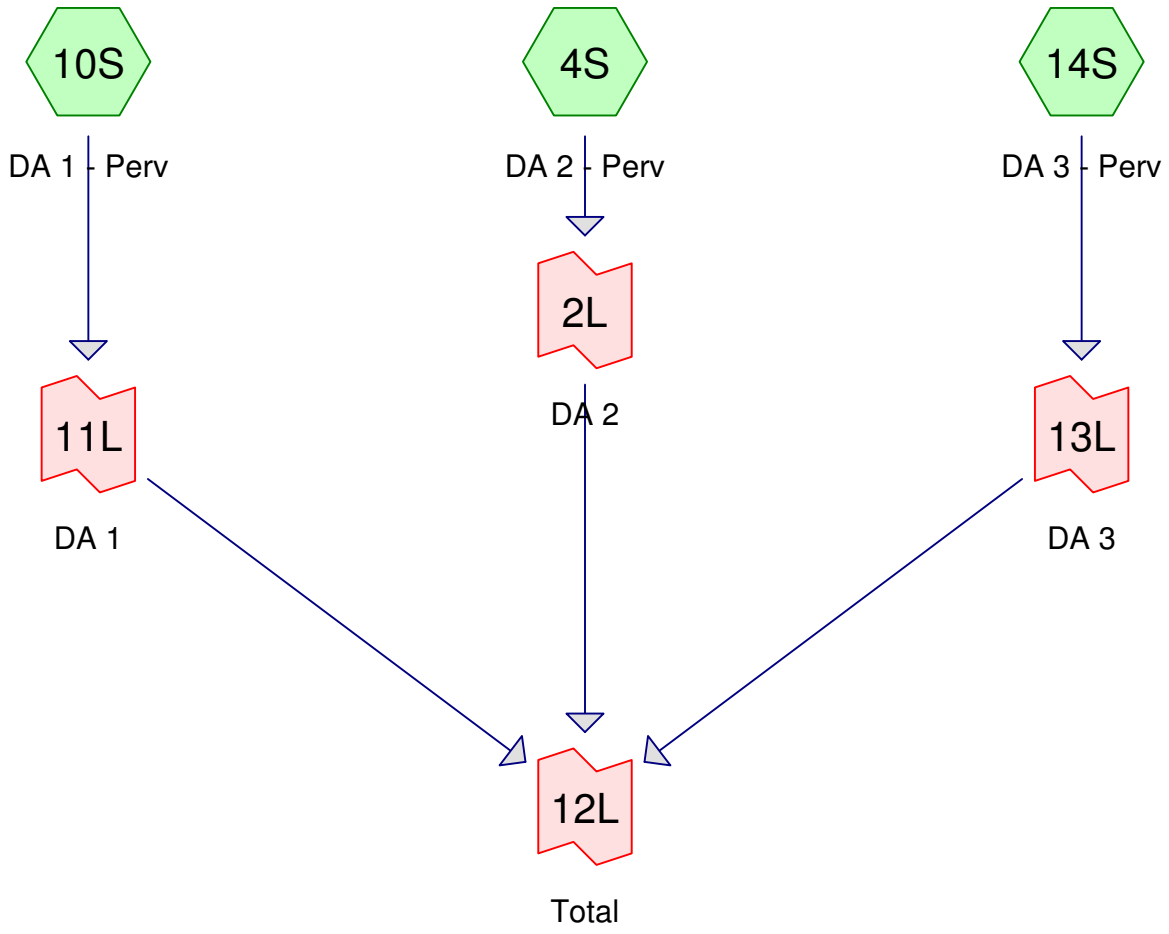
Proj. No.	WDF-DA
Date	1-24-23
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
BLOCK 179.17 LOTS 8 & 9
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

OVERALL DRAINAGE AREA MAP

DA-2

SHEET 2 OF 2



Subcat Reach Pond Link

Routing Diagram for 2024-04-20 HydroCAD - Existing
Prepared by Anderson Consulting Services, Printed 10/25/2024
HydroCAD® 10.20-5c s/n 06666 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing

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

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
36,590	74	>75% Grass cover, Good, HSG C (4S)
28,750	80	>75% Grass cover, Good, HSG D (4S)
692,040	70	Woods, Good, HSG C (4S, 10S, 14S)
454,390	77	Woods, Good, HSG D (4S, 10S)
1,211,770	**73**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
728,630	HSG C	4S, 10S, 14S
483,140	HSG D	4S, 10S
0	Other	
1,211,770		**TOTAL AREA**

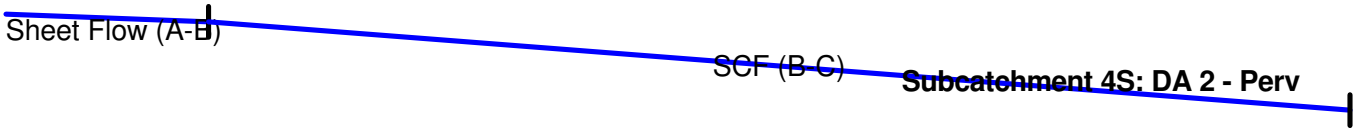
Summary for Subcatchment 4S: DA 2 - Perv

Runoff = 14.76 cfs @ 12.27 hrs, Volume= 68,577 cf, Depth= 1.14"
Routed to Link 2L : DA 2

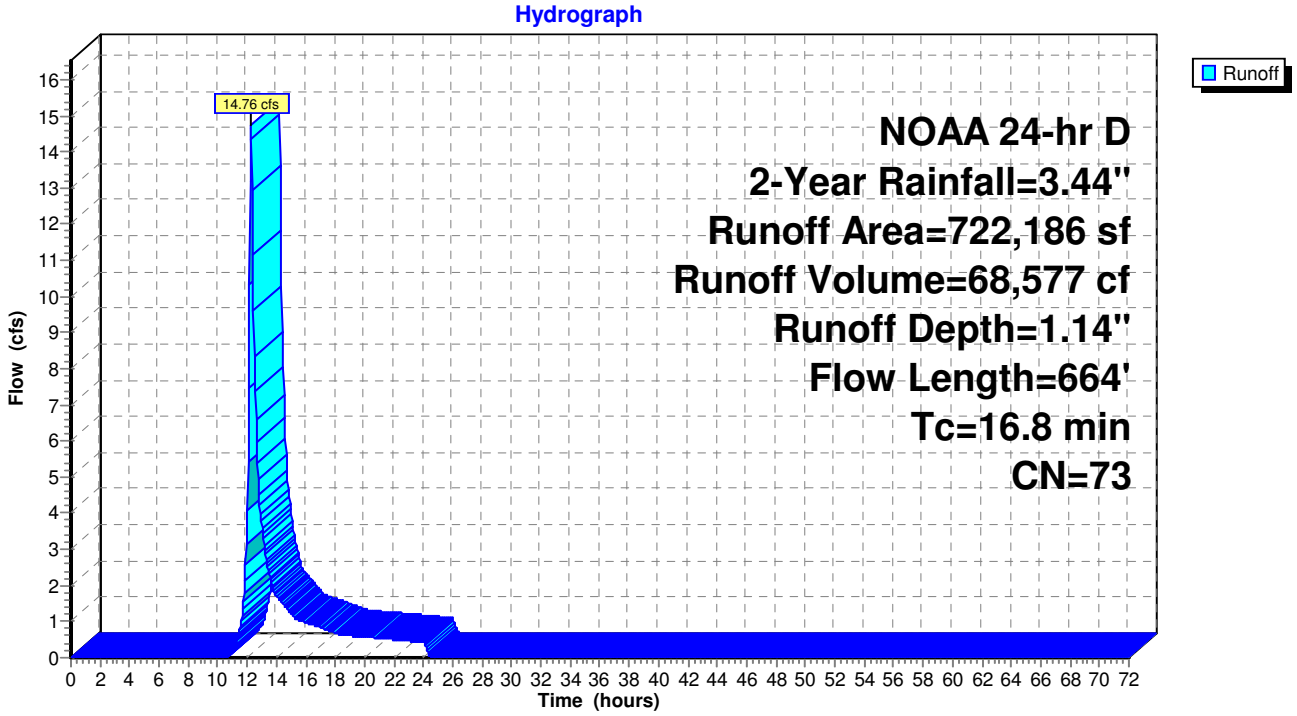
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
399,842	70	Woods, Good, HSG C
36,590	74	>75% Grass cover, Good, HSG C
257,004	77	Woods, Good, HSG D
28,750	80	>75% Grass cover, Good, HSG D
722,186	73	Weighted Average
722,186		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	100	0.0450	0.11		**Sheet Flow, Sheet Flow (A-B)** Woods: Light underbrush n= 0.400 P2= 3.47"
1.9	564	0.0920	4.88		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
16.8	664	Total			



Subcatchment 4S: DA 2 - Perv



Hydrograph for Subcatchment 4S: DA 2 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.18	0.00	0.00
5.00	0.24	0.00	0.00
6.00	0.29	0.00	0.00
7.00	0.36	0.00	0.00
8.00	0.45	0.00	0.00
9.00	0.55	0.00	0.00
10.00	0.68	0.00	0.00
11.00	0.89	0.01	0.19
12.00	1.65	0.18	**4.06**
13.00	2.55	0.59	**3.59**
14.00	2.76	0.71	1.72
15.00	2.89	0.79	1.23
16.00	2.99	0.85	0.98
17.00	3.08	0.91	0.84
18.00	3.15	0.95	0.69
19.00	3.20	0.99	0.61
20.00	3.26	1.02	0.58
21.00	3.31	1.05	0.54
22.00	3.36	1.08	0.51
23.00	3.40	1.11	0.47
24.00	**3.44**	**1.14**	0.43
25.00	3.44	1.14	0.00
26.00	3.44	1.14	0.00
27.00	3.44	1.14	0.00
28.00	3.44	1.14	0.00
29.00	3.44	1.14	0.00
30.00	3.44	1.14	0.00
31.00	3.44	1.14	0.00
32.00	3.44	1.14	0.00
33.00	3.44	1.14	0.00
34.00	3.44	1.14	0.00
35.00	3.44	1.14	0.00
36.00	3.44	1.14	0.00
37.00	3.44	1.14	0.00
38.00	3.44	1.14	0.00
39.00	3.44	1.14	0.00
40.00	3.44	1.14	0.00
41.00	3.44	1.14	0.00
42.00	3.44	1.14	0.00
43.00	3.44	1.14	0.00
44.00	3.44	1.14	0.00
45.00	3.44	1.14	0.00
46.00	3.44	1.14	0.00
47.00	3.44	1.14	0.00
48.00	3.44	1.14	0.00
49.00	3.44	1.14	0.00
50.00	3.44	1.14	0.00
51.00	3.44	1.14	0.00
52.00	3.44	1.14	0.00
53.00	3.44	1.14	0.00
54.00	3.44	1.14	0.00
55.00	3.44	1.14	0.00
56.00	3.44	1.14	0.00
57.00	3.44	1.14	0.00
58.00	3.44	1.14	0.00
59.00	3.44	1.14	0.00
60.00	3.44	1.14	0.00
61.00	3.44	1.14	0.00
62.00	3.44	1.14	0.00
63.00	3.44	1.14	0.00
64.00	3.44	1.14	0.00
65.00	3.44	1.14	0.00
66.00	3.44	1.14	0.00
67.00	3.44	1.14	0.00
68.00	3.44	1.14	0.00
69.00	3.44	1.14	0.00
70.00	3.44	1.14	0.00
71.00	3.44	1.14	0.00
72.00	3.44	1.14	0.00

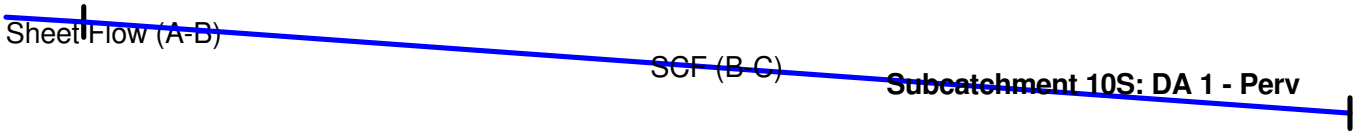
Summary for Subcatchment 10S: DA 1 - Perv

Runoff = 8.62 cfs @ 12.34 hrs, Volume= 45,754 cf, Depth= 1.14"
Routed to Link 11L : DA 1

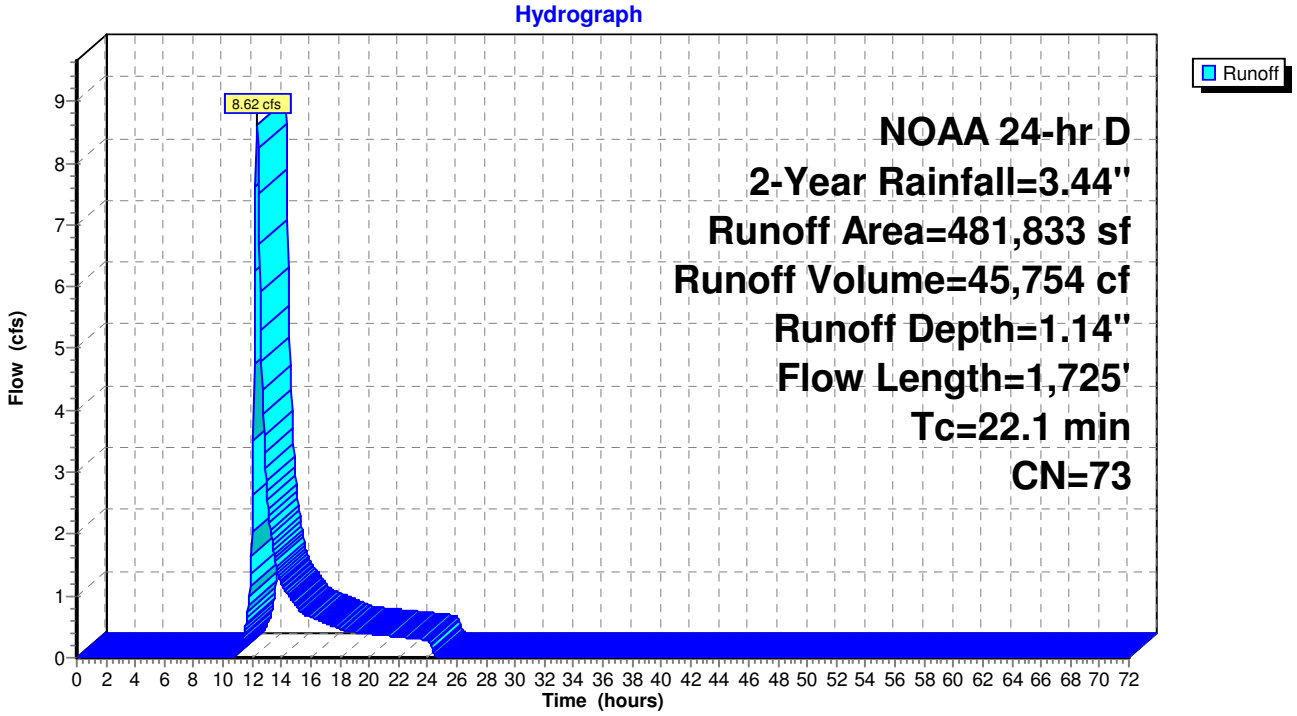
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
197,386	77	Woods, Good, HSG D
284,447	70	Woods, Good, HSG C
481,833	73	Weighted Average
481,833		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	100	0.0450	0.11		**Sheet Flow, Sheet Flow (A-B)** Woods: Light underbrush n= 0.400 P2= 3.47"
7.2	1,625	0.0540	3.74		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
22.1	1,725	Total			



Subcatchment 10S: DA 1 - Perv



Hydrograph for Subcatchment 10S: DA 1 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.18	0.00	0.00
5.00	0.24	0.00	0.00
6.00	0.29	0.00	0.00
7.00	0.36	0.00	0.00
8.00	0.45	0.00	0.00
9.00	0.55	0.00	0.00
10.00	0.68	0.00	0.00
11.00	0.89	0.01	0.10
12.00	1.65	0.18	**2.05**
13.00	2.55	0.59	**2.70**
14.00	2.76	0.71	1.19
15.00	2.89	0.79	0.85
16.00	2.99	0.85	0.66
17.00	3.08	0.91	0.57
18.00	3.15	0.95	0.47
19.00	3.20	0.99	0.41
20.00	3.26	1.02	0.39
21.00	3.31	1.05	0.36
22.00	3.36	1.08	0.34
23.00	3.40	1.11	0.31
24.00	**3.44**	**1.14**	0.29
25.00	3.44	1.14	0.00
26.00	3.44	1.14	0.00
27.00	3.44	1.14	0.00
28.00	3.44	1.14	0.00
29.00	3.44	1.14	0.00
30.00	3.44	1.14	0.00
31.00	3.44	1.14	0.00
32.00	3.44	1.14	0.00
33.00	3.44	1.14	0.00
34.00	3.44	1.14	0.00
35.00	3.44	1.14	0.00
36.00	3.44	1.14	0.00
37.00	3.44	1.14	0.00
38.00	3.44	1.14	0.00
39.00	3.44	1.14	0.00
40.00	3.44	1.14	0.00
41.00	3.44	1.14	0.00
42.00	3.44	1.14	0.00
43.00	3.44	1.14	0.00
44.00	3.44	1.14	0.00
45.00	3.44	1.14	0.00
46.00	3.44	1.14	0.00
47.00	3.44	1.14	0.00
48.00	3.44	1.14	0.00
49.00	3.44	1.14	0.00
50.00	3.44	1.14	0.00
51.00	3.44	1.14	0.00
52.00	3.44	1.14	0.00
53.00	3.44	1.14	0.00
54.00	3.44	1.14	0.00
55.00	3.44	1.14	0.00
56.00	3.44	1.14	0.00
57.00	3.44	1.14	0.00
58.00	3.44	1.14	0.00
59.00	3.44	1.14	0.00
60.00	3.44	1.14	0.00
61.00	3.44	1.14	0.00
62.00	3.44	1.14	0.00
63.00	3.44	1.14	0.00
64.00	3.44	1.14	0.00
65.00	3.44	1.14	0.00
66.00	3.44	1.14	0.00
67.00	3.44	1.14	0.00
68.00	3.44	1.14	0.00
69.00	3.44	1.14	0.00
70.00	3.44	1.14	0.00
71.00	3.44	1.14	0.00
72.00	3.44	1.14	0.00

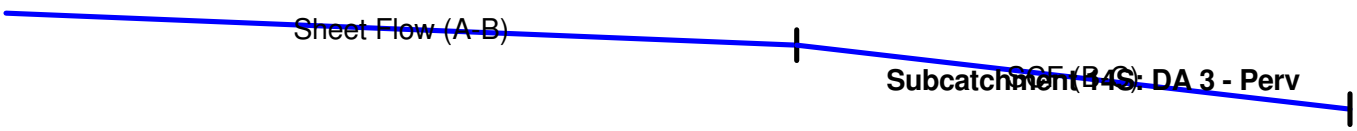
Summary for Subcatchment 14S: DA 3 - Perv

Runoff = 0.13 cfs @ 12.26 hrs, Volume= 627 cf, Depth= 0.97"
Routed to Link 13L : DA 3

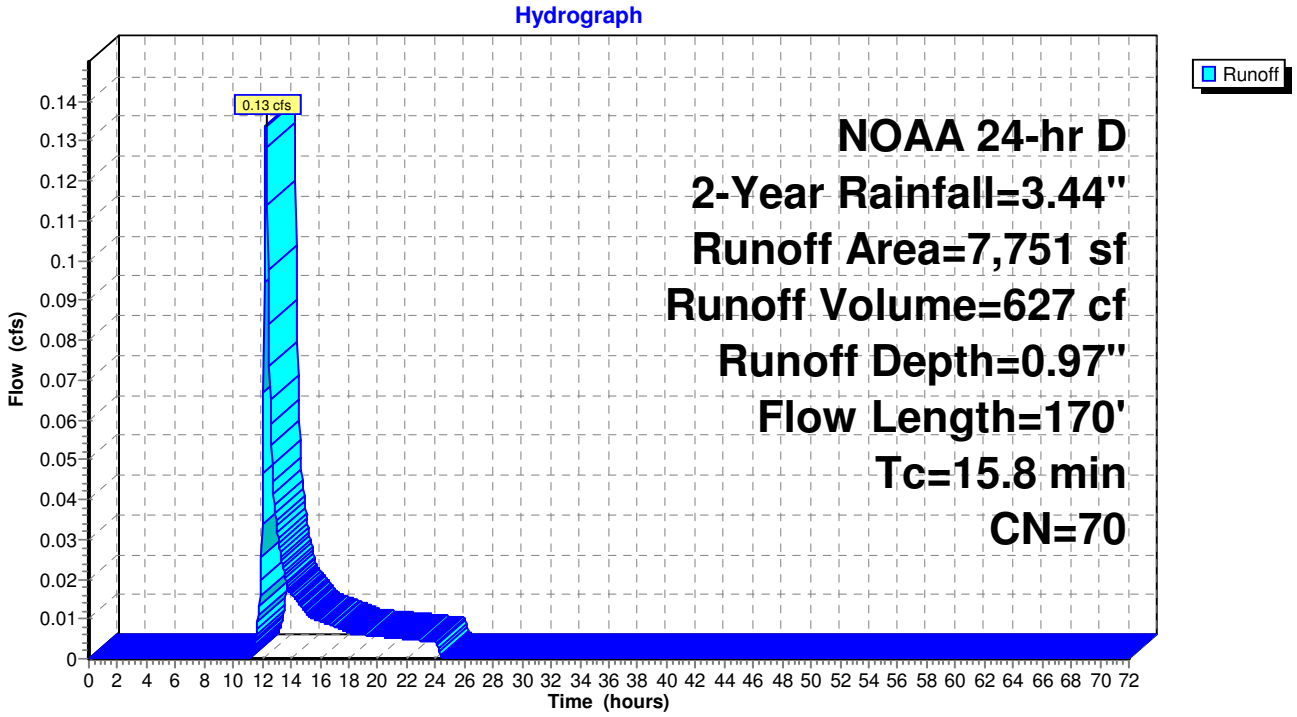
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
7,751	70	Woods, Good, HSG C
7,751		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0400	0.11		**Sheet Flow, Sheet Flow (A-B)** Woods: Light underbrush n= 0.400 P2= 3.47"
0.2	70	0.1150	5.46		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
15.8	170	Total			



Subcatchment 14S: DA 3 - Perv



Hydrograph for Subcatchment 14S: DA 3 - Perv

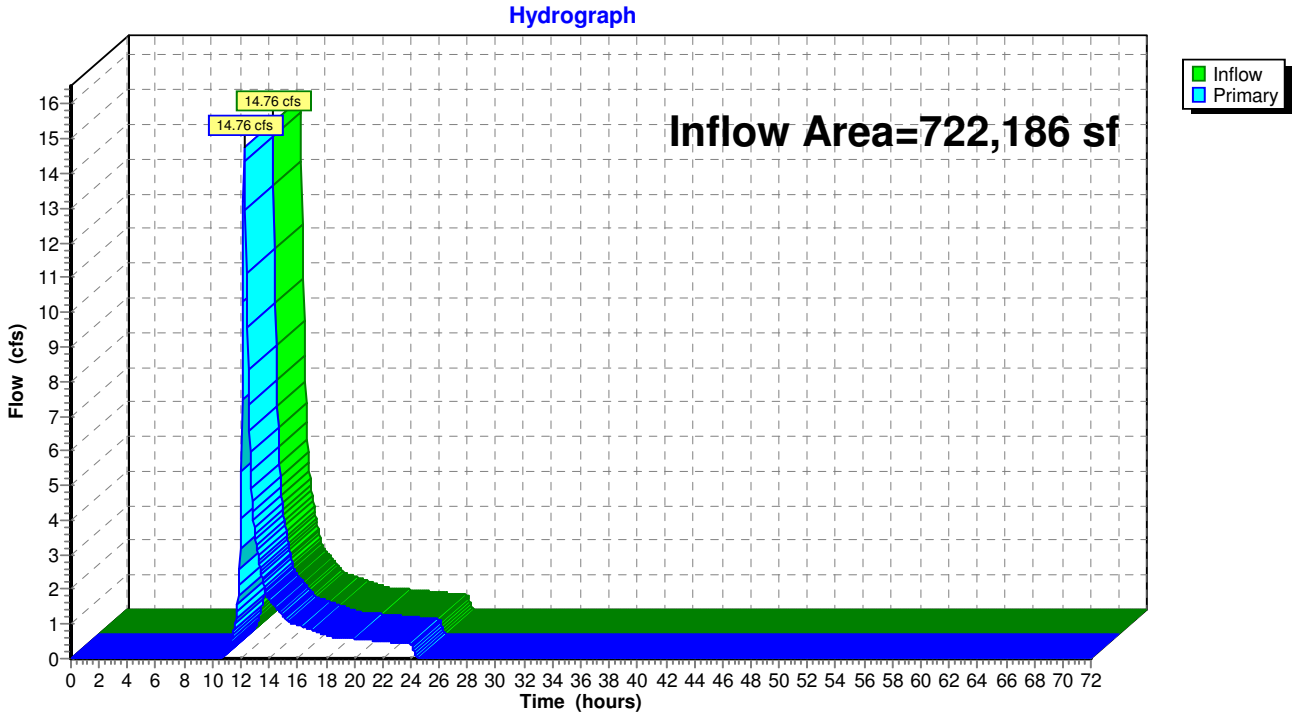
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.18	0.00	0.00
5.00	0.24	0.00	0.00
6.00	0.29	0.00	0.00
7.00	0.36	0.00	0.00
8.00	0.45	0.00	0.00
9.00	0.55	0.00	0.00
10.00	0.68	0.00	0.00
11.00	0.89	0.00	0.00
12.00	1.65	0.12	**0.03**
13.00	2.55	0.48	**0.03**
14.00	2.76	0.58	0.02
15.00	2.89	0.66	0.01
16.00	2.99	0.71	0.01
17.00	3.08	0.76	0.01
18.00	3.15	0.80	0.01
19.00	3.20	0.83	0.01
20.00	3.26	0.86	0.01
21.00	3.31	0.89	0.01
22.00	3.36	0.92	0.00
23.00	3.40	0.95	0.00
24.00	**3.44**	**0.97**	0.00
25.00	3.44	0.97	0.00
26.00	3.44	0.97	0.00
27.00	3.44	0.97	0.00
28.00	3.44	0.97	0.00
29.00	3.44	0.97	0.00
30.00	3.44	0.97	0.00
31.00	3.44	0.97	0.00
32.00	3.44	0.97	0.00
33.00	3.44	0.97	0.00
34.00	3.44	0.97	0.00
35.00	3.44	0.97	0.00
36.00	3.44	0.97	0.00
37.00	3.44	0.97	0.00
38.00	3.44	0.97	0.00
39.00	3.44	0.97	0.00
40.00	3.44	0.97	0.00
41.00	3.44	0.97	0.00
42.00	3.44	0.97	0.00
43.00	3.44	0.97	0.00
44.00	3.44	0.97	0.00
45.00	3.44	0.97	0.00
46.00	3.44	0.97	0.00
47.00	3.44	0.97	0.00
48.00	3.44	0.97	0.00
49.00	3.44	0.97	0.00
50.00	3.44	0.97	0.00
51.00	3.44	0.97	0.00
52.00	3.44	0.97	0.00
53.00	3.44	0.97	0.00
54.00	3.44	0.97	0.00
55.00	3.44	0.97	0.00
56.00	3.44	0.97	0.00
57.00	3.44	0.97	0.00
58.00	3.44	0.97	0.00
59.00	3.44	0.97	0.00
60.00	3.44	0.97	0.00
61.00	3.44	0.97	0.00
62.00	3.44	0.97	0.00
63.00	3.44	0.97	0.00
64.00	3.44	0.97	0.00
65.00	3.44	0.97	0.00
66.00	3.44	0.97	0.00
67.00	3.44	0.97	0.00
68.00	3.44	0.97	0.00
69.00	3.44	0.97	0.00
70.00	3.44	0.97	0.00
71.00	3.44	0.97	0.00
72.00	3.44	0.97	0.00

Summary for Link 2L: DA 2

Inflow Area = 722,186 sf, 0.00% Impervious, Inflow Depth = 1.14" for 2-Year event
Inflow = 14.76 cfs @ 12.27 hrs, Volume= 68,577 cf
Primary = 14.76 cfs @ 12.27 hrs, Volume= 68,577 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Total

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 2L: DA 2



Hydrograph for Link 2L: DA 2

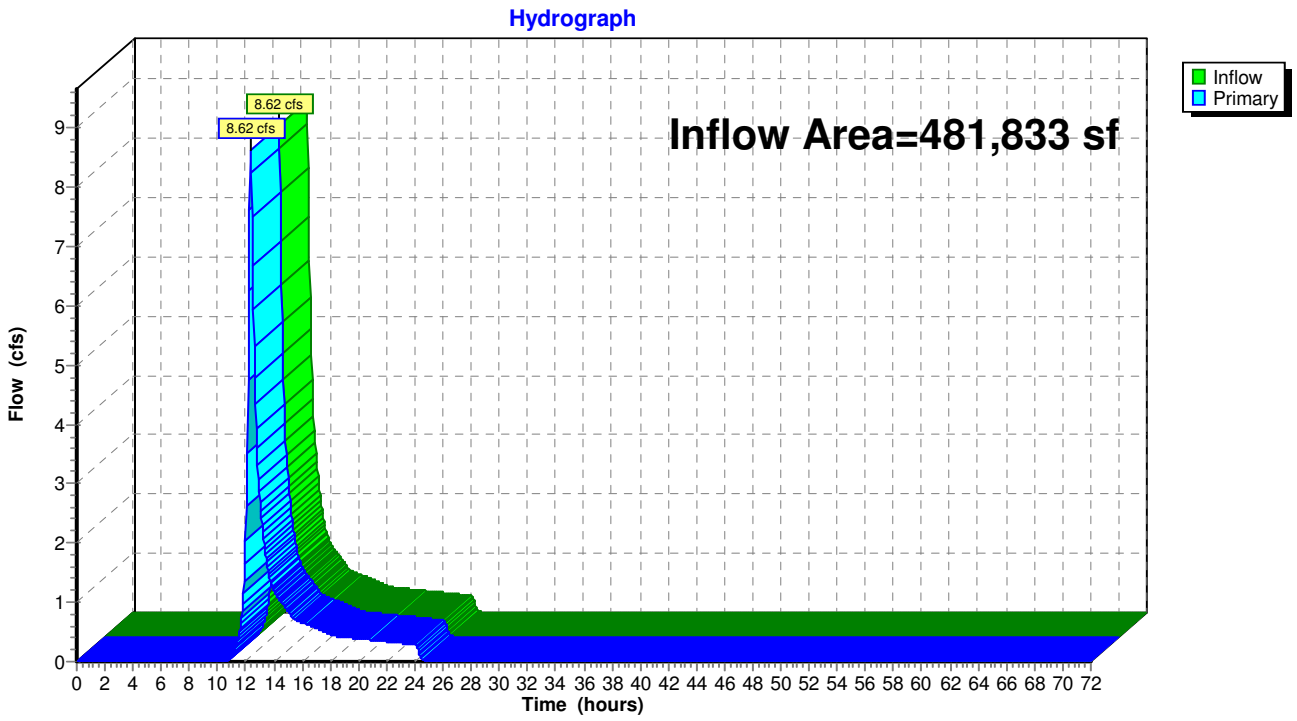
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.19	0.00	0.19	62.00	0.00	0.00	0.00
12.00	**4.06**	0.00	**4.06**	63.00	0.00	0.00	0.00
13.00	**3.59**	0.00	**3.59**	64.00	0.00	0.00	0.00
14.00	1.72	0.00	1.72	65.00	0.00	0.00	0.00
15.00	1.23	0.00	1.23	66.00	0.00	0.00	0.00
16.00	0.98	0.00	0.98	67.00	0.00	0.00	0.00
17.00	0.84	0.00	0.84	68.00	0.00	0.00	0.00
18.00	0.69	0.00	0.69	69.00	0.00	0.00	0.00
19.00	0.61	0.00	0.61	70.00	0.00	0.00	0.00
20.00	0.58	0.00	0.58	71.00	0.00	0.00	0.00
21.00	0.54	0.00	0.54	72.00	0.00	0.00	0.00
22.00	0.51	0.00	0.51				
23.00	0.47	0.00	0.47				
24.00	0.43	0.00	0.43				
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				

Summary for Link 11L: DA 1

Inflow Area = 481,833 sf, 0.00% Impervious, Inflow Depth = 1.14" for 2-Year event
Inflow = 8.62 cfs @ 12.34 hrs, Volume= 45,754 cf
Primary = 8.62 cfs @ 12.34 hrs, Volume= 45,754 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Total

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 11L: DA 1



Hydrograph for Link 11L: DA 1

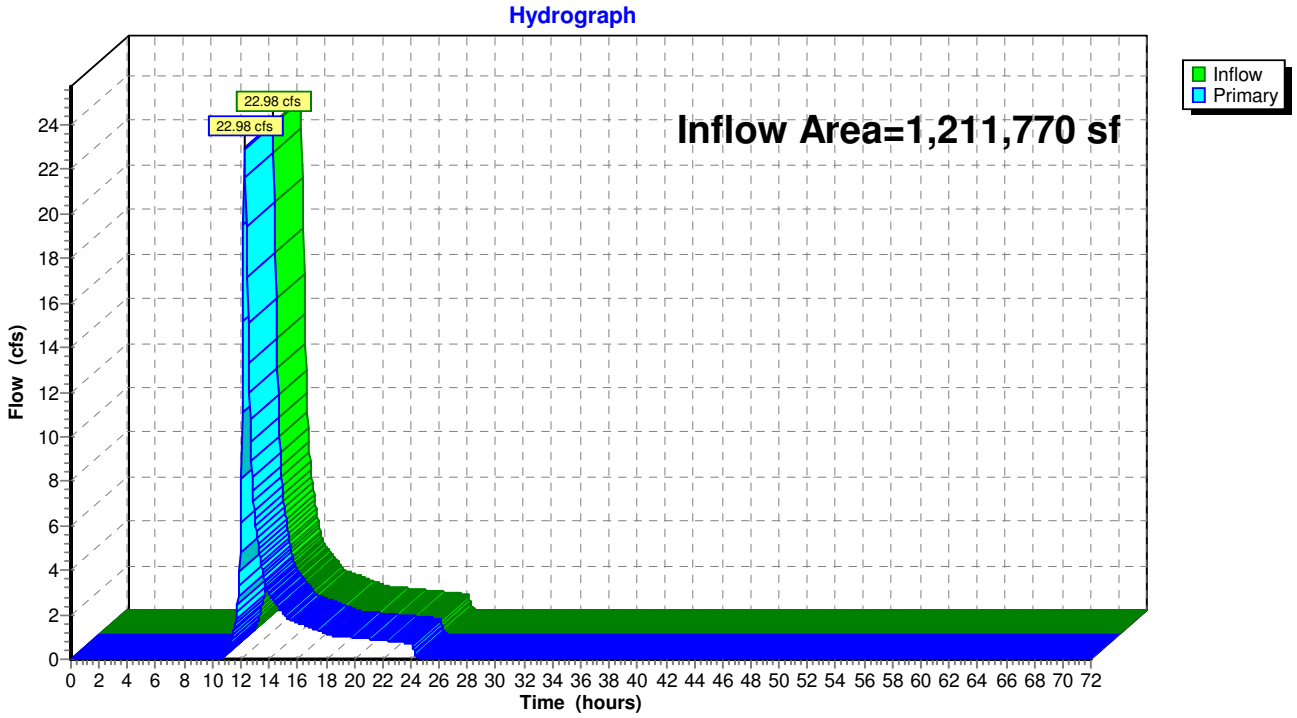
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.10	0.00	0.10	62.00	0.00	0.00	0.00
12.00	**2.05**	0.00	**2.05**	63.00	0.00	0.00	0.00
13.00	**2.70**	0.00	**2.70**	64.00	0.00	0.00	0.00
14.00	1.19	0.00	1.19	65.00	0.00	0.00	0.00
15.00	0.85	0.00	0.85	66.00	0.00	0.00	0.00
16.00	0.66	0.00	0.66	67.00	0.00	0.00	0.00
17.00	0.57	0.00	0.57	68.00	0.00	0.00	0.00
18.00	0.47	0.00	0.47	69.00	0.00	0.00	0.00
19.00	0.41	0.00	0.41	70.00	0.00	0.00	0.00
20.00	0.39	0.00	0.39	71.00	0.00	0.00	0.00
21.00	0.36	0.00	0.36	72.00	0.00	0.00	0.00
22.00	0.34	0.00	0.34				
23.00	0.31	0.00	0.31				
24.00	0.29	0.00	0.29				
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				

Summary for Link 12L: Total

Inflow Area = 1,211,770 sf, 0.00% Impervious, Inflow Depth = 1.14" for 2-Year event
Inflow = 22.98 cfs @ 12.29 hrs, Volume= 114,958 cf
Primary = 22.98 cfs @ 12.29 hrs, Volume= 114,958 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 12L: Total



Hydrograph for Link 12L: Total

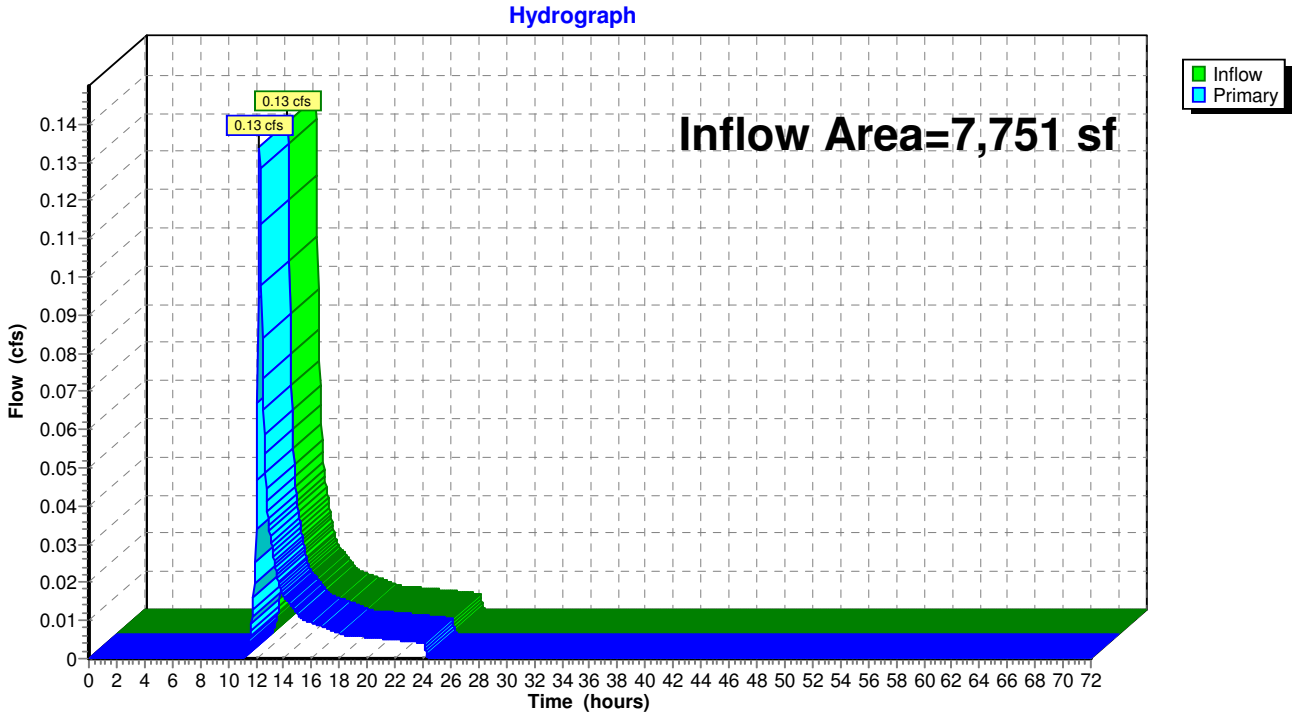
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.29	0.00	0.29	62.00	0.00	0.00	0.00
12.00	**6.14**	0.00	**6.14**	63.00	0.00	0.00	0.00
13.00	**6.32**	0.00	**6.32**	64.00	0.00	0.00	0.00
14.00	2.92	0.00	2.92	65.00	0.00	0.00	0.00
15.00	2.09	0.00	2.09	66.00	0.00	0.00	0.00
16.00	1.64	0.00	1.64	67.00	0.00	0.00	0.00
17.00	1.41	0.00	1.41	68.00	0.00	0.00	0.00
18.00	1.16	0.00	1.16	69.00	0.00	0.00	0.00
19.00	1.03	0.00	1.03	70.00	0.00	0.00	0.00
20.00	0.97	0.00	0.97	71.00	0.00	0.00	0.00
21.00	0.91	0.00	0.91	72.00	0.00	0.00	0.00
22.00	0.85	0.00	0.85				
23.00	0.79	0.00	0.79				
24.00	0.72	0.00	0.72				
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				

Summary for Link 13L: DA 3

Inflow Area = 7,751 sf, 0.00% Impervious, Inflow Depth = 0.97" for 2-Year event
Inflow = 0.13 cfs @ 12.26 hrs, Volume= 627 cf
Primary = 0.13 cfs @ 12.26 hrs, Volume= 627 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Total

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 13L: DA 3



Hydrograph for Link 13L: DA 3

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	**0.03**	0.00	**0.03**	63.00	0.00	0.00	0.00
13.00	**0.03**	0.00	**0.03**	64.00	0.00	0.00	0.00
14.00	0.02	0.00	0.02	65.00	0.00	0.00	0.00
15.00	0.01	0.00	0.01	66.00	0.00	0.00	0.00
16.00	0.01	0.00	0.01	67.00	0.00	0.00	0.00
17.00	0.01	0.00	0.01	68.00	0.00	0.00	0.00
18.00	0.01	0.00	0.01	69.00	0.00	0.00	0.00
19.00	0.01	0.00	0.01	70.00	0.00	0.00	0.00
20.00	0.01	0.00	0.01	71.00	0.00	0.00	0.00
21.00	0.01	0.00	0.01	72.00	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				

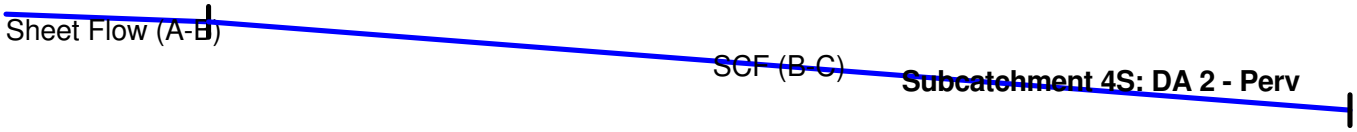
Summary for Subcatchment 4S: DA 2 - Perv

Runoff = 33.11 cfs @ 12.26 hrs, Volume= 147,700 cf, Depth= 2.45"
Routed to Link 2L : DA 2

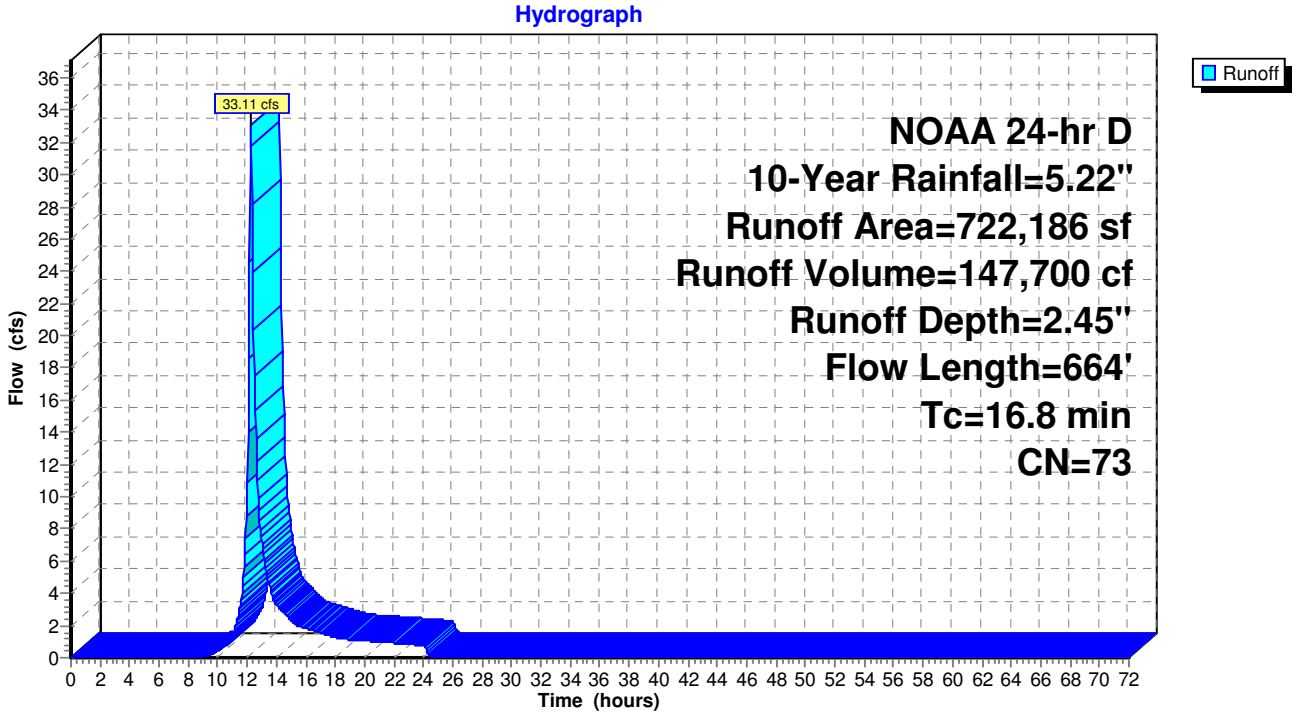
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
399,842	70	Woods, Good, HSG C
36,590	74	>75% Grass cover, Good, HSG C
257,004	77	Woods, Good, HSG D
28,750	80	>75% Grass cover, Good, HSG D
722,186	73	Weighted Average
722,186		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	100	0.0450	0.11		**Sheet Flow, Sheet Flow (A-B)** Woods: Light underbrush n= 0.400 P2= 3.47"
1.9	564	0.0920	4.88		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
16.8	664	Total			



Subcatchment 4S: DA 2 - Perv



Hydrograph for Subcatchment 4S: DA 2 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.13	0.00	0.00
3.00	0.20	0.00	0.00
4.00	0.27	0.00	0.00
5.00	0.36	0.00	0.00
6.00	0.45	0.00	0.00
7.00	0.55	0.00	0.00
8.00	0.68	0.00	0.00
9.00	0.83	0.00	0.07
10.00	1.03	0.02	0.44
11.00	1.36	0.09	1.44
12.00	2.50	0.57	**10.92**
13.00	3.86	1.43	**7.11**
14.00	4.19	1.66	3.29
15.00	4.39	1.81	2.32
16.00	4.54	1.93	1.83
17.00	4.67	2.02	1.56
18.00	4.77	2.10	1.27
19.00	4.86	2.17	1.13
20.00	4.95	2.24	1.06
21.00	5.02	2.30	0.99
22.00	5.09	2.35	0.92
23.00	5.16	2.41	0.85
24.00	**5.22**	**2.45**	0.77
25.00	5.22	2.45	0.00
26.00	5.22	2.45	0.00
27.00	5.22	2.45	0.00
28.00	5.22	2.45	0.00
29.00	5.22	2.45	0.00
30.00	5.22	2.45	0.00
31.00	5.22	2.45	0.00
32.00	5.22	2.45	0.00
33.00	5.22	2.45	0.00
34.00	5.22	2.45	0.00
35.00	5.22	2.45	0.00
36.00	5.22	2.45	0.00
37.00	5.22	2.45	0.00
38.00	5.22	2.45	0.00
39.00	5.22	2.45	0.00
40.00	5.22	2.45	0.00
41.00	5.22	2.45	0.00
42.00	5.22	2.45	0.00
43.00	5.22	2.45	0.00
44.00	5.22	2.45	0.00
45.00	5.22	2.45	0.00
46.00	5.22	2.45	0.00
47.00	5.22	2.45	0.00
48.00	5.22	2.45	0.00
49.00	5.22	2.45	0.00
50.00	5.22	2.45	0.00
51.00	5.22	2.45	0.00
52.00	5.22	2.45	0.00
53.00	5.22	2.45	0.00
54.00	5.22	2.45	0.00
55.00	5.22	2.45	0.00
56.00	5.22	2.45	0.00
57.00	5.22	2.45	0.00
58.00	5.22	2.45	0.00
59.00	5.22	2.45	0.00
60.00	5.22	2.45	0.00
61.00	5.22	2.45	0.00
62.00	5.22	2.45	0.00
63.00	5.22	2.45	0.00
64.00	5.22	2.45	0.00
65.00	5.22	2.45	0.00
66.00	5.22	2.45	0.00
67.00	5.22	2.45	0.00
68.00	5.22	2.45	0.00
69.00	5.22	2.45	0.00
70.00	5.22	2.45	0.00
71.00	5.22	2.45	0.00
72.00	5.22	2.45	0.00

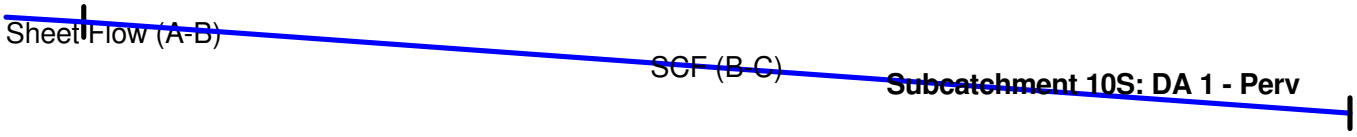
Summary for Subcatchment 10S: DA 1 - Perv

Runoff = 19.40 cfs @ 12.33 hrs, Volume= 98,544 cf, Depth= 2.45"
Routed to Link 11L : DA 1

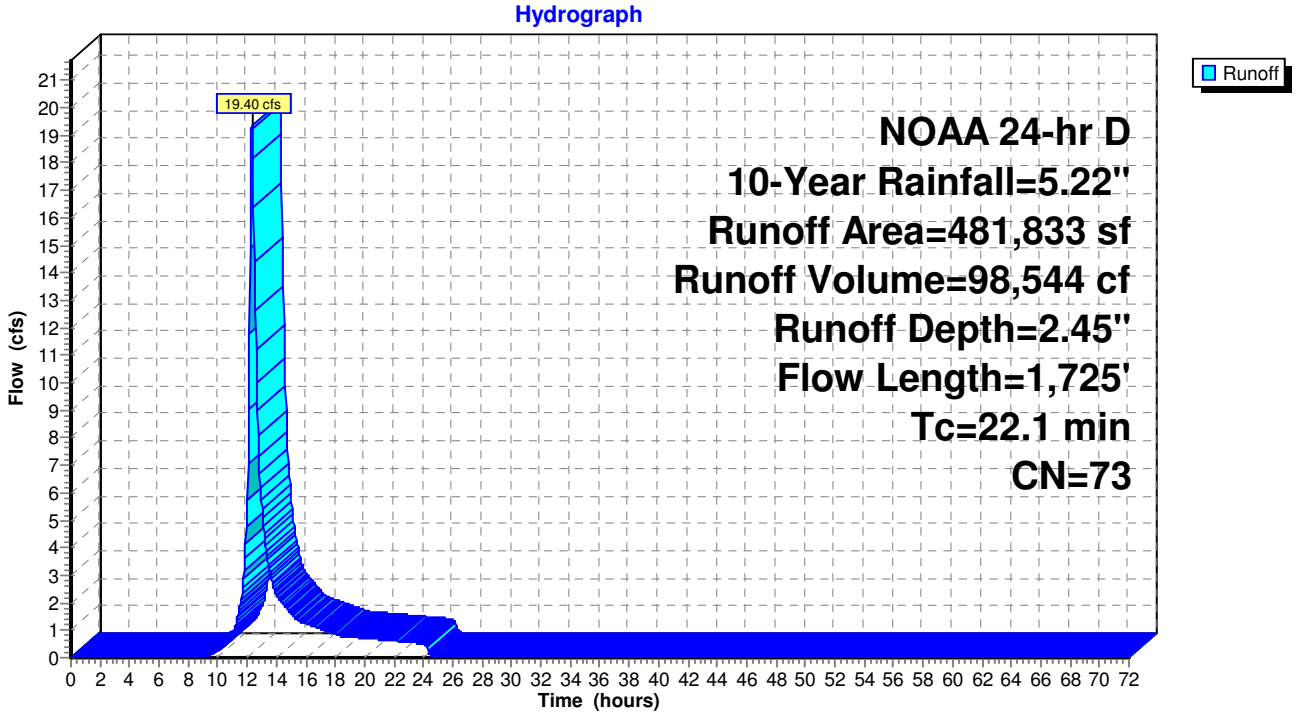
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
197,386	77	Woods, Good, HSG D
284,447	70	Woods, Good, HSG C
481,833	73	Weighted Average
481,833		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	100	0.0450	0.11		**Sheet Flow, Sheet Flow (A-B)** Woods: Light underbrush n= 0.400 P2= 3.47"
7.2	1,625	0.0540	3.74		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
22.1	1,725	Total			



Subcatchment 10S: DA 1 - Perv



Hydrograph for Subcatchment 10S: DA 1 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.13	0.00	0.00
3.00	0.20	0.00	0.00
4.00	0.27	0.00	0.00
5.00	0.36	0.00	0.00
6.00	0.45	0.00	0.00
7.00	0.55	0.00	0.00
8.00	0.68	0.00	0.00
9.00	0.83	0.00	0.03
10.00	1.03	0.02	0.27
11.00	1.36	0.09	0.86
12.00	2.50	0.57	**5.73**
13.00	3.86	1.43	**5.40**
14.00	4.19	1.66	2.28
15.00	4.39	1.81	1.60
16.00	4.54	1.93	1.24
17.00	4.67	2.02	1.05
18.00	4.77	2.10	0.86
19.00	4.86	2.17	0.76
20.00	4.95	2.24	0.71
21.00	5.02	2.30	0.67
22.00	5.09	2.35	0.62
23.00	5.16	2.41	0.57
24.00	**5.22**	**2.45**	0.52
25.00	5.22	2.45	0.00
26.00	5.22	2.45	0.00
27.00	5.22	2.45	0.00
28.00	5.22	2.45	0.00
29.00	5.22	2.45	0.00
30.00	5.22	2.45	0.00
31.00	5.22	2.45	0.00
32.00	5.22	2.45	0.00
33.00	5.22	2.45	0.00
34.00	5.22	2.45	0.00
35.00	5.22	2.45	0.00
36.00	5.22	2.45	0.00
37.00	5.22	2.45	0.00
38.00	5.22	2.45	0.00
39.00	5.22	2.45	0.00
40.00	5.22	2.45	0.00
41.00	5.22	2.45	0.00
42.00	5.22	2.45	0.00
43.00	5.22	2.45	0.00
44.00	5.22	2.45	0.00
45.00	5.22	2.45	0.00
46.00	5.22	2.45	0.00
47.00	5.22	2.45	0.00
48.00	5.22	2.45	0.00
49.00	5.22	2.45	0.00
50.00	5.22	2.45	0.00
51.00	5.22	2.45	0.00
52.00	5.22	2.45	0.00
53.00	5.22	2.45	0.00
54.00	5.22	2.45	0.00
55.00	5.22	2.45	0.00
56.00	5.22	2.45	0.00
57.00	5.22	2.45	0.00
58.00	5.22	2.45	0.00
59.00	5.22	2.45	0.00
60.00	5.22	2.45	0.00
61.00	5.22	2.45	0.00
62.00	5.22	2.45	0.00
63.00	5.22	2.45	0.00
64.00	5.22	2.45	0.00
65.00	5.22	2.45	0.00
66.00	5.22	2.45	0.00
67.00	5.22	2.45	0.00
68.00	5.22	2.45	0.00
69.00	5.22	2.45	0.00
70.00	5.22	2.45	0.00
71.00	5.22	2.45	0.00
72.00	5.22	2.45	0.00

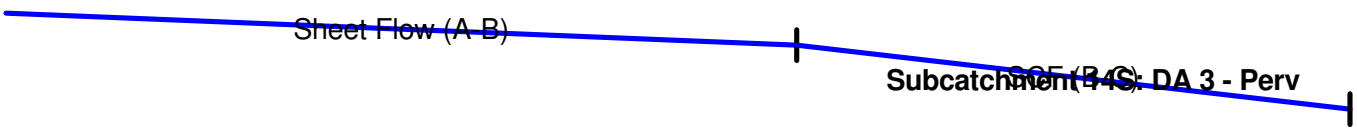
Summary for Subcatchment 14S: DA 3 - Perv

Runoff = 0.32 cfs @ 12.25 hrs, Volume= 1,422 cf, Depth= 2.20"
Routed to Link 13L : DA 3

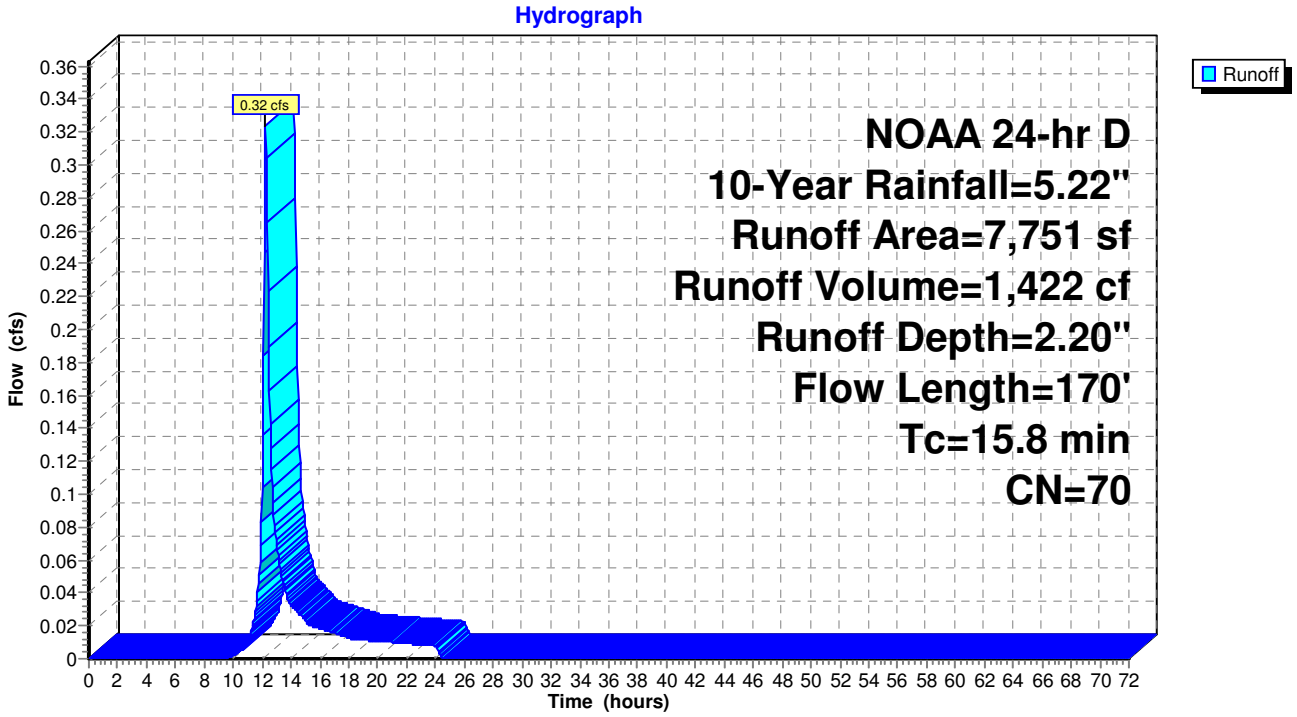
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
7,751	70	Woods, Good, HSG C
7,751		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0400	0.11		**Sheet Flow, Sheet Flow (A-B)** Woods: Light underbrush n= 0.400 P2= 3.47"
0.2	70	0.1150	5.46		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
15.8	170	Total			



Subcatchment 14S: DA 3 - Perv



Hydrograph for Subcatchment 14S: DA 3 - Perv

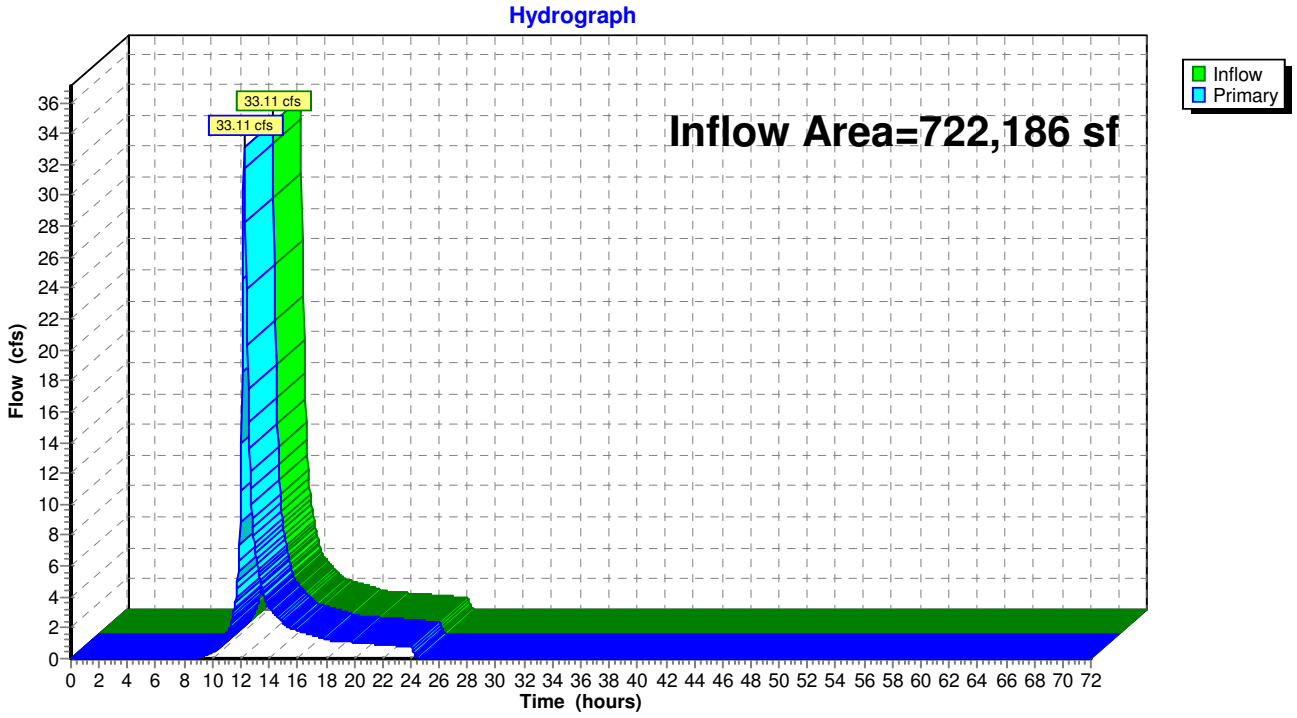
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.13	0.00	0.00
3.00	0.20	0.00	0.00
4.00	0.27	0.00	0.00
5.00	0.36	0.00	0.00
6.00	0.45	0.00	0.00
7.00	0.55	0.00	0.00
8.00	0.68	0.00	0.00
9.00	0.83	0.00	0.00
10.00	1.03	0.01	0.00
11.00	1.36	0.05	0.01
12.00	2.50	0.46	**0.10**
13.00	3.86	1.24	**0.07**
14.00	4.19	1.45	0.03
15.00	4.39	1.60	0.02
16.00	4.54	1.70	0.02
17.00	4.67	1.80	0.02
18.00	4.77	1.87	0.01
19.00	4.86	1.94	0.01
20.00	4.95	2.00	0.01
21.00	5.02	2.05	0.01
22.00	5.09	2.11	0.01
23.00	5.16	2.16	0.01
24.00	**5.22**	**2.20**	0.01
25.00	5.22	2.20	0.00
26.00	5.22	2.20	0.00
27.00	5.22	2.20	0.00
28.00	5.22	2.20	0.00
29.00	5.22	2.20	0.00
30.00	5.22	2.20	0.00
31.00	5.22	2.20	0.00
32.00	5.22	2.20	0.00
33.00	5.22	2.20	0.00
34.00	5.22	2.20	0.00
35.00	5.22	2.20	0.00
36.00	5.22	2.20	0.00
37.00	5.22	2.20	0.00
38.00	5.22	2.20	0.00
39.00	5.22	2.20	0.00
40.00	5.22	2.20	0.00
41.00	5.22	2.20	0.00
42.00	5.22	2.20	0.00
43.00	5.22	2.20	0.00
44.00	5.22	2.20	0.00
45.00	5.22	2.20	0.00
46.00	5.22	2.20	0.00
47.00	5.22	2.20	0.00
48.00	5.22	2.20	0.00
49.00	5.22	2.20	0.00
50.00	5.22	2.20	0.00
51.00	5.22	2.20	0.00
52.00	5.22	2.20	0.00
53.00	5.22	2.20	0.00
54.00	5.22	2.20	0.00
55.00	5.22	2.20	0.00
56.00	5.22	2.20	0.00
57.00	5.22	2.20	0.00
58.00	5.22	2.20	0.00
59.00	5.22	2.20	0.00
60.00	5.22	2.20	0.00
61.00	5.22	2.20	0.00
62.00	5.22	2.20	0.00
63.00	5.22	2.20	0.00
64.00	5.22	2.20	0.00
65.00	5.22	2.20	0.00
66.00	5.22	2.20	0.00
67.00	5.22	2.20	0.00
68.00	5.22	2.20	0.00
69.00	5.22	2.20	0.00
70.00	5.22	2.20	0.00
71.00	5.22	2.20	0.00
72.00	5.22	2.20	0.00

Summary for Link 2L: DA 2

Inflow Area = 722,186 sf, 0.00% Impervious, Inflow Depth = 2.45" for 10-Year event
Inflow = 33.11 cfs @ 12.26 hrs, Volume= 147,700 cf
Primary = 33.11 cfs @ 12.26 hrs, Volume= 147,700 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Total

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 2L: DA 2



Hydrograph for Link 2L: DA 2

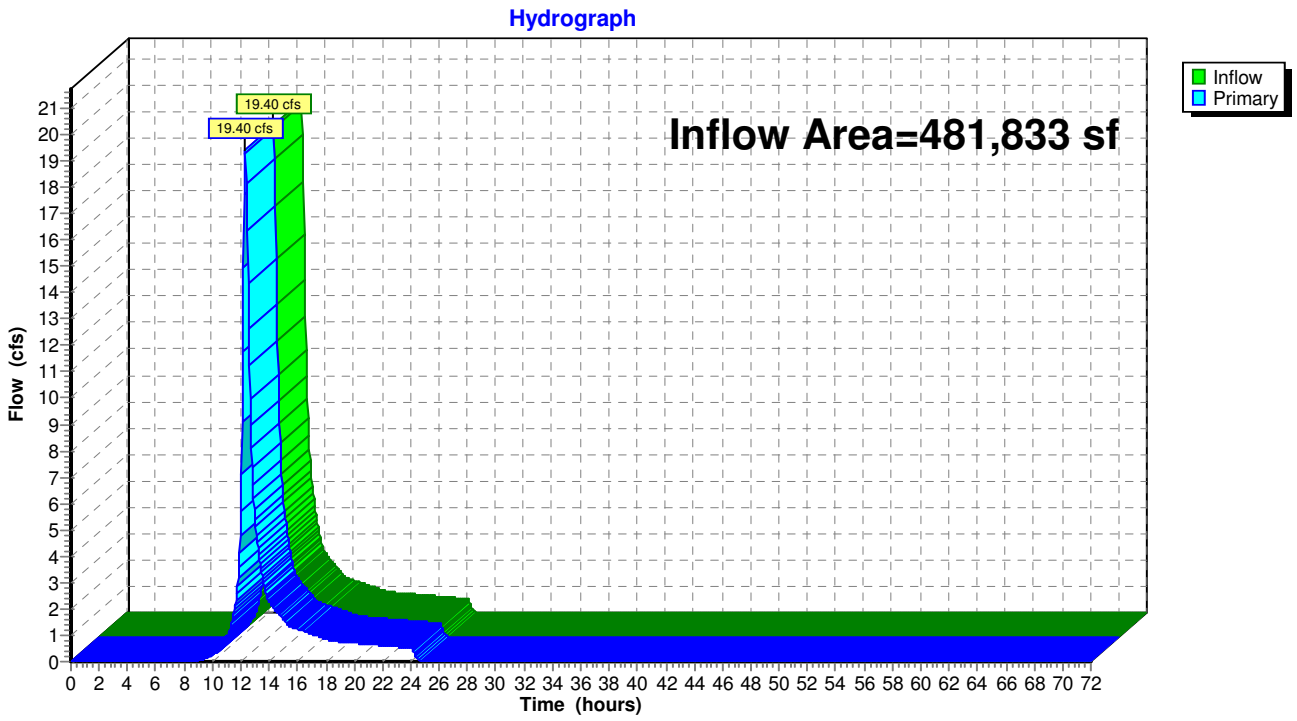
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.07	0.00	0.07	60.00	0.00	0.00	0.00
10.00	0.44	0.00	0.44	61.00	0.00	0.00	0.00
11.00	1.44	0.00	1.44	62.00	0.00	0.00	0.00
12.00	**10.92**	0.00	**10.92**	63.00	0.00	0.00	0.00
13.00	**7.11**	0.00	**7.11**	64.00	0.00	0.00	0.00
14.00	3.29	0.00	3.29	65.00	0.00	0.00	0.00
15.00	2.32	0.00	2.32	66.00	0.00	0.00	0.00
16.00	1.83	0.00	1.83	67.00	0.00	0.00	0.00
17.00	1.56	0.00	1.56	68.00	0.00	0.00	0.00
18.00	1.27	0.00	1.27	69.00	0.00	0.00	0.00
19.00	1.13	0.00	1.13	70.00	0.00	0.00	0.00
20.00	1.06	0.00	1.06	71.00	0.00	0.00	0.00
21.00	0.99	0.00	0.99	72.00	0.00	0.00	0.00
22.00	0.92	0.00	0.92				
23.00	0.85	0.00	0.85				
24.00	0.77	0.00	0.77				
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				

Summary for Link 11L: DA 1

Inflow Area = 481,833 sf, 0.00% Impervious, Inflow Depth = 2.45" for 10-Year event
Inflow = 19.40 cfs @ 12.33 hrs, Volume= 98,544 cf
Primary = 19.40 cfs @ 12.33 hrs, Volume= 98,544 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Total

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 11L: DA 1



Hydrograph for Link 11L: DA 1

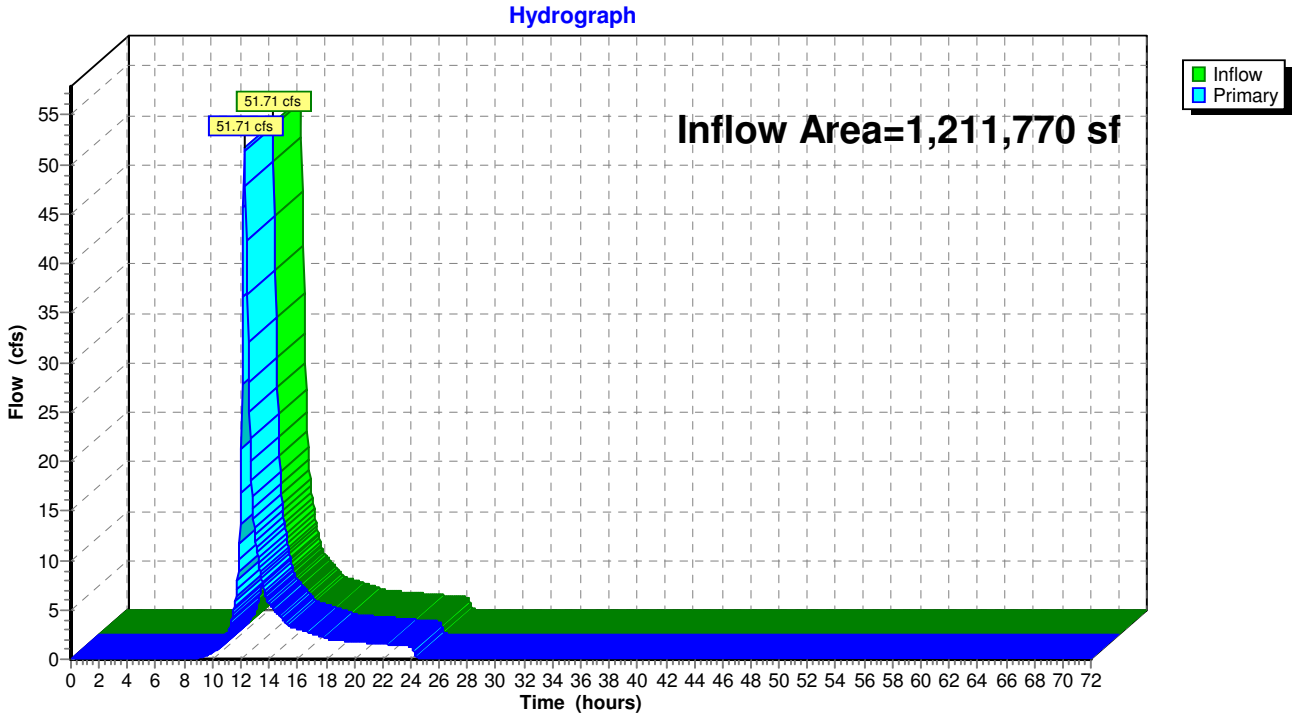
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.03	0.00	0.03	60.00	0.00	0.00	0.00
10.00	0.27	0.00	0.27	61.00	0.00	0.00	0.00
11.00	0.86	0.00	0.86	62.00	0.00	0.00	0.00
12.00	**5.73**	0.00	**5.73**	63.00	0.00	0.00	0.00
13.00	**5.40**	0.00	**5.40**	64.00	0.00	0.00	0.00
14.00	2.28	0.00	2.28	65.00	0.00	0.00	0.00
15.00	1.60	0.00	1.60	66.00	0.00	0.00	0.00
16.00	1.24	0.00	1.24	67.00	0.00	0.00	0.00
17.00	1.05	0.00	1.05	68.00	0.00	0.00	0.00
18.00	0.86	0.00	0.86	69.00	0.00	0.00	0.00
19.00	0.76	0.00	0.76	70.00	0.00	0.00	0.00
20.00	0.71	0.00	0.71	71.00	0.00	0.00	0.00
21.00	0.67	0.00	0.67	72.00	0.00	0.00	0.00
22.00	0.62	0.00	0.62				
23.00	0.57	0.00	0.57				
24.00	0.52	0.00	0.52				
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				

Summary for Link 12L: Total

Inflow Area = 1,211,770 sf, 0.00% Impervious, Inflow Depth = 2.45" for 10-Year event
Inflow = 51.71 cfs @ 12.28 hrs, Volume= 247,666 cf
Primary = 51.71 cfs @ 12.28 hrs, Volume= 247,666 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 12L: Total



Hydrograph for Link 12L: Total

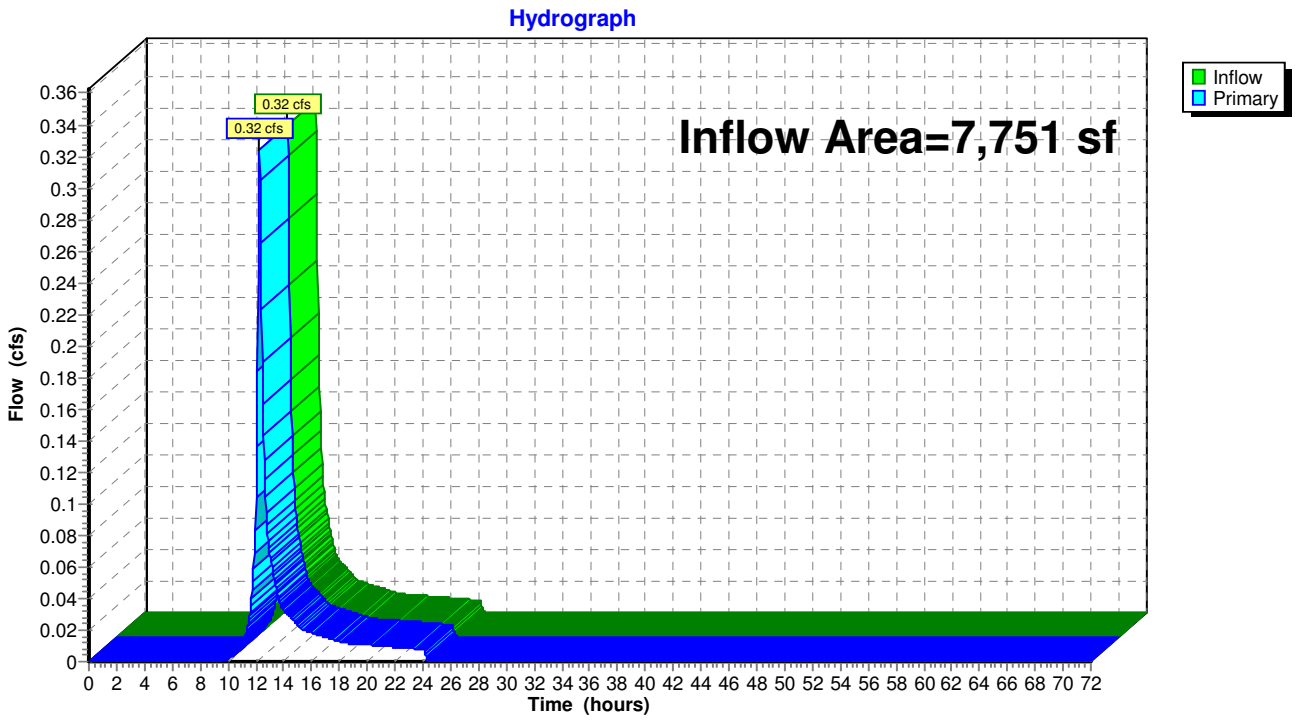
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.10	0.00	0.10	60.00	0.00	0.00	0.00
10.00	0.71	0.00	0.71	61.00	0.00	0.00	0.00
11.00	2.31	0.00	2.31	62.00	0.00	0.00	0.00
12.00	**16.76**	0.00	**16.76**	63.00	0.00	0.00	0.00
13.00	**12.57**	0.00	**12.57**	64.00	0.00	0.00	0.00
14.00	5.61	0.00	5.61	65.00	0.00	0.00	0.00
15.00	3.95	0.00	3.95	66.00	0.00	0.00	0.00
16.00	3.08	0.00	3.08	67.00	0.00	0.00	0.00
17.00	2.62	0.00	2.62	68.00	0.00	0.00	0.00
18.00	2.15	0.00	2.15	69.00	0.00	0.00	0.00
19.00	1.90	0.00	1.90	70.00	0.00	0.00	0.00
20.00	1.79	0.00	1.79	71.00	0.00	0.00	0.00
21.00	1.67	0.00	1.67	72.00	0.00	0.00	0.00
22.00	1.55	0.00	1.55				
23.00	1.43	0.00	1.43				
24.00	1.30	0.00	1.30				
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				

Summary for Link 13L: DA 3

Inflow Area = 7,751 sf, 0.00% Impervious, Inflow Depth = 2.20" for 10-Year event
Inflow = 0.32 cfs @ 12.25 hrs, Volume= 1,422 cf
Primary = 0.32 cfs @ 12.25 hrs, Volume= 1,422 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Total

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 13L: DA 3



Hydrograph for Link 13L: DA 3

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.01	0.00	0.01	62.00	0.00	0.00	0.00
12.00	**0.10**	0.00	**0.10**	63.00	0.00	0.00	0.00
13.00	**0.07**	0.00	**0.07**	64.00	0.00	0.00	0.00
14.00	0.03	0.00	0.03	65.00	0.00	0.00	0.00
15.00	0.02	0.00	0.02	66.00	0.00	0.00	0.00
16.00	0.02	0.00	0.02	67.00	0.00	0.00	0.00
17.00	0.02	0.00	0.02	68.00	0.00	0.00	0.00
18.00	0.01	0.00	0.01	69.00	0.00	0.00	0.00
19.00	0.01	0.00	0.01	70.00	0.00	0.00	0.00
20.00	0.01	0.00	0.01	71.00	0.00	0.00	0.00
21.00	0.01	0.00	0.01	72.00	0.00	0.00	0.00
22.00	0.01	0.00	0.01				
23.00	0.01	0.00	0.01				
24.00	0.01	0.00	0.01				
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				

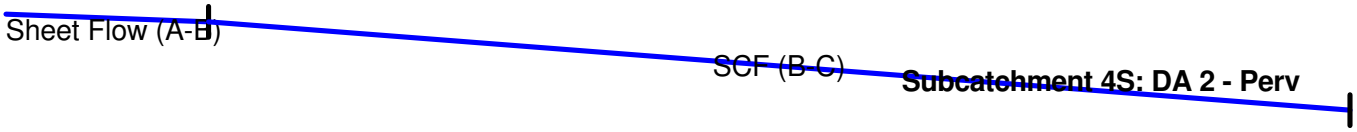
Summary for Subcatchment 4S: DA 2 - Perv

Runoff = 72.79 cfs @ 12.25 hrs, Volume= 324,925 cf, Depth= 5.40"
Routed to Link 2L : DA 2

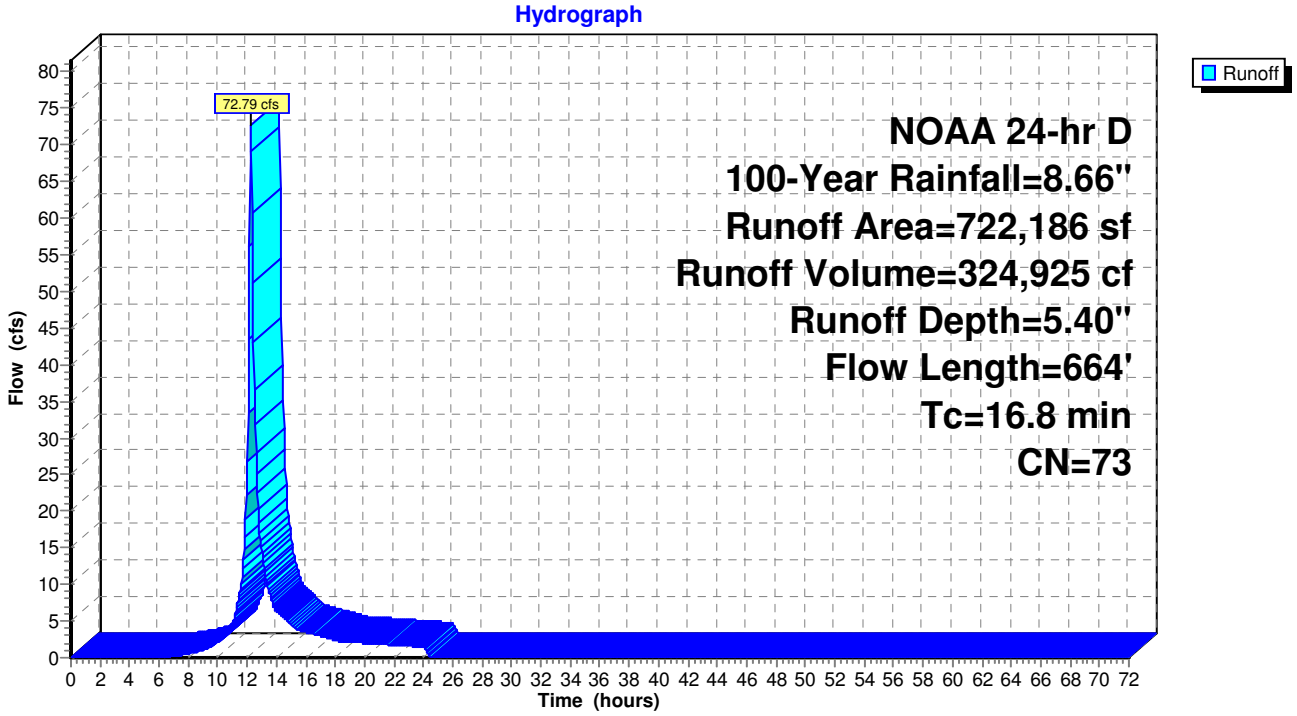
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
399,842	70	Woods, Good, HSG C
36,590	74	>75% Grass cover, Good, HSG C
257,004	77	Woods, Good, HSG D
28,750	80	>75% Grass cover, Good, HSG D
722,186	73	Weighted Average
722,186		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	100	0.0450	0.11		**Sheet Flow, Sheet Flow (A-B)** Woods: Light underbrush n= 0.400 P2= 3.47"
1.9	564	0.0920	4.88		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
16.8	664	Total			



Subcatchment 4S: DA 2 - Perv



Hydrograph for Subcatchment 4S: DA 2 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.00	0.00
2.00	0.21	0.00	0.00
3.00	0.33	0.00	0.00
4.00	0.45	0.00	0.00
5.00	0.59	0.00	0.00
6.00	0.74	0.00	0.00
7.00	0.91	0.01	0.20
8.00	1.12	0.04	0.57
9.00	1.37	0.09	1.07
10.00	1.72	0.20	2.18
11.00	2.25	0.44	4.78
12.00	4.15	1.64	**26.79**
13.00	6.41	3.43	**14.23**
14.00	6.94	3.89	6.45
15.00	7.29	4.18	4.50
16.00	7.54	4.40	3.52
17.00	7.75	4.59	2.97
18.00	7.92	4.74	2.42
19.00	8.07	4.87	2.15
20.00	8.21	4.99	2.01
21.00	8.33	5.11	1.87
22.00	8.45	5.21	1.74
23.00	8.56	5.31	1.60
24.00	**8.66**	**5.40**	1.45
25.00	8.66	5.40	0.00
26.00	8.66	5.40	0.00
27.00	8.66	5.40	0.00
28.00	8.66	5.40	0.00
29.00	8.66	5.40	0.00
30.00	8.66	5.40	0.00
31.00	8.66	5.40	0.00
32.00	8.66	5.40	0.00
33.00	8.66	5.40	0.00
34.00	8.66	5.40	0.00
35.00	8.66	5.40	0.00
36.00	8.66	5.40	0.00
37.00	8.66	5.40	0.00
38.00	8.66	5.40	0.00
39.00	8.66	5.40	0.00
40.00	8.66	5.40	0.00
41.00	8.66	5.40	0.00
42.00	8.66	5.40	0.00
43.00	8.66	5.40	0.00
44.00	8.66	5.40	0.00
45.00	8.66	5.40	0.00
46.00	8.66	5.40	0.00
47.00	8.66	5.40	0.00
48.00	8.66	5.40	0.00
49.00	8.66	5.40	0.00
50.00	8.66	5.40	0.00
51.00	8.66	5.40	0.00
52.00	8.66	5.40	0.00
53.00	8.66	5.40	0.00
54.00	8.66	5.40	0.00
55.00	8.66	5.40	0.00
56.00	8.66	5.40	0.00
57.00	8.66	5.40	0.00
58.00	8.66	5.40	0.00
59.00	8.66	5.40	0.00
60.00	8.66	5.40	0.00
61.00	8.66	5.40	0.00
62.00	8.66	5.40	0.00
63.00	8.66	5.40	0.00
64.00	8.66	5.40	0.00
65.00	8.66	5.40	0.00
66.00	8.66	5.40	0.00
67.00	8.66	5.40	0.00
68.00	8.66	5.40	0.00
69.00	8.66	5.40	0.00
70.00	8.66	5.40	0.00
71.00	8.66	5.40	0.00
72.00	8.66	5.40	0.00

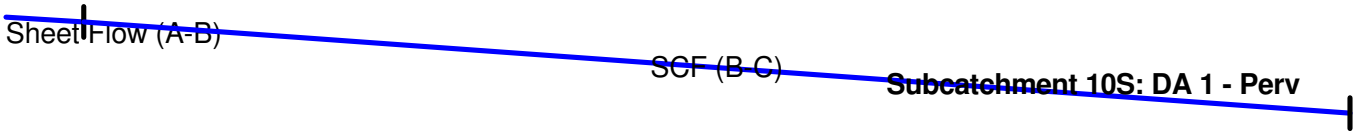
Summary for Subcatchment 10S: DA 1 - Perv

Runoff = 42.86 cfs @ 12.32 hrs, Volume= 216,786 cf, Depth= 5.40"
Routed to Link 11L : DA 1

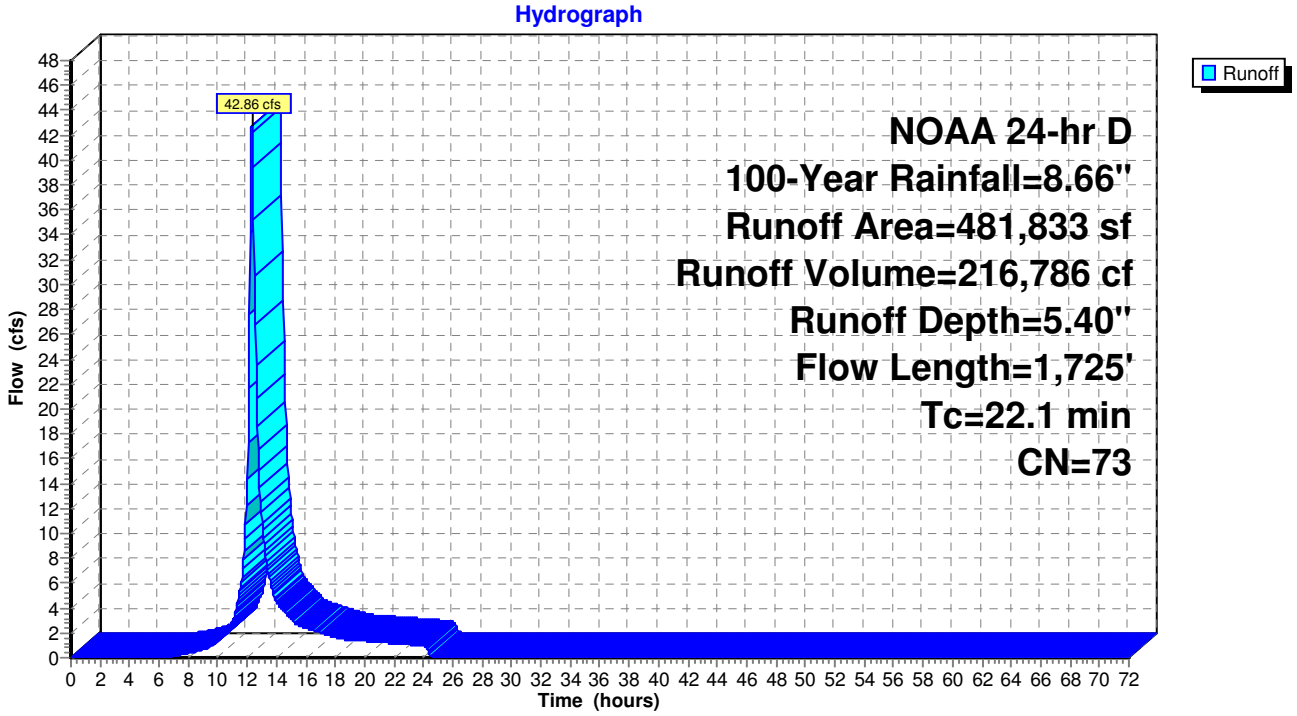
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
197,386	77	Woods, Good, HSG D
284,447	70	Woods, Good, HSG C
481,833	73	Weighted Average
481,833		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.9	100	0.0450	0.11		**Sheet Flow, Sheet Flow (A-B)** Woods: Light underbrush n= 0.400 P2= 3.47"
7.2	1,625	0.0540	3.74		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
22.1	1,725	Total			



Subcatchment 10S: DA 1 - Perv



Hydrograph for Subcatchment 10S: DA 1 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.00	0.00
2.00	0.21	0.00	0.00
3.00	0.33	0.00	0.00
4.00	0.45	0.00	0.00
5.00	0.59	0.00	0.00
6.00	0.74	0.00	0.00
7.00	0.91	0.01	0.11
8.00	1.12	0.04	0.36
9.00	1.37	0.09	0.69
10.00	1.72	0.20	1.38
11.00	2.25	0.44	2.94
12.00	4.15	1.64	**14.36**
13.00	6.41	3.43	**10.90**
14.00	6.94	3.89	4.48
15.00	7.29	4.18	3.11
16.00	7.54	4.40	2.38
17.00	7.75	4.59	2.01
18.00	7.92	4.74	1.64
19.00	8.07	4.87	1.44
20.00	8.21	4.99	1.35
21.00	8.33	5.11	1.26
22.00	8.45	5.21	1.17
23.00	8.56	5.31	1.07
24.00	**8.66**	**5.40**	0.98
25.00	8.66	5.40	0.00
26.00	8.66	5.40	0.00
27.00	8.66	5.40	0.00
28.00	8.66	5.40	0.00
29.00	8.66	5.40	0.00
30.00	8.66	5.40	0.00
31.00	8.66	5.40	0.00
32.00	8.66	5.40	0.00
33.00	8.66	5.40	0.00
34.00	8.66	5.40	0.00
35.00	8.66	5.40	0.00
36.00	8.66	5.40	0.00
37.00	8.66	5.40	0.00
38.00	8.66	5.40	0.00
39.00	8.66	5.40	0.00
40.00	8.66	5.40	0.00
41.00	8.66	5.40	0.00
42.00	8.66	5.40	0.00
43.00	8.66	5.40	0.00
44.00	8.66	5.40	0.00
45.00	8.66	5.40	0.00
46.00	8.66	5.40	0.00
47.00	8.66	5.40	0.00
48.00	8.66	5.40	0.00
49.00	8.66	5.40	0.00
50.00	8.66	5.40	0.00
51.00	8.66	5.40	0.00
52.00	8.66	5.40	0.00
53.00	8.66	5.40	0.00
54.00	8.66	5.40	0.00
55.00	8.66	5.40	0.00
56.00	8.66	5.40	0.00
57.00	8.66	5.40	0.00
58.00	8.66	5.40	0.00
59.00	8.66	5.40	0.00
60.00	8.66	5.40	0.00
61.00	8.66	5.40	0.00
62.00	8.66	5.40	0.00
63.00	8.66	5.40	0.00
64.00	8.66	5.40	0.00
65.00	8.66	5.40	0.00
66.00	8.66	5.40	0.00
67.00	8.66	5.40	0.00
68.00	8.66	5.40	0.00
69.00	8.66	5.40	0.00
70.00	8.66	5.40	0.00
71.00	8.66	5.40	0.00
72.00	8.66	5.40	0.00

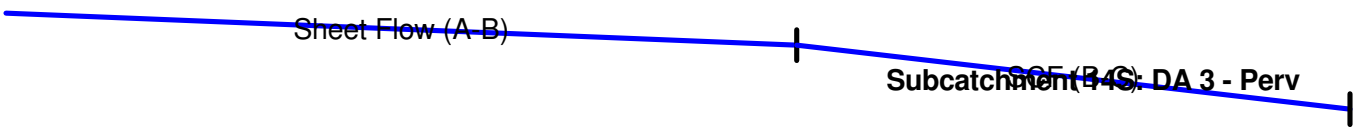
Summary for Subcatchment 14S: DA 3 - Perv

Runoff = 0.75 cfs @ 12.24 hrs, Volume= 3,253 cf, Depth= 5.04"
Routed to Link 13L : DA 3

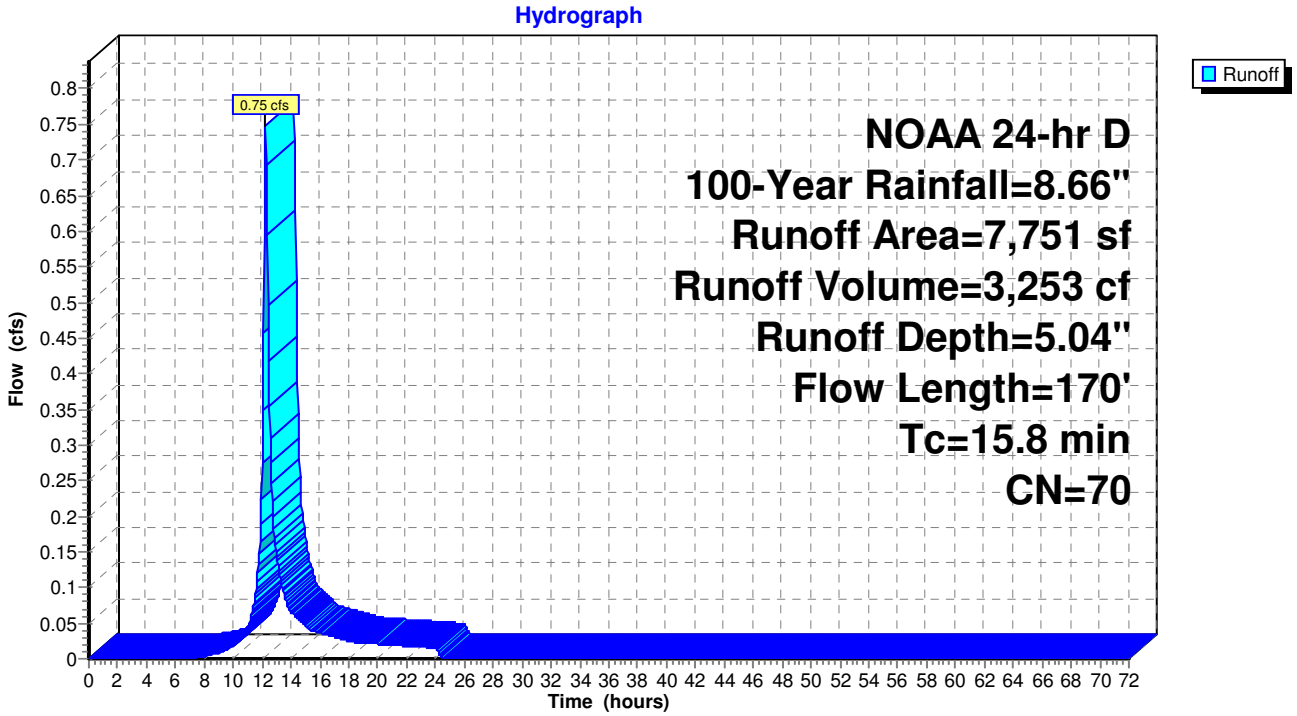
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
7,751	70	Woods, Good, HSG C
7,751		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0400	0.11		**Sheet Flow, Sheet Flow (A-B)** Woods: Light underbrush n= 0.400 P2= 3.47"
0.2	70	0.1150	5.46		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
15.8	170	Total			



Subcatchment 14S: DA 3 - Perv



Hydrograph for Subcatchment 14S: DA 3 - Perv

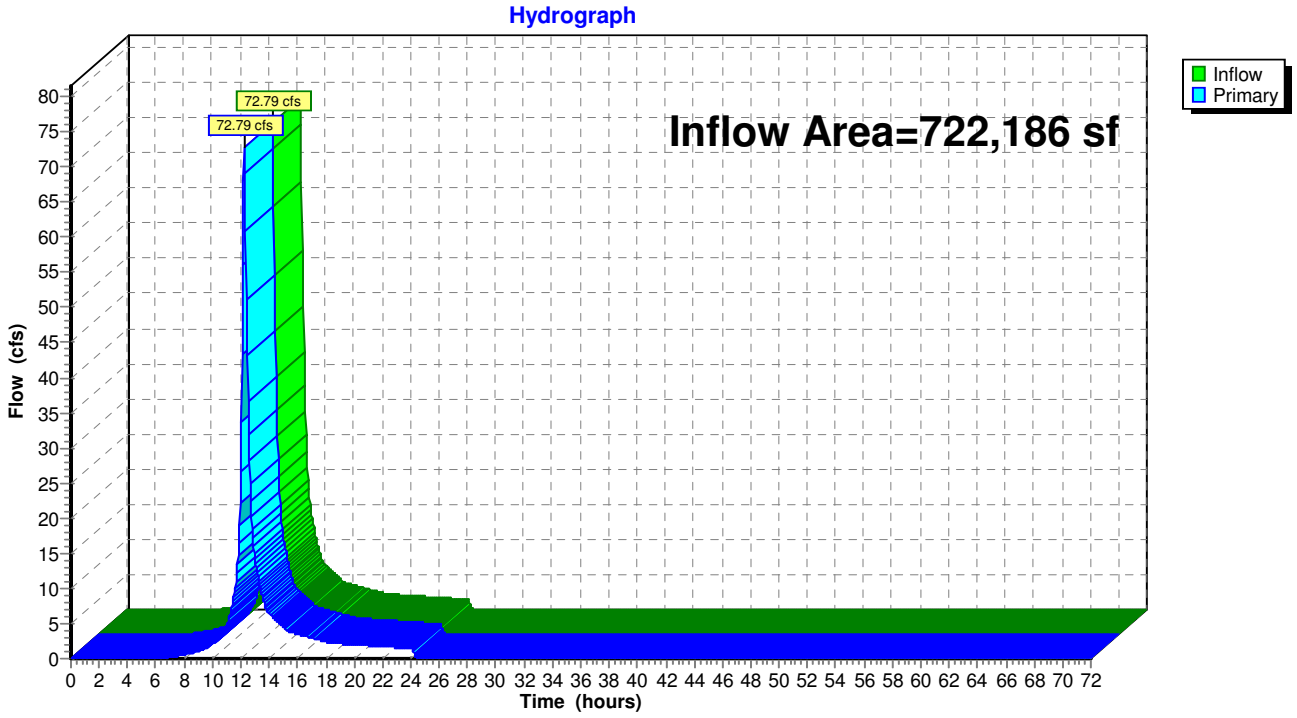
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.00	0.00
2.00	0.21	0.00	0.00
3.00	0.33	0.00	0.00
4.00	0.45	0.00	0.00
5.00	0.59	0.00	0.00
6.00	0.74	0.00	0.00
7.00	0.91	0.00	0.00
8.00	1.12	0.02	0.00
9.00	1.37	0.06	0.01
10.00	1.72	0.14	0.02
11.00	2.25	0.34	0.04
12.00	4.15	1.43	**0.27**
13.00	6.41	3.13	**0.14**
14.00	6.94	3.57	0.07
15.00	7.29	3.86	0.05
16.00	7.54	4.07	0.04
17.00	7.75	4.25	0.03
18.00	7.92	4.40	0.03
19.00	8.07	4.52	0.02
20.00	8.21	4.64	0.02
21.00	8.33	4.75	0.02
22.00	8.45	4.86	0.02
23.00	8.56	4.95	0.02
24.00	**8.66**	**5.04**	0.02
25.00	8.66	5.04	0.00
26.00	8.66	5.04	0.00
27.00	8.66	5.04	0.00
28.00	8.66	5.04	0.00
29.00	8.66	5.04	0.00
30.00	8.66	5.04	0.00
31.00	8.66	5.04	0.00
32.00	8.66	5.04	0.00
33.00	8.66	5.04	0.00
34.00	8.66	5.04	0.00
35.00	8.66	5.04	0.00
36.00	8.66	5.04	0.00
37.00	8.66	5.04	0.00
38.00	8.66	5.04	0.00
39.00	8.66	5.04	0.00
40.00	8.66	5.04	0.00
41.00	8.66	5.04	0.00
42.00	8.66	5.04	0.00
43.00	8.66	5.04	0.00
44.00	8.66	5.04	0.00
45.00	8.66	5.04	0.00
46.00	8.66	5.04	0.00
47.00	8.66	5.04	0.00
48.00	8.66	5.04	0.00
49.00	8.66	5.04	0.00
50.00	8.66	5.04	0.00
51.00	8.66	5.04	0.00
52.00	8.66	5.04	0.00
53.00	8.66	5.04	0.00
54.00	8.66	5.04	0.00
55.00	8.66	5.04	0.00
56.00	8.66	5.04	0.00
57.00	8.66	5.04	0.00
58.00	8.66	5.04	0.00
59.00	8.66	5.04	0.00
60.00	8.66	5.04	0.00
61.00	8.66	5.04	0.00
62.00	8.66	5.04	0.00
63.00	8.66	5.04	0.00
64.00	8.66	5.04	0.00
65.00	8.66	5.04	0.00
66.00	8.66	5.04	0.00
67.00	8.66	5.04	0.00
68.00	8.66	5.04	0.00
69.00	8.66	5.04	0.00
70.00	8.66	5.04	0.00
71.00	8.66	5.04	0.00
72.00	8.66	5.04	0.00

Summary for Link 2L: DA 2

Inflow Area = 722,186 sf, 0.00% Impervious, Inflow Depth = 5.40" for 100-Year event
Inflow = 72.79 cfs @ 12.25 hrs, Volume= 324,925 cf
Primary = 72.79 cfs @ 12.25 hrs, Volume= 324,925 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Total

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 2L: DA 2



Hydrograph for Link 2L: DA 2

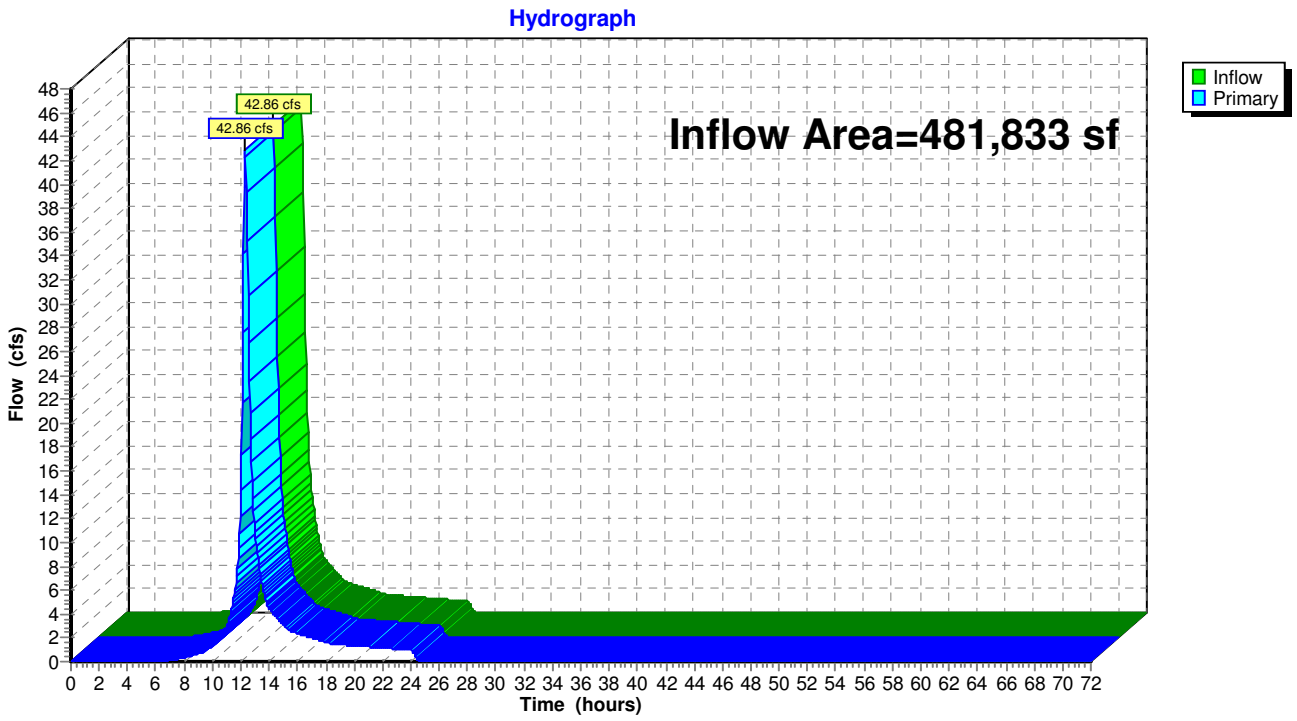
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.20	0.00	0.20	58.00	0.00	0.00	0.00
8.00	0.57	0.00	0.57	59.00	0.00	0.00	0.00
9.00	1.07	0.00	1.07	60.00	0.00	0.00	0.00
10.00	2.18	0.00	2.18	61.00	0.00	0.00	0.00
11.00	4.78	0.00	4.78	62.00	0.00	0.00	0.00
12.00	**26.79**	0.00	**26.79**	63.00	0.00	0.00	0.00
13.00	**14.23**	0.00	**14.23**	64.00	0.00	0.00	0.00
14.00	6.45	0.00	6.45	65.00	0.00	0.00	0.00
15.00	4.50	0.00	4.50	66.00	0.00	0.00	0.00
16.00	3.52	0.00	3.52	67.00	0.00	0.00	0.00
17.00	2.97	0.00	2.97	68.00	0.00	0.00	0.00
18.00	2.42	0.00	2.42	69.00	0.00	0.00	0.00
19.00	2.15	0.00	2.15	70.00	0.00	0.00	0.00
20.00	2.01	0.00	2.01	71.00	0.00	0.00	0.00
21.00	1.87	0.00	1.87	72.00	0.00	0.00	0.00
22.00	1.74	0.00	1.74				
23.00	1.60	0.00	1.60				
24.00	1.45	0.00	1.45				
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				

Summary for Link 11L: DA 1

Inflow Area = 481,833 sf, 0.00% Impervious, Inflow Depth = 5.40" for 100-Year event
Inflow = 42.86 cfs @ 12.32 hrs, Volume= 216,786 cf
Primary = 42.86 cfs @ 12.32 hrs, Volume= 216,786 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Total

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 11L: DA 1



Hydrograph for Link 11L: DA 1

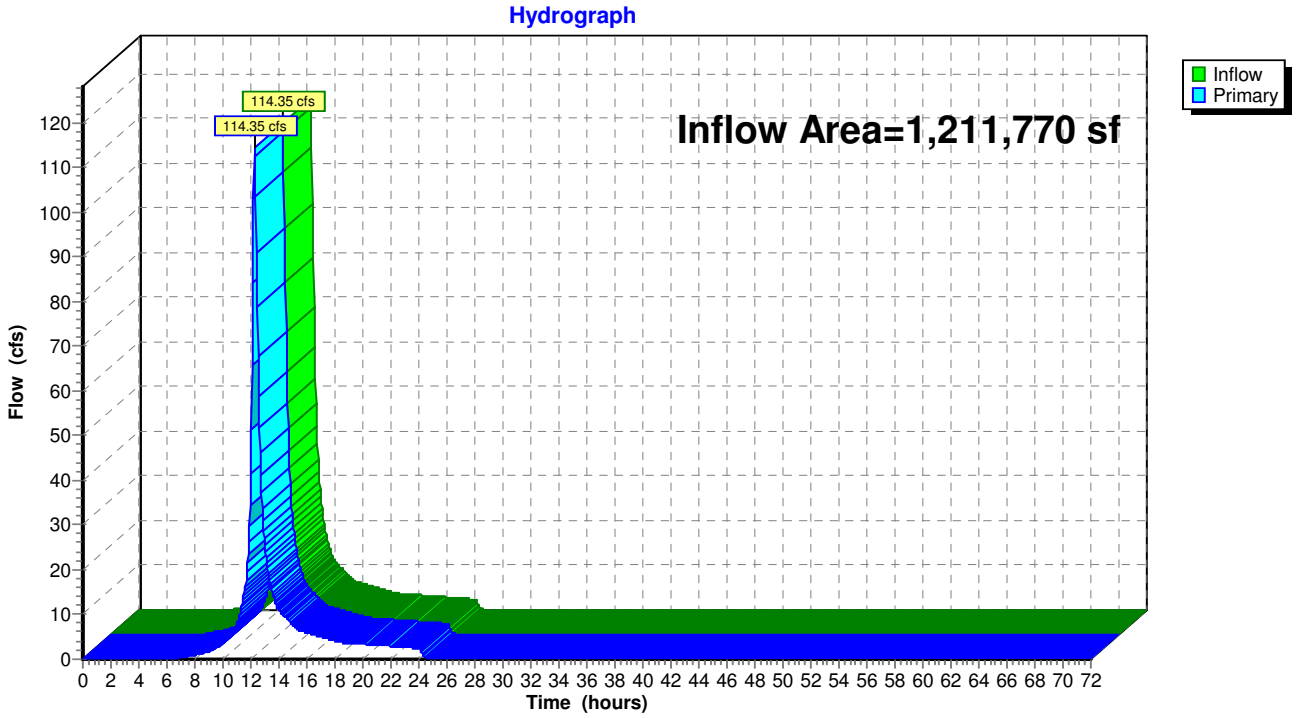
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.11	0.00	0.11	58.00	0.00	0.00	0.00
8.00	0.36	0.00	0.36	59.00	0.00	0.00	0.00
9.00	0.69	0.00	0.69	60.00	0.00	0.00	0.00
10.00	1.38	0.00	1.38	61.00	0.00	0.00	0.00
11.00	2.94	0.00	2.94	62.00	0.00	0.00	0.00
12.00	**14.36**	0.00	**14.36**	63.00	0.00	0.00	0.00
13.00	**10.90**	0.00	**10.90**	64.00	0.00	0.00	0.00
14.00	4.48	0.00	4.48	65.00	0.00	0.00	0.00
15.00	3.11	0.00	3.11	66.00	0.00	0.00	0.00
16.00	2.38	0.00	2.38	67.00	0.00	0.00	0.00
17.00	2.01	0.00	2.01	68.00	0.00	0.00	0.00
18.00	1.64	0.00	1.64	69.00	0.00	0.00	0.00
19.00	1.44	0.00	1.44	70.00	0.00	0.00	0.00
20.00	1.35	0.00	1.35	71.00	0.00	0.00	0.00
21.00	1.26	0.00	1.26	72.00	0.00	0.00	0.00
22.00	1.17	0.00	1.17				
23.00	1.07	0.00	1.07				
24.00	0.98	0.00	0.98				
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				

Summary for Link 12L: Total

Inflow Area = 1,211,770 sf, 0.00% Impervious, Inflow Depth = 5.40" for 100-Year event
Inflow = 114.35 cfs @ 12.27 hrs, Volume= 544,964 cf
Primary = 114.35 cfs @ 12.27 hrs, Volume= 544,964 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 12L: Total



Hydrograph for Link 12L: Total

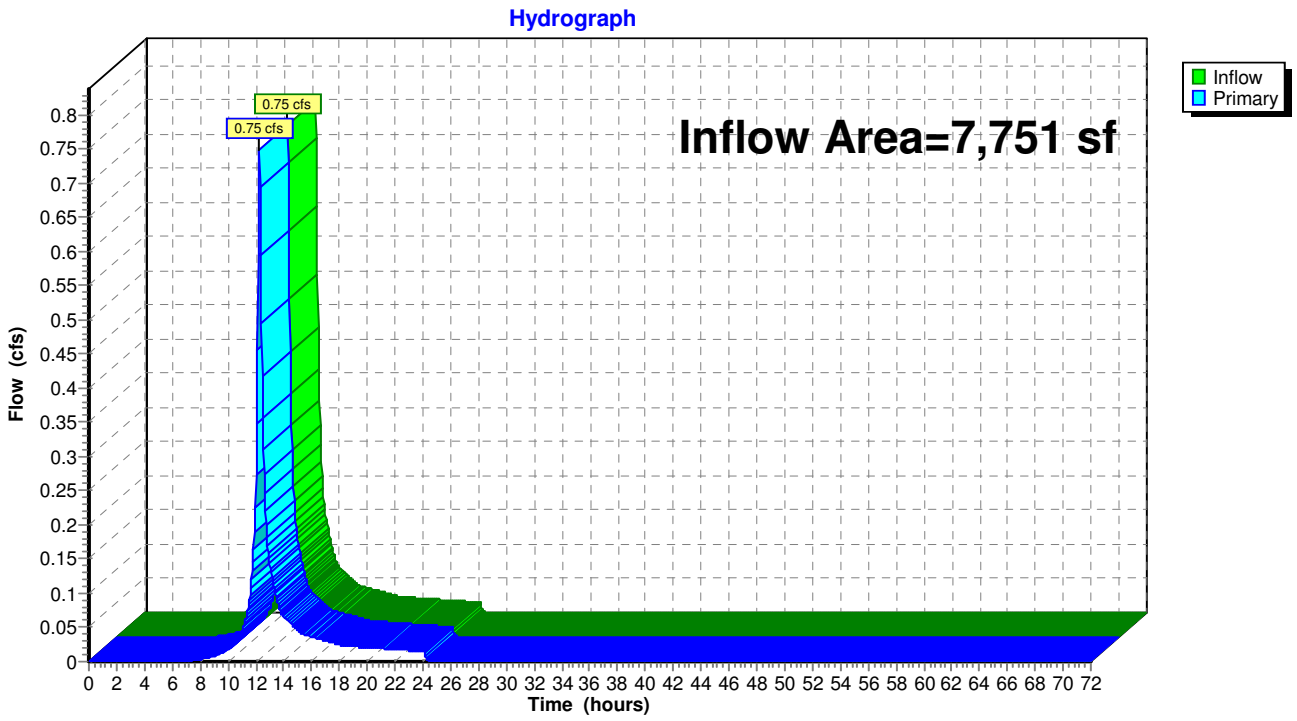
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.31	0.00	0.31	58.00	0.00	0.00	0.00
8.00	0.94	0.00	0.94	59.00	0.00	0.00	0.00
9.00	1.77	0.00	1.77	60.00	0.00	0.00	0.00
10.00	3.57	0.00	3.57	61.00	0.00	0.00	0.00
11.00	7.77	0.00	7.77	62.00	0.00	0.00	0.00
12.00	**41.43**	0.00	**41.43**	63.00	0.00	0.00	0.00
13.00	**25.27**	0.00	**25.27**	64.00	0.00	0.00	0.00
14.00	10.99	0.00	10.99	65.00	0.00	0.00	0.00
15.00	7.65	0.00	7.65	66.00	0.00	0.00	0.00
16.00	5.93	0.00	5.93	67.00	0.00	0.00	0.00
17.00	5.02	0.00	5.02	68.00	0.00	0.00	0.00
18.00	4.09	0.00	4.09	69.00	0.00	0.00	0.00
19.00	3.62	0.00	3.62	70.00	0.00	0.00	0.00
20.00	3.38	0.00	3.38	71.00	0.00	0.00	0.00
21.00	3.15	0.00	3.15	72.00	0.00	0.00	0.00
22.00	2.92	0.00	2.92				
23.00	2.69	0.00	2.69				
24.00	2.45	0.00	2.45				
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				

Summary for Link 13L: DA 3

Inflow Area = 7,751 sf, 0.00% Impervious, Inflow Depth = 5.04" for 100-Year event
Inflow = 0.75 cfs @ 12.24 hrs, Volume= 3,253 cf
Primary = 0.75 cfs @ 12.24 hrs, Volume= 3,253 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 12L : Total

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 13L: DA 3



Hydrograph for Link 13L: DA 3

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	0.00	0.00	0.00	52.00	0.00	0.00	0.00
2.00	0.00	0.00	0.00	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.01	0.00	0.01	60.00	0.00	0.00	0.00
10.00	0.02	0.00	0.02	61.00	0.00	0.00	0.00
11.00	0.04	0.00	0.04	62.00	0.00	0.00	0.00
12.00	**0.27**	0.00	**0.27**	63.00	0.00	0.00	0.00
13.00	**0.14**	0.00	**0.14**	64.00	0.00	0.00	0.00
14.00	0.07	0.00	0.07	65.00	0.00	0.00	0.00
15.00	0.05	0.00	0.05	66.00	0.00	0.00	0.00
16.00	0.04	0.00	0.04	67.00	0.00	0.00	0.00
17.00	0.03	0.00	0.03	68.00	0.00	0.00	0.00
18.00	0.03	0.00	0.03	69.00	0.00	0.00	0.00
19.00	0.02	0.00	0.02	70.00	0.00	0.00	0.00
20.00	0.02	0.00	0.02	71.00	0.00	0.00	0.00
21.00	0.02	0.00	0.02	72.00	0.00	0.00	0.00
22.00	0.02	0.00	0.02				
23.00	0.02	0.00	0.02				
24.00	0.02	0.00	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				

Events for Subcatchment 4S: DA 2 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	14.76	68,577	1.14
10-Year	5.22	33.11	147,700	2.45
100-Year	**8.66**	**72.79**	**324,925**	**5.40**

Events for Subcatchment 10S: DA 1 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	8.62	45,754	1.14
10-Year	5.22	19.40	98,544	2.45
100-Year	**8.66**	**42.86**	**216,786**	**5.40**

Events for Subcatchment 14S: DA 3 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	0.13	627	0.97
10-Year	5.22	0.32	1,422	2.20
100-Year	**8.66**	**0.75**	**3,253**	**5.04**

Events for Link 2L: DA 2

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
2-Year	14.76	14.76	**0.00**
10-Year	33.11	33.11	0.00
100-Year	**72.79**	**72.79**	0.00

Events for Link 11L: DA 1

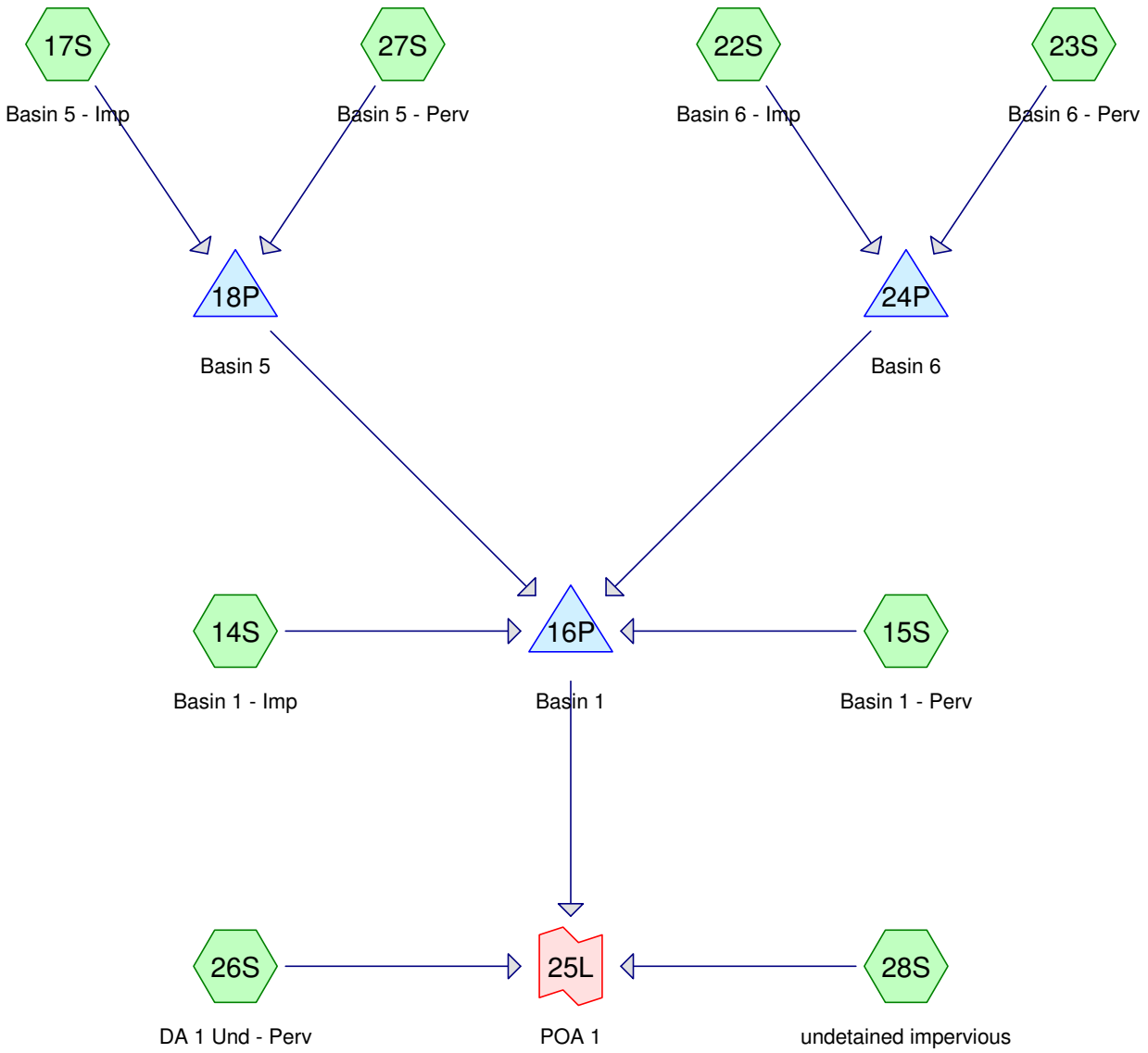
Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
2-Year	8.62	8.62	**0.00**
10-Year	19.40	19.40	0.00
100-Year	**42.86**	**42.86**	0.00

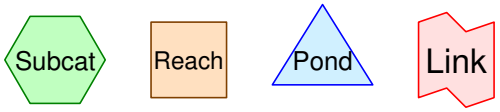
Events for Link 12L: Total

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
2-Year	22.98	22.98	**0.00**
10-Year	51.71	51.71	0.00
100-Year	**114.35**	**114.35**	0.00

Events for Link 13L: DA 3

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
2-Year	0.13	0.13	**0.00**
10-Year	0.32	0.32	0.00
100-Year	**0.75**	**0.75**	0.00





Routing Diagram for 2024-05-12 HydroCad - Proposed POA 1B-1
Prepared by Anderson Consulting Services, Printed 10/25/2024
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2024-05-12 HydroCad - Proposed POA 1B-1

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Rainfall Events Listing

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

2024-05-12 HydroCad - Proposed POA 1B-1

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
137,513	74	>75% Grass cover, Good, HSG C (15S, 23S, 26S, 27S)
96,423	80	>75% Grass cover, Good, HSG D (15S, 26S)
63,821	98	Paved parking, HSG C (14S, 17S, 22S)
16,127	98	Paved parking, HSG D (22S)
136,618	98	Roofs, HSG C (14S, 17S)
15,241	98	fire lane pervoius pavers (22S)
4,437	98	impervious non pavement (22S)
2,331	98	impervious other than pavement (17S)
9,022	98	non parking impervious (14S)
300	98	non pavement impervious (28S)
481,833	**88**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
337,952	HSG C	14S, 15S, 17S, 22S, 23S, 26S, 27S
112,550	HSG D	15S, 22S, 26S
31,331	Other	14S, 17S, 22S, 28S
481,833		**TOTAL AREA**

2024-05-12 HydroCad - Proposed POA 1B-1

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	137,513	96,423	0	233,936	>75% Grass cover, Good
0	0	63,821	16,127	0	79,948	Paved parking
0	0	136,618	0	0	136,618	Roofs
0	0	0	0	15,241	15,241	fire lane pervoius pavers
0	0	0	0	4,437	4,437	impervious non pavement
0	0	0	0	2,331	2,331	impervious other than pavement
0	0	0	0	9,022	9,022	non parking impervious
0	0	0	0	300	300	non pavement impervious
0	**0**	**337,952**	**112,550**	**31,331**	**481,833**	**TOTAL AREA**

Notes Listing (all nodes)

Line#	Node Number	Notes
1	Project	Rainfall events imported from "NJ-2023-Rain.txt" for 6606 NJ Essex
2		Rainfall events imported from "NRCS2-Rain.txt" for 1167 NJ Essex-D
3		Rainfall events imported from "NRCS2-Rain.txt" for 1167 NJ Essex-D

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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 14S: Basin 1 - Imp Runoff Area=147,571 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=1,000' Tc=14.1 min CN=98 Runoff=8.50 cfs 39,434 cf

Subcatchment 15S: Basin 1 - Perv Runoff Area=114,590 sf 0.00% Impervious Runoff Depth=1.39"
Flow Length=1,000' Tc=14.1 min CN=77 Runoff=3.18 cfs 13,236 cf

Subcatchment 17S: Basin 5 - Imp Runoff Area=43,168 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=222' Slope=0.0200 '/' Tc=1.8 min CN=98 Runoff=3.55 cfs 11,535 cf

Subcatchment 22S: Basin 6 - Imp Runoff Area=56,858 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=490' Slope=0.0200 '/' Tc=3.6 min CN=98 Runoff=4.58 cfs 15,194 cf

Subcatchment 23S: Basin 6 - Perv Runoff Area=51,219 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=490' Slope=0.0200 '/' Tc=3.6 min CN=74 Runoff=1.80 cfs 5,116 cf

Subcatchment 26S: DA 1 Und - Perv Runoff Area=64,687 sf 0.00% Impervious Runoff Depth=1.39"
Flow Length=150' Slope=0.1100 '/' Tc=7.1 min CN=77 Runoff=2.31 cfs 7,472 cf

Subcatchment 27S: Basin 5 - Perv Runoff Area=3,440 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=222' Slope=0.0200 '/' Tc=1.8 min CN=74 Runoff=0.13 cfs 344 cf

Subcatchment 28S: undetained impervious Runoff Area=300 sf 100.00% Impervious Runoff Depth=3.21"
Tc=0.0 min CN=98 Runoff=0.02 cfs 80 cf

Pond 16P: Basin 1 Peak Elev=544.29' Storage=35,472 cf Inflow=11.66 cfs 52,670 cf
Outflow=0.75 cfs 36,406 cf

Pond 18P: Basin 5 Peak Elev=579.23' Storage=1,374 cf Inflow=3.68 cfs 11,879 cf
Discarded=1.37 cfs 11,879 cf Primary=0.00 cfs 0 cf Outflow=1.37 cfs 11,879 cf

Pond 24P: Basin 6 Peak Elev=600.01' Storage=156 cf Inflow=6.37 cfs 20,310 cf
Discarded=6.35 cfs 20,310 cf Primary=0.00 cfs 0 cf Outflow=6.35 cfs 20,310 cf

Link 25L: POA 1 Inflow=2.36 cfs 43,958 cf
Primary=2.36 cfs 43,958 cf

Total Runoff Area = 481,833 sf Runoff Volume = 92,411 cf Average Runoff Depth = 2.30"
48.55% Pervious = 233,936 sf 51.45% Impervious = 247,897 sf

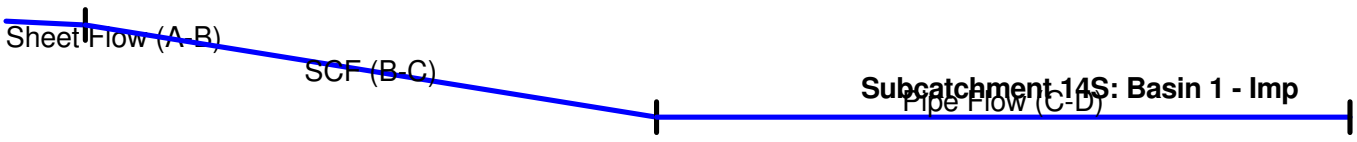
Summary for Subcatchment 14S: Basin 1 - Imp

Runoff = 8.50 cfs @ 12.21 hrs, Volume= 39,434 cf, Depth= 3.21"
Routed to Pond 16P : Basin 1

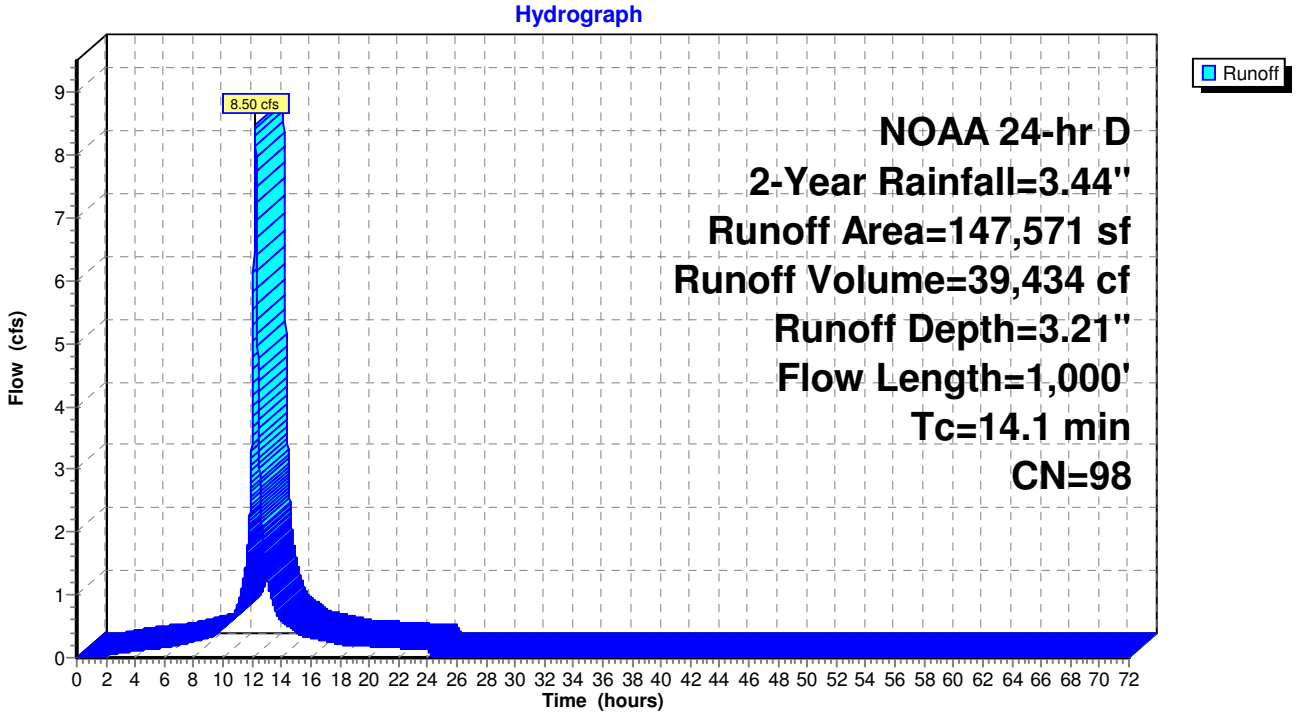
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

	Area (sf)	CN	Description
*	9,022	98	non parking impervious
	28,163	98	Paved parking, HSG C
	110,386	98	Roofs, HSG C
	147,571	98	Weighted Average
	147,571		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.7	425	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
3.4	516		2.50		**Direct Entry, Pipe Flow (C-D)**
14.1	1,000	Total			



Subcatchment 14S: Basin 1 - Imp



Hydrograph for Subcatchment 14S: Basin 1 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.01	0.04
3.00	0.13	0.03	0.08
4.00	0.18	0.06	0.11
5.00	0.24	0.09	0.14
6.00	0.29	0.14	0.16
7.00	0.36	0.20	0.21
8.00	0.45	0.27	0.27
9.00	0.55	0.36	0.32
10.00	0.68	0.49	0.48
11.00	0.89	0.69	0.83
12.00	1.65	1.43	**3.68**
13.00	2.55	2.32	**1.30**
14.00	2.76	2.53	0.60
15.00	2.89	2.66	0.41
16.00	2.99	2.76	0.32
17.00	3.08	2.85	0.27
18.00	3.15	2.91	0.22
19.00	3.20	2.97	0.20
20.00	3.26	3.03	0.18
21.00	3.31	3.08	0.17
22.00	3.36	3.12	0.16
23.00	3.40	3.17	0.14
24.00	**3.44**	**3.21**	0.13
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
58.00	3.44	3.21	0.00
59.00	3.44	3.21	0.00
60.00	3.44	3.21	0.00
61.00	3.44	3.21	0.00
62.00	3.44	3.21	0.00
63.00	3.44	3.21	0.00
64.00	3.44	3.21	0.00
65.00	3.44	3.21	0.00
66.00	3.44	3.21	0.00
67.00	3.44	3.21	0.00
68.00	3.44	3.21	0.00
69.00	3.44	3.21	0.00
70.00	3.44	3.21	0.00
71.00	3.44	3.21	0.00
72.00	3.44	3.21	0.00

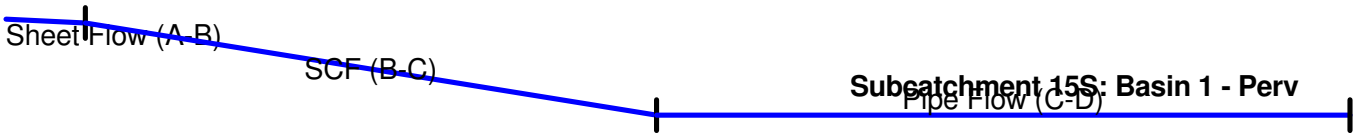
Summary for Subcatchment 15S: Basin 1 - Perv

Runoff = 3.18 cfs @ 12.23 hrs, Volume= 13,236 cf, Depth= 1.39"
Routed to Pond 16P : Basin 1

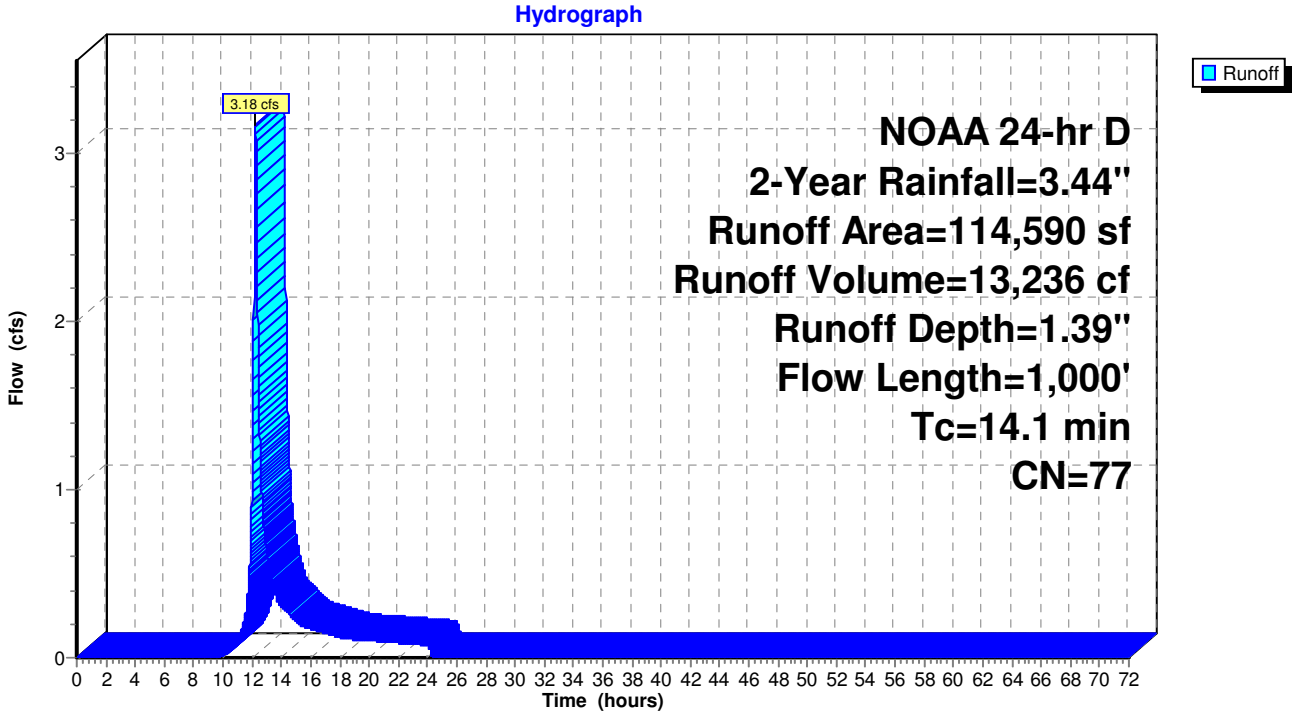
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
64,900	80	>75% Grass cover, Good, HSG D
49,690	74	>75% Grass cover, Good, HSG C
114,590	77	Weighted Average
114,590		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.7	425	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
3.4	516		2.50		**Direct Entry, Pipe Flow (C-D)**
14.1	1,000	Total			



Subcatchment 15S: Basin 1 - Perv



Hydrograph for Subcatchment 15S: Basin 1 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.18	0.00	0.00
5.00	0.24	0.00	0.00
6.00	0.29	0.00	0.00
7.00	0.36	0.00	0.00
8.00	0.45	0.00	0.00
9.00	0.55	0.00	0.00
10.00	0.68	0.00	0.01
11.00	0.89	0.03	0.10
12.00	1.65	0.27	**1.04**
13.00	2.55	0.77	**0.63**
14.00	2.76	0.91	0.31
15.00	2.89	1.00	0.22
16.00	2.99	1.07	0.17
17.00	3.08	1.13	0.15
18.00	3.15	1.17	0.12
19.00	3.20	1.22	0.11
20.00	3.26	1.25	0.10
21.00	3.31	1.29	0.10
22.00	3.36	1.33	0.09
23.00	3.40	1.36	0.08
24.00	**3.44**	**1.39**	0.07
25.00	3.44	1.39	0.00
26.00	3.44	1.39	0.00
27.00	3.44	1.39	0.00
28.00	3.44	1.39	0.00
29.00	3.44	1.39	0.00
30.00	3.44	1.39	0.00
31.00	3.44	1.39	0.00
32.00	3.44	1.39	0.00
33.00	3.44	1.39	0.00
34.00	3.44	1.39	0.00
35.00	3.44	1.39	0.00
36.00	3.44	1.39	0.00
37.00	3.44	1.39	0.00
38.00	3.44	1.39	0.00
39.00	3.44	1.39	0.00
40.00	3.44	1.39	0.00
41.00	3.44	1.39	0.00
42.00	3.44	1.39	0.00
43.00	3.44	1.39	0.00
44.00	3.44	1.39	0.00
45.00	3.44	1.39	0.00
46.00	3.44	1.39	0.00
47.00	3.44	1.39	0.00
48.00	3.44	1.39	0.00
49.00	3.44	1.39	0.00
50.00	3.44	1.39	0.00
51.00	3.44	1.39	0.00
52.00	3.44	1.39	0.00
53.00	3.44	1.39	0.00
54.00	3.44	1.39	0.00
55.00	3.44	1.39	0.00
56.00	3.44	1.39	0.00
57.00	3.44	1.39	0.00
58.00	3.44	1.39	0.00
59.00	3.44	1.39	0.00
60.00	3.44	1.39	0.00
61.00	3.44	1.39	0.00
62.00	3.44	1.39	0.00
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64.00	3.44	1.39	0.00
65.00	3.44	1.39	0.00
66.00	3.44	1.39	0.00
67.00	3.44	1.39	0.00
68.00	3.44	1.39	0.00
69.00	3.44	1.39	0.00
70.00	3.44	1.39	0.00
71.00	3.44	1.39	0.00
72.00	3.44	1.39	0.00

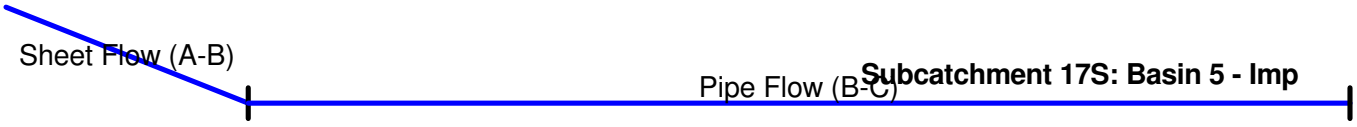
Summary for Subcatchment 17S: Basin 5 - Imp

Runoff = 3.55 cfs @ 12.10 hrs, Volume= 11,535 cf, Depth= 3.21"
Routed to Pond 18P : Basin 5

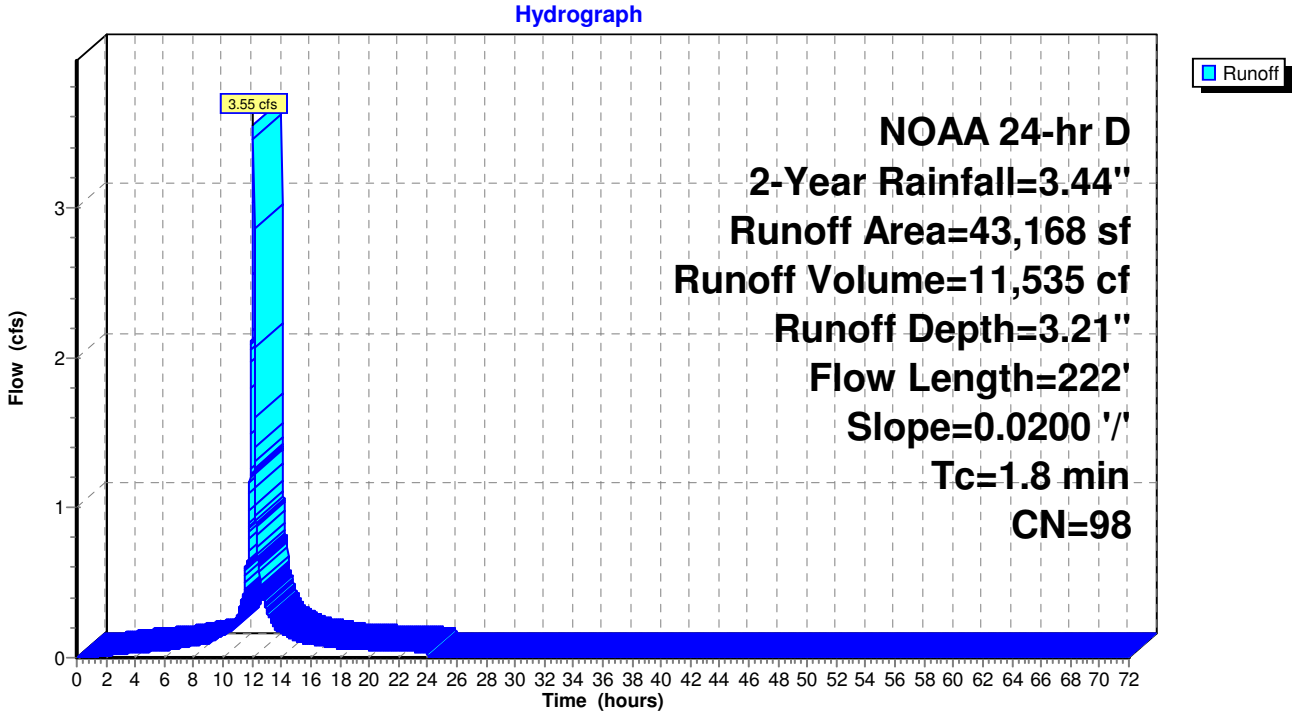
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

	Area (sf)	CN	Description
	26,232	98	Roofs, HSG C
	14,605	98	Paved parking, HSG C
*	2,331	98	impervious other than pavement
	43,168	98	Weighted Average
	43,168		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
1.2	182		2.50		**Direct Entry, Pipe Flow (B-C)**
1.8	222	Total			



Subcatchment 17S: Basin 5 - Imp



Hydrograph for Subcatchment 17S: Basin 5 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.01	0.01
3.00	0.13	0.03	0.02
4.00	0.18	0.06	0.03
5.00	0.24	0.09	0.04
6.00	0.29	0.14	0.05
7.00	0.36	0.20	0.06
8.00	0.45	0.27	0.08
9.00	0.55	0.36	0.10
10.00	0.68	0.49	0.15
11.00	0.89	0.69	0.28
12.00	1.65	1.43	**2.12**
13.00	2.55	2.32	**0.32**
14.00	2.76	2.53	0.17
15.00	2.89	2.66	0.11
16.00	2.99	2.76	0.09
17.00	3.08	2.85	0.08
18.00	3.15	2.91	0.06
19.00	3.20	2.97	0.06
20.00	3.26	3.03	0.05
21.00	3.31	3.08	0.05
22.00	3.36	3.12	0.05
23.00	3.40	3.17	0.04
24.00	**3.44**	**3.21**	0.04
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
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60.00	3.44	3.21	0.00
61.00	3.44	3.21	0.00
62.00	3.44	3.21	0.00
63.00	3.44	3.21	0.00
64.00	3.44	3.21	0.00
65.00	3.44	3.21	0.00
66.00	3.44	3.21	0.00
67.00	3.44	3.21	0.00
68.00	3.44	3.21	0.00
69.00	3.44	3.21	0.00
70.00	3.44	3.21	0.00
71.00	3.44	3.21	0.00
72.00	3.44	3.21	0.00

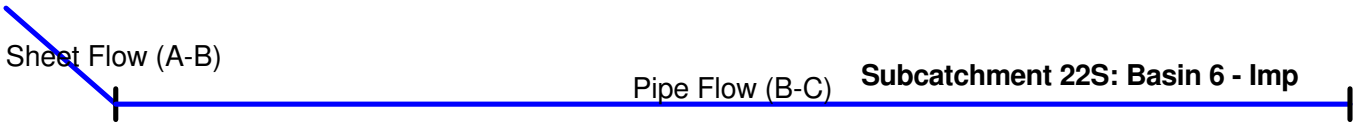
Summary for Subcatchment 22S: Basin 6 - Imp

Runoff = 4.58 cfs @ 12.11 hrs, Volume= 15,194 cf, Depth= 3.21"
Routed to Pond 24P : Basin 6

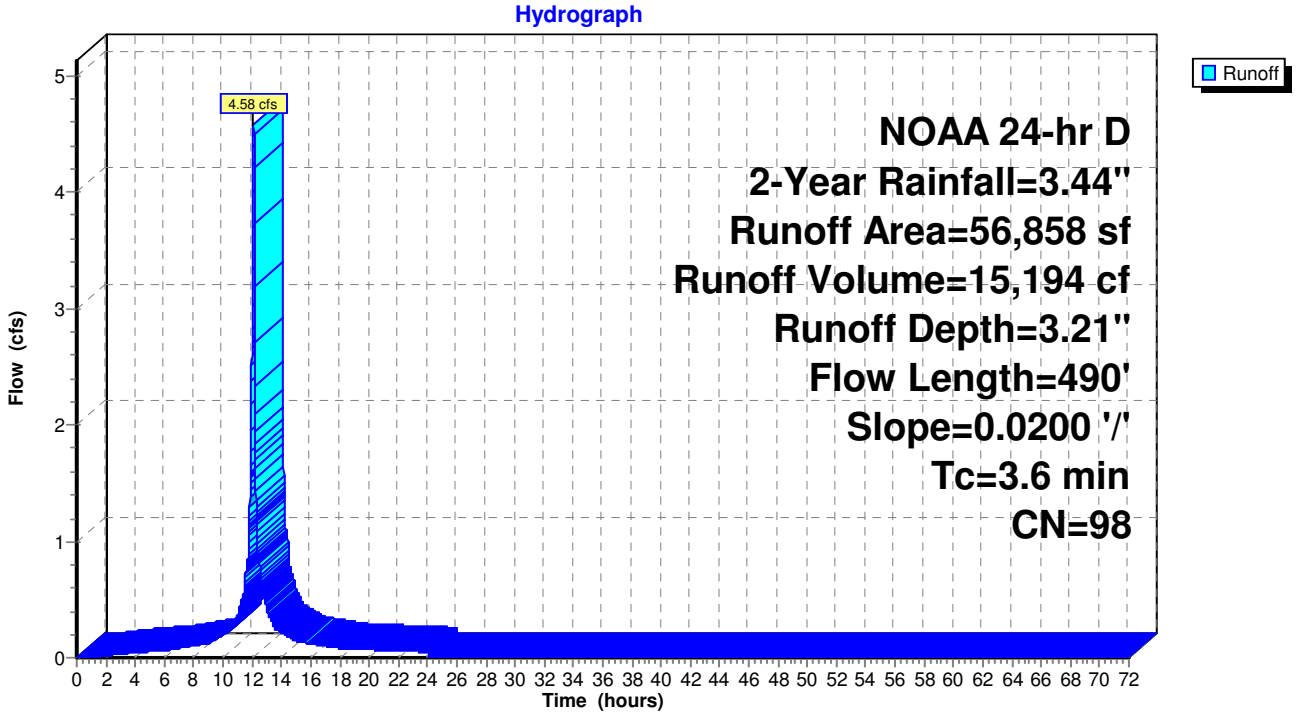
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

	Area (sf)	CN	Description
	16,127	98	Paved parking, HSG D
	21,053	98	Paved parking, HSG C
*	4,437	98	impervious non pavement
*	15,241	98	fire lane pervoius pavers
	56,858	98	Weighted Average
	56,858		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
3.0	450		2.50		**Direct Entry, Pipe Flow (B-C)**
3.6	490	Total			



Subcatchment 22S: Basin 6 - Imp



Hydrograph for Subcatchment 22S: Basin 6 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.01	0.02
3.00	0.13	0.03	0.03
4.00	0.18	0.06	0.04
5.00	0.24	0.09	0.05
6.00	0.29	0.14	0.06
7.00	0.36	0.20	0.08
8.00	0.45	0.27	0.11
9.00	0.55	0.36	0.13
10.00	0.68	0.49	0.20
11.00	0.89	0.69	0.36
12.00	1.65	1.43	**2.71**
13.00	2.55	2.32	**0.43**
14.00	2.76	2.53	0.22
15.00	2.89	2.66	0.15
16.00	2.99	2.76	0.12
17.00	3.08	2.85	0.10
18.00	3.15	2.91	0.08
19.00	3.20	2.97	0.07
20.00	3.26	3.03	0.07
21.00	3.31	3.08	0.06
22.00	3.36	3.12	0.06
23.00	3.40	3.17	0.05
24.00	**3.44**	**3.21**	0.05
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
58.00	3.44	3.21	0.00
59.00	3.44	3.21	0.00
60.00	3.44	3.21	0.00
61.00	3.44	3.21	0.00
62.00	3.44	3.21	0.00
63.00	3.44	3.21	0.00
64.00	3.44	3.21	0.00
65.00	3.44	3.21	0.00
66.00	3.44	3.21	0.00
67.00	3.44	3.21	0.00
68.00	3.44	3.21	0.00
69.00	3.44	3.21	0.00
70.00	3.44	3.21	0.00
71.00	3.44	3.21	0.00
72.00	3.44	3.21	0.00

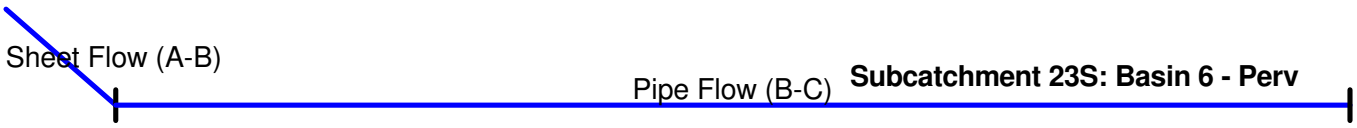
Summary for Subcatchment 23S: Basin 6 - Perv

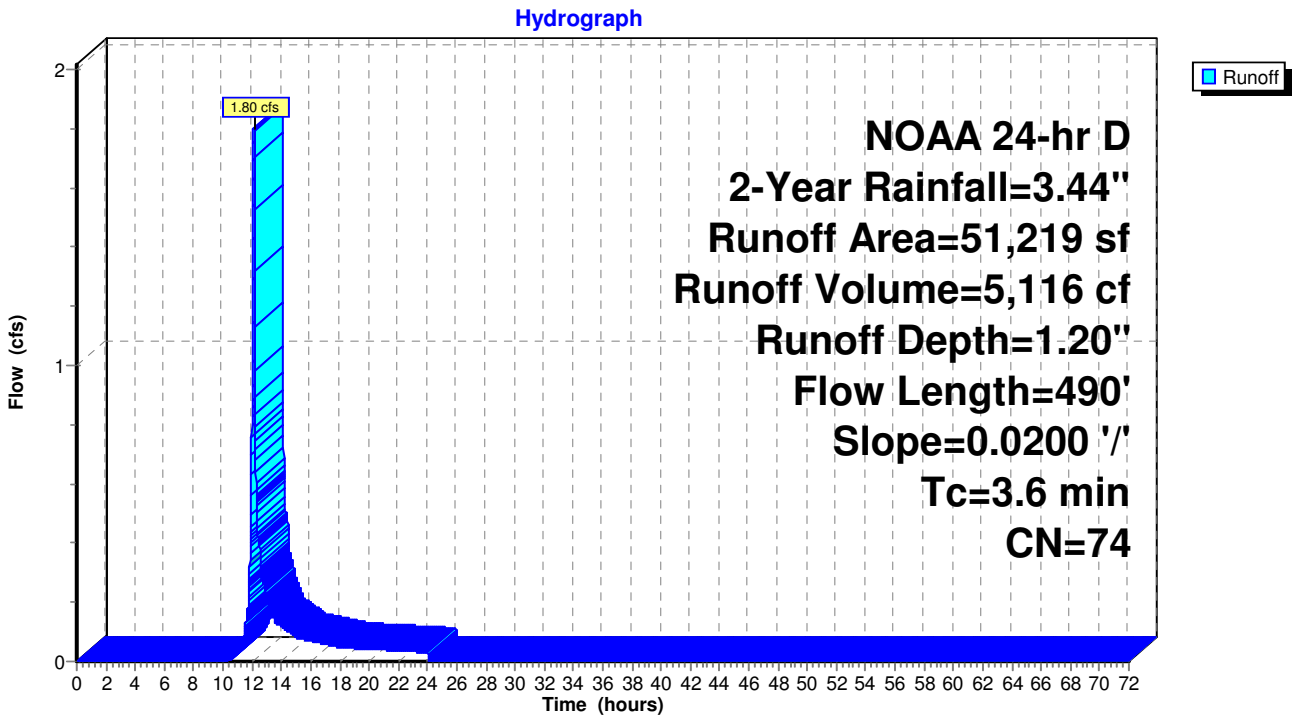
Runoff = 1.80 cfs @ 12.11 hrs, Volume= 5,116 cf, Depth= 1.20"
Routed to Pond 24P : Basin 6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
51,219	74	>75% Grass cover, Good, HSG C
51,219		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
3.0	450		2.50		**Direct Entry, Pipe Flow (B-C)**
3.6	490	Total			





Hydrograph for Subcatchment 23S: Basin 6 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.18	0.00	0.00
5.00	0.24	0.00	0.00
6.00	0.29	0.00	0.00
7.00	0.36	0.00	0.00
8.00	0.45	0.00	0.00
9.00	0.55	0.00	0.00
10.00	0.68	0.00	0.00
11.00	0.89	0.01	0.03
12.00	1.65	0.20	**0.86**
13.00	2.55	0.63	**0.22**
14.00	2.76	0.76	0.12
15.00	2.89	0.84	0.08
16.00	2.99	0.90	0.07
17.00	3.08	0.96	0.06
18.00	3.15	1.00	0.05
19.00	3.20	1.04	0.04
20.00	3.26	1.08	0.04
21.00	3.31	1.11	0.04
22.00	3.36	1.14	0.04
23.00	3.40	1.17	0.03
24.00	**3.44**	**1.20**	0.03
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
58.00	3.44	1.20	0.00
59.00	3.44	1.20	0.00
60.00	3.44	1.20	0.00
61.00	3.44	1.20	0.00
62.00	3.44	1.20	0.00
63.00	3.44	1.20	0.00
64.00	3.44	1.20	0.00
65.00	3.44	1.20	0.00
66.00	3.44	1.20	0.00
67.00	3.44	1.20	0.00
68.00	3.44	1.20	0.00
69.00	3.44	1.20	0.00
70.00	3.44	1.20	0.00
71.00	3.44	1.20	0.00
72.00	3.44	1.20	0.00

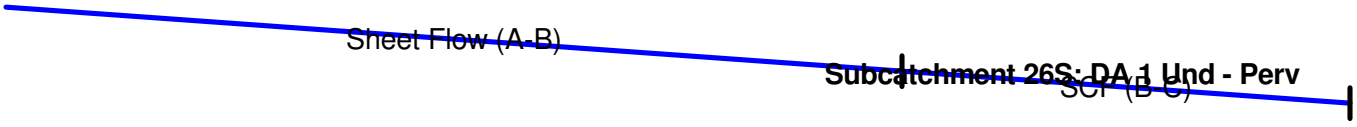
Summary for Subcatchment 26S: DA 1 Und - Perv

Runoff = 2.31 cfs @ 12.15 hrs, Volume= 7,472 cf, Depth= 1.39"
Routed to Link 25L : POA 1

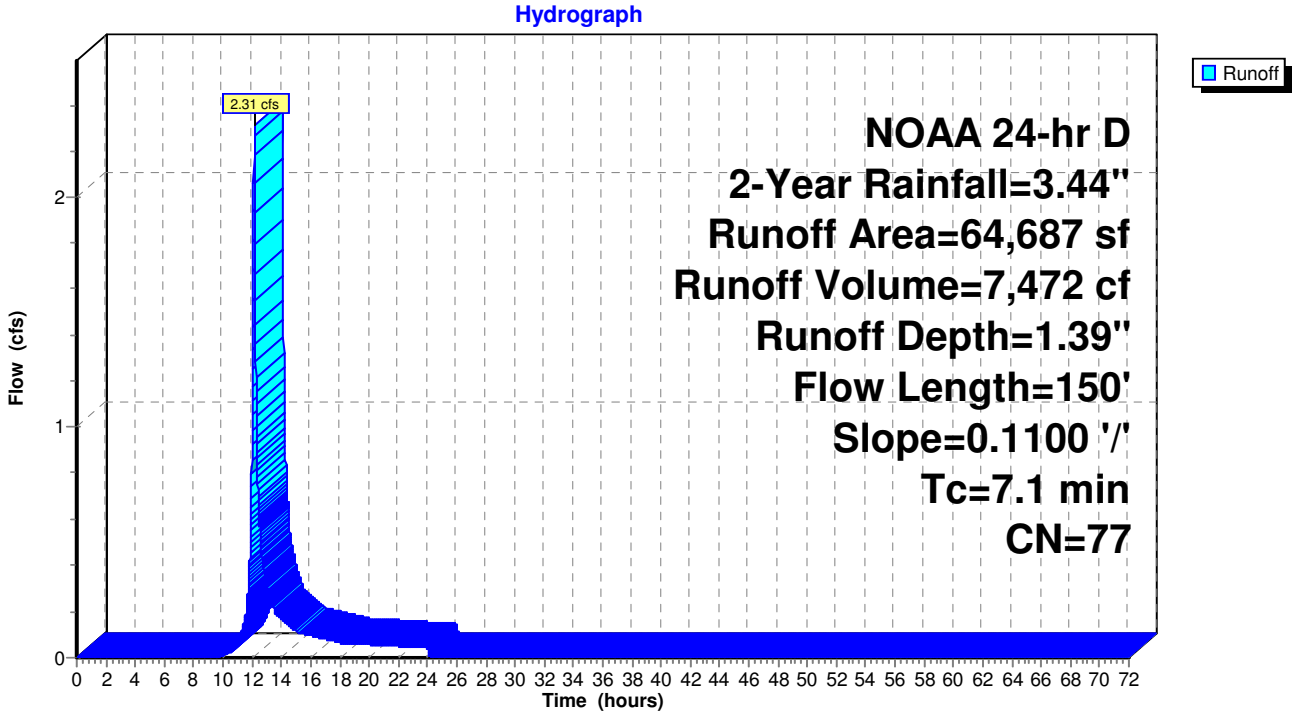
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
31,523	80	>75% Grass cover, Good, HSG D
33,164	74	>75% Grass cover, Good, HSG C
64,687	77	Weighted Average
64,687		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.1100	0.24		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	50	0.1100	5.34		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
7.1	150	Total			



Subcatchment 26S: DA 1 Und - Perv



Hydrograph for Subcatchment 26S: DA 1 Und - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.18	0.00	0.00
5.00	0.24	0.00	0.00
6.00	0.29	0.00	0.00
7.00	0.36	0.00	0.00
8.00	0.45	0.00	0.00
9.00	0.55	0.00	0.00
10.00	0.68	0.00	0.01
11.00	0.89	0.03	0.06
12.00	1.65	0.27	**0.99**
13.00	2.55	0.77	**0.32**
14.00	2.76	0.91	0.17
15.00	2.89	1.00	0.12
16.00	2.99	1.07	0.10
17.00	3.08	1.13	0.08
18.00	3.15	1.17	0.07
19.00	3.20	1.22	0.06
20.00	3.26	1.25	0.06
21.00	3.31	1.29	0.05
22.00	3.36	1.33	0.05
23.00	3.40	1.36	0.05
24.00	**3.44**	**1.39**	0.04
25.00	3.44	1.39	0.00
26.00	3.44	1.39	0.00
27.00	3.44	1.39	0.00
28.00	3.44	1.39	0.00
29.00	3.44	1.39	0.00
30.00	3.44	1.39	0.00
31.00	3.44	1.39	0.00
32.00	3.44	1.39	0.00
33.00	3.44	1.39	0.00
34.00	3.44	1.39	0.00
35.00	3.44	1.39	0.00
36.00	3.44	1.39	0.00
37.00	3.44	1.39	0.00
38.00	3.44	1.39	0.00
39.00	3.44	1.39	0.00
40.00	3.44	1.39	0.00
41.00	3.44	1.39	0.00
42.00	3.44	1.39	0.00
43.00	3.44	1.39	0.00
44.00	3.44	1.39	0.00
45.00	3.44	1.39	0.00
46.00	3.44	1.39	0.00
47.00	3.44	1.39	0.00
48.00	3.44	1.39	0.00
49.00	3.44	1.39	0.00
50.00	3.44	1.39	0.00
51.00	3.44	1.39	0.00
52.00	3.44	1.39	0.00
53.00	3.44	1.39	0.00
54.00	3.44	1.39	0.00
55.00	3.44	1.39	0.00
56.00	3.44	1.39	0.00
57.00	3.44	1.39	0.00
58.00	3.44	1.39	0.00
59.00	3.44	1.39	0.00
60.00	3.44	1.39	0.00
61.00	3.44	1.39	0.00
62.00	3.44	1.39	0.00
63.00	3.44	1.39	0.00
64.00	3.44	1.39	0.00
65.00	3.44	1.39	0.00
66.00	3.44	1.39	0.00
67.00	3.44	1.39	0.00
68.00	3.44	1.39	0.00
69.00	3.44	1.39	0.00
70.00	3.44	1.39	0.00
71.00	3.44	1.39	0.00
72.00	3.44	1.39	0.00

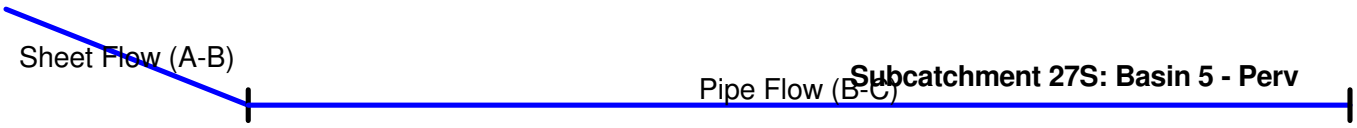
Summary for Subcatchment 27S: Basin 5 - Perv

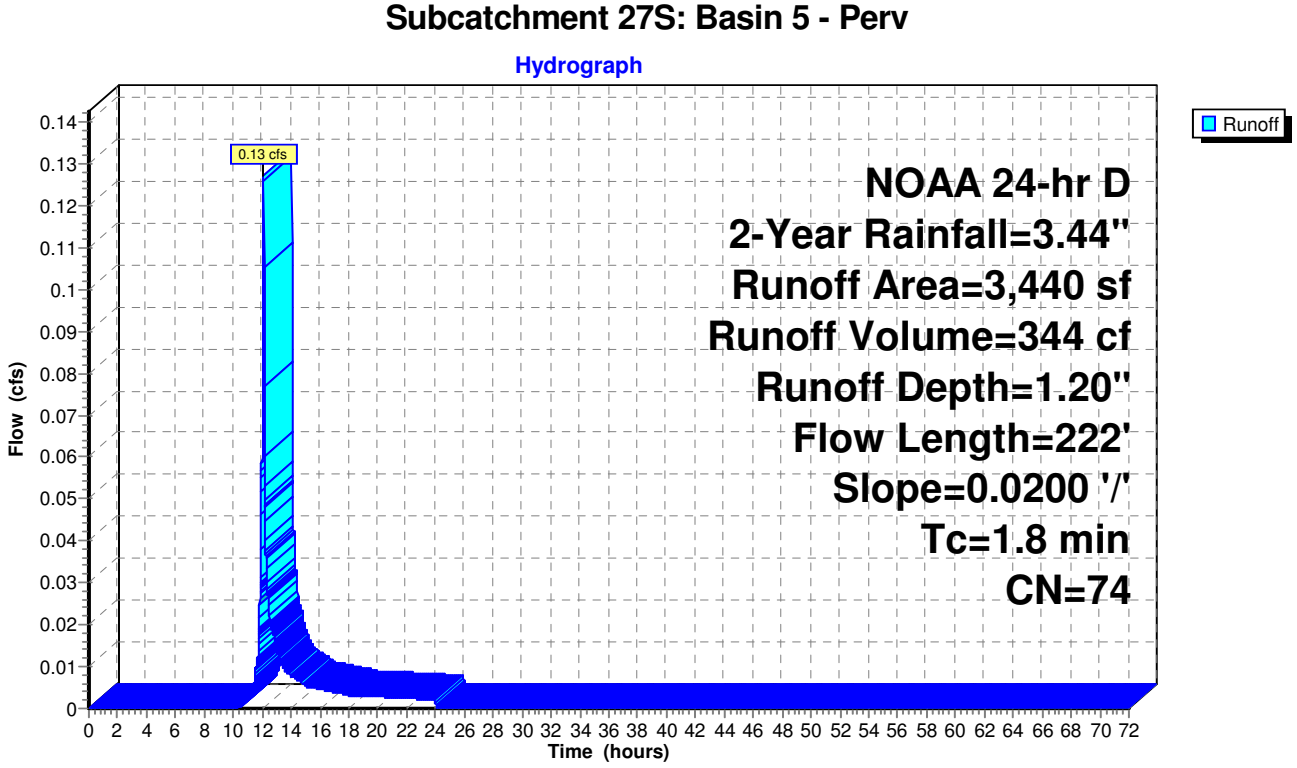
Runoff = 0.13 cfs @ 12.10 hrs, Volume= 344 cf, Depth= 1.20"
Routed to Pond 18P : Basin 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
3,440	74	>75% Grass cover, Good, HSG C
3,440		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
1.2	182		2.50		**Direct Entry, Pipe Flow (B-C)**
1.8	222	Total			





Hydrograph for Subcatchment 27S: Basin 5 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.18	0.00	0.00
5.00	0.24	0.00	0.00
6.00	0.29	0.00	0.00
7.00	0.36	0.00	0.00
8.00	0.45	0.00	0.00
9.00	0.55	0.00	0.00
10.00	0.68	0.00	0.00
11.00	0.89	0.01	0.00
12.00	1.65	0.20	**0.06**
13.00	2.55	0.63	**0.01**
14.00	2.76	0.76	0.01
15.00	2.89	0.84	0.01
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
58.00	3.44	1.20	0.00
59.00	3.44	1.20	0.00
60.00	3.44	1.20	0.00
61.00	3.44	1.20	0.00
62.00	3.44	1.20	0.00
63.00	3.44	1.20	0.00
64.00	3.44	1.20	0.00
65.00	3.44	1.20	0.00
66.00	3.44	1.20	0.00
67.00	3.44	1.20	0.00
68.00	3.44	1.20	0.00
69.00	3.44	1.20	0.00
70.00	3.44	1.20	0.00
71.00	3.44	1.20	0.00
72.00	3.44	1.20	0.00

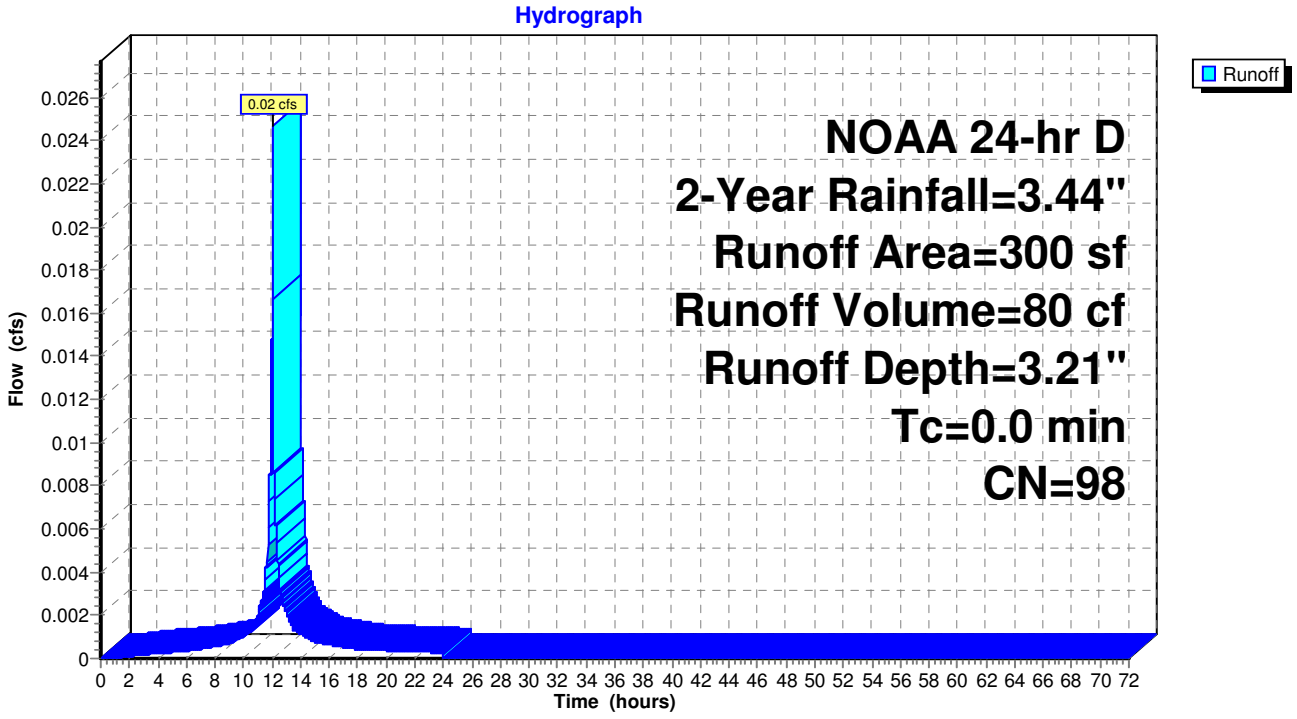
Summary for Subcatchment 28S: undetained impervious

Runoff = 0.02 cfs @ 12.09 hrs, Volume= 80 cf, Depth= 3.21"
Routed to Link 25L : POA 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

	Area (sf)	CN	Description
*	300	98	non pavement impervious
	300		100.00% Impervious Area

Subcatchment 28S: undetained impervious



Hydrograph for Subcatchment 28S: undetained impervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.01	0.00
3.00	0.13	0.03	0.00
4.00	0.18	0.06	0.00
5.00	0.24	0.09	0.00
6.00	0.29	0.14	0.00
7.00	0.36	0.20	0.00
8.00	0.45	0.27	0.00
9.00	0.55	0.36	0.00
10.00	0.68	0.49	0.00
11.00	0.89	0.69	0.00
12.00	1.65	1.43	**0.02**
13.00	2.55	2.32	**0.00**
14.00	2.76	2.53	0.00
15.00	2.89	2.66	0.00
16.00	2.99	2.76	0.00
17.00	3.08	2.85	0.00
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
58.00	3.44	3.21	0.00
59.00	3.44	3.21	0.00
60.00	3.44	3.21	0.00
61.00	3.44	3.21	0.00
62.00	3.44	3.21	0.00
63.00	3.44	3.21	0.00
64.00	3.44	3.21	0.00
65.00	3.44	3.21	0.00
66.00	3.44	3.21	0.00
67.00	3.44	3.21	0.00
68.00	3.44	3.21	0.00
69.00	3.44	3.21	0.00
70.00	3.44	3.21	0.00
71.00	3.44	3.21	0.00
72.00	3.44	3.21	0.00

Summary for Pond 16P: Basin 1

Inflow Area = 416,846 sf, 59.40% Impervious, Inflow Depth = 1.52" for 2-Year event
Inflow = 11.66 cfs @ 12.22 hrs, Volume= 52,670 cf
Outflow = 0.75 cfs @ 14.57 hrs, Volume= 36,406 cf, Atten= 94%, Lag= 141.2 min
Primary = 0.75 cfs @ 14.57 hrs, Volume= 36,406 cf
Routed to Link 25L : POA 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 544.29' @ 14.57 hrs Surf.Area= 46,306 sf Storage= 35,472 cf

Plug-Flow detention time= 738.2 min calculated for 36,406 cf (69% of inflow)
Center-of-Mass det. time= 629.4 min (1,419.7 - 790.2)

Volume	Invert	Avail.Storage	Storage Description
#1	543.50'	170,585 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
543.50	42,000	0	0
544.00	45,955	21,989	21,989
545.00	47,156	46,556	68,544
546.00	51,115	49,136	117,680
547.00	54,695	52,905	170,585

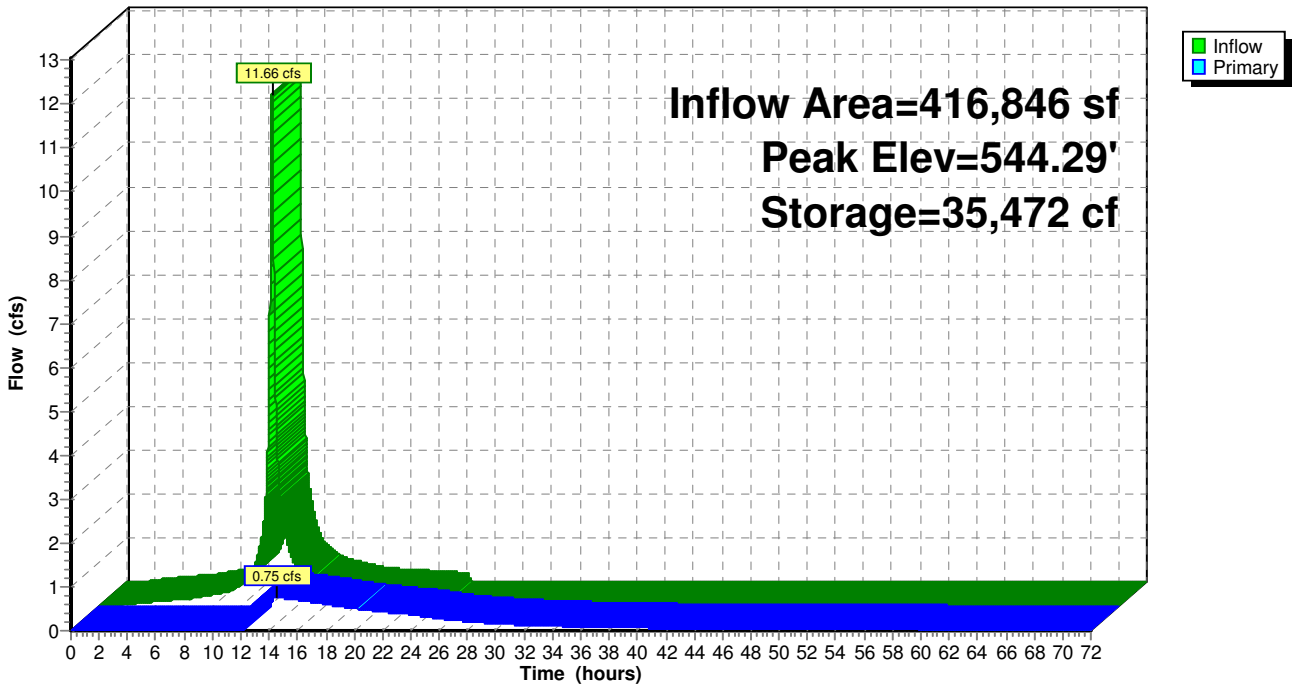
Device	Routing	Invert	Outlet Devices
#1	Primary	546.00'	**42.0" x 48.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	543.82'	**10.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	544.40'	**48.0" W x 8.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.75 cfs @ 14.57 hrs HW=544.29' (Free Discharge)
- **1=Grate** (Controls 0.00 cfs)
- **2=Orifice** (Orifice Controls 0.75 cfs @ 2.34 fps)
- **3=Orifice/Grate** (Controls 0.00 cfs)



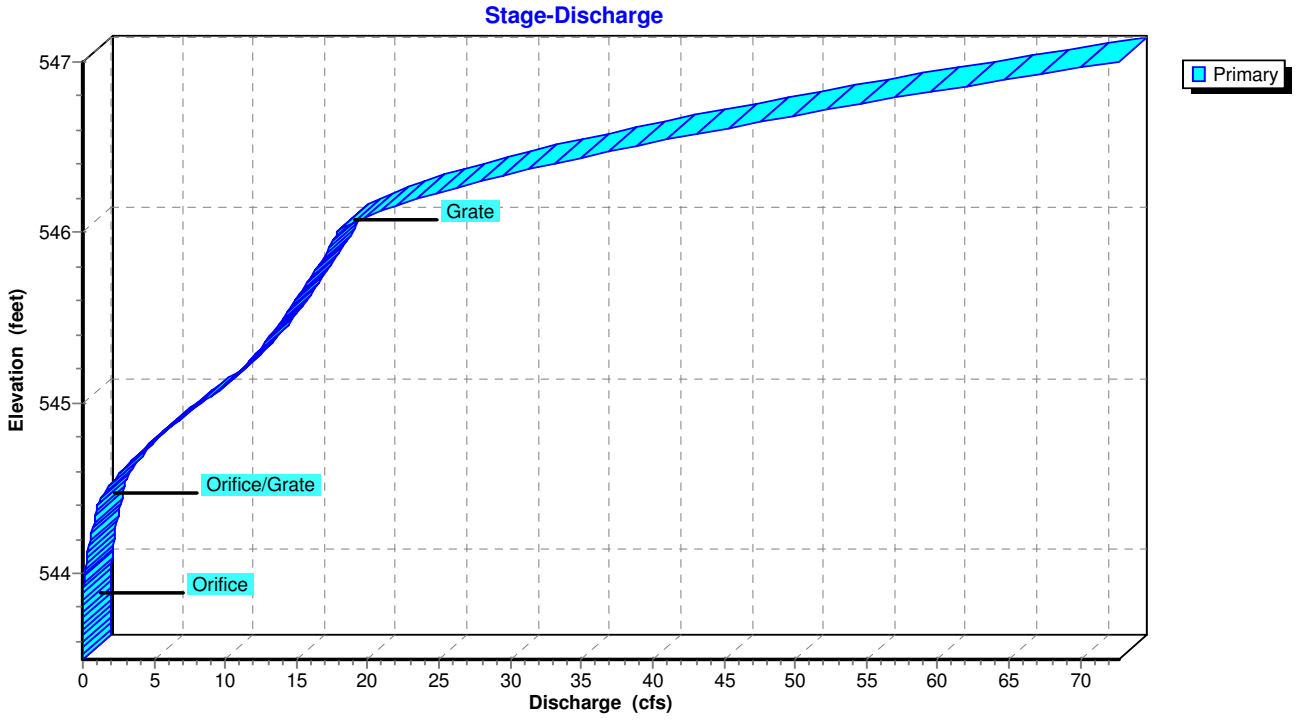
Pond 16P: Basin 1

Hydrograph

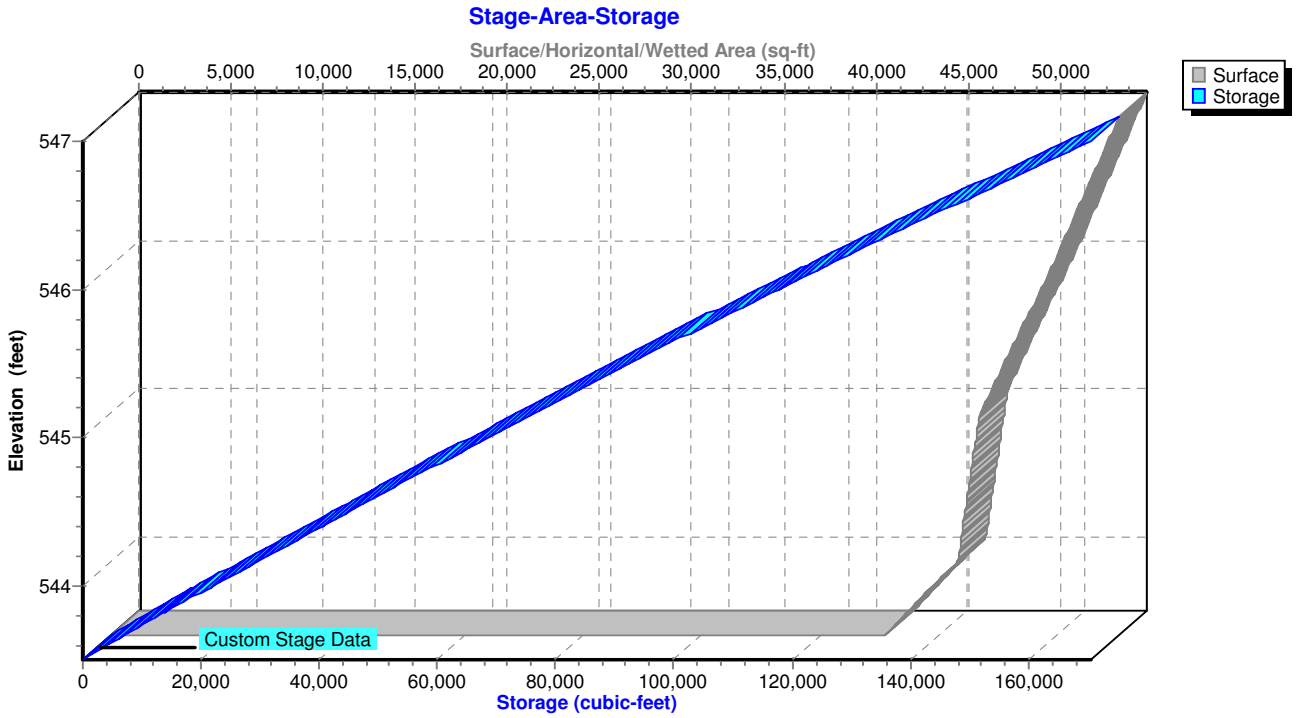


Pond 16P: Basin 1

Stage-Discharge



Pond 16P: Basin 1



Hydrograph for Pond 16P: Basin 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	543.50	0.00
2.00	0.04	54	543.50	0.00
4.00	0.11	609	543.51	0.00
6.00	0.16	1,593	543.54	0.00
8.00	0.27	3,106	543.57	0.00
10.00	0.50	5,597	543.63	0.00
12.00	**4.72**	14,755	543.84	0.00
14.00	**0.90**	**35,305**	**544.29**	**0.74**
16.00	0.50	**34,736**	**544.28**	**0.70**
18.00	0.34	33,023	544.24	0.61
20.00	0.28	31,220	544.20	0.51
22.00	0.25	29,740	544.17	0.43
24.00	0.21	28,460	544.14	0.37
26.00	0.00	26,282	544.09	0.28
28.00	0.00	24,543	544.06	0.21
30.00	0.00	23,208	544.03	0.16
32.00	0.00	22,157	544.00	0.13
34.00	0.00	21,310	543.99	0.11
36.00	0.00	20,608	543.97	0.09
38.00	0.00	20,023	543.96	0.07
40.00	0.00	19,529	543.95	0.06
42.00	0.00	19,101	543.94	0.06
44.00	0.00	18,731	543.93	0.05
46.00	0.00	18,411	543.92	0.04
48.00	0.00	18,130	543.92	0.04
50.00	0.00	17,878	543.91	0.03
52.00	0.00	17,650	543.90	0.03
54.00	0.00	17,445	543.90	0.03
56.00	0.00	17,260	543.90	0.02
58.00	0.00	17,094	543.89	0.02
60.00	0.00	16,943	543.89	0.02
62.00	0.00	16,808	543.89	0.02
64.00	0.00	16,685	543.88	0.02
66.00	0.00	16,570	543.88	0.02
68.00	0.00	16,462	543.88	0.01
70.00	0.00	16,360	543.88	0.01
72.00	0.00	16,264	543.87	0.01

Stage-Discharge for Pond 16P: Basin 1

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
543.50	0.00	544.52	1.93	545.54	14.45	546.56	41.89
543.52	0.00	544.54	2.12	545.56	14.61	546.58	43.11
543.54	0.00	544.56	2.32	545.58	14.78	546.60	44.35
543.56	0.00	544.58	2.53	545.60	14.94	546.62	45.61
543.58	0.00	544.60	2.74	545.62	15.11	546.64	46.89
543.60	0.00	544.62	2.96	545.64	15.27	546.66	48.19
543.62	0.00	544.64	3.19	545.66	15.42	546.68	49.50
543.64	0.00	544.66	3.41	545.68	15.58	546.70	50.83
543.66	0.00	544.68	3.65	545.70	15.74	546.72	52.18
543.68	0.00	544.70	3.90	545.72	15.89	546.74	53.55
543.70	0.00	544.72	4.15	545.74	16.04	546.76	54.93
543.72	0.00	544.74	4.41	545.76	16.19	546.78	56.33
543.74	0.00	544.76	4.67	545.78	16.34	546.80	57.74
543.76	0.00	544.78	4.94	545.80	16.49	546.82	59.17
543.78	0.00	544.80	5.22	545.82	16.64	546.84	60.62
543.80	0.00	544.82	5.50	545.84	16.78	546.86	62.08
543.82	0.00	544.84	5.79	545.86	16.92	546.88	63.55
543.84	0.00	544.86	6.08	545.88	17.07	546.90	65.05
543.86	0.01	544.88	6.38	545.90	17.21	546.92	66.55
543.88	0.01	544.90	6.68	545.92	17.35	546.94	68.08
543.90	0.03	544.92	6.99	545.94	17.49	546.96	69.61
543.92	0.04	544.94	7.30	545.96	17.62	546.98	71.16
543.94	0.06	544.96	7.61	545.98	17.76	547.00	**72.73**
543.96	0.08	544.98	7.94	546.00	17.90		
543.98	0.10	545.00	8.26	546.02	18.17		
544.00	0.13	545.02	8.59	546.04	18.56		
544.02	0.15	545.04	8.93	546.06	19.02		
544.04	0.18	545.06	9.27	546.08	19.54		
544.06	0.22	545.08	9.59	546.10	20.11		
544.08	0.25	545.10	9.88	546.12	20.73		
544.10	0.29	545.12	10.15	546.14	21.39		
544.12	0.33	545.14	10.41	546.16	22.08		
544.14	0.37	545.16	10.66	546.18	22.82		
544.16	0.42	545.18	10.91	546.20	23.58		
544.18	0.46	545.20	11.14	546.22	24.38		
544.20	0.51	545.22	11.37	546.24	25.21		
544.22	0.56	545.24	11.59	546.26	26.07		
544.24	0.61	545.26	11.81	546.28	26.96		
544.26	0.66	545.28	12.02	546.30	27.87		
544.28	0.71	545.30	12.22	546.32	28.81		
544.30	0.77	545.32	12.43	546.34	29.78		
544.32	0.82	545.34	12.63	546.36	30.77		
544.34	0.88	545.36	12.82	546.38	31.78		
544.36	0.94	545.38	13.01	546.40	32.82		
544.38	0.99	545.40	13.20	546.42	33.88		
544.40	1.05	545.42	13.39	546.44	34.96		
544.42	1.15	545.44	13.57	546.46	36.06		
544.44	1.27	545.46	13.75	546.48	37.19		
544.46	1.41	545.48	13.93	546.50	38.33		
544.48	1.57	545.50	14.10	546.52	39.50		
544.50	1.74	545.52	14.28	546.54	40.68		

Stage-Area-Storage for Pond 16P: Basin 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
543.50	42,000	0
543.55	42,395	2,110
543.60	42,791	4,240
543.65	43,186	6,389
543.70	43,582	8,558
543.75	43,978	10,747
543.80	44,373	12,956
543.85	44,769	15,184
543.90	45,164	17,433
543.95	45,560	19,701
544.00	45,955	21,989
544.05	46,015	24,288
544.10	46,075	26,590
544.15	46,135	28,896
544.20	46,195	31,204
544.25	46,255	33,515
544.30	46,315	35,829
544.35	46,375	38,147
544.40	46,435	40,467
544.45	46,495	42,790
544.50	46,556	45,116
544.55	46,616	47,446
544.60	46,676	49,778
544.65	46,736	52,113
544.70	46,796	54,451
544.75	46,856	56,793
544.80	46,916	59,137
544.85	46,976	61,484
544.90	47,036	63,835
544.95	47,096	66,188
545.00	47,156	68,544
545.05	47,354	70,907
545.10	47,552	73,280
545.15	47,750	75,662
545.20	47,948	78,055
545.25	48,146	80,457
545.30	48,344	82,869
545.35	48,542	85,291
545.40	48,740	87,723
545.45	48,938	90,165
545.50	49,136	92,617
545.55	49,333	95,079
545.60	49,531	97,550
545.65	49,729	100,032
545.70	49,927	102,523
545.75	50,125	105,025
545.80	50,323	107,536
545.85	50,521	110,057
545.90	50,719	112,588
545.95	50,917	115,129
546.00	51,115	117,680
546.05	51,294	120,240
546.10	51,473	122,809
546.15	51,652	125,387
546.20	51,831	127,974
546.25	52,010	130,570
546.30	52,189	133,175
546.35	52,368	135,789
546.40	52,547	138,412
546.45	52,726	141,044
546.50	52,905	143,685
546.55	53,084	146,334
546.60	53,263	148,993
546.65	53,442	151,661
546.70	53,621	154,337
546.75	53,800	157,023
546.80	53,979	159,717
546.85	54,158	162,421
546.90	54,337	165,133
546.95	54,516	167,854
547.00	**54,695**	**170,585**

Summary for Pond 18P: Basin 5

Inflow Area = 46,608 sf, 92.62% Impervious, Inflow Depth = 3.06" for 2-Year event
Inflow = 3.68 cfs @ 12.10 hrs, Volume= 11,879 cf
Outflow = 1.37 cfs @ 11.95 hrs, Volume= 11,879 cf, Atten= 63%, Lag= 0.0 min
Discarded = 1.37 cfs @ 11.95 hrs, Volume= 11,879 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 16P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 579.23' @ 12.16 hrs Surf.Area= 14,810 sf Storage= 1,374 cf

Plug-Flow detention time= 6.0 min calculated for 11,877 cf (100% of inflow)
Center-of-Mass det. time= 6.0 min (762.1 - 756.1)

Volume	Invert	Avail.Storage	Storage Description
#1	579.00'	31,397 cf	**Custom Stage Data (Prismatic)** Listed below 78,493 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
579.00	14,810	0	0
580.00	14,810	14,810	14,810
581.00	14,810	14,810	29,620
582.00	14,810	14,810	44,430
583.00	14,810	14,810	59,240
584.00	14,810	14,810	74,050
584.30	14,810	4,443	78,493

Device	Routing	Invert	Outlet Devices
#1	Primary	579.25'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	579.00'	**4.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.37 cfs @ 11.95 hrs HW=579.06' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 1.37 cfs)

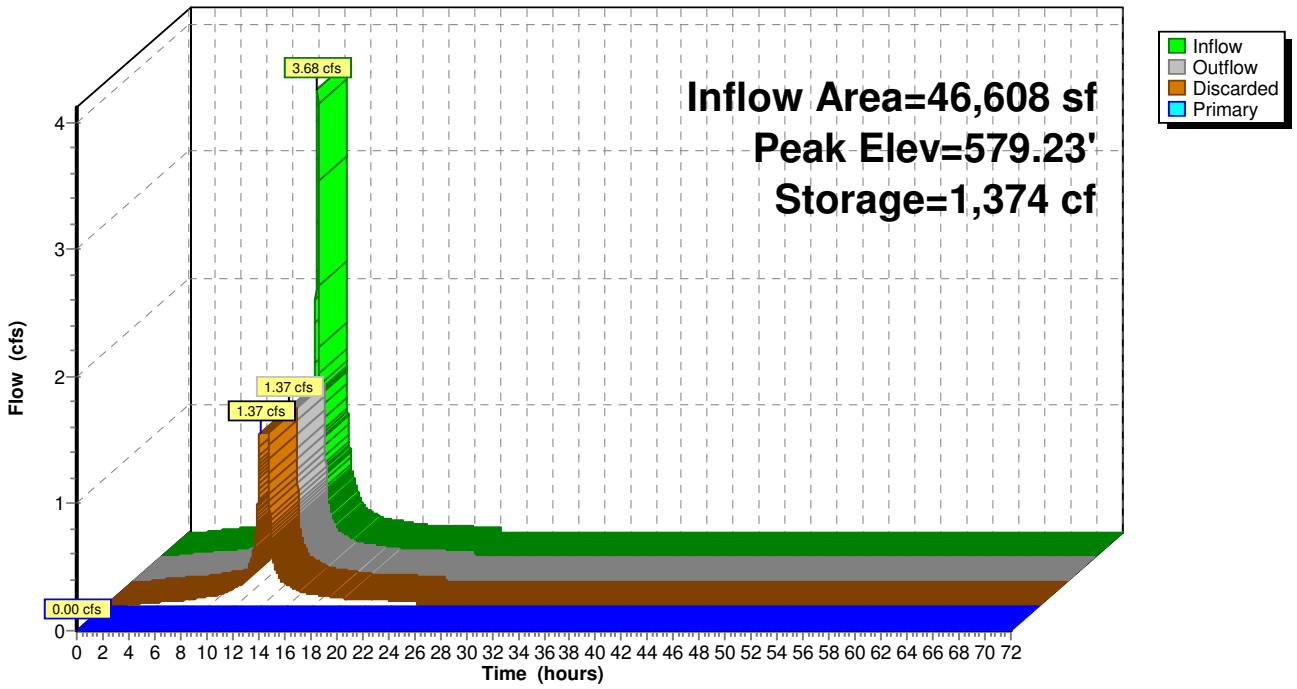
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=579.00' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 18P: Basin 5

Sharp-Crested Rectangular Weir Exfiltration

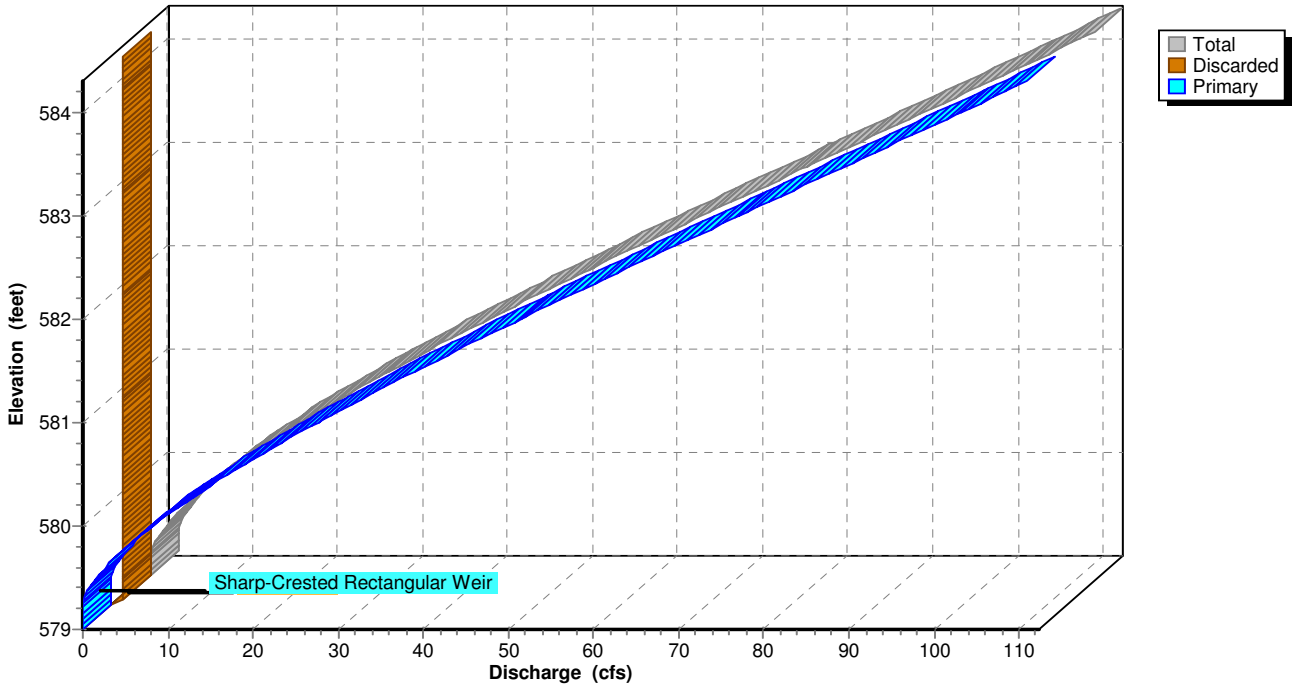
Pond 18P: Basin 5

Hydrograph

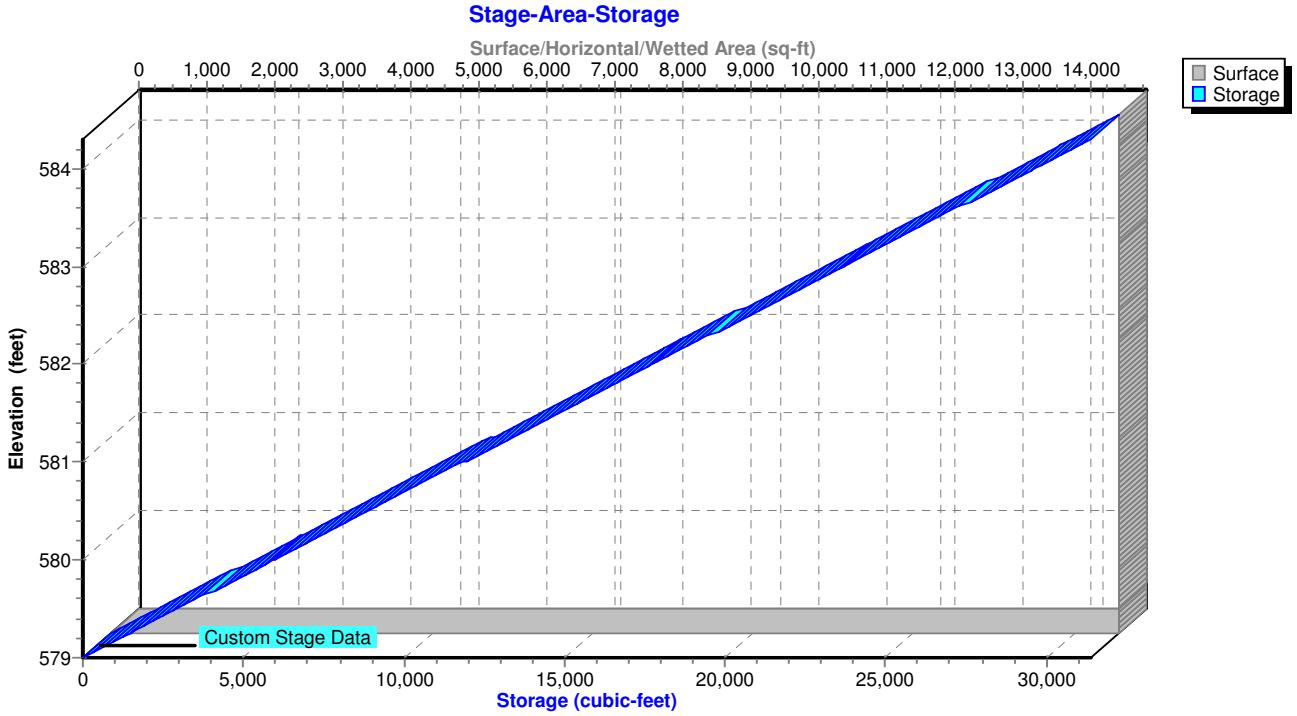


Pond 18P: Basin 5

Stage-Discharge



Pond 18P: Basin 5



Hydrograph for Pond 18P: Basin 5

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	579.00	0.00	0.00	**0.00**
2.00	0.01	3	579.00	0.01	0.01	0.00
4.00	0.03	8	579.00	0.03	0.03	0.00
6.00	0.05	11	579.00	0.05	0.05	0.00
8.00	0.08	18	579.00	0.08	0.08	0.00
10.00	0.15	34	579.01	**0.15**	**0.15**	0.00
12.00	**2.18**	**478**	**579.08**	**1.37**	**1.37**	0.00
14.00	**0.17**	**40**	**579.01**	0.18	0.18	0.00
16.00	0.10	22	579.00	0.10	0.10	0.00
18.00	0.06	15	579.00	0.07	0.07	0.00
20.00	0.06	13	579.00	0.06	0.06	0.00
22.00	0.05	11	579.00	0.05	0.05	0.00
24.00	0.04	9	579.00	0.04	0.04	0.00
26.00	0.00	0	579.00	0.00	0.00	0.00
28.00	0.00	0	579.00	0.00	0.00	0.00
30.00	0.00	0	579.00	0.00	0.00	0.00
32.00	0.00	0	579.00	0.00	0.00	0.00
34.00	0.00	0	579.00	0.00	0.00	0.00
36.00	0.00	0	579.00	0.00	0.00	0.00
38.00	0.00	0	579.00	0.00	0.00	0.00
40.00	0.00	0	579.00	0.00	0.00	0.00
42.00	0.00	0	579.00	0.00	0.00	0.00
44.00	0.00	0	579.00	0.00	0.00	0.00
46.00	0.00	0	579.00	0.00	0.00	0.00
48.00	0.00	0	579.00	0.00	0.00	0.00
50.00	0.00	0	579.00	0.00	0.00	0.00
52.00	0.00	0	579.00	0.00	0.00	0.00
54.00	0.00	0	579.00	0.00	0.00	0.00
56.00	0.00	0	579.00	0.00	0.00	0.00
58.00	0.00	0	579.00	0.00	0.00	0.00
60.00	0.00	0	579.00	0.00	0.00	0.00
62.00	0.00	0	579.00	0.00	0.00	0.00
64.00	0.00	0	579.00	0.00	0.00	0.00
66.00	0.00	0	579.00	0.00	0.00	0.00
68.00	0.00	0	579.00	0.00	0.00	0.00
70.00	0.00	0	579.00	0.00	0.00	0.00
72.00	0.00	0	579.00	0.00	0.00	0.00

Stage-Discharge for Pond 18P: Basin 5

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
579.00	0.00	**0.00**	0.00
579.10	1.37	**1.37**	0.00
579.20	1.37	1.37	0.00
579.30	1.52	1.37	0.15
579.40	2.13	1.37	0.75
579.50	2.99	1.37	1.61
579.60	4.03	1.37	2.66
579.70	5.23	1.37	3.86
579.80	6.56	1.37	5.19
579.90	8.00	1.37	6.63
580.00	9.55	1.37	8.18
580.10	11.19	1.37	9.81
580.20	12.91	1.37	11.54
580.30	14.71	1.37	13.33
580.40	16.57	1.37	15.20
580.50	18.51	1.37	17.14
580.60	20.50	1.37	19.13
580.70	22.55	1.37	21.18
580.80	24.66	1.37	23.28
580.90	26.81	1.37	25.44
581.00	29.00	1.37	27.63
581.10	31.24	1.37	29.87
581.20	33.52	1.37	32.14
581.30	35.83	1.37	34.46
581.40	38.17	1.37	36.80
581.50	40.55	1.37	39.18
581.60	42.96	1.37	41.58
581.70	45.39	1.37	44.02
581.80	47.84	1.37	46.47
581.90	50.32	1.37	48.95
582.00	52.82	1.37	51.45
582.10	55.34	1.37	53.96
582.20	57.87	1.37	56.50
582.30	60.42	1.37	59.05
582.40	62.98	1.37	61.61
582.50	65.55	1.37	64.18
582.60	68.14	1.37	66.77
582.70	70.73	1.37	69.36
582.80	73.33	1.37	71.96
582.90	75.94	1.37	74.56
583.00	78.55	1.37	77.18
583.10	81.16	1.37	79.79
583.20	83.78	1.37	82.40
583.30	86.39	1.37	85.02
583.40	89.01	1.37	87.64
583.50	91.62	1.37	90.25
583.60	94.23	1.37	92.86
583.70	96.84	1.37	95.47
583.80	99.44	1.37	98.07
583.90	102.03	1.37	100.66
584.00	104.62	1.37	103.25
584.10	107.20	1.37	105.83
584.20	109.77	1.37	108.40
584.30	**112.33**	1.37	**110.96**

Stage-Area-Storage for Pond 18P: Basin 5

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
579.00	**14,810**	0
579.10	14,810	592
579.20	14,810	1,185
579.30	14,810	1,777
579.40	14,810	2,370
579.50	14,810	2,962
579.60	14,810	3,554
579.70	14,810	4,147
579.80	14,810	4,739
579.90	14,810	5,332
580.00	14,810	5,924
580.10	14,810	6,516
580.20	14,810	7,109
580.30	14,810	7,701
580.40	14,810	8,294
580.50	14,810	8,886
580.60	14,810	9,478
580.70	14,810	10,071
580.80	14,810	10,663
580.90	14,810	11,256
581.00	14,810	11,848
581.10	14,810	12,440
581.20	14,810	13,033
581.30	14,810	13,625
581.40	14,810	14,218
581.50	14,810	14,810
581.60	14,810	15,402
581.70	14,810	15,995
581.80	14,810	16,587
581.90	14,810	17,180
582.00	14,810	17,772
582.10	14,810	18,364
582.20	14,810	18,957
582.30	14,810	19,549
582.40	14,810	20,142
582.50	14,810	20,734
582.60	14,810	21,326
582.70	14,810	21,919
582.80	14,810	22,511
582.90	14,810	23,104
583.00	14,810	23,696
583.10	14,810	24,288
583.20	14,810	24,881
583.30	14,810	25,473
583.40	14,810	26,066
583.50	14,810	26,658
583.60	14,810	27,250
583.70	14,810	27,843
583.80	14,810	28,435
583.90	14,810	29,028
584.00	14,810	29,620
584.10	14,810	30,212
584.20	14,810	30,805
584.30	14,810	**31,397**

Summary for Pond 24P: Basin 6

Inflow Area = 108,077 sf, 52.61% Impervious, Inflow Depth = 2.26" for 2-Year event
Inflow = 6.37 cfs @ 12.11 hrs, Volume= 20,310 cf
Outflow = 6.35 cfs @ 12.12 hrs, Volume= 20,310 cf, Atten= 0%, Lag= 0.4 min
Discarded = 6.35 cfs @ 12.12 hrs, Volume= 20,310 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 16P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 600.01' @ 12.12 hrs Surf.Area= 35,719 sf Storage= 156 cf

Plug-Flow detention time= 0.4 min calculated for 20,307 cf (100% of inflow)
Center-of-Mass det. time= 0.4 min (783.5 - 783.1)

Volume	Invert	Avail.Storage	Storage Description
#1	600.00'	20,288 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 50,721 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
600.00	35,719	0	0
601.00	35,719	35,719	35,719
601.42	35,719	15,002	50,721

Device	Routing	Invert	Outlet Devices
#1	Primary	600.02'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	600.00'	**10.000 in/hr Exfiltration over Surface area**

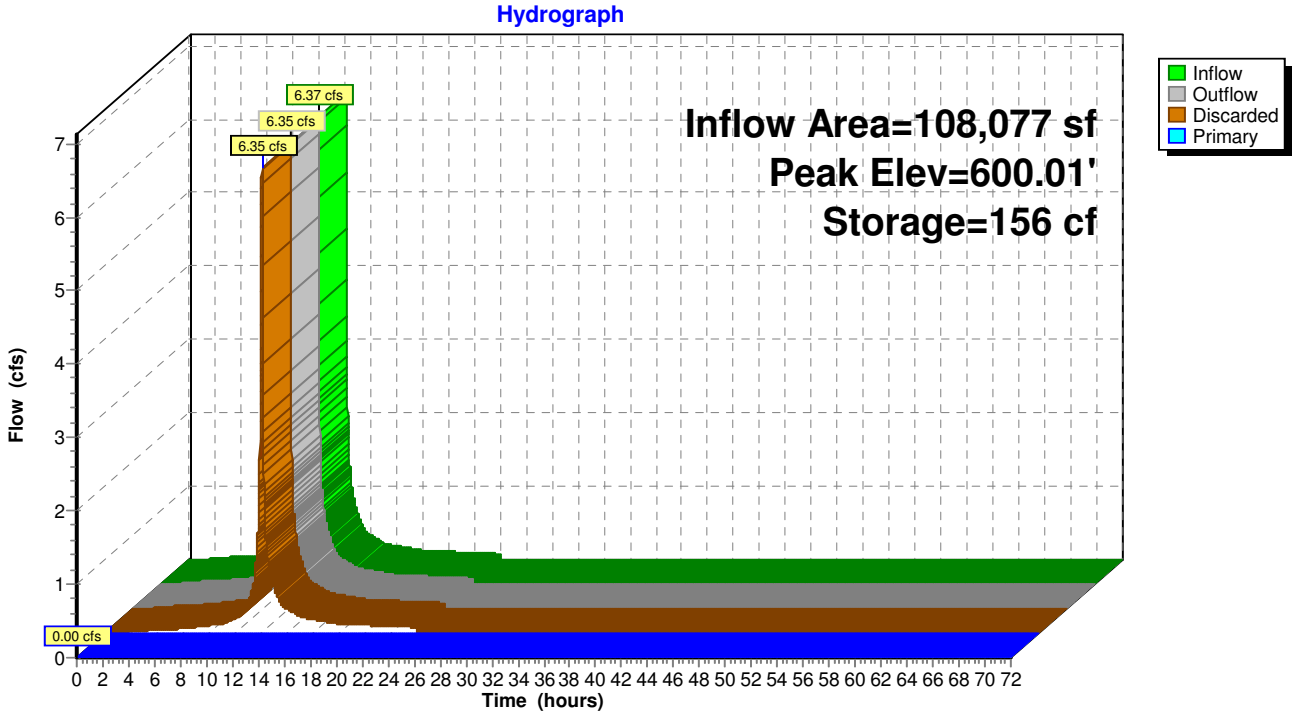
Discarded OutFlow Max=8.27 cfs @ 12.12 hrs HW=600.01' (Free Discharge)
↳**2=Exfiltration** (Exfiltration Controls 8.27 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=600.00' (Free Discharge)
↳**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

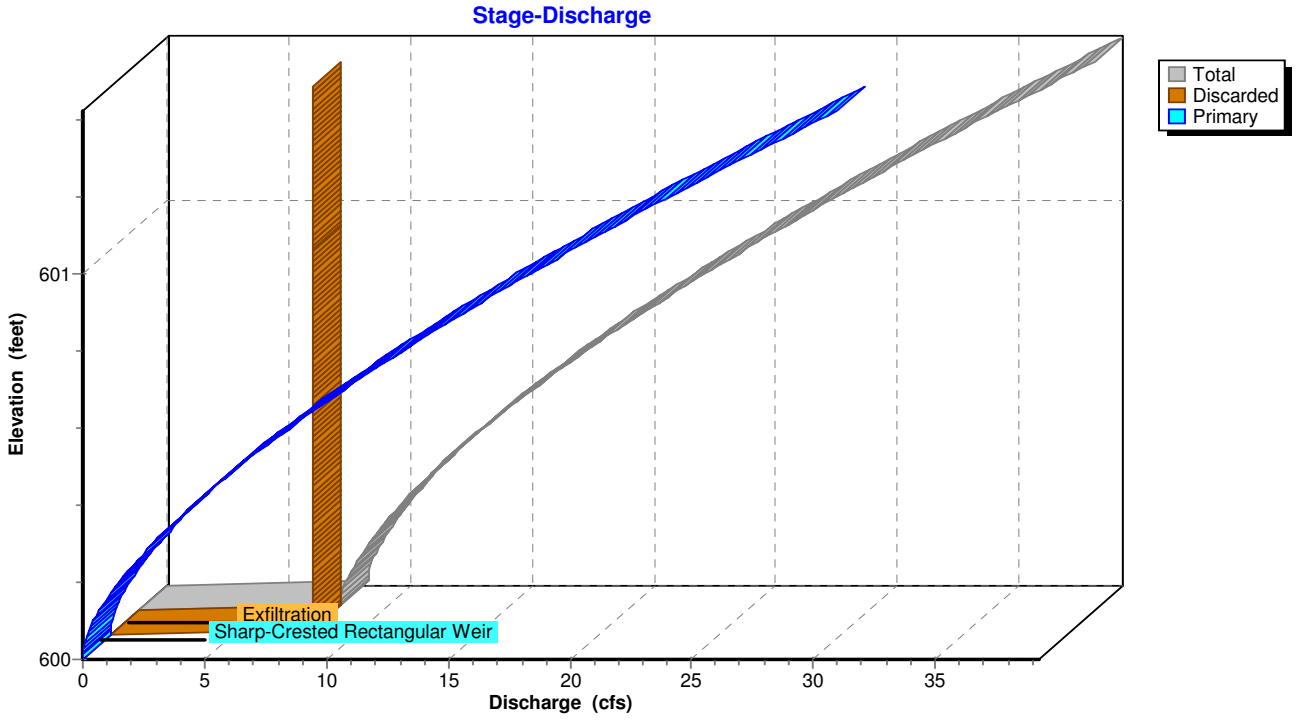
Pond 24P: Basin 6

Sharp-Crested Rectangular Weir Exfiltration

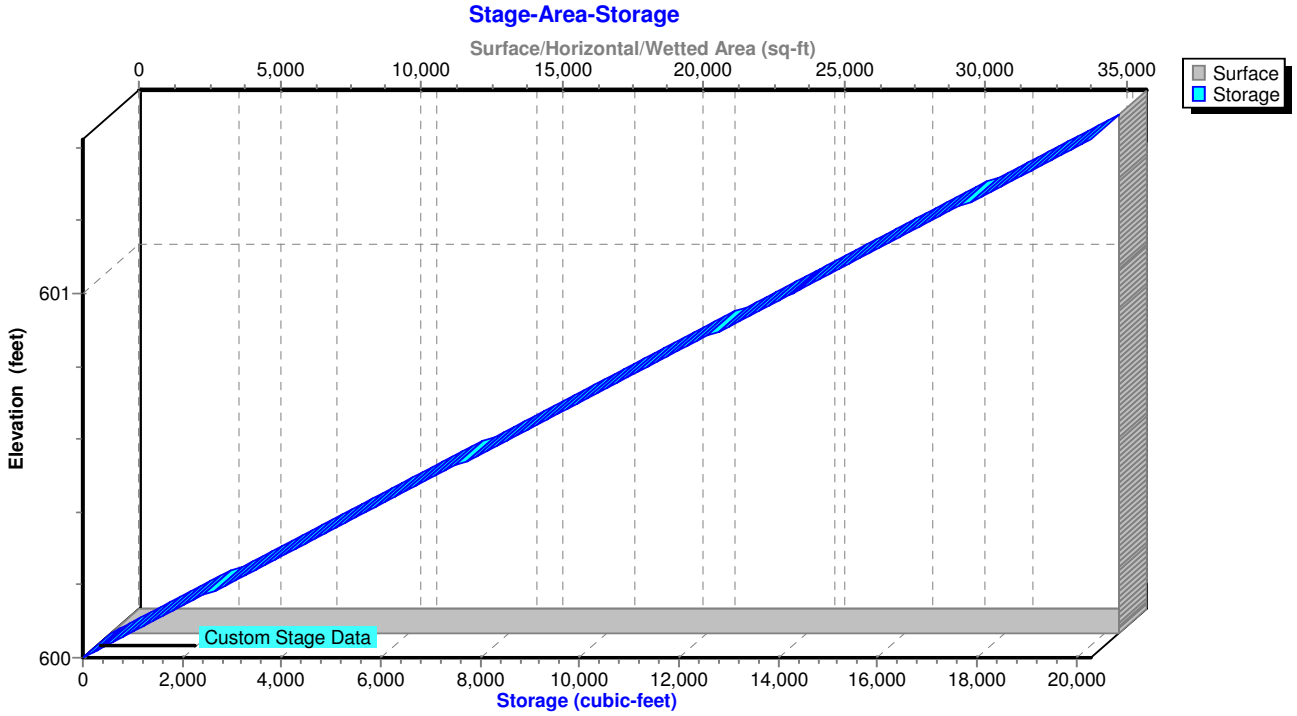
Pond 24P: Basin 6



Pond 24P: Basin 6



Pond 24P: Basin 6



Hydrograph for Pond 24P: Basin 6

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	600.00	0.00	0.00	**0.00**
2.00	0.02	0	600.00	0.02	0.02	0.00
4.00	0.04	1	600.00	0.04	0.04	0.00
6.00	0.06	2	600.00	0.06	0.06	0.00
8.00	0.11	3	600.00	0.11	0.11	0.00
10.00	0.20	5	600.00	0.20	0.20	0.00
12.00	**3.57**	**86**	**600.01**	**3.52**	**3.52**	0.00
14.00	**0.34**	**8**	**600.00**	**0.34**	**0.34**	0.00
16.00	0.19	5	600.00	0.19	0.19	0.00
18.00	0.13	3	600.00	0.13	0.13	0.00
20.00	0.11	3	600.00	0.11	0.11	0.00
22.00	0.10	2	600.00	0.10	0.10	0.00
24.00	0.08	2	600.00	0.08	0.08	0.00
26.00	0.00	0	600.00	0.00	0.00	0.00
28.00	0.00	0	600.00	0.00	0.00	0.00
30.00	0.00	0	600.00	0.00	0.00	0.00
32.00	0.00	0	600.00	0.00	0.00	0.00
34.00	0.00	0	600.00	0.00	0.00	0.00
36.00	0.00	0	600.00	0.00	0.00	0.00
38.00	0.00	0	600.00	0.00	0.00	0.00
40.00	0.00	0	600.00	0.00	0.00	0.00
42.00	0.00	0	600.00	0.00	0.00	0.00
44.00	0.00	0	600.00	0.00	0.00	0.00
46.00	0.00	0	600.00	0.00	0.00	0.00
48.00	0.00	0	600.00	0.00	0.00	0.00
50.00	0.00	0	600.00	0.00	0.00	0.00
52.00	0.00	0	600.00	0.00	0.00	0.00
54.00	0.00	0	600.00	0.00	0.00	0.00
56.00	0.00	0	600.00	0.00	0.00	0.00
58.00	0.00	0	600.00	0.00	0.00	0.00
60.00	0.00	0	600.00	0.00	0.00	0.00
62.00	0.00	0	600.00	0.00	0.00	0.00
64.00	0.00	0	600.00	0.00	0.00	0.00
66.00	0.00	0	600.00	0.00	0.00	0.00
68.00	0.00	0	600.00	0.00	0.00	0.00
70.00	0.00	0	600.00	0.00	0.00	0.00
72.00	0.00	0	600.00	0.00	0.00	0.00

Stage-Discharge for Pond 24P: Basin 6

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
600.00	0.00	**0.00**	0.00
600.02	8.27	**8.27**	0.00
600.04	8.32	8.27	0.06
600.06	8.43	8.27	0.16
600.08	8.56	8.27	0.29
600.10	8.71	8.27	0.44
600.12	8.89	8.27	0.62
600.14	9.08	8.27	0.81
600.16	9.29	8.27	1.02
600.18	9.52	8.27	1.25
600.20	9.76	8.27	1.49
600.22	10.01	8.27	1.74
600.24	10.28	8.27	2.01
600.26	10.56	8.27	2.29
600.28	10.85	8.27	2.58
600.30	11.15	8.27	2.88
600.32	11.46	8.27	3.19
600.34	11.78	8.27	3.51
600.36	12.11	8.27	3.85
600.38	12.46	8.27	4.19
600.40	12.81	8.27	4.54
600.42	13.17	8.27	4.90
600.44	13.53	8.27	5.27
600.46	13.91	8.27	5.64
600.48	14.30	8.27	6.03
600.50	14.69	8.27	6.42
600.52	15.09	8.27	6.82
600.54	15.50	8.27	7.23
600.56	15.91	8.27	7.65
600.58	16.34	8.27	8.07
600.60	16.77	8.27	8.50
600.62	17.20	8.27	8.94
600.64	17.65	8.27	9.38
600.66	18.10	8.27	9.83
600.68	18.56	8.27	10.29
600.70	19.02	8.27	10.75
600.72	19.49	8.27	11.22
600.74	19.97	8.27	11.70
600.76	20.45	8.27	12.18
600.78	20.94	8.27	12.67
600.80	21.43	8.27	13.16
600.82	21.93	8.27	13.66
600.84	22.44	8.27	14.17
600.86	22.95	8.27	14.68
600.88	23.47	8.27	15.20
600.90	23.99	8.27	15.72
600.92	24.52	8.27	16.25
600.94	25.05	8.27	16.78
600.96	25.59	8.27	17.32
600.98	26.13	8.27	17.86
601.00	26.68	8.27	18.41
601.02	27.23	8.27	18.97
601.04	27.79	8.27	19.52
601.06	28.36	8.27	20.09
601.08	28.92	8.27	20.66
601.10	29.50	8.27	21.23
601.12	30.07	8.27	21.81
601.14	30.66	8.27	22.39
601.16	31.24	8.27	22.97
601.18	31.83	8.27	23.56
601.20	32.43	8.27	24.16
601.22	33.03	8.27	24.76
601.24	33.63	8.27	25.36
601.26	34.24	8.27	25.97
601.28	34.85	8.27	26.58
601.30	35.47	8.27	27.20
601.32	36.09	8.27	27.82
601.34	36.71	8.27	28.45
601.36	37.34	8.27	29.07
601.38	37.98	8.27	29.71
601.40	38.61	8.27	30.34
601.42	**39.25**	8.27	**30.98**

Stage-Area-Storage for Pond 24P: Basin 6

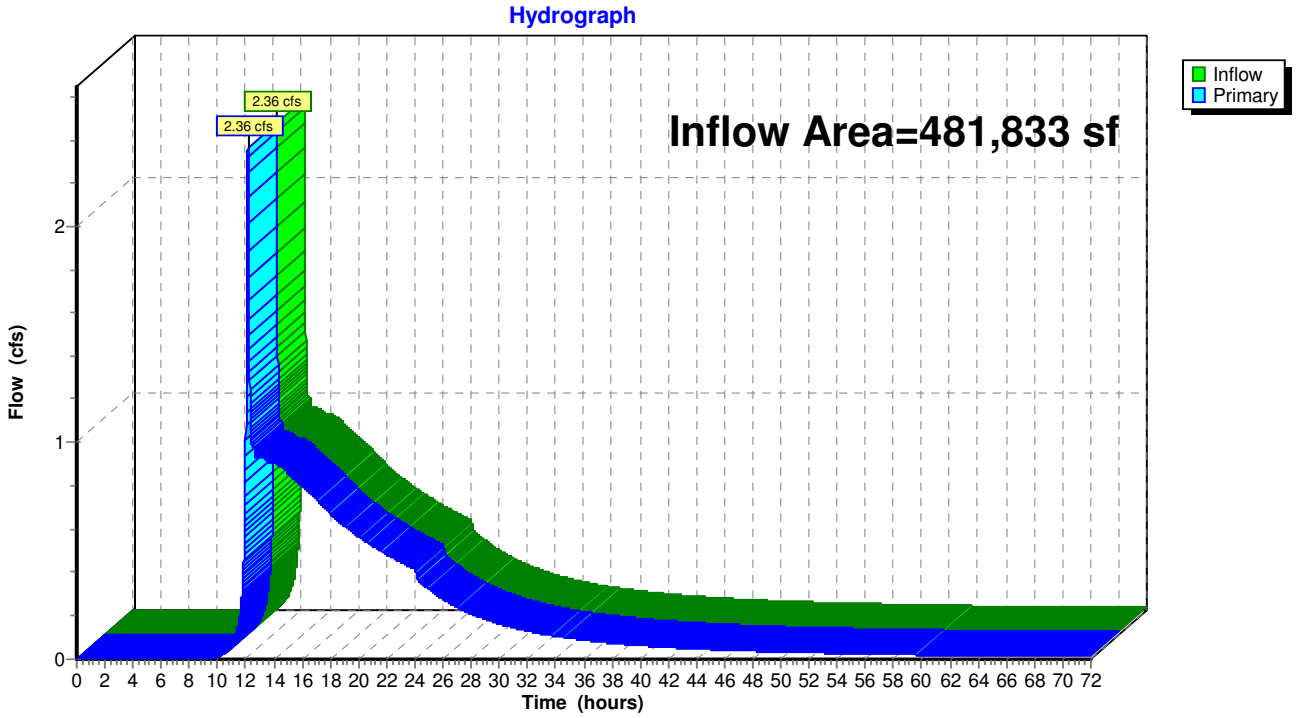
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
600.00	**35,719**	0
600.02	35,719	286
600.04	35,719	572
600.06	35,719	857
600.08	35,719	1,143
600.10	35,719	1,429
600.12	35,719	1,715
600.14	35,719	2,000
600.16	35,719	2,286
600.18	35,719	2,572
600.20	35,719	2,858
600.22	35,719	3,143
600.24	35,719	3,429
600.26	35,719	3,715
600.28	35,719	4,001
600.30	35,719	4,286
600.32	35,719	4,572
600.34	35,719	4,858
600.36	35,719	5,144
600.38	35,719	5,429
600.40	35,719	5,715
600.42	35,719	6,001
600.44	35,719	6,287
600.46	35,719	6,572
600.48	35,719	6,858
600.50	35,719	7,144
600.52	35,719	7,430
600.54	35,719	7,715
600.56	35,719	8,001
600.58	35,719	8,287
600.60	35,719	8,573
600.62	35,719	8,858
600.64	35,719	9,144
600.66	35,719	9,430
600.68	35,719	9,716
600.70	35,719	10,001
600.72	35,719	10,287
600.74	35,719	10,573
600.76	35,719	10,859
600.78	35,719	11,144
600.80	35,719	11,430
600.82	35,719	11,716
600.84	35,719	12,002
600.86	35,719	12,287
600.88	35,719	12,573
600.90	35,719	12,859
600.92	35,719	13,145
600.94	35,719	13,430
600.96	35,719	13,716
600.98	35,719	14,002
601.00	35,719	14,288
601.02	35,719	14,573
601.04	35,719	14,859
601.06	35,719	15,145
601.08	35,719	15,431
601.10	35,719	15,716
601.12	35,719	16,002
601.14	35,719	16,288
601.16	35,719	16,574
601.18	35,719	16,859
601.20	35,719	17,145
601.22	35,719	17,431
601.24	35,719	17,717
601.26	35,719	18,002
601.28	35,719	18,288
601.30	35,719	18,574
601.32	35,719	18,860
601.34	35,719	19,145
601.36	35,719	19,431
601.38	35,719	19,717
601.40	35,719	20,003
601.42	35,719	**20,288**

Summary for Link 25L: POA 1

Inflow Area = 481,833 sf, 51.45% Impervious, Inflow Depth > 1.09" for 2-Year event
Inflow = 2.36 cfs @ 12.15 hrs, Volume= 43,958 cf
Primary = 2.36 cfs @ 12.15 hrs, Volume= 43,958 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 25L: POA 1



Hydrograph for Link 25L: POA 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.03	0.00	0.03
1.00	0.00	0.00	0.00	52.00	0.03	0.00	0.03
2.00	0.00	0.00	0.00	53.00	0.03	0.00	0.03
3.00	0.00	0.00	0.00	54.00	0.03	0.00	0.03
4.00	0.00	0.00	0.00	55.00	0.03	0.00	0.03
5.00	0.00	0.00	0.00	56.00	0.02	0.00	0.02
6.00	0.00	0.00	0.00	57.00	0.02	0.00	0.02
7.00	0.00	0.00	0.00	58.00	0.02	0.00	0.02
8.00	0.00	0.00	0.00	59.00	0.02	0.00	0.02
9.00	0.00	0.00	0.00	60.00	0.02	0.00	0.02
10.00	0.01	0.00	0.01	61.00	0.02	0.00	0.02
11.00	0.07	0.00	0.07	62.00	0.02	0.00	0.02
12.00	**1.01**	0.00	**1.01**	63.00	0.02	0.00	0.02
13.00	**0.94**	0.00	**0.94**	64.00	0.02	0.00	0.02
14.00	0.91	0.00	0.91	65.00	0.02	0.00	0.02
15.00	0.86	0.00	0.86	66.00	0.02	0.00	0.02
16.00	0.80	0.00	0.80	67.00	0.02	0.00	0.02
17.00	0.74	0.00	0.74	68.00	0.01	0.00	0.01
18.00	0.67	0.00	0.67	69.00	0.01	0.00	0.01
19.00	0.62	0.00	0.62	70.00	0.01	0.00	0.01
20.00	0.57	0.00	0.57	71.00	0.01	0.00	0.01
21.00	0.52	0.00	0.52	72.00	0.01	0.00	0.01
22.00	0.48	0.00	0.48				
23.00	0.45	0.00	0.45				
24.00	0.42	0.00	0.42				
25.00	0.32	0.00	0.32				
26.00	0.28	0.00	0.28				
27.00	0.24	0.00	0.24				
28.00	0.21	0.00	0.21				
29.00	0.18	0.00	0.18				
30.00	0.16	0.00	0.16				
31.00	0.15	0.00	0.15				
32.00	0.13	0.00	0.13				
33.00	0.12	0.00	0.12				
34.00	0.11	0.00	0.11				
35.00	0.10	0.00	0.10				
36.00	0.09	0.00	0.09				
37.00	0.08	0.00	0.08				
38.00	0.07	0.00	0.07				
39.00	0.07	0.00	0.07				
40.00	0.06	0.00	0.06				
41.00	0.06	0.00	0.06				
42.00	0.06	0.00	0.06				
43.00	0.05	0.00	0.05				
44.00	0.05	0.00	0.05				
45.00	0.04	0.00	0.04				
46.00	0.04	0.00	0.04				
47.00	0.04	0.00	0.04				
48.00	0.04	0.00	0.04				
49.00	0.04	0.00	0.04				
50.00	0.03	0.00	0.03				

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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 14S: Basin 1 - Imp Runoff Area=147,571 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=1,000' Tc=14.1 min CN=98 Runoff=12.98 cfs 61,277 cf

Subcatchment 15S: Basin 1 - Perv Runoff Area=114,590 sf 0.00% Impervious Runoff Depth=2.81"
Flow Length=1,000' Tc=14.1 min CN=77 Runoff=6.53 cfs 26,815 cf

Subcatchment 17S: Basin 5 - Imp Runoff Area=43,168 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=222' Slope=0.0200 '/' Tc=1.8 min CN=98 Runoff=5.42 cfs 17,925 cf

Subcatchment 22S: Basin 6 - Imp Runoff Area=56,858 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=490' Slope=0.0200 '/' Tc=3.6 min CN=98 Runoff=6.99 cfs 23,610 cf

Subcatchment 23S: Basin 6 - Perv Runoff Area=51,219 sf 0.00% Impervious Runoff Depth=2.54"
Flow Length=490' Slope=0.0200 '/' Tc=3.6 min CN=74 Runoff=3.84 cfs 10,845 cf

Subcatchment 26S: DA 1 Und - Perv Runoff Area=64,687 sf 0.00% Impervious Runoff Depth=2.81"
Flow Length=150' Slope=0.1100 '/' Tc=7.1 min CN=77 Runoff=4.71 cfs 15,137 cf

Subcatchment 27S: Basin 5 - Perv Runoff Area=3,440 sf 0.00% Impervious Runoff Depth=2.54"
Flow Length=222' Slope=0.0200 '/' Tc=1.8 min CN=74 Runoff=0.27 cfs 728 cf

Subcatchment 28S: undetained impervious Runoff Area=300 sf 100.00% Impervious Runoff Depth=4.98"
Tc=0.0 min CN=98 Runoff=0.04 cfs 125 cf

Pond 16P: Basin 1 Peak Elev=544.64' Storage=51,866 cf Inflow=20.44 cfs 89,159 cf
Outflow=3.24 cfs 72,781 cf

Pond 18P: Basin 5 Peak Elev=579.44' Storage=2,595 cf Inflow=5.69 cfs 18,653 cf
Discarded=1.37 cfs 17,616 cf Primary=1.06 cfs 1,038 cf Outflow=2.43 cfs 18,653 cf

Pond 24P: Basin 6 Peak Elev=600.05' Storage=784 cf Inflow=10.83 cfs 34,455 cf
Discarded=8.27 cfs 34,425 cf Primary=0.13 cfs 30 cf Outflow=8.40 cfs 34,455 cf

Link 25L: POA 1 Inflow=5.27 cfs 88,042 cf
Primary=5.27 cfs 88,042 cf

Total Runoff Area = 481,833 sf Runoff Volume = 156,462 cf Average Runoff Depth = 3.90"
48.55% Pervious = 233,936 sf 51.45% Impervious = 247,897 sf

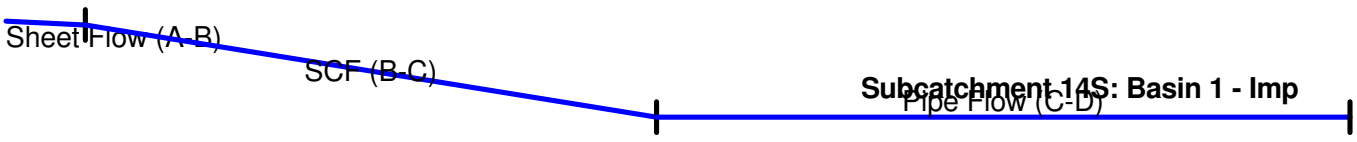
Summary for Subcatchment 14S: Basin 1 - Imp

Runoff = 12.98 cfs @ 12.21 hrs, Volume= 61,277 cf, Depth= 4.98"
Routed to Pond 16P : Basin 1

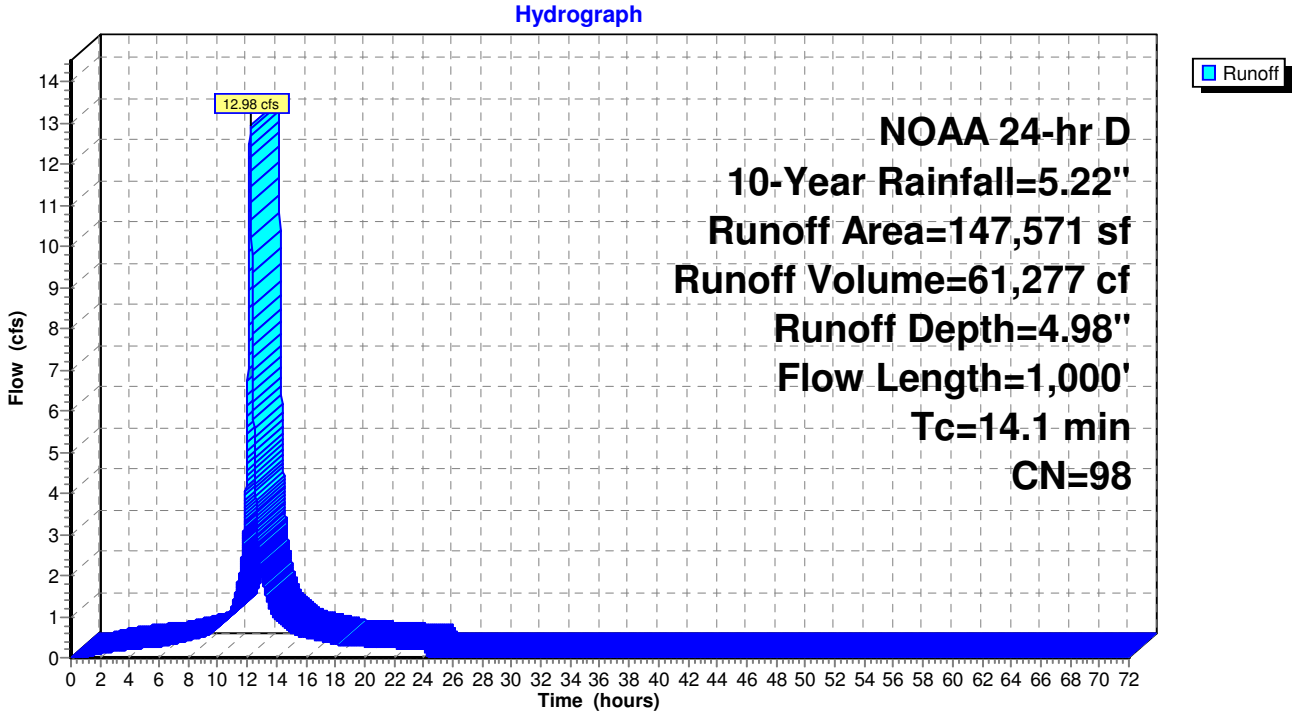
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

	Area (sf)	CN	Description
*	9,022	98	non parking impervious
	28,163	98	Paved parking, HSG C
	110,386	98	Roofs, HSG C
	147,571	98	Weighted Average
	147,571		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.7	425	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
3.4	516		2.50		**Direct Entry, Pipe Flow (C-D)**
14.1	1,000	Total			



Subcatchment 14S: Basin 1 - Imp



Hydrograph for Subcatchment 14S: Basin 1 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.01
2.00	0.13	0.02	0.10
3.00	0.20	0.07	0.16
4.00	0.27	0.12	0.21
5.00	0.36	0.19	0.24
6.00	0.45	0.27	0.27
7.00	0.55	0.36	0.35
8.00	0.68	0.48	0.43
9.00	0.83	0.63	0.51
10.00	1.03	0.82	0.76
11.00	1.36	1.14	1.29
12.00	2.50	2.27	**5.65**
13.00	3.86	3.63	**1.99**
14.00	4.19	3.95	0.91
15.00	4.39	4.16	0.63
16.00	4.54	4.31	0.49
17.00	4.67	4.43	0.41
18.00	4.77	4.54	0.33
19.00	4.86	4.63	0.30
20.00	4.95	4.71	0.28
21.00	5.02	4.79	0.26
22.00	5.09	4.86	0.24
23.00	5.16	4.92	0.22
24.00	**5.22**	**4.98**	0.20
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
58.00	5.22	4.98	0.00
59.00	5.22	4.98	0.00
60.00	5.22	4.98	0.00
61.00	5.22	4.98	0.00
62.00	5.22	4.98	0.00
63.00	5.22	4.98	0.00
64.00	5.22	4.98	0.00
65.00	5.22	4.98	0.00
66.00	5.22	4.98	0.00
67.00	5.22	4.98	0.00
68.00	5.22	4.98	0.00
69.00	5.22	4.98	0.00
70.00	5.22	4.98	0.00
71.00	5.22	4.98	0.00
72.00	5.22	4.98	0.00

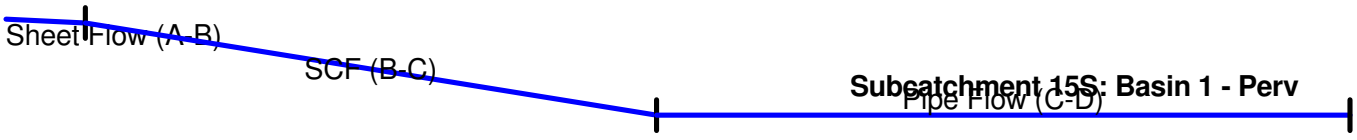
Summary for Subcatchment 15S: Basin 1 - Perv

Runoff = 6.53 cfs @ 12.22 hrs, Volume= 26,815 cf, Depth= 2.81"
Routed to Pond 16P : Basin 1

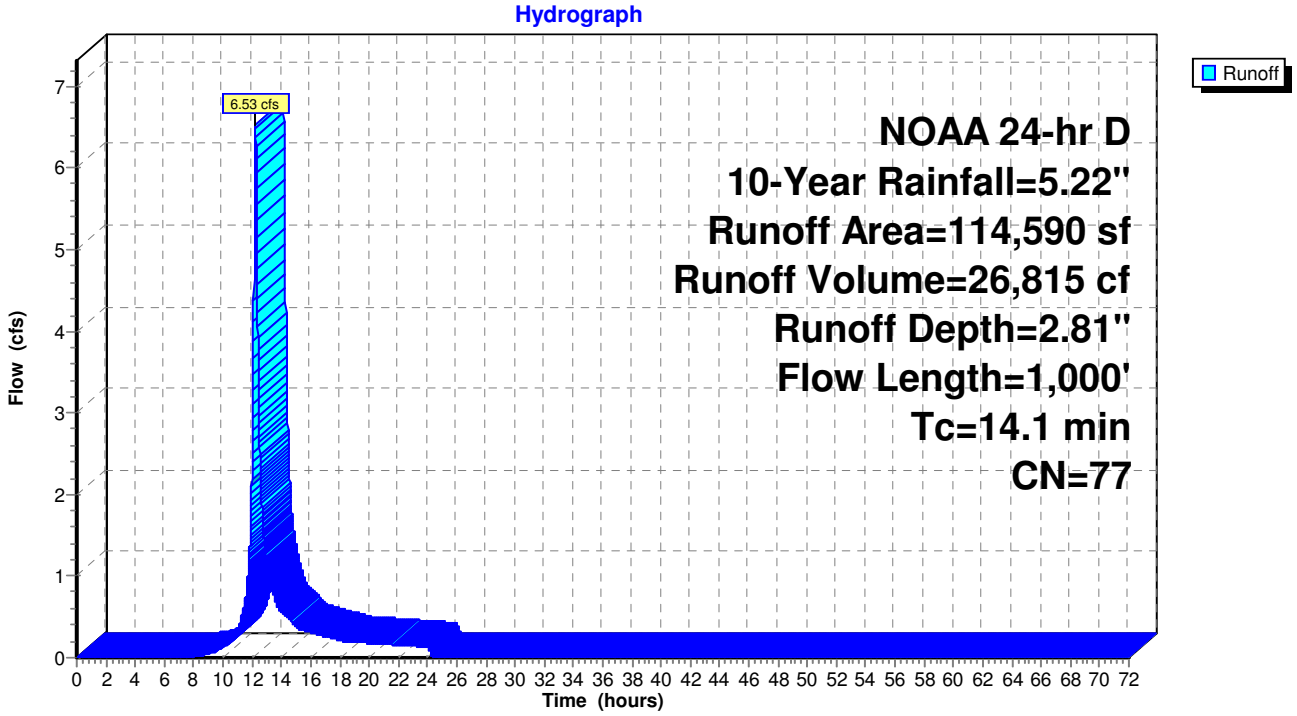
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
64,900	80	>75% Grass cover, Good, HSG D
49,690	74	>75% Grass cover, Good, HSG C
114,590	77	Weighted Average
114,590		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.7	425	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
3.4	516		2.50		**Direct Entry, Pipe Flow (C-D)**
14.1	1,000	Total			



Subcatchment 15S: Basin 1 - Perv



Hydrograph for Subcatchment 15S: Basin 1 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.13	0.00	0.00
3.00	0.20	0.00	0.00
4.00	0.27	0.00	0.00
5.00	0.36	0.00	0.00
6.00	0.45	0.00	0.00
7.00	0.55	0.00	0.00
8.00	0.68	0.00	0.01
9.00	0.83	0.02	0.05
10.00	1.03	0.06	0.13
11.00	1.36	0.15	0.34
12.00	2.50	0.74	**2.40**
13.00	3.86	1.71	**1.18**
14.00	4.19	1.96	0.56
15.00	4.39	2.12	0.39
16.00	4.54	2.25	0.31
17.00	4.67	2.35	0.26
18.00	4.77	2.44	0.21
19.00	4.86	2.51	0.19
20.00	4.95	2.58	0.18
21.00	5.02	2.64	0.17
22.00	5.09	2.70	0.16
23.00	5.16	2.76	0.14
24.00	**5.22**	**2.81**	0.13
25.00	5.22	2.81	0.00
26.00	5.22	2.81	0.00
27.00	5.22	2.81	0.00
28.00	5.22	2.81	0.00
29.00	5.22	2.81	0.00
30.00	5.22	2.81	0.00
31.00	5.22	2.81	0.00
32.00	5.22	2.81	0.00
33.00	5.22	2.81	0.00
34.00	5.22	2.81	0.00
35.00	5.22	2.81	0.00
36.00	5.22	2.81	0.00
37.00	5.22	2.81	0.00
38.00	5.22	2.81	0.00
39.00	5.22	2.81	0.00
40.00	5.22	2.81	0.00
41.00	5.22	2.81	0.00
42.00	5.22	2.81	0.00
43.00	5.22	2.81	0.00
44.00	5.22	2.81	0.00
45.00	5.22	2.81	0.00
46.00	5.22	2.81	0.00
47.00	5.22	2.81	0.00
48.00	5.22	2.81	0.00
49.00	5.22	2.81	0.00
50.00	5.22	2.81	0.00
51.00	5.22	2.81	0.00
52.00	5.22	2.81	0.00
53.00	5.22	2.81	0.00
54.00	5.22	2.81	0.00
55.00	5.22	2.81	0.00
56.00	5.22	2.81	0.00
57.00	5.22	2.81	0.00
58.00	5.22	2.81	0.00
59.00	5.22	2.81	0.00
60.00	5.22	2.81	0.00
61.00	5.22	2.81	0.00
62.00	5.22	2.81	0.00
63.00	5.22	2.81	0.00
64.00	5.22	2.81	0.00
65.00	5.22	2.81	0.00
66.00	5.22	2.81	0.00
67.00	5.22	2.81	0.00
68.00	5.22	2.81	0.00
69.00	5.22	2.81	0.00
70.00	5.22	2.81	0.00
71.00	5.22	2.81	0.00
72.00	5.22	2.81	0.00

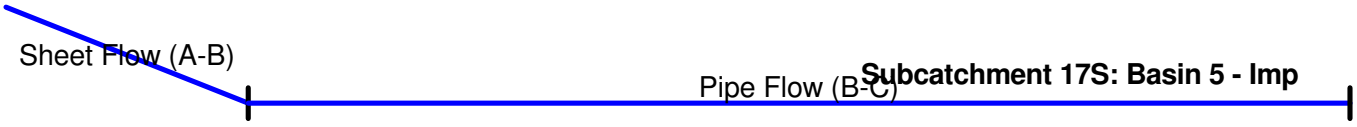
Summary for Subcatchment 17S: Basin 5 - Imp

Runoff = 5.42 cfs @ 12.10 hrs, Volume= 17,925 cf, Depth= 4.98"
Routed to Pond 18P : Basin 5

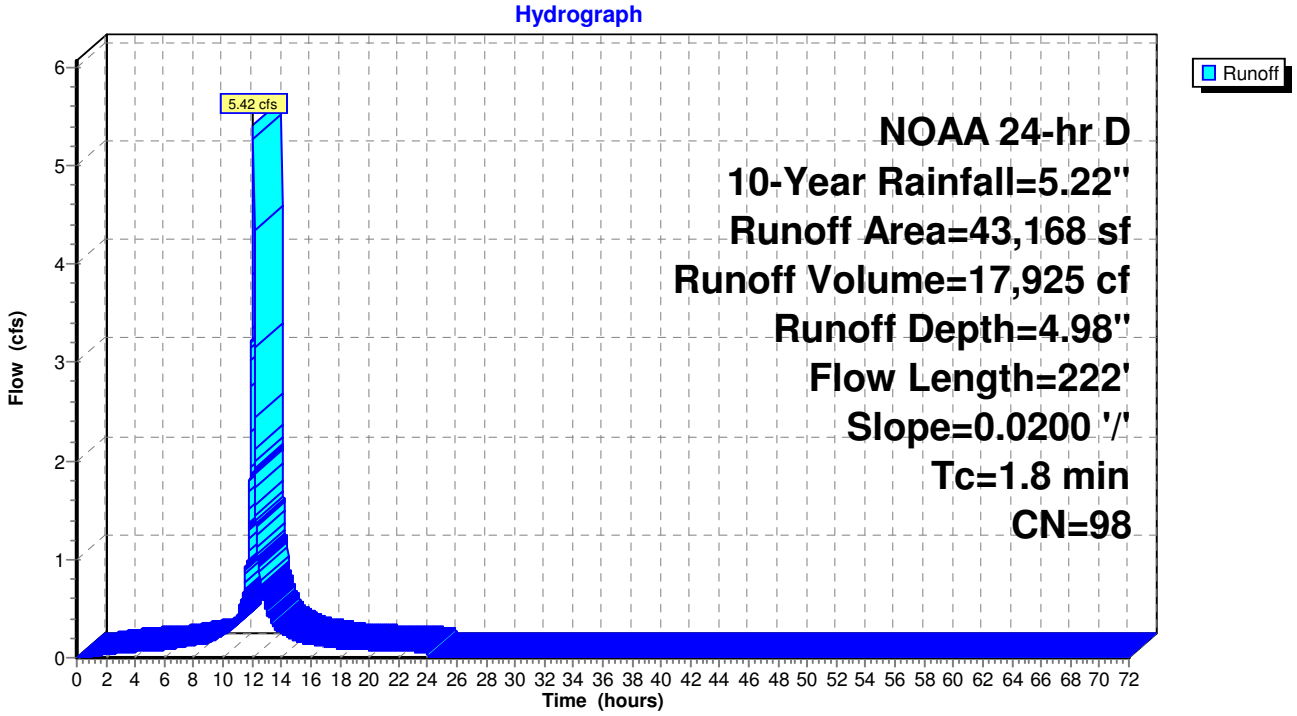
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

	Area (sf)	CN	Description
	26,232	98	Roofs, HSG C
	14,605	98	Paved parking, HSG C
*	2,331	98	impervious other than pavement
	43,168	98	Weighted Average
	43,168		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
1.2	182		2.50		**Direct Entry, Pipe Flow (B-C)**
1.8	222	Total			



Subcatchment 17S: Basin 5 - Imp



Hydrograph for Subcatchment 17S: Basin 5 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.01
2.00	0.13	0.02	0.03
3.00	0.20	0.07	0.05
4.00	0.27	0.12	0.06
5.00	0.36	0.19	0.07
6.00	0.45	0.27	0.08
7.00	0.55	0.36	0.11
8.00	0.68	0.48	0.13
9.00	0.83	0.63	0.15
10.00	1.03	0.82	0.24
11.00	1.36	1.14	0.43
12.00	2.50	2.27	**3.24**
13.00	3.86	3.63	**0.49**
14.00	4.19	3.95	0.25
15.00	4.39	4.16	0.17
16.00	4.54	4.31	0.14
17.00	4.67	4.43	0.12
18.00	4.77	4.54	0.09
19.00	4.86	4.63	0.09
20.00	4.95	4.71	0.08
21.00	5.02	4.79	0.07
22.00	5.09	4.86	0.07
23.00	5.16	4.92	0.06
24.00	**5.22**	**4.98**	0.06
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
58.00	5.22	4.98	0.00
59.00	5.22	4.98	0.00
60.00	5.22	4.98	0.00
61.00	5.22	4.98	0.00
62.00	5.22	4.98	0.00
63.00	5.22	4.98	0.00
64.00	5.22	4.98	0.00
65.00	5.22	4.98	0.00
66.00	5.22	4.98	0.00
67.00	5.22	4.98	0.00
68.00	5.22	4.98	0.00
69.00	5.22	4.98	0.00
70.00	5.22	4.98	0.00
71.00	5.22	4.98	0.00
72.00	5.22	4.98	0.00

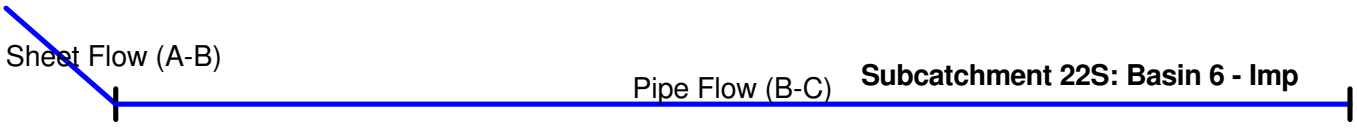
Summary for Subcatchment 22S: Basin 6 - Imp

Runoff = 6.99 cfs @ 12.11 hrs, Volume= 23,610 cf, Depth= 4.98"
Routed to Pond 24P : Basin 6

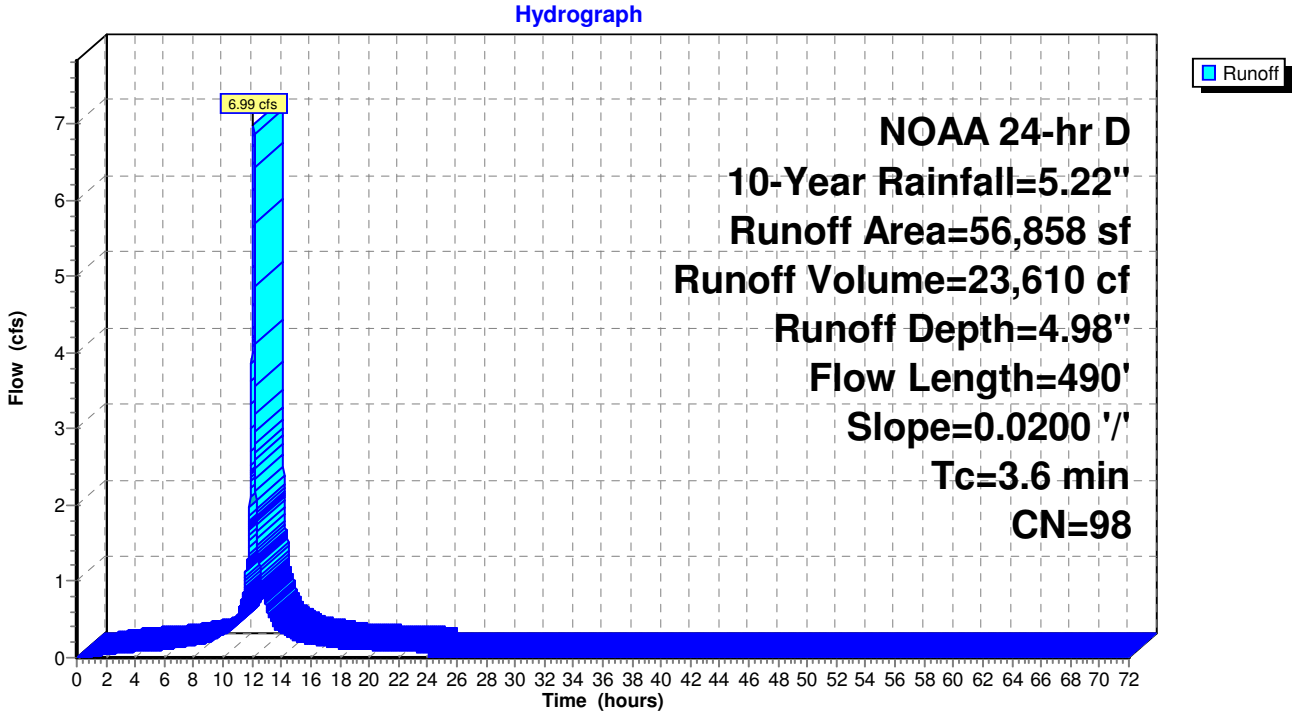
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

	Area (sf)	CN	Description
	16,127	98	Paved parking, HSG D
	21,053	98	Paved parking, HSG C
*	4,437	98	impervious non pavement
*	15,241	98	fire lane pervoius pavers
	56,858	98	Weighted Average
	56,858		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
3.0	450		2.50		**Direct Entry, Pipe Flow (B-C)**
3.6	490	Total			



Subcatchment 22S: Basin 6 - Imp



Hydrograph for Subcatchment 22S: Basin 6 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.01
2.00	0.13	0.02	0.04
3.00	0.20	0.07	0.07
4.00	0.27	0.12	0.08
5.00	0.36	0.19	0.09
6.00	0.45	0.27	0.11
7.00	0.55	0.36	0.14
8.00	0.68	0.48	0.17
9.00	0.83	0.63	0.20
10.00	1.03	0.82	0.31
11.00	1.36	1.14	0.56
12.00	2.50	2.27	**4.15**
13.00	3.86	3.63	**0.65**
14.00	4.19	3.95	0.33
15.00	4.39	4.16	0.22
16.00	4.54	4.31	0.18
17.00	4.67	4.43	0.15
18.00	4.77	4.54	0.12
19.00	4.86	4.63	0.11
20.00	4.95	4.71	0.11
21.00	5.02	4.79	0.10
22.00	5.09	4.86	0.09
23.00	5.16	4.92	0.08
24.00	**5.22**	**4.98**	0.08
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
58.00	5.22	4.98	0.00
59.00	5.22	4.98	0.00
60.00	5.22	4.98	0.00
61.00	5.22	4.98	0.00
62.00	5.22	4.98	0.00
63.00	5.22	4.98	0.00
64.00	5.22	4.98	0.00
65.00	5.22	4.98	0.00
66.00	5.22	4.98	0.00
67.00	5.22	4.98	0.00
68.00	5.22	4.98	0.00
69.00	5.22	4.98	0.00
70.00	5.22	4.98	0.00
71.00	5.22	4.98	0.00
72.00	5.22	4.98	0.00

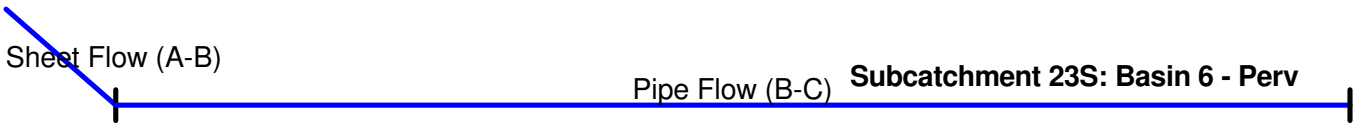
Summary for Subcatchment 23S: Basin 6 - Perv

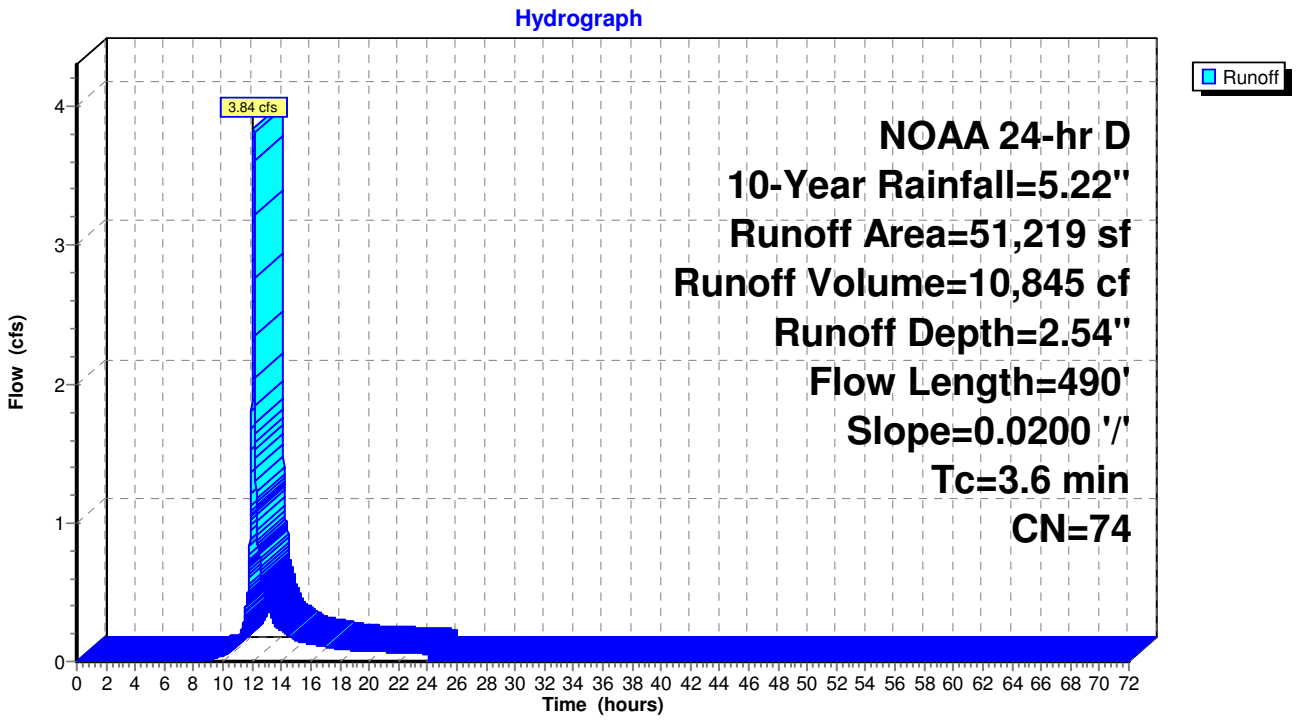
Runoff = 3.84 cfs @ 12.11 hrs, Volume= 10,845 cf, Depth= 2.54"
Routed to Pond 24P : Basin 6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
51,219	74	>75% Grass cover, Good, HSG C
51,219		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
3.0	450		2.50		**Direct Entry, Pipe Flow (B-C)**
3.6	490	Total			





Hydrograph for Subcatchment 23S: Basin 6 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.13	0.00	0.00
3.00	0.20	0.00	0.00
4.00	0.27	0.00	0.00
5.00	0.36	0.00	0.00
6.00	0.45	0.00	0.00
7.00	0.55	0.00	0.00
8.00	0.68	0.00	0.00
9.00	0.83	0.00	0.01
10.00	1.03	0.03	0.05
11.00	1.36	0.10	0.14
12.00	2.50	0.61	**2.00**
13.00	3.86	1.50	**0.42**
14.00	4.19	1.73	0.22
15.00	4.39	1.89	0.15
16.00	4.54	2.01	0.13
17.00	4.67	2.10	0.11
18.00	4.77	2.19	0.09
19.00	4.86	2.26	0.08
20.00	4.95	2.32	0.08
21.00	5.02	2.38	0.07
22.00	5.09	2.44	0.07
23.00	5.16	2.49	0.06
24.00	**5.22**	**2.54**	0.06
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
58.00	5.22	2.54	0.00
59.00	5.22	2.54	0.00
60.00	5.22	2.54	0.00
61.00	5.22	2.54	0.00
62.00	5.22	2.54	0.00
63.00	5.22	2.54	0.00
64.00	5.22	2.54	0.00
65.00	5.22	2.54	0.00
66.00	5.22	2.54	0.00
67.00	5.22	2.54	0.00
68.00	5.22	2.54	0.00
69.00	5.22	2.54	0.00
70.00	5.22	2.54	0.00
71.00	5.22	2.54	0.00
72.00	5.22	2.54	0.00

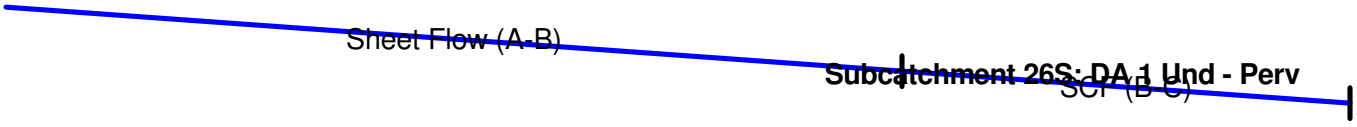
Summary for Subcatchment 26S: DA 1 Und - Perv

Runoff = 4.71 cfs @ 12.14 hrs, Volume= 15,137 cf, Depth= 2.81"
Routed to Link 25L : POA 1

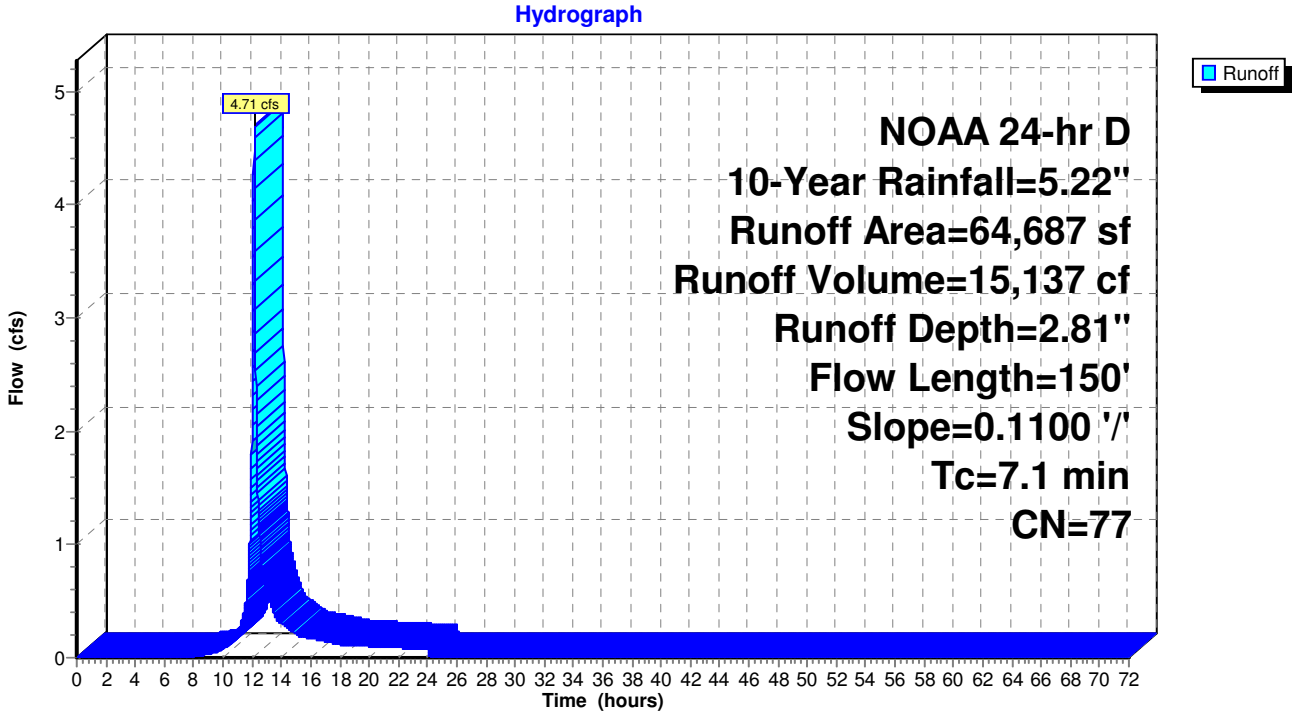
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
31,523	80	>75% Grass cover, Good, HSG D
33,164	74	>75% Grass cover, Good, HSG C
64,687	77	Weighted Average
64,687		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.1100	0.24		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	50	0.1100	5.34		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
7.1	150	Total			



Subcatchment 26S: DA 1 Und - Perv



Hydrograph for Subcatchment 26S: DA 1 Und - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.13	0.00	0.00
3.00	0.20	0.00	0.00
4.00	0.27	0.00	0.00
5.00	0.36	0.00	0.00
6.00	0.45	0.00	0.00
7.00	0.55	0.00	0.00
8.00	0.68	0.00	0.01
9.00	0.83	0.02	0.03
10.00	1.03	0.06	0.08
11.00	1.36	0.15	0.22
12.00	2.50	0.74	**2.19**
13.00	3.86	1.71	**0.60**
14.00	4.19	1.96	0.30
15.00	4.39	2.12	0.21
16.00	4.54	2.25	0.17
17.00	4.67	2.35	0.15
18.00	4.77	2.44	0.12
19.00	4.86	2.51	0.11
20.00	4.95	2.58	0.10
21.00	5.02	2.64	0.09
22.00	5.09	2.70	0.09
23.00	5.16	2.76	0.08
24.00	**5.22**	**2.81**	0.07
25.00	5.22	2.81	0.00
26.00	5.22	2.81	0.00
27.00	5.22	2.81	0.00
28.00	5.22	2.81	0.00
29.00	5.22	2.81	0.00
30.00	5.22	2.81	0.00
31.00	5.22	2.81	0.00
32.00	5.22	2.81	0.00
33.00	5.22	2.81	0.00
34.00	5.22	2.81	0.00
35.00	5.22	2.81	0.00
36.00	5.22	2.81	0.00
37.00	5.22	2.81	0.00
38.00	5.22	2.81	0.00
39.00	5.22	2.81	0.00
40.00	5.22	2.81	0.00
41.00	5.22	2.81	0.00
42.00	5.22	2.81	0.00
43.00	5.22	2.81	0.00
44.00	5.22	2.81	0.00
45.00	5.22	2.81	0.00
46.00	5.22	2.81	0.00
47.00	5.22	2.81	0.00
48.00	5.22	2.81	0.00
49.00	5.22	2.81	0.00
50.00	5.22	2.81	0.00
51.00	5.22	2.81	0.00
52.00	5.22	2.81	0.00
53.00	5.22	2.81	0.00
54.00	5.22	2.81	0.00
55.00	5.22	2.81	0.00
56.00	5.22	2.81	0.00
57.00	5.22	2.81	0.00
58.00	5.22	2.81	0.00
59.00	5.22	2.81	0.00
60.00	5.22	2.81	0.00
61.00	5.22	2.81	0.00
62.00	5.22	2.81	0.00
63.00	5.22	2.81	0.00
64.00	5.22	2.81	0.00
65.00	5.22	2.81	0.00
66.00	5.22	2.81	0.00
67.00	5.22	2.81	0.00
68.00	5.22	2.81	0.00
69.00	5.22	2.81	0.00
70.00	5.22	2.81	0.00
71.00	5.22	2.81	0.00
72.00	5.22	2.81	0.00

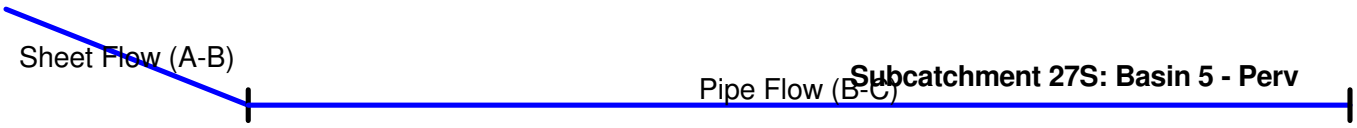
Summary for Subcatchment 27S: Basin 5 - Perv

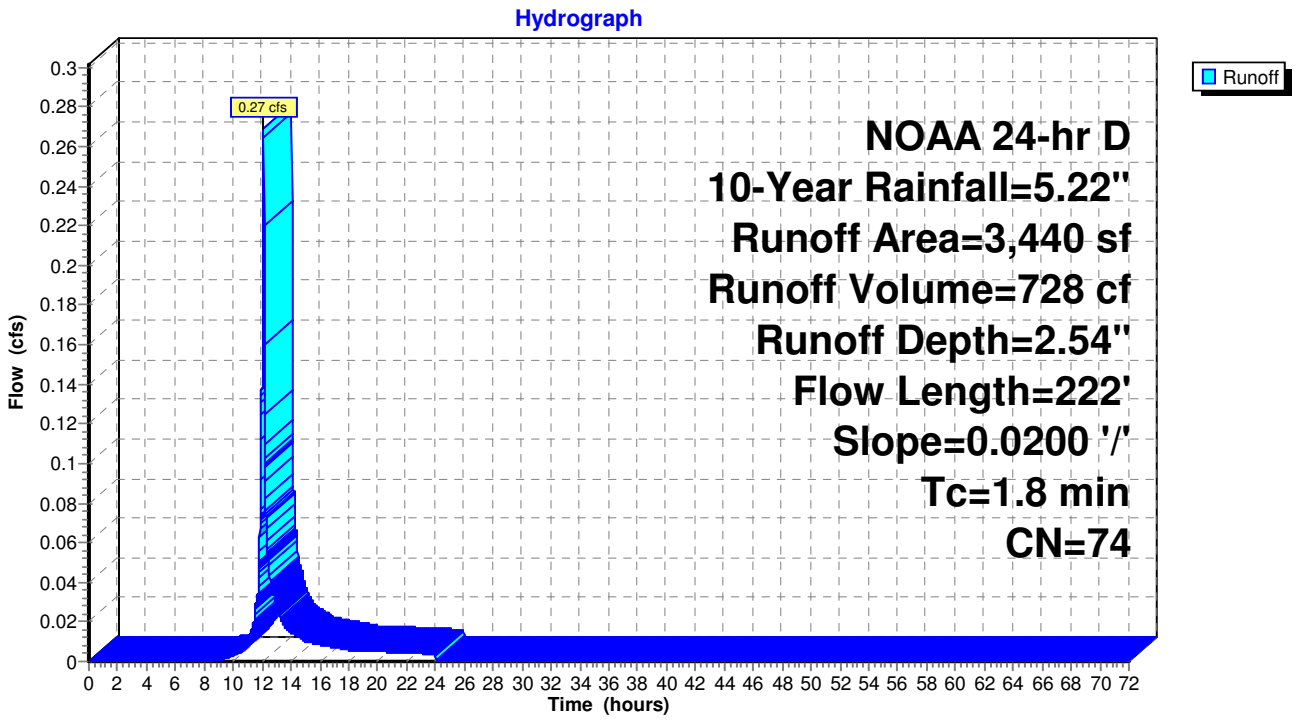
Runoff = 0.27 cfs @ 12.10 hrs, Volume= 728 cf, Depth= 2.54"
Routed to Pond 18P : Basin 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
3,440	74	>75% Grass cover, Good, HSG C
3,440		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
1.2	182		2.50		**Direct Entry, Pipe Flow (B-C)**
1.8	222	Total			





Hydrograph for Subcatchment 27S: Basin 5 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.13	0.00	0.00
3.00	0.20	0.00	0.00
4.00	0.27	0.00	0.00
5.00	0.36	0.00	0.00
6.00	0.45	0.00	0.00
7.00	0.55	0.00	0.00
8.00	0.68	0.00	0.00
9.00	0.83	0.00	0.00
10.00	1.03	0.03	0.00
11.00	1.36	0.10	0.01
12.00	2.50	0.61	**0.14**
13.00	3.86	1.50	**0.03**
14.00	4.19	1.73	0.02
15.00	4.39	1.89	0.01
16.00	4.54	2.01	0.01
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	0.00
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
58.00	5.22	2.54	0.00
59.00	5.22	2.54	0.00
60.00	5.22	2.54	0.00
61.00	5.22	2.54	0.00
62.00	5.22	2.54	0.00
63.00	5.22	2.54	0.00
64.00	5.22	2.54	0.00
65.00	5.22	2.54	0.00
66.00	5.22	2.54	0.00
67.00	5.22	2.54	0.00
68.00	5.22	2.54	0.00
69.00	5.22	2.54	0.00
70.00	5.22	2.54	0.00
71.00	5.22	2.54	0.00
72.00	5.22	2.54	0.00

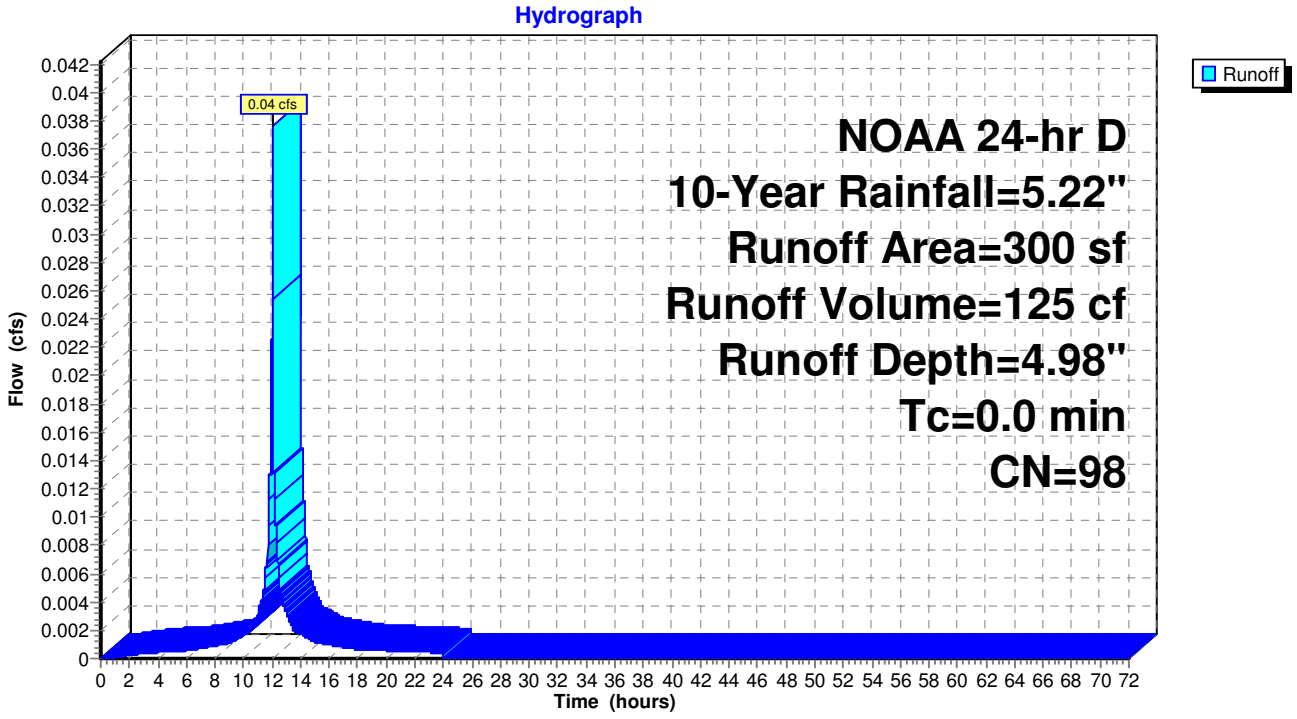
Summary for Subcatchment 28S: undetained impervious

Runoff = 0.04 cfs @ 12.09 hrs, Volume= 125 cf, Depth= 4.98"
Routed to Link 25L : POA 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

	Area (sf)	CN	Description
*	300	98	non pavement impervious
	300		100.00% Impervious Area

Subcatchment 28S: undetained impervious



Hydrograph for Subcatchment 28S: undetained impervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.13	0.02	0.00
3.00	0.20	0.07	0.00
4.00	0.27	0.12	0.00
5.00	0.36	0.19	0.00
6.00	0.45	0.27	0.00
7.00	0.55	0.36	0.00
8.00	0.68	0.48	0.00
9.00	0.83	0.63	0.00
10.00	1.03	0.82	0.00
11.00	1.36	1.14	0.00
12.00	2.50	2.27	**0.03**
13.00	3.86	3.63	**0.00**
14.00	4.19	3.95	0.00
15.00	4.39	4.16	0.00
16.00	4.54	4.31	0.00
17.00	4.67	4.43	0.00
18.00	4.77	4.54	0.00
19.00	4.86	4.63	0.00
20.00	4.95	4.71	0.00
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
58.00	5.22	4.98	0.00
59.00	5.22	4.98	0.00
60.00	5.22	4.98	0.00
61.00	5.22	4.98	0.00
62.00	5.22	4.98	0.00
63.00	5.22	4.98	0.00
64.00	5.22	4.98	0.00
65.00	5.22	4.98	0.00
66.00	5.22	4.98	0.00
67.00	5.22	4.98	0.00
68.00	5.22	4.98	0.00
69.00	5.22	4.98	0.00
70.00	5.22	4.98	0.00
71.00	5.22	4.98	0.00
72.00	5.22	4.98	0.00

Summary for Pond 16P: Basin 1

Inflow Area = 416,846 sf, 59.40% Impervious, Inflow Depth = 2.57" for 10-Year event
Inflow = 20.44 cfs @ 12.21 hrs, Volume= 89,159 cf
Outflow = 3.24 cfs @ 12.98 hrs, Volume= 72,781 cf, Atten= 84%, Lag= 45.8 min
Primary = 3.24 cfs @ 12.98 hrs, Volume= 72,781 cf
Routed to Link 25L : POA 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 544.64' @ 12.98 hrs Surf.Area= 46,729 sf Storage= 51,866 cf

Plug-Flow detention time= 520.3 min calculated for 72,771 cf (82% of inflow)
Center-of-Mass det. time= 439.8 min (1,222.3 - 782.5)

Volume	Invert	Avail.Storage	Storage Description
#1	543.50'	170,585 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
543.50	42,000	0	0
544.00	45,955	21,989	21,989
545.00	47,156	46,556	68,544
546.00	51,115	49,136	117,680
547.00	54,695	52,905	170,585

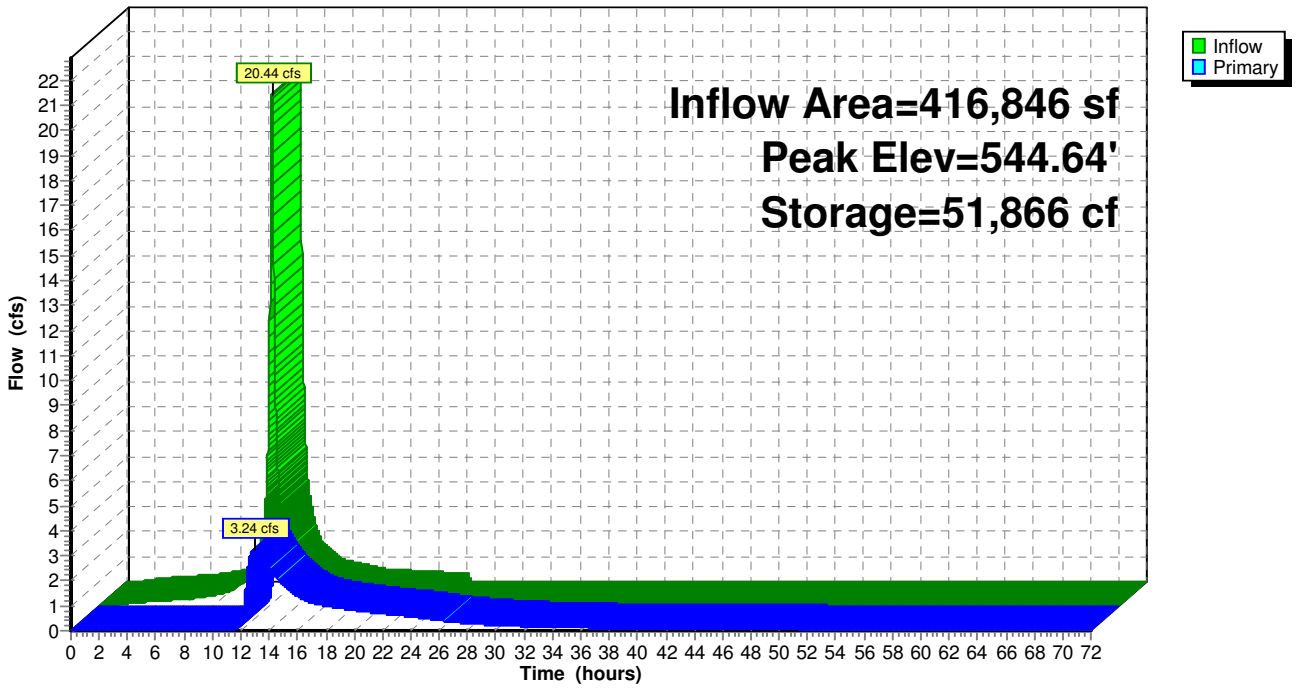
Device	Routing	Invert	Outlet Devices
#1	Primary	546.00'	**42.0" x 48.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	543.82'	**10.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	544.40'	**48.0" W x 8.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.24 cfs @ 12.98 hrs HW=544.64' (Free Discharge)
- **1=Grate** (Controls 0.00 cfs)
- **2=Orifice** (Orifice Controls 1.68 cfs @ 3.09 fps)
- **3=Orifice/Grate** (Orifice Controls 1.55 cfs @ 1.59 fps)



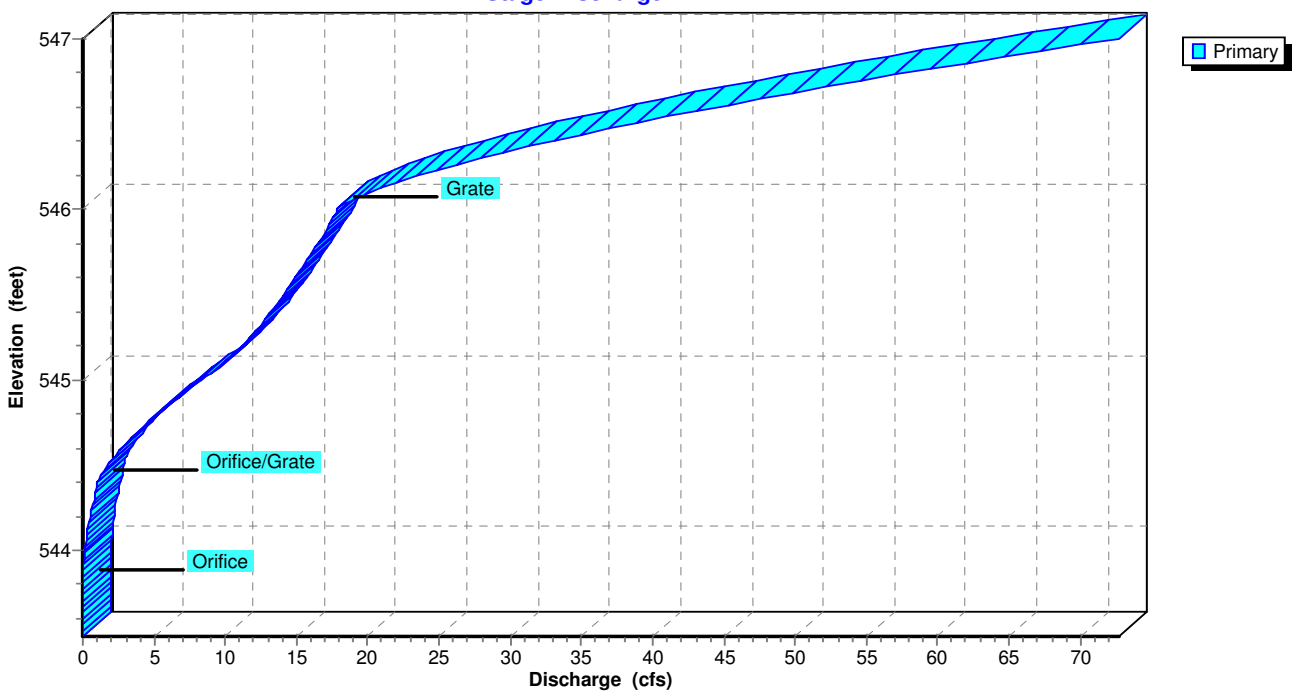
Pond 16P: Basin 1

Hydrograph

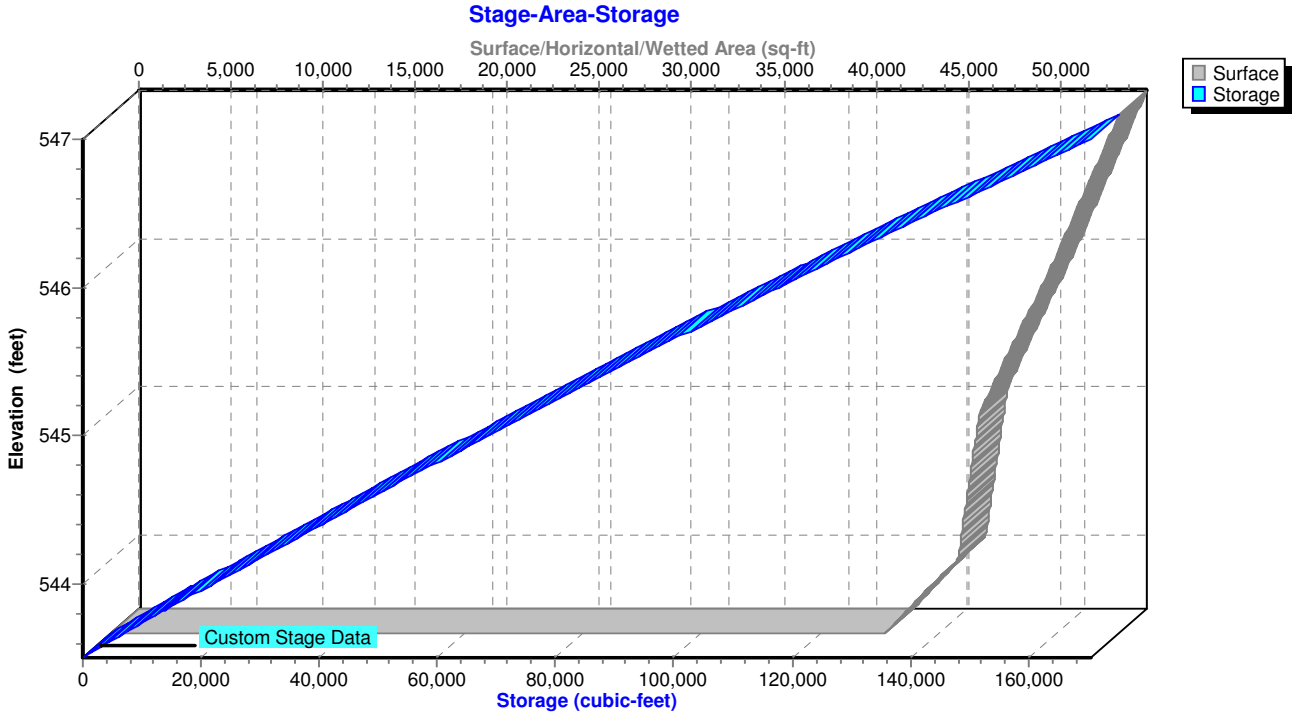


Pond 16P: Basin 1

Stage-Discharge



Pond 16P: Basin 1



Hydrograph for Pond 16P: Basin 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	543.50	0.00
2.00	0.10	220	543.51	0.00
4.00	0.21	1,364	543.53	0.00
6.00	0.27	3,095	543.57	0.00
8.00	0.44	5,595	543.63	0.00
10.00	0.89	9,950	543.73	0.00
12.00	**8.04**	**25,663**	**544.08**	**0.25**
14.00	**1.47**	**48,806**	**544.58**	**2.52**
16.00	0.80	43,005	544.45	1.38
18.00	0.55	39,608	544.38	1.00
20.00	0.46	36,646	544.32	0.82
22.00	0.39	34,341	544.27	0.68
24.00	0.33	32,434	544.23	0.57
26.00	0.00	29,169	544.16	0.41
28.00	0.00	26,676	544.10	0.29
30.00	0.00	24,840	544.06	0.22
32.00	0.00	23,439	544.03	0.17
34.00	0.00	22,341	544.01	0.14
36.00	0.00	21,460	543.99	0.11
38.00	0.00	20,733	543.97	0.09
40.00	0.00	20,127	543.96	0.08
42.00	0.00	19,618	543.95	0.07
44.00	0.00	19,179	543.94	0.06
46.00	0.00	18,798	543.93	0.05
48.00	0.00	18,469	543.92	0.04
50.00	0.00	18,182	543.92	0.04
52.00	0.00	17,924	543.91	0.03
54.00	0.00	17,692	543.91	0.03
56.00	0.00	17,483	543.90	0.03
58.00	0.00	17,294	543.90	0.02
60.00	0.00	17,124	543.89	0.02
62.00	0.00	16,971	543.89	0.02
64.00	0.00	16,833	543.89	0.02
66.00	0.00	16,708	543.88	0.02
68.00	0.00	16,592	543.88	0.02
70.00	0.00	16,482	543.88	0.01
72.00	0.00	16,379	543.88	0.01

Stage-Discharge for Pond 16P: Basin 1

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
543.50	0.00	544.52	1.93	545.54	14.45	546.56	41.89
543.52	0.00	544.54	2.12	545.56	14.61	546.58	43.11
543.54	0.00	544.56	2.32	545.58	14.78	546.60	44.35
543.56	0.00	544.58	2.53	545.60	14.94	546.62	45.61
543.58	0.00	544.60	2.74	545.62	15.11	546.64	46.89
543.60	0.00	544.62	2.96	545.64	15.27	546.66	48.19
543.62	0.00	544.64	3.19	545.66	15.42	546.68	49.50
543.64	0.00	544.66	3.41	545.68	15.58	546.70	50.83
543.66	0.00	544.68	3.65	545.70	15.74	546.72	52.18
543.68	0.00	544.70	3.90	545.72	15.89	546.74	53.55
543.70	0.00	544.72	4.15	545.74	16.04	546.76	54.93
543.72	0.00	544.74	4.41	545.76	16.19	546.78	56.33
543.74	0.00	544.76	4.67	545.78	16.34	546.80	57.74
543.76	0.00	544.78	4.94	545.80	16.49	546.82	59.17
543.78	0.00	544.80	5.22	545.82	16.64	546.84	60.62
543.80	0.00	544.82	5.50	545.84	16.78	546.86	62.08
543.82	0.00	544.84	5.79	545.86	16.92	546.88	63.55
543.84	0.00	544.86	6.08	545.88	17.07	546.90	65.05
543.86	0.01	544.88	6.38	545.90	17.21	546.92	66.55
543.88	0.01	544.90	6.68	545.92	17.35	546.94	68.08
543.90	0.03	544.92	6.99	545.94	17.49	546.96	69.61
543.92	0.04	544.94	7.30	545.96	17.62	546.98	71.16
543.94	0.06	544.96	7.61	545.98	17.76	547.00	**72.73**
543.96	0.08	544.98	7.94	546.00	17.90		
543.98	0.10	545.00	8.26	546.02	18.17		
544.00	0.13	545.02	8.59	546.04	18.56		
544.02	0.15	545.04	8.93	546.06	19.02		
544.04	0.18	545.06	9.27	546.08	19.54		
544.06	0.22	545.08	9.59	546.10	20.11		
544.08	0.25	545.10	9.88	546.12	20.73		
544.10	0.29	545.12	10.15	546.14	21.39		
544.12	0.33	545.14	10.41	546.16	22.08		
544.14	0.37	545.16	10.66	546.18	22.82		
544.16	0.42	545.18	10.91	546.20	23.58		
544.18	0.46	545.20	11.14	546.22	24.38		
544.20	0.51	545.22	11.37	546.24	25.21		
544.22	0.56	545.24	11.59	546.26	26.07		
544.24	0.61	545.26	11.81	546.28	26.96		
544.26	0.66	545.28	12.02	546.30	27.87		
544.28	0.71	545.30	12.22	546.32	28.81		
544.30	0.77	545.32	12.43	546.34	29.78		
544.32	0.82	545.34	12.63	546.36	30.77		
544.34	0.88	545.36	12.82	546.38	31.78		
544.36	0.94	545.38	13.01	546.40	32.82		
544.38	0.99	545.40	13.20	546.42	33.88		
544.40	1.05	545.42	13.39	546.44	34.96		
544.42	1.15	545.44	13.57	546.46	36.06		
544.44	1.27	545.46	13.75	546.48	37.19		
544.46	1.41	545.48	13.93	546.50	38.33		
544.48	1.57	545.50	14.10	546.52	39.50		
544.50	1.74	545.52	14.28	546.54	40.68		

Stage-Area-Storage for Pond 16P: Basin 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
543.50	42,000	0
543.55	42,395	2,110
543.60	42,791	4,240
543.65	43,186	6,389
543.70	43,582	8,558
543.75	43,978	10,747
543.80	44,373	12,956
543.85	44,769	15,184
543.90	45,164	17,433
543.95	45,560	19,701
544.00	45,955	21,989
544.05	46,015	24,288
544.10	46,075	26,590
544.15	46,135	28,896
544.20	46,195	31,204
544.25	46,255	33,515
544.30	46,315	35,829
544.35	46,375	38,147
544.40	46,435	40,467
544.45	46,495	42,790
544.50	46,556	45,116
544.55	46,616	47,446
544.60	46,676	49,778
544.65	46,736	52,113
544.70	46,796	54,451
544.75	46,856	56,793
544.80	46,916	59,137
544.85	46,976	61,484
544.90	47,036	63,835
544.95	47,096	66,188
545.00	47,156	68,544
545.05	47,354	70,907
545.10	47,552	73,280
545.15	47,750	75,662
545.20	47,948	78,055
545.25	48,146	80,457
545.30	48,344	82,869
545.35	48,542	85,291
545.40	48,740	87,723
545.45	48,938	90,165
545.50	49,136	92,617
545.55	49,333	95,079
545.60	49,531	97,550
545.65	49,729	100,032
545.70	49,927	102,523
545.75	50,125	105,025
545.80	50,323	107,536
545.85	50,521	110,057
545.90	50,719	112,588
545.95	50,917	115,129
546.00	51,115	117,680
546.05	51,294	120,240
546.10	51,473	122,809
546.15	51,652	125,387
546.20	51,831	127,974
546.25	52,010	130,570
546.30	52,189	133,175
546.35	52,368	135,789
546.40	52,547	138,412
546.45	52,726	141,044
546.50	52,905	143,685
546.55	53,084	146,334
546.60	53,263	148,993
546.65	53,442	151,661
546.70	53,621	154,337
546.75	53,800	157,023
546.80	53,979	159,717
546.85	54,158	162,421
546.90	54,337	165,133
546.95	54,516	167,854
547.00	**54,695**	**170,585**

Summary for Pond 18P: Basin 5

Inflow Area = 46,608 sf, 92.62% Impervious, Inflow Depth = 4.80" for 10-Year event
Inflow = 5.69 cfs @ 12.10 hrs, Volume= 18,653 cf
Outflow = 2.43 cfs @ 12.14 hrs, Volume= 18,653 cf, Atten= 57%, Lag= 2.7 min
Discarded = 1.37 cfs @ 11.84 hrs, Volume= 17,616 cf
Primary = 1.06 cfs @ 12.14 hrs, Volume= 1,038 cf
Routed to Pond 16P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 579.44' @ 12.14 hrs Surf.Area= 14,810 sf Storage= 2,595 cf

Plug-Flow detention time= 8.1 min calculated for 18,651 cf (100% of inflow)
Center-of-Mass det. time= 8.1 min (756.5 - 748.4)

Volume	Invert	Avail.Storage	Storage Description
#1	579.00'	31,397 cf	**Custom Stage Data (Prismatic)** Listed below 78,493 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
579.00	14,810	0	0
580.00	14,810	14,810	14,810
581.00	14,810	14,810	29,620
582.00	14,810	14,810	44,430
583.00	14,810	14,810	59,240
584.00	14,810	14,810	74,050
584.30	14,810	4,443	78,493

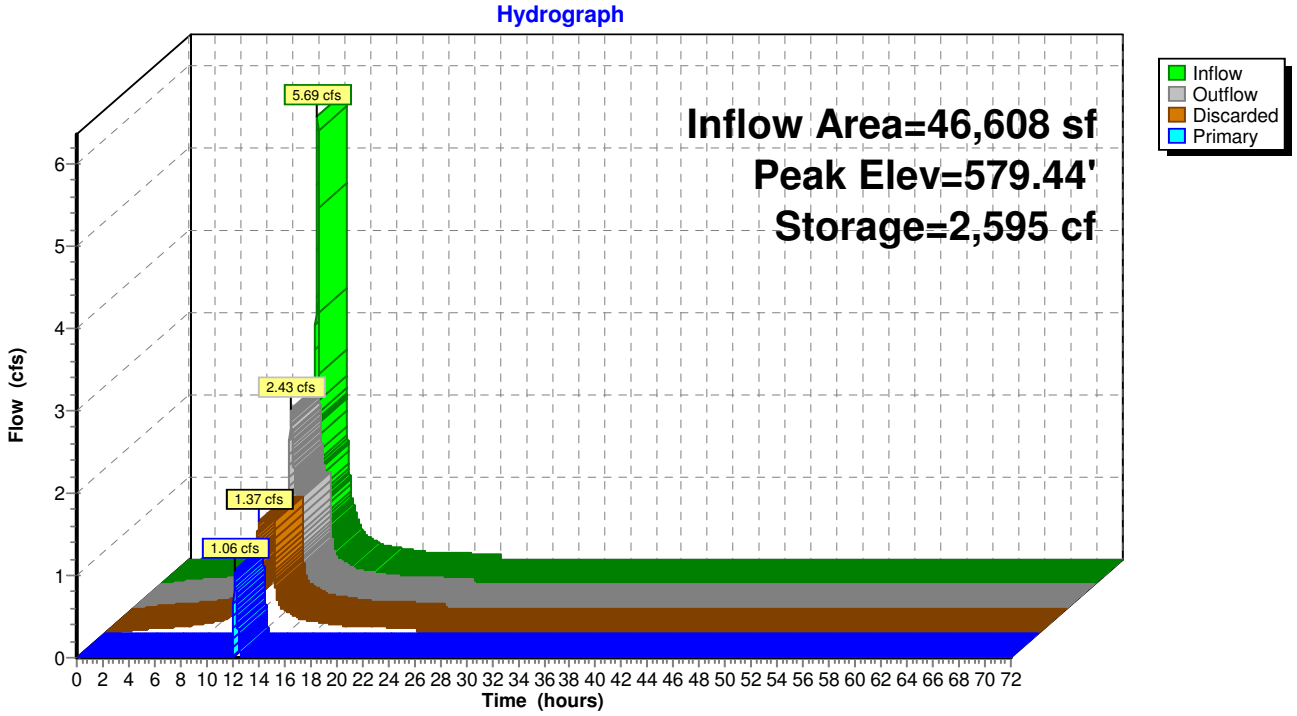
Device	Routing	Invert	Outlet Devices
#1	Primary	579.25'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	579.00'	**4.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.37 cfs @ 11.84 hrs HW=579.06' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 1.37 cfs)

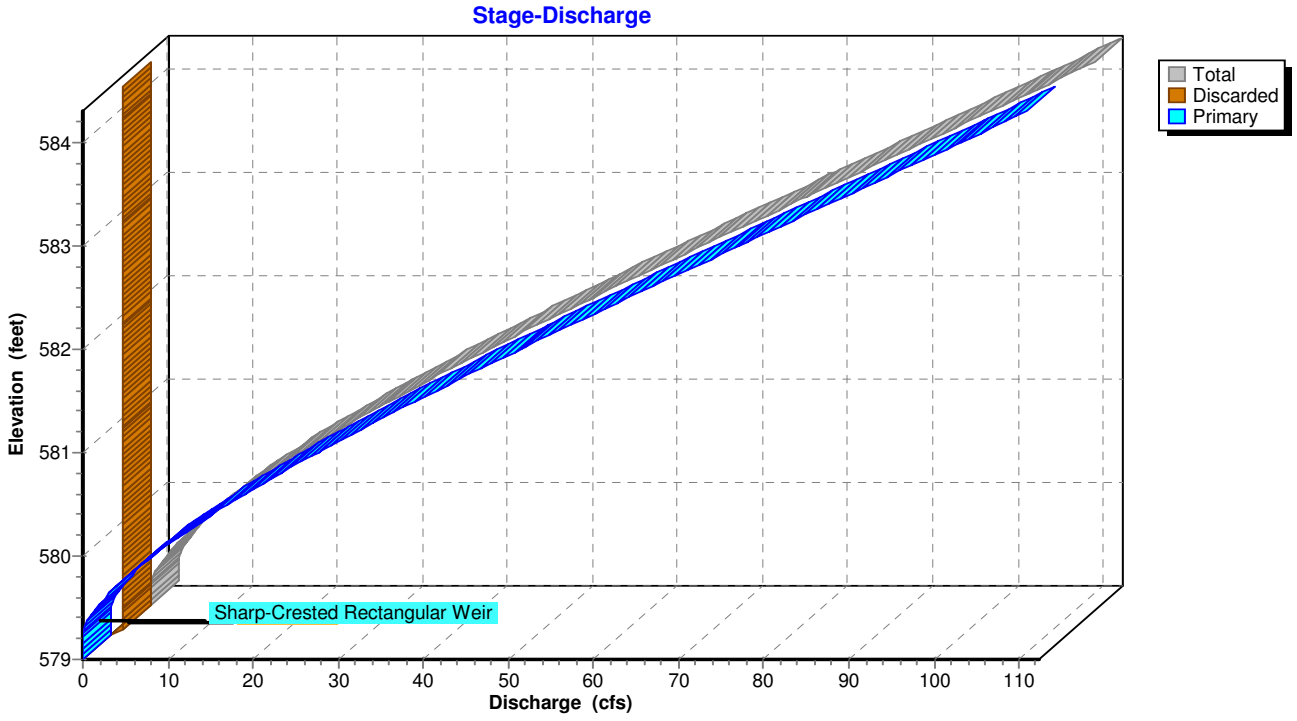
Primary OutFlow Max=1.05 cfs @ 12.14 hrs HW=579.44' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.05 cfs @ 1.42 fps)



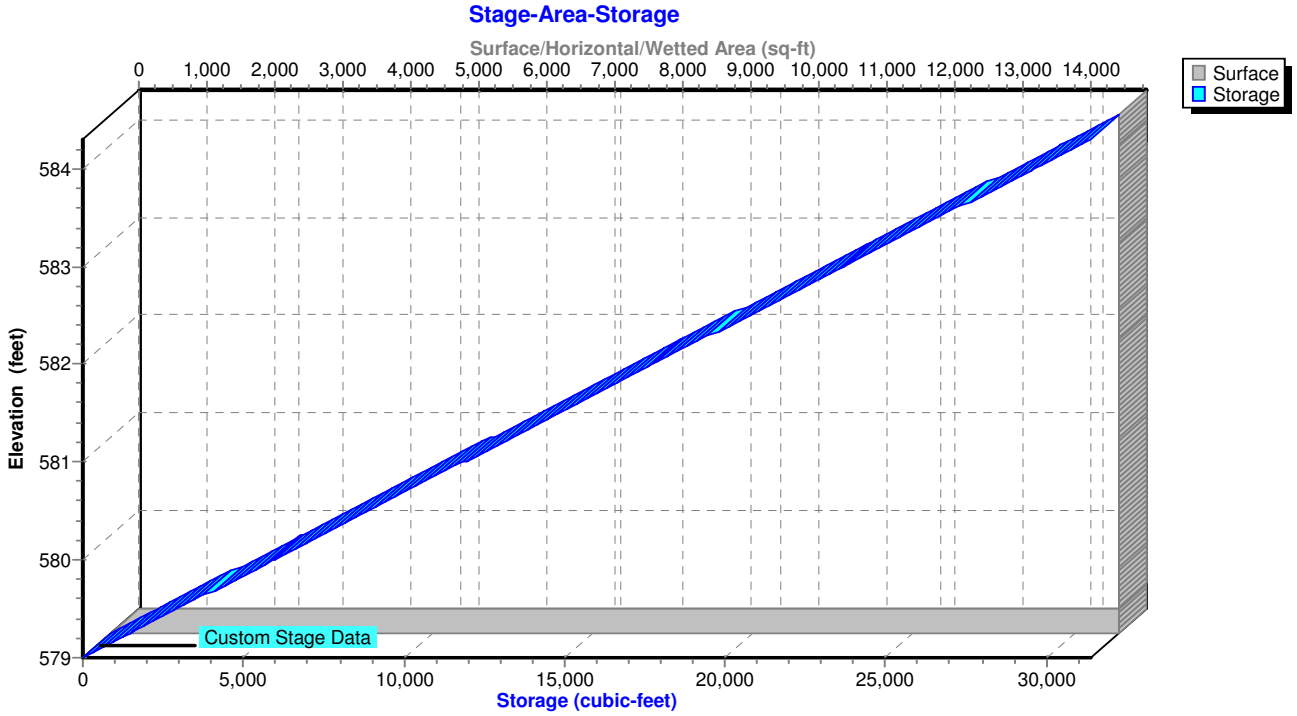
Pond 18P: Basin 5



Pond 18P: Basin 5



Pond 18P: Basin 5



Hydrograph for Pond 18P: Basin 5

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	579.00	0.00	0.00	0.00
2.00	0.03	7	579.00	0.03	0.03	0.00
4.00	0.06	14	579.00	0.06	0.06	0.00
6.00	0.08	18	579.00	0.08	0.08	0.00
8.00	0.13	29	579.00	0.13	0.13	0.00
10.00	0.24	54	579.01	0.24	**0.24**	0.00
12.00	**3.38**	**1,029**	**579.17**	**1.37**	**1.37**	**0.00**
14.00	**0.27**	**62**	**579.01**	**0.27**	0.27	**0.00**
16.00	0.15	34	579.01	0.15	0.15	0.00
18.00	0.10	23	579.00	0.10	0.10	0.00
20.00	0.09	20	579.00	0.09	0.09	0.00
22.00	0.07	17	579.00	0.07	0.07	0.00
24.00	0.06	14	579.00	0.06	0.06	0.00
26.00	0.00	0	579.00	0.00	0.00	0.00
28.00	0.00	0	579.00	0.00	0.00	0.00
30.00	0.00	0	579.00	0.00	0.00	0.00
32.00	0.00	0	579.00	0.00	0.00	0.00
34.00	0.00	0	579.00	0.00	0.00	0.00
36.00	0.00	0	579.00	0.00	0.00	0.00
38.00	0.00	0	579.00	0.00	0.00	0.00
40.00	0.00	0	579.00	0.00	0.00	0.00
42.00	0.00	0	579.00	0.00	0.00	0.00
44.00	0.00	0	579.00	0.00	0.00	0.00
46.00	0.00	0	579.00	0.00	0.00	0.00
48.00	0.00	0	579.00	0.00	0.00	0.00
50.00	0.00	0	579.00	0.00	0.00	0.00
52.00	0.00	0	579.00	0.00	0.00	0.00
54.00	0.00	0	579.00	0.00	0.00	0.00
56.00	0.00	0	579.00	0.00	0.00	0.00
58.00	0.00	0	579.00	0.00	0.00	0.00
60.00	0.00	0	579.00	0.00	0.00	0.00
62.00	0.00	0	579.00	0.00	0.00	0.00
64.00	0.00	0	579.00	0.00	0.00	0.00
66.00	0.00	0	579.00	0.00	0.00	0.00
68.00	0.00	0	579.00	0.00	0.00	0.00
70.00	0.00	0	579.00	0.00	0.00	0.00
72.00	0.00	0	579.00	0.00	0.00	0.00

Stage-Discharge for Pond 18P: Basin 5

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
579.00	0.00	**0.00**	0.00
579.10	1.37	**1.37**	0.00
579.20	1.37	1.37	0.00
579.30	1.52	1.37	0.15
579.40	2.13	1.37	0.75
579.50	2.99	1.37	1.61
579.60	4.03	1.37	2.66
579.70	5.23	1.37	3.86
579.80	6.56	1.37	5.19
579.90	8.00	1.37	6.63
580.00	9.55	1.37	8.18
580.10	11.19	1.37	9.81
580.20	12.91	1.37	11.54
580.30	14.71	1.37	13.33
580.40	16.57	1.37	15.20
580.50	18.51	1.37	17.14
580.60	20.50	1.37	19.13
580.70	22.55	1.37	21.18
580.80	24.66	1.37	23.28
580.90	26.81	1.37	25.44
581.00	29.00	1.37	27.63
581.10	31.24	1.37	29.87
581.20	33.52	1.37	32.14
581.30	35.83	1.37	34.46
581.40	38.17	1.37	36.80
581.50	40.55	1.37	39.18
581.60	42.96	1.37	41.58
581.70	45.39	1.37	44.02
581.80	47.84	1.37	46.47
581.90	50.32	1.37	48.95
582.00	52.82	1.37	51.45
582.10	55.34	1.37	53.96
582.20	57.87	1.37	56.50
582.30	60.42	1.37	59.05
582.40	62.98	1.37	61.61
582.50	65.55	1.37	64.18
582.60	68.14	1.37	66.77
582.70	70.73	1.37	69.36
582.80	73.33	1.37	71.96
582.90	75.94	1.37	74.56
583.00	78.55	1.37	77.18
583.10	81.16	1.37	79.79
583.20	83.78	1.37	82.40
583.30	86.39	1.37	85.02
583.40	89.01	1.37	87.64
583.50	91.62	1.37	90.25
583.60	94.23	1.37	92.86
583.70	96.84	1.37	95.47
583.80	99.44	1.37	98.07
583.90	102.03	1.37	100.66
584.00	104.62	1.37	103.25
584.10	107.20	1.37	105.83
584.20	109.77	1.37	108.40
584.30	**112.33**	1.37	**110.96**

Stage-Area-Storage for Pond 18P: Basin 5

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
579.00	**14,810**	0
579.10	14,810	592
579.20	14,810	1,185
579.30	14,810	1,777
579.40	14,810	2,370
579.50	14,810	2,962
579.60	14,810	3,554
579.70	14,810	4,147
579.80	14,810	4,739
579.90	14,810	5,332
580.00	14,810	5,924
580.10	14,810	6,516
580.20	14,810	7,109
580.30	14,810	7,701
580.40	14,810	8,294
580.50	14,810	8,886
580.60	14,810	9,478
580.70	14,810	10,071
580.80	14,810	10,663
580.90	14,810	11,256
581.00	14,810	11,848
581.10	14,810	12,440
581.20	14,810	13,033
581.30	14,810	13,625
581.40	14,810	14,218
581.50	14,810	14,810
581.60	14,810	15,402
581.70	14,810	15,995
581.80	14,810	16,587
581.90	14,810	17,180
582.00	14,810	17,772
582.10	14,810	18,364
582.20	14,810	18,957
582.30	14,810	19,549
582.40	14,810	20,142
582.50	14,810	20,734
582.60	14,810	21,326
582.70	14,810	21,919
582.80	14,810	22,511
582.90	14,810	23,104
583.00	14,810	23,696
583.10	14,810	24,288
583.20	14,810	24,881
583.30	14,810	25,473
583.40	14,810	26,066
583.50	14,810	26,658
583.60	14,810	27,250
583.70	14,810	27,843
583.80	14,810	28,435
583.90	14,810	29,028
584.00	14,810	29,620
584.10	14,810	30,212
584.20	14,810	30,805
584.30	14,810	**31,397**

Summary for Pond 24P: Basin 6

Inflow Area = 108,077 sf, 52.61% Impervious, Inflow Depth = 3.83" for 10-Year event
Inflow = 10.83 cfs @ 12.11 hrs, Volume= 34,455 cf
Outflow = 8.40 cfs @ 12.14 hrs, Volume= 34,455 cf, Atten= 22%, Lag= 2.1 min
Discarded = 8.27 cfs @ 12.06 hrs, Volume= 34,425 cf
Primary = 0.13 cfs @ 12.14 hrs, Volume= 30 cf
Routed to Pond 16P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 600.05' @ 12.14 hrs Surf.Area= 35,719 sf Storage= 784 cf

Plug-Flow detention time= 0.5 min calculated for 34,450 cf (100% of inflow)
Center-of-Mass det. time= 0.5 min (777.4 - 776.9)

Volume	Invert	Avail.Storage	Storage Description
#1	600.00'	20,288 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 50,721 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
600.00	35,719	0	0
601.00	35,719	35,719	35,719
601.42	35,719	15,002	50,721

Device	Routing	Invert	Outlet Devices
#1	Primary	600.02'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	600.00'	**10.000 in/hr Exfiltration over Surface area**

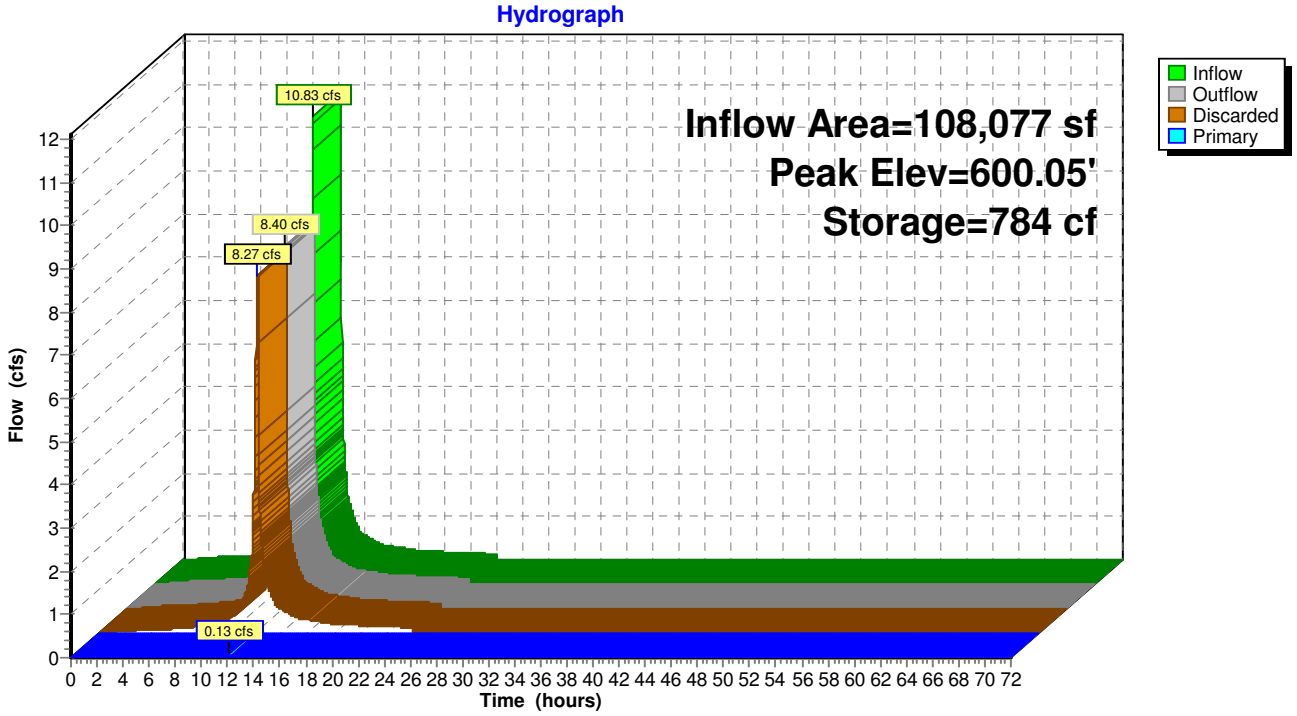
Discarded OutFlow Max=8.27 cfs @ 12.06 hrs HW=600.02' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 8.27 cfs)

Primary OutFlow Max=0.13 cfs @ 12.14 hrs HW=600.05' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.13 cfs @ 0.61 fps)

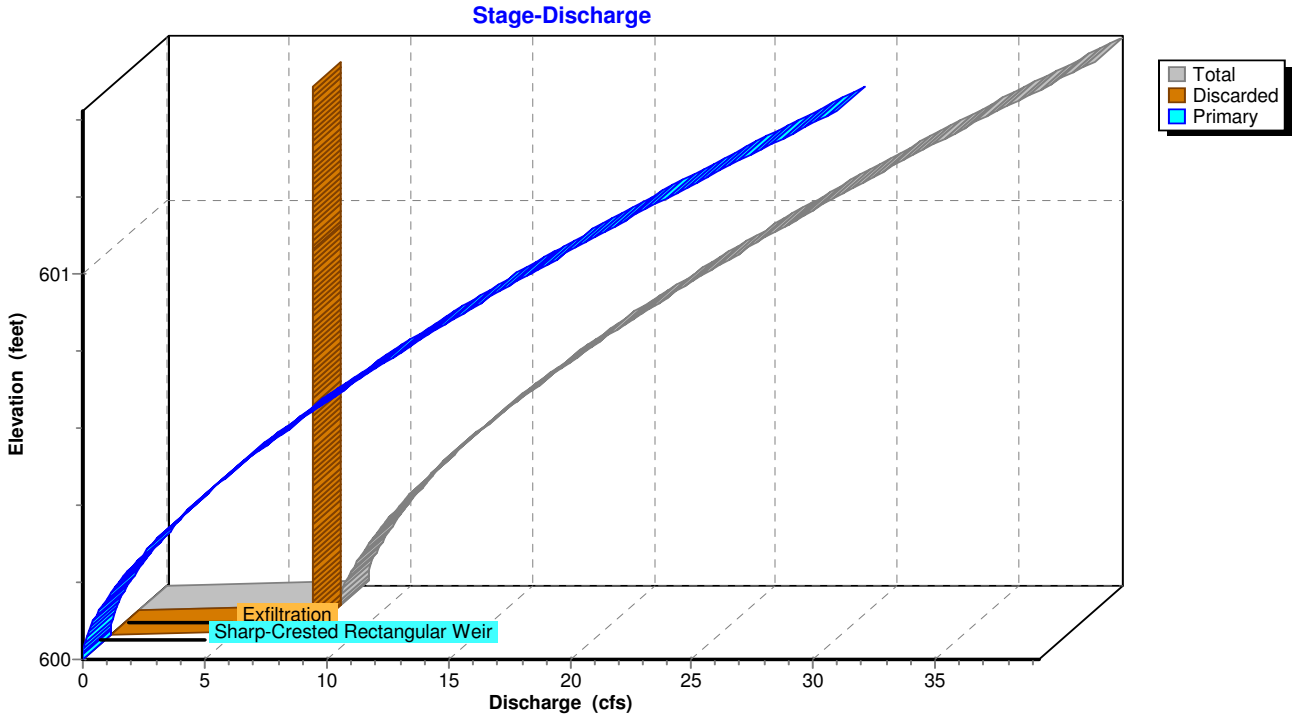
Pond 24P: Basin 6

Sharp-Crested Rectangular Weir
Exfiltration

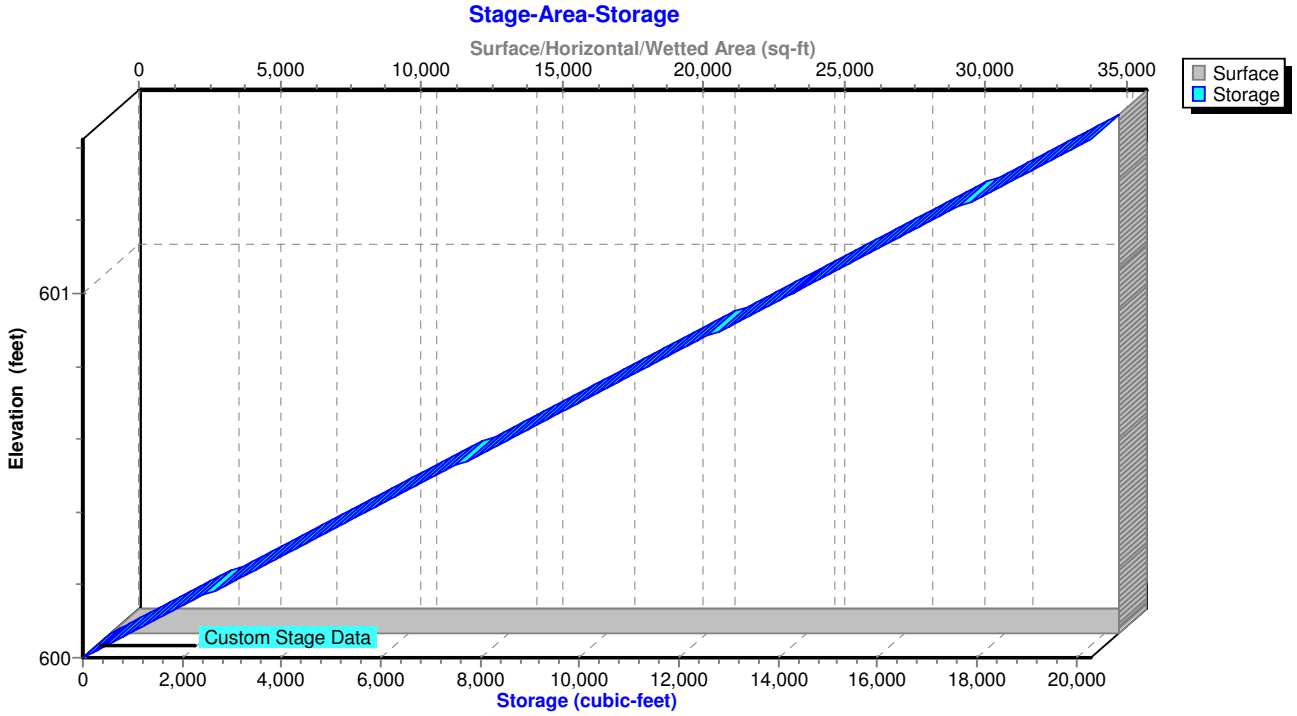
Pond 24P: Basin 6



Pond 24P: Basin 6



Pond 24P: Basin 6



Hydrograph for Pond 24P: Basin 6

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	600.00	0.00	0.00	0.00
2.00	0.04	1	600.00	0.04	0.04	0.00
4.00	0.08	2	600.00	0.08	0.08	0.00
6.00	0.11	3	600.00	0.11	0.11	0.00
8.00	0.17	4	600.00	0.17	0.17	0.00
10.00	0.36	9	600.00	0.36	0.36	0.00
12.00	**6.15**	**149**	**600.01**	**6.06**	**6.06**	**0.00**
14.00	**0.56**	**14**	**600.00**	**0.56**	**0.56**	**0.00**
16.00	0.31	8	600.00	0.31	0.31	0.00
18.00	0.21	5	600.00	0.21	0.21	0.00
20.00	0.18	4	600.00	0.18	0.18	0.00
22.00	0.16	4	600.00	0.16	0.16	0.00
24.00	0.13	3	600.00	0.13	0.13	0.00
26.00	0.00	0	600.00	0.00	0.00	0.00
28.00	0.00	0	600.00	0.00	0.00	0.00
30.00	0.00	0	600.00	0.00	0.00	0.00
32.00	0.00	0	600.00	0.00	0.00	0.00
34.00	0.00	0	600.00	0.00	0.00	0.00
36.00	0.00	0	600.00	0.00	0.00	0.00
38.00	0.00	0	600.00	0.00	0.00	0.00
40.00	0.00	0	600.00	0.00	0.00	0.00
42.00	0.00	0	600.00	0.00	0.00	0.00
44.00	0.00	0	600.00	0.00	0.00	0.00
46.00	0.00	0	600.00	0.00	0.00	0.00
48.00	0.00	0	600.00	0.00	0.00	0.00
50.00	0.00	0	600.00	0.00	0.00	0.00
52.00	0.00	0	600.00	0.00	0.00	0.00
54.00	0.00	0	600.00	0.00	0.00	0.00
56.00	0.00	0	600.00	0.00	0.00	0.00
58.00	0.00	0	600.00	0.00	0.00	0.00
60.00	0.00	0	600.00	0.00	0.00	0.00
62.00	0.00	0	600.00	0.00	0.00	0.00
64.00	0.00	0	600.00	0.00	0.00	0.00
66.00	0.00	0	600.00	0.00	0.00	0.00
68.00	0.00	0	600.00	0.00	0.00	0.00
70.00	0.00	0	600.00	0.00	0.00	0.00
72.00	0.00	0	600.00	0.00	0.00	0.00

Stage-Discharge for Pond 24P: Basin 6

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
600.00	0.00	**0.00**	0.00
600.02	8.27	**8.27**	0.00
600.04	8.32	8.27	0.06
600.06	8.43	8.27	0.16
600.08	8.56	8.27	0.29
600.10	8.71	8.27	0.44
600.12	8.89	8.27	0.62
600.14	9.08	8.27	0.81
600.16	9.29	8.27	1.02
600.18	9.52	8.27	1.25
600.20	9.76	8.27	1.49
600.22	10.01	8.27	1.74
600.24	10.28	8.27	2.01
600.26	10.56	8.27	2.29
600.28	10.85	8.27	2.58
600.30	11.15	8.27	2.88
600.32	11.46	8.27	3.19
600.34	11.78	8.27	3.51
600.36	12.11	8.27	3.85
600.38	12.46	8.27	4.19
600.40	12.81	8.27	4.54
600.42	13.17	8.27	4.90
600.44	13.53	8.27	5.27
600.46	13.91	8.27	5.64
600.48	14.30	8.27	6.03
600.50	14.69	8.27	6.42
600.52	15.09	8.27	6.82
600.54	15.50	8.27	7.23
600.56	15.91	8.27	7.65
600.58	16.34	8.27	8.07
600.60	16.77	8.27	8.50
600.62	17.20	8.27	8.94
600.64	17.65	8.27	9.38
600.66	18.10	8.27	9.83
600.68	18.56	8.27	10.29
600.70	19.02	8.27	10.75
600.72	19.49	8.27	11.22
600.74	19.97	8.27	11.70
600.76	20.45	8.27	12.18
600.78	20.94	8.27	12.67
600.80	21.43	8.27	13.16
600.82	21.93	8.27	13.66
600.84	22.44	8.27	14.17
600.86	22.95	8.27	14.68
600.88	23.47	8.27	15.20
600.90	23.99	8.27	15.72
600.92	24.52	8.27	16.25
600.94	25.05	8.27	16.78
600.96	25.59	8.27	17.32
600.98	26.13	8.27	17.86
601.00	26.68	8.27	18.41
601.02	27.23	8.27	18.97
601.04	27.79	8.27	19.52
601.06	28.36	8.27	20.09
601.08	28.92	8.27	20.66
601.10	29.50	8.27	21.23
601.12	30.07	8.27	21.81
601.14	30.66	8.27	22.39
601.16	31.24	8.27	22.97
601.18	31.83	8.27	23.56
601.20	32.43	8.27	24.16
601.22	33.03	8.27	24.76
601.24	33.63	8.27	25.36
601.26	34.24	8.27	25.97
601.28	34.85	8.27	26.58
601.30	35.47	8.27	27.20
601.32	36.09	8.27	27.82
601.34	36.71	8.27	28.45
601.36	37.34	8.27	29.07
601.38	37.98	8.27	29.71
601.40	38.61	8.27	30.34
601.42	**39.25**	8.27	**30.98**

Stage-Area-Storage for Pond 24P: Basin 6

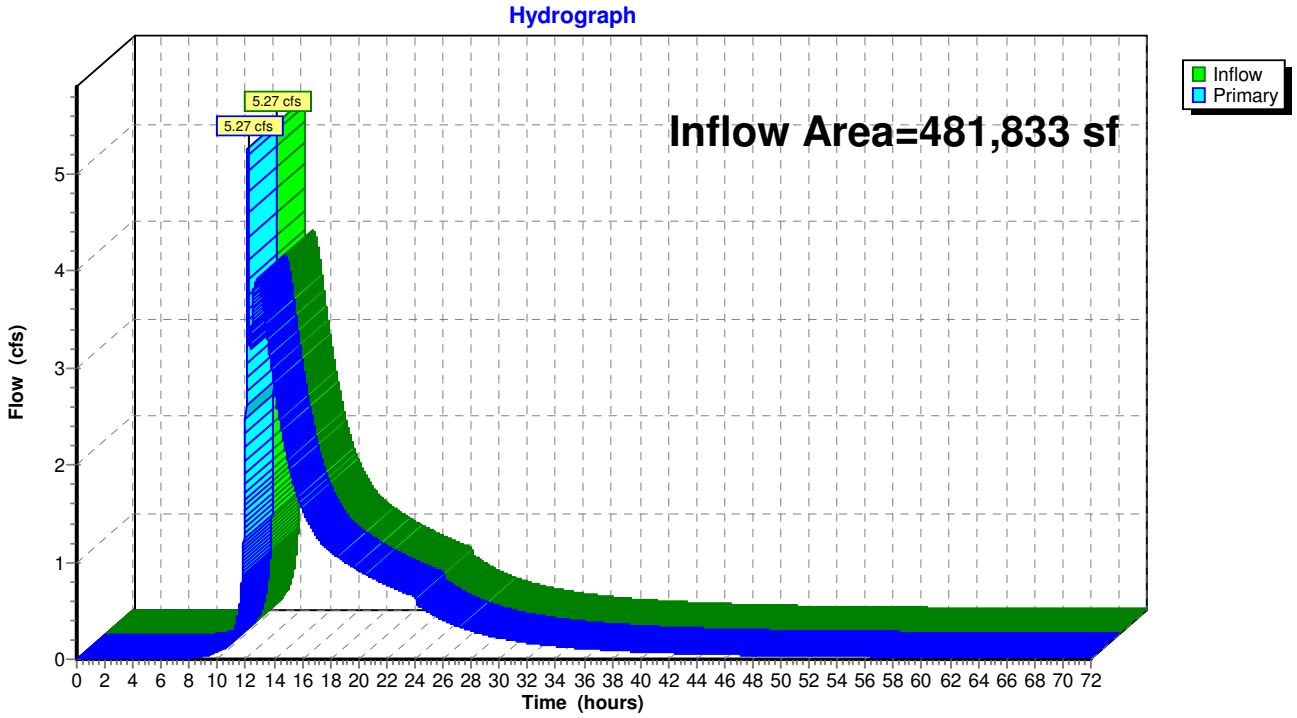
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
600.00	**35,719**	0
600.02	35,719	286
600.04	35,719	572
600.06	35,719	857
600.08	35,719	1,143
600.10	35,719	1,429
600.12	35,719	1,715
600.14	35,719	2,000
600.16	35,719	2,286
600.18	35,719	2,572
600.20	35,719	2,858
600.22	35,719	3,143
600.24	35,719	3,429
600.26	35,719	3,715
600.28	35,719	4,001
600.30	35,719	4,286
600.32	35,719	4,572
600.34	35,719	4,858
600.36	35,719	5,144
600.38	35,719	5,429
600.40	35,719	5,715
600.42	35,719	6,001
600.44	35,719	6,287
600.46	35,719	6,572
600.48	35,719	6,858
600.50	35,719	7,144
600.52	35,719	7,430
600.54	35,719	7,715
600.56	35,719	8,001
600.58	35,719	8,287
600.60	35,719	8,573
600.62	35,719	8,858
600.64	35,719	9,144
600.66	35,719	9,430
600.68	35,719	9,716
600.70	35,719	10,001
600.72	35,719	10,287
600.74	35,719	10,573
600.76	35,719	10,859
600.78	35,719	11,144
600.80	35,719	11,430
600.82	35,719	11,716
600.84	35,719	12,002
600.86	35,719	12,287
600.88	35,719	12,573
600.90	35,719	12,859
600.92	35,719	13,145
600.94	35,719	13,430
600.96	35,719	13,716
600.98	35,719	14,002
601.00	35,719	14,288
601.02	35,719	14,573
601.04	35,719	14,859
601.06	35,719	15,145
601.08	35,719	15,431
601.10	35,719	15,716
601.12	35,719	16,002
601.14	35,719	16,288
601.16	35,719	16,574
601.18	35,719	16,859
601.20	35,719	17,145
601.22	35,719	17,431
601.24	35,719	17,717
601.26	35,719	18,002
601.28	35,719	18,288
601.30	35,719	18,574
601.32	35,719	18,860
601.34	35,719	19,145
601.36	35,719	19,431
601.38	35,719	19,717
601.40	35,719	20,003
601.42	35,719	**20,288**

Summary for Link 25L: POA 1

Inflow Area = 481,833 sf, 51.45% Impervious, Inflow Depth > 2.19" for 10-Year event
Inflow = 5.27 cfs @ 12.15 hrs, Volume= 88,042 cf
Primary = 5.27 cfs @ 12.15 hrs, Volume= 88,042 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 25L: POA 1



Hydrograph for Link 25L: POA 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.04	0.00	0.04
1.00	0.00	0.00	0.00	52.00	0.03	0.00	0.03
2.00	0.00	0.00	0.00	53.00	0.03	0.00	0.03
3.00	0.00	0.00	0.00	54.00	0.03	0.00	0.03
4.00	0.00	0.00	0.00	55.00	0.03	0.00	0.03
5.00	0.00	0.00	0.00	56.00	0.03	0.00	0.03
6.00	0.00	0.00	0.00	57.00	0.03	0.00	0.03
7.00	0.00	0.00	0.00	58.00	0.02	0.00	0.02
8.00	0.01	0.00	0.01	59.00	0.02	0.00	0.02
9.00	0.03	0.00	0.03	60.00	0.02	0.00	0.02
10.00	0.08	0.00	0.08	61.00	0.02	0.00	0.02
11.00	0.22	0.00	0.22	62.00	0.02	0.00	0.02
12.00	**2.48**	0.00	**2.48**	63.00	0.02	0.00	0.02
13.00	**3.84**	0.00	**3.84**	64.00	0.02	0.00	0.02
14.00	2.83	0.00	2.83	65.00	0.02	0.00	0.02
15.00	2.04	0.00	2.04	66.00	0.02	0.00	0.02
16.00	1.55	0.00	1.55	67.00	0.02	0.00	0.02
17.00	1.27	0.00	1.27	68.00	0.02	0.00	0.02
18.00	1.12	0.00	1.12	69.00	0.02	0.00	0.02
19.00	1.01	0.00	1.01	70.00	0.01	0.00	0.01
20.00	0.92	0.00	0.92	71.00	0.01	0.00	0.01
21.00	0.84	0.00	0.84	72.00	0.01	0.00	0.01
22.00	0.77	0.00	0.77				
23.00	0.71	0.00	0.71				
24.00	0.65	0.00	0.65				
25.00	0.49	0.00	0.49				
26.00	0.41	0.00	0.41				
27.00	0.34	0.00	0.34				
28.00	0.29	0.00	0.29				
29.00	0.25	0.00	0.25				
30.00	0.22	0.00	0.22				
31.00	0.19	0.00	0.19				
32.00	0.17	0.00	0.17				
33.00	0.15	0.00	0.15				
34.00	0.14	0.00	0.14				
35.00	0.12	0.00	0.12				
36.00	0.11	0.00	0.11				
37.00	0.10	0.00	0.10				
38.00	0.09	0.00	0.09				
39.00	0.08	0.00	0.08				
40.00	0.08	0.00	0.08				
41.00	0.07	0.00	0.07				
42.00	0.07	0.00	0.07				
43.00	0.06	0.00	0.06				
44.00	0.06	0.00	0.06				
45.00	0.05	0.00	0.05				
46.00	0.05	0.00	0.05				
47.00	0.05	0.00	0.05				
48.00	0.04	0.00	0.04				
49.00	0.04	0.00	0.04				
50.00	0.04	0.00	0.04				

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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 14S: Basin 1 - Imp Runoff Area=147,571 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=1,000' Tc=14.1 min CN=98 Runoff=21.60 cfs 103,543 cf

Subcatchment 15S: Basin 1 - Perv Runoff Area=114,590 sf 0.00% Impervious Runoff Depth=5.88"
Flow Length=1,000' Tc=14.1 min CN=77 Runoff=13.48 cfs 56,178 cf

Subcatchment 17S: Basin 5 - Imp Runoff Area=43,168 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=222' Slope=0.0200 '/' Tc=1.8 min CN=98 Runoff=9.01 cfs 30,289 cf

Subcatchment 22S: Basin 6 - Imp Runoff Area=56,858 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=490' Slope=0.0200 '/' Tc=3.6 min CN=98 Runoff=11.63 cfs 39,895 cf

Subcatchment 23S: Basin 6 - Perv Runoff Area=51,219 sf 0.00% Impervious Runoff Depth=5.52"
Flow Length=490' Slope=0.0200 '/' Tc=3.6 min CN=74 Runoff=8.16 cfs 23,561 cf

Subcatchment 26S: DA 1 Und - Perv Runoff Area=64,687 sf 0.00% Impervious Runoff Depth=5.88"
Flow Length=150' Slope=0.1100 '/' Tc=7.1 min CN=77 Runoff=9.65 cfs 31,713 cf

Subcatchment 27S: Basin 5 - Perv Runoff Area=3,440 sf 0.00% Impervious Runoff Depth=5.52"
Flow Length=222' Slope=0.0200 '/' Tc=1.8 min CN=74 Runoff=0.57 cfs 1,582 cf

Subcatchment 28S: undetained impervious Runoff Area=300 sf 100.00% Impervious Runoff Depth=8.42"
Tc=0.0 min CN=98 Runoff=0.06 cfs 210 cf

Pond 16P: Basin 1 Peak Elev=545.30' Storage=83,095 cf Inflow=41.28 cfs 167,378 cf
Outflow=12.27 cfs 150,907 cf

Pond 18P: Basin 5 Peak Elev=579.76' Storage=4,513 cf Inflow=9.58 cfs 31,871 cf
Discarded=1.37 cfs 26,452 cf Primary=4.67 cfs 5,419 cf Outflow=6.04 cfs 31,871 cf

Pond 24P: Basin 6 Peak Elev=600.31' Storage=4,419 cf Inflow=19.78 cfs 63,455 cf
Discarded=8.27 cfs 61,217 cf Primary=3.02 cfs 2,238 cf Outflow=11.29 cfs 63,455 cf

Link 25L: POA 1 Inflow=14.86 cfs 182,831 cf
Primary=14.86 cfs 182,831 cf

Total Runoff Area = 481,833 sf Runoff Volume = 286,972 cf Average Runoff Depth = 7.15"
48.55% Pervious = 233,936 sf 51.45% Impervious = 247,897 sf

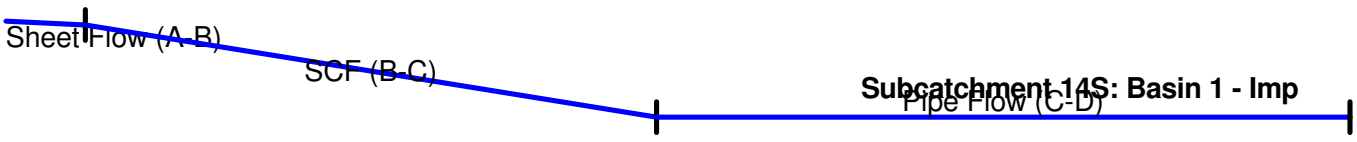
Summary for Subcatchment 14S: Basin 1 - Imp

Runoff = 21.60 cfs @ 12.21 hrs, Volume= 103,543 cf, Depth= 8.42"
Routed to Pond 16P : Basin 1

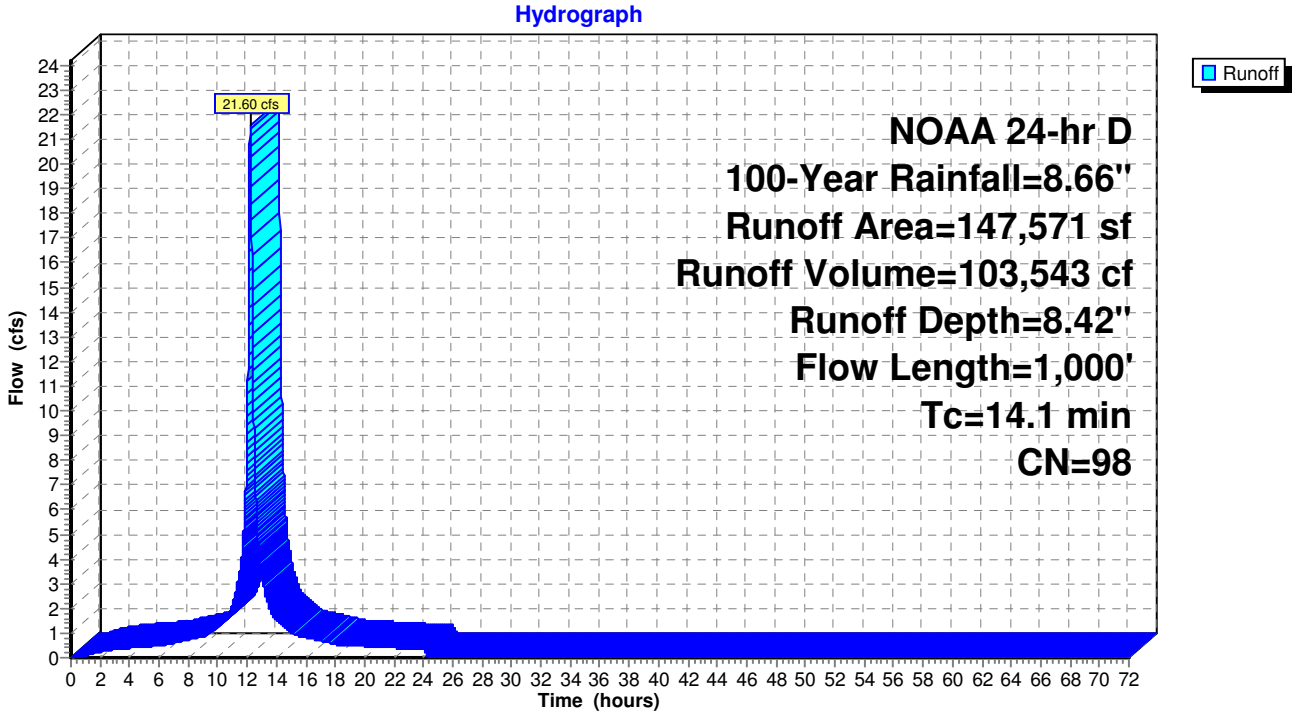
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

	Area (sf)	CN	Description
*	9,022	98	non parking impervious
	28,163	98	Paved parking, HSG C
	110,386	98	Roofs, HSG C
	147,571	98	Weighted Average
	147,571		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.7	425	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
3.4	516		2.50		**Direct Entry, Pipe Flow (C-D)**
14.1	1,000	Total			



Subcatchment 14S: Basin 1 - Imp



Hydrograph for Subcatchment 14S: Basin 1 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.01	0.10
2.00	0.21	0.08	0.25
3.00	0.33	0.17	0.33
4.00	0.45	0.28	0.39
5.00	0.59	0.40	0.44
6.00	0.74	0.54	0.48
7.00	0.91	0.71	0.60
8.00	1.12	0.91	0.74
9.00	1.37	1.16	0.87
10.00	1.72	1.49	1.29
11.00	2.25	2.02	2.17
12.00	4.15	3.91	**9.42**
13.00	6.41	6.17	**3.30**
14.00	6.94	6.70	1.51
15.00	7.29	7.05	1.04
16.00	7.54	7.30	0.82
17.00	7.75	7.51	0.69
18.00	7.92	7.68	0.55
19.00	8.07	7.83	0.49
20.00	8.21	7.97	0.46
21.00	8.33	8.09	0.43
22.00	8.45	8.21	0.40
23.00	8.56	8.32	0.36
24.00	**8.66**	**8.42**	0.33
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
58.00	8.66	8.42	0.00
59.00	8.66	8.42	0.00
60.00	8.66	8.42	0.00
61.00	8.66	8.42	0.00
62.00	8.66	8.42	0.00
63.00	8.66	8.42	0.00
64.00	8.66	8.42	0.00
65.00	8.66	8.42	0.00
66.00	8.66	8.42	0.00
67.00	8.66	8.42	0.00
68.00	8.66	8.42	0.00
69.00	8.66	8.42	0.00
70.00	8.66	8.42	0.00
71.00	8.66	8.42	0.00
72.00	8.66	8.42	0.00

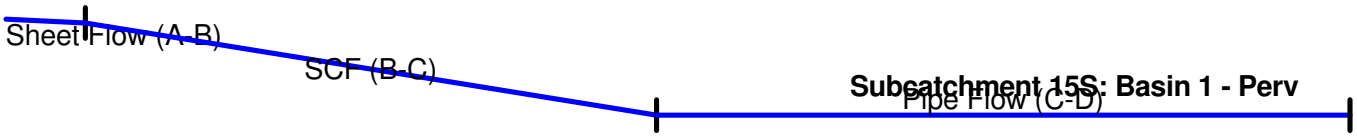
Summary for Subcatchment 15S: Basin 1 - Perv

Runoff = 13.48 cfs @ 12.22 hrs, Volume= 56,178 cf, Depth= 5.88"
Routed to Pond 16P : Basin 1

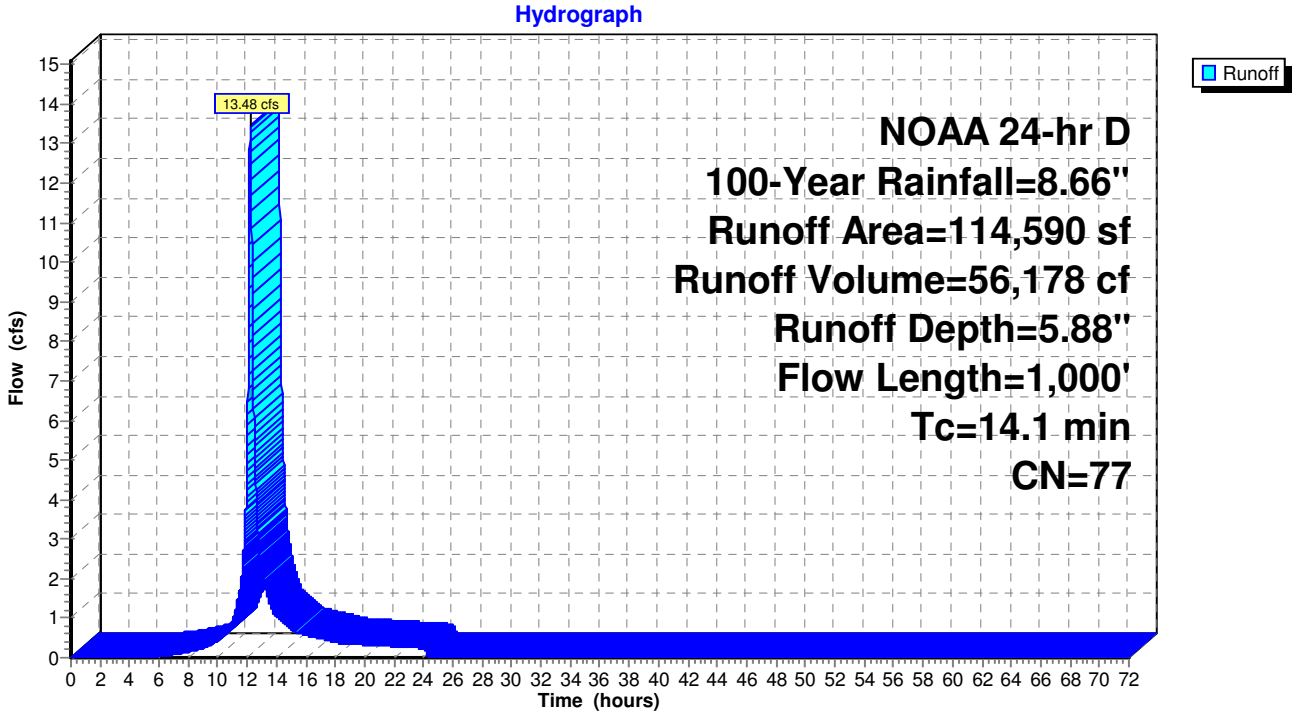
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
64,900	80	>75% Grass cover, Good, HSG D
49,690	74	>75% Grass cover, Good, HSG C
114,590	77	Weighted Average
114,590		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.7	425	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
3.4	516		2.50		**Direct Entry, Pipe Flow (C-D)**
14.1	1,000	Total			



Subcatchment 15S: Basin 1 - Perv



Hydrograph for Subcatchment 15S: Basin 1 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.00	0.00
2.00	0.21	0.00	0.00
3.00	0.33	0.00	0.00
4.00	0.45	0.00	0.00
5.00	0.59	0.00	0.00
6.00	0.74	0.01	0.03
7.00	0.91	0.03	0.08
8.00	1.12	0.08	0.15
9.00	1.37	0.16	0.24
10.00	1.72	0.31	0.45
11.00	2.25	0.59	0.95
12.00	4.15	1.93	**5.36**
13.00	6.41	3.84	**2.25**
14.00	6.94	4.31	1.05
15.00	7.29	4.62	0.73
16.00	7.54	4.85	0.58
17.00	7.75	5.04	0.49
18.00	7.92	5.20	0.39
19.00	8.07	5.34	0.35
20.00	8.21	5.46	0.33
21.00	8.33	5.58	0.31
22.00	8.45	5.69	0.28
23.00	8.56	5.79	0.26
24.00	**8.66**	**5.88**	0.24
25.00	8.66	5.88	0.00
26.00	8.66	5.88	0.00
27.00	8.66	5.88	0.00
28.00	8.66	5.88	0.00
29.00	8.66	5.88	0.00
30.00	8.66	5.88	0.00
31.00	8.66	5.88	0.00
32.00	8.66	5.88	0.00
33.00	8.66	5.88	0.00
34.00	8.66	5.88	0.00
35.00	8.66	5.88	0.00
36.00	8.66	5.88	0.00
37.00	8.66	5.88	0.00
38.00	8.66	5.88	0.00
39.00	8.66	5.88	0.00
40.00	8.66	5.88	0.00
41.00	8.66	5.88	0.00
42.00	8.66	5.88	0.00
43.00	8.66	5.88	0.00
44.00	8.66	5.88	0.00
45.00	8.66	5.88	0.00
46.00	8.66	5.88	0.00
47.00	8.66	5.88	0.00
48.00	8.66	5.88	0.00
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52.00	8.66	5.88	0.00
53.00	8.66	5.88	0.00
54.00	8.66	5.88	0.00
55.00	8.66	5.88	0.00
56.00	8.66	5.88	0.00
57.00	8.66	5.88	0.00
58.00	8.66	5.88	0.00
59.00	8.66	5.88	0.00
60.00	8.66	5.88	0.00
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62.00	8.66	5.88	0.00
63.00	8.66	5.88	0.00
64.00	8.66	5.88	0.00
65.00	8.66	5.88	0.00
66.00	8.66	5.88	0.00
67.00	8.66	5.88	0.00
68.00	8.66	5.88	0.00
69.00	8.66	5.88	0.00
70.00	8.66	5.88	0.00
71.00	8.66	5.88	0.00
72.00	8.66	5.88	0.00

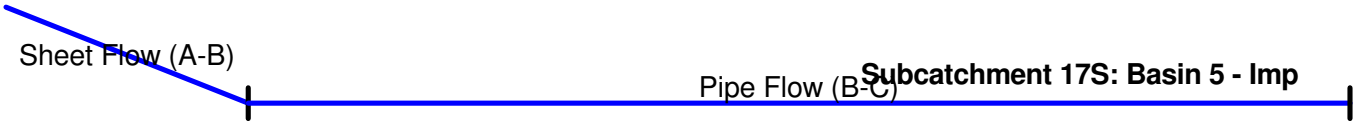
Summary for Subcatchment 17S: Basin 5 - Imp

Runoff = 9.01 cfs @ 12.10 hrs, Volume= 30,289 cf, Depth= 8.42"
Routed to Pond 18P : Basin 5

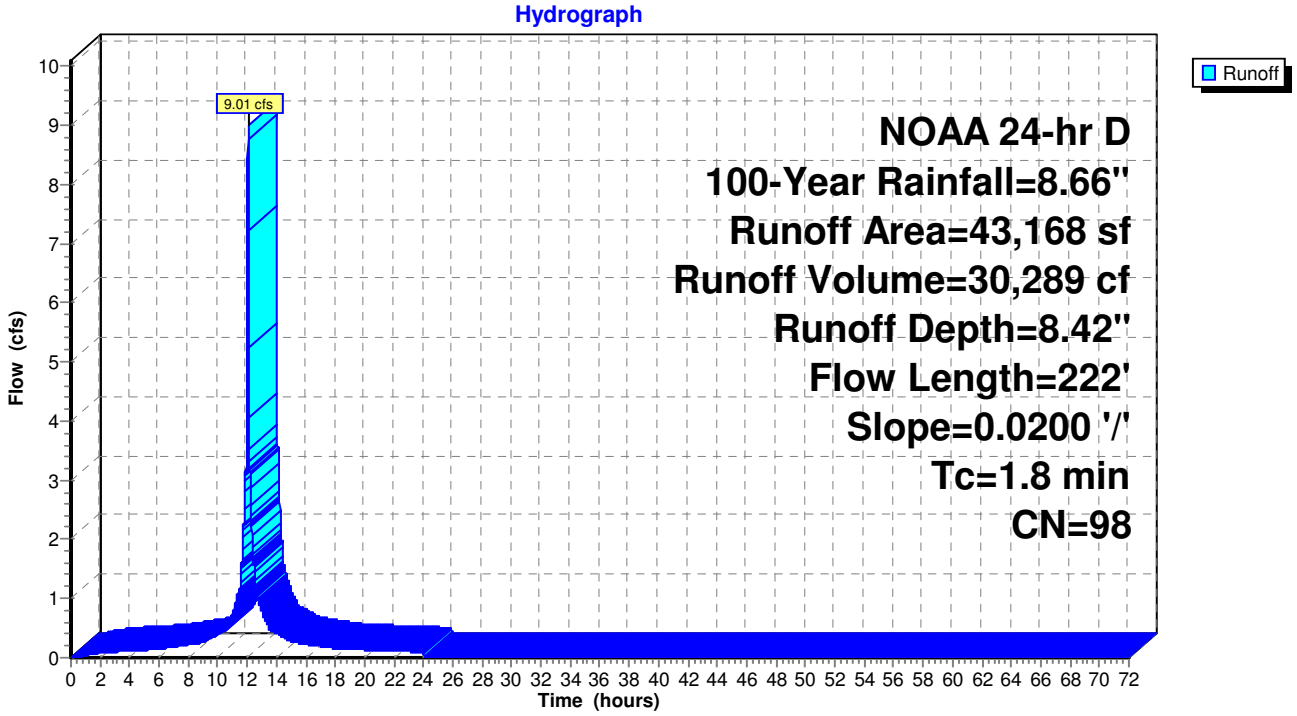
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

	Area (sf)	CN	Description
	26,232	98	Roofs, HSG C
	14,605	98	Paved parking, HSG C
*	2,331	98	impervious other than pavement
	43,168	98	Weighted Average
	43,168		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
1.2	182		2.50		**Direct Entry, Pipe Flow (B-C)**
1.8	222	Total			



Subcatchment 17S: Basin 5 - Imp



Hydrograph for Subcatchment 17S: Basin 5 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.01	0.04
2.00	0.21	0.08	0.08
3.00	0.33	0.17	0.10
4.00	0.45	0.28	0.12
5.00	0.59	0.40	0.13
6.00	0.74	0.54	0.14
7.00	0.91	0.71	0.18
8.00	1.12	0.91	0.22
9.00	1.37	1.16	0.26
10.00	1.72	1.49	0.40
11.00	2.25	2.02	0.72
12.00	4.15	3.91	**5.40**
13.00	6.41	6.17	**0.81**
14.00	6.94	6.70	0.42
15.00	7.29	7.05	0.28
16.00	7.54	7.30	0.23
17.00	7.75	7.51	0.19
18.00	7.92	7.68	0.16
19.00	8.07	7.83	0.14
20.00	8.21	7.97	0.13
21.00	8.33	8.09	0.12
22.00	8.45	8.21	0.11
23.00	8.56	8.32	0.10
24.00	**8.66**	**8.42**	0.10
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
58.00	8.66	8.42	0.00
59.00	8.66	8.42	0.00
60.00	8.66	8.42	0.00
61.00	8.66	8.42	0.00
62.00	8.66	8.42	0.00
63.00	8.66	8.42	0.00
64.00	8.66	8.42	0.00
65.00	8.66	8.42	0.00
66.00	8.66	8.42	0.00
67.00	8.66	8.42	0.00
68.00	8.66	8.42	0.00
69.00	8.66	8.42	0.00
70.00	8.66	8.42	0.00
71.00	8.66	8.42	0.00
72.00	8.66	8.42	0.00

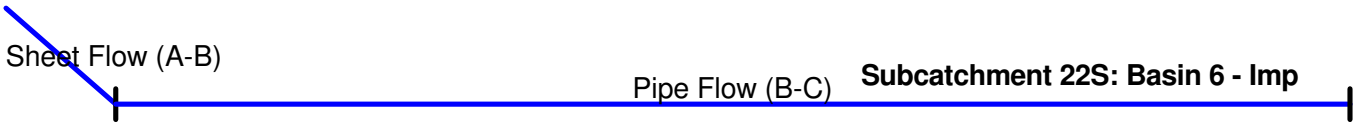
Summary for Subcatchment 22S: Basin 6 - Imp

Runoff = 11.63 cfs @ 12.11 hrs, Volume= 39,895 cf, Depth= 8.42"
Routed to Pond 24P : Basin 6

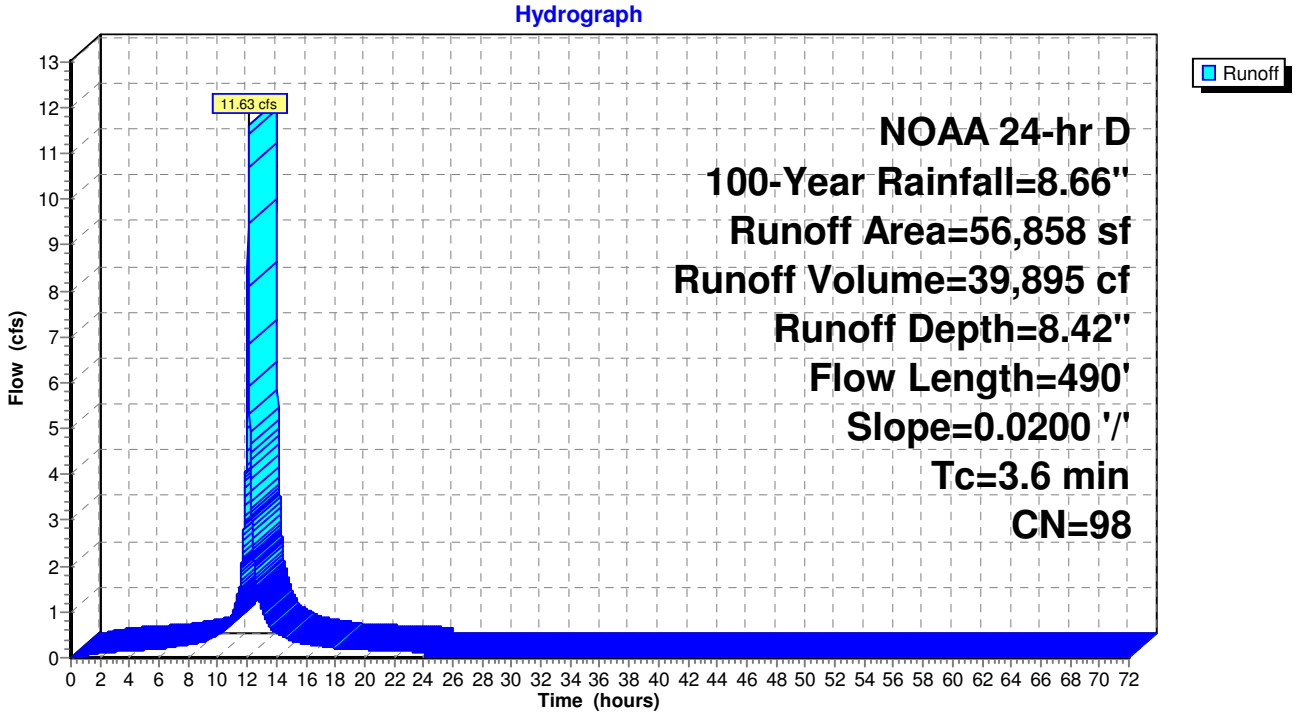
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

	Area (sf)	CN	Description
	16,127	98	Paved parking, HSG D
	21,053	98	Paved parking, HSG C
*	4,437	98	impervious non pavement
*	15,241	98	fire lane pervoius pavers
	56,858	98	Weighted Average
	56,858		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
3.0	450		2.50		**Direct Entry, Pipe Flow (B-C)**
3.6	490	Total			



Subcatchment 22S: Basin 6 - Imp



Hydrograph for Subcatchment 22S: Basin 6 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.01	0.05
2.00	0.21	0.08	0.10
3.00	0.33	0.17	0.13
4.00	0.45	0.28	0.15
5.00	0.59	0.40	0.17
6.00	0.74	0.54	0.19
7.00	0.91	0.71	0.24
8.00	1.12	0.91	0.29
9.00	1.37	1.16	0.35
10.00	1.72	1.49	0.52
11.00	2.25	2.02	0.94
12.00	4.15	3.91	**6.91**
13.00	6.41	6.17	**1.08**
14.00	6.94	6.70	0.55
15.00	7.29	7.05	0.37
16.00	7.54	7.30	0.31
17.00	7.75	7.51	0.26
18.00	7.92	7.68	0.21
19.00	8.07	7.83	0.19
20.00	8.21	7.97	0.18
21.00	8.33	8.09	0.16
22.00	8.45	8.21	0.15
23.00	8.56	8.32	0.14
24.00	**8.66**	**8.42**	0.13
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
58.00	8.66	8.42	0.00
59.00	8.66	8.42	0.00
60.00	8.66	8.42	0.00
61.00	8.66	8.42	0.00
62.00	8.66	8.42	0.00
63.00	8.66	8.42	0.00
64.00	8.66	8.42	0.00
65.00	8.66	8.42	0.00
66.00	8.66	8.42	0.00
67.00	8.66	8.42	0.00
68.00	8.66	8.42	0.00
69.00	8.66	8.42	0.00
70.00	8.66	8.42	0.00
71.00	8.66	8.42	0.00
72.00	8.66	8.42	0.00

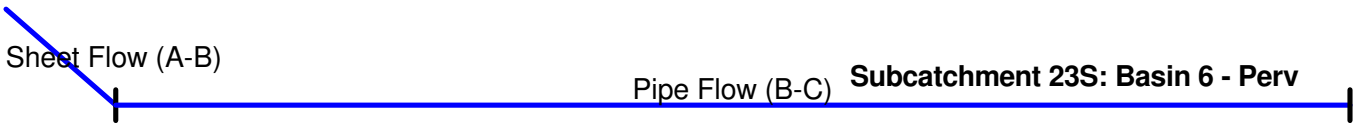
Summary for Subcatchment 23S: Basin 6 - Perv

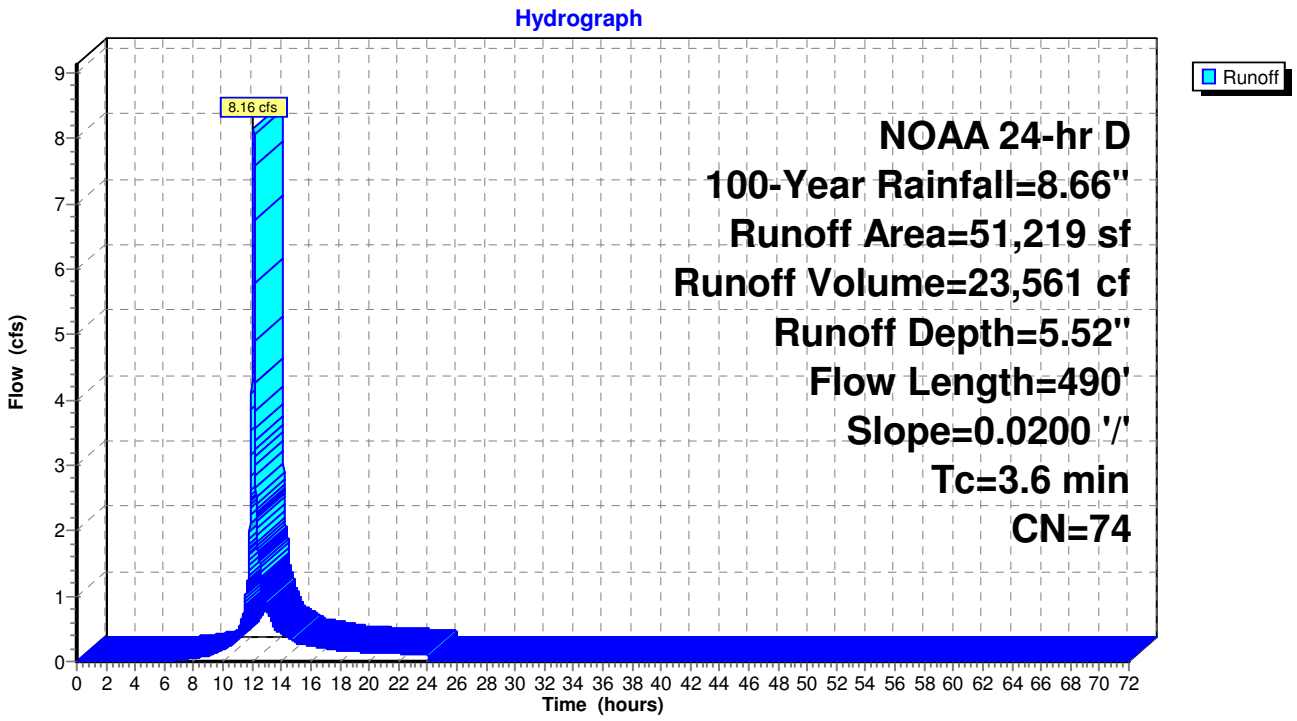
Runoff = 8.16 cfs @ 12.11 hrs, Volume= 23,561 cf, Depth= 5.52"
Routed to Pond 24P : Basin 6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
51,219	74	>75% Grass cover, Good, HSG C
51,219		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
3.0	450		2.50		**Direct Entry, Pipe Flow (B-C)**
3.6	490	Total			





Hydrograph for Subcatchment 23S: Basin 6 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.00	0.00
2.00	0.21	0.00	0.00
3.00	0.33	0.00	0.00
4.00	0.45	0.00	0.00
5.00	0.59	0.00	0.00
6.00	0.74	0.00	0.00
7.00	0.91	0.01	0.02
8.00	1.12	0.05	0.05
9.00	1.37	0.11	0.09
10.00	1.72	0.23	0.19
11.00	2.25	0.47	0.44
12.00	4.15	1.71	**4.51**
13.00	6.41	3.53	**0.83**
14.00	6.94	3.99	0.43
15.00	7.29	4.29	0.29
16.00	7.54	4.51	0.24
17.00	7.75	4.70	0.20
18.00	7.92	4.85	0.17
19.00	8.07	4.99	0.15
20.00	8.21	5.11	0.14
21.00	8.33	5.23	0.13
22.00	8.45	5.33	0.12
23.00	8.56	5.43	0.11
24.00	**8.66**	**5.52**	0.10
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
58.00	8.66	5.52	0.00
59.00	8.66	5.52	0.00
60.00	8.66	5.52	0.00
61.00	8.66	5.52	0.00
62.00	8.66	5.52	0.00
63.00	8.66	5.52	0.00
64.00	8.66	5.52	0.00
65.00	8.66	5.52	0.00
66.00	8.66	5.52	0.00
67.00	8.66	5.52	0.00
68.00	8.66	5.52	0.00
69.00	8.66	5.52	0.00
70.00	8.66	5.52	0.00
71.00	8.66	5.52	0.00
72.00	8.66	5.52	0.00

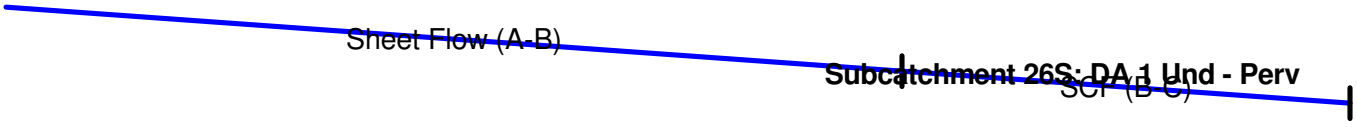
Summary for Subcatchment 26S: DA 1 Und - Perv

Runoff = 9.65 cfs @ 12.14 hrs, Volume= 31,713 cf, Depth= 5.88"
Routed to Link 25L : POA 1

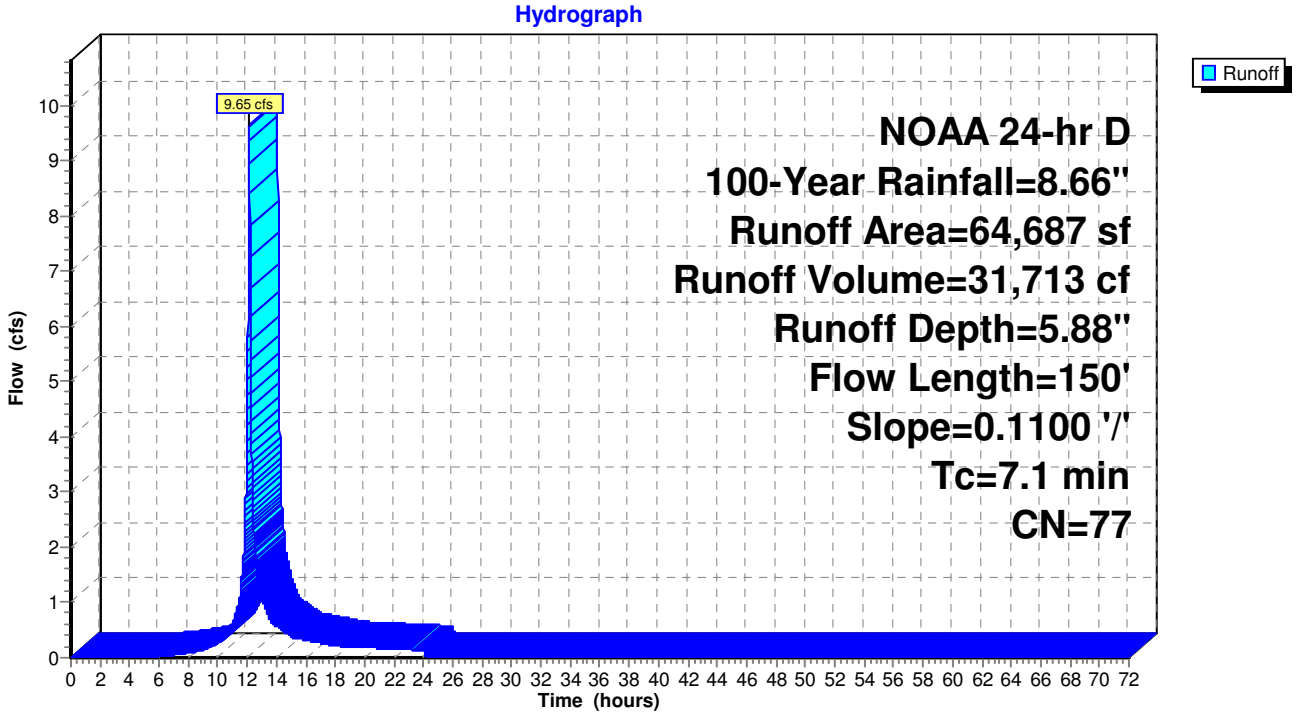
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
31,523	80	>75% Grass cover, Good, HSG D
33,164	74	>75% Grass cover, Good, HSG C
64,687	77	Weighted Average
64,687		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.1100	0.24		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	50	0.1100	5.34		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
7.1	150	Total			



Subcatchment 26S: DA 1 Und - Perv



Hydrograph for Subcatchment 26S: DA 1 Und - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.00	0.00
2.00	0.21	0.00	0.00
3.00	0.33	0.00	0.00
4.00	0.45	0.00	0.00
5.00	0.59	0.00	0.00
6.00	0.74	0.01	0.02
7.00	0.91	0.03	0.05
8.00	1.12	0.08	0.09
9.00	1.37	0.16	0.14
10.00	1.72	0.31	0.27
11.00	2.25	0.59	0.59
12.00	4.15	1.93	**4.77**
13.00	6.41	3.84	**1.14**
14.00	6.94	4.31	0.57
15.00	7.29	4.62	0.39
16.00	7.54	4.85	0.32
17.00	7.75	5.04	0.27
18.00	7.92	5.20	0.22
19.00	8.07	5.34	0.20
20.00	8.21	5.46	0.18
21.00	8.33	5.58	0.17
22.00	8.45	5.69	0.16
23.00	8.56	5.79	0.15
24.00	**8.66**	**5.88**	0.13
25.00	8.66	5.88	0.00
26.00	8.66	5.88	0.00
27.00	8.66	5.88	0.00
28.00	8.66	5.88	0.00
29.00	8.66	5.88	0.00
30.00	8.66	5.88	0.00
31.00	8.66	5.88	0.00
32.00	8.66	5.88	0.00
33.00	8.66	5.88	0.00
34.00	8.66	5.88	0.00
35.00	8.66	5.88	0.00
36.00	8.66	5.88	0.00
37.00	8.66	5.88	0.00
38.00	8.66	5.88	0.00
39.00	8.66	5.88	0.00
40.00	8.66	5.88	0.00
41.00	8.66	5.88	0.00
42.00	8.66	5.88	0.00
43.00	8.66	5.88	0.00
44.00	8.66	5.88	0.00
45.00	8.66	5.88	0.00
46.00	8.66	5.88	0.00
47.00	8.66	5.88	0.00
48.00	8.66	5.88	0.00
49.00	8.66	5.88	0.00
50.00	8.66	5.88	0.00
51.00	8.66	5.88	0.00
52.00	8.66	5.88	0.00
53.00	8.66	5.88	0.00
54.00	8.66	5.88	0.00
55.00	8.66	5.88	0.00
56.00	8.66	5.88	0.00
57.00	8.66	5.88	0.00
58.00	8.66	5.88	0.00
59.00	8.66	5.88	0.00
60.00	8.66	5.88	0.00
61.00	8.66	5.88	0.00
62.00	8.66	5.88	0.00
63.00	8.66	5.88	0.00
64.00	8.66	5.88	0.00
65.00	8.66	5.88	0.00
66.00	8.66	5.88	0.00
67.00	8.66	5.88	0.00
68.00	8.66	5.88	0.00
69.00	8.66	5.88	0.00
70.00	8.66	5.88	0.00
71.00	8.66	5.88	0.00
72.00	8.66	5.88	0.00

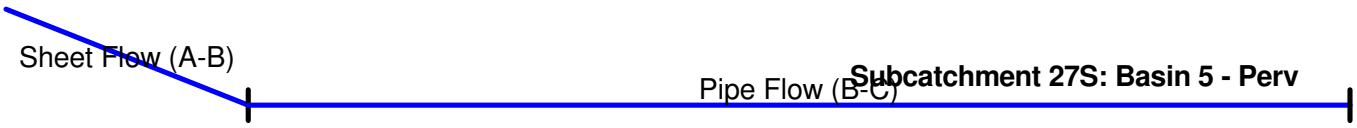
Summary for Subcatchment 27S: Basin 5 - Perv

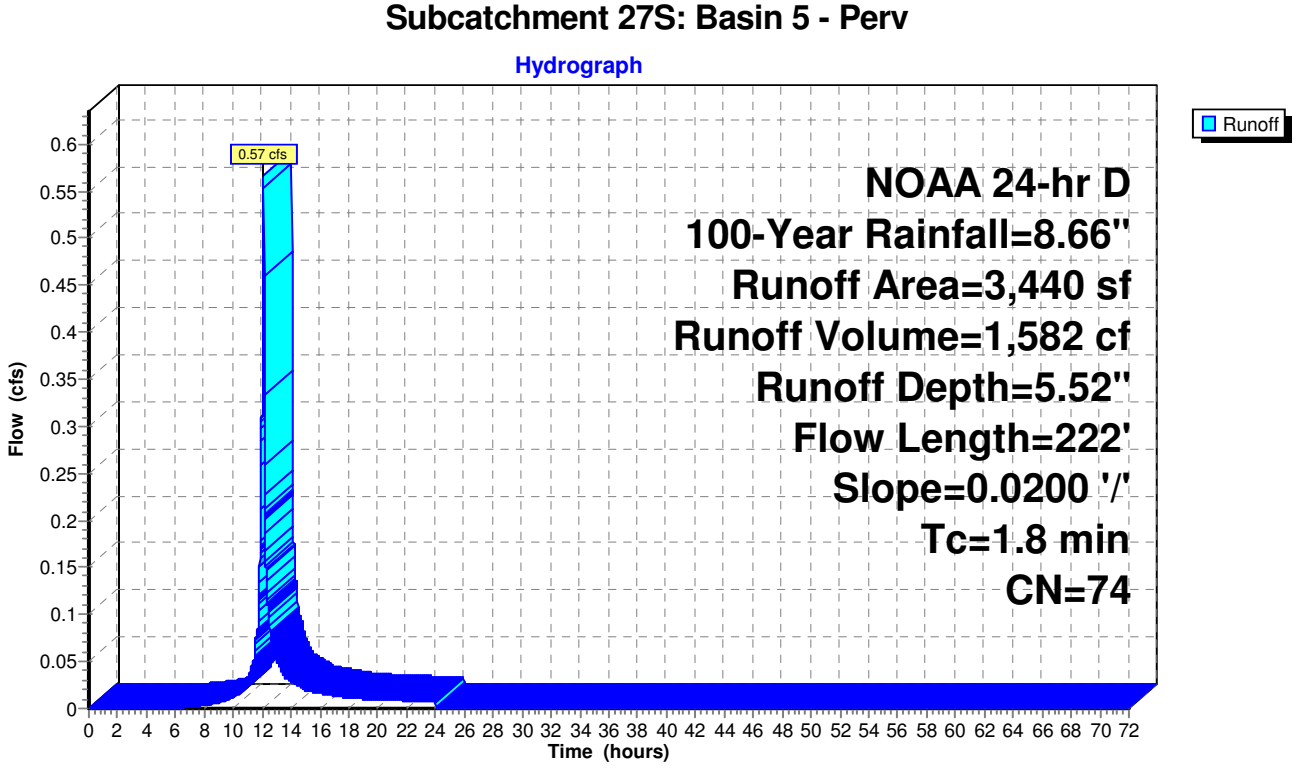
Runoff = 0.57 cfs @ 12.10 hrs, Volume= 1,582 cf, Depth= 5.52"
Routed to Pond 18P : Basin 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
3,440	74	>75% Grass cover, Good, HSG C
3,440		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
1.2	182		2.50		**Direct Entry, Pipe Flow (B-C)**
1.8	222	Total			





Hydrograph for Subcatchment 27S: Basin 5 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.00	0.00
2.00	0.21	0.00	0.00
3.00	0.33	0.00	0.00
4.00	0.45	0.00	0.00
5.00	0.59	0.00	0.00
6.00	0.74	0.00	0.00
7.00	0.91	0.01	0.00
8.00	1.12	0.05	0.00
9.00	1.37	0.11	0.01
10.00	1.72	0.23	0.01
11.00	2.25	0.47	0.03
12.00	4.15	1.71	**0.32**
13.00	6.41	3.53	**0.06**
14.00	6.94	3.99	0.03
15.00	7.29	4.29	0.02
16.00	7.54	4.51	0.02
17.00	7.75	4.70	0.01
18.00	7.92	4.85	0.01
19.00	8.07	4.99	0.01
20.00	8.21	5.11	0.01
21.00	8.33	5.23	0.01
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
58.00	8.66	5.52	0.00
59.00	8.66	5.52	0.00
60.00	8.66	5.52	0.00
61.00	8.66	5.52	0.00
62.00	8.66	5.52	0.00
63.00	8.66	5.52	0.00
64.00	8.66	5.52	0.00
65.00	8.66	5.52	0.00
66.00	8.66	5.52	0.00
67.00	8.66	5.52	0.00
68.00	8.66	5.52	0.00
69.00	8.66	5.52	0.00
70.00	8.66	5.52	0.00
71.00	8.66	5.52	0.00
72.00	8.66	5.52	0.00

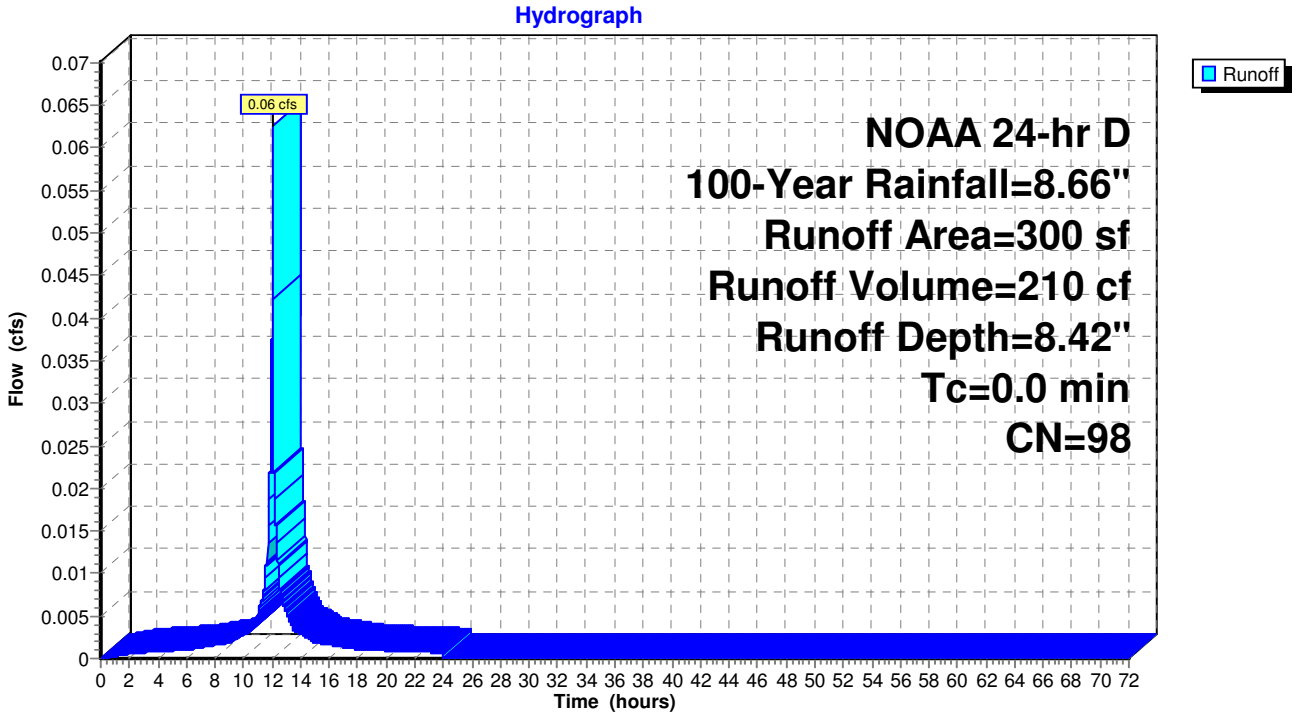
Summary for Subcatchment 28S: undetained impervious

Runoff = 0.06 cfs @ 12.09 hrs, Volume= 210 cf, Depth= 8.42"
Routed to Link 25L : POA 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

	Area (sf)	CN	Description
*	300	98	non pavement impervious
	300		100.00% Impervious Area

Subcatchment 28S: undetained impervious



Hydrograph for Subcatchment 28S: undetained impervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.01	0.00
2.00	0.21	0.08	0.00
3.00	0.33	0.17	0.00
4.00	0.45	0.28	0.00
5.00	0.59	0.40	0.00
6.00	0.74	0.54	0.00
7.00	0.91	0.71	0.00
8.00	1.12	0.91	0.00
9.00	1.37	1.16	0.00
10.00	1.72	1.49	0.00
11.00	2.25	2.02	0.01
12.00	4.15	3.91	**0.05**
13.00	6.41	6.17	**0.01**
14.00	6.94	6.70	0.00
15.00	7.29	7.05	0.00
16.00	7.54	7.30	0.00
17.00	7.75	7.51	0.00
18.00	7.92	7.68	0.00
19.00	8.07	7.83	0.00
20.00	8.21	7.97	0.00
21.00	8.33	8.09	0.00
22.00	8.45	8.21	0.00
23.00	8.56	8.32	0.00
24.00	**8.66**	**8.42**	0.00
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
58.00	8.66	8.42	0.00
59.00	8.66	8.42	0.00
60.00	8.66	8.42	0.00
61.00	8.66	8.42	0.00
62.00	8.66	8.42	0.00
63.00	8.66	8.42	0.00
64.00	8.66	8.42	0.00
65.00	8.66	8.42	0.00
66.00	8.66	8.42	0.00
67.00	8.66	8.42	0.00
68.00	8.66	8.42	0.00
69.00	8.66	8.42	0.00
70.00	8.66	8.42	0.00
71.00	8.66	8.42	0.00
72.00	8.66	8.42	0.00

Summary for Pond 16P: Basin 1

Inflow Area = 416,846 sf, 59.40% Impervious, Inflow Depth = 4.82" for 100-Year event
Inflow = 41.28 cfs @ 12.20 hrs, Volume= 167,378 cf
Outflow = 12.27 cfs @ 12.56 hrs, Volume= 150,907 cf, Atten= 70%, Lag= 21.2 min
Primary = 12.27 cfs @ 12.56 hrs, Volume= 150,907 cf
Routed to Link 25L : POA 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 545.30' @ 12.56 hrs Surf.Area= 48,362 sf Storage= 83,095 cf

Plug-Flow detention time= 335.1 min calculated for 150,886 cf (90% of inflow)
Center-of-Mass det. time= 283.4 min (1,055.8 - 772.4)

Volume	Invert	Avail.Storage	Storage Description
#1	543.50'	170,585 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
543.50	42,000	0	0
544.00	45,955	21,989	21,989
545.00	47,156	46,556	68,544
546.00	51,115	49,136	117,680
547.00	54,695	52,905	170,585

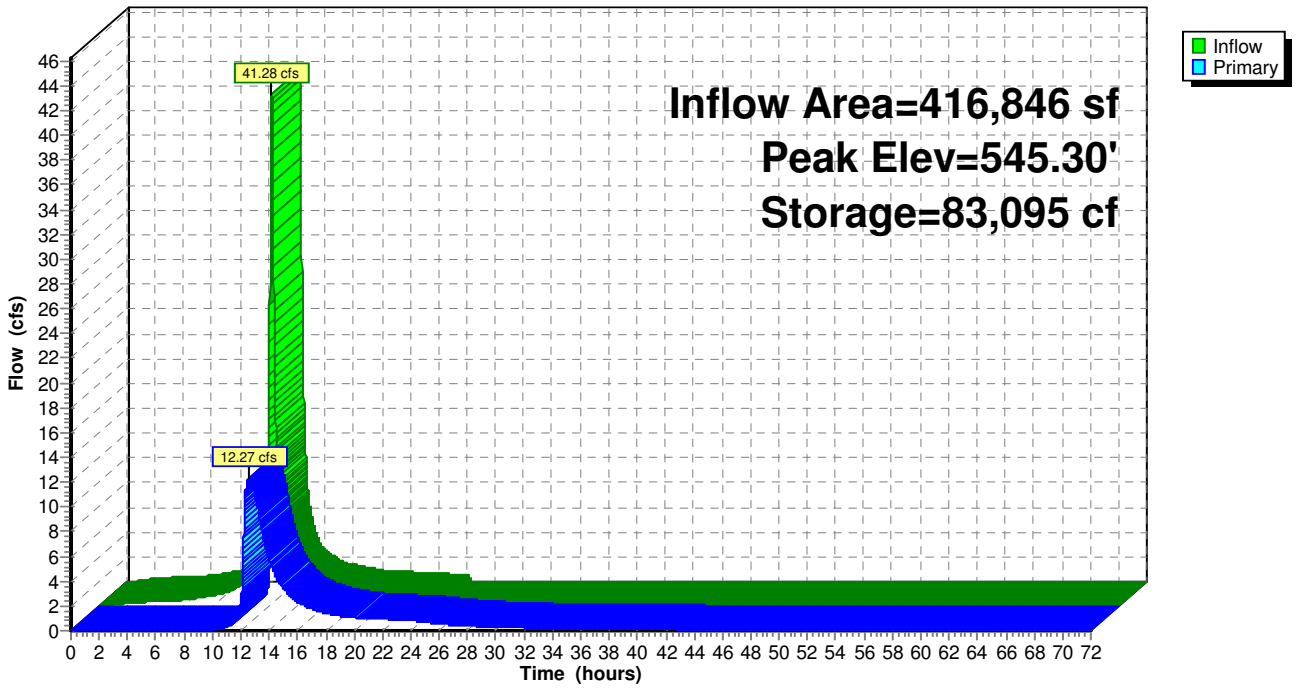
Device	Routing	Invert	Outlet Devices
#1	Primary	546.00'	**42.0" x 48.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	543.82'	**10.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	544.40'	**48.0" W x 8.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=12.27 cfs @ 12.56 hrs HW=545.30' (Free Discharge)
- **1=Grate** (Controls 0.00 cfs)
- **2=Orifice** (Orifice Controls 2.71 cfs @ 4.98 fps)
- **3=Orifice/Grate** (Orifice Controls 9.56 cfs @ 3.58 fps)



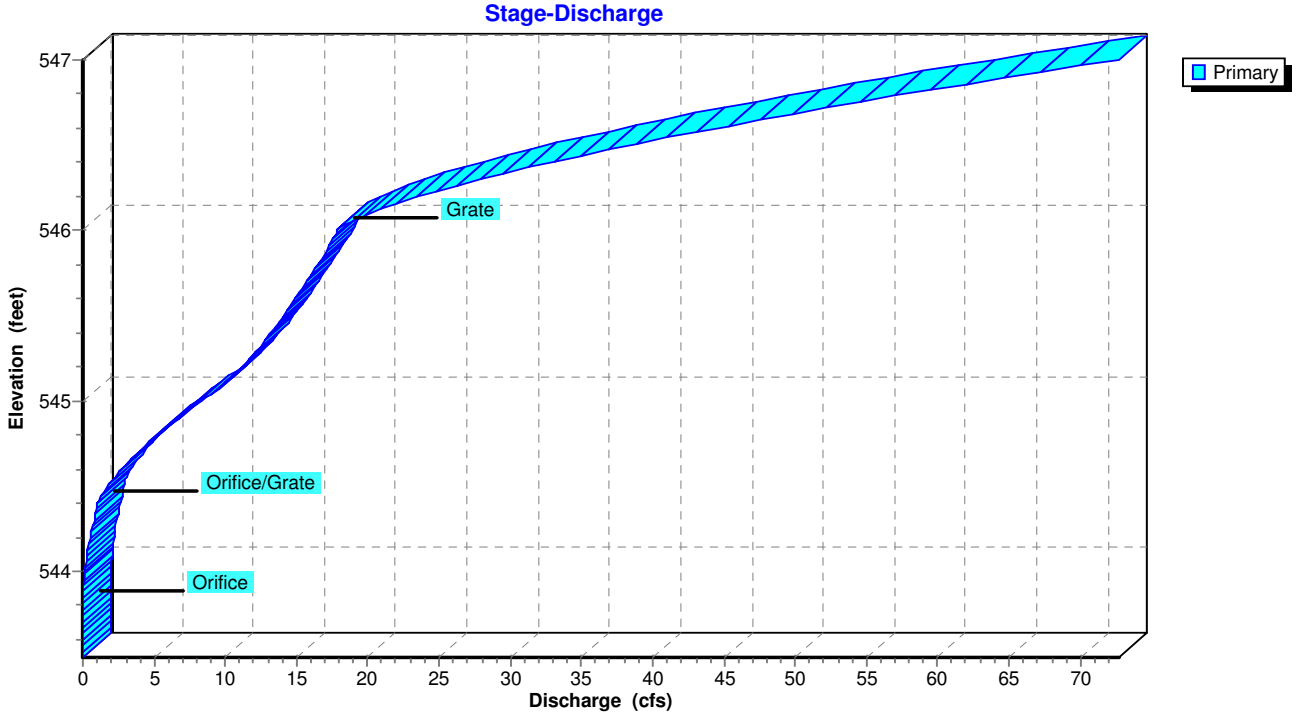
Pond 16P: Basin 1

Hydrograph

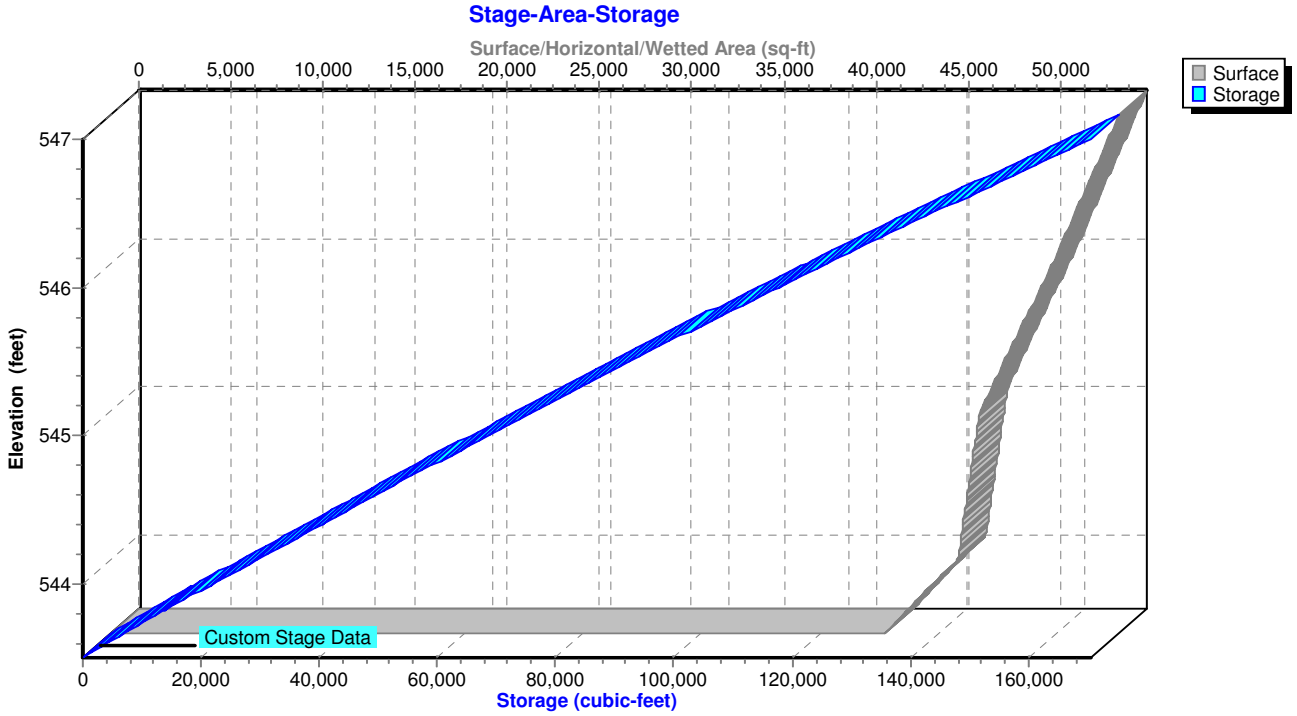


Pond 16P: Basin 1

Stage-Discharge



Pond 16P: Basin 1



Hydrograph for Pond 16P: Basin 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	543.50	0.00
2.00	0.25	723	543.52	0.00
4.00	0.39	3,093	543.57	0.00
6.00	0.51	6,302	543.65	0.00
8.00	0.89	11,247	543.76	0.00
10.00	1.74	19,779	543.95	0.07
12.00	**15.86**	**46,635**	**544.53**	**2.05**
14.00	**2.56**	**60,873**	**544.84**	**5.75**
16.00	1.39	48,007	544.56	2.34
18.00	0.95	43,359	544.46	1.44
20.00	0.79	40,687	544.40	1.07
22.00	0.68	38,744	544.36	0.94
24.00	0.57	36,846	544.32	0.83
26.00	0.00	32,275	544.22	0.57
28.00	0.00	28,877	544.15	0.39
30.00	0.00	26,465	544.10	0.28
32.00	0.00	24,682	544.06	0.21
34.00	0.00	23,316	544.03	0.17
36.00	0.00	22,243	544.01	0.13
38.00	0.00	21,380	543.99	0.11
40.00	0.00	20,666	543.97	0.09
42.00	0.00	20,071	543.96	0.08
44.00	0.00	19,571	543.95	0.06
46.00	0.00	19,138	543.94	0.06
48.00	0.00	18,763	543.93	0.05
50.00	0.00	18,438	543.92	0.04
52.00	0.00	18,154	543.92	0.04
54.00	0.00	17,900	543.91	0.03
56.00	0.00	17,670	543.91	0.03
58.00	0.00	17,463	543.90	0.03
60.00	0.00	17,276	543.90	0.02
62.00	0.00	17,108	543.89	0.02
64.00	0.00	16,956	543.89	0.02
66.00	0.00	16,820	543.89	0.02
68.00	0.00	16,696	543.88	0.02
70.00	0.00	16,580	543.88	0.02
72.00	0.00	16,471	543.88	0.01

Stage-Discharge for Pond 16P: Basin 1

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
543.50	0.00	544.52	1.93	545.54	14.45	546.56	41.89
543.52	0.00	544.54	2.12	545.56	14.61	546.58	43.11
543.54	0.00	544.56	2.32	545.58	14.78	546.60	44.35
543.56	0.00	544.58	2.53	545.60	14.94	546.62	45.61
543.58	0.00	544.60	2.74	545.62	15.11	546.64	46.89
543.60	0.00	544.62	2.96	545.64	15.27	546.66	48.19
543.62	0.00	544.64	3.19	545.66	15.42	546.68	49.50
543.64	0.00	544.66	3.41	545.68	15.58	546.70	50.83
543.66	0.00	544.68	3.65	545.70	15.74	546.72	52.18
543.68	0.00	544.70	3.90	545.72	15.89	546.74	53.55
543.70	0.00	544.72	4.15	545.74	16.04	546.76	54.93
543.72	0.00	544.74	4.41	545.76	16.19	546.78	56.33
543.74	0.00	544.76	4.67	545.78	16.34	546.80	57.74
543.76	0.00	544.78	4.94	545.80	16.49	546.82	59.17
543.78	0.00	544.80	5.22	545.82	16.64	546.84	60.62
543.80	0.00	544.82	5.50	545.84	16.78	546.86	62.08
543.82	0.00	544.84	5.79	545.86	16.92	546.88	63.55
543.84	0.00	544.86	6.08	545.88	17.07	546.90	65.05
543.86	0.01	544.88	6.38	545.90	17.21	546.92	66.55
543.88	0.01	544.90	6.68	545.92	17.35	546.94	68.08
543.90	0.03	544.92	6.99	545.94	17.49	546.96	69.61
543.92	0.04	544.94	7.30	545.96	17.62	546.98	71.16
543.94	0.06	544.96	7.61	545.98	17.76	547.00	**72.73**
543.96	0.08	544.98	7.94	546.00	17.90		
543.98	0.10	545.00	8.26	546.02	18.17		
544.00	0.13	545.02	8.59	546.04	18.56		
544.02	0.15	545.04	8.93	546.06	19.02		
544.04	0.18	545.06	9.27	546.08	19.54		
544.06	0.22	545.08	9.59	546.10	20.11		
544.08	0.25	545.10	9.88	546.12	20.73		
544.10	0.29	545.12	10.15	546.14	21.39		
544.12	0.33	545.14	10.41	546.16	22.08		
544.14	0.37	545.16	10.66	546.18	22.82		
544.16	0.42	545.18	10.91	546.20	23.58		
544.18	0.46	545.20	11.14	546.22	24.38		
544.20	0.51	545.22	11.37	546.24	25.21		
544.22	0.56	545.24	11.59	546.26	26.07		
544.24	0.61	545.26	11.81	546.28	26.96		
544.26	0.66	545.28	12.02	546.30	27.87		
544.28	0.71	545.30	12.22	546.32	28.81		
544.30	0.77	545.32	12.43	546.34	29.78		
544.32	0.82	545.34	12.63	546.36	30.77		
544.34	0.88	545.36	12.82	546.38	31.78		
544.36	0.94	545.38	13.01	546.40	32.82		
544.38	0.99	545.40	13.20	546.42	33.88		
544.40	1.05	545.42	13.39	546.44	34.96		
544.42	1.15	545.44	13.57	546.46	36.06		
544.44	1.27	545.46	13.75	546.48	37.19		
544.46	1.41	545.48	13.93	546.50	38.33		
544.48	1.57	545.50	14.10	546.52	39.50		
544.50	1.74	545.52	14.28	546.54	40.68		

Stage-Area-Storage for Pond 16P: Basin 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
543.50	42,000	0
543.55	42,395	2,110
543.60	42,791	4,240
543.65	43,186	6,389
543.70	43,582	8,558
543.75	43,978	10,747
543.80	44,373	12,956
543.85	44,769	15,184
543.90	45,164	17,433
543.95	45,560	19,701
544.00	45,955	21,989
544.05	46,015	24,288
544.10	46,075	26,590
544.15	46,135	28,896
544.20	46,195	31,204
544.25	46,255	33,515
544.30	46,315	35,829
544.35	46,375	38,147
544.40	46,435	40,467
544.45	46,495	42,790
544.50	46,556	45,116
544.55	46,616	47,446
544.60	46,676	49,778
544.65	46,736	52,113
544.70	46,796	54,451
544.75	46,856	56,793
544.80	46,916	59,137
544.85	46,976	61,484
544.90	47,036	63,835
544.95	47,096	66,188
545.00	47,156	68,544
545.05	47,354	70,907
545.10	47,552	73,280
545.15	47,750	75,662
545.20	47,948	78,055
545.25	48,146	80,457
545.30	48,344	82,869
545.35	48,542	85,291
545.40	48,740	87,723
545.45	48,938	90,165
545.50	49,136	92,617
545.55	49,333	95,079
545.60	49,531	97,550
545.65	49,729	100,032
545.70	49,927	102,523
545.75	50,125	105,025
545.80	50,323	107,536
545.85	50,521	110,057
545.90	50,719	112,588
545.95	50,917	115,129
546.00	51,115	117,680
546.05	51,294	120,240
546.10	51,473	122,809
546.15	51,652	125,387
546.20	51,831	127,974
546.25	52,010	130,570
546.30	52,189	133,175
546.35	52,368	135,789
546.40	52,547	138,412
546.45	52,726	141,044
546.50	52,905	143,685
546.55	53,084	146,334
546.60	53,263	148,993
546.65	53,442	151,661
546.70	53,621	154,337
546.75	53,800	157,023
546.80	53,979	159,717
546.85	54,158	162,421
546.90	54,337	165,133
546.95	54,516	167,854
547.00	**54,695**	**170,585**

Summary for Pond 18P: Basin 5

Inflow Area = 46,608 sf, 92.62% Impervious, Inflow Depth = 8.21" for 100-Year event
Inflow = 9.58 cfs @ 12.10 hrs, Volume= 31,871 cf
Outflow = 6.04 cfs @ 12.13 hrs, Volume= 31,871 cf, Atten= 37%, Lag= 1.7 min
Discarded = 1.37 cfs @ 11.57 hrs, Volume= 26,452 cf
Primary = 4.67 cfs @ 12.13 hrs, Volume= 5,419 cf
Routed to Pond 16P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 579.76' @ 12.13 hrs Surf.Area= 14,810 sf Storage= 4,513 cf

Plug-Flow detention time= 8.7 min calculated for 31,867 cf (100% of inflow)
Center-of-Mass det. time= 8.7 min (749.8 - 741.1)

Volume	Invert	Avail.Storage	Storage Description
#1	579.00'	31,397 cf	**Custom Stage Data (Prismatic)** Listed below 78,493 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
579.00	14,810	0	0
580.00	14,810	14,810	14,810
581.00	14,810	14,810	29,620
582.00	14,810	14,810	44,430
583.00	14,810	14,810	59,240
584.00	14,810	14,810	74,050
584.30	14,810	4,443	78,493

Device	Routing	Invert	Outlet Devices
#1	Primary	579.25'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	579.00'	**4.000 in/hr Exfiltration over Surface area**

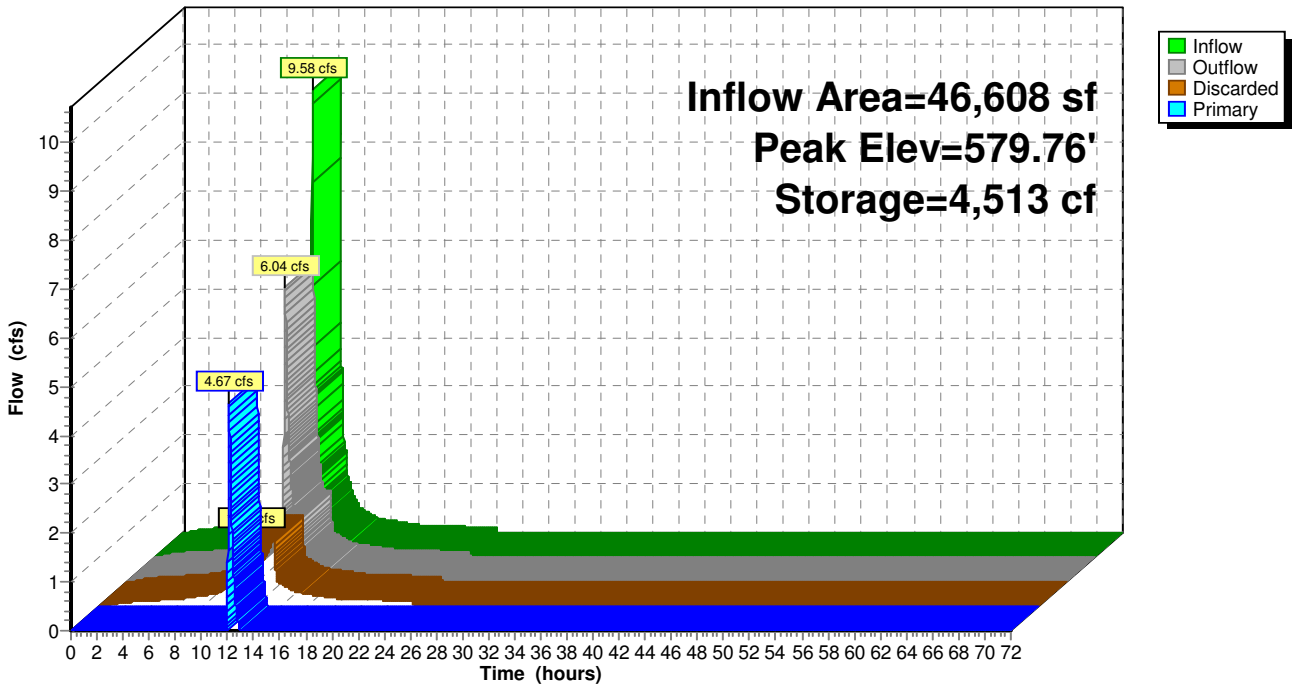
Discarded OutFlow Max=1.37 cfs @ 11.57 hrs HW=579.05' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 1.37 cfs)

Primary OutFlow Max=4.66 cfs @ 12.13 hrs HW=579.76' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Weir Controls 4.66 cfs @ 2.34 fps)



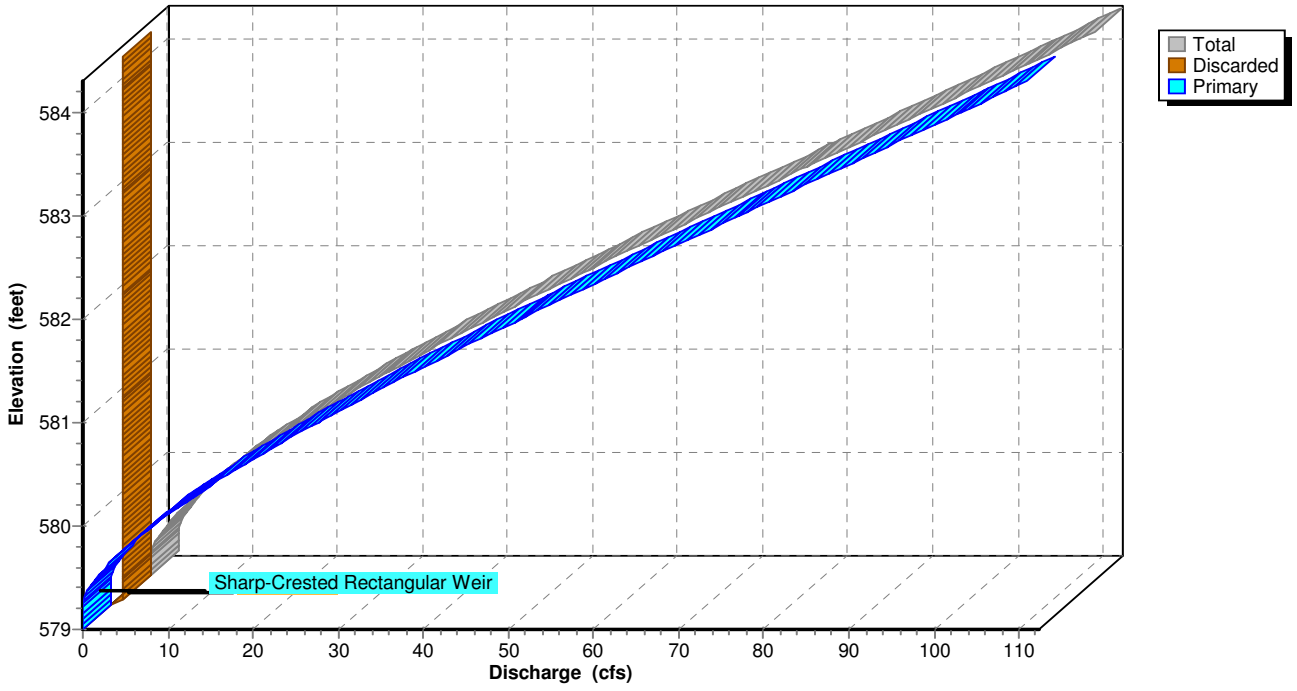
Pond 18P: Basin 5

Hydrograph

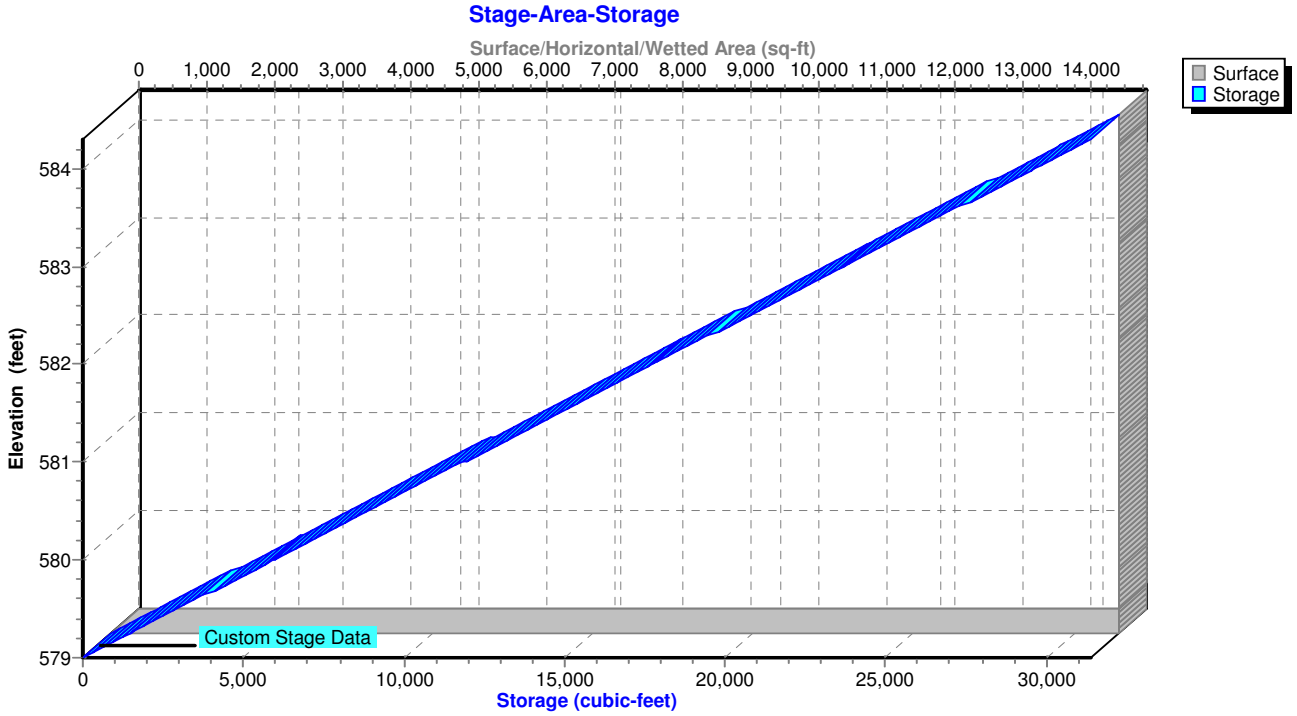


Pond 18P: Basin 5

Stage-Discharge



Pond 18P: Basin 5



Hydrograph for Pond 18P: Basin 5

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	579.00	0.00	0.00	0.00
2.00	0.08	17	579.00	0.08	0.08	0.00
4.00	0.12	27	579.00	0.12	0.12	0.00
6.00	0.14	33	579.01	0.14	0.14	0.00
8.00	0.23	52	579.01	0.22	0.22	0.00
10.00	0.41	93	579.02	0.41	**0.41**	0.00
12.00	**5.72**	**2,561**	**579.43**	**2.38**	**1.37**	**1.01**
14.00	**0.45**	**104**	**579.02**	**0.45**	0.45	**0.00**
16.00	0.25	57	579.01	0.25	0.25	0.00
18.00	0.17	39	579.01	0.17	0.17	0.00
20.00	0.14	33	579.01	0.14	0.14	0.00
22.00	0.12	28	579.00	0.12	0.12	0.00
24.00	0.10	23	579.00	0.10	0.10	0.00
26.00	0.00	0	579.00	0.00	0.00	0.00
28.00	0.00	0	579.00	0.00	0.00	0.00
30.00	0.00	0	579.00	0.00	0.00	0.00
32.00	0.00	0	579.00	0.00	0.00	0.00
34.00	0.00	0	579.00	0.00	0.00	0.00
36.00	0.00	0	579.00	0.00	0.00	0.00
38.00	0.00	0	579.00	0.00	0.00	0.00
40.00	0.00	0	579.00	0.00	0.00	0.00
42.00	0.00	0	579.00	0.00	0.00	0.00
44.00	0.00	0	579.00	0.00	0.00	0.00
46.00	0.00	0	579.00	0.00	0.00	0.00
48.00	0.00	0	579.00	0.00	0.00	0.00
50.00	0.00	0	579.00	0.00	0.00	0.00
52.00	0.00	0	579.00	0.00	0.00	0.00
54.00	0.00	0	579.00	0.00	0.00	0.00
56.00	0.00	0	579.00	0.00	0.00	0.00
58.00	0.00	0	579.00	0.00	0.00	0.00
60.00	0.00	0	579.00	0.00	0.00	0.00
62.00	0.00	0	579.00	0.00	0.00	0.00
64.00	0.00	0	579.00	0.00	0.00	0.00
66.00	0.00	0	579.00	0.00	0.00	0.00
68.00	0.00	0	579.00	0.00	0.00	0.00
70.00	0.00	0	579.00	0.00	0.00	0.00
72.00	0.00	0	579.00	0.00	0.00	0.00

Stage-Discharge for Pond 18P: Basin 5

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
579.00	0.00	**0.00**	0.00
579.10	1.37	**1.37**	0.00
579.20	1.37	1.37	0.00
579.30	1.52	1.37	0.15
579.40	2.13	1.37	0.75
579.50	2.99	1.37	1.61
579.60	4.03	1.37	2.66
579.70	5.23	1.37	3.86
579.80	6.56	1.37	5.19
579.90	8.00	1.37	6.63
580.00	9.55	1.37	8.18
580.10	11.19	1.37	9.81
580.20	12.91	1.37	11.54
580.30	14.71	1.37	13.33
580.40	16.57	1.37	15.20
580.50	18.51	1.37	17.14
580.60	20.50	1.37	19.13
580.70	22.55	1.37	21.18
580.80	24.66	1.37	23.28
580.90	26.81	1.37	25.44
581.00	29.00	1.37	27.63
581.10	31.24	1.37	29.87
581.20	33.52	1.37	32.14
581.30	35.83	1.37	34.46
581.40	38.17	1.37	36.80
581.50	40.55	1.37	39.18
581.60	42.96	1.37	41.58
581.70	45.39	1.37	44.02
581.80	47.84	1.37	46.47
581.90	50.32	1.37	48.95
582.00	52.82	1.37	51.45
582.10	55.34	1.37	53.96
582.20	57.87	1.37	56.50
582.30	60.42	1.37	59.05
582.40	62.98	1.37	61.61
582.50	65.55	1.37	64.18
582.60	68.14	1.37	66.77
582.70	70.73	1.37	69.36
582.80	73.33	1.37	71.96
582.90	75.94	1.37	74.56
583.00	78.55	1.37	77.18
583.10	81.16	1.37	79.79
583.20	83.78	1.37	82.40
583.30	86.39	1.37	85.02
583.40	89.01	1.37	87.64
583.50	91.62	1.37	90.25
583.60	94.23	1.37	92.86
583.70	96.84	1.37	95.47
583.80	99.44	1.37	98.07
583.90	102.03	1.37	100.66
584.00	104.62	1.37	103.25
584.10	107.20	1.37	105.83
584.20	109.77	1.37	108.40
584.30	**112.33**	1.37	**110.96**

Stage-Area-Storage for Pond 18P: Basin 5

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
579.00	**14,810**	0
579.10	14,810	592
579.20	14,810	1,185
579.30	14,810	1,777
579.40	14,810	2,370
579.50	14,810	2,962
579.60	14,810	3,554
579.70	14,810	4,147
579.80	14,810	4,739
579.90	14,810	5,332
580.00	14,810	5,924
580.10	14,810	6,516
580.20	14,810	7,109
580.30	14,810	7,701
580.40	14,810	8,294
580.50	14,810	8,886
580.60	14,810	9,478
580.70	14,810	10,071
580.80	14,810	10,663
580.90	14,810	11,256
581.00	14,810	11,848
581.10	14,810	12,440
581.20	14,810	13,033
581.30	14,810	13,625
581.40	14,810	14,218
581.50	14,810	14,810
581.60	14,810	15,402
581.70	14,810	15,995
581.80	14,810	16,587
581.90	14,810	17,180
582.00	14,810	17,772
582.10	14,810	18,364
582.20	14,810	18,957
582.30	14,810	19,549
582.40	14,810	20,142
582.50	14,810	20,734
582.60	14,810	21,326
582.70	14,810	21,919
582.80	14,810	22,511
582.90	14,810	23,104
583.00	14,810	23,696
583.10	14,810	24,288
583.20	14,810	24,881
583.30	14,810	25,473
583.40	14,810	26,066
583.50	14,810	26,658
583.60	14,810	27,250
583.70	14,810	27,843
583.80	14,810	28,435
583.90	14,810	29,028
584.00	14,810	29,620
584.10	14,810	30,212
584.20	14,810	30,805
584.30	14,810	**31,397**

Summary for Pond 24P: Basin 6

Inflow Area = 108,077 sf, 52.61% Impervious, Inflow Depth = 7.05" for 100-Year event
Inflow = 19.78 cfs @ 12.11 hrs, Volume= 63,455 cf
Outflow = 11.29 cfs @ 12.16 hrs, Volume= 63,455 cf, Atten= 43%, Lag= 3.3 min
Discarded = 8.27 cfs @ 11.95 hrs, Volume= 61,217 cf
Primary = 3.02 cfs @ 12.16 hrs, Volume= 2,238 cf
Routed to Pond 16P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 600.31' @ 12.16 hrs Surf.Area= 35,719 sf Storage= 4,419 cf

Plug-Flow detention time= 1.4 min calculated for 63,446 cf (100% of inflow)
Center-of-Mass det. time= 1.4 min (769.9 - 768.5)

Volume	Invert	Avail.Storage	Storage Description
#1	600.00'	20,288 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 50,721 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
600.00	35,719	0	0
601.00	35,719	35,719	35,719
601.42	35,719	15,002	50,721

Device	Routing	Invert	Outlet Devices
#1	Primary	600.02'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	600.00'	**10.000 in/hr Exfiltration over Surface area**

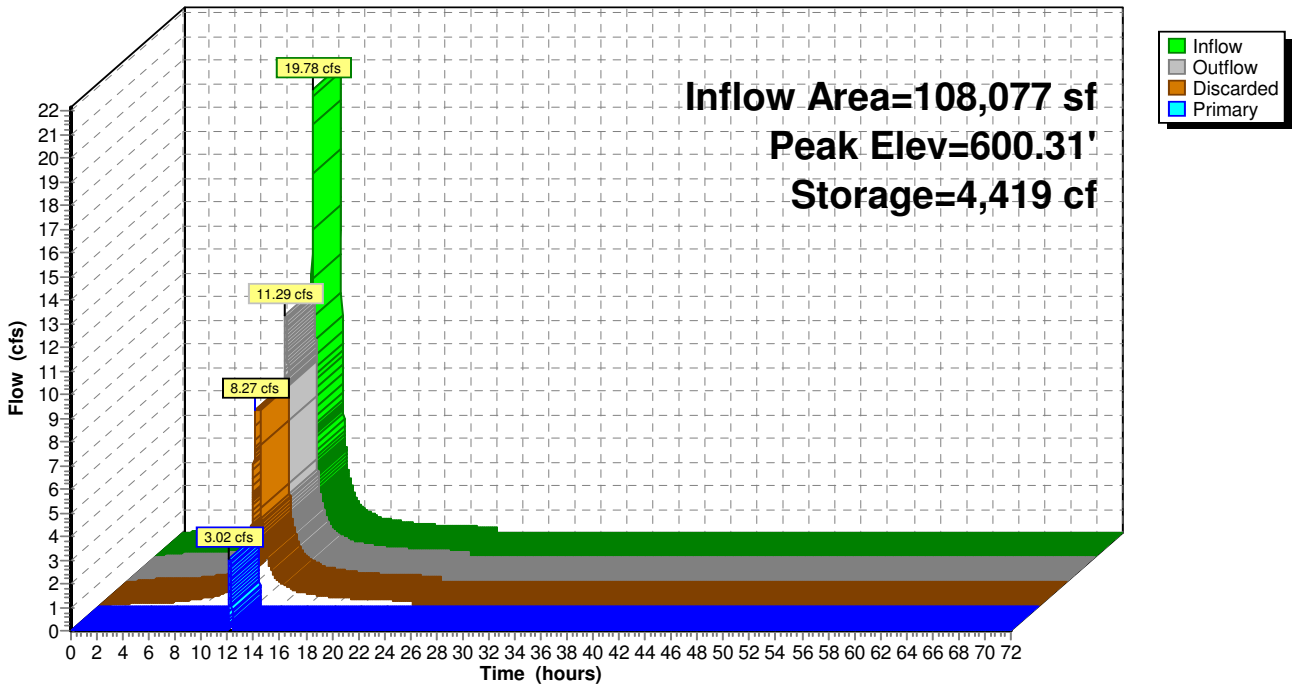
Discarded OutFlow Max=8.27 cfs @ 11.95 hrs HW=600.01' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 8.27 cfs)

Primary OutFlow Max=3.02 cfs @ 12.16 hrs HW=600.31' (Free Discharge)
└**1=Sharp-Crested Rectangular Weir** (Weir Controls 3.02 cfs @ 1.76 fps)



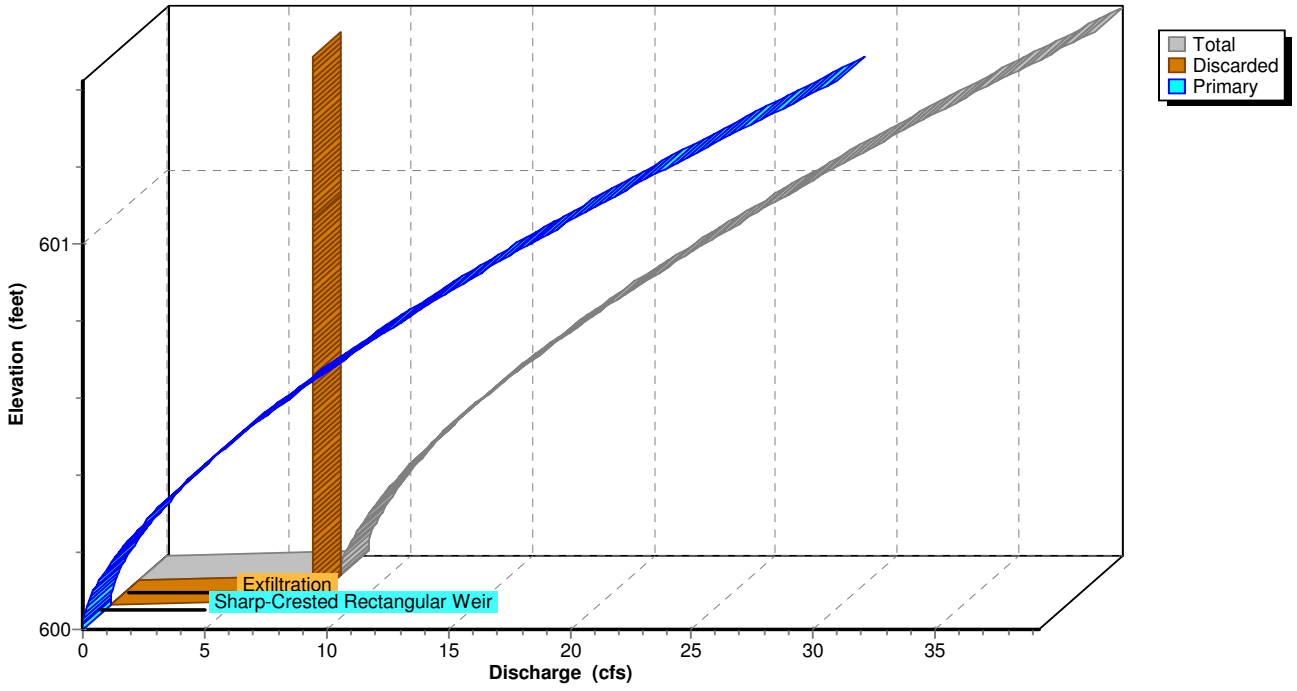
Pond 24P: Basin 6

Hydrograph

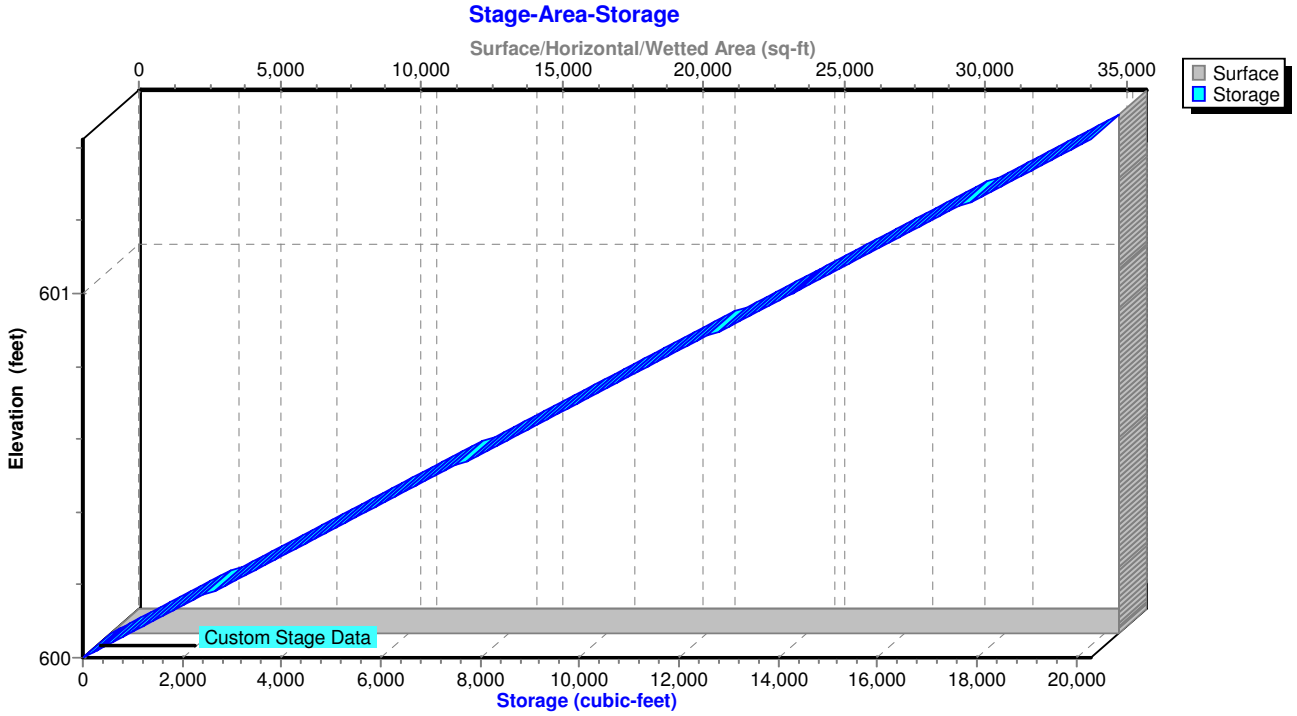


Pond 24P: Basin 6

Stage-Discharge



Pond 24P: Basin 6



Hydrograph for Pond 24P: Basin 6

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	600.00	0.00	0.00	0.00
2.00	0.10	2	600.00	0.10	0.10	0.00
4.00	0.15	4	600.00	0.15	0.15	0.00
6.00	0.19	5	600.00	0.19	0.19	0.00
8.00	0.35	9	600.00	0.35	0.35	0.00
10.00	0.71	17	600.00	0.71	**0.71**	0.00
12.00	**11.42**	**621**	**600.04**	**8.34**	**8.27**	**0.07**
14.00	**0.98**	**24**	**600.00**	**0.98**	0.98	**0.00**
16.00	0.55	14	600.00	0.55	0.55	0.00
18.00	0.37	9	600.00	0.37	0.37	0.00
20.00	0.32	8	600.00	0.32	0.32	0.00
22.00	0.27	7	600.00	0.27	0.27	0.00
24.00	0.23	6	600.00	0.23	0.23	0.00
26.00	0.00	0	600.00	0.00	0.00	0.00
28.00	0.00	0	600.00	0.00	0.00	0.00
30.00	0.00	0	600.00	0.00	0.00	0.00
32.00	0.00	0	600.00	0.00	0.00	0.00
34.00	0.00	0	600.00	0.00	0.00	0.00
36.00	0.00	0	600.00	0.00	0.00	0.00
38.00	0.00	0	600.00	0.00	0.00	0.00
40.00	0.00	0	600.00	0.00	0.00	0.00
42.00	0.00	0	600.00	0.00	0.00	0.00
44.00	0.00	0	600.00	0.00	0.00	0.00
46.00	0.00	0	600.00	0.00	0.00	0.00
48.00	0.00	0	600.00	0.00	0.00	0.00
50.00	0.00	0	600.00	0.00	0.00	0.00
52.00	0.00	0	600.00	0.00	0.00	0.00
54.00	0.00	0	600.00	0.00	0.00	0.00
56.00	0.00	0	600.00	0.00	0.00	0.00
58.00	0.00	0	600.00	0.00	0.00	0.00
60.00	0.00	0	600.00	0.00	0.00	0.00
62.00	0.00	0	600.00	0.00	0.00	0.00
64.00	0.00	0	600.00	0.00	0.00	0.00
66.00	0.00	0	600.00	0.00	0.00	0.00
68.00	0.00	0	600.00	0.00	0.00	0.00
70.00	0.00	0	600.00	0.00	0.00	0.00
72.00	0.00	0	600.00	0.00	0.00	0.00

Stage-Discharge for Pond 24P: Basin 6

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
600.00	0.00	**0.00**	0.00
600.02	8.27	**8.27**	0.00
600.04	8.32	8.27	0.06
600.06	8.43	8.27	0.16
600.08	8.56	8.27	0.29
600.10	8.71	8.27	0.44
600.12	8.89	8.27	0.62
600.14	9.08	8.27	0.81
600.16	9.29	8.27	1.02
600.18	9.52	8.27	1.25
600.20	9.76	8.27	1.49
600.22	10.01	8.27	1.74
600.24	10.28	8.27	2.01
600.26	10.56	8.27	2.29
600.28	10.85	8.27	2.58
600.30	11.15	8.27	2.88
600.32	11.46	8.27	3.19
600.34	11.78	8.27	3.51
600.36	12.11	8.27	3.85
600.38	12.46	8.27	4.19
600.40	12.81	8.27	4.54
600.42	13.17	8.27	4.90
600.44	13.53	8.27	5.27
600.46	13.91	8.27	5.64
600.48	14.30	8.27	6.03
600.50	14.69	8.27	6.42
600.52	15.09	8.27	6.82
600.54	15.50	8.27	7.23
600.56	15.91	8.27	7.65
600.58	16.34	8.27	8.07
600.60	16.77	8.27	8.50
600.62	17.20	8.27	8.94
600.64	17.65	8.27	9.38
600.66	18.10	8.27	9.83
600.68	18.56	8.27	10.29
600.70	19.02	8.27	10.75
600.72	19.49	8.27	11.22
600.74	19.97	8.27	11.70
600.76	20.45	8.27	12.18
600.78	20.94	8.27	12.67
600.80	21.43	8.27	13.16
600.82	21.93	8.27	13.66
600.84	22.44	8.27	14.17
600.86	22.95	8.27	14.68
600.88	23.47	8.27	15.20
600.90	23.99	8.27	15.72
600.92	24.52	8.27	16.25
600.94	25.05	8.27	16.78
600.96	25.59	8.27	17.32
600.98	26.13	8.27	17.86
601.00	26.68	8.27	18.41
601.02	27.23	8.27	18.97
601.04	27.79	8.27	19.52
601.06	28.36	8.27	20.09
601.08	28.92	8.27	20.66
601.10	29.50	8.27	21.23
601.12	30.07	8.27	21.81
601.14	30.66	8.27	22.39
601.16	31.24	8.27	22.97
601.18	31.83	8.27	23.56
601.20	32.43	8.27	24.16
601.22	33.03	8.27	24.76
601.24	33.63	8.27	25.36
601.26	34.24	8.27	25.97
601.28	34.85	8.27	26.58
601.30	35.47	8.27	27.20
601.32	36.09	8.27	27.82
601.34	36.71	8.27	28.45
601.36	37.34	8.27	29.07
601.38	37.98	8.27	29.71
601.40	38.61	8.27	30.34
601.42	**39.25**	8.27	**30.98**

Stage-Area-Storage for Pond 24P: Basin 6

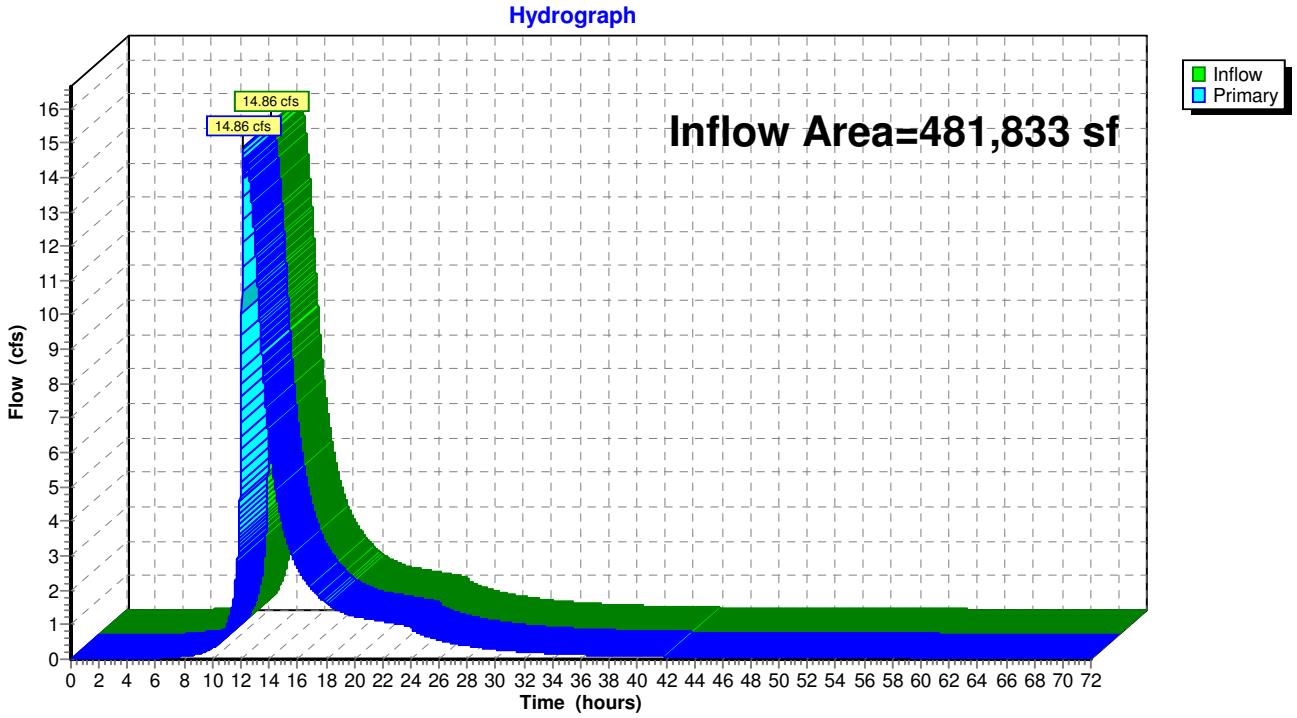
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
600.00	**35,719**	0
600.02	35,719	286
600.04	35,719	572
600.06	35,719	857
600.08	35,719	1,143
600.10	35,719	1,429
600.12	35,719	1,715
600.14	35,719	2,000
600.16	35,719	2,286
600.18	35,719	2,572
600.20	35,719	2,858
600.22	35,719	3,143
600.24	35,719	3,429
600.26	35,719	3,715
600.28	35,719	4,001
600.30	35,719	4,286
600.32	35,719	4,572
600.34	35,719	4,858
600.36	35,719	5,144
600.38	35,719	5,429
600.40	35,719	5,715
600.42	35,719	6,001
600.44	35,719	6,287
600.46	35,719	6,572
600.48	35,719	6,858
600.50	35,719	7,144
600.52	35,719	7,430
600.54	35,719	7,715
600.56	35,719	8,001
600.58	35,719	8,287
600.60	35,719	8,573
600.62	35,719	8,858
600.64	35,719	9,144
600.66	35,719	9,430
600.68	35,719	9,716
600.70	35,719	10,001
600.72	35,719	10,287
600.74	35,719	10,573
600.76	35,719	10,859
600.78	35,719	11,144
600.80	35,719	11,430
600.82	35,719	11,716
600.84	35,719	12,002
600.86	35,719	12,287
600.88	35,719	12,573
600.90	35,719	12,859
600.92	35,719	13,145
600.94	35,719	13,430
600.96	35,719	13,716
600.98	35,719	14,002
601.00	35,719	14,288
601.02	35,719	14,573
601.04	35,719	14,859
601.06	35,719	15,145
601.08	35,719	15,431
601.10	35,719	15,716
601.12	35,719	16,002
601.14	35,719	16,288
601.16	35,719	16,574
601.18	35,719	16,859
601.20	35,719	17,145
601.22	35,719	17,431
601.24	35,719	17,717
601.26	35,719	18,002
601.28	35,719	18,288
601.30	35,719	18,574
601.32	35,719	18,860
601.34	35,719	19,145
601.36	35,719	19,431
601.38	35,719	19,717
601.40	35,719	20,003
601.42	35,719	**20,288**

Summary for Link 25L: POA 1

Inflow Area = 481,833 sf, 51.45% Impervious, Inflow Depth > 4.55" for 100-Year event
Inflow = 14.86 cfs @ 12.16 hrs, Volume= 182,831 cf
Primary = 14.86 cfs @ 12.16 hrs, Volume= 182,831 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 25L: POA 1



Hydrograph for Link 25L: POA 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.04	0.00	0.04
1.00	0.00	0.00	0.00	52.00	0.04	0.00	0.04
2.00	0.00	0.00	0.00	53.00	0.04	0.00	0.04
3.00	0.00	0.00	0.00	54.00	0.03	0.00	0.03
4.00	0.00	0.00	0.00	55.00	0.03	0.00	0.03
5.00	0.00	0.00	0.00	56.00	0.03	0.00	0.03
6.00	0.02	0.00	0.02	57.00	0.03	0.00	0.03
7.00	0.05	0.00	0.05	58.00	0.03	0.00	0.03
8.00	0.09	0.00	0.09	59.00	0.03	0.00	0.03
9.00	0.15	0.00	0.15	60.00	0.02	0.00	0.02
10.00	0.34	0.00	0.34	61.00	0.02	0.00	0.02
11.00	0.92	0.00	0.92	62.00	0.02	0.00	0.02
12.00	**6.87**	0.00	**6.87**	63.00	0.02	0.00	0.02
13.00	**12.04**	0.00	**12.04**	64.00	0.02	0.00	0.02
14.00	6.32	0.00	6.32	65.00	0.02	0.00	0.02
15.00	3.83	0.00	3.83	66.00	0.02	0.00	0.02
16.00	2.67	0.00	2.67	67.00	0.02	0.00	0.02
17.00	2.05	0.00	2.05	68.00	0.02	0.00	0.02
18.00	1.65	0.00	1.65	69.00	0.02	0.00	0.02
19.00	1.41	0.00	1.41	70.00	0.02	0.00	0.02
20.00	1.26	0.00	1.26	71.00	0.02	0.00	0.02
21.00	1.18	0.00	1.18	72.00	0.01	0.00	0.01
22.00	1.10	0.00	1.10				
23.00	1.03	0.00	1.03				
24.00	0.96	0.00	0.96				
25.00	0.69	0.00	0.69				
26.00	0.57	0.00	0.57				
27.00	0.47	0.00	0.47				
28.00	0.39	0.00	0.39				
29.00	0.33	0.00	0.33				
30.00	0.28	0.00	0.28				
31.00	0.25	0.00	0.25				
32.00	0.21	0.00	0.21				
33.00	0.19	0.00	0.19				
34.00	0.17	0.00	0.17				
35.00	0.15	0.00	0.15				
36.00	0.13	0.00	0.13				
37.00	0.12	0.00	0.12				
38.00	0.11	0.00	0.11				
39.00	0.10	0.00	0.10				
40.00	0.09	0.00	0.09				
41.00	0.08	0.00	0.08				
42.00	0.08	0.00	0.08				
43.00	0.07	0.00	0.07				
44.00	0.06	0.00	0.06				
45.00	0.06	0.00	0.06				
46.00	0.06	0.00	0.06				
47.00	0.05	0.00	0.05				
48.00	0.05	0.00	0.05				
49.00	0.05	0.00	0.05				
50.00	0.04	0.00	0.04				

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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 14S: Basin 1 - Imp Runoff Area=147,571 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=1,000' Tc=14.1 min CN=98 Runoff=7.73 cfs 12,723 cf

Subcatchment 15S: Basin 1 - Perv Runoff Area=114,590 sf 0.00% Impervious Runoff Depth=0.12"
Flow Length=1,000' Tc=14.1 min CN=77 Runoff=0.55 cfs 1,117 cf

Subcatchment 17S: Basin 5 - Imp Runoff Area=43,168 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=222' Slope=0.0200 '/' Tc=1.8 min CN=98 Runoff=3.05 cfs 3,722 cf

Subcatchment 22S: Basin 6 - Imp Runoff Area=56,858 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=490' Slope=0.0200 '/' Tc=3.6 min CN=98 Runoff=3.98 cfs 4,902 cf

Subcatchment 23S: Basin 6 - Perv Runoff Area=51,219 sf 0.00% Impervious Runoff Depth=0.07"
Flow Length=490' Slope=0.0200 '/' Tc=3.6 min CN=74 Runoff=0.20 cfs 315 cf

Subcatchment 26S: DA 1 Und - Perv Runoff Area=64,687 sf 0.00% Impervious Runoff Depth=0.12"
Flow Length=150' Slope=0.1100 '/' Tc=7.1 min CN=77 Runoff=0.41 cfs 631 cf

Subcatchment 27S: Basin 5 - Perv Runoff Area=3,440 sf 0.00% Impervious Runoff Depth=0.07"
Flow Length=222' Slope=0.0200 '/' Tc=1.8 min CN=74 Runoff=0.02 cfs 21 cf

Subcatchment 28S: undetained impervious Runoff Area=300 sf 100.00% Impervious Runoff Depth=1.03"
Tc=0.0 min CN=98 Runoff=0.02 cfs 26 cf

Pond 16P: Basin 1 Peak Elev=543.82' Storage=13,840 cf Inflow=8.10 cfs 13,840 cf
Outflow=0.00 cfs 0 cf

Pond 18P: Basin 5 Peak Elev=579.19' Storage=1,135 cf Inflow=3.06 cfs 3,743 cf
Discarded=1.37 cfs 3,743 cf Primary=0.00 cfs 0 cf Outflow=1.37 cfs 3,743 cf

Pond 24P: Basin 6 Peak Elev=600.01' Storage=100 cf Inflow=4.11 cfs 5,217 cf
Discarded=4.08 cfs 5,217 cf Primary=0.00 cfs 0 cf Outflow=4.08 cfs 5,217 cf

Link 25L: POA 1 Inflow=0.41 cfs 657 cf
Primary=0.41 cfs 657 cf

Total Runoff Area = 481,833 sf Runoff Volume = 23,456 cf Average Runoff Depth = 0.58"
48.55% Pervious = 233,936 sf 51.45% Impervious = 247,897 sf

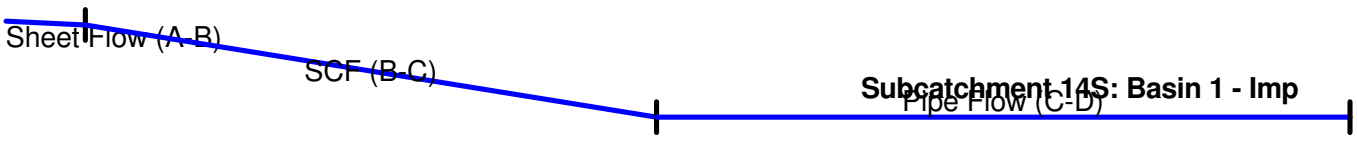
Summary for Subcatchment 14S: Basin 1 - Imp

Runoff = 7.73 cfs @ 1.19 hrs, Volume= 12,723 cf, Depth= 1.03"
Routed to Pond 16P : Basin 1

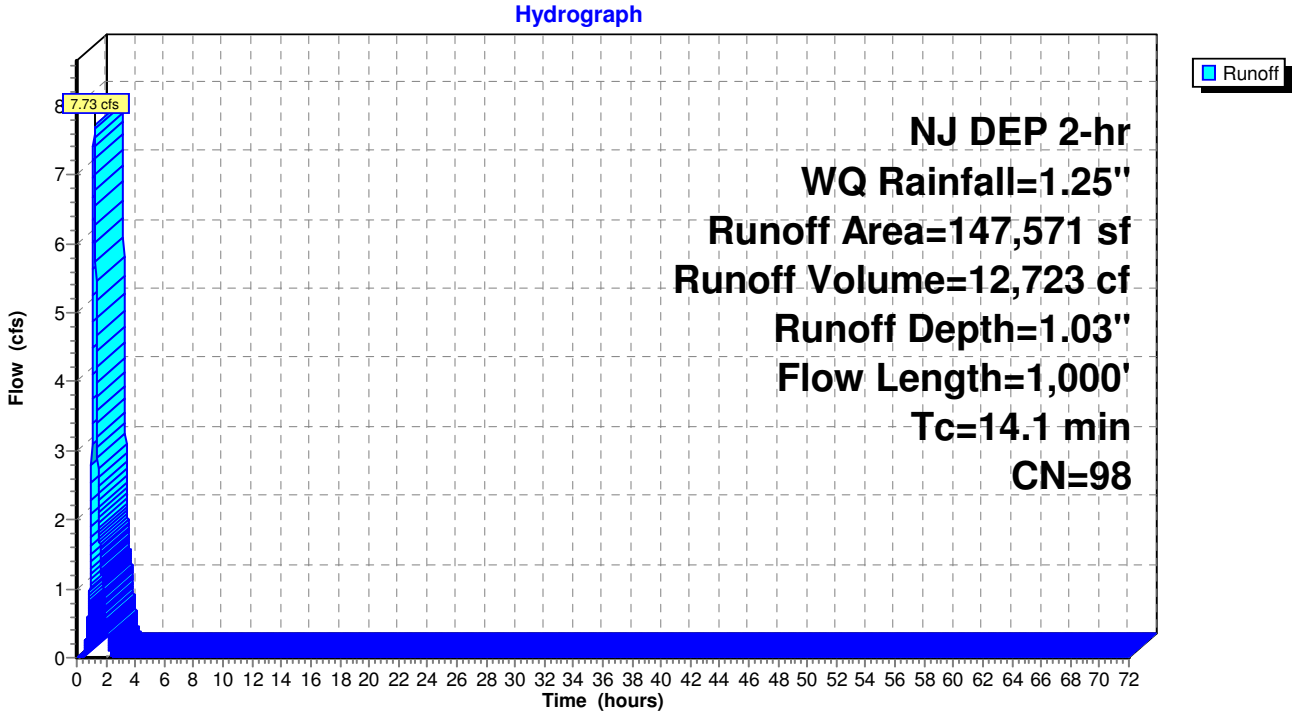
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

	Area (sf)	CN	Description
*	9,022	98	non parking impervious
	28,163	98	Paved parking, HSG C
	110,386	98	Roofs, HSG C
	147,571	98	Weighted Average
	147,571		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.7	425	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
3.4	516		2.50		**Direct Entry, Pipe Flow (C-D)**
14.1	1,000	Total			



Subcatchment 14S: Basin 1 - Imp



Hydrograph for Subcatchment 14S: Basin 1 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.63	0.43	**2.29**
2.00	**1.25**	**1.03**	**0.54**
3.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00
14.00	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
58.00	1.25	1.03	0.00
59.00	1.25	1.03	0.00
60.00	1.25	1.03	0.00
61.00	1.25	1.03	0.00
62.00	1.25	1.03	0.00
63.00	1.25	1.03	0.00
64.00	1.25	1.03	0.00
65.00	1.25	1.03	0.00
66.00	1.25	1.03	0.00
67.00	1.25	1.03	0.00
68.00	1.25	1.03	0.00
69.00	1.25	1.03	0.00
70.00	1.25	1.03	0.00
71.00	1.25	1.03	0.00
72.00	1.25	1.03	0.00

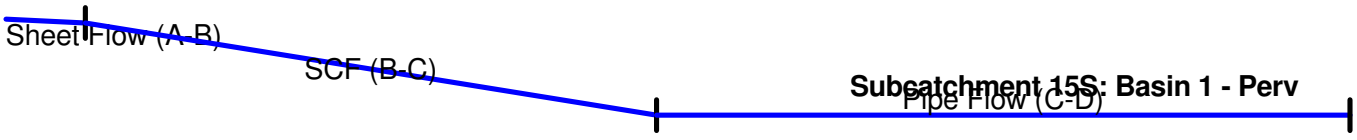
Summary for Subcatchment 15S: Basin 1 - Perv

Runoff = 0.55 cfs @ 1.30 hrs, Volume= 1,117 cf, Depth= 0.12"
Routed to Pond 16P : Basin 1

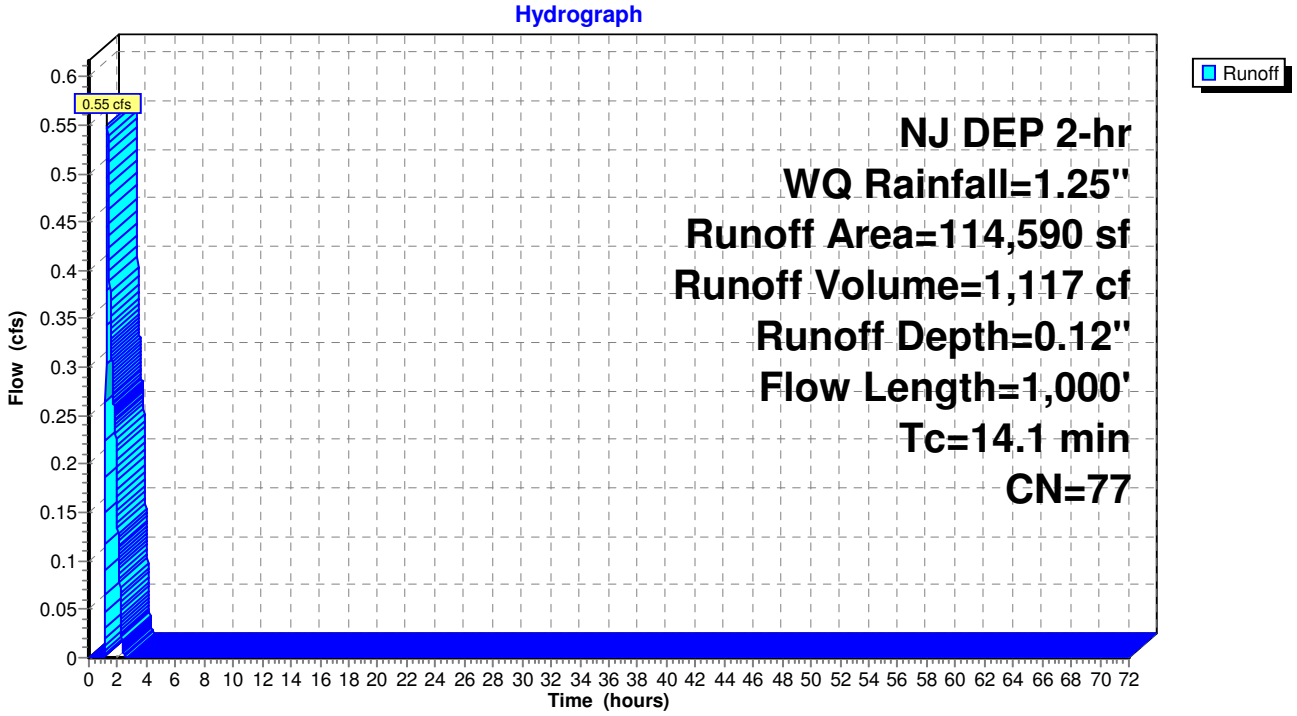
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
64,900	80	>75% Grass cover, Good, HSG D
49,690	74	>75% Grass cover, Good, HSG C
114,590	77	Weighted Average
114,590		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.7	425	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
3.4	516		2.50		**Direct Entry, Pipe Flow (C-D)**
14.1	1,000	Total			



Subcatchment 15S: Basin 1 - Perv



Hydrograph for Subcatchment 15S: Basin 1 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.63	0.00	**0.00**
2.00	**1.25**	**0.12**	**0.13**
3.00	1.25	0.12	0.00
4.00	1.25	0.12	0.00
5.00	1.25	0.12	0.00
6.00	1.25	0.12	0.00
7.00	1.25	0.12	0.00
8.00	1.25	0.12	0.00
9.00	1.25	0.12	0.00
10.00	1.25	0.12	0.00
11.00	1.25	0.12	0.00
12.00	1.25	0.12	0.00
13.00	1.25	0.12	0.00
14.00	1.25	0.12	0.00
15.00	1.25	0.12	0.00
16.00	1.25	0.12	0.00
17.00	1.25	0.12	0.00
18.00	1.25	0.12	0.00
19.00	1.25	0.12	0.00
20.00	1.25	0.12	0.00
21.00	1.25	0.12	0.00
22.00	1.25	0.12	0.00
23.00	1.25	0.12	0.00
24.00	1.25	0.12	0.00
25.00	1.25	0.12	0.00
26.00	1.25	0.12	0.00
27.00	1.25	0.12	0.00
28.00	1.25	0.12	0.00
29.00	1.25	0.12	0.00
30.00	1.25	0.12	0.00
31.00	1.25	0.12	0.00
32.00	1.25	0.12	0.00
33.00	1.25	0.12	0.00
34.00	1.25	0.12	0.00
35.00	1.25	0.12	0.00
36.00	1.25	0.12	0.00
37.00	1.25	0.12	0.00
38.00	1.25	0.12	0.00
39.00	1.25	0.12	0.00
40.00	1.25	0.12	0.00
41.00	1.25	0.12	0.00
42.00	1.25	0.12	0.00
43.00	1.25	0.12	0.00
44.00	1.25	0.12	0.00
45.00	1.25	0.12	0.00
46.00	1.25	0.12	0.00
47.00	1.25	0.12	0.00
48.00	1.25	0.12	0.00
49.00	1.25	0.12	0.00
50.00	1.25	0.12	0.00
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54.00	1.25	0.12	0.00
55.00	1.25	0.12	0.00
56.00	1.25	0.12	0.00
57.00	1.25	0.12	0.00
58.00	1.25	0.12	0.00
59.00	1.25	0.12	0.00
60.00	1.25	0.12	0.00
61.00	1.25	0.12	0.00
62.00	1.25	0.12	0.00
63.00	1.25	0.12	0.00
64.00	1.25	0.12	0.00
65.00	1.25	0.12	0.00
66.00	1.25	0.12	0.00
67.00	1.25	0.12	0.00
68.00	1.25	0.12	0.00
69.00	1.25	0.12	0.00
70.00	1.25	0.12	0.00
71.00	1.25	0.12	0.00
72.00	1.25	0.12	0.00

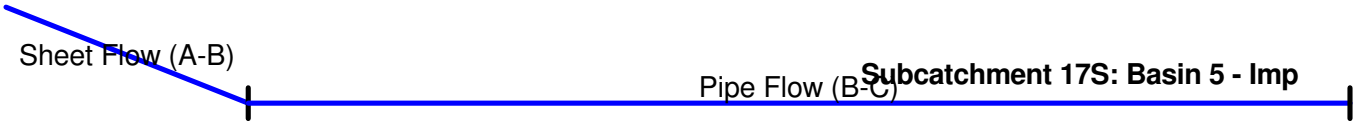
Summary for Subcatchment 17S: Basin 5 - Imp

Runoff = 3.05 cfs @ 1.08 hrs, Volume= 3,722 cf, Depth= 1.03"
Routed to Pond 18P : Basin 5

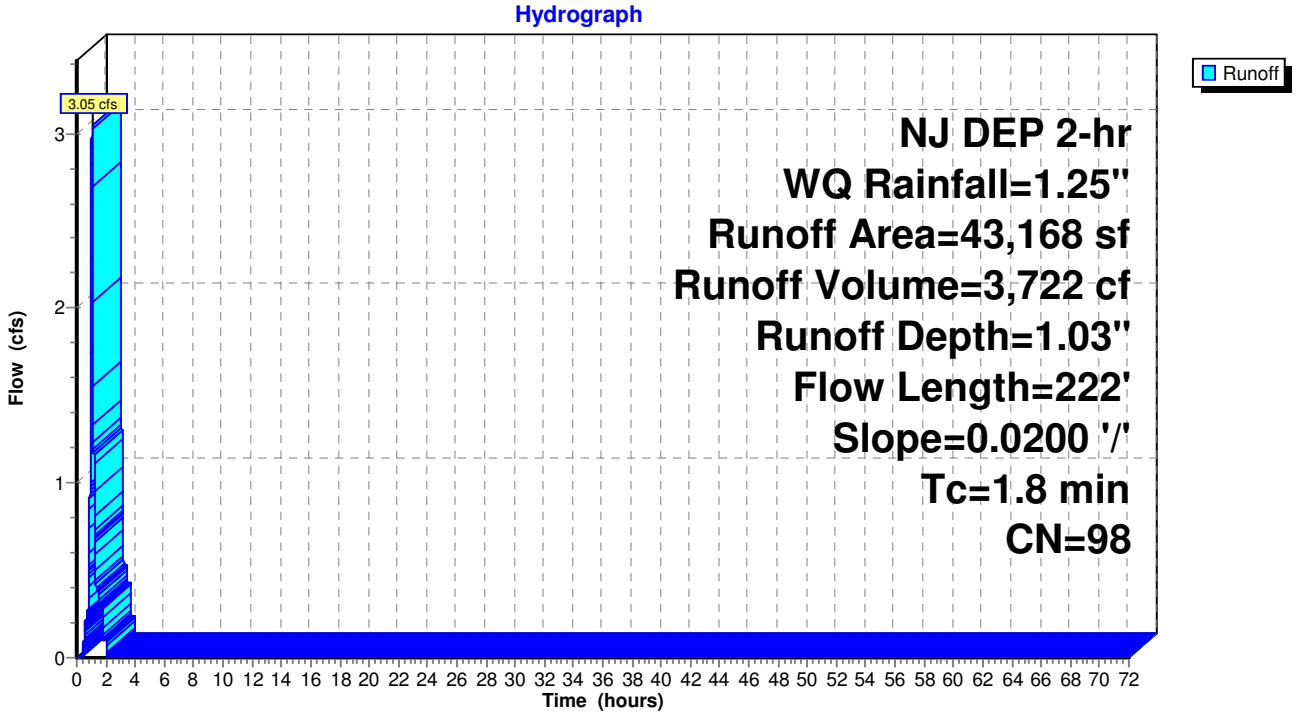
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

	Area (sf)	CN	Description
	26,232	98	Roofs, HSG C
	14,605	98	Paved parking, HSG C
*	2,331	98	impervious other than pavement
	43,168	98	Weighted Average
	43,168		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
1.2	182		2.50		**Direct Entry, Pipe Flow (B-C)**
1.8	222	Total			



Subcatchment 17S: Basin 5 - Imp



Hydrograph for Subcatchment 17S: Basin 5 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.63	0.43	**2.92**
2.00	**1.25**	**1.03**	**0.10**
3.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00
14.00	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
58.00	1.25	1.03	0.00
59.00	1.25	1.03	0.00
60.00	1.25	1.03	0.00
61.00	1.25	1.03	0.00
62.00	1.25	1.03	0.00
63.00	1.25	1.03	0.00
64.00	1.25	1.03	0.00
65.00	1.25	1.03	0.00
66.00	1.25	1.03	0.00
67.00	1.25	1.03	0.00
68.00	1.25	1.03	0.00
69.00	1.25	1.03	0.00
70.00	1.25	1.03	0.00
71.00	1.25	1.03	0.00
72.00	1.25	1.03	0.00

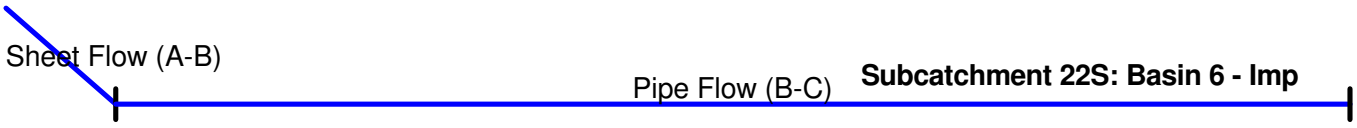
Summary for Subcatchment 22S: Basin 6 - Imp

Runoff = 3.98 cfs @ 1.09 hrs, Volume= 4,902 cf, Depth= 1.03"
Routed to Pond 24P : Basin 6

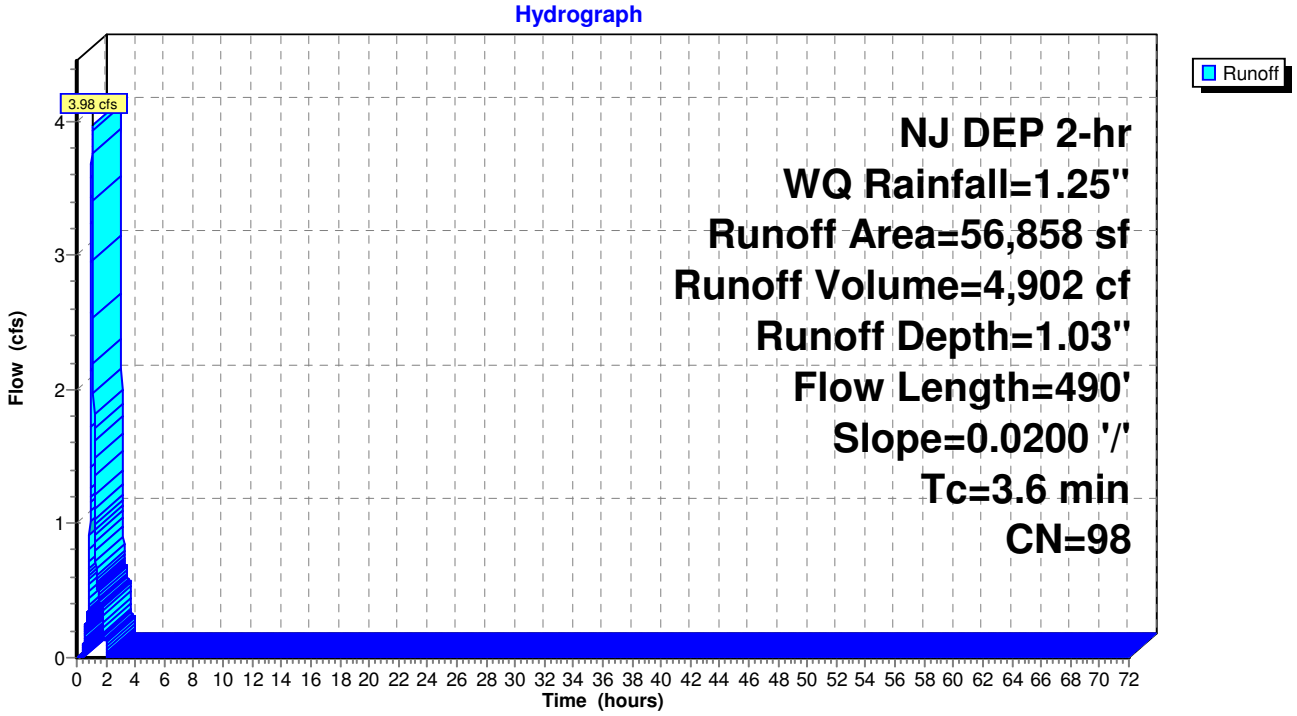
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

	Area (sf)	CN	Description
	16,127	98	Paved parking, HSG D
	21,053	98	Paved parking, HSG C
*	4,437	98	impervious non pavement
*	15,241	98	fire lane pervoius pavers
	56,858	98	Weighted Average
	56,858		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
3.0	450		2.50		**Direct Entry, Pipe Flow (B-C)**
3.6	490	Total			



Subcatchment 22S: Basin 6 - Imp



Hydrograph for Subcatchment 22S: Basin 6 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.63	0.43	**3.43**
2.00	**1.25**	**1.03**	**0.13**
3.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00
14.00	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
58.00	1.25	1.03	0.00
59.00	1.25	1.03	0.00
60.00	1.25	1.03	0.00
61.00	1.25	1.03	0.00
62.00	1.25	1.03	0.00
63.00	1.25	1.03	0.00
64.00	1.25	1.03	0.00
65.00	1.25	1.03	0.00
66.00	1.25	1.03	0.00
67.00	1.25	1.03	0.00
68.00	1.25	1.03	0.00
69.00	1.25	1.03	0.00
70.00	1.25	1.03	0.00
71.00	1.25	1.03	0.00
72.00	1.25	1.03	0.00

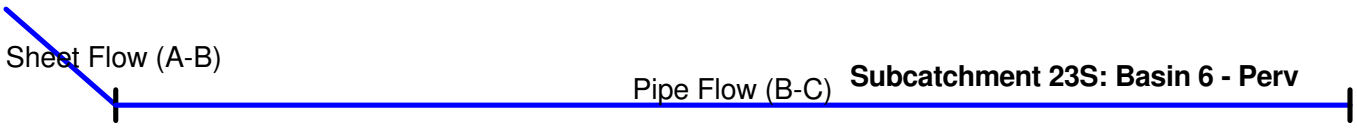
Summary for Subcatchment 23S: Basin 6 - Perv

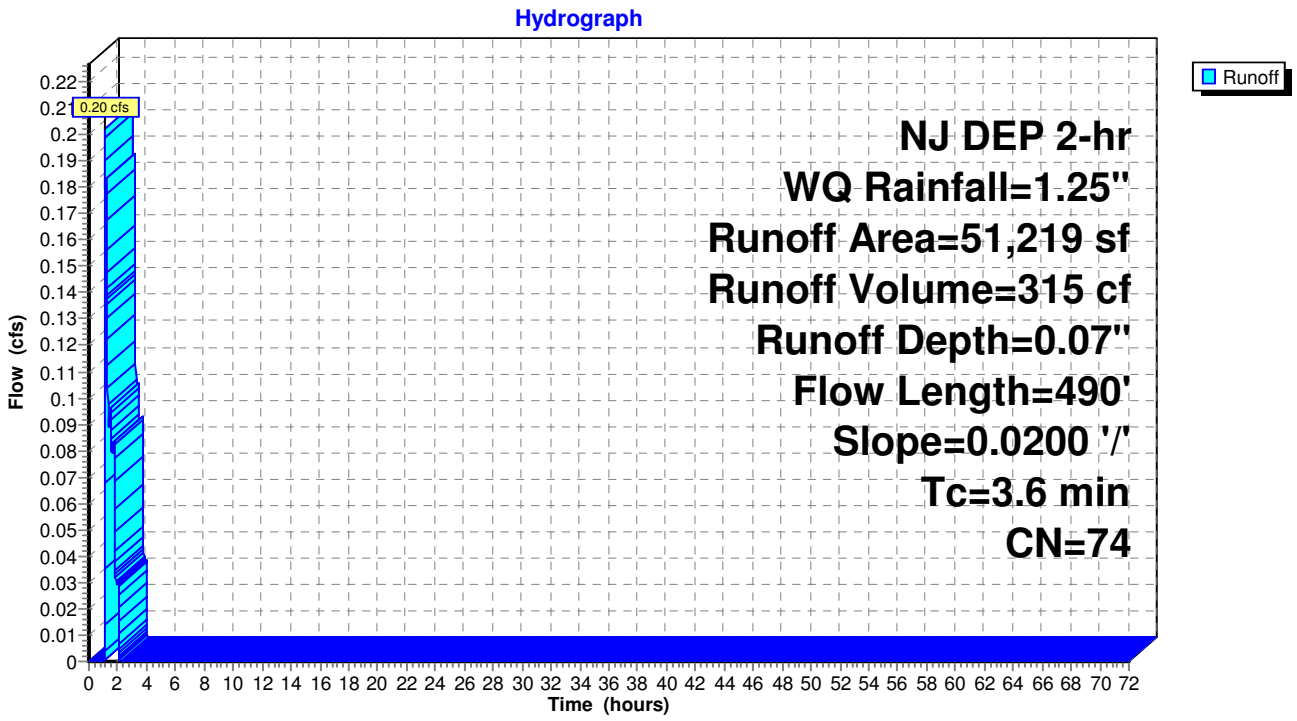
Runoff = 0.20 cfs @ 1.12 hrs, Volume= 315 cf, Depth= 0.07"
Routed to Pond 24P : Basin 6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
51,219	74	>75% Grass cover, Good, HSG C
51,219		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
3.0	450		2.50		**Direct Entry, Pipe Flow (B-C)**
3.6	490	Total			





Hydrograph for Subcatchment 23S: Basin 6 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.63	0.00	**0.00**
2.00	**1.25**	**0.07**	**0.03**
3.00	1.25	0.07	0.00
4.00	1.25	0.07	0.00
5.00	1.25	0.07	0.00
6.00	1.25	0.07	0.00
7.00	1.25	0.07	0.00
8.00	1.25	0.07	0.00
9.00	1.25	0.07	0.00
10.00	1.25	0.07	0.00
11.00	1.25	0.07	0.00
12.00	1.25	0.07	0.00
13.00	1.25	0.07	0.00
14.00	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
58.00	1.25	0.07	0.00
59.00	1.25	0.07	0.00
60.00	1.25	0.07	0.00
61.00	1.25	0.07	0.00
62.00	1.25	0.07	0.00
63.00	1.25	0.07	0.00
64.00	1.25	0.07	0.00
65.00	1.25	0.07	0.00
66.00	1.25	0.07	0.00
67.00	1.25	0.07	0.00
68.00	1.25	0.07	0.00
69.00	1.25	0.07	0.00
70.00	1.25	0.07	0.00
71.00	1.25	0.07	0.00
72.00	1.25	0.07	0.00

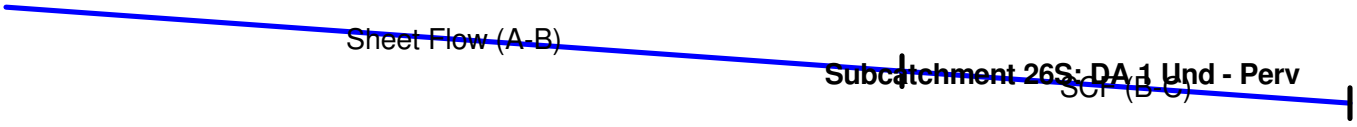
Summary for Subcatchment 26S: DA 1 Und - Perv

Runoff = 0.41 cfs @ 1.17 hrs, Volume= 631 cf, Depth= 0.12"
Routed to Link 25L : POA 1

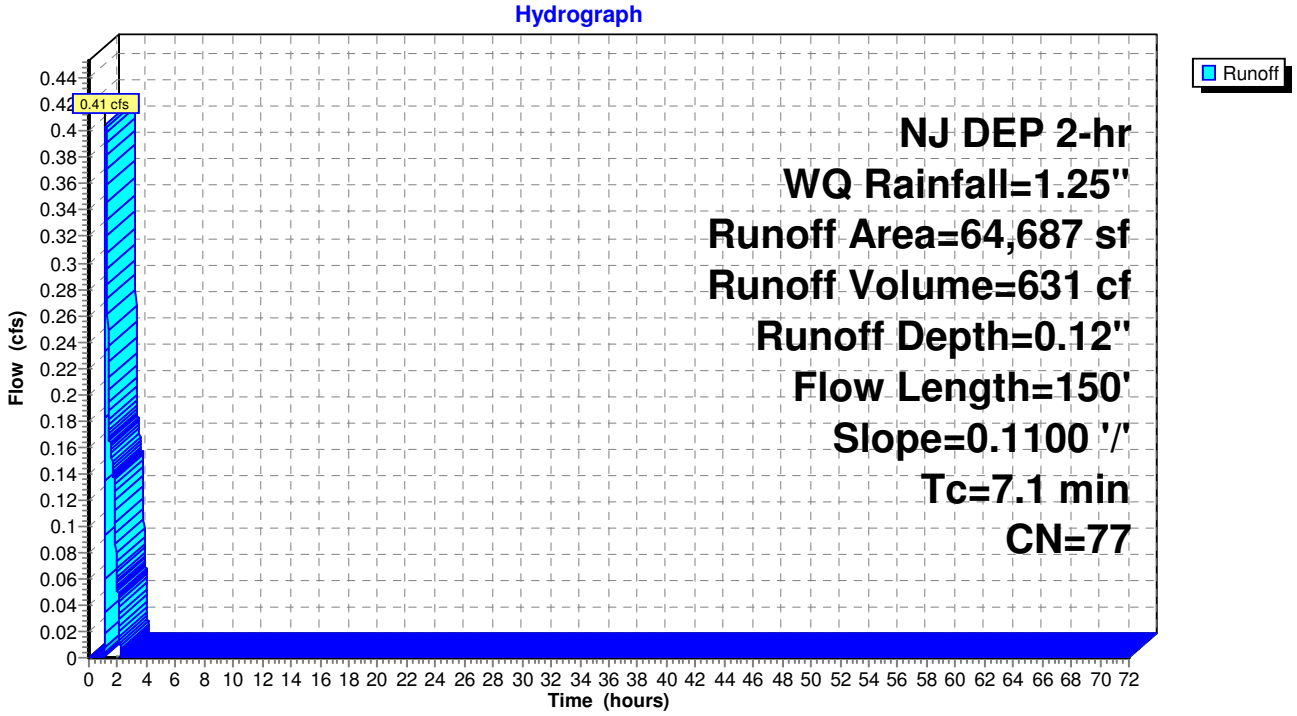
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
31,523	80	>75% Grass cover, Good, HSG D
33,164	74	>75% Grass cover, Good, HSG C
64,687	77	Weighted Average
64,687		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	100	0.1100	0.24		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	50	0.1100	5.34		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
7.1	150	Total			



Subcatchment 26S: DA 1 Und - Perv



Hydrograph for Subcatchment 26S: DA 1 Und - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.63	0.00	**0.00**
2.00	**1.25**	**0.12**	**0.05**
3.00	1.25	0.12	0.00
4.00	1.25	0.12	0.00
5.00	1.25	0.12	0.00
6.00	1.25	0.12	0.00
7.00	1.25	0.12	0.00
8.00	1.25	0.12	0.00
9.00	1.25	0.12	0.00
10.00	1.25	0.12	0.00
11.00	1.25	0.12	0.00
12.00	1.25	0.12	0.00
13.00	1.25	0.12	0.00
14.00	1.25	0.12	0.00
15.00	1.25	0.12	0.00
16.00	1.25	0.12	0.00
17.00	1.25	0.12	0.00
18.00	1.25	0.12	0.00
19.00	1.25	0.12	0.00
20.00	1.25	0.12	0.00
21.00	1.25	0.12	0.00
22.00	1.25	0.12	0.00
23.00	1.25	0.12	0.00
24.00	1.25	0.12	0.00
25.00	1.25	0.12	0.00
26.00	1.25	0.12	0.00
27.00	1.25	0.12	0.00
28.00	1.25	0.12	0.00
29.00	1.25	0.12	0.00
30.00	1.25	0.12	0.00
31.00	1.25	0.12	0.00
32.00	1.25	0.12	0.00
33.00	1.25	0.12	0.00
34.00	1.25	0.12	0.00
35.00	1.25	0.12	0.00
36.00	1.25	0.12	0.00
37.00	1.25	0.12	0.00
38.00	1.25	0.12	0.00
39.00	1.25	0.12	0.00
40.00	1.25	0.12	0.00
41.00	1.25	0.12	0.00
42.00	1.25	0.12	0.00
43.00	1.25	0.12	0.00
44.00	1.25	0.12	0.00
45.00	1.25	0.12	0.00
46.00	1.25	0.12	0.00
47.00	1.25	0.12	0.00
48.00	1.25	0.12	0.00
49.00	1.25	0.12	0.00
50.00	1.25	0.12	0.00
51.00	1.25	0.12	0.00
52.00	1.25	0.12	0.00
53.00	1.25	0.12	0.00
54.00	1.25	0.12	0.00
55.00	1.25	0.12	0.00
56.00	1.25	0.12	0.00
57.00	1.25	0.12	0.00
58.00	1.25	0.12	0.00
59.00	1.25	0.12	0.00
60.00	1.25	0.12	0.00
61.00	1.25	0.12	0.00
62.00	1.25	0.12	0.00
63.00	1.25	0.12	0.00
64.00	1.25	0.12	0.00
65.00	1.25	0.12	0.00
66.00	1.25	0.12	0.00
67.00	1.25	0.12	0.00
68.00	1.25	0.12	0.00
69.00	1.25	0.12	0.00
70.00	1.25	0.12	0.00
71.00	1.25	0.12	0.00
72.00	1.25	0.12	0.00

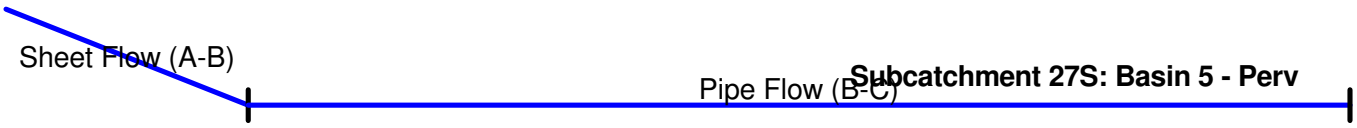
Summary for Subcatchment 27S: Basin 5 - Perv

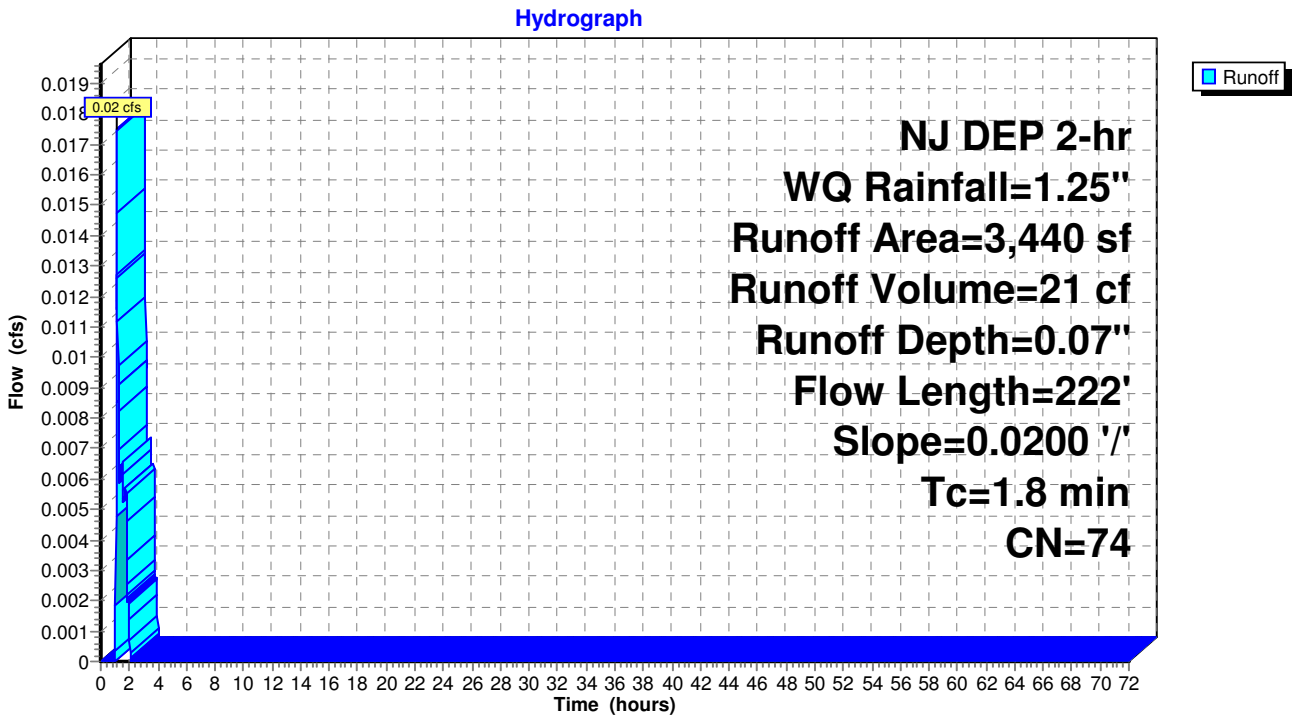
Runoff = 0.02 cfs @ 1.10 hrs, Volume= 21 cf, Depth= 0.07"
Routed to Pond 18P : Basin 5

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
3,440	74	>75% Grass cover, Good, HSG C
3,440		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	40	0.0200	1.19		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
1.2	182		2.50		**Direct Entry, Pipe Flow (B-C)**
1.8	222	Total			





Hydrograph for Subcatchment 27S: Basin 5 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.63	0.00	**0.00**
2.00	**1.25**	**0.07**	**0.00**
3.00	1.25	0.07	0.00
4.00	1.25	0.07	0.00
5.00	1.25	0.07	0.00
6.00	1.25	0.07	0.00
7.00	1.25	0.07	0.00
8.00	1.25	0.07	0.00
9.00	1.25	0.07	0.00
10.00	1.25	0.07	0.00
11.00	1.25	0.07	0.00
12.00	1.25	0.07	0.00
13.00	1.25	0.07	0.00
14.00	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
58.00	1.25	0.07	0.00
59.00	1.25	0.07	0.00
60.00	1.25	0.07	0.00
61.00	1.25	0.07	0.00
62.00	1.25	0.07	0.00
63.00	1.25	0.07	0.00
64.00	1.25	0.07	0.00
65.00	1.25	0.07	0.00
66.00	1.25	0.07	0.00
67.00	1.25	0.07	0.00
68.00	1.25	0.07	0.00
69.00	1.25	0.07	0.00
70.00	1.25	0.07	0.00
71.00	1.25	0.07	0.00
72.00	1.25	0.07	0.00

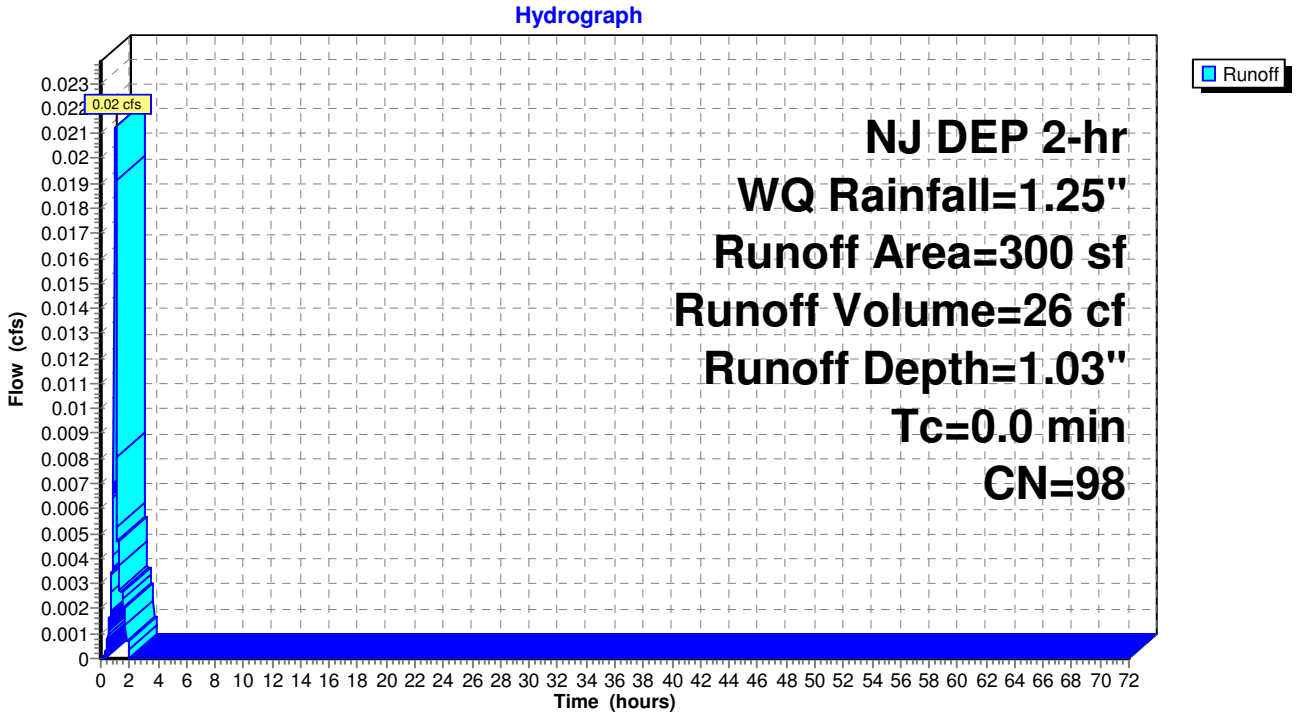
Summary for Subcatchment 28S: undetained impervious

Runoff = 0.02 cfs @ 1.07 hrs, Volume= 26 cf, Depth= 1.03"
Routed to Link 25L : POA 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

	Area (sf)	CN	Description
*	300	98	non pavement impervious
	300		100.00% Impervious Area

Subcatchment 28S: undetained impervious



Hydrograph for Subcatchment 28S: undetained impervious

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.63	0.43	**0.02**
2.00	**1.25**	**1.03**	**0.00**
3.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00
14.00	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
58.00	1.25	1.03	0.00
59.00	1.25	1.03	0.00
60.00	1.25	1.03	0.00
61.00	1.25	1.03	0.00
62.00	1.25	1.03	0.00
63.00	1.25	1.03	0.00
64.00	1.25	1.03	0.00
65.00	1.25	1.03	0.00
66.00	1.25	1.03	0.00
67.00	1.25	1.03	0.00
68.00	1.25	1.03	0.00
69.00	1.25	1.03	0.00
70.00	1.25	1.03	0.00
71.00	1.25	1.03	0.00
72.00	1.25	1.03	0.00

Summary for Pond 16P: Basin 1

Inflow Area = 416,846 sf, 59.40% Impervious, Inflow Depth = 0.40" for WQ event
Inflow = 8.10 cfs @ 1.20 hrs, Volume= 13,840 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 25L : POA 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 543.82' @ 2.80 hrs Surf.Area= 44,530 sf Storage= 13,840 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	543.50'	170,585 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
543.50	42,000	0	0
544.00	45,955	21,989	21,989
545.00	47,156	46,556	68,544
546.00	51,115	49,136	117,680
547.00	54,695	52,905	170,585

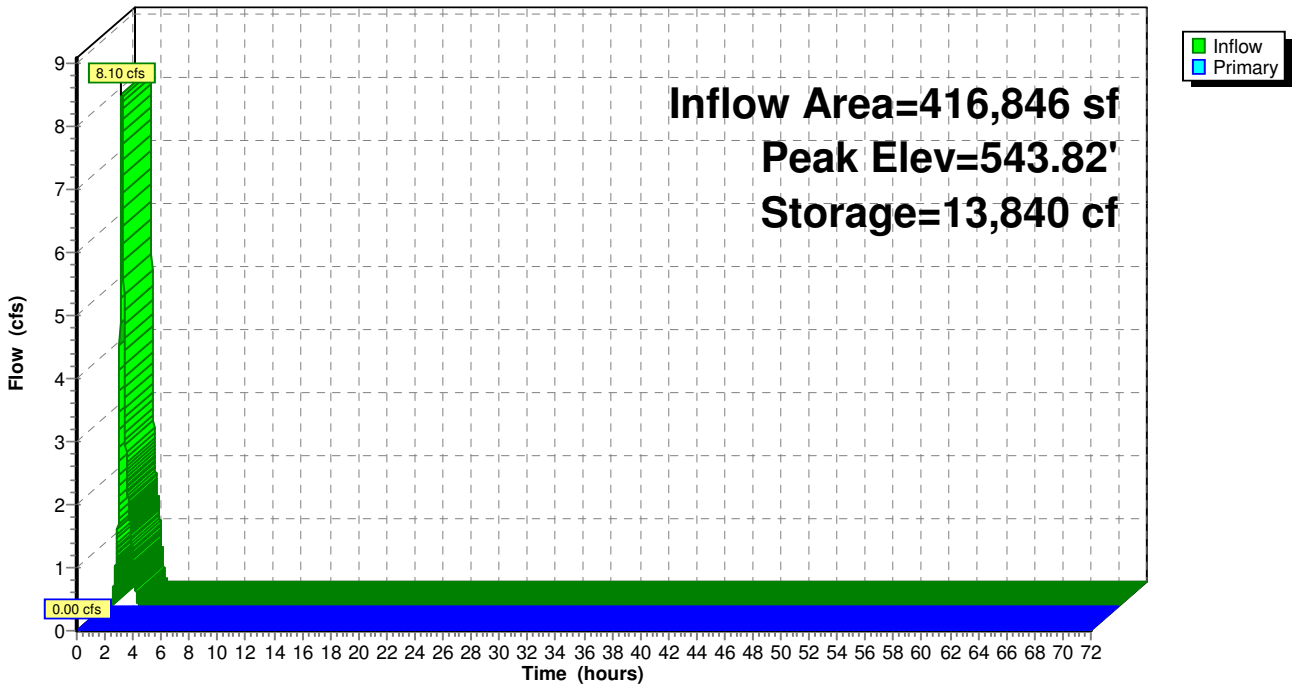
Device	Routing	Invert	Outlet Devices
#1	Primary	546.00'	**42.0" x 48.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	543.82'	**10.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	544.40'	**48.0" W x 8.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=543.50' (Free Discharge)
- **1=Grate** (Controls 0.00 cfs)
- **2=Orifice** (Controls 0.00 cfs)
- **3=Orifice/Grate** (Controls 0.00 cfs)



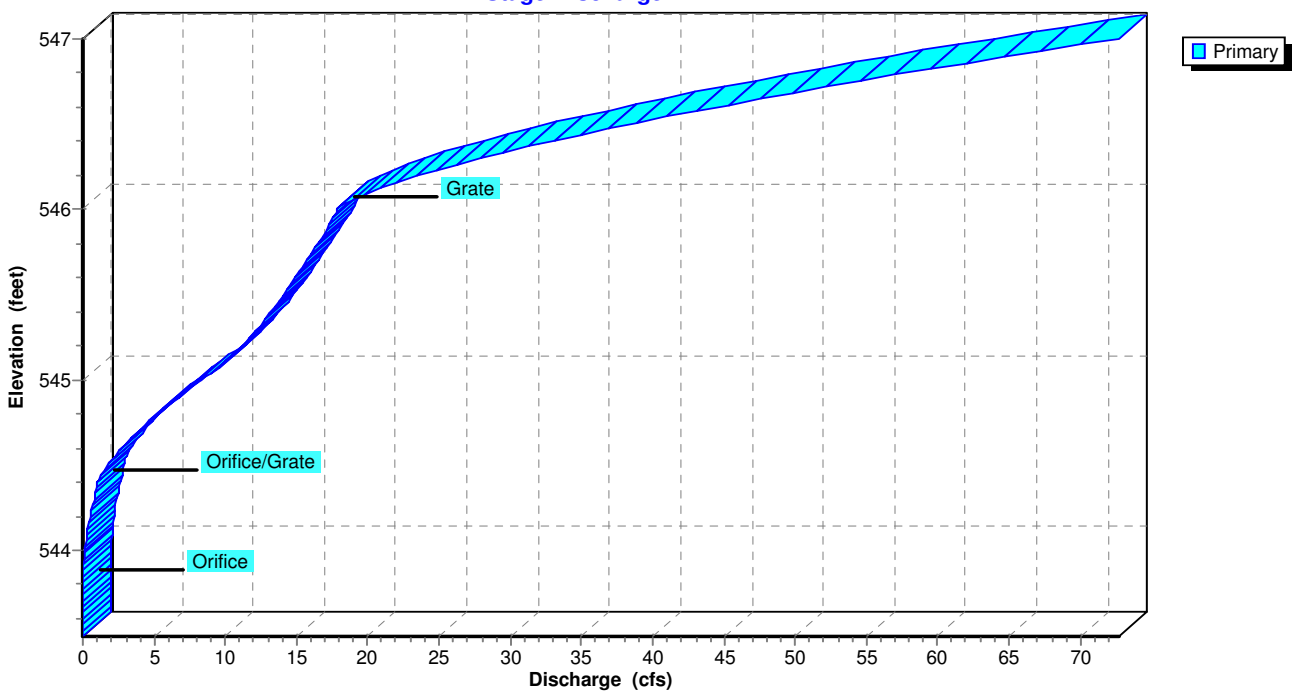
Pond 16P: Basin 1

Hydrograph

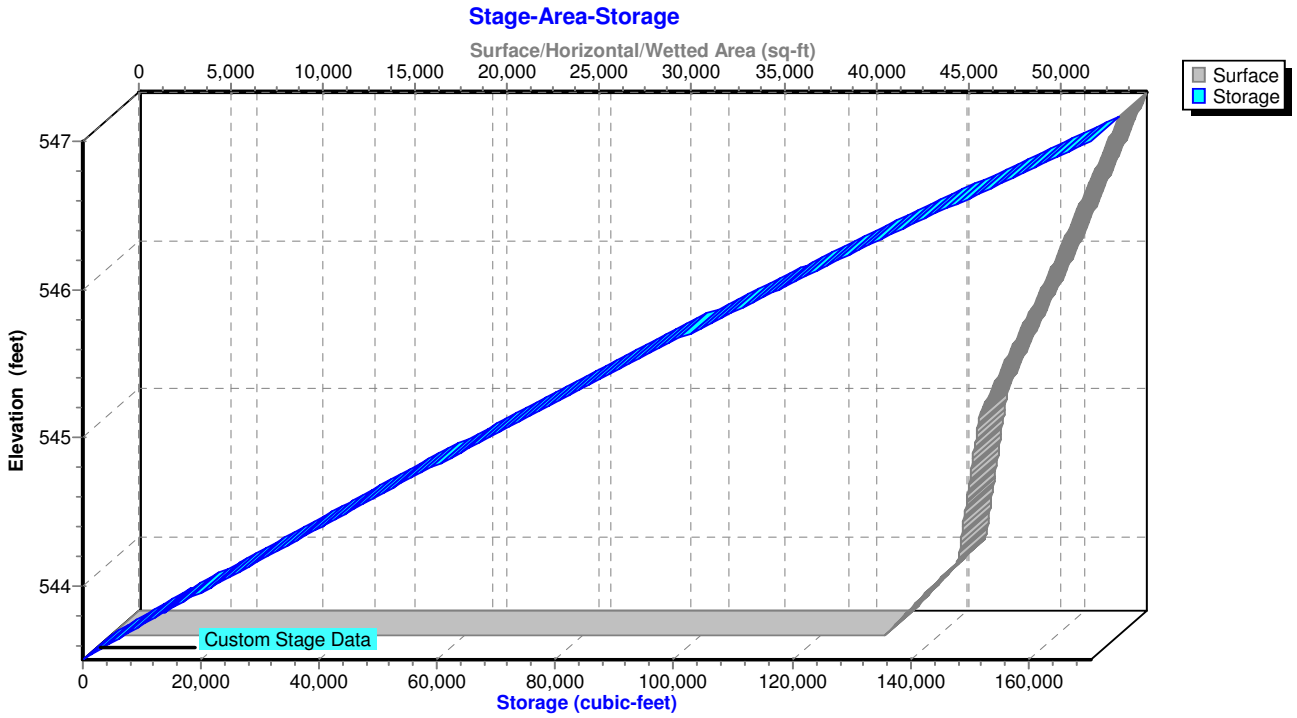


Pond 16P: Basin 1

Stage-Discharge



Pond 16P: Basin 1



Hydrograph for Pond 16P: Basin 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	**0.00**	0	543.50	**0.00**
2.00	**0.68**	**13,426**	**543.81**	0.00
4.00	0.00	**13,840**	**543.82**	0.00
6.00	0.00	13,840	543.82	0.00
8.00	0.00	13,840	543.82	0.00
10.00	0.00	13,840	543.82	0.00
12.00	0.00	13,840	543.82	0.00
14.00	0.00	13,840	543.82	0.00
16.00	0.00	13,840	543.82	0.00
18.00	0.00	13,840	543.82	0.00
20.00	0.00	13,840	543.82	0.00
22.00	0.00	13,840	543.82	0.00
24.00	0.00	13,840	543.82	0.00
26.00	0.00	13,840	543.82	0.00
28.00	0.00	13,840	543.82	0.00
30.00	0.00	13,840	543.82	0.00
32.00	0.00	13,840	543.82	0.00
34.00	0.00	13,840	543.82	0.00
36.00	0.00	13,840	543.82	0.00
38.00	0.00	13,840	543.82	0.00
40.00	0.00	13,840	543.82	0.00
42.00	0.00	13,840	543.82	0.00
44.00	0.00	13,840	543.82	0.00
46.00	0.00	13,840	543.82	0.00
48.00	0.00	13,840	543.82	0.00
50.00	0.00	13,840	543.82	0.00
52.00	0.00	13,840	543.82	0.00
54.00	0.00	13,840	543.82	0.00
56.00	0.00	13,840	543.82	0.00
58.00	0.00	13,840	543.82	0.00
60.00	0.00	13,840	543.82	0.00
62.00	0.00	13,840	543.82	0.00
64.00	0.00	13,840	543.82	0.00
66.00	0.00	13,840	543.82	0.00
68.00	0.00	13,840	543.82	0.00
70.00	0.00	13,840	543.82	0.00
72.00	0.00	13,840	543.82	0.00

Stage-Discharge for Pond 16P: Basin 1

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
543.50	0.00	544.52	1.93	545.54	14.45	546.56	41.89
543.52	0.00	544.54	2.12	545.56	14.61	546.58	43.11
543.54	0.00	544.56	2.32	545.58	14.78	546.60	44.35
543.56	0.00	544.58	2.53	545.60	14.94	546.62	45.61
543.58	0.00	544.60	2.74	545.62	15.11	546.64	46.89
543.60	0.00	544.62	2.96	545.64	15.27	546.66	48.19
543.62	0.00	544.64	3.19	545.66	15.42	546.68	49.50
543.64	0.00	544.66	3.41	545.68	15.58	546.70	50.83
543.66	0.00	544.68	3.65	545.70	15.74	546.72	52.18
543.68	0.00	544.70	3.90	545.72	15.89	546.74	53.55
543.70	0.00	544.72	4.15	545.74	16.04	546.76	54.93
543.72	0.00	544.74	4.41	545.76	16.19	546.78	56.33
543.74	0.00	544.76	4.67	545.78	16.34	546.80	57.74
543.76	0.00	544.78	4.94	545.80	16.49	546.82	59.17
543.78	0.00	544.80	5.22	545.82	16.64	546.84	60.62
543.80	0.00	544.82	5.50	545.84	16.78	546.86	62.08
543.82	0.00	544.84	5.79	545.86	16.92	546.88	63.55
543.84	0.00	544.86	6.08	545.88	17.07	546.90	65.05
543.86	0.01	544.88	6.38	545.90	17.21	546.92	66.55
543.88	0.01	544.90	6.68	545.92	17.35	546.94	68.08
543.90	0.03	544.92	6.99	545.94	17.49	546.96	69.61
543.92	0.04	544.94	7.30	545.96	17.62	546.98	71.16
543.94	0.06	544.96	7.61	545.98	17.76	547.00	**72.73**
543.96	0.08	544.98	7.94	546.00	17.90		
543.98	0.10	545.00	8.26	546.02	18.17		
544.00	0.13	545.02	8.59	546.04	18.56		
544.02	0.15	545.04	8.93	546.06	19.02		
544.04	0.18	545.06	9.27	546.08	19.54		
544.06	0.22	545.08	9.59	546.10	20.11		
544.08	0.25	545.10	9.88	546.12	20.73		
544.10	0.29	545.12	10.15	546.14	21.39		
544.12	0.33	545.14	10.41	546.16	22.08		
544.14	0.37	545.16	10.66	546.18	22.82		
544.16	0.42	545.18	10.91	546.20	23.58		
544.18	0.46	545.20	11.14	546.22	24.38		
544.20	0.51	545.22	11.37	546.24	25.21		
544.22	0.56	545.24	11.59	546.26	26.07		
544.24	0.61	545.26	11.81	546.28	26.96		
544.26	0.66	545.28	12.02	546.30	27.87		
544.28	0.71	545.30	12.22	546.32	28.81		
544.30	0.77	545.32	12.43	546.34	29.78		
544.32	0.82	545.34	12.63	546.36	30.77		
544.34	0.88	545.36	12.82	546.38	31.78		
544.36	0.94	545.38	13.01	546.40	32.82		
544.38	0.99	545.40	13.20	546.42	33.88		
544.40	1.05	545.42	13.39	546.44	34.96		
544.42	1.15	545.44	13.57	546.46	36.06		
544.44	1.27	545.46	13.75	546.48	37.19		
544.46	1.41	545.48	13.93	546.50	38.33		
544.48	1.57	545.50	14.10	546.52	39.50		
544.50	1.74	545.52	14.28	546.54	40.68		

Stage-Area-Storage for Pond 16P: Basin 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
543.50	42,000	0
543.55	42,395	2,110
543.60	42,791	4,240
543.65	43,186	6,389
543.70	43,582	8,558
543.75	43,978	10,747
543.80	44,373	12,956
543.85	44,769	15,184
543.90	45,164	17,433
543.95	45,560	19,701
544.00	45,955	21,989
544.05	46,015	24,288
544.10	46,075	26,590
544.15	46,135	28,896
544.20	46,195	31,204
544.25	46,255	33,515
544.30	46,315	35,829
544.35	46,375	38,147
544.40	46,435	40,467
544.45	46,495	42,790
544.50	46,556	45,116
544.55	46,616	47,446
544.60	46,676	49,778
544.65	46,736	52,113
544.70	46,796	54,451
544.75	46,856	56,793
544.80	46,916	59,137
544.85	46,976	61,484
544.90	47,036	63,835
544.95	47,096	66,188
545.00	47,156	68,544
545.05	47,354	70,907
545.10	47,552	73,280
545.15	47,750	75,662
545.20	47,948	78,055
545.25	48,146	80,457
545.30	48,344	82,869
545.35	48,542	85,291
545.40	48,740	87,723
545.45	48,938	90,165
545.50	49,136	92,617
545.55	49,333	95,079
545.60	49,531	97,550
545.65	49,729	100,032
545.70	49,927	102,523
545.75	50,125	105,025
545.80	50,323	107,536
545.85	50,521	110,057
545.90	50,719	112,588
545.95	50,917	115,129
546.00	51,115	117,680
546.05	51,294	120,240
546.10	51,473	122,809
546.15	51,652	125,387
546.20	51,831	127,974
546.25	52,010	130,570
546.30	52,189	133,175
546.35	52,368	135,789
546.40	52,547	138,412
546.45	52,726	141,044
546.50	52,905	143,685
546.55	53,084	146,334
546.60	53,263	148,993
546.65	53,442	151,661
546.70	53,621	154,337
546.75	53,800	157,023
546.80	53,979	159,717
546.85	54,158	162,421
546.90	54,337	165,133
546.95	54,516	167,854
547.00	**54,695**	**170,585**

Summary for Pond 18P: Basin 5

Inflow Area = 46,608 sf, 92.62% Impervious, Inflow Depth = 0.96" for WQ event
Inflow = 3.06 cfs @ 1.08 hrs, Volume= 3,743 cf
Outflow = 1.37 cfs @ 0.97 hrs, Volume= 3,743 cf, Atten= 55%, Lag= 0.0 min
Discarded = 1.37 cfs @ 0.97 hrs, Volume= 3,743 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 16P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 579.19' @ 1.13 hrs Surf.Area= 14,810 sf Storage= 1,135 cf

Plug-Flow detention time= 7.5 min calculated for 3,743 cf (100% of inflow)
Center-of-Mass det. time= 7.5 min (74.0 - 66.5)

Volume	Invert	Avail.Storage	Storage Description
#1	579.00'	31,397 cf	**Custom Stage Data (Prismatic)** Listed below 78,493 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
579.00	14,810	0	0
580.00	14,810	14,810	14,810
581.00	14,810	14,810	29,620
582.00	14,810	14,810	44,430
583.00	14,810	14,810	59,240
584.00	14,810	14,810	74,050
584.30	14,810	4,443	78,493

Device	Routing	Invert	Outlet Devices
#1	Primary	579.25'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	579.00'	**4.000 in/hr Exfiltration over Surface area**

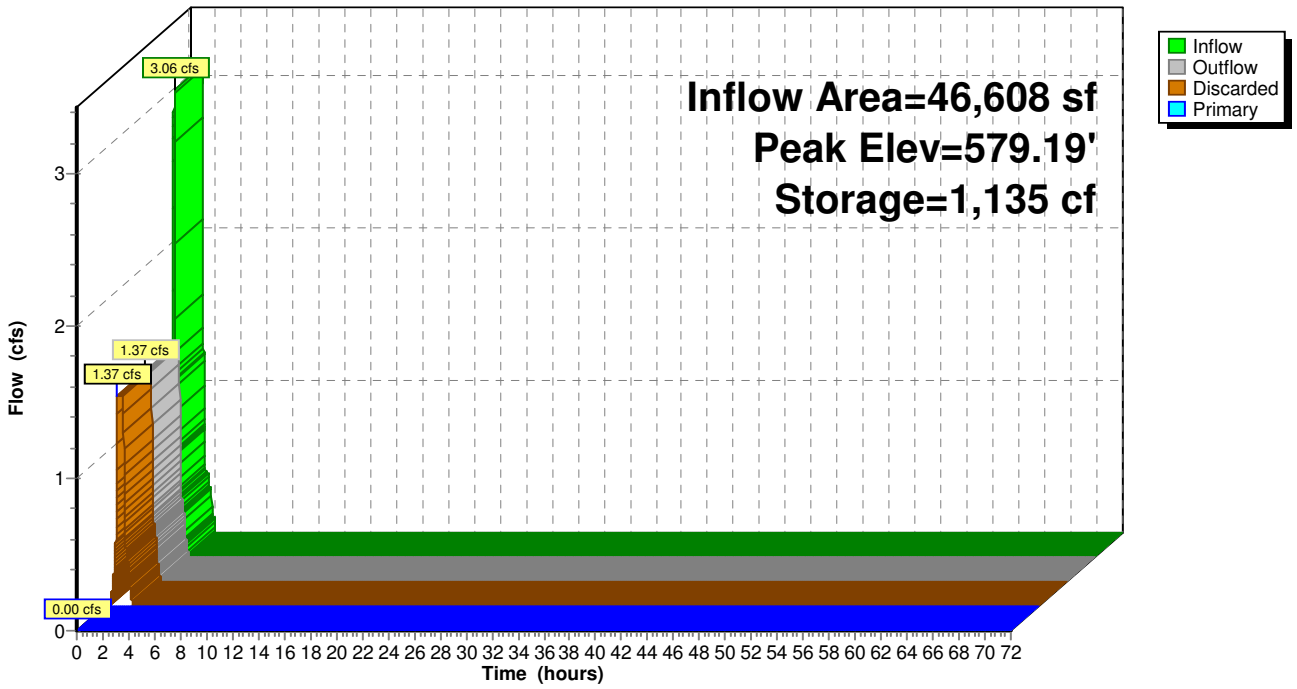
Discarded OutFlow Max=1.37 cfs @ 0.97 hrs HW=579.06' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 1.37 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=579.00' (Free Discharge)
↑**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)



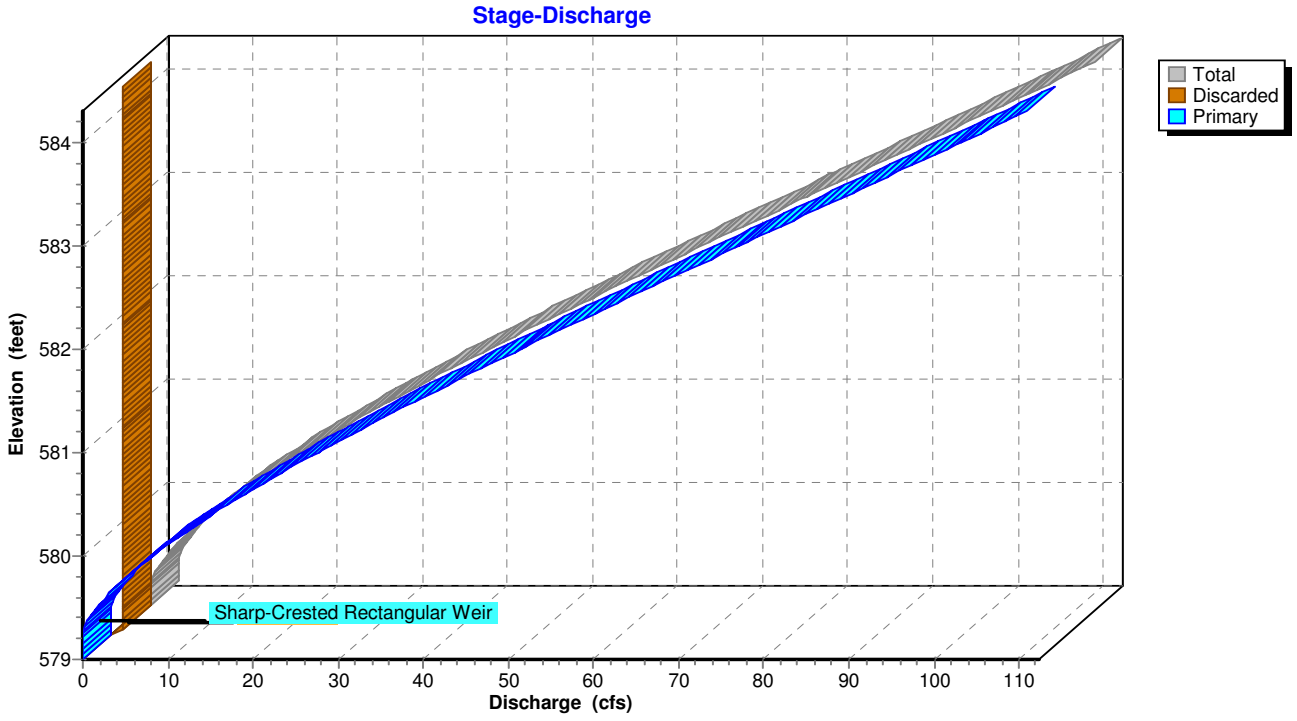
Pond 18P: Basin 5

Hydrograph

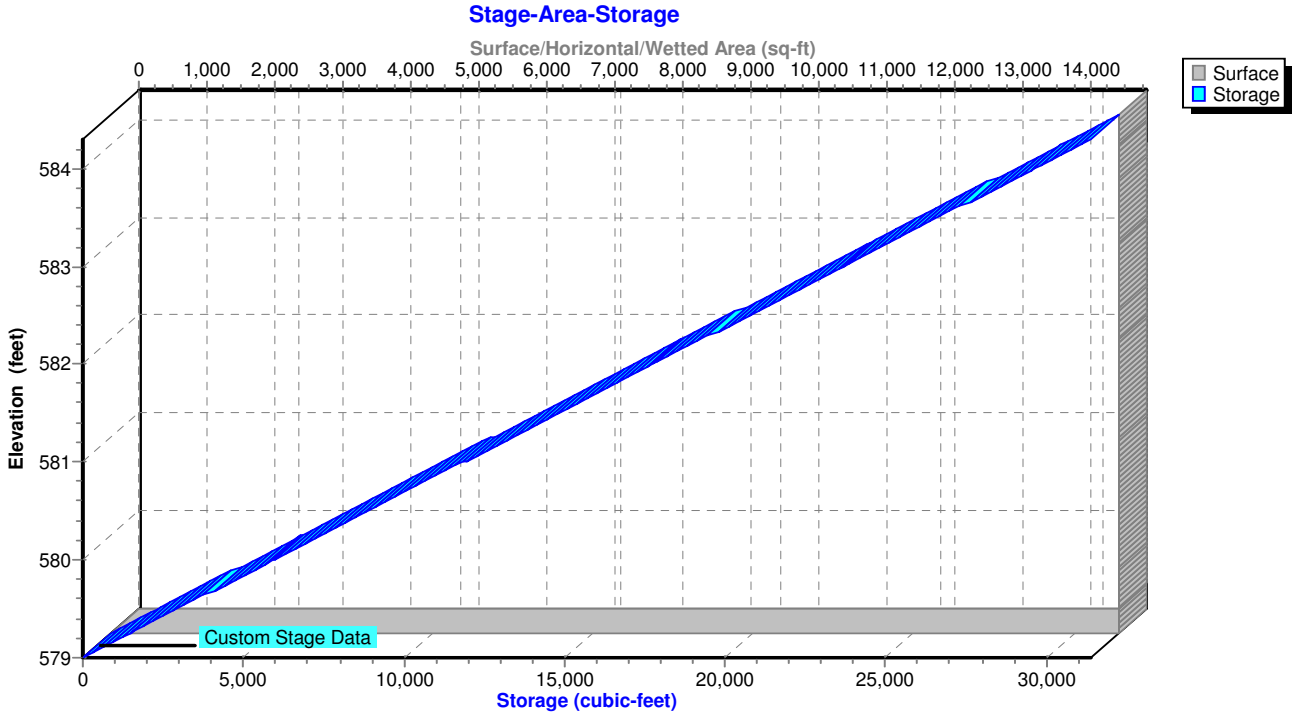


Pond 18P: Basin 5

Stage-Discharge



Pond 18P: Basin 5



Hydrograph for Pond 18P: Basin 5

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	**0.00**	**0**	**579.00**	**0.00**	**0.00**	**0.00**
2.00	**0.10**	**24**	**579.00**	**0.11**	**0.11**	0.00
4.00	0.00	0	579.00	0.00	0.00	0.00
6.00	0.00	0	579.00	0.00	0.00	0.00
8.00	0.00	0	579.00	0.00	0.00	0.00
10.00	0.00	0	579.00	0.00	0.00	0.00
12.00	0.00	0	579.00	0.00	0.00	0.00
14.00	0.00	0	579.00	0.00	0.00	0.00
16.00	0.00	0	579.00	0.00	0.00	0.00
18.00	0.00	0	579.00	0.00	0.00	0.00
20.00	0.00	0	579.00	0.00	0.00	0.00
22.00	0.00	0	579.00	0.00	0.00	0.00
24.00	0.00	0	579.00	0.00	0.00	0.00
26.00	0.00	0	579.00	0.00	0.00	0.00
28.00	0.00	0	579.00	0.00	0.00	0.00
30.00	0.00	0	579.00	0.00	0.00	0.00
32.00	0.00	0	579.00	0.00	0.00	0.00
34.00	0.00	0	579.00	0.00	0.00	0.00
36.00	0.00	0	579.00	0.00	0.00	0.00
38.00	0.00	0	579.00	0.00	0.00	0.00
40.00	0.00	0	579.00	0.00	0.00	0.00
42.00	0.00	0	579.00	0.00	0.00	0.00
44.00	0.00	0	579.00	0.00	0.00	0.00
46.00	0.00	0	579.00	0.00	0.00	0.00
48.00	0.00	0	579.00	0.00	0.00	0.00
50.00	0.00	0	579.00	0.00	0.00	0.00
52.00	0.00	0	579.00	0.00	0.00	0.00
54.00	0.00	0	579.00	0.00	0.00	0.00
56.00	0.00	0	579.00	0.00	0.00	0.00
58.00	0.00	0	579.00	0.00	0.00	0.00
60.00	0.00	0	579.00	0.00	0.00	0.00
62.00	0.00	0	579.00	0.00	0.00	0.00
64.00	0.00	0	579.00	0.00	0.00	0.00
66.00	0.00	0	579.00	0.00	0.00	0.00
68.00	0.00	0	579.00	0.00	0.00	0.00
70.00	0.00	0	579.00	0.00	0.00	0.00
72.00	0.00	0	579.00	0.00	0.00	0.00

Stage-Discharge for Pond 18P: Basin 5

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
579.00	0.00	**0.00**	0.00
579.10	1.37	**1.37**	0.00
579.20	1.37	1.37	0.00
579.30	1.52	1.37	0.15
579.40	2.13	1.37	0.75
579.50	2.99	1.37	1.61
579.60	4.03	1.37	2.66
579.70	5.23	1.37	3.86
579.80	6.56	1.37	5.19
579.90	8.00	1.37	6.63
580.00	9.55	1.37	8.18
580.10	11.19	1.37	9.81
580.20	12.91	1.37	11.54
580.30	14.71	1.37	13.33
580.40	16.57	1.37	15.20
580.50	18.51	1.37	17.14
580.60	20.50	1.37	19.13
580.70	22.55	1.37	21.18
580.80	24.66	1.37	23.28
580.90	26.81	1.37	25.44
581.00	29.00	1.37	27.63
581.10	31.24	1.37	29.87
581.20	33.52	1.37	32.14
581.30	35.83	1.37	34.46
581.40	38.17	1.37	36.80
581.50	40.55	1.37	39.18
581.60	42.96	1.37	41.58
581.70	45.39	1.37	44.02
581.80	47.84	1.37	46.47
581.90	50.32	1.37	48.95
582.00	52.82	1.37	51.45
582.10	55.34	1.37	53.96
582.20	57.87	1.37	56.50
582.30	60.42	1.37	59.05
582.40	62.98	1.37	61.61
582.50	65.55	1.37	64.18
582.60	68.14	1.37	66.77
582.70	70.73	1.37	69.36
582.80	73.33	1.37	71.96
582.90	75.94	1.37	74.56
583.00	78.55	1.37	77.18
583.10	81.16	1.37	79.79
583.20	83.78	1.37	82.40
583.30	86.39	1.37	85.02
583.40	89.01	1.37	87.64
583.50	91.62	1.37	90.25
583.60	94.23	1.37	92.86
583.70	96.84	1.37	95.47
583.80	99.44	1.37	98.07
583.90	102.03	1.37	100.66
584.00	104.62	1.37	103.25
584.10	107.20	1.37	105.83
584.20	109.77	1.37	108.40
584.30	**112.33**	1.37	**110.96**

Stage-Area-Storage for Pond 18P: Basin 5

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
579.00	**14,810**	0
579.10	14,810	592
579.20	14,810	1,185
579.30	14,810	1,777
579.40	14,810	2,370
579.50	14,810	2,962
579.60	14,810	3,554
579.70	14,810	4,147
579.80	14,810	4,739
579.90	14,810	5,332
580.00	14,810	5,924
580.10	14,810	6,516
580.20	14,810	7,109
580.30	14,810	7,701
580.40	14,810	8,294
580.50	14,810	8,886
580.60	14,810	9,478
580.70	14,810	10,071
580.80	14,810	10,663
580.90	14,810	11,256
581.00	14,810	11,848
581.10	14,810	12,440
581.20	14,810	13,033
581.30	14,810	13,625
581.40	14,810	14,218
581.50	14,810	14,810
581.60	14,810	15,402
581.70	14,810	15,995
581.80	14,810	16,587
581.90	14,810	17,180
582.00	14,810	17,772
582.10	14,810	18,364
582.20	14,810	18,957
582.30	14,810	19,549
582.40	14,810	20,142
582.50	14,810	20,734
582.60	14,810	21,326
582.70	14,810	21,919
582.80	14,810	22,511
582.90	14,810	23,104
583.00	14,810	23,696
583.10	14,810	24,288
583.20	14,810	24,881
583.30	14,810	25,473
583.40	14,810	26,066
583.50	14,810	26,658
583.60	14,810	27,250
583.70	14,810	27,843
583.80	14,810	28,435
583.90	14,810	29,028
584.00	14,810	29,620
584.10	14,810	30,212
584.20	14,810	30,805
584.30	14,810	**31,397**

Summary for Pond 24P: Basin 6

Inflow Area = 108,077 sf, 52.61% Impervious, Inflow Depth = 0.58" for WQ event
Inflow = 4.11 cfs @ 1.10 hrs, Volume= 5,217 cf
Outflow = 4.08 cfs @ 1.10 hrs, Volume= 5,217 cf, Atten= 1%, Lag= 0.2 min
Discarded = 4.08 cfs @ 1.10 hrs, Volume= 5,217 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 16P : Basin 1

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 600.01' @ 1.10 hrs Surf.Area= 35,719 sf Storage= 100 cf

Plug-Flow detention time= 0.4 min calculated for 5,216 cf (100% of inflow)
Center-of-Mass det. time= 0.4 min (69.5 - 69.1)

Volume	Invert	Avail.Storage	Storage Description
#1	600.00'	20,288 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 50,721 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
600.00	35,719	0	0
601.00	35,719	35,719	35,719
601.42	35,719	15,002	50,721

Device	Routing	Invert	Outlet Devices
#1	Primary	600.02'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	600.00'	**10.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=8.27 cfs @ 1.10 hrs HW=600.01' (Free Discharge)
↳**2=Exfiltration** (Exfiltration Controls 8.27 cfs)

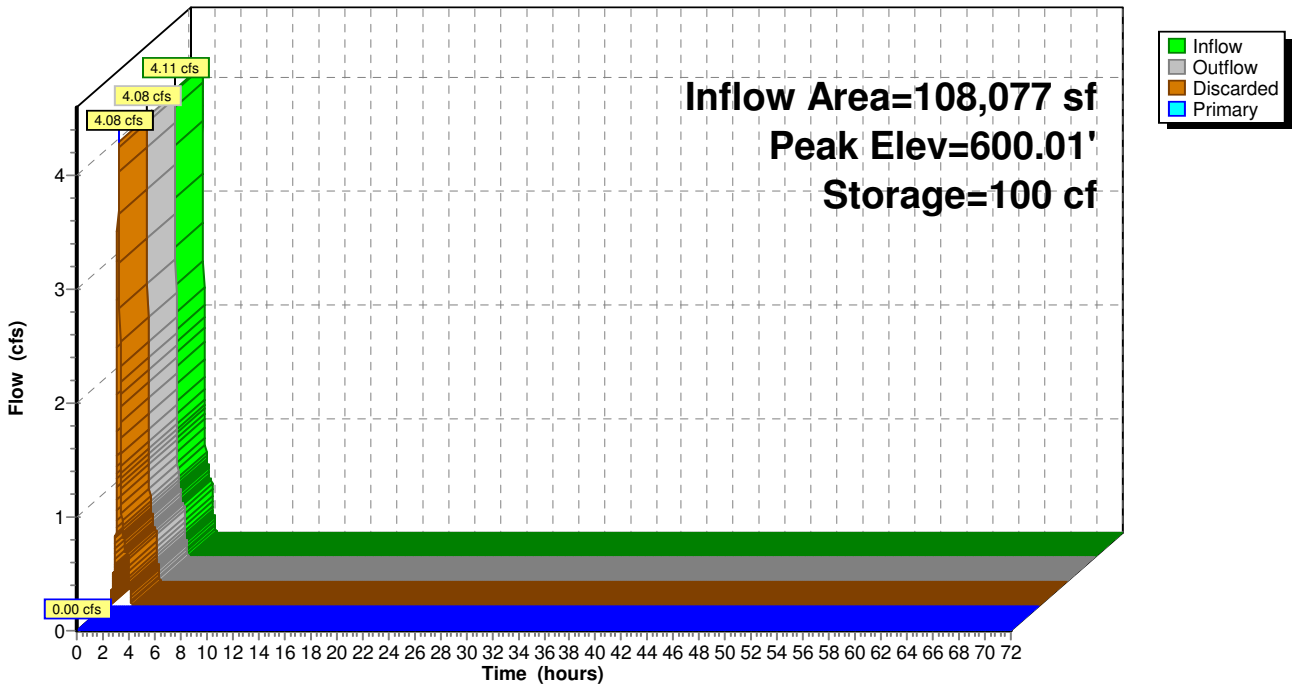
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=600.00' (Free Discharge)
↳**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 24P: Basin 6

Sharp-Crested Rectangular Weir Exfiltration

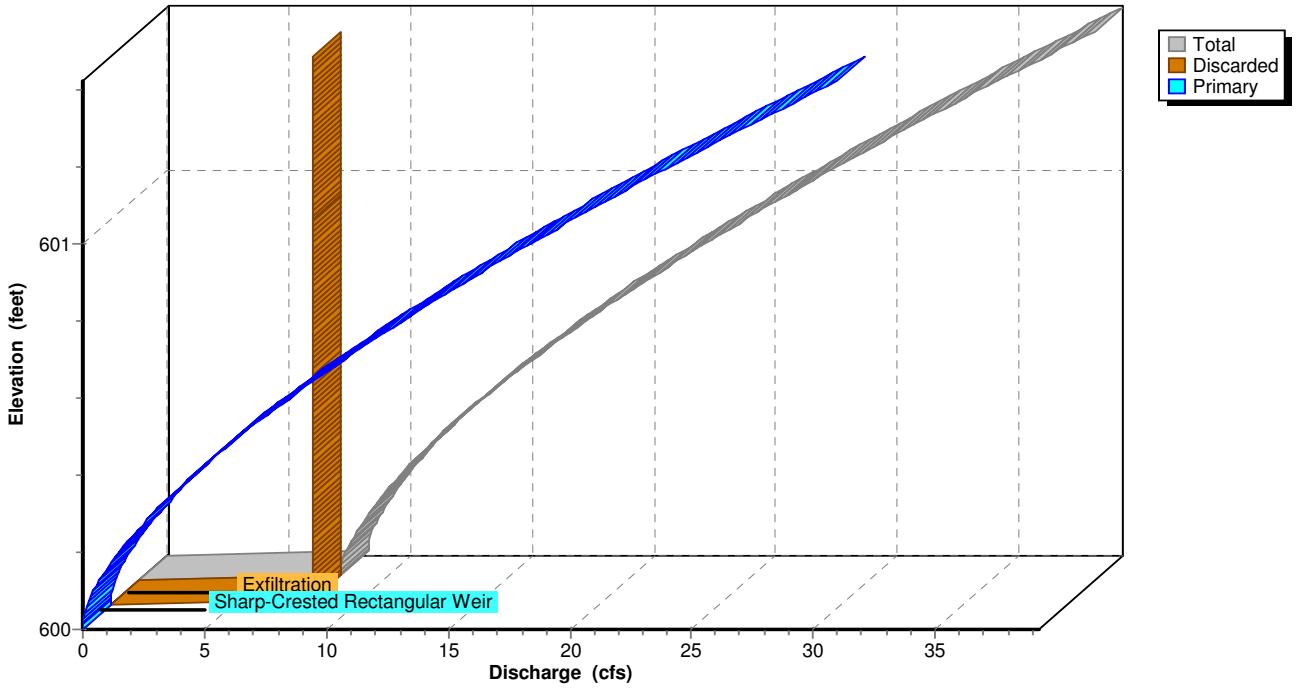
Pond 24P: Basin 6

Hydrograph

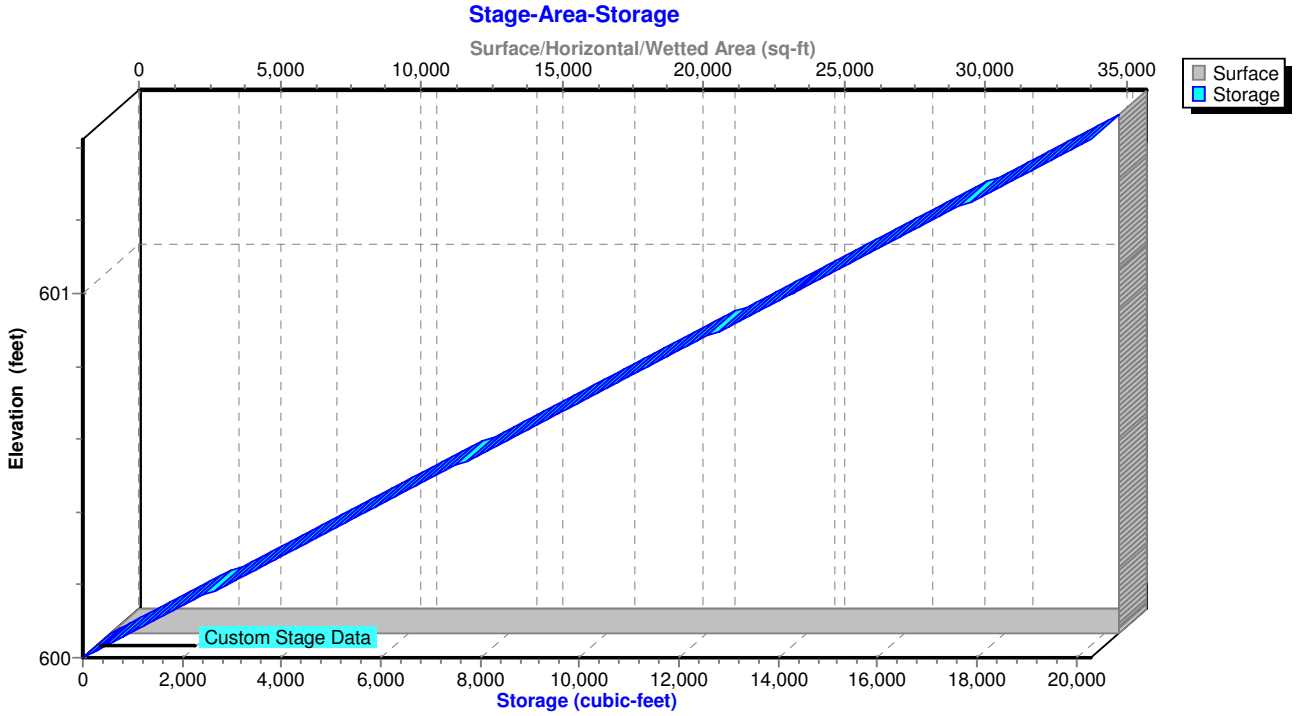


Pond 24P: Basin 6

Stage-Discharge



Pond 24P: Basin 6



Hydrograph for Pond 24P: Basin 6

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	**0.00**	**0**	**600.00**	**0.00**	**0.00**	**0.00**
2.00	**0.16**	**4**	**600.00**	**0.16**	**0.16**	0.00
4.00	0.00	0	600.00	0.00	0.00	0.00
6.00	0.00	0	600.00	0.00	0.00	0.00
8.00	0.00	0	600.00	0.00	0.00	0.00
10.00	0.00	0	600.00	0.00	0.00	0.00
12.00	0.00	0	600.00	0.00	0.00	0.00
14.00	0.00	0	600.00	0.00	0.00	0.00
16.00	0.00	0	600.00	0.00	0.00	0.00
18.00	0.00	0	600.00	0.00	0.00	0.00
20.00	0.00	0	600.00	0.00	0.00	0.00
22.00	0.00	0	600.00	0.00	0.00	0.00
24.00	0.00	0	600.00	0.00	0.00	0.00
26.00	0.00	0	600.00	0.00	0.00	0.00
28.00	0.00	0	600.00	0.00	0.00	0.00
30.00	0.00	0	600.00	0.00	0.00	0.00
32.00	0.00	0	600.00	0.00	0.00	0.00
34.00	0.00	0	600.00	0.00	0.00	0.00
36.00	0.00	0	600.00	0.00	0.00	0.00
38.00	0.00	0	600.00	0.00	0.00	0.00
40.00	0.00	0	600.00	0.00	0.00	0.00
42.00	0.00	0	600.00	0.00	0.00	0.00
44.00	0.00	0	600.00	0.00	0.00	0.00
46.00	0.00	0	600.00	0.00	0.00	0.00
48.00	0.00	0	600.00	0.00	0.00	0.00
50.00	0.00	0	600.00	0.00	0.00	0.00
52.00	0.00	0	600.00	0.00	0.00	0.00
54.00	0.00	0	600.00	0.00	0.00	0.00
56.00	0.00	0	600.00	0.00	0.00	0.00
58.00	0.00	0	600.00	0.00	0.00	0.00
60.00	0.00	0	600.00	0.00	0.00	0.00
62.00	0.00	0	600.00	0.00	0.00	0.00
64.00	0.00	0	600.00	0.00	0.00	0.00
66.00	0.00	0	600.00	0.00	0.00	0.00
68.00	0.00	0	600.00	0.00	0.00	0.00
70.00	0.00	0	600.00	0.00	0.00	0.00
72.00	0.00	0	600.00	0.00	0.00	0.00

Stage-Discharge for Pond 24P: Basin 6

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
600.00	0.00	**0.00**	0.00
600.02	8.27	**8.27**	0.00
600.04	8.32	8.27	0.06
600.06	8.43	8.27	0.16
600.08	8.56	8.27	0.29
600.10	8.71	8.27	0.44
600.12	8.89	8.27	0.62
600.14	9.08	8.27	0.81
600.16	9.29	8.27	1.02
600.18	9.52	8.27	1.25
600.20	9.76	8.27	1.49
600.22	10.01	8.27	1.74
600.24	10.28	8.27	2.01
600.26	10.56	8.27	2.29
600.28	10.85	8.27	2.58
600.30	11.15	8.27	2.88
600.32	11.46	8.27	3.19
600.34	11.78	8.27	3.51
600.36	12.11	8.27	3.85
600.38	12.46	8.27	4.19
600.40	12.81	8.27	4.54
600.42	13.17	8.27	4.90
600.44	13.53	8.27	5.27
600.46	13.91	8.27	5.64
600.48	14.30	8.27	6.03
600.50	14.69	8.27	6.42
600.52	15.09	8.27	6.82
600.54	15.50	8.27	7.23
600.56	15.91	8.27	7.65
600.58	16.34	8.27	8.07
600.60	16.77	8.27	8.50
600.62	17.20	8.27	8.94
600.64	17.65	8.27	9.38
600.66	18.10	8.27	9.83
600.68	18.56	8.27	10.29
600.70	19.02	8.27	10.75
600.72	19.49	8.27	11.22
600.74	19.97	8.27	11.70
600.76	20.45	8.27	12.18
600.78	20.94	8.27	12.67
600.80	21.43	8.27	13.16
600.82	21.93	8.27	13.66
600.84	22.44	8.27	14.17
600.86	22.95	8.27	14.68
600.88	23.47	8.27	15.20
600.90	23.99	8.27	15.72
600.92	24.52	8.27	16.25
600.94	25.05	8.27	16.78
600.96	25.59	8.27	17.32
600.98	26.13	8.27	17.86
601.00	26.68	8.27	18.41
601.02	27.23	8.27	18.97
601.04	27.79	8.27	19.52
601.06	28.36	8.27	20.09
601.08	28.92	8.27	20.66
601.10	29.50	8.27	21.23
601.12	30.07	8.27	21.81
601.14	30.66	8.27	22.39
601.16	31.24	8.27	22.97
601.18	31.83	8.27	23.56
601.20	32.43	8.27	24.16
601.22	33.03	8.27	24.76
601.24	33.63	8.27	25.36
601.26	34.24	8.27	25.97
601.28	34.85	8.27	26.58
601.30	35.47	8.27	27.20
601.32	36.09	8.27	27.82
601.34	36.71	8.27	28.45
601.36	37.34	8.27	29.07
601.38	37.98	8.27	29.71
601.40	38.61	8.27	30.34
601.42	**39.25**	8.27	**30.98**

Stage-Area-Storage for Pond 24P: Basin 6

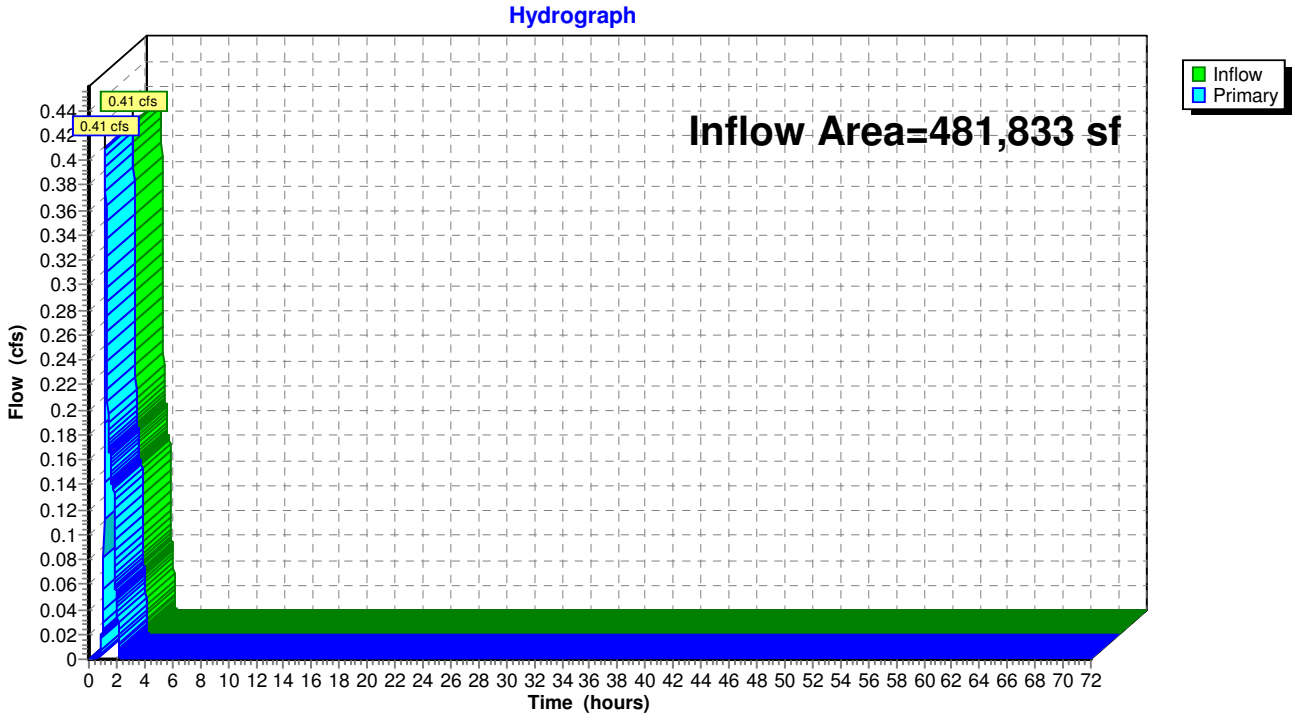
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
600.00	**35,719**	0
600.02	35,719	286
600.04	35,719	572
600.06	35,719	857
600.08	35,719	1,143
600.10	35,719	1,429
600.12	35,719	1,715
600.14	35,719	2,000
600.16	35,719	2,286
600.18	35,719	2,572
600.20	35,719	2,858
600.22	35,719	3,143
600.24	35,719	3,429
600.26	35,719	3,715
600.28	35,719	4,001
600.30	35,719	4,286
600.32	35,719	4,572
600.34	35,719	4,858
600.36	35,719	5,144
600.38	35,719	5,429
600.40	35,719	5,715
600.42	35,719	6,001
600.44	35,719	6,287
600.46	35,719	6,572
600.48	35,719	6,858
600.50	35,719	7,144
600.52	35,719	7,430
600.54	35,719	7,715
600.56	35,719	8,001
600.58	35,719	8,287
600.60	35,719	8,573
600.62	35,719	8,858
600.64	35,719	9,144
600.66	35,719	9,430
600.68	35,719	9,716
600.70	35,719	10,001
600.72	35,719	10,287
600.74	35,719	10,573
600.76	35,719	10,859
600.78	35,719	11,144
600.80	35,719	11,430
600.82	35,719	11,716
600.84	35,719	12,002
600.86	35,719	12,287
600.88	35,719	12,573
600.90	35,719	12,859
600.92	35,719	13,145
600.94	35,719	13,430
600.96	35,719	13,716
600.98	35,719	14,002
601.00	35,719	14,288
601.02	35,719	14,573
601.04	35,719	14,859
601.06	35,719	15,145
601.08	35,719	15,431
601.10	35,719	15,716
601.12	35,719	16,002
601.14	35,719	16,288
601.16	35,719	16,574
601.18	35,719	16,859
601.20	35,719	17,145
601.22	35,719	17,431
601.24	35,719	17,717
601.26	35,719	18,002
601.28	35,719	18,288
601.30	35,719	18,574
601.32	35,719	18,860
601.34	35,719	19,145
601.36	35,719	19,431
601.38	35,719	19,717
601.40	35,719	20,003
601.42	35,719	**20,288**

Summary for Link 25L: POA 1

Inflow Area = 481,833 sf, 51.45% Impervious, Inflow Depth = 0.02" for WQ event
Inflow = 0.41 cfs @ 1.17 hrs, Volume= 657 cf
Primary = 0.41 cfs @ 1.17 hrs, Volume= 657 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 25L: POA 1



Hydrograph for Link 25L: POA 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	51.00	0.00	0.00	0.00
1.00	**0.02**	0.00	**0.02**	52.00	0.00	0.00	0.00
2.00	**0.05**	0.00	**0.05**	53.00	0.00	0.00	0.00
3.00	0.00	0.00	0.00	54.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	55.00	0.00	0.00	0.00
5.00	0.00	0.00	0.00	56.00	0.00	0.00	0.00
6.00	0.00	0.00	0.00	57.00	0.00	0.00	0.00
7.00	0.00	0.00	0.00	58.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	59.00	0.00	0.00	0.00
9.00	0.00	0.00	0.00	60.00	0.00	0.00	0.00
10.00	0.00	0.00	0.00	61.00	0.00	0.00	0.00
11.00	0.00	0.00	0.00	62.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	63.00	0.00	0.00	0.00
13.00	0.00	0.00	0.00	64.00	0.00	0.00	0.00
14.00	0.00	0.00	0.00	65.00	0.00	0.00	0.00
15.00	0.00	0.00	0.00	66.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00	67.00	0.00	0.00	0.00
17.00	0.00	0.00	0.00	68.00	0.00	0.00	0.00
18.00	0.00	0.00	0.00	69.00	0.00	0.00	0.00
19.00	0.00	0.00	0.00	70.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	71.00	0.00	0.00	0.00
21.00	0.00	0.00	0.00	72.00	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				

Events for Subcatchment 14S: Basin 1 - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	8.50	39,434	3.21
10-Year	5.22	12.98	61,277	4.98
100-Year	**8.66**	**21.60**	**103,543**	**8.42**
WQ	1.25	7.73	12,723	1.03

Events for Subcatchment 15S: Basin 1 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	3.18	13,236	1.39
10-Year	5.22	6.53	26,815	2.81
100-Year	**8.66**	**13.48**	**56,178**	**5.88**
WQ	1.25	0.55	1,117	0.12

Events for Subcatchment 17S: Basin 5 - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	3.55	11,535	3.21
10-Year	5.22	5.42	17,925	4.98
100-Year	**8.66**	**9.01**	**30,289**	**8.42**
WQ	1.25	3.05	3,722	1.03

Events for Subcatchment 22S: Basin 6 - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	4.58	15,194	3.21
10-Year	5.22	6.99	23,610	4.98
100-Year	**8.66**	**11.63**	**39,895**	**8.42**
WQ	1.25	3.98	4,902	1.03

Events for Subcatchment 23S: Basin 6 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	1.80	5,116	1.20
10-Year	5.22	3.84	10,845	2.54
100-Year	**8.66**	**8.16**	**23,561**	**5.52**
WQ	1.25	0.20	315	0.07

Events for Subcatchment 26S: DA 1 Und - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	2.31	7,472	1.39
10-Year	5.22	4.71	15,137	2.81
100-Year	**8.66**	**9.65**	**31,713**	**5.88**
WQ	1.25	0.41	631	0.12

Events for Subcatchment 27S: Basin 5 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	0.13	344	1.20
10-Year	5.22	0.27	728	2.54
100-Year	**8.66**	**0.57**	**1,582**	**5.52**
WQ	1.25	0.02	21	0.07

Events for Subcatchment 28S: undetained impervious

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	0.02	80	3.21
10-Year	5.22	0.04	125	4.98
100-Year	**8.66**	**0.06**	**210**	**8.42**
WQ	1.25	0.02	26	1.03

Events for Pond 16P: Basin 1

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	11.66	0.75	544.29	35,472
10-Year	20.44	3.24	544.64	51,866
100-Year	**41.28**	**12.27**	**545.30**	**83,095**
WQ	8.10	0.00	543.82	13,840

Events for Pond 18P: Basin 5

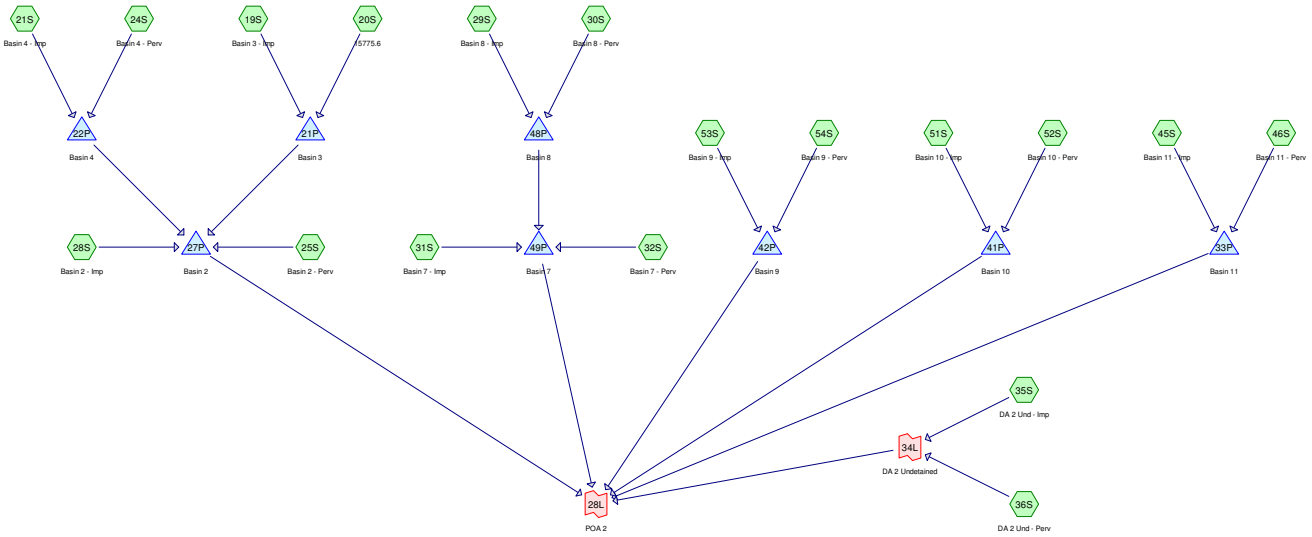
Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	3.68	1.37	**1.37**	0.00	579.23	1,374
10-Year	5.69	2.43	1.37	1.06	579.44	2,595
100-Year	**9.58**	**6.04**	1.37	**4.67**	**579.76**	**4,513**
WQ	3.06	1.37	1.37	0.00	579.19	1,135

Events for Pond 24P: Basin 6

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	6.37	6.35	6.35	0.00	600.01	156
10-Year	10.83	8.40	**8.27**	0.13	600.05	784
100-Year	**19.78**	**11.29**	8.27	**3.02**	**600.31**	**4,419**
WQ	4.11	4.08	4.08	0.00	600.01	100

Events for Link 25L: POA 1

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
2-Year	2.36	2.36	**0.00**
10-Year	5.27	5.27	0.00
100-Year	**14.86**	**14.86**	0.00
WQ	0.41	0.41	0.00



Subcat Reach Pond Link

Routing Diagram for 2024-05-12 HydroCad - Proposed POA 2B-1
Prepared by Anderson Consulting Services, Printed 10/25/2024
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2024-05-12 HydroCad - Proposed POA 2B-1

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Rainfall Events Listing

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

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
218,596	74	>75% Grass cover, Good, HSG C (20S, 24S, 25S, 30S, 32S, 36S, 46S, 52S, 54S)
158,046	80	>75% Grass cover, Good, HSG D (25S, 30S, 32S, 36S, 46S, 52S, 54S)
52,660	98	Paved parking, HSG C (19S, 21S, 35S, 51S)
33,009	98	Paved parking, HSG D (35S)
1,307	98	Paved parking, sidewalk other imp (28S)
28,866	98	Paved parking, sidewalk, other imp (28S)
80,914	98	Roofs, HSG C (29S, 45S, 51S)
30,122	98	Roofs, HSG D (21S, 35S)
948	98	impervious other than pavement (19S)
24,014	98	other impervious (29S, 31S, 45S, 53S)
17,858	98	pavement surface (29S)
22,270	98	pavement surface area/ porous (45S)
1,147	98	roofs (53S)
39,048	98	vehicle pavement surface (31S)
13,382	98	vehicle surface area (53S)
722,187	**87**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
352,170	HSG C	19S, 20S, 21S, 24S, 25S, 29S, 30S, 32S, 35S, 36S, 45S, 46S, 51S, 52S, 54S
221,177	HSG D	21S, 25S, 30S, 32S, 35S, 36S, 46S, 52S, 54S
148,840	Other	19S, 28S, 29S, 31S, 45S, 53S
722,187		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	218,596	158,046	0	376,642	>75% Grass cover, Good
0	0	52,660	33,009	0	85,669	Paved parking
0	0	0	0	1,307	1,307	Paved parking, sidewalk other imp
0	0	0	0	28,866	28,866	Paved parking, sidewalk, other imp
0	0	80,914	30,122	0	111,036	Roofs
0	0	0	0	948	948	impervious other than pavement
0	0	0	0	24,014	24,014	other impervious
0	0	0	0	17,858	17,858	pavement surface
0	0	0	0	22,270	22,270	pavement surface area/ porous
0	0	0	0	1,147	1,147	roofs
0	0	0	0	39,048	39,048	vehicle pavement surface
0	0	0	0	13,382	13,382	vehicle surface area
0	**0**	**352,170**	**221,177**	**148,840**	**722,187**	**TOTAL AREA**

Notes Listing (all nodes)

Line#	Node Number	Notes
1	Project	Rainfall events imported from "NJ-2023-Rain.txt" for 6606 NJ Essex
2		Rainfall events imported from "NRCS2-Rain.txt" for 1167 NJ Essex-D
3		Rainfall events imported from "NRCS2-Rain.txt" for 1167 NJ Essex-D

Time span=0.00-80.00 hrs, dt=0.04 hrs, 2001 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 19S: Basin 3 - Imp Runoff Area=6,824 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=75' Slope=0.0400 '/' Tc=8.3 min CN=98 Runoff=0.47 cfs 1,824 cf

Subcatchment 20S: 15775.6 Runoff Area=15,086 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=75' Slope=0.0400 '/' Tc=8.3 min CN=74 Runoff=0.43 cfs 1,507 cf

Subcatchment 21S: Basin 4 - Imp Runoff Area=41,524 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=755' Slope=0.0200 '/' Tc=5.5 min CN=98 Runoff=3.13 cfs 11,096 cf

Subcatchment 24S: Basin 4 - Perv Runoff Area=7,526 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=755' Slope=0.0200 '/' Tc=5.5 min CN=74 Runoff=0.24 cfs 752 cf

Subcatchment 25S: Basin 2 - Perv Runoff Area=82,260 sf 0.00% Impervious Runoff Depth=1.39"
Flow Length=463' Tc=10.5 min CN=77 Runoff=2.54 cfs 9,502 cf

Subcatchment 28S: Basin 2 - Imp Runoff Area=30,173 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=463' Tc=10.5 min CN=98 Runoff=1.91 cfs 8,063 cf

Subcatchment 29S: Basin 8 - Imp Runoff Area=38,257 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=165' Tc=8.6 min CN=98 Runoff=2.60 cfs 10,223 cf

Subcatchment 30S: Basin 8 - Perv Runoff Area=22,787 sf 0.00% Impervious Runoff Depth=1.39"
Flow Length=165' Tc=8.6 min CN=77 Runoff=0.76 cfs 2,632 cf

Subcatchment 31S: Basin 7 - Imp Runoff Area=45,778 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=760' Tc=12.5 min CN=98 Runoff=2.74 cfs 12,233 cf

Subcatchment 32S: Basin 7 - Perv Runoff Area=58,678 sf 0.00% Impervious Runoff Depth=1.39"
Flow Length=760' Tc=12.5 min CN=77 Runoff=1.70 cfs 6,778 cf

Subcatchment 35S: DA 2 Und - Imp Runoff Area=52,513 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=160' Tc=9.8 min CN=98 Runoff=3.41 cfs 14,033 cf

Subcatchment 36S: DA 2 Und - Perv Runoff Area=119,952 sf 0.00% Impervious Runoff Depth=1.39"
Flow Length=160' Tc=9.8 min CN=77 Runoff=3.80 cfs 13,855 cf

Subcatchment 45S: Basin 11 - Imp Runoff Area=59,901 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=233' Tc=9.8 min CN=98 Runoff=3.89 cfs 16,007 cf

Subcatchment 46S: Basin 11 - Perv Runoff Area=24,202 sf 0.00% Impervious Runoff Depth=1.32"
Flow Length=233' Tc=9.8 min CN=76 Runoff=0.73 cfs 2,666 cf

Subcatchment 51S: Basin 10 - Imp Runoff Area=53,114 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=379' Tc=10.7 min CN=98 Runoff=3.35 cfs 14,193 cf

Subcatchment 52S: Basin 10 - Perv Runoff Area=37,235 sf 0.00% Impervious Runoff Depth=1.26"
Flow Length=379' Tc=10.7 min CN=75 Runoff=1.03 cfs 3,908 cf

Subcatchment 53S: Basin 9 - Imp Runoff Area=17,461 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=140' Tc=7.4 min CN=98 Runoff=1.23 cfs 4,666 cf

Subcatchment 54S: Basin 9 - Perv Runoff Area=8,916 sf 0.00% Impervious Runoff Depth=1.45"
Flow Length=140' Tc=7.4 min CN=78 Runoff=0.33 cfs 1,079 cf

Pond 21P: Basin 3 Peak Elev=559.02' Storage=33 cf Inflow=0.90 cfs 3,330 cf
Discarded=0.89 cfs 3,330 cf Primary=0.00 cfs 0 cf Outflow=0.89 cfs 3,330 cf

Pond 22P: Basin 4 Peak Elev=572.30' Storage=1,477 cf Inflow=3.37 cfs 11,848 cf
Discarded=1.13 cfs 11,848 cf Primary=0.00 cfs 0 cf Outflow=1.13 cfs 11,848 cf

Pond 27P: Basin 2 Peak Elev=544.96' Storage=12,418 cf Inflow=4.44 cfs 17,565 cf
Outflow=0.19 cfs 8,254 cf

Pond 33P: Basin 11 Peak Elev=590.13' Storage=717 cf Inflow=4.62 cfs 18,673 cf
Discarded=3.13 cfs 18,638 cf Primary=0.10 cfs 35 cf Outflow=3.23 cfs 18,673 cf

Pond 41P: Basin 10 Peak Elev=576.17' Storage=1,586 cf Inflow=4.37 cfs 18,101 cf
Discarded=2.22 cfs 18,101 cf Primary=0.00 cfs 0 cf Outflow=2.22 cfs 18,101 cf

Pond 42P: Basin 9 Peak Elev=562.24' Storage=640 cf Inflow=1.55 cfs 5,745 cf
Discarded=0.61 cfs 5,745 cf Primary=0.00 cfs 0 cf Outflow=0.61 cfs 5,745 cf

Pond 48P: Basin 8 Peak Elev=573.11' Storage=434 cf Inflow=3.35 cfs 12,855 cf
Discarded=2.44 cfs 12,855 cf Primary=0.00 cfs 0 cf Outflow=2.44 cfs 12,855 cf

Pond 49P: Basin 7 Peak Elev=531.74' Storage=11,169 cf Inflow=4.44 cfs 19,011 cf
Outflow=0.53 cfs 13,242 cf

Link 28L: POA 2 Inflow=7.24 cfs 49,419 cf
Primary=7.24 cfs 49,419 cf

Link 34L: DA 2 Undetained Inflow=7.21 cfs 27,888 cf
Primary=7.21 cfs 27,888 cf

Total Runoff Area = 722,187 sf Runoff Volume = 135,016 cf Average Runoff Depth = 2.24"
52.15% Pervious = 376,642 sf 47.85% Impervious = 345,545 sf

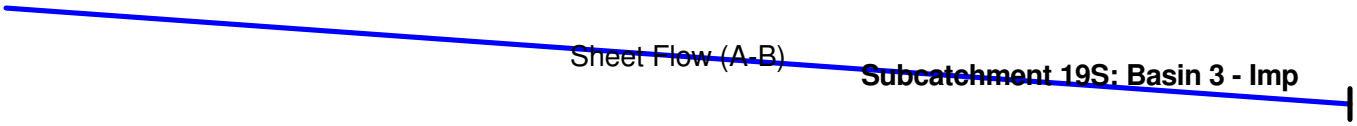
Summary for Subcatchment 19S: Basin 3 - Imp

Runoff = 0.47 cfs @ 12.15 hrs, Volume= 1,824 cf, Depth= 3.21"
Routed to Pond 21P : Basin 3

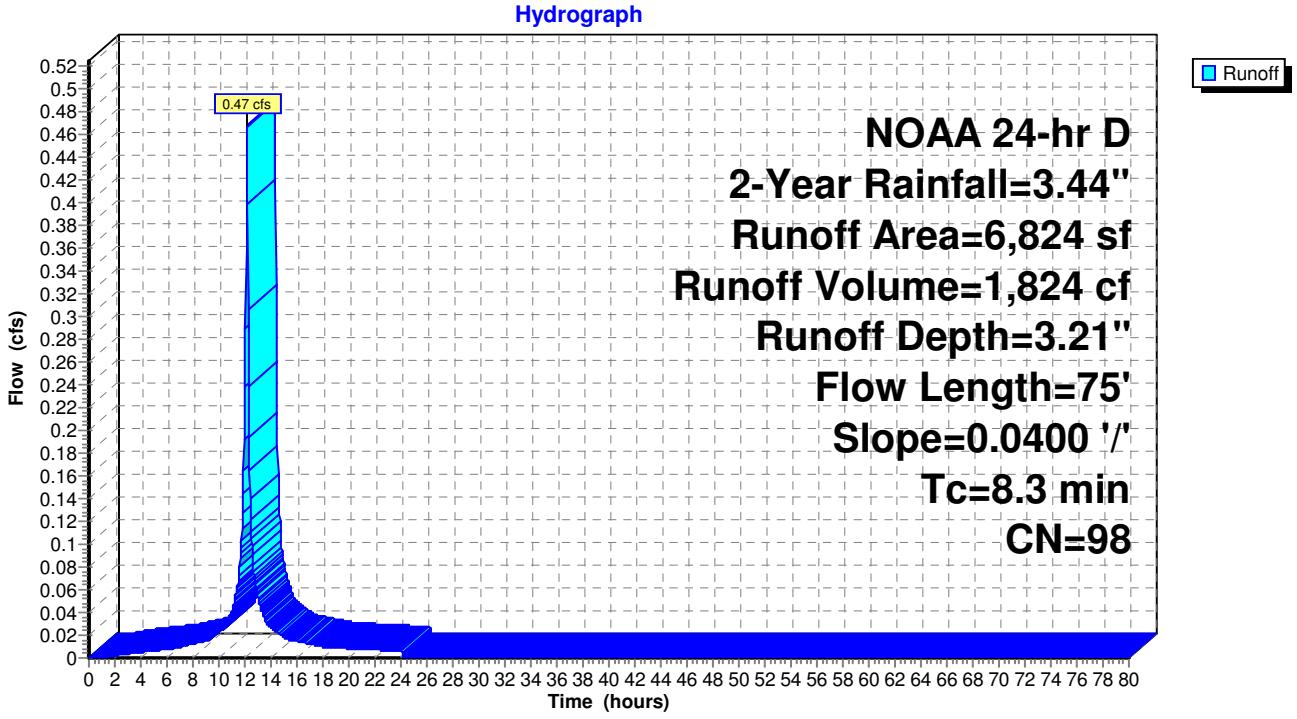
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

	Area (sf)	CN	Description
	5,876	98	Paved parking, HSG C
*	948	98	impervious other than pavement
	6,824	98	Weighted Average
	6,824		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	75	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 19S: Basin 3 - Imp



Hydrograph for Subcatchment 19S: Basin 3 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	3.21	0.00
0.80	0.03	0.00	0.00	41.60	3.44	3.21	0.00
1.60	0.06	0.00	0.00	42.40	3.44	3.21	0.00
2.40	0.10	0.01	0.00	43.20	3.44	3.21	0.00
3.20	0.14	0.03	0.00	44.00	3.44	3.21	0.00
4.00	0.18	0.06	0.01	44.80	3.44	3.21	0.00
4.80	0.22	0.09	0.01	45.60	3.44	3.21	0.00
5.60	0.27	0.12	0.01	46.40	3.44	3.21	0.00
6.40	0.32	0.16	0.01	47.20	3.44	3.21	0.00
7.20	0.38	0.21	0.01	48.00	3.44	3.21	0.00
8.00	0.45	0.27	0.01	48.80	3.44	3.21	0.00
8.80	0.52	0.34	0.01	49.60	3.44	3.21	0.00
9.60	0.62	0.43	0.02	50.40	3.44	3.21	0.00
10.40	0.75	0.55	0.03	51.20	3.44	3.21	0.00
11.20	0.96	0.75	0.05	52.00	3.44	3.21	0.00
12.00	1.65	1.43	**0.24**	52.80	3.44	3.21	0.00
12.80	2.48	2.25	**0.07**	53.60	3.44	3.21	0.00
13.60	2.69	2.46	0.03	54.40	3.44	3.21	0.00
14.40	2.82	2.59	0.02	55.20	3.44	3.21	0.00
15.20	2.92	2.68	0.02	56.00	3.44	3.21	0.00
16.00	2.99	2.76	0.01	56.80	3.44	3.21	0.00
16.80	3.06	2.83	0.01	57.60	3.44	3.21	0.00
17.60	3.12	2.89	0.01	58.40	3.44	3.21	0.00
18.40	3.17	2.94	0.01	59.20	3.44	3.21	0.00
19.20	3.22	2.98	0.01	60.00	3.44	3.21	0.00
20.00	3.26	3.03	0.01	60.80	3.44	3.21	0.00
20.80	3.30	3.07	0.01	61.60	3.44	3.21	0.00
21.60	3.34	3.11	0.01	62.40	3.44	3.21	0.00
22.40	3.38	3.14	0.01	63.20	3.44	3.21	0.00
23.20	3.41	3.18	0.01	64.00	3.44	3.21	0.00
24.00	**3.44**	**3.21**	0.01	64.80	3.44	3.21	0.00
24.80	3.44	3.21	0.00	65.60	3.44	3.21	0.00
25.60	3.44	3.21	0.00	66.40	3.44	3.21	0.00
26.40	3.44	3.21	0.00	67.20	3.44	3.21	0.00
27.20	3.44	3.21	0.00	68.00	3.44	3.21	0.00
28.00	3.44	3.21	0.00	68.80	3.44	3.21	0.00
28.80	3.44	3.21	0.00	69.60	3.44	3.21	0.00
29.60	3.44	3.21	0.00	70.40	3.44	3.21	0.00
30.40	3.44	3.21	0.00	71.20	3.44	3.21	0.00
31.20	3.44	3.21	0.00	72.00	3.44	3.21	0.00
32.00	3.44	3.21	0.00	72.80	3.44	3.21	0.00
32.80	3.44	3.21	0.00	73.60	3.44	3.21	0.00
33.60	3.44	3.21	0.00	74.40	3.44	3.21	0.00
34.40	3.44	3.21	0.00	75.20	3.44	3.21	0.00
35.20	3.44	3.21	0.00	76.00	3.44	3.21	0.00
36.00	3.44	3.21	0.00	76.80	3.44	3.21	0.00
36.80	3.44	3.21	0.00	77.60	3.44	3.21	0.00
37.60	3.44	3.21	0.00	78.40	3.44	3.21	0.00
38.40	3.44	3.21	0.00	79.20	3.44	3.21	0.00
39.20	3.44	3.21	0.00	80.00	3.44	3.21	0.00
40.00	3.44	3.21	0.00				

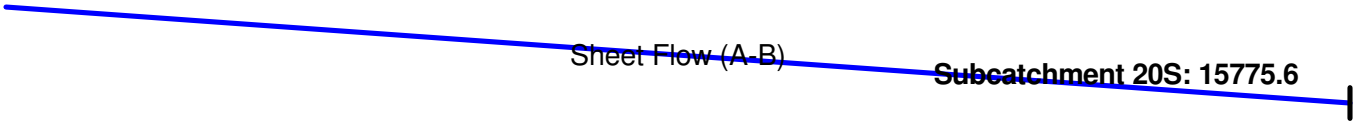
Summary for Subcatchment 20S: 15775.6

Runoff = 0.43 cfs @ 12.16 hrs, Volume= 1,507 cf, Depth= 1.20"
Routed to Pond 21P : Basin 3

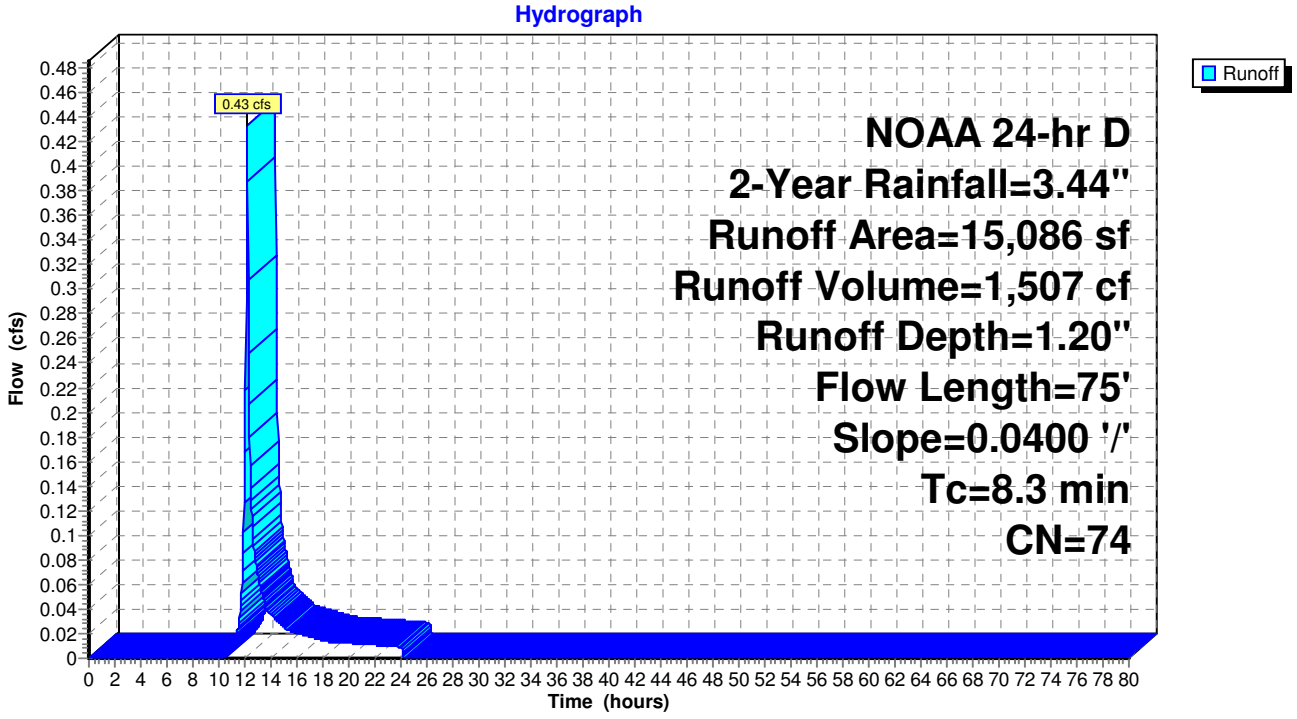
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
15,086	74	>75% Grass cover, Good, HSG C
15,086		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	75	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 20S: 15775.6



Hydrograph for Subcatchment 20S: 15775.6

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	1.20	0.00
0.80	0.03	0.00	0.00	41.60	3.44	1.20	0.00
1.60	0.06	0.00	0.00	42.40	3.44	1.20	0.00
2.40	0.10	0.00	0.00	43.20	3.44	1.20	0.00
3.20	0.14	0.00	0.00	44.00	3.44	1.20	0.00
4.00	0.18	0.00	0.00	44.80	3.44	1.20	0.00
4.80	0.22	0.00	0.00	45.60	3.44	1.20	0.00
5.60	0.27	0.00	0.00	46.40	3.44	1.20	0.00
6.40	0.32	0.00	0.00	47.20	3.44	1.20	0.00
7.20	0.38	0.00	0.00	48.00	3.44	1.20	0.00
8.00	0.45	0.00	0.00	48.80	3.44	1.20	0.00
8.80	0.52	0.00	0.00	49.60	3.44	1.20	0.00
9.60	0.62	0.00	0.00	50.40	3.44	1.20	0.00
10.40	0.75	0.00	0.00	51.20	3.44	1.20	0.00
11.20	0.96	0.02	0.01	52.00	3.44	1.20	0.00
12.00	1.65	0.20	**0.17**	52.80	3.44	1.20	0.00
12.80	2.48	0.60	**0.08**	53.60	3.44	1.20	0.00
13.60	2.69	0.72	0.04	54.40	3.44	1.20	0.00
14.40	2.82	0.80	0.03	55.20	3.44	1.20	0.00
15.20	2.92	0.85	0.02	56.00	3.44	1.20	0.00
16.00	2.99	0.90	0.02	56.80	3.44	1.20	0.00
16.80	3.06	0.95	0.02	57.60	3.44	1.20	0.00
17.60	3.12	0.99	0.02	58.40	3.44	1.20	0.00
18.40	3.17	1.02	0.01	59.20	3.44	1.20	0.00
19.20	3.22	1.05	0.01	60.00	3.44	1.20	0.00
20.00	3.26	1.08	0.01	60.80	3.44	1.20	0.00
20.80	3.30	1.10	0.01	61.60	3.44	1.20	0.00
21.60	3.34	1.13	0.01	62.40	3.44	1.20	0.00
22.40	3.38	1.15	0.01	63.20	3.44	1.20	0.00
23.20	3.41	1.18	0.01	64.00	3.44	1.20	0.00
24.00	**3.44**	**1.20**	0.01	64.80	3.44	1.20	0.00
24.80	3.44	1.20	0.00	65.60	3.44	1.20	0.00
25.60	3.44	1.20	0.00	66.40	3.44	1.20	0.00
26.40	3.44	1.20	0.00	67.20	3.44	1.20	0.00
27.20	3.44	1.20	0.00	68.00	3.44	1.20	0.00
28.00	3.44	1.20	0.00	68.80	3.44	1.20	0.00
28.80	3.44	1.20	0.00	69.60	3.44	1.20	0.00
29.60	3.44	1.20	0.00	70.40	3.44	1.20	0.00
30.40	3.44	1.20	0.00	71.20	3.44	1.20	0.00
31.20	3.44	1.20	0.00	72.00	3.44	1.20	0.00
32.00	3.44	1.20	0.00	72.80	3.44	1.20	0.00
32.80	3.44	1.20	0.00	73.60	3.44	1.20	0.00
33.60	3.44	1.20	0.00	74.40	3.44	1.20	0.00
34.40	3.44	1.20	0.00	75.20	3.44	1.20	0.00
35.20	3.44	1.20	0.00	76.00	3.44	1.20	0.00
36.00	3.44	1.20	0.00	76.80	3.44	1.20	0.00
36.80	3.44	1.20	0.00	77.60	3.44	1.20	0.00
37.60	3.44	1.20	0.00	78.40	3.44	1.20	0.00
38.40	3.44	1.20	0.00	79.20	3.44	1.20	0.00
39.20	3.44	1.20	0.00	80.00	3.44	1.20	0.00
40.00	3.44	1.20	0.00				

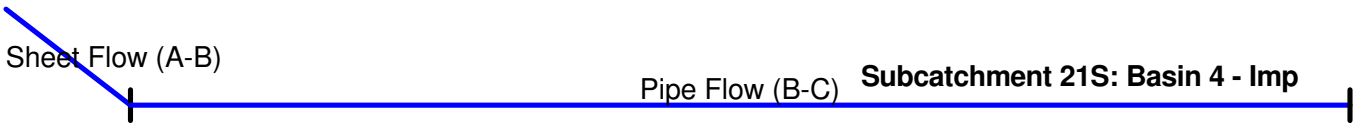
Summary for Subcatchment 21S: Basin 4 - Imp

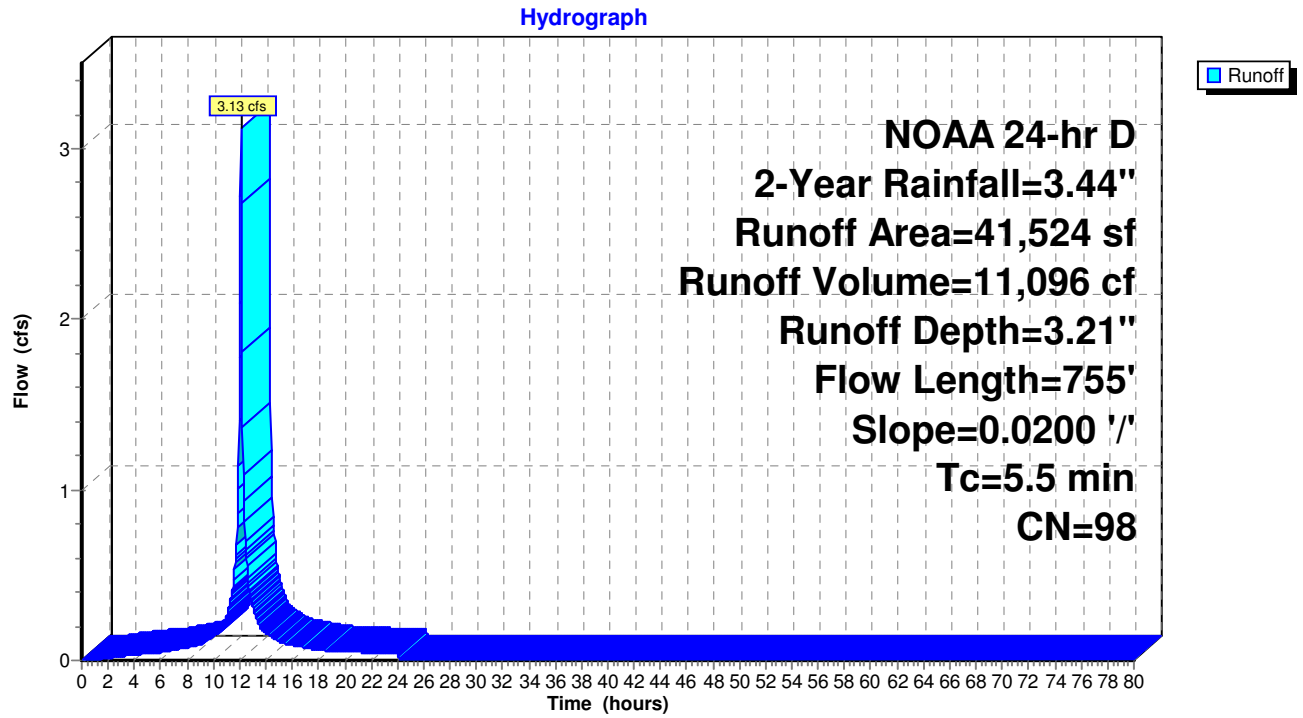
Runoff = 3.13 cfs @ 12.12 hrs, Volume= 11,096 cf, Depth= 3.21"
Routed to Pond 22P : Basin 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
29,022	98	Roofs, HSG D
12,502	98	Paved parking, HSG C
41,524	98	Weighted Average
41,524		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.33		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
4.6	685		2.50		**Direct Entry, Pipe Flow (B-C)**
5.5	755	Total			





Hydrograph for Subcatchment 21S: Basin 4 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	3.21	0.00
0.80	0.03	0.00	0.00	41.60	3.44	3.21	0.00
1.60	0.06	0.00	0.01	42.40	3.44	3.21	0.00
2.40	0.10	0.01	0.02	43.20	3.44	3.21	0.00
3.20	0.14	0.03	0.03	44.00	3.44	3.21	0.00
4.00	0.18	0.06	0.03	44.80	3.44	3.21	0.00
4.80	0.22	0.09	0.04	45.60	3.44	3.21	0.00
5.60	0.27	0.12	0.04	46.40	3.44	3.21	0.00
6.40	0.32	0.16	0.05	47.20	3.44	3.21	0.00
7.20	0.38	0.21	0.06	48.00	3.44	3.21	0.00
8.00	0.45	0.27	0.08	48.80	3.44	3.21	0.00
8.80	0.52	0.34	0.09	49.60	3.44	3.21	0.00
9.60	0.62	0.43	0.12	50.40	3.44	3.21	0.00
10.40	0.75	0.55	0.16	51.20	3.44	3.21	0.00
11.20	0.96	0.75	0.32	52.00	3.44	3.21	0.00
12.00	1.65	1.43	**1.78**	52.80	3.44	3.21	0.00
12.80	2.48	2.25	**0.39**	53.60	3.44	3.21	0.00
13.60	2.69	2.46	0.19	54.40	3.44	3.21	0.00
14.40	2.82	2.59	0.14	55.20	3.44	3.21	0.00
15.20	2.92	2.68	0.10	56.00	3.44	3.21	0.00
16.00	2.99	2.76	0.09	56.80	3.44	3.21	0.00
16.80	3.06	2.83	0.08	57.60	3.44	3.21	0.00
17.60	3.12	2.89	0.07	58.40	3.44	3.21	0.00
18.40	3.17	2.94	0.06	59.20	3.44	3.21	0.00
19.20	3.22	2.98	0.05	60.00	3.44	3.21	0.00
20.00	3.26	3.03	0.05	60.80	3.44	3.21	0.00
20.80	3.30	3.07	0.05	61.60	3.44	3.21	0.00
21.60	3.34	3.11	0.04	62.40	3.44	3.21	0.00
22.40	3.38	3.14	0.04	63.20	3.44	3.21	0.00
23.20	3.41	3.18	0.04	64.00	3.44	3.21	0.00
24.00	**3.44**	**3.21**	0.04	64.80	3.44	3.21	0.00
24.80	3.44	3.21	0.00	65.60	3.44	3.21	0.00
25.60	3.44	3.21	0.00	66.40	3.44	3.21	0.00
26.40	3.44	3.21	0.00	67.20	3.44	3.21	0.00
27.20	3.44	3.21	0.00	68.00	3.44	3.21	0.00
28.00	3.44	3.21	0.00	68.80	3.44	3.21	0.00
28.80	3.44	3.21	0.00	69.60	3.44	3.21	0.00
29.60	3.44	3.21	0.00	70.40	3.44	3.21	0.00
30.40	3.44	3.21	0.00	71.20	3.44	3.21	0.00
31.20	3.44	3.21	0.00	72.00	3.44	3.21	0.00
32.00	3.44	3.21	0.00	72.80	3.44	3.21	0.00
32.80	3.44	3.21	0.00	73.60	3.44	3.21	0.00
33.60	3.44	3.21	0.00	74.40	3.44	3.21	0.00
34.40	3.44	3.21	0.00	75.20	3.44	3.21	0.00
35.20	3.44	3.21	0.00	76.00	3.44	3.21	0.00
36.00	3.44	3.21	0.00	76.80	3.44	3.21	0.00
36.80	3.44	3.21	0.00	77.60	3.44	3.21	0.00
37.60	3.44	3.21	0.00	78.40	3.44	3.21	0.00
38.40	3.44	3.21	0.00	79.20	3.44	3.21	0.00
39.20	3.44	3.21	0.00	80.00	3.44	3.21	0.00
40.00	3.44	3.21	0.00				

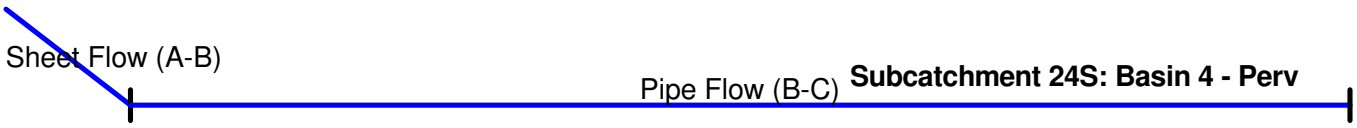
Summary for Subcatchment 24S: Basin 4 - Perv

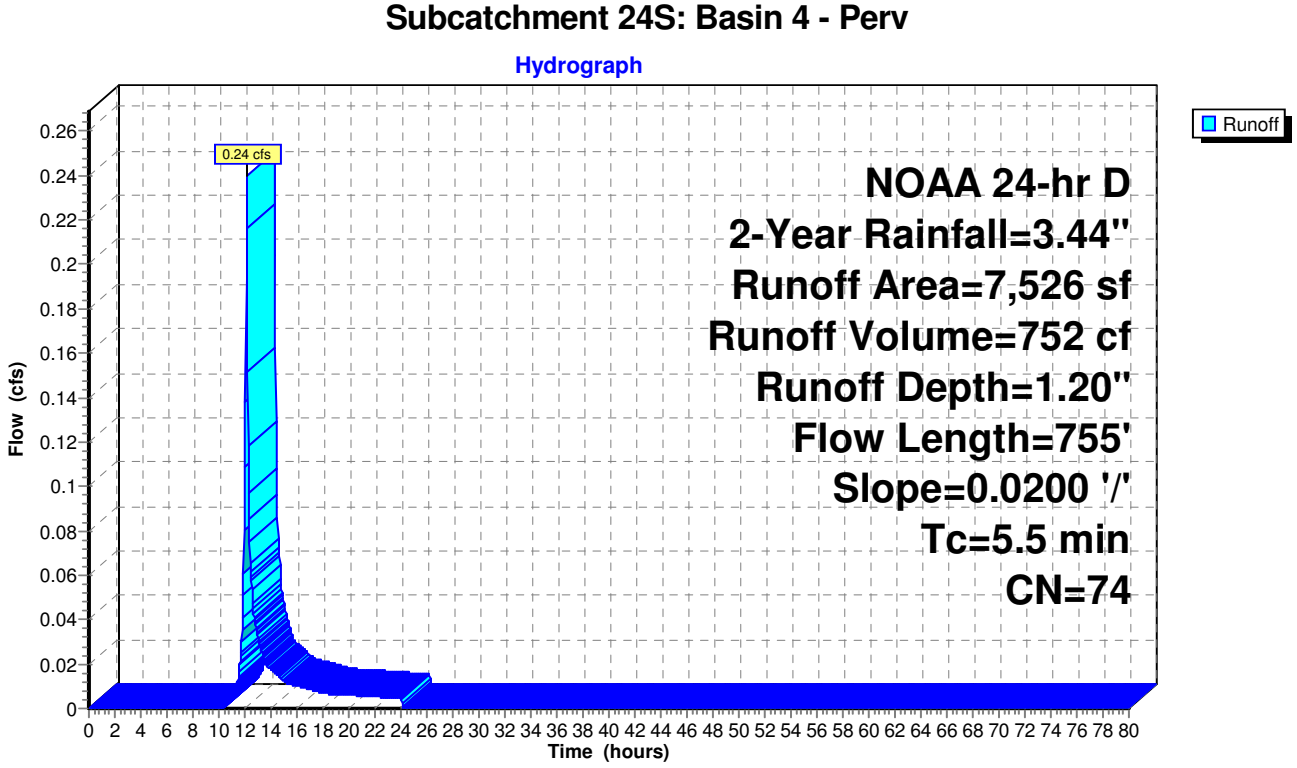
Runoff = 0.24 cfs @ 12.13 hrs, Volume= 752 cf, Depth= 1.20"
Routed to Pond 22P : Basin 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
7,526	74	>75% Grass cover, Good, HSG C
7,526		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.33		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
4.6	685		2.50		**Direct Entry, Pipe Flow (B-C)**
5.5	755	Total			





Hydrograph for Subcatchment 24S: Basin 4 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	1.20	0.00
0.80	0.03	0.00	0.00	41.60	3.44	1.20	0.00
1.60	0.06	0.00	0.00	42.40	3.44	1.20	0.00
2.40	0.10	0.00	0.00	43.20	3.44	1.20	0.00
3.20	0.14	0.00	0.00	44.00	3.44	1.20	0.00
4.00	0.18	0.00	0.00	44.80	3.44	1.20	0.00
4.80	0.22	0.00	0.00	45.60	3.44	1.20	0.00
5.60	0.27	0.00	0.00	46.40	3.44	1.20	0.00
6.40	0.32	0.00	0.00	47.20	3.44	1.20	0.00
7.20	0.38	0.00	0.00	48.00	3.44	1.20	0.00
8.00	0.45	0.00	0.00	48.80	3.44	1.20	0.00
8.80	0.52	0.00	0.00	49.60	3.44	1.20	0.00
9.60	0.62	0.00	0.00	50.40	3.44	1.20	0.00
10.40	0.75	0.00	0.00	51.20	3.44	1.20	0.00
11.20	0.96	0.02	0.01	52.00	3.44	1.20	0.00
12.00	1.65	0.20	**0.11**	52.80	3.44	1.20	0.00
12.80	2.48	0.60	**0.04**	53.60	3.44	1.20	0.00
13.60	2.69	0.72	0.02	54.40	3.44	1.20	0.00
14.40	2.82	0.80	0.02	55.20	3.44	1.20	0.00
15.20	2.92	0.85	0.01	56.00	3.44	1.20	0.00
16.00	2.99	0.90	0.01	56.80	3.44	1.20	0.00
16.80	3.06	0.95	0.01	57.60	3.44	1.20	0.00
17.60	3.12	0.99	0.01	58.40	3.44	1.20	0.00
18.40	3.17	1.02	0.01	59.20	3.44	1.20	0.00
19.20	3.22	1.05	0.01	60.00	3.44	1.20	0.00
20.00	3.26	1.08	0.01	60.80	3.44	1.20	0.00
20.80	3.30	1.10	0.01	61.60	3.44	1.20	0.00
21.60	3.34	1.13	0.01	62.40	3.44	1.20	0.00
22.40	3.38	1.15	0.01	63.20	3.44	1.20	0.00
23.20	3.41	1.18	0.00	64.00	3.44	1.20	0.00
24.00	**3.44**	**1.20**	0.00	64.80	3.44	1.20	0.00
24.80	3.44	1.20	0.00	65.60	3.44	1.20	0.00
25.60	3.44	1.20	0.00	66.40	3.44	1.20	0.00
26.40	3.44	1.20	0.00	67.20	3.44	1.20	0.00
27.20	3.44	1.20	0.00	68.00	3.44	1.20	0.00
28.00	3.44	1.20	0.00	68.80	3.44	1.20	0.00
28.80	3.44	1.20	0.00	69.60	3.44	1.20	0.00
29.60	3.44	1.20	0.00	70.40	3.44	1.20	0.00
30.40	3.44	1.20	0.00	71.20	3.44	1.20	0.00
31.20	3.44	1.20	0.00	72.00	3.44	1.20	0.00
32.00	3.44	1.20	0.00	72.80	3.44	1.20	0.00
32.80	3.44	1.20	0.00	73.60	3.44	1.20	0.00
33.60	3.44	1.20	0.00	74.40	3.44	1.20	0.00
34.40	3.44	1.20	0.00	75.20	3.44	1.20	0.00
35.20	3.44	1.20	0.00	76.00	3.44	1.20	0.00
36.00	3.44	1.20	0.00	76.80	3.44	1.20	0.00
36.80	3.44	1.20	0.00	77.60	3.44	1.20	0.00
37.60	3.44	1.20	0.00	78.40	3.44	1.20	0.00
38.40	3.44	1.20	0.00	79.20	3.44	1.20	0.00
39.20	3.44	1.20	0.00	80.00	3.44	1.20	0.00
40.00	3.44	1.20	0.00				

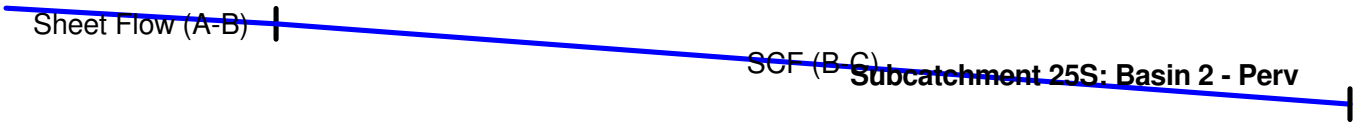
Summary for Subcatchment 25S: Basin 2 - Perv

Runoff = 2.54 cfs @ 12.19 hrs, Volume= 9,502 cf, Depth= 1.39"
Routed to Pond 27P : Basin 2

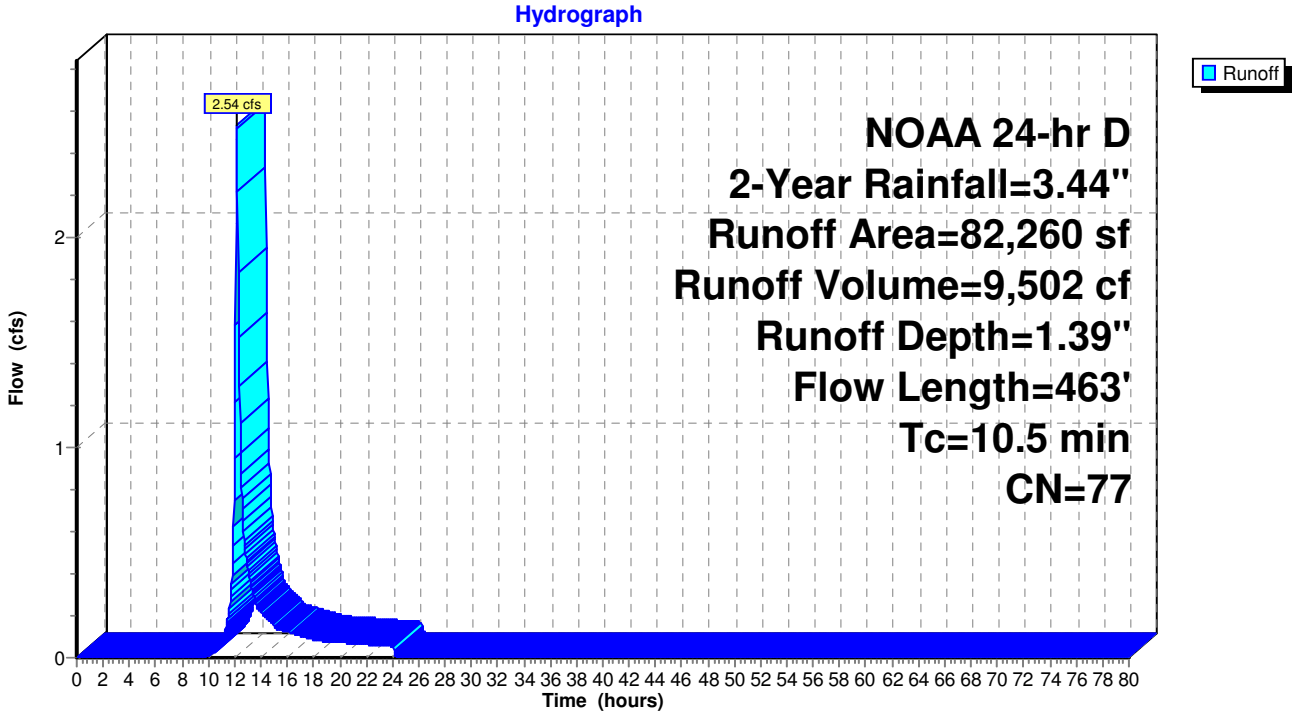
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
47,097	80	>75% Grass cover, Good, HSG D
35,163	74	>75% Grass cover, Good, HSG C
82,260	77	Weighted Average
82,260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	93	0.0500	0.17		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.5	370	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
10.5	463	Total			



Subcatchment 25S: Basin 2 - Perv



Hydrograph for Subcatchment 25S: Basin 2 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	1.39	0.00
0.80	0.03	0.00	0.00	41.60	3.44	1.39	0.00
1.60	0.06	0.00	0.00	42.40	3.44	1.39	0.00
2.40	0.10	0.00	0.00	43.20	3.44	1.39	0.00
3.20	0.14	0.00	0.00	44.00	3.44	1.39	0.00
4.00	0.18	0.00	0.00	44.80	3.44	1.39	0.00
4.80	0.22	0.00	0.00	45.60	3.44	1.39	0.00
5.60	0.27	0.00	0.00	46.40	3.44	1.39	0.00
6.40	0.32	0.00	0.00	47.20	3.44	1.39	0.00
7.20	0.38	0.00	0.00	48.00	3.44	1.39	0.00
8.00	0.45	0.00	0.00	48.80	3.44	1.39	0.00
8.80	0.52	0.00	0.00	49.60	3.44	1.39	0.00
9.60	0.62	0.00	0.00	50.40	3.44	1.39	0.00
10.40	0.75	0.01	0.03	51.20	3.44	1.39	0.00
11.20	0.96	0.04	0.11	52.00	3.44	1.39	0.00
12.00	1.65	0.27	**0.95**	52.80	3.44	1.39	0.00
12.80	2.48	0.73	**0.51**	53.60	3.44	1.39	0.00
13.60	2.69	0.86	0.26	54.40	3.44	1.39	0.00
14.40	2.82	0.95	0.19	55.20	3.44	1.39	0.00
15.20	2.92	1.01	0.14	56.00	3.44	1.39	0.00
16.00	2.99	1.07	0.12	56.80	3.44	1.39	0.00
16.80	3.06	1.11	0.11	57.60	3.44	1.39	0.00
17.60	3.12	1.16	0.09	58.40	3.44	1.39	0.00
18.40	3.17	1.19	0.08	59.20	3.44	1.39	0.00
19.20	3.22	1.22	0.08	60.00	3.44	1.39	0.00
20.00	3.26	1.25	0.07	60.80	3.44	1.39	0.00
20.80	3.30	1.28	0.07	61.60	3.44	1.39	0.00
21.60	3.34	1.31	0.07	62.40	3.44	1.39	0.00
22.40	3.38	1.34	0.06	63.20	3.44	1.39	0.00
23.20	3.41	1.36	0.06	64.00	3.44	1.39	0.00
24.00	**3.44**	**1.39**	0.05	64.80	3.44	1.39	0.00
24.80	3.44	1.39	0.00	65.60	3.44	1.39	0.00
25.60	3.44	1.39	0.00	66.40	3.44	1.39	0.00
26.40	3.44	1.39	0.00	67.20	3.44	1.39	0.00
27.20	3.44	1.39	0.00	68.00	3.44	1.39	0.00
28.00	3.44	1.39	0.00	68.80	3.44	1.39	0.00
28.80	3.44	1.39	0.00	69.60	3.44	1.39	0.00
29.60	3.44	1.39	0.00	70.40	3.44	1.39	0.00
30.40	3.44	1.39	0.00	71.20	3.44	1.39	0.00
31.20	3.44	1.39	0.00	72.00	3.44	1.39	0.00
32.00	3.44	1.39	0.00	72.80	3.44	1.39	0.00
32.80	3.44	1.39	0.00	73.60	3.44	1.39	0.00
33.60	3.44	1.39	0.00	74.40	3.44	1.39	0.00
34.40	3.44	1.39	0.00	75.20	3.44	1.39	0.00
35.20	3.44	1.39	0.00	76.00	3.44	1.39	0.00
36.00	3.44	1.39	0.00	76.80	3.44	1.39	0.00
36.80	3.44	1.39	0.00	77.60	3.44	1.39	0.00
37.60	3.44	1.39	0.00	78.40	3.44	1.39	0.00
38.40	3.44	1.39	0.00	79.20	3.44	1.39	0.00
39.20	3.44	1.39	0.00	80.00	3.44	1.39	0.00
40.00	3.44	1.39	0.00				

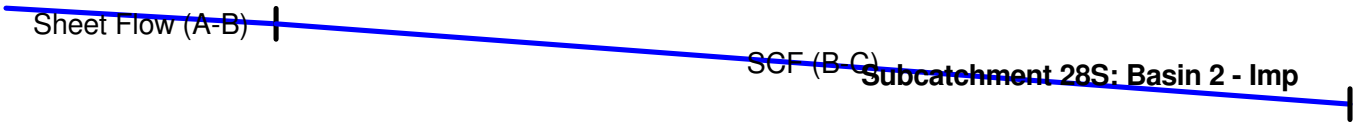
Summary for Subcatchment 28S: Basin 2 - Imp

Runoff = 1.91 cfs @ 12.17 hrs, Volume= 8,063 cf, Depth= 3.21"
Routed to Pond 27P : Basin 2

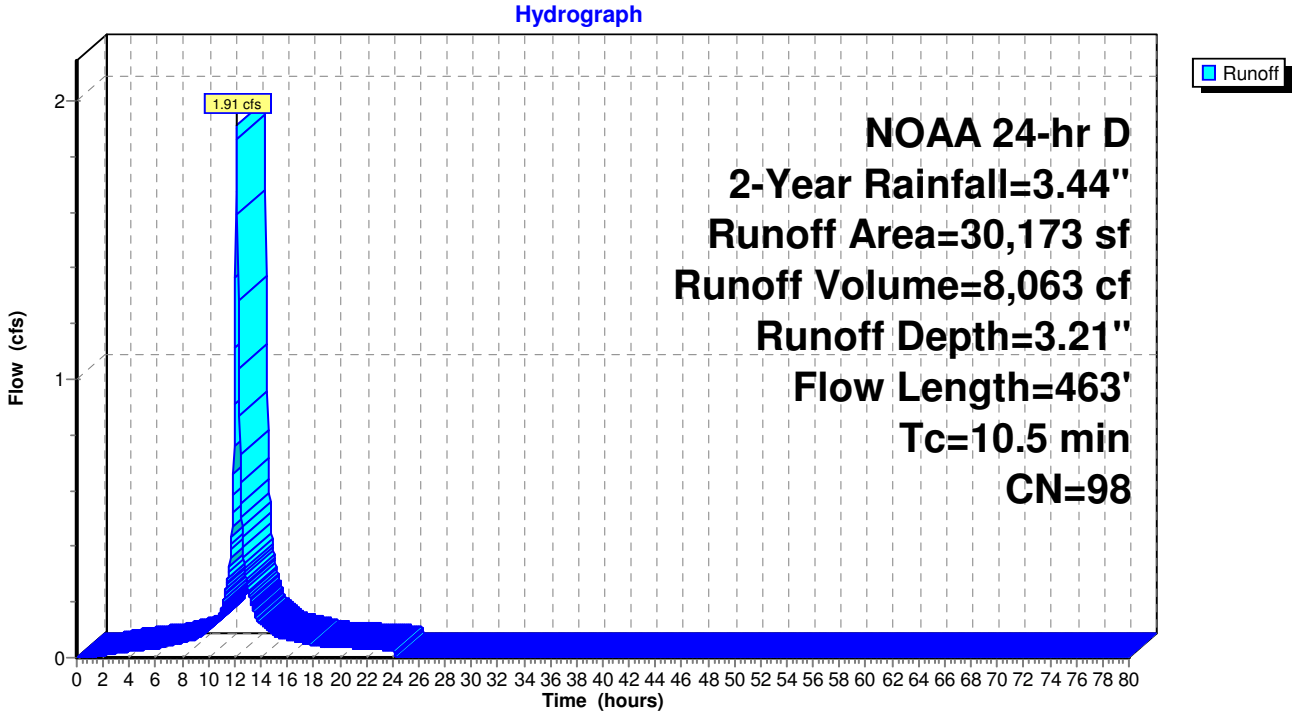
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

	Area (sf)	CN	Description
*	28,866	98	Paved parking, sidewalk, other imp
*	1,307	98	Paved parking, sidewalk other imp
	30,173	98	Weighted Average
	30,173		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	93	0.0500	0.17		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.5	370	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
10.5	463	Total			



Subcatchment 28S: Basin 2 - Imp



Hydrograph for Subcatchment 28S: Basin 2 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	3.21	0.00
0.80	0.03	0.00	0.00	41.60	3.44	3.21	0.00
1.60	0.06	0.00	0.00	42.40	3.44	3.21	0.00
2.40	0.10	0.01	0.01	43.20	3.44	3.21	0.00
3.20	0.14	0.03	0.02	44.00	3.44	3.21	0.00
4.00	0.18	0.06	0.02	44.80	3.44	3.21	0.00
4.80	0.22	0.09	0.03	45.60	3.44	3.21	0.00
5.60	0.27	0.12	0.03	46.40	3.44	3.21	0.00
6.40	0.32	0.16	0.04	47.20	3.44	3.21	0.00
7.20	0.38	0.21	0.05	48.00	3.44	3.21	0.00
8.00	0.45	0.27	0.05	48.80	3.44	3.21	0.00
8.80	0.52	0.34	0.06	49.60	3.44	3.21	0.00
9.60	0.62	0.43	0.09	50.40	3.44	3.21	0.00
10.40	0.75	0.55	0.12	51.20	3.44	3.21	0.00
11.20	0.96	0.75	0.22	52.00	3.44	3.21	0.00
12.00	1.65	1.43	**0.91**	52.80	3.44	3.21	0.00
12.80	2.48	2.25	**0.31**	53.60	3.44	3.21	0.00
13.60	2.69	2.46	0.15	54.40	3.44	3.21	0.00
14.40	2.82	2.59	0.10	55.20	3.44	3.21	0.00
15.20	2.92	2.68	0.07	56.00	3.44	3.21	0.00
16.00	2.99	2.76	0.07	56.80	3.44	3.21	0.00
16.80	3.06	2.83	0.06	57.60	3.44	3.21	0.00
17.60	3.12	2.89	0.05	58.40	3.44	3.21	0.00
18.40	3.17	2.94	0.04	59.20	3.44	3.21	0.00
19.20	3.22	2.98	0.04	60.00	3.44	3.21	0.00
20.00	3.26	3.03	0.04	60.80	3.44	3.21	0.00
20.80	3.30	3.07	0.04	61.60	3.44	3.21	0.00
21.60	3.34	3.11	0.03	62.40	3.44	3.21	0.00
22.40	3.38	3.14	0.03	63.20	3.44	3.21	0.00
23.20	3.41	3.18	0.03	64.00	3.44	3.21	0.00
24.00	**3.44**	**3.21**	0.03	64.80	3.44	3.21	0.00
24.80	3.44	3.21	0.00	65.60	3.44	3.21	0.00
25.60	3.44	3.21	0.00	66.40	3.44	3.21	0.00
26.40	3.44	3.21	0.00	67.20	3.44	3.21	0.00
27.20	3.44	3.21	0.00	68.00	3.44	3.21	0.00
28.00	3.44	3.21	0.00	68.80	3.44	3.21	0.00
28.80	3.44	3.21	0.00	69.60	3.44	3.21	0.00
29.60	3.44	3.21	0.00	70.40	3.44	3.21	0.00
30.40	3.44	3.21	0.00	71.20	3.44	3.21	0.00
31.20	3.44	3.21	0.00	72.00	3.44	3.21	0.00
32.00	3.44	3.21	0.00	72.80	3.44	3.21	0.00
32.80	3.44	3.21	0.00	73.60	3.44	3.21	0.00
33.60	3.44	3.21	0.00	74.40	3.44	3.21	0.00
34.40	3.44	3.21	0.00	75.20	3.44	3.21	0.00
35.20	3.44	3.21	0.00	76.00	3.44	3.21	0.00
36.00	3.44	3.21	0.00	76.80	3.44	3.21	0.00
36.80	3.44	3.21	0.00	77.60	3.44	3.21	0.00
37.60	3.44	3.21	0.00	78.40	3.44	3.21	0.00
38.40	3.44	3.21	0.00	79.20	3.44	3.21	0.00
39.20	3.44	3.21	0.00	80.00	3.44	3.21	0.00
40.00	3.44	3.21	0.00				

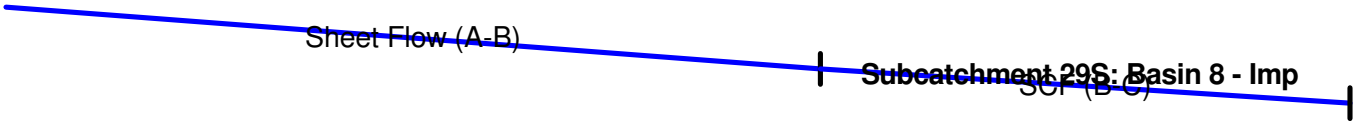
Summary for Subcatchment 29S: Basin 8 - Imp

Runoff = 2.60 cfs @ 12.15 hrs, Volume= 10,223 cf, Depth= 3.21"
Routed to Pond 48P : Basin 8

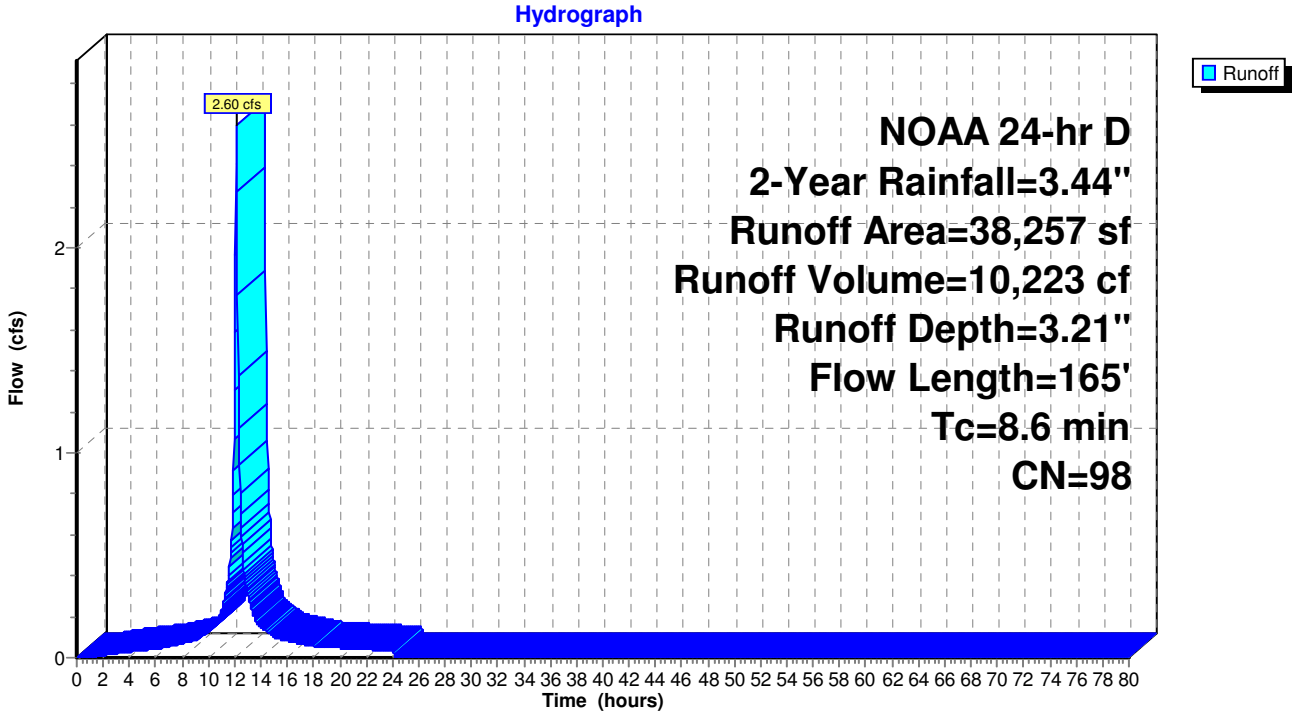
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

	Area (sf)	CN	Description
*	8,924	98	other impervious
	11,475	98	Roofs, HSG C
*	17,858	98	pavement surface
	38,257	98	Weighted Average
	38,257		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0700	0.20		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	65	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
8.6	165	Total			



Subcatchment 29S: Basin 8 - Imp



Hydrograph for Subcatchment 29S: Basin 8 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	3.21	0.00
0.80	0.03	0.00	0.00	41.60	3.44	3.21	0.00
1.60	0.06	0.00	0.01	42.40	3.44	3.21	0.00
2.40	0.10	0.01	0.02	43.20	3.44	3.21	0.00
3.20	0.14	0.03	0.02	44.00	3.44	3.21	0.00
4.00	0.18	0.06	0.03	44.80	3.44	3.21	0.00
4.80	0.22	0.09	0.03	45.60	3.44	3.21	0.00
5.60	0.27	0.12	0.04	46.40	3.44	3.21	0.00
6.40	0.32	0.16	0.05	47.20	3.44	3.21	0.00
7.20	0.38	0.21	0.06	48.00	3.44	3.21	0.00
8.00	0.45	0.27	0.07	48.80	3.44	3.21	0.00
8.80	0.52	0.34	0.08	49.60	3.44	3.21	0.00
9.60	0.62	0.43	0.11	50.40	3.44	3.21	0.00
10.40	0.75	0.55	0.15	51.20	3.44	3.21	0.00
11.20	0.96	0.75	0.28	52.00	3.44	3.21	0.00
12.00	1.65	1.43	**1.31**	52.80	3.44	3.21	0.00
12.80	2.48	2.25	**0.37**	53.60	3.44	3.21	0.00
13.60	2.69	2.46	0.18	54.40	3.44	3.21	0.00
14.40	2.82	2.59	0.13	55.20	3.44	3.21	0.00
15.20	2.92	2.68	0.09	56.00	3.44	3.21	0.00
16.00	2.99	2.76	0.08	56.80	3.44	3.21	0.00
16.80	3.06	2.83	0.07	57.60	3.44	3.21	0.00
17.60	3.12	2.89	0.06	58.40	3.44	3.21	0.00
18.40	3.17	2.94	0.05	59.20	3.44	3.21	0.00
19.20	3.22	2.98	0.05	60.00	3.44	3.21	0.00
20.00	3.26	3.03	0.05	60.80	3.44	3.21	0.00
20.80	3.30	3.07	0.04	61.60	3.44	3.21	0.00
21.60	3.34	3.11	0.04	62.40	3.44	3.21	0.00
22.40	3.38	3.14	0.04	63.20	3.44	3.21	0.00
23.20	3.41	3.18	0.04	64.00	3.44	3.21	0.00
24.00	**3.44**	**3.21**	0.03	64.80	3.44	3.21	0.00
24.80	3.44	3.21	0.00	65.60	3.44	3.21	0.00
25.60	3.44	3.21	0.00	66.40	3.44	3.21	0.00
26.40	3.44	3.21	0.00	67.20	3.44	3.21	0.00
27.20	3.44	3.21	0.00	68.00	3.44	3.21	0.00
28.00	3.44	3.21	0.00	68.80	3.44	3.21	0.00
28.80	3.44	3.21	0.00	69.60	3.44	3.21	0.00
29.60	3.44	3.21	0.00	70.40	3.44	3.21	0.00
30.40	3.44	3.21	0.00	71.20	3.44	3.21	0.00
31.20	3.44	3.21	0.00	72.00	3.44	3.21	0.00
32.00	3.44	3.21	0.00	72.80	3.44	3.21	0.00
32.80	3.44	3.21	0.00	73.60	3.44	3.21	0.00
33.60	3.44	3.21	0.00	74.40	3.44	3.21	0.00
34.40	3.44	3.21	0.00	75.20	3.44	3.21	0.00
35.20	3.44	3.21	0.00	76.00	3.44	3.21	0.00
36.00	3.44	3.21	0.00	76.80	3.44	3.21	0.00
36.80	3.44	3.21	0.00	77.60	3.44	3.21	0.00
37.60	3.44	3.21	0.00	78.40	3.44	3.21	0.00
38.40	3.44	3.21	0.00	79.20	3.44	3.21	0.00
39.20	3.44	3.21	0.00	80.00	3.44	3.21	0.00
40.00	3.44	3.21	0.00				

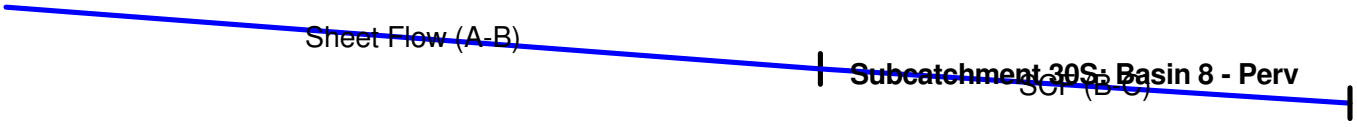
Summary for Subcatchment 30S: Basin 8 - Perv

Runoff = 0.76 cfs @ 12.16 hrs, Volume= 2,632 cf, Depth= 1.39"
Routed to Pond 48P : Basin 8

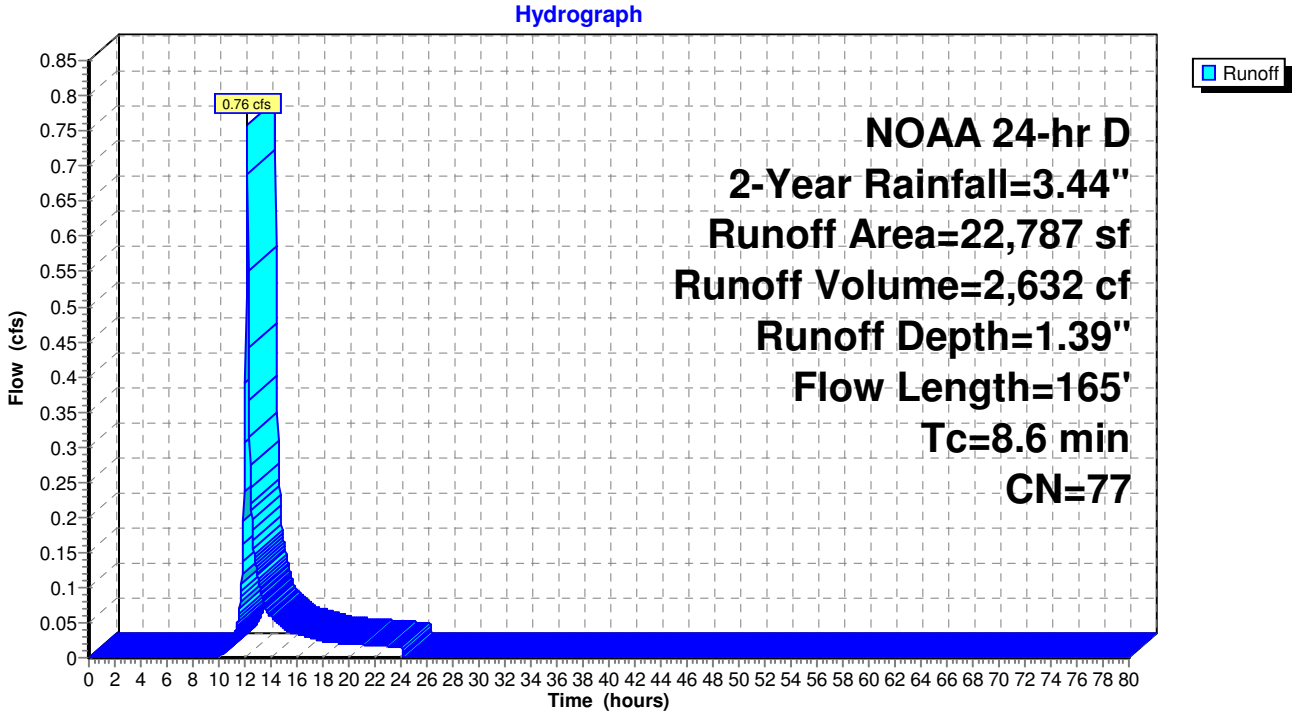
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
11,542	80	>75% Grass cover, Good, HSG D
11,245	74	>75% Grass cover, Good, HSG C
22,787	77	Weighted Average
22,787		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0700	0.20		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	65	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
8.6	165	Total			



Subcatchment 30S: Basin 8 - Perv



Hydrograph for Subcatchment 30S: Basin 8 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	1.39	0.00
0.80	0.03	0.00	0.00	41.60	3.44	1.39	0.00
1.60	0.06	0.00	0.00	42.40	3.44	1.39	0.00
2.40	0.10	0.00	0.00	43.20	3.44	1.39	0.00
3.20	0.14	0.00	0.00	44.00	3.44	1.39	0.00
4.00	0.18	0.00	0.00	44.80	3.44	1.39	0.00
4.80	0.22	0.00	0.00	45.60	3.44	1.39	0.00
5.60	0.27	0.00	0.00	46.40	3.44	1.39	0.00
6.40	0.32	0.00	0.00	47.20	3.44	1.39	0.00
7.20	0.38	0.00	0.00	48.00	3.44	1.39	0.00
8.00	0.45	0.00	0.00	48.80	3.44	1.39	0.00
8.80	0.52	0.00	0.00	49.60	3.44	1.39	0.00
9.60	0.62	0.00	0.00	50.40	3.44	1.39	0.00
10.40	0.75	0.01	0.01	51.20	3.44	1.39	0.00
11.20	0.96	0.04	0.03	52.00	3.44	1.39	0.00
12.00	1.65	0.27	**0.31**	52.80	3.44	1.39	0.00
12.80	2.48	0.73	**0.14**	53.60	3.44	1.39	0.00
13.60	2.69	0.86	0.07	54.40	3.44	1.39	0.00
14.40	2.82	0.95	0.05	55.20	3.44	1.39	0.00
15.20	2.92	1.01	0.04	56.00	3.44	1.39	0.00
16.00	2.99	1.07	0.03	56.80	3.44	1.39	0.00
16.80	3.06	1.11	0.03	57.60	3.44	1.39	0.00
17.60	3.12	1.16	0.03	58.40	3.44	1.39	0.00
18.40	3.17	1.19	0.02	59.20	3.44	1.39	0.00
19.20	3.22	1.22	0.02	60.00	3.44	1.39	0.00
20.00	3.26	1.25	0.02	60.80	3.44	1.39	0.00
20.80	3.30	1.28	0.02	61.60	3.44	1.39	0.00
21.60	3.34	1.31	0.02	62.40	3.44	1.39	0.00
22.40	3.38	1.34	0.02	63.20	3.44	1.39	0.00
23.20	3.41	1.36	0.02	64.00	3.44	1.39	0.00
24.00	**3.44**	**1.39**	0.01	64.80	3.44	1.39	0.00
24.80	3.44	1.39	0.00	65.60	3.44	1.39	0.00
25.60	3.44	1.39	0.00	66.40	3.44	1.39	0.00
26.40	3.44	1.39	0.00	67.20	3.44	1.39	0.00
27.20	3.44	1.39	0.00	68.00	3.44	1.39	0.00
28.00	3.44	1.39	0.00	68.80	3.44	1.39	0.00
28.80	3.44	1.39	0.00	69.60	3.44	1.39	0.00
29.60	3.44	1.39	0.00	70.40	3.44	1.39	0.00
30.40	3.44	1.39	0.00	71.20	3.44	1.39	0.00
31.20	3.44	1.39	0.00	72.00	3.44	1.39	0.00
32.00	3.44	1.39	0.00	72.80	3.44	1.39	0.00
32.80	3.44	1.39	0.00	73.60	3.44	1.39	0.00
33.60	3.44	1.39	0.00	74.40	3.44	1.39	0.00
34.40	3.44	1.39	0.00	75.20	3.44	1.39	0.00
35.20	3.44	1.39	0.00	76.00	3.44	1.39	0.00
36.00	3.44	1.39	0.00	76.80	3.44	1.39	0.00
36.80	3.44	1.39	0.00	77.60	3.44	1.39	0.00
37.60	3.44	1.39	0.00	78.40	3.44	1.39	0.00
38.40	3.44	1.39	0.00	79.20	3.44	1.39	0.00
39.20	3.44	1.39	0.00	80.00	3.44	1.39	0.00
40.00	3.44	1.39	0.00				

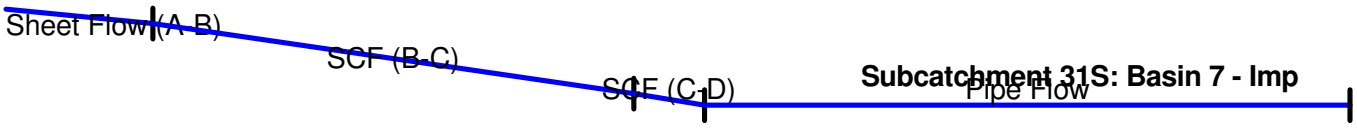
Summary for Subcatchment 31S: Basin 7 - Imp

Runoff = 2.74 cfs @ 12.20 hrs, Volume= 12,233 cf, Depth= 3.21"
Routed to Pond 49P : Basin 7

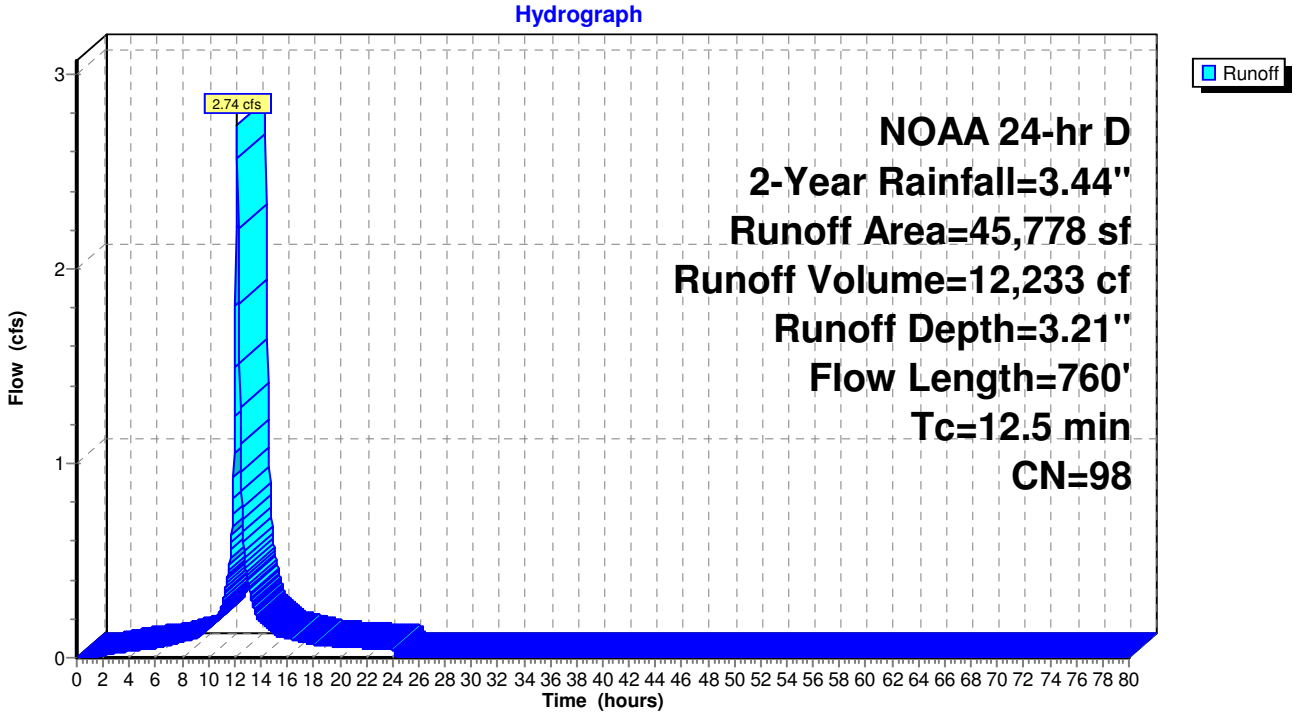
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

	Area (sf)	CN	Description
*	6,730	98	other impervious
*	39,048	98	vehicle pavement surface
	45,778	98	Weighted Average
	45,778		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.1	272	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.1	40	0.0670	5.25		**Shallow Concentrated Flow, SCF (C-D)** Paved Kv= 20.3 fps
2.4	365		2.50		**Direct Entry, Pipe Flow**
12.5	760	Total			



Subcatchment 31S: Basin 7 - Imp



Hydrograph for Subcatchment 31S: Basin 7 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	3.21	0.00
0.80	0.03	0.00	0.00	41.60	3.44	3.21	0.00
1.60	0.06	0.00	0.01	42.40	3.44	3.21	0.00
2.40	0.10	0.01	0.02	43.20	3.44	3.21	0.00
3.20	0.14	0.03	0.03	44.00	3.44	3.21	0.00
4.00	0.18	0.06	0.03	44.80	3.44	3.21	0.00
4.80	0.22	0.09	0.04	45.60	3.44	3.21	0.00
5.60	0.27	0.12	0.05	46.40	3.44	3.21	0.00
6.40	0.32	0.16	0.06	47.20	3.44	3.21	0.00
7.20	0.38	0.21	0.07	48.00	3.44	3.21	0.00
8.00	0.45	0.27	0.08	48.80	3.44	3.21	0.00
8.80	0.52	0.34	0.10	49.60	3.44	3.21	0.00
9.60	0.62	0.43	0.13	50.40	3.44	3.21	0.00
10.40	0.75	0.55	0.18	51.20	3.44	3.21	0.00
11.20	0.96	0.75	0.32	52.00	3.44	3.21	0.00
12.00	1.65	1.43	**1.24**	52.80	3.44	3.21	0.00
12.80	2.48	2.25	**0.48**	53.60	3.44	3.21	0.00
13.60	2.69	2.46	0.23	54.40	3.44	3.21	0.00
14.40	2.82	2.59	0.16	55.20	3.44	3.21	0.00
15.20	2.92	2.68	0.12	56.00	3.44	3.21	0.00
16.00	2.99	2.76	0.10	56.80	3.44	3.21	0.00
16.80	3.06	2.83	0.09	57.60	3.44	3.21	0.00
17.60	3.12	2.89	0.07	58.40	3.44	3.21	0.00
18.40	3.17	2.94	0.06	59.20	3.44	3.21	0.00
19.20	3.22	2.98	0.06	60.00	3.44	3.21	0.00
20.00	3.26	3.03	0.06	60.80	3.44	3.21	0.00
20.80	3.30	3.07	0.05	61.60	3.44	3.21	0.00
21.60	3.34	3.11	0.05	62.40	3.44	3.21	0.00
22.40	3.38	3.14	0.05	63.20	3.44	3.21	0.00
23.20	3.41	3.18	0.04	64.00	3.44	3.21	0.00
24.00	**3.44**	**3.21**	0.04	64.80	3.44	3.21	0.00
24.80	3.44	3.21	0.00	65.60	3.44	3.21	0.00
25.60	3.44	3.21	0.00	66.40	3.44	3.21	0.00
26.40	3.44	3.21	0.00	67.20	3.44	3.21	0.00
27.20	3.44	3.21	0.00	68.00	3.44	3.21	0.00
28.00	3.44	3.21	0.00	68.80	3.44	3.21	0.00
28.80	3.44	3.21	0.00	69.60	3.44	3.21	0.00
29.60	3.44	3.21	0.00	70.40	3.44	3.21	0.00
30.40	3.44	3.21	0.00	71.20	3.44	3.21	0.00
31.20	3.44	3.21	0.00	72.00	3.44	3.21	0.00
32.00	3.44	3.21	0.00	72.80	3.44	3.21	0.00
32.80	3.44	3.21	0.00	73.60	3.44	3.21	0.00
33.60	3.44	3.21	0.00	74.40	3.44	3.21	0.00
34.40	3.44	3.21	0.00	75.20	3.44	3.21	0.00
35.20	3.44	3.21	0.00	76.00	3.44	3.21	0.00
36.00	3.44	3.21	0.00	76.80	3.44	3.21	0.00
36.80	3.44	3.21	0.00	77.60	3.44	3.21	0.00
37.60	3.44	3.21	0.00	78.40	3.44	3.21	0.00
38.40	3.44	3.21	0.00	79.20	3.44	3.21	0.00
39.20	3.44	3.21	0.00	80.00	3.44	3.21	0.00
40.00	3.44	3.21	0.00				

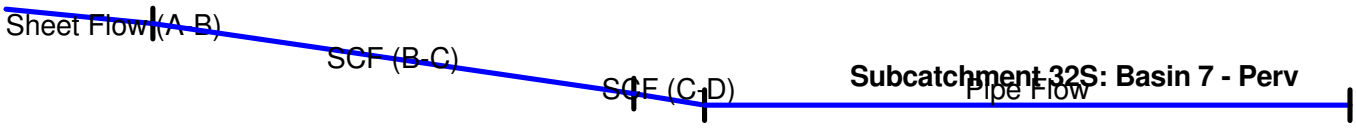
Summary for Subcatchment 32S: Basin 7 - Perv

Runoff = 1.70 cfs @ 12.21 hrs, Volume= 6,778 cf, Depth= 1.39"
Routed to Pond 49P : Basin 7

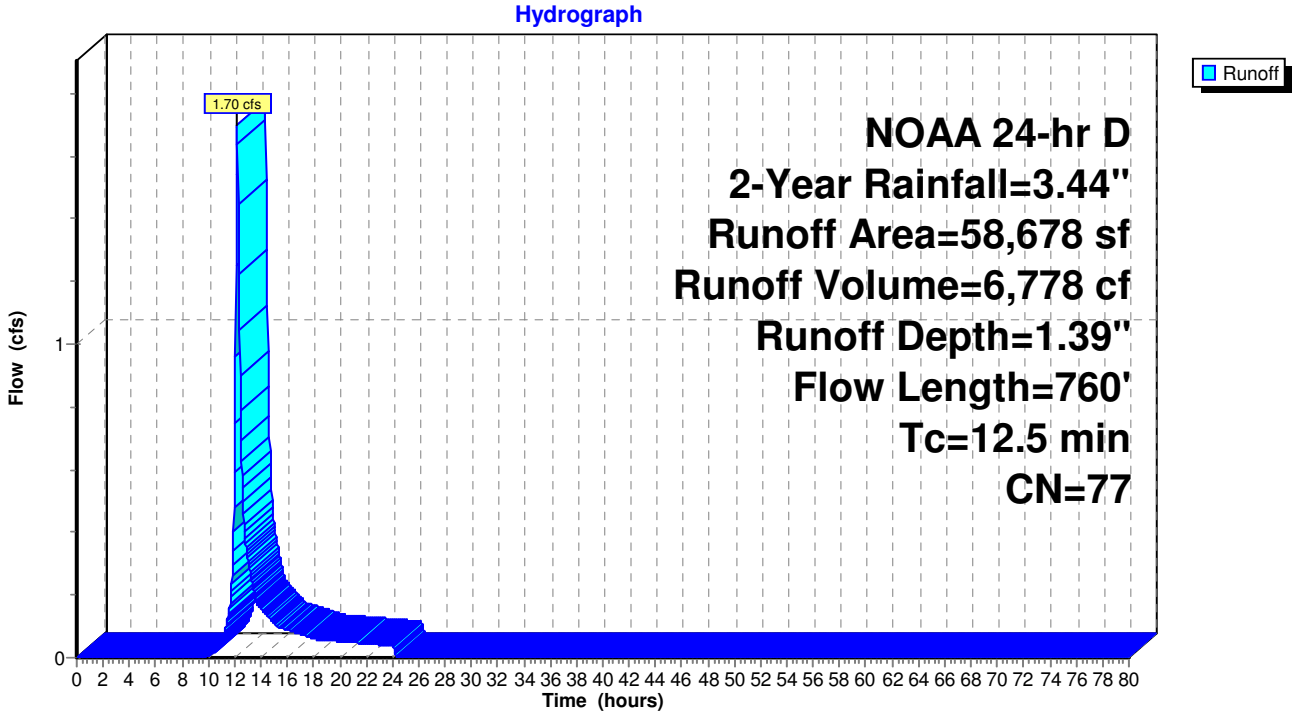
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
25,517	80	>75% Grass cover, Good, HSG D
33,161	74	>75% Grass cover, Good, HSG C
58,678	77	Weighted Average
58,678		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.1	272	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.1	40	0.0670	5.25		**Shallow Concentrated Flow, SCF (C-D)** Paved Kv= 20.3 fps
2.4	365		2.50		**Direct Entry, Pipe Flow**
12.5	760	Total			



Subcatchment 32S: Basin 7 - Perv



Hydrograph for Subcatchment 32S: Basin 7 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	1.39	0.00
0.80	0.03	0.00	0.00	41.60	3.44	1.39	0.00
1.60	0.06	0.00	0.00	42.40	3.44	1.39	0.00
2.40	0.10	0.00	0.00	43.20	3.44	1.39	0.00
3.20	0.14	0.00	0.00	44.00	3.44	1.39	0.00
4.00	0.18	0.00	0.00	44.80	3.44	1.39	0.00
4.80	0.22	0.00	0.00	45.60	3.44	1.39	0.00
5.60	0.27	0.00	0.00	46.40	3.44	1.39	0.00
6.40	0.32	0.00	0.00	47.20	3.44	1.39	0.00
7.20	0.38	0.00	0.00	48.00	3.44	1.39	0.00
8.00	0.45	0.00	0.00	48.80	3.44	1.39	0.00
8.80	0.52	0.00	0.00	49.60	3.44	1.39	0.00
9.60	0.62	0.00	0.00	50.40	3.44	1.39	0.00
10.40	0.75	0.01	0.02	51.20	3.44	1.39	0.00
11.20	0.96	0.04	0.07	52.00	3.44	1.39	0.00
12.00	1.65	0.27	**0.59**	52.80	3.44	1.39	0.00
12.80	2.48	0.73	**0.38**	53.60	3.44	1.39	0.00
13.60	2.69	0.86	0.19	54.40	3.44	1.39	0.00
14.40	2.82	0.95	0.14	55.20	3.44	1.39	0.00
15.20	2.92	1.01	0.10	56.00	3.44	1.39	0.00
16.00	2.99	1.07	0.09	56.80	3.44	1.39	0.00
16.80	3.06	1.11	0.08	57.60	3.44	1.39	0.00
17.60	3.12	1.16	0.07	58.40	3.44	1.39	0.00
18.40	3.17	1.19	0.06	59.20	3.44	1.39	0.00
19.20	3.22	1.22	0.05	60.00	3.44	1.39	0.00
20.00	3.26	1.25	0.05	60.80	3.44	1.39	0.00
20.80	3.30	1.28	0.05	61.60	3.44	1.39	0.00
21.60	3.34	1.31	0.05	62.40	3.44	1.39	0.00
22.40	3.38	1.34	0.04	63.20	3.44	1.39	0.00
23.20	3.41	1.36	0.04	64.00	3.44	1.39	0.00
24.00	**3.44**	**1.39**	0.04	64.80	3.44	1.39	0.00
24.80	3.44	1.39	0.00	65.60	3.44	1.39	0.00
25.60	3.44	1.39	0.00	66.40	3.44	1.39	0.00
26.40	3.44	1.39	0.00	67.20	3.44	1.39	0.00
27.20	3.44	1.39	0.00	68.00	3.44	1.39	0.00
28.00	3.44	1.39	0.00	68.80	3.44	1.39	0.00
28.80	3.44	1.39	0.00	69.60	3.44	1.39	0.00
29.60	3.44	1.39	0.00	70.40	3.44	1.39	0.00
30.40	3.44	1.39	0.00	71.20	3.44	1.39	0.00
31.20	3.44	1.39	0.00	72.00	3.44	1.39	0.00
32.00	3.44	1.39	0.00	72.80	3.44	1.39	0.00
32.80	3.44	1.39	0.00	73.60	3.44	1.39	0.00
33.60	3.44	1.39	0.00	74.40	3.44	1.39	0.00
34.40	3.44	1.39	0.00	75.20	3.44	1.39	0.00
35.20	3.44	1.39	0.00	76.00	3.44	1.39	0.00
36.00	3.44	1.39	0.00	76.80	3.44	1.39	0.00
36.80	3.44	1.39	0.00	77.60	3.44	1.39	0.00
37.60	3.44	1.39	0.00	78.40	3.44	1.39	0.00
38.40	3.44	1.39	0.00	79.20	3.44	1.39	0.00
39.20	3.44	1.39	0.00	80.00	3.44	1.39	0.00
40.00	3.44	1.39	0.00				

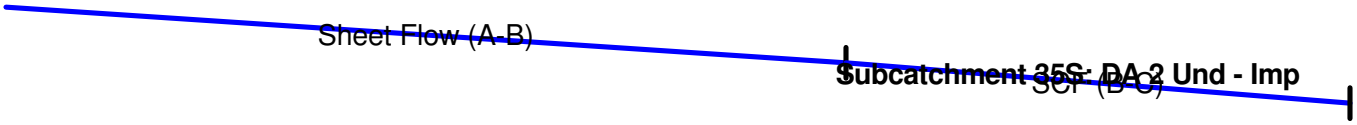
Summary for Subcatchment 35S: DA 2 Und - Imp

Runoff = 3.41 cfs @ 12.17 hrs, Volume= 14,033 cf, Depth= 3.21"
Routed to Link 34L : DA 2 Undetained

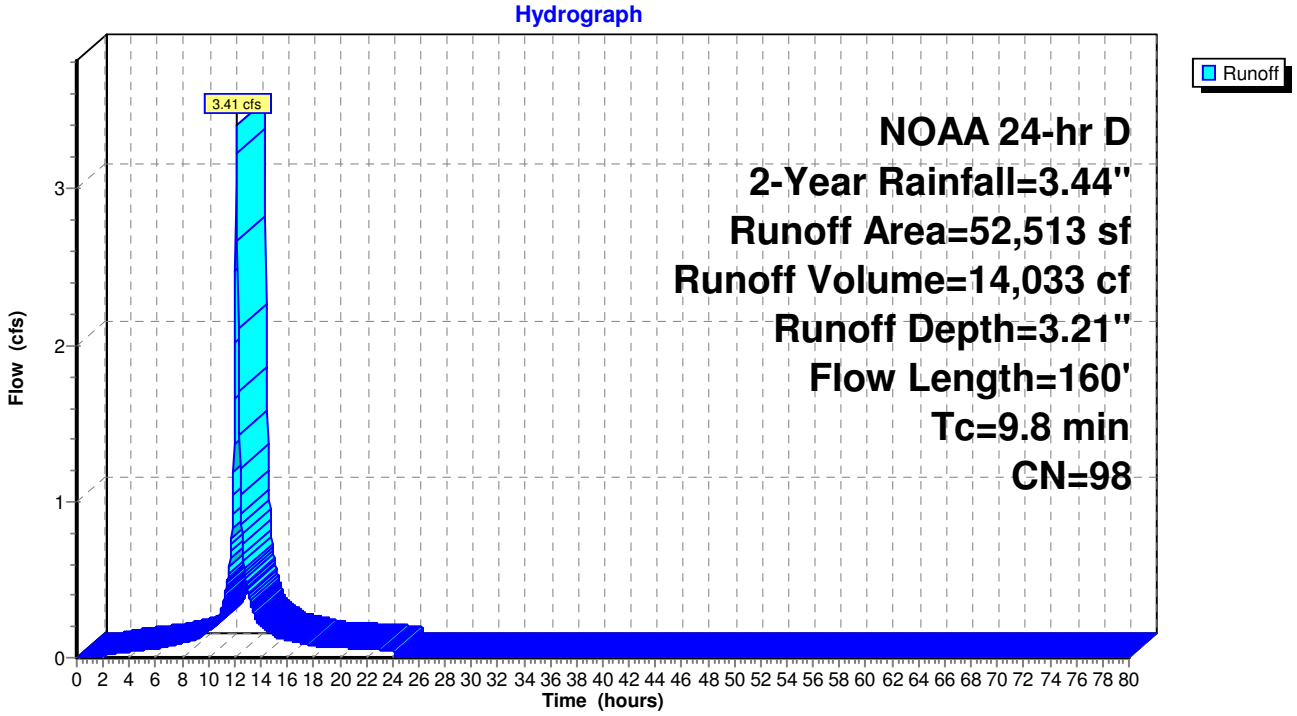
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
18,404	98	Paved parking, HSG C
33,009	98	Paved parking, HSG D
1,100	98	Roofs, HSG D
52,513	98	Weighted Average
52,513		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0500	0.18		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	60	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	160	Total			



Subcatchment 35S: DA 2 Und - Imp



Hydrograph for Subcatchment 35S: DA 2 Und - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	3.21	0.00
0.80	0.03	0.00	0.00	41.60	3.44	3.21	0.00
1.60	0.06	0.00	0.01	42.40	3.44	3.21	0.00
2.40	0.10	0.01	0.02	43.20	3.44	3.21	0.00
3.20	0.14	0.03	0.03	44.00	3.44	3.21	0.00
4.00	0.18	0.06	0.04	44.80	3.44	3.21	0.00
4.80	0.22	0.09	0.05	45.60	3.44	3.21	0.00
5.60	0.27	0.12	0.05	46.40	3.44	3.21	0.00
6.40	0.32	0.16	0.06	47.20	3.44	3.21	0.00
7.20	0.38	0.21	0.08	48.00	3.44	3.21	0.00
8.00	0.45	0.27	0.10	48.80	3.44	3.21	0.00
8.80	0.52	0.34	0.11	49.60	3.44	3.21	0.00
9.60	0.62	0.43	0.15	50.40	3.44	3.21	0.00
10.40	0.75	0.55	0.20	51.20	3.44	3.21	0.00
11.20	0.96	0.75	0.38	52.00	3.44	3.21	0.00
12.00	1.65	1.43	**1.66**	52.80	3.44	3.21	0.00
12.80	2.48	2.25	**0.52**	53.60	3.44	3.21	0.00
13.60	2.69	2.46	0.25	54.40	3.44	3.21	0.00
14.40	2.82	2.59	0.18	55.20	3.44	3.21	0.00
15.20	2.92	2.68	0.13	56.00	3.44	3.21	0.00
16.00	2.99	2.76	0.11	56.80	3.44	3.21	0.00
16.80	3.06	2.83	0.10	57.60	3.44	3.21	0.00
17.60	3.12	2.89	0.08	58.40	3.44	3.21	0.00
18.40	3.17	2.94	0.07	59.20	3.44	3.21	0.00
19.20	3.22	2.98	0.07	60.00	3.44	3.21	0.00
20.00	3.26	3.03	0.06	60.80	3.44	3.21	0.00
20.80	3.30	3.07	0.06	61.60	3.44	3.21	0.00
21.60	3.34	3.11	0.06	62.40	3.44	3.21	0.00
22.40	3.38	3.14	0.05	63.20	3.44	3.21	0.00
23.20	3.41	3.18	0.05	64.00	3.44	3.21	0.00
24.00	**3.44**	**3.21**	0.05	64.80	3.44	3.21	0.00
24.80	3.44	3.21	0.00	65.60	3.44	3.21	0.00
25.60	3.44	3.21	0.00	66.40	3.44	3.21	0.00
26.40	3.44	3.21	0.00	67.20	3.44	3.21	0.00
27.20	3.44	3.21	0.00	68.00	3.44	3.21	0.00
28.00	3.44	3.21	0.00	68.80	3.44	3.21	0.00
28.80	3.44	3.21	0.00	69.60	3.44	3.21	0.00
29.60	3.44	3.21	0.00	70.40	3.44	3.21	0.00
30.40	3.44	3.21	0.00	71.20	3.44	3.21	0.00
31.20	3.44	3.21	0.00	72.00	3.44	3.21	0.00
32.00	3.44	3.21	0.00	72.80	3.44	3.21	0.00
32.80	3.44	3.21	0.00	73.60	3.44	3.21	0.00
33.60	3.44	3.21	0.00	74.40	3.44	3.21	0.00
34.40	3.44	3.21	0.00	75.20	3.44	3.21	0.00
35.20	3.44	3.21	0.00	76.00	3.44	3.21	0.00
36.00	3.44	3.21	0.00	76.80	3.44	3.21	0.00
36.80	3.44	3.21	0.00	77.60	3.44	3.21	0.00
37.60	3.44	3.21	0.00	78.40	3.44	3.21	0.00
38.40	3.44	3.21	0.00	79.20	3.44	3.21	0.00
39.20	3.44	3.21	0.00	80.00	3.44	3.21	0.00
40.00	3.44	3.21	0.00				

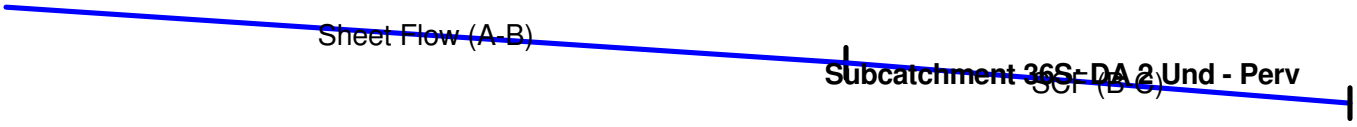
Summary for Subcatchment 36S: DA 2 Und - Perv

Runoff = 3.80 cfs @ 12.18 hrs, Volume= 13,855 cf, Depth= 1.39"
Routed to Link 34L : DA 2 Undetained

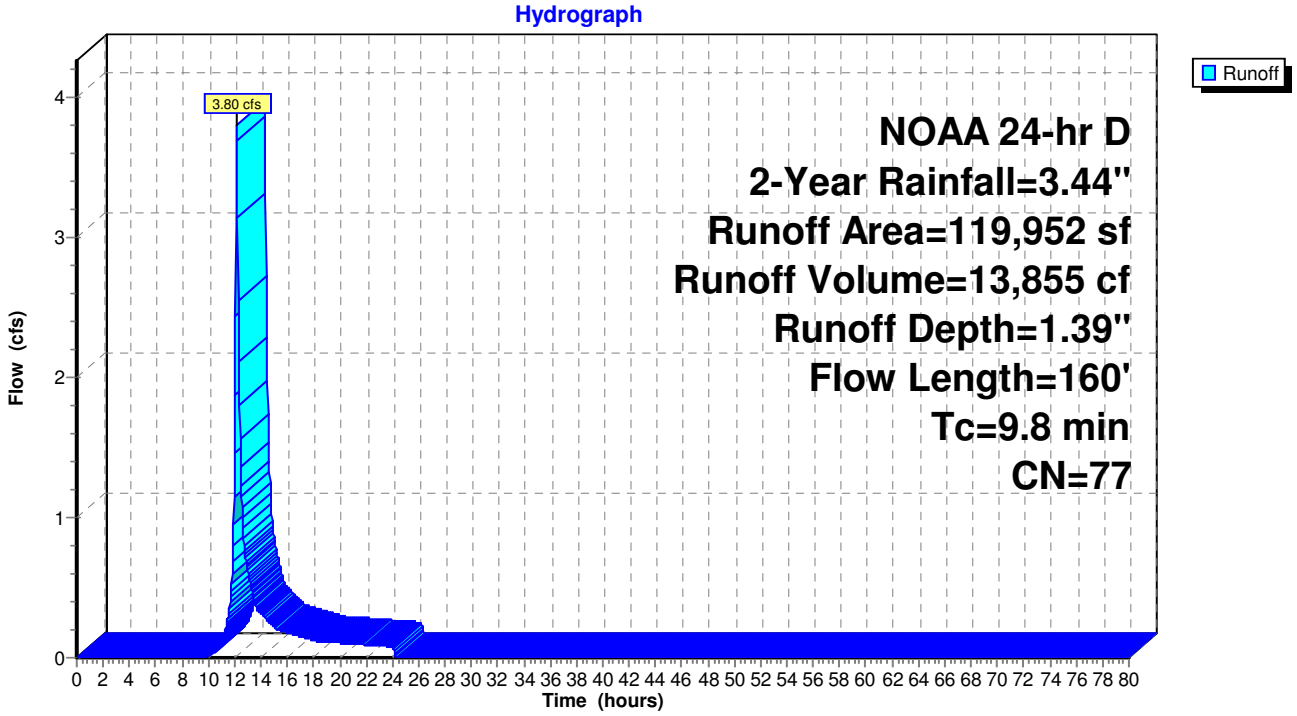
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
52,227	80	>75% Grass cover, Good, HSG D
67,725	74	>75% Grass cover, Good, HSG C
119,952	77	Weighted Average
119,952		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0500	0.18		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	60	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	160	Total			



Subcatchment 36S: DA 2 Und - Perv



Hydrograph for Subcatchment 36S: DA 2 Und - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	1.39	0.00
0.80	0.03	0.00	0.00	41.60	3.44	1.39	0.00
1.60	0.06	0.00	0.00	42.40	3.44	1.39	0.00
2.40	0.10	0.00	0.00	43.20	3.44	1.39	0.00
3.20	0.14	0.00	0.00	44.00	3.44	1.39	0.00
4.00	0.18	0.00	0.00	44.80	3.44	1.39	0.00
4.80	0.22	0.00	0.00	45.60	3.44	1.39	0.00
5.60	0.27	0.00	0.00	46.40	3.44	1.39	0.00
6.40	0.32	0.00	0.00	47.20	3.44	1.39	0.00
7.20	0.38	0.00	0.00	48.00	3.44	1.39	0.00
8.00	0.45	0.00	0.00	48.80	3.44	1.39	0.00
8.80	0.52	0.00	0.00	49.60	3.44	1.39	0.00
9.60	0.62	0.00	0.00	50.40	3.44	1.39	0.00
10.40	0.75	0.01	0.04	51.20	3.44	1.39	0.00
11.20	0.96	0.04	0.16	52.00	3.44	1.39	0.00
12.00	1.65	0.27	**1.46**	52.80	3.44	1.39	0.00
12.80	2.48	0.73	**0.74**	53.60	3.44	1.39	0.00
13.60	2.69	0.86	0.38	54.40	3.44	1.39	0.00
14.40	2.82	0.95	0.28	55.20	3.44	1.39	0.00
15.20	2.92	1.01	0.20	56.00	3.44	1.39	0.00
16.00	2.99	1.07	0.18	56.80	3.44	1.39	0.00
16.80	3.06	1.11	0.16	57.60	3.44	1.39	0.00
17.60	3.12	1.16	0.14	58.40	3.44	1.39	0.00
18.40	3.17	1.19	0.12	59.20	3.44	1.39	0.00
19.20	3.22	1.22	0.11	60.00	3.44	1.39	0.00
20.00	3.26	1.25	0.11	60.80	3.44	1.39	0.00
20.80	3.30	1.28	0.10	61.60	3.44	1.39	0.00
21.60	3.34	1.31	0.10	62.40	3.44	1.39	0.00
22.40	3.38	1.34	0.09	63.20	3.44	1.39	0.00
23.20	3.41	1.36	0.08	64.00	3.44	1.39	0.00
24.00	**3.44**	**1.39**	0.08	64.80	3.44	1.39	0.00
24.80	3.44	1.39	0.00	65.60	3.44	1.39	0.00
25.60	3.44	1.39	0.00	66.40	3.44	1.39	0.00
26.40	3.44	1.39	0.00	67.20	3.44	1.39	0.00
27.20	3.44	1.39	0.00	68.00	3.44	1.39	0.00
28.00	3.44	1.39	0.00	68.80	3.44	1.39	0.00
28.80	3.44	1.39	0.00	69.60	3.44	1.39	0.00
29.60	3.44	1.39	0.00	70.40	3.44	1.39	0.00
30.40	3.44	1.39	0.00	71.20	3.44	1.39	0.00
31.20	3.44	1.39	0.00	72.00	3.44	1.39	0.00
32.00	3.44	1.39	0.00	72.80	3.44	1.39	0.00
32.80	3.44	1.39	0.00	73.60	3.44	1.39	0.00
33.60	3.44	1.39	0.00	74.40	3.44	1.39	0.00
34.40	3.44	1.39	0.00	75.20	3.44	1.39	0.00
35.20	3.44	1.39	0.00	76.00	3.44	1.39	0.00
36.00	3.44	1.39	0.00	76.80	3.44	1.39	0.00
36.80	3.44	1.39	0.00	77.60	3.44	1.39	0.00
37.60	3.44	1.39	0.00	78.40	3.44	1.39	0.00
38.40	3.44	1.39	0.00	79.20	3.44	1.39	0.00
39.20	3.44	1.39	0.00	80.00	3.44	1.39	0.00
40.00	3.44	1.39	0.00				

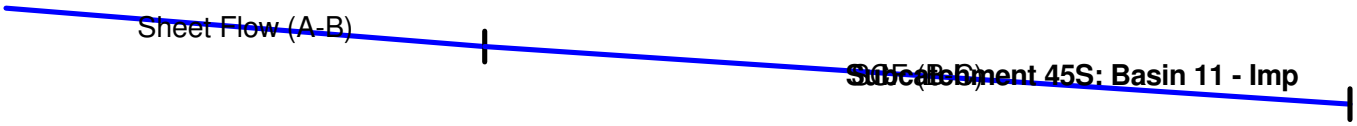
Summary for Subcatchment 45S: Basin 11 - Imp

Runoff = 3.89 cfs @ 12.17 hrs, Volume= 16,007 cf, Depth= 3.21"
Routed to Pond 33P : Basin 11

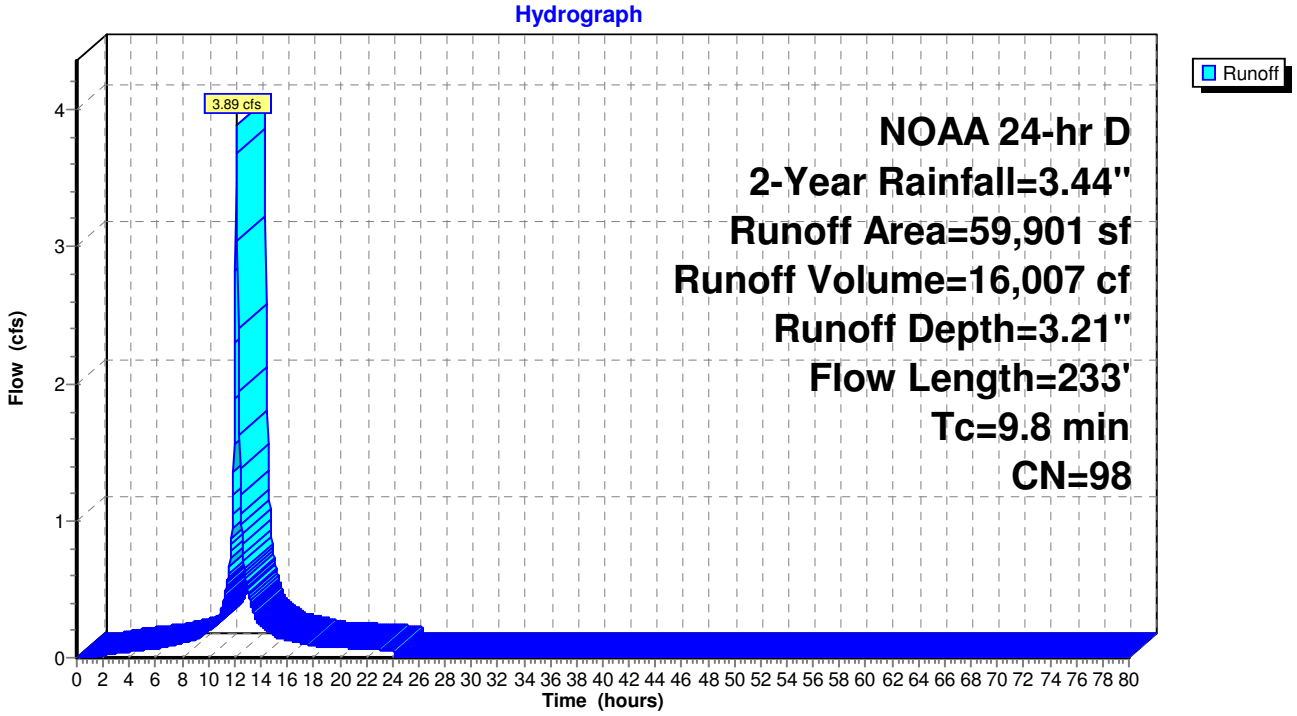
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

	Area (sf)	CN	Description
*	22,270	98	pavement surface area/ porous
	32,203	98	Roofs, HSG C
*	5,428	98	other impervious
	59,901	98	Weighted Average
	59,901		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
0.9	150	0.0330	2.92		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	233	Total			



Subcatchment 45S: Basin 11 - Imp



Hydrograph for Subcatchment 45S: Basin 11 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	3.21	0.00
0.80	0.03	0.00	0.00	41.60	3.44	3.21	0.00
1.60	0.06	0.00	0.01	42.40	3.44	3.21	0.00
2.40	0.10	0.01	0.02	43.20	3.44	3.21	0.00
3.20	0.14	0.03	0.04	44.00	3.44	3.21	0.00
4.00	0.18	0.06	0.05	44.80	3.44	3.21	0.00
4.80	0.22	0.09	0.05	45.60	3.44	3.21	0.00
5.60	0.27	0.12	0.06	46.40	3.44	3.21	0.00
6.40	0.32	0.16	0.07	47.20	3.44	3.21	0.00
7.20	0.38	0.21	0.09	48.00	3.44	3.21	0.00
8.00	0.45	0.27	0.11	48.80	3.44	3.21	0.00
8.80	0.52	0.34	0.13	49.60	3.44	3.21	0.00
9.60	0.62	0.43	0.17	50.40	3.44	3.21	0.00
10.40	0.75	0.55	0.23	51.20	3.44	3.21	0.00
11.20	0.96	0.75	0.43	52.00	3.44	3.21	0.00
12.00	1.65	1.43	**1.89**	52.80	3.44	3.21	0.00
12.80	2.48	2.25	**0.60**	53.60	3.44	3.21	0.00
13.60	2.69	2.46	0.29	54.40	3.44	3.21	0.00
14.40	2.82	2.59	0.21	55.20	3.44	3.21	0.00
15.20	2.92	2.68	0.15	56.00	3.44	3.21	0.00
16.00	2.99	2.76	0.13	56.80	3.44	3.21	0.00
16.80	3.06	2.83	0.11	57.60	3.44	3.21	0.00
17.60	3.12	2.89	0.10	58.40	3.44	3.21	0.00
18.40	3.17	2.94	0.08	59.20	3.44	3.21	0.00
19.20	3.22	2.98	0.08	60.00	3.44	3.21	0.00
20.00	3.26	3.03	0.07	60.80	3.44	3.21	0.00
20.80	3.30	3.07	0.07	61.60	3.44	3.21	0.00
21.60	3.34	3.11	0.07	62.40	3.44	3.21	0.00
22.40	3.38	3.14	0.06	63.20	3.44	3.21	0.00
23.20	3.41	3.18	0.06	64.00	3.44	3.21	0.00
24.00	**3.44**	**3.21**	0.05	64.80	3.44	3.21	0.00
24.80	3.44	3.21	0.00	65.60	3.44	3.21	0.00
25.60	3.44	3.21	0.00	66.40	3.44	3.21	0.00
26.40	3.44	3.21	0.00	67.20	3.44	3.21	0.00
27.20	3.44	3.21	0.00	68.00	3.44	3.21	0.00
28.00	3.44	3.21	0.00	68.80	3.44	3.21	0.00
28.80	3.44	3.21	0.00	69.60	3.44	3.21	0.00
29.60	3.44	3.21	0.00	70.40	3.44	3.21	0.00
30.40	3.44	3.21	0.00	71.20	3.44	3.21	0.00
31.20	3.44	3.21	0.00	72.00	3.44	3.21	0.00
32.00	3.44	3.21	0.00	72.80	3.44	3.21	0.00
32.80	3.44	3.21	0.00	73.60	3.44	3.21	0.00
33.60	3.44	3.21	0.00	74.40	3.44	3.21	0.00
34.40	3.44	3.21	0.00	75.20	3.44	3.21	0.00
35.20	3.44	3.21	0.00	76.00	3.44	3.21	0.00
36.00	3.44	3.21	0.00	76.80	3.44	3.21	0.00
36.80	3.44	3.21	0.00	77.60	3.44	3.21	0.00
37.60	3.44	3.21	0.00	78.40	3.44	3.21	0.00
38.40	3.44	3.21	0.00	79.20	3.44	3.21	0.00
39.20	3.44	3.21	0.00	80.00	3.44	3.21	0.00
40.00	3.44	3.21	0.00				

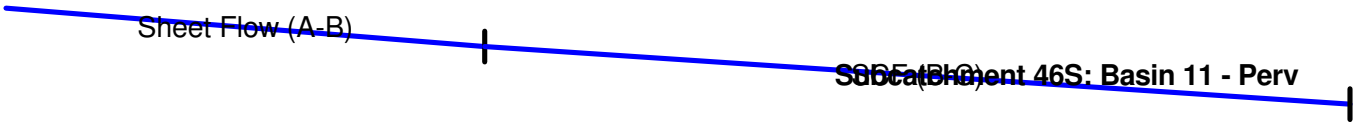
Summary for Subcatchment 46S: Basin 11 - Perv

Runoff = 0.73 cfs @ 12.18 hrs, Volume= 2,666 cf, Depth= 1.32"
Routed to Pond 33P : Basin 11

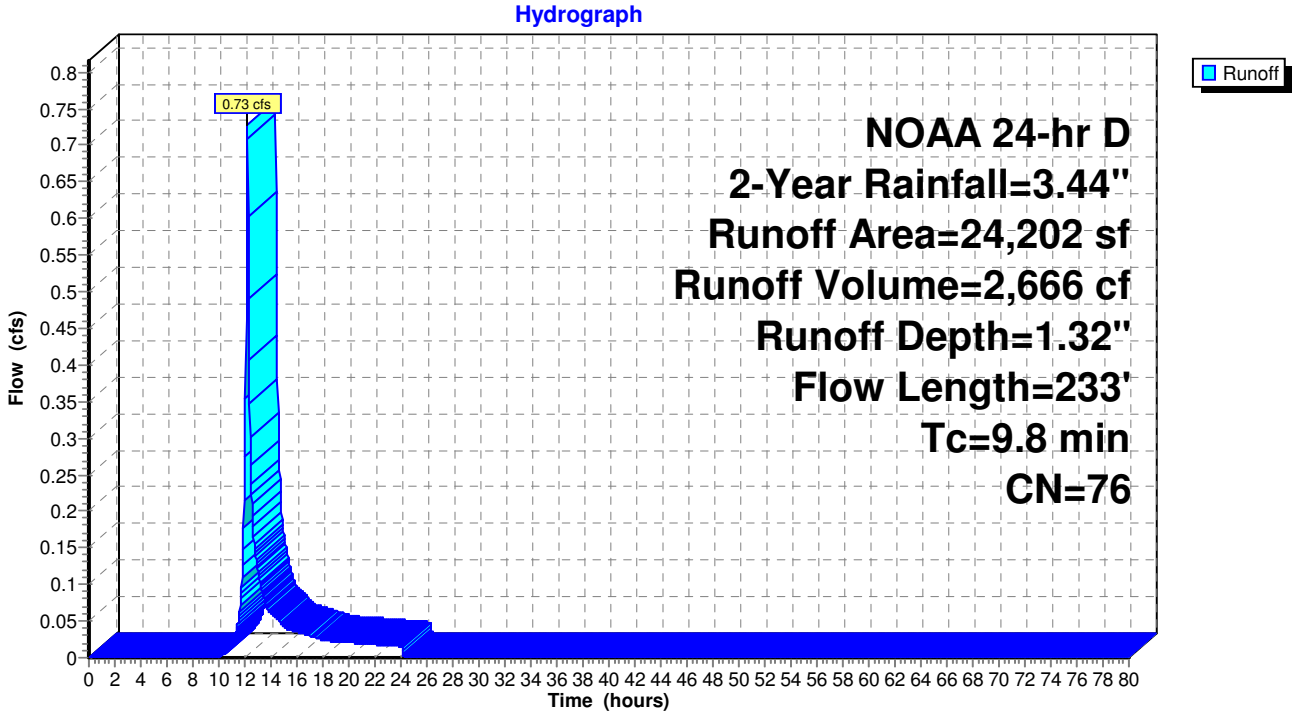
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
7,658	80	>75% Grass cover, Good, HSG D
16,544	74	>75% Grass cover, Good, HSG C
24,202	76	Weighted Average
24,202		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
0.9	150	0.0330	2.92		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	233	Total			



Subcatchment 46S: Basin 11 - Perv



Hydrograph for Subcatchment 46S: Basin 11 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	1.32	0.00
0.80	0.03	0.00	0.00	41.60	3.44	1.32	0.00
1.60	0.06	0.00	0.00	42.40	3.44	1.32	0.00
2.40	0.10	0.00	0.00	43.20	3.44	1.32	0.00
3.20	0.14	0.00	0.00	44.00	3.44	1.32	0.00
4.00	0.18	0.00	0.00	44.80	3.44	1.32	0.00
4.80	0.22	0.00	0.00	45.60	3.44	1.32	0.00
5.60	0.27	0.00	0.00	46.40	3.44	1.32	0.00
6.40	0.32	0.00	0.00	47.20	3.44	1.32	0.00
7.20	0.38	0.00	0.00	48.00	3.44	1.32	0.00
8.00	0.45	0.00	0.00	48.80	3.44	1.32	0.00
8.80	0.52	0.00	0.00	49.60	3.44	1.32	0.00
9.60	0.62	0.00	0.00	50.40	3.44	1.32	0.00
10.40	0.75	0.00	0.01	51.20	3.44	1.32	0.00
11.20	0.96	0.03	0.03	52.00	3.44	1.32	0.00
12.00	1.65	0.25	**0.28**	52.80	3.44	1.32	0.00
12.80	2.48	0.68	**0.14**	53.60	3.44	1.32	0.00
13.60	2.69	0.81	0.07	54.40	3.44	1.32	0.00
14.40	2.82	0.90	0.05	55.20	3.44	1.32	0.00
15.20	2.92	0.96	0.04	56.00	3.44	1.32	0.00
16.00	2.99	1.01	0.04	56.80	3.44	1.32	0.00
16.80	3.06	1.06	0.03	57.60	3.44	1.32	0.00
17.60	3.12	1.10	0.03	58.40	3.44	1.32	0.00
18.40	3.17	1.13	0.02	59.20	3.44	1.32	0.00
19.20	3.22	1.16	0.02	60.00	3.44	1.32	0.00
20.00	3.26	1.19	0.02	60.80	3.44	1.32	0.00
20.80	3.30	1.22	0.02	61.60	3.44	1.32	0.00
21.60	3.34	1.25	0.02	62.40	3.44	1.32	0.00
22.40	3.38	1.28	0.02	63.20	3.44	1.32	0.00
23.20	3.41	1.30	0.02	64.00	3.44	1.32	0.00
24.00	**3.44**	**1.32**	0.02	64.80	3.44	1.32	0.00
24.80	3.44	1.32	0.00	65.60	3.44	1.32	0.00
25.60	3.44	1.32	0.00	66.40	3.44	1.32	0.00
26.40	3.44	1.32	0.00	67.20	3.44	1.32	0.00
27.20	3.44	1.32	0.00	68.00	3.44	1.32	0.00
28.00	3.44	1.32	0.00	68.80	3.44	1.32	0.00
28.80	3.44	1.32	0.00	69.60	3.44	1.32	0.00
29.60	3.44	1.32	0.00	70.40	3.44	1.32	0.00
30.40	3.44	1.32	0.00	71.20	3.44	1.32	0.00
31.20	3.44	1.32	0.00	72.00	3.44	1.32	0.00
32.00	3.44	1.32	0.00	72.80	3.44	1.32	0.00
32.80	3.44	1.32	0.00	73.60	3.44	1.32	0.00
33.60	3.44	1.32	0.00	74.40	3.44	1.32	0.00
34.40	3.44	1.32	0.00	75.20	3.44	1.32	0.00
35.20	3.44	1.32	0.00	76.00	3.44	1.32	0.00
36.00	3.44	1.32	0.00	76.80	3.44	1.32	0.00
36.80	3.44	1.32	0.00	77.60	3.44	1.32	0.00
37.60	3.44	1.32	0.00	78.40	3.44	1.32	0.00
38.40	3.44	1.32	0.00	79.20	3.44	1.32	0.00
39.20	3.44	1.32	0.00	80.00	3.44	1.32	0.00
40.00	3.44	1.32	0.00				

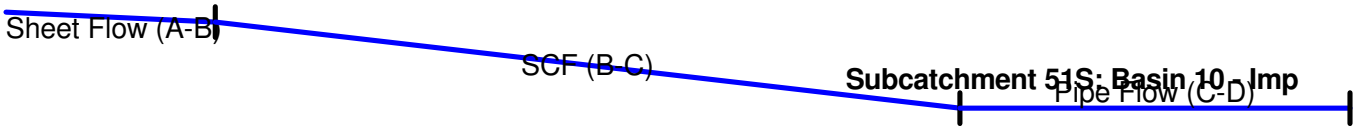
Summary for Subcatchment 51S: Basin 10 - Imp

Runoff = 3.35 cfs @ 12.18 hrs, Volume= 14,193 cf, Depth= 3.21"
Routed to Pond 41P : Basin 10

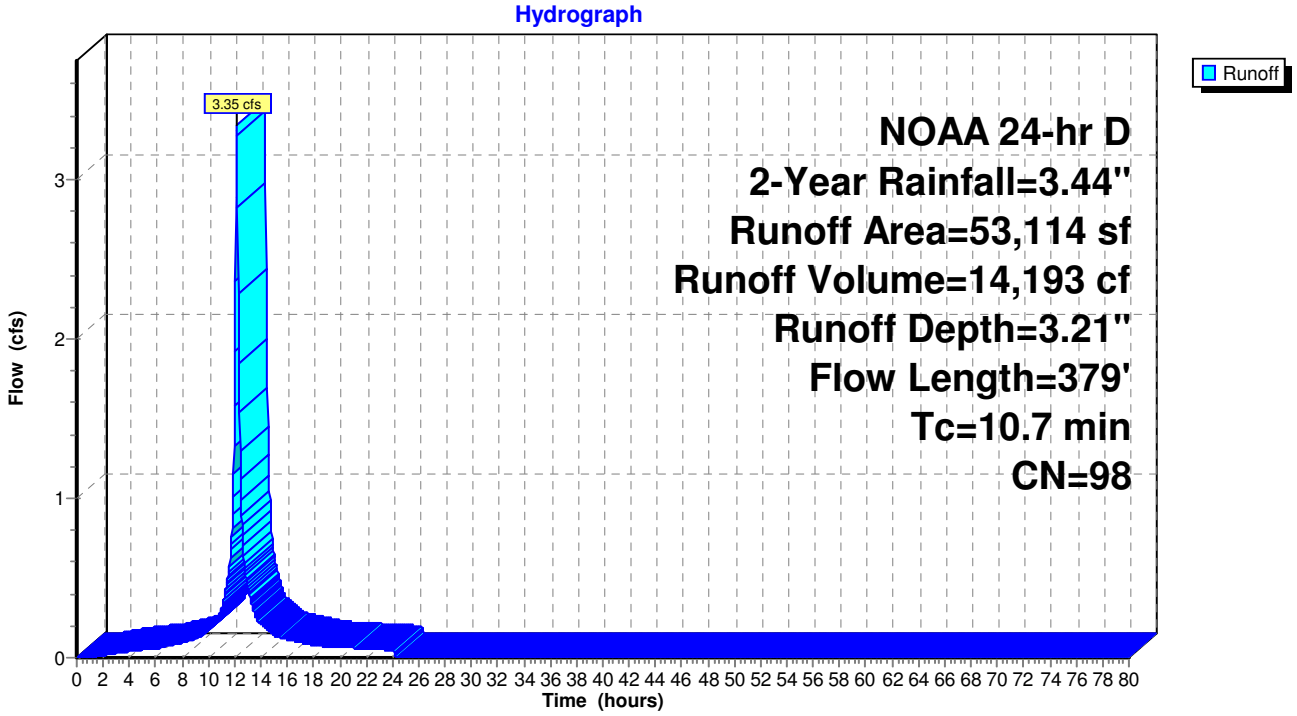
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
15,878	98	Paved parking, HSG C
37,236	98	Roofs, HSG C
53,114	98	Weighted Average
53,114		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.0	210	0.0480	3.53		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.7	110		2.50		**Direct Entry, Pipe Flow (C-D)**
10.7	379	Total			



Subcatchment 51S: Basin 10 - Imp



Hydrograph for Subcatchment 51S: Basin 10 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	3.21	0.00
0.80	0.03	0.00	0.00	41.60	3.44	3.21	0.00
1.60	0.06	0.00	0.01	42.40	3.44	3.21	0.00
2.40	0.10	0.01	0.02	43.20	3.44	3.21	0.00
3.20	0.14	0.03	0.03	44.00	3.44	3.21	0.00
4.00	0.18	0.06	0.04	44.80	3.44	3.21	0.00
4.80	0.22	0.09	0.05	45.60	3.44	3.21	0.00
5.60	0.27	0.12	0.06	46.40	3.44	3.21	0.00
6.40	0.32	0.16	0.06	47.20	3.44	3.21	0.00
7.20	0.38	0.21	0.08	48.00	3.44	3.21	0.00
8.00	0.45	0.27	0.10	48.80	3.44	3.21	0.00
8.80	0.52	0.34	0.11	49.60	3.44	3.21	0.00
9.60	0.62	0.43	0.15	50.40	3.44	3.21	0.00
10.40	0.75	0.55	0.21	51.20	3.44	3.21	0.00
11.20	0.96	0.75	0.38	52.00	3.44	3.21	0.00
12.00	1.65	1.43	**1.59**	52.80	3.44	3.21	0.00
12.80	2.48	2.25	**0.54**	53.60	3.44	3.21	0.00
13.60	2.69	2.46	0.26	54.40	3.44	3.21	0.00
14.40	2.82	2.59	0.18	55.20	3.44	3.21	0.00
15.20	2.92	2.68	0.13	56.00	3.44	3.21	0.00
16.00	2.99	2.76	0.12	56.80	3.44	3.21	0.00
16.80	3.06	2.83	0.10	57.60	3.44	3.21	0.00
17.60	3.12	2.89	0.09	58.40	3.44	3.21	0.00
18.40	3.17	2.94	0.07	59.20	3.44	3.21	0.00
19.20	3.22	2.98	0.07	60.00	3.44	3.21	0.00
20.00	3.26	3.03	0.07	60.80	3.44	3.21	0.00
20.80	3.30	3.07	0.06	61.60	3.44	3.21	0.00
21.60	3.34	3.11	0.06	62.40	3.44	3.21	0.00
22.40	3.38	3.14	0.05	63.20	3.44	3.21	0.00
23.20	3.41	3.18	0.05	64.00	3.44	3.21	0.00
24.00	**3.44**	**3.21**	0.05	64.80	3.44	3.21	0.00
24.80	3.44	3.21	0.00	65.60	3.44	3.21	0.00
25.60	3.44	3.21	0.00	66.40	3.44	3.21	0.00
26.40	3.44	3.21	0.00	67.20	3.44	3.21	0.00
27.20	3.44	3.21	0.00	68.00	3.44	3.21	0.00
28.00	3.44	3.21	0.00	68.80	3.44	3.21	0.00
28.80	3.44	3.21	0.00	69.60	3.44	3.21	0.00
29.60	3.44	3.21	0.00	70.40	3.44	3.21	0.00
30.40	3.44	3.21	0.00	71.20	3.44	3.21	0.00
31.20	3.44	3.21	0.00	72.00	3.44	3.21	0.00
32.00	3.44	3.21	0.00	72.80	3.44	3.21	0.00
32.80	3.44	3.21	0.00	73.60	3.44	3.21	0.00
33.60	3.44	3.21	0.00	74.40	3.44	3.21	0.00
34.40	3.44	3.21	0.00	75.20	3.44	3.21	0.00
35.20	3.44	3.21	0.00	76.00	3.44	3.21	0.00
36.00	3.44	3.21	0.00	76.80	3.44	3.21	0.00
36.80	3.44	3.21	0.00	77.60	3.44	3.21	0.00
37.60	3.44	3.21	0.00	78.40	3.44	3.21	0.00
38.40	3.44	3.21	0.00	79.20	3.44	3.21	0.00
39.20	3.44	3.21	0.00	80.00	3.44	3.21	0.00
40.00	3.44	3.21	0.00				

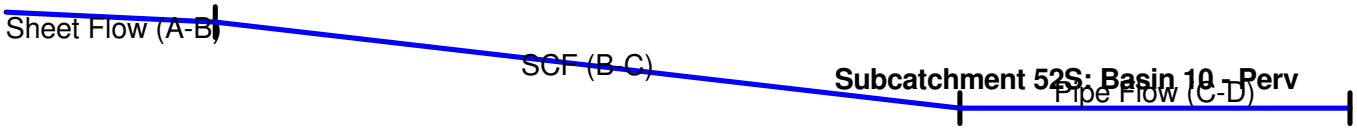
Summary for Subcatchment 52S: Basin 10 - Perv

Runoff = 1.03 cfs @ 12.19 hrs, Volume= 3,908 cf, Depth= 1.26"
Routed to Pond 41P : Basin 10

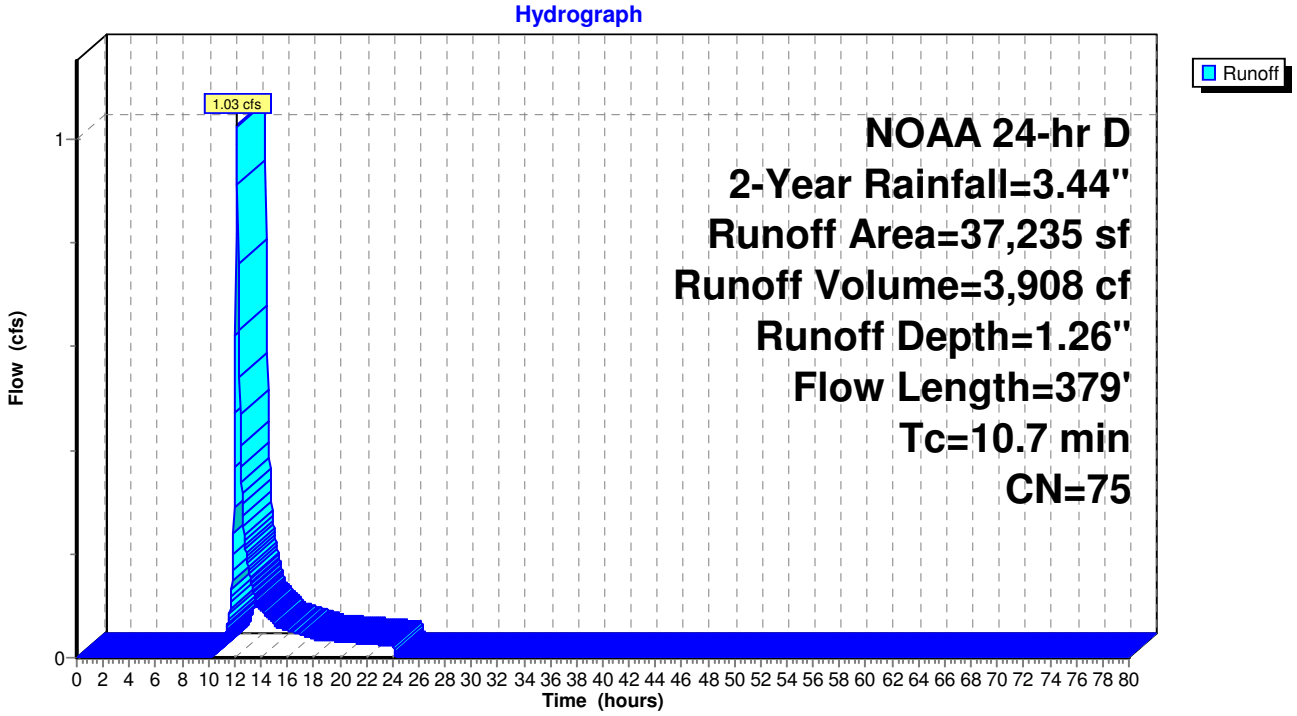
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
7,626	80	>75% Grass cover, Good, HSG D
29,609	74	>75% Grass cover, Good, HSG C
37,235	75	Weighted Average
37,235		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.0	210	0.0480	3.53		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.7	110		2.50		**Direct Entry, Pipe Flow (C-D)**
10.7	379	Total			



Subcatchment 52S: Basin 10 - Perv



Hydrograph for Subcatchment 52S: Basin 10 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	1.26	0.00
0.80	0.03	0.00	0.00	41.60	3.44	1.26	0.00
1.60	0.06	0.00	0.00	42.40	3.44	1.26	0.00
2.40	0.10	0.00	0.00	43.20	3.44	1.26	0.00
3.20	0.14	0.00	0.00	44.00	3.44	1.26	0.00
4.00	0.18	0.00	0.00	44.80	3.44	1.26	0.00
4.80	0.22	0.00	0.00	45.60	3.44	1.26	0.00
5.60	0.27	0.00	0.00	46.40	3.44	1.26	0.00
6.40	0.32	0.00	0.00	47.20	3.44	1.26	0.00
7.20	0.38	0.00	0.00	48.00	3.44	1.26	0.00
8.00	0.45	0.00	0.00	48.80	3.44	1.26	0.00
8.80	0.52	0.00	0.00	49.60	3.44	1.26	0.00
9.60	0.62	0.00	0.00	50.40	3.44	1.26	0.00
10.40	0.75	0.00	0.00	51.20	3.44	1.26	0.00
11.20	0.96	0.02	0.04	52.00	3.44	1.26	0.00
12.00	1.65	0.22	**0.37**	52.80	3.44	1.26	0.00
12.80	2.48	0.64	**0.22**	53.60	3.44	1.26	0.00
13.60	2.69	0.76	0.11	54.40	3.44	1.26	0.00
14.40	2.82	0.84	0.08	55.20	3.44	1.26	0.00
15.20	2.92	0.91	0.06	56.00	3.44	1.26	0.00
16.00	2.99	0.96	0.05	56.80	3.44	1.26	0.00
16.80	3.06	1.00	0.05	57.60	3.44	1.26	0.00
17.60	3.12	1.04	0.04	58.40	3.44	1.26	0.00
18.40	3.17	1.07	0.03	59.20	3.44	1.26	0.00
19.20	3.22	1.10	0.03	60.00	3.44	1.26	0.00
20.00	3.26	1.13	0.03	60.80	3.44	1.26	0.00
20.80	3.30	1.16	0.03	61.60	3.44	1.26	0.00
21.60	3.34	1.19	0.03	62.40	3.44	1.26	0.00
22.40	3.38	1.21	0.03	63.20	3.44	1.26	0.00
23.20	3.41	1.24	0.02	64.00	3.44	1.26	0.00
24.00	**3.44**	**1.26**	0.02	64.80	3.44	1.26	0.00
24.80	3.44	1.26	0.00	65.60	3.44	1.26	0.00
25.60	3.44	1.26	0.00	66.40	3.44	1.26	0.00
26.40	3.44	1.26	0.00	67.20	3.44	1.26	0.00
27.20	3.44	1.26	0.00	68.00	3.44	1.26	0.00
28.00	3.44	1.26	0.00	68.80	3.44	1.26	0.00
28.80	3.44	1.26	0.00	69.60	3.44	1.26	0.00
29.60	3.44	1.26	0.00	70.40	3.44	1.26	0.00
30.40	3.44	1.26	0.00	71.20	3.44	1.26	0.00
31.20	3.44	1.26	0.00	72.00	3.44	1.26	0.00
32.00	3.44	1.26	0.00	72.80	3.44	1.26	0.00
32.80	3.44	1.26	0.00	73.60	3.44	1.26	0.00
33.60	3.44	1.26	0.00	74.40	3.44	1.26	0.00
34.40	3.44	1.26	0.00	75.20	3.44	1.26	0.00
35.20	3.44	1.26	0.00	76.00	3.44	1.26	0.00
36.00	3.44	1.26	0.00	76.80	3.44	1.26	0.00
36.80	3.44	1.26	0.00	77.60	3.44	1.26	0.00
37.60	3.44	1.26	0.00	78.40	3.44	1.26	0.00
38.40	3.44	1.26	0.00	79.20	3.44	1.26	0.00
39.20	3.44	1.26	0.00	80.00	3.44	1.26	0.00
40.00	3.44	1.26	0.00				

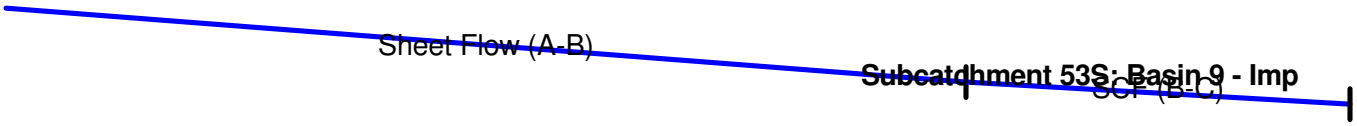
Summary for Subcatchment 53S: Basin 9 - Imp

Runoff = 1.23 cfs @ 12.14 hrs, Volume= 4,666 cf, Depth= 3.21"
Routed to Pond 42P : Basin 9

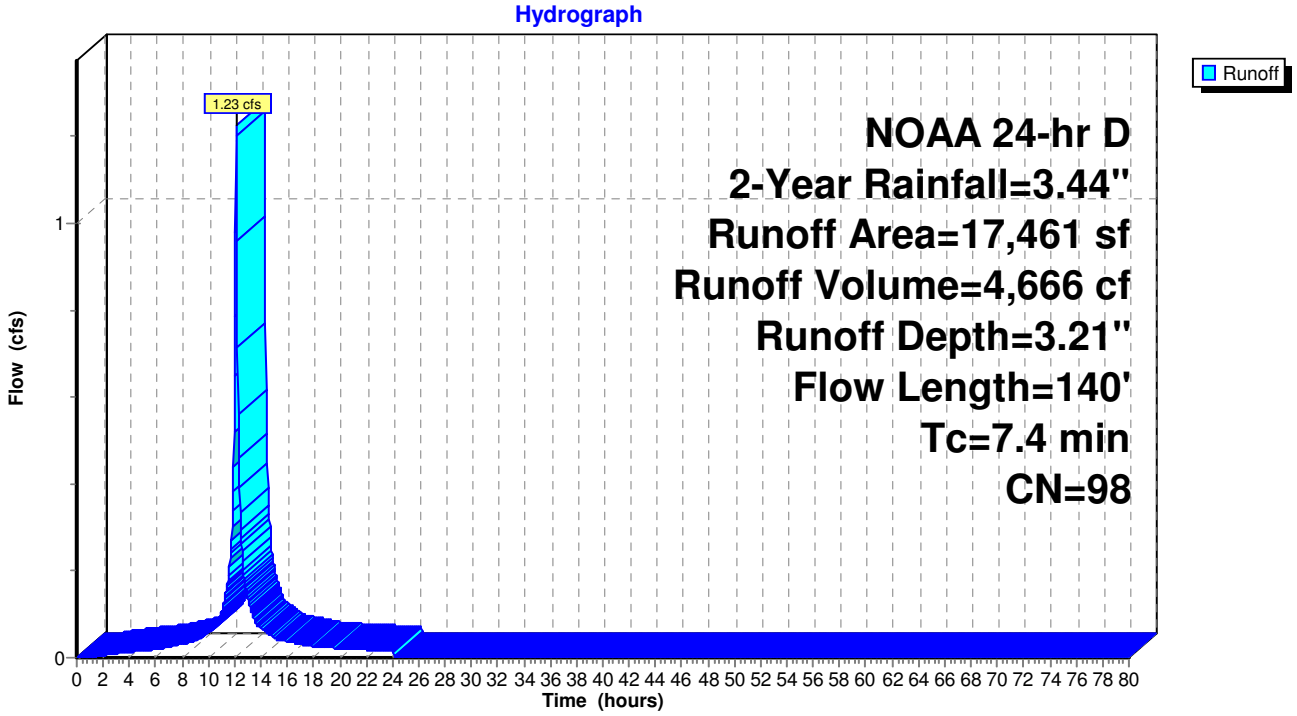
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

	Area (sf)	CN	Description
*	13,382	98	vehicle surface area
*	2,932	98	other impervious
*	1,147	98	roofs
	17,461	98	Weighted Average
	17,461		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.1000	0.23		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	40	0.0750	4.41		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
7.4	140	Total			



Subcatchment 53S: Basin 9 - Imp



Hydrograph for Subcatchment 53S: Basin 9 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	3.21	0.00
0.80	0.03	0.00	0.00	41.60	3.44	3.21	0.00
1.60	0.06	0.00	0.00	42.40	3.44	3.21	0.00
2.40	0.10	0.01	0.01	43.20	3.44	3.21	0.00
3.20	0.14	0.03	0.01	44.00	3.44	3.21	0.00
4.00	0.18	0.06	0.01	44.80	3.44	3.21	0.00
4.80	0.22	0.09	0.02	45.60	3.44	3.21	0.00
5.60	0.27	0.12	0.02	46.40	3.44	3.21	0.00
6.40	0.32	0.16	0.02	47.20	3.44	3.21	0.00
7.20	0.38	0.21	0.03	48.00	3.44	3.21	0.00
8.00	0.45	0.27	0.03	48.80	3.44	3.21	0.00
8.80	0.52	0.34	0.04	49.60	3.44	3.21	0.00
9.60	0.62	0.43	0.05	50.40	3.44	3.21	0.00
10.40	0.75	0.55	0.07	51.20	3.44	3.21	0.00
11.20	0.96	0.75	0.13	52.00	3.44	3.21	0.00
12.00	1.65	1.43	**0.65**	52.80	3.44	3.21	0.00
12.80	2.48	2.25	**0.17**	53.60	3.44	3.21	0.00
13.60	2.69	2.46	0.08	54.40	3.44	3.21	0.00
14.40	2.82	2.59	0.06	55.20	3.44	3.21	0.00
15.20	2.92	2.68	0.04	56.00	3.44	3.21	0.00
16.00	2.99	2.76	0.04	56.80	3.44	3.21	0.00
16.80	3.06	2.83	0.03	57.60	3.44	3.21	0.00
17.60	3.12	2.89	0.03	58.40	3.44	3.21	0.00
18.40	3.17	2.94	0.02	59.20	3.44	3.21	0.00
19.20	3.22	2.98	0.02	60.00	3.44	3.21	0.00
20.00	3.26	3.03	0.02	60.80	3.44	3.21	0.00
20.80	3.30	3.07	0.02	61.60	3.44	3.21	0.00
21.60	3.34	3.11	0.02	62.40	3.44	3.21	0.00
22.40	3.38	3.14	0.02	63.20	3.44	3.21	0.00
23.20	3.41	3.18	0.02	64.00	3.44	3.21	0.00
24.00	**3.44**	**3.21**	0.02	64.80	3.44	3.21	0.00
24.80	3.44	3.21	0.00	65.60	3.44	3.21	0.00
25.60	3.44	3.21	0.00	66.40	3.44	3.21	0.00
26.40	3.44	3.21	0.00	67.20	3.44	3.21	0.00
27.20	3.44	3.21	0.00	68.00	3.44	3.21	0.00
28.00	3.44	3.21	0.00	68.80	3.44	3.21	0.00
28.80	3.44	3.21	0.00	69.60	3.44	3.21	0.00
29.60	3.44	3.21	0.00	70.40	3.44	3.21	0.00
30.40	3.44	3.21	0.00	71.20	3.44	3.21	0.00
31.20	3.44	3.21	0.00	72.00	3.44	3.21	0.00
32.00	3.44	3.21	0.00	72.80	3.44	3.21	0.00
32.80	3.44	3.21	0.00	73.60	3.44	3.21	0.00
33.60	3.44	3.21	0.00	74.40	3.44	3.21	0.00
34.40	3.44	3.21	0.00	75.20	3.44	3.21	0.00
35.20	3.44	3.21	0.00	76.00	3.44	3.21	0.00
36.00	3.44	3.21	0.00	76.80	3.44	3.21	0.00
36.80	3.44	3.21	0.00	77.60	3.44	3.21	0.00
37.60	3.44	3.21	0.00	78.40	3.44	3.21	0.00
38.40	3.44	3.21	0.00	79.20	3.44	3.21	0.00
39.20	3.44	3.21	0.00	80.00	3.44	3.21	0.00
40.00	3.44	3.21	0.00				

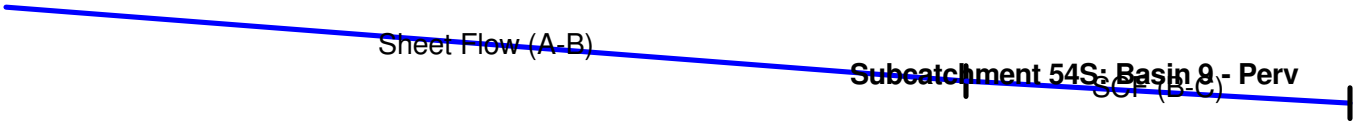
Summary for Subcatchment 54S: Basin 9 - Perv

Runoff = 0.33 cfs @ 12.15 hrs, Volume= 1,079 cf, Depth= 1.45"
Routed to Pond 42P : Basin 9

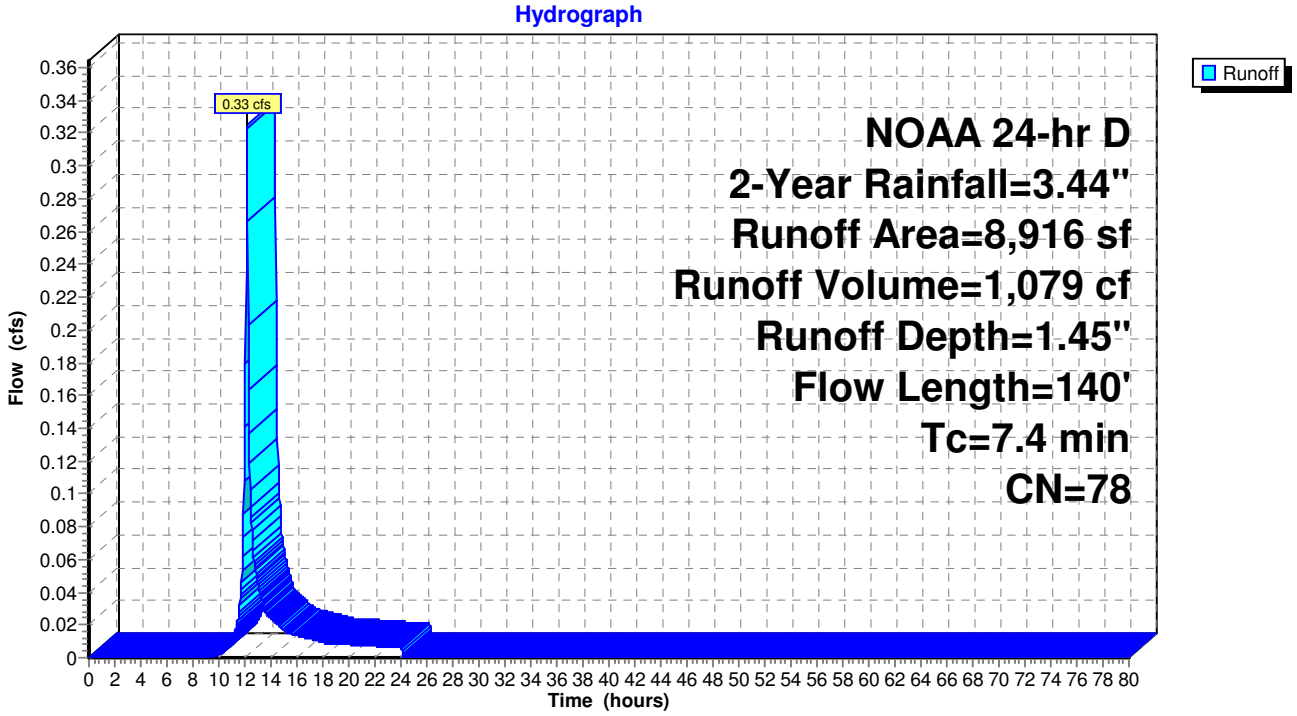
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
2,537	74	>75% Grass cover, Good, HSG C
6,379	80	>75% Grass cover, Good, HSG D
8,916	78	Weighted Average
8,916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.1000	0.23		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	40	0.0750	4.41		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
7.4	140	Total			



Subcatchment 54S: Basin 9 - Perv



Hydrograph for Subcatchment 54S: Basin 9 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	3.44	1.45	0.00
0.80	0.03	0.00	0.00	41.60	3.44	1.45	0.00
1.60	0.06	0.00	0.00	42.40	3.44	1.45	0.00
2.40	0.10	0.00	0.00	43.20	3.44	1.45	0.00
3.20	0.14	0.00	0.00	44.00	3.44	1.45	0.00
4.00	0.18	0.00	0.00	44.80	3.44	1.45	0.00
4.80	0.22	0.00	0.00	45.60	3.44	1.45	0.00
5.60	0.27	0.00	0.00	46.40	3.44	1.45	0.00
6.40	0.32	0.00	0.00	47.20	3.44	1.45	0.00
7.20	0.38	0.00	0.00	48.00	3.44	1.45	0.00
8.00	0.45	0.00	0.00	48.80	3.44	1.45	0.00
8.80	0.52	0.00	0.00	49.60	3.44	1.45	0.00
9.60	0.62	0.00	0.00	50.40	3.44	1.45	0.00
10.40	0.75	0.01	0.00	51.20	3.44	1.45	0.00
11.20	0.96	0.05	0.01	52.00	3.44	1.45	0.00
12.00	1.65	0.30	**0.14**	52.80	3.44	1.45	0.00
12.80	2.48	0.77	**0.05**	53.60	3.44	1.45	0.00
13.60	2.69	0.91	0.03	54.40	3.44	1.45	0.00
14.40	2.82	1.00	0.02	55.20	3.44	1.45	0.00
15.20	2.92	1.07	0.02	56.00	3.44	1.45	0.00
16.00	2.99	1.12	0.01	56.80	3.44	1.45	0.00
16.80	3.06	1.17	0.01	57.60	3.44	1.45	0.00
17.60	3.12	1.22	0.01	58.40	3.44	1.45	0.00
18.40	3.17	1.25	0.01	59.20	3.44	1.45	0.00
19.20	3.22	1.29	0.01	60.00	3.44	1.45	0.00
20.00	3.26	1.32	0.01	60.80	3.44	1.45	0.00
20.80	3.30	1.35	0.01	61.60	3.44	1.45	0.00
21.60	3.34	1.38	0.01	62.40	3.44	1.45	0.00
22.40	3.38	1.40	0.01	63.20	3.44	1.45	0.00
23.20	3.41	1.43	0.01	64.00	3.44	1.45	0.00
24.00	**3.44**	**1.45**	0.01	64.80	3.44	1.45	0.00
24.80	3.44	1.45	0.00	65.60	3.44	1.45	0.00
25.60	3.44	1.45	0.00	66.40	3.44	1.45	0.00
26.40	3.44	1.45	0.00	67.20	3.44	1.45	0.00
27.20	3.44	1.45	0.00	68.00	3.44	1.45	0.00
28.00	3.44	1.45	0.00	68.80	3.44	1.45	0.00
28.80	3.44	1.45	0.00	69.60	3.44	1.45	0.00
29.60	3.44	1.45	0.00	70.40	3.44	1.45	0.00
30.40	3.44	1.45	0.00	71.20	3.44	1.45	0.00
31.20	3.44	1.45	0.00	72.00	3.44	1.45	0.00
32.00	3.44	1.45	0.00	72.80	3.44	1.45	0.00
32.80	3.44	1.45	0.00	73.60	3.44	1.45	0.00
33.60	3.44	1.45	0.00	74.40	3.44	1.45	0.00
34.40	3.44	1.45	0.00	75.20	3.44	1.45	0.00
35.20	3.44	1.45	0.00	76.00	3.44	1.45	0.00
36.00	3.44	1.45	0.00	76.80	3.44	1.45	0.00
36.80	3.44	1.45	0.00	77.60	3.44	1.45	0.00
37.60	3.44	1.45	0.00	78.40	3.44	1.45	0.00
38.40	3.44	1.45	0.00	79.20	3.44	1.45	0.00
39.20	3.44	1.45	0.00	80.00	3.44	1.45	0.00
40.00	3.44	1.45	0.00				

Summary for Pond 21P: Basin 3

Inflow Area = 21,910 sf, 31.15% Impervious, Inflow Depth = 1.82" for 2-Year event
Inflow = 0.90 cfs @ 12.16 hrs, Volume= 3,330 cf
Outflow = 0.89 cfs @ 12.17 hrs, Volume= 3,330 cf, Atten= 1%, Lag= 0.6 min
Discarded = 0.89 cfs @ 12.17 hrs, Volume= 3,330 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 27P : Basin 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 559.02' @ 12.17 hrs Surf.Area= 5,227 sf Storage= 33 cf

Plug-Flow detention time= 0.6 min calculated for 3,329 cf (100% of inflow)
Center-of-Mass det. time= 0.6 min (810.9 - 810.2)

Volume	Invert	Avail.Storage	Storage Description
#1	559.00'	4,537 cf	**Custom Stage Data (Prismatic)** Listed below 11,343 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
559.00	5,227	0	0
560.00	5,227	5,227	5,227
561.00	5,227	5,227	10,454
561.17	5,227	889	11,343

Device	Routing	Invert	Outlet Devices
#1	Primary	559.22'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	559.00'	**10.000 in/hr Exfiltration over Surface area**

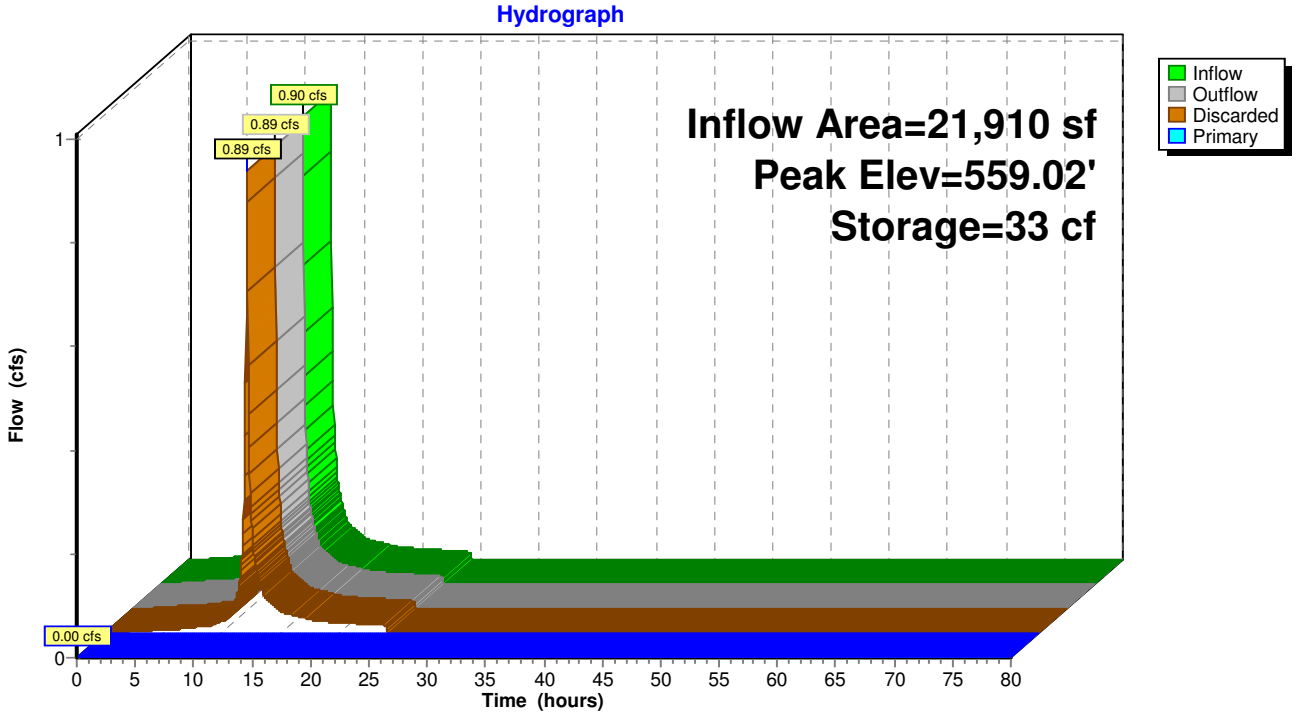
Discarded OutFlow Max=1.21 cfs @ 12.17 hrs HW=559.02' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 1.21 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=559.00' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

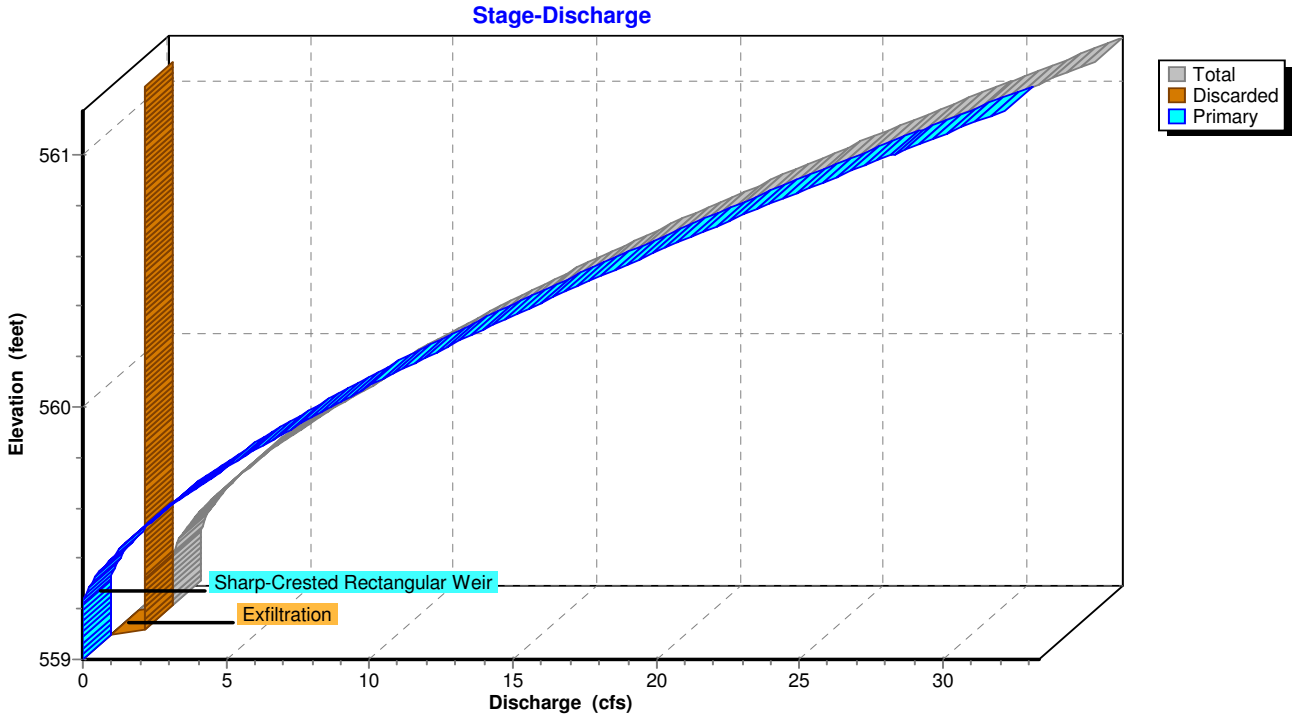
Pond 21P: Basin 3

Sharp-Crested Rectangular Weir
Exfiltration

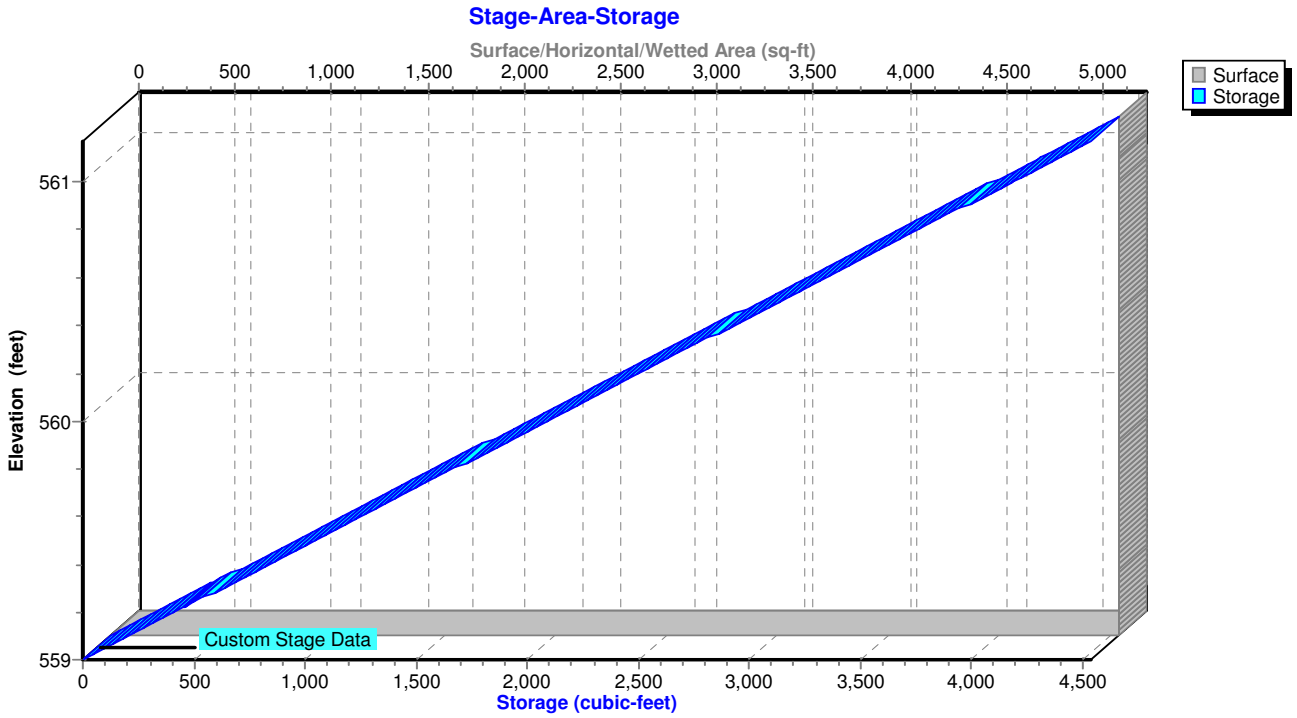
Pond 21P: Basin 3



Pond 21P: Basin 3



Pond 21P: Basin 3



Hydrograph for Pond 21P: Basin 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	559.00	0.00	0.00	**0.00**
2.00	0.00	0	559.00	0.00	0.00	0.00
4.00	0.01	0	559.00	0.01	0.01	0.00
6.00	0.01	0	559.00	0.01	0.01	0.00
8.00	0.01	0	559.00	0.01	0.01	0.00
10.00	0.02	1	559.00	0.02	0.02	0.00
12.00	**0.41**	**14**	**559.01**	**0.38**	**0.38**	0.00
14.00	**0.06**	**2**	**559.00**	**0.06**	**0.06**	0.00
16.00	0.04	1	559.00	0.04	0.04	0.00
18.00	0.02	1	559.00	0.02	0.02	0.00
20.00	0.02	1	559.00	0.02	0.02	0.00
22.00	0.02	1	559.00	0.02	0.02	0.00
24.00	0.02	1	559.00	0.02	0.02	0.00
26.00	0.00	0	559.00	0.00	0.00	0.00
28.00	0.00	0	559.00	0.00	0.00	0.00
30.00	0.00	0	559.00	0.00	0.00	0.00
32.00	0.00	0	559.00	0.00	0.00	0.00
34.00	0.00	0	559.00	0.00	0.00	0.00
36.00	0.00	0	559.00	0.00	0.00	0.00
38.00	0.00	0	559.00	0.00	0.00	0.00
40.00	0.00	0	559.00	0.00	0.00	0.00
42.00	0.00	0	559.00	0.00	0.00	0.00
44.00	0.00	0	559.00	0.00	0.00	0.00
46.00	0.00	0	559.00	0.00	0.00	0.00
48.00	0.00	0	559.00	0.00	0.00	0.00
50.00	0.00	0	559.00	0.00	0.00	0.00
52.00	0.00	0	559.00	0.00	0.00	0.00
54.00	0.00	0	559.00	0.00	0.00	0.00
56.00	0.00	0	559.00	0.00	0.00	0.00
58.00	0.00	0	559.00	0.00	0.00	0.00
60.00	0.00	0	559.00	0.00	0.00	0.00
62.00	0.00	0	559.00	0.00	0.00	0.00
64.00	0.00	0	559.00	0.00	0.00	0.00
66.00	0.00	0	559.00	0.00	0.00	0.00
68.00	0.00	0	559.00	0.00	0.00	0.00
70.00	0.00	0	559.00	0.00	0.00	0.00
72.00	0.00	0	559.00	0.00	0.00	0.00
74.00	0.00	0	559.00	0.00	0.00	0.00
76.00	0.00	0	559.00	0.00	0.00	0.00
78.00	0.00	0	559.00	0.00	0.00	0.00
80.00	0.00	0	559.00	0.00	0.00	0.00

Stage-Discharge for Pond 21P: Basin 3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
559.00	0.00	**0.00**	0.00
559.05	1.21	**1.21**	0.00
559.10	1.21	1.21	0.00
559.15	1.21	1.21	0.00
559.20	1.21	1.21	0.00
559.25	1.28	1.21	0.07
559.30	1.50	1.21	0.29
559.35	1.82	1.21	0.61
559.40	2.20	1.21	0.99
559.45	2.64	1.21	1.43
559.50	3.12	1.21	1.91
559.55	3.65	1.21	2.44
559.60	4.22	1.21	3.01
559.65	4.82	1.21	3.61
559.70	5.46	1.21	4.25
559.75	6.12	1.21	4.91
559.80	6.82	1.21	5.61
559.85	7.54	1.21	6.33
559.90	8.30	1.21	7.09
559.95	9.07	1.21	7.86
560.00	9.87	1.21	8.66
560.05	10.69	1.21	9.48
560.10	11.53	1.21	10.32
560.15	12.40	1.21	11.19
560.20	13.28	1.21	12.07
560.25	14.18	1.21	12.97
560.30	15.10	1.21	13.89
560.35	16.03	1.21	14.82
560.40	16.99	1.21	15.78
560.45	17.96	1.21	16.75
560.50	18.94	1.21	17.73
560.55	19.94	1.21	18.73
560.60	20.95	1.21	19.74
560.65	21.98	1.21	20.77
560.70	23.02	1.21	21.81
560.75	24.07	1.21	22.86
560.80	25.14	1.21	23.93
560.85	26.21	1.21	25.00
560.90	27.30	1.21	26.09
560.95	28.40	1.21	27.19
561.00	29.51	1.21	28.30
561.05	30.63	1.21	29.42
561.10	31.76	1.21	30.55
561.15	**32.90**	1.21	**31.69**

Stage-Area-Storage for Pond 21P: Basin 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
559.00	**5,227**	0
559.05	5,227	105
559.10	5,227	209
559.15	5,227	314
559.20	5,227	418
559.25	5,227	523
559.30	5,227	627
559.35	5,227	732
559.40	5,227	836
559.45	5,227	941
559.50	5,227	1,045
559.55	5,227	1,150
559.60	5,227	1,254
559.65	5,227	1,359
559.70	5,227	1,464
559.75	5,227	1,568
559.80	5,227	1,673
559.85	5,227	1,777
559.90	5,227	1,882
559.95	5,227	1,986
560.00	5,227	2,091
560.05	5,227	2,195
560.10	5,227	2,300
560.15	5,227	2,404
560.20	5,227	2,509
560.25	5,227	2,614
560.30	5,227	2,718
560.35	5,227	2,823
560.40	5,227	2,927
560.45	5,227	3,032
560.50	5,227	3,136
560.55	5,227	3,241
560.60	5,227	3,345
560.65	5,227	3,450
560.70	5,227	3,554
560.75	5,227	3,659
560.80	5,227	3,763
560.85	5,227	3,868
560.90	5,227	3,973
560.95	5,227	4,077
561.00	5,227	4,182
561.05	5,227	4,286
561.10	5,227	4,391
561.15	5,227	**4,495**

Summary for Pond 22P: Basin 4

Inflow Area = 49,050 sf, 84.66% Impervious, Inflow Depth = 2.90" for 2-Year event
Inflow = 3.37 cfs @ 12.12 hrs, Volume= 11,848 cf
Outflow = 1.13 cfs @ 11.96 hrs, Volume= 11,848 cf, Atten= 66%, Lag= 0.0 min
Discarded = 1.13 cfs @ 11.96 hrs, Volume= 11,848 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 27P : Basin 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 572.30' @ 12.30 hrs Surf.Area= 12,197 sf Storage= 1,477 cf

Plug-Flow detention time= 6.1 min calculated for 11,842 cf (100% of inflow)
Center-of-Mass det. time= 6.1 min (769.5 - 763.5)

Volume	Invert	Avail.Storage	Storage Description
#1	572.00'	14,197 cf	**Custom Stage Data (Prismatic)** Listed below 35,493 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
572.00	12,197	0	0
573.00	12,197	12,197	12,197
574.00	12,197	12,197	24,394
574.91	12,197	11,099	35,493

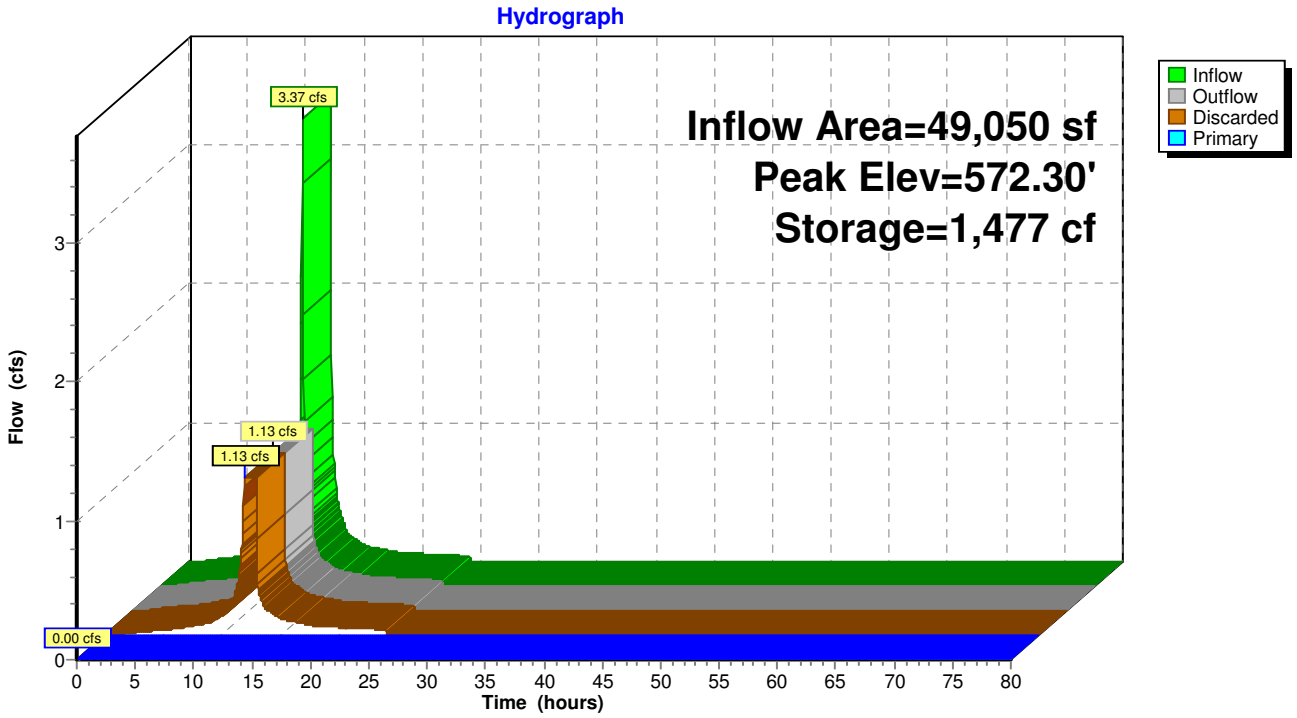
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	572.50'	**6.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Discarded	572.00'	**4.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.13 cfs @ 11.96 hrs HW=572.03' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 1.13 cfs)

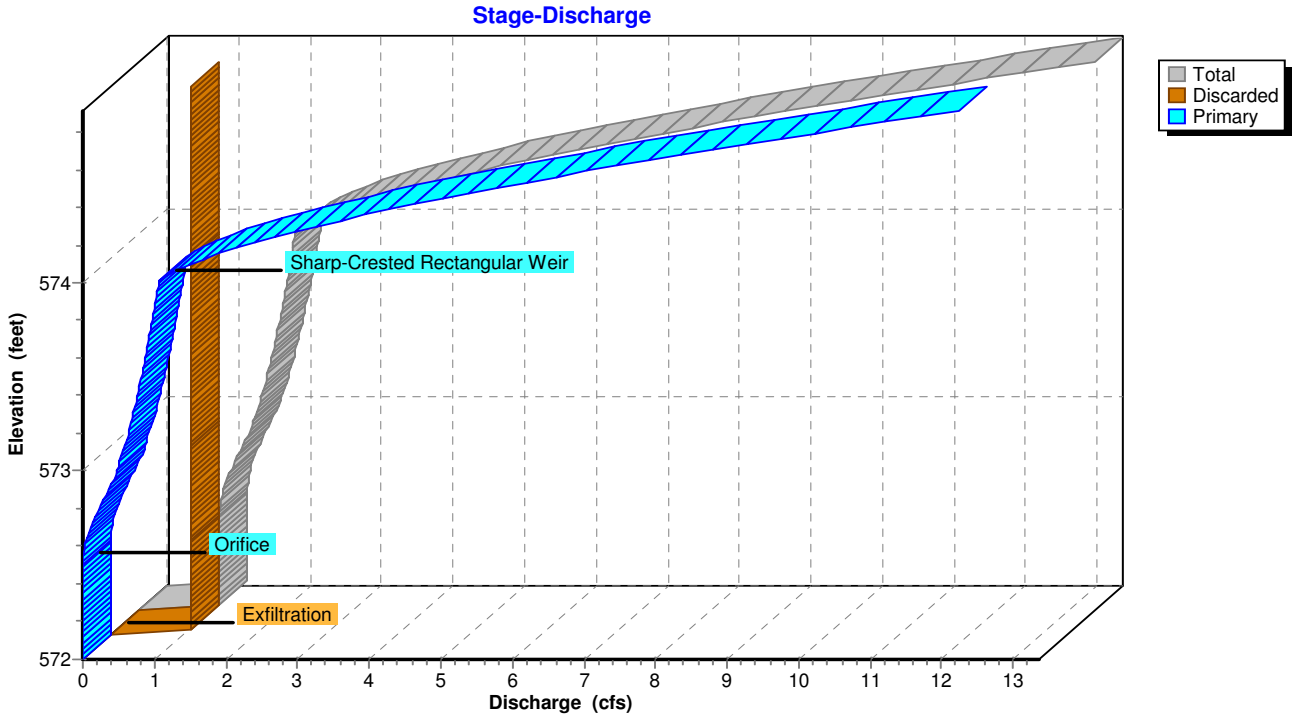
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=572.00' (Free Discharge)
├**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice** (Controls 0.00 cfs)



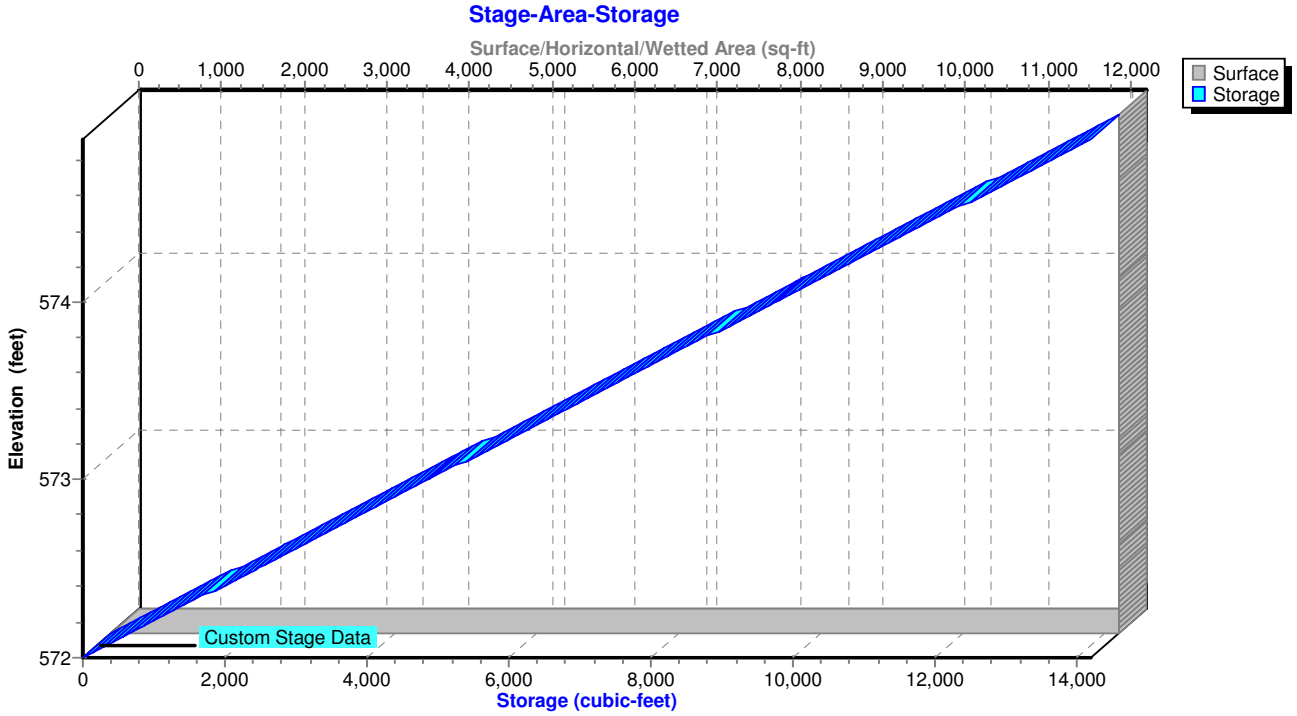
Pond 22P: Basin 4



Pond 22P: Basin 4



Pond 22P: Basin 4



Hydrograph for Pond 22P: Basin 4

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	572.00	0.00	0.00	**0.00**
2.00	0.01	2	572.00	0.01	0.01	0.00
4.00	0.03	4	572.00	0.03	0.03	0.00
6.00	0.05	6	572.00	0.05	0.05	0.00
8.00	0.08	10	572.00	0.08	0.08	0.00
10.00	0.14	18	572.00	**0.14**	**0.14**	0.00
12.00	**1.89**	**251**	**572.05**	**1.13**	**1.13**	0.00
14.00	**0.18**	**23**	**572.00**	0.18	0.18	0.00
16.00	0.10	13	572.00	0.10	0.10	0.00
18.00	0.07	8	572.00	0.07	0.07	0.00
20.00	0.06	7	572.00	0.06	0.06	0.00
22.00	0.05	6	572.00	0.05	0.05	0.00
24.00	0.04	5	572.00	0.04	0.04	0.00
26.00	0.00	0	572.00	0.00	0.00	0.00
28.00	0.00	0	572.00	0.00	0.00	0.00
30.00	0.00	0	572.00	0.00	0.00	0.00
32.00	0.00	0	572.00	0.00	0.00	0.00
34.00	0.00	0	572.00	0.00	0.00	0.00
36.00	0.00	0	572.00	0.00	0.00	0.00
38.00	0.00	0	572.00	0.00	0.00	0.00
40.00	0.00	0	572.00	0.00	0.00	0.00
42.00	0.00	0	572.00	0.00	0.00	0.00
44.00	0.00	0	572.00	0.00	0.00	0.00
46.00	0.00	0	572.00	0.00	0.00	0.00
48.00	0.00	0	572.00	0.00	0.00	0.00
50.00	0.00	0	572.00	0.00	0.00	0.00
52.00	0.00	0	572.00	0.00	0.00	0.00
54.00	0.00	0	572.00	0.00	0.00	0.00
56.00	0.00	0	572.00	0.00	0.00	0.00
58.00	0.00	0	572.00	0.00	0.00	0.00
60.00	0.00	0	572.00	0.00	0.00	0.00
62.00	0.00	0	572.00	0.00	0.00	0.00
64.00	0.00	0	572.00	0.00	0.00	0.00
66.00	0.00	0	572.00	0.00	0.00	0.00
68.00	0.00	0	572.00	0.00	0.00	0.00
70.00	0.00	0	572.00	0.00	0.00	0.00
72.00	0.00	0	572.00	0.00	0.00	0.00
74.00	0.00	0	572.00	0.00	0.00	0.00
76.00	0.00	0	572.00	0.00	0.00	0.00
78.00	0.00	0	572.00	0.00	0.00	0.00
80.00	0.00	0	572.00	0.00	0.00	0.00

Stage-Discharge for Pond 22P: Basin 4

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
572.00	0.00	**0.00**	0.00
572.05	1.13	**1.13**	0.00
572.10	1.13	1.13	0.00
572.15	1.13	1.13	0.00
572.20	1.13	1.13	0.00
572.25	1.13	1.13	0.00
572.30	1.13	1.13	0.00
572.35	1.13	1.13	0.00
572.40	1.13	1.13	0.00
572.45	1.13	1.13	0.00
572.50	1.13	1.13	0.00
572.55	1.14	1.13	0.01
572.60	1.16	1.13	0.03
572.65	1.19	1.13	0.07
572.70	1.24	1.13	0.11
572.75	1.30	1.13	0.17
572.80	1.36	1.13	0.23
572.85	1.43	1.13	0.30
572.90	1.49	1.13	0.36
572.95	1.55	1.13	0.43
573.00	1.60	1.13	0.47
573.05	1.65	1.13	0.52
573.10	1.69	1.13	0.56
573.15	1.73	1.13	0.60
573.20	1.76	1.13	0.63
573.25	1.80	1.13	0.67
573.30	1.83	1.13	0.70
573.35	1.86	1.13	0.73
573.40	1.89	1.13	0.76
573.45	1.92	1.13	0.79
573.50	1.95	1.13	0.82
573.55	1.97	1.13	0.85
573.60	2.00	1.13	0.87
573.65	2.03	1.13	0.90
573.70	2.05	1.13	0.92
573.75	2.07	1.13	0.95
573.80	2.10	1.13	0.97
573.85	2.12	1.13	0.99
573.90	2.14	1.13	1.01
573.95	2.17	1.13	1.04
574.00	2.19	1.13	1.06
574.05	2.35	1.13	1.22
574.10	2.64	1.13	1.51
574.15	3.00	1.13	1.87
574.20	3.43	1.13	2.30
574.25	3.90	1.13	2.77
574.30	4.42	1.13	3.29
574.35	4.99	1.13	3.86
574.40	5.59	1.13	4.46
574.45	6.22	1.13	5.09
574.50	6.89	1.13	5.76
574.55	7.59	1.13	6.46
574.60	8.31	1.13	7.18
574.65	9.06	1.13	7.93
574.70	9.84	1.13	8.71
574.75	10.64	1.13	9.51
574.80	11.47	1.13	10.34
574.85	12.31	1.13	11.18
574.90	**13.18**	1.13	**12.05**

Stage-Area-Storage for Pond 22P: Basin 4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
572.00	**12,197**	0
572.05	12,197	244
572.10	12,197	488
572.15	12,197	732
572.20	12,197	976
572.25	12,197	1,220
572.30	12,197	1,464
572.35	12,197	1,708
572.40	12,197	1,952
572.45	12,197	2,195
572.50	12,197	2,439
572.55	12,197	2,683
572.60	12,197	2,927
572.65	12,197	3,171
572.70	12,197	3,415
572.75	12,197	3,659
572.80	12,197	3,903
572.85	12,197	4,147
572.90	12,197	4,391
572.95	12,197	4,635
573.00	12,197	4,879
573.05	12,197	5,123
573.10	12,197	5,367
573.15	12,197	5,611
573.20	12,197	5,855
573.25	12,197	6,099
573.30	12,197	6,342
573.35	12,197	6,586
573.40	12,197	6,830
573.45	12,197	7,074
573.50	12,197	7,318
573.55	12,197	7,562
573.60	12,197	7,806
573.65	12,197	8,050
573.70	12,197	8,294
573.75	12,197	8,538
573.80	12,197	8,782
573.85	12,197	9,026
573.90	12,197	9,270
573.95	12,197	9,514
574.00	12,197	9,758
574.05	12,197	10,002
574.10	12,197	10,245
574.15	12,197	10,489
574.20	12,197	10,733
574.25	12,197	10,977
574.30	12,197	11,221
574.35	12,197	11,465
574.40	12,197	11,709
574.45	12,197	11,953
574.50	12,197	12,197
574.55	12,197	12,441
574.60	12,197	12,685
574.65	12,197	12,929
574.70	12,197	13,173
574.75	12,197	13,417
574.80	12,197	13,661
574.85	12,197	13,905
574.90	12,197	**14,149**

Summary for Pond 27P: Basin 2

Inflow Area = 183,393 sf, 42.82% Impervious, Inflow Depth = 1.15" for 2-Year event
Inflow = 4.44 cfs @ 12.18 hrs, Volume= 17,565 cf
Outflow = 0.19 cfs @ 15.96 hrs, Volume= 8,254 cf, Atten= 96%, Lag= 226.9 min
Primary = 0.19 cfs @ 15.96 hrs, Volume= 8,254 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 544.96' @ 15.96 hrs Surf.Area= 27,516 sf Storage= 12,418 cf

Plug-Flow detention time= 632.5 min calculated for 8,254 cf (47% of inflow)
Center-of-Mass det. time= 488.9 min (1,305.8 - 816.8)

Volume	Invert	Avail.Storage	Storage Description
#1	544.50'	74,059 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
544.50	26,023	0	0
546.00	30,850	42,655	42,655
547.00	31,958	31,404	74,059

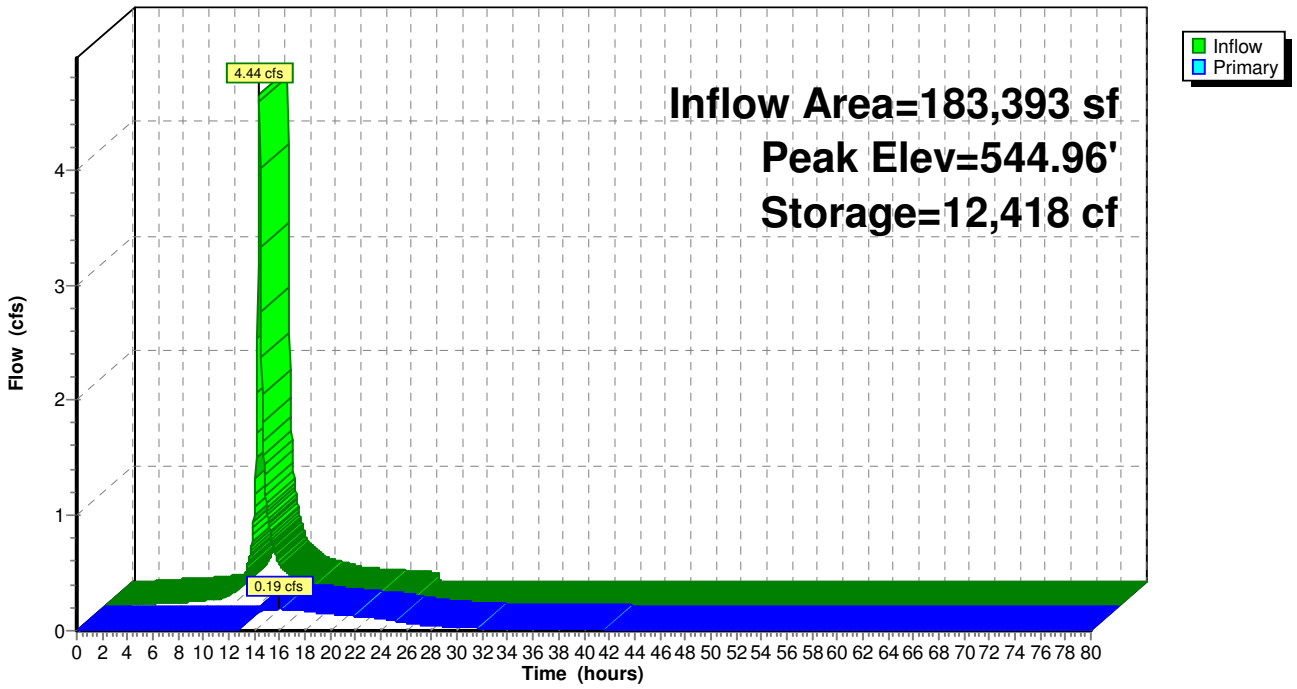
Device	Routing	Invert	Outlet Devices
#1	Primary	545.50'	**42.0" x 48.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	544.85'	**1.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.7' Crest Height

Primary OutFlow Max=0.19 cfs @ 15.96 hrs HW=544.96' (Free Discharge)
1=Grate (Controls 0.00 cfs)
2=Sharp-Crested Rectangular Weir (Weir Controls 0.19 cfs @ 1.13 fps)



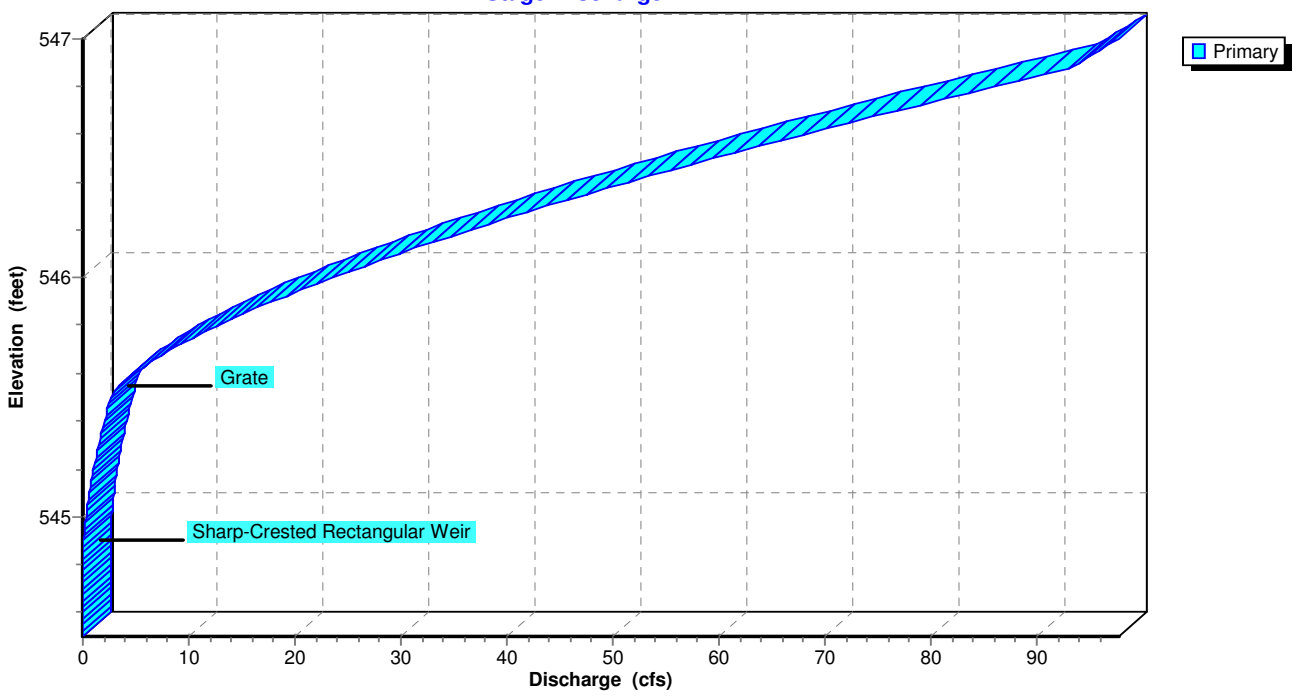
Pond 27P: Basin 2

Hydrograph

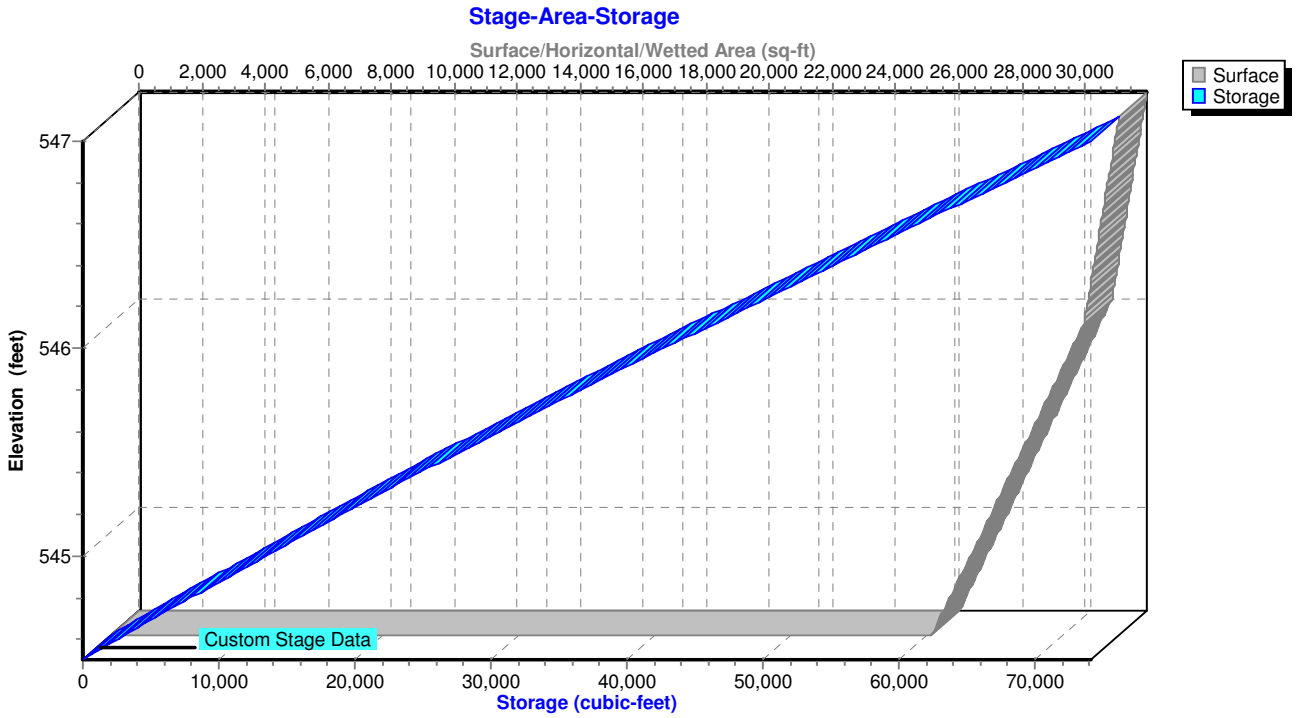


Pond 27P: Basin 2

Stage-Discharge



Pond 27P: Basin 2



Hydrograph for Pond 27P: Basin 2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	544.50	0.00
2.00	0.01	13	544.50	0.00
4.00	0.02	129	544.50	0.00
6.00	0.03	332	544.51	0.00
8.00	0.05	646	544.52	0.00
10.00	0.11	1,171	544.54	0.00
12.00	**1.86**	3,984	544.65	0.00
14.00	**0.34**	**11,941**	**544.95**	**0.15**
16.00	0.19	**12,419**	**544.96**	**0.19**
18.00	0.13	12,241	544.96	0.17
20.00	0.11	11,937	544.95	0.15
22.00	0.10	11,687	544.94	0.13
24.00	0.08	11,462	544.93	0.11
26.00	0.00	10,872	544.91	0.07
28.00	0.00	10,474	544.89	0.04
30.00	0.00	10,204	544.88	0.03
32.00	0.00	10,019	544.88	0.02
34.00	0.00	9,886	544.87	0.02
36.00	0.00	9,778	544.87	0.01
38.00	0.00	9,690	544.86	0.01
40.00	0.00	9,619	544.86	0.01
42.00	0.00	9,560	544.86	0.01
44.00	0.00	9,513	544.86	0.01
46.00	0.00	9,474	544.86	0.00
48.00	0.00	9,443	544.86	0.00
50.00	0.00	9,417	544.85	0.00
52.00	0.00	9,396	544.85	0.00
54.00	0.00	9,379	544.85	0.00
56.00	0.00	9,366	544.85	0.00
58.00	0.00	9,354	544.85	0.00
60.00	0.00	9,345	544.85	0.00
62.00	0.00	9,338	544.85	0.00
64.00	0.00	9,332	544.85	0.00
66.00	0.00	9,327	544.85	0.00
68.00	0.00	9,323	544.85	0.00
70.00	0.00	9,320	544.85	0.00
72.00	0.00	9,317	544.85	0.00
74.00	0.00	9,315	544.85	0.00
76.00	0.00	9,313	544.85	0.00
78.00	0.00	9,311	544.85	0.00
80.00	0.00	9,310	544.85	0.00

Stage-Discharge for Pond 27P: Basin 2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
544.50	0.00	545.52	2.88	546.54	62.84
544.52	0.00	545.54	3.25	546.56	64.53
544.54	0.00	545.56	3.71	546.58	66.23
544.56	0.00	545.58	4.22	546.60	67.96
544.58	0.00	545.60	4.79	546.62	69.69
544.60	0.00	545.62	5.41	546.64	71.44
544.62	0.00	545.64	6.08	546.66	73.21
544.64	0.00	545.66	6.78	546.68	74.99
544.66	0.00	545.68	7.52	546.70	76.78
544.68	0.00	545.70	8.30	546.72	78.59
544.70	0.00	545.72	9.11	546.74	80.41
544.72	0.00	545.74	9.96	546.76	82.24
544.74	0.00	545.76	10.84	546.78	84.09
544.76	0.00	545.78	11.75	546.80	85.96
544.78	0.00	545.80	12.68	546.82	87.83
544.80	0.00	545.82	13.65	546.84	89.72
544.82	0.00	545.84	14.64	546.86	91.62
544.84	0.00	545.86	15.66	546.88	93.21
544.86	0.00	545.88	16.71	546.90	93.97
544.88	0.03	545.90	17.78	546.92	94.73
544.90	0.05	545.92	18.88	546.94	95.49
544.92	0.09	545.94	20.00	546.96	96.24
544.94	0.13	545.96	21.14	546.98	96.99
544.96	0.18	545.98	22.30	547.00	**97.73**
544.98	0.23	546.00	23.49		
545.00	0.29	546.02	24.70		
545.02	0.35	546.04	25.93		
545.04	0.41	546.06	27.19		
545.06	0.48	546.08	28.46		
545.08	0.55	546.10	29.76		
545.10	0.62	546.12	31.07		
545.12	0.69	546.14	32.41		
545.14	0.77	546.16	33.76		
545.16	0.86	546.18	35.13		
545.18	0.94	546.20	36.52		
545.20	1.03	546.22	37.93		
545.22	1.12	546.24	39.36		
545.24	1.21	546.26	40.81		
545.26	1.30	546.28	42.27		
545.28	1.40	546.30	43.76		
545.30	1.50	546.32	45.26		
545.32	1.60	546.34	46.77		
545.34	1.71	546.36	48.31		
545.36	1.81	546.38	49.86		
545.38	1.92	546.40	51.42		
545.40	2.03	546.42	53.01		
545.42	2.14	546.44	54.60		
545.44	2.26	546.46	56.22		
545.46	2.38	546.48	57.85		
545.48	2.49	546.50	59.50		
545.50	2.61	546.52	61.16		

Stage-Area-Storage for Pond 27P: Basin 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
544.50	26,023	0
544.55	26,184	1,305
544.60	26,345	2,618
544.65	26,506	3,940
544.70	26,667	5,269
544.75	26,828	6,606
544.80	26,988	7,952
544.85	27,149	9,305
544.90	27,310	10,667
544.95	27,471	12,036
545.00	27,632	13,414
545.05	27,793	14,799
545.10	27,954	16,193
545.15	28,115	17,595
545.20	28,276	19,005
545.25	28,437	20,422
545.30	28,597	21,848
545.35	28,758	23,282
545.40	28,919	24,724
545.45	29,080	26,174
545.50	29,241	27,632
545.55	29,402	29,098
545.60	29,563	30,572
545.65	29,724	32,054
545.70	29,885	33,545
545.75	30,046	35,043
545.80	30,206	36,549
545.85	30,367	38,063
545.90	30,528	39,586
545.95	30,689	41,116
546.00	30,850	42,655
546.05	30,905	44,199
546.10	30,961	45,745
546.15	31,016	47,295
546.20	31,072	48,847
546.25	31,127	50,402
546.30	31,182	51,960
546.35	31,238	53,520
546.40	31,293	55,083
546.45	31,349	56,649
546.50	31,404	58,218
546.55	31,459	59,790
546.60	31,515	61,364
546.65	31,570	62,941
546.70	31,626	64,521
546.75	31,681	66,104
546.80	31,736	67,689
546.85	31,792	69,278
546.90	31,847	70,868
546.95	31,903	72,462
547.00	**31,958**	**74,059**

Summary for Pond 33P: Basin 11

Inflow Area = 84,103 sf, 71.22% Impervious, Inflow Depth = 2.66" for 2-Year event
Inflow = 4.62 cfs @ 12.17 hrs, Volume= 18,673 cf
Outflow = 3.23 cfs @ 12.26 hrs, Volume= 18,673 cf, Atten= 30%, Lag= 5.7 min
Discarded = 3.13 cfs @ 12.12 hrs, Volume= 18,638 cf
Primary = 0.10 cfs @ 12.26 hrs, Volume= 35 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 590.13' @ 12.26 hrs Surf.Area= 13,504 sf Storage= 717 cf

Plug-Flow detention time= 1.1 min calculated for 18,664 cf (100% of inflow)
Center-of-Mass det. time= 1.1 min (776.6 - 775.5)

Volume	Invert	Avail.Storage	Storage Description
#1	590.00'	13,072 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 32,680 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
590.00	13,504	0	0
591.00	13,504	13,504	13,504
592.00	13,504	13,504	27,008
592.42	13,504	5,672	32,680

Device	Routing	Invert	Outlet Devices
#1	Primary	590.10'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	590.00'	**10.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=3.13 cfs @ 12.12 hrs HW=590.04' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 3.13 cfs)

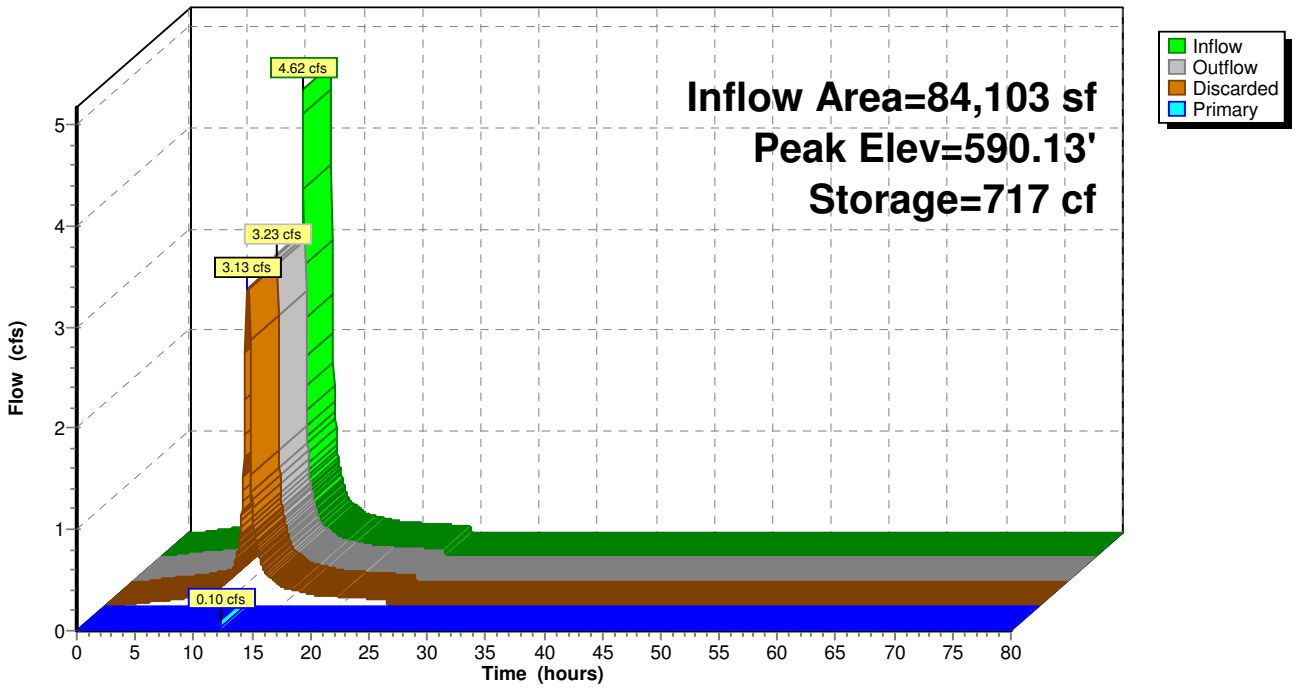
Primary OutFlow Max=0.09 cfs @ 12.26 hrs HW=590.13' (Free Discharge)
↑**1=Sharp-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.57 fps)

Pond 33P: Basin 11

Sharp-Crested Rectangular Weir Exfiltration

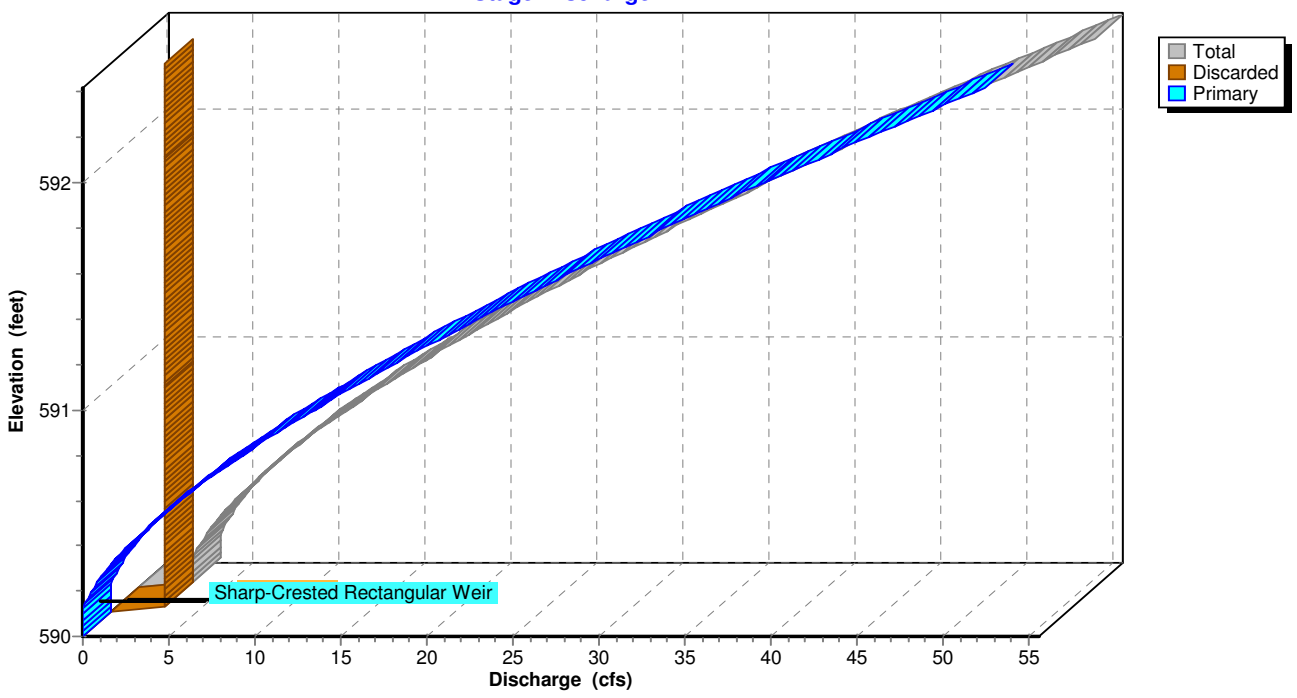
Pond 33P: Basin 11

Hydrograph

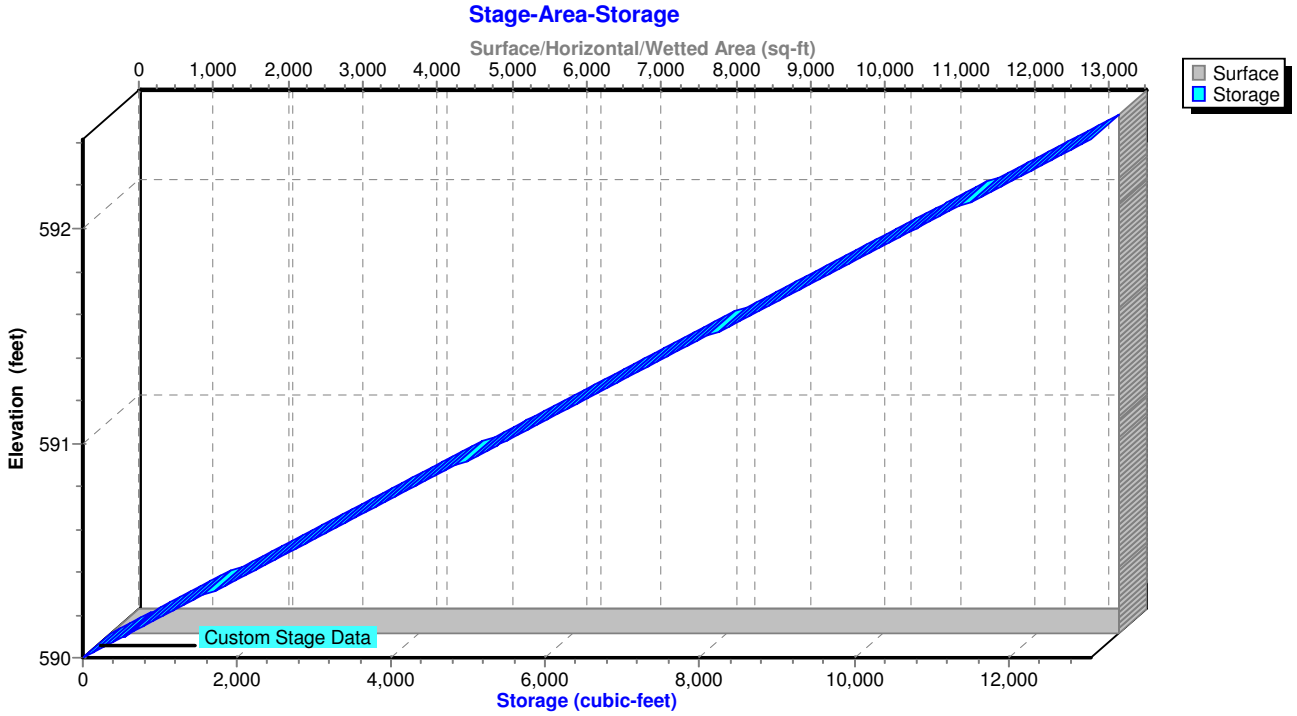


Pond 33P: Basin 11

Stage-Discharge



Pond 33P: Basin 11



Hydrograph for Pond 33P: Basin 11

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	590.00	0.00	0.00	0.00
2.00	0.02	1	590.00	0.02	0.02	0.00
4.00	0.05	2	590.00	0.05	0.05	0.00
6.00	0.07	3	590.00	0.07	0.07	0.00
8.00	0.11	5	590.00	0.11	0.11	0.00
10.00	0.20	8	590.00	0.20	0.20	0.00
12.00	**2.17**	**86**	**590.02**	**2.05**	**2.05**	**0.00**
14.00	**0.30**	**13**	**590.00**	**0.30**	**0.30**	**0.00**
16.00	0.17	7	590.00	0.17	0.17	0.00
18.00	0.11	5	590.00	0.11	0.11	0.00
20.00	0.09	4	590.00	0.09	0.09	0.00
22.00	0.08	3	590.00	0.08	0.08	0.00
24.00	0.07	3	590.00	0.07	0.07	0.00
26.00	0.00	0	590.00	0.00	0.00	0.00
28.00	0.00	0	590.00	0.00	0.00	0.00
30.00	0.00	0	590.00	0.00	0.00	0.00
32.00	0.00	0	590.00	0.00	0.00	0.00
34.00	0.00	0	590.00	0.00	0.00	0.00
36.00	0.00	0	590.00	0.00	0.00	0.00
38.00	0.00	0	590.00	0.00	0.00	0.00
40.00	0.00	0	590.00	0.00	0.00	0.00
42.00	0.00	0	590.00	0.00	0.00	0.00
44.00	0.00	0	590.00	0.00	0.00	0.00
46.00	0.00	0	590.00	0.00	0.00	0.00
48.00	0.00	0	590.00	0.00	0.00	0.00
50.00	0.00	0	590.00	0.00	0.00	0.00
52.00	0.00	0	590.00	0.00	0.00	0.00
54.00	0.00	0	590.00	0.00	0.00	0.00
56.00	0.00	0	590.00	0.00	0.00	0.00
58.00	0.00	0	590.00	0.00	0.00	0.00
60.00	0.00	0	590.00	0.00	0.00	0.00
62.00	0.00	0	590.00	0.00	0.00	0.00
64.00	0.00	0	590.00	0.00	0.00	0.00
66.00	0.00	0	590.00	0.00	0.00	0.00
68.00	0.00	0	590.00	0.00	0.00	0.00
70.00	0.00	0	590.00	0.00	0.00	0.00
72.00	0.00	0	590.00	0.00	0.00	0.00
74.00	0.00	0	590.00	0.00	0.00	0.00
76.00	0.00	0	590.00	0.00	0.00	0.00
78.00	0.00	0	590.00	0.00	0.00	0.00
80.00	0.00	0	590.00	0.00	0.00	0.00

Stage-Discharge for Pond 33P: Basin 11

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
590.00	0.00	**0.00**	0.00
590.05	3.13	**3.13**	0.00
590.10	3.13	3.13	0.00
590.15	3.31	3.13	0.18
590.20	3.64	3.13	0.51
590.25	4.07	3.13	0.94
590.30	4.58	3.13	1.45
590.35	5.15	3.13	2.02
590.40	5.78	3.13	2.65
590.45	6.46	3.13	3.34
590.50	7.20	3.13	4.07
590.55	7.97	3.13	4.85
590.60	8.79	3.13	5.66
590.65	9.65	3.13	6.52
590.70	10.54	3.13	7.42
590.75	11.47	3.13	8.35
590.80	12.43	3.13	9.31
590.85	13.43	3.13	10.30
590.90	14.45	3.13	11.32
590.95	15.50	3.13	12.38
591.00	16.58	3.13	13.46
591.05	17.69	3.13	14.56
591.10	18.82	3.13	15.70
591.15	19.98	3.13	16.85
591.20	21.16	3.13	18.03
591.25	22.36	3.13	19.24
591.30	23.59	3.13	20.46
591.35	24.83	3.13	21.71
591.40	26.10	3.13	22.97
591.45	27.39	3.13	24.26
591.50	28.69	3.13	25.57
591.55	30.02	3.13	26.89
591.60	31.36	3.13	28.23
591.65	32.72	3.13	29.59
591.70	34.10	3.13	30.97
591.75	35.49	3.13	32.37
591.80	36.90	3.13	33.78
591.85	38.33	3.13	35.20
591.90	39.77	3.13	36.64
591.95	41.22	3.13	38.10
592.00	42.69	3.13	39.57
592.05	44.17	3.13	41.05
592.10	45.67	3.13	42.55
592.15	47.18	3.13	44.05
592.20	48.70	3.13	45.58
592.25	50.24	3.13	47.11
592.30	51.78	3.13	48.66
592.35	53.34	3.13	50.21
592.40	**54.91**	3.13	**51.78**

Stage-Area-Storage for Pond 33P: Basin 11

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
590.00	**13,504**	0
590.05	13,504	270
590.10	13,504	540
590.15	13,504	810
590.20	13,504	1,080
590.25	13,504	1,350
590.30	13,504	1,620
590.35	13,504	1,891
590.40	13,504	2,161
590.45	13,504	2,431
590.50	13,504	2,701
590.55	13,504	2,971
590.60	13,504	3,241
590.65	13,504	3,511
590.70	13,504	3,781
590.75	13,504	4,051
590.80	13,504	4,321
590.85	13,504	4,591
590.90	13,504	4,861
590.95	13,504	5,132
591.00	13,504	5,402
591.05	13,504	5,672
591.10	13,504	5,942
591.15	13,504	6,212
591.20	13,504	6,482
591.25	13,504	6,752
591.30	13,504	7,022
591.35	13,504	7,292
591.40	13,504	7,562
591.45	13,504	7,832
591.50	13,504	8,102
591.55	13,504	8,372
591.60	13,504	8,643
591.65	13,504	8,913
591.70	13,504	9,183
591.75	13,504	9,453
591.80	13,504	9,723
591.85	13,504	9,993
591.90	13,504	10,263
591.95	13,504	10,533
592.00	13,504	10,803
592.05	13,504	11,073
592.10	13,504	11,343
592.15	13,504	11,613
592.20	13,504	11,884
592.25	13,504	12,154
592.30	13,504	12,424
592.35	13,504	12,694
592.40	13,504	**12,964**

Summary for Pond 41P: Basin 10

Inflow Area = 90,349 sf, 58.79% Impervious, Inflow Depth = 2.40" for 2-Year event
Inflow = 4.37 cfs @ 12.18 hrs, Volume= 18,101 cf
Outflow = 2.22 cfs @ 12.08 hrs, Volume= 18,101 cf, Atten= 49%, Lag= 0.0 min
Discarded = 2.22 cfs @ 12.08 hrs, Volume= 18,101 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 576.17' @ 12.35 hrs Surf.Area= 9,583 sf Storage= 1,586 cf

Plug-Flow detention time= 3.9 min calculated for 18,092 cf (100% of inflow)
Center-of-Mass det. time= 3.9 min (788.7 - 784.9)

Volume	Invert	Avail.Storage	Storage Description
#1	576.00'	28,749 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
576.00	9,583	0	0
577.00	9,583	9,583	9,583
578.00	9,583	9,583	19,166
579.00	9,583	9,583	28,749

Device	Routing	Invert	Outlet Devices
#1	Primary	577.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	576.25'	**42.0" W x 12.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Discarded	576.00'	**10.000 in/hr Exfiltration over Surface area**

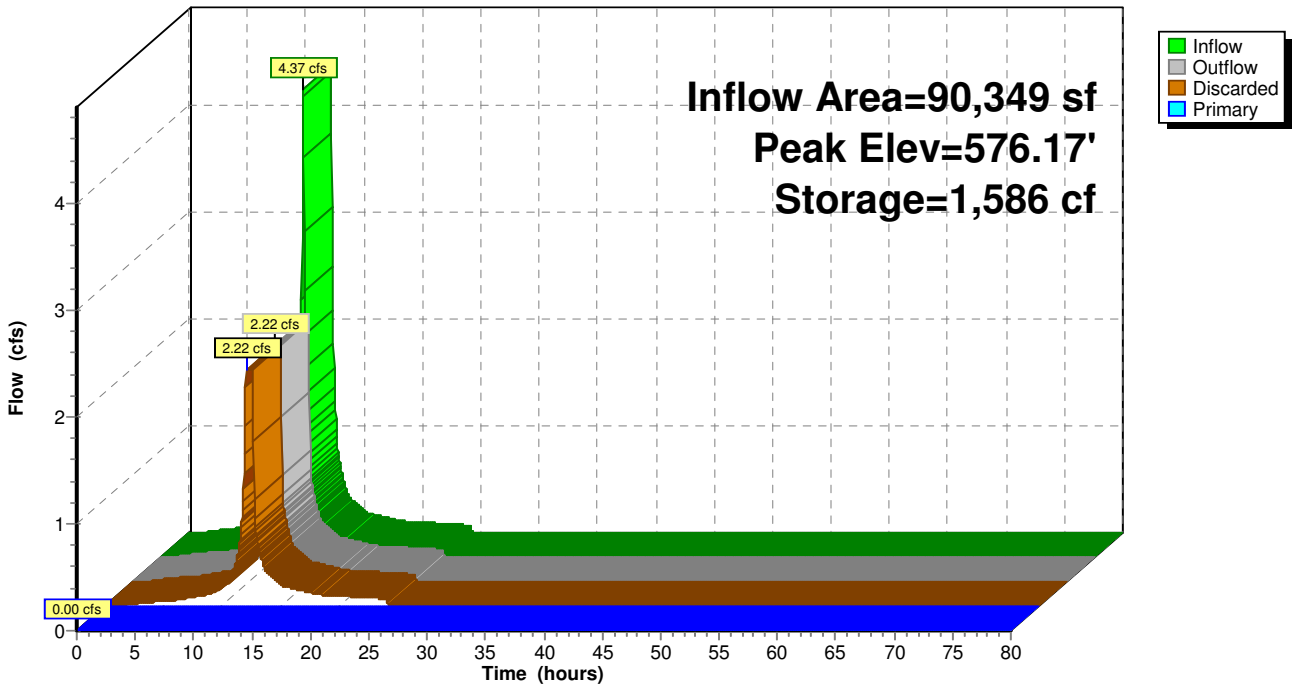
Discarded OutFlow Max=2.22 cfs @ 12.08 hrs HW=576.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 2.22 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=576.00' (Free Discharge)
├**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Orifice/Grate** (Controls 0.00 cfs)



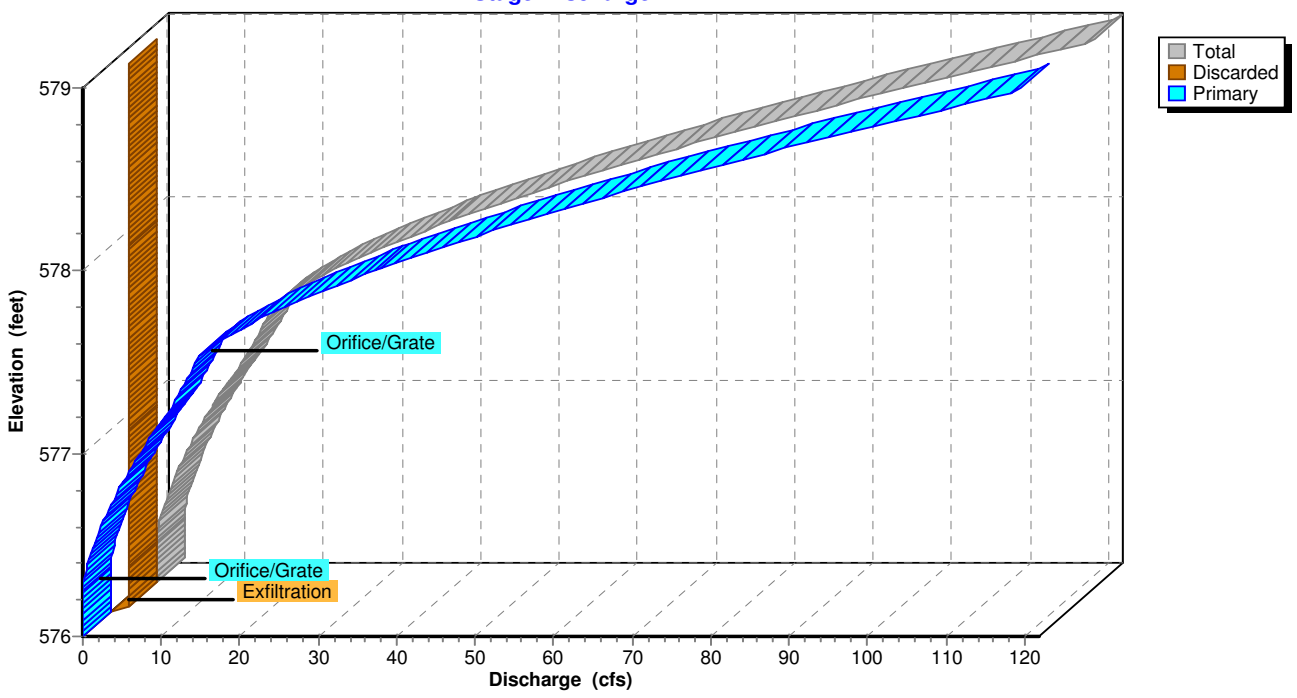
Pond 41P: Basin 10

Hydrograph

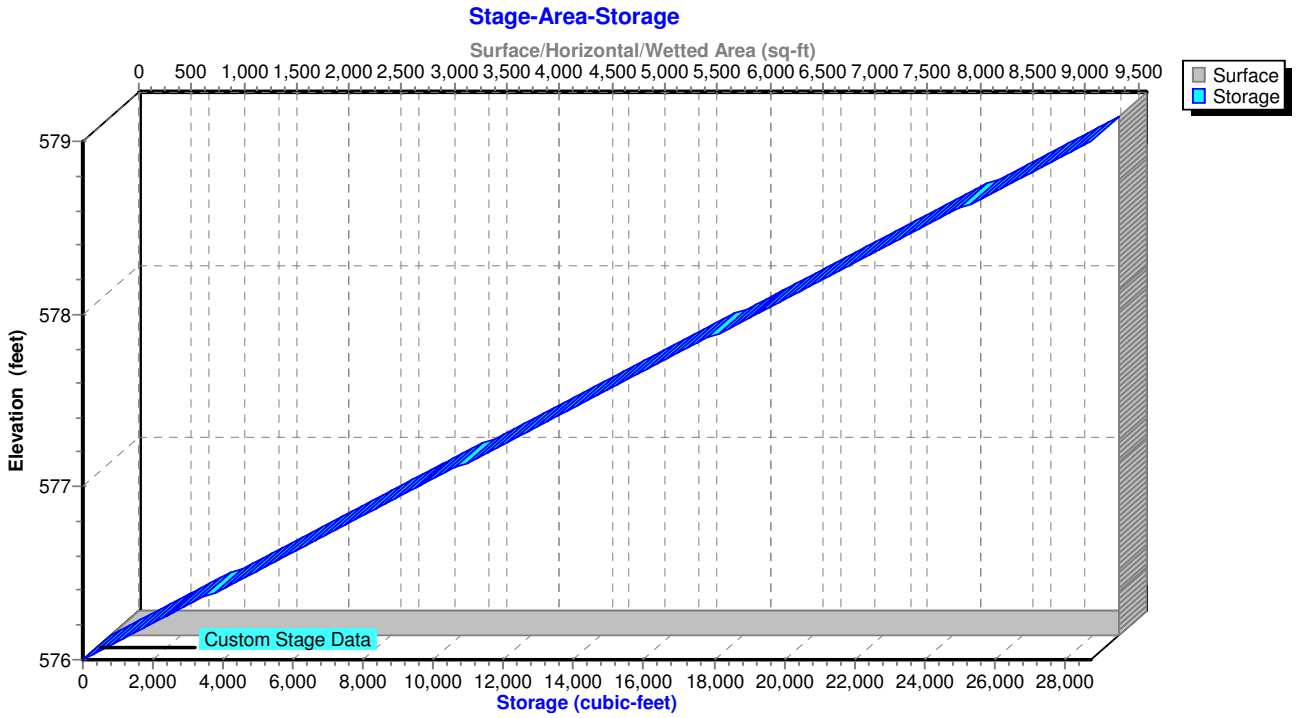


Pond 41P: Basin 10

Stage-Discharge



Pond 41P: Basin 10



Hydrograph for Pond 41P: Basin 10

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	576.00	0.00	0.00	**0.00**
2.00	0.01	2	576.00	0.01	0.01	0.00
4.00	0.04	5	576.00	0.04	0.04	0.00
6.00	0.06	8	576.00	0.06	0.06	0.00
8.00	0.10	12	576.00	0.10	0.10	0.00
10.00	0.18	23	576.00	0.18	0.18	0.00
12.00	**1.96**	**219**	**576.02**	**1.69**	**1.69**	0.00
14.00	**0.30**	**40**	**576.00**	**0.31**	**0.31**	0.00
16.00	0.17	22	576.00	0.17	0.17	0.00
18.00	0.11	15	576.00	0.12	0.12	0.00
20.00	0.10	13	576.00	0.10	0.10	0.00
22.00	0.08	11	576.00	0.08	0.08	0.00
24.00	0.07	9	576.00	0.07	0.07	0.00
26.00	0.00	0	576.00	0.00	0.00	0.00
28.00	0.00	0	576.00	0.00	0.00	0.00
30.00	0.00	0	576.00	0.00	0.00	0.00
32.00	0.00	0	576.00	0.00	0.00	0.00
34.00	0.00	0	576.00	0.00	0.00	0.00
36.00	0.00	0	576.00	0.00	0.00	0.00
38.00	0.00	0	576.00	0.00	0.00	0.00
40.00	0.00	0	576.00	0.00	0.00	0.00
42.00	0.00	0	576.00	0.00	0.00	0.00
44.00	0.00	0	576.00	0.00	0.00	0.00
46.00	0.00	0	576.00	0.00	0.00	0.00
48.00	0.00	0	576.00	0.00	0.00	0.00
50.00	0.00	0	576.00	0.00	0.00	0.00
52.00	0.00	0	576.00	0.00	0.00	0.00
54.00	0.00	0	576.00	0.00	0.00	0.00
56.00	0.00	0	576.00	0.00	0.00	0.00
58.00	0.00	0	576.00	0.00	0.00	0.00
60.00	0.00	0	576.00	0.00	0.00	0.00
62.00	0.00	0	576.00	0.00	0.00	0.00
64.00	0.00	0	576.00	0.00	0.00	0.00
66.00	0.00	0	576.00	0.00	0.00	0.00
68.00	0.00	0	576.00	0.00	0.00	0.00
70.00	0.00	0	576.00	0.00	0.00	0.00
72.00	0.00	0	576.00	0.00	0.00	0.00
74.00	0.00	0	576.00	0.00	0.00	0.00
76.00	0.00	0	576.00	0.00	0.00	0.00
78.00	0.00	0	576.00	0.00	0.00	0.00
80.00	0.00	0	576.00	0.00	0.00	0.00

Stage-Discharge for Pond 41P: Basin 10

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
576.00	0.00	**0.00**	0.00
576.05	2.22	**2.22**	0.00
576.10	2.22	2.22	0.00
576.15	2.22	2.22	0.00
576.20	2.22	2.22	0.00
576.25	2.22	2.22	0.00
576.30	2.34	2.22	0.13
576.35	2.57	2.22	0.36
576.40	2.87	2.22	0.65
576.45	3.22	2.22	1.00
576.50	3.62	2.22	1.40
576.55	4.06	2.22	1.85
576.60	4.54	2.22	2.33
576.65	5.06	2.22	2.84
576.70	5.61	2.22	3.39
576.75	6.19	2.22	3.97
576.80	6.80	2.22	4.58
576.85	7.44	2.22	5.22
576.90	8.11	2.22	5.89
576.95	8.80	2.22	6.58
577.00	9.52	2.22	7.30
577.05	10.26	2.22	8.04
577.10	11.02	2.22	8.80
577.15	11.81	2.22	9.59
577.20	12.62	2.22	10.40
577.25	13.45	2.22	11.23
577.30	14.18	2.22	11.96
577.35	14.82	2.22	12.61
577.40	15.42	2.22	13.20
577.45	15.98	2.22	13.76
577.50	16.52	2.22	14.30
577.55	17.61	2.22	15.39
577.60	19.17	2.22	16.95
577.65	21.03	2.22	18.81
577.70	23.12	2.22	20.90
577.75	25.43	2.22	23.21
577.80	27.91	2.22	25.69
577.85	30.57	2.22	28.35
577.90	33.38	2.22	31.16
577.95	36.33	2.22	34.12
578.00	39.43	2.22	37.21
578.05	42.65	2.22	40.43
578.10	46.00	2.22	43.78
578.15	49.47	2.22	47.25
578.20	53.05	2.22	50.83
578.25	56.74	2.22	54.53
578.30	60.54	2.22	58.33
578.35	64.45	2.22	62.23
578.40	68.45	2.22	66.23
578.45	72.56	2.22	70.34
578.50	76.75	2.22	74.54
578.55	81.05	2.22	78.83
578.60	85.43	2.22	83.21
578.65	89.90	2.22	87.68
578.70	94.46	2.22	92.24
578.75	99.11	2.22	96.89
578.80	103.84	2.22	101.62
578.85	108.65	2.22	106.43
578.90	113.54	2.22	111.32
578.95	118.51	2.22	116.29
579.00	**121.80**	2.22	**119.58**

Stage-Area-Storage for Pond 41P: Basin 10

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
576.00	**9,583**	0
576.05	9,583	479
576.10	9,583	958
576.15	9,583	1,437
576.20	9,583	1,917
576.25	9,583	2,396
576.30	9,583	2,875
576.35	9,583	3,354
576.40	9,583	3,833
576.45	9,583	4,312
576.50	9,583	4,792
576.55	9,583	5,271
576.60	9,583	5,750
576.65	9,583	6,229
576.70	9,583	6,708
576.75	9,583	7,187
576.80	9,583	7,666
576.85	9,583	8,146
576.90	9,583	8,625
576.95	9,583	9,104
577.00	9,583	9,583
577.05	9,583	10,062
577.10	9,583	10,541
577.15	9,583	11,020
577.20	9,583	11,500
577.25	9,583	11,979
577.30	9,583	12,458
577.35	9,583	12,937
577.40	9,583	13,416
577.45	9,583	13,895
577.50	9,583	14,375
577.55	9,583	14,854
577.60	9,583	15,333
577.65	9,583	15,812
577.70	9,583	16,291
577.75	9,583	16,770
577.80	9,583	17,249
577.85	9,583	17,729
577.90	9,583	18,208
577.95	9,583	18,687
578.00	9,583	19,166
578.05	9,583	19,645
578.10	9,583	20,124
578.15	9,583	20,603
578.20	9,583	21,083
578.25	9,583	21,562
578.30	9,583	22,041
578.35	9,583	22,520
578.40	9,583	22,999
578.45	9,583	23,478
578.50	9,583	23,958
578.55	9,583	24,437
578.60	9,583	24,916
578.65	9,583	25,395
578.70	9,583	25,874
578.75	9,583	26,353
578.80	9,583	26,832
578.85	9,583	27,312
578.90	9,583	27,791
578.95	9,583	28,270
579.00	9,583	**28,749**

Summary for Pond 42P: Basin 9

Inflow Area = 26,377 sf, 66.20% Impervious, Inflow Depth = 2.61" for 2-Year event
Inflow = 1.55 cfs @ 12.14 hrs, Volume= 5,745 cf
Outflow = 0.61 cfs @ 12.00 hrs, Volume= 5,745 cf, Atten= 61%, Lag= 0.0 min
Discarded = 0.61 cfs @ 12.00 hrs, Volume= 5,745 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 562.24' @ 12.32 hrs Surf.Area= 6,534 sf Storage= 640 cf

Plug-Flow detention time= 4.9 min calculated for 5,742 cf (100% of inflow)
Center-of-Mass det. time= 4.9 min (781.7 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	562.00'	6,325 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 15,812 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
562.00	6,534	0	0
563.00	6,534	6,534	6,534
564.00	6,534	6,534	13,068
564.42	6,534	2,744	15,812

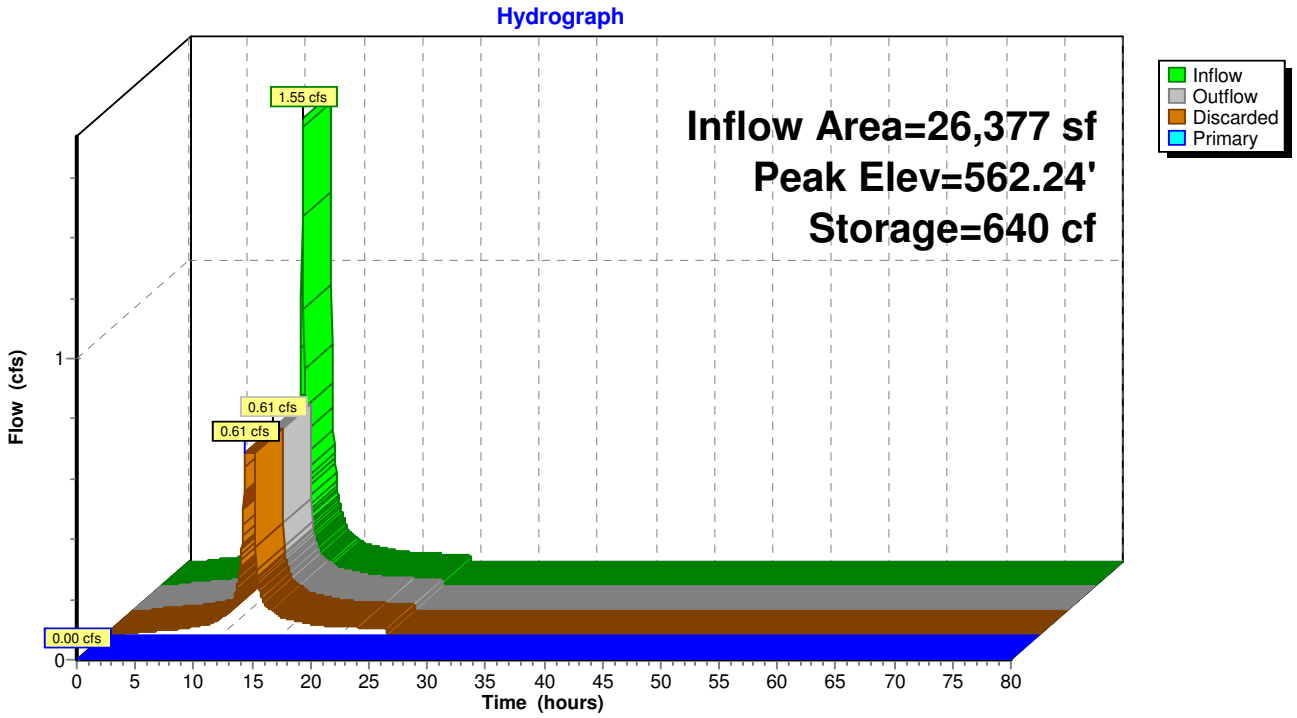
Device	Routing	Invert	Outlet Devices
#1	Primary	564.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	563.00'	**3.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Discarded	562.00'	**4.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.61 cfs @ 12.00 hrs HW=562.03' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.61 cfs)

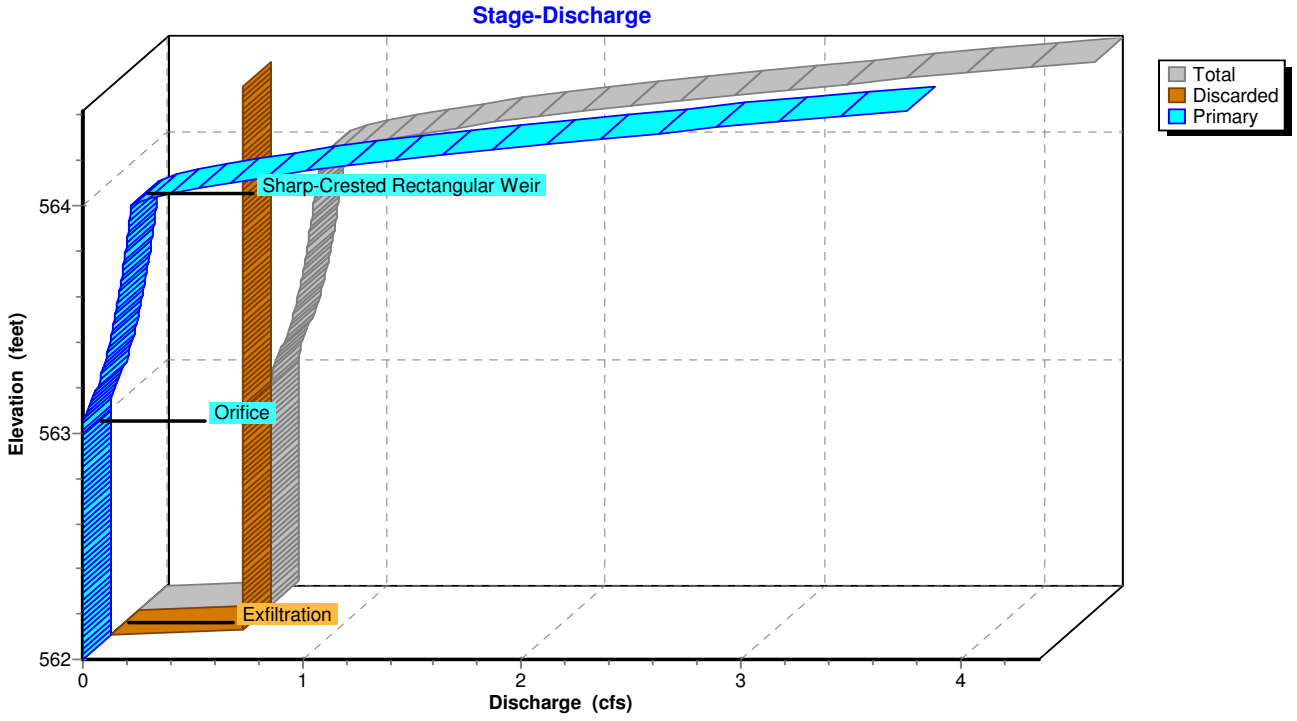
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=562.00' (Free Discharge)
├**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice** (Controls 0.00 cfs)



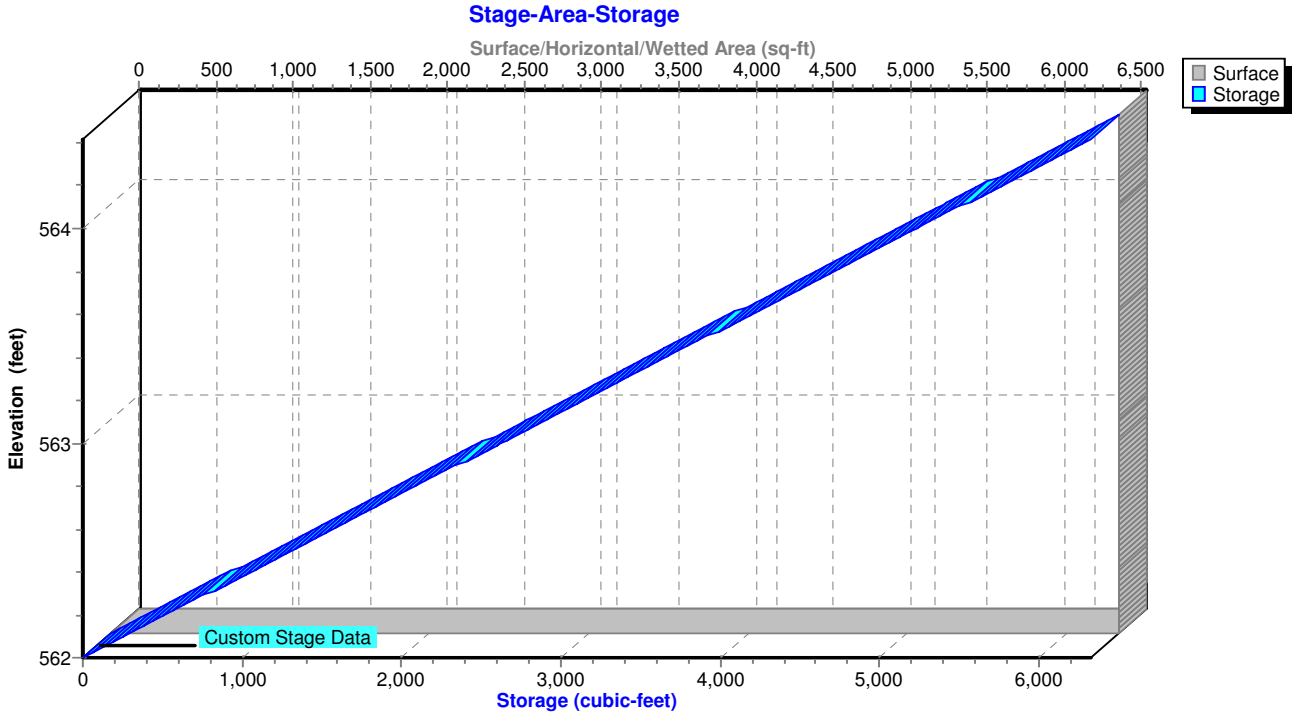
Pond 42P: Basin 9



Pond 42P: Basin 9



Pond 42P: Basin 9



Hydrograph for Pond 42P: Basin 9

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	562.00	0.00	0.00	**0.00**
2.00	0.01	1	562.00	0.00	0.00	0.00
4.00	0.01	1	562.00	0.01	0.01	0.00
6.00	0.02	2	562.00	0.02	0.02	0.00
8.00	0.03	3	562.00	0.03	0.03	0.00
10.00	0.06	6	562.00	0.06	0.06	0.00
12.00	**0.79**	**77**	**562.03**	**0.61**	**0.61**	0.00
14.00	**0.09**	**10**	**562.00**	0.09	0.09	0.00
16.00	0.05	5	562.00	0.05	0.05	0.00
18.00	0.03	4	562.00	0.03	0.03	0.00
20.00	0.03	3	562.00	0.03	0.03	0.00
22.00	0.03	3	562.00	0.03	0.03	0.00
24.00	0.02	2	562.00	0.02	0.02	0.00
26.00	0.00	0	562.00	0.00	0.00	0.00
28.00	0.00	0	562.00	0.00	0.00	0.00
30.00	0.00	0	562.00	0.00	0.00	0.00
32.00	0.00	0	562.00	0.00	0.00	0.00
34.00	0.00	0	562.00	0.00	0.00	0.00
36.00	0.00	0	562.00	0.00	0.00	0.00
38.00	0.00	0	562.00	0.00	0.00	0.00
40.00	0.00	0	562.00	0.00	0.00	0.00
42.00	0.00	0	562.00	0.00	0.00	0.00
44.00	0.00	0	562.00	0.00	0.00	0.00
46.00	0.00	0	562.00	0.00	0.00	0.00
48.00	0.00	0	562.00	0.00	0.00	0.00
50.00	0.00	0	562.00	0.00	0.00	0.00
52.00	0.00	0	562.00	0.00	0.00	0.00
54.00	0.00	0	562.00	0.00	0.00	0.00
56.00	0.00	0	562.00	0.00	0.00	0.00
58.00	0.00	0	562.00	0.00	0.00	0.00
60.00	0.00	0	562.00	0.00	0.00	0.00
62.00	0.00	0	562.00	0.00	0.00	0.00
64.00	0.00	0	562.00	0.00	0.00	0.00
66.00	0.00	0	562.00	0.00	0.00	0.00
68.00	0.00	0	562.00	0.00	0.00	0.00
70.00	0.00	0	562.00	0.00	0.00	0.00
72.00	0.00	0	562.00	0.00	0.00	0.00
74.00	0.00	0	562.00	0.00	0.00	0.00
76.00	0.00	0	562.00	0.00	0.00	0.00
78.00	0.00	0	562.00	0.00	0.00	0.00
80.00	0.00	0	562.00	0.00	0.00	0.00

Stage-Discharge for Pond 42P: Basin 9

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
562.00	0.00	**0.00**	0.00
562.05	0.61	**0.61**	0.00
562.10	0.61	0.61	0.00
562.15	0.61	0.61	0.00
562.20	0.61	0.61	0.00
562.25	0.61	0.61	0.00
562.30	0.61	0.61	0.00
562.35	0.61	0.61	0.00
562.40	0.61	0.61	0.00
562.45	0.61	0.61	0.00
562.50	0.61	0.61	0.00
562.55	0.61	0.61	0.00
562.60	0.61	0.61	0.00
562.65	0.61	0.61	0.00
562.70	0.61	0.61	0.00
562.75	0.61	0.61	0.00
562.80	0.61	0.61	0.00
562.85	0.61	0.61	0.00
562.90	0.61	0.61	0.00
562.95	0.61	0.61	0.00
563.00	0.61	0.61	0.00
563.05	0.61	0.61	0.01
563.10	0.62	0.61	0.02
563.15	0.65	0.61	0.04
563.20	0.67	0.61	0.06
563.25	0.69	0.61	0.08
563.30	0.70	0.61	0.10
563.35	0.72	0.61	0.11
563.40	0.73	0.61	0.12
563.45	0.74	0.61	0.13
563.50	0.75	0.61	0.14
563.55	0.76	0.61	0.15
563.60	0.77	0.61	0.16
563.65	0.78	0.61	0.17
563.70	0.78	0.61	0.18
563.75	0.79	0.61	0.19
563.80	0.80	0.61	0.19
563.85	0.81	0.61	0.20
563.90	0.81	0.61	0.21
563.95	0.82	0.61	0.21
564.00	0.83	0.61	0.22
564.05	0.98	0.61	0.37
564.10	1.25	0.61	0.64
564.15	1.60	0.61	0.99
564.20	2.01	0.61	1.40
564.25	2.47	0.61	1.87
564.30	2.98	0.61	2.37
564.35	3.53	0.61	2.92
564.40	**4.11**	0.61	**3.51**

Stage-Area-Storage for Pond 42P: Basin 9

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
562.00	**6,534**	0
562.05	6,534	131
562.10	6,534	261
562.15	6,534	392
562.20	6,534	523
562.25	6,534	653
562.30	6,534	784
562.35	6,534	915
562.40	6,534	1,045
562.45	6,534	1,176
562.50	6,534	1,307
562.55	6,534	1,437
562.60	6,534	1,568
562.65	6,534	1,699
562.70	6,534	1,830
562.75	6,534	1,960
562.80	6,534	2,091
562.85	6,534	2,222
562.90	6,534	2,352
562.95	6,534	2,483
563.00	6,534	2,614
563.05	6,534	2,744
563.10	6,534	2,875
563.15	6,534	3,006
563.20	6,534	3,136
563.25	6,534	3,267
563.30	6,534	3,398
563.35	6,534	3,528
563.40	6,534	3,659
563.45	6,534	3,790
563.50	6,534	3,920
563.55	6,534	4,051
563.60	6,534	4,182
563.65	6,534	4,312
563.70	6,534	4,443
563.75	6,534	4,574
563.80	6,534	4,704
563.85	6,534	4,835
563.90	6,534	4,966
563.95	6,534	5,097
564.00	6,534	5,227
564.05	6,534	5,358
564.10	6,534	5,489
564.15	6,534	5,619
564.20	6,534	5,750
564.25	6,534	5,881
564.30	6,534	6,011
564.35	6,534	6,142
564.40	6,534	**6,273**

Summary for Pond 48P: Basin 8

Inflow Area = 61,044 sf, 62.67% Impervious, Inflow Depth = 2.53" for 2-Year event
Inflow = 3.35 cfs @ 12.16 hrs, Volume= 12,855 cf
Outflow = 2.44 cfs @ 12.23 hrs, Volume= 12,855 cf, Atten= 27%, Lag= 4.6 min
Discarded = 2.44 cfs @ 12.23 hrs, Volume= 12,855 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 49P : Basin 7

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 573.11' @ 12.23 hrs Surf.Area= 10,019 sf Storage= 434 cf

Plug-Flow detention time= 1.1 min calculated for 12,849 cf (100% of inflow)
Center-of-Mass det. time= 1.1 min (781.4 - 780.3)

Volume	Invert	Avail.Storage	Storage Description
#1	573.00'	12,023 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 30,057 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
573.00	10,019	0	0
574.00	10,019	10,019	10,019
575.00	10,019	10,019	20,038
576.00	10,019	10,019	30,057

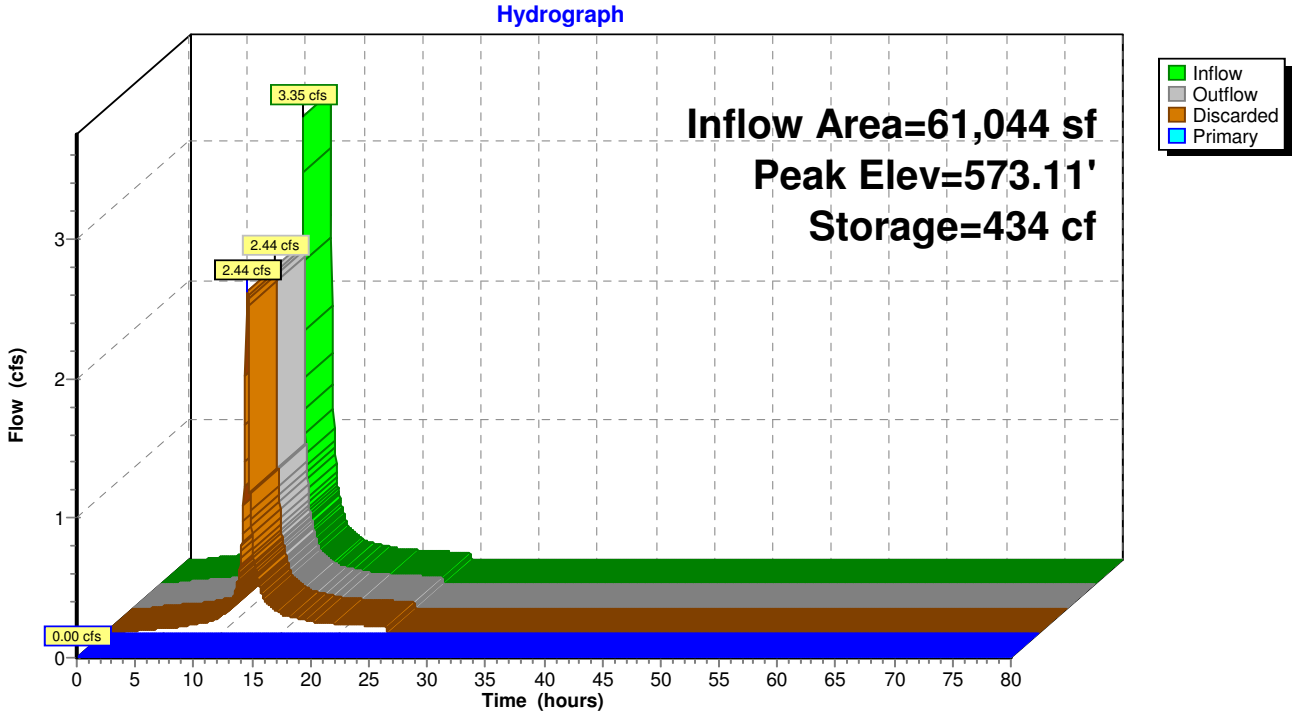
Device	Routing	Invert	Outlet Devices
#1	Primary	575.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	573.45'	**6.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Discarded	573.00'	**10.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 571.00'

Discarded OutFlow Max=2.44 cfs @ 12.23 hrs HW=573.11' (Free Discharge)
└**3=Exfiltration** (Controls 2.44 cfs)

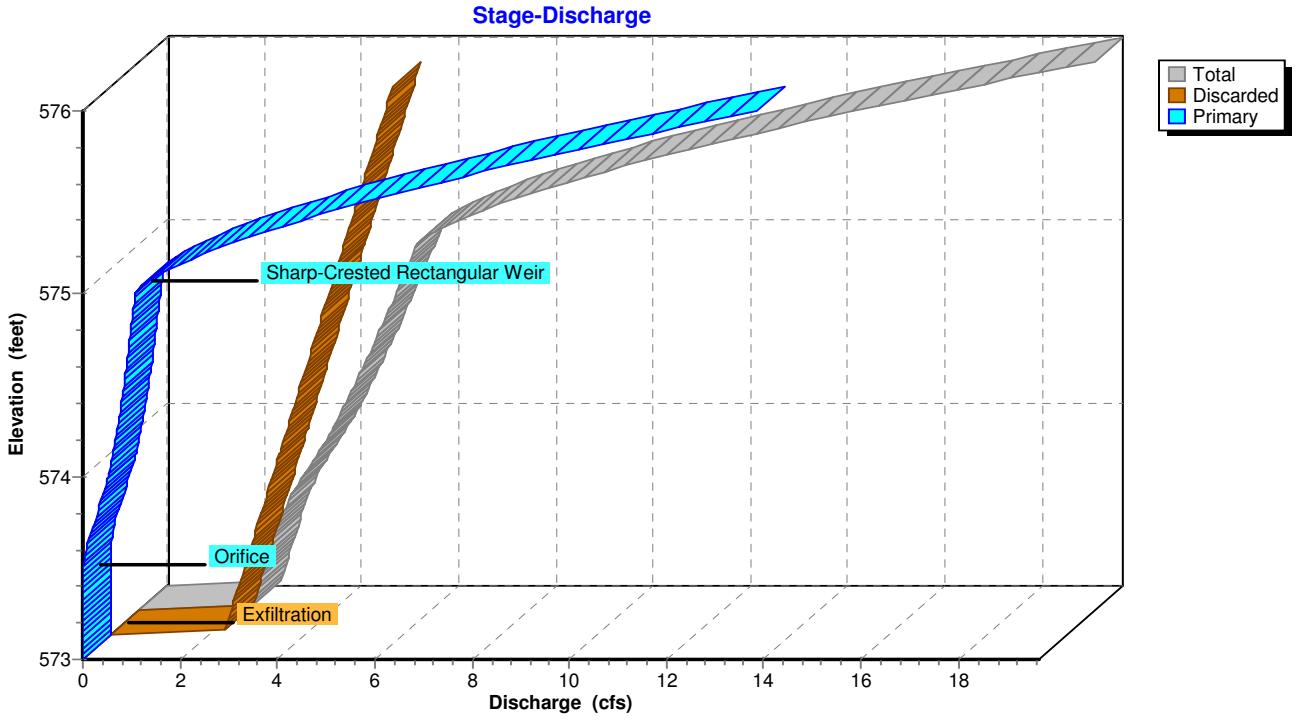
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=573.00' (Free Discharge)
└**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice** (Controls 0.00 cfs)



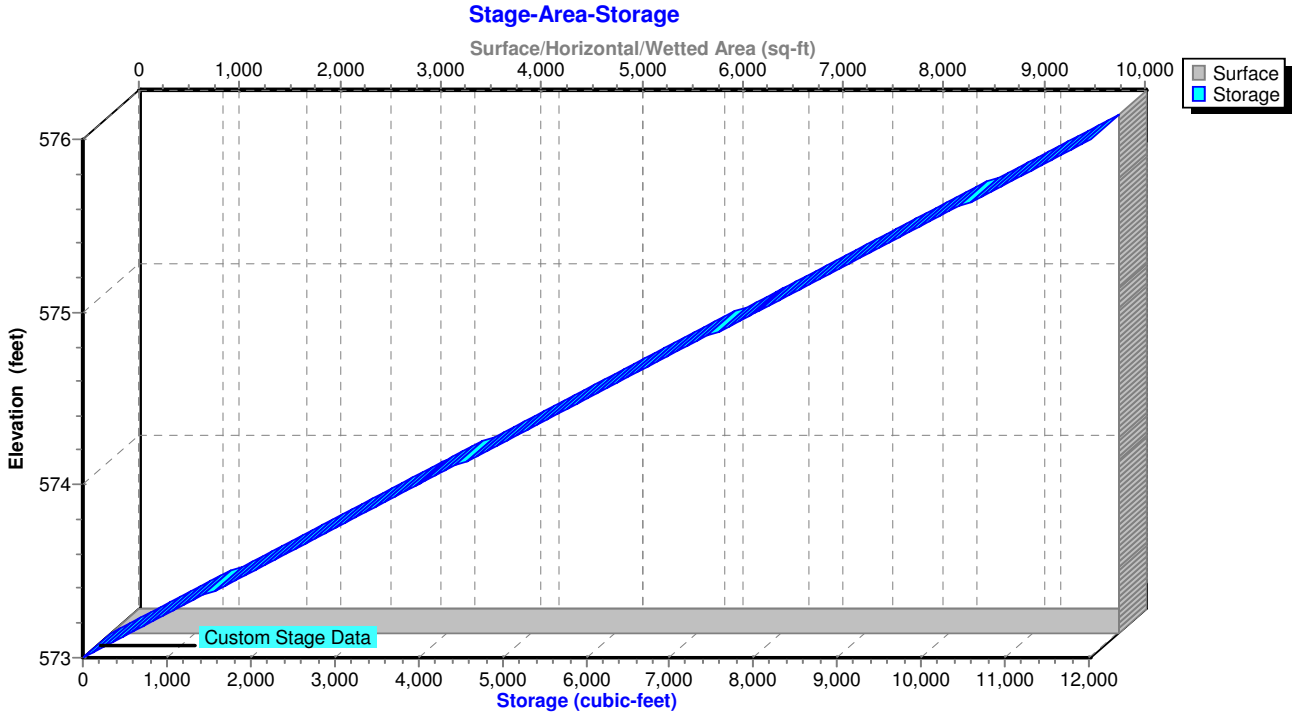
Pond 48P: Basin 8



Pond 48P: Basin 8



Pond 48P: Basin 8



Hydrograph for Pond 48P: Basin 8

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	573.00	0.00	0.00	**0.00**
2.00	0.01	1	573.00	0.01	0.01	0.00
4.00	0.03	1	573.00	0.03	0.03	0.00
6.00	0.04	2	573.00	0.04	0.04	0.00
8.00	0.07	4	573.00	0.07	0.07	0.00
10.00	0.13	7	573.00	0.13	0.13	0.00
12.00	**1.61**	**76**	**573.02**	**1.49**	**1.49**	0.00
14.00	**0.21**	**11**	**573.00**	**0.21**	**0.21**	0.00
16.00	0.12	6	573.00	0.12	0.12	0.00
18.00	0.08	4	573.00	0.08	0.08	0.00
20.00	0.07	3	573.00	0.07	0.07	0.00
22.00	0.06	3	573.00	0.06	0.06	0.00
24.00	0.05	2	573.00	0.05	0.05	0.00
26.00	0.00	0	573.00	0.00	0.00	0.00
28.00	0.00	0	573.00	0.00	0.00	0.00
30.00	0.00	0	573.00	0.00	0.00	0.00
32.00	0.00	0	573.00	0.00	0.00	0.00
34.00	0.00	0	573.00	0.00	0.00	0.00
36.00	0.00	0	573.00	0.00	0.00	0.00
38.00	0.00	0	573.00	0.00	0.00	0.00
40.00	0.00	0	573.00	0.00	0.00	0.00
42.00	0.00	0	573.00	0.00	0.00	0.00
44.00	0.00	0	573.00	0.00	0.00	0.00
46.00	0.00	0	573.00	0.00	0.00	0.00
48.00	0.00	0	573.00	0.00	0.00	0.00
50.00	0.00	0	573.00	0.00	0.00	0.00
52.00	0.00	0	573.00	0.00	0.00	0.00
54.00	0.00	0	573.00	0.00	0.00	0.00
56.00	0.00	0	573.00	0.00	0.00	0.00
58.00	0.00	0	573.00	0.00	0.00	0.00
60.00	0.00	0	573.00	0.00	0.00	0.00
62.00	0.00	0	573.00	0.00	0.00	0.00
64.00	0.00	0	573.00	0.00	0.00	0.00
66.00	0.00	0	573.00	0.00	0.00	0.00
68.00	0.00	0	573.00	0.00	0.00	0.00
70.00	0.00	0	573.00	0.00	0.00	0.00
72.00	0.00	0	573.00	0.00	0.00	0.00
74.00	0.00	0	573.00	0.00	0.00	0.00
76.00	0.00	0	573.00	0.00	0.00	0.00
78.00	0.00	0	573.00	0.00	0.00	0.00
80.00	0.00	0	573.00	0.00	0.00	0.00

Stage-Discharge for Pond 48P: Basin 8

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
573.00	0.00	0.00	0.00
573.05	2.38	2.38	0.00
573.10	2.44	2.44	0.00
573.15	2.49	2.49	0.00
573.20	2.55	2.55	0.00
573.25	2.61	2.61	0.00
573.30	2.67	2.67	0.00
573.35	2.73	2.73	0.00
573.40	2.78	2.78	0.00
573.45	2.84	2.84	0.00
573.50	2.91	2.90	0.01
573.55	2.99	2.96	0.03
573.60	3.08	3.01	0.07
573.65	3.18	3.07	0.11
573.70	3.30	3.13	0.17
573.75	3.42	3.19	0.23
573.80	3.54	3.25	0.30
573.85	3.67	3.30	0.36
573.90	3.79	3.36	0.43
573.95	3.89	3.42	0.47
574.00	4.00	3.48	0.52
574.05	4.10	3.54	0.56
574.10	4.19	3.59	0.60
574.15	4.29	3.65	0.63
574.20	4.38	3.71	0.67
574.25	4.47	3.77	0.70
574.30	4.56	3.83	0.73
574.35	4.65	3.88	0.76
574.40	4.73	3.94	0.79
574.45	4.82	4.00	0.82
574.50	4.90	4.06	0.85
574.55	4.99	4.12	0.87
574.60	5.07	4.17	0.90
574.65	5.15	4.23	0.92
574.70	5.24	4.29	0.95
574.75	5.32	4.35	0.97
574.80	5.40	4.41	0.99
574.85	5.48	4.46	1.01
574.90	5.56	4.52	1.04
574.95	5.64	4.58	1.06
575.00	5.72	4.64	1.08
575.05	5.94	4.70	1.24
575.10	6.28	4.75	1.53
575.15	6.70	4.81	1.89
575.20	7.19	4.87	2.32
575.25	7.72	4.93	2.79
575.30	8.30	4.99	3.31
575.35	8.92	5.04	3.88
575.40	9.58	5.10	4.48
575.45	10.27	5.16	5.11
575.50	11.00	5.22	5.78
575.55	11.75	5.28	6.47
575.60	12.53	5.33	7.20
575.65	13.34	5.39	7.95
575.70	14.18	5.45	8.73
575.75	15.04	5.51	9.53
575.80	15.92	5.57	10.35
575.85	16.82	5.62	11.20
575.90	17.75	5.68	12.07
575.95	18.69	5.74	12.95
576.00	**19.66**	**5.80**	**13.86**

Stage-Area-Storage for Pond 48P: Basin 8

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
573.00	**10,019**	0
573.05	10,019	200
573.10	10,019	401
573.15	10,019	601
573.20	10,019	802
573.25	10,019	1,002
573.30	10,019	1,202
573.35	10,019	1,403
573.40	10,019	1,603
573.45	10,019	1,803
573.50	10,019	2,004
573.55	10,019	2,204
573.60	10,019	2,405
573.65	10,019	2,605
573.70	10,019	2,805
573.75	10,019	3,006
573.80	10,019	3,206
573.85	10,019	3,406
573.90	10,019	3,607
573.95	10,019	3,807
574.00	10,019	4,008
574.05	10,019	4,208
574.10	10,019	4,408
574.15	10,019	4,609
574.20	10,019	4,809
574.25	10,019	5,010
574.30	10,019	5,210
574.35	10,019	5,410
574.40	10,019	5,611
574.45	10,019	5,811
574.50	10,019	6,011
574.55	10,019	6,212
574.60	10,019	6,412
574.65	10,019	6,613
574.70	10,019	6,813
574.75	10,019	7,013
574.80	10,019	7,214
574.85	10,019	7,414
574.90	10,019	7,614
574.95	10,019	7,815
575.00	10,019	8,015
575.05	10,019	8,216
575.10	10,019	8,416
575.15	10,019	8,616
575.20	10,019	8,817
575.25	10,019	9,017
575.30	10,019	9,217
575.35	10,019	9,418
575.40	10,019	9,618
575.45	10,019	9,819
575.50	10,019	10,019
575.55	10,019	10,219
575.60	10,019	10,420
575.65	10,019	10,620
575.70	10,019	10,821
575.75	10,019	11,021
575.80	10,019	11,221
575.85	10,019	11,422
575.90	10,019	11,622
575.95	10,019	11,822
576.00	10,019	**12,023**

Summary for Pond 49P: Basin 7

Inflow Area = 165,500 sf, 50.78% Impervious, Inflow Depth = 1.38" for 2-Year event
Inflow = 4.44 cfs @ 12.20 hrs, Volume= 19,011 cf
Outflow = 0.53 cfs @ 13.31 hrs, Volume= 13,242 cf, Atten= 88%, Lag= 66.6 min
Primary = 0.53 cfs @ 13.31 hrs, Volume= 13,242 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 531.74' @ 13.31 hrs Surf.Area= 15,670 sf Storage= 11,169 cf

Plug-Flow detention time= 476.0 min calculated for 13,235 cf (70% of inflow)
Center-of-Mass det. time= 368.8 min (1,168.4 - 799.6)

Volume	Invert	Avail.Storage	Storage Description
#1	531.00'	50,966 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
531.00	14,375	0	0
532.00	16,117	15,246	15,246
533.00	17,860	16,989	32,235
534.00	19,602	18,731	50,966

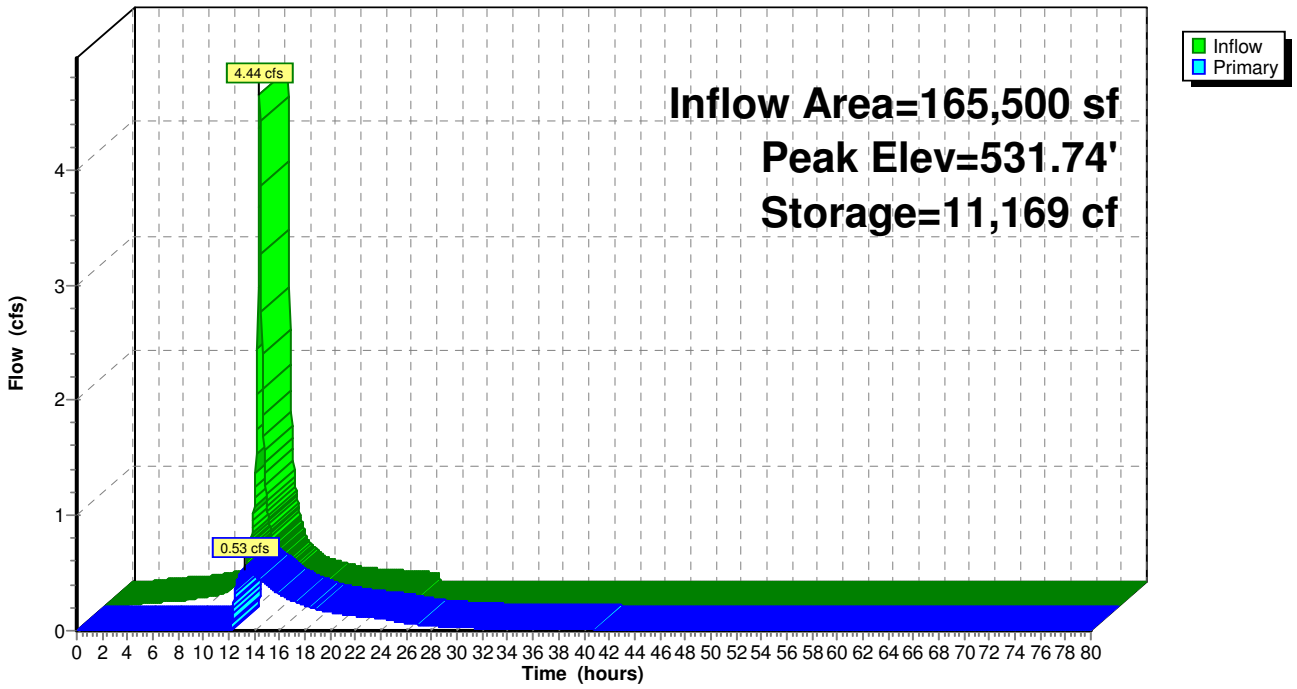
Device	Routing	Invert	Outlet Devices
#1	Primary	531.38'	**12.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.53 cfs @ 13.31 hrs HW=531.74' (Free Discharge)
1=Orifice (Orifice Controls 0.53 cfs @ 2.05 fps)



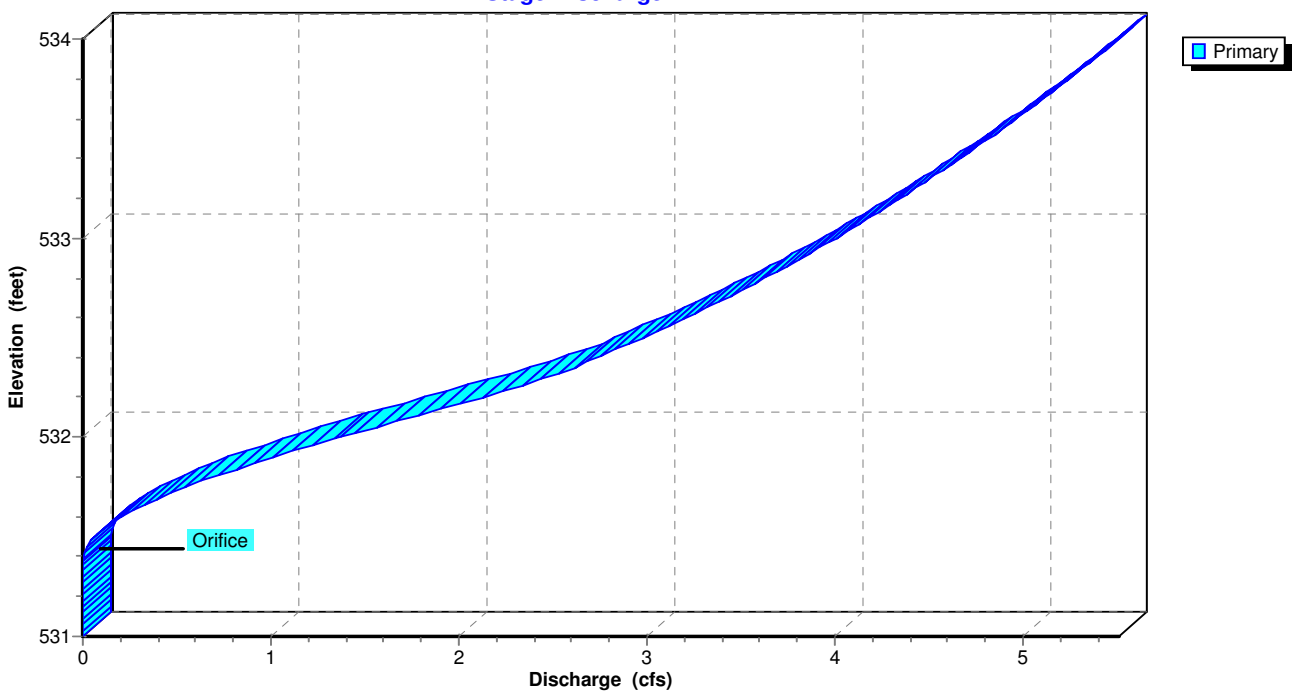
Pond 49P: Basin 7

Hydrograph

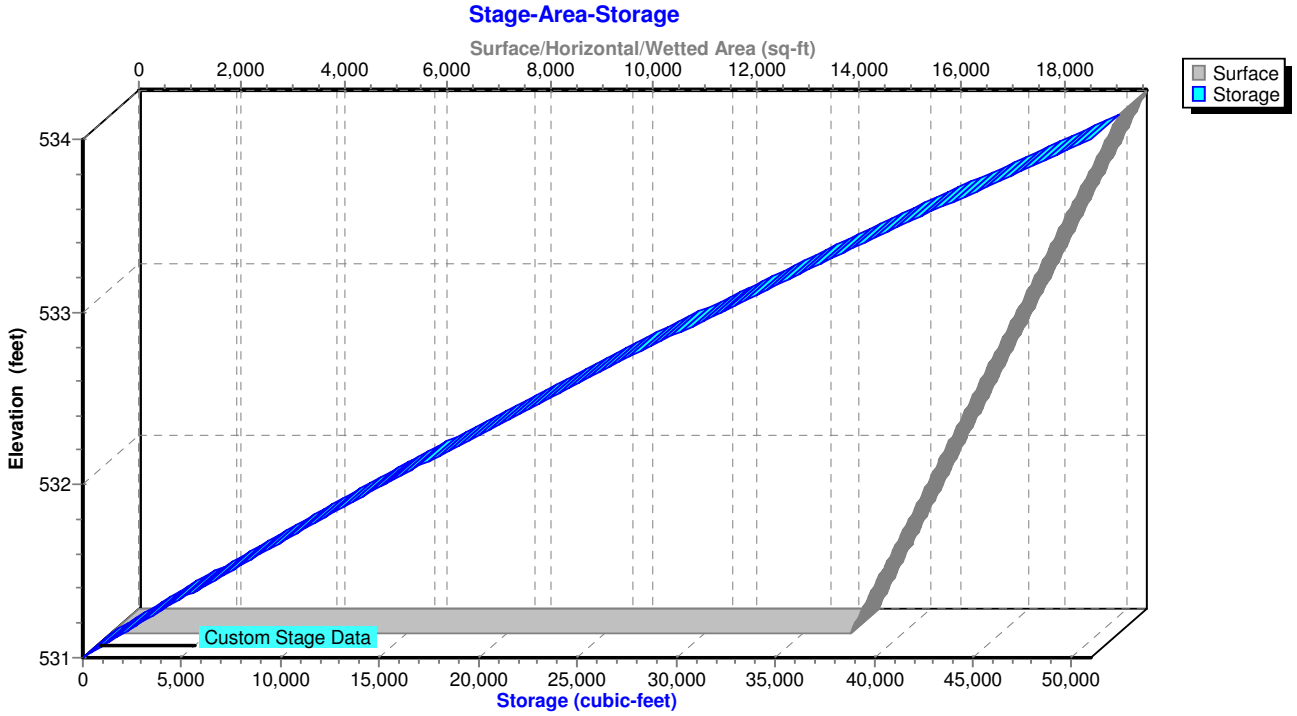


Pond 49P: Basin 7

Stage-Discharge



Pond 49P: Basin 7



Hydrograph for Pond 49P: Basin 7

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	531.00	0.00
2.00	0.01	18	531.00	0.00
4.00	0.03	192	531.01	0.00
6.00	0.05	499	531.03	0.00
8.00	0.08	971	531.07	0.00
10.00	0.16	1,752	531.12	0.00
12.00	**1.83**	**4,982**	**531.34**	**0.00**
14.00	**0.34**	**10,919**	**531.73**	**0.49**
16.00	0.19	9,821	531.66	0.32
18.00	0.13	9,061	531.61	0.22
20.00	0.11	8,549	531.57	0.16
22.00	0.09	8,233	531.55	0.13
24.00	0.08	7,994	531.54	0.11
26.00	0.00	7,430	531.50	0.07
28.00	0.00	7,054	531.48	0.04
30.00	0.00	6,800	531.46	0.03
32.00	0.00	6,622	531.45	0.02
34.00	0.00	6,487	531.44	0.02
36.00	0.00	6,380	531.43	0.01
38.00	0.00	6,295	531.43	0.01
40.00	0.00	6,227	531.42	0.01
42.00	0.00	6,173	531.42	0.01
44.00	0.00	6,126	531.42	0.01
46.00	0.00	6,084	531.41	0.01
48.00	0.00	6,045	531.41	0.01
50.00	0.00	6,011	531.41	0.00
52.00	0.00	5,981	531.41	0.00
54.00	0.00	5,953	531.40	0.00
56.00	0.00	5,928	531.40	0.00
58.00	0.00	5,906	531.40	0.00
60.00	0.00	5,886	531.40	0.00
62.00	0.00	5,868	531.40	0.00
64.00	0.00	5,852	531.40	0.00
66.00	0.00	5,837	531.40	0.00
68.00	0.00	5,824	531.40	0.00
70.00	0.00	5,812	531.39	0.00
72.00	0.00	5,802	531.39	0.00
74.00	0.00	5,792	531.39	0.00
76.00	0.00	5,784	531.39	0.00
78.00	0.00	5,776	531.39	0.00
80.00	0.00	5,769	531.39	0.00

Stage-Discharge for Pond 49P: Basin 7

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
531.00	0.00	532.02	1.45	533.04	4.07
531.02	0.00	532.04	1.52	533.06	4.11
531.04	0.00	532.06	1.60	533.08	4.14
531.06	0.00	532.08	1.67	533.10	4.18
531.08	0.00	532.10	1.75	533.12	4.21
531.10	0.00	532.12	1.83	533.14	4.24
531.12	0.00	532.14	1.90	533.16	4.28
531.14	0.00	532.16	1.98	533.18	4.31
531.16	0.00	532.18	2.05	533.20	4.34
531.18	0.00	532.20	2.13	533.22	4.38
531.20	0.00	532.22	2.20	533.24	4.41
531.22	0.00	532.24	2.27	533.26	4.44
531.24	0.00	532.26	2.34	533.28	4.47
531.26	0.00	532.28	2.40	533.30	4.51
531.28	0.00	532.30	2.47	533.32	4.54
531.30	0.00	532.32	2.53	533.34	4.57
531.32	0.00	532.34	2.58	533.36	4.60
531.34	0.00	532.36	2.63	533.38	4.63
531.36	0.00	532.38	2.67	533.40	4.66
531.38	0.00	532.40	2.73	533.42	4.69
531.40	0.00	532.42	2.78	533.44	4.72
531.42	0.01	532.44	2.83	533.46	4.75
531.44	0.02	532.46	2.88	533.48	4.78
531.46	0.03	532.48	2.93	533.50	4.81
531.48	0.04	532.50	2.98	533.52	4.84
531.50	0.06	532.52	3.03	533.54	4.87
531.52	0.09	532.54	3.07	533.56	4.90
531.54	0.11	532.56	3.12	533.58	4.93
531.56	0.14	532.58	3.16	533.60	4.96
531.58	0.17	532.60	3.21	533.62	4.99
531.60	0.20	532.62	3.25	533.64	5.02
531.62	0.24	532.64	3.30	533.66	5.05
531.64	0.28	532.66	3.34	533.68	5.07
531.66	0.32	532.68	3.38	533.70	5.10
531.68	0.37	532.70	3.42	533.72	5.13
531.70	0.42	532.72	3.47	533.74	5.16
531.72	0.47	532.74	3.51	533.76	5.19
531.74	0.52	532.76	3.55	533.78	5.21
531.76	0.57	532.78	3.59	533.80	5.24
531.78	0.63	532.80	3.63	533.82	5.27
531.80	0.69	532.82	3.67	533.84	5.29
531.82	0.75	532.84	3.71	533.86	5.32
531.84	0.81	532.86	3.74	533.88	5.35
531.86	0.88	532.88	3.78	533.90	5.37
531.88	0.95	532.90	3.82	533.92	5.40
531.90	1.01	532.92	3.86	533.94	5.43
531.92	1.08	532.94	3.89	533.96	5.45
531.94	1.15	532.96	3.93	533.98	5.48
531.96	1.22	532.98	3.97	534.00	**5.51**
531.98	1.30	533.00	4.00		
532.00	1.37	533.02	4.04		

Stage-Area-Storage for Pond 49P: Basin 7

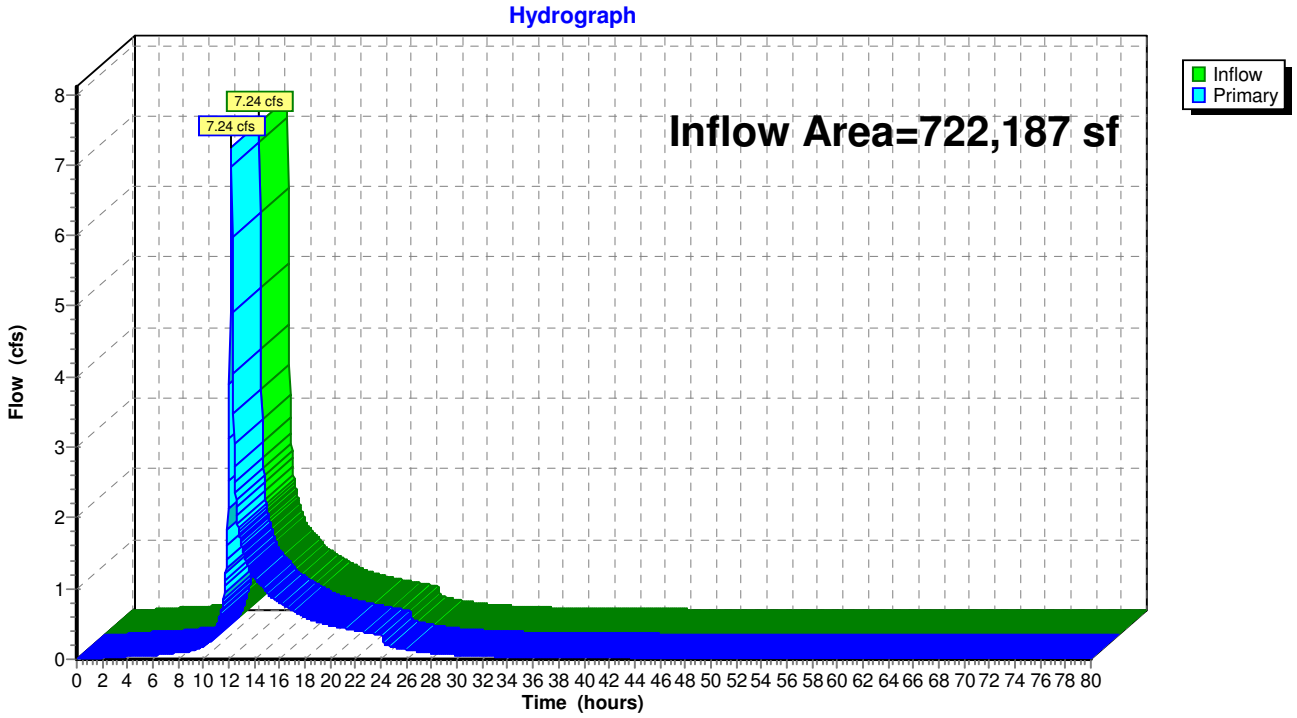
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
531.00	14,375	0
531.05	14,462	721
531.10	14,549	1,446
531.15	14,636	2,176
531.20	14,723	2,910
531.25	14,811	3,648
531.30	14,898	4,391
531.35	14,985	5,138
531.40	15,072	5,889
531.45	15,159	6,645
531.50	15,246	7,405
531.55	15,333	8,170
531.60	15,420	8,939
531.65	15,507	9,712
531.70	15,594	10,489
531.75	15,682	11,271
531.80	15,769	12,057
531.85	15,856	12,848
531.90	15,943	13,643
531.95	16,030	14,442
532.00	16,117	15,246
532.05	16,204	16,054
532.10	16,291	16,866
532.15	16,378	17,683
532.20	16,466	18,504
532.25	16,553	19,330
532.30	16,640	20,160
532.35	16,727	20,994
532.40	16,814	21,832
532.45	16,901	22,675
532.50	16,989	23,522
532.55	17,076	24,374
532.60	17,163	25,230
532.65	17,250	26,090
532.70	17,337	26,955
532.75	17,424	27,824
532.80	17,511	28,697
532.85	17,599	29,575
532.90	17,686	30,457
532.95	17,773	31,344
533.00	17,860	32,235
533.05	17,947	33,130
533.10	18,034	34,029
533.15	18,121	34,933
533.20	18,208	35,841
533.25	18,296	36,754
533.30	18,383	37,671
533.35	18,470	38,592
533.40	18,557	39,518
533.45	18,644	40,448
533.50	18,731	41,382
533.55	18,818	42,321
533.60	18,905	43,264
533.65	18,992	44,211
533.70	19,079	45,163
533.75	19,167	46,119
533.80	19,254	47,080
533.85	19,341	48,045
533.90	19,428	49,014
533.95	19,515	49,988
534.00	**19,602**	**50,966**

Summary for Link 28L: POA 2

Inflow Area = 722,187 sf, 47.85% Impervious, Inflow Depth > 0.82" for 2-Year event
Inflow = 7.24 cfs @ 12.17 hrs, Volume= 49,419 cf
Primary = 7.24 cfs @ 12.17 hrs, Volume= 49,419 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs

Link 28L: POA 2



Hydrograph for Link 28L: POA 2

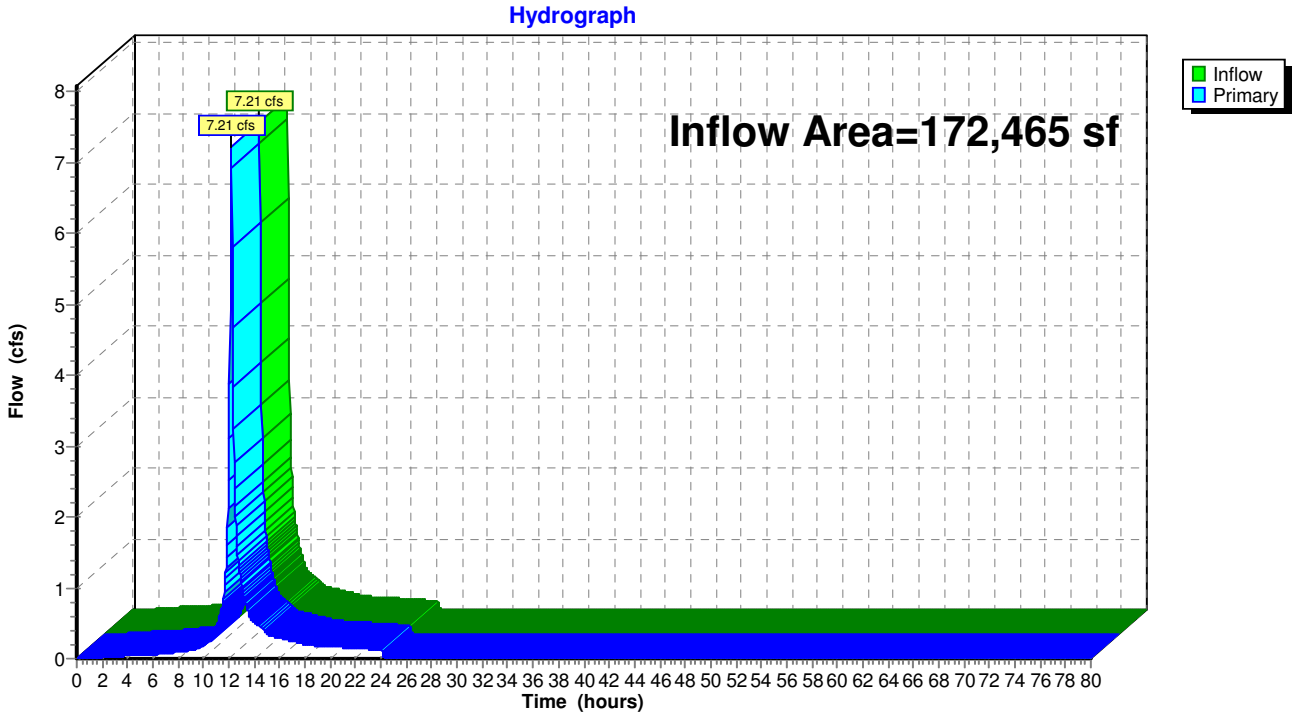
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	40.80	0.02	0.00	0.02
0.80	0.00	0.00	0.00	41.60	0.01	0.00	0.01
1.60	0.01	0.00	0.01	42.40	0.01	0.00	0.01
2.40	0.02	0.00	0.02	43.20	0.01	0.00	0.01
3.20	0.03	0.00	0.03	44.00	0.01	0.00	0.01
4.00	0.04	0.00	0.04	44.80	0.01	0.00	0.01
4.80	0.05	0.00	0.05	45.60	0.01	0.00	0.01
5.60	0.05	0.00	0.05	46.40	0.01	0.00	0.01
6.40	0.06	0.00	0.06	47.20	0.01	0.00	0.01
7.20	0.08	0.00	0.08	48.00	0.01	0.00	0.01
8.00	0.10	0.00	0.10	48.80	0.01	0.00	0.01
8.80	0.11	0.00	0.11	49.60	0.01	0.00	0.01
9.60	0.15	0.00	0.15	50.40	0.01	0.00	0.01
10.40	0.24	0.00	0.24	51.20	0.01	0.00	0.01
11.20	0.54	0.00	0.54	52.00	0.01	0.00	0.01
12.00	**3.12**	0.00	**3.12**	52.80	0.01	0.00	0.01
12.80	**1.77**	0.00	**1.77**	53.60	0.01	0.00	0.01
13.60	1.27	0.00	1.27	54.40	0.01	0.00	0.01
14.40	1.08	0.00	1.08	55.20	0.01	0.00	0.01
15.20	0.90	0.00	0.90	56.00	0.00	0.00	0.00
16.00	0.80	0.00	0.80	56.80	0.00	0.00	0.00
16.80	0.72	0.00	0.72	57.60	0.00	0.00	0.00
17.60	0.64	0.00	0.64	58.40	0.00	0.00	0.00
18.40	0.56	0.00	0.56	59.20	0.00	0.00	0.00
19.20	0.52	0.00	0.52	60.00	0.00	0.00	0.00
20.00	0.48	0.00	0.48	60.80	0.00	0.00	0.00
20.80	0.45	0.00	0.45	61.60	0.00	0.00	0.00
21.60	0.42	0.00	0.42	62.40	0.00	0.00	0.00
22.40	0.39	0.00	0.39	63.20	0.00	0.00	0.00
23.20	0.37	0.00	0.37	64.00	0.00	0.00	0.00
24.00	0.34	0.00	0.34	64.80	0.00	0.00	0.00
24.80	0.18	0.00	0.18	65.60	0.00	0.00	0.00
25.60	0.15	0.00	0.15	66.40	0.00	0.00	0.00
26.40	0.12	0.00	0.12	67.20	0.00	0.00	0.00
27.20	0.10	0.00	0.10	68.00	0.00	0.00	0.00
28.00	0.09	0.00	0.09	68.80	0.00	0.00	0.00
28.80	0.07	0.00	0.07	69.60	0.00	0.00	0.00
29.60	0.06	0.00	0.06	70.40	0.00	0.00	0.00
30.40	0.06	0.00	0.06	71.20	0.00	0.00	0.00
31.20	0.05	0.00	0.05	72.00	0.00	0.00	0.00
32.00	0.04	0.00	0.04	72.80	0.00	0.00	0.00
32.80	0.04	0.00	0.04	73.60	0.00	0.00	0.00
33.60	0.03	0.00	0.03	74.40	0.00	0.00	0.00
34.40	0.03	0.00	0.03	75.20	0.00	0.00	0.00
35.20	0.03	0.00	0.03	76.00	0.00	0.00	0.00
36.00	0.03	0.00	0.03	76.80	0.00	0.00	0.00
36.80	0.02	0.00	0.02	77.60	0.00	0.00	0.00
37.60	0.02	0.00	0.02	78.40	0.00	0.00	0.00
38.40	0.02	0.00	0.02	79.20	0.00	0.00	0.00
39.20	0.02	0.00	0.02	80.00	0.00	0.00	0.00
40.00	0.02	0.00	0.02				

Summary for Link 34L: DA 2 Undetained

Inflow Area = 172,465 sf, 30.45% Impervious, Inflow Depth = 1.94" for 2-Year event
Inflow = 7.21 cfs @ 12.17 hrs, Volume= 27,888 cf
Primary = 7.21 cfs @ 12.17 hrs, Volume= 27,888 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 28L : POA 2

Primary outflow = Inflow, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs

Link 34L: DA 2 Undetained



Hydrograph for Link 34L: DA 2 Undetained

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	40.80	0.00	0.00	0.00
0.80	0.00	0.00	0.00	41.60	0.00	0.00	0.00
1.60	0.01	0.00	0.01	42.40	0.00	0.00	0.00
2.40	0.02	0.00	0.02	43.20	0.00	0.00	0.00
3.20	0.03	0.00	0.03	44.00	0.00	0.00	0.00
4.00	0.04	0.00	0.04	44.80	0.00	0.00	0.00
4.80	0.05	0.00	0.05	45.60	0.00	0.00	0.00
5.60	0.05	0.00	0.05	46.40	0.00	0.00	0.00
6.40	0.06	0.00	0.06	47.20	0.00	0.00	0.00
7.20	0.08	0.00	0.08	48.00	0.00	0.00	0.00
8.00	0.10	0.00	0.10	48.80	0.00	0.00	0.00
8.80	0.11	0.00	0.11	49.60	0.00	0.00	0.00
9.60	0.15	0.00	0.15	50.40	0.00	0.00	0.00
10.40	0.24	0.00	0.24	51.20	0.00	0.00	0.00
11.20	0.54	0.00	0.54	52.00	0.00	0.00	0.00
12.00	**3.12**	0.00	**3.12**	52.80	0.00	0.00	0.00
12.80	**1.26**	0.00	**1.26**	53.60	0.00	0.00	0.00
13.60	0.63	0.00	0.63	54.40	0.00	0.00	0.00
14.40	0.46	0.00	0.46	55.20	0.00	0.00	0.00
15.20	0.33	0.00	0.33	56.00	0.00	0.00	0.00
16.00	0.29	0.00	0.29	56.80	0.00	0.00	0.00
16.80	0.26	0.00	0.26	57.60	0.00	0.00	0.00
17.60	0.22	0.00	0.22	58.40	0.00	0.00	0.00
18.40	0.19	0.00	0.19	59.20	0.00	0.00	0.00
19.20	0.18	0.00	0.18	60.00	0.00	0.00	0.00
20.00	0.17	0.00	0.17	60.80	0.00	0.00	0.00
20.80	0.16	0.00	0.16	61.60	0.00	0.00	0.00
21.60	0.15	0.00	0.15	62.40	0.00	0.00	0.00
22.40	0.14	0.00	0.14	63.20	0.00	0.00	0.00
23.20	0.13	0.00	0.13	64.00	0.00	0.00	0.00
24.00	0.12	0.00	0.12	64.80	0.00	0.00	0.00
24.80	0.00	0.00	0.00	65.60	0.00	0.00	0.00
25.60	0.00	0.00	0.00	66.40	0.00	0.00	0.00
26.40	0.00	0.00	0.00	67.20	0.00	0.00	0.00
27.20	0.00	0.00	0.00	68.00	0.00	0.00	0.00
28.00	0.00	0.00	0.00	68.80	0.00	0.00	0.00
28.80	0.00	0.00	0.00	69.60	0.00	0.00	0.00
29.60	0.00	0.00	0.00	70.40	0.00	0.00	0.00
30.40	0.00	0.00	0.00	71.20	0.00	0.00	0.00
31.20	0.00	0.00	0.00	72.00	0.00	0.00	0.00
32.00	0.00	0.00	0.00	72.80	0.00	0.00	0.00
32.80	0.00	0.00	0.00	73.60	0.00	0.00	0.00
33.60	0.00	0.00	0.00	74.40	0.00	0.00	0.00
34.40	0.00	0.00	0.00	75.20	0.00	0.00	0.00
35.20	0.00	0.00	0.00	76.00	0.00	0.00	0.00
36.00	0.00	0.00	0.00	76.80	0.00	0.00	0.00
36.80	0.00	0.00	0.00	77.60	0.00	0.00	0.00
37.60	0.00	0.00	0.00	78.40	0.00	0.00	0.00
38.40	0.00	0.00	0.00	79.20	0.00	0.00	0.00
39.20	0.00	0.00	0.00	80.00	0.00	0.00	0.00
40.00	0.00	0.00	0.00				

Time span=0.00-80.00 hrs, dt=0.04 hrs, 2001 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 19S: Basin 3 - Imp Runoff Area=6,824 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=75' Slope=0.0400 '/' Tc=8.3 min CN=98 Runoff=0.71 cfs 2,834 cf

Subcatchment 20S: 15775.6 Runoff Area=15,086 sf 0.00% Impervious Runoff Depth=2.54"
Flow Length=75' Slope=0.0400 '/' Tc=8.3 min CN=74 Runoff=0.94 cfs 3,194 cf

Subcatchment 21S: Basin 4 - Imp Runoff Area=41,524 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=755' Slope=0.0200 '/' Tc=5.5 min CN=98 Runoff=4.78 cfs 17,242 cf

Subcatchment 24S: Basin 4 - Perv Runoff Area=7,526 sf 0.00% Impervious Runoff Depth=2.54"
Flow Length=755' Slope=0.0200 '/' Tc=5.5 min CN=74 Runoff=0.52 cfs 1,594 cf

Subcatchment 25S: Basin 2 - Perv Runoff Area=82,260 sf 0.00% Impervious Runoff Depth=2.81"
Flow Length=463' Tc=10.5 min CN=77 Runoff=5.19 cfs 19,249 cf

Subcatchment 28S: Basin 2 - Imp Runoff Area=30,173 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=463' Tc=10.5 min CN=98 Runoff=2.92 cfs 12,529 cf

Subcatchment 29S: Basin 8 - Imp Runoff Area=38,257 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=165' Tc=8.6 min CN=98 Runoff=3.97 cfs 15,886 cf

Subcatchment 30S: Basin 8 - Perv Runoff Area=22,787 sf 0.00% Impervious Runoff Depth=2.81"
Flow Length=165' Tc=8.6 min CN=77 Runoff=1.55 cfs 5,332 cf

Subcatchment 31S: Basin 7 - Imp Runoff Area=45,778 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=760' Tc=12.5 min CN=98 Runoff=4.18 cfs 19,009 cf

Subcatchment 32S: Basin 7 - Perv Runoff Area=58,678 sf 0.00% Impervious Runoff Depth=2.81"
Flow Length=760' Tc=12.5 min CN=77 Runoff=3.49 cfs 13,731 cf

Subcatchment 35S: DA 2 Und - Imp Runoff Area=52,513 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=160' Tc=9.8 min CN=98 Runoff=5.21 cfs 21,805 cf

Subcatchment 36S: DA 2 Und - Perv Runoff Area=119,952 sf 0.00% Impervious Runoff Depth=2.81"
Flow Length=160' Tc=9.8 min CN=77 Runoff=7.79 cfs 28,070 cf

Subcatchment 45S: Basin 11 - Imp Runoff Area=59,901 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=233' Tc=9.8 min CN=98 Runoff=5.95 cfs 24,873 cf

Subcatchment 46S: Basin 11 - Perv Runoff Area=24,202 sf 0.00% Impervious Runoff Depth=2.72"
Flow Length=233' Tc=9.8 min CN=76 Runoff=1.52 cfs 5,482 cf

Subcatchment 51S: Basin 10 - Imp Runoff Area=53,114 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=379' Tc=10.7 min CN=98 Runoff=5.12 cfs 22,055 cf

Subcatchment 52S: Basin 10 - Perv Runoff Area=37,235 sf 0.00% Impervious Runoff Depth=2.63"
Flow Length=379' Tc=10.7 min CN=75 Runoff=2.19 cfs 8,157 cf

Subcatchment 53S: Basin 9 - Imp Runoff Area=17,461 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=140' Tc=7.4 min CN=98 Runoff=1.87 cfs 7,250 cf

Subcatchment 54S: Basin 9 - Perv Runoff Area=8,916 sf 0.00% Impervious Runoff Depth=2.90"
Flow Length=140' Tc=7.4 min CN=78 Runoff=0.65 cfs 2,154 cf

Pond 21P: Basin 3 Peak Elev=559.09' Storage=183 cf Inflow=1.65 cfs 6,028 cf
Discarded=1.21 cfs 6,028 cf Primary=0.00 cfs 0 cf Outflow=1.21 cfs 6,028 cf

Pond 22P: Basin 4 Peak Elev=572.69' Storage=3,380 cf Inflow=5.30 cfs 18,836 cf
Discarded=1.13 cfs 18,660 cf Primary=0.10 cfs 176 cf Outflow=1.23 cfs 18,836 cf

Pond 27P: Basin 2 Peak Elev=545.18' Storage=18,379 cf Inflow=8.13 cfs 31,954 cf
Outflow=0.93 cfs 22,643 cf

Pond 33P: Basin 11 Peak Elev=590.37' Storage=1,989 cf Inflow=7.47 cfs 30,355 cf
Discarded=3.13 cfs 28,464 cf Primary=2.25 cfs 1,891 cf Outflow=5.37 cfs 30,355 cf

Pond 41P: Basin 10 Peak Elev=576.44' Storage=4,207 cf Inflow=7.31 cfs 30,212 cf
Discarded=2.22 cfs 28,927 cf Primary=0.93 cfs 1,285 cf Outflow=3.14 cfs 30,212 cf

Pond 42P: Basin 9 Peak Elev=562.64' Storage=1,667 cf Inflow=2.52 cfs 9,405 cf
Discarded=0.61 cfs 9,405 cf Primary=0.00 cfs 0 cf Outflow=0.61 cfs 9,405 cf

Pond 48P: Basin 8 Peak Elev=573.44' Storage=1,768 cf Inflow=5.52 cfs 21,218 cf
Discarded=2.83 cfs 21,218 cf Primary=0.00 cfs 0 cf Outflow=2.83 cfs 21,218 cf

Pond 49P: Basin 7 Peak Elev=532.09' Storage=16,775 cf Inflow=7.67 cfs 32,740 cf
Outflow=1.73 cfs 26,967 cf

Link 28L: POA 2 Inflow=15.29 cfs 102,660 cf
Primary=15.29 cfs 102,660 cf

Link 34L: DA 2 Undetained Inflow=13.00 cfs 49,875 cf
Primary=13.00 cfs 49,875 cf

Total Runoff Area = 722,187 sf Runoff Volume = 230,446 cf Average Runoff Depth = 3.83"
52.15% Pervious = 376,642 sf 47.85% Impervious = 345,545 sf

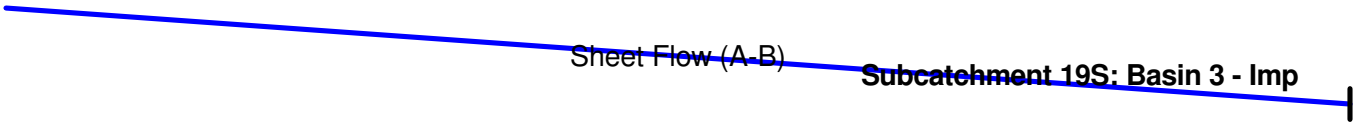
Summary for Subcatchment 19S: Basin 3 - Imp

Runoff = 0.71 cfs @ 12.15 hrs, Volume= 2,834 cf, Depth= 4.98"
Routed to Pond 21P : Basin 3

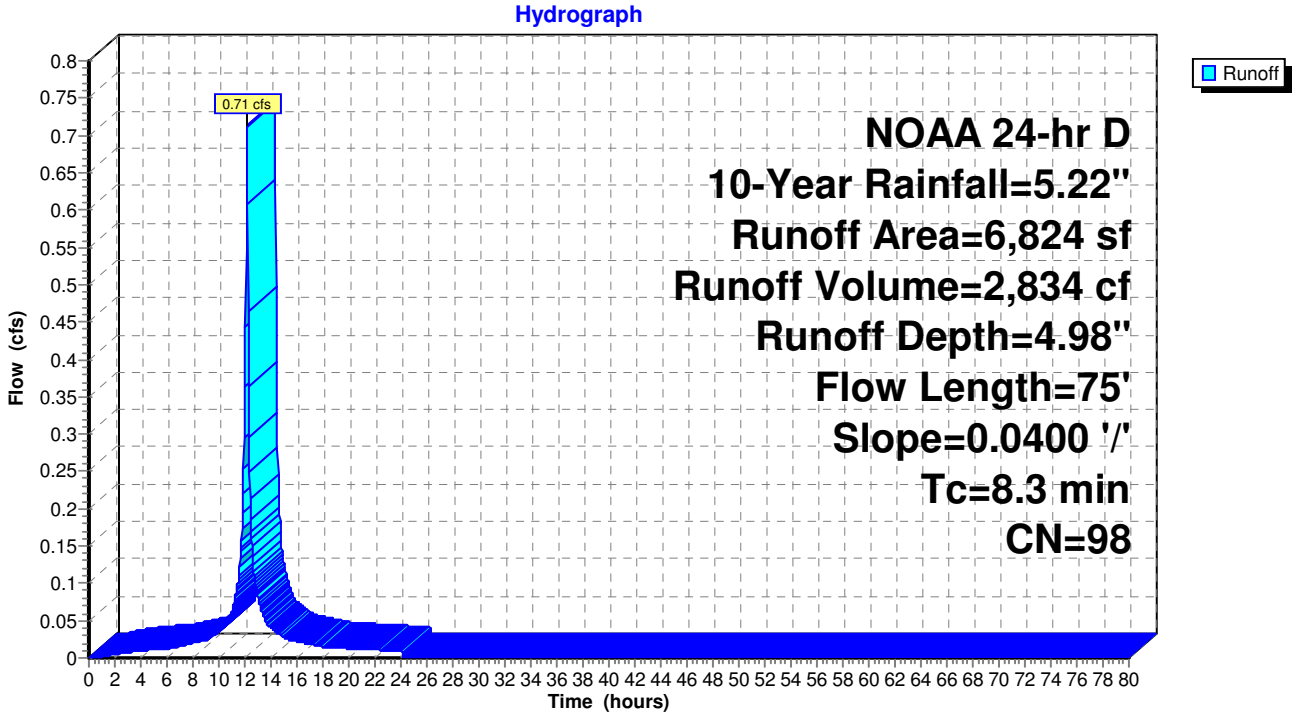
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

	Area (sf)	CN	Description
	5,876	98	Paved parking, HSG C
*	948	98	impervious other than pavement
	6,824	98	Weighted Average
	6,824		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	75	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 19S: Basin 3 - Imp



Hydrograph for Subcatchment 19S: Basin 3 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	4.98	0.00
0.80	0.05	0.00	0.00	41.60	5.22	4.98	0.00
1.60	0.10	0.01	0.00	42.40	5.22	4.98	0.00
2.40	0.15	0.04	0.01	43.20	5.22	4.98	0.00
3.20	0.21	0.08	0.01	44.00	5.22	4.98	0.00
4.00	0.27	0.12	0.01	44.80	5.22	4.98	0.00
4.80	0.34	0.18	0.01	45.60	5.22	4.98	0.00
5.60	0.41	0.24	0.01	46.40	5.22	4.98	0.00
6.40	0.48	0.30	0.01	47.20	5.22	4.98	0.00
7.20	0.57	0.39	0.02	48.00	5.22	4.98	0.00
8.00	0.68	0.48	0.02	48.80	5.22	4.98	0.00
8.80	0.80	0.59	0.02	49.60	5.22	4.98	0.00
9.60	0.94	0.74	0.03	50.40	5.22	4.98	0.00
10.40	1.14	0.93	0.04	51.20	5.22	4.98	0.00
11.20	1.46	1.24	0.08	52.00	5.22	4.98	0.00
12.00	2.50	2.27	**0.36**	52.80	5.22	4.98	0.00
12.80	3.76	3.53	**0.10**	53.60	5.22	4.98	0.00
13.60	4.08	3.84	0.05	54.40	5.22	4.98	0.00
14.40	4.28	4.04	0.04	55.20	5.22	4.98	0.00
15.20	4.42	4.19	0.03	56.00	5.22	4.98	0.00
16.00	4.54	4.31	0.02	56.80	5.22	4.98	0.00
16.80	4.65	4.41	0.02	57.60	5.22	4.98	0.00
17.60	4.74	4.50	0.02	58.40	5.22	4.98	0.00
18.40	4.81	4.57	0.01	59.20	5.22	4.98	0.00
19.20	4.88	4.64	0.01	60.00	5.22	4.98	0.00
20.00	4.95	4.71	0.01	60.80	5.22	4.98	0.00
20.80	5.01	4.77	0.01	61.60	5.22	4.98	0.00
21.60	5.07	4.83	0.01	62.40	5.22	4.98	0.00
22.40	5.12	4.88	0.01	63.20	5.22	4.98	0.00
23.20	5.17	4.94	0.01	64.00	5.22	4.98	0.00
24.00	**5.22**	**4.98**	0.01	64.80	5.22	4.98	0.00
24.80	5.22	4.98	0.00	65.60	5.22	4.98	0.00
25.60	5.22	4.98	0.00	66.40	5.22	4.98	0.00
26.40	5.22	4.98	0.00	67.20	5.22	4.98	0.00
27.20	5.22	4.98	0.00	68.00	5.22	4.98	0.00
28.00	5.22	4.98	0.00	68.80	5.22	4.98	0.00
28.80	5.22	4.98	0.00	69.60	5.22	4.98	0.00
29.60	5.22	4.98	0.00	70.40	5.22	4.98	0.00
30.40	5.22	4.98	0.00	71.20	5.22	4.98	0.00
31.20	5.22	4.98	0.00	72.00	5.22	4.98	0.00
32.00	5.22	4.98	0.00	72.80	5.22	4.98	0.00
32.80	5.22	4.98	0.00	73.60	5.22	4.98	0.00
33.60	5.22	4.98	0.00	74.40	5.22	4.98	0.00
34.40	5.22	4.98	0.00	75.20	5.22	4.98	0.00
35.20	5.22	4.98	0.00	76.00	5.22	4.98	0.00
36.00	5.22	4.98	0.00	76.80	5.22	4.98	0.00
36.80	5.22	4.98	0.00	77.60	5.22	4.98	0.00
37.60	5.22	4.98	0.00	78.40	5.22	4.98	0.00
38.40	5.22	4.98	0.00	79.20	5.22	4.98	0.00
39.20	5.22	4.98	0.00	80.00	5.22	4.98	0.00
40.00	5.22	4.98	0.00				

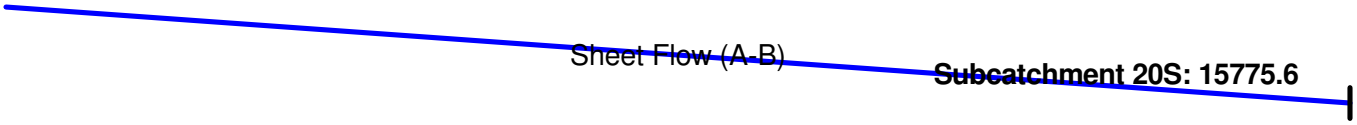
Summary for Subcatchment 20S: 15775.6

Runoff = 0.94 cfs @ 12.16 hrs, Volume= 3,194 cf, Depth= 2.54"
Routed to Pond 21P : Basin 3

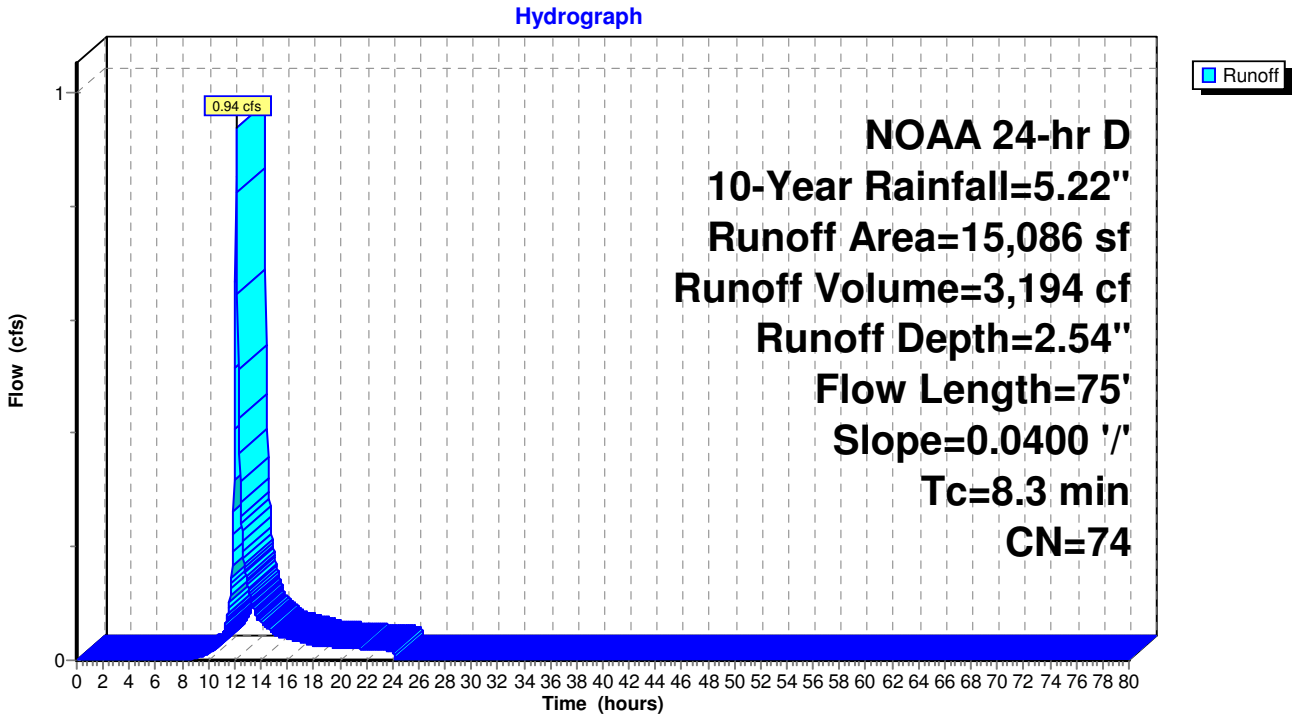
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
15,086	74	>75% Grass cover, Good, HSG C
15,086		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	75	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 20S: 15775.6



Hydrograph for Subcatchment 20S: 15775.6

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	2.54	0.00
0.80	0.05	0.00	0.00	41.60	5.22	2.54	0.00
1.60	0.10	0.00	0.00	42.40	5.22	2.54	0.00
2.40	0.15	0.00	0.00	43.20	5.22	2.54	0.00
3.20	0.21	0.00	0.00	44.00	5.22	2.54	0.00
4.00	0.27	0.00	0.00	44.80	5.22	2.54	0.00
4.80	0.34	0.00	0.00	45.60	5.22	2.54	0.00
5.60	0.41	0.00	0.00	46.40	5.22	2.54	0.00
6.40	0.48	0.00	0.00	47.20	5.22	2.54	0.00
7.20	0.57	0.00	0.00	48.00	5.22	2.54	0.00
8.00	0.68	0.00	0.00	48.80	5.22	2.54	0.00
8.80	0.80	0.00	0.00	49.60	5.22	2.54	0.00
9.60	0.94	0.02	0.01	50.40	5.22	2.54	0.00
10.40	1.14	0.05	0.02	51.20	5.22	2.54	0.00
11.20	1.46	0.13	0.05	52.00	5.22	2.54	0.00
12.00	2.50	0.61	**0.41**	52.80	5.22	2.54	0.00
12.80	3.76	1.42	**0.16**	53.60	5.22	2.54	0.00
13.60	4.08	1.65	0.08	54.40	5.22	2.54	0.00
14.40	4.28	1.80	0.06	55.20	5.22	2.54	0.00
15.20	4.42	1.91	0.04	56.00	5.22	2.54	0.00
16.00	4.54	2.01	0.04	56.80	5.22	2.54	0.00
16.80	4.65	2.09	0.03	57.60	5.22	2.54	0.00
17.60	4.74	2.16	0.03	58.40	5.22	2.54	0.00
18.40	4.81	2.21	0.02	59.20	5.22	2.54	0.00
19.20	4.88	2.27	0.02	60.00	5.22	2.54	0.00
20.00	4.95	2.32	0.02	60.80	5.22	2.54	0.00
20.80	5.01	2.37	0.02	61.60	5.22	2.54	0.00
21.60	5.07	2.42	0.02	62.40	5.22	2.54	0.00
22.40	5.12	2.46	0.02	63.20	5.22	2.54	0.00
23.20	5.17	2.50	0.02	64.00	5.22	2.54	0.00
24.00	**5.22**	**2.54**	0.02	64.80	5.22	2.54	0.00
24.80	5.22	2.54	0.00	65.60	5.22	2.54	0.00
25.60	5.22	2.54	0.00	66.40	5.22	2.54	0.00
26.40	5.22	2.54	0.00	67.20	5.22	2.54	0.00
27.20	5.22	2.54	0.00	68.00	5.22	2.54	0.00
28.00	5.22	2.54	0.00	68.80	5.22	2.54	0.00
28.80	5.22	2.54	0.00	69.60	5.22	2.54	0.00
29.60	5.22	2.54	0.00	70.40	5.22	2.54	0.00
30.40	5.22	2.54	0.00	71.20	5.22	2.54	0.00
31.20	5.22	2.54	0.00	72.00	5.22	2.54	0.00
32.00	5.22	2.54	0.00	72.80	5.22	2.54	0.00
32.80	5.22	2.54	0.00	73.60	5.22	2.54	0.00
33.60	5.22	2.54	0.00	74.40	5.22	2.54	0.00
34.40	5.22	2.54	0.00	75.20	5.22	2.54	0.00
35.20	5.22	2.54	0.00	76.00	5.22	2.54	0.00
36.00	5.22	2.54	0.00	76.80	5.22	2.54	0.00
36.80	5.22	2.54	0.00	77.60	5.22	2.54	0.00
37.60	5.22	2.54	0.00	78.40	5.22	2.54	0.00
38.40	5.22	2.54	0.00	79.20	5.22	2.54	0.00
39.20	5.22	2.54	0.00	80.00	5.22	2.54	0.00
40.00	5.22	2.54	0.00				

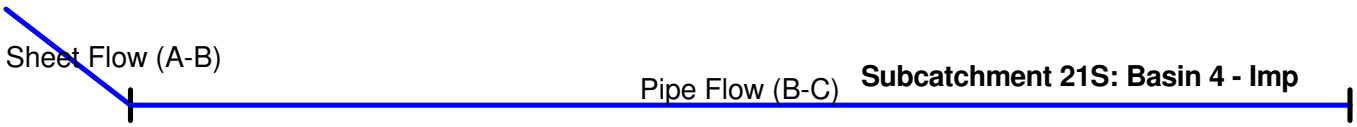
Summary for Subcatchment 21S: Basin 4 - Imp

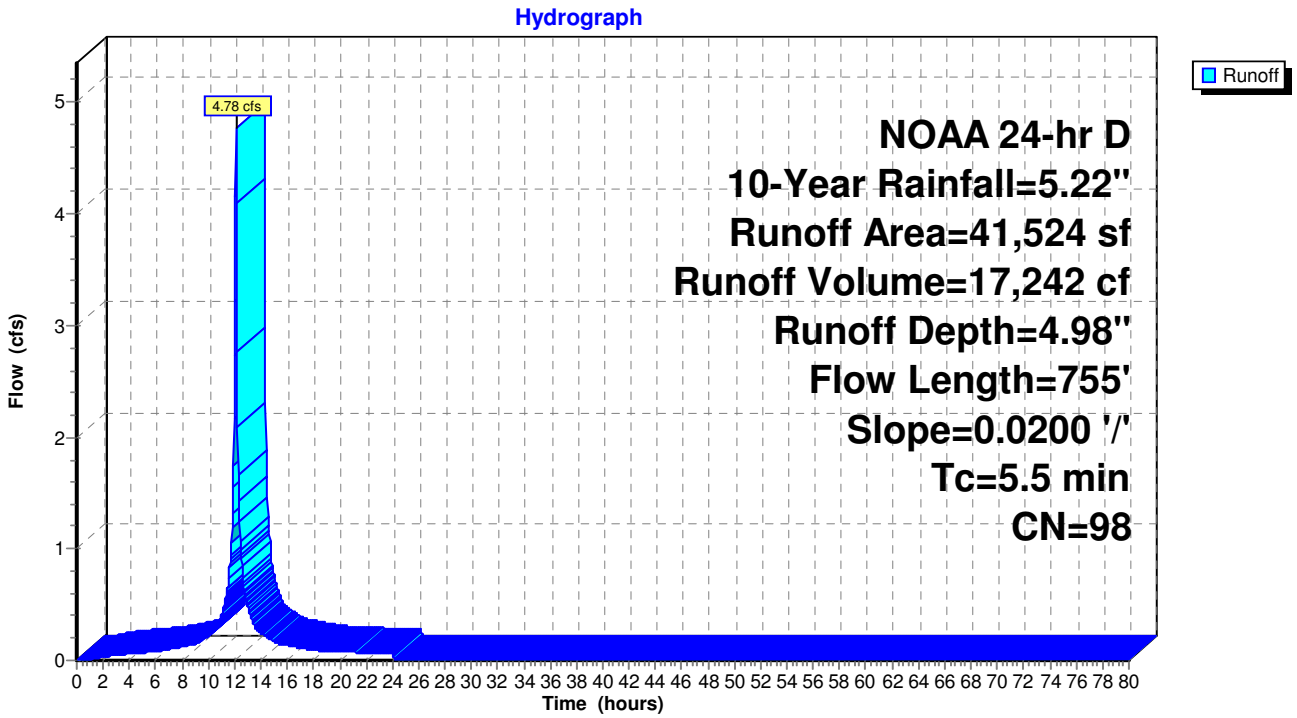
Runoff = 4.78 cfs @ 12.12 hrs, Volume= 17,242 cf, Depth= 4.98"
Routed to Pond 22P : Basin 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
29,022	98	Roofs, HSG D
12,502	98	Paved parking, HSG C
41,524	98	Weighted Average
41,524		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.33		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
4.6	685		2.50		**Direct Entry, Pipe Flow (B-C)**
5.5	755	Total			





Hydrograph for Subcatchment 21S: Basin 4 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	4.98	0.00
0.80	0.05	0.00	0.00	41.60	5.22	4.98	0.00
1.60	0.10	0.01	0.02	42.40	5.22	4.98	0.00
2.40	0.15	0.04	0.04	43.20	5.22	4.98	0.00
3.20	0.21	0.08	0.05	44.00	5.22	4.98	0.00
4.00	0.27	0.12	0.06	44.80	5.22	4.98	0.00
4.80	0.34	0.18	0.07	45.60	5.22	4.98	0.00
5.60	0.41	0.24	0.07	46.40	5.22	4.98	0.00
6.40	0.48	0.30	0.09	47.20	5.22	4.98	0.00
7.20	0.57	0.39	0.11	48.00	5.22	4.98	0.00
8.00	0.68	0.48	0.12	48.80	5.22	4.98	0.00
8.80	0.80	0.59	0.14	49.60	5.22	4.98	0.00
9.60	0.94	0.74	0.19	50.40	5.22	4.98	0.00
10.40	1.14	0.93	0.26	51.20	5.22	4.98	0.00
11.20	1.46	1.24	0.50	52.00	5.22	4.98	0.00
12.00	2.50	2.27	**2.72**	52.80	5.22	4.98	0.00
12.80	3.76	3.53	**0.59**	53.60	5.22	4.98	0.00
13.60	4.08	3.84	0.28	54.40	5.22	4.98	0.00
14.40	4.28	4.04	0.21	55.20	5.22	4.98	0.00
15.20	4.42	4.19	0.15	56.00	5.22	4.98	0.00
16.00	4.54	4.31	0.14	56.80	5.22	4.98	0.00
16.80	4.65	4.41	0.12	57.60	5.22	4.98	0.00
17.60	4.74	4.50	0.10	58.40	5.22	4.98	0.00
18.40	4.81	4.57	0.09	59.20	5.22	4.98	0.00
19.20	4.88	4.64	0.08	60.00	5.22	4.98	0.00
20.00	4.95	4.71	0.08	60.80	5.22	4.98	0.00
20.80	5.01	4.77	0.07	61.60	5.22	4.98	0.00
21.60	5.07	4.83	0.07	62.40	5.22	4.98	0.00
22.40	5.12	4.88	0.06	63.20	5.22	4.98	0.00
23.20	5.17	4.94	0.06	64.00	5.22	4.98	0.00
24.00	**5.22**	**4.98**	0.06	64.80	5.22	4.98	0.00
24.80	5.22	4.98	0.00	65.60	5.22	4.98	0.00
25.60	5.22	4.98	0.00	66.40	5.22	4.98	0.00
26.40	5.22	4.98	0.00	67.20	5.22	4.98	0.00
27.20	5.22	4.98	0.00	68.00	5.22	4.98	0.00
28.00	5.22	4.98	0.00	68.80	5.22	4.98	0.00
28.80	5.22	4.98	0.00	69.60	5.22	4.98	0.00
29.60	5.22	4.98	0.00	70.40	5.22	4.98	0.00
30.40	5.22	4.98	0.00	71.20	5.22	4.98	0.00
31.20	5.22	4.98	0.00	72.00	5.22	4.98	0.00
32.00	5.22	4.98	0.00	72.80	5.22	4.98	0.00
32.80	5.22	4.98	0.00	73.60	5.22	4.98	0.00
33.60	5.22	4.98	0.00	74.40	5.22	4.98	0.00
34.40	5.22	4.98	0.00	75.20	5.22	4.98	0.00
35.20	5.22	4.98	0.00	76.00	5.22	4.98	0.00
36.00	5.22	4.98	0.00	76.80	5.22	4.98	0.00
36.80	5.22	4.98	0.00	77.60	5.22	4.98	0.00
37.60	5.22	4.98	0.00	78.40	5.22	4.98	0.00
38.40	5.22	4.98	0.00	79.20	5.22	4.98	0.00
39.20	5.22	4.98	0.00	80.00	5.22	4.98	0.00
40.00	5.22	4.98	0.00				

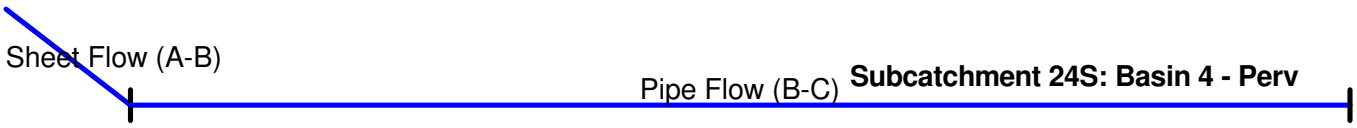
Summary for Subcatchment 24S: Basin 4 - Perv

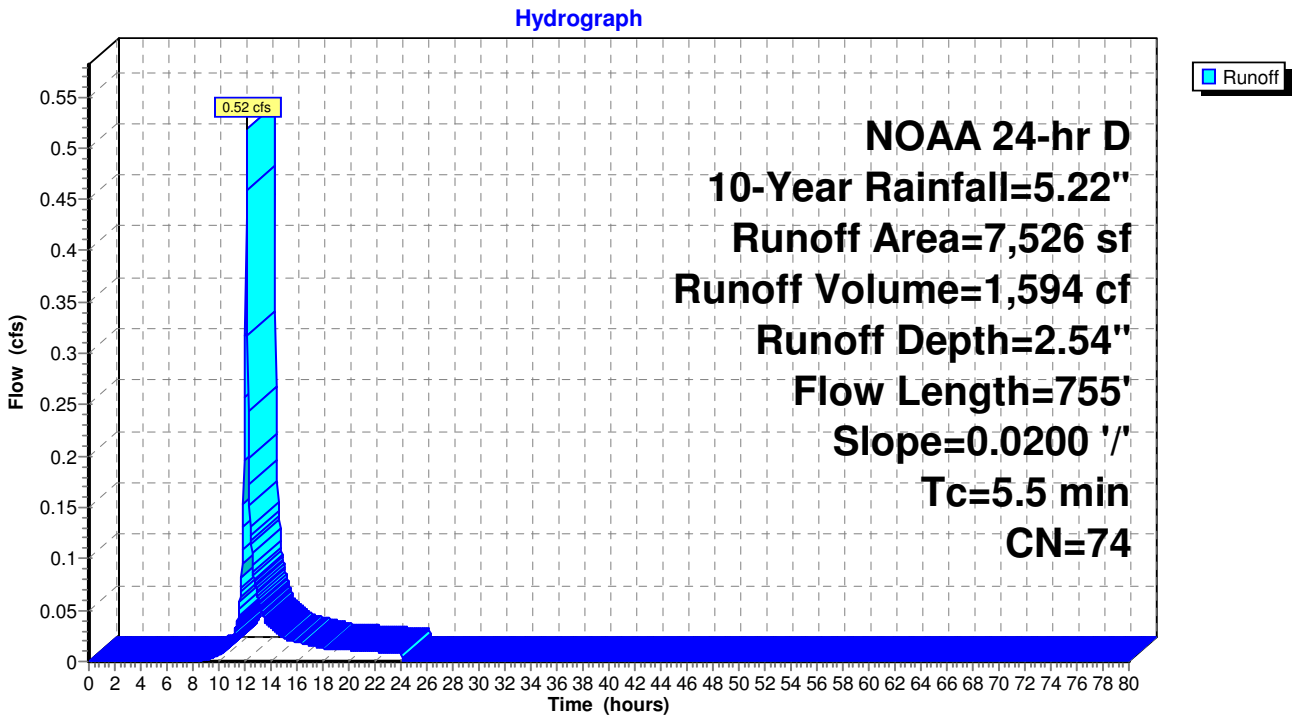
Runoff = 0.52 cfs @ 12.12 hrs, Volume= 1,594 cf, Depth= 2.54"
Routed to Pond 22P : Basin 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
7,526	74	>75% Grass cover, Good, HSG C
7,526		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.33		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
4.6	685		2.50		**Direct Entry, Pipe Flow (B-C)**
5.5	755	Total			





Hydrograph for Subcatchment 24S: Basin 4 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	2.54	0.00
0.80	0.05	0.00	0.00	41.60	5.22	2.54	0.00
1.60	0.10	0.00	0.00	42.40	5.22	2.54	0.00
2.40	0.15	0.00	0.00	43.20	5.22	2.54	0.00
3.20	0.21	0.00	0.00	44.00	5.22	2.54	0.00
4.00	0.27	0.00	0.00	44.80	5.22	2.54	0.00
4.80	0.34	0.00	0.00	45.60	5.22	2.54	0.00
5.60	0.41	0.00	0.00	46.40	5.22	2.54	0.00
6.40	0.48	0.00	0.00	47.20	5.22	2.54	0.00
7.20	0.57	0.00	0.00	48.00	5.22	2.54	0.00
8.00	0.68	0.00	0.00	48.80	5.22	2.54	0.00
8.80	0.80	0.00	0.00	49.60	5.22	2.54	0.00
9.60	0.94	0.02	0.00	50.40	5.22	2.54	0.00
10.40	1.14	0.05	0.01	51.20	5.22	2.54	0.00
11.20	1.46	0.13	0.03	52.00	5.22	2.54	0.00
12.00	2.50	0.61	**0.26**	52.80	5.22	2.54	0.00
12.80	3.76	1.42	**0.08**	53.60	5.22	2.54	0.00
13.60	4.08	1.65	0.04	54.40	5.22	2.54	0.00
14.40	4.28	1.80	0.03	55.20	5.22	2.54	0.00
15.20	4.42	1.91	0.02	56.00	5.22	2.54	0.00
16.00	4.54	2.01	0.02	56.80	5.22	2.54	0.00
16.80	4.65	2.09	0.02	57.60	5.22	2.54	0.00
17.60	4.74	2.16	0.01	58.40	5.22	2.54	0.00
18.40	4.81	2.21	0.01	59.20	5.22	2.54	0.00
19.20	4.88	2.27	0.01	60.00	5.22	2.54	0.00
20.00	4.95	2.32	0.01	60.80	5.22	2.54	0.00
20.80	5.01	2.37	0.01	61.60	5.22	2.54	0.00
21.60	5.07	2.42	0.01	62.40	5.22	2.54	0.00
22.40	5.12	2.46	0.01	63.20	5.22	2.54	0.00
23.20	5.17	2.50	0.01	64.00	5.22	2.54	0.00
24.00	**5.22**	**2.54**	0.01	64.80	5.22	2.54	0.00
24.80	5.22	2.54	0.00	65.60	5.22	2.54	0.00
25.60	5.22	2.54	0.00	66.40	5.22	2.54	0.00
26.40	5.22	2.54	0.00	67.20	5.22	2.54	0.00
27.20	5.22	2.54	0.00	68.00	5.22	2.54	0.00
28.00	5.22	2.54	0.00	68.80	5.22	2.54	0.00
28.80	5.22	2.54	0.00	69.60	5.22	2.54	0.00
29.60	5.22	2.54	0.00	70.40	5.22	2.54	0.00
30.40	5.22	2.54	0.00	71.20	5.22	2.54	0.00
31.20	5.22	2.54	0.00	72.00	5.22	2.54	0.00
32.00	5.22	2.54	0.00	72.80	5.22	2.54	0.00
32.80	5.22	2.54	0.00	73.60	5.22	2.54	0.00
33.60	5.22	2.54	0.00	74.40	5.22	2.54	0.00
34.40	5.22	2.54	0.00	75.20	5.22	2.54	0.00
35.20	5.22	2.54	0.00	76.00	5.22	2.54	0.00
36.00	5.22	2.54	0.00	76.80	5.22	2.54	0.00
36.80	5.22	2.54	0.00	77.60	5.22	2.54	0.00
37.60	5.22	2.54	0.00	78.40	5.22	2.54	0.00
38.40	5.22	2.54	0.00	79.20	5.22	2.54	0.00
39.20	5.22	2.54	0.00	80.00	5.22	2.54	0.00
40.00	5.22	2.54	0.00				

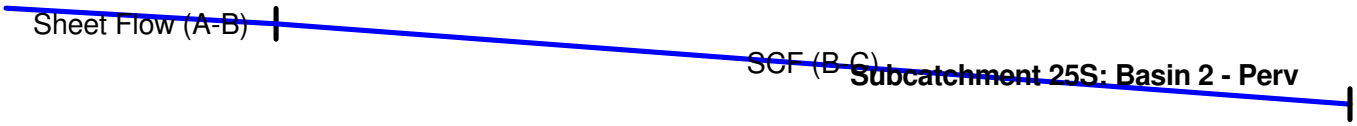
Summary for Subcatchment 25S: Basin 2 - Perv

Runoff = 5.19 cfs @ 12.18 hrs, Volume= 19,249 cf, Depth= 2.81"
Routed to Pond 27P : Basin 2

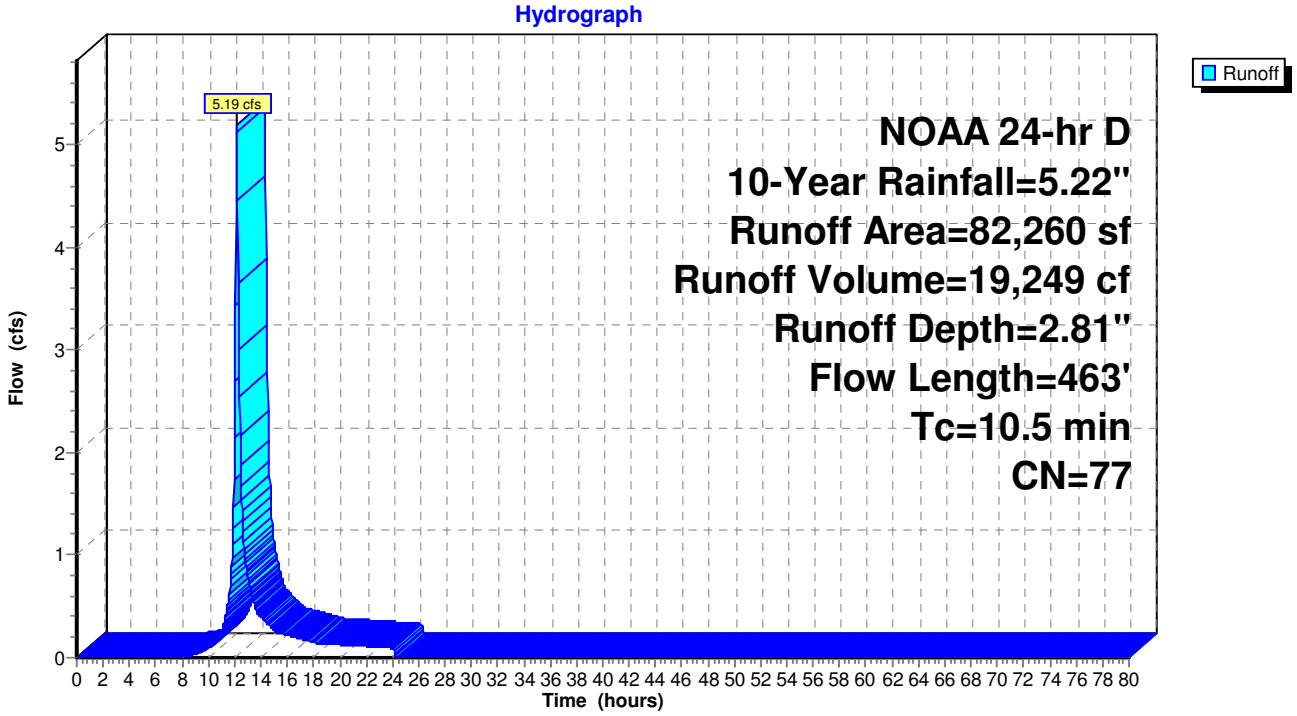
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
47,097	80	>75% Grass cover, Good, HSG D
35,163	74	>75% Grass cover, Good, HSG C
82,260	77	Weighted Average
82,260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	93	0.0500	0.17		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.5	370	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
10.5	463	Total			



Subcatchment 25S: Basin 2 - Perv



Hydrograph for Subcatchment 25S: Basin 2 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	2.81	0.00
0.80	0.05	0.00	0.00	41.60	5.22	2.81	0.00
1.60	0.10	0.00	0.00	42.40	5.22	2.81	0.00
2.40	0.15	0.00	0.00	43.20	5.22	2.81	0.00
3.20	0.21	0.00	0.00	44.00	5.22	2.81	0.00
4.00	0.27	0.00	0.00	44.80	5.22	2.81	0.00
4.80	0.34	0.00	0.00	45.60	5.22	2.81	0.00
5.60	0.41	0.00	0.00	46.40	5.22	2.81	0.00
6.40	0.48	0.00	0.00	47.20	5.22	2.81	0.00
7.20	0.57	0.00	0.00	48.00	5.22	2.81	0.00
8.00	0.68	0.00	0.01	48.80	5.22	2.81	0.00
8.80	0.80	0.01	0.03	49.60	5.22	2.81	0.00
9.60	0.94	0.04	0.07	50.40	5.22	2.81	0.00
10.40	1.14	0.08	0.14	51.20	5.22	2.81	0.00
11.20	1.46	0.19	0.34	52.00	5.22	2.81	0.00
12.00	2.50	0.74	**2.14**	52.80	5.22	2.81	0.00
12.80	3.76	1.63	**0.96**	53.60	5.22	2.81	0.00
13.60	4.08	1.87	0.48	54.40	5.22	2.81	0.00
14.40	4.28	2.03	0.35	55.20	5.22	2.81	0.00
15.20	4.42	2.15	0.25	56.00	5.22	2.81	0.00
16.00	4.54	2.25	0.22	56.80	5.22	2.81	0.00
16.80	4.65	2.33	0.19	57.60	5.22	2.81	0.00
17.60	4.74	2.40	0.17	58.40	5.22	2.81	0.00
18.40	4.81	2.47	0.14	59.20	5.22	2.81	0.00
19.20	4.88	2.52	0.14	60.00	5.22	2.81	0.00
20.00	4.95	2.58	0.13	60.80	5.22	2.81	0.00
20.80	5.01	2.63	0.12	61.60	5.22	2.81	0.00
21.60	5.07	2.68	0.11	62.40	5.22	2.81	0.00
22.40	5.12	2.73	0.11	63.20	5.22	2.81	0.00
23.20	5.17	2.77	0.10	64.00	5.22	2.81	0.00
24.00	**5.22**	**2.81**	0.09	64.80	5.22	2.81	0.00
24.80	5.22	2.81	0.00	65.60	5.22	2.81	0.00
25.60	5.22	2.81	0.00	66.40	5.22	2.81	0.00
26.40	5.22	2.81	0.00	67.20	5.22	2.81	0.00
27.20	5.22	2.81	0.00	68.00	5.22	2.81	0.00
28.00	5.22	2.81	0.00	68.80	5.22	2.81	0.00
28.80	5.22	2.81	0.00	69.60	5.22	2.81	0.00
29.60	5.22	2.81	0.00	70.40	5.22	2.81	0.00
30.40	5.22	2.81	0.00	71.20	5.22	2.81	0.00
31.20	5.22	2.81	0.00	72.00	5.22	2.81	0.00
32.00	5.22	2.81	0.00	72.80	5.22	2.81	0.00
32.80	5.22	2.81	0.00	73.60	5.22	2.81	0.00
33.60	5.22	2.81	0.00	74.40	5.22	2.81	0.00
34.40	5.22	2.81	0.00	75.20	5.22	2.81	0.00
35.20	5.22	2.81	0.00	76.00	5.22	2.81	0.00
36.00	5.22	2.81	0.00	76.80	5.22	2.81	0.00
36.80	5.22	2.81	0.00	77.60	5.22	2.81	0.00
37.60	5.22	2.81	0.00	78.40	5.22	2.81	0.00
38.40	5.22	2.81	0.00	79.20	5.22	2.81	0.00
39.20	5.22	2.81	0.00	80.00	5.22	2.81	0.00
40.00	5.22	2.81	0.00				

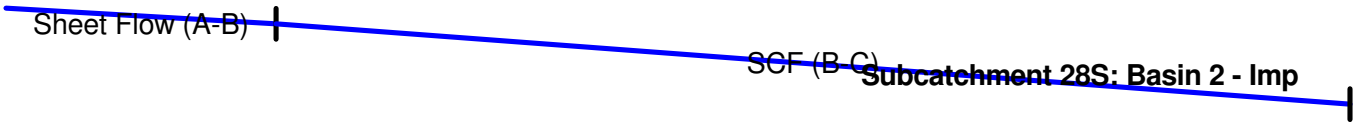
Summary for Subcatchment 28S: Basin 2 - Imp

Runoff = 2.92 cfs @ 12.17 hrs, Volume= 12,529 cf, Depth= 4.98"
Routed to Pond 27P : Basin 2

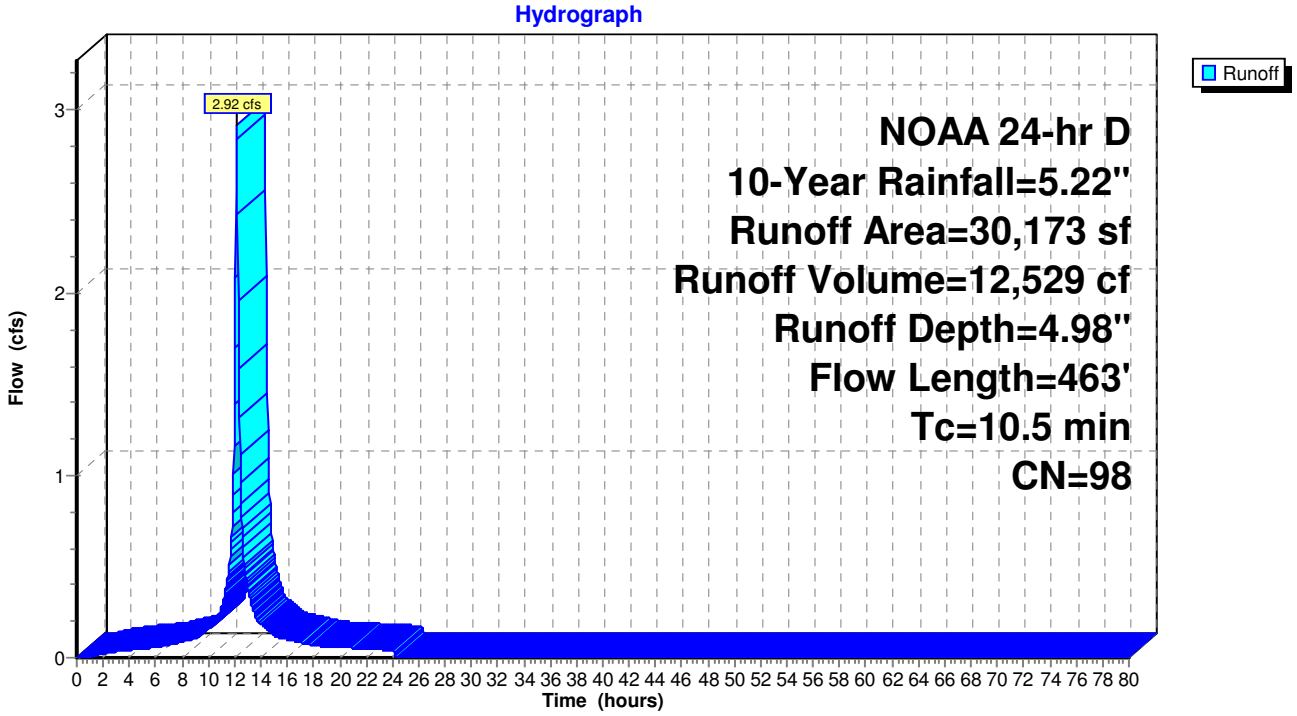
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

	Area (sf)	CN	Description
*	28,866	98	Paved parking, sidewalk, other imp
*	1,307	98	Paved parking, sidewalk other imp
	30,173	98	Weighted Average
	30,173		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	93	0.0500	0.17		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.5	370	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
10.5	463	Total			



Subcatchment 28S: Basin 2 - Imp



Hydrograph for Subcatchment 28S: Basin 2 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	4.98	0.00
0.80	0.05	0.00	0.00	41.60	5.22	4.98	0.00
1.60	0.10	0.01	0.02	42.40	5.22	4.98	0.00
2.40	0.15	0.04	0.03	43.20	5.22	4.98	0.00
3.20	0.21	0.08	0.04	44.00	5.22	4.98	0.00
4.00	0.27	0.12	0.04	44.80	5.22	4.98	0.00
4.80	0.34	0.18	0.05	45.60	5.22	4.98	0.00
5.60	0.41	0.24	0.05	46.40	5.22	4.98	0.00
6.40	0.48	0.30	0.06	47.20	5.22	4.98	0.00
7.20	0.57	0.39	0.07	48.00	5.22	4.98	0.00
8.00	0.68	0.48	0.09	48.80	5.22	4.98	0.00
8.80	0.80	0.59	0.10	49.60	5.22	4.98	0.00
9.60	0.94	0.74	0.14	50.40	5.22	4.98	0.00
10.40	1.14	0.93	0.18	51.20	5.22	4.98	0.00
11.20	1.46	1.24	0.33	52.00	5.22	4.98	0.00
12.00	2.50	2.27	**1.40**	52.80	5.22	4.98	0.00
12.80	3.76	3.53	**0.46**	53.60	5.22	4.98	0.00
13.60	4.08	3.84	0.22	54.40	5.22	4.98	0.00
14.40	4.28	4.04	0.16	55.20	5.22	4.98	0.00
15.20	4.42	4.19	0.11	56.00	5.22	4.98	0.00
16.00	4.54	4.31	0.10	56.80	5.22	4.98	0.00
16.80	4.65	4.41	0.09	57.60	5.22	4.98	0.00
17.60	4.74	4.50	0.07	58.40	5.22	4.98	0.00
18.40	4.81	4.57	0.06	59.20	5.22	4.98	0.00
19.20	4.88	4.64	0.06	60.00	5.22	4.98	0.00
20.00	4.95	4.71	0.06	60.80	5.22	4.98	0.00
20.80	5.01	4.77	0.05	61.60	5.22	4.98	0.00
21.60	5.07	4.83	0.05	62.40	5.22	4.98	0.00
22.40	5.12	4.88	0.05	63.20	5.22	4.98	0.00
23.20	5.17	4.94	0.04	64.00	5.22	4.98	0.00
24.00	**5.22**	**4.98**	0.04	64.80	5.22	4.98	0.00
24.80	5.22	4.98	0.00	65.60	5.22	4.98	0.00
25.60	5.22	4.98	0.00	66.40	5.22	4.98	0.00
26.40	5.22	4.98	0.00	67.20	5.22	4.98	0.00
27.20	5.22	4.98	0.00	68.00	5.22	4.98	0.00
28.00	5.22	4.98	0.00	68.80	5.22	4.98	0.00
28.80	5.22	4.98	0.00	69.60	5.22	4.98	0.00
29.60	5.22	4.98	0.00	70.40	5.22	4.98	0.00
30.40	5.22	4.98	0.00	71.20	5.22	4.98	0.00
31.20	5.22	4.98	0.00	72.00	5.22	4.98	0.00
32.00	5.22	4.98	0.00	72.80	5.22	4.98	0.00
32.80	5.22	4.98	0.00	73.60	5.22	4.98	0.00
33.60	5.22	4.98	0.00	74.40	5.22	4.98	0.00
34.40	5.22	4.98	0.00	75.20	5.22	4.98	0.00
35.20	5.22	4.98	0.00	76.00	5.22	4.98	0.00
36.00	5.22	4.98	0.00	76.80	5.22	4.98	0.00
36.80	5.22	4.98	0.00	77.60	5.22	4.98	0.00
37.60	5.22	4.98	0.00	78.40	5.22	4.98	0.00
38.40	5.22	4.98	0.00	79.20	5.22	4.98	0.00
39.20	5.22	4.98	0.00	80.00	5.22	4.98	0.00
40.00	5.22	4.98	0.00				

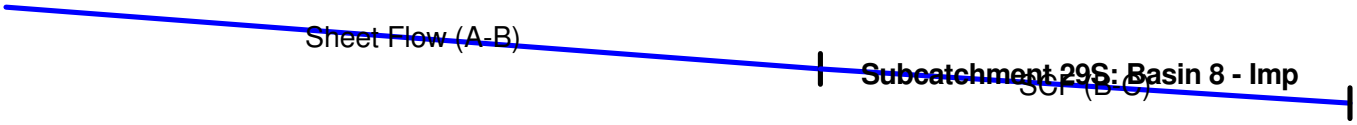
Summary for Subcatchment 29S: Basin 8 - Imp

Runoff = 3.97 cfs @ 12.15 hrs, Volume= 15,886 cf, Depth= 4.98"
Routed to Pond 48P : Basin 8

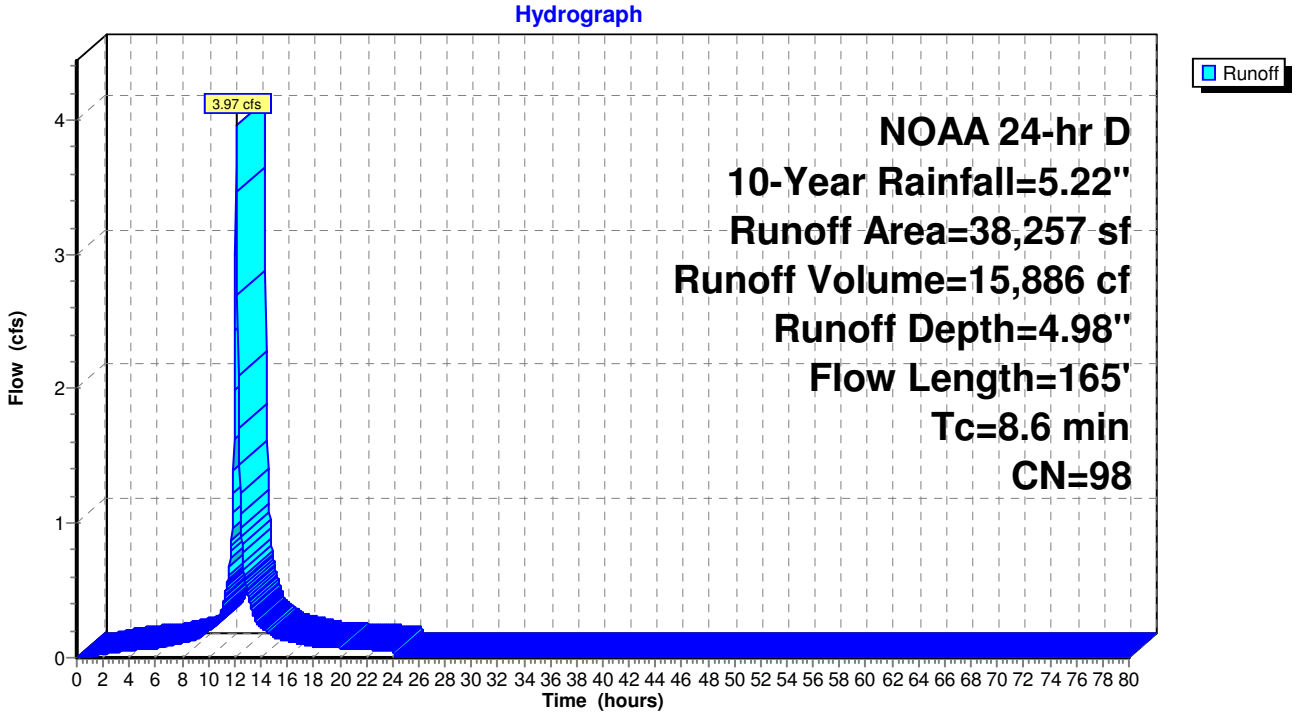
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

	Area (sf)	CN	Description
*	8,924	98	other impervious
	11,475	98	Roofs, HSG C
*	17,858	98	pavement surface
	38,257	98	Weighted Average
	38,257		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0700	0.20		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	65	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
8.6	165	Total			



Subcatchment 29S: Basin 8 - Imp



Hydrograph for Subcatchment 29S: Basin 8 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	4.98	0.00
0.80	0.05	0.00	0.00	41.60	5.22	4.98	0.00
1.60	0.10	0.01	0.02	42.40	5.22	4.98	0.00
2.40	0.15	0.04	0.03	43.20	5.22	4.98	0.00
3.20	0.21	0.08	0.05	44.00	5.22	4.98	0.00
4.00	0.27	0.12	0.05	44.80	5.22	4.98	0.00
4.80	0.34	0.18	0.06	45.60	5.22	4.98	0.00
5.60	0.41	0.24	0.07	46.40	5.22	4.98	0.00
6.40	0.48	0.30	0.08	47.20	5.22	4.98	0.00
7.20	0.57	0.39	0.10	48.00	5.22	4.98	0.00
8.00	0.68	0.48	0.11	48.80	5.22	4.98	0.00
8.80	0.80	0.59	0.13	49.60	5.22	4.98	0.00
9.60	0.94	0.74	0.17	50.40	5.22	4.98	0.00
10.40	1.14	0.93	0.23	51.20	5.22	4.98	0.00
11.20	1.46	1.24	0.43	52.00	5.22	4.98	0.00
12.00	2.50	2.27	**2.00**	52.80	5.22	4.98	0.00
12.80	3.76	3.53	**0.57**	53.60	5.22	4.98	0.00
13.60	4.08	3.84	0.27	54.40	5.22	4.98	0.00
14.40	4.28	4.04	0.20	55.20	5.22	4.98	0.00
15.20	4.42	4.19	0.14	56.00	5.22	4.98	0.00
16.00	4.54	4.31	0.13	56.80	5.22	4.98	0.00
16.80	4.65	4.41	0.11	57.60	5.22	4.98	0.00
17.60	4.74	4.50	0.09	58.40	5.22	4.98	0.00
18.40	4.81	4.57	0.08	59.20	5.22	4.98	0.00
19.20	4.88	4.64	0.08	60.00	5.22	4.98	0.00
20.00	4.95	4.71	0.07	60.80	5.22	4.98	0.00
20.80	5.01	4.77	0.07	61.60	5.22	4.98	0.00
21.60	5.07	4.83	0.06	62.40	5.22	4.98	0.00
22.40	5.12	4.88	0.06	63.20	5.22	4.98	0.00
23.20	5.17	4.94	0.06	64.00	5.22	4.98	0.00
24.00	**5.22**	**4.98**	0.05	64.80	5.22	4.98	0.00
24.80	5.22	4.98	0.00	65.60	5.22	4.98	0.00
25.60	5.22	4.98	0.00	66.40	5.22	4.98	0.00
26.40	5.22	4.98	0.00	67.20	5.22	4.98	0.00
27.20	5.22	4.98	0.00	68.00	5.22	4.98	0.00
28.00	5.22	4.98	0.00	68.80	5.22	4.98	0.00
28.80	5.22	4.98	0.00	69.60	5.22	4.98	0.00
29.60	5.22	4.98	0.00	70.40	5.22	4.98	0.00
30.40	5.22	4.98	0.00	71.20	5.22	4.98	0.00
31.20	5.22	4.98	0.00	72.00	5.22	4.98	0.00
32.00	5.22	4.98	0.00	72.80	5.22	4.98	0.00
32.80	5.22	4.98	0.00	73.60	5.22	4.98	0.00
33.60	5.22	4.98	0.00	74.40	5.22	4.98	0.00
34.40	5.22	4.98	0.00	75.20	5.22	4.98	0.00
35.20	5.22	4.98	0.00	76.00	5.22	4.98	0.00
36.00	5.22	4.98	0.00	76.80	5.22	4.98	0.00
36.80	5.22	4.98	0.00	77.60	5.22	4.98	0.00
37.60	5.22	4.98	0.00	78.40	5.22	4.98	0.00
38.40	5.22	4.98	0.00	79.20	5.22	4.98	0.00
39.20	5.22	4.98	0.00	80.00	5.22	4.98	0.00
40.00	5.22	4.98	0.00				

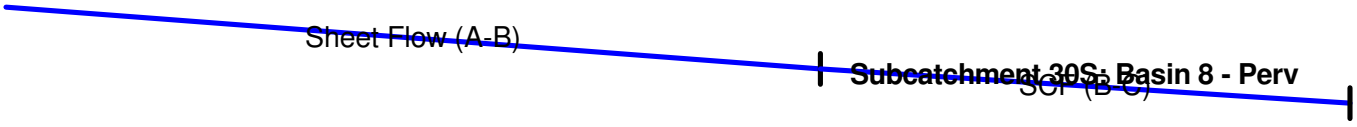
Summary for Subcatchment 30S: Basin 8 - Perv

Runoff = 1.55 cfs @ 12.16 hrs, Volume= 5,332 cf, Depth= 2.81"
Routed to Pond 48P : Basin 8

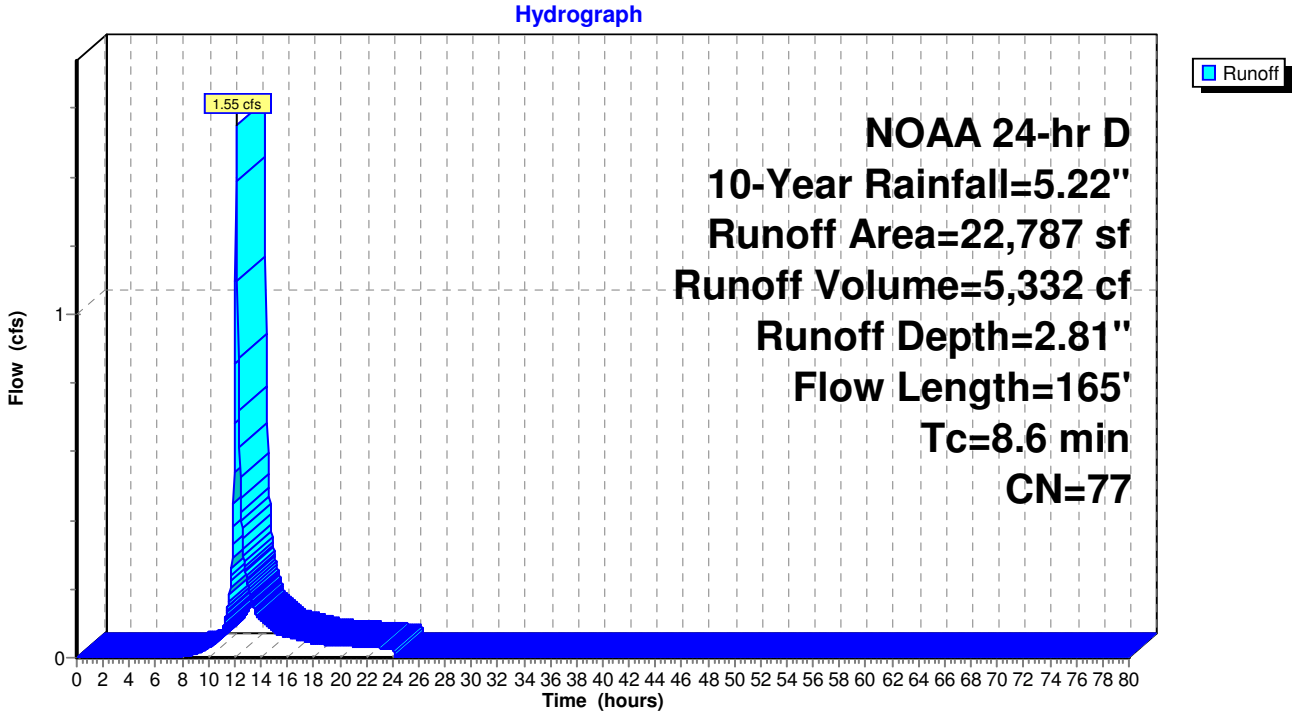
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
11,542	80	>75% Grass cover, Good, HSG D
11,245	74	>75% Grass cover, Good, HSG C
22,787	77	Weighted Average
22,787		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0700	0.20		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	65	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
8.6	165	Total			



Subcatchment 30S: Basin 8 - Perv



Hydrograph for Subcatchment 30S: Basin 8 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	2.81	0.00
0.80	0.05	0.00	0.00	41.60	5.22	2.81	0.00
1.60	0.10	0.00	0.00	42.40	5.22	2.81	0.00
2.40	0.15	0.00	0.00	43.20	5.22	2.81	0.00
3.20	0.21	0.00	0.00	44.00	5.22	2.81	0.00
4.00	0.27	0.00	0.00	44.80	5.22	2.81	0.00
4.80	0.34	0.00	0.00	45.60	5.22	2.81	0.00
5.60	0.41	0.00	0.00	46.40	5.22	2.81	0.00
6.40	0.48	0.00	0.00	47.20	5.22	2.81	0.00
7.20	0.57	0.00	0.00	48.00	5.22	2.81	0.00
8.00	0.68	0.00	0.00	48.80	5.22	2.81	0.00
8.80	0.80	0.01	0.01	49.60	5.22	2.81	0.00
9.60	0.94	0.04	0.02	50.40	5.22	2.81	0.00
10.40	1.14	0.08	0.04	51.20	5.22	2.81	0.00
11.20	1.46	0.19	0.10	52.00	5.22	2.81	0.00
12.00	2.50	0.74	**0.68**	52.80	5.22	2.81	0.00
12.80	3.76	1.63	**0.26**	53.60	5.22	2.81	0.00
13.60	4.08	1.87	0.13	54.40	5.22	2.81	0.00
14.40	4.28	2.03	0.10	55.20	5.22	2.81	0.00
15.20	4.42	2.15	0.07	56.00	5.22	2.81	0.00
16.00	4.54	2.25	0.06	56.80	5.22	2.81	0.00
16.80	4.65	2.33	0.05	57.60	5.22	2.81	0.00
17.60	4.74	2.40	0.05	58.40	5.22	2.81	0.00
18.40	4.81	2.47	0.04	59.20	5.22	2.81	0.00
19.20	4.88	2.52	0.04	60.00	5.22	2.81	0.00
20.00	4.95	2.58	0.04	60.80	5.22	2.81	0.00
20.80	5.01	2.63	0.03	61.60	5.22	2.81	0.00
21.60	5.07	2.68	0.03	62.40	5.22	2.81	0.00
22.40	5.12	2.73	0.03	63.20	5.22	2.81	0.00
23.20	5.17	2.77	0.03	64.00	5.22	2.81	0.00
24.00	**5.22**	**2.81**	0.03	64.80	5.22	2.81	0.00
24.80	5.22	2.81	0.00	65.60	5.22	2.81	0.00
25.60	5.22	2.81	0.00	66.40	5.22	2.81	0.00
26.40	5.22	2.81	0.00	67.20	5.22	2.81	0.00
27.20	5.22	2.81	0.00	68.00	5.22	2.81	0.00
28.00	5.22	2.81	0.00	68.80	5.22	2.81	0.00
28.80	5.22	2.81	0.00	69.60	5.22	2.81	0.00
29.60	5.22	2.81	0.00	70.40	5.22	2.81	0.00
30.40	5.22	2.81	0.00	71.20	5.22	2.81	0.00
31.20	5.22	2.81	0.00	72.00	5.22	2.81	0.00
32.00	5.22	2.81	0.00	72.80	5.22	2.81	0.00
32.80	5.22	2.81	0.00	73.60	5.22	2.81	0.00
33.60	5.22	2.81	0.00	74.40	5.22	2.81	0.00
34.40	5.22	2.81	0.00	75.20	5.22	2.81	0.00
35.20	5.22	2.81	0.00	76.00	5.22	2.81	0.00
36.00	5.22	2.81	0.00	76.80	5.22	2.81	0.00
36.80	5.22	2.81	0.00	77.60	5.22	2.81	0.00
37.60	5.22	2.81	0.00	78.40	5.22	2.81	0.00
38.40	5.22	2.81	0.00	79.20	5.22	2.81	0.00
39.20	5.22	2.81	0.00	80.00	5.22	2.81	0.00
40.00	5.22	2.81	0.00				

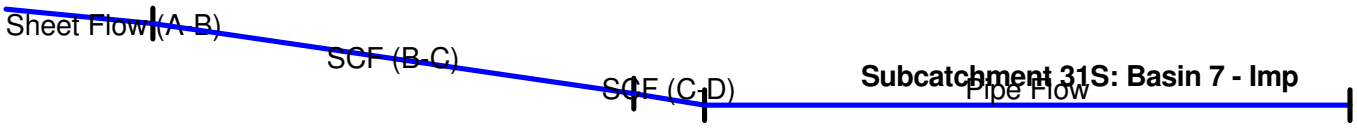
Summary for Subcatchment 31S: Basin 7 - Imp

Runoff = 4.18 cfs @ 12.20 hrs, Volume= 19,009 cf, Depth= 4.98"
Routed to Pond 49P : Basin 7

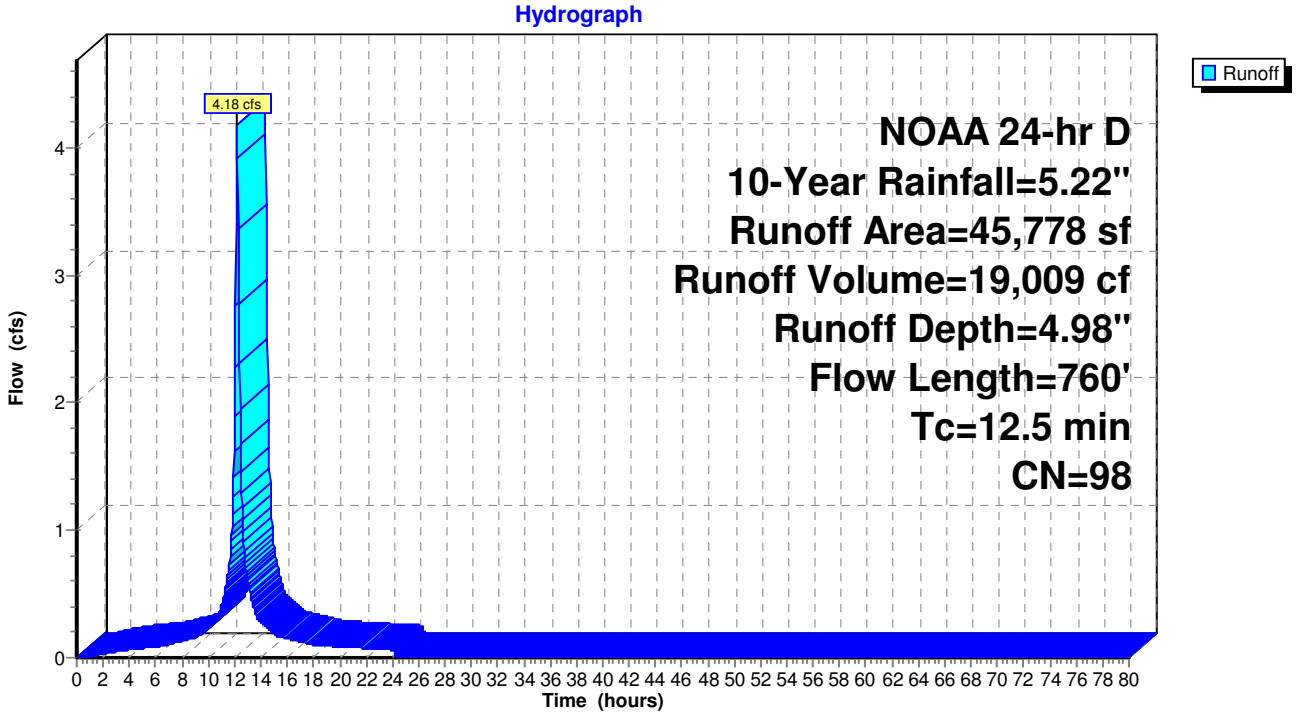
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

	Area (sf)	CN	Description
*	6,730	98	other impervious
*	39,048	98	vehicle pavement surface
	45,778	98	Weighted Average
	45,778		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.1	272	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.1	40	0.0670	5.25		**Shallow Concentrated Flow, SCF (C-D)** Paved Kv= 20.3 fps
2.4	365		2.50		**Direct Entry, Pipe Flow**
12.5	760	Total			



Subcatchment 31S: Basin 7 - Imp



Hydrograph for Subcatchment 31S: Basin 7 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	4.98	0.00
0.80	0.05	0.00	0.00	41.60	5.22	4.98	0.00
1.60	0.10	0.01	0.02	42.40	5.22	4.98	0.00
2.40	0.15	0.04	0.04	43.20	5.22	4.98	0.00
3.20	0.21	0.08	0.05	44.00	5.22	4.98	0.00
4.00	0.27	0.12	0.06	44.80	5.22	4.98	0.00
4.80	0.34	0.18	0.07	45.60	5.22	4.98	0.00
5.60	0.41	0.24	0.08	46.40	5.22	4.98	0.00
6.40	0.48	0.30	0.09	47.20	5.22	4.98	0.00
7.20	0.57	0.39	0.11	48.00	5.22	4.98	0.00
8.00	0.68	0.48	0.13	48.80	5.22	4.98	0.00
8.80	0.80	0.59	0.15	49.60	5.22	4.98	0.00
9.60	0.94	0.74	0.20	50.40	5.22	4.98	0.00
10.40	1.14	0.93	0.27	51.20	5.22	4.98	0.00
11.20	1.46	1.24	0.49	52.00	5.22	4.98	0.00
12.00	2.50	2.27	**1.90**	52.80	5.22	4.98	0.00
12.80	3.76	3.53	**0.74**	53.60	5.22	4.98	0.00
13.60	4.08	3.84	0.35	54.40	5.22	4.98	0.00
14.40	4.28	4.04	0.24	55.20	5.22	4.98	0.00
15.20	4.42	4.19	0.18	56.00	5.22	4.98	0.00
16.00	4.54	4.31	0.15	56.80	5.22	4.98	0.00
16.80	4.65	4.41	0.13	57.60	5.22	4.98	0.00
17.60	4.74	4.50	0.11	58.40	5.22	4.98	0.00
18.40	4.81	4.57	0.10	59.20	5.22	4.98	0.00
19.20	4.88	4.64	0.09	60.00	5.22	4.98	0.00
20.00	4.95	4.71	0.09	60.80	5.22	4.98	0.00
20.80	5.01	4.77	0.08	61.60	5.22	4.98	0.00
21.60	5.07	4.83	0.08	62.40	5.22	4.98	0.00
22.40	5.12	4.88	0.07	63.20	5.22	4.98	0.00
23.20	5.17	4.94	0.07	64.00	5.22	4.98	0.00
24.00	**5.22**	**4.98**	0.06	64.80	5.22	4.98	0.00
24.80	5.22	4.98	0.00	65.60	5.22	4.98	0.00
25.60	5.22	4.98	0.00	66.40	5.22	4.98	0.00
26.40	5.22	4.98	0.00	67.20	5.22	4.98	0.00
27.20	5.22	4.98	0.00	68.00	5.22	4.98	0.00
28.00	5.22	4.98	0.00	68.80	5.22	4.98	0.00
28.80	5.22	4.98	0.00	69.60	5.22	4.98	0.00
29.60	5.22	4.98	0.00	70.40	5.22	4.98	0.00
30.40	5.22	4.98	0.00	71.20	5.22	4.98	0.00
31.20	5.22	4.98	0.00	72.00	5.22	4.98	0.00
32.00	5.22	4.98	0.00	72.80	5.22	4.98	0.00
32.80	5.22	4.98	0.00	73.60	5.22	4.98	0.00
33.60	5.22	4.98	0.00	74.40	5.22	4.98	0.00
34.40	5.22	4.98	0.00	75.20	5.22	4.98	0.00
35.20	5.22	4.98	0.00	76.00	5.22	4.98	0.00
36.00	5.22	4.98	0.00	76.80	5.22	4.98	0.00
36.80	5.22	4.98	0.00	77.60	5.22	4.98	0.00
37.60	5.22	4.98	0.00	78.40	5.22	4.98	0.00
38.40	5.22	4.98	0.00	79.20	5.22	4.98	0.00
39.20	5.22	4.98	0.00	80.00	5.22	4.98	0.00
40.00	5.22	4.98	0.00				

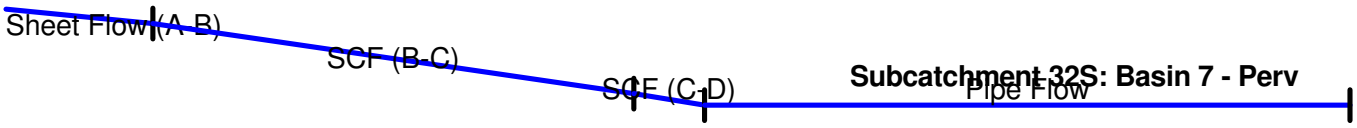
Summary for Subcatchment 32S: Basin 7 - Perv

Runoff = 3.49 cfs @ 12.20 hrs, Volume= 13,731 cf, Depth= 2.81"
Routed to Pond 49P : Basin 7

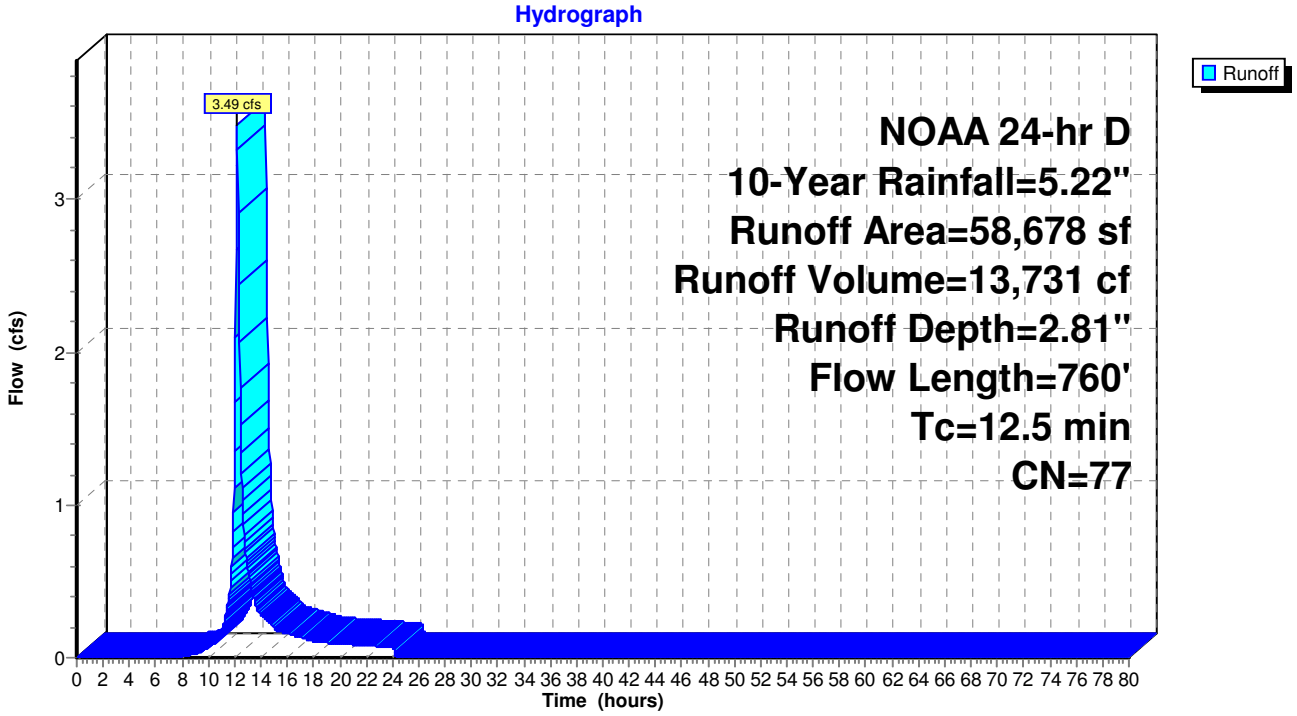
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
25,517	80	>75% Grass cover, Good, HSG D
33,161	74	>75% Grass cover, Good, HSG C
58,678	77	Weighted Average
58,678		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.1	272	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.1	40	0.0670	5.25		**Shallow Concentrated Flow, SCF (C-D)** Paved Kv= 20.3 fps
2.4	365		2.50		**Direct Entry, Pipe Flow**
12.5	760	Total			



Subcatchment 32S: Basin 7 - Perv



Hydrograph for Subcatchment 32S: Basin 7 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	2.81	0.00
0.80	0.05	0.00	0.00	41.60	5.22	2.81	0.00
1.60	0.10	0.00	0.00	42.40	5.22	2.81	0.00
2.40	0.15	0.00	0.00	43.20	5.22	2.81	0.00
3.20	0.21	0.00	0.00	44.00	5.22	2.81	0.00
4.00	0.27	0.00	0.00	44.80	5.22	2.81	0.00
4.80	0.34	0.00	0.00	45.60	5.22	2.81	0.00
5.60	0.41	0.00	0.00	46.40	5.22	2.81	0.00
6.40	0.48	0.00	0.00	47.20	5.22	2.81	0.00
7.20	0.57	0.00	0.00	48.00	5.22	2.81	0.00
8.00	0.68	0.00	0.01	48.80	5.22	2.81	0.00
8.80	0.80	0.01	0.02	49.60	5.22	2.81	0.00
9.60	0.94	0.04	0.05	50.40	5.22	2.81	0.00
10.40	1.14	0.08	0.09	51.20	5.22	2.81	0.00
11.20	1.46	0.19	0.23	52.00	5.22	2.81	0.00
12.00	2.50	0.74	**1.35**	52.80	5.22	2.81	0.00
12.80	3.76	1.63	**0.71**	53.60	5.22	2.81	0.00
13.60	4.08	1.87	0.35	54.40	5.22	2.81	0.00
14.40	4.28	2.03	0.25	55.20	5.22	2.81	0.00
15.20	4.42	2.15	0.18	56.00	5.22	2.81	0.00
16.00	4.54	2.25	0.16	56.80	5.22	2.81	0.00
16.80	4.65	2.33	0.14	57.60	5.22	2.81	0.00
17.60	4.74	2.40	0.12	58.40	5.22	2.81	0.00
18.40	4.81	2.47	0.10	59.20	5.22	2.81	0.00
19.20	4.88	2.52	0.10	60.00	5.22	2.81	0.00
20.00	4.95	2.58	0.09	60.80	5.22	2.81	0.00
20.80	5.01	2.63	0.09	61.60	5.22	2.81	0.00
21.60	5.07	2.68	0.08	62.40	5.22	2.81	0.00
22.40	5.12	2.73	0.08	63.20	5.22	2.81	0.00
23.20	5.17	2.77	0.07	64.00	5.22	2.81	0.00
24.00	**5.22**	**2.81**	0.07	64.80	5.22	2.81	0.00
24.80	5.22	2.81	0.00	65.60	5.22	2.81	0.00
25.60	5.22	2.81	0.00	66.40	5.22	2.81	0.00
26.40	5.22	2.81	0.00	67.20	5.22	2.81	0.00
27.20	5.22	2.81	0.00	68.00	5.22	2.81	0.00
28.00	5.22	2.81	0.00	68.80	5.22	2.81	0.00
28.80	5.22	2.81	0.00	69.60	5.22	2.81	0.00
29.60	5.22	2.81	0.00	70.40	5.22	2.81	0.00
30.40	5.22	2.81	0.00	71.20	5.22	2.81	0.00
31.20	5.22	2.81	0.00	72.00	5.22	2.81	0.00
32.00	5.22	2.81	0.00	72.80	5.22	2.81	0.00
32.80	5.22	2.81	0.00	73.60	5.22	2.81	0.00
33.60	5.22	2.81	0.00	74.40	5.22	2.81	0.00
34.40	5.22	2.81	0.00	75.20	5.22	2.81	0.00
35.20	5.22	2.81	0.00	76.00	5.22	2.81	0.00
36.00	5.22	2.81	0.00	76.80	5.22	2.81	0.00
36.80	5.22	2.81	0.00	77.60	5.22	2.81	0.00
37.60	5.22	2.81	0.00	78.40	5.22	2.81	0.00
38.40	5.22	2.81	0.00	79.20	5.22	2.81	0.00
39.20	5.22	2.81	0.00	80.00	5.22	2.81	0.00
40.00	5.22	2.81	0.00				

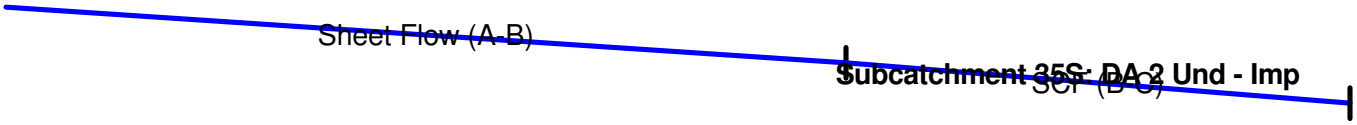
Summary for Subcatchment 35S: DA 2 Und - Imp

Runoff = 5.21 cfs @ 12.17 hrs, Volume= 21,805 cf, Depth= 4.98"
Routed to Link 34L : DA 2 Undetained

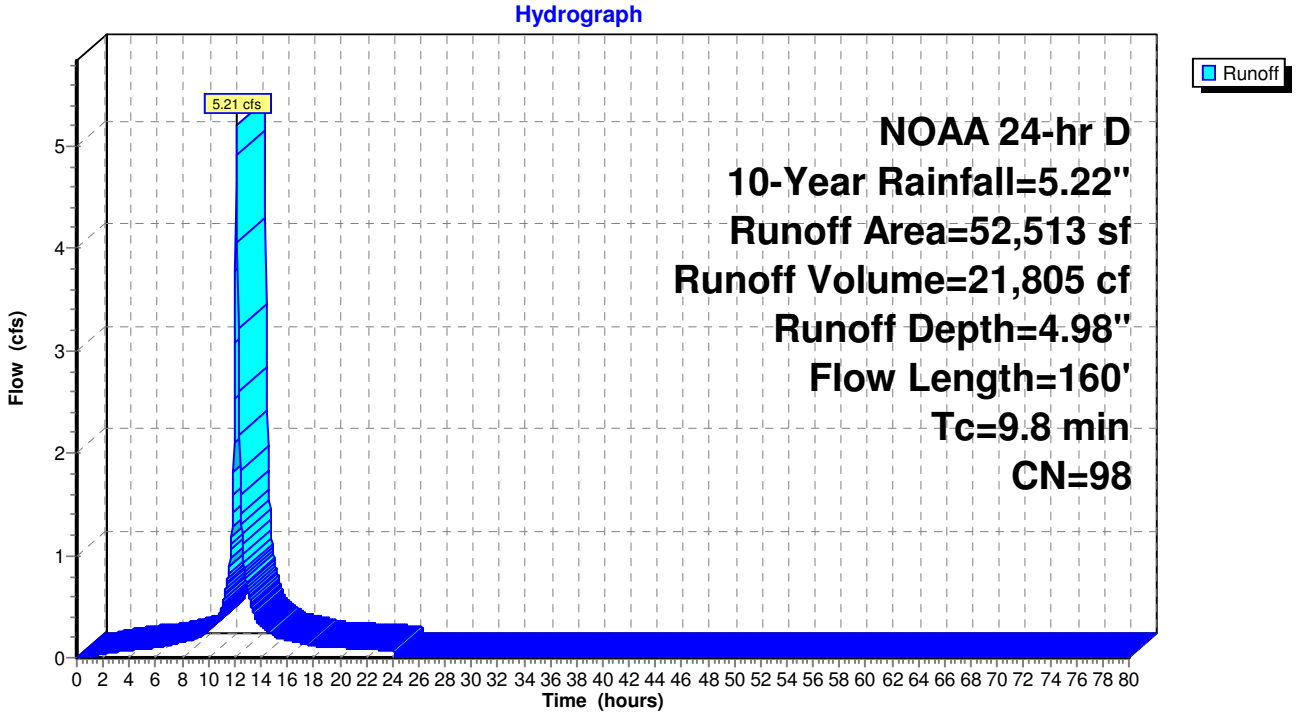
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
18,404	98	Paved parking, HSG C
33,009	98	Paved parking, HSG D
1,100	98	Roofs, HSG D
52,513	98	Weighted Average
52,513		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0500	0.18		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	60	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	160	Total			



Subcatchment 35S: DA 2 Und - Imp



Hydrograph for Subcatchment 35S: DA 2 Und - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	4.98	0.00
0.80	0.05	0.00	0.00	41.60	5.22	4.98	0.00
1.60	0.10	0.01	0.03	42.40	5.22	4.98	0.00
2.40	0.15	0.04	0.05	43.20	5.22	4.98	0.00
3.20	0.21	0.08	0.06	44.00	5.22	4.98	0.00
4.00	0.27	0.12	0.07	44.80	5.22	4.98	0.00
4.80	0.34	0.18	0.08	45.60	5.22	4.98	0.00
5.60	0.41	0.24	0.09	46.40	5.22	4.98	0.00
6.40	0.48	0.30	0.11	47.20	5.22	4.98	0.00
7.20	0.57	0.39	0.13	48.00	5.22	4.98	0.00
8.00	0.68	0.48	0.15	48.80	5.22	4.98	0.00
8.80	0.80	0.59	0.18	49.60	5.22	4.98	0.00
9.60	0.94	0.74	0.24	50.40	5.22	4.98	0.00
10.40	1.14	0.93	0.32	51.20	5.22	4.98	0.00
11.20	1.46	1.24	0.59	52.00	5.22	4.98	0.00
12.00	2.50	2.27	**2.54**	52.80	5.22	4.98	0.00
12.80	3.76	3.53	**0.80**	53.60	5.22	4.98	0.00
13.60	4.08	3.84	0.38	54.40	5.22	4.98	0.00
14.40	4.28	4.04	0.28	55.20	5.22	4.98	0.00
15.20	4.42	4.19	0.20	56.00	5.22	4.98	0.00
16.00	4.54	4.31	0.17	56.80	5.22	4.98	0.00
16.80	4.65	4.41	0.15	57.60	5.22	4.98	0.00
17.60	4.74	4.50	0.13	58.40	5.22	4.98	0.00
18.40	4.81	4.57	0.11	59.20	5.22	4.98	0.00
19.20	4.88	4.64	0.10	60.00	5.22	4.98	0.00
20.00	4.95	4.71	0.10	60.80	5.22	4.98	0.00
20.80	5.01	4.77	0.09	61.60	5.22	4.98	0.00
21.60	5.07	4.83	0.09	62.40	5.22	4.98	0.00
22.40	5.12	4.88	0.08	63.20	5.22	4.98	0.00
23.20	5.17	4.94	0.08	64.00	5.22	4.98	0.00
24.00	**5.22**	**4.98**	0.07	64.80	5.22	4.98	0.00
24.80	5.22	4.98	0.00	65.60	5.22	4.98	0.00
25.60	5.22	4.98	0.00	66.40	5.22	4.98	0.00
26.40	5.22	4.98	0.00	67.20	5.22	4.98	0.00
27.20	5.22	4.98	0.00	68.00	5.22	4.98	0.00
28.00	5.22	4.98	0.00	68.80	5.22	4.98	0.00
28.80	5.22	4.98	0.00	69.60	5.22	4.98	0.00
29.60	5.22	4.98	0.00	70.40	5.22	4.98	0.00
30.40	5.22	4.98	0.00	71.20	5.22	4.98	0.00
31.20	5.22	4.98	0.00	72.00	5.22	4.98	0.00
32.00	5.22	4.98	0.00	72.80	5.22	4.98	0.00
32.80	5.22	4.98	0.00	73.60	5.22	4.98	0.00
33.60	5.22	4.98	0.00	74.40	5.22	4.98	0.00
34.40	5.22	4.98	0.00	75.20	5.22	4.98	0.00
35.20	5.22	4.98	0.00	76.00	5.22	4.98	0.00
36.00	5.22	4.98	0.00	76.80	5.22	4.98	0.00
36.80	5.22	4.98	0.00	77.60	5.22	4.98	0.00
37.60	5.22	4.98	0.00	78.40	5.22	4.98	0.00
38.40	5.22	4.98	0.00	79.20	5.22	4.98	0.00
39.20	5.22	4.98	0.00	80.00	5.22	4.98	0.00
40.00	5.22	4.98	0.00				

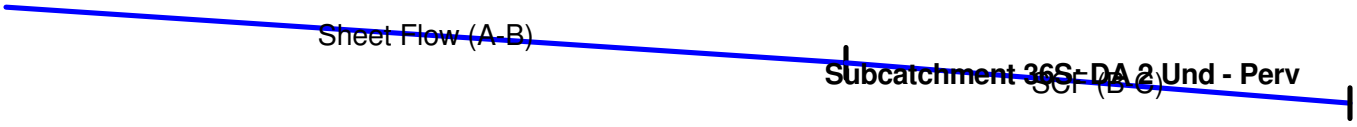
Summary for Subcatchment 36S: DA 2 Und - Perv

Runoff = 7.79 cfs @ 12.17 hrs, Volume= 28,070 cf, Depth= 2.81"
Routed to Link 34L : DA 2 Undetained

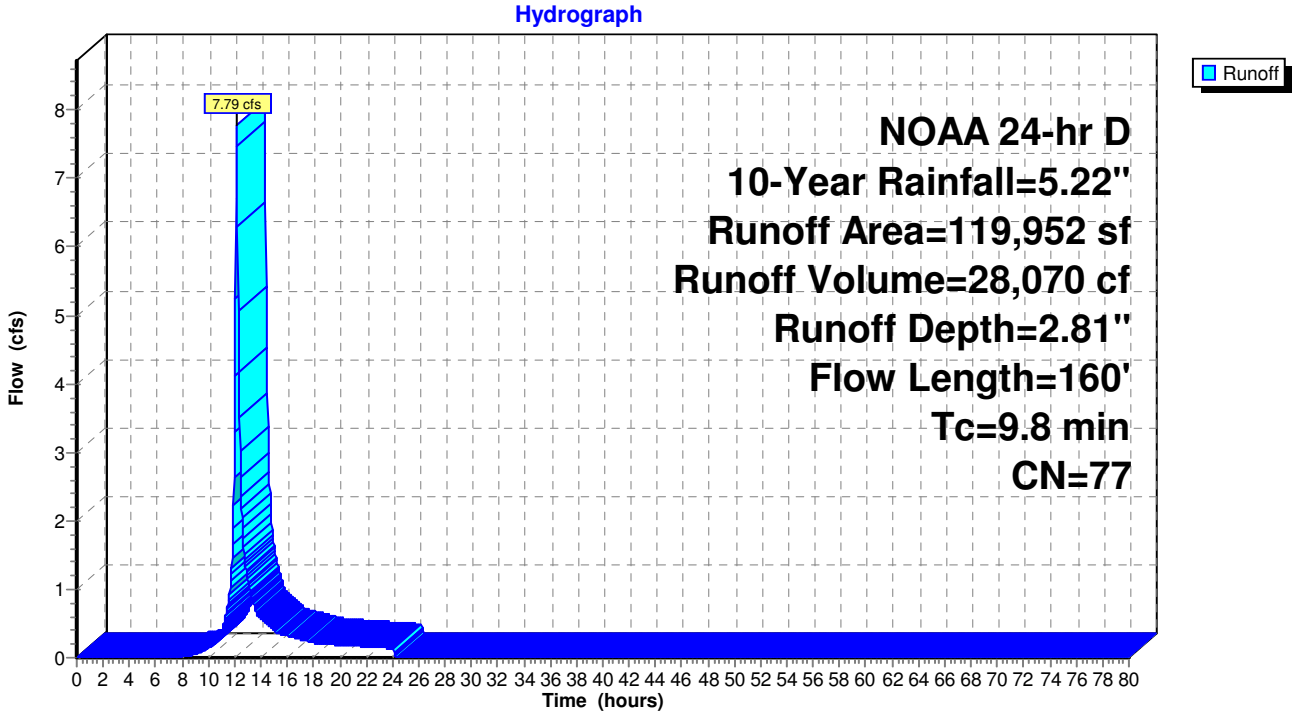
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
52,227	80	>75% Grass cover, Good, HSG D
67,725	74	>75% Grass cover, Good, HSG C
119,952	77	Weighted Average
119,952		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0500	0.18		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	60	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	160	Total			



Subcatchment 36S: DA 2 Und - Perv



Hydrograph for Subcatchment 36S: DA 2 Und - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	2.81	0.00
0.80	0.05	0.00	0.00	41.60	5.22	2.81	0.00
1.60	0.10	0.00	0.00	42.40	5.22	2.81	0.00
2.40	0.15	0.00	0.00	43.20	5.22	2.81	0.00
3.20	0.21	0.00	0.00	44.00	5.22	2.81	0.00
4.00	0.27	0.00	0.00	44.80	5.22	2.81	0.00
4.80	0.34	0.00	0.00	45.60	5.22	2.81	0.00
5.60	0.41	0.00	0.00	46.40	5.22	2.81	0.00
6.40	0.48	0.00	0.00	47.20	5.22	2.81	0.00
7.20	0.57	0.00	0.00	48.00	5.22	2.81	0.00
8.00	0.68	0.00	0.01	48.80	5.22	2.81	0.00
8.80	0.80	0.01	0.05	49.60	5.22	2.81	0.00
9.60	0.94	0.04	0.10	50.40	5.22	2.81	0.00
10.40	1.14	0.08	0.20	51.20	5.22	2.81	0.00
11.20	1.46	0.19	0.51	52.00	5.22	2.81	0.00
12.00	2.50	0.74	**3.29**	52.80	5.22	2.81	0.00
12.80	3.76	1.63	**1.38**	53.60	5.22	2.81	0.00
13.60	4.08	1.87	0.69	54.40	5.22	2.81	0.00
14.40	4.28	2.03	0.50	55.20	5.22	2.81	0.00
15.20	4.42	2.15	0.36	56.00	5.22	2.81	0.00
16.00	4.54	2.25	0.32	56.80	5.22	2.81	0.00
16.80	4.65	2.33	0.28	57.60	5.22	2.81	0.00
17.60	4.74	2.40	0.24	58.40	5.22	2.81	0.00
18.40	4.81	2.47	0.21	59.20	5.22	2.81	0.00
19.20	4.88	2.52	0.20	60.00	5.22	2.81	0.00
20.00	4.95	2.58	0.19	60.80	5.22	2.81	0.00
20.80	5.01	2.63	0.18	61.60	5.22	2.81	0.00
21.60	5.07	2.68	0.17	62.40	5.22	2.81	0.00
22.40	5.12	2.73	0.16	63.20	5.22	2.81	0.00
23.20	5.17	2.77	0.15	64.00	5.22	2.81	0.00
24.00	**5.22**	**2.81**	0.14	64.80	5.22	2.81	0.00
24.80	5.22	2.81	0.00	65.60	5.22	2.81	0.00
25.60	5.22	2.81	0.00	66.40	5.22	2.81	0.00
26.40	5.22	2.81	0.00	67.20	5.22	2.81	0.00
27.20	5.22	2.81	0.00	68.00	5.22	2.81	0.00
28.00	5.22	2.81	0.00	68.80	5.22	2.81	0.00
28.80	5.22	2.81	0.00	69.60	5.22	2.81	0.00
29.60	5.22	2.81	0.00	70.40	5.22	2.81	0.00
30.40	5.22	2.81	0.00	71.20	5.22	2.81	0.00
31.20	5.22	2.81	0.00	72.00	5.22	2.81	0.00
32.00	5.22	2.81	0.00	72.80	5.22	2.81	0.00
32.80	5.22	2.81	0.00	73.60	5.22	2.81	0.00
33.60	5.22	2.81	0.00	74.40	5.22	2.81	0.00
34.40	5.22	2.81	0.00	75.20	5.22	2.81	0.00
35.20	5.22	2.81	0.00	76.00	5.22	2.81	0.00
36.00	5.22	2.81	0.00	76.80	5.22	2.81	0.00
36.80	5.22	2.81	0.00	77.60	5.22	2.81	0.00
37.60	5.22	2.81	0.00	78.40	5.22	2.81	0.00
38.40	5.22	2.81	0.00	79.20	5.22	2.81	0.00
39.20	5.22	2.81	0.00	80.00	5.22	2.81	0.00
40.00	5.22	2.81	0.00				

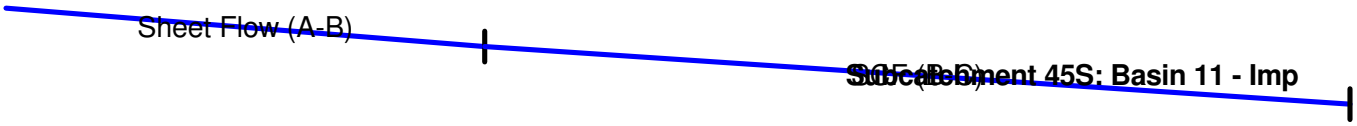
Summary for Subcatchment 45S: Basin 11 - Imp

Runoff = 5.95 cfs @ 12.17 hrs, Volume= 24,873 cf, Depth= 4.98"
Routed to Pond 33P : Basin 11

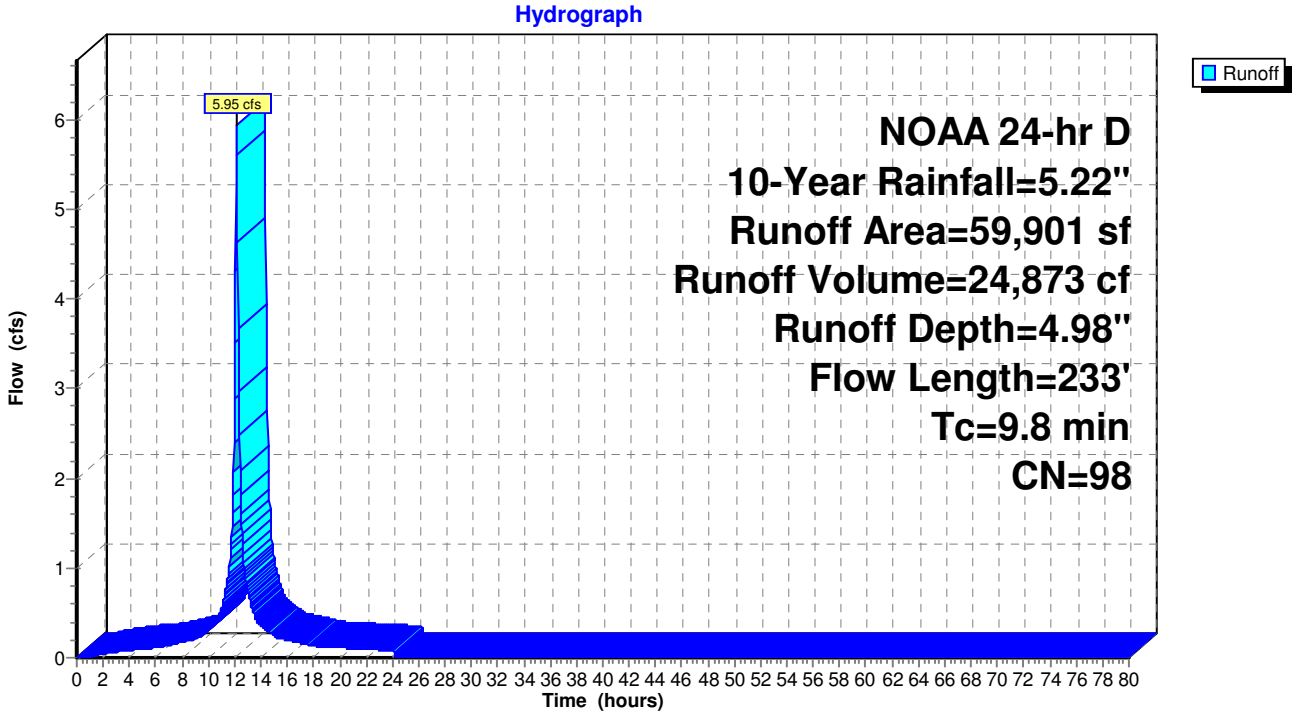
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

	Area (sf)	CN	Description
*	22,270	98	pavement surface area/ porous
	32,203	98	Roofs, HSG C
*	5,428	98	other impervious
	59,901	98	Weighted Average
	59,901		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
0.9	150	0.0330	2.92		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	233	Total			



Subcatchment 45S: Basin 11 - Imp



Hydrograph for Subcatchment 45S: Basin 11 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	4.98	0.00
0.80	0.05	0.00	0.00	41.60	5.22	4.98	0.00
1.60	0.10	0.01	0.03	42.40	5.22	4.98	0.00
2.40	0.15	0.04	0.05	43.20	5.22	4.98	0.00
3.20	0.21	0.08	0.07	44.00	5.22	4.98	0.00
4.00	0.27	0.12	0.08	44.80	5.22	4.98	0.00
4.80	0.34	0.18	0.10	45.60	5.22	4.98	0.00
5.60	0.41	0.24	0.11	46.40	5.22	4.98	0.00
6.40	0.48	0.30	0.12	47.20	5.22	4.98	0.00
7.20	0.57	0.39	0.15	48.00	5.22	4.98	0.00
8.00	0.68	0.48	0.18	48.80	5.22	4.98	0.00
8.80	0.80	0.59	0.20	49.60	5.22	4.98	0.00
9.60	0.94	0.74	0.27	50.40	5.22	4.98	0.00
10.40	1.14	0.93	0.36	51.20	5.22	4.98	0.00
11.20	1.46	1.24	0.67	52.00	5.22	4.98	0.00
12.00	2.50	2.27	**2.90**	52.80	5.22	4.98	0.00
12.80	3.76	3.53	**0.91**	53.60	5.22	4.98	0.00
13.60	4.08	3.84	0.44	54.40	5.22	4.98	0.00
14.40	4.28	4.04	0.31	55.20	5.22	4.98	0.00
15.20	4.42	4.19	0.23	56.00	5.22	4.98	0.00
16.00	4.54	4.31	0.20	56.80	5.22	4.98	0.00
16.80	4.65	4.41	0.17	57.60	5.22	4.98	0.00
17.60	4.74	4.50	0.15	58.40	5.22	4.98	0.00
18.40	4.81	4.57	0.13	59.20	5.22	4.98	0.00
19.20	4.88	4.64	0.12	60.00	5.22	4.98	0.00
20.00	4.95	4.71	0.11	60.80	5.22	4.98	0.00
20.80	5.01	4.77	0.11	61.60	5.22	4.98	0.00
21.60	5.07	4.83	0.10	62.40	5.22	4.98	0.00
22.40	5.12	4.88	0.09	63.20	5.22	4.98	0.00
23.20	5.17	4.94	0.09	64.00	5.22	4.98	0.00
24.00	**5.22**	**4.98**	0.08	64.80	5.22	4.98	0.00
24.80	5.22	4.98	0.00	65.60	5.22	4.98	0.00
25.60	5.22	4.98	0.00	66.40	5.22	4.98	0.00
26.40	5.22	4.98	0.00	67.20	5.22	4.98	0.00
27.20	5.22	4.98	0.00	68.00	5.22	4.98	0.00
28.00	5.22	4.98	0.00	68.80	5.22	4.98	0.00
28.80	5.22	4.98	0.00	69.60	5.22	4.98	0.00
29.60	5.22	4.98	0.00	70.40	5.22	4.98	0.00
30.40	5.22	4.98	0.00	71.20	5.22	4.98	0.00
31.20	5.22	4.98	0.00	72.00	5.22	4.98	0.00
32.00	5.22	4.98	0.00	72.80	5.22	4.98	0.00
32.80	5.22	4.98	0.00	73.60	5.22	4.98	0.00
33.60	5.22	4.98	0.00	74.40	5.22	4.98	0.00
34.40	5.22	4.98	0.00	75.20	5.22	4.98	0.00
35.20	5.22	4.98	0.00	76.00	5.22	4.98	0.00
36.00	5.22	4.98	0.00	76.80	5.22	4.98	0.00
36.80	5.22	4.98	0.00	77.60	5.22	4.98	0.00
37.60	5.22	4.98	0.00	78.40	5.22	4.98	0.00
38.40	5.22	4.98	0.00	79.20	5.22	4.98	0.00
39.20	5.22	4.98	0.00	80.00	5.22	4.98	0.00
40.00	5.22	4.98	0.00				

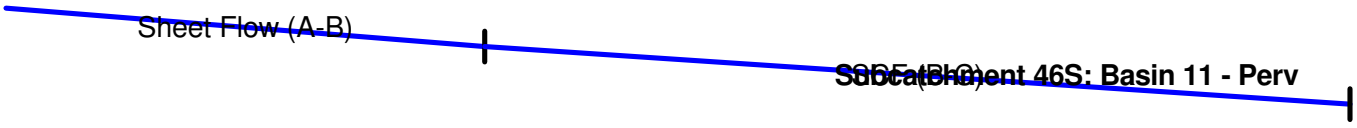
Summary for Subcatchment 46S: Basin 11 - Perv

Runoff = 1.52 cfs @ 12.17 hrs, Volume= 5,482 cf, Depth= 2.72"
Routed to Pond 33P : Basin 11

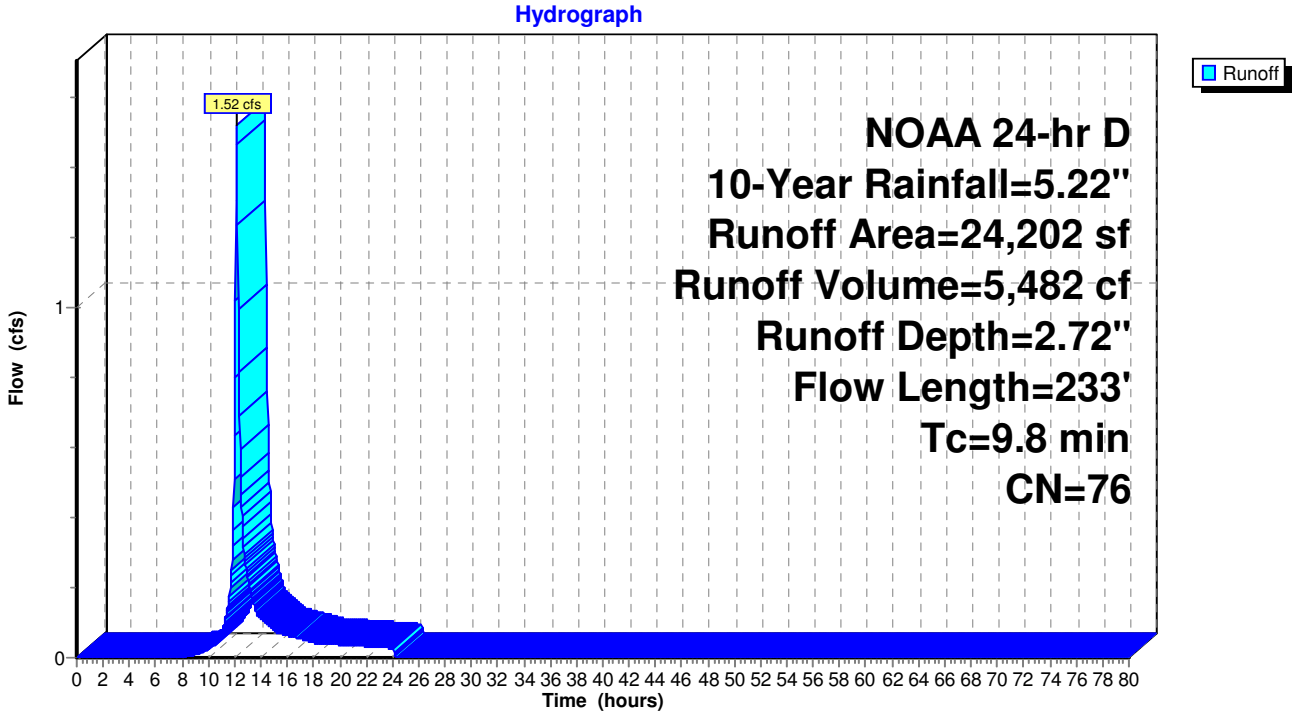
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
7,658	80	>75% Grass cover, Good, HSG D
16,544	74	>75% Grass cover, Good, HSG C
24,202	76	Weighted Average
24,202		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
0.9	150	0.0330	2.92		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	233	Total			



Subcatchment 46S: Basin 11 - Perv



Hydrograph for Subcatchment 46S: Basin 11 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	2.72	0.00
0.80	0.05	0.00	0.00	41.60	5.22	2.72	0.00
1.60	0.10	0.00	0.00	42.40	5.22	2.72	0.00
2.40	0.15	0.00	0.00	43.20	5.22	2.72	0.00
3.20	0.21	0.00	0.00	44.00	5.22	2.72	0.00
4.00	0.27	0.00	0.00	44.80	5.22	2.72	0.00
4.80	0.34	0.00	0.00	45.60	5.22	2.72	0.00
5.60	0.41	0.00	0.00	46.40	5.22	2.72	0.00
6.40	0.48	0.00	0.00	47.20	5.22	2.72	0.00
7.20	0.57	0.00	0.00	48.00	5.22	2.72	0.00
8.00	0.68	0.00	0.00	48.80	5.22	2.72	0.00
8.80	0.80	0.01	0.01	49.60	5.22	2.72	0.00
9.60	0.94	0.03	0.02	50.40	5.22	2.72	0.00
10.40	1.14	0.07	0.04	51.20	5.22	2.72	0.00
11.20	1.46	0.17	0.10	52.00	5.22	2.72	0.00
12.00	2.50	0.70	**0.64**	52.80	5.22	2.72	0.00
12.80	3.76	1.56	**0.27**	53.60	5.22	2.72	0.00
13.60	4.08	1.80	0.14	54.40	5.22	2.72	0.00
14.40	4.28	1.95	0.10	55.20	5.22	2.72	0.00
15.20	4.42	2.07	0.07	56.00	5.22	2.72	0.00
16.00	4.54	2.16	0.06	56.80	5.22	2.72	0.00
16.80	4.65	2.25	0.06	57.60	5.22	2.72	0.00
17.60	4.74	2.32	0.05	58.40	5.22	2.72	0.00
18.40	4.81	2.38	0.04	59.20	5.22	2.72	0.00
19.20	4.88	2.44	0.04	60.00	5.22	2.72	0.00
20.00	4.95	2.49	0.04	60.80	5.22	2.72	0.00
20.80	5.01	2.54	0.04	61.60	5.22	2.72	0.00
21.60	5.07	2.59	0.03	62.40	5.22	2.72	0.00
22.40	5.12	2.64	0.03	63.20	5.22	2.72	0.00
23.20	5.17	2.68	0.03	64.00	5.22	2.72	0.00
24.00	**5.22**	**2.72**	0.03	64.80	5.22	2.72	0.00
24.80	5.22	2.72	0.00	65.60	5.22	2.72	0.00
25.60	5.22	2.72	0.00	66.40	5.22	2.72	0.00
26.40	5.22	2.72	0.00	67.20	5.22	2.72	0.00
27.20	5.22	2.72	0.00	68.00	5.22	2.72	0.00
28.00	5.22	2.72	0.00	68.80	5.22	2.72	0.00
28.80	5.22	2.72	0.00	69.60	5.22	2.72	0.00
29.60	5.22	2.72	0.00	70.40	5.22	2.72	0.00
30.40	5.22	2.72	0.00	71.20	5.22	2.72	0.00
31.20	5.22	2.72	0.00	72.00	5.22	2.72	0.00
32.00	5.22	2.72	0.00	72.80	5.22	2.72	0.00
32.80	5.22	2.72	0.00	73.60	5.22	2.72	0.00
33.60	5.22	2.72	0.00	74.40	5.22	2.72	0.00
34.40	5.22	2.72	0.00	75.20	5.22	2.72	0.00
35.20	5.22	2.72	0.00	76.00	5.22	2.72	0.00
36.00	5.22	2.72	0.00	76.80	5.22	2.72	0.00
36.80	5.22	2.72	0.00	77.60	5.22	2.72	0.00
37.60	5.22	2.72	0.00	78.40	5.22	2.72	0.00
38.40	5.22	2.72	0.00	79.20	5.22	2.72	0.00
39.20	5.22	2.72	0.00	80.00	5.22	2.72	0.00
40.00	5.22	2.72	0.00				

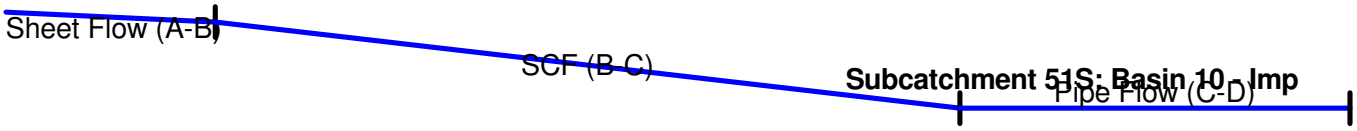
Summary for Subcatchment 51S: Basin 10 - Imp

Runoff = 5.12 cfs @ 12.18 hrs, Volume= 22,055 cf, Depth= 4.98"
Routed to Pond 41P : Basin 10

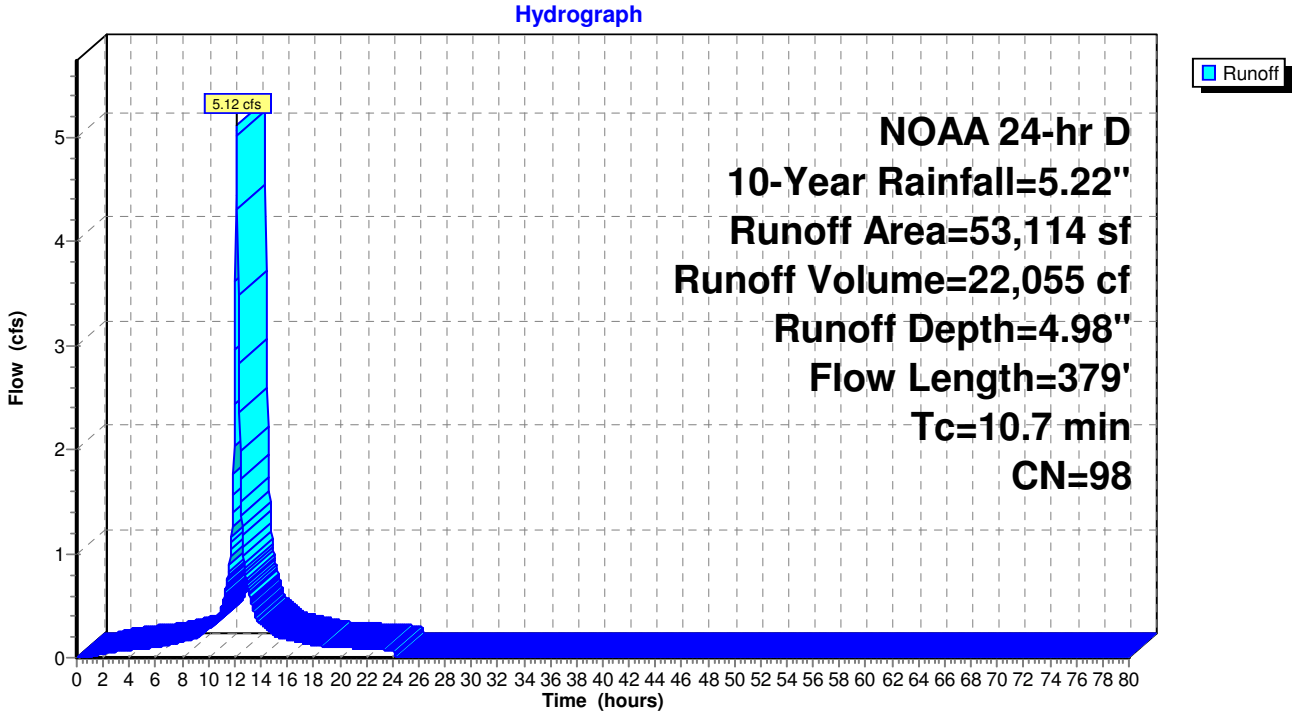
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
15,878	98	Paved parking, HSG C
37,236	98	Roofs, HSG C
53,114	98	Weighted Average
53,114		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.0	210	0.0480	3.53		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.7	110		2.50		**Direct Entry, Pipe Flow (C-D)**
10.7	379	Total			



Subcatchment 51S: Basin 10 - Imp



Hydrograph for Subcatchment 51S: Basin 10 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	4.98	0.00
0.80	0.05	0.00	0.00	41.60	5.22	4.98	0.00
1.60	0.10	0.01	0.03	42.40	5.22	4.98	0.00
2.40	0.15	0.04	0.05	43.20	5.22	4.98	0.00
3.20	0.21	0.08	0.06	44.00	5.22	4.98	0.00
4.00	0.27	0.12	0.07	44.80	5.22	4.98	0.00
4.80	0.34	0.18	0.08	45.60	5.22	4.98	0.00
5.60	0.41	0.24	0.09	46.40	5.22	4.98	0.00
6.40	0.48	0.30	0.11	47.20	5.22	4.98	0.00
7.20	0.57	0.39	0.13	48.00	5.22	4.98	0.00
8.00	0.68	0.48	0.16	48.80	5.22	4.98	0.00
8.80	0.80	0.59	0.18	49.60	5.22	4.98	0.00
9.60	0.94	0.74	0.24	50.40	5.22	4.98	0.00
10.40	1.14	0.93	0.32	51.20	5.22	4.98	0.00
11.20	1.46	1.24	0.58	52.00	5.22	4.98	0.00
12.00	2.50	2.27	**2.44**	52.80	5.22	4.98	0.00
12.80	3.76	3.53	**0.82**	53.60	5.22	4.98	0.00
13.60	4.08	3.84	0.39	54.40	5.22	4.98	0.00
14.40	4.28	4.04	0.28	55.20	5.22	4.98	0.00
15.20	4.42	4.19	0.20	56.00	5.22	4.98	0.00
16.00	4.54	4.31	0.18	56.80	5.22	4.98	0.00
16.80	4.65	4.41	0.15	57.60	5.22	4.98	0.00
17.60	4.74	4.50	0.13	58.40	5.22	4.98	0.00
18.40	4.81	4.57	0.11	59.20	5.22	4.98	0.00
19.20	4.88	4.64	0.11	60.00	5.22	4.98	0.00
20.00	4.95	4.71	0.10	60.80	5.22	4.98	0.00
20.80	5.01	4.77	0.09	61.60	5.22	4.98	0.00
21.60	5.07	4.83	0.09	62.40	5.22	4.98	0.00
22.40	5.12	4.88	0.08	63.20	5.22	4.98	0.00
23.20	5.17	4.94	0.08	64.00	5.22	4.98	0.00
24.00	**5.22**	**4.98**	0.07	64.80	5.22	4.98	0.00
24.80	5.22	4.98	0.00	65.60	5.22	4.98	0.00
25.60	5.22	4.98	0.00	66.40	5.22	4.98	0.00
26.40	5.22	4.98	0.00	67.20	5.22	4.98	0.00
27.20	5.22	4.98	0.00	68.00	5.22	4.98	0.00
28.00	5.22	4.98	0.00	68.80	5.22	4.98	0.00
28.80	5.22	4.98	0.00	69.60	5.22	4.98	0.00
29.60	5.22	4.98	0.00	70.40	5.22	4.98	0.00
30.40	5.22	4.98	0.00	71.20	5.22	4.98	0.00
31.20	5.22	4.98	0.00	72.00	5.22	4.98	0.00
32.00	5.22	4.98	0.00	72.80	5.22	4.98	0.00
32.80	5.22	4.98	0.00	73.60	5.22	4.98	0.00
33.60	5.22	4.98	0.00	74.40	5.22	4.98	0.00
34.40	5.22	4.98	0.00	75.20	5.22	4.98	0.00
35.20	5.22	4.98	0.00	76.00	5.22	4.98	0.00
36.00	5.22	4.98	0.00	76.80	5.22	4.98	0.00
36.80	5.22	4.98	0.00	77.60	5.22	4.98	0.00
37.60	5.22	4.98	0.00	78.40	5.22	4.98	0.00
38.40	5.22	4.98	0.00	79.20	5.22	4.98	0.00
39.20	5.22	4.98	0.00	80.00	5.22	4.98	0.00
40.00	5.22	4.98	0.00				

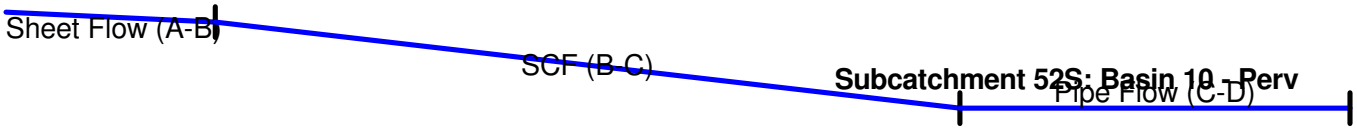
Summary for Subcatchment 52S: Basin 10 - Perv

Runoff = 2.19 cfs @ 12.18 hrs, Volume= 8,157 cf, Depth= 2.63"
Routed to Pond 41P : Basin 10

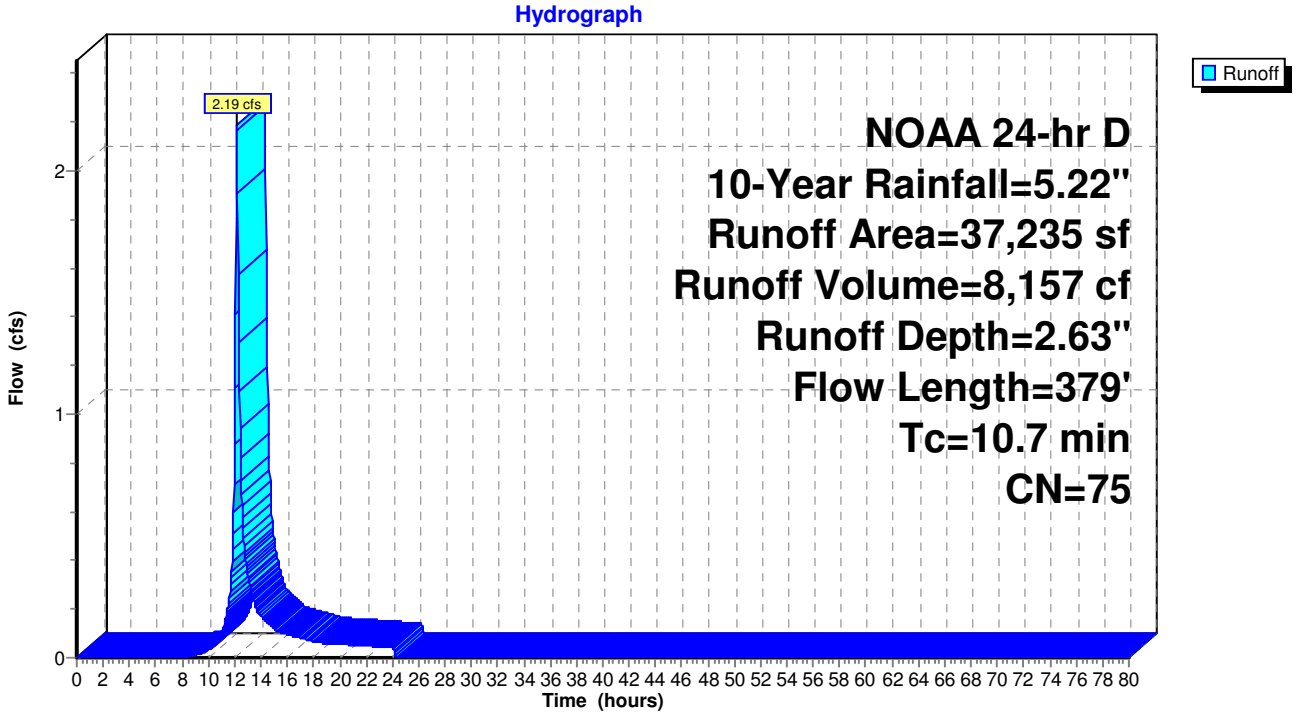
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
7,626	80	>75% Grass cover, Good, HSG D
29,609	74	>75% Grass cover, Good, HSG C
37,235	75	Weighted Average
37,235		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.0	210	0.0480	3.53		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.7	110		2.50		**Direct Entry, Pipe Flow (C-D)**
10.7	379	Total			



Subcatchment 52S: Basin 10 - Perv



Hydrograph for Subcatchment 52S: Basin 10 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	2.63	0.00
0.80	0.05	0.00	0.00	41.60	5.22	2.63	0.00
1.60	0.10	0.00	0.00	42.40	5.22	2.63	0.00
2.40	0.15	0.00	0.00	43.20	5.22	2.63	0.00
3.20	0.21	0.00	0.00	44.00	5.22	2.63	0.00
4.00	0.27	0.00	0.00	44.80	5.22	2.63	0.00
4.80	0.34	0.00	0.00	45.60	5.22	2.63	0.00
5.60	0.41	0.00	0.00	46.40	5.22	2.63	0.00
6.40	0.48	0.00	0.00	47.20	5.22	2.63	0.00
7.20	0.57	0.00	0.00	48.00	5.22	2.63	0.00
8.00	0.68	0.00	0.00	48.80	5.22	2.63	0.00
8.80	0.80	0.00	0.01	49.60	5.22	2.63	0.00
9.60	0.94	0.02	0.02	50.40	5.22	2.63	0.00
10.40	1.14	0.06	0.05	51.20	5.22	2.63	0.00
11.20	1.46	0.15	0.13	52.00	5.22	2.63	0.00
12.00	2.50	0.65	**0.88**	52.80	5.22	2.63	0.00
12.80	3.76	1.49	**0.42**	53.60	5.22	2.63	0.00
13.60	4.08	1.73	0.21	54.40	5.22	2.63	0.00
14.40	4.28	1.88	0.15	55.20	5.22	2.63	0.00
15.20	4.42	1.99	0.11	56.00	5.22	2.63	0.00
16.00	4.54	2.08	0.10	56.80	5.22	2.63	0.00
16.80	4.65	2.17	0.08	57.60	5.22	2.63	0.00
17.60	4.74	2.24	0.07	58.40	5.22	2.63	0.00
18.40	4.81	2.30	0.06	59.20	5.22	2.63	0.00
19.20	4.88	2.35	0.06	60.00	5.22	2.63	0.00
20.00	4.95	2.41	0.06	60.80	5.22	2.63	0.00
20.80	5.01	2.46	0.05	61.60	5.22	2.63	0.00
21.60	5.07	2.50	0.05	62.40	5.22	2.63	0.00
22.40	5.12	2.55	0.05	63.20	5.22	2.63	0.00
23.20	5.17	2.59	0.04	64.00	5.22	2.63	0.00
24.00	**5.22**	**2.63**	0.04	64.80	5.22	2.63	0.00
24.80	5.22	2.63	0.00	65.60	5.22	2.63	0.00
25.60	5.22	2.63	0.00	66.40	5.22	2.63	0.00
26.40	5.22	2.63	0.00	67.20	5.22	2.63	0.00
27.20	5.22	2.63	0.00	68.00	5.22	2.63	0.00
28.00	5.22	2.63	0.00	68.80	5.22	2.63	0.00
28.80	5.22	2.63	0.00	69.60	5.22	2.63	0.00
29.60	5.22	2.63	0.00	70.40	5.22	2.63	0.00
30.40	5.22	2.63	0.00	71.20	5.22	2.63	0.00
31.20	5.22	2.63	0.00	72.00	5.22	2.63	0.00
32.00	5.22	2.63	0.00	72.80	5.22	2.63	0.00
32.80	5.22	2.63	0.00	73.60	5.22	2.63	0.00
33.60	5.22	2.63	0.00	74.40	5.22	2.63	0.00
34.40	5.22	2.63	0.00	75.20	5.22	2.63	0.00
35.20	5.22	2.63	0.00	76.00	5.22	2.63	0.00
36.00	5.22	2.63	0.00	76.80	5.22	2.63	0.00
36.80	5.22	2.63	0.00	77.60	5.22	2.63	0.00
37.60	5.22	2.63	0.00	78.40	5.22	2.63	0.00
38.40	5.22	2.63	0.00	79.20	5.22	2.63	0.00
39.20	5.22	2.63	0.00	80.00	5.22	2.63	0.00
40.00	5.22	2.63	0.00				

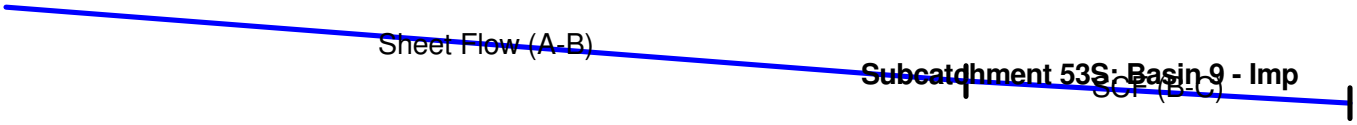
Summary for Subcatchment 53S: Basin 9 - Imp

Runoff = 1.87 cfs @ 12.14 hrs, Volume= 7,250 cf, Depth= 4.98"
Routed to Pond 42P : Basin 9

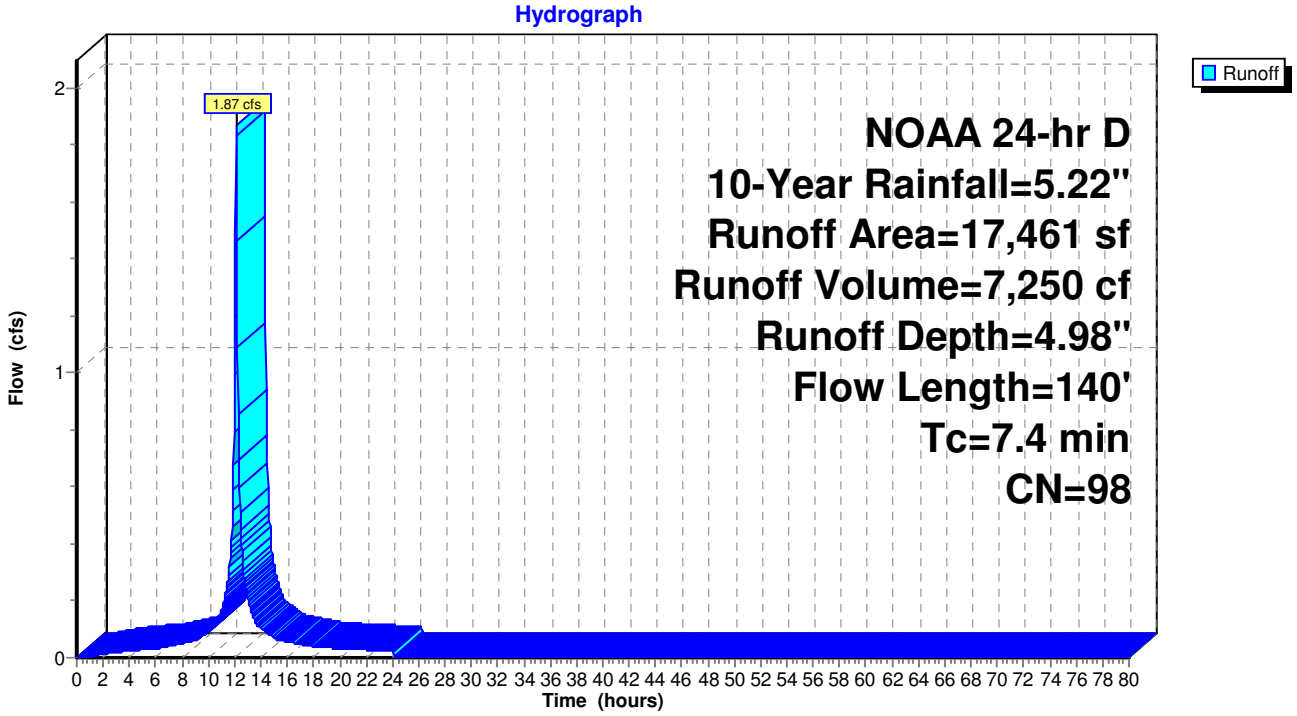
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

	Area (sf)	CN	Description
*	13,382	98	vehicle surface area
*	2,932	98	other impervious
*	1,147	98	roofs
	17,461	98	Weighted Average
	17,461		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.1000	0.23		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	40	0.0750	4.41		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
7.4	140	Total			



Subcatchment 53S: Basin 9 - Imp



Hydrograph for Subcatchment 53S: Basin 9 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	4.98	0.00
0.80	0.05	0.00	0.00	41.60	5.22	4.98	0.00
1.60	0.10	0.01	0.01	42.40	5.22	4.98	0.00
2.40	0.15	0.04	0.02	43.20	5.22	4.98	0.00
3.20	0.21	0.08	0.02	44.00	5.22	4.98	0.00
4.00	0.27	0.12	0.02	44.80	5.22	4.98	0.00
4.80	0.34	0.18	0.03	45.60	5.22	4.98	0.00
5.60	0.41	0.24	0.03	46.40	5.22	4.98	0.00
6.40	0.48	0.30	0.04	47.20	5.22	4.98	0.00
7.20	0.57	0.39	0.04	48.00	5.22	4.98	0.00
8.00	0.68	0.48	0.05	48.80	5.22	4.98	0.00
8.80	0.80	0.59	0.06	49.60	5.22	4.98	0.00
9.60	0.94	0.74	0.08	50.40	5.22	4.98	0.00
10.40	1.14	0.93	0.11	51.20	5.22	4.98	0.00
11.20	1.46	1.24	0.20	52.00	5.22	4.98	0.00
12.00	2.50	2.27	**0.99**	52.80	5.22	4.98	0.00
12.80	3.76	3.53	**0.25**	53.60	5.22	4.98	0.00
13.60	4.08	3.84	0.12	54.40	5.22	4.98	0.00
14.40	4.28	4.04	0.09	55.20	5.22	4.98	0.00
15.20	4.42	4.19	0.06	56.00	5.22	4.98	0.00
16.00	4.54	4.31	0.06	56.80	5.22	4.98	0.00
16.80	4.65	4.41	0.05	57.60	5.22	4.98	0.00
17.60	4.74	4.50	0.04	58.40	5.22	4.98	0.00
18.40	4.81	4.57	0.04	59.20	5.22	4.98	0.00
19.20	4.88	4.64	0.03	60.00	5.22	4.98	0.00
20.00	4.95	4.71	0.03	60.80	5.22	4.98	0.00
20.80	5.01	4.77	0.03	61.60	5.22	4.98	0.00
21.60	5.07	4.83	0.03	62.40	5.22	4.98	0.00
22.40	5.12	4.88	0.03	63.20	5.22	4.98	0.00
23.20	5.17	4.94	0.03	64.00	5.22	4.98	0.00
24.00	**5.22**	**4.98**	0.02	64.80	5.22	4.98	0.00
24.80	5.22	4.98	0.00	65.60	5.22	4.98	0.00
25.60	5.22	4.98	0.00	66.40	5.22	4.98	0.00
26.40	5.22	4.98	0.00	67.20	5.22	4.98	0.00
27.20	5.22	4.98	0.00	68.00	5.22	4.98	0.00
28.00	5.22	4.98	0.00	68.80	5.22	4.98	0.00
28.80	5.22	4.98	0.00	69.60	5.22	4.98	0.00
29.60	5.22	4.98	0.00	70.40	5.22	4.98	0.00
30.40	5.22	4.98	0.00	71.20	5.22	4.98	0.00
31.20	5.22	4.98	0.00	72.00	5.22	4.98	0.00
32.00	5.22	4.98	0.00	72.80	5.22	4.98	0.00
32.80	5.22	4.98	0.00	73.60	5.22	4.98	0.00
33.60	5.22	4.98	0.00	74.40	5.22	4.98	0.00
34.40	5.22	4.98	0.00	75.20	5.22	4.98	0.00
35.20	5.22	4.98	0.00	76.00	5.22	4.98	0.00
36.00	5.22	4.98	0.00	76.80	5.22	4.98	0.00
36.80	5.22	4.98	0.00	77.60	5.22	4.98	0.00
37.60	5.22	4.98	0.00	78.40	5.22	4.98	0.00
38.40	5.22	4.98	0.00	79.20	5.22	4.98	0.00
39.20	5.22	4.98	0.00	80.00	5.22	4.98	0.00
40.00	5.22	4.98	0.00				

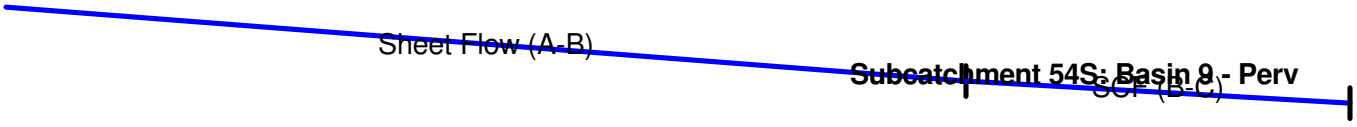
Summary for Subcatchment 54S: Basin 9 - Perv

Runoff = 0.65 cfs @ 12.15 hrs, Volume= 2,154 cf, Depth= 2.90"
Routed to Pond 42P : Basin 9

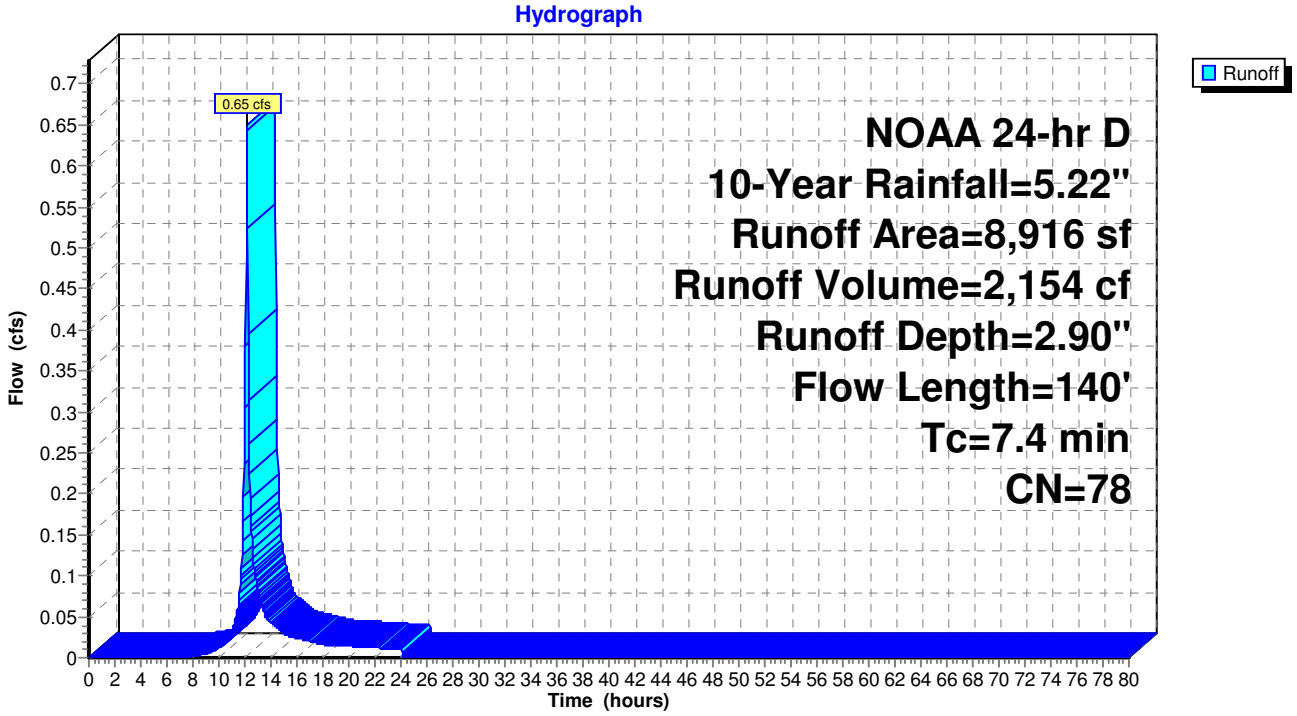
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
2,537	74	>75% Grass cover, Good, HSG C
6,379	80	>75% Grass cover, Good, HSG D
8,916	78	Weighted Average
8,916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.1000	0.23		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	40	0.0750	4.41		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
7.4	140	Total			



Subcatchment 54S: Basin 9 - Perv



Hydrograph for Subcatchment 54S: Basin 9 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	5.22	2.90	0.00
0.80	0.05	0.00	0.00	41.60	5.22	2.90	0.00
1.60	0.10	0.00	0.00	42.40	5.22	2.90	0.00
2.40	0.15	0.00	0.00	43.20	5.22	2.90	0.00
3.20	0.21	0.00	0.00	44.00	5.22	2.90	0.00
4.00	0.27	0.00	0.00	44.80	5.22	2.90	0.00
4.80	0.34	0.00	0.00	45.60	5.22	2.90	0.00
5.60	0.41	0.00	0.00	46.40	5.22	2.90	0.00
6.40	0.48	0.00	0.00	47.20	5.22	2.90	0.00
7.20	0.57	0.00	0.00	48.00	5.22	2.90	0.00
8.00	0.68	0.00	0.00	48.80	5.22	2.90	0.00
8.80	0.80	0.02	0.00	49.60	5.22	2.90	0.00
9.60	0.94	0.04	0.01	50.40	5.22	2.90	0.00
10.40	1.14	0.10	0.02	51.20	5.22	2.90	0.00
11.20	1.46	0.22	0.04	52.00	5.22	2.90	0.00
12.00	2.50	0.79	**0.31**	52.80	5.22	2.90	0.00
12.80	3.76	1.70	**0.10**	53.60	5.22	2.90	0.00
13.60	4.08	1.95	0.05	54.40	5.22	2.90	0.00
14.40	4.28	2.11	0.04	55.20	5.22	2.90	0.00
15.20	4.42	2.23	0.03	56.00	5.22	2.90	0.00
16.00	4.54	2.33	0.02	56.80	5.22	2.90	0.00
16.80	4.65	2.41	0.02	57.60	5.22	2.90	0.00
17.60	4.74	2.49	0.02	58.40	5.22	2.90	0.00
18.40	4.81	2.55	0.02	59.20	5.22	2.90	0.00
19.20	4.88	2.61	0.01	60.00	5.22	2.90	0.00
20.00	4.95	2.67	0.01	60.80	5.22	2.90	0.00
20.80	5.01	2.72	0.01	61.60	5.22	2.90	0.00
21.60	5.07	2.77	0.01	62.40	5.22	2.90	0.00
22.40	5.12	2.82	0.01	63.20	5.22	2.90	0.00
23.20	5.17	2.86	0.01	64.00	5.22	2.90	0.00
24.00	**5.22**	**2.90**	0.01	64.80	5.22	2.90	0.00
24.80	5.22	2.90	0.00	65.60	5.22	2.90	0.00
25.60	5.22	2.90	0.00	66.40	5.22	2.90	0.00
26.40	5.22	2.90	0.00	67.20	5.22	2.90	0.00
27.20	5.22	2.90	0.00	68.00	5.22	2.90	0.00
28.00	5.22	2.90	0.00	68.80	5.22	2.90	0.00
28.80	5.22	2.90	0.00	69.60	5.22	2.90	0.00
29.60	5.22	2.90	0.00	70.40	5.22	2.90	0.00
30.40	5.22	2.90	0.00	71.20	5.22	2.90	0.00
31.20	5.22	2.90	0.00	72.00	5.22	2.90	0.00
32.00	5.22	2.90	0.00	72.80	5.22	2.90	0.00
32.80	5.22	2.90	0.00	73.60	5.22	2.90	0.00
33.60	5.22	2.90	0.00	74.40	5.22	2.90	0.00
34.40	5.22	2.90	0.00	75.20	5.22	2.90	0.00
35.20	5.22	2.90	0.00	76.00	5.22	2.90	0.00
36.00	5.22	2.90	0.00	76.80	5.22	2.90	0.00
36.80	5.22	2.90	0.00	77.60	5.22	2.90	0.00
37.60	5.22	2.90	0.00	78.40	5.22	2.90	0.00
38.40	5.22	2.90	0.00	79.20	5.22	2.90	0.00
39.20	5.22	2.90	0.00	80.00	5.22	2.90	0.00
40.00	5.22	2.90	0.00				

Summary for Pond 21P: Basin 3

Inflow Area = 21,910 sf, 31.15% Impervious, Inflow Depth = 3.30" for 10-Year event
Inflow = 1.65 cfs @ 12.16 hrs, Volume= 6,028 cf
Outflow = 1.21 cfs @ 12.12 hrs, Volume= 6,028 cf, Atten= 27%, Lag= 0.0 min
Discarded = 1.21 cfs @ 12.12 hrs, Volume= 6,028 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 27P : Basin 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 559.09' @ 12.23 hrs Surf.Area= 5,227 sf Storage= 183 cf

Plug-Flow detention time= 0.8 min calculated for 6,025 cf (100% of inflow)
Center-of-Mass det. time= 0.8 min (803.0 - 802.2)

Volume	Invert	Avail.Storage	Storage Description
#1	559.00'	4,537 cf	**Custom Stage Data (Prismatic)** Listed below 11,343 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
559.00	5,227	0	0
560.00	5,227	5,227	5,227
561.00	5,227	5,227	10,454
561.17	5,227	889	11,343

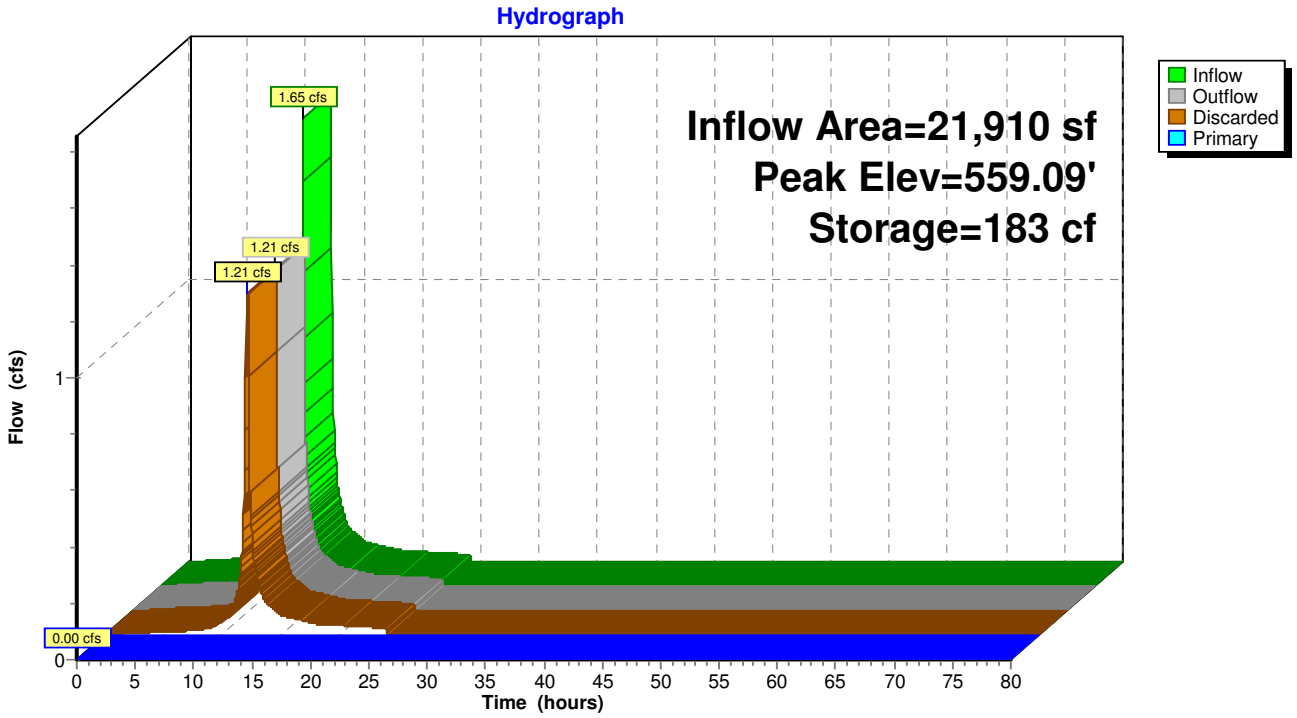
Device	Routing	Invert	Outlet Devices
#1	Primary	559.22'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	559.00'	**10.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.21 cfs @ 12.12 hrs HW=559.03' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 1.21 cfs)

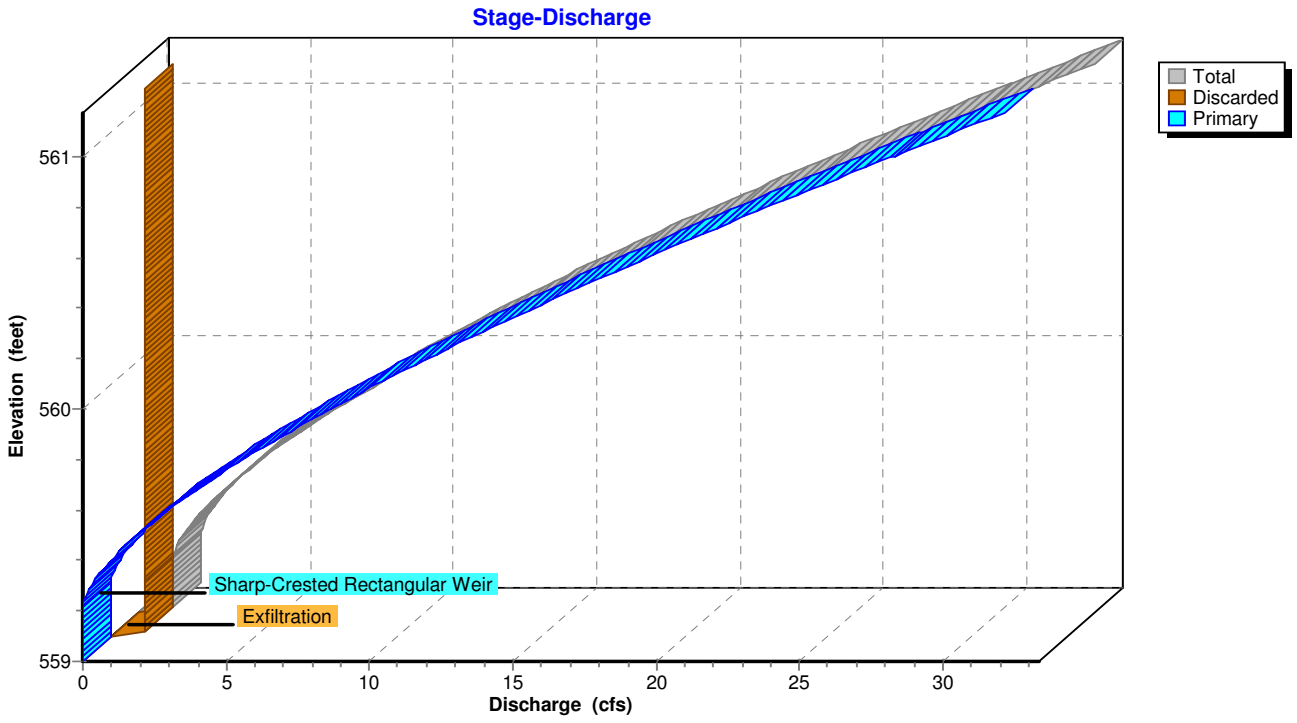
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=559.00' (Free Discharge)
↑—**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)



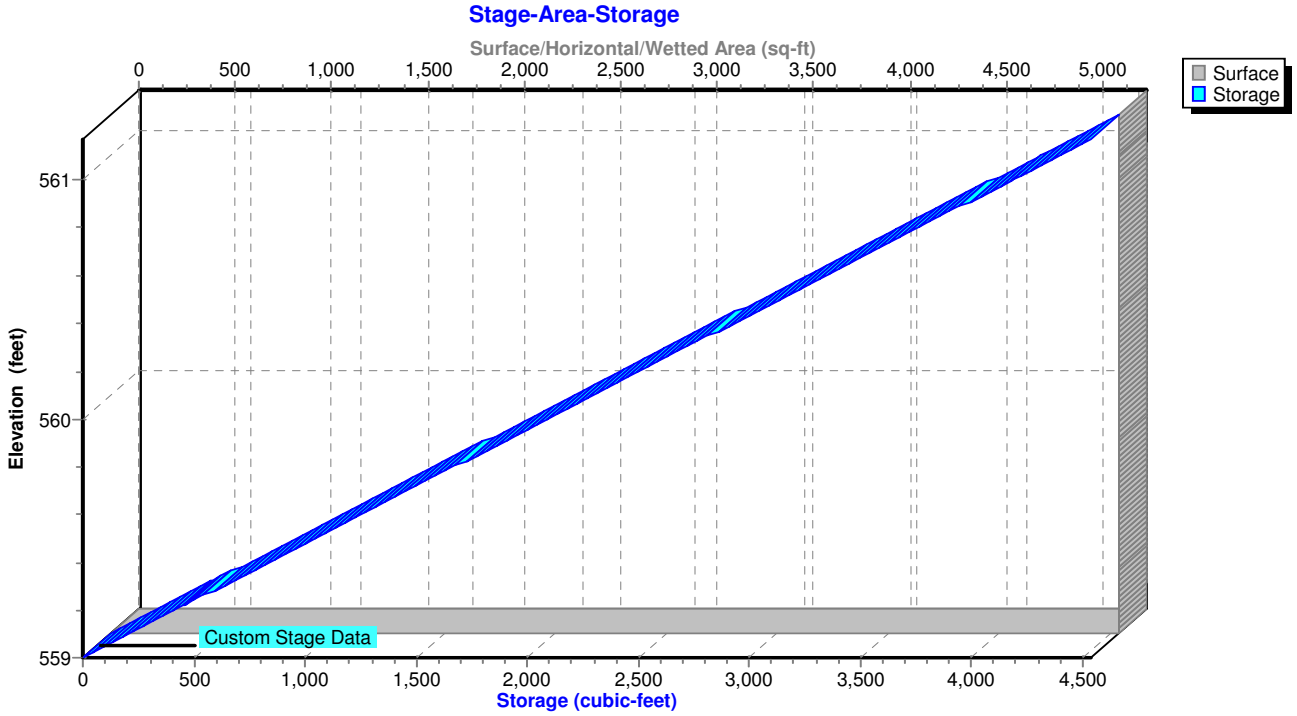
Pond 21P: Basin 3



Pond 21P: Basin 3



Pond 21P: Basin 3



Hydrograph for Pond 21P: Basin 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	559.00	0.00	0.00	**0.00**
2.00	0.01	0	559.00	0.00	0.00	0.00
4.00	0.01	0	559.00	0.01	0.01	0.00
6.00	0.01	0	559.00	0.01	0.01	0.00
8.00	0.02	1	559.00	0.02	0.02	0.00
10.00	0.05	2	559.00	0.05	0.05	0.00
12.00	**0.77**	**27**	**559.01**	**0.73**	**0.73**	0.00
14.00	**0.11**	**4**	**559.00**	**0.11**	**0.11**	0.00
16.00	0.06	2	559.00	0.06	0.06	0.00
18.00	0.04	2	559.00	0.04	0.04	0.00
20.00	0.04	1	559.00	0.04	0.04	0.00
22.00	0.03	1	559.00	0.03	0.03	0.00
24.00	0.03	1	559.00	0.03	0.03	0.00
26.00	0.00	0	559.00	0.00	0.00	0.00
28.00	0.00	0	559.00	0.00	0.00	0.00
30.00	0.00	0	559.00	0.00	0.00	0.00
32.00	0.00	0	559.00	0.00	0.00	0.00
34.00	0.00	0	559.00	0.00	0.00	0.00
36.00	0.00	0	559.00	0.00	0.00	0.00
38.00	0.00	0	559.00	0.00	0.00	0.00
40.00	0.00	0	559.00	0.00	0.00	0.00
42.00	0.00	0	559.00	0.00	0.00	0.00
44.00	0.00	0	559.00	0.00	0.00	0.00
46.00	0.00	0	559.00	0.00	0.00	0.00
48.00	0.00	0	559.00	0.00	0.00	0.00
50.00	0.00	0	559.00	0.00	0.00	0.00
52.00	0.00	0	559.00	0.00	0.00	0.00
54.00	0.00	0	559.00	0.00	0.00	0.00
56.00	0.00	0	559.00	0.00	0.00	0.00
58.00	0.00	0	559.00	0.00	0.00	0.00
60.00	0.00	0	559.00	0.00	0.00	0.00
62.00	0.00	0	559.00	0.00	0.00	0.00
64.00	0.00	0	559.00	0.00	0.00	0.00
66.00	0.00	0	559.00	0.00	0.00	0.00
68.00	0.00	0	559.00	0.00	0.00	0.00
70.00	0.00	0	559.00	0.00	0.00	0.00
72.00	0.00	0	559.00	0.00	0.00	0.00
74.00	0.00	0	559.00	0.00	0.00	0.00
76.00	0.00	0	559.00	0.00	0.00	0.00
78.00	0.00	0	559.00	0.00	0.00	0.00
80.00	0.00	0	559.00	0.00	0.00	0.00

Stage-Discharge for Pond 21P: Basin 3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
559.00	0.00	**0.00**	0.00
559.05	1.21	**1.21**	0.00
559.10	1.21	1.21	0.00
559.15	1.21	1.21	0.00
559.20	1.21	1.21	0.00
559.25	1.28	1.21	0.07
559.30	1.50	1.21	0.29
559.35	1.82	1.21	0.61
559.40	2.20	1.21	0.99
559.45	2.64	1.21	1.43
559.50	3.12	1.21	1.91
559.55	3.65	1.21	2.44
559.60	4.22	1.21	3.01
559.65	4.82	1.21	3.61
559.70	5.46	1.21	4.25
559.75	6.12	1.21	4.91
559.80	6.82	1.21	5.61
559.85	7.54	1.21	6.33
559.90	8.30	1.21	7.09
559.95	9.07	1.21	7.86
560.00	9.87	1.21	8.66
560.05	10.69	1.21	9.48
560.10	11.53	1.21	10.32
560.15	12.40	1.21	11.19
560.20	13.28	1.21	12.07
560.25	14.18	1.21	12.97
560.30	15.10	1.21	13.89
560.35	16.03	1.21	14.82
560.40	16.99	1.21	15.78
560.45	17.96	1.21	16.75
560.50	18.94	1.21	17.73
560.55	19.94	1.21	18.73
560.60	20.95	1.21	19.74
560.65	21.98	1.21	20.77
560.70	23.02	1.21	21.81
560.75	24.07	1.21	22.86
560.80	25.14	1.21	23.93
560.85	26.21	1.21	25.00
560.90	27.30	1.21	26.09
560.95	28.40	1.21	27.19
561.00	29.51	1.21	28.30
561.05	30.63	1.21	29.42
561.10	31.76	1.21	30.55
561.15	**32.90**	1.21	**31.69**

Stage-Area-Storage for Pond 21P: Basin 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
559.00	**5,227**	0
559.05	5,227	105
559.10	5,227	209
559.15	5,227	314
559.20	5,227	418
559.25	5,227	523
559.30	5,227	627
559.35	5,227	732
559.40	5,227	836
559.45	5,227	941
559.50	5,227	1,045
559.55	5,227	1,150
559.60	5,227	1,254
559.65	5,227	1,359
559.70	5,227	1,464
559.75	5,227	1,568
559.80	5,227	1,673
559.85	5,227	1,777
559.90	5,227	1,882
559.95	5,227	1,986
560.00	5,227	2,091
560.05	5,227	2,195
560.10	5,227	2,300
560.15	5,227	2,404
560.20	5,227	2,509
560.25	5,227	2,614
560.30	5,227	2,718
560.35	5,227	2,823
560.40	5,227	2,927
560.45	5,227	3,032
560.50	5,227	3,136
560.55	5,227	3,241
560.60	5,227	3,345
560.65	5,227	3,450
560.70	5,227	3,554
560.75	5,227	3,659
560.80	5,227	3,763
560.85	5,227	3,868
560.90	5,227	3,973
560.95	5,227	4,077
561.00	5,227	4,182
561.05	5,227	4,286
561.10	5,227	4,391
561.15	5,227	**4,495**

Summary for Pond 22P: Basin 4

Inflow Area = 49,050 sf, 84.66% Impervious, Inflow Depth = 4.61" for 10-Year event
Inflow = 5.30 cfs @ 12.12 hrs, Volume= 18,836 cf
Outflow = 1.23 cfs @ 12.40 hrs, Volume= 18,836 cf, Atten= 77%, Lag= 16.7 min
Discarded = 1.13 cfs @ 11.80 hrs, Volume= 18,660 cf
Primary = 0.10 cfs @ 12.40 hrs, Volume= 176 cf
Routed to Pond 27P : Basin 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 572.69' @ 12.40 hrs Surf.Area= 12,197 sf Storage= 3,380 cf

Plug-Flow detention time= 14.4 min calculated for 18,826 cf (100% of inflow)
Center-of-Mass det. time= 14.4 min (770.6 - 756.3)

Volume	Invert	Avail.Storage	Storage Description
#1	572.00'	14,197 cf	**Custom Stage Data (Prismatic)** Listed below 35,493 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
572.00	12,197	0	0
573.00	12,197	12,197	12,197
574.00	12,197	12,197	24,394
574.91	12,197	11,099	35,493

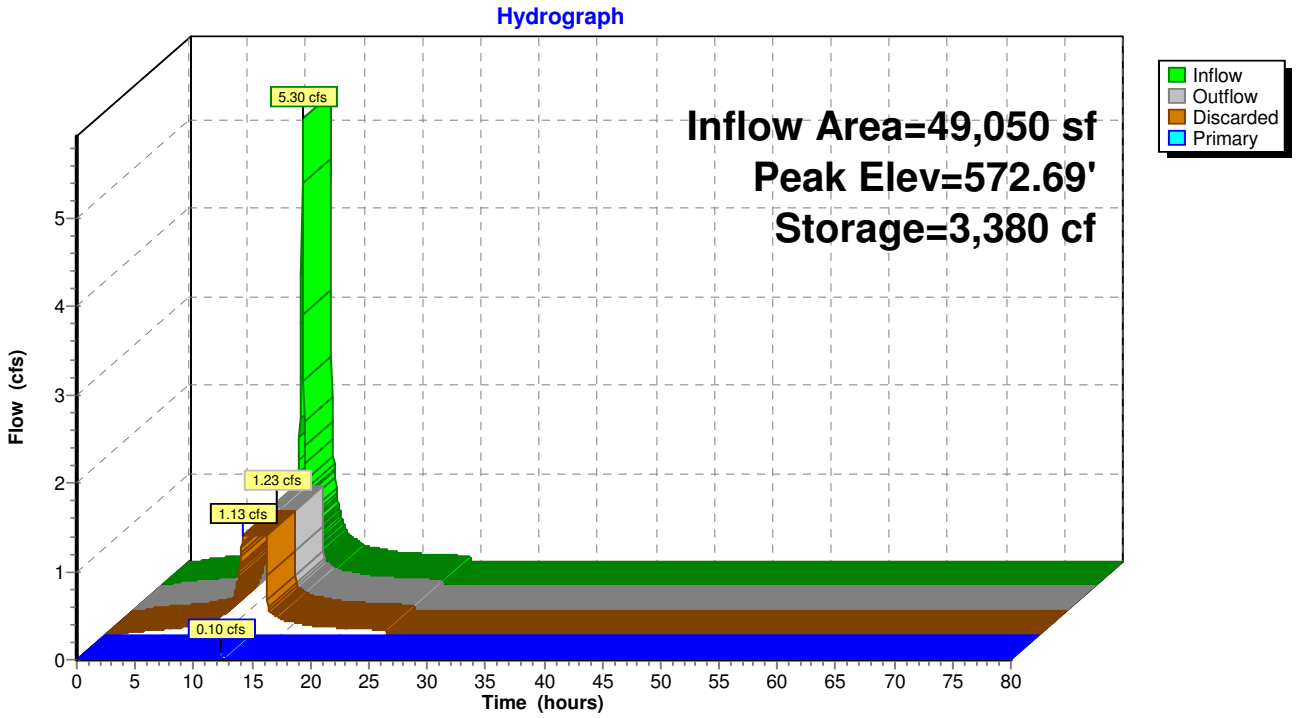
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	572.50'	**6.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Discarded	572.00'	**4.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.13 cfs @ 11.80 hrs HW=572.03' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 1.13 cfs)

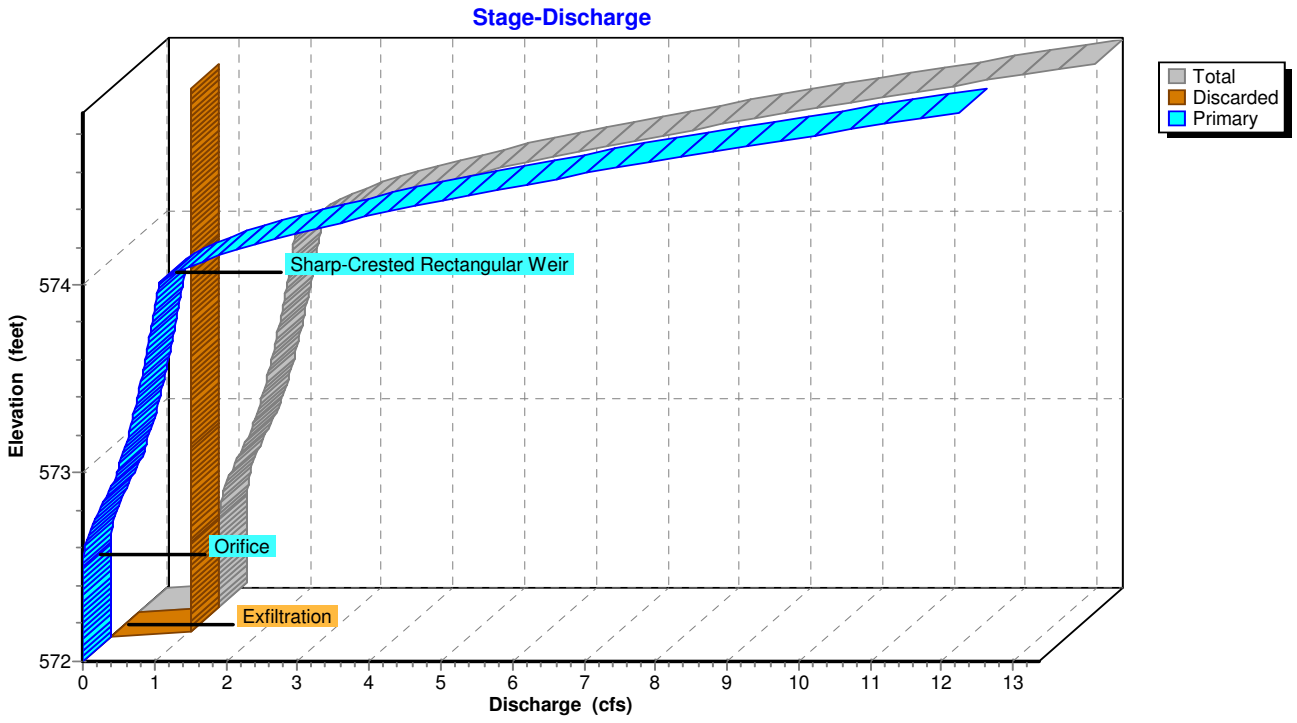
Primary OutFlow Max=0.10 cfs @ 12.40 hrs HW=572.69' (Free Discharge)
├**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice** (Orifice Controls 0.10 cfs @ 1.49 fps)



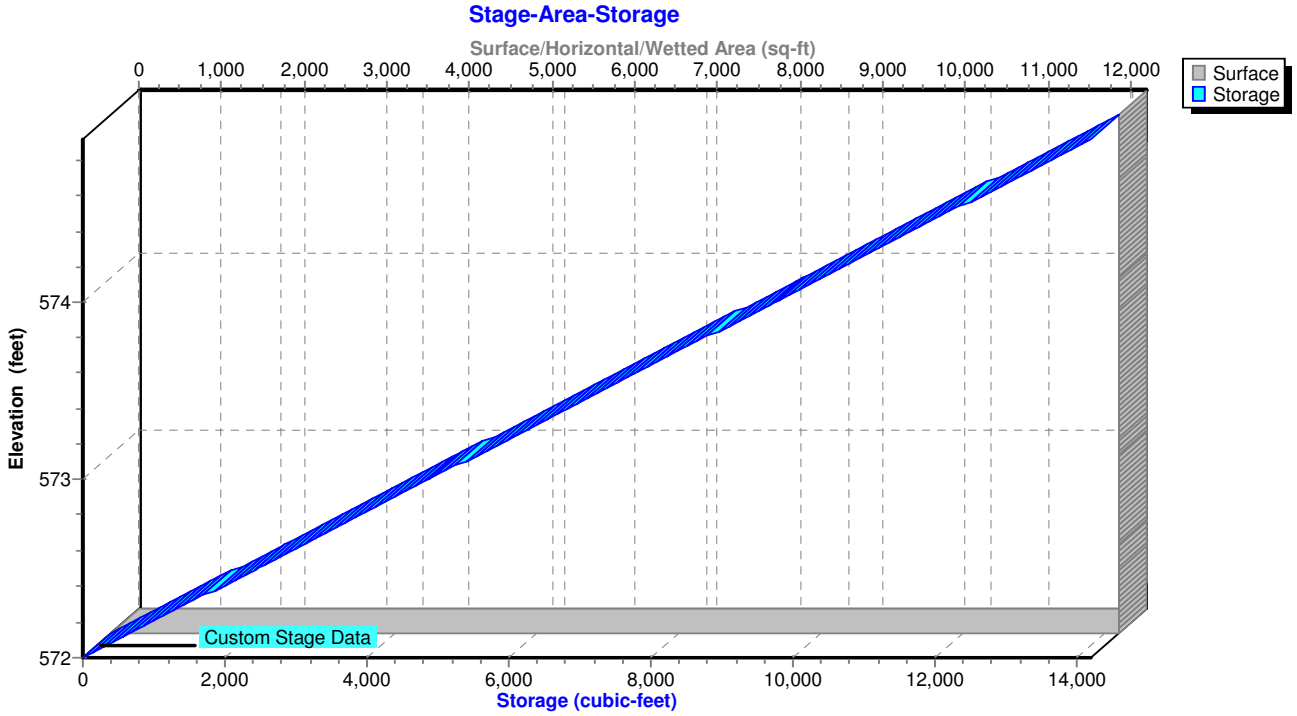
Pond 22P: Basin 4



Pond 22P: Basin 4



Pond 22P: Basin 4



Hydrograph for Pond 22P: Basin 4

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	572.00	0.00	0.00	0.00
2.00	0.03	4	572.00	0.03	0.03	0.00
4.00	0.06	7	572.00	0.06	0.06	0.00
6.00	0.08	10	572.00	0.08	0.08	0.00
8.00	0.12	15	572.00	0.12	0.12	0.00
10.00	0.23	29	572.01	0.23	**0.23**	0.00
12.00	**2.98**	**703**	**572.14**	**1.13**	**1.13**	**0.00**
14.00	**0.28**	**39**	**572.01**	**0.31**	0.31	**0.00**
16.00	0.15	20	572.00	0.16	0.16	0.00
18.00	0.10	13	572.00	0.10	0.10	0.00
20.00	0.09	11	572.00	0.09	0.09	0.00
22.00	0.08	10	572.00	0.08	0.08	0.00
24.00	0.06	8	572.00	0.06	0.06	0.00
26.00	0.00	0	572.00	0.00	0.00	0.00
28.00	0.00	0	572.00	0.00	0.00	0.00
30.00	0.00	0	572.00	0.00	0.00	0.00
32.00	0.00	0	572.00	0.00	0.00	0.00
34.00	0.00	0	572.00	0.00	0.00	0.00
36.00	0.00	0	572.00	0.00	0.00	0.00
38.00	0.00	0	572.00	0.00	0.00	0.00
40.00	0.00	0	572.00	0.00	0.00	0.00
42.00	0.00	0	572.00	0.00	0.00	0.00
44.00	0.00	0	572.00	0.00	0.00	0.00
46.00	0.00	0	572.00	0.00	0.00	0.00
48.00	0.00	0	572.00	0.00	0.00	0.00
50.00	0.00	0	572.00	0.00	0.00	0.00
52.00	0.00	0	572.00	0.00	0.00	0.00
54.00	0.00	0	572.00	0.00	0.00	0.00
56.00	0.00	0	572.00	0.00	0.00	0.00
58.00	0.00	0	572.00	0.00	0.00	0.00
60.00	0.00	0	572.00	0.00	0.00	0.00
62.00	0.00	0	572.00	0.00	0.00	0.00
64.00	0.00	0	572.00	0.00	0.00	0.00
66.00	0.00	0	572.00	0.00	0.00	0.00
68.00	0.00	0	572.00	0.00	0.00	0.00
70.00	0.00	0	572.00	0.00	0.00	0.00
72.00	0.00	0	572.00	0.00	0.00	0.00
74.00	0.00	0	572.00	0.00	0.00	0.00
76.00	0.00	0	572.00	0.00	0.00	0.00
78.00	0.00	0	572.00	0.00	0.00	0.00
80.00	0.00	0	572.00	0.00	0.00	0.00

Stage-Discharge for Pond 22P: Basin 4

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
572.00	0.00	**0.00**	0.00
572.05	1.13	**1.13**	0.00
572.10	1.13	1.13	0.00
572.15	1.13	1.13	0.00
572.20	1.13	1.13	0.00
572.25	1.13	1.13	0.00
572.30	1.13	1.13	0.00
572.35	1.13	1.13	0.00
572.40	1.13	1.13	0.00
572.45	1.13	1.13	0.00
572.50	1.13	1.13	0.00
572.55	1.14	1.13	0.01
572.60	1.16	1.13	0.03
572.65	1.19	1.13	0.07
572.70	1.24	1.13	0.11
572.75	1.30	1.13	0.17
572.80	1.36	1.13	0.23
572.85	1.43	1.13	0.30
572.90	1.49	1.13	0.36
572.95	1.55	1.13	0.43
573.00	1.60	1.13	0.47
573.05	1.65	1.13	0.52
573.10	1.69	1.13	0.56
573.15	1.73	1.13	0.60
573.20	1.76	1.13	0.63
573.25	1.80	1.13	0.67
573.30	1.83	1.13	0.70
573.35	1.86	1.13	0.73
573.40	1.89	1.13	0.76
573.45	1.92	1.13	0.79
573.50	1.95	1.13	0.82
573.55	1.97	1.13	0.85
573.60	2.00	1.13	0.87
573.65	2.03	1.13	0.90
573.70	2.05	1.13	0.92
573.75	2.07	1.13	0.95
573.80	2.10	1.13	0.97
573.85	2.12	1.13	0.99
573.90	2.14	1.13	1.01
573.95	2.17	1.13	1.04
574.00	2.19	1.13	1.06
574.05	2.35	1.13	1.22
574.10	2.64	1.13	1.51
574.15	3.00	1.13	1.87
574.20	3.43	1.13	2.30
574.25	3.90	1.13	2.77
574.30	4.42	1.13	3.29
574.35	4.99	1.13	3.86
574.40	5.59	1.13	4.46
574.45	6.22	1.13	5.09
574.50	6.89	1.13	5.76
574.55	7.59	1.13	6.46
574.60	8.31	1.13	7.18
574.65	9.06	1.13	7.93
574.70	9.84	1.13	8.71
574.75	10.64	1.13	9.51
574.80	11.47	1.13	10.34
574.85	12.31	1.13	11.18
574.90	**13.18**	1.13	**12.05**

Stage-Area-Storage for Pond 22P: Basin 4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
572.00	**12,197**	0
572.05	12,197	244
572.10	12,197	488
572.15	12,197	732
572.20	12,197	976
572.25	12,197	1,220
572.30	12,197	1,464
572.35	12,197	1,708
572.40	12,197	1,952
572.45	12,197	2,195
572.50	12,197	2,439
572.55	12,197	2,683
572.60	12,197	2,927
572.65	12,197	3,171
572.70	12,197	3,415
572.75	12,197	3,659
572.80	12,197	3,903
572.85	12,197	4,147
572.90	12,197	4,391
572.95	12,197	4,635
573.00	12,197	4,879
573.05	12,197	5,123
573.10	12,197	5,367
573.15	12,197	5,611
573.20	12,197	5,855
573.25	12,197	6,099
573.30	12,197	6,342
573.35	12,197	6,586
573.40	12,197	6,830
573.45	12,197	7,074
573.50	12,197	7,318
573.55	12,197	7,562
573.60	12,197	7,806
573.65	12,197	8,050
573.70	12,197	8,294
573.75	12,197	8,538
573.80	12,197	8,782
573.85	12,197	9,026
573.90	12,197	9,270
573.95	12,197	9,514
574.00	12,197	9,758
574.05	12,197	10,002
574.10	12,197	10,245
574.15	12,197	10,489
574.20	12,197	10,733
574.25	12,197	10,977
574.30	12,197	11,221
574.35	12,197	11,465
574.40	12,197	11,709
574.45	12,197	11,953
574.50	12,197	12,197
574.55	12,197	12,441
574.60	12,197	12,685
574.65	12,197	12,929
574.70	12,197	13,173
574.75	12,197	13,417
574.80	12,197	13,661
574.85	12,197	13,905
574.90	12,197	**14,149**

Summary for Pond 27P: Basin 2

Inflow Area = 183,393 sf, 42.82% Impervious, Inflow Depth = 2.09" for 10-Year event
Inflow = 8.13 cfs @ 12.18 hrs, Volume= 31,954 cf
Outflow = 0.93 cfs @ 13.25 hrs, Volume= 22,643 cf, Atten= 89%, Lag= 64.2 min
Primary = 0.93 cfs @ 13.25 hrs, Volume= 22,643 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 545.18' @ 13.25 hrs Surf.Area= 28,204 sf Storage= 18,379 cf

Plug-Flow detention time= 403.9 min calculated for 22,632 cf (71% of inflow)
Center-of-Mass det. time= 300.9 min (1,107.1 - 806.2)

Volume	Invert	Avail.Storage	Storage Description
#1	544.50'	74,059 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
544.50	26,023	0	0
546.00	30,850	42,655	42,655
547.00	31,958	31,404	74,059

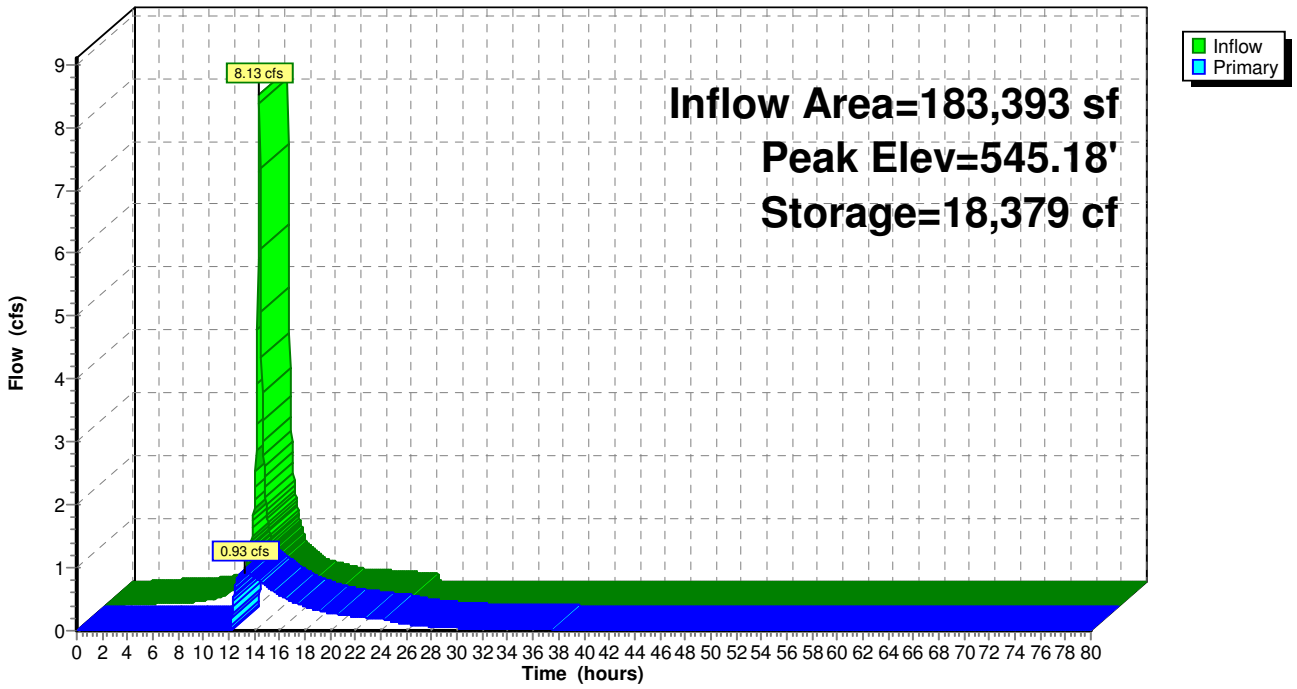
Device	Routing	Invert	Outlet Devices
#1	Primary	545.50'	**42.0" x 48.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	544.85'	**1.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.7' Crest Height

Primary OutFlow Max=0.93 cfs @ 13.25 hrs HW=545.18' (Free Discharge)
1=Grate (Controls 0.00 cfs)
2=Sharp-Crested Rectangular Weir (Weir Controls 0.93 cfs @ 1.98 fps)



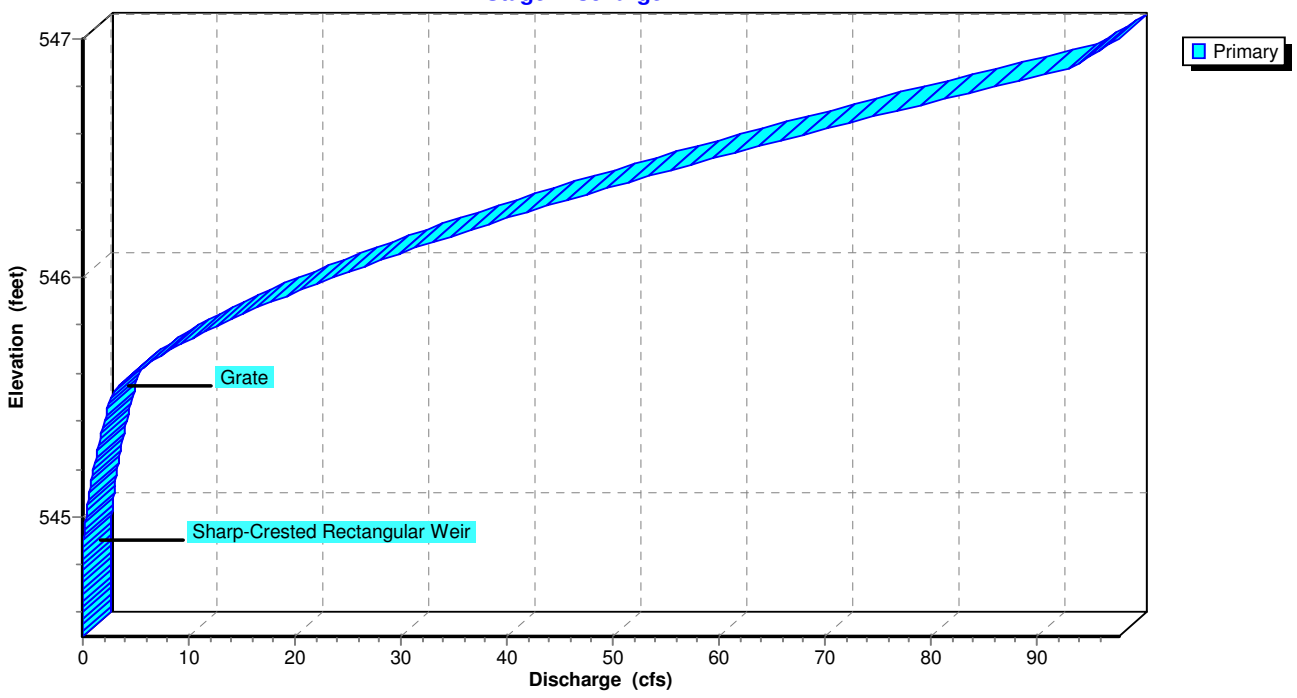
Pond 27P: Basin 2

Hydrograph

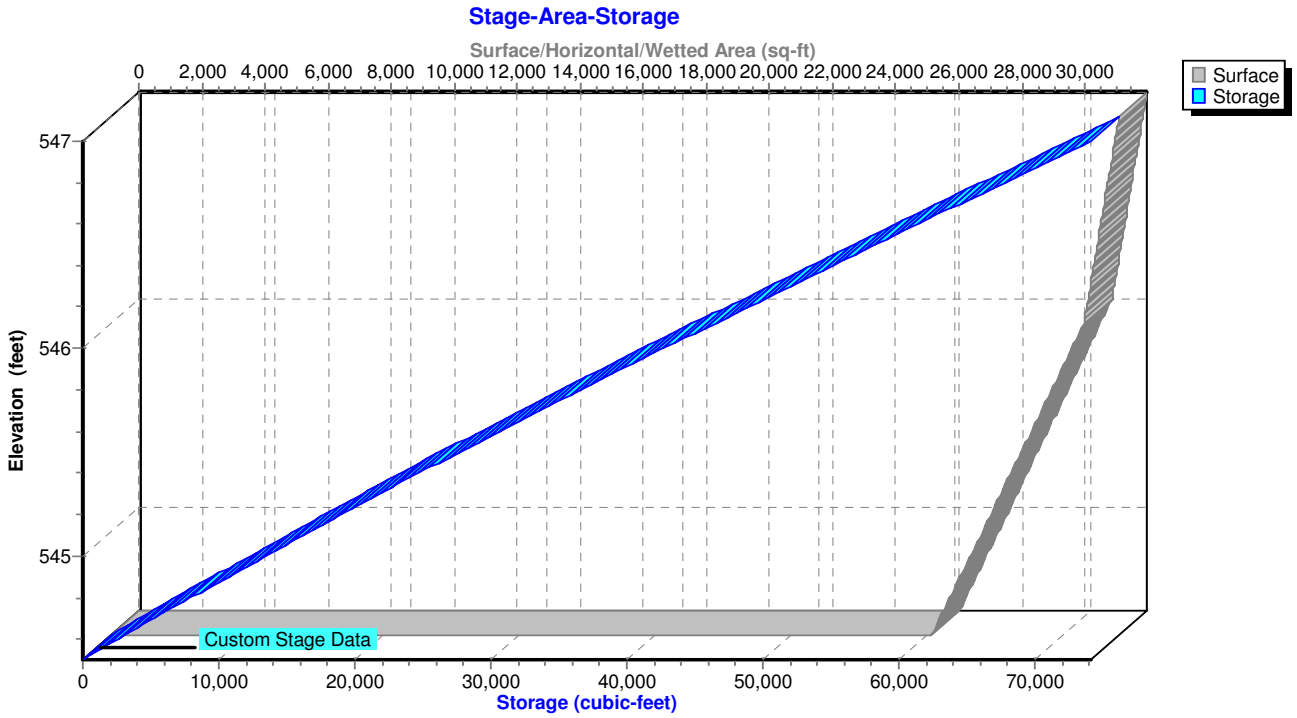


Pond 27P: Basin 2

Stage-Discharge



Pond 27P: Basin 2



Hydrograph for Pond 27P: Basin 2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	544.50	0.00
2.00	0.02	49	544.50	0.00
4.00	0.04	287	544.51	0.00
6.00	0.06	644	544.52	0.00
8.00	0.10	1,167	544.54	0.00
10.00	0.26	2,301	544.59	0.00
12.00	**3.54**	**8,017**	**544.80**	**0.00**
14.00	**0.58**	**17,862**	**545.16**	**0.85**
16.00	0.32	15,796	545.09	0.57
18.00	0.22	14,349	545.03	0.39
20.00	0.19	13,392	545.00	0.28
22.00	0.16	12,808	544.98	0.23
24.00	0.13	12,382	544.96	0.19
26.00	0.00	11,420	544.93	0.11
28.00	0.00	10,817	544.91	0.07
30.00	0.00	10,438	544.89	0.04
32.00	0.00	10,180	544.88	0.03
34.00	0.00	10,002	544.88	0.02
36.00	0.00	9,872	544.87	0.02
38.00	0.00	9,767	544.87	0.01
40.00	0.00	9,681	544.86	0.01
42.00	0.00	9,611	544.86	0.01
44.00	0.00	9,554	544.86	0.01
46.00	0.00	9,508	544.86	0.01
48.00	0.00	9,470	544.86	0.00
50.00	0.00	9,440	544.85	0.00
52.00	0.00	9,415	544.85	0.00
54.00	0.00	9,394	544.85	0.00
56.00	0.00	9,378	544.85	0.00
58.00	0.00	9,364	544.85	0.00
60.00	0.00	9,353	544.85	0.00
62.00	0.00	9,344	544.85	0.00
64.00	0.00	9,337	544.85	0.00
66.00	0.00	9,331	544.85	0.00
68.00	0.00	9,326	544.85	0.00
70.00	0.00	9,322	544.85	0.00
72.00	0.00	9,319	544.85	0.00
74.00	0.00	9,317	544.85	0.00
76.00	0.00	9,314	544.85	0.00
78.00	0.00	9,313	544.85	0.00
80.00	0.00	9,311	544.85	0.00

Stage-Discharge for Pond 27P: Basin 2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
544.50	0.00	545.52	2.88	546.54	62.84
544.52	0.00	545.54	3.25	546.56	64.53
544.54	0.00	545.56	3.71	546.58	66.23
544.56	0.00	545.58	4.22	546.60	67.96
544.58	0.00	545.60	4.79	546.62	69.69
544.60	0.00	545.62	5.41	546.64	71.44
544.62	0.00	545.64	6.08	546.66	73.21
544.64	0.00	545.66	6.78	546.68	74.99
544.66	0.00	545.68	7.52	546.70	76.78
544.68	0.00	545.70	8.30	546.72	78.59
544.70	0.00	545.72	9.11	546.74	80.41
544.72	0.00	545.74	9.96	546.76	82.24
544.74	0.00	545.76	10.84	546.78	84.09
544.76	0.00	545.78	11.75	546.80	85.96
544.78	0.00	545.80	12.68	546.82	87.83
544.80	0.00	545.82	13.65	546.84	89.72
544.82	0.00	545.84	14.64	546.86	91.62
544.84	0.00	545.86	15.66	546.88	93.21
544.86	0.00	545.88	16.71	546.90	93.97
544.88	0.03	545.90	17.78	546.92	94.73
544.90	0.05	545.92	18.88	546.94	95.49
544.92	0.09	545.94	20.00	546.96	96.24
544.94	0.13	545.96	21.14	546.98	96.99
544.96	0.18	545.98	22.30	547.00	**97.73**
544.98	0.23	546.00	23.49		
545.00	0.29	546.02	24.70		
545.02	0.35	546.04	25.93		
545.04	0.41	546.06	27.19		
545.06	0.48	546.08	28.46		
545.08	0.55	546.10	29.76		
545.10	0.62	546.12	31.07		
545.12	0.69	546.14	32.41		
545.14	0.77	546.16	33.76		
545.16	0.86	546.18	35.13		
545.18	0.94	546.20	36.52		
545.20	1.03	546.22	37.93		
545.22	1.12	546.24	39.36		
545.24	1.21	546.26	40.81		
545.26	1.30	546.28	42.27		
545.28	1.40	546.30	43.76		
545.30	1.50	546.32	45.26		
545.32	1.60	546.34	46.77		
545.34	1.71	546.36	48.31		
545.36	1.81	546.38	49.86		
545.38	1.92	546.40	51.42		
545.40	2.03	546.42	53.01		
545.42	2.14	546.44	54.60		
545.44	2.26	546.46	56.22		
545.46	2.38	546.48	57.85		
545.48	2.49	546.50	59.50		
545.50	2.61	546.52	61.16		

Stage-Area-Storage for Pond 27P: Basin 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
544.50	26,023	0
544.55	26,184	1,305
544.60	26,345	2,618
544.65	26,506	3,940
544.70	26,667	5,269
544.75	26,828	6,606
544.80	26,988	7,952
544.85	27,149	9,305
544.90	27,310	10,667
544.95	27,471	12,036
545.00	27,632	13,414
545.05	27,793	14,799
545.10	27,954	16,193
545.15	28,115	17,595
545.20	28,276	19,005
545.25	28,437	20,422
545.30	28,597	21,848
545.35	28,758	23,282
545.40	28,919	24,724
545.45	29,080	26,174
545.50	29,241	27,632
545.55	29,402	29,098
545.60	29,563	30,572
545.65	29,724	32,054
545.70	29,885	33,545
545.75	30,046	35,043
545.80	30,206	36,549
545.85	30,367	38,063
545.90	30,528	39,586
545.95	30,689	41,116
546.00	30,850	42,655
546.05	30,905	44,199
546.10	30,961	45,745
546.15	31,016	47,295
546.20	31,072	48,847
546.25	31,127	50,402
546.30	31,182	51,960
546.35	31,238	53,520
546.40	31,293	55,083
546.45	31,349	56,649
546.50	31,404	58,218
546.55	31,459	59,790
546.60	31,515	61,364
546.65	31,570	62,941
546.70	31,626	64,521
546.75	31,681	66,104
546.80	31,736	67,689
546.85	31,792	69,278
546.90	31,847	70,868
546.95	31,903	72,462
547.00	**31,958**	**74,059**

Summary for Pond 33P: Basin 11

Inflow Area = 84,103 sf, 71.22% Impervious, Inflow Depth = 4.33" for 10-Year event
Inflow = 7.47 cfs @ 12.17 hrs, Volume= 30,355 cf
Outflow = 5.37 cfs @ 12.26 hrs, Volume= 30,355 cf, Atten= 28%, Lag= 5.4 min
Discarded = 3.13 cfs @ 12.00 hrs, Volume= 28,464 cf
Primary = 2.25 cfs @ 12.26 hrs, Volume= 1,891 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 590.37' @ 12.26 hrs Surf.Area= 13,504 sf Storage= 1,989 cf

Plug-Flow detention time= 1.9 min calculated for 30,339 cf (100% of inflow)
Center-of-Mass det. time= 1.9 min (770.5 - 768.6)

Volume	Invert	Avail.Storage	Storage Description
#1	590.00'	13,072 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 32,680 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
590.00	13,504	0	0
591.00	13,504	13,504	13,504
592.00	13,504	13,504	27,008
592.42	13,504	5,672	32,680

Device	Routing	Invert	Outlet Devices
#1	Primary	590.10'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	590.00'	**10.000 in/hr Exfiltration over Surface area**

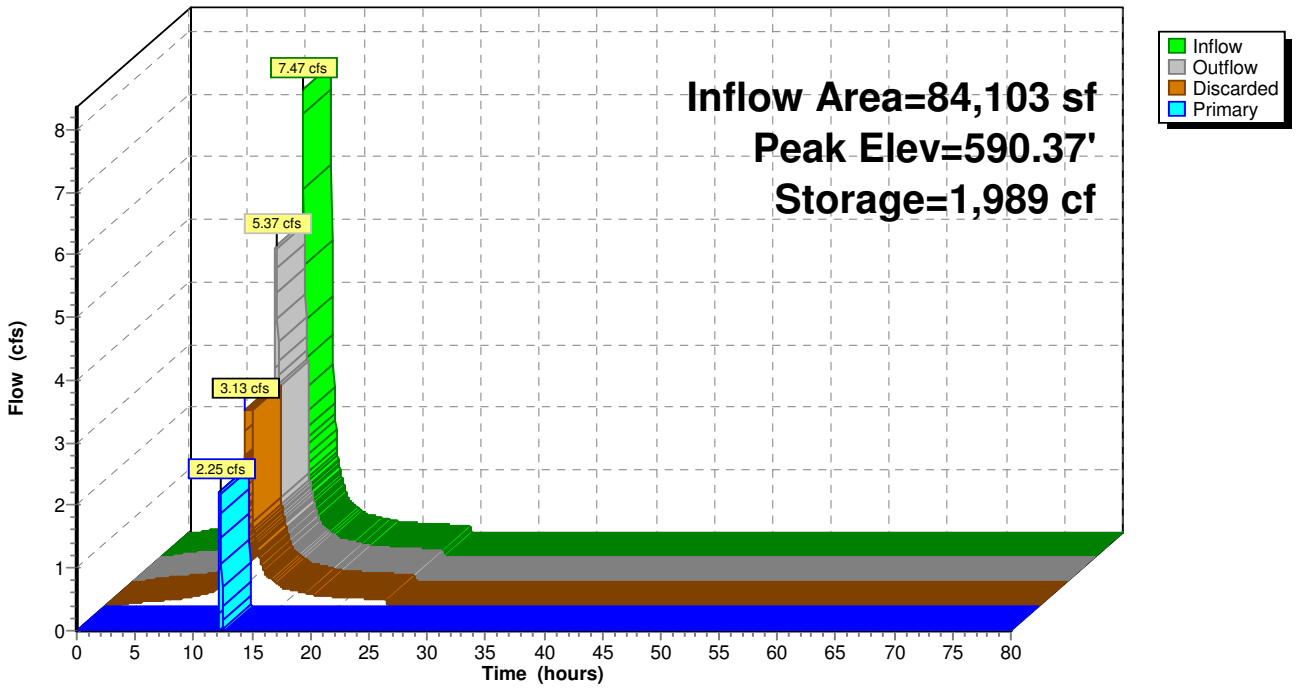
Discarded OutFlow Max=3.13 cfs @ 12.00 hrs HW=590.03' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 3.13 cfs)

Primary OutFlow Max=2.19 cfs @ 12.26 hrs HW=590.36' (Free Discharge)
↑**1=Sharp-Crested Rectangular Weir** (Weir Controls 2.19 cfs @ 1.68 fps)



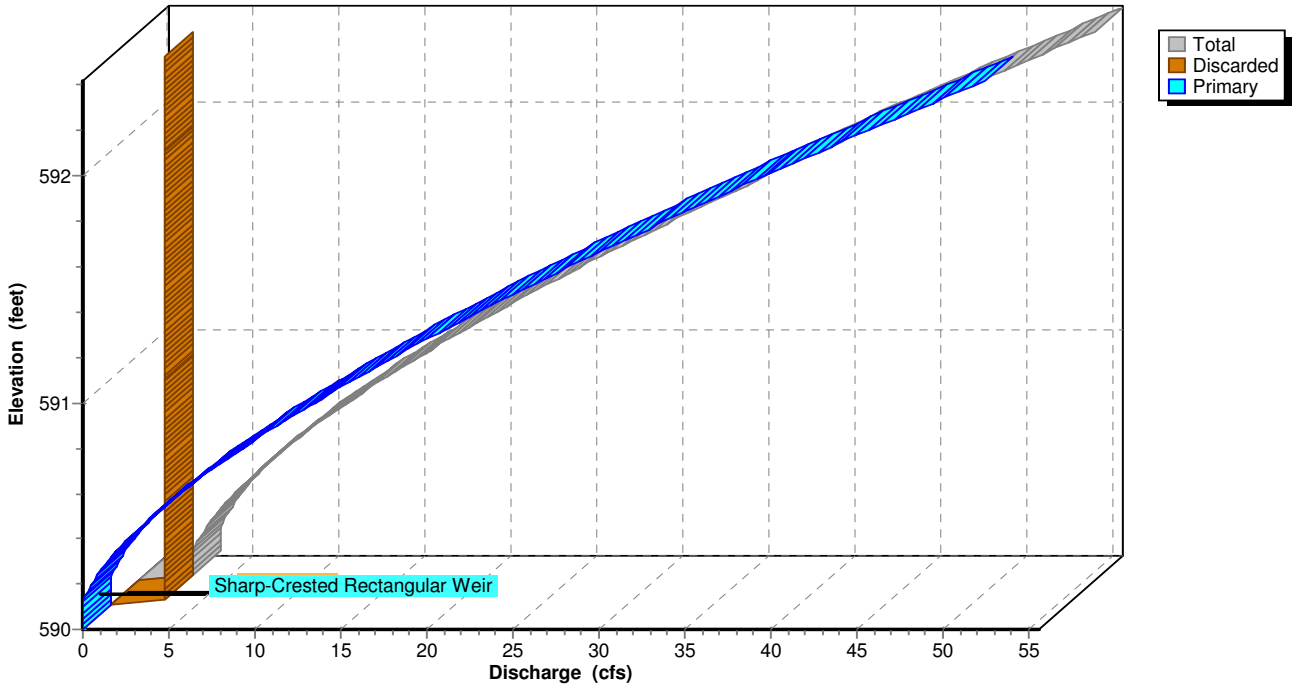
Pond 33P: Basin 11

Hydrograph

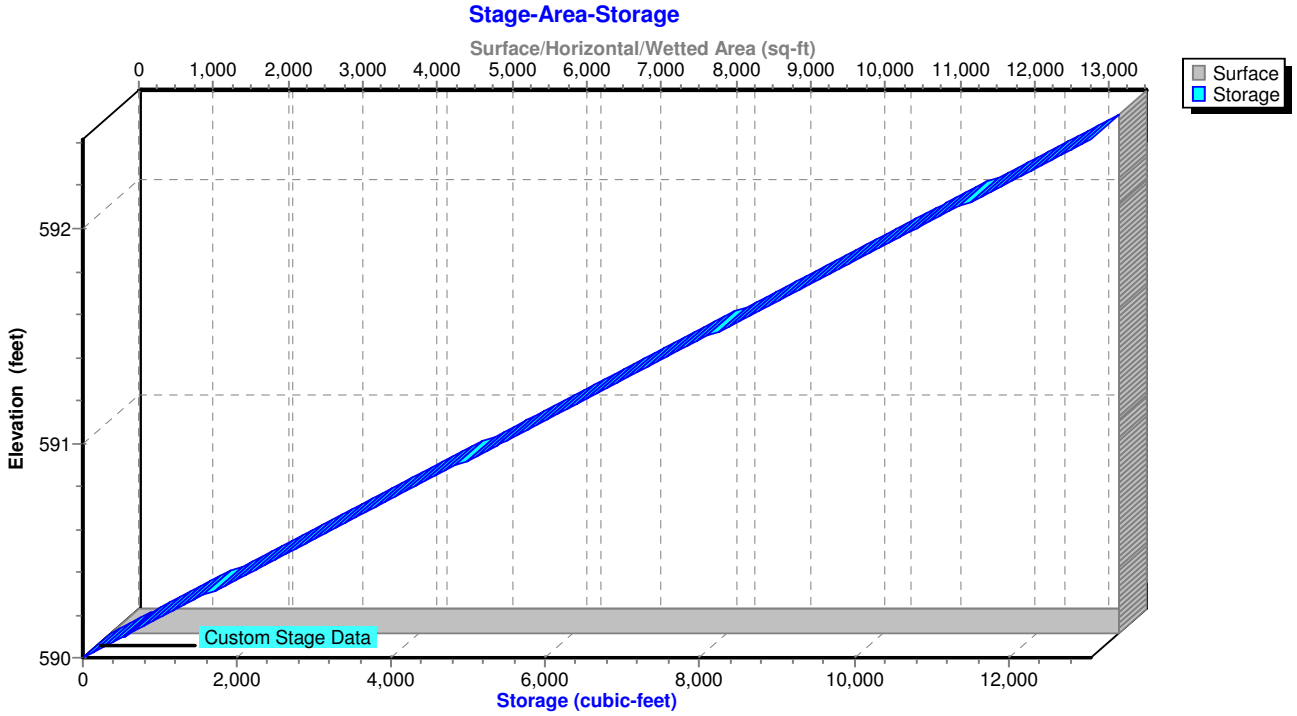


Pond 33P: Basin 11

Stage-Discharge



Pond 33P: Basin 11



Hydrograph for Pond 33P: Basin 11

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	590.00	0.00	0.00	0.00
2.00	0.04	2	590.00	0.04	0.04	0.00
4.00	0.08	4	590.00	0.08	0.08	0.00
6.00	0.11	5	590.00	0.11	0.11	0.00
8.00	0.18	7	590.00	0.18	0.18	0.00
10.00	0.34	14	590.00	0.34	0.34	0.00
12.00	**3.53**	**155**	**590.03**	**3.13**	**3.13**	**0.00**
14.00	**0.47**	**20**	**590.00**	**0.48**	0.48	**0.00**
16.00	0.26	11	590.00	0.26	0.26	0.00
18.00	0.18	7	590.00	0.18	0.18	0.00
20.00	0.15	6	590.00	0.15	0.15	0.00
22.00	0.13	5	590.00	0.13	0.13	0.00
24.00	0.11	4	590.00	0.11	0.11	0.00
26.00	0.00	0	590.00	0.00	0.00	0.00
28.00	0.00	0	590.00	0.00	0.00	0.00
30.00	0.00	0	590.00	0.00	0.00	0.00
32.00	0.00	0	590.00	0.00	0.00	0.00
34.00	0.00	0	590.00	0.00	0.00	0.00
36.00	0.00	0	590.00	0.00	0.00	0.00
38.00	0.00	0	590.00	0.00	0.00	0.00
40.00	0.00	0	590.00	0.00	0.00	0.00
42.00	0.00	0	590.00	0.00	0.00	0.00
44.00	0.00	0	590.00	0.00	0.00	0.00
46.00	0.00	0	590.00	0.00	0.00	0.00
48.00	0.00	0	590.00	0.00	0.00	0.00
50.00	0.00	0	590.00	0.00	0.00	0.00
52.00	0.00	0	590.00	0.00	0.00	0.00
54.00	0.00	0	590.00	0.00	0.00	0.00
56.00	0.00	0	590.00	0.00	0.00	0.00
58.00	0.00	0	590.00	0.00	0.00	0.00
60.00	0.00	0	590.00	0.00	0.00	0.00
62.00	0.00	0	590.00	0.00	0.00	0.00
64.00	0.00	0	590.00	0.00	0.00	0.00
66.00	0.00	0	590.00	0.00	0.00	0.00
68.00	0.00	0	590.00	0.00	0.00	0.00
70.00	0.00	0	590.00	0.00	0.00	0.00
72.00	0.00	0	590.00	0.00	0.00	0.00
74.00	0.00	0	590.00	0.00	0.00	0.00
76.00	0.00	0	590.00	0.00	0.00	0.00
78.00	0.00	0	590.00	0.00	0.00	0.00
80.00	0.00	0	590.00	0.00	0.00	0.00

Stage-Discharge for Pond 33P: Basin 11

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
590.00	0.00	**0.00**	0.00
590.05	3.13	**3.13**	0.00
590.10	3.13	3.13	0.00
590.15	3.31	3.13	0.18
590.20	3.64	3.13	0.51
590.25	4.07	3.13	0.94
590.30	4.58	3.13	1.45
590.35	5.15	3.13	2.02
590.40	5.78	3.13	2.65
590.45	6.46	3.13	3.34
590.50	7.20	3.13	4.07
590.55	7.97	3.13	4.85
590.60	8.79	3.13	5.66
590.65	9.65	3.13	6.52
590.70	10.54	3.13	7.42
590.75	11.47	3.13	8.35
590.80	12.43	3.13	9.31
590.85	13.43	3.13	10.30
590.90	14.45	3.13	11.32
590.95	15.50	3.13	12.38
591.00	16.58	3.13	13.46
591.05	17.69	3.13	14.56
591.10	18.82	3.13	15.70
591.15	19.98	3.13	16.85
591.20	21.16	3.13	18.03
591.25	22.36	3.13	19.24
591.30	23.59	3.13	20.46
591.35	24.83	3.13	21.71
591.40	26.10	3.13	22.97
591.45	27.39	3.13	24.26
591.50	28.69	3.13	25.57
591.55	30.02	3.13	26.89
591.60	31.36	3.13	28.23
591.65	32.72	3.13	29.59
591.70	34.10	3.13	30.97
591.75	35.49	3.13	32.37
591.80	36.90	3.13	33.78
591.85	38.33	3.13	35.20
591.90	39.77	3.13	36.64
591.95	41.22	3.13	38.10
592.00	42.69	3.13	39.57
592.05	44.17	3.13	41.05
592.10	45.67	3.13	42.55
592.15	47.18	3.13	44.05
592.20	48.70	3.13	45.58
592.25	50.24	3.13	47.11
592.30	51.78	3.13	48.66
592.35	53.34	3.13	50.21
592.40	**54.91**	3.13	**51.78**

Stage-Area-Storage for Pond 33P: Basin 11

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
590.00	**13,504**	0
590.05	13,504	270
590.10	13,504	540
590.15	13,504	810
590.20	13,504	1,080
590.25	13,504	1,350
590.30	13,504	1,620
590.35	13,504	1,891
590.40	13,504	2,161
590.45	13,504	2,431
590.50	13,504	2,701
590.55	13,504	2,971
590.60	13,504	3,241
590.65	13,504	3,511
590.70	13,504	3,781
590.75	13,504	4,051
590.80	13,504	4,321
590.85	13,504	4,591
590.90	13,504	4,861
590.95	13,504	5,132
591.00	13,504	5,402
591.05	13,504	5,672
591.10	13,504	5,942
591.15	13,504	6,212
591.20	13,504	6,482
591.25	13,504	6,752
591.30	13,504	7,022
591.35	13,504	7,292
591.40	13,504	7,562
591.45	13,504	7,832
591.50	13,504	8,102
591.55	13,504	8,372
591.60	13,504	8,643
591.65	13,504	8,913
591.70	13,504	9,183
591.75	13,504	9,453
591.80	13,504	9,723
591.85	13,504	9,993
591.90	13,504	10,263
591.95	13,504	10,533
592.00	13,504	10,803
592.05	13,504	11,073
592.10	13,504	11,343
592.15	13,504	11,613
592.20	13,504	11,884
592.25	13,504	12,154
592.30	13,504	12,424
592.35	13,504	12,694
592.40	13,504	**12,964**

Summary for Pond 41P: Basin 10

Inflow Area = 90,349 sf, 58.79% Impervious, Inflow Depth = 4.01" for 10-Year event
Inflow = 7.31 cfs @ 12.18 hrs, Volume= 30,212 cf
Outflow = 3.14 cfs @ 12.38 hrs, Volume= 30,212 cf, Atten= 57%, Lag= 12.3 min
Discarded = 2.22 cfs @ 11.96 hrs, Volume= 28,927 cf
Primary = 0.93 cfs @ 12.38 hrs, Volume= 1,285 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 576.44' @ 12.38 hrs Surf.Area= 9,583 sf Storage= 4,207 cf

Plug-Flow detention time= 8.1 min calculated for 30,197 cf (100% of inflow)
Center-of-Mass det. time= 8.1 min (786.5 - 778.4)

Volume	Invert	Avail.Storage	Storage Description
#1	576.00'	28,749 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
576.00	9,583	0	0
577.00	9,583	9,583	9,583
578.00	9,583	9,583	19,166
579.00	9,583	9,583	28,749

Device	Routing	Invert	Outlet Devices
#1	Primary	577.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	576.25'	**42.0" W x 12.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Discarded	576.00'	**10.000 in/hr Exfiltration over Surface area**

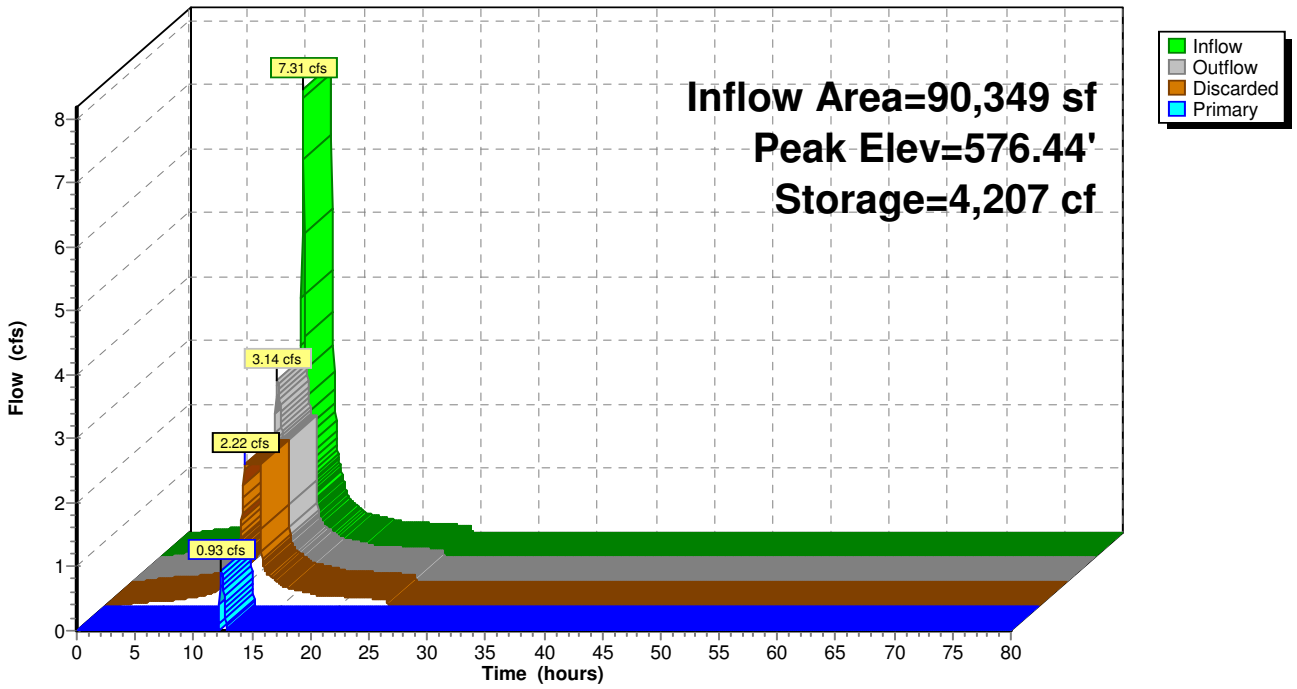
Discarded OutFlow Max=2.22 cfs @ 11.96 hrs HW=576.03' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 2.22 cfs)

Primary OutFlow Max=0.92 cfs @ 12.38 hrs HW=576.44' (Free Discharge)
├**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Orifice/Grate** (Orifice Controls 0.92 cfs @ 1.39 fps)



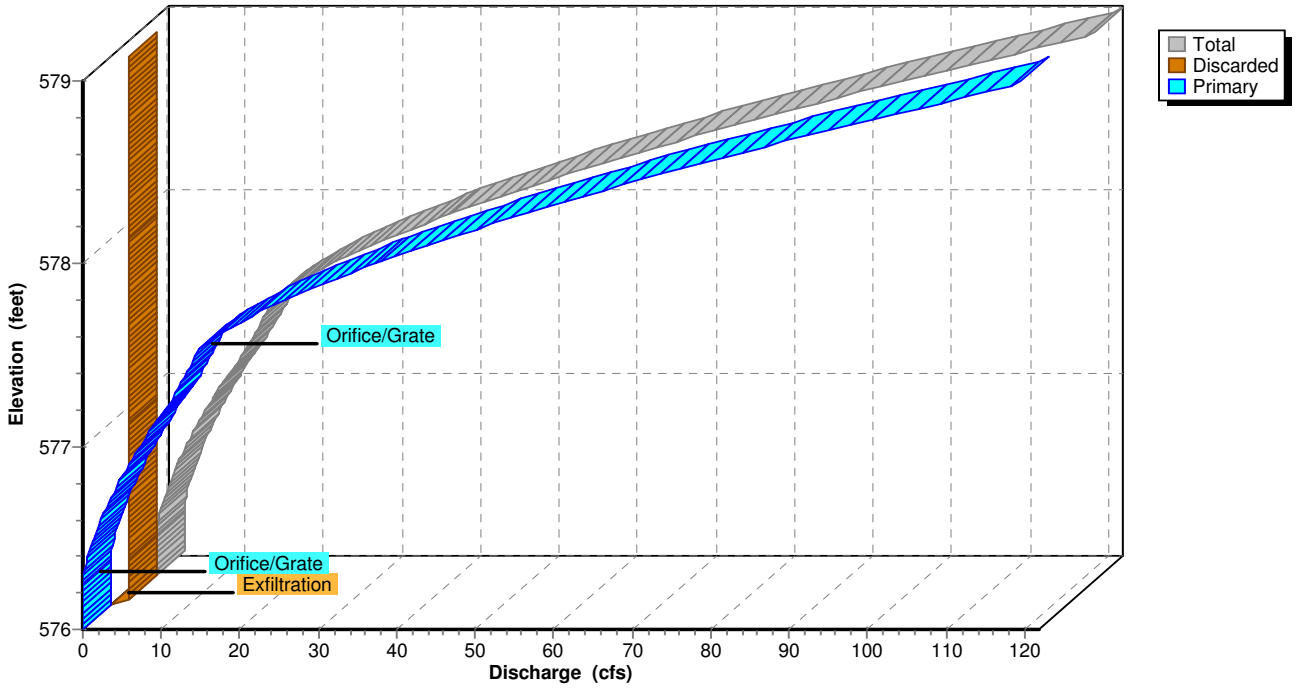
Pond 41P: Basin 10

Hydrograph

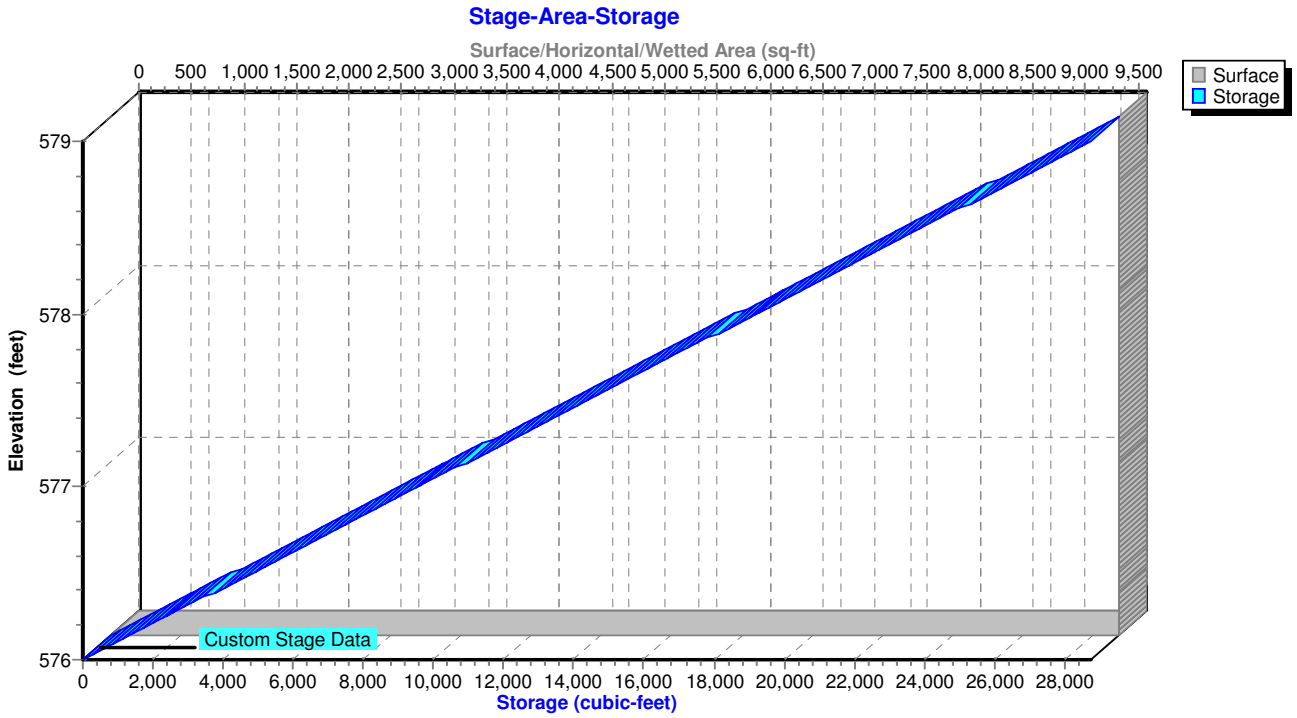


Pond 41P: Basin 10

Stage-Discharge



Pond 41P: Basin 10



Hydrograph for Pond 41P: Basin 10

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	576.00	0.00	0.00	0.00
2.00	0.04	5	576.00	0.04	0.04	0.00
4.00	0.07	10	576.00	0.07	0.07	0.00
6.00	0.10	13	576.00	0.10	0.10	0.00
8.00	0.16	20	576.00	0.15	0.15	0.00
10.00	0.31	40	576.00	0.31	**0.31**	0.00
12.00	**3.32**	**449**	**576.05**	**2.22**	**2.22**	**0.00**
14.00	**0.49**	**65**	**576.01**	**0.50**	0.50	**0.00**
16.00	0.27	35	576.00	0.27	0.27	0.00
18.00	0.18	24	576.00	0.19	0.19	0.00
20.00	0.16	20	576.00	0.16	0.16	0.00
22.00	0.13	17	576.00	0.13	0.13	0.00
24.00	0.11	15	576.00	0.11	0.11	0.00
26.00	0.00	0	576.00	0.00	0.00	0.00
28.00	0.00	0	576.00	0.00	0.00	0.00
30.00	0.00	0	576.00	0.00	0.00	0.00
32.00	0.00	0	576.00	0.00	0.00	0.00
34.00	0.00	0	576.00	0.00	0.00	0.00
36.00	0.00	0	576.00	0.00	0.00	0.00
38.00	0.00	0	576.00	0.00	0.00	0.00
40.00	0.00	0	576.00	0.00	0.00	0.00
42.00	0.00	0	576.00	0.00	0.00	0.00
44.00	0.00	0	576.00	0.00	0.00	0.00
46.00	0.00	0	576.00	0.00	0.00	0.00
48.00	0.00	0	576.00	0.00	0.00	0.00
50.00	0.00	0	576.00	0.00	0.00	0.00
52.00	0.00	0	576.00	0.00	0.00	0.00
54.00	0.00	0	576.00	0.00	0.00	0.00
56.00	0.00	0	576.00	0.00	0.00	0.00
58.00	0.00	0	576.00	0.00	0.00	0.00
60.00	0.00	0	576.00	0.00	0.00	0.00
62.00	0.00	0	576.00	0.00	0.00	0.00
64.00	0.00	0	576.00	0.00	0.00	0.00
66.00	0.00	0	576.00	0.00	0.00	0.00
68.00	0.00	0	576.00	0.00	0.00	0.00
70.00	0.00	0	576.00	0.00	0.00	0.00
72.00	0.00	0	576.00	0.00	0.00	0.00
74.00	0.00	0	576.00	0.00	0.00	0.00
76.00	0.00	0	576.00	0.00	0.00	0.00
78.00	0.00	0	576.00	0.00	0.00	0.00
80.00	0.00	0	576.00	0.00	0.00	0.00

Stage-Discharge for Pond 41P: Basin 10

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
576.00	0.00	**0.00**	0.00
576.05	2.22	**2.22**	0.00
576.10	2.22	2.22	0.00
576.15	2.22	2.22	0.00
576.20	2.22	2.22	0.00
576.25	2.22	2.22	0.00
576.30	2.34	2.22	0.13
576.35	2.57	2.22	0.36
576.40	2.87	2.22	0.65
576.45	3.22	2.22	1.00
576.50	3.62	2.22	1.40
576.55	4.06	2.22	1.85
576.60	4.54	2.22	2.33
576.65	5.06	2.22	2.84
576.70	5.61	2.22	3.39
576.75	6.19	2.22	3.97
576.80	6.80	2.22	4.58
576.85	7.44	2.22	5.22
576.90	8.11	2.22	5.89
576.95	8.80	2.22	6.58
577.00	9.52	2.22	7.30
577.05	10.26	2.22	8.04
577.10	11.02	2.22	8.80
577.15	11.81	2.22	9.59
577.20	12.62	2.22	10.40
577.25	13.45	2.22	11.23
577.30	14.18	2.22	11.96
577.35	14.82	2.22	12.61
577.40	15.42	2.22	13.20
577.45	15.98	2.22	13.76
577.50	16.52	2.22	14.30
577.55	17.61	2.22	15.39
577.60	19.17	2.22	16.95
577.65	21.03	2.22	18.81
577.70	23.12	2.22	20.90
577.75	25.43	2.22	23.21
577.80	27.91	2.22	25.69
577.85	30.57	2.22	28.35
577.90	33.38	2.22	31.16
577.95	36.33	2.22	34.12
578.00	39.43	2.22	37.21
578.05	42.65	2.22	40.43
578.10	46.00	2.22	43.78
578.15	49.47	2.22	47.25
578.20	53.05	2.22	50.83
578.25	56.74	2.22	54.53
578.30	60.54	2.22	58.33
578.35	64.45	2.22	62.23
578.40	68.45	2.22	66.23
578.45	72.56	2.22	70.34
578.50	76.75	2.22	74.54
578.55	81.05	2.22	78.83
578.60	85.43	2.22	83.21
578.65	89.90	2.22	87.68
578.70	94.46	2.22	92.24
578.75	99.11	2.22	96.89
578.80	103.84	2.22	101.62
578.85	108.65	2.22	106.43
578.90	113.54	2.22	111.32
578.95	118.51	2.22	116.29
579.00	**121.80**	2.22	**119.58**

Stage-Area-Storage for Pond 41P: Basin 10

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
576.00	**9,583**	0
576.05	9,583	479
576.10	9,583	958
576.15	9,583	1,437
576.20	9,583	1,917
576.25	9,583	2,396
576.30	9,583	2,875
576.35	9,583	3,354
576.40	9,583	3,833
576.45	9,583	4,312
576.50	9,583	4,792
576.55	9,583	5,271
576.60	9,583	5,750
576.65	9,583	6,229
576.70	9,583	6,708
576.75	9,583	7,187
576.80	9,583	7,666
576.85	9,583	8,146
576.90	9,583	8,625
576.95	9,583	9,104
577.00	9,583	9,583
577.05	9,583	10,062
577.10	9,583	10,541
577.15	9,583	11,020
577.20	9,583	11,500
577.25	9,583	11,979
577.30	9,583	12,458
577.35	9,583	12,937
577.40	9,583	13,416
577.45	9,583	13,895
577.50	9,583	14,375
577.55	9,583	14,854
577.60	9,583	15,333
577.65	9,583	15,812
577.70	9,583	16,291
577.75	9,583	16,770
577.80	9,583	17,249
577.85	9,583	17,729
577.90	9,583	18,208
577.95	9,583	18,687
578.00	9,583	19,166
578.05	9,583	19,645
578.10	9,583	20,124
578.15	9,583	20,603
578.20	9,583	21,083
578.25	9,583	21,562
578.30	9,583	22,041
578.35	9,583	22,520
578.40	9,583	22,999
578.45	9,583	23,478
578.50	9,583	23,958
578.55	9,583	24,437
578.60	9,583	24,916
578.65	9,583	25,395
578.70	9,583	25,874
578.75	9,583	26,353
578.80	9,583	26,832
578.85	9,583	27,312
578.90	9,583	27,791
578.95	9,583	28,270
579.00	9,583	**28,749**

Summary for Pond 42P: Basin 9

Inflow Area = 26,377 sf, 66.20% Impervious, Inflow Depth = 4.28" for 10-Year event
Inflow = 2.52 cfs @ 12.14 hrs, Volume= 9,405 cf
Outflow = 0.61 cfs @ 11.84 hrs, Volume= 9,405 cf, Atten= 76%, Lag= 0.0 min
Discarded = 0.61 cfs @ 11.84 hrs, Volume= 9,405 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 562.64' @ 12.46 hrs Surf.Area= 6,534 sf Storage= 1,667 cf

Plug-Flow detention time= 13.6 min calculated for 9,400 cf (100% of inflow)
Center-of-Mass det. time= 13.6 min (783.2 - 769.5)

Volume	Invert	Avail.Storage	Storage Description
#1	562.00'	6,325 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 15,812 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
562.00	6,534	0	0
563.00	6,534	6,534	6,534
564.00	6,534	6,534	13,068
564.42	6,534	2,744	15,812

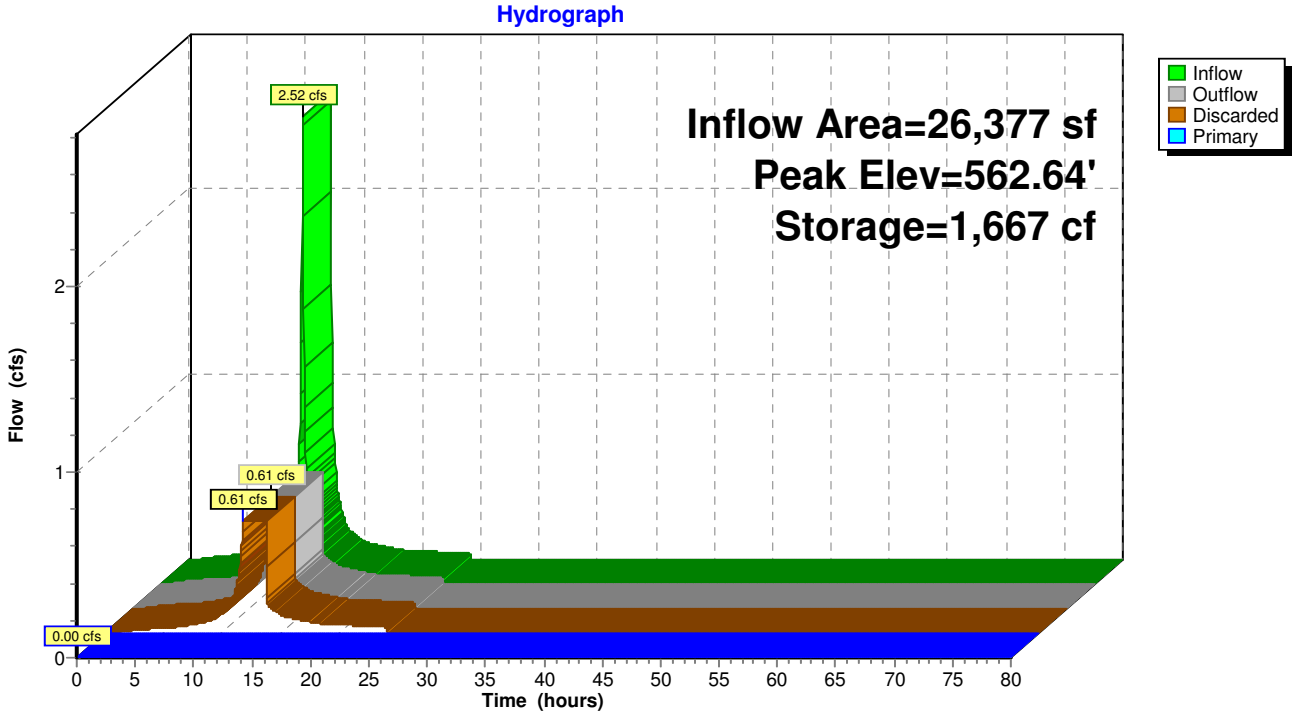
Device	Routing	Invert	Outlet Devices
#1	Primary	564.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	563.00'	**3.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Discarded	562.00'	**4.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.61 cfs @ 11.84 hrs HW=562.02' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.61 cfs)

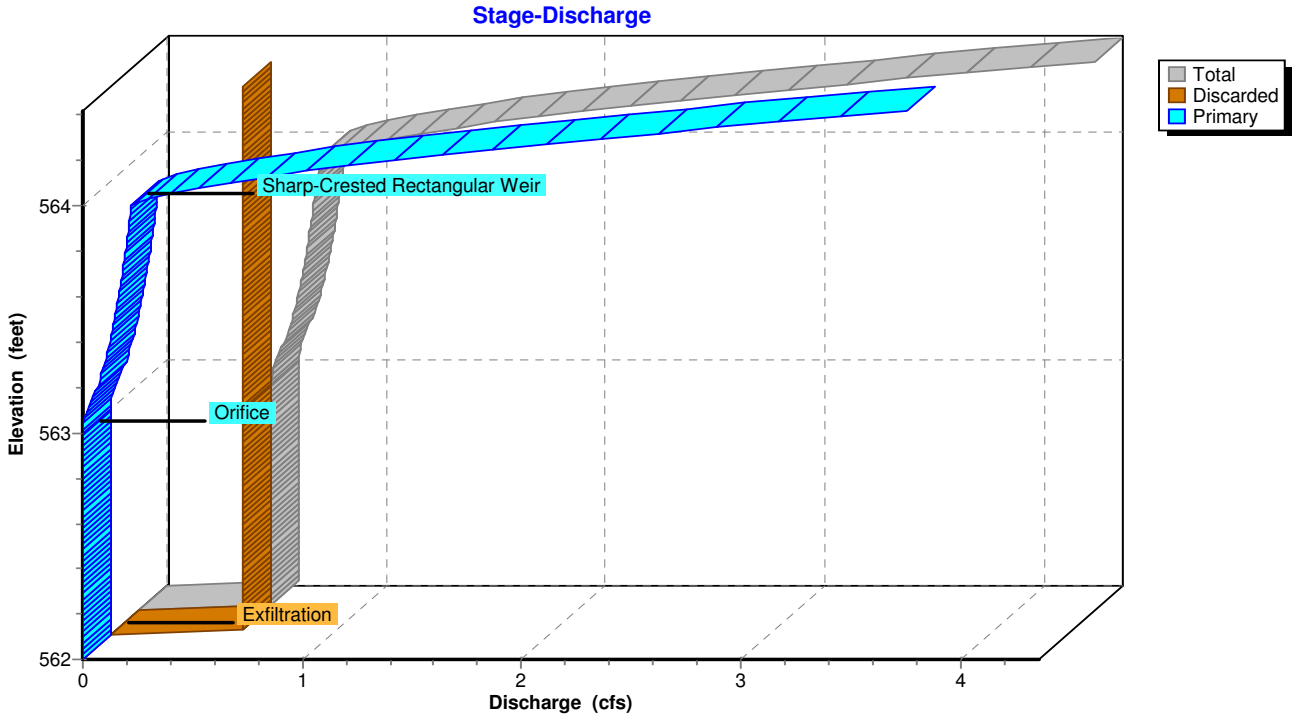
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=562.00' (Free Discharge)
├**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice** (Controls 0.00 cfs)



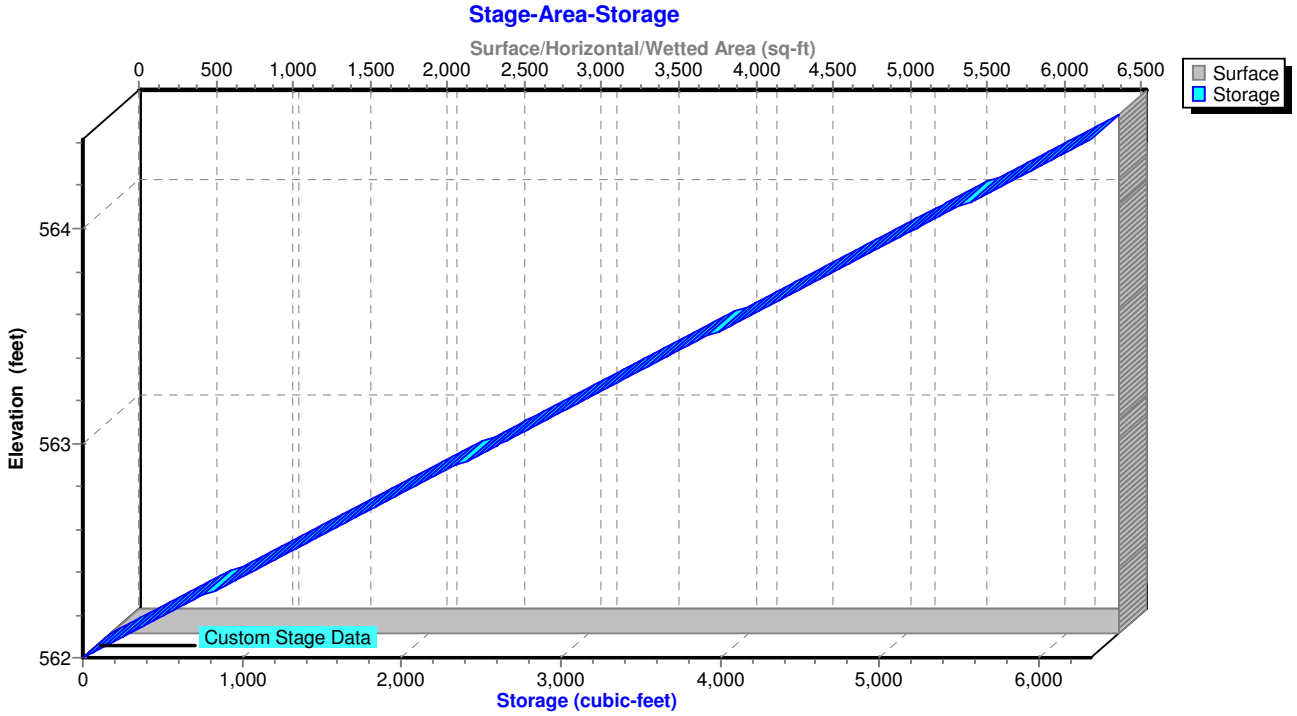
Pond 42P: Basin 9



Pond 42P: Basin 9



Pond 42P: Basin 9



Hydrograph for Pond 42P: Basin 9

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	562.00	0.00	0.00	**0.00**
2.00	0.01	1	562.00	0.01	0.01	0.00
4.00	0.02	3	562.00	0.02	0.02	0.00
6.00	0.03	3	562.00	0.03	0.03	0.00
8.00	0.05	6	562.00	0.05	0.05	0.00
10.00	0.11	11	562.00	**0.10**	**0.10**	0.00
12.00	**1.30**	**239**	**562.09**	**0.61**	**0.61**	0.00
14.00	**0.15**	**16**	**562.01**	0.15	0.15	0.00
16.00	0.08	9	562.00	0.08	0.08	0.00
18.00	0.05	6	562.00	0.06	0.06	0.00
20.00	0.05	5	562.00	0.05	0.05	0.00
22.00	0.04	4	562.00	0.04	0.04	0.00
24.00	0.03	4	562.00	0.03	0.03	0.00
26.00	0.00	0	562.00	0.00	0.00	0.00
28.00	0.00	0	562.00	0.00	0.00	0.00
30.00	0.00	0	562.00	0.00	0.00	0.00
32.00	0.00	0	562.00	0.00	0.00	0.00
34.00	0.00	0	562.00	0.00	0.00	0.00
36.00	0.00	0	562.00	0.00	0.00	0.00
38.00	0.00	0	562.00	0.00	0.00	0.00
40.00	0.00	0	562.00	0.00	0.00	0.00
42.00	0.00	0	562.00	0.00	0.00	0.00
44.00	0.00	0	562.00	0.00	0.00	0.00
46.00	0.00	0	562.00	0.00	0.00	0.00
48.00	0.00	0	562.00	0.00	0.00	0.00
50.00	0.00	0	562.00	0.00	0.00	0.00
52.00	0.00	0	562.00	0.00	0.00	0.00
54.00	0.00	0	562.00	0.00	0.00	0.00
56.00	0.00	0	562.00	0.00	0.00	0.00
58.00	0.00	0	562.00	0.00	0.00	0.00
60.00	0.00	0	562.00	0.00	0.00	0.00
62.00	0.00	0	562.00	0.00	0.00	0.00
64.00	0.00	0	562.00	0.00	0.00	0.00
66.00	0.00	0	562.00	0.00	0.00	0.00
68.00	0.00	0	562.00	0.00	0.00	0.00
70.00	0.00	0	562.00	0.00	0.00	0.00
72.00	0.00	0	562.00	0.00	0.00	0.00
74.00	0.00	0	562.00	0.00	0.00	0.00
76.00	0.00	0	562.00	0.00	0.00	0.00
78.00	0.00	0	562.00	0.00	0.00	0.00
80.00	0.00	0	562.00	0.00	0.00	0.00

Stage-Discharge for Pond 42P: Basin 9

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
562.00	0.00	**0.00**	0.00
562.05	0.61	**0.61**	0.00
562.10	0.61	0.61	0.00
562.15	0.61	0.61	0.00
562.20	0.61	0.61	0.00
562.25	0.61	0.61	0.00
562.30	0.61	0.61	0.00
562.35	0.61	0.61	0.00
562.40	0.61	0.61	0.00
562.45	0.61	0.61	0.00
562.50	0.61	0.61	0.00
562.55	0.61	0.61	0.00
562.60	0.61	0.61	0.00
562.65	0.61	0.61	0.00
562.70	0.61	0.61	0.00
562.75	0.61	0.61	0.00
562.80	0.61	0.61	0.00
562.85	0.61	0.61	0.00
562.90	0.61	0.61	0.00
562.95	0.61	0.61	0.00
563.00	0.61	0.61	0.00
563.05	0.61	0.61	0.01
563.10	0.62	0.61	0.02
563.15	0.65	0.61	0.04
563.20	0.67	0.61	0.06
563.25	0.69	0.61	0.08
563.30	0.70	0.61	0.10
563.35	0.72	0.61	0.11
563.40	0.73	0.61	0.12
563.45	0.74	0.61	0.13
563.50	0.75	0.61	0.14
563.55	0.76	0.61	0.15
563.60	0.77	0.61	0.16
563.65	0.78	0.61	0.17
563.70	0.78	0.61	0.18
563.75	0.79	0.61	0.19
563.80	0.80	0.61	0.19
563.85	0.81	0.61	0.20
563.90	0.81	0.61	0.21
563.95	0.82	0.61	0.21
564.00	0.83	0.61	0.22
564.05	0.98	0.61	0.37
564.10	1.25	0.61	0.64
564.15	1.60	0.61	0.99
564.20	2.01	0.61	1.40
564.25	2.47	0.61	1.87
564.30	2.98	0.61	2.37
564.35	3.53	0.61	2.92
564.40	**4.11**	0.61	**3.51**

Stage-Area-Storage for Pond 42P: Basin 9

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
562.00	**6,534**	0
562.05	6,534	131
562.10	6,534	261
562.15	6,534	392
562.20	6,534	523
562.25	6,534	653
562.30	6,534	784
562.35	6,534	915
562.40	6,534	1,045
562.45	6,534	1,176
562.50	6,534	1,307
562.55	6,534	1,437
562.60	6,534	1,568
562.65	6,534	1,699
562.70	6,534	1,830
562.75	6,534	1,960
562.80	6,534	2,091
562.85	6,534	2,222
562.90	6,534	2,352
562.95	6,534	2,483
563.00	6,534	2,614
563.05	6,534	2,744
563.10	6,534	2,875
563.15	6,534	3,006
563.20	6,534	3,136
563.25	6,534	3,267
563.30	6,534	3,398
563.35	6,534	3,528
563.40	6,534	3,659
563.45	6,534	3,790
563.50	6,534	3,920
563.55	6,534	4,051
563.60	6,534	4,182
563.65	6,534	4,312
563.70	6,534	4,443
563.75	6,534	4,574
563.80	6,534	4,704
563.85	6,534	4,835
563.90	6,534	4,966
563.95	6,534	5,097
564.00	6,534	5,227
564.05	6,534	5,358
564.10	6,534	5,489
564.15	6,534	5,619
564.20	6,534	5,750
564.25	6,534	5,881
564.30	6,534	6,011
564.35	6,534	6,142
564.40	6,534	**6,273**

Summary for Pond 48P: Basin 8

Inflow Area = 61,044 sf, 62.67% Impervious, Inflow Depth = 4.17" for 10-Year event
Inflow = 5.52 cfs @ 12.16 hrs, Volume= 21,218 cf
Outflow = 2.83 cfs @ 12.29 hrs, Volume= 21,218 cf, Atten= 49%, Lag= 8.2 min
Discarded = 2.83 cfs @ 12.29 hrs, Volume= 21,218 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 49P : Basin 7

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 573.44' @ 12.29 hrs Surf.Area= 10,019 sf Storage= 1,768 cf

Plug-Flow detention time= 2.6 min calculated for 21,207 cf (100% of inflow)
Center-of-Mass det. time= 2.6 min (775.9 - 773.3)

Volume	Invert	Avail.Storage	Storage Description
#1	573.00'	12,023 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 30,057 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
573.00	10,019	0	0
574.00	10,019	10,019	10,019
575.00	10,019	10,019	20,038
576.00	10,019	10,019	30,057

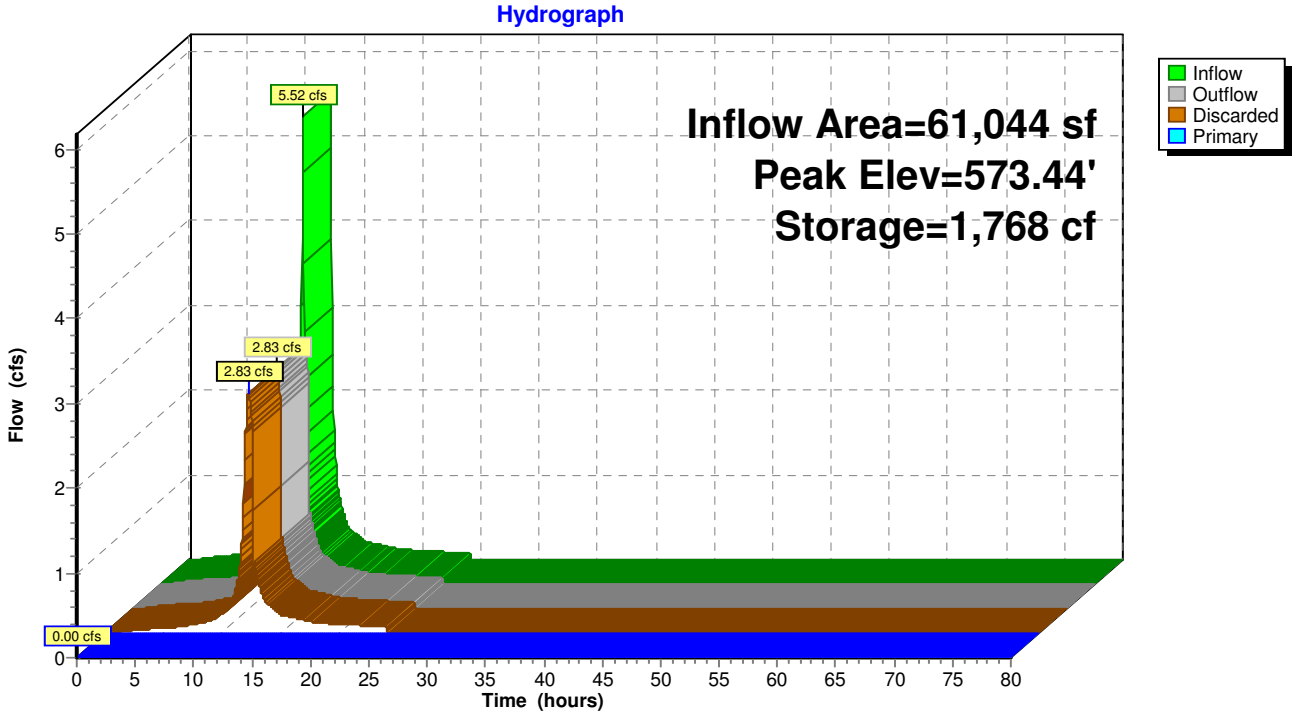
Device	Routing	Invert	Outlet Devices
#1	Primary	575.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	573.45'	**6.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Discarded	573.00'	**10.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 571.00'

Discarded OutFlow Max=2.83 cfs @ 12.29 hrs HW=573.44' (Free Discharge)
└**3=Exfiltration** (Controls 2.83 cfs)

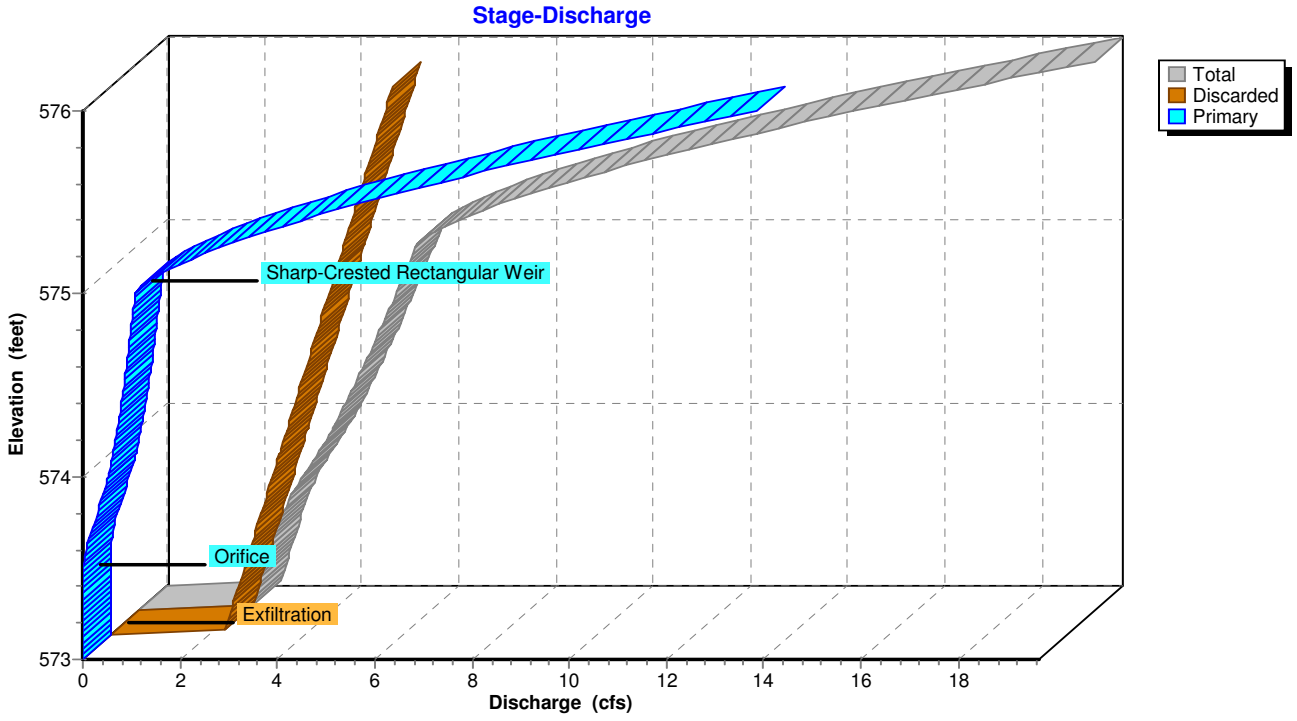
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=573.00' (Free Discharge)
└**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice** (Controls 0.00 cfs)



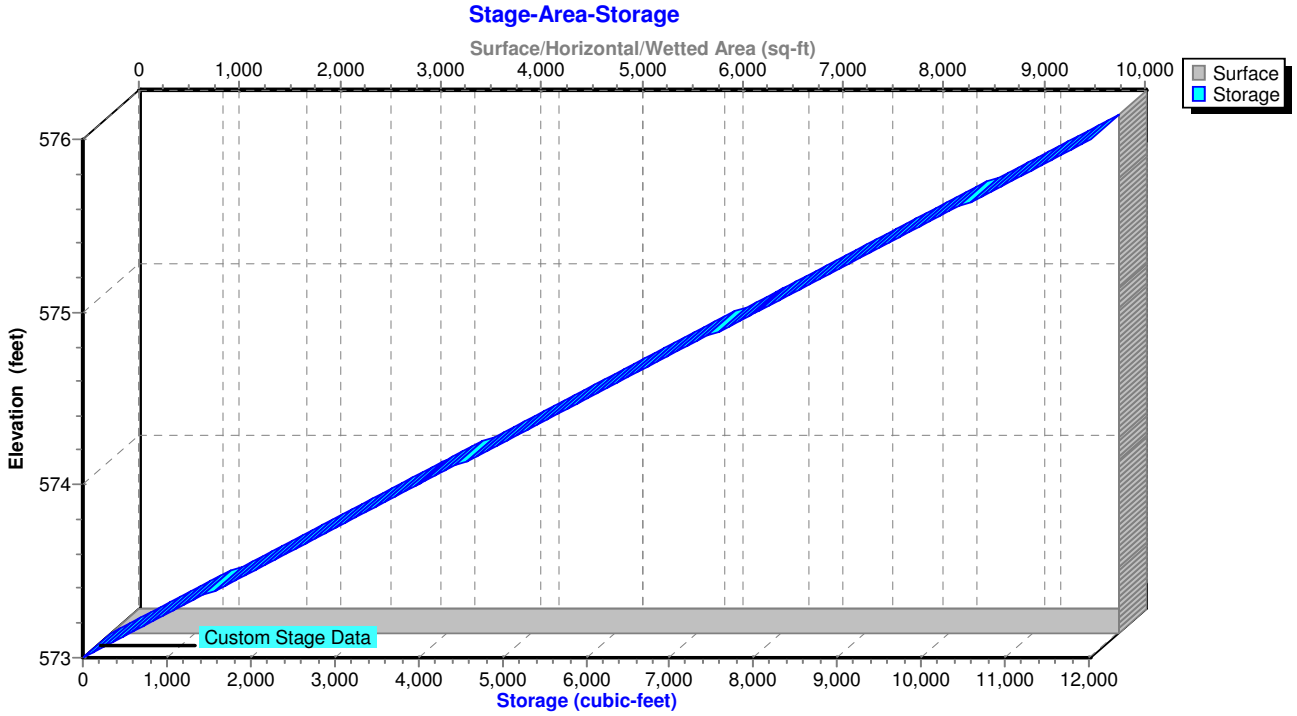
Pond 48P: Basin 8



Pond 48P: Basin 8



Pond 48P: Basin 8



Hydrograph for Pond 48P: Basin 8

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	573.00	0.00	0.00	**0.00**
2.00	0.03	1	573.00	0.03	0.03	0.00
4.00	0.05	3	573.00	0.05	0.05	0.00
6.00	0.07	4	573.00	0.07	0.07	0.00
8.00	0.12	6	573.00	0.12	0.12	0.00
10.00	0.23	12	573.00	0.23	0.23	0.00
12.00	**2.68**	**136**	**573.03**	**2.36**	**2.36**	0.00
14.00	**0.34**	**17**	**573.00**	**0.34**	**0.34**	0.00
16.00	0.19	10	573.00	0.19	0.19	0.00
18.00	0.13	6	573.00	0.13	0.13	0.00
20.00	0.11	5	573.00	0.11	0.11	0.00
22.00	0.09	5	573.00	0.09	0.09	0.00
24.00	0.08	4	573.00	0.08	0.08	0.00
26.00	0.00	0	573.00	0.00	0.00	0.00
28.00	0.00	0	573.00	0.00	0.00	0.00
30.00	0.00	0	573.00	0.00	0.00	0.00
32.00	0.00	0	573.00	0.00	0.00	0.00
34.00	0.00	0	573.00	0.00	0.00	0.00
36.00	0.00	0	573.00	0.00	0.00	0.00
38.00	0.00	0	573.00	0.00	0.00	0.00
40.00	0.00	0	573.00	0.00	0.00	0.00
42.00	0.00	0	573.00	0.00	0.00	0.00
44.00	0.00	0	573.00	0.00	0.00	0.00
46.00	0.00	0	573.00	0.00	0.00	0.00
48.00	0.00	0	573.00	0.00	0.00	0.00
50.00	0.00	0	573.00	0.00	0.00	0.00
52.00	0.00	0	573.00	0.00	0.00	0.00
54.00	0.00	0	573.00	0.00	0.00	0.00
56.00	0.00	0	573.00	0.00	0.00	0.00
58.00	0.00	0	573.00	0.00	0.00	0.00
60.00	0.00	0	573.00	0.00	0.00	0.00
62.00	0.00	0	573.00	0.00	0.00	0.00
64.00	0.00	0	573.00	0.00	0.00	0.00
66.00	0.00	0	573.00	0.00	0.00	0.00
68.00	0.00	0	573.00	0.00	0.00	0.00
70.00	0.00	0	573.00	0.00	0.00	0.00
72.00	0.00	0	573.00	0.00	0.00	0.00
74.00	0.00	0	573.00	0.00	0.00	0.00
76.00	0.00	0	573.00	0.00	0.00	0.00
78.00	0.00	0	573.00	0.00	0.00	0.00
80.00	0.00	0	573.00	0.00	0.00	0.00

Stage-Discharge for Pond 48P: Basin 8

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
573.00	0.00	0.00	0.00
573.05	2.38	2.38	0.00
573.10	2.44	2.44	0.00
573.15	2.49	2.49	0.00
573.20	2.55	2.55	0.00
573.25	2.61	2.61	0.00
573.30	2.67	2.67	0.00
573.35	2.73	2.73	0.00
573.40	2.78	2.78	0.00
573.45	2.84	2.84	0.00
573.50	2.91	2.90	0.01
573.55	2.99	2.96	0.03
573.60	3.08	3.01	0.07
573.65	3.18	3.07	0.11
573.70	3.30	3.13	0.17
573.75	3.42	3.19	0.23
573.80	3.54	3.25	0.30
573.85	3.67	3.30	0.36
573.90	3.79	3.36	0.43
573.95	3.89	3.42	0.47
574.00	4.00	3.48	0.52
574.05	4.10	3.54	0.56
574.10	4.19	3.59	0.60
574.15	4.29	3.65	0.63
574.20	4.38	3.71	0.67
574.25	4.47	3.77	0.70
574.30	4.56	3.83	0.73
574.35	4.65	3.88	0.76
574.40	4.73	3.94	0.79
574.45	4.82	4.00	0.82
574.50	4.90	4.06	0.85
574.55	4.99	4.12	0.87
574.60	5.07	4.17	0.90
574.65	5.15	4.23	0.92
574.70	5.24	4.29	0.95
574.75	5.32	4.35	0.97
574.80	5.40	4.41	0.99
574.85	5.48	4.46	1.01
574.90	5.56	4.52	1.04
574.95	5.64	4.58	1.06
575.00	5.72	4.64	1.08
575.05	5.94	4.70	1.24
575.10	6.28	4.75	1.53
575.15	6.70	4.81	1.89
575.20	7.19	4.87	2.32
575.25	7.72	4.93	2.79
575.30	8.30	4.99	3.31
575.35	8.92	5.04	3.88
575.40	9.58	5.10	4.48
575.45	10.27	5.16	5.11
575.50	11.00	5.22	5.78
575.55	11.75	5.28	6.47
575.60	12.53	5.33	7.20
575.65	13.34	5.39	7.95
575.70	14.18	5.45	8.73
575.75	15.04	5.51	9.53
575.80	15.92	5.57	10.35
575.85	16.82	5.62	11.20
575.90	17.75	5.68	12.07
575.95	18.69	5.74	12.95
576.00	**19.66**	**5.80**	**13.86**

Stage-Area-Storage for Pond 48P: Basin 8

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
573.00	**10,019**	0
573.05	10,019	200
573.10	10,019	401
573.15	10,019	601
573.20	10,019	802
573.25	10,019	1,002
573.30	10,019	1,202
573.35	10,019	1,403
573.40	10,019	1,603
573.45	10,019	1,803
573.50	10,019	2,004
573.55	10,019	2,204
573.60	10,019	2,405
573.65	10,019	2,605
573.70	10,019	2,805
573.75	10,019	3,006
573.80	10,019	3,206
573.85	10,019	3,406
573.90	10,019	3,607
573.95	10,019	3,807
574.00	10,019	4,008
574.05	10,019	4,208
574.10	10,019	4,408
574.15	10,019	4,609
574.20	10,019	4,809
574.25	10,019	5,010
574.30	10,019	5,210
574.35	10,019	5,410
574.40	10,019	5,611
574.45	10,019	5,811
574.50	10,019	6,011
574.55	10,019	6,212
574.60	10,019	6,412
574.65	10,019	6,613
574.70	10,019	6,813
574.75	10,019	7,013
574.80	10,019	7,214
574.85	10,019	7,414
574.90	10,019	7,614
574.95	10,019	7,815
575.00	10,019	8,015
575.05	10,019	8,216
575.10	10,019	8,416
575.15	10,019	8,616
575.20	10,019	8,817
575.25	10,019	9,017
575.30	10,019	9,217
575.35	10,019	9,418
575.40	10,019	9,618
575.45	10,019	9,819
575.50	10,019	10,019
575.55	10,019	10,219
575.60	10,019	10,420
575.65	10,019	10,620
575.70	10,019	10,821
575.75	10,019	11,021
575.80	10,019	11,221
575.85	10,019	11,422
575.90	10,019	11,622
575.95	10,019	11,822
576.00	10,019	**12,023**

Summary for Pond 49P: Basin 7

Inflow Area = 165,500 sf, 50.78% Impervious, Inflow Depth = 2.37" for 10-Year event
Inflow = 7.67 cfs @ 12.20 hrs, Volume= 32,740 cf
Outflow = 1.73 cfs @ 12.69 hrs, Volume= 26,967 cf, Atten= 77%, Lag= 29.6 min
Primary = 1.73 cfs @ 12.69 hrs, Volume= 26,967 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 532.09' @ 12.69 hrs Surf.Area= 16,282 sf Storage= 16,775 cf

Plug-Flow detention time= 332.7 min calculated for 26,967 cf (82% of inflow)
Center-of-Mass det. time= 253.4 min (1,045.3 - 791.8)

Volume	Invert	Avail.Storage	Storage Description
#1	531.00'	50,966 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
531.00	14,375	0	0
532.00	16,117	15,246	15,246
533.00	17,860	16,989	32,235
534.00	19,602	18,731	50,966

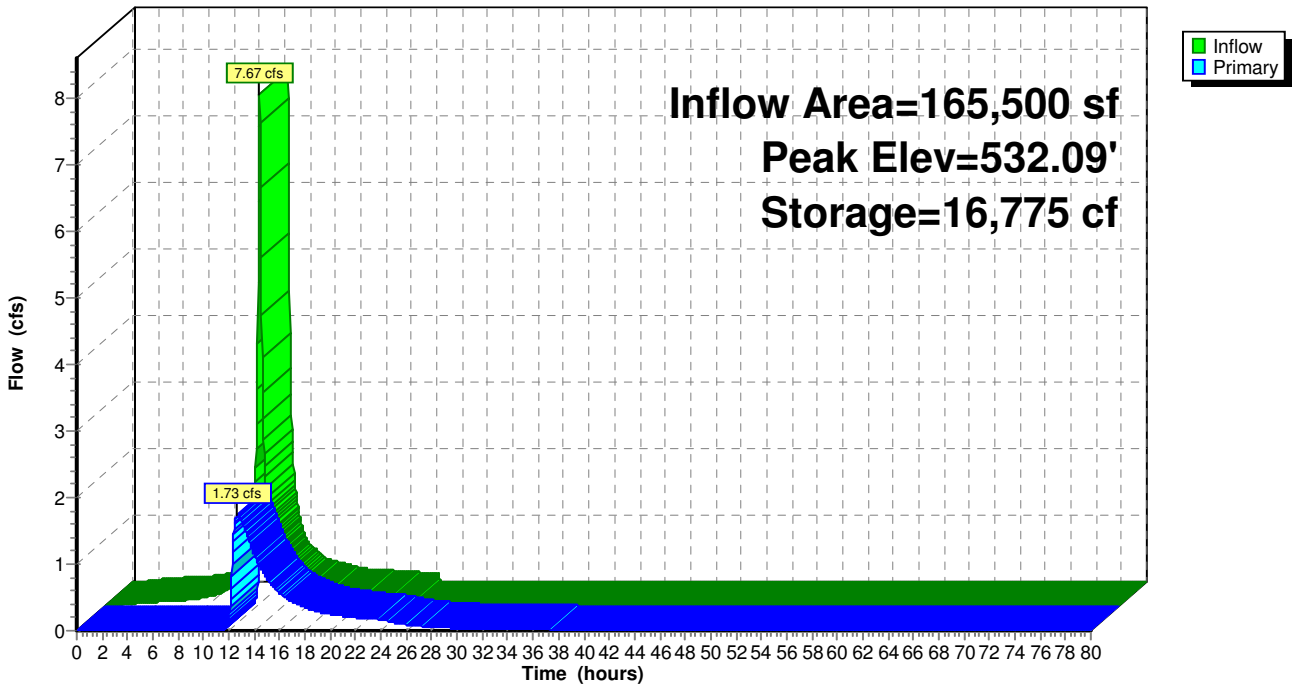
Device	Routing	Invert	Outlet Devices
#1	Primary	531.38'	**12.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.73 cfs @ 12.69 hrs HW=532.09' (Free Discharge)
1=Orifice (Orifice Controls 1.73 cfs @ 2.88 fps)



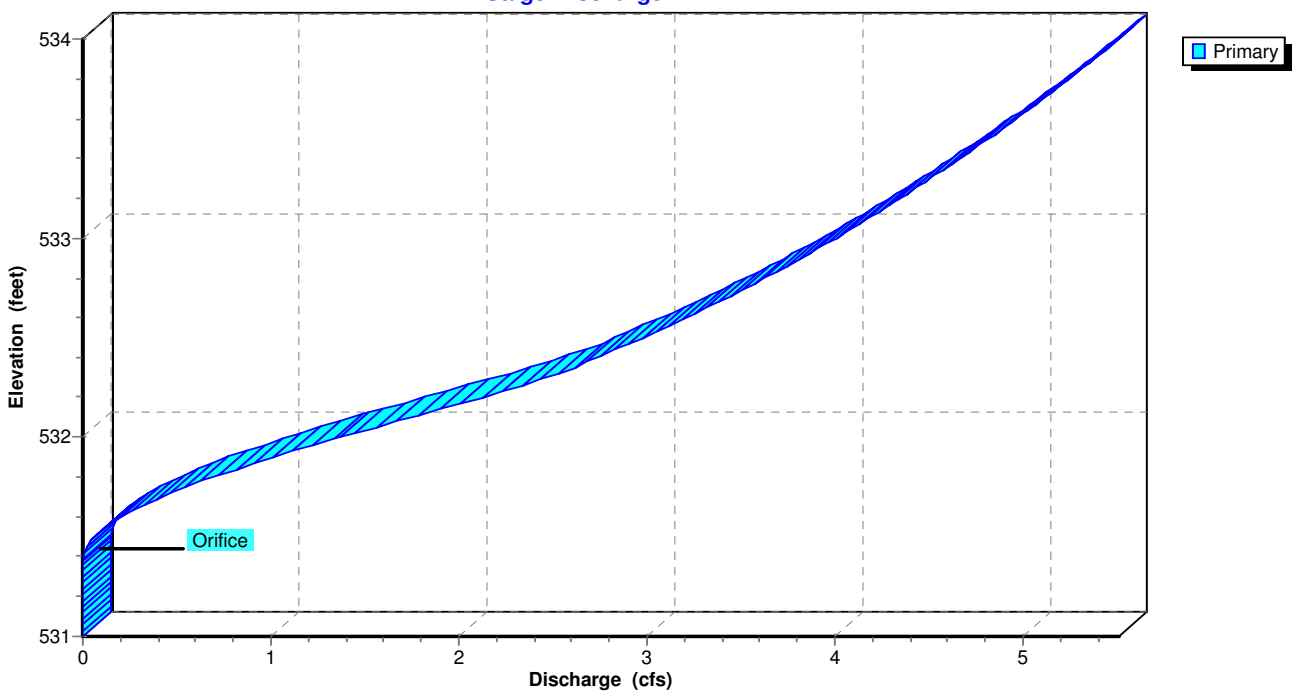
Pond 49P: Basin 7

Hydrograph

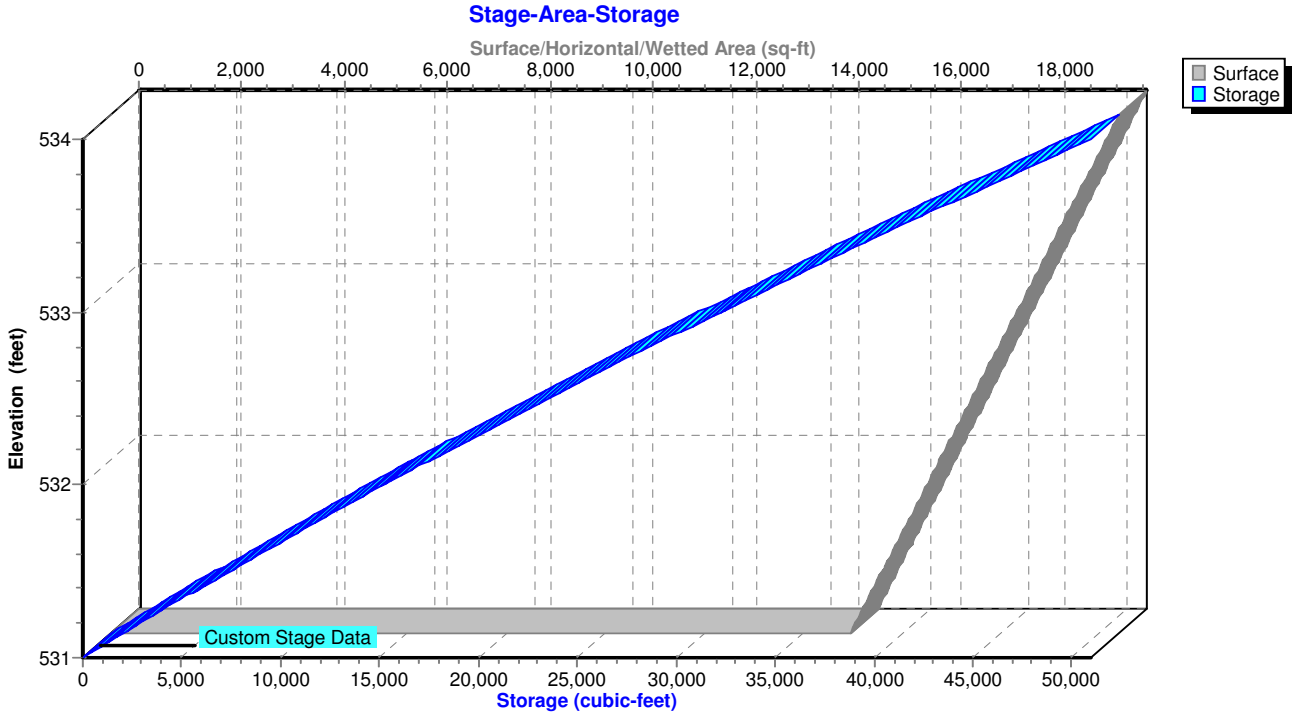


Pond 49P: Basin 7

Stage-Discharge



Pond 49P: Basin 7



Hydrograph for Pond 49P: Basin 7

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	531.00	0.00
2.00	0.03	71	531.00	0.00
4.00	0.06	429	531.03	0.00
6.00	0.08	967	531.07	0.00
8.00	0.14	1,749	531.12	0.00
10.00	0.31	3,199	531.22	0.00
12.00	**3.25**	**9,007**	**531.60**	**0.21**
14.00	**0.56**	**14,247**	**531.94**	**1.15**
16.00	0.31	11,370	531.76	0.56
18.00	0.21	10,053	531.67	0.35
20.00	0.18	9,311	531.62	0.25
22.00	0.15	8,897	531.60	0.20
24.00	0.13	8,591	531.58	0.17
26.00	0.00	7,772	531.52	0.09
28.00	0.00	7,266	531.49	0.05
30.00	0.00	6,947	531.47	0.04
32.00	0.00	6,725	531.46	0.03
34.00	0.00	6,567	531.44	0.02
36.00	0.00	6,443	531.44	0.02
38.00	0.00	6,345	531.43	0.01
40.00	0.00	6,267	531.43	0.01
42.00	0.00	6,205	531.42	0.01
44.00	0.00	6,155	531.42	0.01
46.00	0.00	6,109	531.41	0.01
48.00	0.00	6,069	531.41	0.01
50.00	0.00	6,032	531.41	0.00
52.00	0.00	5,999	531.41	0.00
54.00	0.00	5,970	531.41	0.00
56.00	0.00	5,943	531.40	0.00
58.00	0.00	5,919	531.40	0.00
60.00	0.00	5,898	531.40	0.00
62.00	0.00	5,879	531.40	0.00
64.00	0.00	5,861	531.40	0.00
66.00	0.00	5,846	531.40	0.00
68.00	0.00	5,832	531.40	0.00
70.00	0.00	5,819	531.40	0.00
72.00	0.00	5,808	531.39	0.00
74.00	0.00	5,798	531.39	0.00
76.00	0.00	5,789	531.39	0.00
78.00	0.00	5,781	531.39	0.00
80.00	0.00	5,773	531.39	0.00

Stage-Discharge for Pond 49P: Basin 7

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
531.00	0.00	532.02	1.45	533.04	4.07
531.02	0.00	532.04	1.52	533.06	4.11
531.04	0.00	532.06	1.60	533.08	4.14
531.06	0.00	532.08	1.67	533.10	4.18
531.08	0.00	532.10	1.75	533.12	4.21
531.10	0.00	532.12	1.83	533.14	4.24
531.12	0.00	532.14	1.90	533.16	4.28
531.14	0.00	532.16	1.98	533.18	4.31
531.16	0.00	532.18	2.05	533.20	4.34
531.18	0.00	532.20	2.13	533.22	4.38
531.20	0.00	532.22	2.20	533.24	4.41
531.22	0.00	532.24	2.27	533.26	4.44
531.24	0.00	532.26	2.34	533.28	4.47
531.26	0.00	532.28	2.40	533.30	4.51
531.28	0.00	532.30	2.47	533.32	4.54
531.30	0.00	532.32	2.53	533.34	4.57
531.32	0.00	532.34	2.58	533.36	4.60
531.34	0.00	532.36	2.63	533.38	4.63
531.36	0.00	532.38	2.67	533.40	4.66
531.38	0.00	532.40	2.73	533.42	4.69
531.40	0.00	532.42	2.78	533.44	4.72
531.42	0.01	532.44	2.83	533.46	4.75
531.44	0.02	532.46	2.88	533.48	4.78
531.46	0.03	532.48	2.93	533.50	4.81
531.48	0.04	532.50	2.98	533.52	4.84
531.50	0.06	532.52	3.03	533.54	4.87
531.52	0.09	532.54	3.07	533.56	4.90
531.54	0.11	532.56	3.12	533.58	4.93
531.56	0.14	532.58	3.16	533.60	4.96
531.58	0.17	532.60	3.21	533.62	4.99
531.60	0.20	532.62	3.25	533.64	5.02
531.62	0.24	532.64	3.30	533.66	5.05
531.64	0.28	532.66	3.34	533.68	5.07
531.66	0.32	532.68	3.38	533.70	5.10
531.68	0.37	532.70	3.42	533.72	5.13
531.70	0.42	532.72	3.47	533.74	5.16
531.72	0.47	532.74	3.51	533.76	5.19
531.74	0.52	532.76	3.55	533.78	5.21
531.76	0.57	532.78	3.59	533.80	5.24
531.78	0.63	532.80	3.63	533.82	5.27
531.80	0.69	532.82	3.67	533.84	5.29
531.82	0.75	532.84	3.71	533.86	5.32
531.84	0.81	532.86	3.74	533.88	5.35
531.86	0.88	532.88	3.78	533.90	5.37
531.88	0.95	532.90	3.82	533.92	5.40
531.90	1.01	532.92	3.86	533.94	5.43
531.92	1.08	532.94	3.89	533.96	5.45
531.94	1.15	532.96	3.93	533.98	5.48
531.96	1.22	532.98	3.97	534.00	**5.51**
531.98	1.30	533.00	4.00		
532.00	1.37	533.02	4.04		

Stage-Area-Storage for Pond 49P: Basin 7

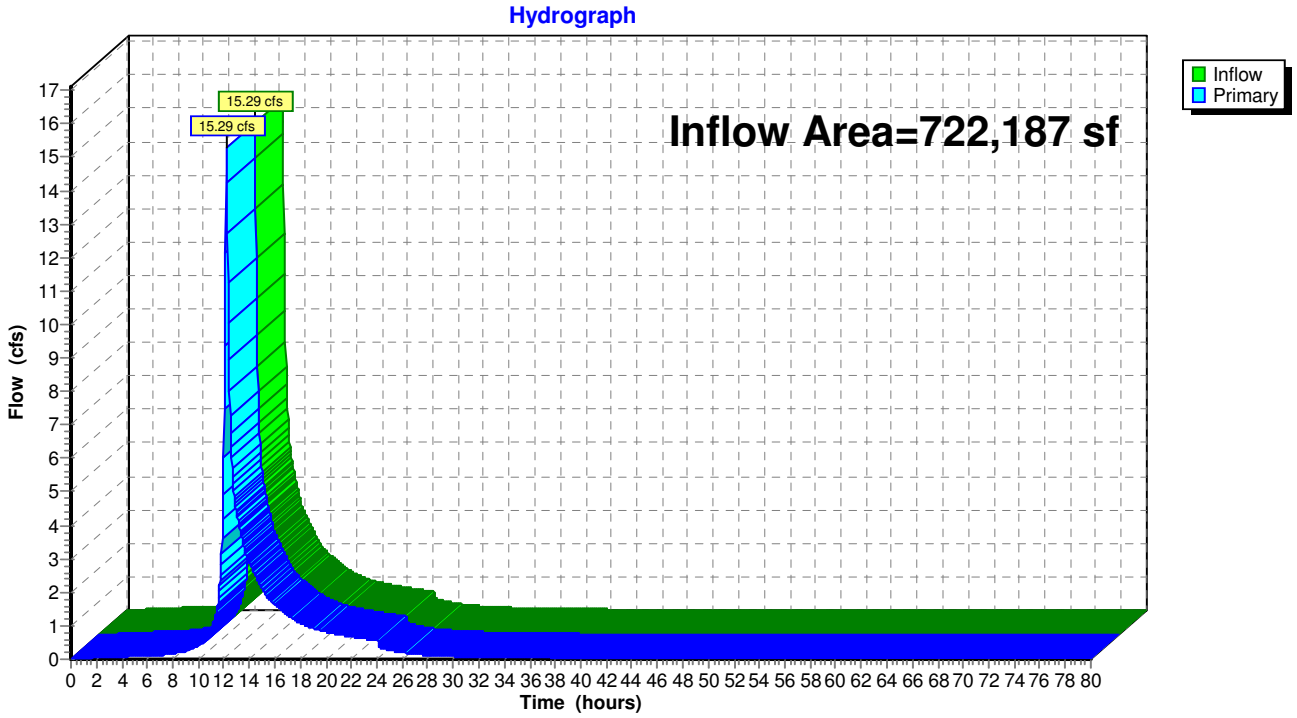
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
531.00	14,375	0
531.05	14,462	721
531.10	14,549	1,446
531.15	14,636	2,176
531.20	14,723	2,910
531.25	14,811	3,648
531.30	14,898	4,391
531.35	14,985	5,138
531.40	15,072	5,889
531.45	15,159	6,645
531.50	15,246	7,405
531.55	15,333	8,170
531.60	15,420	8,939
531.65	15,507	9,712
531.70	15,594	10,489
531.75	15,682	11,271
531.80	15,769	12,057
531.85	15,856	12,848
531.90	15,943	13,643
531.95	16,030	14,442
532.00	16,117	15,246
532.05	16,204	16,054
532.10	16,291	16,866
532.15	16,378	17,683
532.20	16,466	18,504
532.25	16,553	19,330
532.30	16,640	20,160
532.35	16,727	20,994
532.40	16,814	21,832
532.45	16,901	22,675
532.50	16,989	23,522
532.55	17,076	24,374
532.60	17,163	25,230
532.65	17,250	26,090
532.70	17,337	26,955
532.75	17,424	27,824
532.80	17,511	28,697
532.85	17,599	29,575
532.90	17,686	30,457
532.95	17,773	31,344
533.00	17,860	32,235
533.05	17,947	33,130
533.10	18,034	34,029
533.15	18,121	34,933
533.20	18,208	35,841
533.25	18,296	36,754
533.30	18,383	37,671
533.35	18,470	38,592
533.40	18,557	39,518
533.45	18,644	40,448
533.50	18,731	41,382
533.55	18,818	42,321
533.60	18,905	43,264
533.65	18,992	44,211
533.70	19,079	45,163
533.75	19,167	46,119
533.80	19,254	47,080
533.85	19,341	48,045
533.90	19,428	49,014
533.95	19,515	49,988
534.00	**19,602**	**50,966**

Summary for Link 28L: POA 2

Inflow Area = 722,187 sf, 47.85% Impervious, Inflow Depth = 1.71" for 10-Year event
Inflow = 15.29 cfs @ 12.20 hrs, Volume= 102,660 cf
Primary = 15.29 cfs @ 12.20 hrs, Volume= 102,660 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs

Link 28L: POA 2



Hydrograph for Link 28L: POA 2

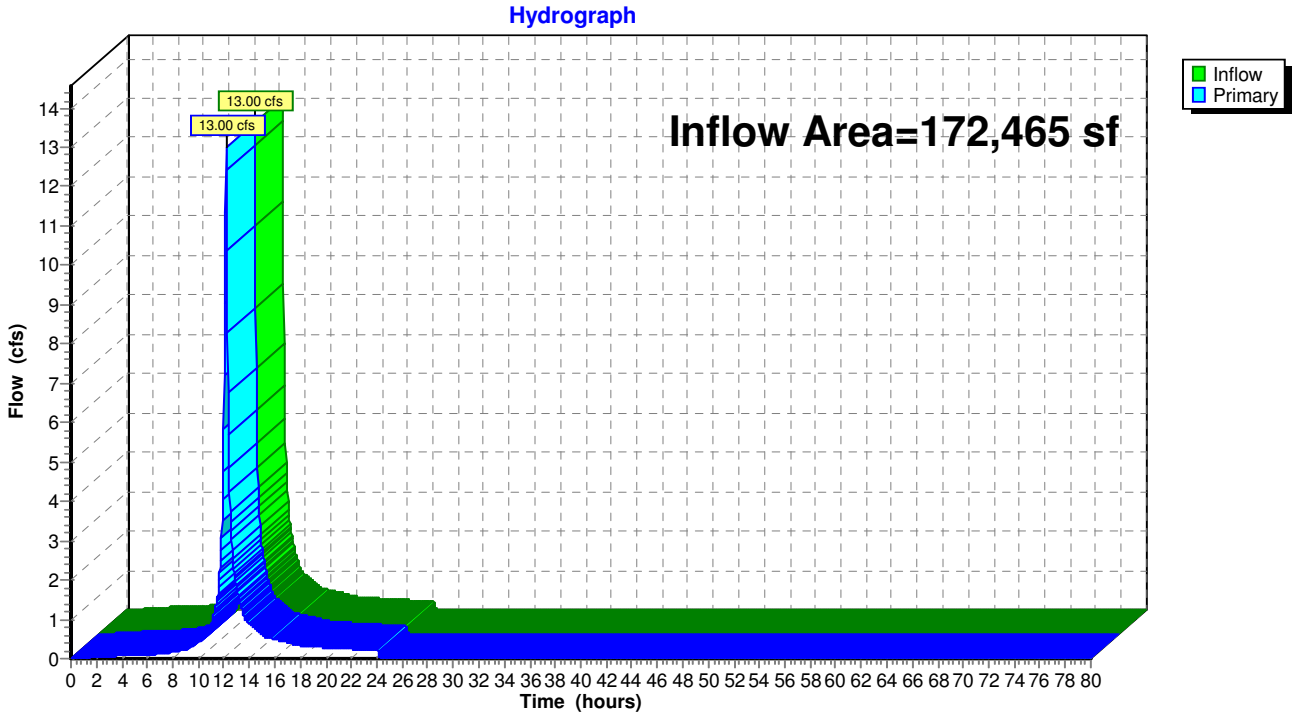
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	40.80	0.02	0.00	0.02
0.80	0.00	0.00	0.00	41.60	0.02	0.00	0.02
1.60	0.03	0.00	0.03	42.40	0.02	0.00	0.02
2.40	0.05	0.00	0.05	43.20	0.01	0.00	0.01
3.20	0.06	0.00	0.06	44.00	0.01	0.00	0.01
4.00	0.07	0.00	0.07	44.80	0.01	0.00	0.01
4.80	0.08	0.00	0.08	45.60	0.01	0.00	0.01
5.60	0.09	0.00	0.09	46.40	0.01	0.00	0.01
6.40	0.11	0.00	0.11	47.20	0.01	0.00	0.01
7.20	0.13	0.00	0.13	48.00	0.01	0.00	0.01
8.00	0.17	0.00	0.17	48.80	0.01	0.00	0.01
8.80	0.22	0.00	0.22	49.60	0.01	0.00	0.01
9.60	0.34	0.00	0.34	50.40	0.01	0.00	0.01
10.40	0.52	0.00	0.52	51.20	0.01	0.00	0.01
11.20	1.09	0.00	1.09	52.00	0.01	0.00	0.01
12.00	**6.04**	0.00	**6.04**	52.80	0.01	0.00	0.01
12.80	**4.89**	0.00	**4.89**	53.60	0.01	0.00	0.01
13.60	3.33	0.00	3.33	54.40	0.01	0.00	0.01
14.40	2.55	0.00	2.55	55.20	0.01	0.00	0.01
15.20	1.97	0.00	1.97	56.00	0.01	0.00	0.01
16.00	1.63	0.00	1.63	56.80	0.01	0.00	0.01
16.80	1.38	0.00	1.38	57.60	0.00	0.00	0.00
17.60	1.17	0.00	1.17	58.40	0.00	0.00	0.00
18.40	1.00	0.00	1.00	59.20	0.00	0.00	0.00
19.20	0.90	0.00	0.90	60.00	0.00	0.00	0.00
20.00	0.82	0.00	0.82	60.80	0.00	0.00	0.00
20.80	0.76	0.00	0.76	61.60	0.00	0.00	0.00
21.60	0.70	0.00	0.70	62.40	0.00	0.00	0.00
22.40	0.65	0.00	0.65	63.20	0.00	0.00	0.00
23.20	0.60	0.00	0.60	64.00	0.00	0.00	0.00
24.00	0.56	0.00	0.56	64.80	0.00	0.00	0.00
24.80	0.28	0.00	0.28	65.60	0.00	0.00	0.00
25.60	0.22	0.00	0.22	66.40	0.00	0.00	0.00
26.40	0.18	0.00	0.18	67.20	0.00	0.00	0.00
27.20	0.14	0.00	0.14	68.00	0.00	0.00	0.00
28.00	0.12	0.00	0.12	68.80	0.00	0.00	0.00
28.80	0.10	0.00	0.10	69.60	0.00	0.00	0.00
29.60	0.09	0.00	0.09	70.40	0.00	0.00	0.00
30.40	0.07	0.00	0.07	71.20	0.00	0.00	0.00
31.20	0.06	0.00	0.06	72.00	0.00	0.00	0.00
32.00	0.06	0.00	0.06	72.80	0.00	0.00	0.00
32.80	0.05	0.00	0.05	73.60	0.00	0.00	0.00
33.60	0.04	0.00	0.04	74.40	0.00	0.00	0.00
34.40	0.04	0.00	0.04	75.20	0.00	0.00	0.00
35.20	0.03	0.00	0.03	76.00	0.00	0.00	0.00
36.00	0.03	0.00	0.03	76.80	0.00	0.00	0.00
36.80	0.03	0.00	0.03	77.60	0.00	0.00	0.00
37.60	0.03	0.00	0.03	78.40	0.00	0.00	0.00
38.40	0.02	0.00	0.02	79.20	0.00	0.00	0.00
39.20	0.02	0.00	0.02	80.00	0.00	0.00	0.00
40.00	0.02	0.00	0.02				

Summary for Link 34L: DA 2 Undetained

Inflow Area = 172,465 sf, 30.45% Impervious, Inflow Depth = 3.47" for 10-Year event
Inflow = 13.00 cfs @ 12.17 hrs, Volume= 49,875 cf
Primary = 13.00 cfs @ 12.17 hrs, Volume= 49,875 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 28L : POA 2

Primary outflow = Inflow, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs

Link 34L: DA 2 Undetained



Hydrograph for Link 34L: DA 2 Undetained

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	40.80	0.00	0.00	0.00
0.80	0.00	0.00	0.00	41.60	0.00	0.00	0.00
1.60	0.03	0.00	0.03	42.40	0.00	0.00	0.00
2.40	0.05	0.00	0.05	43.20	0.00	0.00	0.00
3.20	0.06	0.00	0.06	44.00	0.00	0.00	0.00
4.00	0.07	0.00	0.07	44.80	0.00	0.00	0.00
4.80	0.08	0.00	0.08	45.60	0.00	0.00	0.00
5.60	0.09	0.00	0.09	46.40	0.00	0.00	0.00
6.40	0.11	0.00	0.11	47.20	0.00	0.00	0.00
7.20	0.13	0.00	0.13	48.00	0.00	0.00	0.00
8.00	0.17	0.00	0.17	48.80	0.00	0.00	0.00
8.80	0.22	0.00	0.22	49.60	0.00	0.00	0.00
9.60	0.34	0.00	0.34	50.40	0.00	0.00	0.00
10.40	0.52	0.00	0.52	51.20	0.00	0.00	0.00
11.20	1.09	0.00	1.09	52.00	0.00	0.00	0.00
12.00	**5.83**	0.00	**5.83**	52.80	0.00	0.00	0.00
12.80	**2.18**	0.00	**2.18**	53.60	0.00	0.00	0.00
13.60	1.07	0.00	1.07	54.40	0.00	0.00	0.00
14.40	0.78	0.00	0.78	55.20	0.00	0.00	0.00
15.20	0.56	0.00	0.56	56.00	0.00	0.00	0.00
16.00	0.49	0.00	0.49	56.80	0.00	0.00	0.00
16.80	0.43	0.00	0.43	57.60	0.00	0.00	0.00
17.60	0.37	0.00	0.37	58.40	0.00	0.00	0.00
18.40	0.32	0.00	0.32	59.20	0.00	0.00	0.00
19.20	0.30	0.00	0.30	60.00	0.00	0.00	0.00
20.00	0.29	0.00	0.29	60.80	0.00	0.00	0.00
20.80	0.27	0.00	0.27	61.60	0.00	0.00	0.00
21.60	0.25	0.00	0.25	62.40	0.00	0.00	0.00
22.40	0.24	0.00	0.24	63.20	0.00	0.00	0.00
23.20	0.22	0.00	0.22	64.00	0.00	0.00	0.00
24.00	0.21	0.00	0.21	64.80	0.00	0.00	0.00
24.80	0.00	0.00	0.00	65.60	0.00	0.00	0.00
25.60	0.00	0.00	0.00	66.40	0.00	0.00	0.00
26.40	0.00	0.00	0.00	67.20	0.00	0.00	0.00
27.20	0.00	0.00	0.00	68.00	0.00	0.00	0.00
28.00	0.00	0.00	0.00	68.80	0.00	0.00	0.00
28.80	0.00	0.00	0.00	69.60	0.00	0.00	0.00
29.60	0.00	0.00	0.00	70.40	0.00	0.00	0.00
30.40	0.00	0.00	0.00	71.20	0.00	0.00	0.00
31.20	0.00	0.00	0.00	72.00	0.00	0.00	0.00
32.00	0.00	0.00	0.00	72.80	0.00	0.00	0.00
32.80	0.00	0.00	0.00	73.60	0.00	0.00	0.00
33.60	0.00	0.00	0.00	74.40	0.00	0.00	0.00
34.40	0.00	0.00	0.00	75.20	0.00	0.00	0.00
35.20	0.00	0.00	0.00	76.00	0.00	0.00	0.00
36.00	0.00	0.00	0.00	76.80	0.00	0.00	0.00
36.80	0.00	0.00	0.00	77.60	0.00	0.00	0.00
37.60	0.00	0.00	0.00	78.40	0.00	0.00	0.00
38.40	0.00	0.00	0.00	79.20	0.00	0.00	0.00
39.20	0.00	0.00	0.00	80.00	0.00	0.00	0.00
40.00	0.00	0.00	0.00				

Time span=0.00-80.00 hrs, dt=0.04 hrs, 2001 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 19S: Basin 3 - Imp Runoff Area=6,824 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=75' Slope=0.0400 '/' Tc=8.3 min CN=98 Runoff=1.19 cfs 4,788 cf

Subcatchment 20S: 15775.6 Runoff Area=15,086 sf 0.00% Impervious Runoff Depth=5.52"
Flow Length=75' Slope=0.0400 '/' Tc=8.3 min CN=74 Runoff=2.02 cfs 6,940 cf

Subcatchment 21S: Basin 4 - Imp Runoff Area=41,524 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=755' Slope=0.0200 '/' Tc=5.5 min CN=98 Runoff=7.95 cfs 29,135 cf

Subcatchment 24S: Basin 4 - Perv Runoff Area=7,526 sf 0.00% Impervious Runoff Depth=5.52"
Flow Length=755' Slope=0.0200 '/' Tc=5.5 min CN=74 Runoff=1.11 cfs 3,462 cf

Subcatchment 25S: Basin 2 - Perv Runoff Area=82,260 sf 0.00% Impervious Runoff Depth=5.88"
Flow Length=463' Tc=10.5 min CN=77 Runoff=10.70 cfs 40,328 cf

Subcatchment 28S: Basin 2 - Imp Runoff Area=30,173 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=463' Tc=10.5 min CN=98 Runoff=4.86 cfs 21,171 cf

Subcatchment 29S: Basin 8 - Imp Runoff Area=38,257 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=165' Tc=8.6 min CN=98 Runoff=6.60 cfs 26,843 cf

Subcatchment 30S: Basin 8 - Perv Runoff Area=22,787 sf 0.00% Impervious Runoff Depth=5.88"
Flow Length=165' Tc=8.6 min CN=77 Runoff=3.19 cfs 11,171 cf

Subcatchment 31S: Basin 7 - Imp Runoff Area=45,778 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=760' Tc=12.5 min CN=98 Runoff=6.97 cfs 32,120 cf

Subcatchment 32S: Basin 7 - Perv Runoff Area=58,678 sf 0.00% Impervious Runoff Depth=5.88"
Flow Length=760' Tc=12.5 min CN=77 Runoff=7.20 cfs 28,767 cf

Subcatchment 35S: DA 2 Und - Imp Runoff Area=52,513 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=160' Tc=9.8 min CN=98 Runoff=8.68 cfs 36,846 cf

Subcatchment 36S: DA 2 Und - Perv Runoff Area=119,952 sf 0.00% Impervious Runoff Depth=5.88"
Flow Length=160' Tc=9.8 min CN=77 Runoff=16.02 cfs 58,807 cf

Subcatchment 45S: Basin 11 - Imp Runoff Area=59,901 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=233' Tc=9.8 min CN=98 Runoff=9.90 cfs 42,030 cf

Subcatchment 46S: Basin 11 - Perv Runoff Area=24,202 sf 0.00% Impervious Runoff Depth=5.76"
Flow Length=233' Tc=9.8 min CN=76 Runoff=3.18 cfs 11,621 cf

Subcatchment 51S: Basin 10 - Imp Runoff Area=53,114 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=379' Tc=10.7 min CN=98 Runoff=8.52 cfs 37,268 cf

Subcatchment 52S: Basin 10 - Perv Runoff Area=37,235 sf 0.00% Impervious Runoff Depth=5.64"
Flow Length=379' Tc=10.7 min CN=75 Runoff=4.65 cfs 17,503 cf

Subcatchment 53S: Basin 9 - Imp Runoff Area=17,461 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=140' Tc=7.4 min CN=98 Runoff=3.12 cfs 12,252 cf

Subcatchment 54S: Basin 9 - Perv Runoff Area=8,916 sf 0.00% Impervious Runoff Depth=6.00"
Flow Length=140' Tc=7.4 min CN=78 Runoff=1.31 cfs 4,461 cf

Pond 21P: Basin 3 Peak Elev=559.42' Storage=876 cf Inflow=3.21 cfs 11,728 cf
Discarded=1.21 cfs 10,971 cf Primary=1.15 cfs 756 cf Outflow=2.36 cfs 11,728 cf

Pond 22P: Basin 4 Peak Elev=573.49' Storage=7,284 cf Inflow=9.06 cfs 32,597 cf
Discarded=1.13 cfs 28,845 cf Primary=0.81 cfs 3,752 cf Outflow=1.94 cfs 32,597 cf

Pond 27P: Basin 2 Peak Elev=545.62' Storage=31,128 cf Inflow=17.10 cfs 66,008 cf
Outflow=5.38 cfs 56,696 cf

Pond 33P: Basin 11 Peak Elev=590.71' Storage=3,818 cf Inflow=13.07 cfs 53,651 cf
Discarded=3.13 cfs 44,987 cf Primary=7.54 cfs 8,664 cf Outflow=10.67 cfs 53,651 cf

Pond 41P: Basin 10 Peak Elev=576.86' Storage=8,209 cf Inflow=13.17 cfs 54,771 cf
Discarded=2.22 cfs 44,788 cf Primary=5.31 cfs 9,983 cf Outflow=7.53 cfs 54,771 cf

Pond 42P: Basin 9 Peak Elev=563.59' Storage=4,157 cf Inflow=4.43 cfs 16,713 cf
Discarded=0.61 cfs 15,973 cf Primary=0.16 cfs 739 cf Outflow=0.77 cfs 16,713 cf

Pond 48P: Basin 8 Peak Elev=574.22' Storage=4,871 cf Inflow=9.79 cfs 38,015 cf
Discarded=3.73 cfs 36,926 cf Primary=0.68 cfs 1,089 cf Outflow=4.41 cfs 38,015 cf

Pond 49P: Basin 7 Peak Elev=532.81' Storage=28,901 cf Inflow=14.70 cfs 61,976 cf
Outflow=3.65 cfs 56,198 cf

Link 28L: POA 2 Inflow=38.99 cfs 227,933 cf
Primary=38.99 cfs 227,933 cf

Link 34L: DA 2 Undetained Inflow=24.70 cfs 95,653 cf
Primary=24.70 cfs 95,653 cf

Total Runoff Area = 722,187 sf Runoff Volume = 425,513 cf Average Runoff Depth = 7.07"
52.15% Pervious = 376,642 sf 47.85% Impervious = 345,545 sf

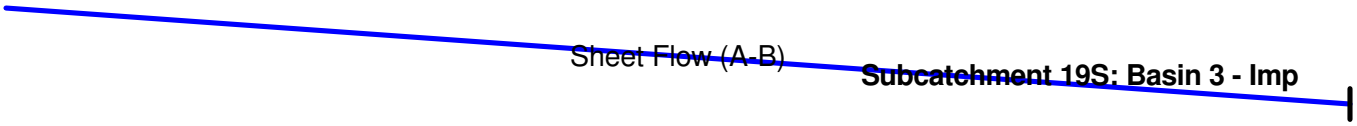
Summary for Subcatchment 19S: Basin 3 - Imp

Runoff = 1.19 cfs @ 12.15 hrs, Volume= 4,788 cf, Depth= 8.42"
Routed to Pond 21P : Basin 3

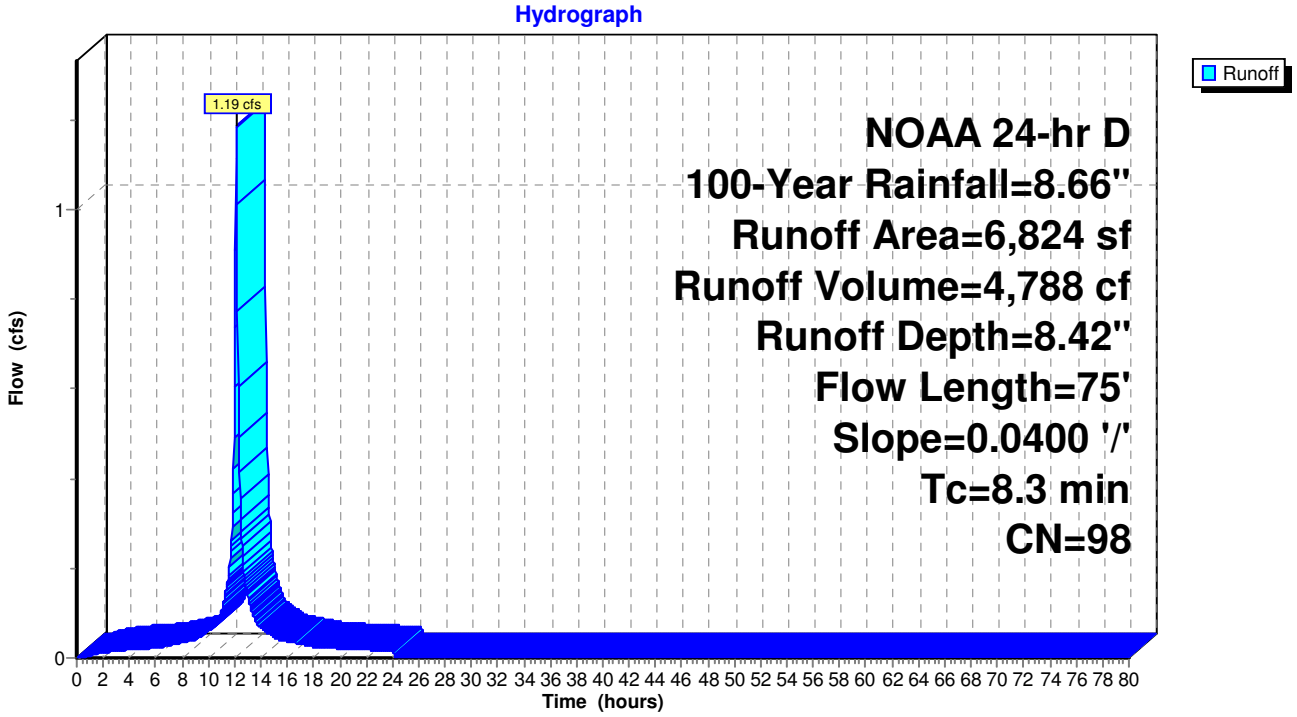
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

	Area (sf)	CN	Description
	5,876	98	Paved parking, HSG C
*	948	98	impervious other than pavement
	6,824	98	Weighted Average
	6,824		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	75	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 19S: Basin 3 - Imp



Hydrograph for Subcatchment 19S: Basin 3 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	8.42	0.00
0.80	0.08	0.01	0.00	41.60	8.66	8.42	0.00
1.60	0.16	0.05	0.01	42.40	8.66	8.42	0.00
2.40	0.25	0.11	0.01	43.20	8.66	8.42	0.00
3.20	0.35	0.19	0.02	44.00	8.66	8.42	0.00
4.00	0.45	0.28	0.02	44.80	8.66	8.42	0.00
4.80	0.56	0.38	0.02	45.60	8.66	8.42	0.00
5.60	0.68	0.48	0.02	46.40	8.66	8.42	0.00
6.40	0.80	0.60	0.02	47.20	8.66	8.42	0.00
7.20	0.95	0.74	0.03	48.00	8.66	8.42	0.00
8.00	1.12	0.91	0.03	48.80	8.66	8.42	0.00
8.80	1.32	1.10	0.04	49.60	8.66	8.42	0.00
9.60	1.56	1.34	0.05	50.40	8.66	8.42	0.00
10.40	1.89	1.67	0.07	51.20	8.66	8.42	0.00
11.20	2.42	2.19	0.13	52.00	8.66	8.42	0.00
12.00	4.15	3.91	**0.61**	52.80	8.66	8.42	0.00
12.80	6.24	6.00	**0.17**	53.60	8.66	8.42	0.00
13.60	6.77	6.53	0.08	54.40	8.66	8.42	0.00
14.40	7.10	6.86	0.06	55.20	8.66	8.42	0.00
15.20	7.34	7.10	0.04	56.00	8.66	8.42	0.00
16.00	7.54	7.30	0.04	56.80	8.66	8.42	0.00
16.80	7.71	7.47	0.03	57.60	8.66	8.42	0.00
17.60	7.86	7.62	0.03	58.40	8.66	8.42	0.00
18.40	7.98	7.74	0.02	59.20	8.66	8.42	0.00
19.20	8.10	7.86	0.02	60.00	8.66	8.42	0.00
20.00	8.21	7.97	0.02	60.80	8.66	8.42	0.00
20.80	8.31	8.07	0.02	61.60	8.66	8.42	0.00
21.60	8.41	8.17	0.02	62.40	8.66	8.42	0.00
22.40	8.50	8.26	0.02	63.20	8.66	8.42	0.00
23.20	8.58	8.34	0.02	64.00	8.66	8.42	0.00
24.00	**8.66**	**8.42**	0.02	64.80	8.66	8.42	0.00
24.80	8.66	8.42	0.00	65.60	8.66	8.42	0.00
25.60	8.66	8.42	0.00	66.40	8.66	8.42	0.00
26.40	8.66	8.42	0.00	67.20	8.66	8.42	0.00
27.20	8.66	8.42	0.00	68.00	8.66	8.42	0.00
28.00	8.66	8.42	0.00	68.80	8.66	8.42	0.00
28.80	8.66	8.42	0.00	69.60	8.66	8.42	0.00
29.60	8.66	8.42	0.00	70.40	8.66	8.42	0.00
30.40	8.66	8.42	0.00	71.20	8.66	8.42	0.00
31.20	8.66	8.42	0.00	72.00	8.66	8.42	0.00
32.00	8.66	8.42	0.00	72.80	8.66	8.42	0.00
32.80	8.66	8.42	0.00	73.60	8.66	8.42	0.00
33.60	8.66	8.42	0.00	74.40	8.66	8.42	0.00
34.40	8.66	8.42	0.00	75.20	8.66	8.42	0.00
35.20	8.66	8.42	0.00	76.00	8.66	8.42	0.00
36.00	8.66	8.42	0.00	76.80	8.66	8.42	0.00
36.80	8.66	8.42	0.00	77.60	8.66	8.42	0.00
37.60	8.66	8.42	0.00	78.40	8.66	8.42	0.00
38.40	8.66	8.42	0.00	79.20	8.66	8.42	0.00
39.20	8.66	8.42	0.00	80.00	8.66	8.42	0.00
40.00	8.66	8.42	0.00				

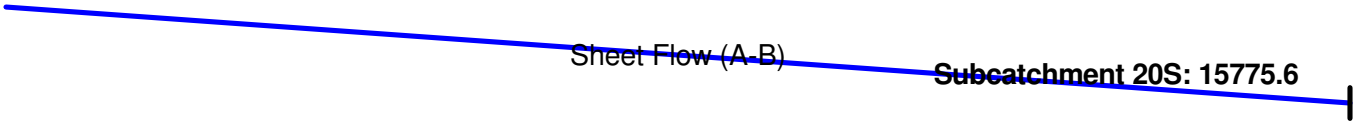
Summary for Subcatchment 20S: 15775.6

Runoff = 2.02 cfs @ 12.15 hrs, Volume= 6,940 cf, Depth= 5.52"
Routed to Pond 21P : Basin 3

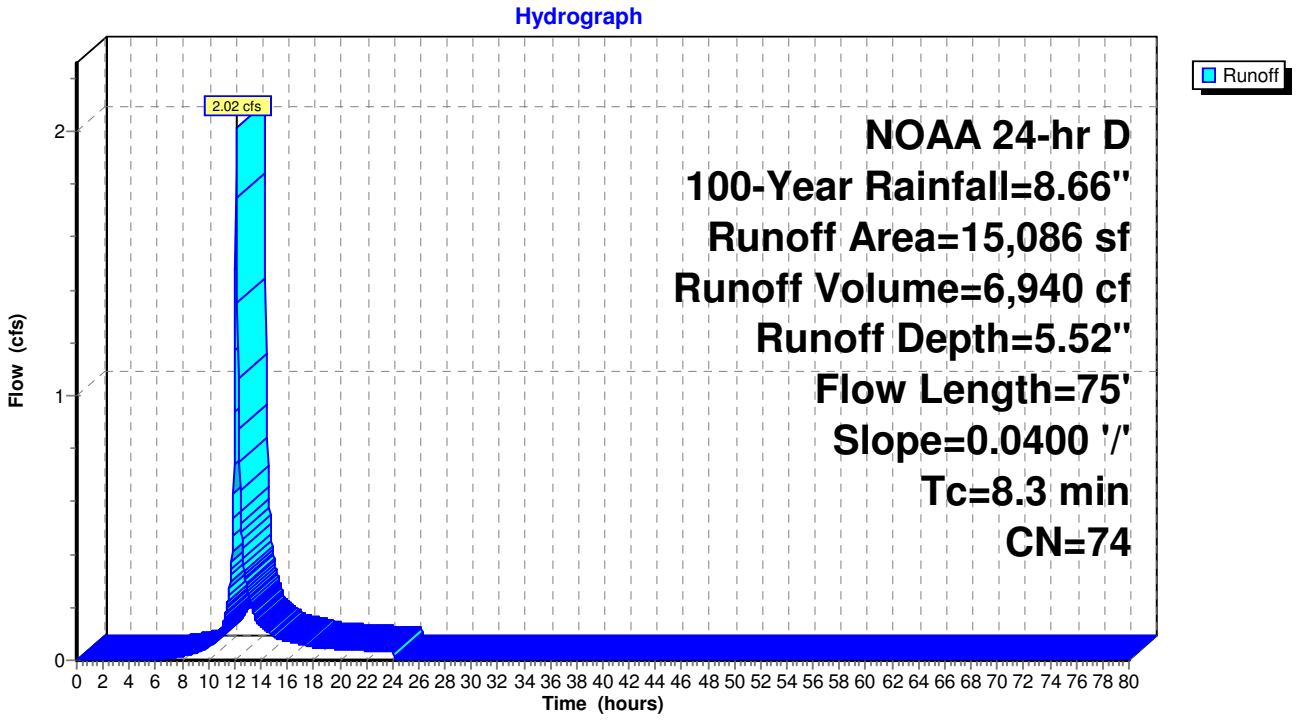
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
15,086	74	>75% Grass cover, Good, HSG C
15,086		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	75	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 20S: 15775.6



Hydrograph for Subcatchment 20S: 15775.6

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	5.52	0.00
0.80	0.08	0.00	0.00	41.60	8.66	5.52	0.00
1.60	0.16	0.00	0.00	42.40	8.66	5.52	0.00
2.40	0.25	0.00	0.00	43.20	8.66	5.52	0.00
3.20	0.35	0.00	0.00	44.00	8.66	5.52	0.00
4.00	0.45	0.00	0.00	44.80	8.66	5.52	0.00
4.80	0.56	0.00	0.00	45.60	8.66	5.52	0.00
5.60	0.68	0.00	0.00	46.40	8.66	5.52	0.00
6.40	0.80	0.00	0.00	47.20	8.66	5.52	0.00
7.20	0.95	0.02	0.01	48.00	8.66	5.52	0.00
8.00	1.12	0.05	0.02	48.80	8.66	5.52	0.00
8.80	1.32	0.09	0.02	49.60	8.66	5.52	0.00
9.60	1.56	0.17	0.04	50.40	8.66	5.52	0.00
10.40	1.89	0.30	0.07	51.20	8.66	5.52	0.00
11.20	2.42	0.57	0.15	52.00	8.66	5.52	0.00
12.00	4.15	1.71	**0.94**	52.80	8.66	5.52	0.00
12.80	6.24	3.39	**0.31**	53.60	8.66	5.52	0.00
13.60	6.77	3.84	0.15	54.40	8.66	5.52	0.00
14.40	7.10	4.13	0.11	55.20	8.66	5.52	0.00
15.20	7.34	4.34	0.08	56.00	8.66	5.52	0.00
16.00	7.54	4.51	0.07	56.80	8.66	5.52	0.00
16.80	7.71	4.67	0.06	57.60	8.66	5.52	0.00
17.60	7.86	4.80	0.05	58.40	8.66	5.52	0.00
18.40	7.98	4.91	0.05	59.20	8.66	5.52	0.00
19.20	8.10	5.01	0.04	60.00	8.66	5.52	0.00
20.00	8.21	5.11	0.04	60.80	8.66	5.52	0.00
20.80	8.31	5.20	0.04	61.60	8.66	5.52	0.00
21.60	8.41	5.29	0.04	62.40	8.66	5.52	0.00
22.40	8.50	5.37	0.03	63.20	8.66	5.52	0.00
23.20	8.58	5.45	0.03	64.00	8.66	5.52	0.00
24.00	**8.66**	**5.52**	0.03	64.80	8.66	5.52	0.00
24.80	8.66	5.52	0.00	65.60	8.66	5.52	0.00
25.60	8.66	5.52	0.00	66.40	8.66	5.52	0.00
26.40	8.66	5.52	0.00	67.20	8.66	5.52	0.00
27.20	8.66	5.52	0.00	68.00	8.66	5.52	0.00
28.00	8.66	5.52	0.00	68.80	8.66	5.52	0.00
28.80	8.66	5.52	0.00	69.60	8.66	5.52	0.00
29.60	8.66	5.52	0.00	70.40	8.66	5.52	0.00
30.40	8.66	5.52	0.00	71.20	8.66	5.52	0.00
31.20	8.66	5.52	0.00	72.00	8.66	5.52	0.00
32.00	8.66	5.52	0.00	72.80	8.66	5.52	0.00
32.80	8.66	5.52	0.00	73.60	8.66	5.52	0.00
33.60	8.66	5.52	0.00	74.40	8.66	5.52	0.00
34.40	8.66	5.52	0.00	75.20	8.66	5.52	0.00
35.20	8.66	5.52	0.00	76.00	8.66	5.52	0.00
36.00	8.66	5.52	0.00	76.80	8.66	5.52	0.00
36.80	8.66	5.52	0.00	77.60	8.66	5.52	0.00
37.60	8.66	5.52	0.00	78.40	8.66	5.52	0.00
38.40	8.66	5.52	0.00	79.20	8.66	5.52	0.00
39.20	8.66	5.52	0.00	80.00	8.66	5.52	0.00
40.00	8.66	5.52	0.00				

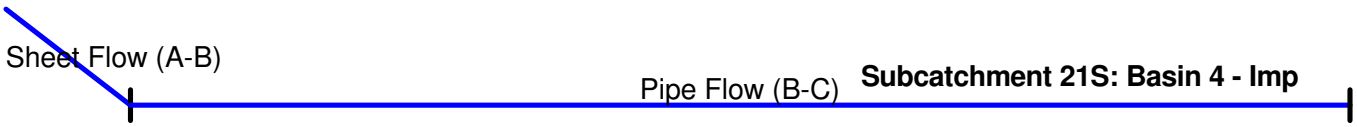
Summary for Subcatchment 21S: Basin 4 - Imp

Runoff = 7.95 cfs @ 12.12 hrs, Volume= 29,135 cf, Depth= 8.42"
Routed to Pond 22P : Basin 4

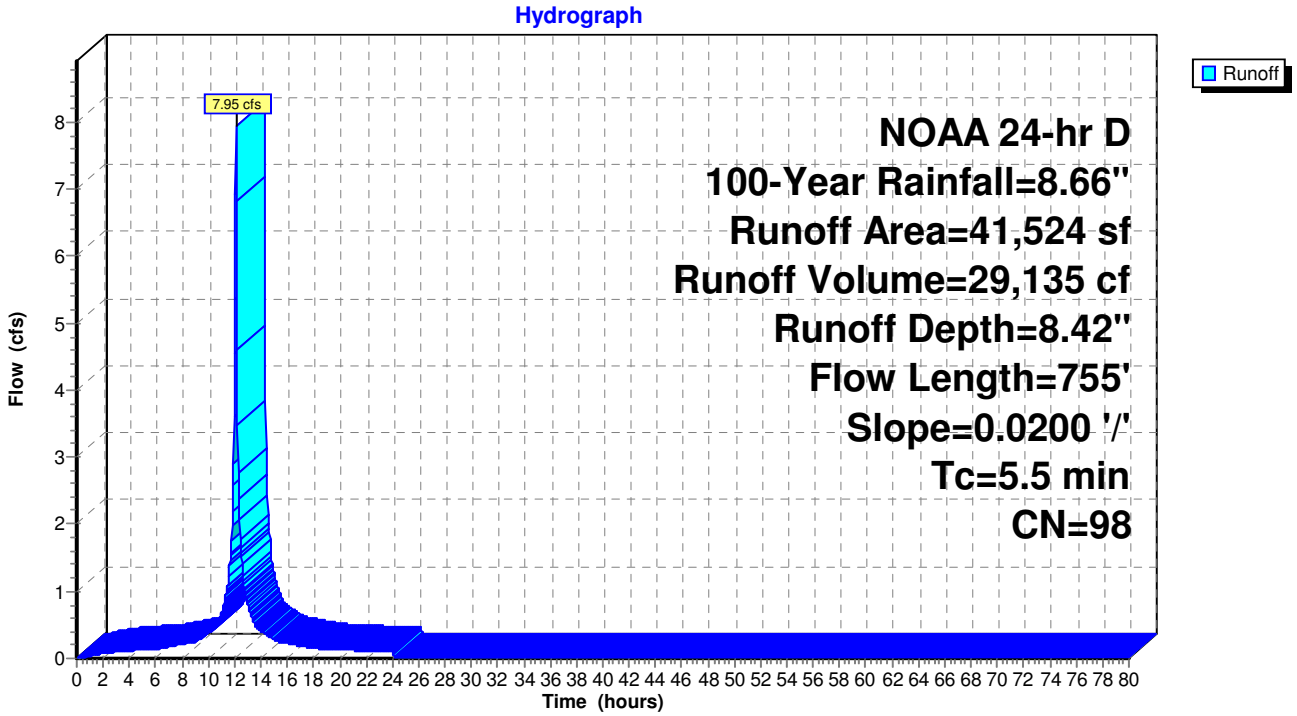
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
29,022	98	Roofs, HSG D
12,502	98	Paved parking, HSG C
41,524	98	Weighted Average
41,524		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.33		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
4.6	685		2.50		**Direct Entry, Pipe Flow (B-C)**
5.5	755	Total			



Subcatchment 21S: Basin 4 - Imp



Hydrograph for Subcatchment 21S: Basin 4 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	8.42	0.00
0.80	0.08	0.01	0.02	41.60	8.66	8.42	0.00
1.60	0.16	0.05	0.06	42.40	8.66	8.42	0.00
2.40	0.25	0.11	0.08	43.20	8.66	8.42	0.00
3.20	0.35	0.19	0.10	44.00	8.66	8.42	0.00
4.00	0.45	0.28	0.11	44.80	8.66	8.42	0.00
4.80	0.56	0.38	0.12	45.60	8.66	8.42	0.00
5.60	0.68	0.48	0.13	46.40	8.66	8.42	0.00
6.40	0.80	0.60	0.15	47.20	8.66	8.42	0.00
7.20	0.95	0.74	0.18	48.00	8.66	8.42	0.00
8.00	1.12	0.91	0.21	48.80	8.66	8.42	0.00
8.80	1.32	1.10	0.24	49.60	8.66	8.42	0.00
9.60	1.56	1.34	0.33	50.40	8.66	8.42	0.00
10.40	1.89	1.67	0.43	51.20	8.66	8.42	0.00
11.20	2.42	2.19	0.83	52.00	8.66	8.42	0.00
12.00	4.15	3.91	**4.54**	52.80	8.66	8.42	0.00
12.80	6.24	6.00	**0.98**	53.60	8.66	8.42	0.00
13.60	6.77	6.53	0.47	54.40	8.66	8.42	0.00
14.40	7.10	6.86	0.35	55.20	8.66	8.42	0.00
15.20	7.34	7.10	0.25	56.00	8.66	8.42	0.00
16.00	7.54	7.30	0.22	56.80	8.66	8.42	0.00
16.80	7.71	7.47	0.20	57.60	8.66	8.42	0.00
17.60	7.86	7.62	0.17	58.40	8.66	8.42	0.00
18.40	7.98	7.74	0.14	59.20	8.66	8.42	0.00
19.20	8.10	7.86	0.14	60.00	8.66	8.42	0.00
20.00	8.21	7.97	0.13	60.80	8.66	8.42	0.00
20.80	8.31	8.07	0.12	61.60	8.66	8.42	0.00
21.60	8.41	8.17	0.11	62.40	8.66	8.42	0.00
22.40	8.50	8.26	0.11	63.20	8.66	8.42	0.00
23.20	8.58	8.34	0.10	64.00	8.66	8.42	0.00
24.00	**8.66**	**8.42**	0.09	64.80	8.66	8.42	0.00
24.80	8.66	8.42	0.00	65.60	8.66	8.42	0.00
25.60	8.66	8.42	0.00	66.40	8.66	8.42	0.00
26.40	8.66	8.42	0.00	67.20	8.66	8.42	0.00
27.20	8.66	8.42	0.00	68.00	8.66	8.42	0.00
28.00	8.66	8.42	0.00	68.80	8.66	8.42	0.00
28.80	8.66	8.42	0.00	69.60	8.66	8.42	0.00
29.60	8.66	8.42	0.00	70.40	8.66	8.42	0.00
30.40	8.66	8.42	0.00	71.20	8.66	8.42	0.00
31.20	8.66	8.42	0.00	72.00	8.66	8.42	0.00
32.00	8.66	8.42	0.00	72.80	8.66	8.42	0.00
32.80	8.66	8.42	0.00	73.60	8.66	8.42	0.00
33.60	8.66	8.42	0.00	74.40	8.66	8.42	0.00
34.40	8.66	8.42	0.00	75.20	8.66	8.42	0.00
35.20	8.66	8.42	0.00	76.00	8.66	8.42	0.00
36.00	8.66	8.42	0.00	76.80	8.66	8.42	0.00
36.80	8.66	8.42	0.00	77.60	8.66	8.42	0.00
37.60	8.66	8.42	0.00	78.40	8.66	8.42	0.00
38.40	8.66	8.42	0.00	79.20	8.66	8.42	0.00
39.20	8.66	8.42	0.00	80.00	8.66	8.42	0.00
40.00	8.66	8.42	0.00				

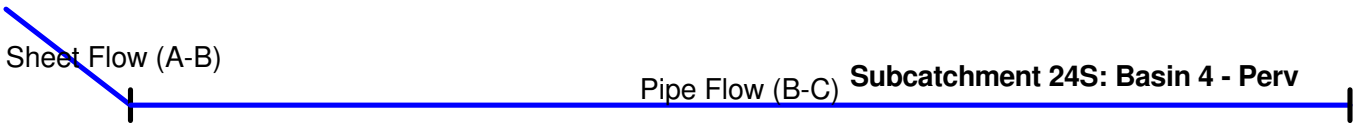
Summary for Subcatchment 24S: Basin 4 - Perv

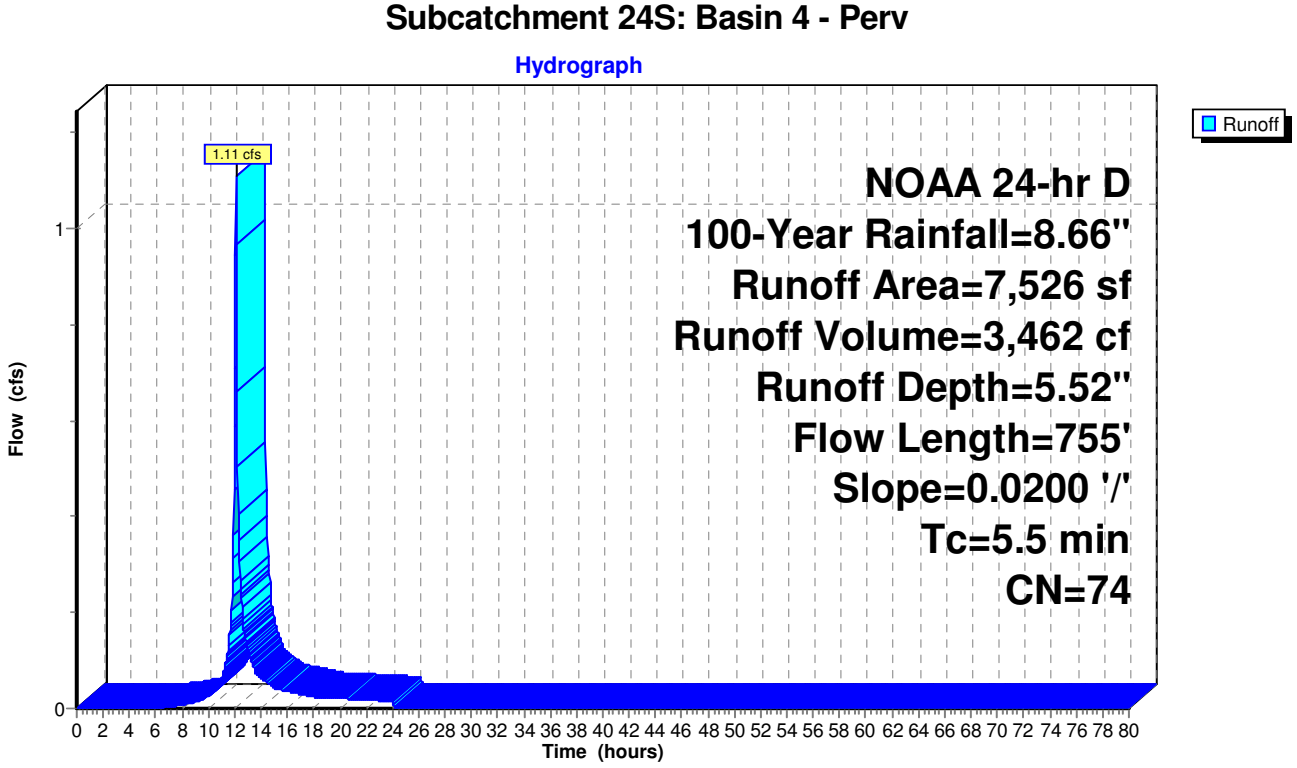
Runoff = 1.11 cfs @ 12.12 hrs, Volume= 3,462 cf, Depth= 5.52"
Routed to Pond 22P : Basin 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
7,526	74	>75% Grass cover, Good, HSG C
7,526		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.33		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
4.6	685		2.50		**Direct Entry, Pipe Flow (B-C)**
5.5	755	Total			





Hydrograph for Subcatchment 24S: Basin 4 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	5.52	0.00
0.80	0.08	0.00	0.00	41.60	8.66	5.52	0.00
1.60	0.16	0.00	0.00	42.40	8.66	5.52	0.00
2.40	0.25	0.00	0.00	43.20	8.66	5.52	0.00
3.20	0.35	0.00	0.00	44.00	8.66	5.52	0.00
4.00	0.45	0.00	0.00	44.80	8.66	5.52	0.00
4.80	0.56	0.00	0.00	45.60	8.66	5.52	0.00
5.60	0.68	0.00	0.00	46.40	8.66	5.52	0.00
6.40	0.80	0.00	0.00	47.20	8.66	5.52	0.00
7.20	0.95	0.02	0.00	48.00	8.66	5.52	0.00
8.00	1.12	0.05	0.01	48.80	8.66	5.52	0.00
8.80	1.32	0.09	0.01	49.60	8.66	5.52	0.00
9.60	1.56	0.17	0.02	50.40	8.66	5.52	0.00
10.40	1.89	0.30	0.03	51.20	8.66	5.52	0.00
11.20	2.42	0.57	0.08	52.00	8.66	5.52	0.00
12.00	4.15	1.71	**0.59**	52.80	8.66	5.52	0.00
12.80	6.24	3.39	**0.15**	53.60	8.66	5.52	0.00
13.60	6.77	3.84	0.07	54.40	8.66	5.52	0.00
14.40	7.10	4.13	0.06	55.20	8.66	5.52	0.00
15.20	7.34	4.34	0.04	56.00	8.66	5.52	0.00
16.00	7.54	4.51	0.04	56.80	8.66	5.52	0.00
16.80	7.71	4.67	0.03	57.60	8.66	5.52	0.00
17.60	7.86	4.80	0.03	58.40	8.66	5.52	0.00
18.40	7.98	4.91	0.02	59.20	8.66	5.52	0.00
19.20	8.10	5.01	0.02	60.00	8.66	5.52	0.00
20.00	8.21	5.11	0.02	60.80	8.66	5.52	0.00
20.80	8.31	5.20	0.02	61.60	8.66	5.52	0.00
21.60	8.41	5.29	0.02	62.40	8.66	5.52	0.00
22.40	8.50	5.37	0.02	63.20	8.66	5.52	0.00
23.20	8.58	5.45	0.02	64.00	8.66	5.52	0.00
24.00	**8.66**	**5.52**	0.02	64.80	8.66	5.52	0.00
24.80	8.66	5.52	0.00	65.60	8.66	5.52	0.00
25.60	8.66	5.52	0.00	66.40	8.66	5.52	0.00
26.40	8.66	5.52	0.00	67.20	8.66	5.52	0.00
27.20	8.66	5.52	0.00	68.00	8.66	5.52	0.00
28.00	8.66	5.52	0.00	68.80	8.66	5.52	0.00
28.80	8.66	5.52	0.00	69.60	8.66	5.52	0.00
29.60	8.66	5.52	0.00	70.40	8.66	5.52	0.00
30.40	8.66	5.52	0.00	71.20	8.66	5.52	0.00
31.20	8.66	5.52	0.00	72.00	8.66	5.52	0.00
32.00	8.66	5.52	0.00	72.80	8.66	5.52	0.00
32.80	8.66	5.52	0.00	73.60	8.66	5.52	0.00
33.60	8.66	5.52	0.00	74.40	8.66	5.52	0.00
34.40	8.66	5.52	0.00	75.20	8.66	5.52	0.00
35.20	8.66	5.52	0.00	76.00	8.66	5.52	0.00
36.00	8.66	5.52	0.00	76.80	8.66	5.52	0.00
36.80	8.66	5.52	0.00	77.60	8.66	5.52	0.00
37.60	8.66	5.52	0.00	78.40	8.66	5.52	0.00
38.40	8.66	5.52	0.00	79.20	8.66	5.52	0.00
39.20	8.66	5.52	0.00	80.00	8.66	5.52	0.00
40.00	8.66	5.52	0.00				

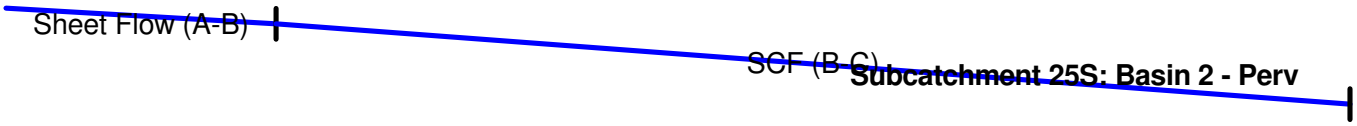
Summary for Subcatchment 25S: Basin 2 - Perv

Runoff = 10.70 cfs @ 12.18 hrs, Volume= 40,328 cf, Depth= 5.88"
Routed to Pond 27P : Basin 2

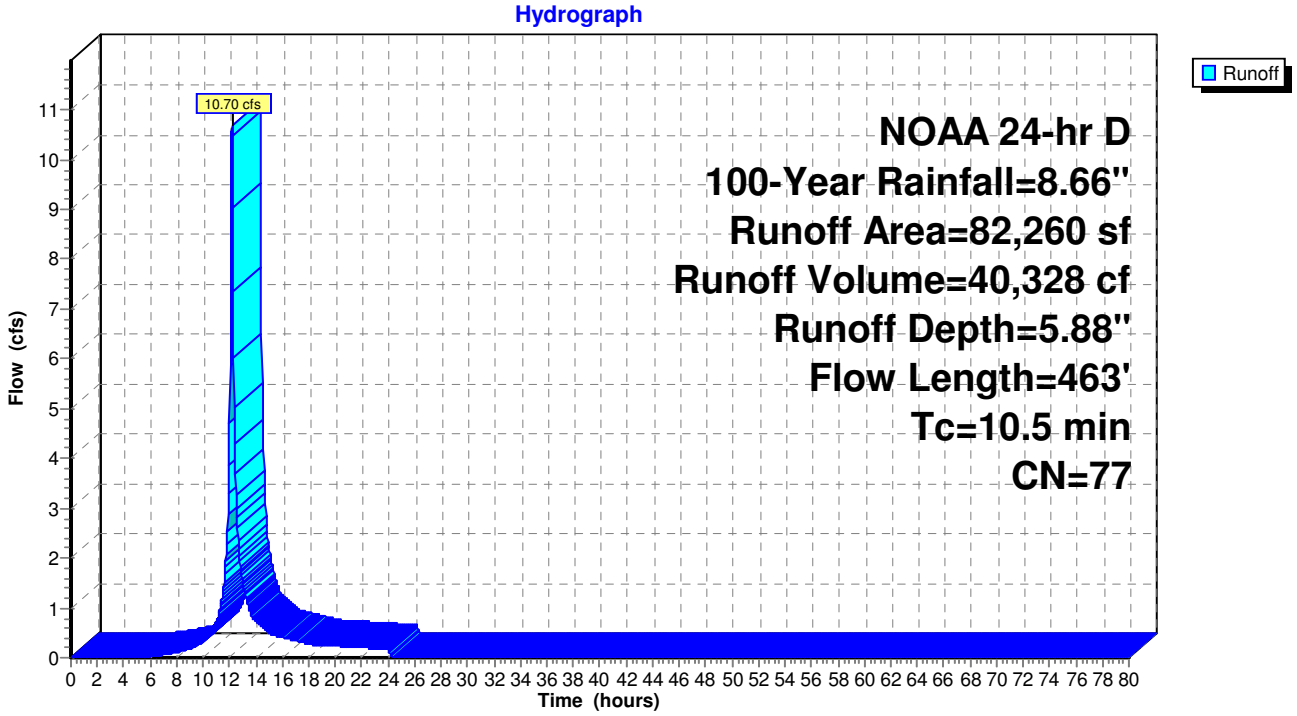
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
47,097	80	>75% Grass cover, Good, HSG D
35,163	74	>75% Grass cover, Good, HSG C
82,260	77	Weighted Average
82,260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	93	0.0500	0.17		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.5	370	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
10.5	463	Total			



Subcatchment 25S: Basin 2 - Perv



Hydrograph for Subcatchment 25S: Basin 2 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	5.88	0.00
0.80	0.08	0.00	0.00	41.60	8.66	5.88	0.00
1.60	0.16	0.00	0.00	42.40	8.66	5.88	0.00
2.40	0.25	0.00	0.00	43.20	8.66	5.88	0.00
3.20	0.35	0.00	0.00	44.00	8.66	5.88	0.00
4.00	0.45	0.00	0.00	44.80	8.66	5.88	0.00
4.80	0.56	0.00	0.00	45.60	8.66	5.88	0.00
5.60	0.68	0.00	0.01	46.40	8.66	5.88	0.00
6.40	0.80	0.01	0.03	47.20	8.66	5.88	0.00
7.20	0.95	0.04	0.07	48.00	8.66	5.88	0.00
8.00	1.12	0.08	0.11	48.80	8.66	5.88	0.00
8.80	1.32	0.14	0.16	49.60	8.66	5.88	0.00
9.60	1.56	0.24	0.26	50.40	8.66	5.88	0.00
10.40	1.89	0.39	0.42	51.20	8.66	5.88	0.00
11.20	2.42	0.69	0.91	52.00	8.66	5.88	0.00
12.00	4.15	1.93	**4.72**	52.80	8.66	5.88	0.00
12.80	6.24	3.69	**1.84**	53.60	8.66	5.88	0.00
13.60	6.77	4.16	0.90	54.40	8.66	5.88	0.00
14.40	7.10	4.45	0.65	55.20	8.66	5.88	0.00
15.20	7.34	4.67	0.47	56.00	8.66	5.88	0.00
16.00	7.54	4.85	0.41	56.80	8.66	5.88	0.00
16.80	7.71	5.01	0.36	57.60	8.66	5.88	0.00
17.60	7.86	5.14	0.31	58.40	8.66	5.88	0.00
18.40	7.98	5.26	0.26	59.20	8.66	5.88	0.00
19.20	8.10	5.36	0.25	60.00	8.66	5.88	0.00
20.00	8.21	5.46	0.24	60.80	8.66	5.88	0.00
20.80	8.31	5.56	0.22	61.60	8.66	5.88	0.00
21.60	8.41	5.65	0.21	62.40	8.66	5.88	0.00
22.40	8.50	5.73	0.20	63.20	8.66	5.88	0.00
23.20	8.58	5.81	0.18	64.00	8.66	5.88	0.00
24.00	**8.66**	**5.88**	0.17	64.80	8.66	5.88	0.00
24.80	8.66	5.88	0.00	65.60	8.66	5.88	0.00
25.60	8.66	5.88	0.00	66.40	8.66	5.88	0.00
26.40	8.66	5.88	0.00	67.20	8.66	5.88	0.00
27.20	8.66	5.88	0.00	68.00	8.66	5.88	0.00
28.00	8.66	5.88	0.00	68.80	8.66	5.88	0.00
28.80	8.66	5.88	0.00	69.60	8.66	5.88	0.00
29.60	8.66	5.88	0.00	70.40	8.66	5.88	0.00
30.40	8.66	5.88	0.00	71.20	8.66	5.88	0.00
31.20	8.66	5.88	0.00	72.00	8.66	5.88	0.00
32.00	8.66	5.88	0.00	72.80	8.66	5.88	0.00
32.80	8.66	5.88	0.00	73.60	8.66	5.88	0.00
33.60	8.66	5.88	0.00	74.40	8.66	5.88	0.00
34.40	8.66	5.88	0.00	75.20	8.66	5.88	0.00
35.20	8.66	5.88	0.00	76.00	8.66	5.88	0.00
36.00	8.66	5.88	0.00	76.80	8.66	5.88	0.00
36.80	8.66	5.88	0.00	77.60	8.66	5.88	0.00
37.60	8.66	5.88	0.00	78.40	8.66	5.88	0.00
38.40	8.66	5.88	0.00	79.20	8.66	5.88	0.00
39.20	8.66	5.88	0.00	80.00	8.66	5.88	0.00
40.00	8.66	5.88	0.00				

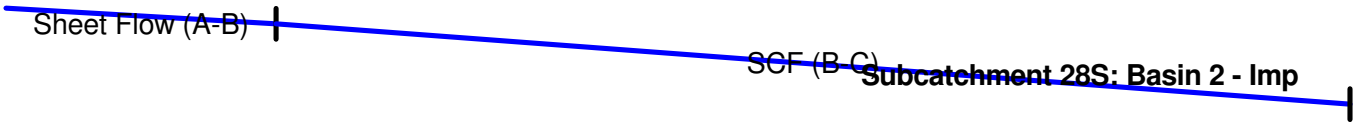
Summary for Subcatchment 28S: Basin 2 - Imp

Runoff = 4.86 cfs @ 12.17 hrs, Volume= 21,171 cf, Depth= 8.42"
Routed to Pond 27P : Basin 2

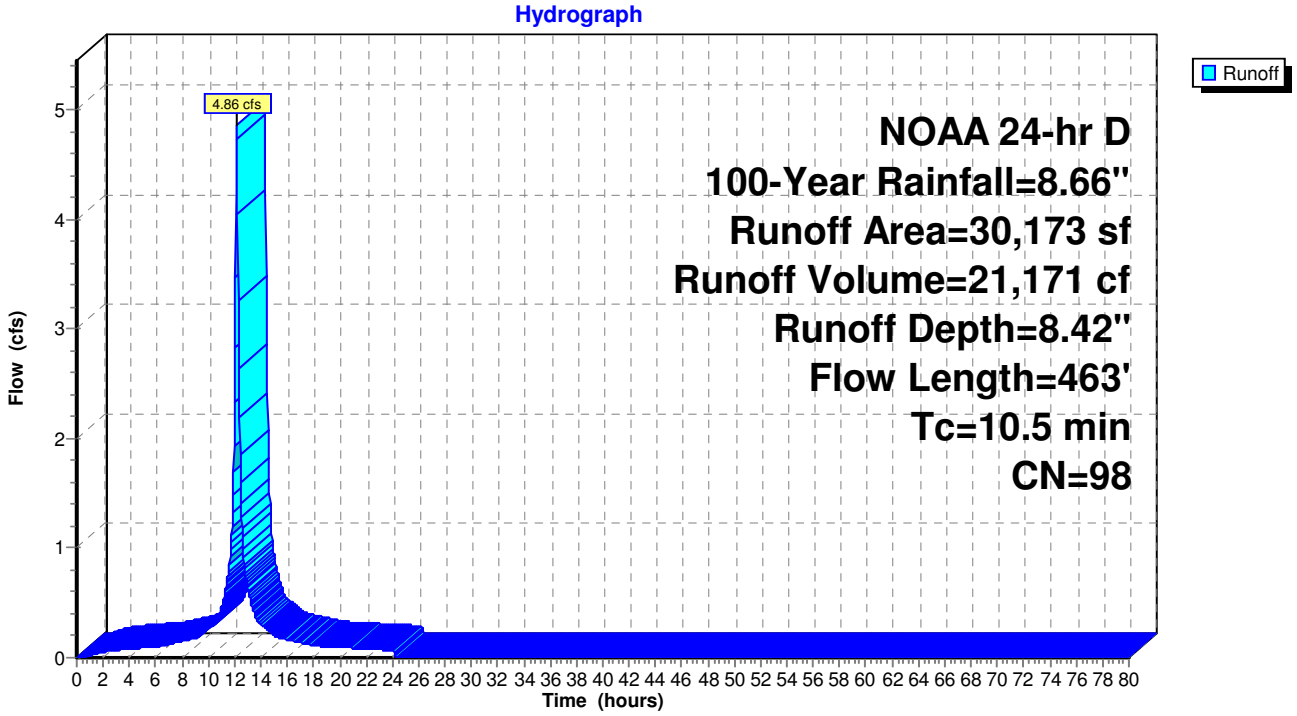
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

	Area (sf)	CN	Description
*	28,866	98	Paved parking, sidewalk, other imp
*	1,307	98	Paved parking, sidewalk other imp
	30,173	98	Weighted Average
	30,173		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	93	0.0500	0.17		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.5	370	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
10.5	463	Total			



Subcatchment 28S: Basin 2 - Imp



Hydrograph for Subcatchment 28S: Basin 2 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	8.42	0.00
0.80	0.08	0.01	0.01	41.60	8.66	8.42	0.00
1.60	0.16	0.05	0.04	42.40	8.66	8.42	0.00
2.40	0.25	0.11	0.06	43.20	8.66	8.42	0.00
3.20	0.35	0.19	0.07	44.00	8.66	8.42	0.00
4.00	0.45	0.28	0.08	44.80	8.66	8.42	0.00
4.80	0.56	0.38	0.09	45.60	8.66	8.42	0.00
5.60	0.68	0.48	0.10	46.40	8.66	8.42	0.00
6.40	0.80	0.60	0.11	47.20	8.66	8.42	0.00
7.20	0.95	0.74	0.13	48.00	8.66	8.42	0.00
8.00	1.12	0.91	0.15	48.80	8.66	8.42	0.00
8.80	1.32	1.10	0.17	49.60	8.66	8.42	0.00
9.60	1.56	1.34	0.23	50.40	8.66	8.42	0.00
10.40	1.89	1.67	0.31	51.20	8.66	8.42	0.00
11.20	2.42	2.19	0.56	52.00	8.66	8.42	0.00
12.00	4.15	3.91	**2.33**	52.80	8.66	8.42	0.00
12.80	6.24	6.00	**0.77**	53.60	8.66	8.42	0.00
13.60	6.77	6.53	0.37	54.40	8.66	8.42	0.00
14.40	7.10	6.86	0.26	55.20	8.66	8.42	0.00
15.20	7.34	7.10	0.19	56.00	8.66	8.42	0.00
16.00	7.54	7.30	0.17	56.80	8.66	8.42	0.00
16.80	7.71	7.47	0.14	57.60	8.66	8.42	0.00
17.60	7.86	7.62	0.12	58.40	8.66	8.42	0.00
18.40	7.98	7.74	0.10	59.20	8.66	8.42	0.00
19.20	8.10	7.86	0.10	60.00	8.66	8.42	0.00
20.00	8.21	7.97	0.09	60.80	8.66	8.42	0.00
20.80	8.31	8.07	0.09	61.60	8.66	8.42	0.00
21.60	8.41	8.17	0.08	62.40	8.66	8.42	0.00
22.40	8.50	8.26	0.08	63.20	8.66	8.42	0.00
23.20	8.58	8.34	0.07	64.00	8.66	8.42	0.00
24.00	**8.66**	**8.42**	0.07	64.80	8.66	8.42	0.00
24.80	8.66	8.42	0.00	65.60	8.66	8.42	0.00
25.60	8.66	8.42	0.00	66.40	8.66	8.42	0.00
26.40	8.66	8.42	0.00	67.20	8.66	8.42	0.00
27.20	8.66	8.42	0.00	68.00	8.66	8.42	0.00
28.00	8.66	8.42	0.00	68.80	8.66	8.42	0.00
28.80	8.66	8.42	0.00	69.60	8.66	8.42	0.00
29.60	8.66	8.42	0.00	70.40	8.66	8.42	0.00
30.40	8.66	8.42	0.00	71.20	8.66	8.42	0.00
31.20	8.66	8.42	0.00	72.00	8.66	8.42	0.00
32.00	8.66	8.42	0.00	72.80	8.66	8.42	0.00
32.80	8.66	8.42	0.00	73.60	8.66	8.42	0.00
33.60	8.66	8.42	0.00	74.40	8.66	8.42	0.00
34.40	8.66	8.42	0.00	75.20	8.66	8.42	0.00
35.20	8.66	8.42	0.00	76.00	8.66	8.42	0.00
36.00	8.66	8.42	0.00	76.80	8.66	8.42	0.00
36.80	8.66	8.42	0.00	77.60	8.66	8.42	0.00
37.60	8.66	8.42	0.00	78.40	8.66	8.42	0.00
38.40	8.66	8.42	0.00	79.20	8.66	8.42	0.00
39.20	8.66	8.42	0.00	80.00	8.66	8.42	0.00
40.00	8.66	8.42	0.00				

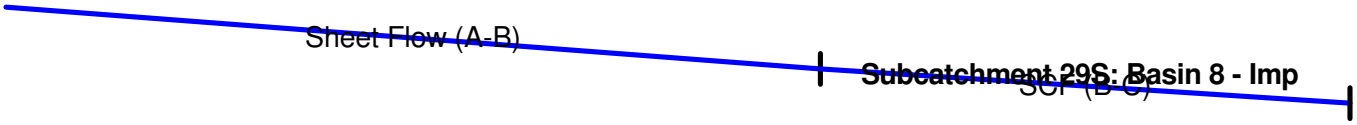
Summary for Subcatchment 29S: Basin 8 - Imp

Runoff = 6.60 cfs @ 12.15 hrs, Volume= 26,843 cf, Depth= 8.42"
Routed to Pond 48P : Basin 8

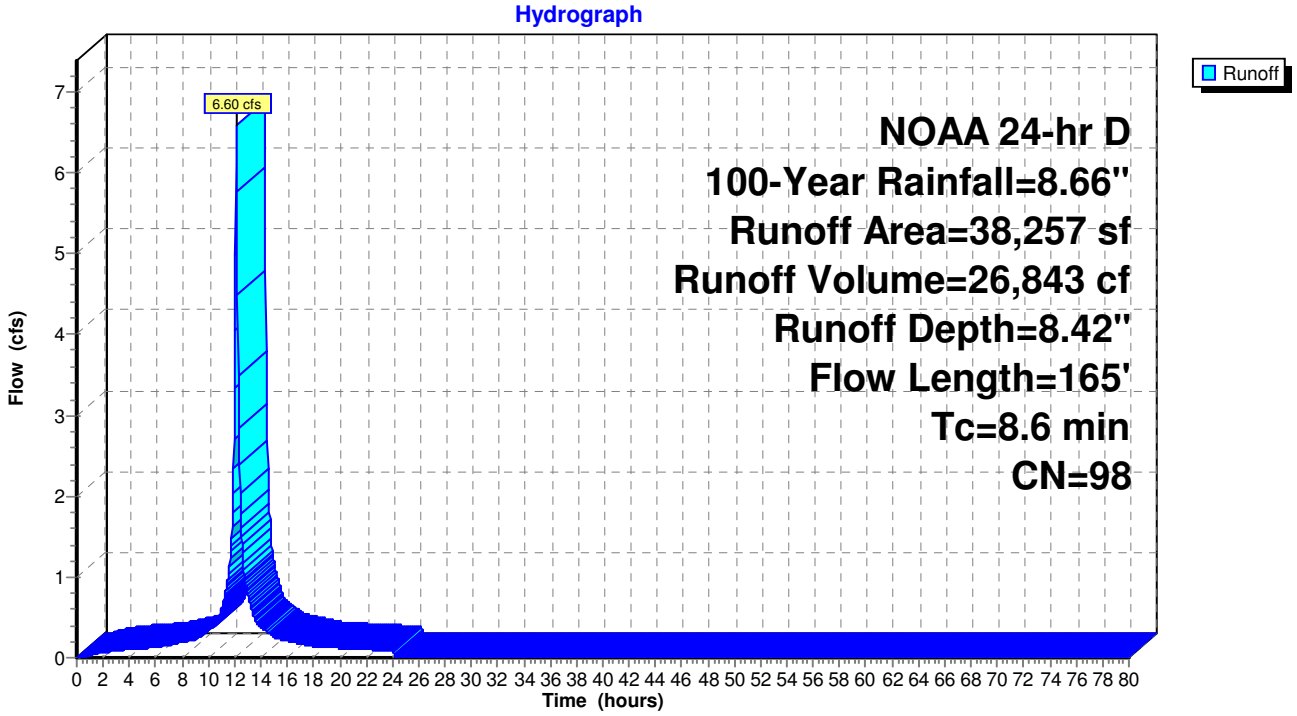
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

	Area (sf)	CN	Description
*	8,924	98	other impervious
	11,475	98	Roofs, HSG C
*	17,858	98	pavement surface
	38,257	98	Weighted Average
	38,257		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0700	0.20		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	65	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
8.6	165	Total			



Subcatchment 29S: Basin 8 - Imp



Hydrograph for Subcatchment 29S: Basin 8 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	8.42	0.00
0.80	0.08	0.01	0.02	41.60	8.66	8.42	0.00
1.60	0.16	0.05	0.05	42.40	8.66	8.42	0.00
2.40	0.25	0.11	0.08	43.20	8.66	8.42	0.00
3.20	0.35	0.19	0.09	44.00	8.66	8.42	0.00
4.00	0.45	0.28	0.10	44.80	8.66	8.42	0.00
4.80	0.56	0.38	0.11	45.60	8.66	8.42	0.00
5.60	0.68	0.48	0.12	46.40	8.66	8.42	0.00
6.40	0.80	0.60	0.14	47.20	8.66	8.42	0.00
7.20	0.95	0.74	0.17	48.00	8.66	8.42	0.00
8.00	1.12	0.91	0.19	48.80	8.66	8.42	0.00
8.80	1.32	1.10	0.22	49.60	8.66	8.42	0.00
9.60	1.56	1.34	0.30	50.40	8.66	8.42	0.00
10.40	1.89	1.67	0.39	51.20	8.66	8.42	0.00
11.20	2.42	2.19	0.73	52.00	8.66	8.42	0.00
12.00	4.15	3.91	**3.33**	52.80	8.66	8.42	0.00
12.80	6.24	6.00	**0.94**	53.60	8.66	8.42	0.00
13.60	6.77	6.53	0.45	54.40	8.66	8.42	0.00
14.40	7.10	6.86	0.33	55.20	8.66	8.42	0.00
15.20	7.34	7.10	0.24	56.00	8.66	8.42	0.00
16.00	7.54	7.30	0.21	56.80	8.66	8.42	0.00
16.80	7.71	7.47	0.18	57.60	8.66	8.42	0.00
17.60	7.86	7.62	0.15	58.40	8.66	8.42	0.00
18.40	7.98	7.74	0.13	59.20	8.66	8.42	0.00
19.20	8.10	7.86	0.13	60.00	8.66	8.42	0.00
20.00	8.21	7.97	0.12	60.80	8.66	8.42	0.00
20.80	8.31	8.07	0.11	61.60	8.66	8.42	0.00
21.60	8.41	8.17	0.10	62.40	8.66	8.42	0.00
22.40	8.50	8.26	0.10	63.20	8.66	8.42	0.00
23.20	8.58	8.34	0.09	64.00	8.66	8.42	0.00
24.00	**8.66**	**8.42**	0.08	64.80	8.66	8.42	0.00
24.80	8.66	8.42	0.00	65.60	8.66	8.42	0.00
25.60	8.66	8.42	0.00	66.40	8.66	8.42	0.00
26.40	8.66	8.42	0.00	67.20	8.66	8.42	0.00
27.20	8.66	8.42	0.00	68.00	8.66	8.42	0.00
28.00	8.66	8.42	0.00	68.80	8.66	8.42	0.00
28.80	8.66	8.42	0.00	69.60	8.66	8.42	0.00
29.60	8.66	8.42	0.00	70.40	8.66	8.42	0.00
30.40	8.66	8.42	0.00	71.20	8.66	8.42	0.00
31.20	8.66	8.42	0.00	72.00	8.66	8.42	0.00
32.00	8.66	8.42	0.00	72.80	8.66	8.42	0.00
32.80	8.66	8.42	0.00	73.60	8.66	8.42	0.00
33.60	8.66	8.42	0.00	74.40	8.66	8.42	0.00
34.40	8.66	8.42	0.00	75.20	8.66	8.42	0.00
35.20	8.66	8.42	0.00	76.00	8.66	8.42	0.00
36.00	8.66	8.42	0.00	76.80	8.66	8.42	0.00
36.80	8.66	8.42	0.00	77.60	8.66	8.42	0.00
37.60	8.66	8.42	0.00	78.40	8.66	8.42	0.00
38.40	8.66	8.42	0.00	79.20	8.66	8.42	0.00
39.20	8.66	8.42	0.00	80.00	8.66	8.42	0.00
40.00	8.66	8.42	0.00				

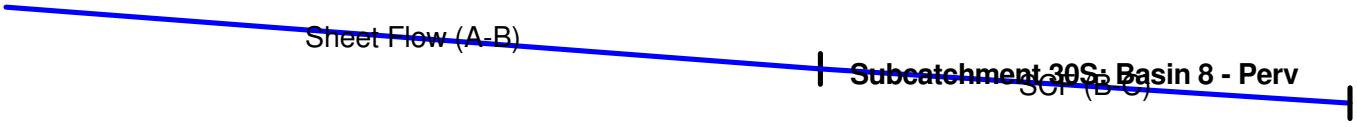
Summary for Subcatchment 30S: Basin 8 - Perv

Runoff = 3.19 cfs @ 12.16 hrs, Volume= 11,171 cf, Depth= 5.88"
Routed to Pond 48P : Basin 8

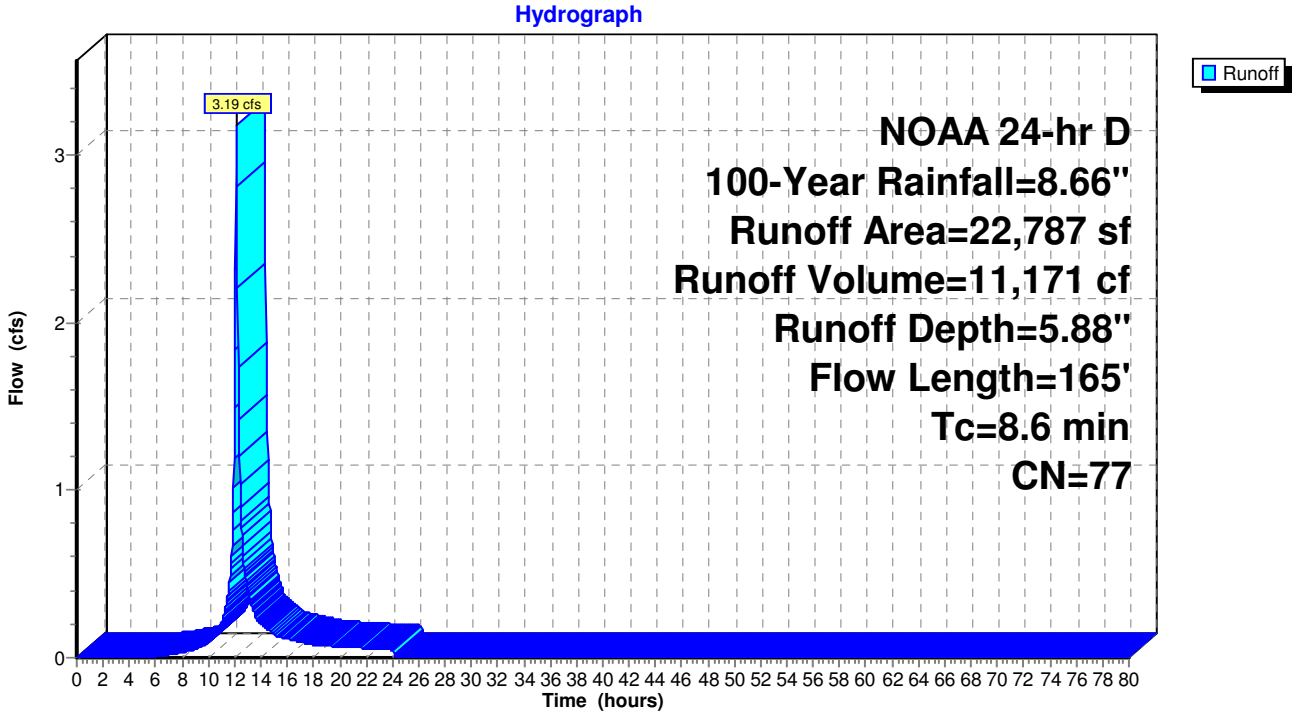
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
11,542	80	>75% Grass cover, Good, HSG D
11,245	74	>75% Grass cover, Good, HSG C
22,787	77	Weighted Average
22,787		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0700	0.20		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	65	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
8.6	165	Total			



Subcatchment 30S: Basin 8 - Perv



Hydrograph for Subcatchment 30S: Basin 8 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	5.88	0.00
0.80	0.08	0.00	0.00	41.60	8.66	5.88	0.00
1.60	0.16	0.00	0.00	42.40	8.66	5.88	0.00
2.40	0.25	0.00	0.00	43.20	8.66	5.88	0.00
3.20	0.35	0.00	0.00	44.00	8.66	5.88	0.00
4.00	0.45	0.00	0.00	44.80	8.66	5.88	0.00
4.80	0.56	0.00	0.00	45.60	8.66	5.88	0.00
5.60	0.68	0.00	0.00	46.40	8.66	5.88	0.00
6.40	0.80	0.01	0.01	47.20	8.66	5.88	0.00
7.20	0.95	0.04	0.02	48.00	8.66	5.88	0.00
8.00	1.12	0.08	0.03	48.80	8.66	5.88	0.00
8.80	1.32	0.14	0.05	49.60	8.66	5.88	0.00
9.60	1.56	0.24	0.07	50.40	8.66	5.88	0.00
10.40	1.89	0.39	0.12	51.20	8.66	5.88	0.00
11.20	2.42	0.69	0.26	52.00	8.66	5.88	0.00
12.00	4.15	1.93	**1.49**	52.80	8.66	5.88	0.00
12.80	6.24	3.69	**0.49**	53.60	8.66	5.88	0.00
13.60	6.77	4.16	0.24	54.40	8.66	5.88	0.00
14.40	7.10	4.45	0.18	55.20	8.66	5.88	0.00
15.20	7.34	4.67	0.13	56.00	8.66	5.88	0.00
16.00	7.54	4.85	0.11	56.80	8.66	5.88	0.00
16.80	7.71	5.01	0.10	57.60	8.66	5.88	0.00
17.60	7.86	5.14	0.08	58.40	8.66	5.88	0.00
18.40	7.98	5.26	0.07	59.20	8.66	5.88	0.00
19.20	8.10	5.36	0.07	60.00	8.66	5.88	0.00
20.00	8.21	5.46	0.07	60.80	8.66	5.88	0.00
20.80	8.31	5.56	0.06	61.60	8.66	5.88	0.00
21.60	8.41	5.65	0.06	62.40	8.66	5.88	0.00
22.40	8.50	5.73	0.05	63.20	8.66	5.88	0.00
23.20	8.58	5.81	0.05	64.00	8.66	5.88	0.00
24.00	**8.66**	**5.88**	0.05	64.80	8.66	5.88	0.00
24.80	8.66	5.88	0.00	65.60	8.66	5.88	0.00
25.60	8.66	5.88	0.00	66.40	8.66	5.88	0.00
26.40	8.66	5.88	0.00	67.20	8.66	5.88	0.00
27.20	8.66	5.88	0.00	68.00	8.66	5.88	0.00
28.00	8.66	5.88	0.00	68.80	8.66	5.88	0.00
28.80	8.66	5.88	0.00	69.60	8.66	5.88	0.00
29.60	8.66	5.88	0.00	70.40	8.66	5.88	0.00
30.40	8.66	5.88	0.00	71.20	8.66	5.88	0.00
31.20	8.66	5.88	0.00	72.00	8.66	5.88	0.00
32.00	8.66	5.88	0.00	72.80	8.66	5.88	0.00
32.80	8.66	5.88	0.00	73.60	8.66	5.88	0.00
33.60	8.66	5.88	0.00	74.40	8.66	5.88	0.00
34.40	8.66	5.88	0.00	75.20	8.66	5.88	0.00
35.20	8.66	5.88	0.00	76.00	8.66	5.88	0.00
36.00	8.66	5.88	0.00	76.80	8.66	5.88	0.00
36.80	8.66	5.88	0.00	77.60	8.66	5.88	0.00
37.60	8.66	5.88	0.00	78.40	8.66	5.88	0.00
38.40	8.66	5.88	0.00	79.20	8.66	5.88	0.00
39.20	8.66	5.88	0.00	80.00	8.66	5.88	0.00
40.00	8.66	5.88	0.00				

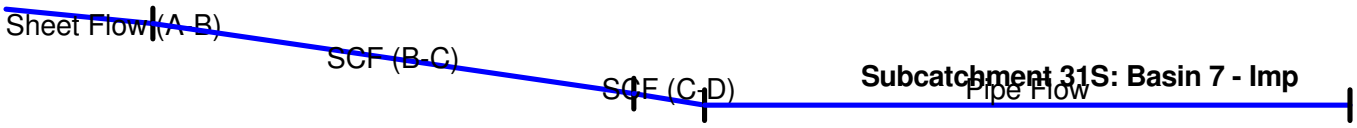
Summary for Subcatchment 31S: Basin 7 - Imp

Runoff = 6.97 cfs @ 12.20 hrs, Volume= 32,120 cf, Depth= 8.42"
Routed to Pond 49P : Basin 7

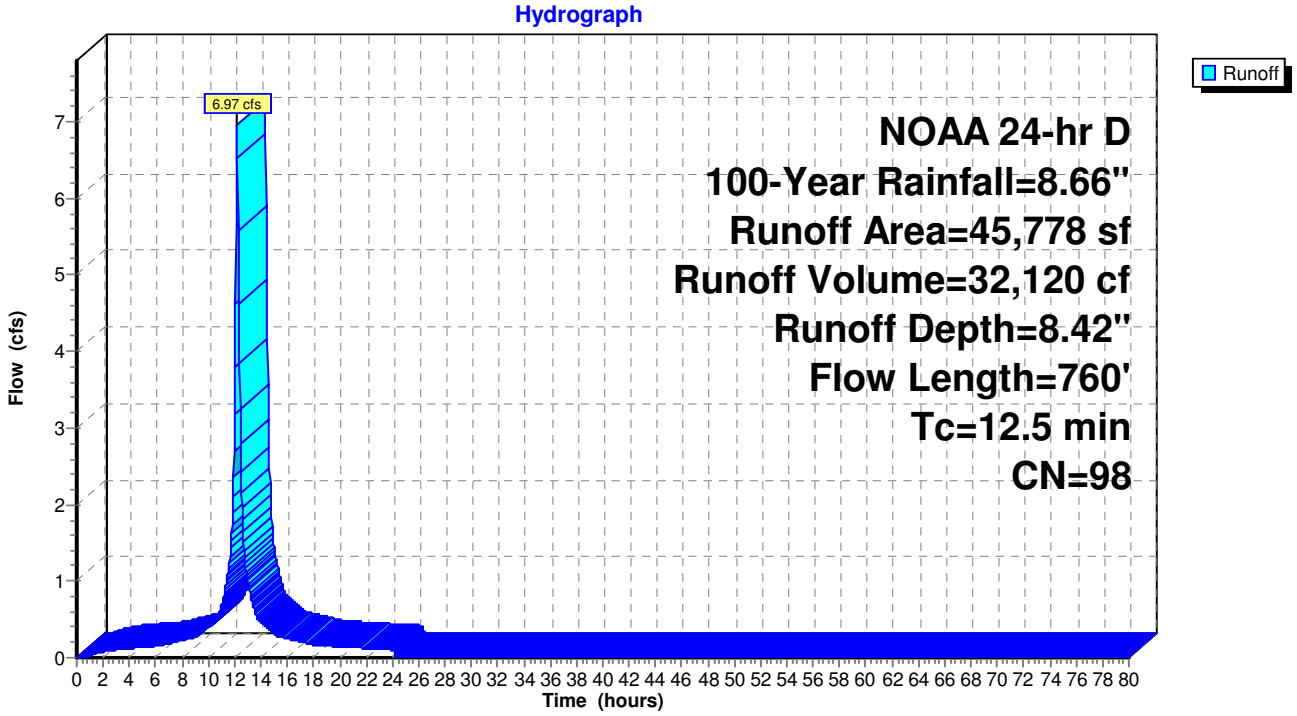
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

	Area (sf)	CN	Description
*	6,730	98	other impervious
*	39,048	98	vehicle pavement surface
	45,778	98	Weighted Average
	45,778		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.1	272	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.1	40	0.0670	5.25		**Shallow Concentrated Flow, SCF (C-D)** Paved Kv= 20.3 fps
2.4	365		2.50		**Direct Entry, Pipe Flow**
12.5	760	Total			



Subcatchment 31S: Basin 7 - Imp



Hydrograph for Subcatchment 31S: Basin 7 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	8.42	0.00
0.80	0.08	0.01	0.02	41.60	8.66	8.42	0.00
1.60	0.16	0.05	0.06	42.40	8.66	8.42	0.00
2.40	0.25	0.11	0.09	43.20	8.66	8.42	0.00
3.20	0.35	0.19	0.11	44.00	8.66	8.42	0.00
4.00	0.45	0.28	0.12	44.80	8.66	8.42	0.00
4.80	0.56	0.38	0.13	45.60	8.66	8.42	0.00
5.60	0.68	0.48	0.15	46.40	8.66	8.42	0.00
6.40	0.80	0.60	0.16	47.20	8.66	8.42	0.00
7.20	0.95	0.74	0.20	48.00	8.66	8.42	0.00
8.00	1.12	0.91	0.23	48.80	8.66	8.42	0.00
8.80	1.32	1.10	0.26	49.60	8.66	8.42	0.00
9.60	1.56	1.34	0.34	50.40	8.66	8.42	0.00
10.40	1.89	1.67	0.46	51.20	8.66	8.42	0.00
11.20	2.42	2.19	0.82	52.00	8.66	8.42	0.00
12.00	4.15	3.91	**3.17**	52.80	8.66	8.42	0.00
12.80	6.24	6.00	**1.23**	53.60	8.66	8.42	0.00
13.60	6.77	6.53	0.58	54.40	8.66	8.42	0.00
14.40	7.10	6.86	0.41	55.20	8.66	8.42	0.00
15.20	7.34	7.10	0.29	56.00	8.66	8.42	0.00
16.00	7.54	7.30	0.25	56.80	8.66	8.42	0.00
16.80	7.71	7.47	0.22	57.60	8.66	8.42	0.00
17.60	7.86	7.62	0.19	58.40	8.66	8.42	0.00
18.40	7.98	7.74	0.16	59.20	8.66	8.42	0.00
19.20	8.10	7.86	0.15	60.00	8.66	8.42	0.00
20.00	8.21	7.97	0.14	60.80	8.66	8.42	0.00
20.80	8.31	8.07	0.13	61.60	8.66	8.42	0.00
21.60	8.41	8.17	0.13	62.40	8.66	8.42	0.00
22.40	8.50	8.26	0.12	63.20	8.66	8.42	0.00
23.20	8.58	8.34	0.11	64.00	8.66	8.42	0.00
24.00	**8.66**	**8.42**	0.10	64.80	8.66	8.42	0.00
24.80	8.66	8.42	0.00	65.60	8.66	8.42	0.00
25.60	8.66	8.42	0.00	66.40	8.66	8.42	0.00
26.40	8.66	8.42	0.00	67.20	8.66	8.42	0.00
27.20	8.66	8.42	0.00	68.00	8.66	8.42	0.00
28.00	8.66	8.42	0.00	68.80	8.66	8.42	0.00
28.80	8.66	8.42	0.00	69.60	8.66	8.42	0.00
29.60	8.66	8.42	0.00	70.40	8.66	8.42	0.00
30.40	8.66	8.42	0.00	71.20	8.66	8.42	0.00
31.20	8.66	8.42	0.00	72.00	8.66	8.42	0.00
32.00	8.66	8.42	0.00	72.80	8.66	8.42	0.00
32.80	8.66	8.42	0.00	73.60	8.66	8.42	0.00
33.60	8.66	8.42	0.00	74.40	8.66	8.42	0.00
34.40	8.66	8.42	0.00	75.20	8.66	8.42	0.00
35.20	8.66	8.42	0.00	76.00	8.66	8.42	0.00
36.00	8.66	8.42	0.00	76.80	8.66	8.42	0.00
36.80	8.66	8.42	0.00	77.60	8.66	8.42	0.00
37.60	8.66	8.42	0.00	78.40	8.66	8.42	0.00
38.40	8.66	8.42	0.00	79.20	8.66	8.42	0.00
39.20	8.66	8.42	0.00	80.00	8.66	8.42	0.00
40.00	8.66	8.42	0.00				

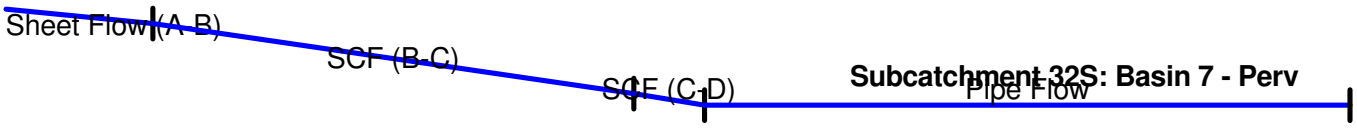
Summary for Subcatchment 32S: Basin 7 - Perv

Runoff = 7.20 cfs @ 12.20 hrs, Volume= 28,767 cf, Depth= 5.88"
Routed to Pond 49P : Basin 7

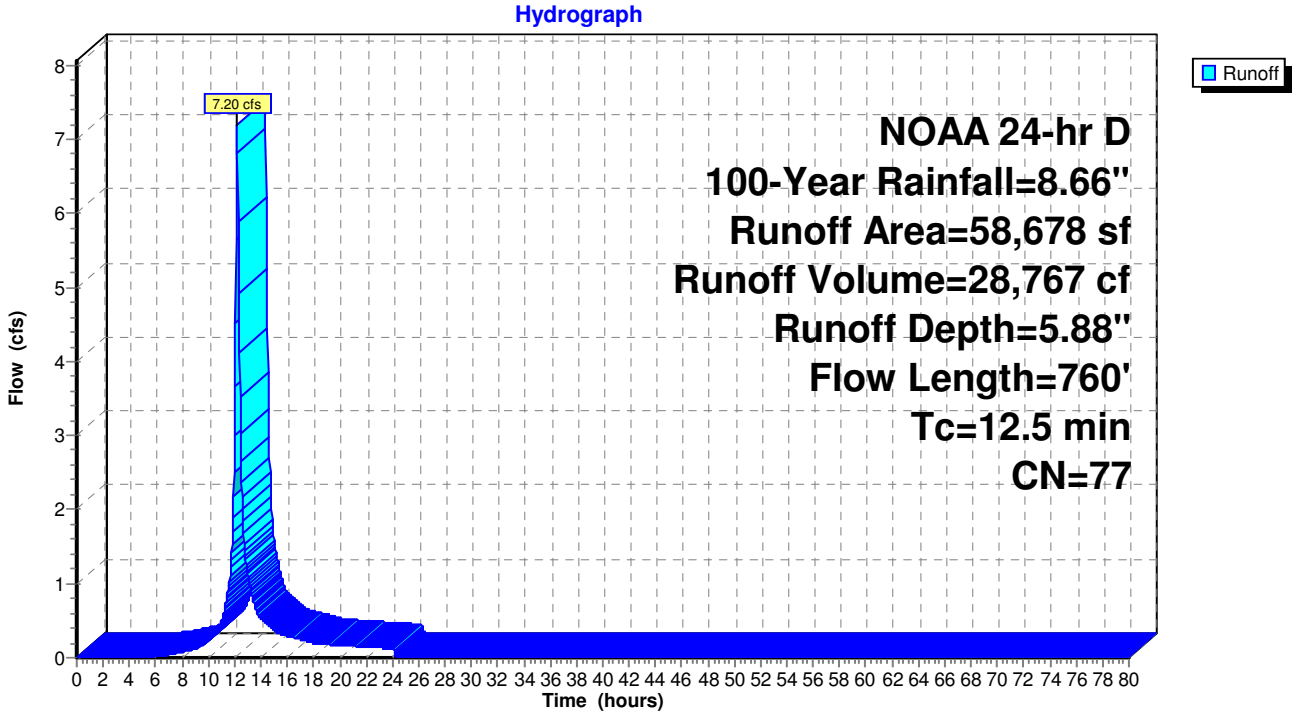
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
25,517	80	>75% Grass cover, Good, HSG D
33,161	74	>75% Grass cover, Good, HSG C
58,678	77	Weighted Average
58,678		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.1	272	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.1	40	0.0670	5.25		**Shallow Concentrated Flow, SCF (C-D)** Paved Kv= 20.3 fps
2.4	365		2.50		**Direct Entry, Pipe Flow**
12.5	760	Total			



Subcatchment 32S: Basin 7 - Perv



Hydrograph for Subcatchment 32S: Basin 7 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	5.88	0.00
0.80	0.08	0.00	0.00	41.60	8.66	5.88	0.00
1.60	0.16	0.00	0.00	42.40	8.66	5.88	0.00
2.40	0.25	0.00	0.00	43.20	8.66	5.88	0.00
3.20	0.35	0.00	0.00	44.00	8.66	5.88	0.00
4.00	0.45	0.00	0.00	44.80	8.66	5.88	0.00
4.80	0.56	0.00	0.00	45.60	8.66	5.88	0.00
5.60	0.68	0.00	0.01	46.40	8.66	5.88	0.00
6.40	0.80	0.01	0.02	47.20	8.66	5.88	0.00
7.20	0.95	0.04	0.05	48.00	8.66	5.88	0.00
8.00	1.12	0.08	0.08	48.80	8.66	5.88	0.00
8.80	1.32	0.14	0.12	49.60	8.66	5.88	0.00
9.60	1.56	0.24	0.18	50.40	8.66	5.88	0.00
10.40	1.89	0.39	0.29	51.20	8.66	5.88	0.00
11.20	2.42	0.69	0.62	52.00	8.66	5.88	0.00
12.00	4.15	1.93	**3.00**	52.80	8.66	5.88	0.00
12.80	6.24	3.69	**1.37**	53.60	8.66	5.88	0.00
13.60	6.77	4.16	0.66	54.40	8.66	5.88	0.00
14.40	7.10	4.45	0.47	55.20	8.66	5.88	0.00
15.20	7.34	4.67	0.34	56.00	8.66	5.88	0.00
16.00	7.54	4.85	0.29	56.80	8.66	5.88	0.00
16.80	7.71	5.01	0.26	57.60	8.66	5.88	0.00
17.60	7.86	5.14	0.22	58.40	8.66	5.88	0.00
18.40	7.98	5.26	0.19	59.20	8.66	5.88	0.00
19.20	8.10	5.36	0.18	60.00	8.66	5.88	0.00
20.00	8.21	5.46	0.17	60.80	8.66	5.88	0.00
20.80	8.31	5.56	0.16	61.60	8.66	5.88	0.00
21.60	8.41	5.65	0.15	62.40	8.66	5.88	0.00
22.40	8.50	5.73	0.14	63.20	8.66	5.88	0.00
23.20	8.58	5.81	0.13	64.00	8.66	5.88	0.00
24.00	**8.66**	**5.88**	0.12	64.80	8.66	5.88	0.00
24.80	8.66	5.88	0.00	65.60	8.66	5.88	0.00
25.60	8.66	5.88	0.00	66.40	8.66	5.88	0.00
26.40	8.66	5.88	0.00	67.20	8.66	5.88	0.00
27.20	8.66	5.88	0.00	68.00	8.66	5.88	0.00
28.00	8.66	5.88	0.00	68.80	8.66	5.88	0.00
28.80	8.66	5.88	0.00	69.60	8.66	5.88	0.00
29.60	8.66	5.88	0.00	70.40	8.66	5.88	0.00
30.40	8.66	5.88	0.00	71.20	8.66	5.88	0.00
31.20	8.66	5.88	0.00	72.00	8.66	5.88	0.00
32.00	8.66	5.88	0.00	72.80	8.66	5.88	0.00
32.80	8.66	5.88	0.00	73.60	8.66	5.88	0.00
33.60	8.66	5.88	0.00	74.40	8.66	5.88	0.00
34.40	8.66	5.88	0.00	75.20	8.66	5.88	0.00
35.20	8.66	5.88	0.00	76.00	8.66	5.88	0.00
36.00	8.66	5.88	0.00	76.80	8.66	5.88	0.00
36.80	8.66	5.88	0.00	77.60	8.66	5.88	0.00
37.60	8.66	5.88	0.00	78.40	8.66	5.88	0.00
38.40	8.66	5.88	0.00	79.20	8.66	5.88	0.00
39.20	8.66	5.88	0.00	80.00	8.66	5.88	0.00
40.00	8.66	5.88	0.00				

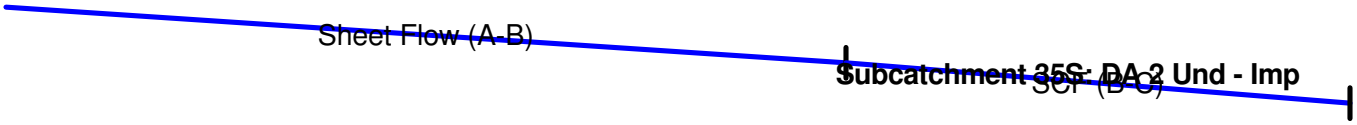
Summary for Subcatchment 35S: DA 2 Und - Imp

Runoff = 8.68 cfs @ 12.17 hrs, Volume= 36,846 cf, Depth= 8.42"
Routed to Link 34L : DA 2 Undetained

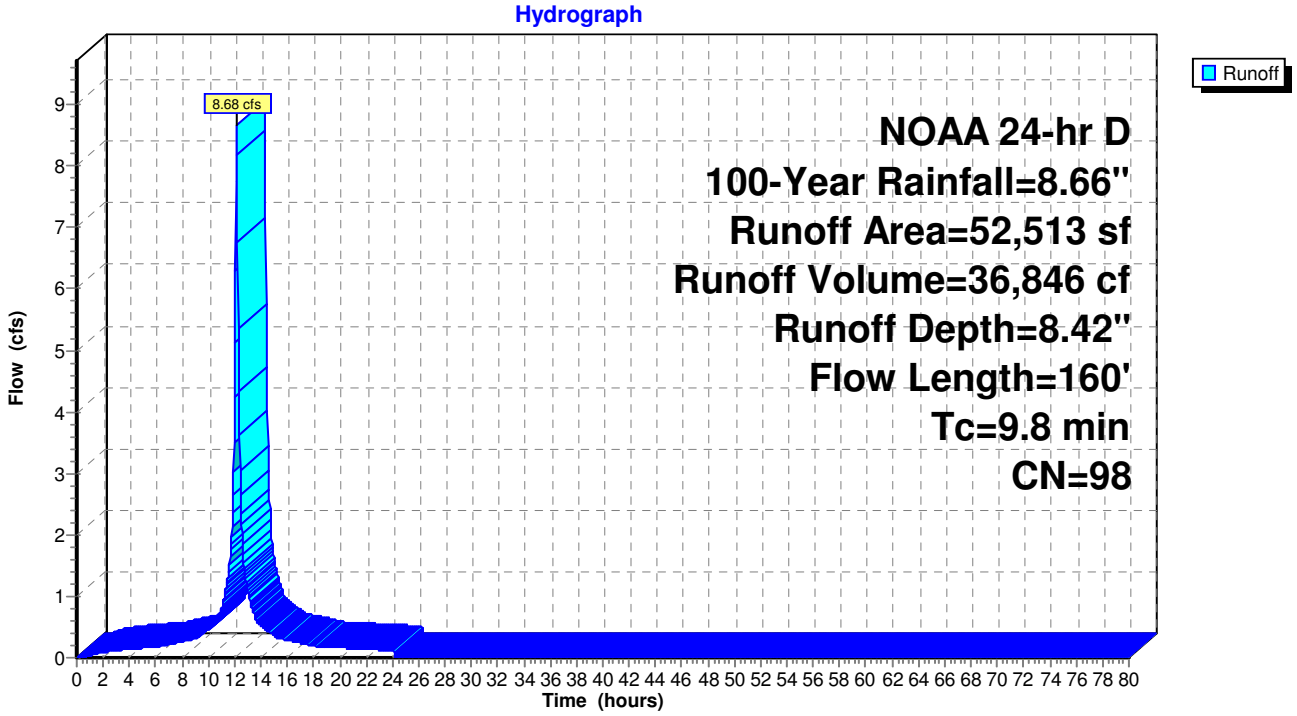
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
18,404	98	Paved parking, HSG C
33,009	98	Paved parking, HSG D
1,100	98	Roofs, HSG D
52,513	98	Weighted Average
52,513		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0500	0.18		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	60	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	160	Total			



Subcatchment 35S: DA 2 Und - Imp



Hydrograph for Subcatchment 35S: DA 2 Und - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	8.42	0.00
0.80	0.08	0.01	0.02	41.60	8.66	8.42	0.00
1.60	0.16	0.05	0.07	42.40	8.66	8.42	0.00
2.40	0.25	0.11	0.10	43.20	8.66	8.42	0.00
3.20	0.35	0.19	0.12	44.00	8.66	8.42	0.00
4.00	0.45	0.28	0.14	44.80	8.66	8.42	0.00
4.80	0.56	0.38	0.15	45.60	8.66	8.42	0.00
5.60	0.68	0.48	0.17	46.40	8.66	8.42	0.00
6.40	0.80	0.60	0.19	47.20	8.66	8.42	0.00
7.20	0.95	0.74	0.23	48.00	8.66	8.42	0.00
8.00	1.12	0.91	0.27	48.80	8.66	8.42	0.00
8.80	1.32	1.10	0.31	49.60	8.66	8.42	0.00
9.60	1.56	1.34	0.40	50.40	8.66	8.42	0.00
10.40	1.89	1.67	0.54	51.20	8.66	8.42	0.00
11.20	2.42	2.19	0.98	52.00	8.66	8.42	0.00
12.00	4.15	3.91	**4.23**	52.80	8.66	8.42	0.00
12.80	6.24	6.00	**1.33**	53.60	8.66	8.42	0.00
13.60	6.77	6.53	0.64	54.40	8.66	8.42	0.00
14.40	7.10	6.86	0.46	55.20	8.66	8.42	0.00
15.20	7.34	7.10	0.33	56.00	8.66	8.42	0.00
16.00	7.54	7.30	0.29	56.80	8.66	8.42	0.00
16.80	7.71	7.47	0.25	57.60	8.66	8.42	0.00
17.60	7.86	7.62	0.21	58.40	8.66	8.42	0.00
18.40	7.98	7.74	0.18	59.20	8.66	8.42	0.00
19.20	8.10	7.86	0.17	60.00	8.66	8.42	0.00
20.00	8.21	7.97	0.16	60.80	8.66	8.42	0.00
20.80	8.31	8.07	0.15	61.60	8.66	8.42	0.00
21.60	8.41	8.17	0.14	62.40	8.66	8.42	0.00
22.40	8.50	8.26	0.13	63.20	8.66	8.42	0.00
23.20	8.58	8.34	0.13	64.00	8.66	8.42	0.00
24.00	**8.66**	**8.42**	0.12	64.80	8.66	8.42	0.00
24.80	8.66	8.42	0.00	65.60	8.66	8.42	0.00
25.60	8.66	8.42	0.00	66.40	8.66	8.42	0.00
26.40	8.66	8.42	0.00	67.20	8.66	8.42	0.00
27.20	8.66	8.42	0.00	68.00	8.66	8.42	0.00
28.00	8.66	8.42	0.00	68.80	8.66	8.42	0.00
28.80	8.66	8.42	0.00	69.60	8.66	8.42	0.00
29.60	8.66	8.42	0.00	70.40	8.66	8.42	0.00
30.40	8.66	8.42	0.00	71.20	8.66	8.42	0.00
31.20	8.66	8.42	0.00	72.00	8.66	8.42	0.00
32.00	8.66	8.42	0.00	72.80	8.66	8.42	0.00
32.80	8.66	8.42	0.00	73.60	8.66	8.42	0.00
33.60	8.66	8.42	0.00	74.40	8.66	8.42	0.00
34.40	8.66	8.42	0.00	75.20	8.66	8.42	0.00
35.20	8.66	8.42	0.00	76.00	8.66	8.42	0.00
36.00	8.66	8.42	0.00	76.80	8.66	8.42	0.00
36.80	8.66	8.42	0.00	77.60	8.66	8.42	0.00
37.60	8.66	8.42	0.00	78.40	8.66	8.42	0.00
38.40	8.66	8.42	0.00	79.20	8.66	8.42	0.00
39.20	8.66	8.42	0.00	80.00	8.66	8.42	0.00
40.00	8.66	8.42	0.00				

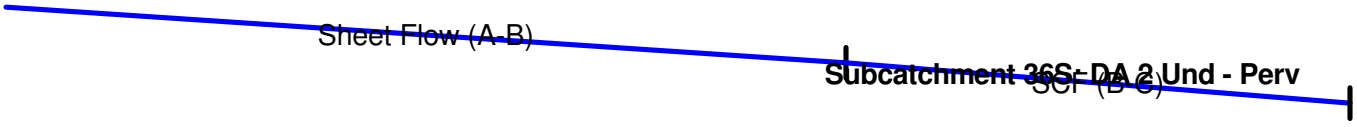
Summary for Subcatchment 36S: DA 2 Und - Perv

Runoff = 16.02 cfs @ 12.17 hrs, Volume= 58,807 cf, Depth= 5.88"
Routed to Link 34L : DA 2 Undetained

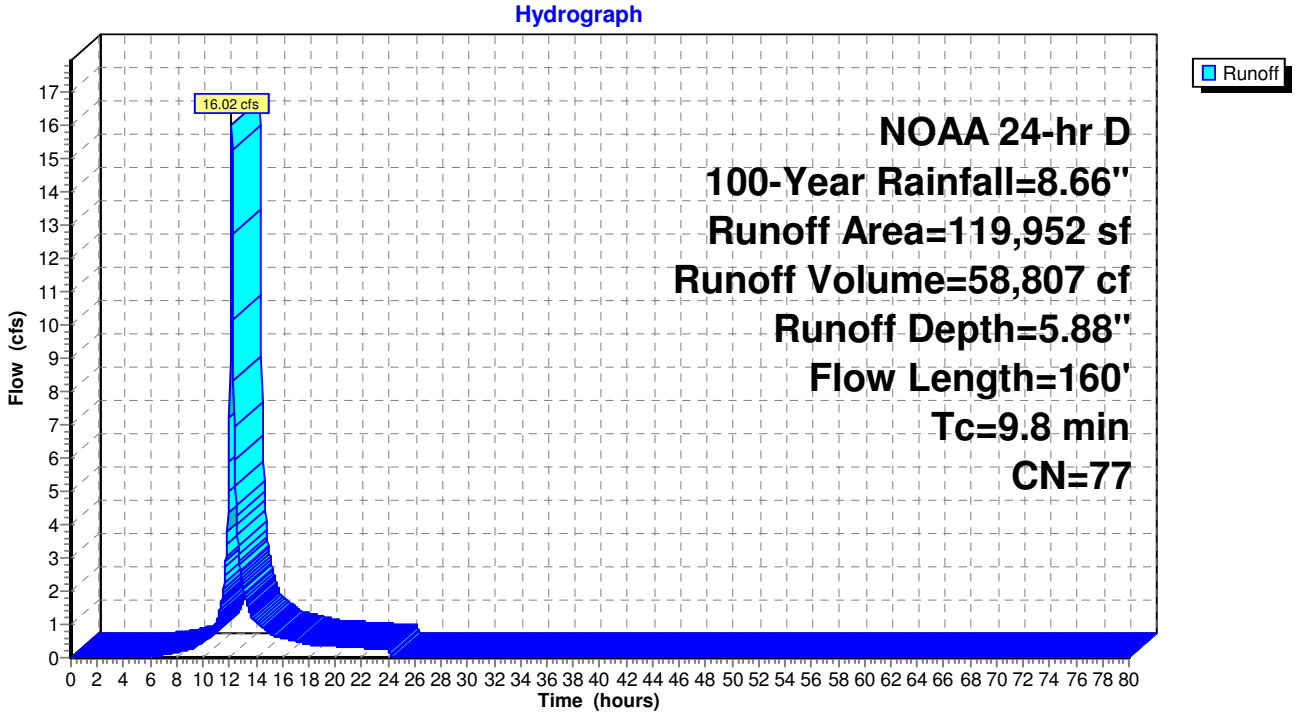
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
52,227	80	>75% Grass cover, Good, HSG D
67,725	74	>75% Grass cover, Good, HSG C
119,952	77	Weighted Average
119,952		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0500	0.18		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	60	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	160	Total			



Subcatchment 36S: DA 2 Und - Perv



Hydrograph for Subcatchment 36S: DA 2 Und - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	5.88	0.00
0.80	0.08	0.00	0.00	41.60	8.66	5.88	0.00
1.60	0.16	0.00	0.00	42.40	8.66	5.88	0.00
2.40	0.25	0.00	0.00	43.20	8.66	5.88	0.00
3.20	0.35	0.00	0.00	44.00	8.66	5.88	0.00
4.00	0.45	0.00	0.00	44.80	8.66	5.88	0.00
4.80	0.56	0.00	0.00	45.60	8.66	5.88	0.00
5.60	0.68	0.00	0.02	46.40	8.66	5.88	0.00
6.40	0.80	0.01	0.05	47.20	8.66	5.88	0.00
7.20	0.95	0.04	0.10	48.00	8.66	5.88	0.00
8.00	1.12	0.08	0.16	48.80	8.66	5.88	0.00
8.80	1.32	0.14	0.24	49.60	8.66	5.88	0.00
9.60	1.56	0.24	0.39	50.40	8.66	5.88	0.00
10.40	1.89	0.39	0.62	51.20	8.66	5.88	0.00
11.20	2.42	0.69	1.34	52.00	8.66	5.88	0.00
12.00	4.15	1.93	**7.23**	52.80	8.66	5.88	0.00
12.80	6.24	3.69	**2.65**	53.60	8.66	5.88	0.00
13.60	6.77	4.16	1.30	54.40	8.66	5.88	0.00
14.40	7.10	4.45	0.94	55.20	8.66	5.88	0.00
15.20	7.34	4.67	0.68	56.00	8.66	5.88	0.00
16.00	7.54	4.85	0.60	56.80	8.66	5.88	0.00
16.80	7.71	5.01	0.52	57.60	8.66	5.88	0.00
17.60	7.86	5.14	0.44	58.40	8.66	5.88	0.00
18.40	7.98	5.26	0.38	59.20	8.66	5.88	0.00
19.20	8.10	5.36	0.36	60.00	8.66	5.88	0.00
20.00	8.21	5.46	0.34	60.80	8.66	5.88	0.00
20.80	8.31	5.56	0.32	61.60	8.66	5.88	0.00
21.60	8.41	5.65	0.30	62.40	8.66	5.88	0.00
22.40	8.50	5.73	0.28	63.20	8.66	5.88	0.00
23.20	8.58	5.81	0.27	64.00	8.66	5.88	0.00
24.00	**8.66**	**5.88**	0.25	64.80	8.66	5.88	0.00
24.80	8.66	5.88	0.00	65.60	8.66	5.88	0.00
25.60	8.66	5.88	0.00	66.40	8.66	5.88	0.00
26.40	8.66	5.88	0.00	67.20	8.66	5.88	0.00
27.20	8.66	5.88	0.00	68.00	8.66	5.88	0.00
28.00	8.66	5.88	0.00	68.80	8.66	5.88	0.00
28.80	8.66	5.88	0.00	69.60	8.66	5.88	0.00
29.60	8.66	5.88	0.00	70.40	8.66	5.88	0.00
30.40	8.66	5.88	0.00	71.20	8.66	5.88	0.00
31.20	8.66	5.88	0.00	72.00	8.66	5.88	0.00
32.00	8.66	5.88	0.00	72.80	8.66	5.88	0.00
32.80	8.66	5.88	0.00	73.60	8.66	5.88	0.00
33.60	8.66	5.88	0.00	74.40	8.66	5.88	0.00
34.40	8.66	5.88	0.00	75.20	8.66	5.88	0.00
35.20	8.66	5.88	0.00	76.00	8.66	5.88	0.00
36.00	8.66	5.88	0.00	76.80	8.66	5.88	0.00
36.80	8.66	5.88	0.00	77.60	8.66	5.88	0.00
37.60	8.66	5.88	0.00	78.40	8.66	5.88	0.00
38.40	8.66	5.88	0.00	79.20	8.66	5.88	0.00
39.20	8.66	5.88	0.00	80.00	8.66	5.88	0.00
40.00	8.66	5.88	0.00				

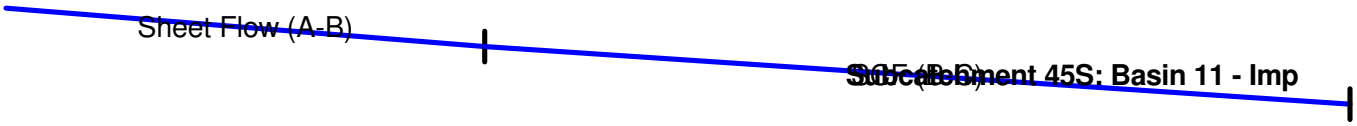
Summary for Subcatchment 45S: Basin 11 - Imp

Runoff = 9.90 cfs @ 12.17 hrs, Volume= 42,030 cf, Depth= 8.42"
Routed to Pond 33P : Basin 11

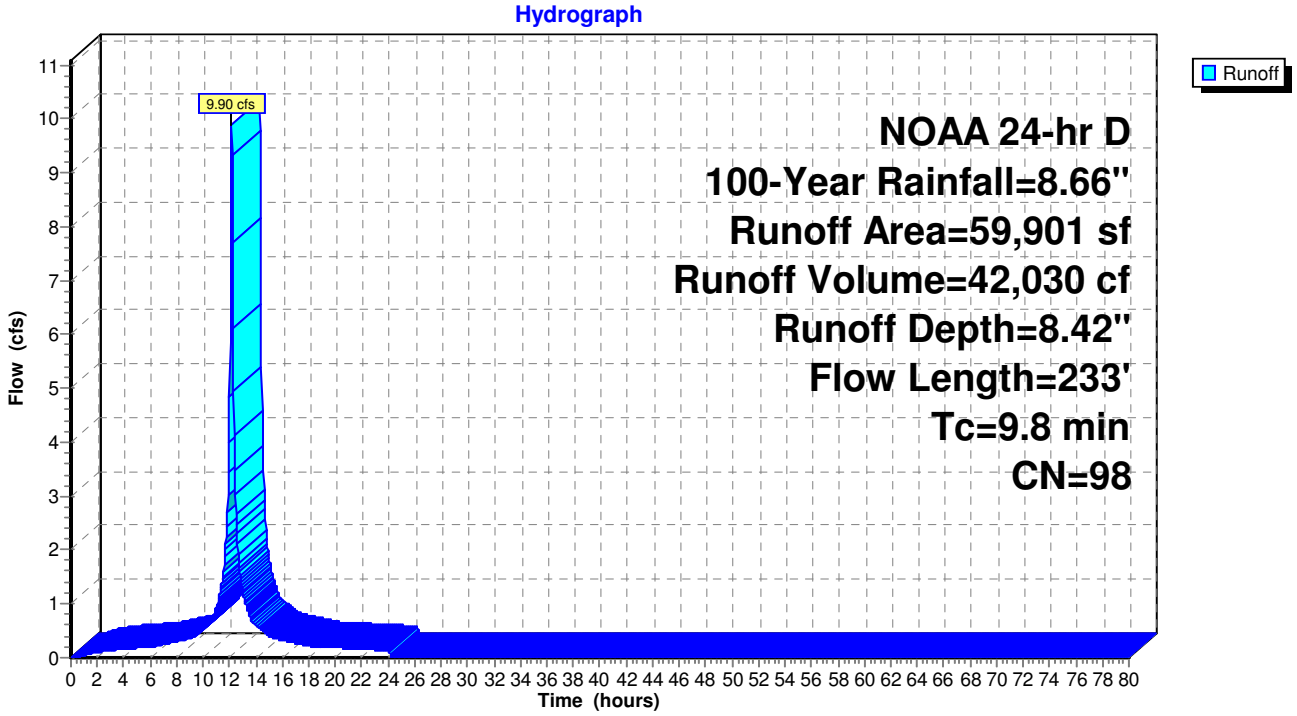
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

	Area (sf)	CN	Description
*	22,270	98	pavement surface area/ porous
	32,203	98	Roofs, HSG C
*	5,428	98	other impervious
	59,901	98	Weighted Average
	59,901		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
0.9	150	0.0330	2.92		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	233	Total			



Subcatchment 45S: Basin 11 - Imp



Hydrograph for Subcatchment 45S: Basin 11 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	8.42	0.00
0.80	0.08	0.01	0.03	41.60	8.66	8.42	0.00
1.60	0.16	0.05	0.08	42.40	8.66	8.42	0.00
2.40	0.25	0.11	0.12	43.20	8.66	8.42	0.00
3.20	0.35	0.19	0.14	44.00	8.66	8.42	0.00
4.00	0.45	0.28	0.16	44.80	8.66	8.42	0.00
4.80	0.56	0.38	0.18	45.60	8.66	8.42	0.00
5.60	0.68	0.48	0.19	46.40	8.66	8.42	0.00
6.40	0.80	0.60	0.22	47.20	8.66	8.42	0.00
7.20	0.95	0.74	0.26	48.00	8.66	8.42	0.00
8.00	1.12	0.91	0.30	48.80	8.66	8.42	0.00
8.80	1.32	1.10	0.35	49.60	8.66	8.42	0.00
9.60	1.56	1.34	0.46	50.40	8.66	8.42	0.00
10.40	1.89	1.67	0.61	51.20	8.66	8.42	0.00
11.20	2.42	2.19	1.12	52.00	8.66	8.42	0.00
12.00	4.15	3.91	**4.83**	52.80	8.66	8.42	0.00
12.80	6.24	6.00	**1.51**	53.60	8.66	8.42	0.00
13.60	6.77	6.53	0.73	54.40	8.66	8.42	0.00
14.40	7.10	6.86	0.52	55.20	8.66	8.42	0.00
15.20	7.34	7.10	0.37	56.00	8.66	8.42	0.00
16.00	7.54	7.30	0.33	56.80	8.66	8.42	0.00
16.80	7.71	7.47	0.29	57.60	8.66	8.42	0.00
17.60	7.86	7.62	0.24	58.40	8.66	8.42	0.00
18.40	7.98	7.74	0.21	59.20	8.66	8.42	0.00
19.20	8.10	7.86	0.20	60.00	8.66	8.42	0.00
20.00	8.21	7.97	0.19	60.80	8.66	8.42	0.00
20.80	8.31	8.07	0.18	61.60	8.66	8.42	0.00
21.60	8.41	8.17	0.16	62.40	8.66	8.42	0.00
22.40	8.50	8.26	0.15	63.20	8.66	8.42	0.00
23.20	8.58	8.34	0.14	64.00	8.66	8.42	0.00
24.00	**8.66**	**8.42**	0.13	64.80	8.66	8.42	0.00
24.80	8.66	8.42	0.00	65.60	8.66	8.42	0.00
25.60	8.66	8.42	0.00	66.40	8.66	8.42	0.00
26.40	8.66	8.42	0.00	67.20	8.66	8.42	0.00
27.20	8.66	8.42	0.00	68.00	8.66	8.42	0.00
28.00	8.66	8.42	0.00	68.80	8.66	8.42	0.00
28.80	8.66	8.42	0.00	69.60	8.66	8.42	0.00
29.60	8.66	8.42	0.00	70.40	8.66	8.42	0.00
30.40	8.66	8.42	0.00	71.20	8.66	8.42	0.00
31.20	8.66	8.42	0.00	72.00	8.66	8.42	0.00
32.00	8.66	8.42	0.00	72.80	8.66	8.42	0.00
32.80	8.66	8.42	0.00	73.60	8.66	8.42	0.00
33.60	8.66	8.42	0.00	74.40	8.66	8.42	0.00
34.40	8.66	8.42	0.00	75.20	8.66	8.42	0.00
35.20	8.66	8.42	0.00	76.00	8.66	8.42	0.00
36.00	8.66	8.42	0.00	76.80	8.66	8.42	0.00
36.80	8.66	8.42	0.00	77.60	8.66	8.42	0.00
37.60	8.66	8.42	0.00	78.40	8.66	8.42	0.00
38.40	8.66	8.42	0.00	79.20	8.66	8.42	0.00
39.20	8.66	8.42	0.00	80.00	8.66	8.42	0.00
40.00	8.66	8.42	0.00				

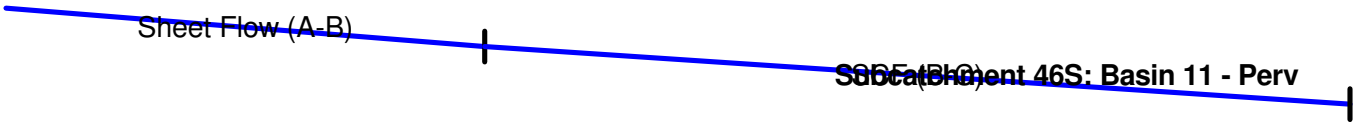
Summary for Subcatchment 46S: Basin 11 - Perv

Runoff = 3.18 cfs @ 12.17 hrs, Volume= 11,621 cf, Depth= 5.76"
Routed to Pond 33P : Basin 11

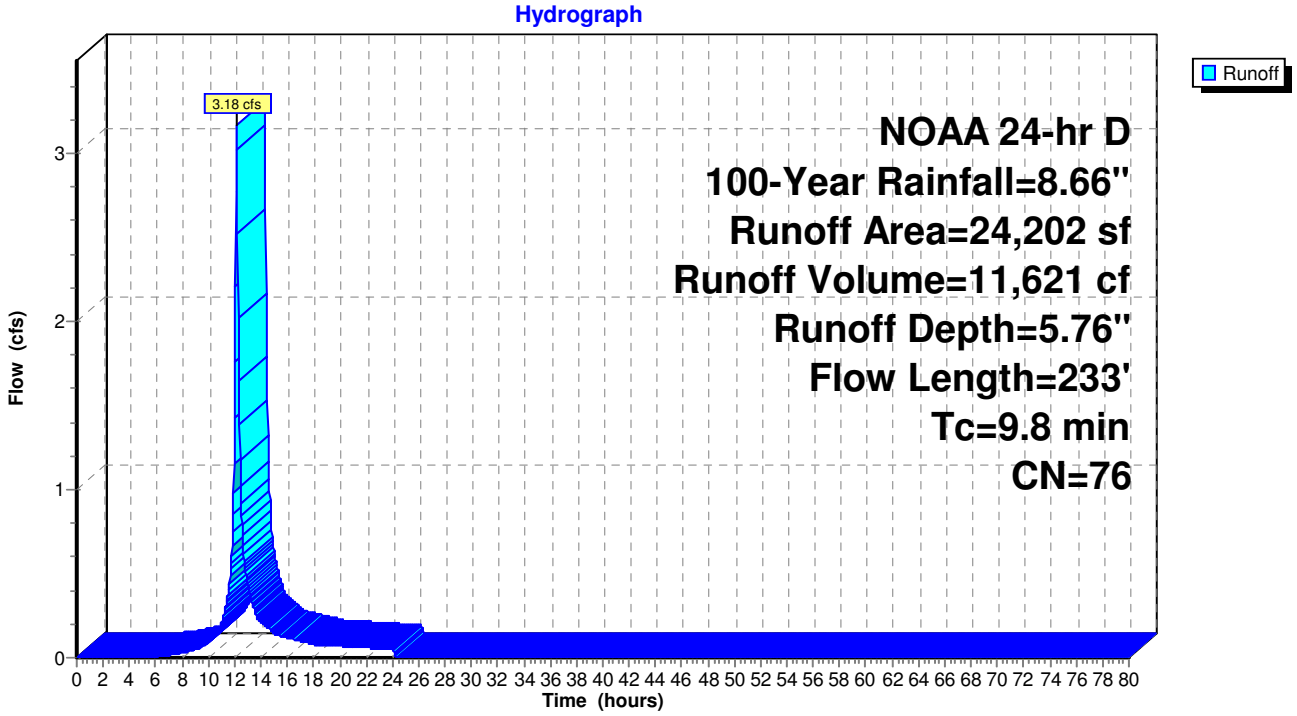
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
7,658	80	>75% Grass cover, Good, HSG D
16,544	74	>75% Grass cover, Good, HSG C
24,202	76	Weighted Average
24,202		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
0.9	150	0.0330	2.92		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	233	Total			



Subcatchment 46S: Basin 11 - Perv



Hydrograph for Subcatchment 46S: Basin 11 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	5.76	0.00
0.80	0.08	0.00	0.00	41.60	8.66	5.76	0.00
1.60	0.16	0.00	0.00	42.40	8.66	5.76	0.00
2.40	0.25	0.00	0.00	43.20	8.66	5.76	0.00
3.20	0.35	0.00	0.00	44.00	8.66	5.76	0.00
4.00	0.45	0.00	0.00	44.80	8.66	5.76	0.00
4.80	0.56	0.00	0.00	45.60	8.66	5.76	0.00
5.60	0.68	0.00	0.00	46.40	8.66	5.76	0.00
6.40	0.80	0.01	0.01	47.20	8.66	5.76	0.00
7.20	0.95	0.03	0.02	48.00	8.66	5.76	0.00
8.00	1.12	0.07	0.03	48.80	8.66	5.76	0.00
8.80	1.32	0.12	0.04	49.60	8.66	5.76	0.00
9.60	1.56	0.21	0.07	50.40	8.66	5.76	0.00
10.40	1.89	0.36	0.12	51.20	8.66	5.76	0.00
11.20	2.42	0.65	0.26	52.00	8.66	5.76	0.00
12.00	4.15	1.85	**1.42**	52.80	8.66	5.76	0.00
12.80	6.24	3.59	**0.53**	53.60	8.66	5.76	0.00
13.60	6.77	4.05	0.26	54.40	8.66	5.76	0.00
14.40	7.10	4.34	0.19	55.20	8.66	5.76	0.00
15.20	7.34	4.56	0.14	56.00	8.66	5.76	0.00
16.00	7.54	4.74	0.12	56.80	8.66	5.76	0.00
16.80	7.71	4.89	0.10	57.60	8.66	5.76	0.00
17.60	7.86	5.03	0.09	58.40	8.66	5.76	0.00
18.40	7.98	5.14	0.08	59.20	8.66	5.76	0.00
19.20	8.10	5.25	0.07	60.00	8.66	5.76	0.00
20.00	8.21	5.35	0.07	60.80	8.66	5.76	0.00
20.80	8.31	5.44	0.06	61.60	8.66	5.76	0.00
21.60	8.41	5.53	0.06	62.40	8.66	5.76	0.00
22.40	8.50	5.61	0.06	63.20	8.66	5.76	0.00
23.20	8.58	5.69	0.05	64.00	8.66	5.76	0.00
24.00	**8.66**	**5.76**	0.05	64.80	8.66	5.76	0.00
24.80	8.66	5.76	0.00	65.60	8.66	5.76	0.00
25.60	8.66	5.76	0.00	66.40	8.66	5.76	0.00
26.40	8.66	5.76	0.00	67.20	8.66	5.76	0.00
27.20	8.66	5.76	0.00	68.00	8.66	5.76	0.00
28.00	8.66	5.76	0.00	68.80	8.66	5.76	0.00
28.80	8.66	5.76	0.00	69.60	8.66	5.76	0.00
29.60	8.66	5.76	0.00	70.40	8.66	5.76	0.00
30.40	8.66	5.76	0.00	71.20	8.66	5.76	0.00
31.20	8.66	5.76	0.00	72.00	8.66	5.76	0.00
32.00	8.66	5.76	0.00	72.80	8.66	5.76	0.00
32.80	8.66	5.76	0.00	73.60	8.66	5.76	0.00
33.60	8.66	5.76	0.00	74.40	8.66	5.76	0.00
34.40	8.66	5.76	0.00	75.20	8.66	5.76	0.00
35.20	8.66	5.76	0.00	76.00	8.66	5.76	0.00
36.00	8.66	5.76	0.00	76.80	8.66	5.76	0.00
36.80	8.66	5.76	0.00	77.60	8.66	5.76	0.00
37.60	8.66	5.76	0.00	78.40	8.66	5.76	0.00
38.40	8.66	5.76	0.00	79.20	8.66	5.76	0.00
39.20	8.66	5.76	0.00	80.00	8.66	5.76	0.00
40.00	8.66	5.76	0.00				

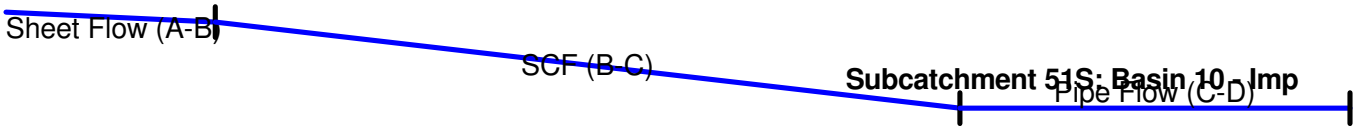
Summary for Subcatchment 51S: Basin 10 - Imp

Runoff = 8.52 cfs @ 12.18 hrs, Volume= 37,268 cf, Depth= 8.42"
Routed to Pond 41P : Basin 10

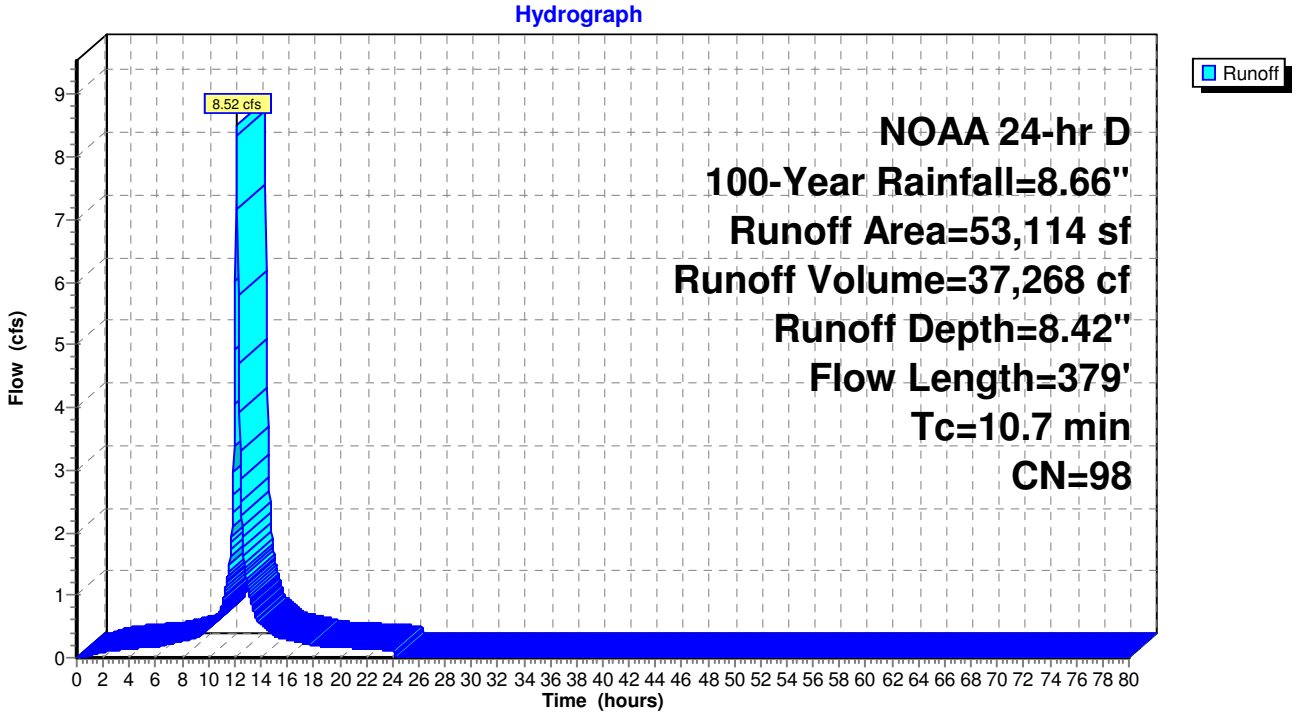
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
15,878	98	Paved parking, HSG C
37,236	98	Roofs, HSG C
53,114	98	Weighted Average
53,114		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.0	210	0.0480	3.53		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.7	110		2.50		**Direct Entry, Pipe Flow (C-D)**
10.7	379	Total			



Subcatchment 51S: Basin 10 - Imp



Hydrograph for Subcatchment 51S: Basin 10 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	8.42	0.00
0.80	0.08	0.01	0.02	41.60	8.66	8.42	0.00
1.60	0.16	0.05	0.07	42.40	8.66	8.42	0.00
2.40	0.25	0.11	0.11	43.20	8.66	8.42	0.00
3.20	0.35	0.19	0.13	44.00	8.66	8.42	0.00
4.00	0.45	0.28	0.14	44.80	8.66	8.42	0.00
4.80	0.56	0.38	0.16	45.60	8.66	8.42	0.00
5.60	0.68	0.48	0.17	46.40	8.66	8.42	0.00
6.40	0.80	0.60	0.19	47.20	8.66	8.42	0.00
7.20	0.95	0.74	0.23	48.00	8.66	8.42	0.00
8.00	1.12	0.91	0.27	48.80	8.66	8.42	0.00
8.80	1.32	1.10	0.31	49.60	8.66	8.42	0.00
9.60	1.56	1.34	0.40	50.40	8.66	8.42	0.00
10.40	1.89	1.67	0.54	51.20	8.66	8.42	0.00
11.20	2.42	2.19	0.98	52.00	8.66	8.42	0.00
12.00	4.15	3.91	**4.06**	52.80	8.66	8.42	0.00
12.80	6.24	6.00	**1.37**	53.60	8.66	8.42	0.00
13.60	6.77	6.53	0.65	54.40	8.66	8.42	0.00
14.40	7.10	6.86	0.47	55.20	8.66	8.42	0.00
15.20	7.34	7.10	0.33	56.00	8.66	8.42	0.00
16.00	7.54	7.30	0.29	56.80	8.66	8.42	0.00
16.80	7.71	7.47	0.25	57.60	8.66	8.42	0.00
17.60	7.86	7.62	0.22	58.40	8.66	8.42	0.00
18.40	7.98	7.74	0.18	59.20	8.66	8.42	0.00
19.20	8.10	7.86	0.17	60.00	8.66	8.42	0.00
20.00	8.21	7.97	0.17	60.80	8.66	8.42	0.00
20.80	8.31	8.07	0.16	61.60	8.66	8.42	0.00
21.60	8.41	8.17	0.15	62.40	8.66	8.42	0.00
22.40	8.50	8.26	0.14	63.20	8.66	8.42	0.00
23.20	8.58	8.34	0.13	64.00	8.66	8.42	0.00
24.00	**8.66**	**8.42**	0.12	64.80	8.66	8.42	0.00
24.80	8.66	8.42	0.00	65.60	8.66	8.42	0.00
25.60	8.66	8.42	0.00	66.40	8.66	8.42	0.00
26.40	8.66	8.42	0.00	67.20	8.66	8.42	0.00
27.20	8.66	8.42	0.00	68.00	8.66	8.42	0.00
28.00	8.66	8.42	0.00	68.80	8.66	8.42	0.00
28.80	8.66	8.42	0.00	69.60	8.66	8.42	0.00
29.60	8.66	8.42	0.00	70.40	8.66	8.42	0.00
30.40	8.66	8.42	0.00	71.20	8.66	8.42	0.00
31.20	8.66	8.42	0.00	72.00	8.66	8.42	0.00
32.00	8.66	8.42	0.00	72.80	8.66	8.42	0.00
32.80	8.66	8.42	0.00	73.60	8.66	8.42	0.00
33.60	8.66	8.42	0.00	74.40	8.66	8.42	0.00
34.40	8.66	8.42	0.00	75.20	8.66	8.42	0.00
35.20	8.66	8.42	0.00	76.00	8.66	8.42	0.00
36.00	8.66	8.42	0.00	76.80	8.66	8.42	0.00
36.80	8.66	8.42	0.00	77.60	8.66	8.42	0.00
37.60	8.66	8.42	0.00	78.40	8.66	8.42	0.00
38.40	8.66	8.42	0.00	79.20	8.66	8.42	0.00
39.20	8.66	8.42	0.00	80.00	8.66	8.42	0.00
40.00	8.66	8.42	0.00				

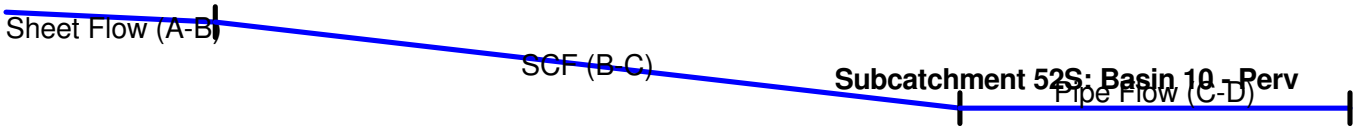
Summary for Subcatchment 52S: Basin 10 - Perv

Runoff = 4.65 cfs @ 12.18 hrs, Volume= 17,503 cf, Depth= 5.64"
Routed to Pond 41P : Basin 10

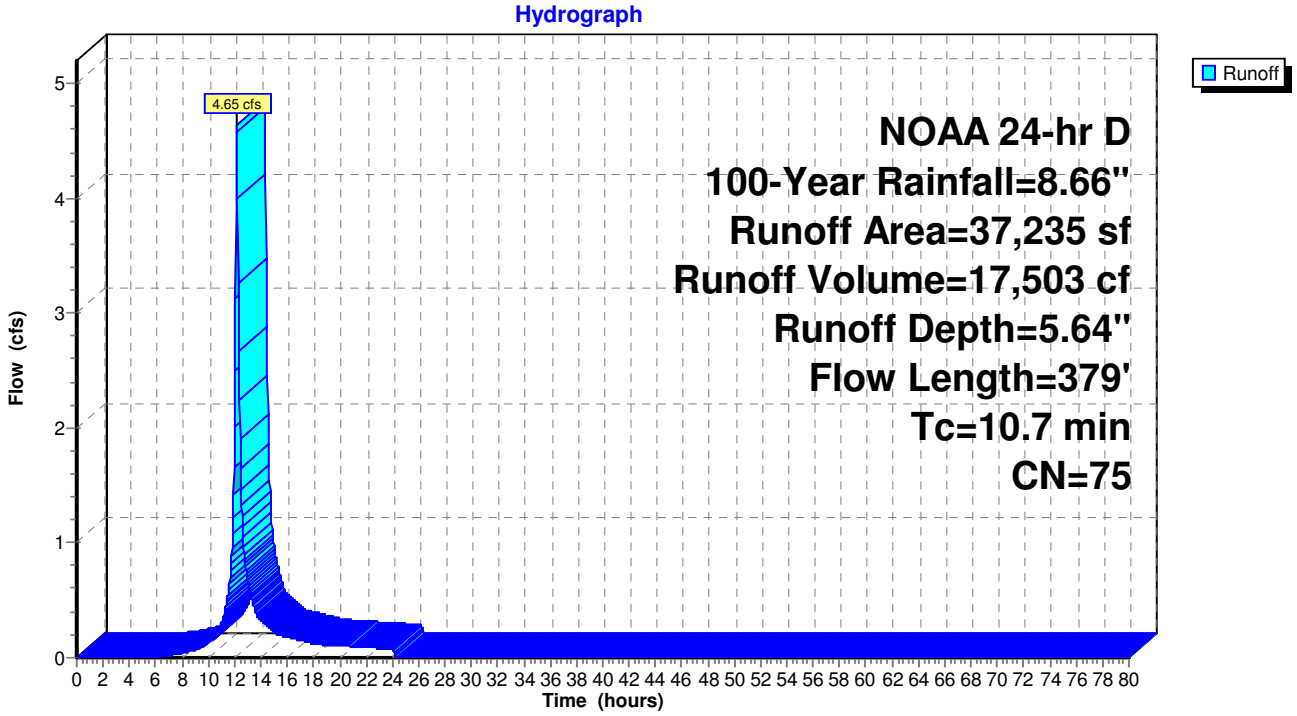
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
7,626	80	>75% Grass cover, Good, HSG D
29,609	74	>75% Grass cover, Good, HSG C
37,235	75	Weighted Average
37,235		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.0	210	0.0480	3.53		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.7	110		2.50		**Direct Entry, Pipe Flow (C-D)**
10.7	379	Total			



Subcatchment 52S: Basin 10 - Perv



Hydrograph for Subcatchment 52S: Basin 10 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	5.64	0.00
0.80	0.08	0.00	0.00	41.60	8.66	5.64	0.00
1.60	0.16	0.00	0.00	42.40	8.66	5.64	0.00
2.40	0.25	0.00	0.00	43.20	8.66	5.64	0.00
3.20	0.35	0.00	0.00	44.00	8.66	5.64	0.00
4.00	0.45	0.00	0.00	44.80	8.66	5.64	0.00
4.80	0.56	0.00	0.00	45.60	8.66	5.64	0.00
5.60	0.68	0.00	0.00	46.40	8.66	5.64	0.00
6.40	0.80	0.01	0.01	47.20	8.66	5.64	0.00
7.20	0.95	0.02	0.02	48.00	8.66	5.64	0.00
8.00	1.12	0.06	0.04	48.80	8.66	5.64	0.00
8.80	1.32	0.11	0.06	49.60	8.66	5.64	0.00
9.60	1.56	0.19	0.10	50.40	8.66	5.64	0.00
10.40	1.89	0.33	0.17	51.20	8.66	5.64	0.00
11.20	2.42	0.61	0.38	52.00	8.66	5.64	0.00
12.00	4.15	1.78	**2.02**	52.80	8.66	5.64	0.00
12.80	6.24	3.49	**0.82**	53.60	8.66	5.64	0.00
13.60	6.77	3.95	0.40	54.40	8.66	5.64	0.00
14.40	7.10	4.23	0.29	55.20	8.66	5.64	0.00
15.20	7.34	4.45	0.21	56.00	8.66	5.64	0.00
16.00	7.54	4.63	0.18	56.80	8.66	5.64	0.00
16.80	7.71	4.78	0.16	57.60	8.66	5.64	0.00
17.60	7.86	4.91	0.14	58.40	8.66	5.64	0.00
18.40	7.98	5.02	0.12	59.20	8.66	5.64	0.00
19.20	8.10	5.13	0.11	60.00	8.66	5.64	0.00
20.00	8.21	5.23	0.10	60.80	8.66	5.64	0.00
20.80	8.31	5.32	0.10	61.60	8.66	5.64	0.00
21.60	8.41	5.41	0.09	62.40	8.66	5.64	0.00
22.40	8.50	5.49	0.09	63.20	8.66	5.64	0.00
23.20	8.58	5.57	0.08	64.00	8.66	5.64	0.00
24.00	**8.66**	**5.64**	0.08	64.80	8.66	5.64	0.00
24.80	8.66	5.64	0.00	65.60	8.66	5.64	0.00
25.60	8.66	5.64	0.00	66.40	8.66	5.64	0.00
26.40	8.66	5.64	0.00	67.20	8.66	5.64	0.00
27.20	8.66	5.64	0.00	68.00	8.66	5.64	0.00
28.00	8.66	5.64	0.00	68.80	8.66	5.64	0.00
28.80	8.66	5.64	0.00	69.60	8.66	5.64	0.00
29.60	8.66	5.64	0.00	70.40	8.66	5.64	0.00
30.40	8.66	5.64	0.00	71.20	8.66	5.64	0.00
31.20	8.66	5.64	0.00	72.00	8.66	5.64	0.00
32.00	8.66	5.64	0.00	72.80	8.66	5.64	0.00
32.80	8.66	5.64	0.00	73.60	8.66	5.64	0.00
33.60	8.66	5.64	0.00	74.40	8.66	5.64	0.00
34.40	8.66	5.64	0.00	75.20	8.66	5.64	0.00
35.20	8.66	5.64	0.00	76.00	8.66	5.64	0.00
36.00	8.66	5.64	0.00	76.80	8.66	5.64	0.00
36.80	8.66	5.64	0.00	77.60	8.66	5.64	0.00
37.60	8.66	5.64	0.00	78.40	8.66	5.64	0.00
38.40	8.66	5.64	0.00	79.20	8.66	5.64	0.00
39.20	8.66	5.64	0.00	80.00	8.66	5.64	0.00
40.00	8.66	5.64	0.00				

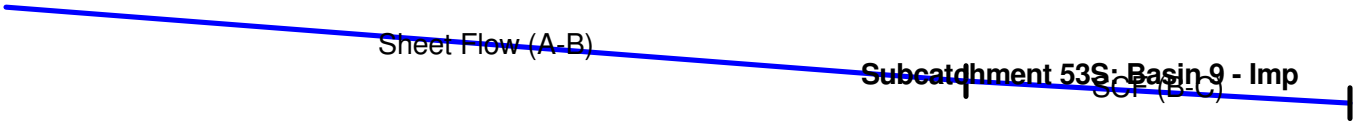
Summary for Subcatchment 53S: Basin 9 - Imp

Runoff = 3.12 cfs @ 12.14 hrs, Volume= 12,252 cf, Depth= 8.42"
Routed to Pond 42P : Basin 9

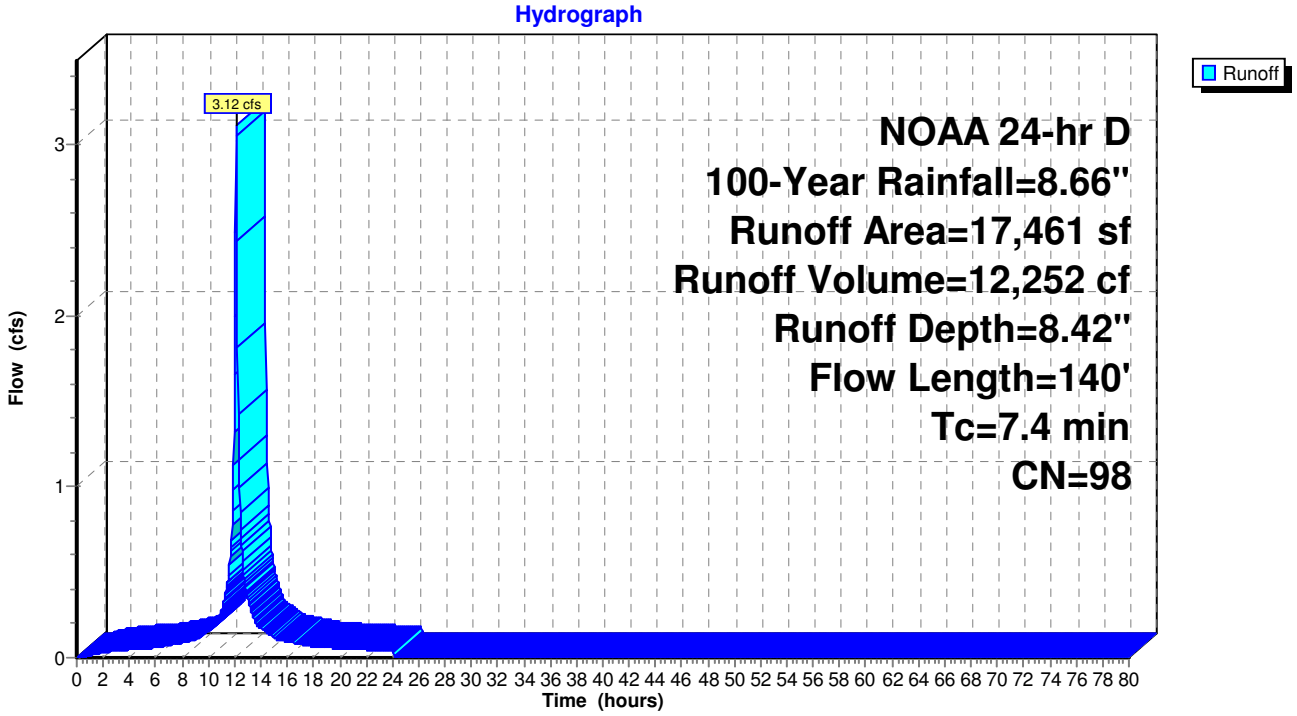
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

	Area (sf)	CN	Description
*	13,382	98	vehicle surface area
*	2,932	98	other impervious
*	1,147	98	roofs
	17,461	98	Weighted Average
	17,461		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.1000	0.23		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	40	0.0750	4.41		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
7.4	140	Total			



Subcatchment 53S: Basin 9 - Imp



Hydrograph for Subcatchment 53S: Basin 9 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	8.42	0.00
0.80	0.08	0.01	0.01	41.60	8.66	8.42	0.00
1.60	0.16	0.05	0.03	42.40	8.66	8.42	0.00
2.40	0.25	0.11	0.04	43.20	8.66	8.42	0.00
3.20	0.35	0.19	0.04	44.00	8.66	8.42	0.00
4.00	0.45	0.28	0.05	44.80	8.66	8.42	0.00
4.80	0.56	0.38	0.05	45.60	8.66	8.42	0.00
5.60	0.68	0.48	0.06	46.40	8.66	8.42	0.00
6.40	0.80	0.60	0.06	47.20	8.66	8.42	0.00
7.20	0.95	0.74	0.08	48.00	8.66	8.42	0.00
8.00	1.12	0.91	0.09	48.80	8.66	8.42	0.00
8.80	1.32	1.10	0.10	49.60	8.66	8.42	0.00
9.60	1.56	1.34	0.14	50.40	8.66	8.42	0.00
10.40	1.89	1.67	0.18	51.20	8.66	8.42	0.00
11.20	2.42	2.19	0.34	52.00	8.66	8.42	0.00
12.00	4.15	3.91	**1.66**	52.80	8.66	8.42	0.00
12.80	6.24	6.00	**0.42**	53.60	8.66	8.42	0.00
13.60	6.77	6.53	0.20	54.40	8.66	8.42	0.00
14.40	7.10	6.86	0.15	55.20	8.66	8.42	0.00
15.20	7.34	7.10	0.11	56.00	8.66	8.42	0.00
16.00	7.54	7.30	0.09	56.80	8.66	8.42	0.00
16.80	7.71	7.47	0.08	57.60	8.66	8.42	0.00
17.60	7.86	7.62	0.07	58.40	8.66	8.42	0.00
18.40	7.98	7.74	0.06	59.20	8.66	8.42	0.00
19.20	8.10	7.86	0.06	60.00	8.66	8.42	0.00
20.00	8.21	7.97	0.05	60.80	8.66	8.42	0.00
20.80	8.31	8.07	0.05	61.60	8.66	8.42	0.00
21.60	8.41	8.17	0.05	62.40	8.66	8.42	0.00
22.40	8.50	8.26	0.04	63.20	8.66	8.42	0.00
23.20	8.58	8.34	0.04	64.00	8.66	8.42	0.00
24.00	**8.66**	**8.42**	0.04	64.80	8.66	8.42	0.00
24.80	8.66	8.42	0.00	65.60	8.66	8.42	0.00
25.60	8.66	8.42	0.00	66.40	8.66	8.42	0.00
26.40	8.66	8.42	0.00	67.20	8.66	8.42	0.00
27.20	8.66	8.42	0.00	68.00	8.66	8.42	0.00
28.00	8.66	8.42	0.00	68.80	8.66	8.42	0.00
28.80	8.66	8.42	0.00	69.60	8.66	8.42	0.00
29.60	8.66	8.42	0.00	70.40	8.66	8.42	0.00
30.40	8.66	8.42	0.00	71.20	8.66	8.42	0.00
31.20	8.66	8.42	0.00	72.00	8.66	8.42	0.00
32.00	8.66	8.42	0.00	72.80	8.66	8.42	0.00
32.80	8.66	8.42	0.00	73.60	8.66	8.42	0.00
33.60	8.66	8.42	0.00	74.40	8.66	8.42	0.00
34.40	8.66	8.42	0.00	75.20	8.66	8.42	0.00
35.20	8.66	8.42	0.00	76.00	8.66	8.42	0.00
36.00	8.66	8.42	0.00	76.80	8.66	8.42	0.00
36.80	8.66	8.42	0.00	77.60	8.66	8.42	0.00
37.60	8.66	8.42	0.00	78.40	8.66	8.42	0.00
38.40	8.66	8.42	0.00	79.20	8.66	8.42	0.00
39.20	8.66	8.42	0.00	80.00	8.66	8.42	0.00
40.00	8.66	8.42	0.00				

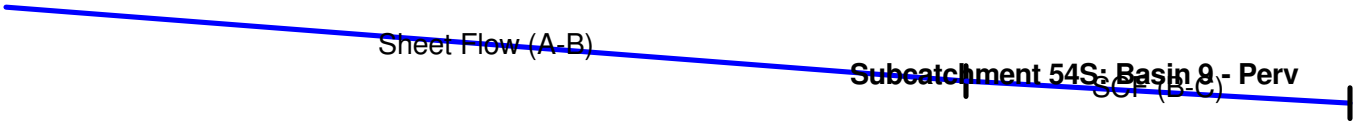
Summary for Subcatchment 54S: Basin 9 - Perv

Runoff = 1.31 cfs @ 12.14 hrs, Volume= 4,461 cf, Depth= 6.00"
Routed to Pond 42P : Basin 9

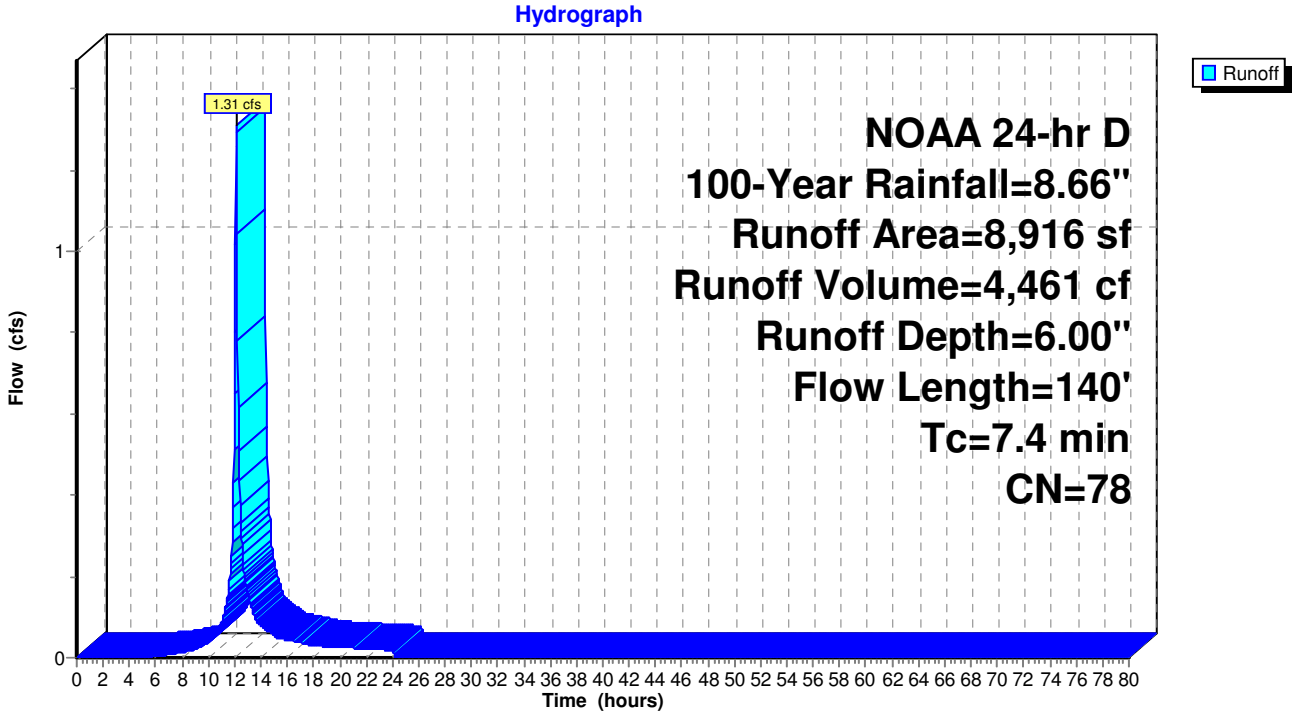
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
2,537	74	>75% Grass cover, Good, HSG C
6,379	80	>75% Grass cover, Good, HSG D
8,916	78	Weighted Average
8,916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.1000	0.23		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	40	0.0750	4.41		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
7.4	140	Total			



Subcatchment 54S: Basin 9 - Perv



Hydrograph for Subcatchment 54S: Basin 9 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	8.66	6.00	0.00
0.80	0.08	0.00	0.00	41.60	8.66	6.00	0.00
1.60	0.16	0.00	0.00	42.40	8.66	6.00	0.00
2.40	0.25	0.00	0.00	43.20	8.66	6.00	0.00
3.20	0.35	0.00	0.00	44.00	8.66	6.00	0.00
4.00	0.45	0.00	0.00	44.80	8.66	6.00	0.00
4.80	0.56	0.00	0.00	45.60	8.66	6.00	0.00
5.60	0.68	0.00	0.00	46.40	8.66	6.00	0.00
6.40	0.80	0.02	0.00	47.20	8.66	6.00	0.00
7.20	0.95	0.05	0.01	48.00	8.66	6.00	0.00
8.00	1.12	0.09	0.01	48.80	8.66	6.00	0.00
8.80	1.32	0.16	0.02	49.60	8.66	6.00	0.00
9.60	1.56	0.26	0.03	50.40	8.66	6.00	0.00
10.40	1.89	0.43	0.05	51.20	8.66	6.00	0.00
11.20	2.42	0.74	0.11	52.00	8.66	6.00	0.00
12.00	4.15	2.01	**0.65**	52.80	8.66	6.00	0.00
12.80	6.24	3.79	**0.19**	53.60	8.66	6.00	0.00
13.60	6.77	4.26	0.09	54.40	8.66	6.00	0.00
14.40	7.10	4.56	0.07	55.20	8.66	6.00	0.00
15.20	7.34	4.78	0.05	56.00	8.66	6.00	0.00
16.00	7.54	4.96	0.04	56.80	8.66	6.00	0.00
16.80	7.71	5.12	0.04	57.60	8.66	6.00	0.00
17.60	7.86	5.26	0.03	58.40	8.66	6.00	0.00
18.40	7.98	5.37	0.03	59.20	8.66	6.00	0.00
19.20	8.10	5.48	0.03	60.00	8.66	6.00	0.00
20.00	8.21	5.58	0.03	60.80	8.66	6.00	0.00
20.80	8.31	5.68	0.02	61.60	8.66	6.00	0.00
21.60	8.41	5.77	0.02	62.40	8.66	6.00	0.00
22.40	8.50	5.85	0.02	63.20	8.66	6.00	0.00
23.20	8.58	5.93	0.02	64.00	8.66	6.00	0.00
24.00	**8.66**	**6.00**	0.02	64.80	8.66	6.00	0.00
24.80	8.66	6.00	0.00	65.60	8.66	6.00	0.00
25.60	8.66	6.00	0.00	66.40	8.66	6.00	0.00
26.40	8.66	6.00	0.00	67.20	8.66	6.00	0.00
27.20	8.66	6.00	0.00	68.00	8.66	6.00	0.00
28.00	8.66	6.00	0.00	68.80	8.66	6.00	0.00
28.80	8.66	6.00	0.00	69.60	8.66	6.00	0.00
29.60	8.66	6.00	0.00	70.40	8.66	6.00	0.00
30.40	8.66	6.00	0.00	71.20	8.66	6.00	0.00
31.20	8.66	6.00	0.00	72.00	8.66	6.00	0.00
32.00	8.66	6.00	0.00	72.80	8.66	6.00	0.00
32.80	8.66	6.00	0.00	73.60	8.66	6.00	0.00
33.60	8.66	6.00	0.00	74.40	8.66	6.00	0.00
34.40	8.66	6.00	0.00	75.20	8.66	6.00	0.00
35.20	8.66	6.00	0.00	76.00	8.66	6.00	0.00
36.00	8.66	6.00	0.00	76.80	8.66	6.00	0.00
36.80	8.66	6.00	0.00	77.60	8.66	6.00	0.00
37.60	8.66	6.00	0.00	78.40	8.66	6.00	0.00
38.40	8.66	6.00	0.00	79.20	8.66	6.00	0.00
39.20	8.66	6.00	0.00	80.00	8.66	6.00	0.00
40.00	8.66	6.00	0.00				

Summary for Pond 21P: Basin 3

Inflow Area = 21,910 sf, 31.15% Impervious, Inflow Depth = 6.42" for 100-Year event
Inflow = 3.21 cfs @ 12.15 hrs, Volume= 11,728 cf
Outflow = 2.36 cfs @ 12.23 hrs, Volume= 11,728 cf, Atten= 26%, Lag= 4.6 min
Discarded = 1.21 cfs @ 12.00 hrs, Volume= 10,971 cf
Primary = 1.15 cfs @ 12.23 hrs, Volume= 756 cf
Routed to Pond 27P : Basin 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 559.42' @ 12.23 hrs Surf.Area= 5,227 sf Storage= 876 cf

Plug-Flow detention time= 2.2 min calculated for 11,722 cf (100% of inflow)
Center-of-Mass det. time= 2.2 min (792.7 - 790.5)

Volume	Invert	Avail.Storage	Storage Description
#1	559.00'	4,537 cf	**Custom Stage Data (Prismatic)** Listed below 11,343 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
559.00	5,227	0	0
560.00	5,227	5,227	5,227
561.00	5,227	5,227	10,454
561.17	5,227	889	11,343

Device	Routing	Invert	Outlet Devices
#1	Primary	559.22'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	559.00'	**10.000 in/hr Exfiltration over Surface area**

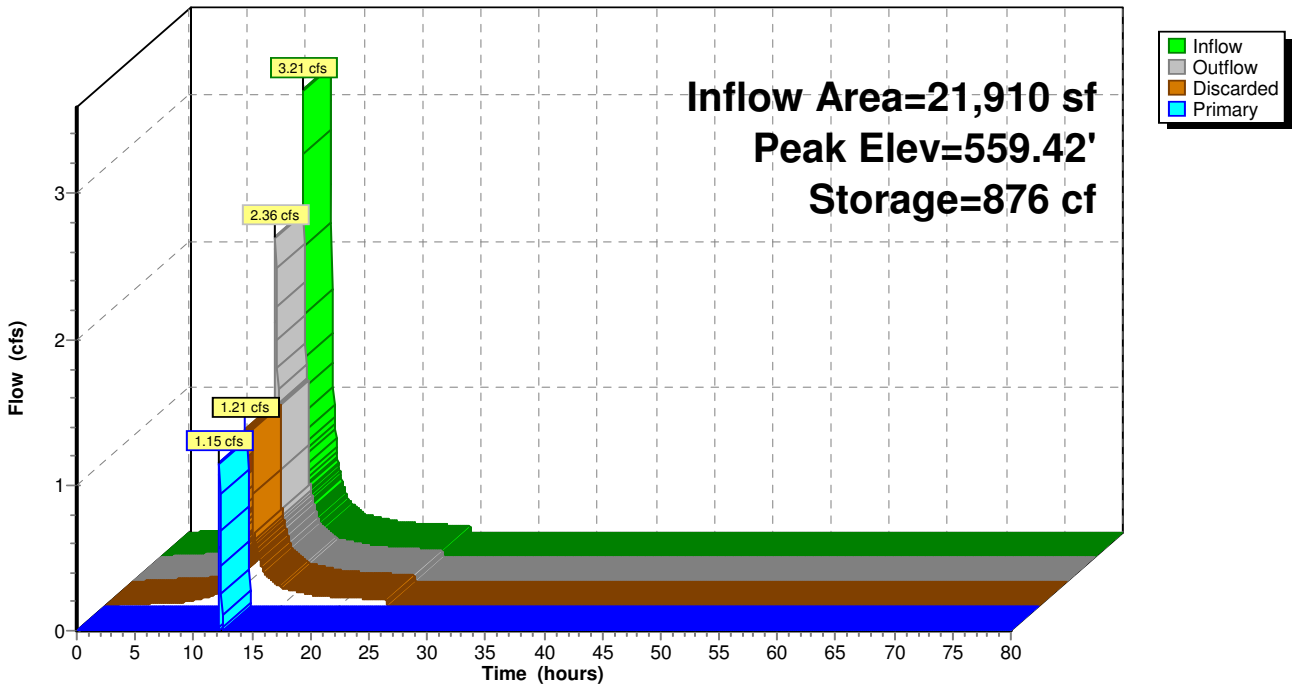
Discarded OutFlow Max=1.21 cfs @ 12.00 hrs HW=559.03' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.21 cfs)

Primary OutFlow Max=1.13 cfs @ 12.23 hrs HW=559.42' (Free Discharge)
└**1=Sharp-Crested Rectangular Weir** (Weir Controls 1.13 cfs @ 1.45 fps)



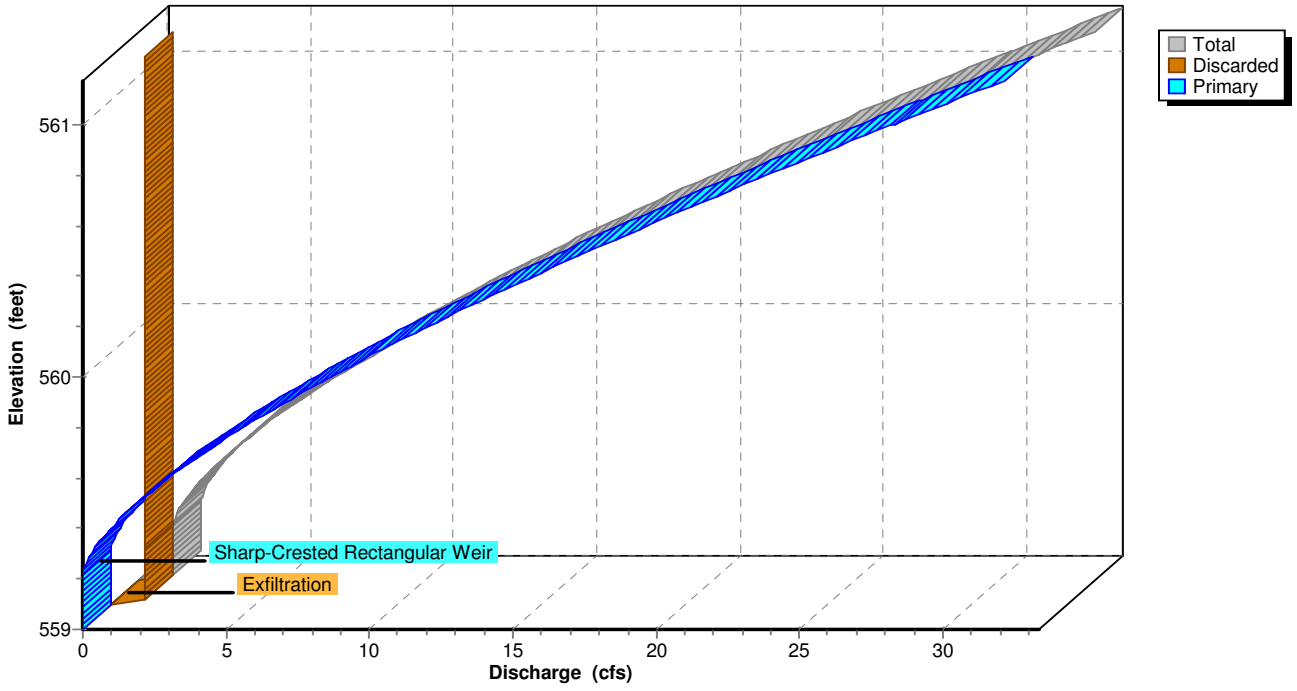
Pond 21P: Basin 3

Hydrograph

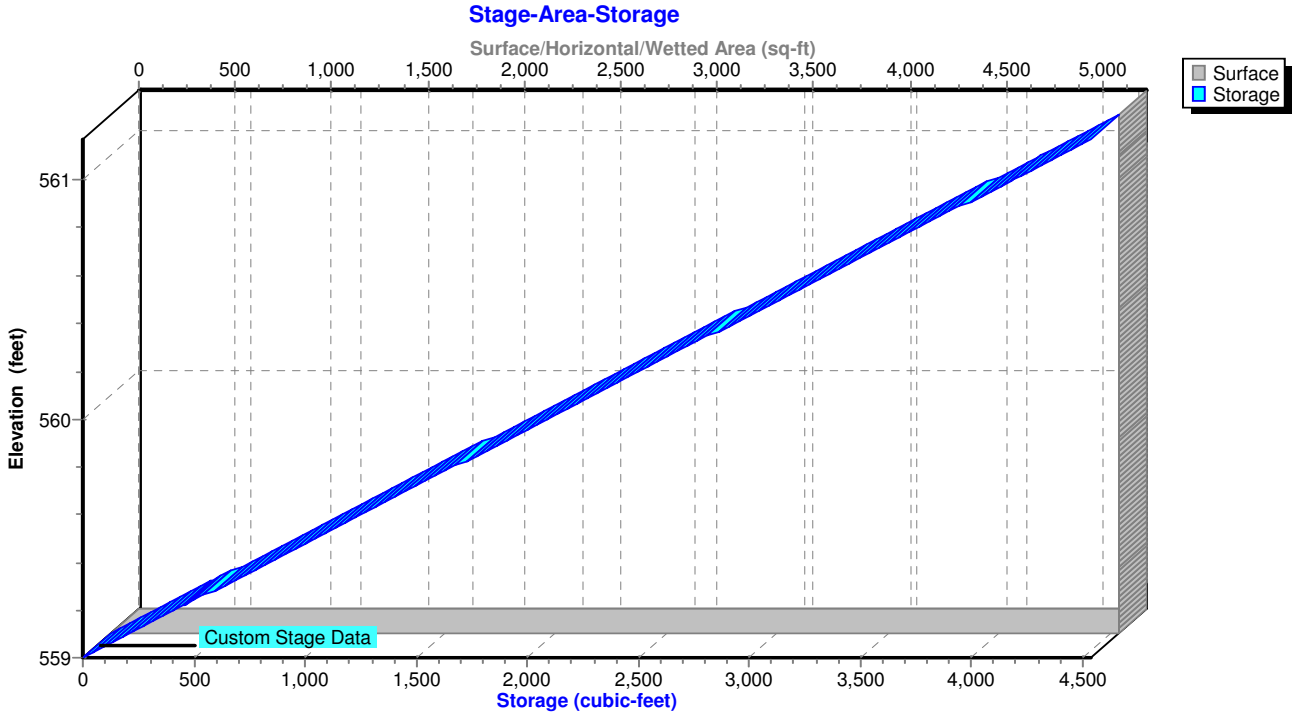


Pond 21P: Basin 3

Stage-Discharge



Pond 21P: Basin 3



Hydrograph for Pond 21P: Basin 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	559.00	0.00	0.00	0.00
2.00	0.01	0	559.00	0.01	0.01	0.00
4.00	0.02	1	559.00	0.02	0.02	0.00
6.00	0.02	1	559.00	0.02	0.02	0.00
8.00	0.05	2	559.00	0.05	0.05	0.00
10.00	0.11	4	559.00	0.11	0.11	0.00
12.00	**1.55**	**73**	**559.03**	**1.21**	**1.21**	**0.00**
14.00	**0.20**	**7**	**559.00**	**0.20**	0.20	**0.00**
16.00	0.11	4	559.00	0.11	0.11	0.00
18.00	0.07	3	559.00	0.07	0.07	0.00
20.00	0.06	2	559.00	0.06	0.06	0.00
22.00	0.05	2	559.00	0.05	0.05	0.00
24.00	0.05	2	559.00	0.05	0.05	0.00
26.00	0.00	0	559.00	0.00	0.00	0.00
28.00	0.00	0	559.00	0.00	0.00	0.00
30.00	0.00	0	559.00	0.00	0.00	0.00
32.00	0.00	0	559.00	0.00	0.00	0.00
34.00	0.00	0	559.00	0.00	0.00	0.00
36.00	0.00	0	559.00	0.00	0.00	0.00
38.00	0.00	0	559.00	0.00	0.00	0.00
40.00	0.00	0	559.00	0.00	0.00	0.00
42.00	0.00	0	559.00	0.00	0.00	0.00
44.00	0.00	0	559.00	0.00	0.00	0.00
46.00	0.00	0	559.00	0.00	0.00	0.00
48.00	0.00	0	559.00	0.00	0.00	0.00
50.00	0.00	0	559.00	0.00	0.00	0.00
52.00	0.00	0	559.00	0.00	0.00	0.00
54.00	0.00	0	559.00	0.00	0.00	0.00
56.00	0.00	0	559.00	0.00	0.00	0.00
58.00	0.00	0	559.00	0.00	0.00	0.00
60.00	0.00	0	559.00	0.00	0.00	0.00
62.00	0.00	0	559.00	0.00	0.00	0.00
64.00	0.00	0	559.00	0.00	0.00	0.00
66.00	0.00	0	559.00	0.00	0.00	0.00
68.00	0.00	0	559.00	0.00	0.00	0.00
70.00	0.00	0	559.00	0.00	0.00	0.00
72.00	0.00	0	559.00	0.00	0.00	0.00
74.00	0.00	0	559.00	0.00	0.00	0.00
76.00	0.00	0	559.00	0.00	0.00	0.00
78.00	0.00	0	559.00	0.00	0.00	0.00
80.00	0.00	0	559.00	0.00	0.00	0.00

Stage-Discharge for Pond 21P: Basin 3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
559.00	0.00	**0.00**	0.00
559.05	1.21	**1.21**	0.00
559.10	1.21	1.21	0.00
559.15	1.21	1.21	0.00
559.20	1.21	1.21	0.00
559.25	1.28	1.21	0.07
559.30	1.50	1.21	0.29
559.35	1.82	1.21	0.61
559.40	2.20	1.21	0.99
559.45	2.64	1.21	1.43
559.50	3.12	1.21	1.91
559.55	3.65	1.21	2.44
559.60	4.22	1.21	3.01
559.65	4.82	1.21	3.61
559.70	5.46	1.21	4.25
559.75	6.12	1.21	4.91
559.80	6.82	1.21	5.61
559.85	7.54	1.21	6.33
559.90	8.30	1.21	7.09
559.95	9.07	1.21	7.86
560.00	9.87	1.21	8.66
560.05	10.69	1.21	9.48
560.10	11.53	1.21	10.32
560.15	12.40	1.21	11.19
560.20	13.28	1.21	12.07
560.25	14.18	1.21	12.97
560.30	15.10	1.21	13.89
560.35	16.03	1.21	14.82
560.40	16.99	1.21	15.78
560.45	17.96	1.21	16.75
560.50	18.94	1.21	17.73
560.55	19.94	1.21	18.73
560.60	20.95	1.21	19.74
560.65	21.98	1.21	20.77
560.70	23.02	1.21	21.81
560.75	24.07	1.21	22.86
560.80	25.14	1.21	23.93
560.85	26.21	1.21	25.00
560.90	27.30	1.21	26.09
560.95	28.40	1.21	27.19
561.00	29.51	1.21	28.30
561.05	30.63	1.21	29.42
561.10	31.76	1.21	30.55
561.15	**32.90**	1.21	**31.69**

Stage-Area-Storage for Pond 21P: Basin 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
559.00	**5,227**	0
559.05	5,227	105
559.10	5,227	209
559.15	5,227	314
559.20	5,227	418
559.25	5,227	523
559.30	5,227	627
559.35	5,227	732
559.40	5,227	836
559.45	5,227	941
559.50	5,227	1,045
559.55	5,227	1,150
559.60	5,227	1,254
559.65	5,227	1,359
559.70	5,227	1,464
559.75	5,227	1,568
559.80	5,227	1,673
559.85	5,227	1,777
559.90	5,227	1,882
559.95	5,227	1,986
560.00	5,227	2,091
560.05	5,227	2,195
560.10	5,227	2,300
560.15	5,227	2,404
560.20	5,227	2,509
560.25	5,227	2,614
560.30	5,227	2,718
560.35	5,227	2,823
560.40	5,227	2,927
560.45	5,227	3,032
560.50	5,227	3,136
560.55	5,227	3,241
560.60	5,227	3,345
560.65	5,227	3,450
560.70	5,227	3,554
560.75	5,227	3,659
560.80	5,227	3,763
560.85	5,227	3,868
560.90	5,227	3,973
560.95	5,227	4,077
561.00	5,227	4,182
561.05	5,227	4,286
561.10	5,227	4,391
561.15	5,227	**4,495**

Summary for Pond 22P: Basin 4

Inflow Area = 49,050 sf, 84.66% Impervious, Inflow Depth = 7.97" for 100-Year event
Inflow = 9.06 cfs @ 12.12 hrs, Volume= 32,597 cf
Outflow = 1.94 cfs @ 12.43 hrs, Volume= 32,597 cf, Atten= 79%, Lag= 18.4 min
Discarded = 1.13 cfs @ 11.48 hrs, Volume= 28,845 cf
Primary = 0.81 cfs @ 12.43 hrs, Volume= 3,752 cf
Routed to Pond 27P : Basin 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 573.49' @ 12.43 hrs Surf.Area= 12,197 sf Storage= 7,284 cf

Plug-Flow detention time= 24.8 min calculated for 32,581 cf (100% of inflow)
Center-of-Mass det. time= 24.7 min (773.8 - 749.0)

Volume	Invert	Avail.Storage	Storage Description
#1	572.00'	14,197 cf	**Custom Stage Data (Prismatic)** Listed below 35,493 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
572.00	12,197	0	0
573.00	12,197	12,197	12,197
574.00	12,197	12,197	24,394
574.91	12,197	11,099	35,493

Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	572.50'	**6.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Discarded	572.00'	**4.000 in/hr Exfiltration over Surface area**

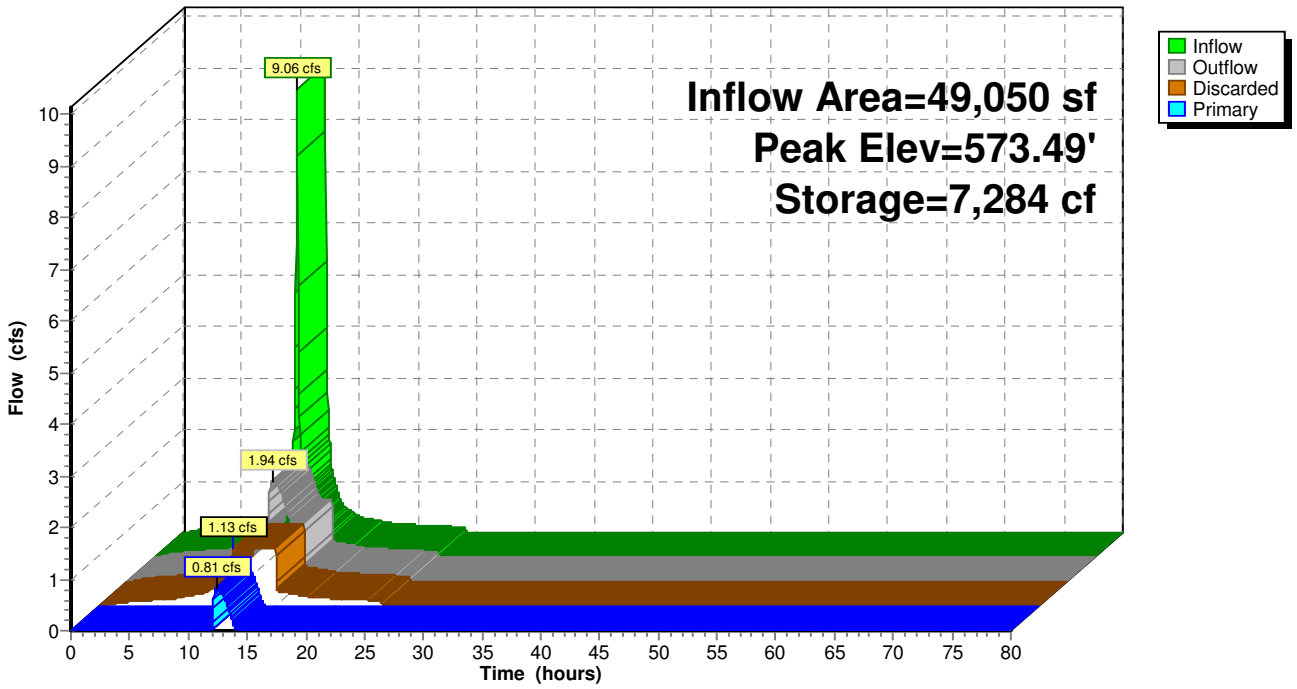
Discarded OutFlow Max=1.13 cfs @ 11.48 hrs HW=572.03' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 1.13 cfs)

Primary OutFlow Max=0.81 cfs @ 12.43 hrs HW=573.49' (Free Discharge)
├**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice** (Orifice Controls 0.81 cfs @ 4.15 fps)



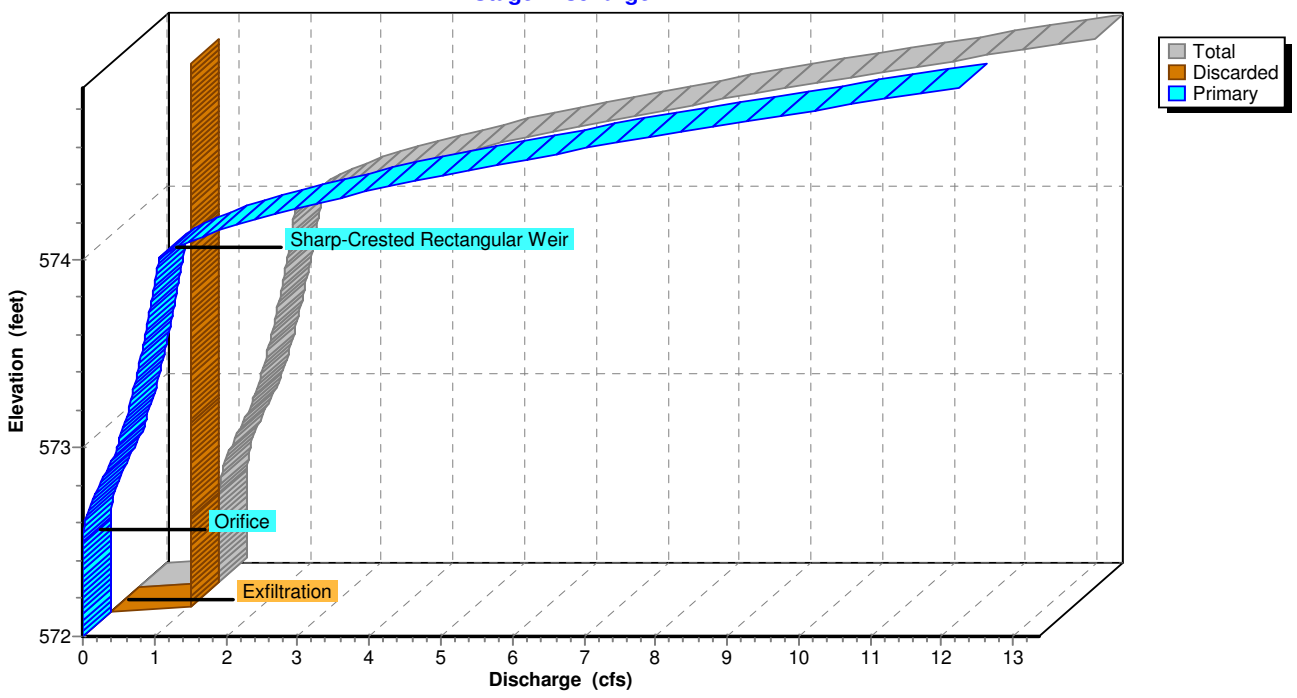
Pond 22P: Basin 4

Hydrograph

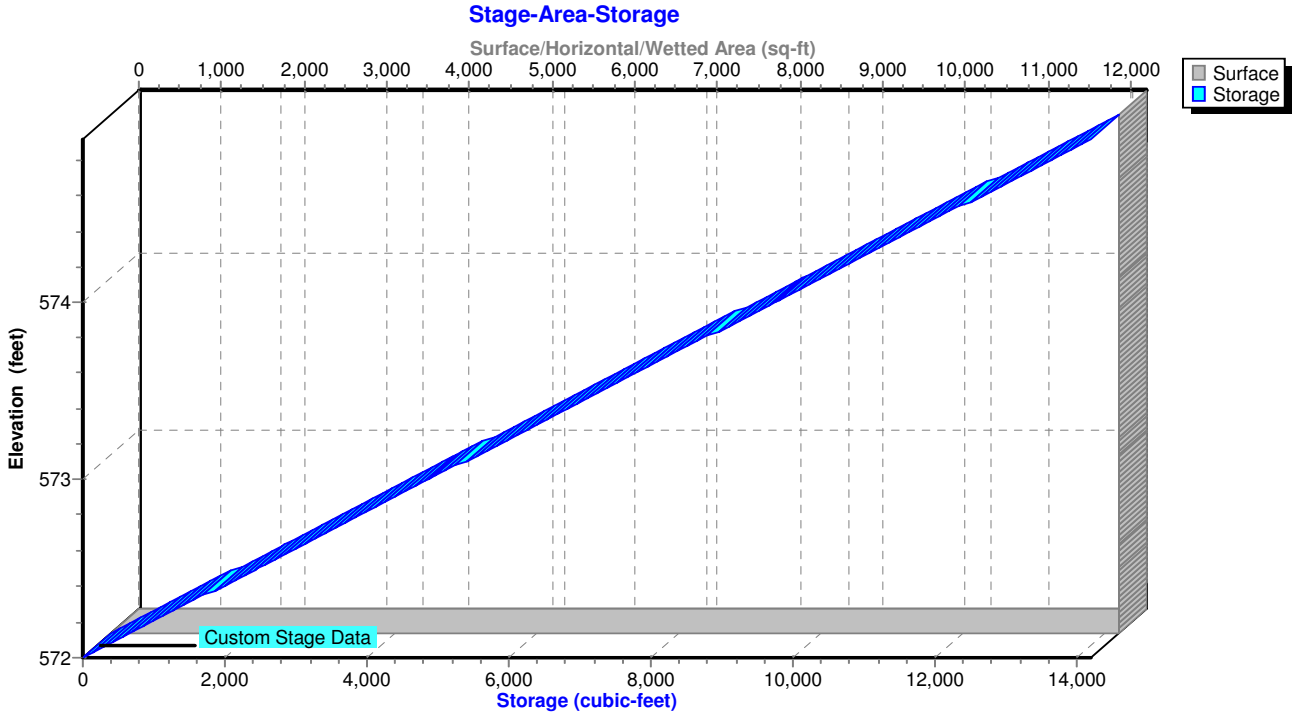


Pond 22P: Basin 4

Stage-Discharge



Pond 22P: Basin 4



Hydrograph for Pond 22P: Basin 4

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	572.00	0.00	0.00	0.00
2.00	0.07	9	572.00	0.07	0.07	0.00
4.00	0.11	14	572.00	0.11	0.11	0.00
6.00	0.14	17	572.00	0.14	0.14	0.00
8.00	0.22	28	572.01	0.22	0.22	0.00
10.00	0.41	50	572.01	0.40	**0.40**	0.00
12.00	**5.13**	**2,239**	**572.46**	**1.13**	**1.13**	**0.00**
14.00	**0.47**	**3,005**	**572.62**	**1.17**	1.13	**0.04**
16.00	0.26	33	572.01	0.26	0.26	0.00
18.00	0.18	22	572.00	0.18	0.18	0.00
20.00	0.15	19	572.00	0.15	0.15	0.00
22.00	0.13	16	572.00	0.13	0.13	0.00
24.00	0.11	13	572.00	0.11	0.11	0.00
26.00	0.00	0	572.00	0.00	0.00	0.00
28.00	0.00	0	572.00	0.00	0.00	0.00
30.00	0.00	0	572.00	0.00	0.00	0.00
32.00	0.00	0	572.00	0.00	0.00	0.00
34.00	0.00	0	572.00	0.00	0.00	0.00
36.00	0.00	0	572.00	0.00	0.00	0.00
38.00	0.00	0	572.00	0.00	0.00	0.00
40.00	0.00	0	572.00	0.00	0.00	0.00
42.00	0.00	0	572.00	0.00	0.00	0.00
44.00	0.00	0	572.00	0.00	0.00	0.00
46.00	0.00	0	572.00	0.00	0.00	0.00
48.00	0.00	0	572.00	0.00	0.00	0.00
50.00	0.00	0	572.00	0.00	0.00	0.00
52.00	0.00	0	572.00	0.00	0.00	0.00
54.00	0.00	0	572.00	0.00	0.00	0.00
56.00	0.00	0	572.00	0.00	0.00	0.00
58.00	0.00	0	572.00	0.00	0.00	0.00
60.00	0.00	0	572.00	0.00	0.00	0.00
62.00	0.00	0	572.00	0.00	0.00	0.00
64.00	0.00	0	572.00	0.00	0.00	0.00
66.00	0.00	0	572.00	0.00	0.00	0.00
68.00	0.00	0	572.00	0.00	0.00	0.00
70.00	0.00	0	572.00	0.00	0.00	0.00
72.00	0.00	0	572.00	0.00	0.00	0.00
74.00	0.00	0	572.00	0.00	0.00	0.00
76.00	0.00	0	572.00	0.00	0.00	0.00
78.00	0.00	0	572.00	0.00	0.00	0.00
80.00	0.00	0	572.00	0.00	0.00	0.00

Stage-Discharge for Pond 22P: Basin 4

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
572.00	0.00	**0.00**	0.00
572.05	1.13	**1.13**	0.00
572.10	1.13	1.13	0.00
572.15	1.13	1.13	0.00
572.20	1.13	1.13	0.00
572.25	1.13	1.13	0.00
572.30	1.13	1.13	0.00
572.35	1.13	1.13	0.00
572.40	1.13	1.13	0.00
572.45	1.13	1.13	0.00
572.50	1.13	1.13	0.00
572.55	1.14	1.13	0.01
572.60	1.16	1.13	0.03
572.65	1.19	1.13	0.07
572.70	1.24	1.13	0.11
572.75	1.30	1.13	0.17
572.80	1.36	1.13	0.23
572.85	1.43	1.13	0.30
572.90	1.49	1.13	0.36
572.95	1.55	1.13	0.43
573.00	1.60	1.13	0.47
573.05	1.65	1.13	0.52
573.10	1.69	1.13	0.56
573.15	1.73	1.13	0.60
573.20	1.76	1.13	0.63
573.25	1.80	1.13	0.67
573.30	1.83	1.13	0.70
573.35	1.86	1.13	0.73
573.40	1.89	1.13	0.76
573.45	1.92	1.13	0.79
573.50	1.95	1.13	0.82
573.55	1.97	1.13	0.85
573.60	2.00	1.13	0.87
573.65	2.03	1.13	0.90
573.70	2.05	1.13	0.92
573.75	2.07	1.13	0.95
573.80	2.10	1.13	0.97
573.85	2.12	1.13	0.99
573.90	2.14	1.13	1.01
573.95	2.17	1.13	1.04
574.00	2.19	1.13	1.06
574.05	2.35	1.13	1.22
574.10	2.64	1.13	1.51
574.15	3.00	1.13	1.87
574.20	3.43	1.13	2.30
574.25	3.90	1.13	2.77
574.30	4.42	1.13	3.29
574.35	4.99	1.13	3.86
574.40	5.59	1.13	4.46
574.45	6.22	1.13	5.09
574.50	6.89	1.13	5.76
574.55	7.59	1.13	6.46
574.60	8.31	1.13	7.18
574.65	9.06	1.13	7.93
574.70	9.84	1.13	8.71
574.75	10.64	1.13	9.51
574.80	11.47	1.13	10.34
574.85	12.31	1.13	11.18
574.90	**13.18**	1.13	**12.05**

Stage-Area-Storage for Pond 22P: Basin 4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
572.00	**12,197**	0
572.05	12,197	244
572.10	12,197	488
572.15	12,197	732
572.20	12,197	976
572.25	12,197	1,220
572.30	12,197	1,464
572.35	12,197	1,708
572.40	12,197	1,952
572.45	12,197	2,195
572.50	12,197	2,439
572.55	12,197	2,683
572.60	12,197	2,927
572.65	12,197	3,171
572.70	12,197	3,415
572.75	12,197	3,659
572.80	12,197	3,903
572.85	12,197	4,147
572.90	12,197	4,391
572.95	12,197	4,635
573.00	12,197	4,879
573.05	12,197	5,123
573.10	12,197	5,367
573.15	12,197	5,611
573.20	12,197	5,855
573.25	12,197	6,099
573.30	12,197	6,342
573.35	12,197	6,586
573.40	12,197	6,830
573.45	12,197	7,074
573.50	12,197	7,318
573.55	12,197	7,562
573.60	12,197	7,806
573.65	12,197	8,050
573.70	12,197	8,294
573.75	12,197	8,538
573.80	12,197	8,782
573.85	12,197	9,026
573.90	12,197	9,270
573.95	12,197	9,514
574.00	12,197	9,758
574.05	12,197	10,002
574.10	12,197	10,245
574.15	12,197	10,489
574.20	12,197	10,733
574.25	12,197	10,977
574.30	12,197	11,221
574.35	12,197	11,465
574.40	12,197	11,709
574.45	12,197	11,953
574.50	12,197	12,197
574.55	12,197	12,441
574.60	12,197	12,685
574.65	12,197	12,929
574.70	12,197	13,173
574.75	12,197	13,417
574.80	12,197	13,661
574.85	12,197	13,905
574.90	12,197	**14,149**

Summary for Pond 27P: Basin 2

Inflow Area = 183,393 sf, 42.82% Impervious, Inflow Depth = 4.32" for 100-Year event
Inflow = 17.10 cfs @ 12.19 hrs, Volume= 66,008 cf
Outflow = 5.38 cfs @ 12.50 hrs, Volume= 56,696 cf, Atten= 69%, Lag= 18.5 min
Primary = 5.38 cfs @ 12.50 hrs, Volume= 56,696 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 545.62' @ 12.50 hrs Surf.Area= 29,623 sf Storage= 31,128 cf

Plug-Flow detention time= 260.9 min calculated for 56,696 cf (86% of inflow)
Center-of-Mass det. time= 195.4 min (986.5 - 791.1)

Volume	Invert	Avail.Storage	Storage Description
#1	544.50'	74,059 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
544.50	26,023	0	0
546.00	30,850	42,655	42,655
547.00	31,958	31,404	74,059

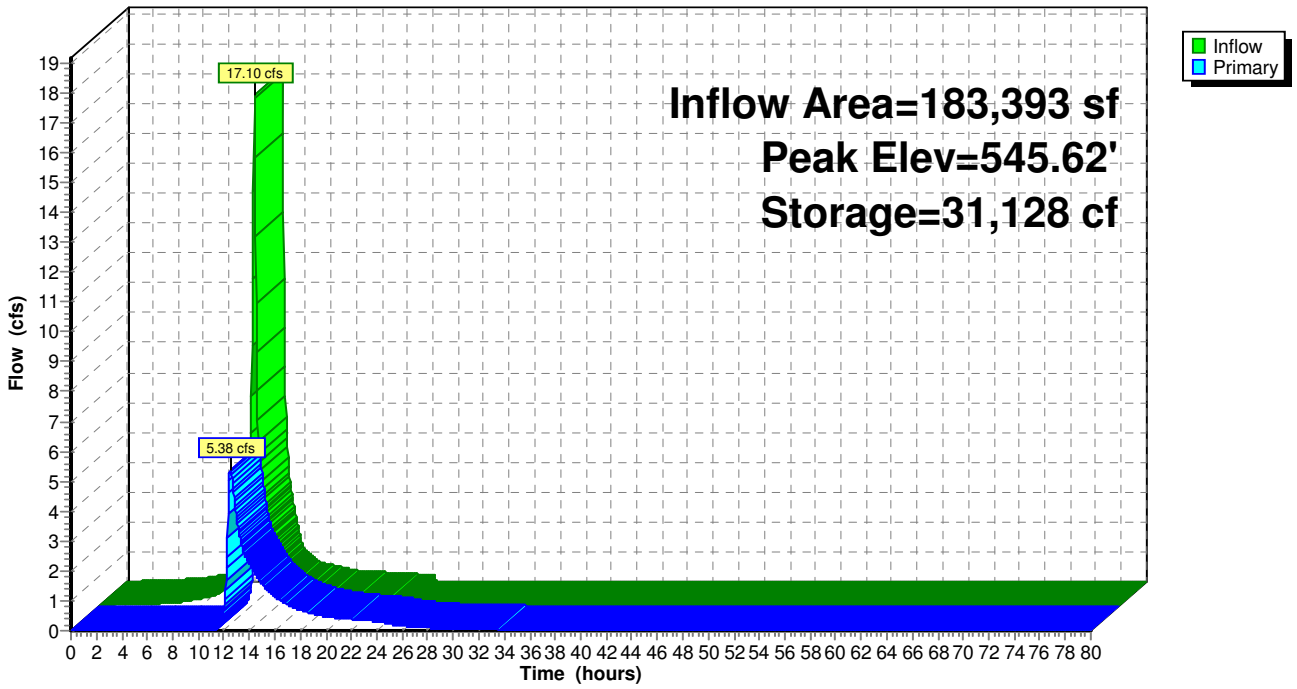
Device	Routing	Invert	Outlet Devices
#1	Primary	545.50'	**42.0" x 48.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	544.85'	**1.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.7' Crest Height

Primary OutFlow Max=5.36 cfs @ 12.50 hrs HW=545.62' (Free Discharge)
└**1=Grate** (Weir Controls 2.00 cfs @ 1.13 fps)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 3.36 cfs @ 3.25 fps)



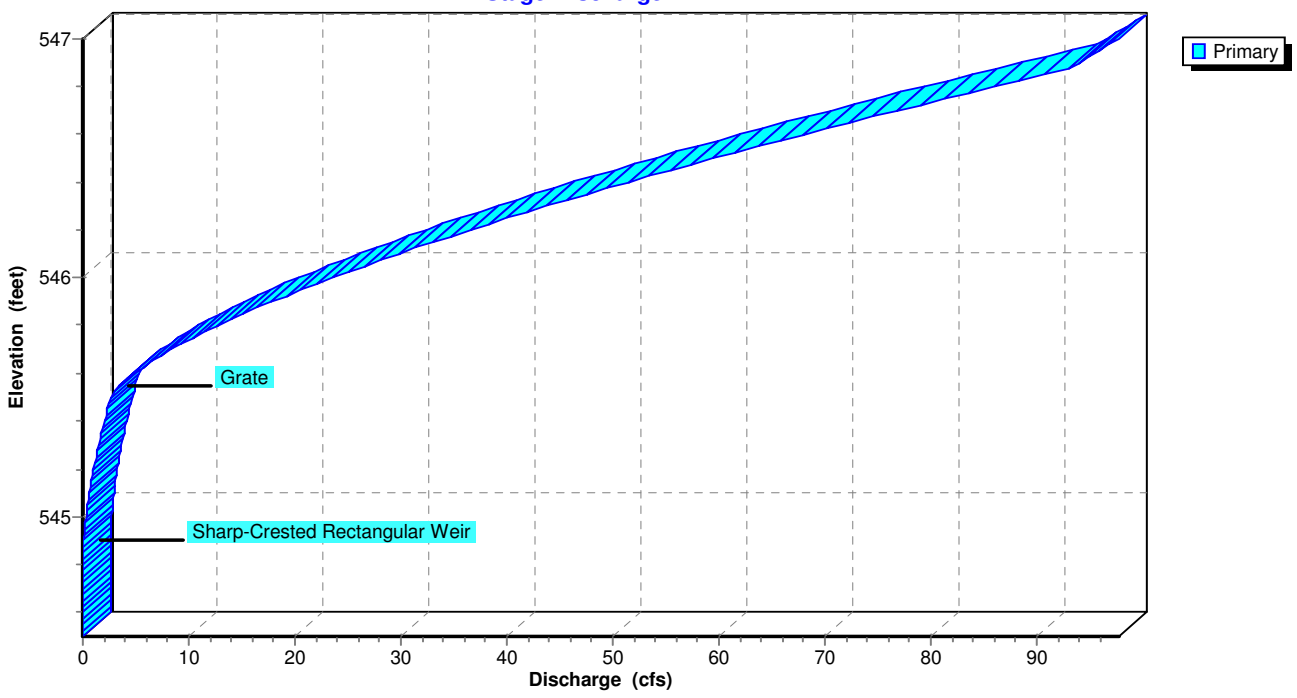
Pond 27P: Basin 2

Hydrograph

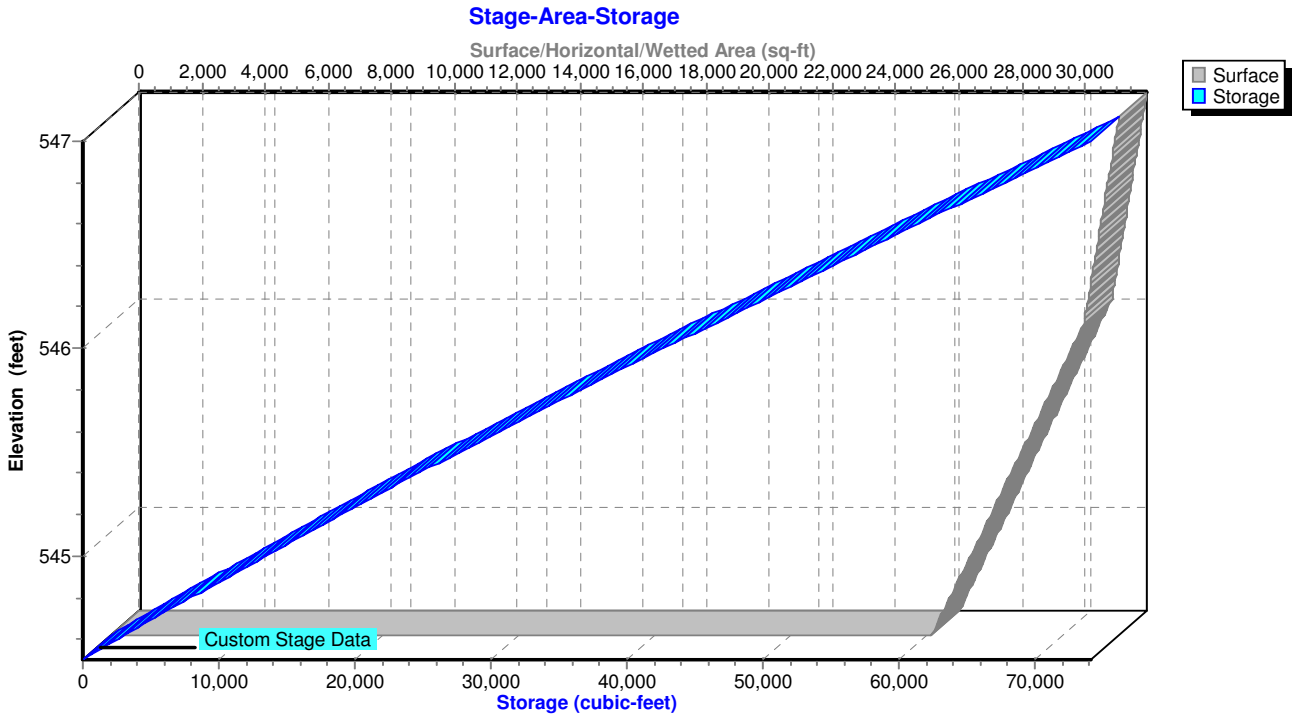


Pond 27P: Basin 2

Stage-Discharge



Pond 27P: Basin 2



Hydrograph for Pond 27P: Basin 2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	544.50	0.00
2.00	0.05	158	544.51	0.00
4.00	0.08	648	544.52	0.00
6.00	0.12	1,332	544.55	0.00
8.00	0.26	2,674	544.60	0.00
10.00	0.60	5,485	544.71	0.00
12.00	**7.05**	**16,996**	**545.13**	**0.73**
14.00	**1.08**	**25,827**	**545.44**	**2.25**
16.00	0.58	19,686	545.22	1.14
18.00	0.39	16,767	545.12	0.70
20.00	0.33	15,156	545.06	0.49
22.00	0.28	14,274	545.03	0.38
24.00	0.24	13,657	545.01	0.31
26.00	0.00	12,121	544.95	0.16
28.00	0.00	11,230	544.92	0.09
30.00	0.00	10,700	544.90	0.06
32.00	0.00	10,359	544.89	0.04
34.00	0.00	10,126	544.88	0.03
36.00	0.00	9,965	544.87	0.02
38.00	0.00	9,842	544.87	0.02
40.00	0.00	9,742	544.87	0.01
42.00	0.00	9,661	544.86	0.01
44.00	0.00	9,595	544.86	0.01
46.00	0.00	9,541	544.86	0.01
48.00	0.00	9,497	544.86	0.01
50.00	0.00	9,462	544.86	0.00
52.00	0.00	9,433	544.85	0.00
54.00	0.00	9,409	544.85	0.00
56.00	0.00	9,390	544.85	0.00
58.00	0.00	9,374	544.85	0.00
60.00	0.00	9,361	544.85	0.00
62.00	0.00	9,351	544.85	0.00
64.00	0.00	9,342	544.85	0.00
66.00	0.00	9,335	544.85	0.00
68.00	0.00	9,330	544.85	0.00
70.00	0.00	9,325	544.85	0.00
72.00	0.00	9,321	544.85	0.00
74.00	0.00	9,318	544.85	0.00
76.00	0.00	9,316	544.85	0.00
78.00	0.00	9,314	544.85	0.00
80.00	0.00	9,312	544.85	0.00

Stage-Discharge for Pond 27P: Basin 2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
544.50	0.00	545.52	2.88	546.54	62.84
544.52	0.00	545.54	3.25	546.56	64.53
544.54	0.00	545.56	3.71	546.58	66.23
544.56	0.00	545.58	4.22	546.60	67.96
544.58	0.00	545.60	4.79	546.62	69.69
544.60	0.00	545.62	5.41	546.64	71.44
544.62	0.00	545.64	6.08	546.66	73.21
544.64	0.00	545.66	6.78	546.68	74.99
544.66	0.00	545.68	7.52	546.70	76.78
544.68	0.00	545.70	8.30	546.72	78.59
544.70	0.00	545.72	9.11	546.74	80.41
544.72	0.00	545.74	9.96	546.76	82.24
544.74	0.00	545.76	10.84	546.78	84.09
544.76	0.00	545.78	11.75	546.80	85.96
544.78	0.00	545.80	12.68	546.82	87.83
544.80	0.00	545.82	13.65	546.84	89.72
544.82	0.00	545.84	14.64	546.86	91.62
544.84	0.00	545.86	15.66	546.88	93.21
544.86	0.00	545.88	16.71	546.90	93.97
544.88	0.03	545.90	17.78	546.92	94.73
544.90	0.05	545.92	18.88	546.94	95.49
544.92	0.09	545.94	20.00	546.96	96.24
544.94	0.13	545.96	21.14	546.98	96.99
544.96	0.18	545.98	22.30	547.00	**97.73**
544.98	0.23	546.00	23.49		
545.00	0.29	546.02	24.70		
545.02	0.35	546.04	25.93		
545.04	0.41	546.06	27.19		
545.06	0.48	546.08	28.46		
545.08	0.55	546.10	29.76		
545.10	0.62	546.12	31.07		
545.12	0.69	546.14	32.41		
545.14	0.77	546.16	33.76		
545.16	0.86	546.18	35.13		
545.18	0.94	546.20	36.52		
545.20	1.03	546.22	37.93		
545.22	1.12	546.24	39.36		
545.24	1.21	546.26	40.81		
545.26	1.30	546.28	42.27		
545.28	1.40	546.30	43.76		
545.30	1.50	546.32	45.26		
545.32	1.60	546.34	46.77		
545.34	1.71	546.36	48.31		
545.36	1.81	546.38	49.86		
545.38	1.92	546.40	51.42		
545.40	2.03	546.42	53.01		
545.42	2.14	546.44	54.60		
545.44	2.26	546.46	56.22		
545.46	2.38	546.48	57.85		
545.48	2.49	546.50	59.50		
545.50	2.61	546.52	61.16		

Stage-Area-Storage for Pond 27P: Basin 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
544.50	26,023	0
544.55	26,184	1,305
544.60	26,345	2,618
544.65	26,506	3,940
544.70	26,667	5,269
544.75	26,828	6,606
544.80	26,988	7,952
544.85	27,149	9,305
544.90	27,310	10,667
544.95	27,471	12,036
545.00	27,632	13,414
545.05	27,793	14,799
545.10	27,954	16,193
545.15	28,115	17,595
545.20	28,276	19,005
545.25	28,437	20,422
545.30	28,597	21,848
545.35	28,758	23,282
545.40	28,919	24,724
545.45	29,080	26,174
545.50	29,241	27,632
545.55	29,402	29,098
545.60	29,563	30,572
545.65	29,724	32,054
545.70	29,885	33,545
545.75	30,046	35,043
545.80	30,206	36,549
545.85	30,367	38,063
545.90	30,528	39,586
545.95	30,689	41,116
546.00	30,850	42,655
546.05	30,905	44,199
546.10	30,961	45,745
546.15	31,016	47,295
546.20	31,072	48,847
546.25	31,127	50,402
546.30	31,182	51,960
546.35	31,238	53,520
546.40	31,293	55,083
546.45	31,349	56,649
546.50	31,404	58,218
546.55	31,459	59,790
546.60	31,515	61,364
546.65	31,570	62,941
546.70	31,626	64,521
546.75	31,681	66,104
546.80	31,736	67,689
546.85	31,792	69,278
546.90	31,847	70,868
546.95	31,903	72,462
547.00	**31,958**	**74,059**

Summary for Pond 33P: Basin 11

Inflow Area = 84,103 sf, 71.22% Impervious, Inflow Depth = 7.65" for 100-Year event
Inflow = 13.07 cfs @ 12.17 hrs, Volume= 53,651 cf
Outflow = 10.67 cfs @ 12.24 hrs, Volume= 53,651 cf, Atten= 18%, Lag= 4.2 min
Discarded = 3.13 cfs @ 11.84 hrs, Volume= 44,987 cf
Primary = 7.54 cfs @ 12.24 hrs, Volume= 8,664 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 590.71' @ 12.24 hrs Surf.Area= 13,504 sf Storage= 3,818 cf

Plug-Flow detention time= 2.5 min calculated for 53,624 cf (100% of inflow)
Center-of-Mass det. time= 2.5 min (763.3 - 760.9)

Volume	Invert	Avail.Storage	Storage Description
#1	590.00'	13,072 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 32,680 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
590.00	13,504	0	0
591.00	13,504	13,504	13,504
592.00	13,504	13,504	27,008
592.42	13,504	5,672	32,680

Device	Routing	Invert	Outlet Devices
#1	Primary	590.10'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	590.00'	**10.000 in/hr Exfiltration over Surface area**

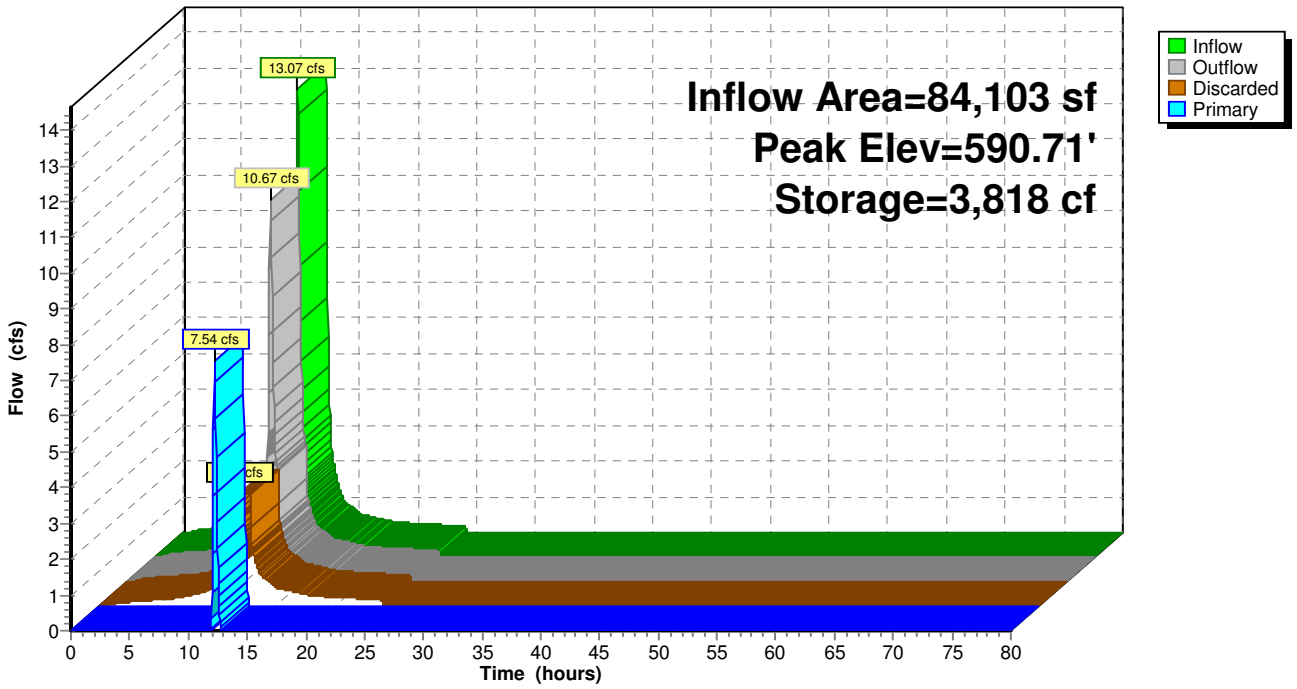
Discarded OutFlow Max=3.13 cfs @ 11.84 hrs HW=590.03' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 3.13 cfs)

Primary OutFlow Max=7.50 cfs @ 12.24 hrs HW=590.70' (Free Discharge)
↑**1=Sharp-Crested Rectangular Weir** (Weir Controls 7.50 cfs @ 2.54 fps)



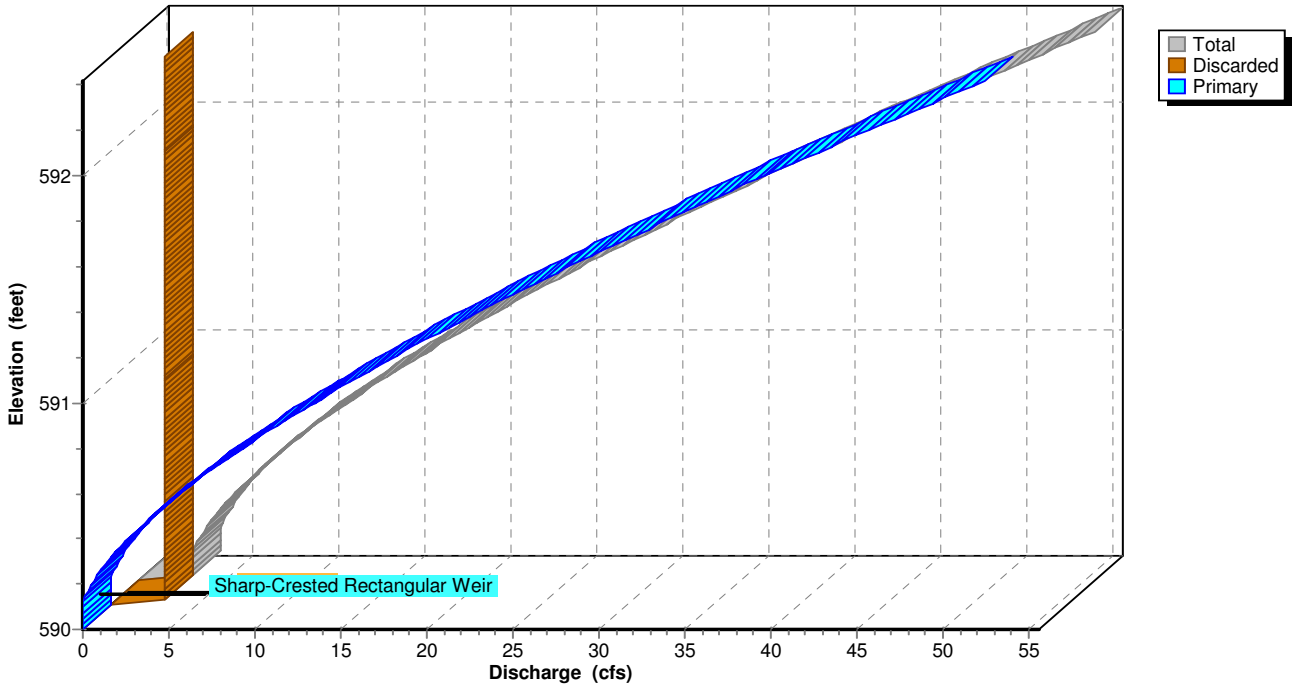
Pond 33P: Basin 11

Hydrograph

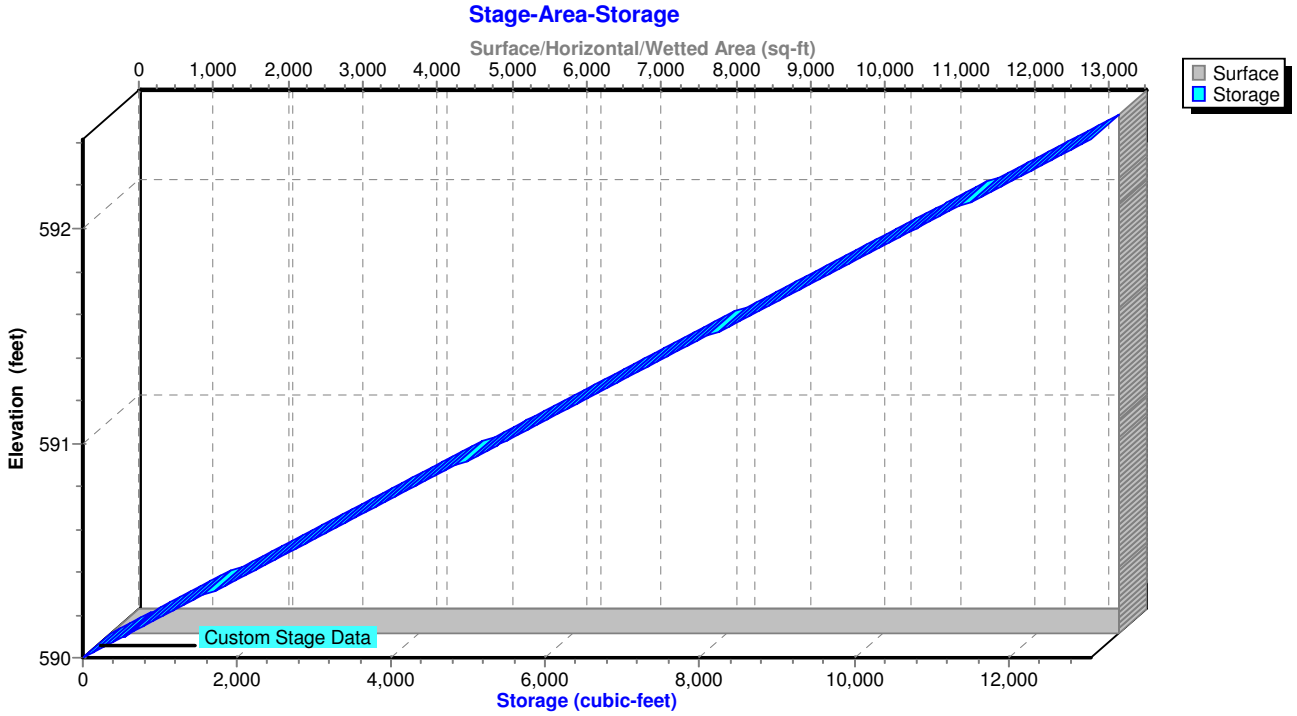


Pond 33P: Basin 11

Stage-Discharge



Pond 33P: Basin 11



Hydrograph for Pond 33P: Basin 11

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	590.00	0.00	0.00	0.00
2.00	0.10	4	590.00	0.10	0.10	0.00
4.00	0.16	7	590.00	0.16	0.16	0.00
6.00	0.20	8	590.00	0.20	0.20	0.00
8.00	0.33	14	590.00	0.33	0.33	0.00
10.00	0.63	26	590.00	0.63	**0.63**	0.00
12.00	**6.26**	**966**	**590.18**	**3.49**	**3.13**	**0.36**
14.00	**0.81**	**34**	**590.01**	**0.82**	0.82	**0.00**
16.00	0.45	19	590.00	0.45	0.45	0.00
18.00	0.30	13	590.00	0.30	0.30	0.00
20.00	0.25	11	590.00	0.25	0.25	0.00
22.00	0.22	9	590.00	0.22	0.22	0.00
24.00	0.18	8	590.00	0.18	0.18	0.00
26.00	0.00	0	590.00	0.00	0.00	0.00
28.00	0.00	0	590.00	0.00	0.00	0.00
30.00	0.00	0	590.00	0.00	0.00	0.00
32.00	0.00	0	590.00	0.00	0.00	0.00
34.00	0.00	0	590.00	0.00	0.00	0.00
36.00	0.00	0	590.00	0.00	0.00	0.00
38.00	0.00	0	590.00	0.00	0.00	0.00
40.00	0.00	0	590.00	0.00	0.00	0.00
42.00	0.00	0	590.00	0.00	0.00	0.00
44.00	0.00	0	590.00	0.00	0.00	0.00
46.00	0.00	0	590.00	0.00	0.00	0.00
48.00	0.00	0	590.00	0.00	0.00	0.00
50.00	0.00	0	590.00	0.00	0.00	0.00
52.00	0.00	0	590.00	0.00	0.00	0.00
54.00	0.00	0	590.00	0.00	0.00	0.00
56.00	0.00	0	590.00	0.00	0.00	0.00
58.00	0.00	0	590.00	0.00	0.00	0.00
60.00	0.00	0	590.00	0.00	0.00	0.00
62.00	0.00	0	590.00	0.00	0.00	0.00
64.00	0.00	0	590.00	0.00	0.00	0.00
66.00	0.00	0	590.00	0.00	0.00	0.00
68.00	0.00	0	590.00	0.00	0.00	0.00
70.00	0.00	0	590.00	0.00	0.00	0.00
72.00	0.00	0	590.00	0.00	0.00	0.00
74.00	0.00	0	590.00	0.00	0.00	0.00
76.00	0.00	0	590.00	0.00	0.00	0.00
78.00	0.00	0	590.00	0.00	0.00	0.00
80.00	0.00	0	590.00	0.00	0.00	0.00

Stage-Discharge for Pond 33P: Basin 11

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
590.00	0.00	**0.00**	0.00
590.05	3.13	**3.13**	0.00
590.10	3.13	3.13	0.00
590.15	3.31	3.13	0.18
590.20	3.64	3.13	0.51
590.25	4.07	3.13	0.94
590.30	4.58	3.13	1.45
590.35	5.15	3.13	2.02
590.40	5.78	3.13	2.65
590.45	6.46	3.13	3.34
590.50	7.20	3.13	4.07
590.55	7.97	3.13	4.85
590.60	8.79	3.13	5.66
590.65	9.65	3.13	6.52
590.70	10.54	3.13	7.42
590.75	11.47	3.13	8.35
590.80	12.43	3.13	9.31
590.85	13.43	3.13	10.30
590.90	14.45	3.13	11.32
590.95	15.50	3.13	12.38
591.00	16.58	3.13	13.46
591.05	17.69	3.13	14.56
591.10	18.82	3.13	15.70
591.15	19.98	3.13	16.85
591.20	21.16	3.13	18.03
591.25	22.36	3.13	19.24
591.30	23.59	3.13	20.46
591.35	24.83	3.13	21.71
591.40	26.10	3.13	22.97
591.45	27.39	3.13	24.26
591.50	28.69	3.13	25.57
591.55	30.02	3.13	26.89
591.60	31.36	3.13	28.23
591.65	32.72	3.13	29.59
591.70	34.10	3.13	30.97
591.75	35.49	3.13	32.37
591.80	36.90	3.13	33.78
591.85	38.33	3.13	35.20
591.90	39.77	3.13	36.64
591.95	41.22	3.13	38.10
592.00	42.69	3.13	39.57
592.05	44.17	3.13	41.05
592.10	45.67	3.13	42.55
592.15	47.18	3.13	44.05
592.20	48.70	3.13	45.58
592.25	50.24	3.13	47.11
592.30	51.78	3.13	48.66
592.35	53.34	3.13	50.21
592.40	**54.91**	3.13	**51.78**

Stage-Area-Storage for Pond 33P: Basin 11

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
590.00	**13,504**	0
590.05	13,504	270
590.10	13,504	540
590.15	13,504	810
590.20	13,504	1,080
590.25	13,504	1,350
590.30	13,504	1,620
590.35	13,504	1,891
590.40	13,504	2,161
590.45	13,504	2,431
590.50	13,504	2,701
590.55	13,504	2,971
590.60	13,504	3,241
590.65	13,504	3,511
590.70	13,504	3,781
590.75	13,504	4,051
590.80	13,504	4,321
590.85	13,504	4,591
590.90	13,504	4,861
590.95	13,504	5,132
591.00	13,504	5,402
591.05	13,504	5,672
591.10	13,504	5,942
591.15	13,504	6,212
591.20	13,504	6,482
591.25	13,504	6,752
591.30	13,504	7,022
591.35	13,504	7,292
591.40	13,504	7,562
591.45	13,504	7,832
591.50	13,504	8,102
591.55	13,504	8,372
591.60	13,504	8,643
591.65	13,504	8,913
591.70	13,504	9,183
591.75	13,504	9,453
591.80	13,504	9,723
591.85	13,504	9,993
591.90	13,504	10,263
591.95	13,504	10,533
592.00	13,504	10,803
592.05	13,504	11,073
592.10	13,504	11,343
592.15	13,504	11,613
592.20	13,504	11,884
592.25	13,504	12,154
592.30	13,504	12,424
592.35	13,504	12,694
592.40	13,504	**12,964**

Summary for Pond 41P: Basin 10

Inflow Area = 90,349 sf, 58.79% Impervious, Inflow Depth = 7.27" for 100-Year event
Inflow = 13.17 cfs @ 12.18 hrs, Volume= 54,771 cf
Outflow = 7.53 cfs @ 12.32 hrs, Volume= 54,771 cf, Atten= 43%, Lag= 8.5 min
Discarded = 2.22 cfs @ 11.68 hrs, Volume= 44,788 cf
Primary = 5.31 cfs @ 12.32 hrs, Volume= 9,983 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 576.86' @ 12.32 hrs Surf.Area= 9,583 sf Storage= 8,209 cf

Plug-Flow detention time= 10.0 min calculated for 54,744 cf (100% of inflow)
Center-of-Mass det. time= 10.0 min (780.2 - 770.2)

Volume	Invert	Avail.Storage	Storage Description
#1	576.00'	28,749 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
576.00	9,583	0	0
577.00	9,583	9,583	9,583
578.00	9,583	9,583	19,166
579.00	9,583	9,583	28,749

Device	Routing	Invert	Outlet Devices
#1	Primary	577.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	576.25'	**42.0" W x 12.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Discarded	576.00'	**10.000 in/hr Exfiltration over Surface area**

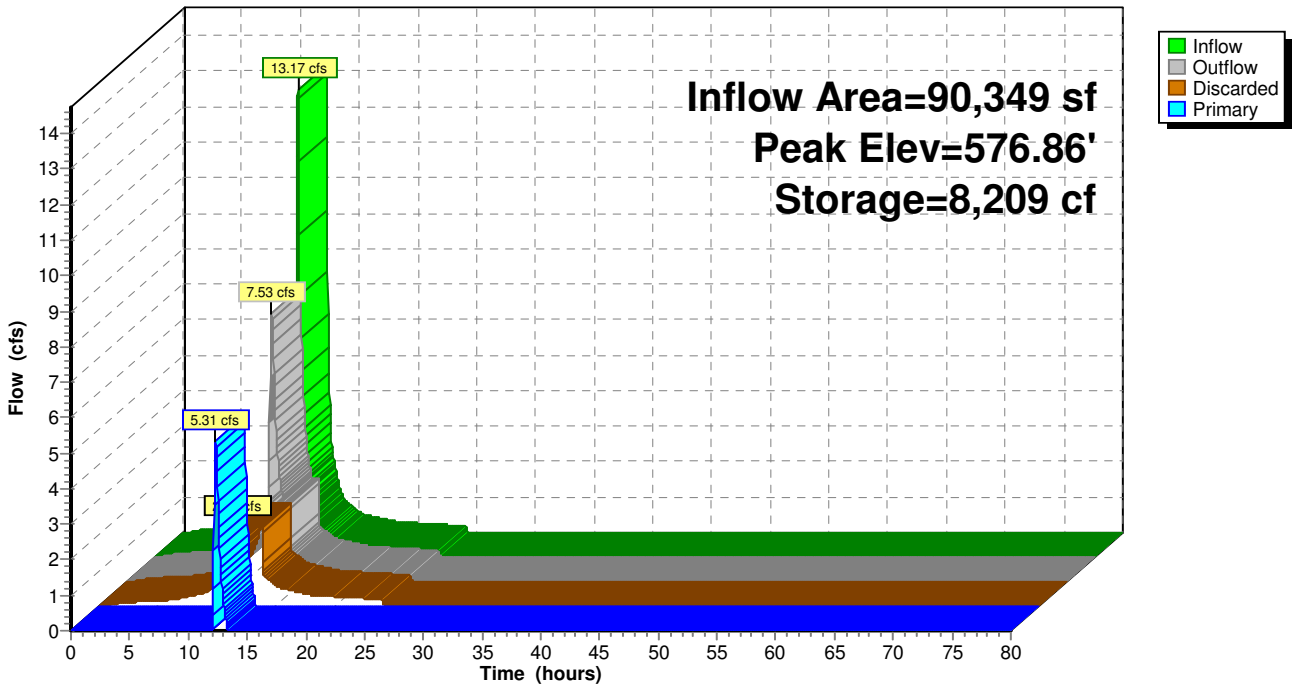
Discarded OutFlow Max=2.22 cfs @ 11.68 hrs HW=576.03' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 2.22 cfs)

Primary OutFlow Max=5.31 cfs @ 12.32 hrs HW=576.86' (Free Discharge)
├**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Orifice/Grate** (Orifice Controls 5.31 cfs @ 2.50 fps)



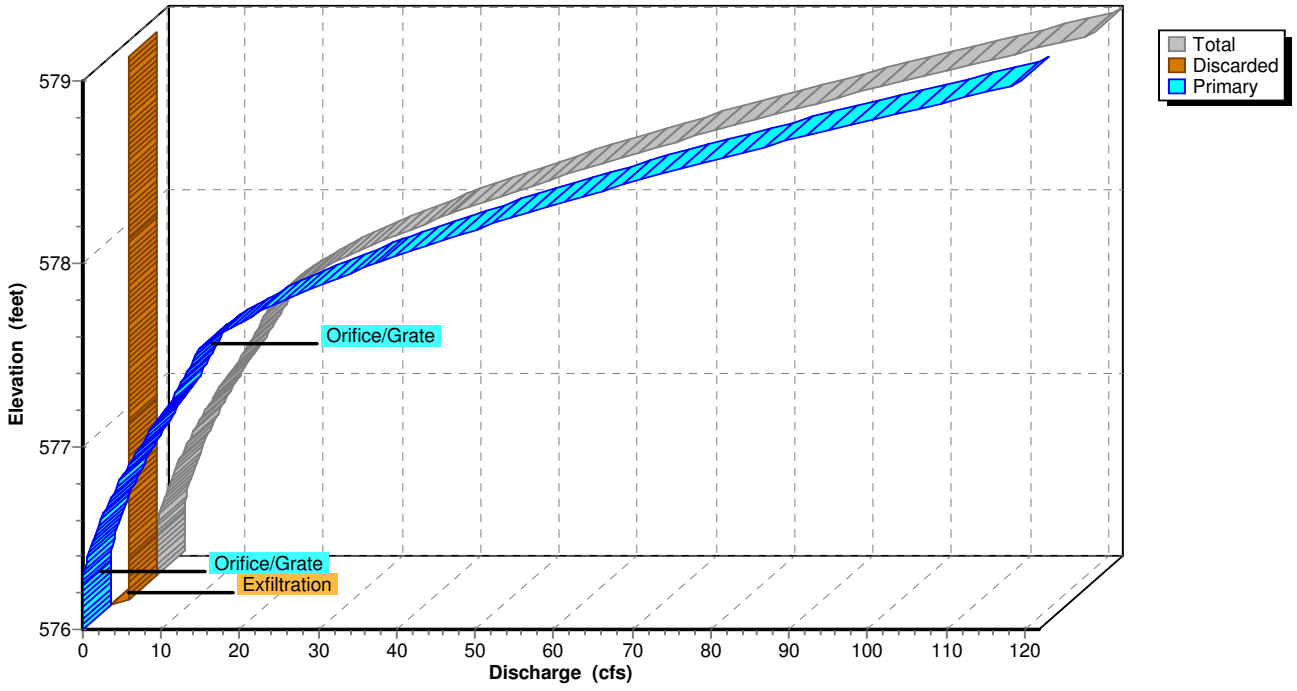
Pond 41P: Basin 10

Hydrograph

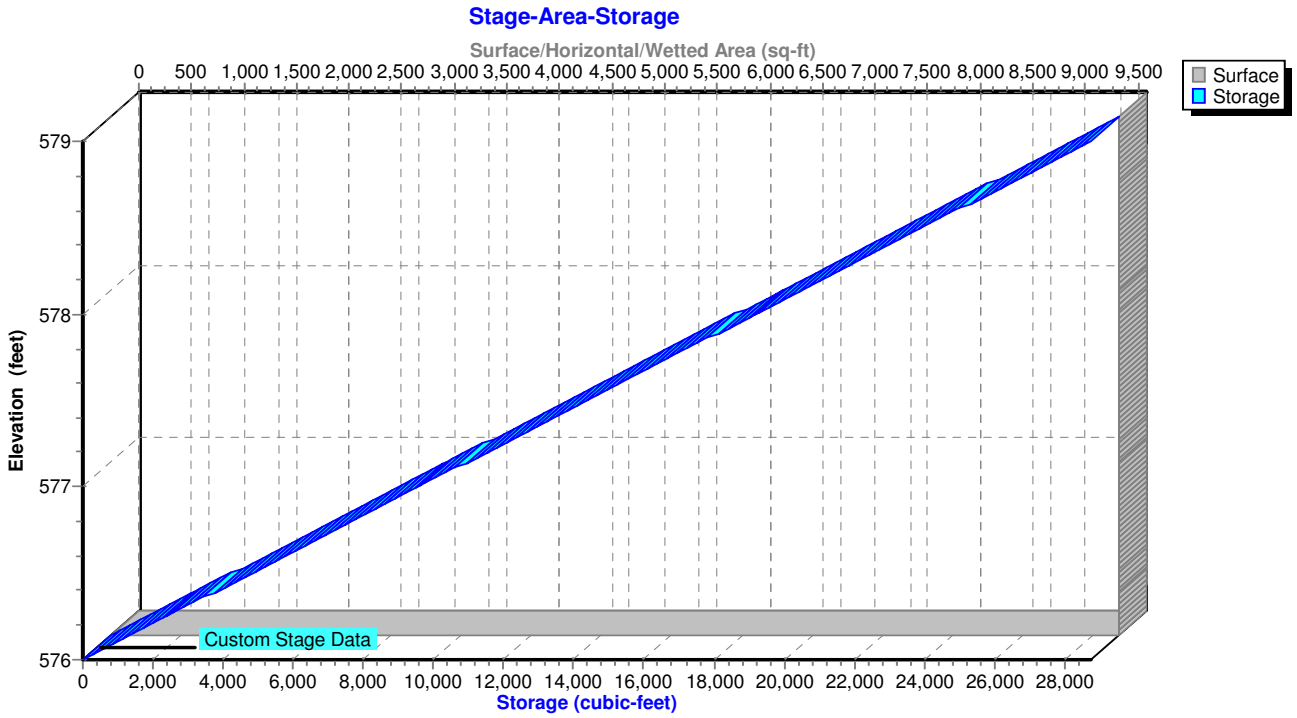


Pond 41P: Basin 10

Stage-Discharge



Pond 41P: Basin 10



Hydrograph for Pond 41P: Basin 10

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	576.00	0.00	0.00	0.00
2.00	0.09	12	576.00	0.09	0.09	0.00
4.00	0.14	18	576.00	0.14	0.14	0.00
6.00	0.18	23	576.00	0.18	0.18	0.00
8.00	0.31	40	576.00	0.31	0.31	0.00
10.00	0.61	78	576.01	0.60	**0.60**	0.00
12.00	**6.08**	**2,008**	**576.21**	**2.22**	**2.22**	**0.00**
14.00	**0.86**	**125**	**576.01**	**0.97**	0.97	**0.00**
16.00	0.47	62	576.01	0.48	0.48	0.00
18.00	0.32	42	576.00	0.32	0.32	0.00
20.00	0.27	35	576.00	0.27	0.27	0.00
22.00	0.23	30	576.00	0.23	0.23	0.00
24.00	0.19	25	576.00	0.19	0.19	0.00
26.00	0.00	0	576.00	0.00	0.00	0.00
28.00	0.00	0	576.00	0.00	0.00	0.00
30.00	0.00	0	576.00	0.00	0.00	0.00
32.00	0.00	0	576.00	0.00	0.00	0.00
34.00	0.00	0	576.00	0.00	0.00	0.00
36.00	0.00	0	576.00	0.00	0.00	0.00
38.00	0.00	0	576.00	0.00	0.00	0.00
40.00	0.00	0	576.00	0.00	0.00	0.00
42.00	0.00	0	576.00	0.00	0.00	0.00
44.00	0.00	0	576.00	0.00	0.00	0.00
46.00	0.00	0	576.00	0.00	0.00	0.00
48.00	0.00	0	576.00	0.00	0.00	0.00
50.00	0.00	0	576.00	0.00	0.00	0.00
52.00	0.00	0	576.00	0.00	0.00	0.00
54.00	0.00	0	576.00	0.00	0.00	0.00
56.00	0.00	0	576.00	0.00	0.00	0.00
58.00	0.00	0	576.00	0.00	0.00	0.00
60.00	0.00	0	576.00	0.00	0.00	0.00
62.00	0.00	0	576.00	0.00	0.00	0.00
64.00	0.00	0	576.00	0.00	0.00	0.00
66.00	0.00	0	576.00	0.00	0.00	0.00
68.00	0.00	0	576.00	0.00	0.00	0.00
70.00	0.00	0	576.00	0.00	0.00	0.00
72.00	0.00	0	576.00	0.00	0.00	0.00
74.00	0.00	0	576.00	0.00	0.00	0.00
76.00	0.00	0	576.00	0.00	0.00	0.00
78.00	0.00	0	576.00	0.00	0.00	0.00
80.00	0.00	0	576.00	0.00	0.00	0.00

Stage-Discharge for Pond 41P: Basin 10

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
576.00	0.00	**0.00**	0.00
576.05	2.22	**2.22**	0.00
576.10	2.22	2.22	0.00
576.15	2.22	2.22	0.00
576.20	2.22	2.22	0.00
576.25	2.22	2.22	0.00
576.30	2.34	2.22	0.13
576.35	2.57	2.22	0.36
576.40	2.87	2.22	0.65
576.45	3.22	2.22	1.00
576.50	3.62	2.22	1.40
576.55	4.06	2.22	1.85
576.60	4.54	2.22	2.33
576.65	5.06	2.22	2.84
576.70	5.61	2.22	3.39
576.75	6.19	2.22	3.97
576.80	6.80	2.22	4.58
576.85	7.44	2.22	5.22
576.90	8.11	2.22	5.89
576.95	8.80	2.22	6.58
577.00	9.52	2.22	7.30
577.05	10.26	2.22	8.04
577.10	11.02	2.22	8.80
577.15	11.81	2.22	9.59
577.20	12.62	2.22	10.40
577.25	13.45	2.22	11.23
577.30	14.18	2.22	11.96
577.35	14.82	2.22	12.61
577.40	15.42	2.22	13.20
577.45	15.98	2.22	13.76
577.50	16.52	2.22	14.30
577.55	17.61	2.22	15.39
577.60	19.17	2.22	16.95
577.65	21.03	2.22	18.81
577.70	23.12	2.22	20.90
577.75	25.43	2.22	23.21
577.80	27.91	2.22	25.69
577.85	30.57	2.22	28.35
577.90	33.38	2.22	31.16
577.95	36.33	2.22	34.12
578.00	39.43	2.22	37.21
578.05	42.65	2.22	40.43
578.10	46.00	2.22	43.78
578.15	49.47	2.22	47.25
578.20	53.05	2.22	50.83
578.25	56.74	2.22	54.53
578.30	60.54	2.22	58.33
578.35	64.45	2.22	62.23
578.40	68.45	2.22	66.23
578.45	72.56	2.22	70.34
578.50	76.75	2.22	74.54
578.55	81.05	2.22	78.83
578.60	85.43	2.22	83.21
578.65	89.90	2.22	87.68
578.70	94.46	2.22	92.24
578.75	99.11	2.22	96.89
578.80	103.84	2.22	101.62
578.85	108.65	2.22	106.43
578.90	113.54	2.22	111.32
578.95	118.51	2.22	116.29
579.00	**121.80**	2.22	**119.58**

Stage-Area-Storage for Pond 41P: Basin 10

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
576.00	**9,583**	0
576.05	9,583	479
576.10	9,583	958
576.15	9,583	1,437
576.20	9,583	1,917
576.25	9,583	2,396
576.30	9,583	2,875
576.35	9,583	3,354
576.40	9,583	3,833
576.45	9,583	4,312
576.50	9,583	4,792
576.55	9,583	5,271
576.60	9,583	5,750
576.65	9,583	6,229
576.70	9,583	6,708
576.75	9,583	7,187
576.80	9,583	7,666
576.85	9,583	8,146
576.90	9,583	8,625
576.95	9,583	9,104
577.00	9,583	9,583
577.05	9,583	10,062
577.10	9,583	10,541
577.15	9,583	11,020
577.20	9,583	11,500
577.25	9,583	11,979
577.30	9,583	12,458
577.35	9,583	12,937
577.40	9,583	13,416
577.45	9,583	13,895
577.50	9,583	14,375
577.55	9,583	14,854
577.60	9,583	15,333
577.65	9,583	15,812
577.70	9,583	16,291
577.75	9,583	16,770
577.80	9,583	17,249
577.85	9,583	17,729
577.90	9,583	18,208
577.95	9,583	18,687
578.00	9,583	19,166
578.05	9,583	19,645
578.10	9,583	20,124
578.15	9,583	20,603
578.20	9,583	21,083
578.25	9,583	21,562
578.30	9,583	22,041
578.35	9,583	22,520
578.40	9,583	22,999
578.45	9,583	23,478
578.50	9,583	23,958
578.55	9,583	24,437
578.60	9,583	24,916
578.65	9,583	25,395
578.70	9,583	25,874
578.75	9,583	26,353
578.80	9,583	26,832
578.85	9,583	27,312
578.90	9,583	27,791
578.95	9,583	28,270
579.00	9,583	**28,749**

Summary for Pond 42P: Basin 9

Inflow Area = 26,377 sf, 66.20% Impervious, Inflow Depth = 7.60" for 100-Year event
Inflow = 4.43 cfs @ 12.14 hrs, Volume= 16,713 cf
Outflow = 0.77 cfs @ 12.63 hrs, Volume= 16,713 cf, Atten= 83%, Lag= 29.2 min
Discarded = 0.61 cfs @ 11.56 hrs, Volume= 15,973 cf
Primary = 0.16 cfs @ 12.63 hrs, Volume= 739 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 563.59' @ 12.63 hrs Surf.Area= 6,534 sf Storage= 4,157 cf

Plug-Flow detention time= 35.2 min calculated for 16,713 cf (100% of inflow)
Center-of-Mass det. time= 35.2 min (796.3 - 761.1)

Volume	Invert	Avail.Storage	Storage Description
#1	562.00'	6,325 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 15,812 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
562.00	6,534	0	0
563.00	6,534	6,534	6,534
564.00	6,534	6,534	13,068
564.42	6,534	2,744	15,812

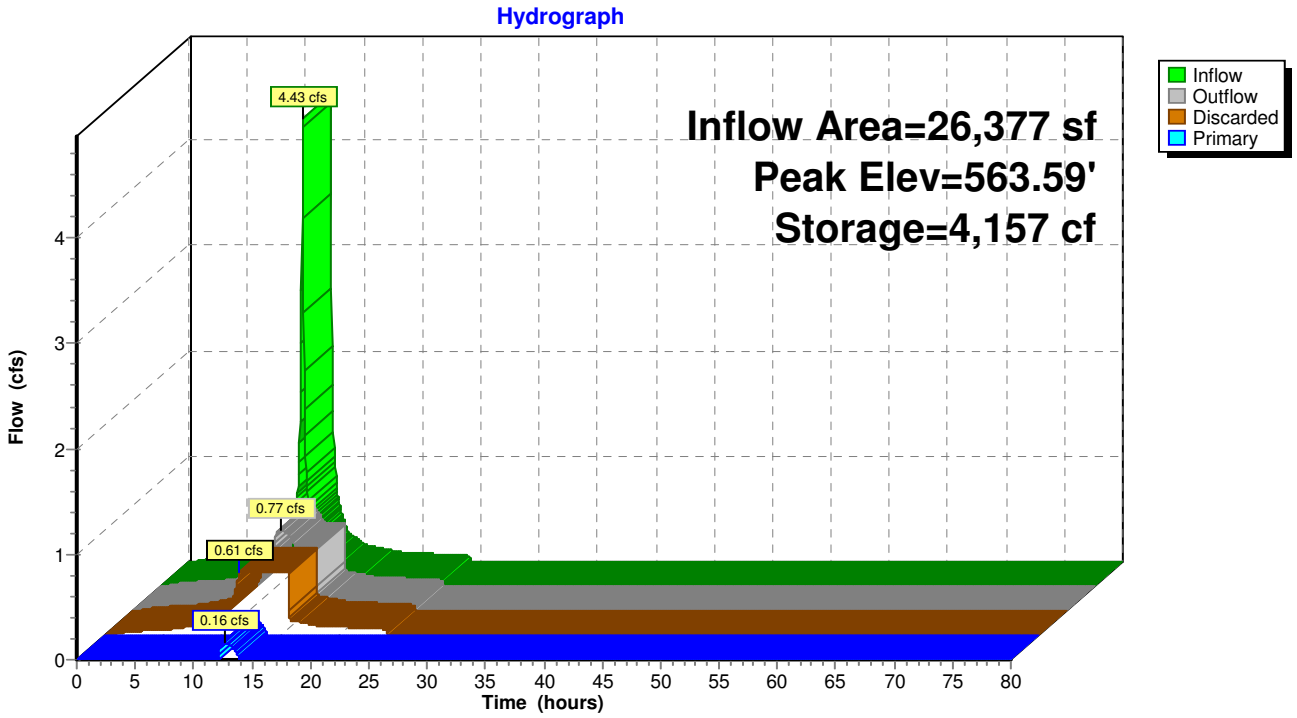
Device	Routing	Invert	Outlet Devices
#1	Primary	564.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	563.00'	**3.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Discarded	562.00'	**4.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.61 cfs @ 11.56 hrs HW=562.03' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.61 cfs)

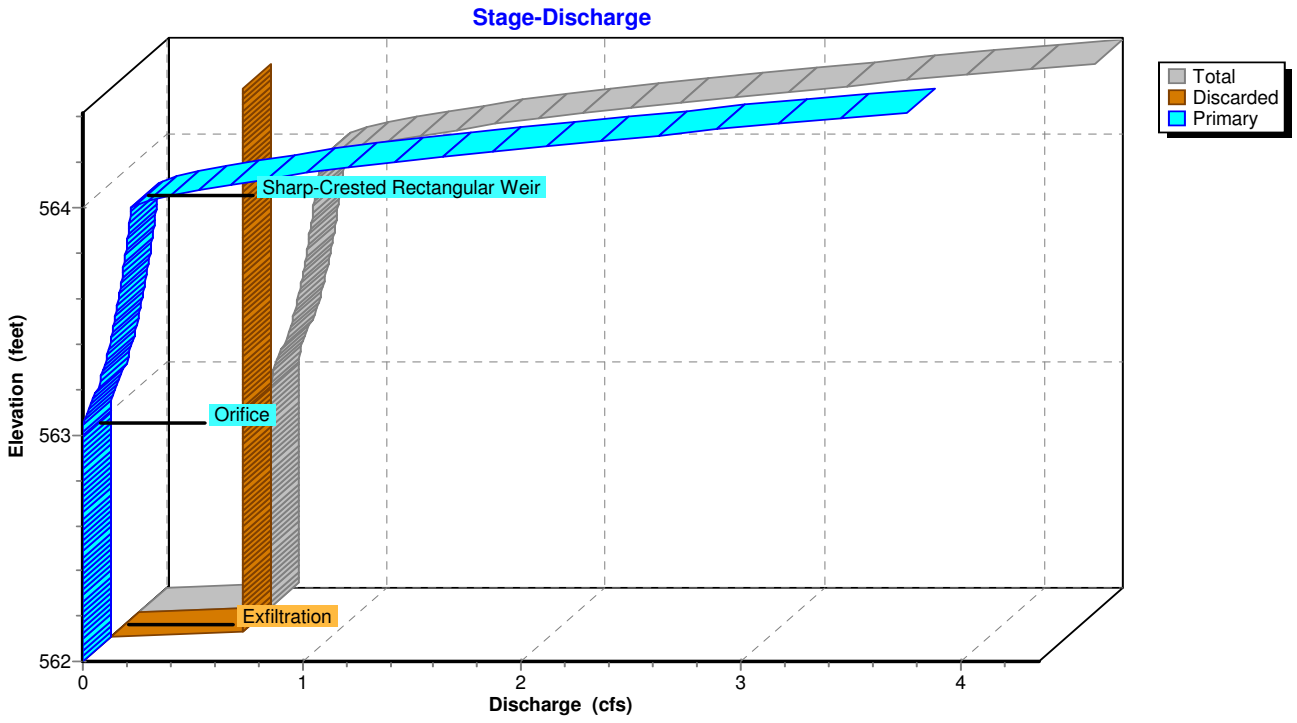
Primary OutFlow Max=0.16 cfs @ 12.63 hrs HW=563.59' (Free Discharge)
├**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice** (Orifice Controls 0.16 cfs @ 3.28 fps)



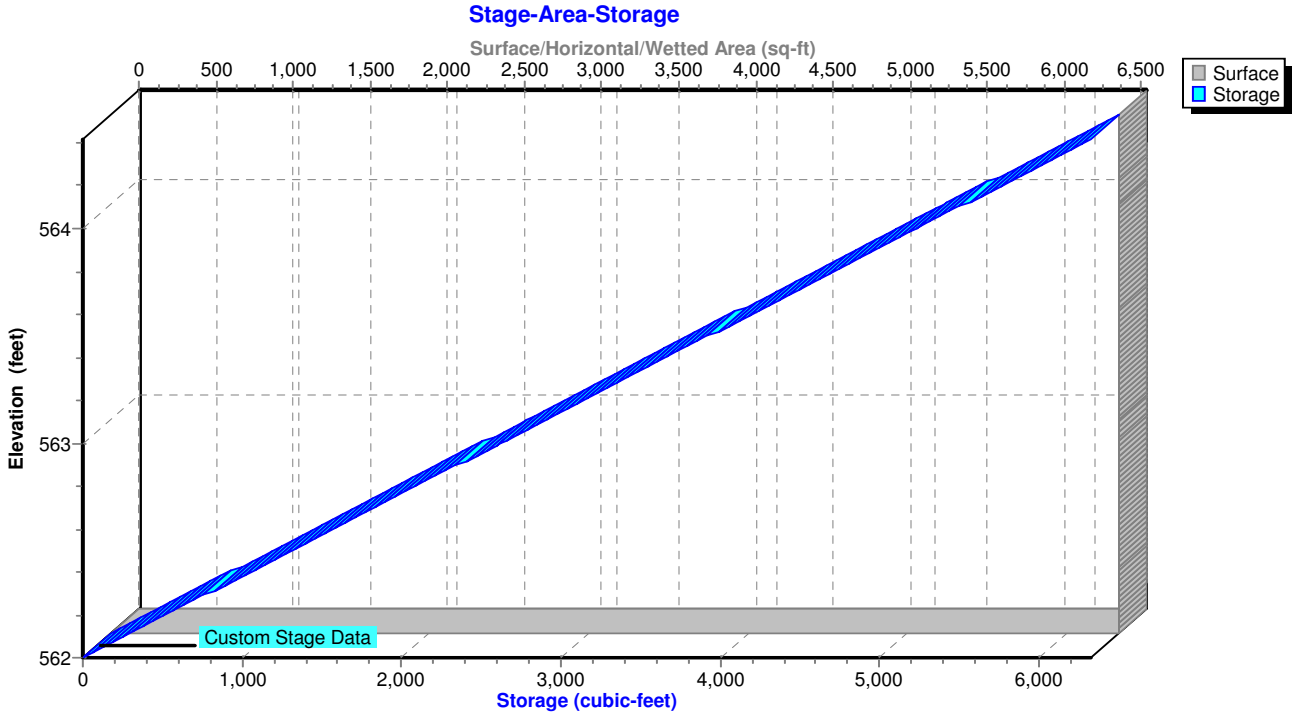
Pond 42P: Basin 9



Pond 42P: Basin 9



Pond 42P: Basin 9



Hydrograph for Pond 42P: Basin 9

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	562.00	0.00	0.00	0.00
2.00	0.03	3	562.00	0.03	0.03	0.00
4.00	0.05	5	562.00	0.05	0.05	0.00
6.00	0.06	6	562.00	0.06	0.06	0.00
8.00	0.10	11	562.00	0.10	0.10	0.00
10.00	0.20	20	562.01	0.20	**0.20**	0.00
12.00	**2.31**	**930**	**562.36**	**0.61**	**0.61**	**0.00**
14.00	**0.25**	**2,706**	**563.04**	**0.61**	0.61	**0.00**
16.00	0.14	15	562.01	0.14	0.14	0.00
18.00	0.09	10	562.00	0.09	0.09	0.00
20.00	0.08	8	562.00	0.08	0.08	0.00
22.00	0.07	7	562.00	0.07	0.07	0.00
24.00	0.06	6	562.00	0.06	0.06	0.00
26.00	0.00	0	562.00	0.00	0.00	0.00
28.00	0.00	0	562.00	0.00	0.00	0.00
30.00	0.00	0	562.00	0.00	0.00	0.00
32.00	0.00	0	562.00	0.00	0.00	0.00
34.00	0.00	0	562.00	0.00	0.00	0.00
36.00	0.00	0	562.00	0.00	0.00	0.00
38.00	0.00	0	562.00	0.00	0.00	0.00
40.00	0.00	0	562.00	0.00	0.00	0.00
42.00	0.00	0	562.00	0.00	0.00	0.00
44.00	0.00	0	562.00	0.00	0.00	0.00
46.00	0.00	0	562.00	0.00	0.00	0.00
48.00	0.00	0	562.00	0.00	0.00	0.00
50.00	0.00	0	562.00	0.00	0.00	0.00
52.00	0.00	0	562.00	0.00	0.00	0.00
54.00	0.00	0	562.00	0.00	0.00	0.00
56.00	0.00	0	562.00	0.00	0.00	0.00
58.00	0.00	0	562.00	0.00	0.00	0.00
60.00	0.00	0	562.00	0.00	0.00	0.00
62.00	0.00	0	562.00	0.00	0.00	0.00
64.00	0.00	0	562.00	0.00	0.00	0.00
66.00	0.00	0	562.00	0.00	0.00	0.00
68.00	0.00	0	562.00	0.00	0.00	0.00
70.00	0.00	0	562.00	0.00	0.00	0.00
72.00	0.00	0	562.00	0.00	0.00	0.00
74.00	0.00	0	562.00	0.00	0.00	0.00
76.00	0.00	0	562.00	0.00	0.00	0.00
78.00	0.00	0	562.00	0.00	0.00	0.00
80.00	0.00	0	562.00	0.00	0.00	0.00

Stage-Discharge for Pond 42P: Basin 9

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
562.00	0.00	**0.00**	0.00
562.05	0.61	**0.61**	0.00
562.10	0.61	0.61	0.00
562.15	0.61	0.61	0.00
562.20	0.61	0.61	0.00
562.25	0.61	0.61	0.00
562.30	0.61	0.61	0.00
562.35	0.61	0.61	0.00
562.40	0.61	0.61	0.00
562.45	0.61	0.61	0.00
562.50	0.61	0.61	0.00
562.55	0.61	0.61	0.00
562.60	0.61	0.61	0.00
562.65	0.61	0.61	0.00
562.70	0.61	0.61	0.00
562.75	0.61	0.61	0.00
562.80	0.61	0.61	0.00
562.85	0.61	0.61	0.00
562.90	0.61	0.61	0.00
562.95	0.61	0.61	0.00
563.00	0.61	0.61	0.00
563.05	0.61	0.61	0.01
563.10	0.62	0.61	0.02
563.15	0.65	0.61	0.04
563.20	0.67	0.61	0.06
563.25	0.69	0.61	0.08
563.30	0.70	0.61	0.10
563.35	0.72	0.61	0.11
563.40	0.73	0.61	0.12
563.45	0.74	0.61	0.13
563.50	0.75	0.61	0.14
563.55	0.76	0.61	0.15
563.60	0.77	0.61	0.16
563.65	0.78	0.61	0.17
563.70	0.78	0.61	0.18
563.75	0.79	0.61	0.19
563.80	0.80	0.61	0.19
563.85	0.81	0.61	0.20
563.90	0.81	0.61	0.21
563.95	0.82	0.61	0.21
564.00	0.83	0.61	0.22
564.05	0.98	0.61	0.37
564.10	1.25	0.61	0.64
564.15	1.60	0.61	0.99
564.20	2.01	0.61	1.40
564.25	2.47	0.61	1.87
564.30	2.98	0.61	2.37
564.35	3.53	0.61	2.92
564.40	**4.11**	0.61	**3.51**

Stage-Area-Storage for Pond 42P: Basin 9

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
562.00	**6,534**	0
562.05	6,534	131
562.10	6,534	261
562.15	6,534	392
562.20	6,534	523
562.25	6,534	653
562.30	6,534	784
562.35	6,534	915
562.40	6,534	1,045
562.45	6,534	1,176
562.50	6,534	1,307
562.55	6,534	1,437
562.60	6,534	1,568
562.65	6,534	1,699
562.70	6,534	1,830
562.75	6,534	1,960
562.80	6,534	2,091
562.85	6,534	2,222
562.90	6,534	2,352
562.95	6,534	2,483
563.00	6,534	2,614
563.05	6,534	2,744
563.10	6,534	2,875
563.15	6,534	3,006
563.20	6,534	3,136
563.25	6,534	3,267
563.30	6,534	3,398
563.35	6,534	3,528
563.40	6,534	3,659
563.45	6,534	3,790
563.50	6,534	3,920
563.55	6,534	4,051
563.60	6,534	4,182
563.65	6,534	4,312
563.70	6,534	4,443
563.75	6,534	4,574
563.80	6,534	4,704
563.85	6,534	4,835
563.90	6,534	4,966
563.95	6,534	5,097
564.00	6,534	5,227
564.05	6,534	5,358
564.10	6,534	5,489
564.15	6,534	5,619
564.20	6,534	5,750
564.25	6,534	5,881
564.30	6,534	6,011
564.35	6,534	6,142
564.40	6,534	**6,273**

Summary for Pond 48P: Basin 8

Inflow Area = 61,044 sf, 62.67% Impervious, Inflow Depth = 7.47" for 100-Year event
Inflow = 9.79 cfs @ 12.16 hrs, Volume= 38,015 cf
Outflow = 4.41 cfs @ 12.32 hrs, Volume= 38,015 cf, Atten= 55%, Lag= 9.7 min
Discarded = 3.73 cfs @ 12.32 hrs, Volume= 36,926 cf
Primary = 0.68 cfs @ 12.32 hrs, Volume= 1,089 cf
Routed to Pond 49P : Basin 7

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 574.22' @ 12.32 hrs Surf.Area= 10,019 sf Storage= 4,871 cf

Plug-Flow detention time= 5.7 min calculated for 37,996 cf (100% of inflow)
Center-of-Mass det. time= 5.7 min (770.6 - 764.9)

Volume	Invert	Avail.Storage	Storage Description
#1	573.00'	12,023 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 30,057 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
573.00	10,019	0	0
574.00	10,019	10,019	10,019
575.00	10,019	10,019	20,038
576.00	10,019	10,019	30,057

Device	Routing	Invert	Outlet Devices
#1	Primary	575.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	573.45'	**6.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Discarded	573.00'	**10.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 571.00'

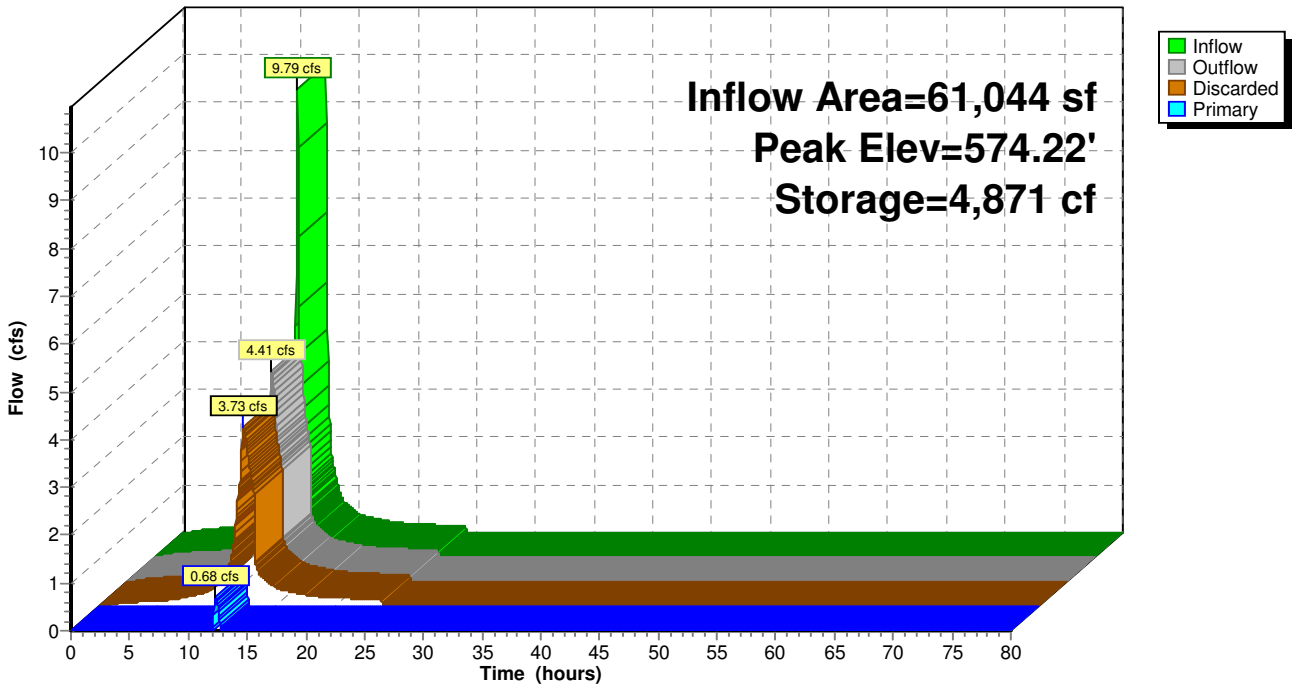
Discarded OutFlow Max=3.73 cfs @ 12.32 hrs HW=574.21' (Free Discharge)
└**3=Exfiltration** (Controls 3.73 cfs)

Primary OutFlow Max=0.68 cfs @ 12.32 hrs HW=574.21' (Free Discharge)
├**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice** (Orifice Controls 0.68 cfs @ 3.45 fps)



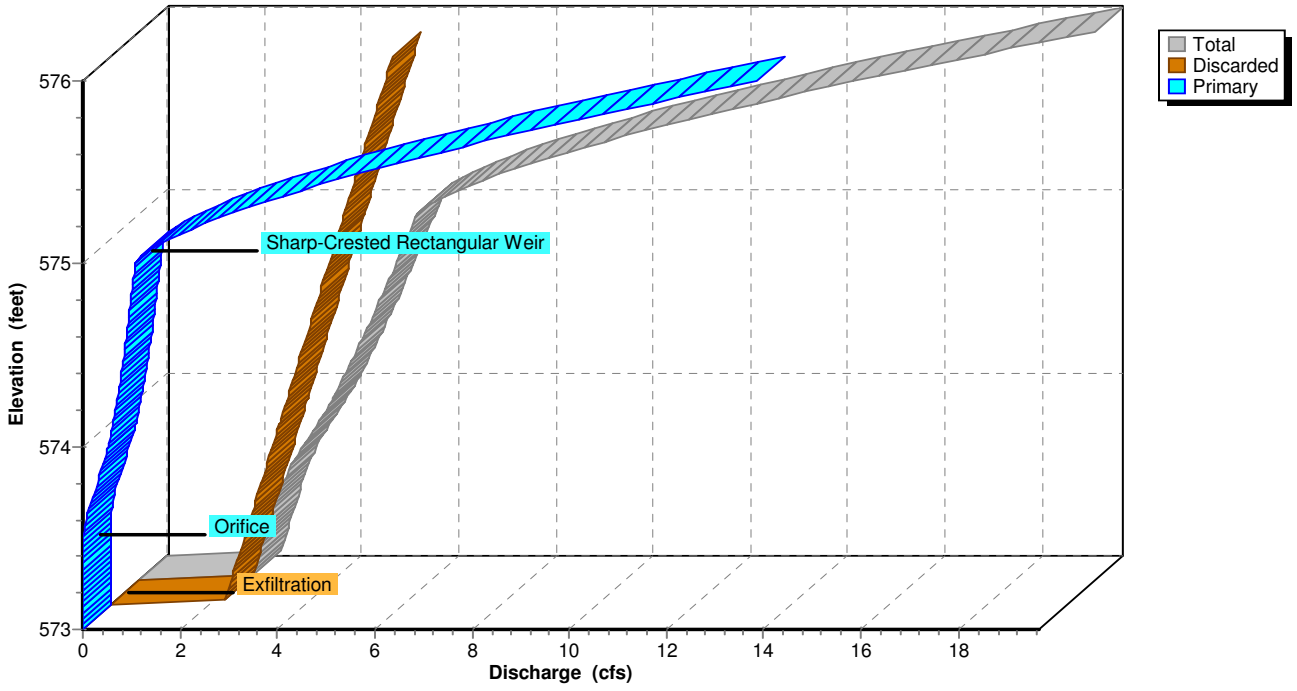
Pond 48P: Basin 8

Hydrograph

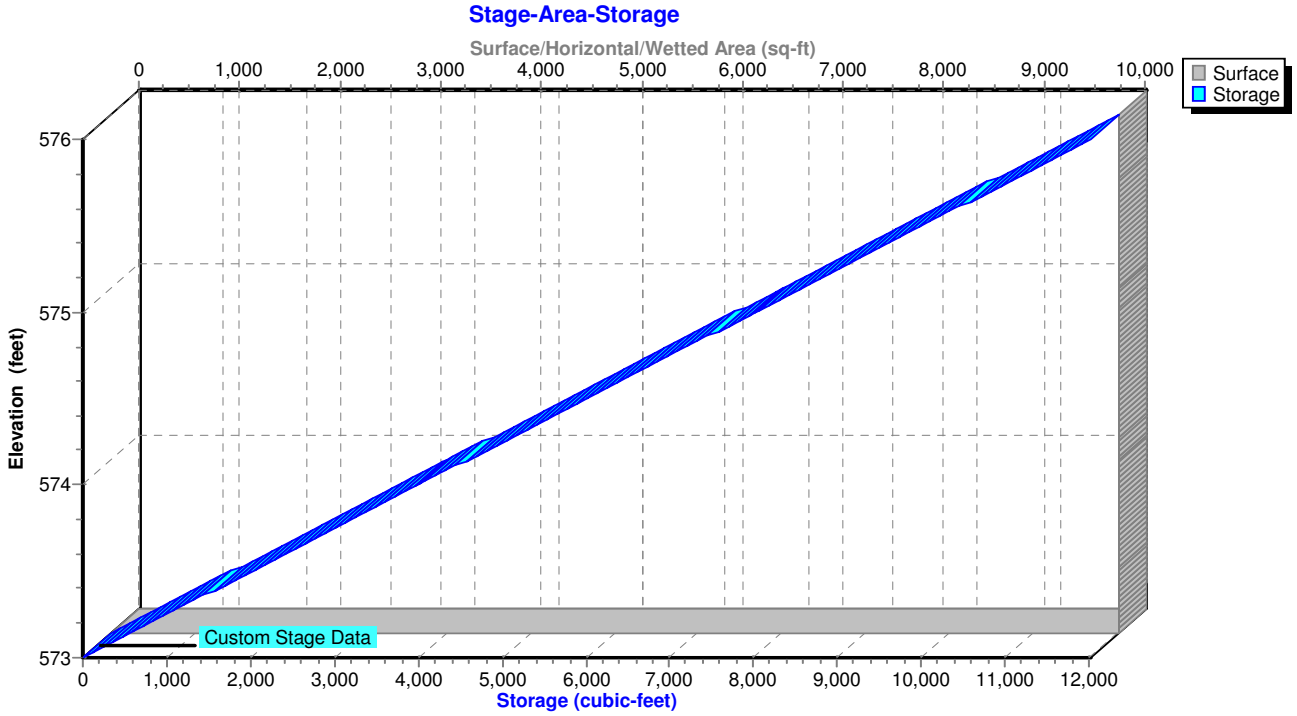


Pond 48P: Basin 8

Stage-Discharge



Pond 48P: Basin 8



Hydrograph for Pond 48P: Basin 8

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	573.00	0.00	0.00	0.00
2.00	0.07	3	573.00	0.07	0.07	0.00
4.00	0.10	5	573.00	0.10	0.10	0.00
6.00	0.13	7	573.00	0.13	0.13	0.00
8.00	0.23	11	573.00	0.23	0.23	0.00
10.00	0.44	22	573.01	0.44	0.44	0.00
12.00	**4.82**	**736**	**573.18**	**2.53**	**2.53**	**0.00**
14.00	**0.58**	**30**	**573.01**	**0.59**	**0.59**	**0.00**
16.00	0.32	16	573.00	0.32	0.32	0.00
18.00	0.22	11	573.00	0.22	0.22	0.00
20.00	0.18	9	573.00	0.18	0.18	0.00
22.00	0.16	8	573.00	0.16	0.16	0.00
24.00	0.13	7	573.00	0.13	0.13	0.00
26.00	0.00	0	573.00	0.00	0.00	0.00
28.00	0.00	0	573.00	0.00	0.00	0.00
30.00	0.00	0	573.00	0.00	0.00	0.00
32.00	0.00	0	573.00	0.00	0.00	0.00
34.00	0.00	0	573.00	0.00	0.00	0.00
36.00	0.00	0	573.00	0.00	0.00	0.00
38.00	0.00	0	573.00	0.00	0.00	0.00
40.00	0.00	0	573.00	0.00	0.00	0.00
42.00	0.00	0	573.00	0.00	0.00	0.00
44.00	0.00	0	573.00	0.00	0.00	0.00
46.00	0.00	0	573.00	0.00	0.00	0.00
48.00	0.00	0	573.00	0.00	0.00	0.00
50.00	0.00	0	573.00	0.00	0.00	0.00
52.00	0.00	0	573.00	0.00	0.00	0.00
54.00	0.00	0	573.00	0.00	0.00	0.00
56.00	0.00	0	573.00	0.00	0.00	0.00
58.00	0.00	0	573.00	0.00	0.00	0.00
60.00	0.00	0	573.00	0.00	0.00	0.00
62.00	0.00	0	573.00	0.00	0.00	0.00
64.00	0.00	0	573.00	0.00	0.00	0.00
66.00	0.00	0	573.00	0.00	0.00	0.00
68.00	0.00	0	573.00	0.00	0.00	0.00
70.00	0.00	0	573.00	0.00	0.00	0.00
72.00	0.00	0	573.00	0.00	0.00	0.00
74.00	0.00	0	573.00	0.00	0.00	0.00
76.00	0.00	0	573.00	0.00	0.00	0.00
78.00	0.00	0	573.00	0.00	0.00	0.00
80.00	0.00	0	573.00	0.00	0.00	0.00

Stage-Discharge for Pond 48P: Basin 8

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
573.00	0.00	0.00	0.00
573.05	2.38	2.38	0.00
573.10	2.44	2.44	0.00
573.15	2.49	2.49	0.00
573.20	2.55	2.55	0.00
573.25	2.61	2.61	0.00
573.30	2.67	2.67	0.00
573.35	2.73	2.73	0.00
573.40	2.78	2.78	0.00
573.45	2.84	2.84	0.00
573.50	2.91	2.90	0.01
573.55	2.99	2.96	0.03
573.60	3.08	3.01	0.07
573.65	3.18	3.07	0.11
573.70	3.30	3.13	0.17
573.75	3.42	3.19	0.23
573.80	3.54	3.25	0.30
573.85	3.67	3.30	0.36
573.90	3.79	3.36	0.43
573.95	3.89	3.42	0.47
574.00	4.00	3.48	0.52
574.05	4.10	3.54	0.56
574.10	4.19	3.59	0.60
574.15	4.29	3.65	0.63
574.20	4.38	3.71	0.67
574.25	4.47	3.77	0.70
574.30	4.56	3.83	0.73
574.35	4.65	3.88	0.76
574.40	4.73	3.94	0.79
574.45	4.82	4.00	0.82
574.50	4.90	4.06	0.85
574.55	4.99	4.12	0.87
574.60	5.07	4.17	0.90
574.65	5.15	4.23	0.92
574.70	5.24	4.29	0.95
574.75	5.32	4.35	0.97
574.80	5.40	4.41	0.99
574.85	5.48	4.46	1.01
574.90	5.56	4.52	1.04
574.95	5.64	4.58	1.06
575.00	5.72	4.64	1.08
575.05	5.94	4.70	1.24
575.10	6.28	4.75	1.53
575.15	6.70	4.81	1.89
575.20	7.19	4.87	2.32
575.25	7.72	4.93	2.79
575.30	8.30	4.99	3.31
575.35	8.92	5.04	3.88
575.40	9.58	5.10	4.48
575.45	10.27	5.16	5.11
575.50	11.00	5.22	5.78
575.55	11.75	5.28	6.47
575.60	12.53	5.33	7.20
575.65	13.34	5.39	7.95
575.70	14.18	5.45	8.73
575.75	15.04	5.51	9.53
575.80	15.92	5.57	10.35
575.85	16.82	5.62	11.20
575.90	17.75	5.68	12.07
575.95	18.69	5.74	12.95
576.00	**19.66**	**5.80**	**13.86**

Stage-Area-Storage for Pond 48P: Basin 8

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
573.00	**10,019**	0
573.05	10,019	200
573.10	10,019	401
573.15	10,019	601
573.20	10,019	802
573.25	10,019	1,002
573.30	10,019	1,202
573.35	10,019	1,403
573.40	10,019	1,603
573.45	10,019	1,803
573.50	10,019	2,004
573.55	10,019	2,204
573.60	10,019	2,405
573.65	10,019	2,605
573.70	10,019	2,805
573.75	10,019	3,006
573.80	10,019	3,206
573.85	10,019	3,406
573.90	10,019	3,607
573.95	10,019	3,807
574.00	10,019	4,008
574.05	10,019	4,208
574.10	10,019	4,408
574.15	10,019	4,609
574.20	10,019	4,809
574.25	10,019	5,010
574.30	10,019	5,210
574.35	10,019	5,410
574.40	10,019	5,611
574.45	10,019	5,811
574.50	10,019	6,011
574.55	10,019	6,212
574.60	10,019	6,412
574.65	10,019	6,613
574.70	10,019	6,813
574.75	10,019	7,013
574.80	10,019	7,214
574.85	10,019	7,414
574.90	10,019	7,614
574.95	10,019	7,815
575.00	10,019	8,015
575.05	10,019	8,216
575.10	10,019	8,416
575.15	10,019	8,616
575.20	10,019	8,817
575.25	10,019	9,017
575.30	10,019	9,217
575.35	10,019	9,418
575.40	10,019	9,618
575.45	10,019	9,819
575.50	10,019	10,019
575.55	10,019	10,219
575.60	10,019	10,420
575.65	10,019	10,620
575.70	10,019	10,821
575.75	10,019	11,021
575.80	10,019	11,221
575.85	10,019	11,422
575.90	10,019	11,622
575.95	10,019	11,822
576.00	10,019	**12,023**

Summary for Pond 49P: Basin 7

Inflow Area = 165,500 sf, 50.78% Impervious, Inflow Depth = 4.49" for 100-Year event
Inflow = 14.70 cfs @ 12.20 hrs, Volume= 61,976 cf
Outflow = 3.65 cfs @ 12.65 hrs, Volume= 56,198 cf, Atten= 75%, Lag= 27.1 min
Primary = 3.65 cfs @ 12.65 hrs, Volume= 56,198 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 532.81' @ 12.65 hrs Surf.Area= 17,532 sf Storage= 28,901 cf

Plug-Flow detention time= 235.8 min calculated for 56,170 cf (91% of inflow)
Center-of-Mass det. time= 187.5 min (968.3 - 780.9)

Volume	Invert	Avail.Storage	Storage Description
#1	531.00'	50,966 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
531.00	14,375	0	0
532.00	16,117	15,246	15,246
533.00	17,860	16,989	32,235
534.00	19,602	18,731	50,966

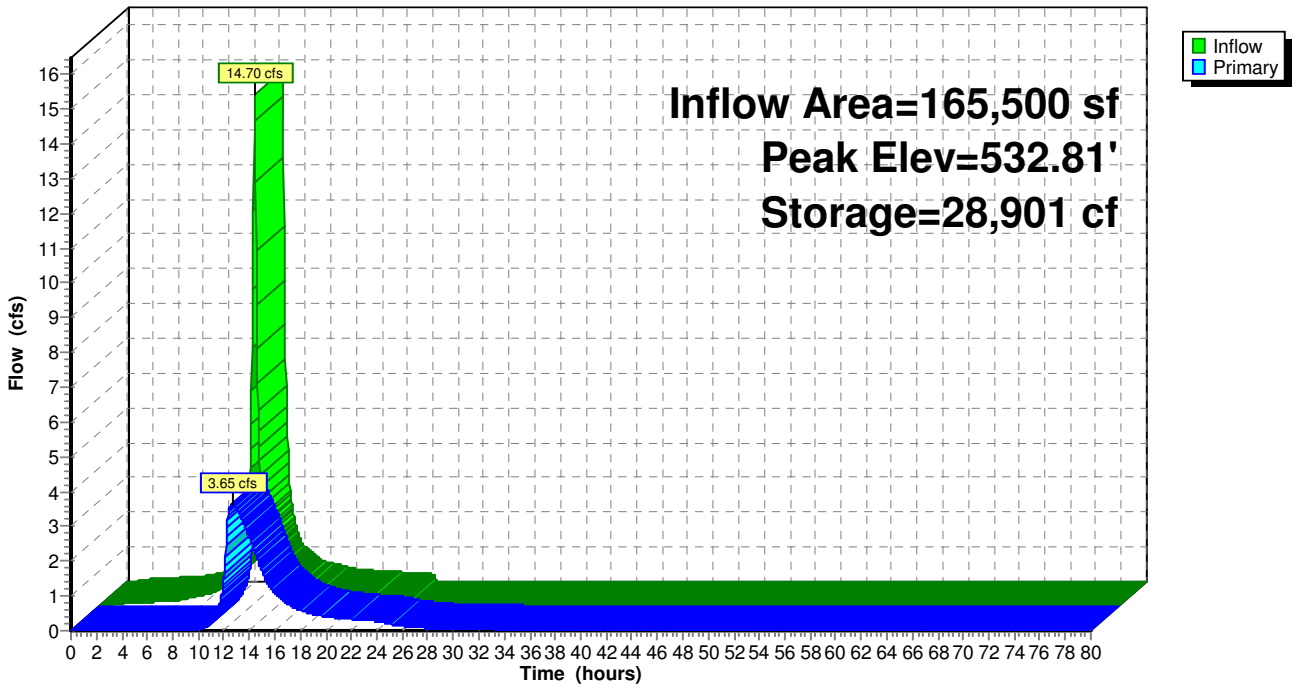
Device	Routing	Invert	Outlet Devices
#1	Primary	531.38'	**12.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.65 cfs @ 12.65 hrs HW=532.81' (Free Discharge)
1=Orifice (Orifice Controls 3.65 cfs @ 4.65 fps)



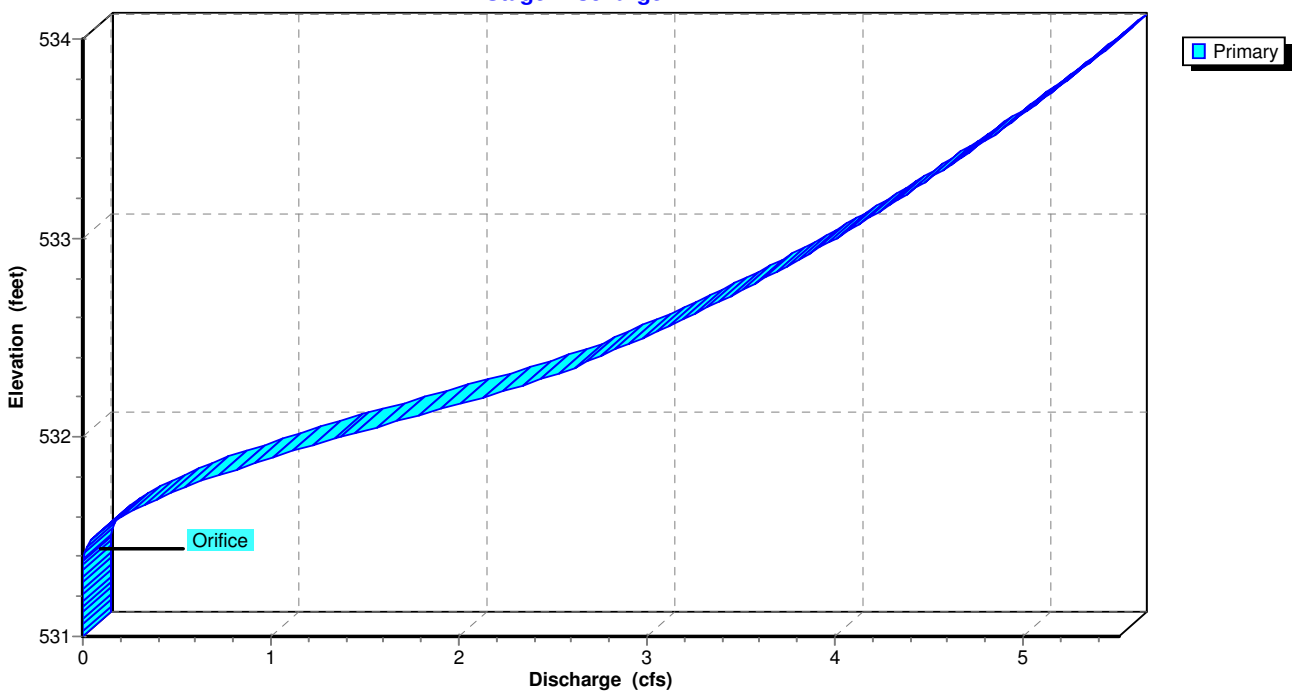
Pond 49P: Basin 7

Hydrograph

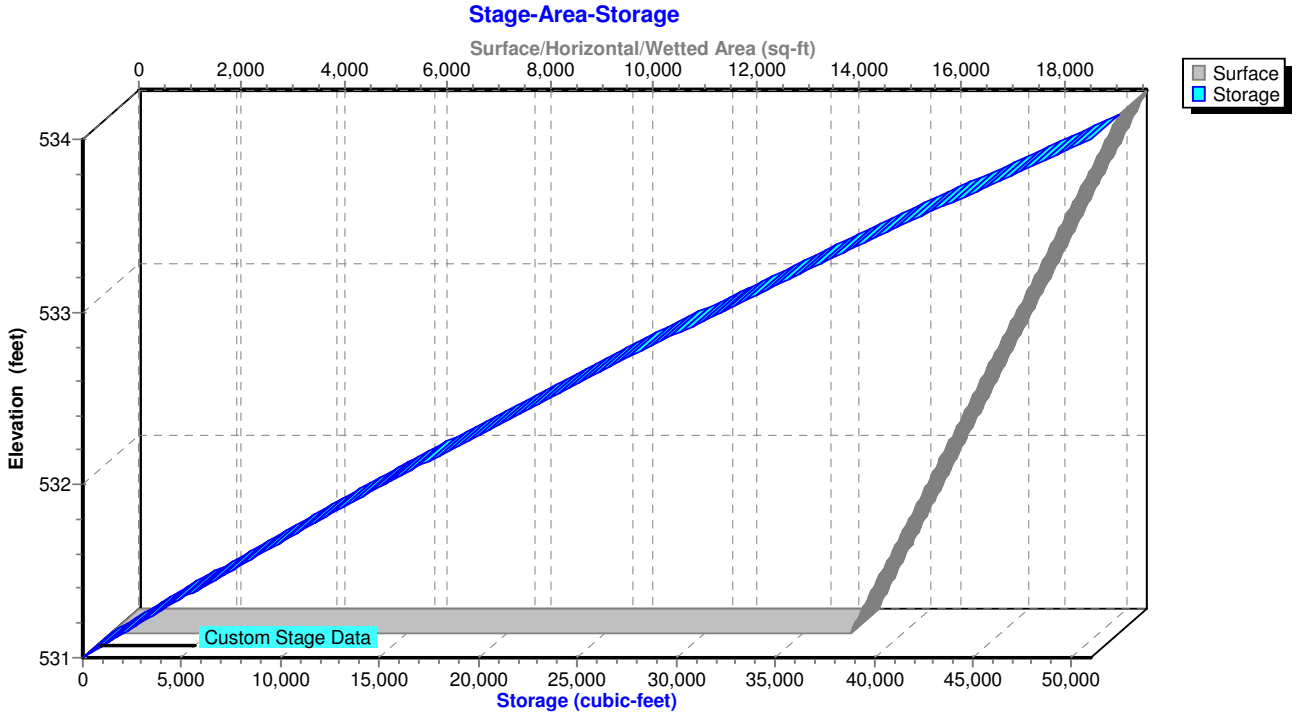


Pond 49P: Basin 7

Stage-Discharge



Pond 49P: Basin 7



Hydrograph for Pond 49P: Basin 7

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	531.00	0.00
2.00	0.08	231	531.02	0.00
4.00	0.12	970	531.07	0.00
6.00	0.17	1,977	531.14	0.00
8.00	0.31	3,643	531.25	0.00
10.00	0.64	6,716	531.45	0.03
12.00	**6.17**	**15,662**	**532.03**	**1.47**
14.00	**1.00**	**21,529**	**532.38**	**2.68**
16.00	0.55	13,949	531.92	1.08
18.00	0.37	11,536	531.77	0.59
20.00	0.31	10,437	531.70	0.41
22.00	0.27	9,891	531.66	0.33
24.00	0.22	9,494	531.64	0.27
26.00	0.00	8,236	531.55	0.13
28.00	0.00	7,534	531.51	0.07
30.00	0.00	7,119	531.48	0.05
32.00	0.00	6,846	531.46	0.03
34.00	0.00	6,655	531.45	0.02
36.00	0.00	6,513	531.44	0.02
38.00	0.00	6,400	531.43	0.01
40.00	0.00	6,311	531.43	0.01
42.00	0.00	6,240	531.42	0.01
44.00	0.00	6,184	531.42	0.01
46.00	0.00	6,135	531.42	0.01
48.00	0.00	6,092	531.41	0.01
50.00	0.00	6,053	531.41	0.01
52.00	0.00	6,018	531.41	0.00
54.00	0.00	5,987	531.41	0.00
56.00	0.00	5,958	531.40	0.00
58.00	0.00	5,933	531.40	0.00
60.00	0.00	5,910	531.40	0.00
62.00	0.00	5,890	531.40	0.00
64.00	0.00	5,871	531.40	0.00
66.00	0.00	5,855	531.40	0.00
68.00	0.00	5,840	531.40	0.00
70.00	0.00	5,827	531.40	0.00
72.00	0.00	5,815	531.40	0.00
74.00	0.00	5,804	531.39	0.00
76.00	0.00	5,794	531.39	0.00
78.00	0.00	5,785	531.39	0.00
80.00	0.00	5,778	531.39	0.00

Stage-Discharge for Pond 49P: Basin 7

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
531.00	0.00	532.02	1.45	533.04	4.07
531.02	0.00	532.04	1.52	533.06	4.11
531.04	0.00	532.06	1.60	533.08	4.14
531.06	0.00	532.08	1.67	533.10	4.18
531.08	0.00	532.10	1.75	533.12	4.21
531.10	0.00	532.12	1.83	533.14	4.24
531.12	0.00	532.14	1.90	533.16	4.28
531.14	0.00	532.16	1.98	533.18	4.31
531.16	0.00	532.18	2.05	533.20	4.34
531.18	0.00	532.20	2.13	533.22	4.38
531.20	0.00	532.22	2.20	533.24	4.41
531.22	0.00	532.24	2.27	533.26	4.44
531.24	0.00	532.26	2.34	533.28	4.47
531.26	0.00	532.28	2.40	533.30	4.51
531.28	0.00	532.30	2.47	533.32	4.54
531.30	0.00	532.32	2.53	533.34	4.57
531.32	0.00	532.34	2.58	533.36	4.60
531.34	0.00	532.36	2.63	533.38	4.63
531.36	0.00	532.38	2.67	533.40	4.66
531.38	0.00	532.40	2.73	533.42	4.69
531.40	0.00	532.42	2.78	533.44	4.72
531.42	0.01	532.44	2.83	533.46	4.75
531.44	0.02	532.46	2.88	533.48	4.78
531.46	0.03	532.48	2.93	533.50	4.81
531.48	0.04	532.50	2.98	533.52	4.84
531.50	0.06	532.52	3.03	533.54	4.87
531.52	0.09	532.54	3.07	533.56	4.90
531.54	0.11	532.56	3.12	533.58	4.93
531.56	0.14	532.58	3.16	533.60	4.96
531.58	0.17	532.60	3.21	533.62	4.99
531.60	0.20	532.62	3.25	533.64	5.02
531.62	0.24	532.64	3.30	533.66	5.05
531.64	0.28	532.66	3.34	533.68	5.07
531.66	0.32	532.68	3.38	533.70	5.10
531.68	0.37	532.70	3.42	533.72	5.13
531.70	0.42	532.72	3.47	533.74	5.16
531.72	0.47	532.74	3.51	533.76	5.19
531.74	0.52	532.76	3.55	533.78	5.21
531.76	0.57	532.78	3.59	533.80	5.24
531.78	0.63	532.80	3.63	533.82	5.27
531.80	0.69	532.82	3.67	533.84	5.29
531.82	0.75	532.84	3.71	533.86	5.32
531.84	0.81	532.86	3.74	533.88	5.35
531.86	0.88	532.88	3.78	533.90	5.37
531.88	0.95	532.90	3.82	533.92	5.40
531.90	1.01	532.92	3.86	533.94	5.43
531.92	1.08	532.94	3.89	533.96	5.45
531.94	1.15	532.96	3.93	533.98	5.48
531.96	1.22	532.98	3.97	534.00	**5.51**
531.98	1.30	533.00	4.00		
532.00	1.37	533.02	4.04		

Stage-Area-Storage for Pond 49P: Basin 7

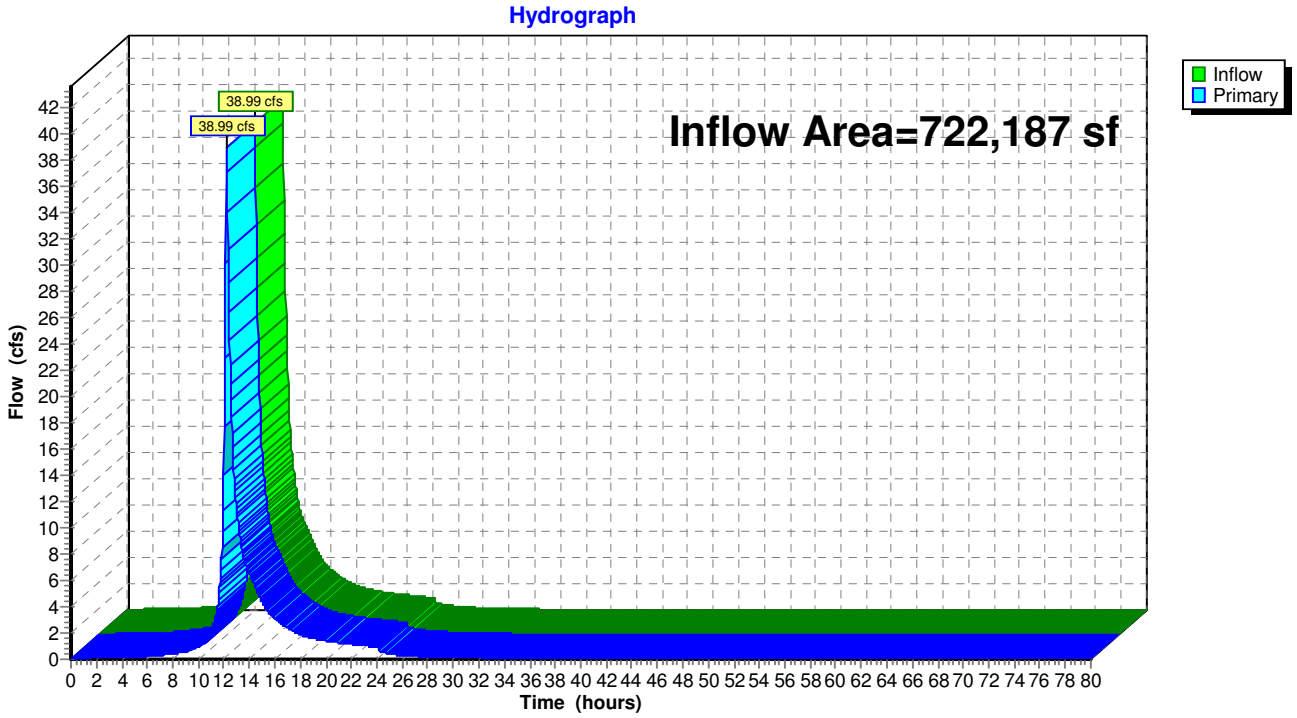
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
531.00	14,375	0
531.05	14,462	721
531.10	14,549	1,446
531.15	14,636	2,176
531.20	14,723	2,910
531.25	14,811	3,648
531.30	14,898	4,391
531.35	14,985	5,138
531.40	15,072	5,889
531.45	15,159	6,645
531.50	15,246	7,405
531.55	15,333	8,170
531.60	15,420	8,939
531.65	15,507	9,712
531.70	15,594	10,489
531.75	15,682	11,271
531.80	15,769	12,057
531.85	15,856	12,848
531.90	15,943	13,643
531.95	16,030	14,442
532.00	16,117	15,246
532.05	16,204	16,054
532.10	16,291	16,866
532.15	16,378	17,683
532.20	16,466	18,504
532.25	16,553	19,330
532.30	16,640	20,160
532.35	16,727	20,994
532.40	16,814	21,832
532.45	16,901	22,675
532.50	16,989	23,522
532.55	17,076	24,374
532.60	17,163	25,230
532.65	17,250	26,090
532.70	17,337	26,955
532.75	17,424	27,824
532.80	17,511	28,697
532.85	17,599	29,575
532.90	17,686	30,457
532.95	17,773	31,344
533.00	17,860	32,235
533.05	17,947	33,130
533.10	18,034	34,029
533.15	18,121	34,933
533.20	18,208	35,841
533.25	18,296	36,754
533.30	18,383	37,671
533.35	18,470	38,592
533.40	18,557	39,518
533.45	18,644	40,448
533.50	18,731	41,382
533.55	18,818	42,321
533.60	18,905	43,264
533.65	18,992	44,211
533.70	19,079	45,163
533.75	19,167	46,119
533.80	19,254	47,080
533.85	19,341	48,045
533.90	19,428	49,014
533.95	19,515	49,988
534.00	**19,602**	**50,966**

Summary for Link 28L: POA 2

Inflow Area = 722,187 sf, 47.85% Impervious, Inflow Depth = 3.79" for 100-Year event
Inflow = 38.99 cfs @ 12.20 hrs, Volume= 227,933 cf
Primary = 38.99 cfs @ 12.20 hrs, Volume= 227,933 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs

Link 28L: POA 2



Hydrograph for Link 28L: POA 2

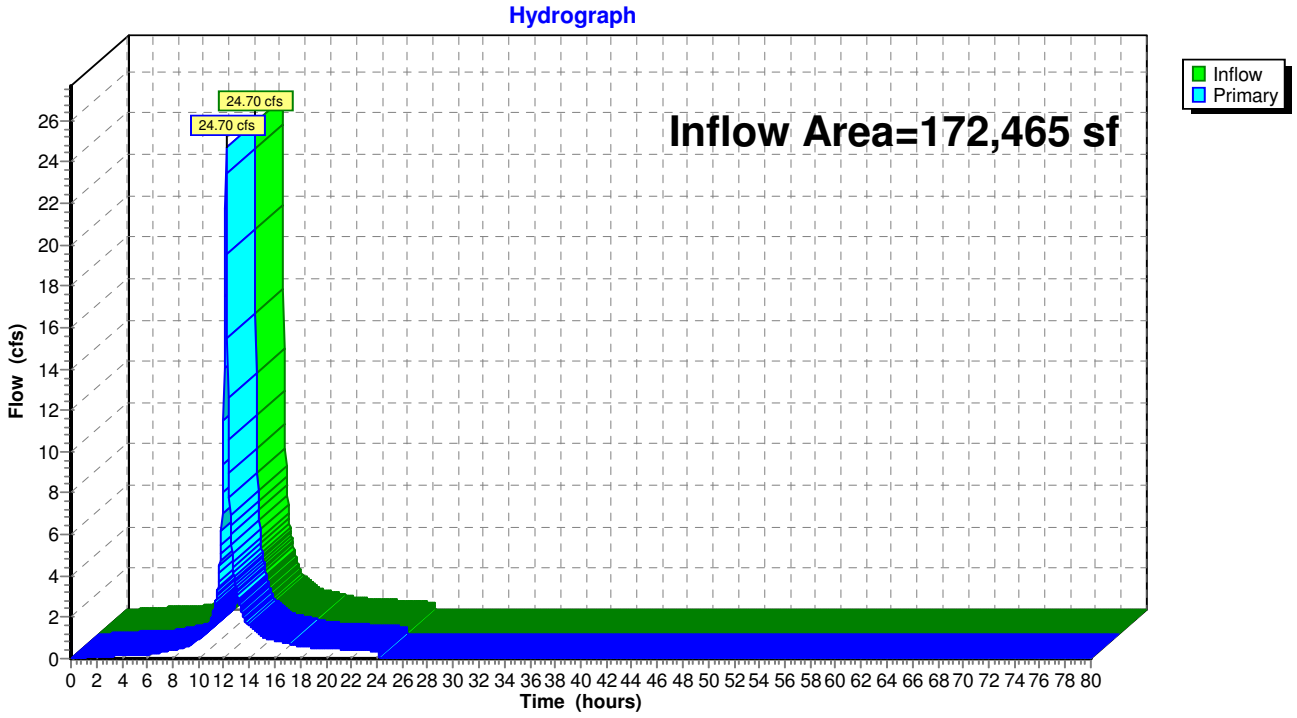
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	40.80	0.02	0.00	0.02
0.80	0.02	0.00	0.02	41.60	0.02	0.00	0.02
1.60	0.07	0.00	0.07	42.40	0.02	0.00	0.02
2.40	0.10	0.00	0.10	43.20	0.02	0.00	0.02
3.20	0.12	0.00	0.12	44.00	0.02	0.00	0.02
4.00	0.14	0.00	0.14	44.80	0.01	0.00	0.01
4.80	0.15	0.00	0.15	45.60	0.01	0.00	0.01
5.60	0.18	0.00	0.18	46.40	0.01	0.00	0.01
6.40	0.24	0.00	0.24	47.20	0.01	0.00	0.01
7.20	0.33	0.00	0.33	48.00	0.01	0.00	0.01
8.00	0.43	0.00	0.43	48.80	0.01	0.00	0.01
8.80	0.55	0.00	0.55	49.60	0.01	0.00	0.01
9.60	0.79	0.00	0.79	50.40	0.01	0.00	0.01
10.40	1.23	0.00	1.23	51.20	0.01	0.00	0.01
11.20	2.67	0.00	2.67	52.00	0.01	0.00	0.01
12.00	**14.02**	0.00	**14.02**	52.80	0.01	0.00	0.01
12.80	**13.78**	0.00	**13.78**	53.60	0.01	0.00	0.01
13.60	7.65	0.00	7.65	54.40	0.01	0.00	0.01
14.40	5.63	0.00	5.63	55.20	0.01	0.00	0.01
15.20	4.01	0.00	4.01	56.00	0.01	0.00	0.01
16.00	3.10	0.00	3.10	56.80	0.01	0.00	0.01
16.80	2.51	0.00	2.51	57.60	0.01	0.00	0.01
17.60	2.08	0.00	2.08	58.40	0.01	0.00	0.01
18.40	1.74	0.00	1.74	59.20	0.00	0.00	0.00
19.20	1.55	0.00	1.55	60.00	0.00	0.00	0.00
20.00	1.40	0.00	1.40	60.80	0.00	0.00	0.00
20.80	1.29	0.00	1.29	61.60	0.00	0.00	0.00
21.60	1.19	0.00	1.19	62.40	0.00	0.00	0.00
22.40	1.10	0.00	1.10	63.20	0.00	0.00	0.00
23.20	1.02	0.00	1.02	64.00	0.00	0.00	0.00
24.00	0.95	0.00	0.95	64.80	0.00	0.00	0.00
24.80	0.45	0.00	0.45	65.60	0.00	0.00	0.00
25.60	0.34	0.00	0.34	66.40	0.00	0.00	0.00
26.40	0.26	0.00	0.26	67.20	0.00	0.00	0.00
27.20	0.21	0.00	0.21	68.00	0.00	0.00	0.00
28.00	0.17	0.00	0.17	68.80	0.00	0.00	0.00
28.80	0.14	0.00	0.14	69.60	0.00	0.00	0.00
29.60	0.11	0.00	0.11	70.40	0.00	0.00	0.00
30.40	0.09	0.00	0.09	71.20	0.00	0.00	0.00
31.20	0.08	0.00	0.08	72.00	0.00	0.00	0.00
32.00	0.07	0.00	0.07	72.80	0.00	0.00	0.00
32.80	0.06	0.00	0.06	73.60	0.00	0.00	0.00
33.60	0.05	0.00	0.05	74.40	0.00	0.00	0.00
34.40	0.05	0.00	0.05	75.20	0.00	0.00	0.00
35.20	0.04	0.00	0.04	76.00	0.00	0.00	0.00
36.00	0.04	0.00	0.04	76.80	0.00	0.00	0.00
36.80	0.03	0.00	0.03	77.60	0.00	0.00	0.00
37.60	0.03	0.00	0.03	78.40	0.00	0.00	0.00
38.40	0.03	0.00	0.03	79.20	0.00	0.00	0.00
39.20	0.03	0.00	0.03	80.00	0.00	0.00	0.00
40.00	0.02	0.00	0.02				

Summary for Link 34L: DA 2 Undetained

Inflow Area = 172,465 sf, 30.45% Impervious, Inflow Depth = 6.66" for 100-Year event
Inflow = 24.70 cfs @ 12.17 hrs, Volume= 95,653 cf
Primary = 24.70 cfs @ 12.17 hrs, Volume= 95,653 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 28L : POA 2

Primary outflow = Inflow, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs

Link 34L: DA 2 Undetained



Hydrograph for Link 34L: DA 2 Undetained

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	40.80	0.00	0.00	0.00
0.80	0.02	0.00	0.02	41.60	0.00	0.00	0.00
1.60	0.07	0.00	0.07	42.40	0.00	0.00	0.00
2.40	0.10	0.00	0.10	43.20	0.00	0.00	0.00
3.20	0.12	0.00	0.12	44.00	0.00	0.00	0.00
4.00	0.14	0.00	0.14	44.80	0.00	0.00	0.00
4.80	0.15	0.00	0.15	45.60	0.00	0.00	0.00
5.60	0.18	0.00	0.18	46.40	0.00	0.00	0.00
6.40	0.24	0.00	0.24	47.20	0.00	0.00	0.00
7.20	0.33	0.00	0.33	48.00	0.00	0.00	0.00
8.00	0.43	0.00	0.43	48.80	0.00	0.00	0.00
8.80	0.55	0.00	0.55	49.60	0.00	0.00	0.00
9.60	0.79	0.00	0.79	50.40	0.00	0.00	0.00
10.40	1.15	0.00	1.15	51.20	0.00	0.00	0.00
11.20	2.32	0.00	2.32	52.00	0.00	0.00	0.00
12.00	**11.46**	0.00	**11.46**	52.80	0.00	0.00	0.00
12.80	**3.98**	0.00	**3.98**	53.60	0.00	0.00	0.00
13.60	1.93	0.00	1.93	54.40	0.00	0.00	0.00
14.40	1.40	0.00	1.40	55.20	0.00	0.00	0.00
15.20	1.01	0.00	1.01	56.00	0.00	0.00	0.00
16.00	0.88	0.00	0.88	56.80	0.00	0.00	0.00
16.80	0.77	0.00	0.77	57.60	0.00	0.00	0.00
17.60	0.66	0.00	0.66	58.40	0.00	0.00	0.00
18.40	0.56	0.00	0.56	59.20	0.00	0.00	0.00
19.20	0.53	0.00	0.53	60.00	0.00	0.00	0.00
20.00	0.51	0.00	0.51	60.80	0.00	0.00	0.00
20.80	0.48	0.00	0.48	61.60	0.00	0.00	0.00
21.60	0.45	0.00	0.45	62.40	0.00	0.00	0.00
22.40	0.42	0.00	0.42	63.20	0.00	0.00	0.00
23.20	0.39	0.00	0.39	64.00	0.00	0.00	0.00
24.00	0.36	0.00	0.36	64.80	0.00	0.00	0.00
24.80	0.00	0.00	0.00	65.60	0.00	0.00	0.00
25.60	0.00	0.00	0.00	66.40	0.00	0.00	0.00
26.40	0.00	0.00	0.00	67.20	0.00	0.00	0.00
27.20	0.00	0.00	0.00	68.00	0.00	0.00	0.00
28.00	0.00	0.00	0.00	68.80	0.00	0.00	0.00
28.80	0.00	0.00	0.00	69.60	0.00	0.00	0.00
29.60	0.00	0.00	0.00	70.40	0.00	0.00	0.00
30.40	0.00	0.00	0.00	71.20	0.00	0.00	0.00
31.20	0.00	0.00	0.00	72.00	0.00	0.00	0.00
32.00	0.00	0.00	0.00	72.80	0.00	0.00	0.00
32.80	0.00	0.00	0.00	73.60	0.00	0.00	0.00
33.60	0.00	0.00	0.00	74.40	0.00	0.00	0.00
34.40	0.00	0.00	0.00	75.20	0.00	0.00	0.00
35.20	0.00	0.00	0.00	76.00	0.00	0.00	0.00
36.00	0.00	0.00	0.00	76.80	0.00	0.00	0.00
36.80	0.00	0.00	0.00	77.60	0.00	0.00	0.00
37.60	0.00	0.00	0.00	78.40	0.00	0.00	0.00
38.40	0.00	0.00	0.00	79.20	0.00	0.00	0.00
39.20	0.00	0.00	0.00	80.00	0.00	0.00	0.00
40.00	0.00	0.00	0.00				

Time span=0.00-80.00 hrs, dt=0.04 hrs, 2001 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 19S: Basin 3 - Imp Runoff Area=6,824 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=75' Slope=0.0400 '/' Tc=8.3 min CN=98 Runoff=0.43 cfs 588 cf

Subcatchment 20S: 15775.6 Runoff Area=15,086 sf 0.00% Impervious Runoff Depth=0.07"
Flow Length=75' Slope=0.0400 '/' Tc=8.3 min CN=74 Runoff=0.05 cfs 93 cf

Subcatchment 21S: Basin 4 - Imp Runoff Area=41,524 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=755' Slope=0.0200 '/' Tc=5.5 min CN=98 Runoff=2.77 cfs 3,580 cf

Subcatchment 24S: Basin 4 - Perv Runoff Area=7,526 sf 0.00% Impervious Runoff Depth=0.07"
Flow Length=755' Slope=0.0200 '/' Tc=5.5 min CN=74 Runoff=0.03 cfs 46 cf

Subcatchment 25S: Basin 2 - Perv Runoff Area=82,260 sf 0.00% Impervious Runoff Depth=0.12"
Flow Length=463' Tc=10.5 min CN=77 Runoff=0.45 cfs 802 cf

Subcatchment 28S: Basin 2 - Imp Runoff Area=30,173 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=463' Tc=10.5 min CN=98 Runoff=1.76 cfs 2,601 cf

Subcatchment 29S: Basin 8 - Imp Runoff Area=38,257 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=165' Tc=8.6 min CN=98 Runoff=2.37 cfs 3,298 cf

Subcatchment 30S: Basin 8 - Perv Runoff Area=22,787 sf 0.00% Impervious Runoff Depth=0.12"
Flow Length=165' Tc=8.6 min CN=77 Runoff=0.13 cfs 222 cf

Subcatchment 31S: Basin 7 - Imp Runoff Area=45,778 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=760' Tc=12.5 min CN=98 Runoff=2.53 cfs 3,947 cf

Subcatchment 32S: Basin 7 - Perv Runoff Area=58,678 sf 0.00% Impervious Runoff Depth=0.12"
Flow Length=760' Tc=12.5 min CN=77 Runoff=0.29 cfs 572 cf

Subcatchment 35S: DA 2 Und - Imp Runoff Area=52,513 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=160' Tc=9.8 min CN=98 Runoff=3.13 cfs 4,527 cf

Subcatchment 36S: DA 2 Und - Perv Runoff Area=119,952 sf 0.00% Impervious Runoff Depth=0.12"
Flow Length=160' Tc=9.8 min CN=77 Runoff=0.66 cfs 1,170 cf

Subcatchment 45S: Basin 11 - Imp Runoff Area=59,901 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=233' Tc=9.8 min CN=98 Runoff=3.57 cfs 5,164 cf

Subcatchment 46S: Basin 11 - Perv Runoff Area=24,202 sf 0.00% Impervious Runoff Depth=0.10"
Flow Length=233' Tc=9.8 min CN=76 Runoff=0.11 cfs 204 cf

Subcatchment 51S: Basin 10 - Imp Runoff Area=53,114 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=379' Tc=10.7 min CN=98 Runoff=3.08 cfs 4,579 cf

Subcatchment 52S: Basin 10 - Perv Runoff Area=37,235 sf 0.00% Impervious Runoff Depth=0.09"
Flow Length=379' Tc=10.7 min CN=75 Runoff=0.14 cfs 270 cf

Subcatchment 53S: Basin 9 - Imp Runoff Area=17,461 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=140' Tc=7.4 min CN=98 Runoff=1.12 cfs 1,505 cf

Subcatchment 54S: Basin 9 - Perv Runoff Area=8,916 sf 0.00% Impervious Runoff Depth=0.13"
Flow Length=140' Tc=7.4 min CN=78 Runoff=0.07 cfs 100 cf

Pond 21P: Basin 3 Peak Elev=559.01' Storage=17 cf Inflow=0.45 cfs 681 cf
Discarded=0.44 cfs 681 cf Primary=0.00 cfs 0 cf Outflow=0.44 cfs 681 cf

Pond 22P: Basin 4 Peak Elev=572.22' Storage=1,074 cf Inflow=2.78 cfs 3,626 cf
Discarded=1.13 cfs 3,626 cf Primary=0.00 cfs 0 cf Outflow=1.13 cfs 3,626 cf

Pond 27P: Basin 2 Peak Elev=544.63' Storage=3,403 cf Inflow=2.08 cfs 3,403 cf
Outflow=0.00 cfs 0 cf

Pond 33P: Basin 11 Peak Elev=590.05' Storage=265 cf Inflow=3.64 cfs 5,369 cf
Discarded=3.13 cfs 5,369 cf Primary=0.00 cfs 0 cf Outflow=3.13 cfs 5,369 cf

Pond 41P: Basin 10 Peak Elev=576.07' Storage=654 cf Inflow=3.15 cfs 4,849 cf
Discarded=2.22 cfs 4,849 cf Primary=0.00 cfs 0 cf Outflow=2.22 cfs 4,849 cf

Pond 42P: Basin 9 Peak Elev=562.13' Storage=344 cf Inflow=1.17 cfs 1,605 cf
Discarded=0.61 cfs 1,605 cf Primary=0.00 cfs 0 cf Outflow=0.61 cfs 1,605 cf

Pond 48P: Basin 8 Peak Elev=573.03' Storage=128 cf Inflow=2.45 cfs 3,521 cf
Discarded=2.37 cfs 3,521 cf Primary=0.00 cfs 0 cf Outflow=2.37 cfs 3,521 cf

Pond 49P: Basin 7 Peak Elev=531.31' Storage=4,519 cf Inflow=2.72 cfs 4,519 cf
Outflow=0.00 cfs 0 cf

Link 28L: POA 2 Inflow=3.61 cfs 5,697 cf
Primary=3.61 cfs 5,697 cf

Link 34L: DA 2 Undetained Inflow=3.61 cfs 5,697 cf
Primary=3.61 cfs 5,697 cf

Total Runoff Area = 722,187 sf Runoff Volume = 33,270 cf Average Runoff Depth = 0.55"
52.15% Pervious = 376,642 sf 47.85% Impervious = 345,545 sf

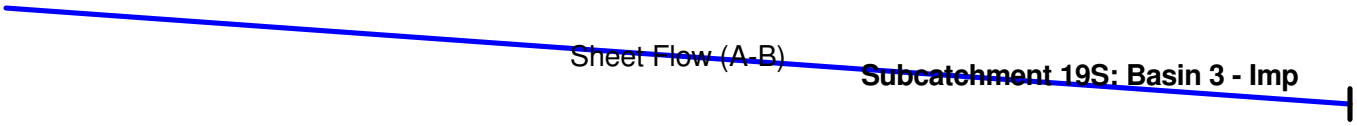
Summary for Subcatchment 19S: Basin 3 - Imp

Runoff = 0.43 cfs @ 1.12 hrs, Volume= 588 cf, Depth= 1.03"
Routed to Pond 21P : Basin 3

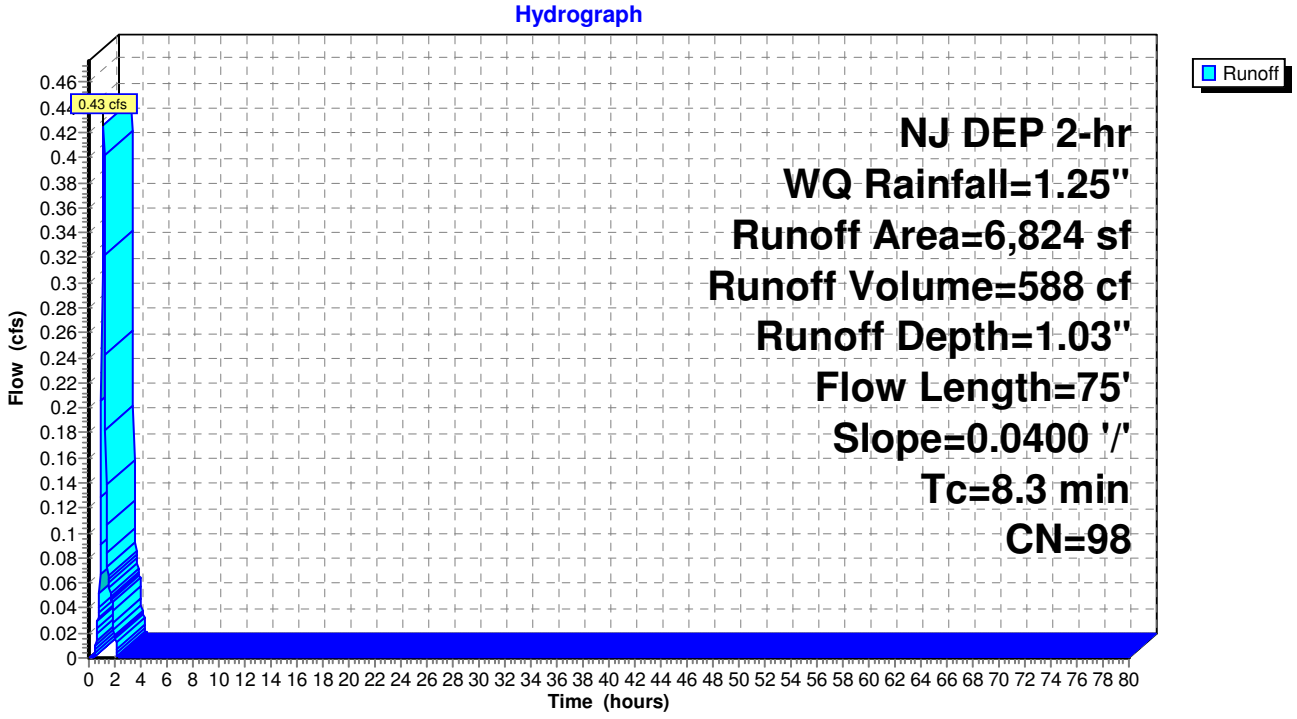
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

	Area (sf)	CN	Description
	5,876	98	Paved parking, HSG C
*	948	98	impervious other than pavement
	6,824	98	Weighted Average
	6,824		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	75	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"



Subcatchment 19S: Basin 3 - Imp



Hydrograph for Subcatchment 19S: Basin 3 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	1.03	0.00
0.80	0.23	0.09	**0.04**	41.60	1.25	1.03	0.00
1.60	**1.18**	**0.97**	**0.06**	42.40	1.25	1.03	0.00
2.40	**1.25**	**1.03**	0.00	43.20	1.25	1.03	0.00
3.20	1.25	1.03	0.00	44.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	44.80	1.25	1.03	0.00
4.80	1.25	1.03	0.00	45.60	1.25	1.03	0.00
5.60	1.25	1.03	0.00	46.40	1.25	1.03	0.00
6.40	1.25	1.03	0.00	47.20	1.25	1.03	0.00
7.20	1.25	1.03	0.00	48.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	48.80	1.25	1.03	0.00
8.80	1.25	1.03	0.00	49.60	1.25	1.03	0.00
9.60	1.25	1.03	0.00	50.40	1.25	1.03	0.00
10.40	1.25	1.03	0.00	51.20	1.25	1.03	0.00
11.20	1.25	1.03	0.00	52.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	52.80	1.25	1.03	0.00
12.80	1.25	1.03	0.00	53.60	1.25	1.03	0.00
13.60	1.25	1.03	0.00	54.40	1.25	1.03	0.00
14.40	1.25	1.03	0.00	55.20	1.25	1.03	0.00
15.20	1.25	1.03	0.00	56.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	56.80	1.25	1.03	0.00
16.80	1.25	1.03	0.00	57.60	1.25	1.03	0.00
17.60	1.25	1.03	0.00	58.40	1.25	1.03	0.00
18.40	1.25	1.03	0.00	59.20	1.25	1.03	0.00
19.20	1.25	1.03	0.00	60.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00	60.80	1.25	1.03	0.00
20.80	1.25	1.03	0.00	61.60	1.25	1.03	0.00
21.60	1.25	1.03	0.00	62.40	1.25	1.03	0.00
22.40	1.25	1.03	0.00	63.20	1.25	1.03	0.00
23.20	1.25	1.03	0.00	64.00	1.25	1.03	0.00
24.00	1.25	1.03	0.00	64.80	1.25	1.03	0.00
24.80	1.25	1.03	0.00	65.60	1.25	1.03	0.00
25.60	1.25	1.03	0.00	66.40	1.25	1.03	0.00
26.40	1.25	1.03	0.00	67.20	1.25	1.03	0.00
27.20	1.25	1.03	0.00	68.00	1.25	1.03	0.00
28.00	1.25	1.03	0.00	68.80	1.25	1.03	0.00
28.80	1.25	1.03	0.00	69.60	1.25	1.03	0.00
29.60	1.25	1.03	0.00	70.40	1.25	1.03	0.00
30.40	1.25	1.03	0.00	71.20	1.25	1.03	0.00
31.20	1.25	1.03	0.00	72.00	1.25	1.03	0.00
32.00	1.25	1.03	0.00	72.80	1.25	1.03	0.00
32.80	1.25	1.03	0.00	73.60	1.25	1.03	0.00
33.60	1.25	1.03	0.00	74.40	1.25	1.03	0.00
34.40	1.25	1.03	0.00	75.20	1.25	1.03	0.00
35.20	1.25	1.03	0.00	76.00	1.25	1.03	0.00
36.00	1.25	1.03	0.00	76.80	1.25	1.03	0.00
36.80	1.25	1.03	0.00	77.60	1.25	1.03	0.00
37.60	1.25	1.03	0.00	78.40	1.25	1.03	0.00
38.40	1.25	1.03	0.00	79.20	1.25	1.03	0.00
39.20	1.25	1.03	0.00	80.00	1.25	1.03	0.00
40.00	1.25	1.03	0.00				

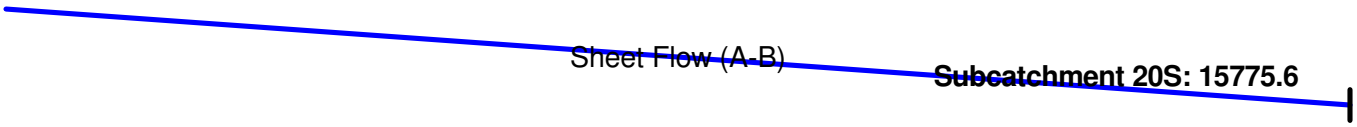
Summary for Subcatchment 20S: 15775.6

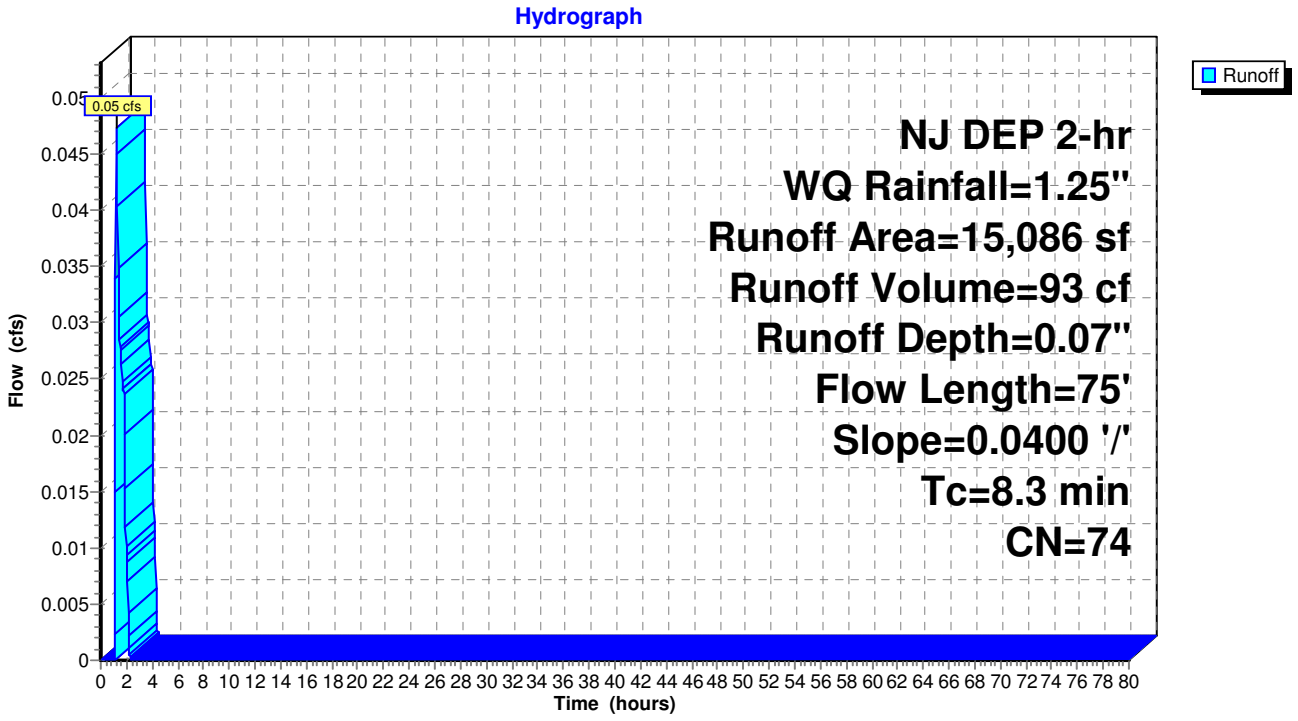
Runoff = 0.05 cfs @ 1.24 hrs, Volume= 93 cf, Depth= 0.07"
Routed to Pond 21P : Basin 3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
15,086	74	>75% Grass cover, Good, HSG C
15,086		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	75	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"





Hydrograph for Subcatchment 20S: 15775.6

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	0.07	0.00
0.80	0.23	0.00	**0.00**	41.60	1.25	0.07	0.00
1.60	**1.18**	**0.06**	**0.03**	42.40	1.25	0.07	0.00
2.40	**1.25**	**0.07**	0.00	43.20	1.25	0.07	0.00
3.20	1.25	0.07	0.00	44.00	1.25	0.07	0.00
4.00	1.25	0.07	0.00	44.80	1.25	0.07	0.00
4.80	1.25	0.07	0.00	45.60	1.25	0.07	0.00
5.60	1.25	0.07	0.00	46.40	1.25	0.07	0.00
6.40	1.25	0.07	0.00	47.20	1.25	0.07	0.00
7.20	1.25	0.07	0.00	48.00	1.25	0.07	0.00
8.00	1.25	0.07	0.00	48.80	1.25	0.07	0.00
8.80	1.25	0.07	0.00	49.60	1.25	0.07	0.00
9.60	1.25	0.07	0.00	50.40	1.25	0.07	0.00
10.40	1.25	0.07	0.00	51.20	1.25	0.07	0.00
11.20	1.25	0.07	0.00	52.00	1.25	0.07	0.00
12.00	1.25	0.07	0.00	52.80	1.25	0.07	0.00
12.80	1.25	0.07	0.00	53.60	1.25	0.07	0.00
13.60	1.25	0.07	0.00	54.40	1.25	0.07	0.00
14.40	1.25	0.07	0.00	55.20	1.25	0.07	0.00
15.20	1.25	0.07	0.00	56.00	1.25	0.07	0.00
16.00	1.25	0.07	0.00	56.80	1.25	0.07	0.00
16.80	1.25	0.07	0.00	57.60	1.25	0.07	0.00
17.60	1.25	0.07	0.00	58.40	1.25	0.07	0.00
18.40	1.25	0.07	0.00	59.20	1.25	0.07	0.00
19.20	1.25	0.07	0.00	60.00	1.25	0.07	0.00
20.00	1.25	0.07	0.00	60.80	1.25	0.07	0.00
20.80	1.25	0.07	0.00	61.60	1.25	0.07	0.00
21.60	1.25	0.07	0.00	62.40	1.25	0.07	0.00
22.40	1.25	0.07	0.00	63.20	1.25	0.07	0.00
23.20	1.25	0.07	0.00	64.00	1.25	0.07	0.00
24.00	1.25	0.07	0.00	64.80	1.25	0.07	0.00
24.80	1.25	0.07	0.00	65.60	1.25	0.07	0.00
25.60	1.25	0.07	0.00	66.40	1.25	0.07	0.00
26.40	1.25	0.07	0.00	67.20	1.25	0.07	0.00
27.20	1.25	0.07	0.00	68.00	1.25	0.07	0.00
28.00	1.25	0.07	0.00	68.80	1.25	0.07	0.00
28.80	1.25	0.07	0.00	69.60	1.25	0.07	0.00
29.60	1.25	0.07	0.00	70.40	1.25	0.07	0.00
30.40	1.25	0.07	0.00	71.20	1.25	0.07	0.00
31.20	1.25	0.07	0.00	72.00	1.25	0.07	0.00
32.00	1.25	0.07	0.00	72.80	1.25	0.07	0.00
32.80	1.25	0.07	0.00	73.60	1.25	0.07	0.00
33.60	1.25	0.07	0.00	74.40	1.25	0.07	0.00
34.40	1.25	0.07	0.00	75.20	1.25	0.07	0.00
35.20	1.25	0.07	0.00	76.00	1.25	0.07	0.00
36.00	1.25	0.07	0.00	76.80	1.25	0.07	0.00
36.80	1.25	0.07	0.00	77.60	1.25	0.07	0.00
37.60	1.25	0.07	0.00	78.40	1.25	0.07	0.00
38.40	1.25	0.07	0.00	79.20	1.25	0.07	0.00
39.20	1.25	0.07	0.00	80.00	1.25	0.07	0.00
40.00	1.25	0.07	0.00				

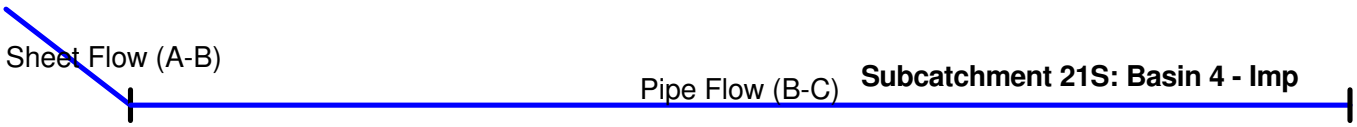
Summary for Subcatchment 21S: Basin 4 - Imp

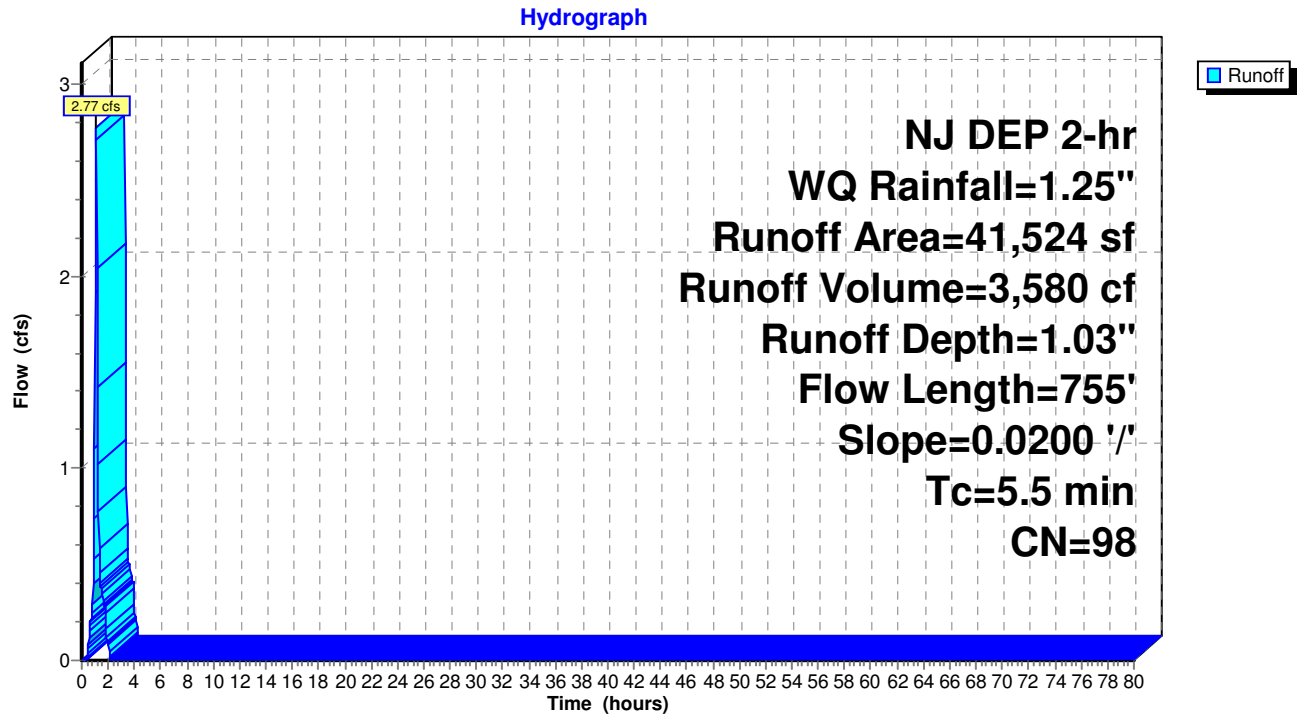
Runoff = 2.77 cfs @ 1.09 hrs, Volume= 3,580 cf, Depth= 1.03"
Routed to Pond 22P : Basin 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
29,022	98	Roofs, HSG D
12,502	98	Paved parking, HSG C
41,524	98	Weighted Average
41,524		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.33		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
4.6	685		2.50		**Direct Entry, Pipe Flow (B-C)**
5.5	755	Total			





Hydrograph for Subcatchment 21S: Basin 4 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	1.03	0.00
0.80	0.23	0.09	**0.29**	41.60	1.25	1.03	0.00
1.60	**1.18**	**0.97**	**0.31**	42.40	1.25	1.03	0.00
2.40	**1.25**	**1.03**	0.00	43.20	1.25	1.03	0.00
3.20	1.25	1.03	0.00	44.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	44.80	1.25	1.03	0.00
4.80	1.25	1.03	0.00	45.60	1.25	1.03	0.00
5.60	1.25	1.03	0.00	46.40	1.25	1.03	0.00
6.40	1.25	1.03	0.00	47.20	1.25	1.03	0.00
7.20	1.25	1.03	0.00	48.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	48.80	1.25	1.03	0.00
8.80	1.25	1.03	0.00	49.60	1.25	1.03	0.00
9.60	1.25	1.03	0.00	50.40	1.25	1.03	0.00
10.40	1.25	1.03	0.00	51.20	1.25	1.03	0.00
11.20	1.25	1.03	0.00	52.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	52.80	1.25	1.03	0.00
12.80	1.25	1.03	0.00	53.60	1.25	1.03	0.00
13.60	1.25	1.03	0.00	54.40	1.25	1.03	0.00
14.40	1.25	1.03	0.00	55.20	1.25	1.03	0.00
15.20	1.25	1.03	0.00	56.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	56.80	1.25	1.03	0.00
16.80	1.25	1.03	0.00	57.60	1.25	1.03	0.00
17.60	1.25	1.03	0.00	58.40	1.25	1.03	0.00
18.40	1.25	1.03	0.00	59.20	1.25	1.03	0.00
19.20	1.25	1.03	0.00	60.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00	60.80	1.25	1.03	0.00
20.80	1.25	1.03	0.00	61.60	1.25	1.03	0.00
21.60	1.25	1.03	0.00	62.40	1.25	1.03	0.00
22.40	1.25	1.03	0.00	63.20	1.25	1.03	0.00
23.20	1.25	1.03	0.00	64.00	1.25	1.03	0.00
24.00	1.25	1.03	0.00	64.80	1.25	1.03	0.00
24.80	1.25	1.03	0.00	65.60	1.25	1.03	0.00
25.60	1.25	1.03	0.00	66.40	1.25	1.03	0.00
26.40	1.25	1.03	0.00	67.20	1.25	1.03	0.00
27.20	1.25	1.03	0.00	68.00	1.25	1.03	0.00
28.00	1.25	1.03	0.00	68.80	1.25	1.03	0.00
28.80	1.25	1.03	0.00	69.60	1.25	1.03	0.00
29.60	1.25	1.03	0.00	70.40	1.25	1.03	0.00
30.40	1.25	1.03	0.00	71.20	1.25	1.03	0.00
31.20	1.25	1.03	0.00	72.00	1.25	1.03	0.00
32.00	1.25	1.03	0.00	72.80	1.25	1.03	0.00
32.80	1.25	1.03	0.00	73.60	1.25	1.03	0.00
33.60	1.25	1.03	0.00	74.40	1.25	1.03	0.00
34.40	1.25	1.03	0.00	75.20	1.25	1.03	0.00
35.20	1.25	1.03	0.00	76.00	1.25	1.03	0.00
36.00	1.25	1.03	0.00	76.80	1.25	1.03	0.00
36.80	1.25	1.03	0.00	77.60	1.25	1.03	0.00
37.60	1.25	1.03	0.00	78.40	1.25	1.03	0.00
38.40	1.25	1.03	0.00	79.20	1.25	1.03	0.00
39.20	1.25	1.03	0.00	80.00	1.25	1.03	0.00
40.00	1.25	1.03	0.00				

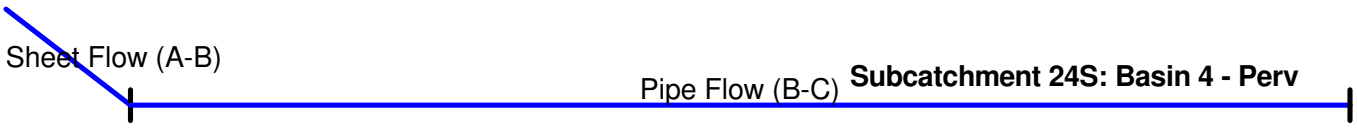
Summary for Subcatchment 24S: Basin 4 - Perv

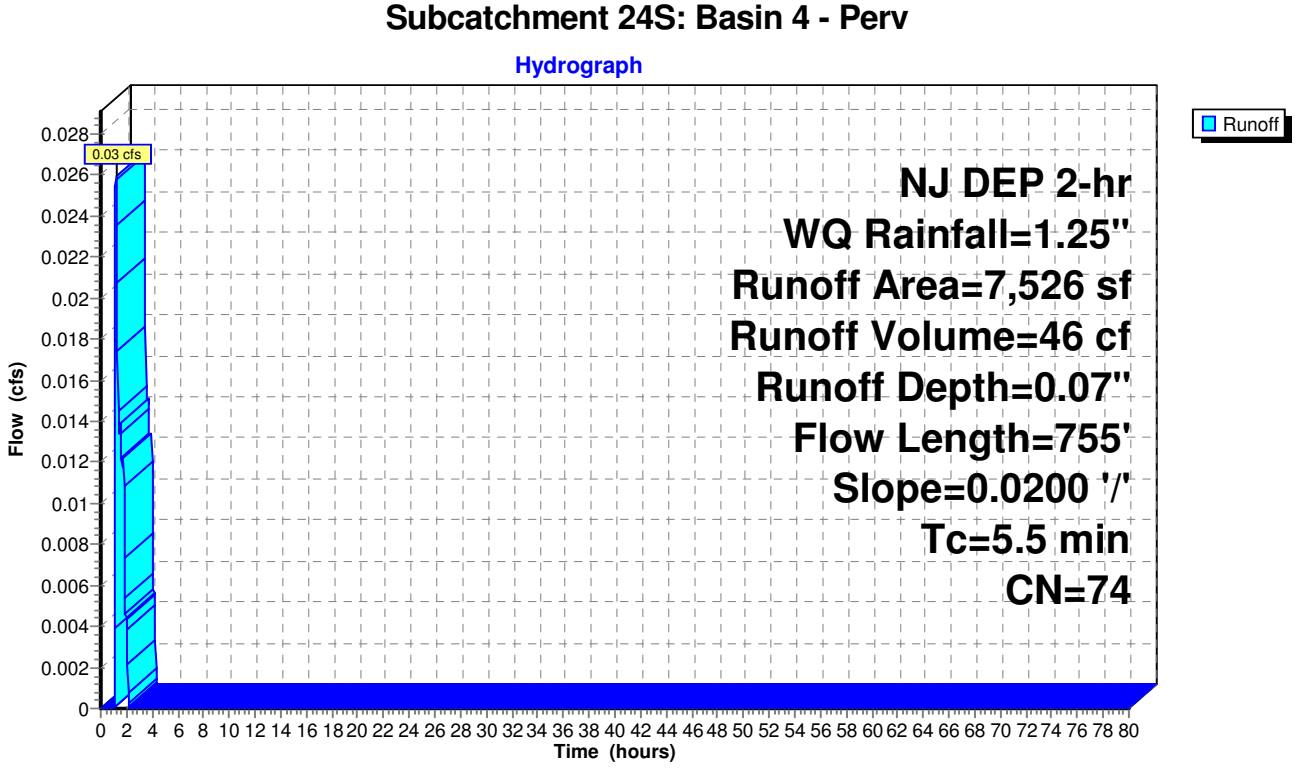
Runoff = 0.03 cfs @ 1.19 hrs, Volume= 46 cf, Depth= 0.07"
Routed to Pond 22P : Basin 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
7,526	74	>75% Grass cover, Good, HSG C
7,526		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	70	0.0200	1.33		**Sheet Flow, Sheet Flow (A-B)** Smooth surfaces n= 0.011 P2= 3.47"
4.6	685		2.50		**Direct Entry, Pipe Flow (B-C)**
5.5	755	Total			





Hydrograph for Subcatchment 24S: Basin 4 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	0.07	0.00
0.80	0.23	0.00	**0.00**	41.60	1.25	0.07	0.00
1.60	**1.18**	**0.06**	**0.01**	42.40	1.25	0.07	0.00
2.40	**1.25**	**0.07**	0.00	43.20	1.25	0.07	0.00
3.20	1.25	0.07	0.00	44.00	1.25	0.07	0.00
4.00	1.25	0.07	0.00	44.80	1.25	0.07	0.00
4.80	1.25	0.07	0.00	45.60	1.25	0.07	0.00
5.60	1.25	0.07	0.00	46.40	1.25	0.07	0.00
6.40	1.25	0.07	0.00	47.20	1.25	0.07	0.00
7.20	1.25	0.07	0.00	48.00	1.25	0.07	0.00
8.00	1.25	0.07	0.00	48.80	1.25	0.07	0.00
8.80	1.25	0.07	0.00	49.60	1.25	0.07	0.00
9.60	1.25	0.07	0.00	50.40	1.25	0.07	0.00
10.40	1.25	0.07	0.00	51.20	1.25	0.07	0.00
11.20	1.25	0.07	0.00	52.00	1.25	0.07	0.00
12.00	1.25	0.07	0.00	52.80	1.25	0.07	0.00
12.80	1.25	0.07	0.00	53.60	1.25	0.07	0.00
13.60	1.25	0.07	0.00	54.40	1.25	0.07	0.00
14.40	1.25	0.07	0.00	55.20	1.25	0.07	0.00
15.20	1.25	0.07	0.00	56.00	1.25	0.07	0.00
16.00	1.25	0.07	0.00	56.80	1.25	0.07	0.00
16.80	1.25	0.07	0.00	57.60	1.25	0.07	0.00
17.60	1.25	0.07	0.00	58.40	1.25	0.07	0.00
18.40	1.25	0.07	0.00	59.20	1.25	0.07	0.00
19.20	1.25	0.07	0.00	60.00	1.25	0.07	0.00
20.00	1.25	0.07	0.00	60.80	1.25	0.07	0.00
20.80	1.25	0.07	0.00	61.60	1.25	0.07	0.00
21.60	1.25	0.07	0.00	62.40	1.25	0.07	0.00
22.40	1.25	0.07	0.00	63.20	1.25	0.07	0.00
23.20	1.25	0.07	0.00	64.00	1.25	0.07	0.00
24.00	1.25	0.07	0.00	64.80	1.25	0.07	0.00
24.80	1.25	0.07	0.00	65.60	1.25	0.07	0.00
25.60	1.25	0.07	0.00	66.40	1.25	0.07	0.00
26.40	1.25	0.07	0.00	67.20	1.25	0.07	0.00
27.20	1.25	0.07	0.00	68.00	1.25	0.07	0.00
28.00	1.25	0.07	0.00	68.80	1.25	0.07	0.00
28.80	1.25	0.07	0.00	69.60	1.25	0.07	0.00
29.60	1.25	0.07	0.00	70.40	1.25	0.07	0.00
30.40	1.25	0.07	0.00	71.20	1.25	0.07	0.00
31.20	1.25	0.07	0.00	72.00	1.25	0.07	0.00
32.00	1.25	0.07	0.00	72.80	1.25	0.07	0.00
32.80	1.25	0.07	0.00	73.60	1.25	0.07	0.00
33.60	1.25	0.07	0.00	74.40	1.25	0.07	0.00
34.40	1.25	0.07	0.00	75.20	1.25	0.07	0.00
35.20	1.25	0.07	0.00	76.00	1.25	0.07	0.00
36.00	1.25	0.07	0.00	76.80	1.25	0.07	0.00
36.80	1.25	0.07	0.00	77.60	1.25	0.07	0.00
37.60	1.25	0.07	0.00	78.40	1.25	0.07	0.00
38.40	1.25	0.07	0.00	79.20	1.25	0.07	0.00
39.20	1.25	0.07	0.00	80.00	1.25	0.07	0.00
40.00	1.25	0.07	0.00				

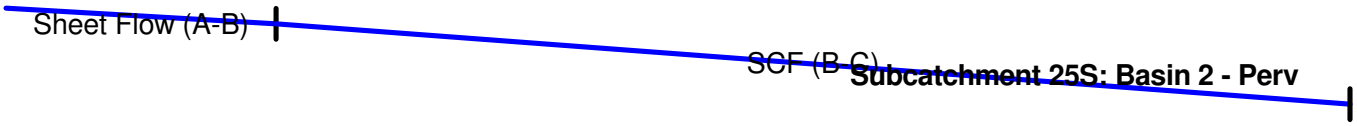
Summary for Subcatchment 25S: Basin 2 - Perv

Runoff = 0.45 cfs @ 1.24 hrs, Volume= 802 cf, Depth= 0.12"
Routed to Pond 27P : Basin 2

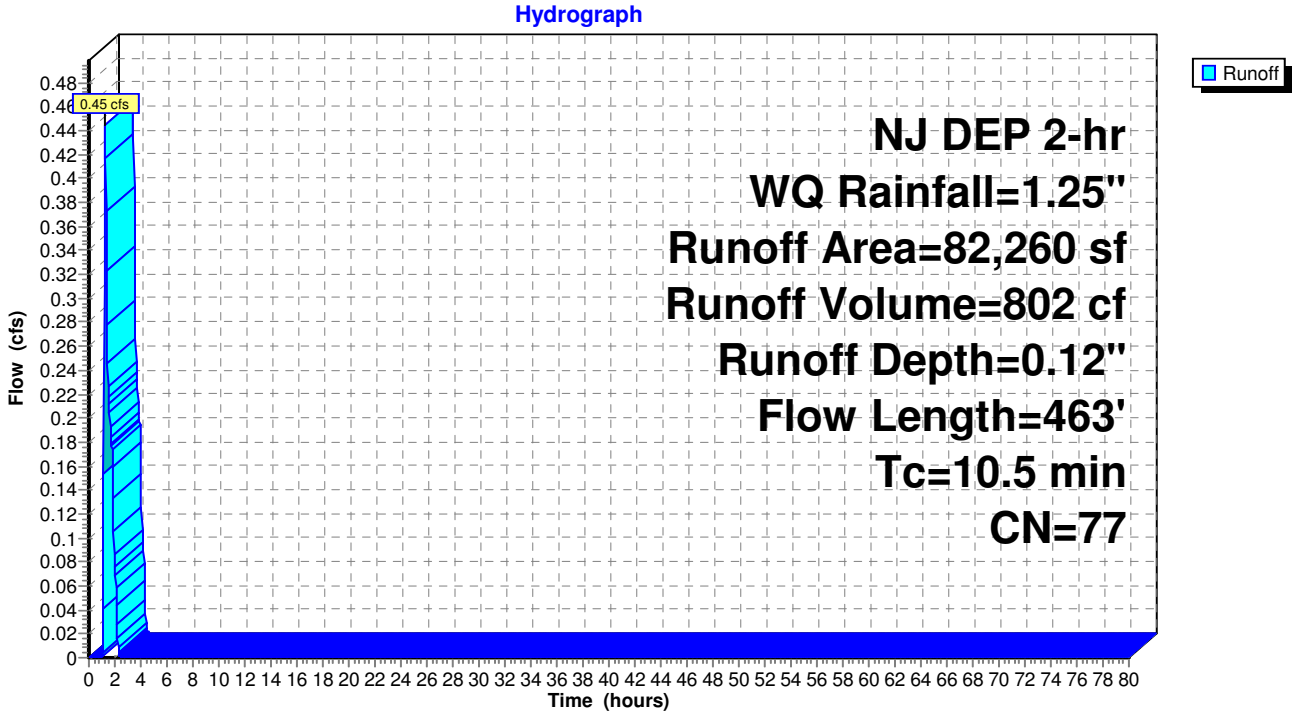
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
47,097	80	>75% Grass cover, Good, HSG D
35,163	74	>75% Grass cover, Good, HSG C
82,260	77	Weighted Average
82,260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	93	0.0500	0.17		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.5	370	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
10.5	463	Total			



Subcatchment 25S: Basin 2 - Perv



Hydrograph for Subcatchment 25S: Basin 2 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	0.12	0.00
0.80	0.23	0.00	**0.00**	41.60	1.25	0.12	0.00
1.60	**1.18**	**0.10**	**0.20**	42.40	1.25	0.12	0.00
2.40	**1.25**	**0.12**	0.00	43.20	1.25	0.12	0.00
3.20	1.25	0.12	0.00	44.00	1.25	0.12	0.00
4.00	1.25	0.12	0.00	44.80	1.25	0.12	0.00
4.80	1.25	0.12	0.00	45.60	1.25	0.12	0.00
5.60	1.25	0.12	0.00	46.40	1.25	0.12	0.00
6.40	1.25	0.12	0.00	47.20	1.25	0.12	0.00
7.20	1.25	0.12	0.00	48.00	1.25	0.12	0.00
8.00	1.25	0.12	0.00	48.80	1.25	0.12	0.00
8.80	1.25	0.12	0.00	49.60	1.25	0.12	0.00
9.60	1.25	0.12	0.00	50.40	1.25	0.12	0.00
10.40	1.25	0.12	0.00	51.20	1.25	0.12	0.00
11.20	1.25	0.12	0.00	52.00	1.25	0.12	0.00
12.00	1.25	0.12	0.00	52.80	1.25	0.12	0.00
12.80	1.25	0.12	0.00	53.60	1.25	0.12	0.00
13.60	1.25	0.12	0.00	54.40	1.25	0.12	0.00
14.40	1.25	0.12	0.00	55.20	1.25	0.12	0.00
15.20	1.25	0.12	0.00	56.00	1.25	0.12	0.00
16.00	1.25	0.12	0.00	56.80	1.25	0.12	0.00
16.80	1.25	0.12	0.00	57.60	1.25	0.12	0.00
17.60	1.25	0.12	0.00	58.40	1.25	0.12	0.00
18.40	1.25	0.12	0.00	59.20	1.25	0.12	0.00
19.20	1.25	0.12	0.00	60.00	1.25	0.12	0.00
20.00	1.25	0.12	0.00	60.80	1.25	0.12	0.00
20.80	1.25	0.12	0.00	61.60	1.25	0.12	0.00
21.60	1.25	0.12	0.00	62.40	1.25	0.12	0.00
22.40	1.25	0.12	0.00	63.20	1.25	0.12	0.00
23.20	1.25	0.12	0.00	64.00	1.25	0.12	0.00
24.00	1.25	0.12	0.00	64.80	1.25	0.12	0.00
24.80	1.25	0.12	0.00	65.60	1.25	0.12	0.00
25.60	1.25	0.12	0.00	66.40	1.25	0.12	0.00
26.40	1.25	0.12	0.00	67.20	1.25	0.12	0.00
27.20	1.25	0.12	0.00	68.00	1.25	0.12	0.00
28.00	1.25	0.12	0.00	68.80	1.25	0.12	0.00
28.80	1.25	0.12	0.00	69.60	1.25	0.12	0.00
29.60	1.25	0.12	0.00	70.40	1.25	0.12	0.00
30.40	1.25	0.12	0.00	71.20	1.25	0.12	0.00
31.20	1.25	0.12	0.00	72.00	1.25	0.12	0.00
32.00	1.25	0.12	0.00	72.80	1.25	0.12	0.00
32.80	1.25	0.12	0.00	73.60	1.25	0.12	0.00
33.60	1.25	0.12	0.00	74.40	1.25	0.12	0.00
34.40	1.25	0.12	0.00	75.20	1.25	0.12	0.00
35.20	1.25	0.12	0.00	76.00	1.25	0.12	0.00
36.00	1.25	0.12	0.00	76.80	1.25	0.12	0.00
36.80	1.25	0.12	0.00	77.60	1.25	0.12	0.00
37.60	1.25	0.12	0.00	78.40	1.25	0.12	0.00
38.40	1.25	0.12	0.00	79.20	1.25	0.12	0.00
39.20	1.25	0.12	0.00	80.00	1.25	0.12	0.00
40.00	1.25	0.12	0.00				

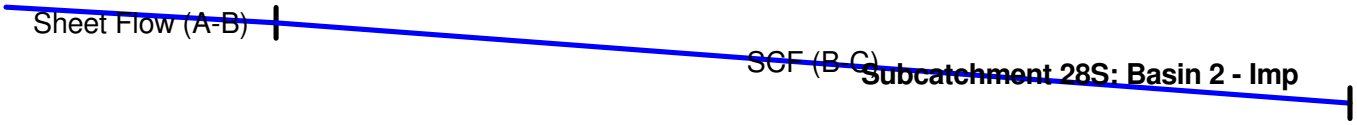
Summary for Subcatchment 28S: Basin 2 - Imp

Runoff = 1.76 cfs @ 1.15 hrs, Volume= 2,601 cf, Depth= 1.03"
Routed to Pond 27P : Basin 2

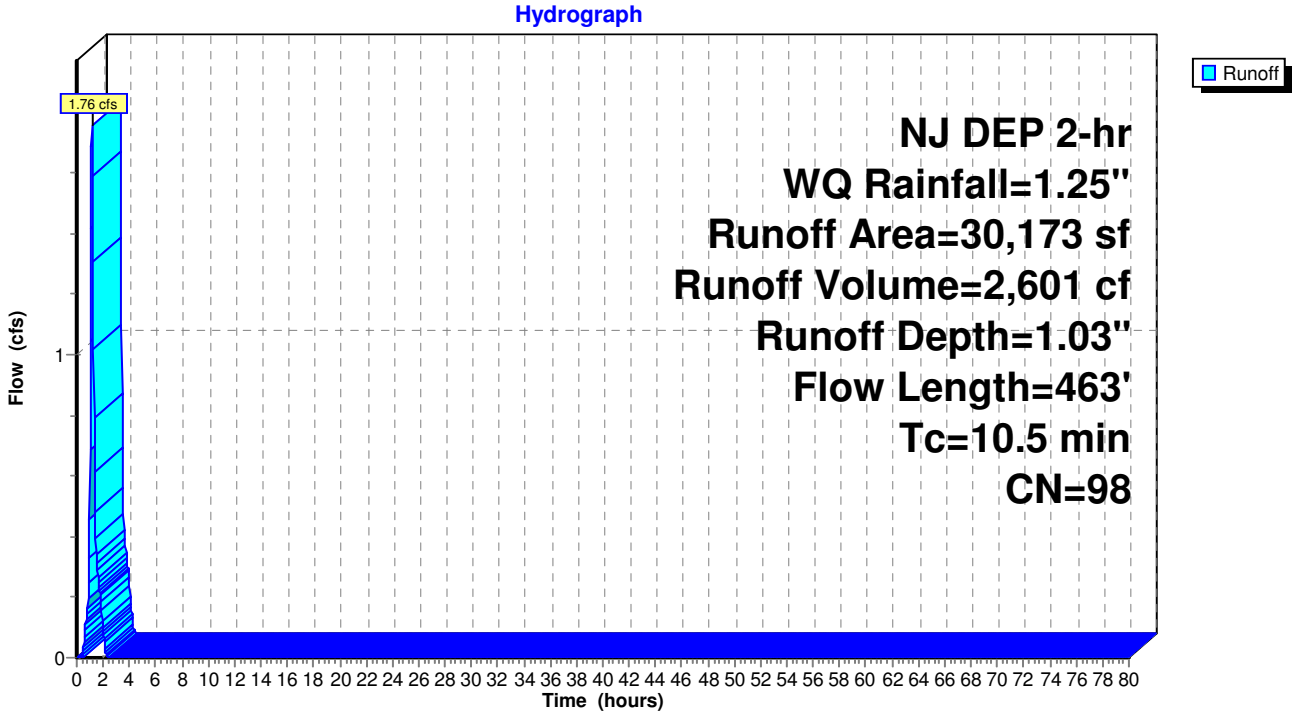
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

	Area (sf)	CN	Description
*	28,866	98	Paved parking, sidewalk, other imp
*	1,307	98	Paved parking, sidewalk other imp
	30,173	98	Weighted Average
	30,173		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	93	0.0500	0.17		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.5	370	0.0650	4.10		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
10.5	463	Total			



Subcatchment 28S: Basin 2 - Imp



Hydrograph for Subcatchment 28S: Basin 2 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	1.03	0.00
0.80	0.23	0.09	**0.16**	41.60	1.25	1.03	0.00
1.60	**1.18**	**0.97**	**0.27**	42.40	1.25	1.03	0.00
2.40	**1.25**	**1.03**	0.00	43.20	1.25	1.03	0.00
3.20	1.25	1.03	0.00	44.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	44.80	1.25	1.03	0.00
4.80	1.25	1.03	0.00	45.60	1.25	1.03	0.00
5.60	1.25	1.03	0.00	46.40	1.25	1.03	0.00
6.40	1.25	1.03	0.00	47.20	1.25	1.03	0.00
7.20	1.25	1.03	0.00	48.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	48.80	1.25	1.03	0.00
8.80	1.25	1.03	0.00	49.60	1.25	1.03	0.00
9.60	1.25	1.03	0.00	50.40	1.25	1.03	0.00
10.40	1.25	1.03	0.00	51.20	1.25	1.03	0.00
11.20	1.25	1.03	0.00	52.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	52.80	1.25	1.03	0.00
12.80	1.25	1.03	0.00	53.60	1.25	1.03	0.00
13.60	1.25	1.03	0.00	54.40	1.25	1.03	0.00
14.40	1.25	1.03	0.00	55.20	1.25	1.03	0.00
15.20	1.25	1.03	0.00	56.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	56.80	1.25	1.03	0.00
16.80	1.25	1.03	0.00	57.60	1.25	1.03	0.00
17.60	1.25	1.03	0.00	58.40	1.25	1.03	0.00
18.40	1.25	1.03	0.00	59.20	1.25	1.03	0.00
19.20	1.25	1.03	0.00	60.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00	60.80	1.25	1.03	0.00
20.80	1.25	1.03	0.00	61.60	1.25	1.03	0.00
21.60	1.25	1.03	0.00	62.40	1.25	1.03	0.00
22.40	1.25	1.03	0.00	63.20	1.25	1.03	0.00
23.20	1.25	1.03	0.00	64.00	1.25	1.03	0.00
24.00	1.25	1.03	0.00	64.80	1.25	1.03	0.00
24.80	1.25	1.03	0.00	65.60	1.25	1.03	0.00
25.60	1.25	1.03	0.00	66.40	1.25	1.03	0.00
26.40	1.25	1.03	0.00	67.20	1.25	1.03	0.00
27.20	1.25	1.03	0.00	68.00	1.25	1.03	0.00
28.00	1.25	1.03	0.00	68.80	1.25	1.03	0.00
28.80	1.25	1.03	0.00	69.60	1.25	1.03	0.00
29.60	1.25	1.03	0.00	70.40	1.25	1.03	0.00
30.40	1.25	1.03	0.00	71.20	1.25	1.03	0.00
31.20	1.25	1.03	0.00	72.00	1.25	1.03	0.00
32.00	1.25	1.03	0.00	72.80	1.25	1.03	0.00
32.80	1.25	1.03	0.00	73.60	1.25	1.03	0.00
33.60	1.25	1.03	0.00	74.40	1.25	1.03	0.00
34.40	1.25	1.03	0.00	75.20	1.25	1.03	0.00
35.20	1.25	1.03	0.00	76.00	1.25	1.03	0.00
36.00	1.25	1.03	0.00	76.80	1.25	1.03	0.00
36.80	1.25	1.03	0.00	77.60	1.25	1.03	0.00
37.60	1.25	1.03	0.00	78.40	1.25	1.03	0.00
38.40	1.25	1.03	0.00	79.20	1.25	1.03	0.00
39.20	1.25	1.03	0.00	80.00	1.25	1.03	0.00
40.00	1.25	1.03	0.00				

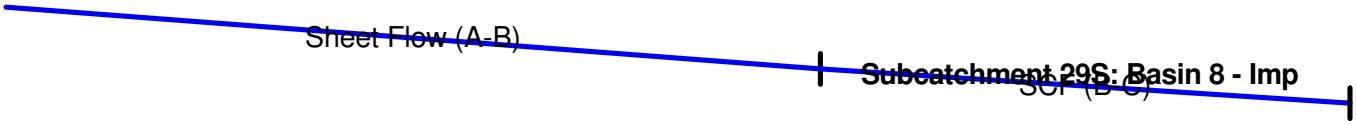
Summary for Subcatchment 29S: Basin 8 - Imp

Runoff = 2.37 cfs @ 1.13 hrs, Volume= 3,298 cf, Depth= 1.03"
Routed to Pond 48P : Basin 8

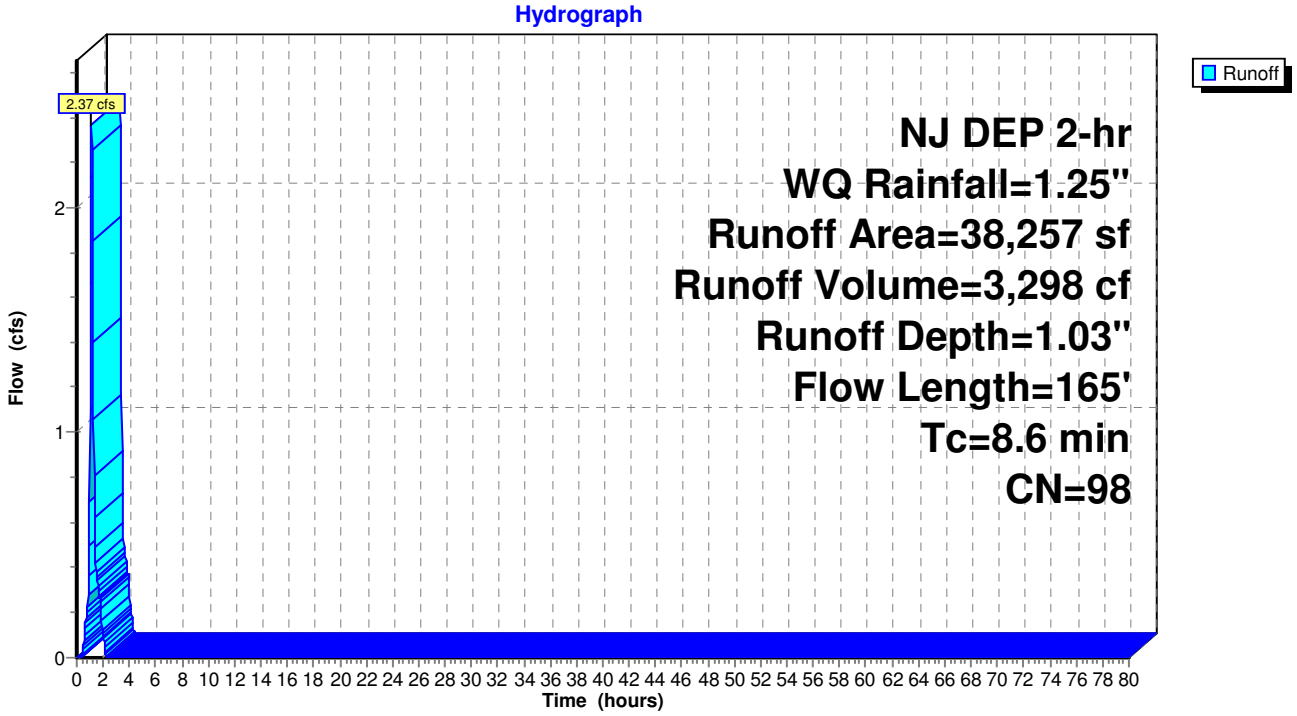
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

	Area (sf)	CN	Description
*	8,924	98	other impervious
	11,475	98	Roofs, HSG C
*	17,858	98	pavement surface
	38,257	98	Weighted Average
	38,257		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0700	0.20		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	65	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
8.6	165	Total			



Subcatchment 29S: Basin 8 - Imp



Hydrograph for Subcatchment 29S: Basin 8 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	1.03	0.00
0.80	0.23	0.09	**0.23**	41.60	1.25	1.03	0.00
1.60	**1.18**	**0.97**	**0.32**	42.40	1.25	1.03	0.00
2.40	**1.25**	**1.03**	0.00	43.20	1.25	1.03	0.00
3.20	1.25	1.03	0.00	44.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	44.80	1.25	1.03	0.00
4.80	1.25	1.03	0.00	45.60	1.25	1.03	0.00
5.60	1.25	1.03	0.00	46.40	1.25	1.03	0.00
6.40	1.25	1.03	0.00	47.20	1.25	1.03	0.00
7.20	1.25	1.03	0.00	48.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	48.80	1.25	1.03	0.00
8.80	1.25	1.03	0.00	49.60	1.25	1.03	0.00
9.60	1.25	1.03	0.00	50.40	1.25	1.03	0.00
10.40	1.25	1.03	0.00	51.20	1.25	1.03	0.00
11.20	1.25	1.03	0.00	52.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	52.80	1.25	1.03	0.00
12.80	1.25	1.03	0.00	53.60	1.25	1.03	0.00
13.60	1.25	1.03	0.00	54.40	1.25	1.03	0.00
14.40	1.25	1.03	0.00	55.20	1.25	1.03	0.00
15.20	1.25	1.03	0.00	56.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	56.80	1.25	1.03	0.00
16.80	1.25	1.03	0.00	57.60	1.25	1.03	0.00
17.60	1.25	1.03	0.00	58.40	1.25	1.03	0.00
18.40	1.25	1.03	0.00	59.20	1.25	1.03	0.00
19.20	1.25	1.03	0.00	60.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00	60.80	1.25	1.03	0.00
20.80	1.25	1.03	0.00	61.60	1.25	1.03	0.00
21.60	1.25	1.03	0.00	62.40	1.25	1.03	0.00
22.40	1.25	1.03	0.00	63.20	1.25	1.03	0.00
23.20	1.25	1.03	0.00	64.00	1.25	1.03	0.00
24.00	1.25	1.03	0.00	64.80	1.25	1.03	0.00
24.80	1.25	1.03	0.00	65.60	1.25	1.03	0.00
25.60	1.25	1.03	0.00	66.40	1.25	1.03	0.00
26.40	1.25	1.03	0.00	67.20	1.25	1.03	0.00
27.20	1.25	1.03	0.00	68.00	1.25	1.03	0.00
28.00	1.25	1.03	0.00	68.80	1.25	1.03	0.00
28.80	1.25	1.03	0.00	69.60	1.25	1.03	0.00
29.60	1.25	1.03	0.00	70.40	1.25	1.03	0.00
30.40	1.25	1.03	0.00	71.20	1.25	1.03	0.00
31.20	1.25	1.03	0.00	72.00	1.25	1.03	0.00
32.00	1.25	1.03	0.00	72.80	1.25	1.03	0.00
32.80	1.25	1.03	0.00	73.60	1.25	1.03	0.00
33.60	1.25	1.03	0.00	74.40	1.25	1.03	0.00
34.40	1.25	1.03	0.00	75.20	1.25	1.03	0.00
35.20	1.25	1.03	0.00	76.00	1.25	1.03	0.00
36.00	1.25	1.03	0.00	76.80	1.25	1.03	0.00
36.80	1.25	1.03	0.00	77.60	1.25	1.03	0.00
37.60	1.25	1.03	0.00	78.40	1.25	1.03	0.00
38.40	1.25	1.03	0.00	79.20	1.25	1.03	0.00
39.20	1.25	1.03	0.00	80.00	1.25	1.03	0.00
40.00	1.25	1.03	0.00				

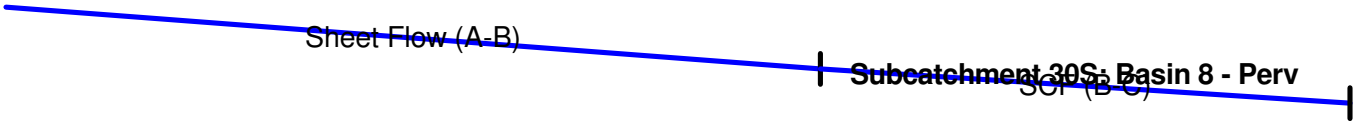
Summary for Subcatchment 30S: Basin 8 - Perv

Runoff = 0.13 cfs @ 1.21 hrs, Volume= 222 cf, Depth= 0.12"
Routed to Pond 48P : Basin 8

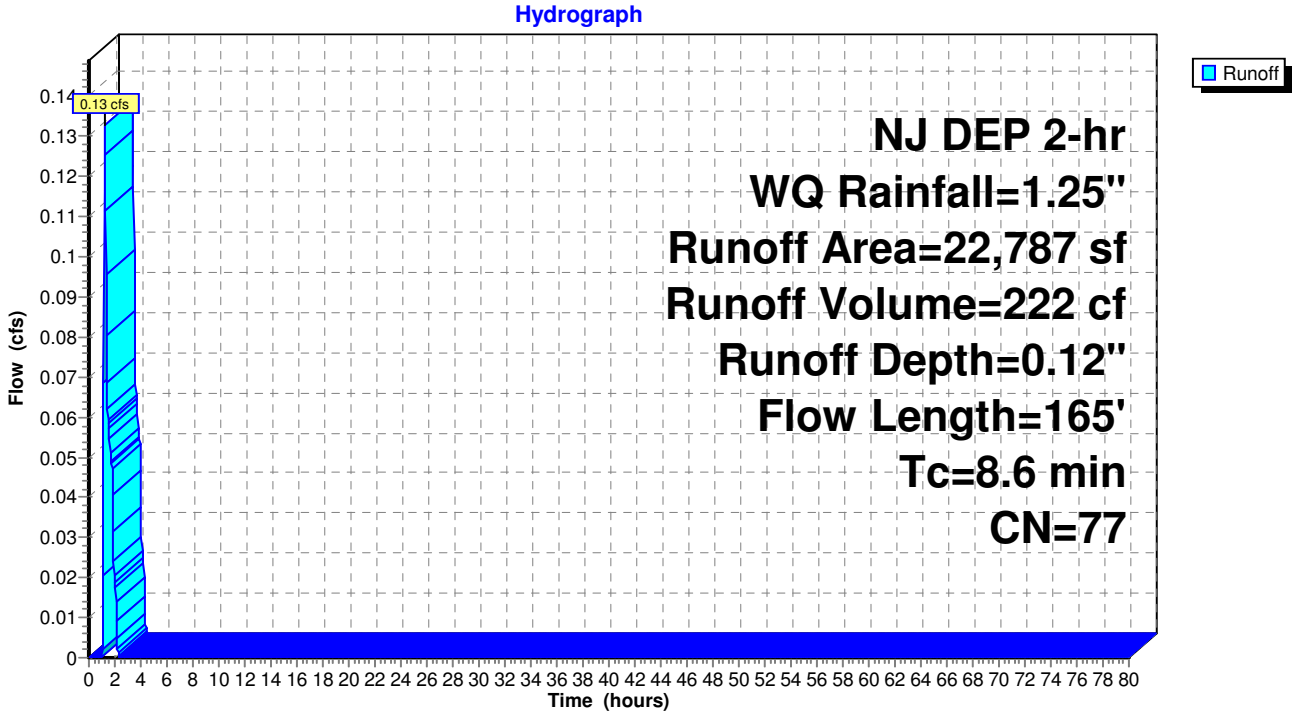
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
11,542	80	>75% Grass cover, Good, HSG D
11,245	74	>75% Grass cover, Good, HSG C
22,787	77	Weighted Average
22,787		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0700	0.20		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	65	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
8.6	165	Total			



Subcatchment 30S: Basin 8 - Perv



Hydrograph for Subcatchment 30S: Basin 8 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	0.12	0.00
0.80	0.23	0.00	**0.00**	41.60	1.25	0.12	0.00
1.60	**1.18**	**0.10**	**0.05**	42.40	1.25	0.12	0.00
2.40	**1.25**	**0.12**	0.00	43.20	1.25	0.12	0.00
3.20	1.25	0.12	0.00	44.00	1.25	0.12	0.00
4.00	1.25	0.12	0.00	44.80	1.25	0.12	0.00
4.80	1.25	0.12	0.00	45.60	1.25	0.12	0.00
5.60	1.25	0.12	0.00	46.40	1.25	0.12	0.00
6.40	1.25	0.12	0.00	47.20	1.25	0.12	0.00
7.20	1.25	0.12	0.00	48.00	1.25	0.12	0.00
8.00	1.25	0.12	0.00	48.80	1.25	0.12	0.00
8.80	1.25	0.12	0.00	49.60	1.25	0.12	0.00
9.60	1.25	0.12	0.00	50.40	1.25	0.12	0.00
10.40	1.25	0.12	0.00	51.20	1.25	0.12	0.00
11.20	1.25	0.12	0.00	52.00	1.25	0.12	0.00
12.00	1.25	0.12	0.00	52.80	1.25	0.12	0.00
12.80	1.25	0.12	0.00	53.60	1.25	0.12	0.00
13.60	1.25	0.12	0.00	54.40	1.25	0.12	0.00
14.40	1.25	0.12	0.00	55.20	1.25	0.12	0.00
15.20	1.25	0.12	0.00	56.00	1.25	0.12	0.00
16.00	1.25	0.12	0.00	56.80	1.25	0.12	0.00
16.80	1.25	0.12	0.00	57.60	1.25	0.12	0.00
17.60	1.25	0.12	0.00	58.40	1.25	0.12	0.00
18.40	1.25	0.12	0.00	59.20	1.25	0.12	0.00
19.20	1.25	0.12	0.00	60.00	1.25	0.12	0.00
20.00	1.25	0.12	0.00	60.80	1.25	0.12	0.00
20.80	1.25	0.12	0.00	61.60	1.25	0.12	0.00
21.60	1.25	0.12	0.00	62.40	1.25	0.12	0.00
22.40	1.25	0.12	0.00	63.20	1.25	0.12	0.00
23.20	1.25	0.12	0.00	64.00	1.25	0.12	0.00
24.00	1.25	0.12	0.00	64.80	1.25	0.12	0.00
24.80	1.25	0.12	0.00	65.60	1.25	0.12	0.00
25.60	1.25	0.12	0.00	66.40	1.25	0.12	0.00
26.40	1.25	0.12	0.00	67.20	1.25	0.12	0.00
27.20	1.25	0.12	0.00	68.00	1.25	0.12	0.00
28.00	1.25	0.12	0.00	68.80	1.25	0.12	0.00
28.80	1.25	0.12	0.00	69.60	1.25	0.12	0.00
29.60	1.25	0.12	0.00	70.40	1.25	0.12	0.00
30.40	1.25	0.12	0.00	71.20	1.25	0.12	0.00
31.20	1.25	0.12	0.00	72.00	1.25	0.12	0.00
32.00	1.25	0.12	0.00	72.80	1.25	0.12	0.00
32.80	1.25	0.12	0.00	73.60	1.25	0.12	0.00
33.60	1.25	0.12	0.00	74.40	1.25	0.12	0.00
34.40	1.25	0.12	0.00	75.20	1.25	0.12	0.00
35.20	1.25	0.12	0.00	76.00	1.25	0.12	0.00
36.00	1.25	0.12	0.00	76.80	1.25	0.12	0.00
36.80	1.25	0.12	0.00	77.60	1.25	0.12	0.00
37.60	1.25	0.12	0.00	78.40	1.25	0.12	0.00
38.40	1.25	0.12	0.00	79.20	1.25	0.12	0.00
39.20	1.25	0.12	0.00	80.00	1.25	0.12	0.00
40.00	1.25	0.12	0.00				

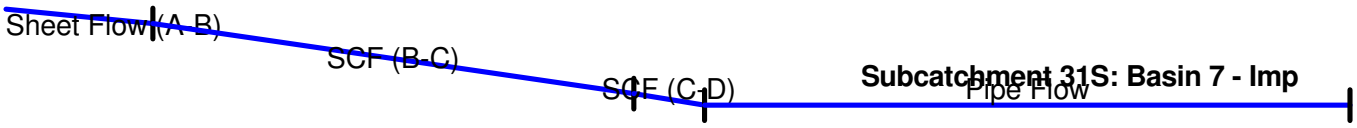
Summary for Subcatchment 31S: Basin 7 - Imp

Runoff = 2.53 cfs @ 1.17 hrs, Volume= 3,947 cf, Depth= 1.03"
Routed to Pond 49P : Basin 7

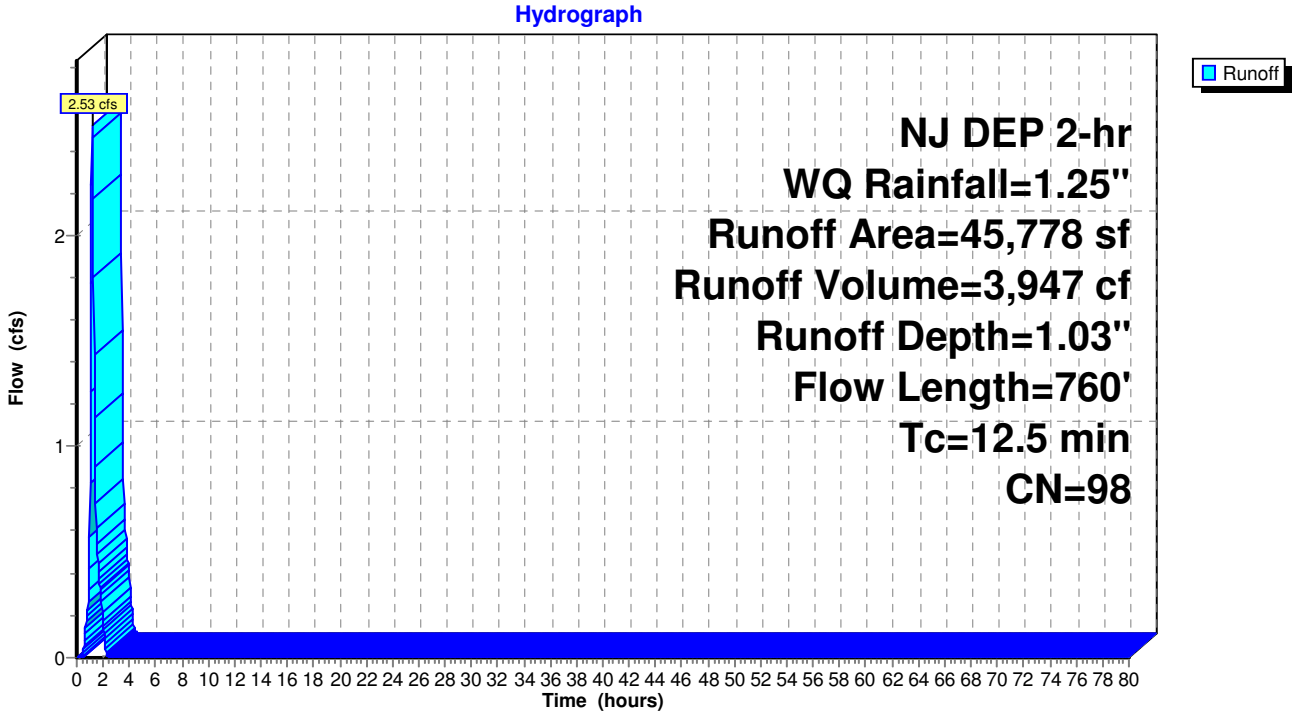
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

	Area (sf)	CN	Description
*	6,730	98	other impervious
*	39,048	98	vehicle pavement surface
	45,778	98	Weighted Average
	45,778		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.1	272	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.1	40	0.0670	5.25		**Shallow Concentrated Flow, SCF (C-D)** Paved Kv= 20.3 fps
2.4	365		2.50		**Direct Entry, Pipe Flow**
12.5	760	Total			



Subcatchment 31S: Basin 7 - Imp



Hydrograph for Subcatchment 31S: Basin 7 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	1.03	0.00
0.80	0.23	0.09	**0.23**	41.60	1.25	1.03	0.00
1.60	**1.18**	**0.97**	**0.45**	42.40	1.25	1.03	0.00
2.40	**1.25**	**1.03**	0.00	43.20	1.25	1.03	0.00
3.20	1.25	1.03	0.00	44.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	44.80	1.25	1.03	0.00
4.80	1.25	1.03	0.00	45.60	1.25	1.03	0.00
5.60	1.25	1.03	0.00	46.40	1.25	1.03	0.00
6.40	1.25	1.03	0.00	47.20	1.25	1.03	0.00
7.20	1.25	1.03	0.00	48.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	48.80	1.25	1.03	0.00
8.80	1.25	1.03	0.00	49.60	1.25	1.03	0.00
9.60	1.25	1.03	0.00	50.40	1.25	1.03	0.00
10.40	1.25	1.03	0.00	51.20	1.25	1.03	0.00
11.20	1.25	1.03	0.00	52.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	52.80	1.25	1.03	0.00
12.80	1.25	1.03	0.00	53.60	1.25	1.03	0.00
13.60	1.25	1.03	0.00	54.40	1.25	1.03	0.00
14.40	1.25	1.03	0.00	55.20	1.25	1.03	0.00
15.20	1.25	1.03	0.00	56.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	56.80	1.25	1.03	0.00
16.80	1.25	1.03	0.00	57.60	1.25	1.03	0.00
17.60	1.25	1.03	0.00	58.40	1.25	1.03	0.00
18.40	1.25	1.03	0.00	59.20	1.25	1.03	0.00
19.20	1.25	1.03	0.00	60.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00	60.80	1.25	1.03	0.00
20.80	1.25	1.03	0.00	61.60	1.25	1.03	0.00
21.60	1.25	1.03	0.00	62.40	1.25	1.03	0.00
22.40	1.25	1.03	0.00	63.20	1.25	1.03	0.00
23.20	1.25	1.03	0.00	64.00	1.25	1.03	0.00
24.00	1.25	1.03	0.00	64.80	1.25	1.03	0.00
24.80	1.25	1.03	0.00	65.60	1.25	1.03	0.00
25.60	1.25	1.03	0.00	66.40	1.25	1.03	0.00
26.40	1.25	1.03	0.00	67.20	1.25	1.03	0.00
27.20	1.25	1.03	0.00	68.00	1.25	1.03	0.00
28.00	1.25	1.03	0.00	68.80	1.25	1.03	0.00
28.80	1.25	1.03	0.00	69.60	1.25	1.03	0.00
29.60	1.25	1.03	0.00	70.40	1.25	1.03	0.00
30.40	1.25	1.03	0.00	71.20	1.25	1.03	0.00
31.20	1.25	1.03	0.00	72.00	1.25	1.03	0.00
32.00	1.25	1.03	0.00	72.80	1.25	1.03	0.00
32.80	1.25	1.03	0.00	73.60	1.25	1.03	0.00
33.60	1.25	1.03	0.00	74.40	1.25	1.03	0.00
34.40	1.25	1.03	0.00	75.20	1.25	1.03	0.00
35.20	1.25	1.03	0.00	76.00	1.25	1.03	0.00
36.00	1.25	1.03	0.00	76.80	1.25	1.03	0.00
36.80	1.25	1.03	0.00	77.60	1.25	1.03	0.00
37.60	1.25	1.03	0.00	78.40	1.25	1.03	0.00
38.40	1.25	1.03	0.00	79.20	1.25	1.03	0.00
39.20	1.25	1.03	0.00	80.00	1.25	1.03	0.00
40.00	1.25	1.03	0.00				

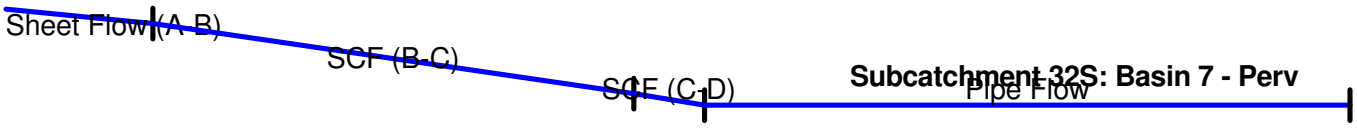
Summary for Subcatchment 32S: Basin 7 - Perv

Runoff = 0.29 cfs @ 1.27 hrs, Volume= 572 cf, Depth= 0.12"
Routed to Pond 49P : Basin 7

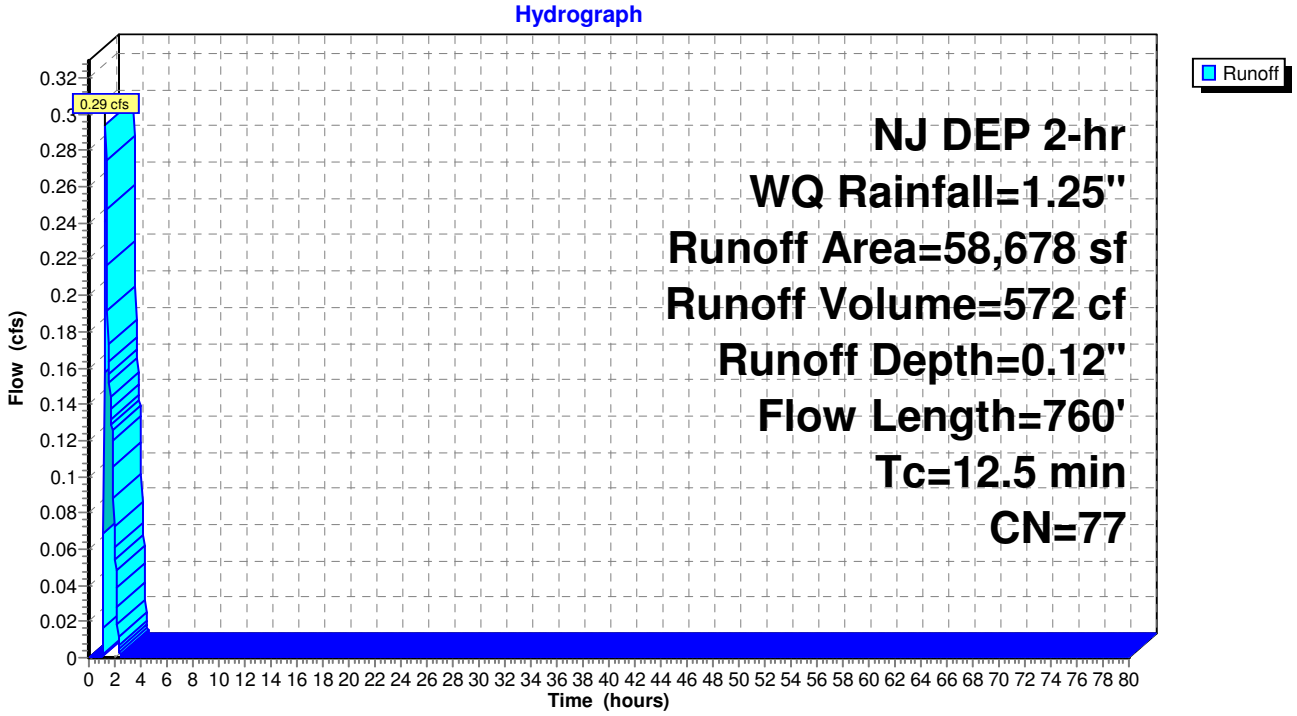
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
25,517	80	>75% Grass cover, Good, HSG D
33,161	74	>75% Grass cover, Good, HSG C
58,678	77	Weighted Average
58,678		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.1	272	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.1	40	0.0670	5.25		**Shallow Concentrated Flow, SCF (C-D)** Paved Kv= 20.3 fps
2.4	365		2.50		**Direct Entry, Pipe Flow**
12.5	760	Total			



Subcatchment 32S: Basin 7 - Perv



Hydrograph for Subcatchment 32S: Basin 7 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	0.12	0.00
0.80	0.23	0.00	**0.00**	41.60	1.25	0.12	0.00
1.60	**1.18**	**0.10**	**0.15**	42.40	1.25	0.12	0.00
2.40	**1.25**	**0.12**	0.00	43.20	1.25	0.12	0.00
3.20	1.25	0.12	0.00	44.00	1.25	0.12	0.00
4.00	1.25	0.12	0.00	44.80	1.25	0.12	0.00
4.80	1.25	0.12	0.00	45.60	1.25	0.12	0.00
5.60	1.25	0.12	0.00	46.40	1.25	0.12	0.00
6.40	1.25	0.12	0.00	47.20	1.25	0.12	0.00
7.20	1.25	0.12	0.00	48.00	1.25	0.12	0.00
8.00	1.25	0.12	0.00	48.80	1.25	0.12	0.00
8.80	1.25	0.12	0.00	49.60	1.25	0.12	0.00
9.60	1.25	0.12	0.00	50.40	1.25	0.12	0.00
10.40	1.25	0.12	0.00	51.20	1.25	0.12	0.00
11.20	1.25	0.12	0.00	52.00	1.25	0.12	0.00
12.00	1.25	0.12	0.00	52.80	1.25	0.12	0.00
12.80	1.25	0.12	0.00	53.60	1.25	0.12	0.00
13.60	1.25	0.12	0.00	54.40	1.25	0.12	0.00
14.40	1.25	0.12	0.00	55.20	1.25	0.12	0.00
15.20	1.25	0.12	0.00	56.00	1.25	0.12	0.00
16.00	1.25	0.12	0.00	56.80	1.25	0.12	0.00
16.80	1.25	0.12	0.00	57.60	1.25	0.12	0.00
17.60	1.25	0.12	0.00	58.40	1.25	0.12	0.00
18.40	1.25	0.12	0.00	59.20	1.25	0.12	0.00
19.20	1.25	0.12	0.00	60.00	1.25	0.12	0.00
20.00	1.25	0.12	0.00	60.80	1.25	0.12	0.00
20.80	1.25	0.12	0.00	61.60	1.25	0.12	0.00
21.60	1.25	0.12	0.00	62.40	1.25	0.12	0.00
22.40	1.25	0.12	0.00	63.20	1.25	0.12	0.00
23.20	1.25	0.12	0.00	64.00	1.25	0.12	0.00
24.00	1.25	0.12	0.00	64.80	1.25	0.12	0.00
24.80	1.25	0.12	0.00	65.60	1.25	0.12	0.00
25.60	1.25	0.12	0.00	66.40	1.25	0.12	0.00
26.40	1.25	0.12	0.00	67.20	1.25	0.12	0.00
27.20	1.25	0.12	0.00	68.00	1.25	0.12	0.00
28.00	1.25	0.12	0.00	68.80	1.25	0.12	0.00
28.80	1.25	0.12	0.00	69.60	1.25	0.12	0.00
29.60	1.25	0.12	0.00	70.40	1.25	0.12	0.00
30.40	1.25	0.12	0.00	71.20	1.25	0.12	0.00
31.20	1.25	0.12	0.00	72.00	1.25	0.12	0.00
32.00	1.25	0.12	0.00	72.80	1.25	0.12	0.00
32.80	1.25	0.12	0.00	73.60	1.25	0.12	0.00
33.60	1.25	0.12	0.00	74.40	1.25	0.12	0.00
34.40	1.25	0.12	0.00	75.20	1.25	0.12	0.00
35.20	1.25	0.12	0.00	76.00	1.25	0.12	0.00
36.00	1.25	0.12	0.00	76.80	1.25	0.12	0.00
36.80	1.25	0.12	0.00	77.60	1.25	0.12	0.00
37.60	1.25	0.12	0.00	78.40	1.25	0.12	0.00
38.40	1.25	0.12	0.00	79.20	1.25	0.12	0.00
39.20	1.25	0.12	0.00	80.00	1.25	0.12	0.00
40.00	1.25	0.12	0.00				

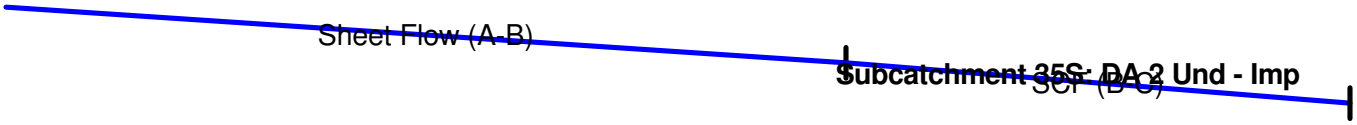
Summary for Subcatchment 35S: DA 2 Und - Imp

Runoff = 3.13 cfs @ 1.14 hrs, Volume= 4,527 cf, Depth= 1.03"
Routed to Link 34L : DA 2 Undetained

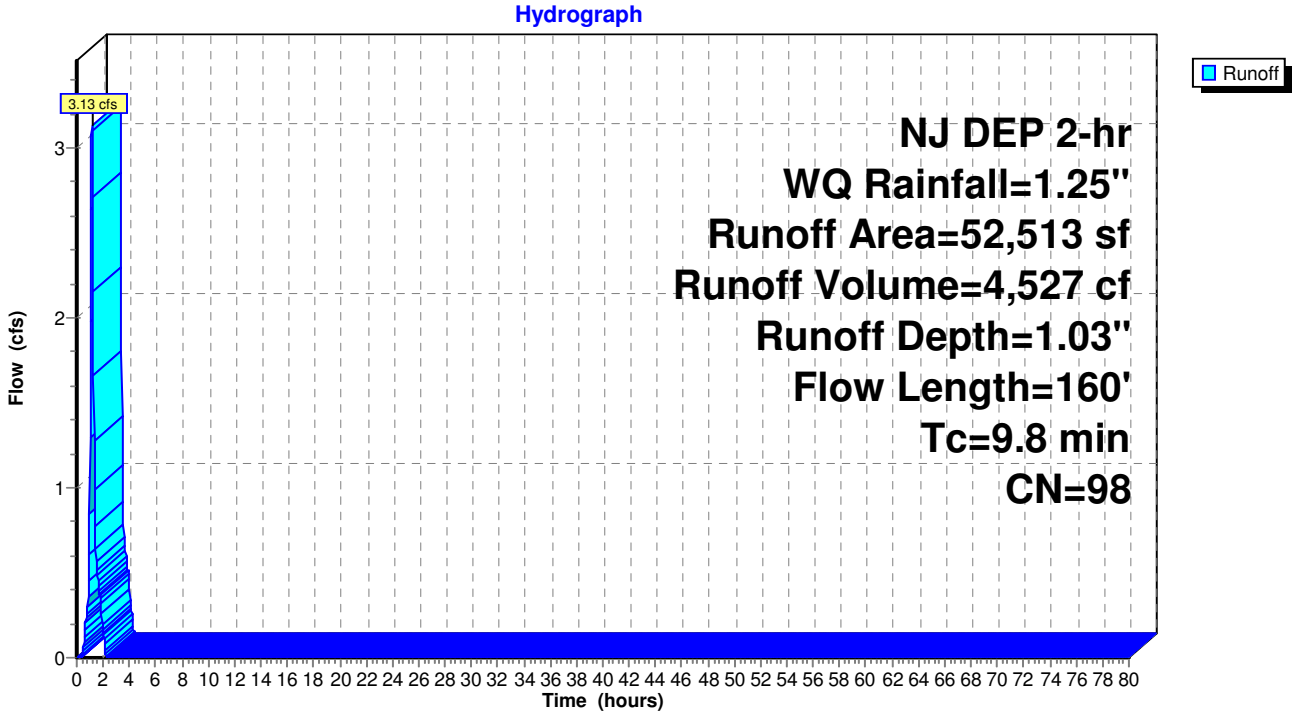
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
18,404	98	Paved parking, HSG C
33,009	98	Paved parking, HSG D
1,100	98	Roofs, HSG D
52,513	98	Weighted Average
52,513		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0500	0.18		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	60	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	160	Total			



Subcatchment 35S: DA 2 Und - Imp



Hydrograph for Subcatchment 35S: DA 2 Und - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	1.03	0.00
0.80	0.23	0.09	**0.29**	41.60	1.25	1.03	0.00
1.60	**1.18**	**0.97**	**0.45**	42.40	1.25	1.03	0.00
2.40	**1.25**	**1.03**	0.00	43.20	1.25	1.03	0.00
3.20	1.25	1.03	0.00	44.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	44.80	1.25	1.03	0.00
4.80	1.25	1.03	0.00	45.60	1.25	1.03	0.00
5.60	1.25	1.03	0.00	46.40	1.25	1.03	0.00
6.40	1.25	1.03	0.00	47.20	1.25	1.03	0.00
7.20	1.25	1.03	0.00	48.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	48.80	1.25	1.03	0.00
8.80	1.25	1.03	0.00	49.60	1.25	1.03	0.00
9.60	1.25	1.03	0.00	50.40	1.25	1.03	0.00
10.40	1.25	1.03	0.00	51.20	1.25	1.03	0.00
11.20	1.25	1.03	0.00	52.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	52.80	1.25	1.03	0.00
12.80	1.25	1.03	0.00	53.60	1.25	1.03	0.00
13.60	1.25	1.03	0.00	54.40	1.25	1.03	0.00
14.40	1.25	1.03	0.00	55.20	1.25	1.03	0.00
15.20	1.25	1.03	0.00	56.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	56.80	1.25	1.03	0.00
16.80	1.25	1.03	0.00	57.60	1.25	1.03	0.00
17.60	1.25	1.03	0.00	58.40	1.25	1.03	0.00
18.40	1.25	1.03	0.00	59.20	1.25	1.03	0.00
19.20	1.25	1.03	0.00	60.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00	60.80	1.25	1.03	0.00
20.80	1.25	1.03	0.00	61.60	1.25	1.03	0.00
21.60	1.25	1.03	0.00	62.40	1.25	1.03	0.00
22.40	1.25	1.03	0.00	63.20	1.25	1.03	0.00
23.20	1.25	1.03	0.00	64.00	1.25	1.03	0.00
24.00	1.25	1.03	0.00	64.80	1.25	1.03	0.00
24.80	1.25	1.03	0.00	65.60	1.25	1.03	0.00
25.60	1.25	1.03	0.00	66.40	1.25	1.03	0.00
26.40	1.25	1.03	0.00	67.20	1.25	1.03	0.00
27.20	1.25	1.03	0.00	68.00	1.25	1.03	0.00
28.00	1.25	1.03	0.00	68.80	1.25	1.03	0.00
28.80	1.25	1.03	0.00	69.60	1.25	1.03	0.00
29.60	1.25	1.03	0.00	70.40	1.25	1.03	0.00
30.40	1.25	1.03	0.00	71.20	1.25	1.03	0.00
31.20	1.25	1.03	0.00	72.00	1.25	1.03	0.00
32.00	1.25	1.03	0.00	72.80	1.25	1.03	0.00
32.80	1.25	1.03	0.00	73.60	1.25	1.03	0.00
33.60	1.25	1.03	0.00	74.40	1.25	1.03	0.00
34.40	1.25	1.03	0.00	75.20	1.25	1.03	0.00
35.20	1.25	1.03	0.00	76.00	1.25	1.03	0.00
36.00	1.25	1.03	0.00	76.80	1.25	1.03	0.00
36.80	1.25	1.03	0.00	77.60	1.25	1.03	0.00
37.60	1.25	1.03	0.00	78.40	1.25	1.03	0.00
38.40	1.25	1.03	0.00	79.20	1.25	1.03	0.00
39.20	1.25	1.03	0.00	80.00	1.25	1.03	0.00
40.00	1.25	1.03	0.00				

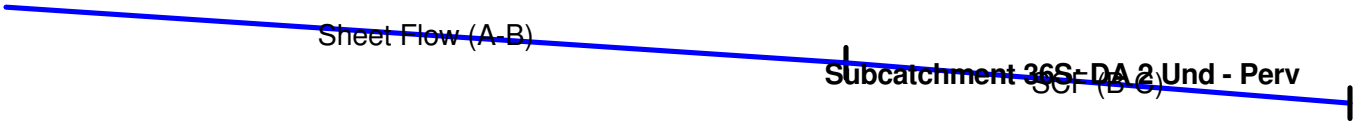
Summary for Subcatchment 36S: DA 2 Und - Perv

Runoff = 0.66 cfs @ 1.23 hrs, Volume= 1,170 cf, Depth= 0.12"
Routed to Link 34L : DA 2 Undetained

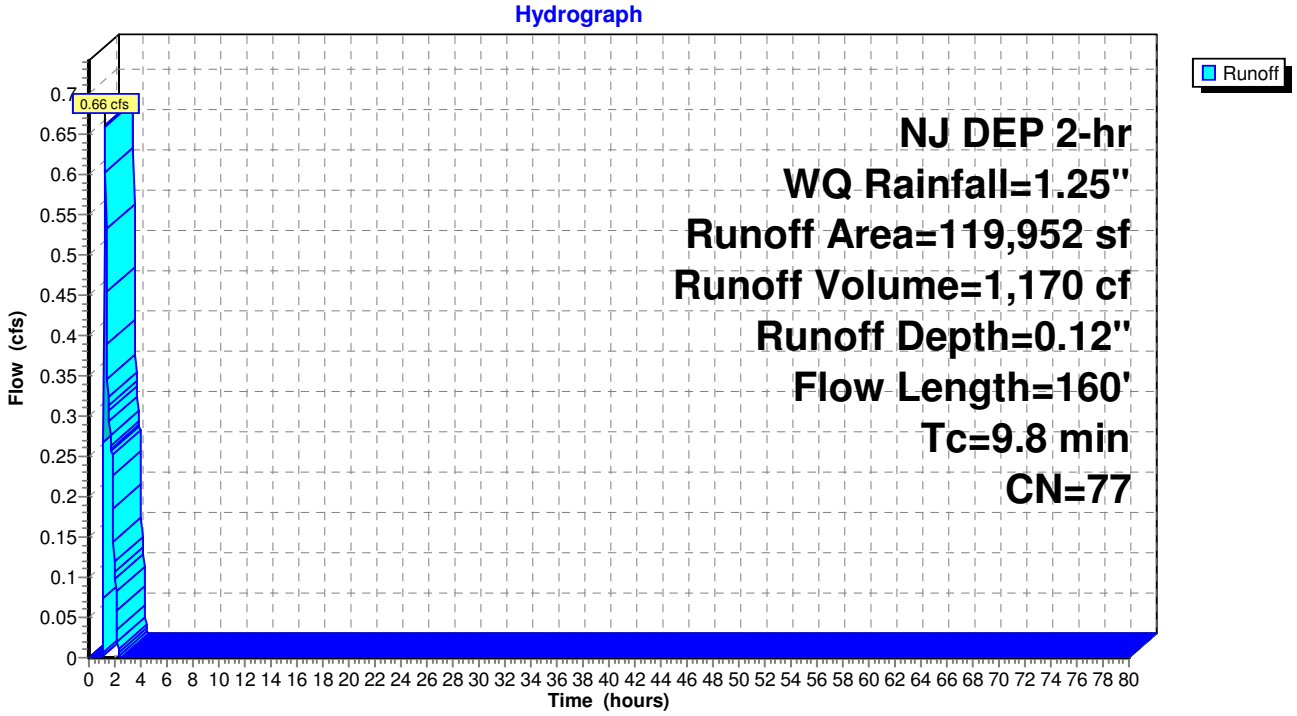
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
52,227	80	>75% Grass cover, Good, HSG D
67,725	74	>75% Grass cover, Good, HSG C
119,952	77	Weighted Average
119,952		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	100	0.0500	0.18		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.3	60	0.0600	3.94		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	160	Total			



Subcatchment 36S: DA 2 Und - Perv



Hydrograph for Subcatchment 36S: DA 2 Und - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	0.12	0.00
0.80	0.23	0.00	**0.00**	41.60	1.25	0.12	0.00
1.60	**1.18**	**0.10**	**0.29**	42.40	1.25	0.12	0.00
2.40	**1.25**	**0.12**	0.00	43.20	1.25	0.12	0.00
3.20	1.25	0.12	0.00	44.00	1.25	0.12	0.00
4.00	1.25	0.12	0.00	44.80	1.25	0.12	0.00
4.80	1.25	0.12	0.00	45.60	1.25	0.12	0.00
5.60	1.25	0.12	0.00	46.40	1.25	0.12	0.00
6.40	1.25	0.12	0.00	47.20	1.25	0.12	0.00
7.20	1.25	0.12	0.00	48.00	1.25	0.12	0.00
8.00	1.25	0.12	0.00	48.80	1.25	0.12	0.00
8.80	1.25	0.12	0.00	49.60	1.25	0.12	0.00
9.60	1.25	0.12	0.00	50.40	1.25	0.12	0.00
10.40	1.25	0.12	0.00	51.20	1.25	0.12	0.00
11.20	1.25	0.12	0.00	52.00	1.25	0.12	0.00
12.00	1.25	0.12	0.00	52.80	1.25	0.12	0.00
12.80	1.25	0.12	0.00	53.60	1.25	0.12	0.00
13.60	1.25	0.12	0.00	54.40	1.25	0.12	0.00
14.40	1.25	0.12	0.00	55.20	1.25	0.12	0.00
15.20	1.25	0.12	0.00	56.00	1.25	0.12	0.00
16.00	1.25	0.12	0.00	56.80	1.25	0.12	0.00
16.80	1.25	0.12	0.00	57.60	1.25	0.12	0.00
17.60	1.25	0.12	0.00	58.40	1.25	0.12	0.00
18.40	1.25	0.12	0.00	59.20	1.25	0.12	0.00
19.20	1.25	0.12	0.00	60.00	1.25	0.12	0.00
20.00	1.25	0.12	0.00	60.80	1.25	0.12	0.00
20.80	1.25	0.12	0.00	61.60	1.25	0.12	0.00
21.60	1.25	0.12	0.00	62.40	1.25	0.12	0.00
22.40	1.25	0.12	0.00	63.20	1.25	0.12	0.00
23.20	1.25	0.12	0.00	64.00	1.25	0.12	0.00
24.00	1.25	0.12	0.00	64.80	1.25	0.12	0.00
24.80	1.25	0.12	0.00	65.60	1.25	0.12	0.00
25.60	1.25	0.12	0.00	66.40	1.25	0.12	0.00
26.40	1.25	0.12	0.00	67.20	1.25	0.12	0.00
27.20	1.25	0.12	0.00	68.00	1.25	0.12	0.00
28.00	1.25	0.12	0.00	68.80	1.25	0.12	0.00
28.80	1.25	0.12	0.00	69.60	1.25	0.12	0.00
29.60	1.25	0.12	0.00	70.40	1.25	0.12	0.00
30.40	1.25	0.12	0.00	71.20	1.25	0.12	0.00
31.20	1.25	0.12	0.00	72.00	1.25	0.12	0.00
32.00	1.25	0.12	0.00	72.80	1.25	0.12	0.00
32.80	1.25	0.12	0.00	73.60	1.25	0.12	0.00
33.60	1.25	0.12	0.00	74.40	1.25	0.12	0.00
34.40	1.25	0.12	0.00	75.20	1.25	0.12	0.00
35.20	1.25	0.12	0.00	76.00	1.25	0.12	0.00
36.00	1.25	0.12	0.00	76.80	1.25	0.12	0.00
36.80	1.25	0.12	0.00	77.60	1.25	0.12	0.00
37.60	1.25	0.12	0.00	78.40	1.25	0.12	0.00
38.40	1.25	0.12	0.00	79.20	1.25	0.12	0.00
39.20	1.25	0.12	0.00	80.00	1.25	0.12	0.00
40.00	1.25	0.12	0.00				

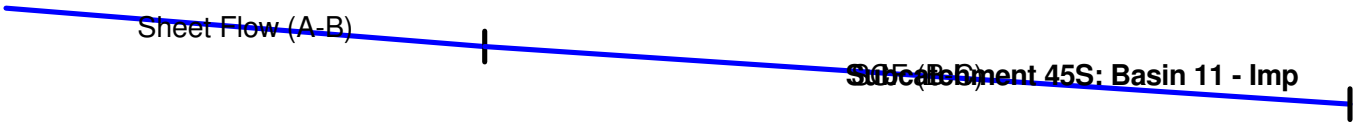
Summary for Subcatchment 45S: Basin 11 - Imp

Runoff = 3.57 cfs @ 1.14 hrs, Volume= 5,164 cf, Depth= 1.03"
Routed to Pond 33P : Basin 11

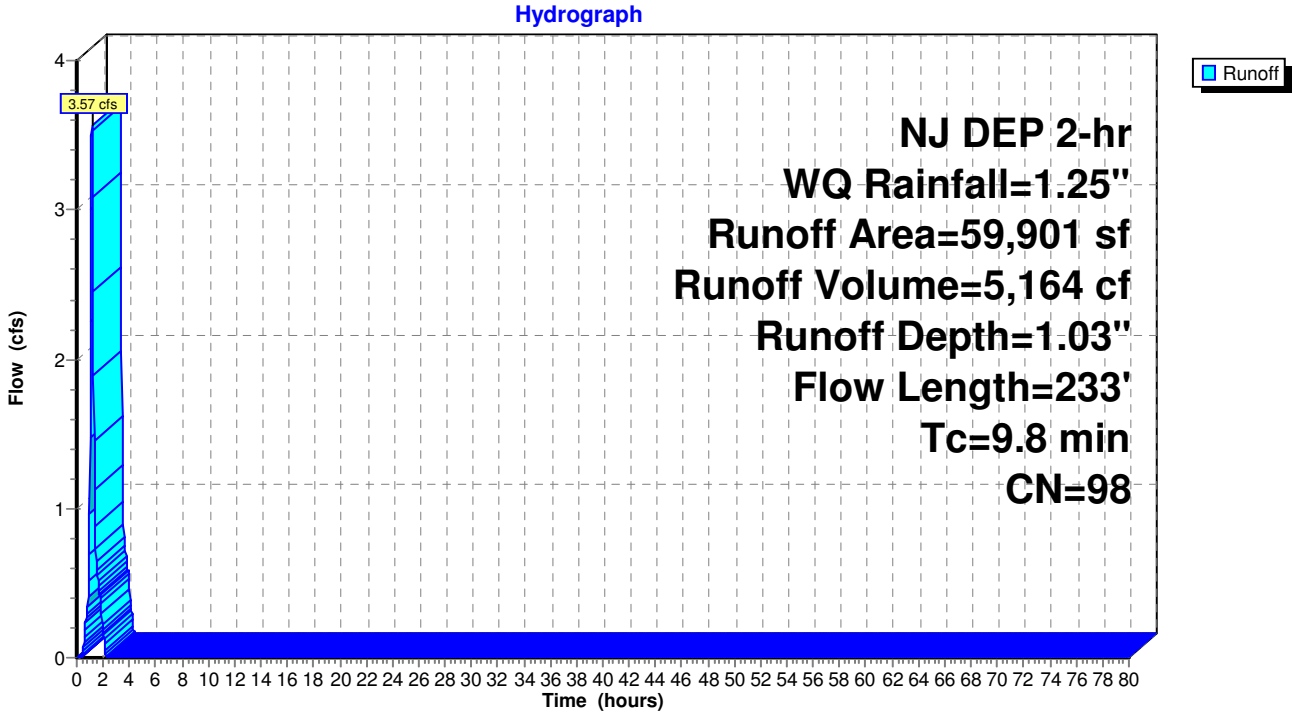
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

	Area (sf)	CN	Description
*	22,270	98	pavement surface area/ porous
	32,203	98	Roofs, HSG C
*	5,428	98	other impervious
	59,901	98	Weighted Average
	59,901		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
0.9	150	0.0330	2.92		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	233	Total			



Subcatchment 45S: Basin 11 - Imp



Hydrograph for Subcatchment 45S: Basin 11 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	1.03	0.00
0.80	0.23	0.09	**0.34**	41.60	1.25	1.03	0.00
1.60	**1.18**	**0.97**	**0.52**	42.40	1.25	1.03	0.00
2.40	**1.25**	**1.03**	0.00	43.20	1.25	1.03	0.00
3.20	1.25	1.03	0.00	44.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	44.80	1.25	1.03	0.00
4.80	1.25	1.03	0.00	45.60	1.25	1.03	0.00
5.60	1.25	1.03	0.00	46.40	1.25	1.03	0.00
6.40	1.25	1.03	0.00	47.20	1.25	1.03	0.00
7.20	1.25	1.03	0.00	48.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	48.80	1.25	1.03	0.00
8.80	1.25	1.03	0.00	49.60	1.25	1.03	0.00
9.60	1.25	1.03	0.00	50.40	1.25	1.03	0.00
10.40	1.25	1.03	0.00	51.20	1.25	1.03	0.00
11.20	1.25	1.03	0.00	52.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	52.80	1.25	1.03	0.00
12.80	1.25	1.03	0.00	53.60	1.25	1.03	0.00
13.60	1.25	1.03	0.00	54.40	1.25	1.03	0.00
14.40	1.25	1.03	0.00	55.20	1.25	1.03	0.00
15.20	1.25	1.03	0.00	56.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	56.80	1.25	1.03	0.00
16.80	1.25	1.03	0.00	57.60	1.25	1.03	0.00
17.60	1.25	1.03	0.00	58.40	1.25	1.03	0.00
18.40	1.25	1.03	0.00	59.20	1.25	1.03	0.00
19.20	1.25	1.03	0.00	60.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00	60.80	1.25	1.03	0.00
20.80	1.25	1.03	0.00	61.60	1.25	1.03	0.00
21.60	1.25	1.03	0.00	62.40	1.25	1.03	0.00
22.40	1.25	1.03	0.00	63.20	1.25	1.03	0.00
23.20	1.25	1.03	0.00	64.00	1.25	1.03	0.00
24.00	1.25	1.03	0.00	64.80	1.25	1.03	0.00
24.80	1.25	1.03	0.00	65.60	1.25	1.03	0.00
25.60	1.25	1.03	0.00	66.40	1.25	1.03	0.00
26.40	1.25	1.03	0.00	67.20	1.25	1.03	0.00
27.20	1.25	1.03	0.00	68.00	1.25	1.03	0.00
28.00	1.25	1.03	0.00	68.80	1.25	1.03	0.00
28.80	1.25	1.03	0.00	69.60	1.25	1.03	0.00
29.60	1.25	1.03	0.00	70.40	1.25	1.03	0.00
30.40	1.25	1.03	0.00	71.20	1.25	1.03	0.00
31.20	1.25	1.03	0.00	72.00	1.25	1.03	0.00
32.00	1.25	1.03	0.00	72.80	1.25	1.03	0.00
32.80	1.25	1.03	0.00	73.60	1.25	1.03	0.00
33.60	1.25	1.03	0.00	74.40	1.25	1.03	0.00
34.40	1.25	1.03	0.00	75.20	1.25	1.03	0.00
35.20	1.25	1.03	0.00	76.00	1.25	1.03	0.00
36.00	1.25	1.03	0.00	76.80	1.25	1.03	0.00
36.80	1.25	1.03	0.00	77.60	1.25	1.03	0.00
37.60	1.25	1.03	0.00	78.40	1.25	1.03	0.00
38.40	1.25	1.03	0.00	79.20	1.25	1.03	0.00
39.20	1.25	1.03	0.00	80.00	1.25	1.03	0.00
40.00	1.25	1.03	0.00				

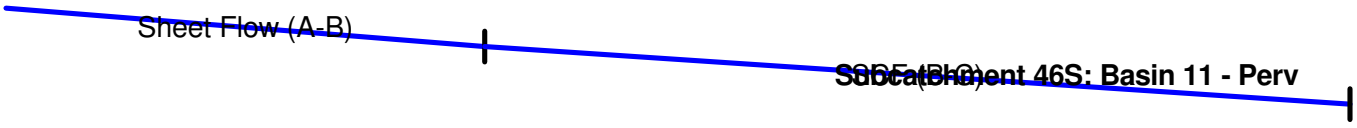
Summary for Subcatchment 46S: Basin 11 - Perv

Runoff = 0.11 cfs @ 1.24 hrs, Volume= 204 cf, Depth= 0.10"
Routed to Pond 33P : Basin 11

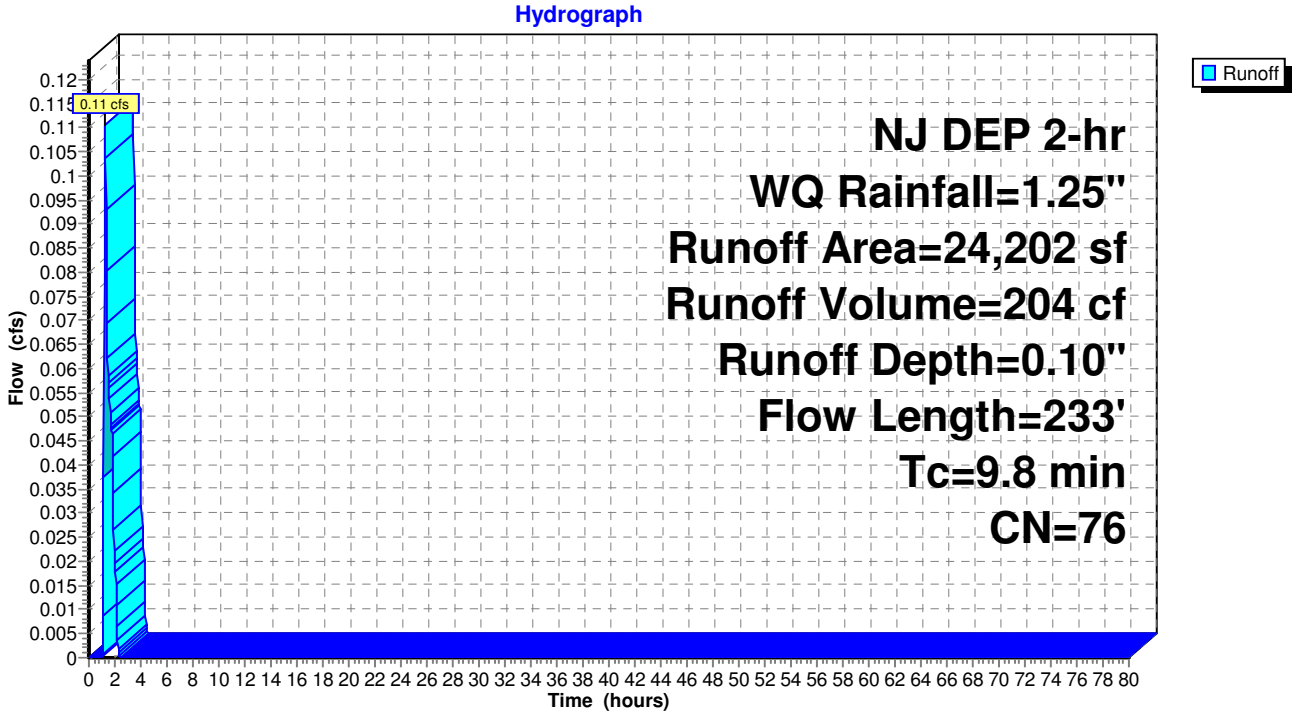
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
7,658	80	>75% Grass cover, Good, HSG D
16,544	74	>75% Grass cover, Good, HSG C
24,202	76	Weighted Average
24,202		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	83	0.0400	0.15		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
0.9	150	0.0330	2.92		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
9.8	233	Total			



Subcatchment 46S: Basin 11 - Perv



Hydrograph for Subcatchment 46S: Basin 11 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	0.10	0.00
0.80	0.23	0.00	**0.00**	41.60	1.25	0.10	0.00
1.60	**1.18**	**0.08**	**0.05**	42.40	1.25	0.10	0.00
2.40	**1.25**	**0.10**	0.00	43.20	1.25	0.10	0.00
3.20	1.25	0.10	0.00	44.00	1.25	0.10	0.00
4.00	1.25	0.10	0.00	44.80	1.25	0.10	0.00
4.80	1.25	0.10	0.00	45.60	1.25	0.10	0.00
5.60	1.25	0.10	0.00	46.40	1.25	0.10	0.00
6.40	1.25	0.10	0.00	47.20	1.25	0.10	0.00
7.20	1.25	0.10	0.00	48.00	1.25	0.10	0.00
8.00	1.25	0.10	0.00	48.80	1.25	0.10	0.00
8.80	1.25	0.10	0.00	49.60	1.25	0.10	0.00
9.60	1.25	0.10	0.00	50.40	1.25	0.10	0.00
10.40	1.25	0.10	0.00	51.20	1.25	0.10	0.00
11.20	1.25	0.10	0.00	52.00	1.25	0.10	0.00
12.00	1.25	0.10	0.00	52.80	1.25	0.10	0.00
12.80	1.25	0.10	0.00	53.60	1.25	0.10	0.00
13.60	1.25	0.10	0.00	54.40	1.25	0.10	0.00
14.40	1.25	0.10	0.00	55.20	1.25	0.10	0.00
15.20	1.25	0.10	0.00	56.00	1.25	0.10	0.00
16.00	1.25	0.10	0.00	56.80	1.25	0.10	0.00
16.80	1.25	0.10	0.00	57.60	1.25	0.10	0.00
17.60	1.25	0.10	0.00	58.40	1.25	0.10	0.00
18.40	1.25	0.10	0.00	59.20	1.25	0.10	0.00
19.20	1.25	0.10	0.00	60.00	1.25	0.10	0.00
20.00	1.25	0.10	0.00	60.80	1.25	0.10	0.00
20.80	1.25	0.10	0.00	61.60	1.25	0.10	0.00
21.60	1.25	0.10	0.00	62.40	1.25	0.10	0.00
22.40	1.25	0.10	0.00	63.20	1.25	0.10	0.00
23.20	1.25	0.10	0.00	64.00	1.25	0.10	0.00
24.00	1.25	0.10	0.00	64.80	1.25	0.10	0.00
24.80	1.25	0.10	0.00	65.60	1.25	0.10	0.00
25.60	1.25	0.10	0.00	66.40	1.25	0.10	0.00
26.40	1.25	0.10	0.00	67.20	1.25	0.10	0.00
27.20	1.25	0.10	0.00	68.00	1.25	0.10	0.00
28.00	1.25	0.10	0.00	68.80	1.25	0.10	0.00
28.80	1.25	0.10	0.00	69.60	1.25	0.10	0.00
29.60	1.25	0.10	0.00	70.40	1.25	0.10	0.00
30.40	1.25	0.10	0.00	71.20	1.25	0.10	0.00
31.20	1.25	0.10	0.00	72.00	1.25	0.10	0.00
32.00	1.25	0.10	0.00	72.80	1.25	0.10	0.00
32.80	1.25	0.10	0.00	73.60	1.25	0.10	0.00
33.60	1.25	0.10	0.00	74.40	1.25	0.10	0.00
34.40	1.25	0.10	0.00	75.20	1.25	0.10	0.00
35.20	1.25	0.10	0.00	76.00	1.25	0.10	0.00
36.00	1.25	0.10	0.00	76.80	1.25	0.10	0.00
36.80	1.25	0.10	0.00	77.60	1.25	0.10	0.00
37.60	1.25	0.10	0.00	78.40	1.25	0.10	0.00
38.40	1.25	0.10	0.00	79.20	1.25	0.10	0.00
39.20	1.25	0.10	0.00	80.00	1.25	0.10	0.00
40.00	1.25	0.10	0.00				

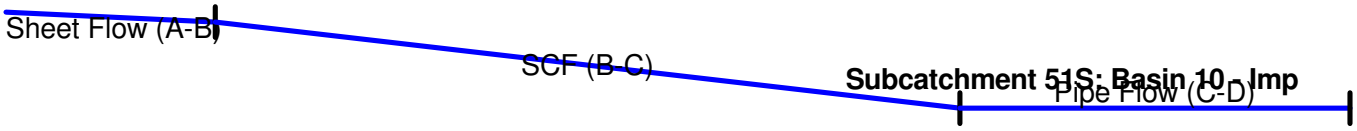
Summary for Subcatchment 51S: Basin 10 - Imp

Runoff = 3.08 cfs @ 1.15 hrs, Volume= 4,579 cf, Depth= 1.03"
Routed to Pond 41P : Basin 10

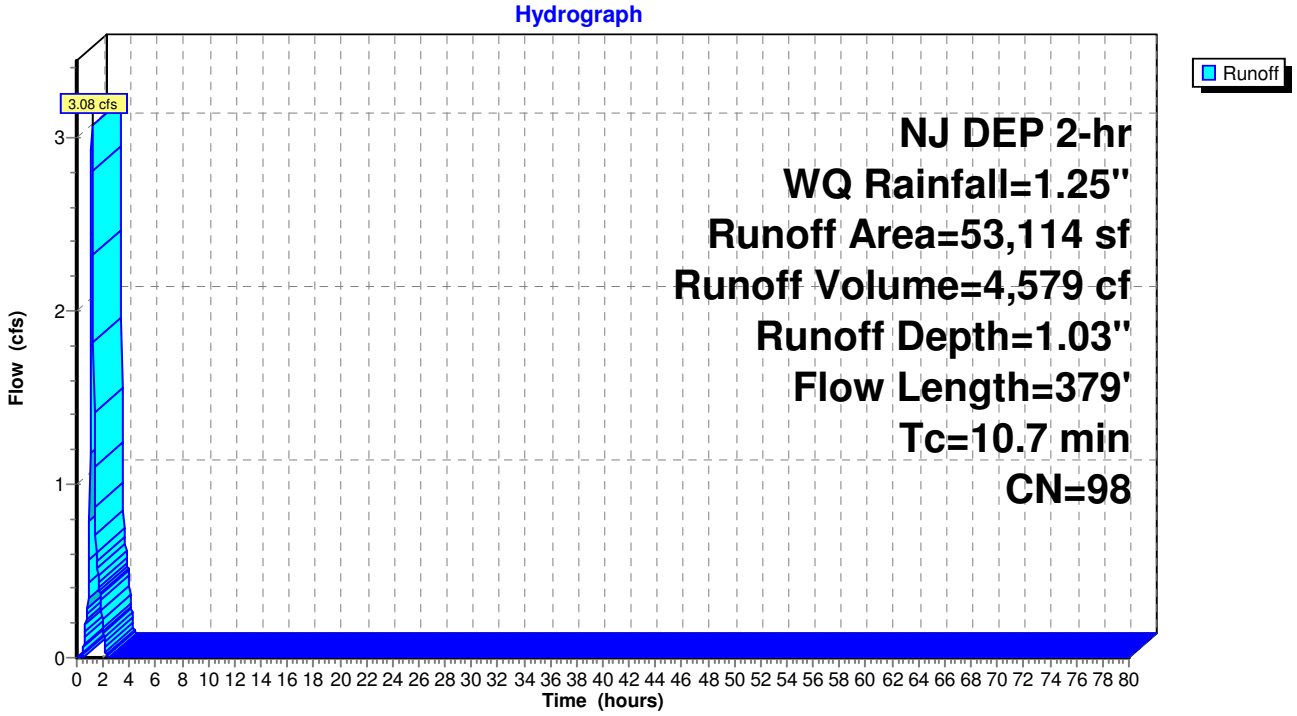
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
15,878	98	Paved parking, HSG C
37,236	98	Roofs, HSG C
53,114	98	Weighted Average
53,114		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.0	210	0.0480	3.53		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.7	110		2.50		**Direct Entry, Pipe Flow (C-D)**
10.7	379	Total			



Subcatchment 51S: Basin 10 - Imp



Hydrograph for Subcatchment 51S: Basin 10 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	1.03	0.00
0.80	0.23	0.09	**0.29**	41.60	1.25	1.03	0.00
1.60	**1.18**	**0.97**	**0.48**	42.40	1.25	1.03	0.00
2.40	**1.25**	**1.03**	0.00	43.20	1.25	1.03	0.00
3.20	1.25	1.03	0.00	44.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	44.80	1.25	1.03	0.00
4.80	1.25	1.03	0.00	45.60	1.25	1.03	0.00
5.60	1.25	1.03	0.00	46.40	1.25	1.03	0.00
6.40	1.25	1.03	0.00	47.20	1.25	1.03	0.00
7.20	1.25	1.03	0.00	48.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	48.80	1.25	1.03	0.00
8.80	1.25	1.03	0.00	49.60	1.25	1.03	0.00
9.60	1.25	1.03	0.00	50.40	1.25	1.03	0.00
10.40	1.25	1.03	0.00	51.20	1.25	1.03	0.00
11.20	1.25	1.03	0.00	52.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	52.80	1.25	1.03	0.00
12.80	1.25	1.03	0.00	53.60	1.25	1.03	0.00
13.60	1.25	1.03	0.00	54.40	1.25	1.03	0.00
14.40	1.25	1.03	0.00	55.20	1.25	1.03	0.00
15.20	1.25	1.03	0.00	56.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	56.80	1.25	1.03	0.00
16.80	1.25	1.03	0.00	57.60	1.25	1.03	0.00
17.60	1.25	1.03	0.00	58.40	1.25	1.03	0.00
18.40	1.25	1.03	0.00	59.20	1.25	1.03	0.00
19.20	1.25	1.03	0.00	60.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00	60.80	1.25	1.03	0.00
20.80	1.25	1.03	0.00	61.60	1.25	1.03	0.00
21.60	1.25	1.03	0.00	62.40	1.25	1.03	0.00
22.40	1.25	1.03	0.00	63.20	1.25	1.03	0.00
23.20	1.25	1.03	0.00	64.00	1.25	1.03	0.00
24.00	1.25	1.03	0.00	64.80	1.25	1.03	0.00
24.80	1.25	1.03	0.00	65.60	1.25	1.03	0.00
25.60	1.25	1.03	0.00	66.40	1.25	1.03	0.00
26.40	1.25	1.03	0.00	67.20	1.25	1.03	0.00
27.20	1.25	1.03	0.00	68.00	1.25	1.03	0.00
28.00	1.25	1.03	0.00	68.80	1.25	1.03	0.00
28.80	1.25	1.03	0.00	69.60	1.25	1.03	0.00
29.60	1.25	1.03	0.00	70.40	1.25	1.03	0.00
30.40	1.25	1.03	0.00	71.20	1.25	1.03	0.00
31.20	1.25	1.03	0.00	72.00	1.25	1.03	0.00
32.00	1.25	1.03	0.00	72.80	1.25	1.03	0.00
32.80	1.25	1.03	0.00	73.60	1.25	1.03	0.00
33.60	1.25	1.03	0.00	74.40	1.25	1.03	0.00
34.40	1.25	1.03	0.00	75.20	1.25	1.03	0.00
35.20	1.25	1.03	0.00	76.00	1.25	1.03	0.00
36.00	1.25	1.03	0.00	76.80	1.25	1.03	0.00
36.80	1.25	1.03	0.00	77.60	1.25	1.03	0.00
37.60	1.25	1.03	0.00	78.40	1.25	1.03	0.00
38.40	1.25	1.03	0.00	79.20	1.25	1.03	0.00
39.20	1.25	1.03	0.00	80.00	1.25	1.03	0.00
40.00	1.25	1.03	0.00				

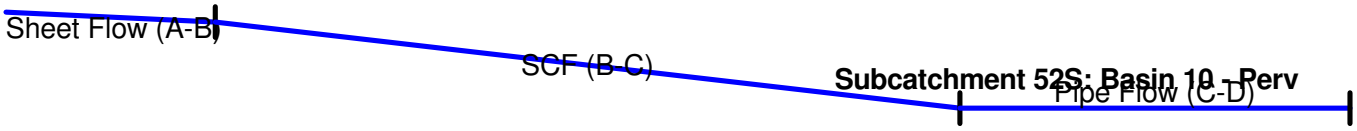
Summary for Subcatchment 52S: Basin 10 - Perv

Runoff = 0.14 cfs @ 1.26 hrs, Volume= 270 cf, Depth= 0.09"
Routed to Pond 41P : Basin 10

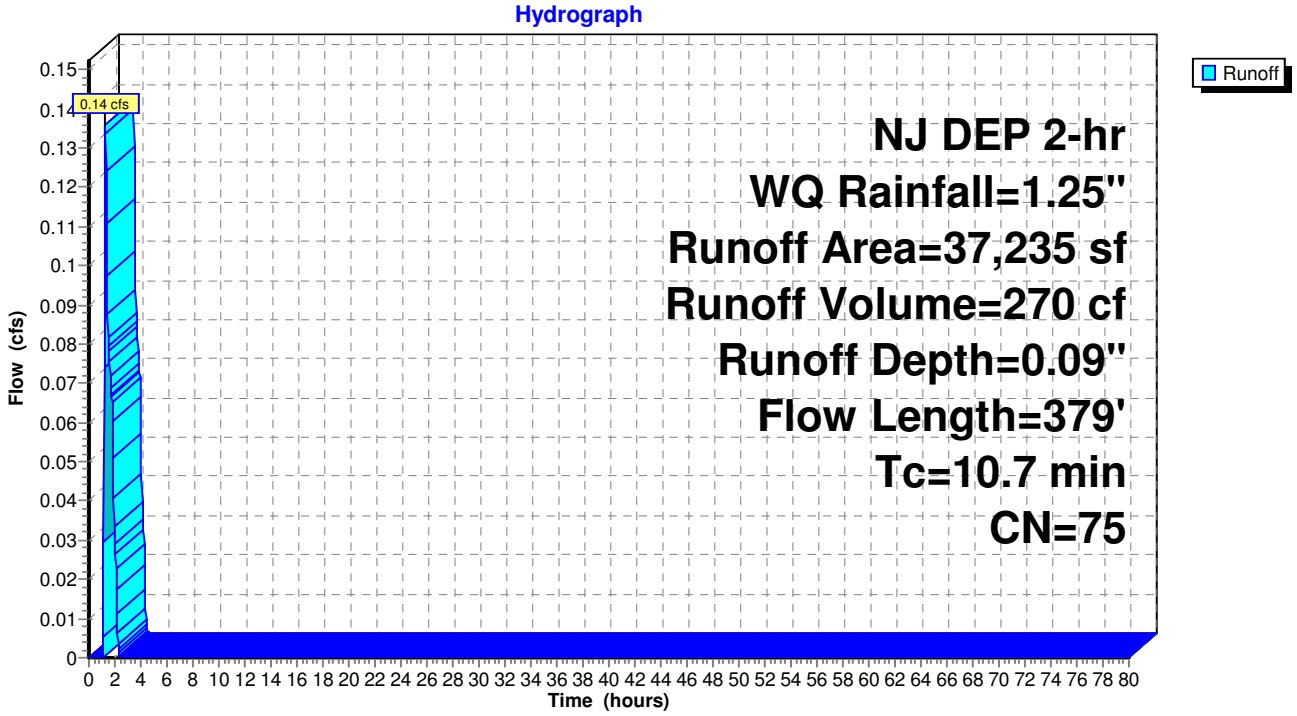
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
7,626	80	>75% Grass cover, Good, HSG D
29,609	74	>75% Grass cover, Good, HSG C
37,235	75	Weighted Average
37,235		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	59	0.0200	0.11		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47" Using McCuen-Spiess flow length
1.0	210	0.0480	3.53		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
0.7	110		2.50		**Direct Entry, Pipe Flow (C-D)**
10.7	379	Total			



Subcatchment 52S: Basin 10 - Perv



Hydrograph for Subcatchment 52S: Basin 10 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	0.09	0.00
0.80	0.23	0.00	**0.00**	41.60	1.25	0.09	0.00
1.60	**1.18**	**0.07**	**0.08**	42.40	1.25	0.09	0.00
2.40	**1.25**	**0.09**	0.00	43.20	1.25	0.09	0.00
3.20	1.25	0.09	0.00	44.00	1.25	0.09	0.00
4.00	1.25	0.09	0.00	44.80	1.25	0.09	0.00
4.80	1.25	0.09	0.00	45.60	1.25	0.09	0.00
5.60	1.25	0.09	0.00	46.40	1.25	0.09	0.00
6.40	1.25	0.09	0.00	47.20	1.25	0.09	0.00
7.20	1.25	0.09	0.00	48.00	1.25	0.09	0.00
8.00	1.25	0.09	0.00	48.80	1.25	0.09	0.00
8.80	1.25	0.09	0.00	49.60	1.25	0.09	0.00
9.60	1.25	0.09	0.00	50.40	1.25	0.09	0.00
10.40	1.25	0.09	0.00	51.20	1.25	0.09	0.00
11.20	1.25	0.09	0.00	52.00	1.25	0.09	0.00
12.00	1.25	0.09	0.00	52.80	1.25	0.09	0.00
12.80	1.25	0.09	0.00	53.60	1.25	0.09	0.00
13.60	1.25	0.09	0.00	54.40	1.25	0.09	0.00
14.40	1.25	0.09	0.00	55.20	1.25	0.09	0.00
15.20	1.25	0.09	0.00	56.00	1.25	0.09	0.00
16.00	1.25	0.09	0.00	56.80	1.25	0.09	0.00
16.80	1.25	0.09	0.00	57.60	1.25	0.09	0.00
17.60	1.25	0.09	0.00	58.40	1.25	0.09	0.00
18.40	1.25	0.09	0.00	59.20	1.25	0.09	0.00
19.20	1.25	0.09	0.00	60.00	1.25	0.09	0.00
20.00	1.25	0.09	0.00	60.80	1.25	0.09	0.00
20.80	1.25	0.09	0.00	61.60	1.25	0.09	0.00
21.60	1.25	0.09	0.00	62.40	1.25	0.09	0.00
22.40	1.25	0.09	0.00	63.20	1.25	0.09	0.00
23.20	1.25	0.09	0.00	64.00	1.25	0.09	0.00
24.00	1.25	0.09	0.00	64.80	1.25	0.09	0.00
24.80	1.25	0.09	0.00	65.60	1.25	0.09	0.00
25.60	1.25	0.09	0.00	66.40	1.25	0.09	0.00
26.40	1.25	0.09	0.00	67.20	1.25	0.09	0.00
27.20	1.25	0.09	0.00	68.00	1.25	0.09	0.00
28.00	1.25	0.09	0.00	68.80	1.25	0.09	0.00
28.80	1.25	0.09	0.00	69.60	1.25	0.09	0.00
29.60	1.25	0.09	0.00	70.40	1.25	0.09	0.00
30.40	1.25	0.09	0.00	71.20	1.25	0.09	0.00
31.20	1.25	0.09	0.00	72.00	1.25	0.09	0.00
32.00	1.25	0.09	0.00	72.80	1.25	0.09	0.00
32.80	1.25	0.09	0.00	73.60	1.25	0.09	0.00
33.60	1.25	0.09	0.00	74.40	1.25	0.09	0.00
34.40	1.25	0.09	0.00	75.20	1.25	0.09	0.00
35.20	1.25	0.09	0.00	76.00	1.25	0.09	0.00
36.00	1.25	0.09	0.00	76.80	1.25	0.09	0.00
36.80	1.25	0.09	0.00	77.60	1.25	0.09	0.00
37.60	1.25	0.09	0.00	78.40	1.25	0.09	0.00
38.40	1.25	0.09	0.00	79.20	1.25	0.09	0.00
39.20	1.25	0.09	0.00	80.00	1.25	0.09	0.00
40.00	1.25	0.09	0.00				

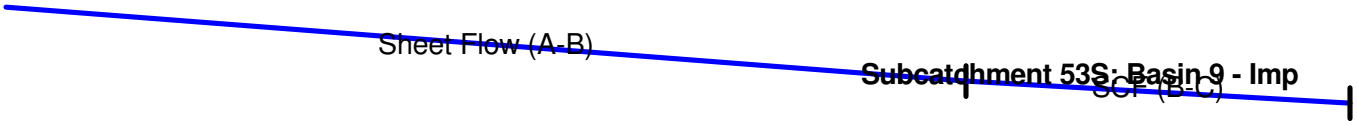
Summary for Subcatchment 53S: Basin 9 - Imp

Runoff = 1.12 cfs @ 1.11 hrs, Volume= 1,505 cf, Depth= 1.03"
Routed to Pond 42P : Basin 9

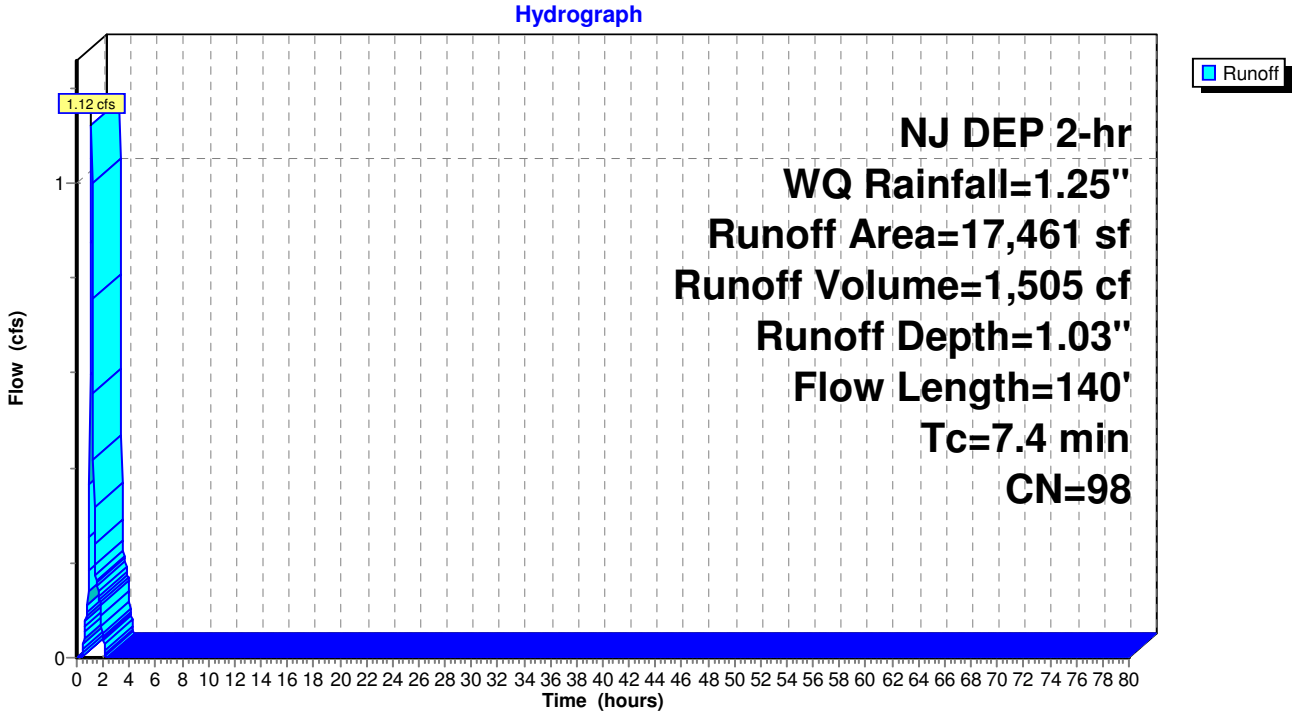
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

	Area (sf)	CN	Description
*	13,382	98	vehicle surface area
*	2,932	98	other impervious
*	1,147	98	roofs
	17,461	98	Weighted Average
	17,461		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.1000	0.23		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	40	0.0750	4.41		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
7.4	140	Total			



Subcatchment 53S: Basin 9 - Imp



Hydrograph for Subcatchment 53S: Basin 9 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	1.03	0.00
0.80	0.23	0.09	**0.11**	41.60	1.25	1.03	0.00
1.60	**1.18**	**0.97**	**0.14**	42.40	1.25	1.03	0.00
2.40	**1.25**	**1.03**	0.00	43.20	1.25	1.03	0.00
3.20	1.25	1.03	0.00	44.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00	44.80	1.25	1.03	0.00
4.80	1.25	1.03	0.00	45.60	1.25	1.03	0.00
5.60	1.25	1.03	0.00	46.40	1.25	1.03	0.00
6.40	1.25	1.03	0.00	47.20	1.25	1.03	0.00
7.20	1.25	1.03	0.00	48.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00	48.80	1.25	1.03	0.00
8.80	1.25	1.03	0.00	49.60	1.25	1.03	0.00
9.60	1.25	1.03	0.00	50.40	1.25	1.03	0.00
10.40	1.25	1.03	0.00	51.20	1.25	1.03	0.00
11.20	1.25	1.03	0.00	52.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00	52.80	1.25	1.03	0.00
12.80	1.25	1.03	0.00	53.60	1.25	1.03	0.00
13.60	1.25	1.03	0.00	54.40	1.25	1.03	0.00
14.40	1.25	1.03	0.00	55.20	1.25	1.03	0.00
15.20	1.25	1.03	0.00	56.00	1.25	1.03	0.00
16.00	1.25	1.03	0.00	56.80	1.25	1.03	0.00
16.80	1.25	1.03	0.00	57.60	1.25	1.03	0.00
17.60	1.25	1.03	0.00	58.40	1.25	1.03	0.00
18.40	1.25	1.03	0.00	59.20	1.25	1.03	0.00
19.20	1.25	1.03	0.00	60.00	1.25	1.03	0.00
20.00	1.25	1.03	0.00	60.80	1.25	1.03	0.00
20.80	1.25	1.03	0.00	61.60	1.25	1.03	0.00
21.60	1.25	1.03	0.00	62.40	1.25	1.03	0.00
22.40	1.25	1.03	0.00	63.20	1.25	1.03	0.00
23.20	1.25	1.03	0.00	64.00	1.25	1.03	0.00
24.00	1.25	1.03	0.00	64.80	1.25	1.03	0.00
24.80	1.25	1.03	0.00	65.60	1.25	1.03	0.00
25.60	1.25	1.03	0.00	66.40	1.25	1.03	0.00
26.40	1.25	1.03	0.00	67.20	1.25	1.03	0.00
27.20	1.25	1.03	0.00	68.00	1.25	1.03	0.00
28.00	1.25	1.03	0.00	68.80	1.25	1.03	0.00
28.80	1.25	1.03	0.00	69.60	1.25	1.03	0.00
29.60	1.25	1.03	0.00	70.40	1.25	1.03	0.00
30.40	1.25	1.03	0.00	71.20	1.25	1.03	0.00
31.20	1.25	1.03	0.00	72.00	1.25	1.03	0.00
32.00	1.25	1.03	0.00	72.80	1.25	1.03	0.00
32.80	1.25	1.03	0.00	73.60	1.25	1.03	0.00
33.60	1.25	1.03	0.00	74.40	1.25	1.03	0.00
34.40	1.25	1.03	0.00	75.20	1.25	1.03	0.00
35.20	1.25	1.03	0.00	76.00	1.25	1.03	0.00
36.00	1.25	1.03	0.00	76.80	1.25	1.03	0.00
36.80	1.25	1.03	0.00	77.60	1.25	1.03	0.00
37.60	1.25	1.03	0.00	78.40	1.25	1.03	0.00
38.40	1.25	1.03	0.00	79.20	1.25	1.03	0.00
39.20	1.25	1.03	0.00	80.00	1.25	1.03	0.00
40.00	1.25	1.03	0.00				

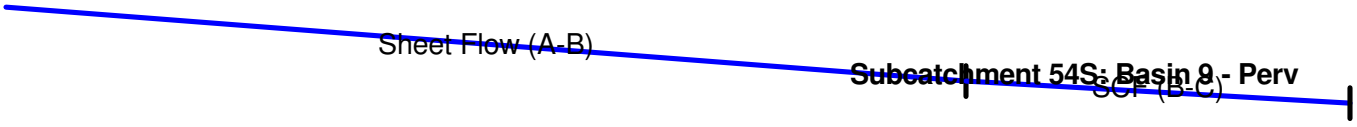
Summary for Subcatchment 54S: Basin 9 - Perv

Runoff = 0.07 cfs @ 1.18 hrs, Volume= 100 cf, Depth= 0.13"
Routed to Pond 42P : Basin 9

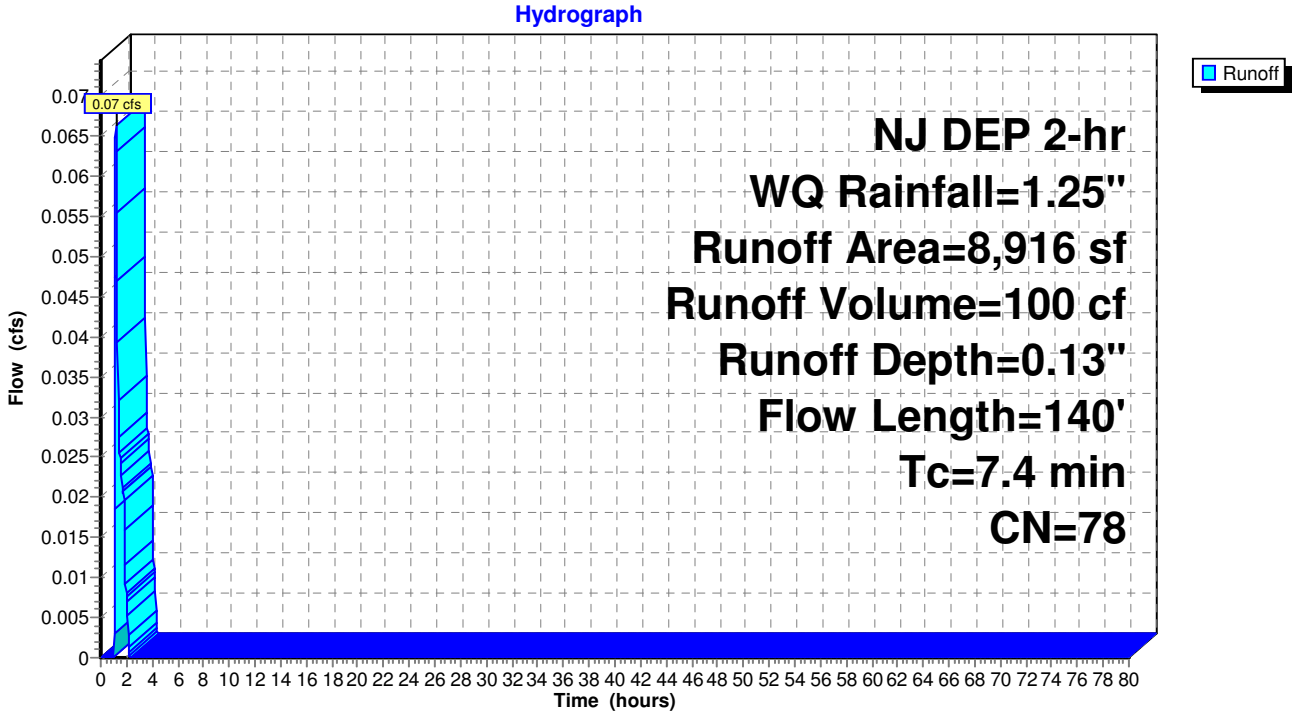
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
2,537	74	>75% Grass cover, Good, HSG C
6,379	80	>75% Grass cover, Good, HSG D
8,916	78	Weighted Average
8,916		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.1000	0.23		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	40	0.0750	4.41		**Shallow Concentrated Flow, SCF (B-C)** Unpaved Kv= 16.1 fps
7.4	140	Total			



Subcatchment 54S: Basin 9 - Perv



Hydrograph for Subcatchment 54S: Basin 9 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	40.80	1.25	0.13	0.00
0.80	0.23	0.00	**0.00**	41.60	1.25	0.13	0.00
1.60	**1.18**	**0.11**	**0.02**	42.40	1.25	0.13	0.00
2.40	**1.25**	**0.13**	0.00	43.20	1.25	0.13	0.00
3.20	1.25	0.13	0.00	44.00	1.25	0.13	0.00
4.00	1.25	0.13	0.00	44.80	1.25	0.13	0.00
4.80	1.25	0.13	0.00	45.60	1.25	0.13	0.00
5.60	1.25	0.13	0.00	46.40	1.25	0.13	0.00
6.40	1.25	0.13	0.00	47.20	1.25	0.13	0.00
7.20	1.25	0.13	0.00	48.00	1.25	0.13	0.00
8.00	1.25	0.13	0.00	48.80	1.25	0.13	0.00
8.80	1.25	0.13	0.00	49.60	1.25	0.13	0.00
9.60	1.25	0.13	0.00	50.40	1.25	0.13	0.00
10.40	1.25	0.13	0.00	51.20	1.25	0.13	0.00
11.20	1.25	0.13	0.00	52.00	1.25	0.13	0.00
12.00	1.25	0.13	0.00	52.80	1.25	0.13	0.00
12.80	1.25	0.13	0.00	53.60	1.25	0.13	0.00
13.60	1.25	0.13	0.00	54.40	1.25	0.13	0.00
14.40	1.25	0.13	0.00	55.20	1.25	0.13	0.00
15.20	1.25	0.13	0.00	56.00	1.25	0.13	0.00
16.00	1.25	0.13	0.00	56.80	1.25	0.13	0.00
16.80	1.25	0.13	0.00	57.60	1.25	0.13	0.00
17.60	1.25	0.13	0.00	58.40	1.25	0.13	0.00
18.40	1.25	0.13	0.00	59.20	1.25	0.13	0.00
19.20	1.25	0.13	0.00	60.00	1.25	0.13	0.00
20.00	1.25	0.13	0.00	60.80	1.25	0.13	0.00
20.80	1.25	0.13	0.00	61.60	1.25	0.13	0.00
21.60	1.25	0.13	0.00	62.40	1.25	0.13	0.00
22.40	1.25	0.13	0.00	63.20	1.25	0.13	0.00
23.20	1.25	0.13	0.00	64.00	1.25	0.13	0.00
24.00	1.25	0.13	0.00	64.80	1.25	0.13	0.00
24.80	1.25	0.13	0.00	65.60	1.25	0.13	0.00
25.60	1.25	0.13	0.00	66.40	1.25	0.13	0.00
26.40	1.25	0.13	0.00	67.20	1.25	0.13	0.00
27.20	1.25	0.13	0.00	68.00	1.25	0.13	0.00
28.00	1.25	0.13	0.00	68.80	1.25	0.13	0.00
28.80	1.25	0.13	0.00	69.60	1.25	0.13	0.00
29.60	1.25	0.13	0.00	70.40	1.25	0.13	0.00
30.40	1.25	0.13	0.00	71.20	1.25	0.13	0.00
31.20	1.25	0.13	0.00	72.00	1.25	0.13	0.00
32.00	1.25	0.13	0.00	72.80	1.25	0.13	0.00
32.80	1.25	0.13	0.00	73.60	1.25	0.13	0.00
33.60	1.25	0.13	0.00	74.40	1.25	0.13	0.00
34.40	1.25	0.13	0.00	75.20	1.25	0.13	0.00
35.20	1.25	0.13	0.00	76.00	1.25	0.13	0.00
36.00	1.25	0.13	0.00	76.80	1.25	0.13	0.00
36.80	1.25	0.13	0.00	77.60	1.25	0.13	0.00
37.60	1.25	0.13	0.00	78.40	1.25	0.13	0.00
38.40	1.25	0.13	0.00	79.20	1.25	0.13	0.00
39.20	1.25	0.13	0.00	80.00	1.25	0.13	0.00
40.00	1.25	0.13	0.00				

Summary for Pond 21P: Basin 3

Inflow Area = 21,910 sf, 31.15% Impervious, Inflow Depth = 0.37" for WQ event
Inflow = 0.45 cfs @ 1.14 hrs, Volume= 681 cf
Outflow = 0.44 cfs @ 1.15 hrs, Volume= 681 cf, Atten= 0%, Lag= 0.7 min
Discarded = 0.44 cfs @ 1.15 hrs, Volume= 681 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 27P : Basin 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 559.01' @ 1.15 hrs Surf.Area= 5,227 sf Storage= 17 cf

Plug-Flow detention time= 0.6 min calculated for 681 cf (100% of inflow)
Center-of-Mass det. time= 0.6 min (75.4 - 74.8)

Volume	Invert	Avail.Storage	Storage Description
#1	559.00'	4,537 cf	**Custom Stage Data (Prismatic)** Listed below 11,343 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
559.00	5,227	0	0
560.00	5,227	5,227	5,227
561.00	5,227	5,227	10,454
561.17	5,227	889	11,343

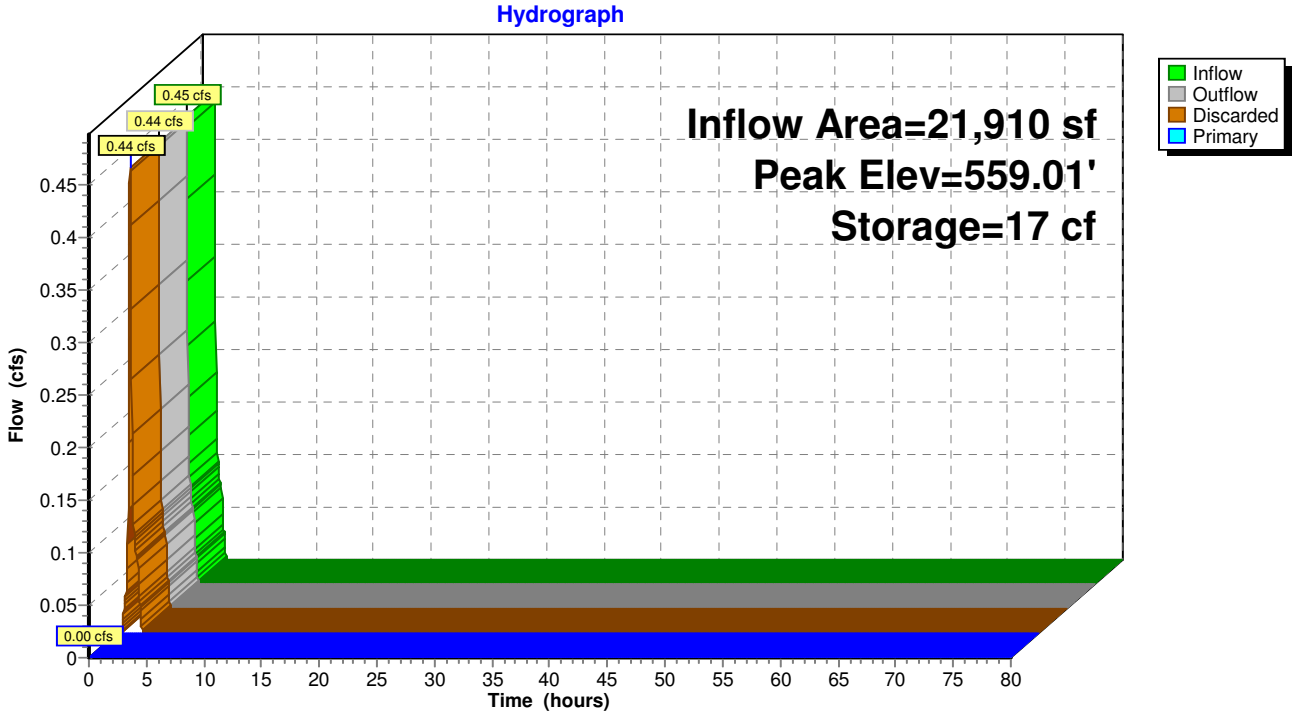
Device	Routing	Invert	Outlet Devices
#1	Primary	559.22'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	559.00'	**10.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.21 cfs @ 1.15 hrs HW=559.01' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 1.21 cfs)

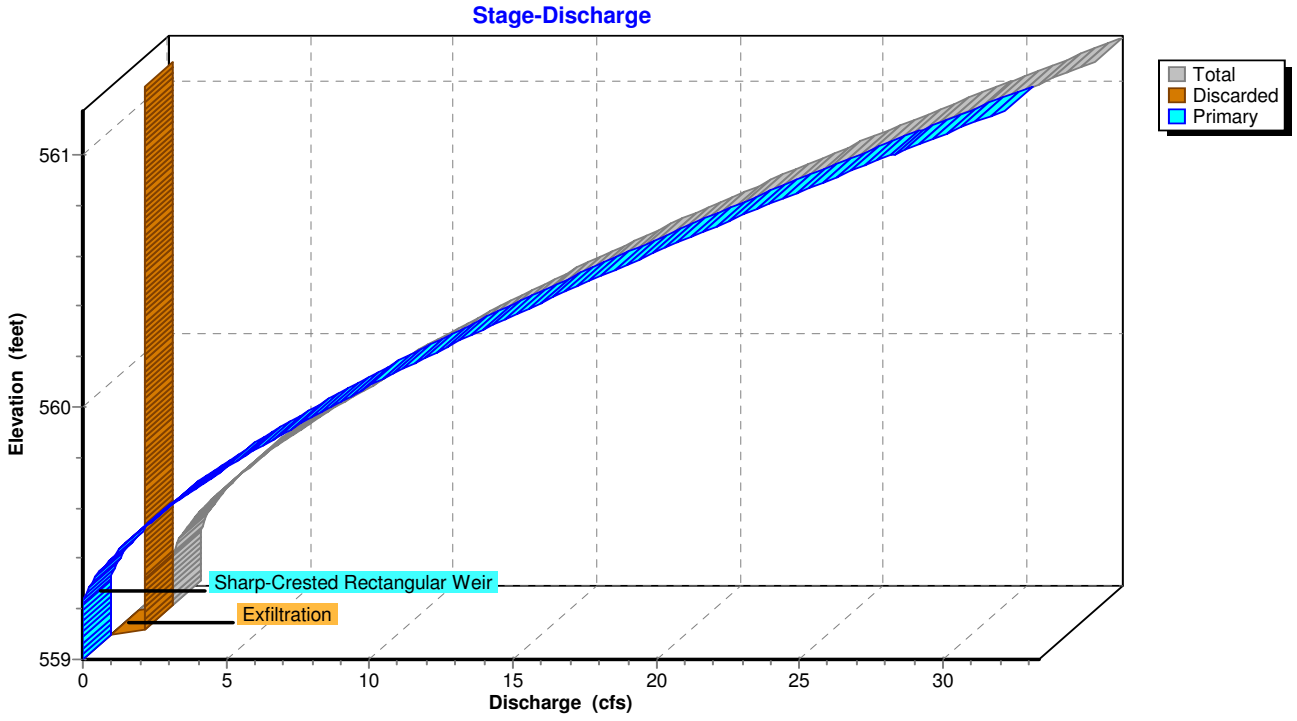
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=559.00' (Free Discharge)
↑**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)



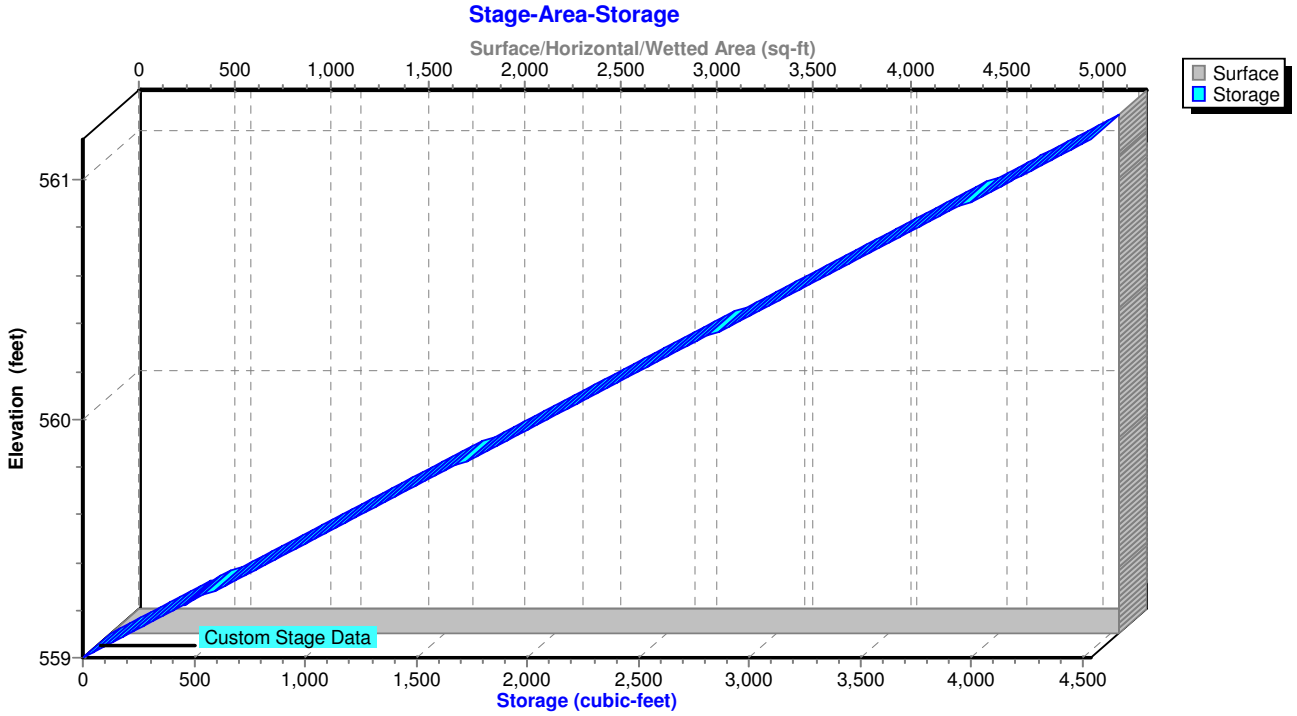
Pond 21P: Basin 3



Pond 21P: Basin 3



Pond 21P: Basin 3



Hydrograph for Pond 21P: Basin 3

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	**0.00**	**0**	**559.00**	**0.00**	**0.00**	**0.00**
2.00	**0.03**	**1**	**559.00**	**0.03**	**0.03**	0.00
4.00	0.00	0	559.00	0.00	0.00	0.00
6.00	0.00	0	559.00	0.00	0.00	0.00
8.00	0.00	0	559.00	0.00	0.00	0.00
10.00	0.00	0	559.00	0.00	0.00	0.00
12.00	0.00	0	559.00	0.00	0.00	0.00
14.00	0.00	0	559.00	0.00	0.00	0.00
16.00	0.00	0	559.00	0.00	0.00	0.00
18.00	0.00	0	559.00	0.00	0.00	0.00
20.00	0.00	0	559.00	0.00	0.00	0.00
22.00	0.00	0	559.00	0.00	0.00	0.00
24.00	0.00	0	559.00	0.00	0.00	0.00
26.00	0.00	0	559.00	0.00	0.00	0.00
28.00	0.00	0	559.00	0.00	0.00	0.00
30.00	0.00	0	559.00	0.00	0.00	0.00
32.00	0.00	0	559.00	0.00	0.00	0.00
34.00	0.00	0	559.00	0.00	0.00	0.00
36.00	0.00	0	559.00	0.00	0.00	0.00
38.00	0.00	0	559.00	0.00	0.00	0.00
40.00	0.00	0	559.00	0.00	0.00	0.00
42.00	0.00	0	559.00	0.00	0.00	0.00
44.00	0.00	0	559.00	0.00	0.00	0.00
46.00	0.00	0	559.00	0.00	0.00	0.00
48.00	0.00	0	559.00	0.00	0.00	0.00
50.00	0.00	0	559.00	0.00	0.00	0.00
52.00	0.00	0	559.00	0.00	0.00	0.00
54.00	0.00	0	559.00	0.00	0.00	0.00
56.00	0.00	0	559.00	0.00	0.00	0.00
58.00	0.00	0	559.00	0.00	0.00	0.00
60.00	0.00	0	559.00	0.00	0.00	0.00
62.00	0.00	0	559.00	0.00	0.00	0.00
64.00	0.00	0	559.00	0.00	0.00	0.00
66.00	0.00	0	559.00	0.00	0.00	0.00
68.00	0.00	0	559.00	0.00	0.00	0.00
70.00	0.00	0	559.00	0.00	0.00	0.00
72.00	0.00	0	559.00	0.00	0.00	0.00
74.00	0.00	0	559.00	0.00	0.00	0.00
76.00	0.00	0	559.00	0.00	0.00	0.00
78.00	0.00	0	559.00	0.00	0.00	0.00
80.00	0.00	0	559.00	0.00	0.00	0.00

Stage-Discharge for Pond 21P: Basin 3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
559.00	0.00	**0.00**	0.00
559.05	1.21	**1.21**	0.00
559.10	1.21	1.21	0.00
559.15	1.21	1.21	0.00
559.20	1.21	1.21	0.00
559.25	1.28	1.21	0.07
559.30	1.50	1.21	0.29
559.35	1.82	1.21	0.61
559.40	2.20	1.21	0.99
559.45	2.64	1.21	1.43
559.50	3.12	1.21	1.91
559.55	3.65	1.21	2.44
559.60	4.22	1.21	3.01
559.65	4.82	1.21	3.61
559.70	5.46	1.21	4.25
559.75	6.12	1.21	4.91
559.80	6.82	1.21	5.61
559.85	7.54	1.21	6.33
559.90	8.30	1.21	7.09
559.95	9.07	1.21	7.86
560.00	9.87	1.21	8.66
560.05	10.69	1.21	9.48
560.10	11.53	1.21	10.32
560.15	12.40	1.21	11.19
560.20	13.28	1.21	12.07
560.25	14.18	1.21	12.97
560.30	15.10	1.21	13.89
560.35	16.03	1.21	14.82
560.40	16.99	1.21	15.78
560.45	17.96	1.21	16.75
560.50	18.94	1.21	17.73
560.55	19.94	1.21	18.73
560.60	20.95	1.21	19.74
560.65	21.98	1.21	20.77
560.70	23.02	1.21	21.81
560.75	24.07	1.21	22.86
560.80	25.14	1.21	23.93
560.85	26.21	1.21	25.00
560.90	27.30	1.21	26.09
560.95	28.40	1.21	27.19
561.00	29.51	1.21	28.30
561.05	30.63	1.21	29.42
561.10	31.76	1.21	30.55
561.15	**32.90**	1.21	**31.69**

Stage-Area-Storage for Pond 21P: Basin 3

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
559.00	**5,227**	0
559.05	5,227	105
559.10	5,227	209
559.15	5,227	314
559.20	5,227	418
559.25	5,227	523
559.30	5,227	627
559.35	5,227	732
559.40	5,227	836
559.45	5,227	941
559.50	5,227	1,045
559.55	5,227	1,150
559.60	5,227	1,254
559.65	5,227	1,359
559.70	5,227	1,464
559.75	5,227	1,568
559.80	5,227	1,673
559.85	5,227	1,777
559.90	5,227	1,882
559.95	5,227	1,986
560.00	5,227	2,091
560.05	5,227	2,195
560.10	5,227	2,300
560.15	5,227	2,404
560.20	5,227	2,509
560.25	5,227	2,614
560.30	5,227	2,718
560.35	5,227	2,823
560.40	5,227	2,927
560.45	5,227	3,032
560.50	5,227	3,136
560.55	5,227	3,241
560.60	5,227	3,345
560.65	5,227	3,450
560.70	5,227	3,554
560.75	5,227	3,659
560.80	5,227	3,763
560.85	5,227	3,868
560.90	5,227	3,973
560.95	5,227	4,077
561.00	5,227	4,182
561.05	5,227	4,286
561.10	5,227	4,391
561.15	5,227	**4,495**

Summary for Pond 22P: Basin 4

Inflow Area = 49,050 sf, 84.66% Impervious, Inflow Depth = 0.89" for WQ event
Inflow = 2.78 cfs @ 1.10 hrs, Volume= 3,626 cf
Outflow = 1.13 cfs @ 1.00 hrs, Volume= 3,626 cf, Atten= 59%, Lag= 0.0 min
Discarded = 1.13 cfs @ 1.00 hrs, Volume= 3,626 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 27P : Basin 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 572.22' @ 1.23 hrs Surf.Area= 12,197 sf Storage= 1,074 cf

Plug-Flow detention time= 7.9 min calculated for 3,624 cf (100% of inflow)
Center-of-Mass det. time= 7.9 min (77.9 - 70.0)

Volume	Invert	Avail.Storage	Storage Description
#1	572.00'	14,197 cf	**Custom Stage Data (Prismatic)** Listed below 35,493 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
572.00	12,197	0	0
573.00	12,197	12,197	12,197
574.00	12,197	12,197	24,394
574.91	12,197	11,099	35,493

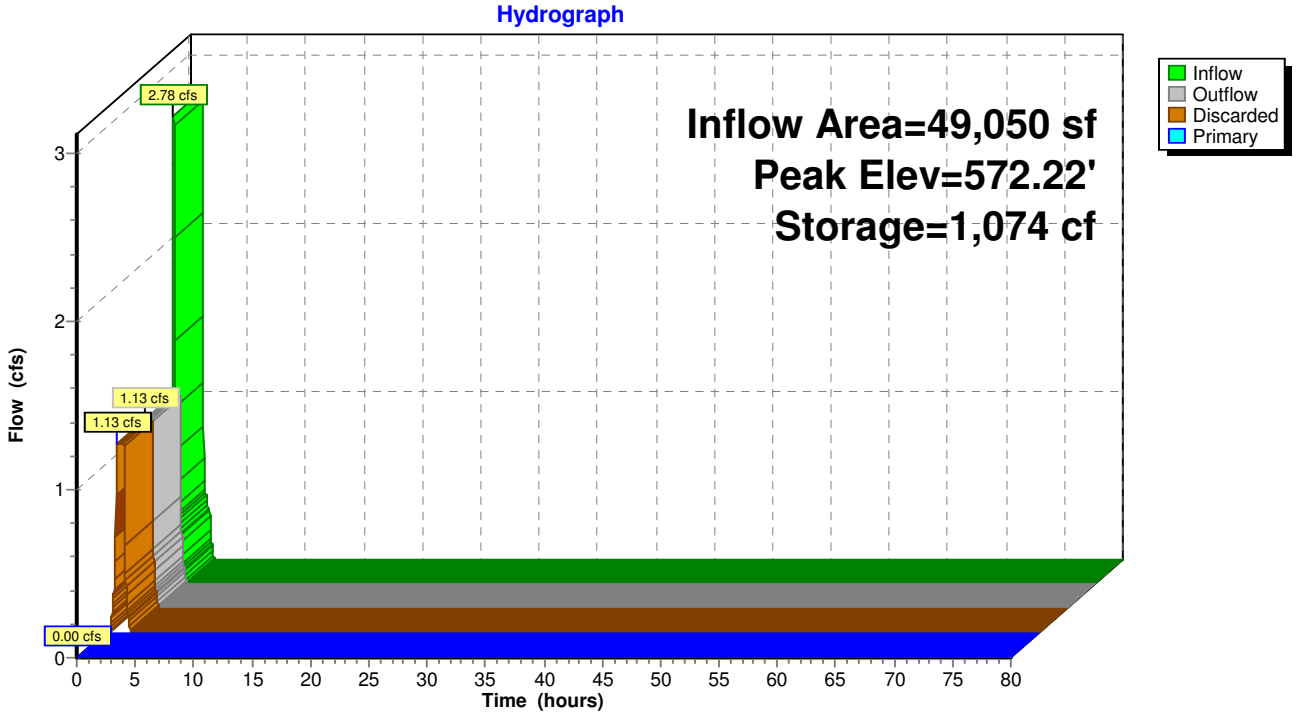
Device	Routing	Invert	Outlet Devices
#1	Primary	574.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	572.50'	**6.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Discarded	572.00'	**4.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.13 cfs @ 1.00 hrs HW=572.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 1.13 cfs)

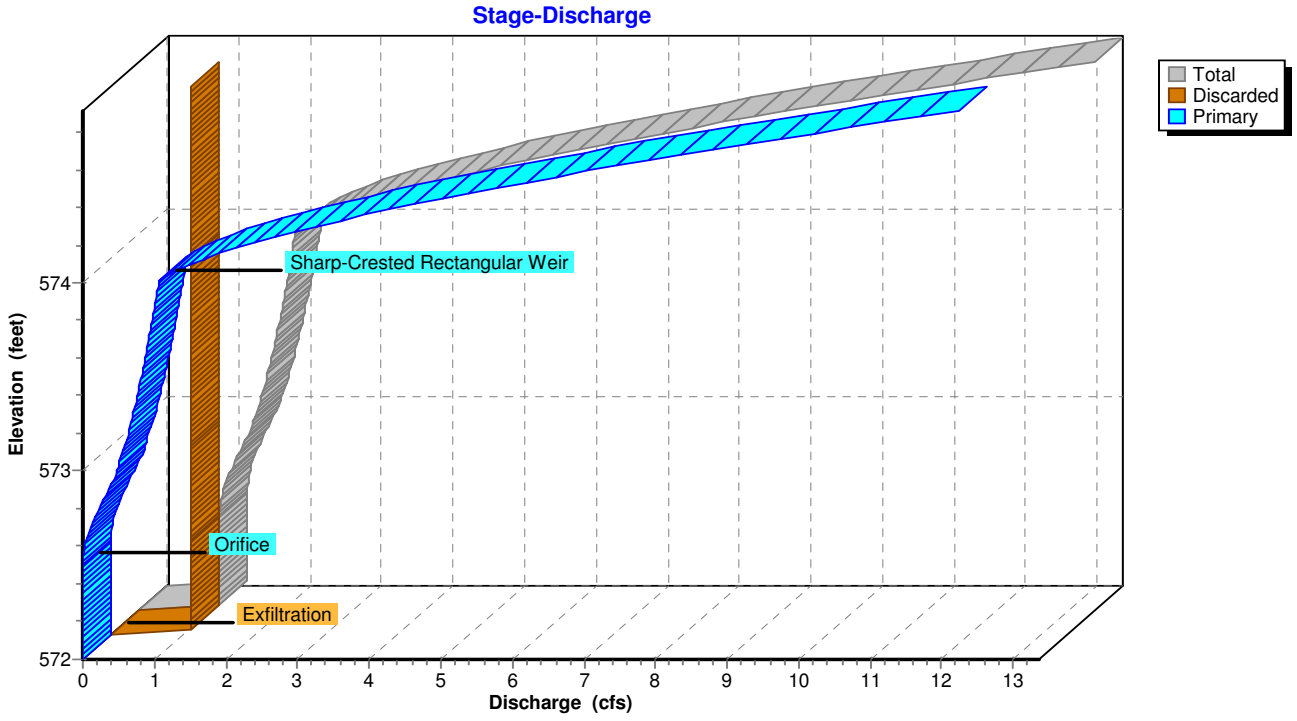
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=572.00' (Free Discharge)
├**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice** (Controls 0.00 cfs)



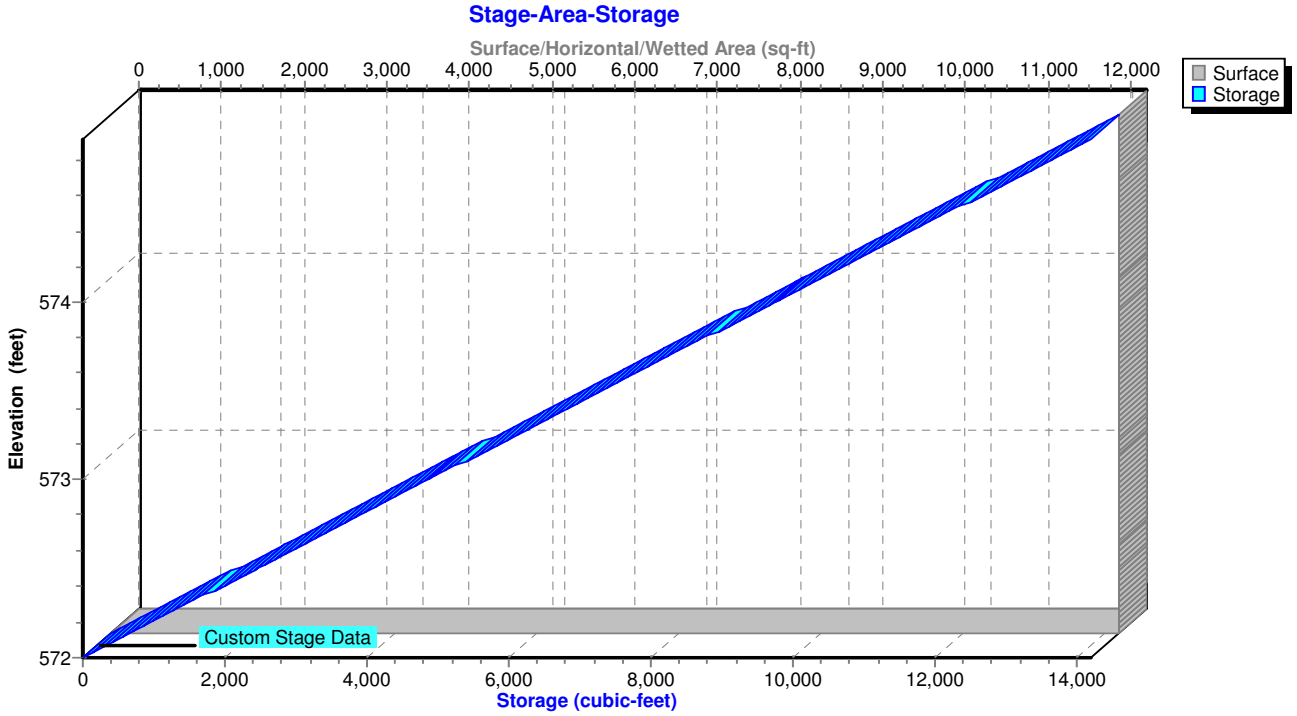
Pond 22P: Basin 4



Pond 22P: Basin 4



Pond 22P: Basin 4



Hydrograph for Pond 22P: Basin 4

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	**0.00**	**0**	**572.00**	**0.00**	**0.00**	**0.00**
2.00	**0.10**	**13**	**572.00**	**0.10**	**0.10**	0.00
4.00	0.00	0	572.00	0.00	0.00	0.00
6.00	0.00	0	572.00	0.00	0.00	0.00
8.00	0.00	0	572.00	0.00	0.00	0.00
10.00	0.00	0	572.00	0.00	0.00	0.00
12.00	0.00	0	572.00	0.00	0.00	0.00
14.00	0.00	0	572.00	0.00	0.00	0.00
16.00	0.00	0	572.00	0.00	0.00	0.00
18.00	0.00	0	572.00	0.00	0.00	0.00
20.00	0.00	0	572.00	0.00	0.00	0.00
22.00	0.00	0	572.00	0.00	0.00	0.00
24.00	0.00	0	572.00	0.00	0.00	0.00
26.00	0.00	0	572.00	0.00	0.00	0.00
28.00	0.00	0	572.00	0.00	0.00	0.00
30.00	0.00	0	572.00	0.00	0.00	0.00
32.00	0.00	0	572.00	0.00	0.00	0.00
34.00	0.00	0	572.00	0.00	0.00	0.00
36.00	0.00	0	572.00	0.00	0.00	0.00
38.00	0.00	0	572.00	0.00	0.00	0.00
40.00	0.00	0	572.00	0.00	0.00	0.00
42.00	0.00	0	572.00	0.00	0.00	0.00
44.00	0.00	0	572.00	0.00	0.00	0.00
46.00	0.00	0	572.00	0.00	0.00	0.00
48.00	0.00	0	572.00	0.00	0.00	0.00
50.00	0.00	0	572.00	0.00	0.00	0.00
52.00	0.00	0	572.00	0.00	0.00	0.00
54.00	0.00	0	572.00	0.00	0.00	0.00
56.00	0.00	0	572.00	0.00	0.00	0.00
58.00	0.00	0	572.00	0.00	0.00	0.00
60.00	0.00	0	572.00	0.00	0.00	0.00
62.00	0.00	0	572.00	0.00	0.00	0.00
64.00	0.00	0	572.00	0.00	0.00	0.00
66.00	0.00	0	572.00	0.00	0.00	0.00
68.00	0.00	0	572.00	0.00	0.00	0.00
70.00	0.00	0	572.00	0.00	0.00	0.00
72.00	0.00	0	572.00	0.00	0.00	0.00
74.00	0.00	0	572.00	0.00	0.00	0.00
76.00	0.00	0	572.00	0.00	0.00	0.00
78.00	0.00	0	572.00	0.00	0.00	0.00
80.00	0.00	0	572.00	0.00	0.00	0.00

Stage-Discharge for Pond 22P: Basin 4

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
572.00	0.00	**0.00**	0.00
572.05	1.13	**1.13**	0.00
572.10	1.13	1.13	0.00
572.15	1.13	1.13	0.00
572.20	1.13	1.13	0.00
572.25	1.13	1.13	0.00
572.30	1.13	1.13	0.00
572.35	1.13	1.13	0.00
572.40	1.13	1.13	0.00
572.45	1.13	1.13	0.00
572.50	1.13	1.13	0.00
572.55	1.14	1.13	0.01
572.60	1.16	1.13	0.03
572.65	1.19	1.13	0.07
572.70	1.24	1.13	0.11
572.75	1.30	1.13	0.17
572.80	1.36	1.13	0.23
572.85	1.43	1.13	0.30
572.90	1.49	1.13	0.36
572.95	1.55	1.13	0.43
573.00	1.60	1.13	0.47
573.05	1.65	1.13	0.52
573.10	1.69	1.13	0.56
573.15	1.73	1.13	0.60
573.20	1.76	1.13	0.63
573.25	1.80	1.13	0.67
573.30	1.83	1.13	0.70
573.35	1.86	1.13	0.73
573.40	1.89	1.13	0.76
573.45	1.92	1.13	0.79
573.50	1.95	1.13	0.82
573.55	1.97	1.13	0.85
573.60	2.00	1.13	0.87
573.65	2.03	1.13	0.90
573.70	2.05	1.13	0.92
573.75	2.07	1.13	0.95
573.80	2.10	1.13	0.97
573.85	2.12	1.13	0.99
573.90	2.14	1.13	1.01
573.95	2.17	1.13	1.04
574.00	2.19	1.13	1.06
574.05	2.35	1.13	1.22
574.10	2.64	1.13	1.51
574.15	3.00	1.13	1.87
574.20	3.43	1.13	2.30
574.25	3.90	1.13	2.77
574.30	4.42	1.13	3.29
574.35	4.99	1.13	3.86
574.40	5.59	1.13	4.46
574.45	6.22	1.13	5.09
574.50	6.89	1.13	5.76
574.55	7.59	1.13	6.46
574.60	8.31	1.13	7.18
574.65	9.06	1.13	7.93
574.70	9.84	1.13	8.71
574.75	10.64	1.13	9.51
574.80	11.47	1.13	10.34
574.85	12.31	1.13	11.18
574.90	**13.18**	1.13	**12.05**

Stage-Area-Storage for Pond 22P: Basin 4

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
572.00	**12,197**	0
572.05	12,197	244
572.10	12,197	488
572.15	12,197	732
572.20	12,197	976
572.25	12,197	1,220
572.30	12,197	1,464
572.35	12,197	1,708
572.40	12,197	1,952
572.45	12,197	2,195
572.50	12,197	2,439
572.55	12,197	2,683
572.60	12,197	2,927
572.65	12,197	3,171
572.70	12,197	3,415
572.75	12,197	3,659
572.80	12,197	3,903
572.85	12,197	4,147
572.90	12,197	4,391
572.95	12,197	4,635
573.00	12,197	4,879
573.05	12,197	5,123
573.10	12,197	5,367
573.15	12,197	5,611
573.20	12,197	5,855
573.25	12,197	6,099
573.30	12,197	6,342
573.35	12,197	6,586
573.40	12,197	6,830
573.45	12,197	7,074
573.50	12,197	7,318
573.55	12,197	7,562
573.60	12,197	7,806
573.65	12,197	8,050
573.70	12,197	8,294
573.75	12,197	8,538
573.80	12,197	8,782
573.85	12,197	9,026
573.90	12,197	9,270
573.95	12,197	9,514
574.00	12,197	9,758
574.05	12,197	10,002
574.10	12,197	10,245
574.15	12,197	10,489
574.20	12,197	10,733
574.25	12,197	10,977
574.30	12,197	11,221
574.35	12,197	11,465
574.40	12,197	11,709
574.45	12,197	11,953
574.50	12,197	12,197
574.55	12,197	12,441
574.60	12,197	12,685
574.65	12,197	12,929
574.70	12,197	13,173
574.75	12,197	13,417
574.80	12,197	13,661
574.85	12,197	13,905
574.90	12,197	**14,149**

Summary for Pond 27P: Basin 2

Inflow Area = 183,393 sf, 42.82% Impervious, Inflow Depth = 0.22" for WQ event
Inflow = 2.08 cfs @ 1.17 hrs, Volume= 3,403 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 544.63' @ 2.64 hrs Surf.Area= 26,441 sf Storage= 3,403 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	544.50'	74,059 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
544.50	26,023	0	0
546.00	30,850	42,655	42,655
547.00	31,958	31,404	74,059

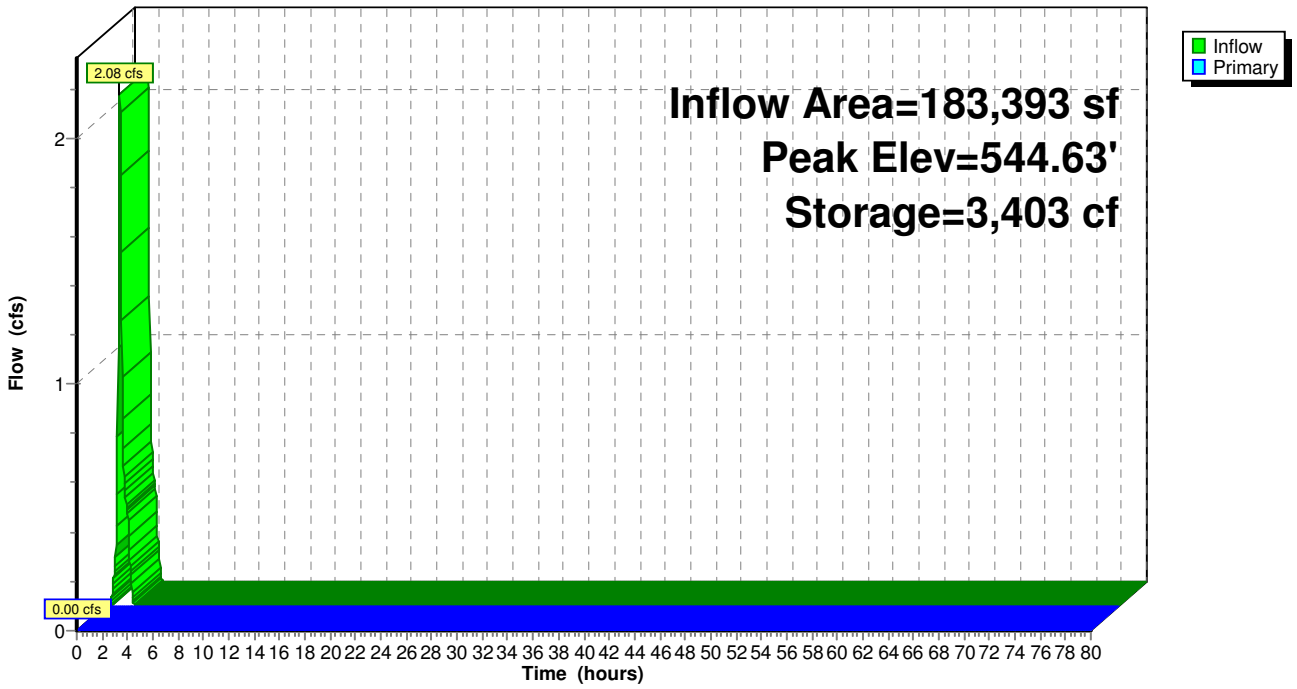
Device	Routing	Invert	Outlet Devices
#1	Primary	545.50'	**42.0" x 48.0" Horiz. Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	544.85'	**1.5' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 0.7' Crest Height

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=544.50' (Free Discharge)
1=Grate (Controls 0.00 cfs)
2=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)



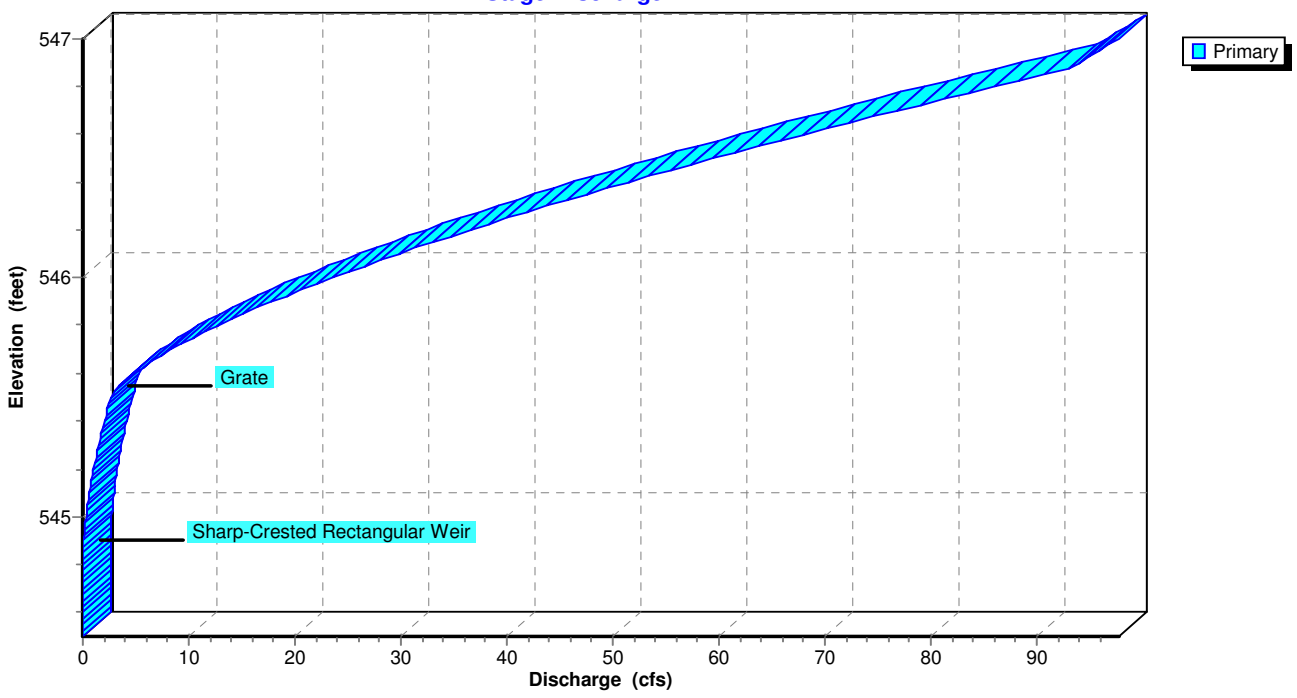
Pond 27P: Basin 2

Hydrograph

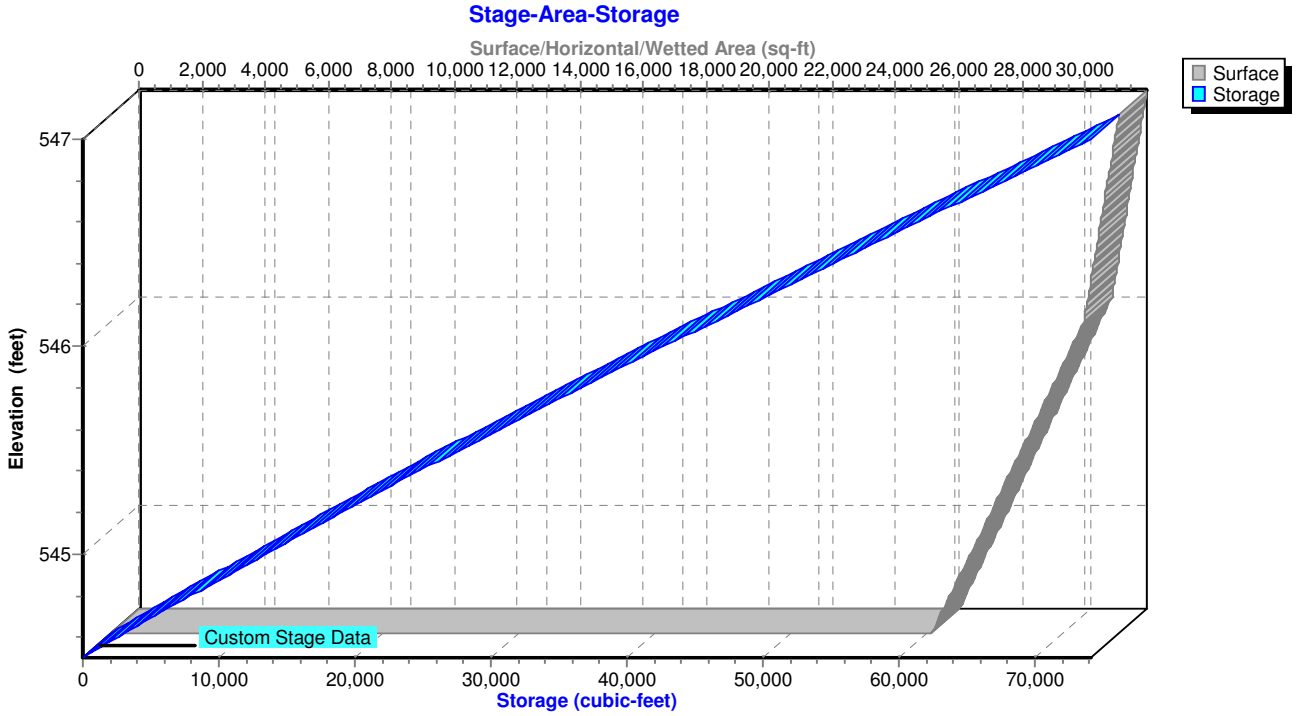


Pond 27P: Basin 2

Stage-Discharge



Pond 27P: Basin 2



Hydrograph for Pond 27P: Basin 2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	**0.00**	0	544.50	**0.00**
2.00	**0.16**	**3,320**	**544.63**	0.00
4.00	0.00	**3,403**	**544.63**	0.00
6.00	0.00	3,403	544.63	0.00
8.00	0.00	3,403	544.63	0.00
10.00	0.00	3,403	544.63	0.00
12.00	0.00	3,403	544.63	0.00
14.00	0.00	3,403	544.63	0.00
16.00	0.00	3,403	544.63	0.00
18.00	0.00	3,403	544.63	0.00
20.00	0.00	3,403	544.63	0.00
22.00	0.00	3,403	544.63	0.00
24.00	0.00	3,403	544.63	0.00
26.00	0.00	3,403	544.63	0.00
28.00	0.00	3,403	544.63	0.00
30.00	0.00	3,403	544.63	0.00
32.00	0.00	3,403	544.63	0.00
34.00	0.00	3,403	544.63	0.00
36.00	0.00	3,403	544.63	0.00
38.00	0.00	3,403	544.63	0.00
40.00	0.00	3,403	544.63	0.00
42.00	0.00	3,403	544.63	0.00
44.00	0.00	3,403	544.63	0.00
46.00	0.00	3,403	544.63	0.00
48.00	0.00	3,403	544.63	0.00
50.00	0.00	3,403	544.63	0.00
52.00	0.00	3,403	544.63	0.00
54.00	0.00	3,403	544.63	0.00
56.00	0.00	3,403	544.63	0.00
58.00	0.00	3,403	544.63	0.00
60.00	0.00	3,403	544.63	0.00
62.00	0.00	3,403	544.63	0.00
64.00	0.00	3,403	544.63	0.00
66.00	0.00	3,403	544.63	0.00
68.00	0.00	3,403	544.63	0.00
70.00	0.00	3,403	544.63	0.00
72.00	0.00	3,403	544.63	0.00
74.00	0.00	3,403	544.63	0.00
76.00	0.00	3,403	544.63	0.00
78.00	0.00	3,403	544.63	0.00
80.00	0.00	3,403	544.63	0.00

Stage-Discharge for Pond 27P: Basin 2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
544.50	0.00	545.52	2.88	546.54	62.84
544.52	0.00	545.54	3.25	546.56	64.53
544.54	0.00	545.56	3.71	546.58	66.23
544.56	0.00	545.58	4.22	546.60	67.96
544.58	0.00	545.60	4.79	546.62	69.69
544.60	0.00	545.62	5.41	546.64	71.44
544.62	0.00	545.64	6.08	546.66	73.21
544.64	0.00	545.66	6.78	546.68	74.99
544.66	0.00	545.68	7.52	546.70	76.78
544.68	0.00	545.70	8.30	546.72	78.59
544.70	0.00	545.72	9.11	546.74	80.41
544.72	0.00	545.74	9.96	546.76	82.24
544.74	0.00	545.76	10.84	546.78	84.09
544.76	0.00	545.78	11.75	546.80	85.96
544.78	0.00	545.80	12.68	546.82	87.83
544.80	0.00	545.82	13.65	546.84	89.72
544.82	0.00	545.84	14.64	546.86	91.62
544.84	0.00	545.86	15.66	546.88	93.21
544.86	0.00	545.88	16.71	546.90	93.97
544.88	0.03	545.90	17.78	546.92	94.73
544.90	0.05	545.92	18.88	546.94	95.49
544.92	0.09	545.94	20.00	546.96	96.24
544.94	0.13	545.96	21.14	546.98	96.99
544.96	0.18	545.98	22.30	547.00	**97.73**
544.98	0.23	546.00	23.49		
545.00	0.29	546.02	24.70		
545.02	0.35	546.04	25.93		
545.04	0.41	546.06	27.19		
545.06	0.48	546.08	28.46		
545.08	0.55	546.10	29.76		
545.10	0.62	546.12	31.07		
545.12	0.69	546.14	32.41		
545.14	0.77	546.16	33.76		
545.16	0.86	546.18	35.13		
545.18	0.94	546.20	36.52		
545.20	1.03	546.22	37.93		
545.22	1.12	546.24	39.36		
545.24	1.21	546.26	40.81		
545.26	1.30	546.28	42.27		
545.28	1.40	546.30	43.76		
545.30	1.50	546.32	45.26		
545.32	1.60	546.34	46.77		
545.34	1.71	546.36	48.31		
545.36	1.81	546.38	49.86		
545.38	1.92	546.40	51.42		
545.40	2.03	546.42	53.01		
545.42	2.14	546.44	54.60		
545.44	2.26	546.46	56.22		
545.46	2.38	546.48	57.85		
545.48	2.49	546.50	59.50		
545.50	2.61	546.52	61.16		

Stage-Area-Storage for Pond 27P: Basin 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
544.50	26,023	0
544.55	26,184	1,305
544.60	26,345	2,618
544.65	26,506	3,940
544.70	26,667	5,269
544.75	26,828	6,606
544.80	26,988	7,952
544.85	27,149	9,305
544.90	27,310	10,667
544.95	27,471	12,036
545.00	27,632	13,414
545.05	27,793	14,799
545.10	27,954	16,193
545.15	28,115	17,595
545.20	28,276	19,005
545.25	28,437	20,422
545.30	28,597	21,848
545.35	28,758	23,282
545.40	28,919	24,724
545.45	29,080	26,174
545.50	29,241	27,632
545.55	29,402	29,098
545.60	29,563	30,572
545.65	29,724	32,054
545.70	29,885	33,545
545.75	30,046	35,043
545.80	30,206	36,549
545.85	30,367	38,063
545.90	30,528	39,586
545.95	30,689	41,116
546.00	30,850	42,655
546.05	30,905	44,199
546.10	30,961	45,745
546.15	31,016	47,295
546.20	31,072	48,847
546.25	31,127	50,402
546.30	31,182	51,960
546.35	31,238	53,520
546.40	31,293	55,083
546.45	31,349	56,649
546.50	31,404	58,218
546.55	31,459	59,790
546.60	31,515	61,364
546.65	31,570	62,941
546.70	31,626	64,521
546.75	31,681	66,104
546.80	31,736	67,689
546.85	31,792	69,278
546.90	31,847	70,868
546.95	31,903	72,462
547.00	**31,958**	**74,059**

Summary for Pond 33P: Basin 11

Inflow Area = 84,103 sf, 71.22% Impervious, Inflow Depth = 0.77" for WQ event
Inflow = 3.64 cfs @ 1.15 hrs, Volume= 5,369 cf
Outflow = 3.13 cfs @ 1.12 hrs, Volume= 5,369 cf, Atten= 14%, Lag= 0.0 min
Discarded = 3.13 cfs @ 1.12 hrs, Volume= 5,369 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 590.05' @ 1.20 hrs Surf.Area= 13,504 sf Storage= 265 cf

Plug-Flow detention time= 0.9 min calculated for 5,366 cf (100% of inflow)
Center-of-Mass det. time= 0.9 min (75.3 - 74.4)

Volume	Invert	Avail.Storage	Storage Description
#1	590.00'	13,072 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 32,680 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
590.00	13,504	0	0
591.00	13,504	13,504	13,504
592.00	13,504	13,504	27,008
592.42	13,504	5,672	32,680

Device	Routing	Invert	Outlet Devices
#1	Primary	590.10'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Discarded	590.00'	**10.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=3.13 cfs @ 1.12 hrs HW=590.03' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 3.13 cfs)

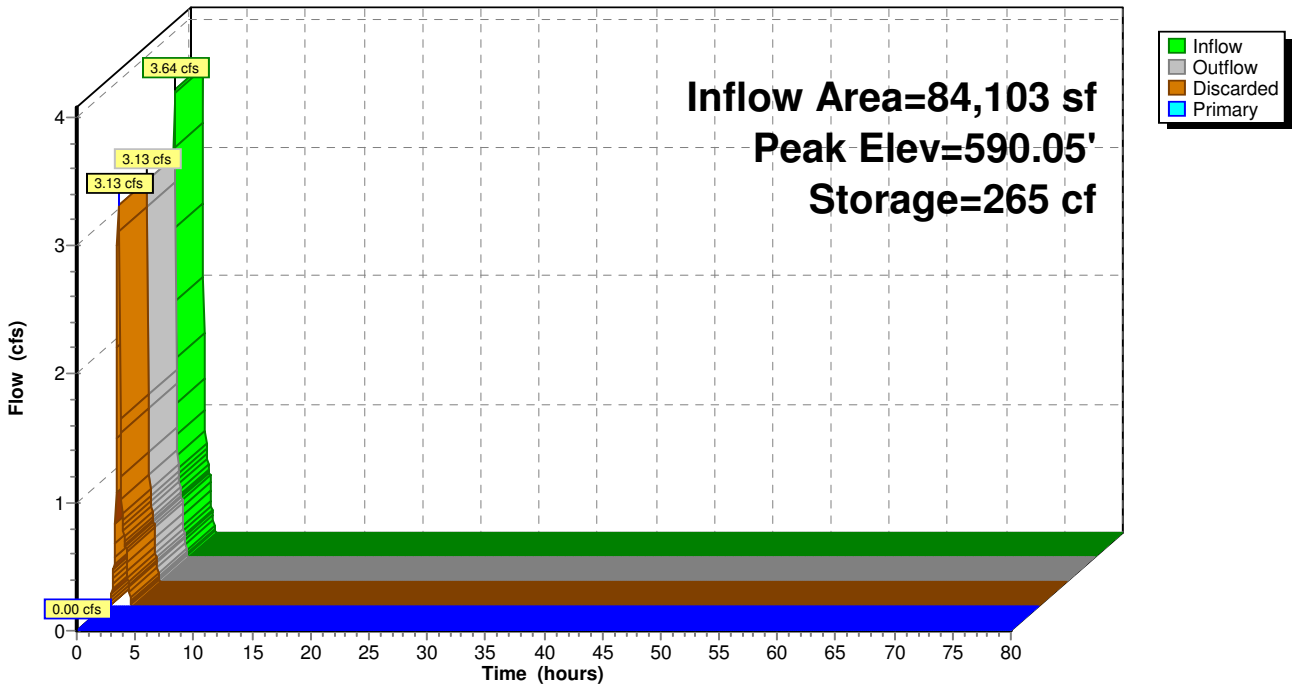
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=590.00' (Free Discharge)
↑**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 33P: Basin 11

Sharp-Crested Rectangular Weir Exfiltration

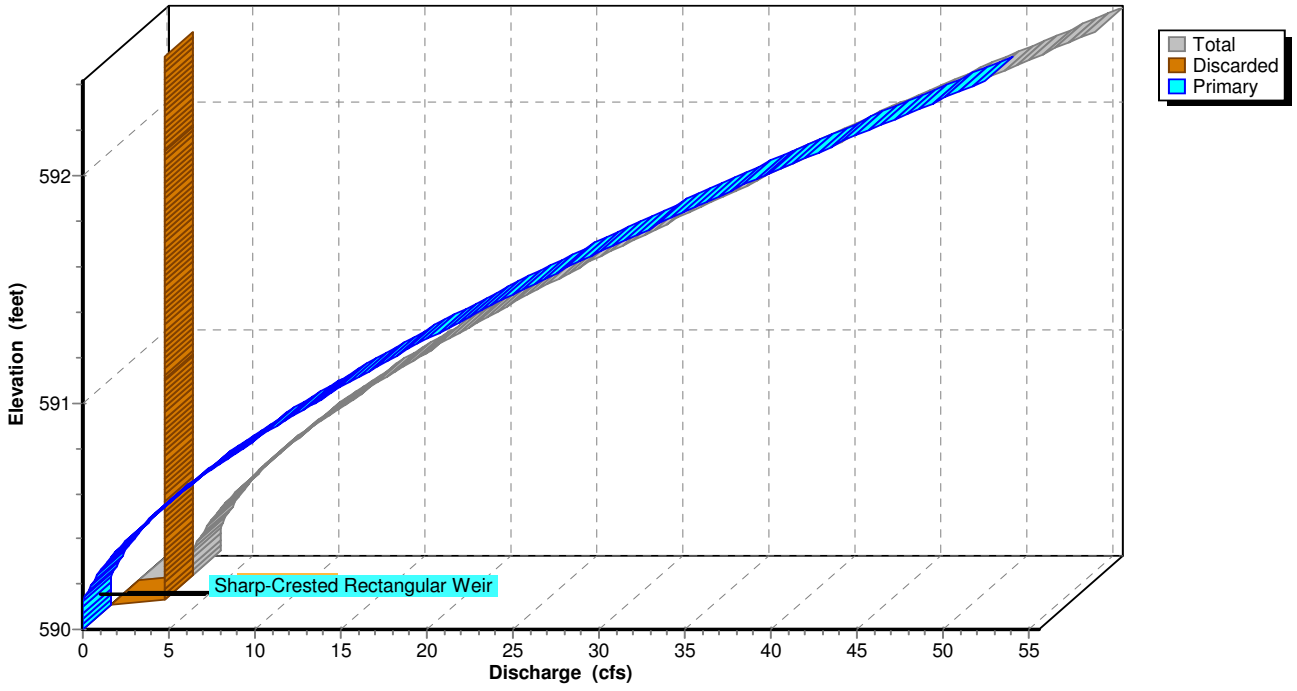
Pond 33P: Basin 11

Hydrograph

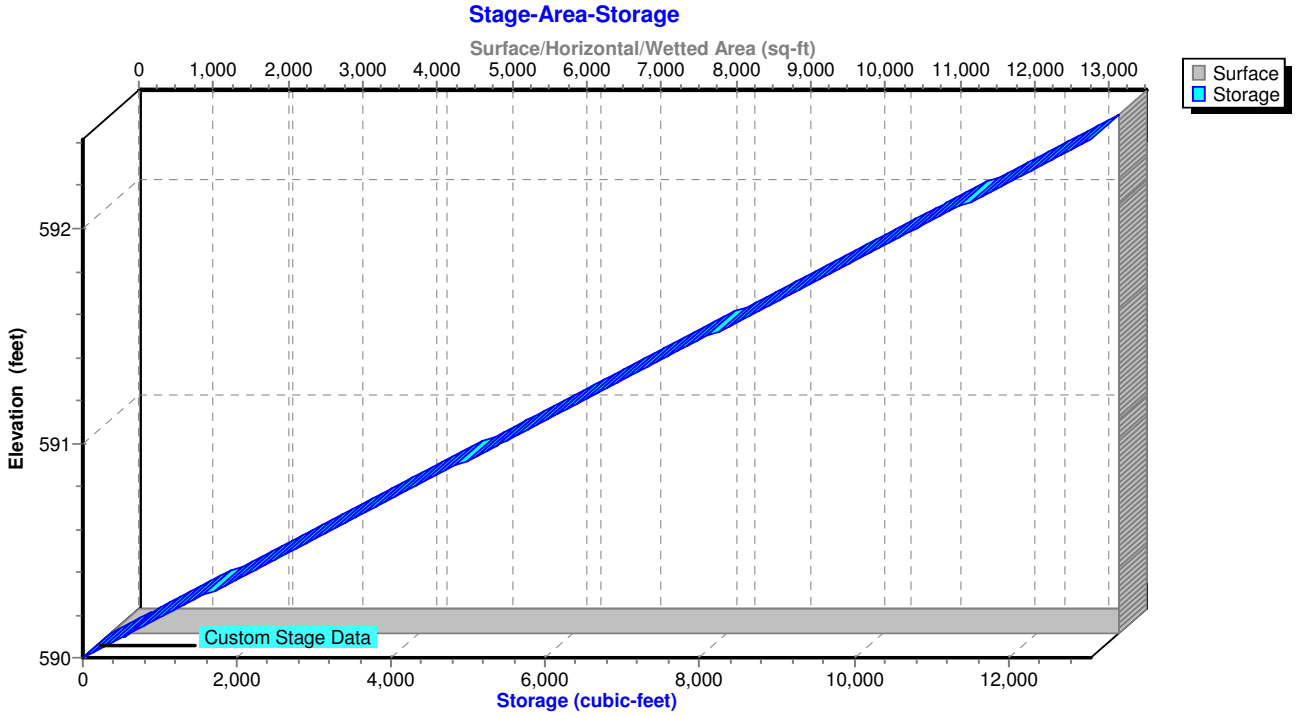


Pond 33P: Basin 11

Stage-Discharge



Pond 33P: Basin 11



Hydrograph for Pond 33P: Basin 11

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	**0.00**	**0**	**590.00**	**0.00**	**0.00**	**0.00**
2.00	**0.18**	**8**	**590.00**	**0.19**	**0.19**	0.00
4.00	0.00	0	590.00	0.00	0.00	0.00
6.00	0.00	0	590.00	0.00	0.00	0.00
8.00	0.00	0	590.00	0.00	0.00	0.00
10.00	0.00	0	590.00	0.00	0.00	0.00
12.00	0.00	0	590.00	0.00	0.00	0.00
14.00	0.00	0	590.00	0.00	0.00	0.00
16.00	0.00	0	590.00	0.00	0.00	0.00
18.00	0.00	0	590.00	0.00	0.00	0.00
20.00	0.00	0	590.00	0.00	0.00	0.00
22.00	0.00	0	590.00	0.00	0.00	0.00
24.00	0.00	0	590.00	0.00	0.00	0.00
26.00	0.00	0	590.00	0.00	0.00	0.00
28.00	0.00	0	590.00	0.00	0.00	0.00
30.00	0.00	0	590.00	0.00	0.00	0.00
32.00	0.00	0	590.00	0.00	0.00	0.00
34.00	0.00	0	590.00	0.00	0.00	0.00
36.00	0.00	0	590.00	0.00	0.00	0.00
38.00	0.00	0	590.00	0.00	0.00	0.00
40.00	0.00	0	590.00	0.00	0.00	0.00
42.00	0.00	0	590.00	0.00	0.00	0.00
44.00	0.00	0	590.00	0.00	0.00	0.00
46.00	0.00	0	590.00	0.00	0.00	0.00
48.00	0.00	0	590.00	0.00	0.00	0.00
50.00	0.00	0	590.00	0.00	0.00	0.00
52.00	0.00	0	590.00	0.00	0.00	0.00
54.00	0.00	0	590.00	0.00	0.00	0.00
56.00	0.00	0	590.00	0.00	0.00	0.00
58.00	0.00	0	590.00	0.00	0.00	0.00
60.00	0.00	0	590.00	0.00	0.00	0.00
62.00	0.00	0	590.00	0.00	0.00	0.00
64.00	0.00	0	590.00	0.00	0.00	0.00
66.00	0.00	0	590.00	0.00	0.00	0.00
68.00	0.00	0	590.00	0.00	0.00	0.00
70.00	0.00	0	590.00	0.00	0.00	0.00
72.00	0.00	0	590.00	0.00	0.00	0.00
74.00	0.00	0	590.00	0.00	0.00	0.00
76.00	0.00	0	590.00	0.00	0.00	0.00
78.00	0.00	0	590.00	0.00	0.00	0.00
80.00	0.00	0	590.00	0.00	0.00	0.00

Stage-Discharge for Pond 33P: Basin 11

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
590.00	0.00	**0.00**	0.00
590.05	3.13	**3.13**	0.00
590.10	3.13	3.13	0.00
590.15	3.31	3.13	0.18
590.20	3.64	3.13	0.51
590.25	4.07	3.13	0.94
590.30	4.58	3.13	1.45
590.35	5.15	3.13	2.02
590.40	5.78	3.13	2.65
590.45	6.46	3.13	3.34
590.50	7.20	3.13	4.07
590.55	7.97	3.13	4.85
590.60	8.79	3.13	5.66
590.65	9.65	3.13	6.52
590.70	10.54	3.13	7.42
590.75	11.47	3.13	8.35
590.80	12.43	3.13	9.31
590.85	13.43	3.13	10.30
590.90	14.45	3.13	11.32
590.95	15.50	3.13	12.38
591.00	16.58	3.13	13.46
591.05	17.69	3.13	14.56
591.10	18.82	3.13	15.70
591.15	19.98	3.13	16.85
591.20	21.16	3.13	18.03
591.25	22.36	3.13	19.24
591.30	23.59	3.13	20.46
591.35	24.83	3.13	21.71
591.40	26.10	3.13	22.97
591.45	27.39	3.13	24.26
591.50	28.69	3.13	25.57
591.55	30.02	3.13	26.89
591.60	31.36	3.13	28.23
591.65	32.72	3.13	29.59
591.70	34.10	3.13	30.97
591.75	35.49	3.13	32.37
591.80	36.90	3.13	33.78
591.85	38.33	3.13	35.20
591.90	39.77	3.13	36.64
591.95	41.22	3.13	38.10
592.00	42.69	3.13	39.57
592.05	44.17	3.13	41.05
592.10	45.67	3.13	42.55
592.15	47.18	3.13	44.05
592.20	48.70	3.13	45.58
592.25	50.24	3.13	47.11
592.30	51.78	3.13	48.66
592.35	53.34	3.13	50.21
592.40	**54.91**	3.13	**51.78**

Stage-Area-Storage for Pond 33P: Basin 11

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
590.00	**13,504**	0
590.05	13,504	270
590.10	13,504	540
590.15	13,504	810
590.20	13,504	1,080
590.25	13,504	1,350
590.30	13,504	1,620
590.35	13,504	1,891
590.40	13,504	2,161
590.45	13,504	2,431
590.50	13,504	2,701
590.55	13,504	2,971
590.60	13,504	3,241
590.65	13,504	3,511
590.70	13,504	3,781
590.75	13,504	4,051
590.80	13,504	4,321
590.85	13,504	4,591
590.90	13,504	4,861
590.95	13,504	5,132
591.00	13,504	5,402
591.05	13,504	5,672
591.10	13,504	5,942
591.15	13,504	6,212
591.20	13,504	6,482
591.25	13,504	6,752
591.30	13,504	7,022
591.35	13,504	7,292
591.40	13,504	7,562
591.45	13,504	7,832
591.50	13,504	8,102
591.55	13,504	8,372
591.60	13,504	8,643
591.65	13,504	8,913
591.70	13,504	9,183
591.75	13,504	9,453
591.80	13,504	9,723
591.85	13,504	9,993
591.90	13,504	10,263
591.95	13,504	10,533
592.00	13,504	10,803
592.05	13,504	11,073
592.10	13,504	11,343
592.15	13,504	11,613
592.20	13,504	11,884
592.25	13,504	12,154
592.30	13,504	12,424
592.35	13,504	12,694
592.40	13,504	**12,964**

Summary for Pond 41P: Basin 10

Inflow Area = 90,349 sf, 58.79% Impervious, Inflow Depth = 0.64" for WQ event
Inflow = 3.15 cfs @ 1.16 hrs, Volume= 4,849 cf
Outflow = 2.22 cfs @ 1.12 hrs, Volume= 4,849 cf, Atten= 30%, Lag= 0.0 min
Discarded = 2.22 cfs @ 1.12 hrs, Volume= 4,849 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 576.07' @ 1.26 hrs Surf.Area= 9,583 sf Storage= 654 cf

Plug-Flow detention time= 3.0 min calculated for 4,846 cf (100% of inflow)
Center-of-Mass det. time= 3.0 min (78.6 - 75.6)

Volume	Invert	Avail.Storage	Storage Description
#1	576.00'	28,749 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
576.00	9,583	0	0
577.00	9,583	9,583	9,583
578.00	9,583	9,583	19,166
579.00	9,583	9,583	28,749

Device	Routing	Invert	Outlet Devices
#1	Primary	577.50'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	576.25'	**42.0" W x 12.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Discarded	576.00'	**10.000 in/hr Exfiltration over Surface area**

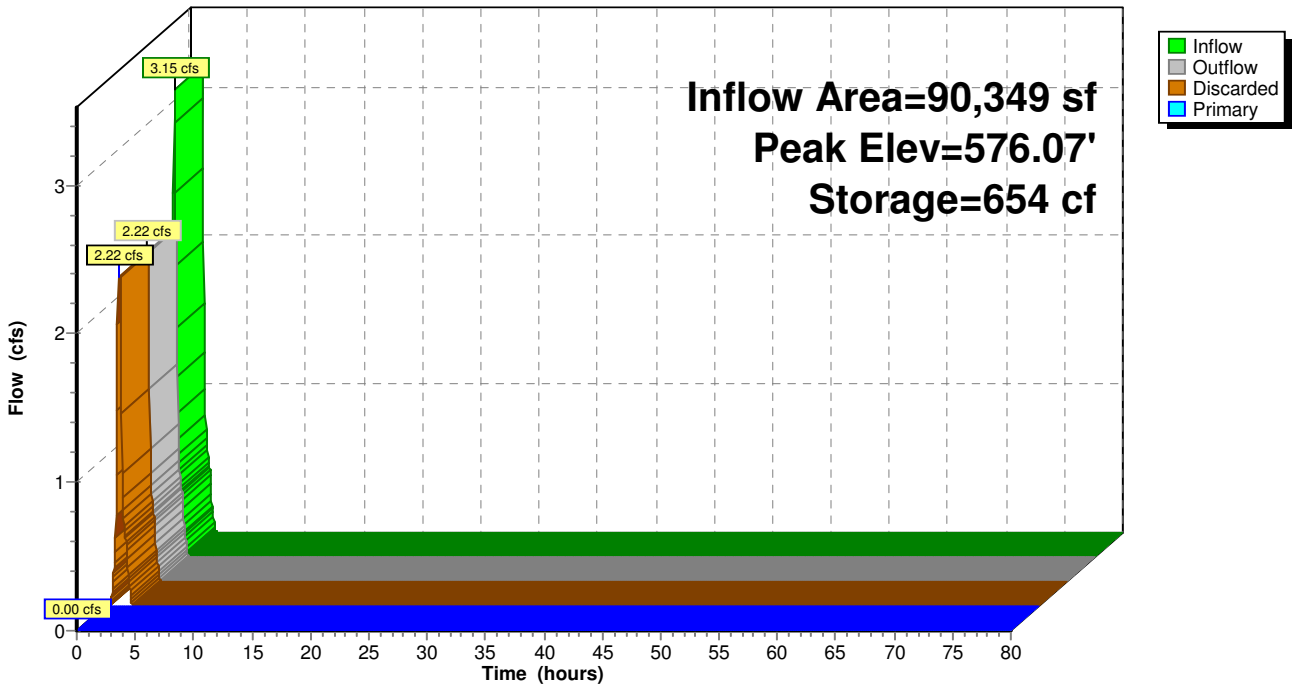
Discarded OutFlow Max=2.22 cfs @ 1.12 hrs HW=576.04' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 2.22 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=576.00' (Free Discharge)
├**1=Orifice/Grate** (Controls 0.00 cfs)
└**2=Orifice/Grate** (Controls 0.00 cfs)



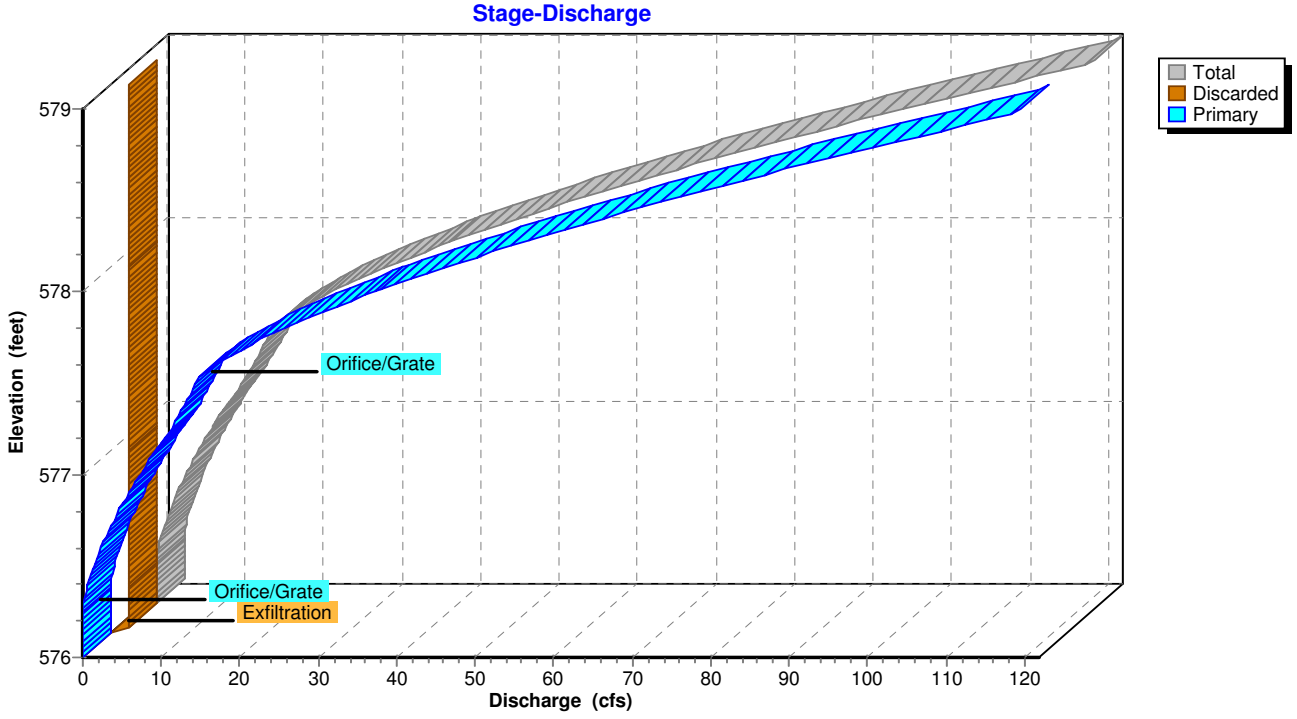
Pond 41P: Basin 10

Hydrograph

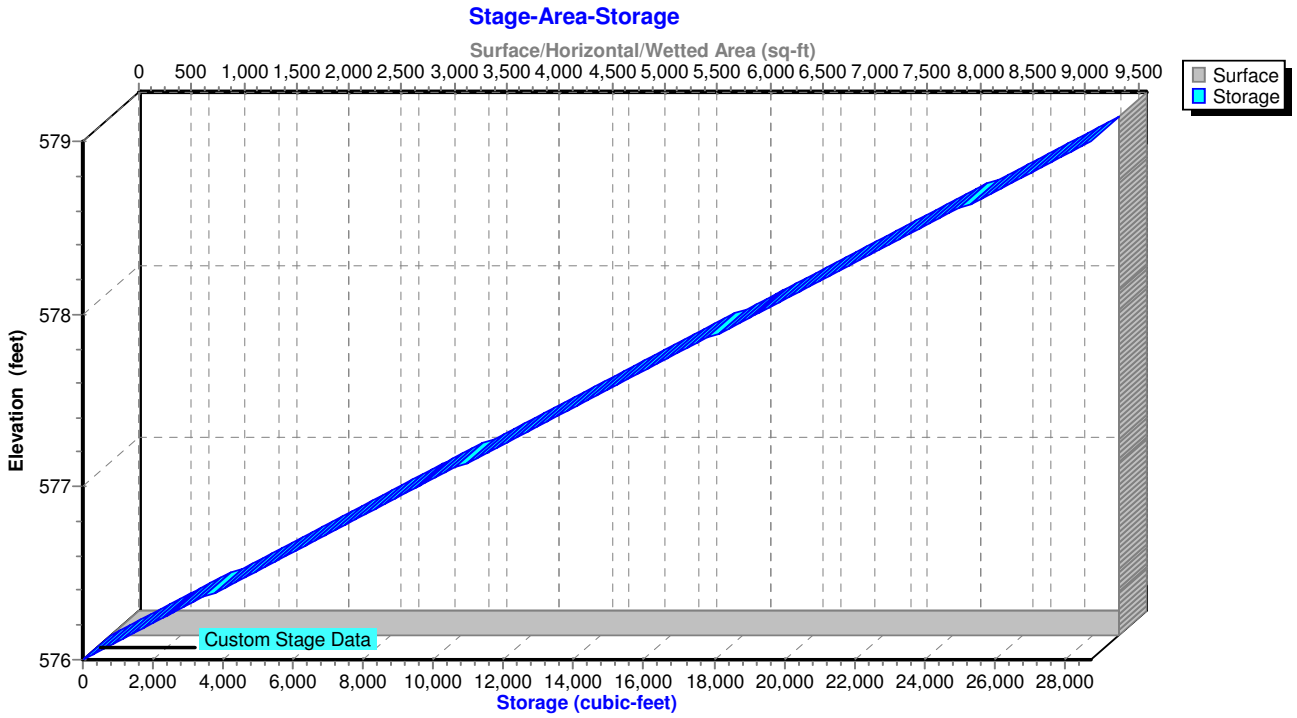


Pond 41P: Basin 10

Stage-Discharge



Pond 41P: Basin 10



Hydrograph for Pond 41P: Basin 10

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	**0.00**	**0**	**576.00**	**0.00**	**0.00**	**0.00**
2.00	**0.18**	**28**	**576.00**	**0.21**	**0.21**	0.00
4.00	0.00	0	576.00	0.00	0.00	0.00
6.00	0.00	0	576.00	0.00	0.00	0.00
8.00	0.00	0	576.00	0.00	0.00	0.00
10.00	0.00	0	576.00	0.00	0.00	0.00
12.00	0.00	0	576.00	0.00	0.00	0.00
14.00	0.00	0	576.00	0.00	0.00	0.00
16.00	0.00	0	576.00	0.00	0.00	0.00
18.00	0.00	0	576.00	0.00	0.00	0.00
20.00	0.00	0	576.00	0.00	0.00	0.00
22.00	0.00	0	576.00	0.00	0.00	0.00
24.00	0.00	0	576.00	0.00	0.00	0.00
26.00	0.00	0	576.00	0.00	0.00	0.00
28.00	0.00	0	576.00	0.00	0.00	0.00
30.00	0.00	0	576.00	0.00	0.00	0.00
32.00	0.00	0	576.00	0.00	0.00	0.00
34.00	0.00	0	576.00	0.00	0.00	0.00
36.00	0.00	0	576.00	0.00	0.00	0.00
38.00	0.00	0	576.00	0.00	0.00	0.00
40.00	0.00	0	576.00	0.00	0.00	0.00
42.00	0.00	0	576.00	0.00	0.00	0.00
44.00	0.00	0	576.00	0.00	0.00	0.00
46.00	0.00	0	576.00	0.00	0.00	0.00
48.00	0.00	0	576.00	0.00	0.00	0.00
50.00	0.00	0	576.00	0.00	0.00	0.00
52.00	0.00	0	576.00	0.00	0.00	0.00
54.00	0.00	0	576.00	0.00	0.00	0.00
56.00	0.00	0	576.00	0.00	0.00	0.00
58.00	0.00	0	576.00	0.00	0.00	0.00
60.00	0.00	0	576.00	0.00	0.00	0.00
62.00	0.00	0	576.00	0.00	0.00	0.00
64.00	0.00	0	576.00	0.00	0.00	0.00
66.00	0.00	0	576.00	0.00	0.00	0.00
68.00	0.00	0	576.00	0.00	0.00	0.00
70.00	0.00	0	576.00	0.00	0.00	0.00
72.00	0.00	0	576.00	0.00	0.00	0.00
74.00	0.00	0	576.00	0.00	0.00	0.00
76.00	0.00	0	576.00	0.00	0.00	0.00
78.00	0.00	0	576.00	0.00	0.00	0.00
80.00	0.00	0	576.00	0.00	0.00	0.00

Stage-Discharge for Pond 41P: Basin 10

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
576.00	0.00	**0.00**	0.00
576.05	2.22	**2.22**	0.00
576.10	2.22	2.22	0.00
576.15	2.22	2.22	0.00
576.20	2.22	2.22	0.00
576.25	2.22	2.22	0.00
576.30	2.34	2.22	0.13
576.35	2.57	2.22	0.36
576.40	2.87	2.22	0.65
576.45	3.22	2.22	1.00
576.50	3.62	2.22	1.40
576.55	4.06	2.22	1.85
576.60	4.54	2.22	2.33
576.65	5.06	2.22	2.84
576.70	5.61	2.22	3.39
576.75	6.19	2.22	3.97
576.80	6.80	2.22	4.58
576.85	7.44	2.22	5.22
576.90	8.11	2.22	5.89
576.95	8.80	2.22	6.58
577.00	9.52	2.22	7.30
577.05	10.26	2.22	8.04
577.10	11.02	2.22	8.80
577.15	11.81	2.22	9.59
577.20	12.62	2.22	10.40
577.25	13.45	2.22	11.23
577.30	14.18	2.22	11.96
577.35	14.82	2.22	12.61
577.40	15.42	2.22	13.20
577.45	15.98	2.22	13.76
577.50	16.52	2.22	14.30
577.55	17.61	2.22	15.39
577.60	19.17	2.22	16.95
577.65	21.03	2.22	18.81
577.70	23.12	2.22	20.90
577.75	25.43	2.22	23.21
577.80	27.91	2.22	25.69
577.85	30.57	2.22	28.35
577.90	33.38	2.22	31.16
577.95	36.33	2.22	34.12
578.00	39.43	2.22	37.21
578.05	42.65	2.22	40.43
578.10	46.00	2.22	43.78
578.15	49.47	2.22	47.25
578.20	53.05	2.22	50.83
578.25	56.74	2.22	54.53
578.30	60.54	2.22	58.33
578.35	64.45	2.22	62.23
578.40	68.45	2.22	66.23
578.45	72.56	2.22	70.34
578.50	76.75	2.22	74.54
578.55	81.05	2.22	78.83
578.60	85.43	2.22	83.21
578.65	89.90	2.22	87.68
578.70	94.46	2.22	92.24
578.75	99.11	2.22	96.89
578.80	103.84	2.22	101.62
578.85	108.65	2.22	106.43
578.90	113.54	2.22	111.32
578.95	118.51	2.22	116.29
579.00	**121.80**	2.22	**119.58**

Stage-Area-Storage for Pond 41P: Basin 10

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
576.00	**9,583**	0
576.05	9,583	479
576.10	9,583	958
576.15	9,583	1,437
576.20	9,583	1,917
576.25	9,583	2,396
576.30	9,583	2,875
576.35	9,583	3,354
576.40	9,583	3,833
576.45	9,583	4,312
576.50	9,583	4,792
576.55	9,583	5,271
576.60	9,583	5,750
576.65	9,583	6,229
576.70	9,583	6,708
576.75	9,583	7,187
576.80	9,583	7,666
576.85	9,583	8,146
576.90	9,583	8,625
576.95	9,583	9,104
577.00	9,583	9,583
577.05	9,583	10,062
577.10	9,583	10,541
577.15	9,583	11,020
577.20	9,583	11,500
577.25	9,583	11,979
577.30	9,583	12,458
577.35	9,583	12,937
577.40	9,583	13,416
577.45	9,583	13,895
577.50	9,583	14,375
577.55	9,583	14,854
577.60	9,583	15,333
577.65	9,583	15,812
577.70	9,583	16,291
577.75	9,583	16,770
577.80	9,583	17,249
577.85	9,583	17,729
577.90	9,583	18,208
577.95	9,583	18,687
578.00	9,583	19,166
578.05	9,583	19,645
578.10	9,583	20,124
578.15	9,583	20,603
578.20	9,583	21,083
578.25	9,583	21,562
578.30	9,583	22,041
578.35	9,583	22,520
578.40	9,583	22,999
578.45	9,583	23,478
578.50	9,583	23,958
578.55	9,583	24,437
578.60	9,583	24,916
578.65	9,583	25,395
578.70	9,583	25,874
578.75	9,583	26,353
578.80	9,583	26,832
578.85	9,583	27,312
578.90	9,583	27,791
578.95	9,583	28,270
579.00	9,583	**28,749**

Summary for Pond 42P: Basin 9

Inflow Area = 26,377 sf, 66.20% Impervious, Inflow Depth = 0.73" for WQ event
Inflow = 1.17 cfs @ 1.12 hrs, Volume= 1,605 cf
Outflow = 0.61 cfs @ 1.04 hrs, Volume= 1,605 cf, Atten= 48%, Lag= 0.0 min
Discarded = 0.61 cfs @ 1.04 hrs, Volume= 1,605 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 562.13' @ 1.25 hrs Surf.Area= 6,534 sf Storage= 344 cf

Plug-Flow detention time= 4.7 min calculated for 1,604 cf (100% of inflow)
Center-of-Mass det. time= 4.7 min (77.1 - 72.4)

Volume	Invert	Avail.Storage	Storage Description
#1	562.00'	6,325 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 15,812 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
562.00	6,534	0	0
563.00	6,534	6,534	6,534
564.00	6,534	6,534	13,068
564.42	6,534	2,744	15,812

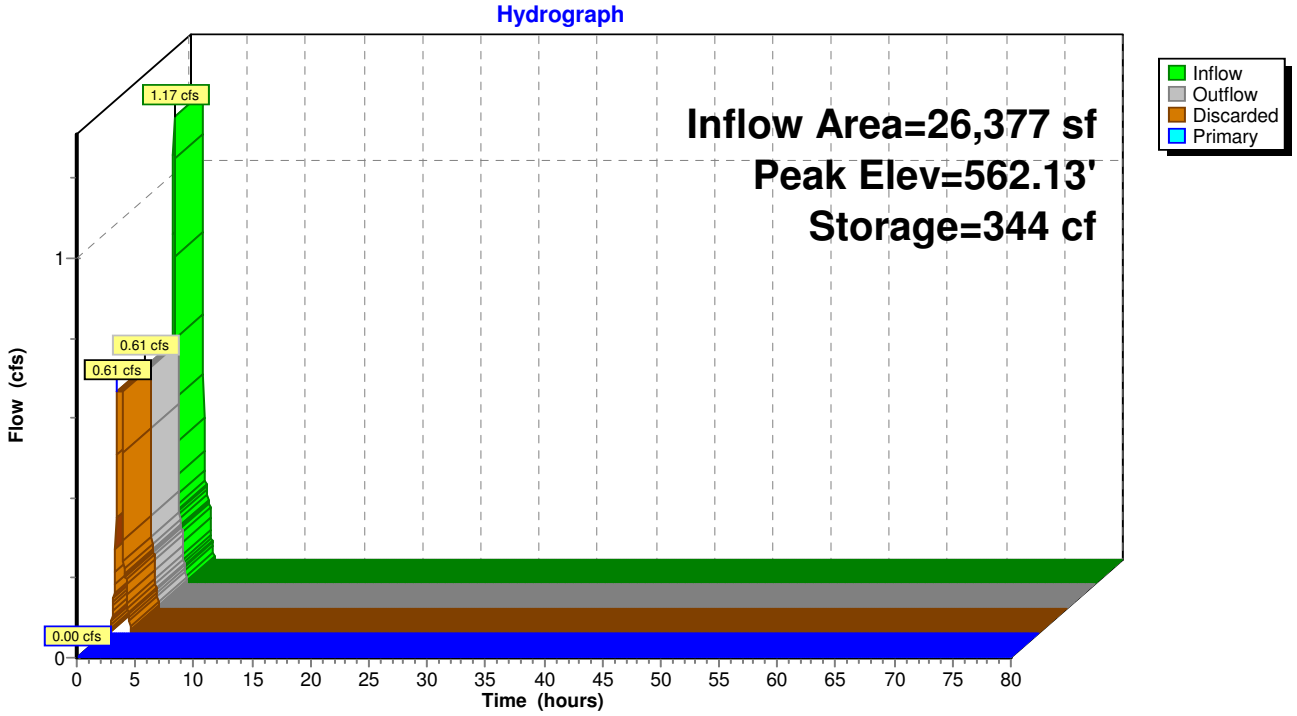
Device	Routing	Invert	Outlet Devices
#1	Primary	564.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	563.00'	**3.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Discarded	562.00'	**4.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.61 cfs @ 1.04 hrs HW=562.03' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.61 cfs)

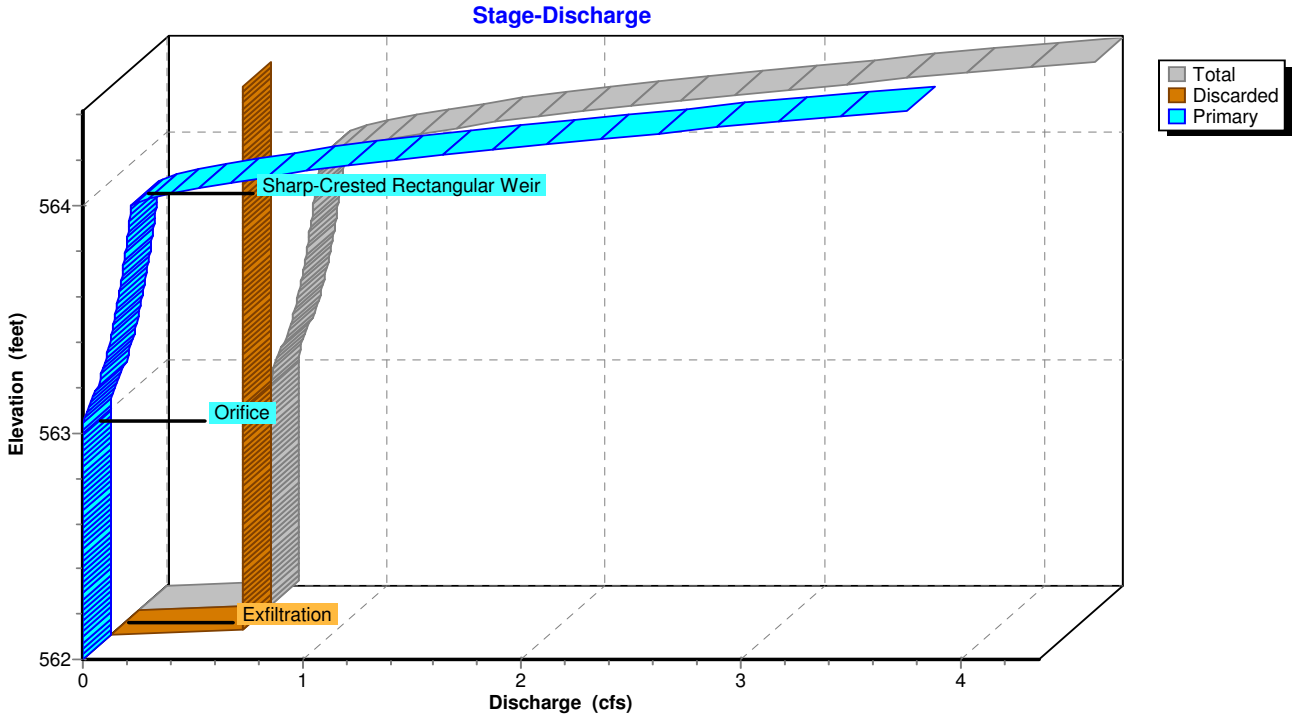
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=562.00' (Free Discharge)
├**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice** (Controls 0.00 cfs)



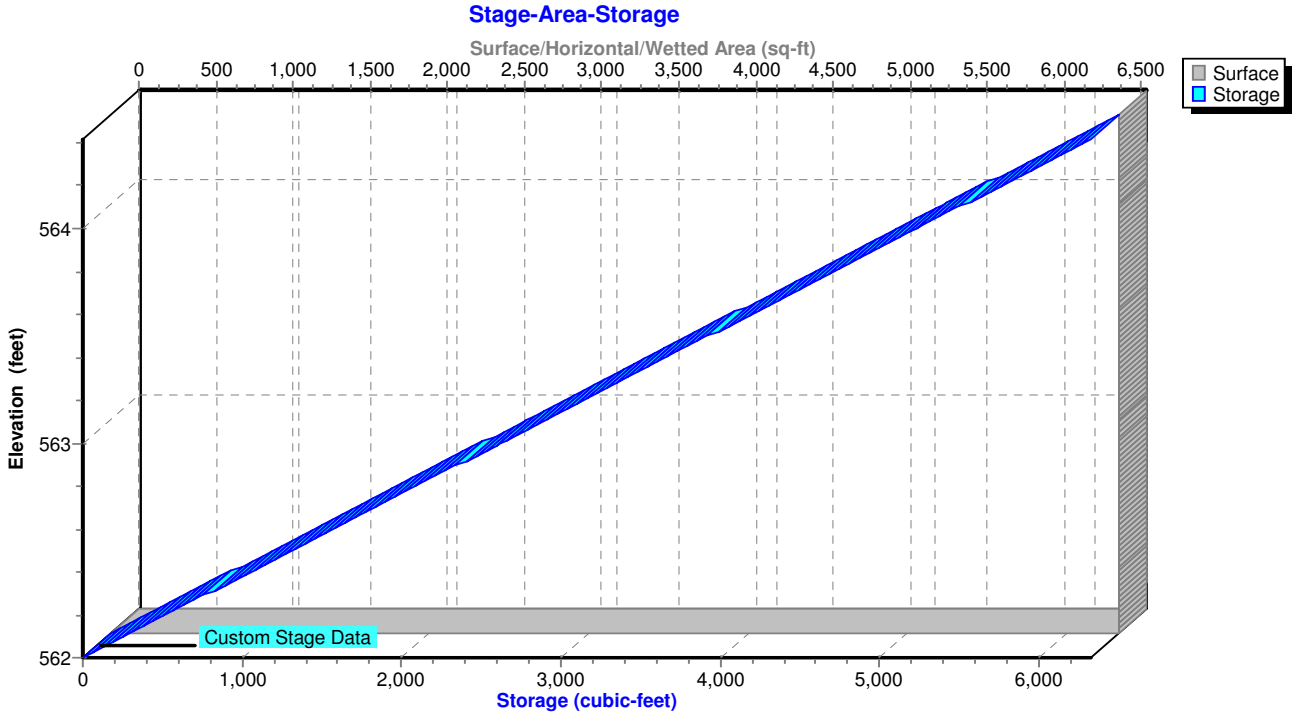
Pond 42P: Basin 9



Pond 42P: Basin 9



Pond 42P: Basin 9



Hydrograph for Pond 42P: Basin 9

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	**0.00**	**0**	**562.00**	**0.00**	**0.00**	**0.00**
2.00	**0.05**	**5**	**562.00**	**0.05**	**0.05**	0.00
4.00	0.00	0	562.00	0.00	0.00	0.00
6.00	0.00	0	562.00	0.00	0.00	0.00
8.00	0.00	0	562.00	0.00	0.00	0.00
10.00	0.00	0	562.00	0.00	0.00	0.00
12.00	0.00	0	562.00	0.00	0.00	0.00
14.00	0.00	0	562.00	0.00	0.00	0.00
16.00	0.00	0	562.00	0.00	0.00	0.00
18.00	0.00	0	562.00	0.00	0.00	0.00
20.00	0.00	0	562.00	0.00	0.00	0.00
22.00	0.00	0	562.00	0.00	0.00	0.00
24.00	0.00	0	562.00	0.00	0.00	0.00
26.00	0.00	0	562.00	0.00	0.00	0.00
28.00	0.00	0	562.00	0.00	0.00	0.00
30.00	0.00	0	562.00	0.00	0.00	0.00
32.00	0.00	0	562.00	0.00	0.00	0.00
34.00	0.00	0	562.00	0.00	0.00	0.00
36.00	0.00	0	562.00	0.00	0.00	0.00
38.00	0.00	0	562.00	0.00	0.00	0.00
40.00	0.00	0	562.00	0.00	0.00	0.00
42.00	0.00	0	562.00	0.00	0.00	0.00
44.00	0.00	0	562.00	0.00	0.00	0.00
46.00	0.00	0	562.00	0.00	0.00	0.00
48.00	0.00	0	562.00	0.00	0.00	0.00
50.00	0.00	0	562.00	0.00	0.00	0.00
52.00	0.00	0	562.00	0.00	0.00	0.00
54.00	0.00	0	562.00	0.00	0.00	0.00
56.00	0.00	0	562.00	0.00	0.00	0.00
58.00	0.00	0	562.00	0.00	0.00	0.00
60.00	0.00	0	562.00	0.00	0.00	0.00
62.00	0.00	0	562.00	0.00	0.00	0.00
64.00	0.00	0	562.00	0.00	0.00	0.00
66.00	0.00	0	562.00	0.00	0.00	0.00
68.00	0.00	0	562.00	0.00	0.00	0.00
70.00	0.00	0	562.00	0.00	0.00	0.00
72.00	0.00	0	562.00	0.00	0.00	0.00
74.00	0.00	0	562.00	0.00	0.00	0.00
76.00	0.00	0	562.00	0.00	0.00	0.00
78.00	0.00	0	562.00	0.00	0.00	0.00
80.00	0.00	0	562.00	0.00	0.00	0.00

Stage-Discharge for Pond 42P: Basin 9

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
562.00	0.00	**0.00**	0.00
562.05	0.61	**0.61**	0.00
562.10	0.61	0.61	0.00
562.15	0.61	0.61	0.00
562.20	0.61	0.61	0.00
562.25	0.61	0.61	0.00
562.30	0.61	0.61	0.00
562.35	0.61	0.61	0.00
562.40	0.61	0.61	0.00
562.45	0.61	0.61	0.00
562.50	0.61	0.61	0.00
562.55	0.61	0.61	0.00
562.60	0.61	0.61	0.00
562.65	0.61	0.61	0.00
562.70	0.61	0.61	0.00
562.75	0.61	0.61	0.00
562.80	0.61	0.61	0.00
562.85	0.61	0.61	0.00
562.90	0.61	0.61	0.00
562.95	0.61	0.61	0.00
563.00	0.61	0.61	0.00
563.05	0.61	0.61	0.01
563.10	0.62	0.61	0.02
563.15	0.65	0.61	0.04
563.20	0.67	0.61	0.06
563.25	0.69	0.61	0.08
563.30	0.70	0.61	0.10
563.35	0.72	0.61	0.11
563.40	0.73	0.61	0.12
563.45	0.74	0.61	0.13
563.50	0.75	0.61	0.14
563.55	0.76	0.61	0.15
563.60	0.77	0.61	0.16
563.65	0.78	0.61	0.17
563.70	0.78	0.61	0.18
563.75	0.79	0.61	0.19
563.80	0.80	0.61	0.19
563.85	0.81	0.61	0.20
563.90	0.81	0.61	0.21
563.95	0.82	0.61	0.21
564.00	0.83	0.61	0.22
564.05	0.98	0.61	0.37
564.10	1.25	0.61	0.64
564.15	1.60	0.61	0.99
564.20	2.01	0.61	1.40
564.25	2.47	0.61	1.87
564.30	2.98	0.61	2.37
564.35	3.53	0.61	2.92
564.40	**4.11**	0.61	**3.51**

Stage-Area-Storage for Pond 42P: Basin 9

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
562.00	**6,534**	0
562.05	6,534	131
562.10	6,534	261
562.15	6,534	392
562.20	6,534	523
562.25	6,534	653
562.30	6,534	784
562.35	6,534	915
562.40	6,534	1,045
562.45	6,534	1,176
562.50	6,534	1,307
562.55	6,534	1,437
562.60	6,534	1,568
562.65	6,534	1,699
562.70	6,534	1,830
562.75	6,534	1,960
562.80	6,534	2,091
562.85	6,534	2,222
562.90	6,534	2,352
562.95	6,534	2,483
563.00	6,534	2,614
563.05	6,534	2,744
563.10	6,534	2,875
563.15	6,534	3,006
563.20	6,534	3,136
563.25	6,534	3,267
563.30	6,534	3,398
563.35	6,534	3,528
563.40	6,534	3,659
563.45	6,534	3,790
563.50	6,534	3,920
563.55	6,534	4,051
563.60	6,534	4,182
563.65	6,534	4,312
563.70	6,534	4,443
563.75	6,534	4,574
563.80	6,534	4,704
563.85	6,534	4,835
563.90	6,534	4,966
563.95	6,534	5,097
564.00	6,534	5,227
564.05	6,534	5,358
564.10	6,534	5,489
564.15	6,534	5,619
564.20	6,534	5,750
564.25	6,534	5,881
564.30	6,534	6,011
564.35	6,534	6,142
564.40	6,534	**6,273**

Summary for Pond 48P: Basin 8

Inflow Area = 61,044 sf, 62.67% Impervious, Inflow Depth = 0.69" for WQ event
Inflow = 2.45 cfs @ 1.13 hrs, Volume= 3,521 cf
Outflow = 2.37 cfs @ 1.14 hrs, Volume= 3,521 cf, Atten= 3%, Lag= 0.6 min
Discarded = 2.37 cfs @ 1.14 hrs, Volume= 3,521 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 49P : Basin 7

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 573.03' @ 1.15 hrs Surf.Area= 10,019 sf Storage= 128 cf

Plug-Flow detention time= 0.9 min calculated for 3,519 cf (100% of inflow)
Center-of-Mass det. time= 0.9 min (74.5 - 73.6)

Volume	Invert	Avail.Storage	Storage Description
#1	573.00'	12,023 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 30,057 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
573.00	10,019	0	0
574.00	10,019	10,019	10,019
575.00	10,019	10,019	20,038
576.00	10,019	10,019	30,057

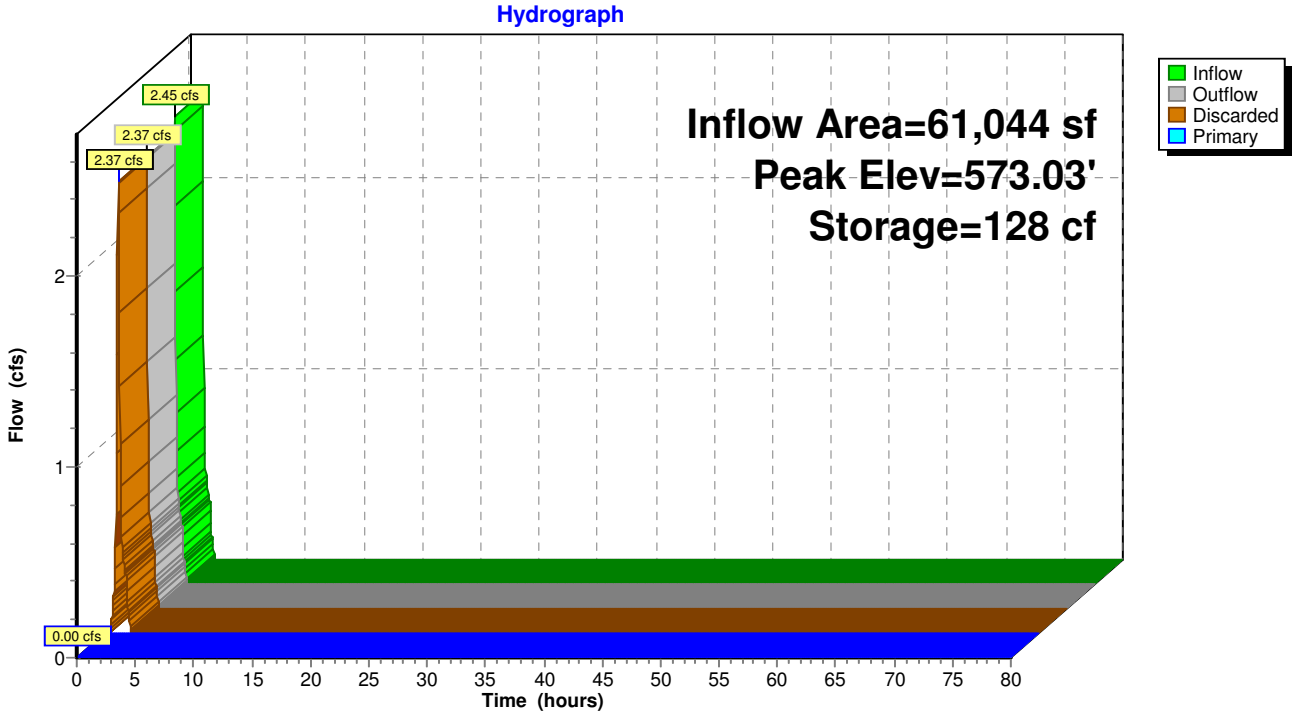
Device	Routing	Invert	Outlet Devices
#1	Primary	575.00'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	573.45'	**6.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Discarded	573.00'	**10.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 571.00'

Discarded OutFlow Max=2.36 cfs @ 1.14 hrs HW=573.03' (Free Discharge)
└**3=Exfiltration** (Controls 2.36 cfs)

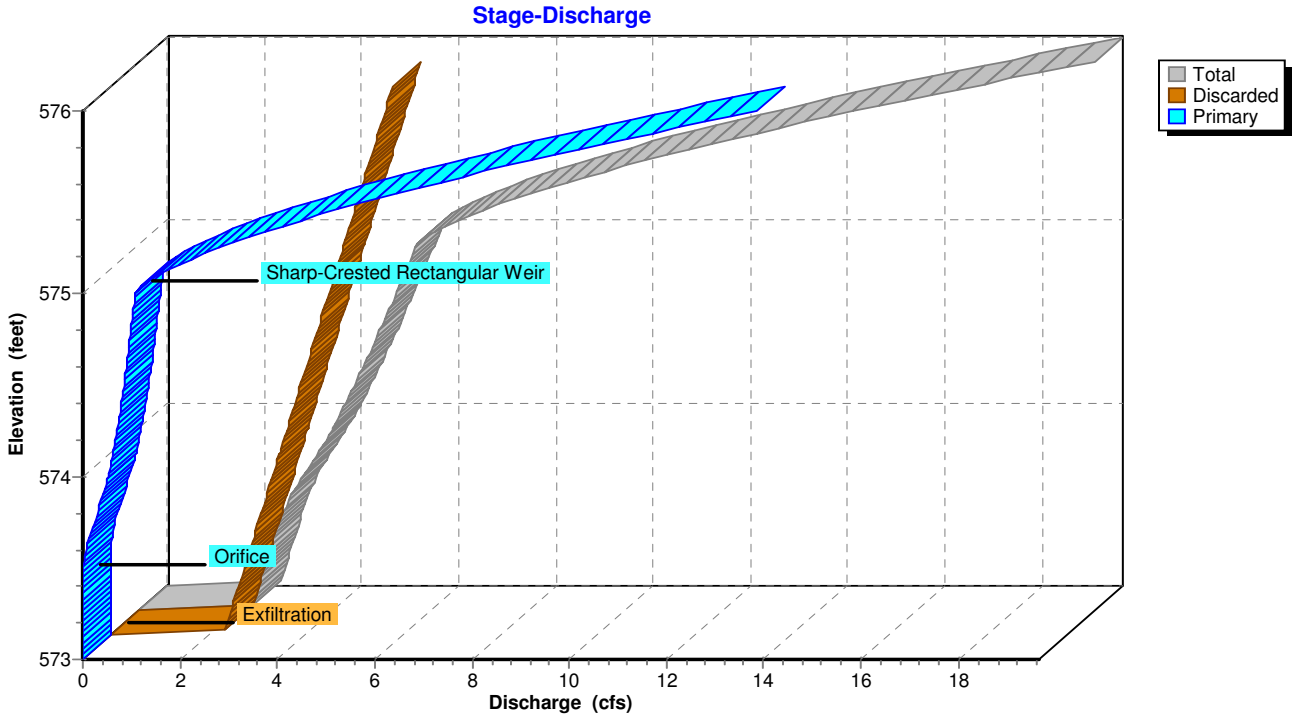
Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=573.00' (Free Discharge)
└**1=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**2=Orifice** (Controls 0.00 cfs)



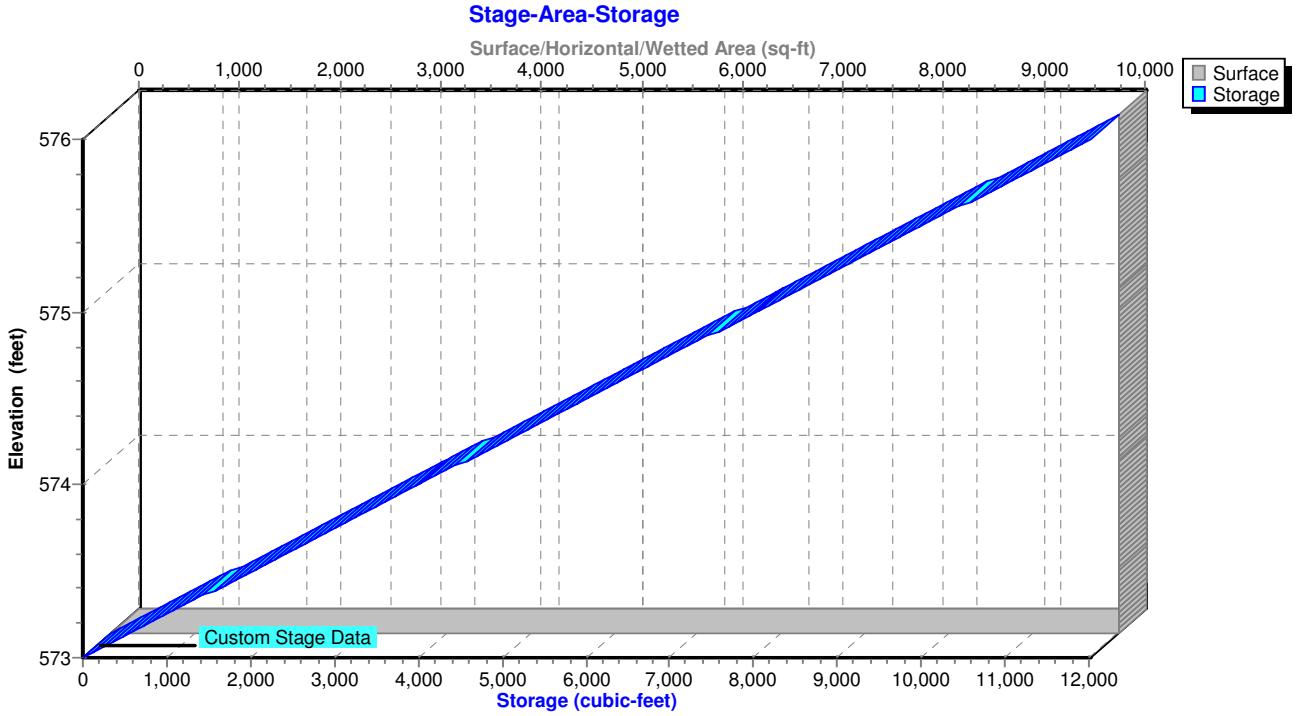
Pond 48P: Basin 8



Pond 48P: Basin 8



Pond 48P: Basin 8



Hydrograph for Pond 48P: Basin 8

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	**0.00**	**0**	**573.00**	**0.00**	**0.00**	**0.00**
2.00	**0.12**	**6**	**573.00**	**0.12**	**0.12**	0.00
4.00	0.00	0	573.00	0.00	0.00	0.00
6.00	0.00	0	573.00	0.00	0.00	0.00
8.00	0.00	0	573.00	0.00	0.00	0.00
10.00	0.00	0	573.00	0.00	0.00	0.00
12.00	0.00	0	573.00	0.00	0.00	0.00
14.00	0.00	0	573.00	0.00	0.00	0.00
16.00	0.00	0	573.00	0.00	0.00	0.00
18.00	0.00	0	573.00	0.00	0.00	0.00
20.00	0.00	0	573.00	0.00	0.00	0.00
22.00	0.00	0	573.00	0.00	0.00	0.00
24.00	0.00	0	573.00	0.00	0.00	0.00
26.00	0.00	0	573.00	0.00	0.00	0.00
28.00	0.00	0	573.00	0.00	0.00	0.00
30.00	0.00	0	573.00	0.00	0.00	0.00
32.00	0.00	0	573.00	0.00	0.00	0.00
34.00	0.00	0	573.00	0.00	0.00	0.00
36.00	0.00	0	573.00	0.00	0.00	0.00
38.00	0.00	0	573.00	0.00	0.00	0.00
40.00	0.00	0	573.00	0.00	0.00	0.00
42.00	0.00	0	573.00	0.00	0.00	0.00
44.00	0.00	0	573.00	0.00	0.00	0.00
46.00	0.00	0	573.00	0.00	0.00	0.00
48.00	0.00	0	573.00	0.00	0.00	0.00
50.00	0.00	0	573.00	0.00	0.00	0.00
52.00	0.00	0	573.00	0.00	0.00	0.00
54.00	0.00	0	573.00	0.00	0.00	0.00
56.00	0.00	0	573.00	0.00	0.00	0.00
58.00	0.00	0	573.00	0.00	0.00	0.00
60.00	0.00	0	573.00	0.00	0.00	0.00
62.00	0.00	0	573.00	0.00	0.00	0.00
64.00	0.00	0	573.00	0.00	0.00	0.00
66.00	0.00	0	573.00	0.00	0.00	0.00
68.00	0.00	0	573.00	0.00	0.00	0.00
70.00	0.00	0	573.00	0.00	0.00	0.00
72.00	0.00	0	573.00	0.00	0.00	0.00
74.00	0.00	0	573.00	0.00	0.00	0.00
76.00	0.00	0	573.00	0.00	0.00	0.00
78.00	0.00	0	573.00	0.00	0.00	0.00
80.00	0.00	0	573.00	0.00	0.00	0.00

Stage-Discharge for Pond 48P: Basin 8

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
573.00	0.00	0.00	0.00
573.05	2.38	2.38	0.00
573.10	2.44	2.44	0.00
573.15	2.49	2.49	0.00
573.20	2.55	2.55	0.00
573.25	2.61	2.61	0.00
573.30	2.67	2.67	0.00
573.35	2.73	2.73	0.00
573.40	2.78	2.78	0.00
573.45	2.84	2.84	0.00
573.50	2.91	2.90	0.01
573.55	2.99	2.96	0.03
573.60	3.08	3.01	0.07
573.65	3.18	3.07	0.11
573.70	3.30	3.13	0.17
573.75	3.42	3.19	0.23
573.80	3.54	3.25	0.30
573.85	3.67	3.30	0.36
573.90	3.79	3.36	0.43
573.95	3.89	3.42	0.47
574.00	4.00	3.48	0.52
574.05	4.10	3.54	0.56
574.10	4.19	3.59	0.60
574.15	4.29	3.65	0.63
574.20	4.38	3.71	0.67
574.25	4.47	3.77	0.70
574.30	4.56	3.83	0.73
574.35	4.65	3.88	0.76
574.40	4.73	3.94	0.79
574.45	4.82	4.00	0.82
574.50	4.90	4.06	0.85
574.55	4.99	4.12	0.87
574.60	5.07	4.17	0.90
574.65	5.15	4.23	0.92
574.70	5.24	4.29	0.95
574.75	5.32	4.35	0.97
574.80	5.40	4.41	0.99
574.85	5.48	4.46	1.01
574.90	5.56	4.52	1.04
574.95	5.64	4.58	1.06
575.00	5.72	4.64	1.08
575.05	5.94	4.70	1.24
575.10	6.28	4.75	1.53
575.15	6.70	4.81	1.89
575.20	7.19	4.87	2.32
575.25	7.72	4.93	2.79
575.30	8.30	4.99	3.31
575.35	8.92	5.04	3.88
575.40	9.58	5.10	4.48
575.45	10.27	5.16	5.11
575.50	11.00	5.22	5.78
575.55	11.75	5.28	6.47
575.60	12.53	5.33	7.20
575.65	13.34	5.39	7.95
575.70	14.18	5.45	8.73
575.75	15.04	5.51	9.53
575.80	15.92	5.57	10.35
575.85	16.82	5.62	11.20
575.90	17.75	5.68	12.07
575.95	18.69	5.74	12.95
576.00	**19.66**	**5.80**	**13.86**

Stage-Area-Storage for Pond 48P: Basin 8

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
573.00	**10,019**	0
573.05	10,019	200
573.10	10,019	401
573.15	10,019	601
573.20	10,019	802
573.25	10,019	1,002
573.30	10,019	1,202
573.35	10,019	1,403
573.40	10,019	1,603
573.45	10,019	1,803
573.50	10,019	2,004
573.55	10,019	2,204
573.60	10,019	2,405
573.65	10,019	2,605
573.70	10,019	2,805
573.75	10,019	3,006
573.80	10,019	3,206
573.85	10,019	3,406
573.90	10,019	3,607
573.95	10,019	3,807
574.00	10,019	4,008
574.05	10,019	4,208
574.10	10,019	4,408
574.15	10,019	4,609
574.20	10,019	4,809
574.25	10,019	5,010
574.30	10,019	5,210
574.35	10,019	5,410
574.40	10,019	5,611
574.45	10,019	5,811
574.50	10,019	6,011
574.55	10,019	6,212
574.60	10,019	6,412
574.65	10,019	6,613
574.70	10,019	6,813
574.75	10,019	7,013
574.80	10,019	7,214
574.85	10,019	7,414
574.90	10,019	7,614
574.95	10,019	7,815
575.00	10,019	8,015
575.05	10,019	8,216
575.10	10,019	8,416
575.15	10,019	8,616
575.20	10,019	8,817
575.25	10,019	9,017
575.30	10,019	9,217
575.35	10,019	9,418
575.40	10,019	9,618
575.45	10,019	9,819
575.50	10,019	10,019
575.55	10,019	10,219
575.60	10,019	10,420
575.65	10,019	10,620
575.70	10,019	10,821
575.75	10,019	11,021
575.80	10,019	11,221
575.85	10,019	11,422
575.90	10,019	11,622
575.95	10,019	11,822
576.00	10,019	**12,023**

Summary for Pond 49P: Basin 7

Inflow Area = 165,500 sf, 50.78% Impervious, Inflow Depth = 0.33" for WQ event
Inflow = 2.72 cfs @ 1.19 hrs, Volume= 4,519 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 28L : POA 2

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs
Peak Elev= 531.31' @ 2.72 hrs Surf.Area= 14,913 sf Storage= 4,519 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	531.00'	50,966 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
531.00	14,375	0	0
532.00	16,117	15,246	15,246
533.00	17,860	16,989	32,235
534.00	19,602	18,731	50,966

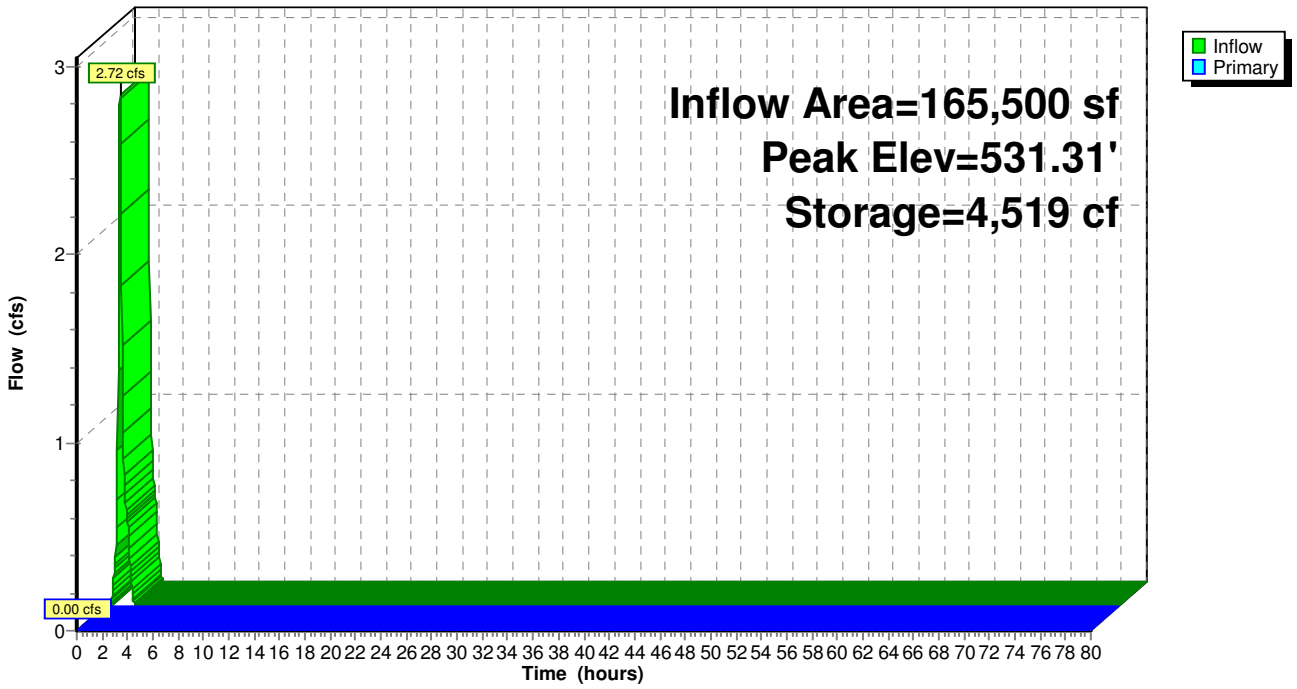
Device	Routing	Invert	Outlet Devices
#1	Primary	531.38'	**12.0" Vert. Orifice** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=531.00' (Free Discharge)
1=Orifice (Controls 0.00 cfs)



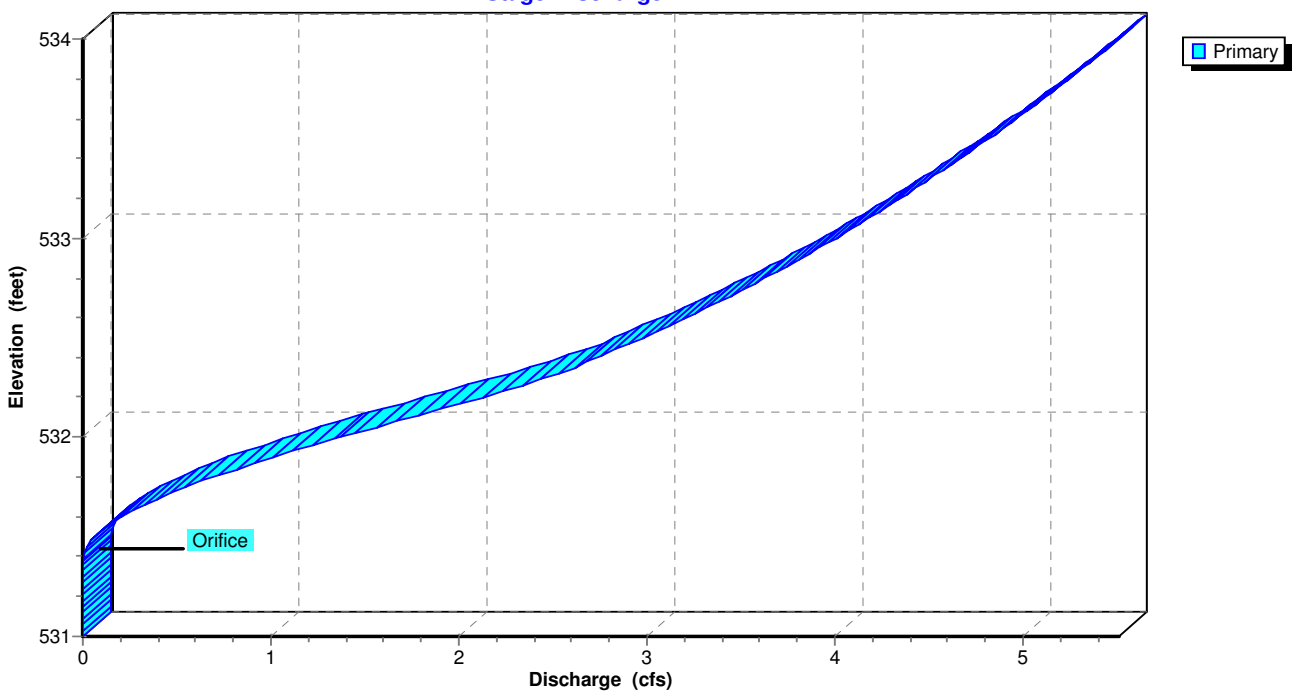
Pond 49P: Basin 7

Hydrograph

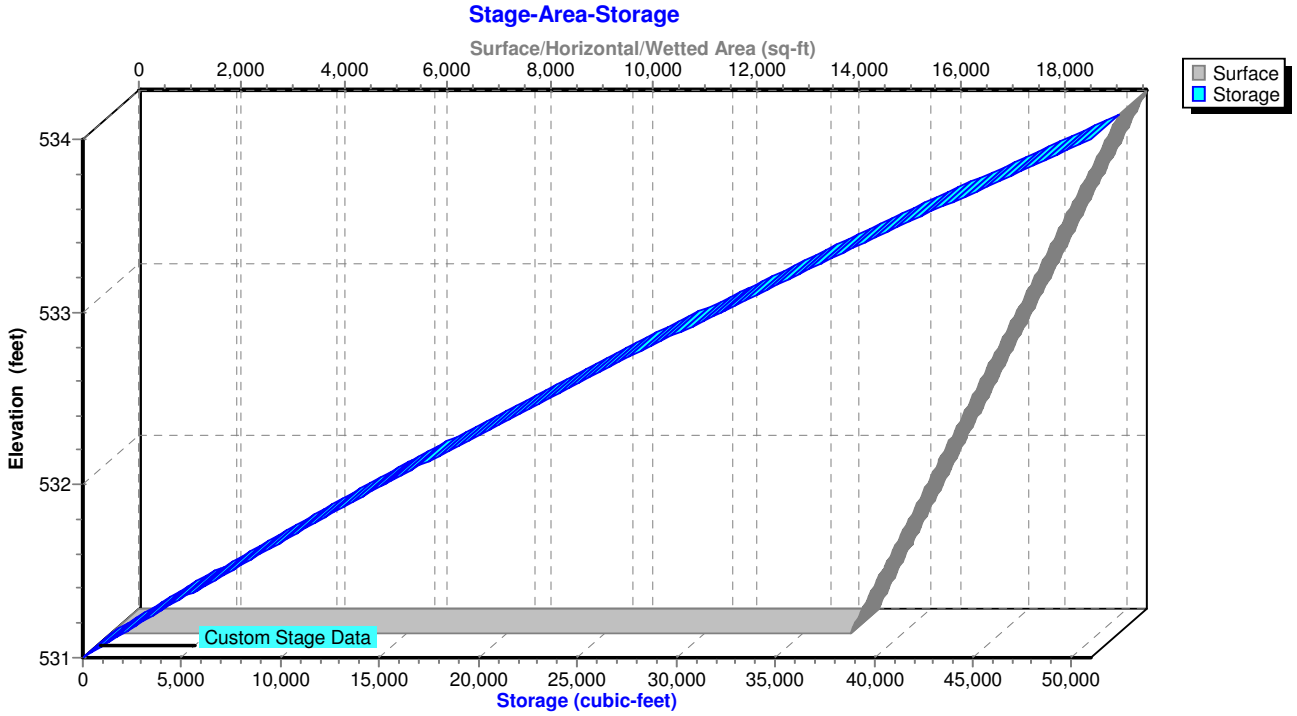


Pond 49P: Basin 7

Stage-Discharge



Pond 49P: Basin 7



Hydrograph for Pond 49P: Basin 7

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	**0.00**	0	531.00	**0.00**
2.00	**0.21**	**4,397**	**531.30**	0.00
4.00	0.00	**4,519**	**531.31**	0.00
6.00	0.00	4,519	531.31	0.00
8.00	0.00	4,519	531.31	0.00
10.00	0.00	4,519	531.31	0.00
12.00	0.00	4,519	531.31	0.00
14.00	0.00	4,519	531.31	0.00
16.00	0.00	4,519	531.31	0.00
18.00	0.00	4,519	531.31	0.00
20.00	0.00	4,519	531.31	0.00
22.00	0.00	4,519	531.31	0.00
24.00	0.00	4,519	531.31	0.00
26.00	0.00	4,519	531.31	0.00
28.00	0.00	4,519	531.31	0.00
30.00	0.00	4,519	531.31	0.00
32.00	0.00	4,519	531.31	0.00
34.00	0.00	4,519	531.31	0.00
36.00	0.00	4,519	531.31	0.00
38.00	0.00	4,519	531.31	0.00
40.00	0.00	4,519	531.31	0.00
42.00	0.00	4,519	531.31	0.00
44.00	0.00	4,519	531.31	0.00
46.00	0.00	4,519	531.31	0.00
48.00	0.00	4,519	531.31	0.00
50.00	0.00	4,519	531.31	0.00
52.00	0.00	4,519	531.31	0.00
54.00	0.00	4,519	531.31	0.00
56.00	0.00	4,519	531.31	0.00
58.00	0.00	4,519	531.31	0.00
60.00	0.00	4,519	531.31	0.00
62.00	0.00	4,519	531.31	0.00
64.00	0.00	4,519	531.31	0.00
66.00	0.00	4,519	531.31	0.00
68.00	0.00	4,519	531.31	0.00
70.00	0.00	4,519	531.31	0.00
72.00	0.00	4,519	531.31	0.00
74.00	0.00	4,519	531.31	0.00
76.00	0.00	4,519	531.31	0.00
78.00	0.00	4,519	531.31	0.00
80.00	0.00	4,519	531.31	0.00

Stage-Discharge for Pond 49P: Basin 7

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
531.00	0.00	532.02	1.45	533.04	4.07
531.02	0.00	532.04	1.52	533.06	4.11
531.04	0.00	532.06	1.60	533.08	4.14
531.06	0.00	532.08	1.67	533.10	4.18
531.08	0.00	532.10	1.75	533.12	4.21
531.10	0.00	532.12	1.83	533.14	4.24
531.12	0.00	532.14	1.90	533.16	4.28
531.14	0.00	532.16	1.98	533.18	4.31
531.16	0.00	532.18	2.05	533.20	4.34
531.18	0.00	532.20	2.13	533.22	4.38
531.20	0.00	532.22	2.20	533.24	4.41
531.22	0.00	532.24	2.27	533.26	4.44
531.24	0.00	532.26	2.34	533.28	4.47
531.26	0.00	532.28	2.40	533.30	4.51
531.28	0.00	532.30	2.47	533.32	4.54
531.30	0.00	532.32	2.53	533.34	4.57
531.32	0.00	532.34	2.58	533.36	4.60
531.34	0.00	532.36	2.63	533.38	4.63
531.36	0.00	532.38	2.67	533.40	4.66
531.38	0.00	532.40	2.73	533.42	4.69
531.40	0.00	532.42	2.78	533.44	4.72
531.42	0.01	532.44	2.83	533.46	4.75
531.44	0.02	532.46	2.88	533.48	4.78
531.46	0.03	532.48	2.93	533.50	4.81
531.48	0.04	532.50	2.98	533.52	4.84
531.50	0.06	532.52	3.03	533.54	4.87
531.52	0.09	532.54	3.07	533.56	4.90
531.54	0.11	532.56	3.12	533.58	4.93
531.56	0.14	532.58	3.16	533.60	4.96
531.58	0.17	532.60	3.21	533.62	4.99
531.60	0.20	532.62	3.25	533.64	5.02
531.62	0.24	532.64	3.30	533.66	5.05
531.64	0.28	532.66	3.34	533.68	5.07
531.66	0.32	532.68	3.38	533.70	5.10
531.68	0.37	532.70	3.42	533.72	5.13
531.70	0.42	532.72	3.47	533.74	5.16
531.72	0.47	532.74	3.51	533.76	5.19
531.74	0.52	532.76	3.55	533.78	5.21
531.76	0.57	532.78	3.59	533.80	5.24
531.78	0.63	532.80	3.63	533.82	5.27
531.80	0.69	532.82	3.67	533.84	5.29
531.82	0.75	532.84	3.71	533.86	5.32
531.84	0.81	532.86	3.74	533.88	5.35
531.86	0.88	532.88	3.78	533.90	5.37
531.88	0.95	532.90	3.82	533.92	5.40
531.90	1.01	532.92	3.86	533.94	5.43
531.92	1.08	532.94	3.89	533.96	5.45
531.94	1.15	532.96	3.93	533.98	5.48
531.96	1.22	532.98	3.97	534.00	**5.51**
531.98	1.30	533.00	4.00		
532.00	1.37	533.02	4.04		

Stage-Area-Storage for Pond 49P: Basin 7

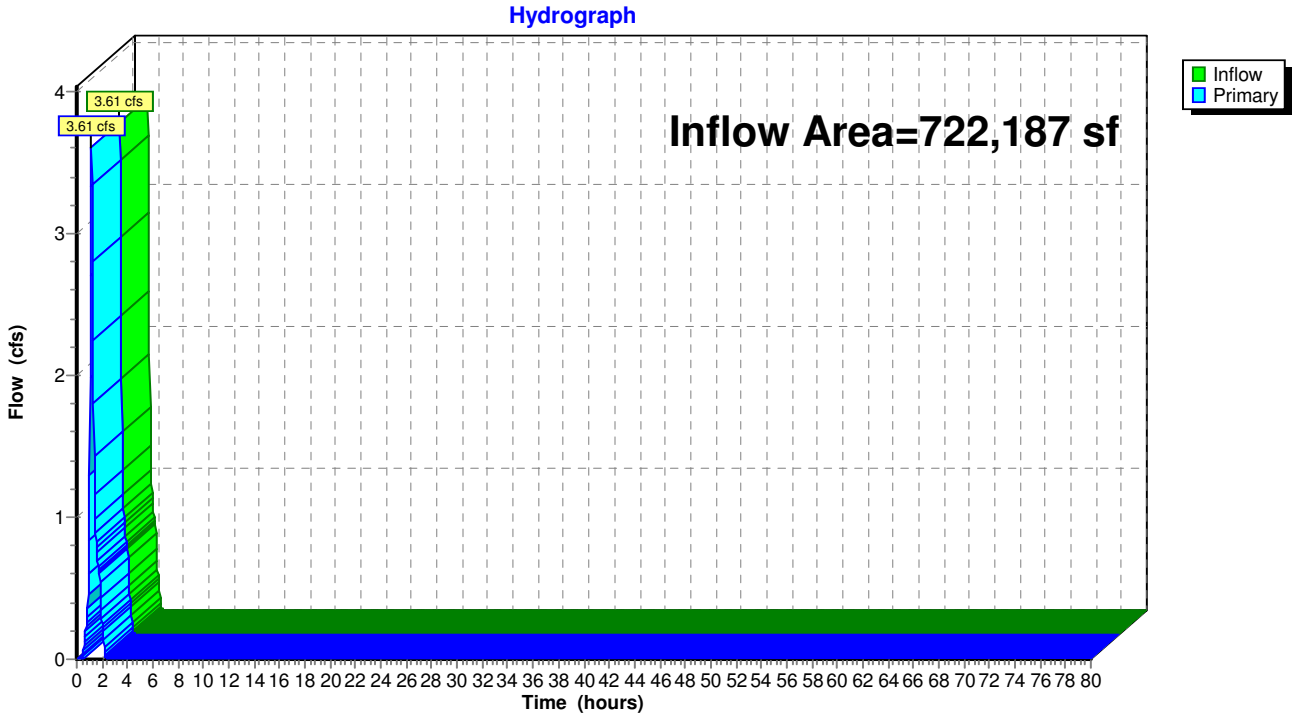
Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
531.00	14,375	0
531.05	14,462	721
531.10	14,549	1,446
531.15	14,636	2,176
531.20	14,723	2,910
531.25	14,811	3,648
531.30	14,898	4,391
531.35	14,985	5,138
531.40	15,072	5,889
531.45	15,159	6,645
531.50	15,246	7,405
531.55	15,333	8,170
531.60	15,420	8,939
531.65	15,507	9,712
531.70	15,594	10,489
531.75	15,682	11,271
531.80	15,769	12,057
531.85	15,856	12,848
531.90	15,943	13,643
531.95	16,030	14,442
532.00	16,117	15,246
532.05	16,204	16,054
532.10	16,291	16,866
532.15	16,378	17,683
532.20	16,466	18,504
532.25	16,553	19,330
532.30	16,640	20,160
532.35	16,727	20,994
532.40	16,814	21,832
532.45	16,901	22,675
532.50	16,989	23,522
532.55	17,076	24,374
532.60	17,163	25,230
532.65	17,250	26,090
532.70	17,337	26,955
532.75	17,424	27,824
532.80	17,511	28,697
532.85	17,599	29,575
532.90	17,686	30,457
532.95	17,773	31,344
533.00	17,860	32,235
533.05	17,947	33,130
533.10	18,034	34,029
533.15	18,121	34,933
533.20	18,208	35,841
533.25	18,296	36,754
533.30	18,383	37,671
533.35	18,470	38,592
533.40	18,557	39,518
533.45	18,644	40,448
533.50	18,731	41,382
533.55	18,818	42,321
533.60	18,905	43,264
533.65	18,992	44,211
533.70	19,079	45,163
533.75	19,167	46,119
533.80	19,254	47,080
533.85	19,341	48,045
533.90	19,428	49,014
533.95	19,515	49,988
534.00	**19,602**	**50,966**

Summary for Link 28L: POA 2

Inflow Area = 722,187 sf, 47.85% Impervious, Inflow Depth = 0.09" for WQ event
Inflow = 3.61 cfs @ 1.16 hrs, Volume= 5,697 cf
Primary = 3.61 cfs @ 1.16 hrs, Volume= 5,697 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs

Link 28L: POA 2



Hydrograph for Link 28L: POA 2

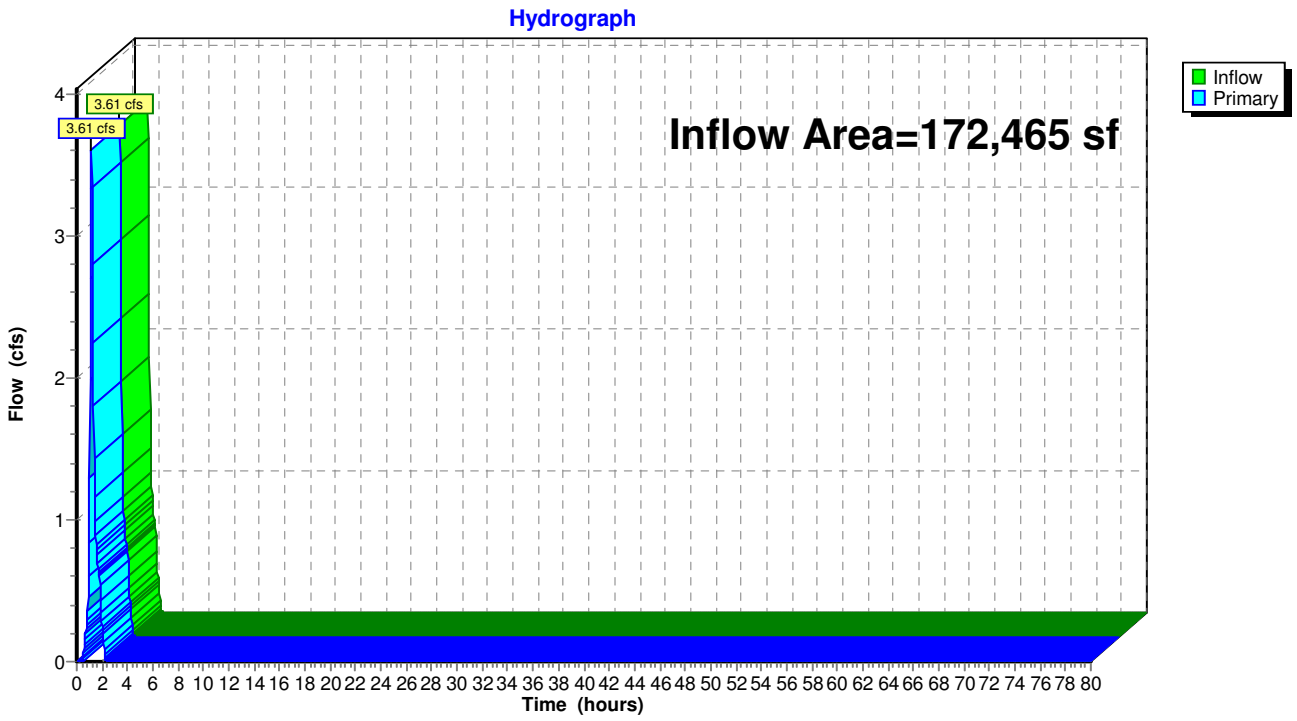
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	40.80	0.00	0.00	0.00
0.80	**0.29**	0.00	**0.29**	41.60	0.00	0.00	0.00
1.60	**0.75**	0.00	**0.75**	42.40	0.00	0.00	0.00
2.40	0.00	0.00	0.00	43.20	0.00	0.00	0.00
3.20	0.00	0.00	0.00	44.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	44.80	0.00	0.00	0.00
4.80	0.00	0.00	0.00	45.60	0.00	0.00	0.00
5.60	0.00	0.00	0.00	46.40	0.00	0.00	0.00
6.40	0.00	0.00	0.00	47.20	0.00	0.00	0.00
7.20	0.00	0.00	0.00	48.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	48.80	0.00	0.00	0.00
8.80	0.00	0.00	0.00	49.60	0.00	0.00	0.00
9.60	0.00	0.00	0.00	50.40	0.00	0.00	0.00
10.40	0.00	0.00	0.00	51.20	0.00	0.00	0.00
11.20	0.00	0.00	0.00	52.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	52.80	0.00	0.00	0.00
12.80	0.00	0.00	0.00	53.60	0.00	0.00	0.00
13.60	0.00	0.00	0.00	54.40	0.00	0.00	0.00
14.40	0.00	0.00	0.00	55.20	0.00	0.00	0.00
15.20	0.00	0.00	0.00	56.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00	56.80	0.00	0.00	0.00
16.80	0.00	0.00	0.00	57.60	0.00	0.00	0.00
17.60	0.00	0.00	0.00	58.40	0.00	0.00	0.00
18.40	0.00	0.00	0.00	59.20	0.00	0.00	0.00
19.20	0.00	0.00	0.00	60.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	60.80	0.00	0.00	0.00
20.80	0.00	0.00	0.00	61.60	0.00	0.00	0.00
21.60	0.00	0.00	0.00	62.40	0.00	0.00	0.00
22.40	0.00	0.00	0.00	63.20	0.00	0.00	0.00
23.20	0.00	0.00	0.00	64.00	0.00	0.00	0.00
24.00	0.00	0.00	0.00	64.80	0.00	0.00	0.00
24.80	0.00	0.00	0.00	65.60	0.00	0.00	0.00
25.60	0.00	0.00	0.00	66.40	0.00	0.00	0.00
26.40	0.00	0.00	0.00	67.20	0.00	0.00	0.00
27.20	0.00	0.00	0.00	68.00	0.00	0.00	0.00
28.00	0.00	0.00	0.00	68.80	0.00	0.00	0.00
28.80	0.00	0.00	0.00	69.60	0.00	0.00	0.00
29.60	0.00	0.00	0.00	70.40	0.00	0.00	0.00
30.40	0.00	0.00	0.00	71.20	0.00	0.00	0.00
31.20	0.00	0.00	0.00	72.00	0.00	0.00	0.00
32.00	0.00	0.00	0.00	72.80	0.00	0.00	0.00
32.80	0.00	0.00	0.00	73.60	0.00	0.00	0.00
33.60	0.00	0.00	0.00	74.40	0.00	0.00	0.00
34.40	0.00	0.00	0.00	75.20	0.00	0.00	0.00
35.20	0.00	0.00	0.00	76.00	0.00	0.00	0.00
36.00	0.00	0.00	0.00	76.80	0.00	0.00	0.00
36.80	0.00	0.00	0.00	77.60	0.00	0.00	0.00
37.60	0.00	0.00	0.00	78.40	0.00	0.00	0.00
38.40	0.00	0.00	0.00	79.20	0.00	0.00	0.00
39.20	0.00	0.00	0.00	80.00	0.00	0.00	0.00
40.00	0.00	0.00	0.00				

Summary for Link 34L: DA 2 Undetained

Inflow Area = 172,465 sf, 30.45% Impervious, Inflow Depth = 0.40" for WQ event
Inflow = 3.61 cfs @ 1.16 hrs, Volume= 5,697 cf
Primary = 3.61 cfs @ 1.16 hrs, Volume= 5,697 cf, Atten= 0%, Lag= 0.0 min
Routed to Link 28L : POA 2

Primary outflow = Inflow, Time Span= 0.00-80.00 hrs, dt= 0.04 hrs

Link 34L: DA 2 Undetained



Hydrograph for Link 34L: DA 2 Undetained

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00	40.80	0.00	0.00	0.00
0.80	**0.29**	0.00	**0.29**	41.60	0.00	0.00	0.00
1.60	**0.75**	0.00	**0.75**	42.40	0.00	0.00	0.00
2.40	0.00	0.00	0.00	43.20	0.00	0.00	0.00
3.20	0.00	0.00	0.00	44.00	0.00	0.00	0.00
4.00	0.00	0.00	0.00	44.80	0.00	0.00	0.00
4.80	0.00	0.00	0.00	45.60	0.00	0.00	0.00
5.60	0.00	0.00	0.00	46.40	0.00	0.00	0.00
6.40	0.00	0.00	0.00	47.20	0.00	0.00	0.00
7.20	0.00	0.00	0.00	48.00	0.00	0.00	0.00
8.00	0.00	0.00	0.00	48.80	0.00	0.00	0.00
8.80	0.00	0.00	0.00	49.60	0.00	0.00	0.00
9.60	0.00	0.00	0.00	50.40	0.00	0.00	0.00
10.40	0.00	0.00	0.00	51.20	0.00	0.00	0.00
11.20	0.00	0.00	0.00	52.00	0.00	0.00	0.00
12.00	0.00	0.00	0.00	52.80	0.00	0.00	0.00
12.80	0.00	0.00	0.00	53.60	0.00	0.00	0.00
13.60	0.00	0.00	0.00	54.40	0.00	0.00	0.00
14.40	0.00	0.00	0.00	55.20	0.00	0.00	0.00
15.20	0.00	0.00	0.00	56.00	0.00	0.00	0.00
16.00	0.00	0.00	0.00	56.80	0.00	0.00	0.00
16.80	0.00	0.00	0.00	57.60	0.00	0.00	0.00
17.60	0.00	0.00	0.00	58.40	0.00	0.00	0.00
18.40	0.00	0.00	0.00	59.20	0.00	0.00	0.00
19.20	0.00	0.00	0.00	60.00	0.00	0.00	0.00
20.00	0.00	0.00	0.00	60.80	0.00	0.00	0.00
20.80	0.00	0.00	0.00	61.60	0.00	0.00	0.00
21.60	0.00	0.00	0.00	62.40	0.00	0.00	0.00
22.40	0.00	0.00	0.00	63.20	0.00	0.00	0.00
23.20	0.00	0.00	0.00	64.00	0.00	0.00	0.00
24.00	0.00	0.00	0.00	64.80	0.00	0.00	0.00
24.80	0.00	0.00	0.00	65.60	0.00	0.00	0.00
25.60	0.00	0.00	0.00	66.40	0.00	0.00	0.00
26.40	0.00	0.00	0.00	67.20	0.00	0.00	0.00
27.20	0.00	0.00	0.00	68.00	0.00	0.00	0.00
28.00	0.00	0.00	0.00	68.80	0.00	0.00	0.00
28.80	0.00	0.00	0.00	69.60	0.00	0.00	0.00
29.60	0.00	0.00	0.00	70.40	0.00	0.00	0.00
30.40	0.00	0.00	0.00	71.20	0.00	0.00	0.00
31.20	0.00	0.00	0.00	72.00	0.00	0.00	0.00
32.00	0.00	0.00	0.00	72.80	0.00	0.00	0.00
32.80	0.00	0.00	0.00	73.60	0.00	0.00	0.00
33.60	0.00	0.00	0.00	74.40	0.00	0.00	0.00
34.40	0.00	0.00	0.00	75.20	0.00	0.00	0.00
35.20	0.00	0.00	0.00	76.00	0.00	0.00	0.00
36.00	0.00	0.00	0.00	76.80	0.00	0.00	0.00
36.80	0.00	0.00	0.00	77.60	0.00	0.00	0.00
37.60	0.00	0.00	0.00	78.40	0.00	0.00	0.00
38.40	0.00	0.00	0.00	79.20	0.00	0.00	0.00
39.20	0.00	0.00	0.00	80.00	0.00	0.00	0.00
40.00	0.00	0.00	0.00				

Events for Subcatchment 19S: Basin 3 - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	0.47	1,824	3.21
10-Year	5.22	0.71	2,834	4.98
100-Year	**8.66**	**1.19**	**4,788**	**8.42**
WQ	1.25	0.43	588	1.03

Events for Subcatchment 20S: 15775.6

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	0.43	1,507	1.20
10-Year	5.22	0.94	3,194	2.54
100-Year	**8.66**	**2.02**	**6,940**	**5.52**
WQ	1.25	0.05	93	0.07

Events for Subcatchment 21S: Basin 4 - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	3.13	11,096	3.21
10-Year	5.22	4.78	17,242	4.98
100-Year	**8.66**	**7.95**	**29,135**	**8.42**
WQ	1.25	2.77	3,580	1.03

Events for Subcatchment 24S: Basin 4 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	0.24	752	1.20
10-Year	5.22	0.52	1,594	2.54
100-Year	**8.66**	**1.11**	**3,462**	**5.52**
WQ	1.25	0.03	46	0.07

Events for Subcatchment 25S: Basin 2 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	2.54	9,502	1.39
10-Year	5.22	5.19	19,249	2.81
100-Year	**8.66**	**10.70**	**40,328**	**5.88**
WQ	1.25	0.45	802	0.12

Events for Subcatchment 28S: Basin 2 - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	1.91	8,063	3.21
10-Year	5.22	2.92	12,529	4.98
100-Year	**8.66**	**4.86**	**21,171**	**8.42**
WQ	1.25	1.76	2,601	1.03

Events for Subcatchment 29S: Basin 8 - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	2.60	10,223	3.21
10-Year	5.22	3.97	15,886	4.98
100-Year	**8.66**	**6.60**	**26,843**	**8.42**
WQ	1.25	2.37	3,298	1.03

Events for Subcatchment 30S: Basin 8 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	0.76	2,632	1.39
10-Year	5.22	1.55	5,332	2.81
100-Year	**8.66**	**3.19**	**11,171**	**5.88**
WQ	1.25	0.13	222	0.12

Events for Subcatchment 31S: Basin 7 - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	2.74	12,233	3.21
10-Year	5.22	4.18	19,009	4.98
100-Year	**8.66**	**6.97**	**32,120**	**8.42**
WQ	1.25	2.53	3,947	1.03

Events for Subcatchment 32S: Basin 7 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	1.70	6,778	1.39
10-Year	5.22	3.49	13,731	2.81
100-Year	**8.66**	**7.20**	**28,767**	**5.88**
WQ	1.25	0.29	572	0.12

Events for Subcatchment 35S: DA 2 Und - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	3.41	14,033	3.21
10-Year	5.22	5.21	21,805	4.98
100-Year	**8.66**	**8.68**	**36,846**	**8.42**
WQ	1.25	3.13	4,527	1.03

Events for Subcatchment 36S: DA 2 Und - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	3.80	13,855	1.39
10-Year	5.22	7.79	28,070	2.81
100-Year	**8.66**	**16.02**	**58,807**	**5.88**
WQ	1.25	0.66	1,170	0.12

Events for Subcatchment 45S: Basin 11 - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	3.89	16,007	3.21
10-Year	5.22	5.95	24,873	4.98
100-Year	**8.66**	**9.90**	**42,030**	**8.42**
WQ	1.25	3.57	5,164	1.03

Events for Subcatchment 46S: Basin 11 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	0.73	2,666	1.32
10-Year	5.22	1.52	5,482	2.72
100-Year	**8.66**	**3.18**	**11,621**	**5.76**
WQ	1.25	0.11	204	0.10

Events for Subcatchment 51S: Basin 10 - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	3.35	14,193	3.21
10-Year	5.22	5.12	22,055	4.98
100-Year	**8.66**	**8.52**	**37,268**	**8.42**
WQ	1.25	3.08	4,579	1.03

Events for Subcatchment 52S: Basin 10 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	1.03	3,908	1.26
10-Year	5.22	2.19	8,157	2.63
100-Year	**8.66**	**4.65**	**17,503**	**5.64**
WQ	1.25	0.14	270	0.09

Events for Subcatchment 53S: Basin 9 - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	1.23	4,666	3.21
10-Year	5.22	1.87	7,250	4.98
100-Year	**8.66**	**3.12**	**12,252**	**8.42**
WQ	1.25	1.12	1,505	1.03

Events for Subcatchment 54S: Basin 9 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (cubic-feet)	Depth (inches)
2-Year	3.44	0.33	1,079	1.45
10-Year	5.22	0.65	2,154	2.90
100-Year	**8.66**	**1.31**	**4,461**	**6.00**
WQ	1.25	0.07	100	0.13

Events for Pond 21P: Basin 3

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	0.90	0.89	0.89	0.00	559.02	33
10-Year	1.65	1.21	**1.21**	0.00	559.09	183
100-Year	**3.21**	**2.36**	1.21	**1.15**	**559.42**	**876**
WQ	0.45	0.44	0.44	0.00	559.01	17

Events for Pond 22P: Basin 4

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	3.37	1.13	**1.13**	0.00	572.30	1,477
10-Year	5.30	1.23	1.13	0.10	572.69	3,380
100-Year	**9.06**	**1.94**	1.13	**0.81**	**573.49**	**7,284**
WQ	2.78	1.13	1.13	0.00	572.22	1,074

Events for Pond 27P: Basin 2

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	4.44	0.19	544.96	12,418
10-Year	8.13	0.93	545.18	18,379
100-Year	**17.10**	**5.38**	**545.62**	**31,128**
WQ	2.08	0.00	544.63	3,403

Events for Pond 33P: Basin 11

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	4.62	3.23	**3.13**	0.10	590.13	717
10-Year	7.47	5.37	3.13	2.25	590.37	1,989
100-Year	**13.07**	**10.67**	3.13	**7.54**	**590.71**	**3,818**
WQ	3.64	3.13	3.13	0.00	590.05	265

Events for Pond 41P: Basin 10

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	4.37	2.22	**2.22**	0.00	576.17	1,586
10-Year	7.31	3.14	2.22	0.93	576.44	4,207
100-Year	**13.17**	**7.53**	2.22	**5.31**	**576.86**	**8,209**
WQ	3.15	2.22	2.22	0.00	576.07	654

Events for Pond 42P: Basin 9

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	1.55	0.61	**0.61**	0.00	562.24	640
10-Year	2.52	0.61	0.61	0.00	562.64	1,667
100-Year	**4.43**	**0.77**	0.61	**0.16**	**563.59**	**4,157**
WQ	1.17	0.61	0.61	0.00	562.13	344

Events for Pond 48P: Basin 8

Event	Inflow (cfs)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	3.35	2.44	2.44	0.00	573.11	434
10-Year	5.52	2.83	2.83	0.00	573.44	1,768
100-Year	**9.79**	**4.41**	**3.73**	**0.68**	**574.22**	**4,871**
WQ	2.45	2.37	2.37	0.00	573.03	128

Events for Pond 49P: Basin 7

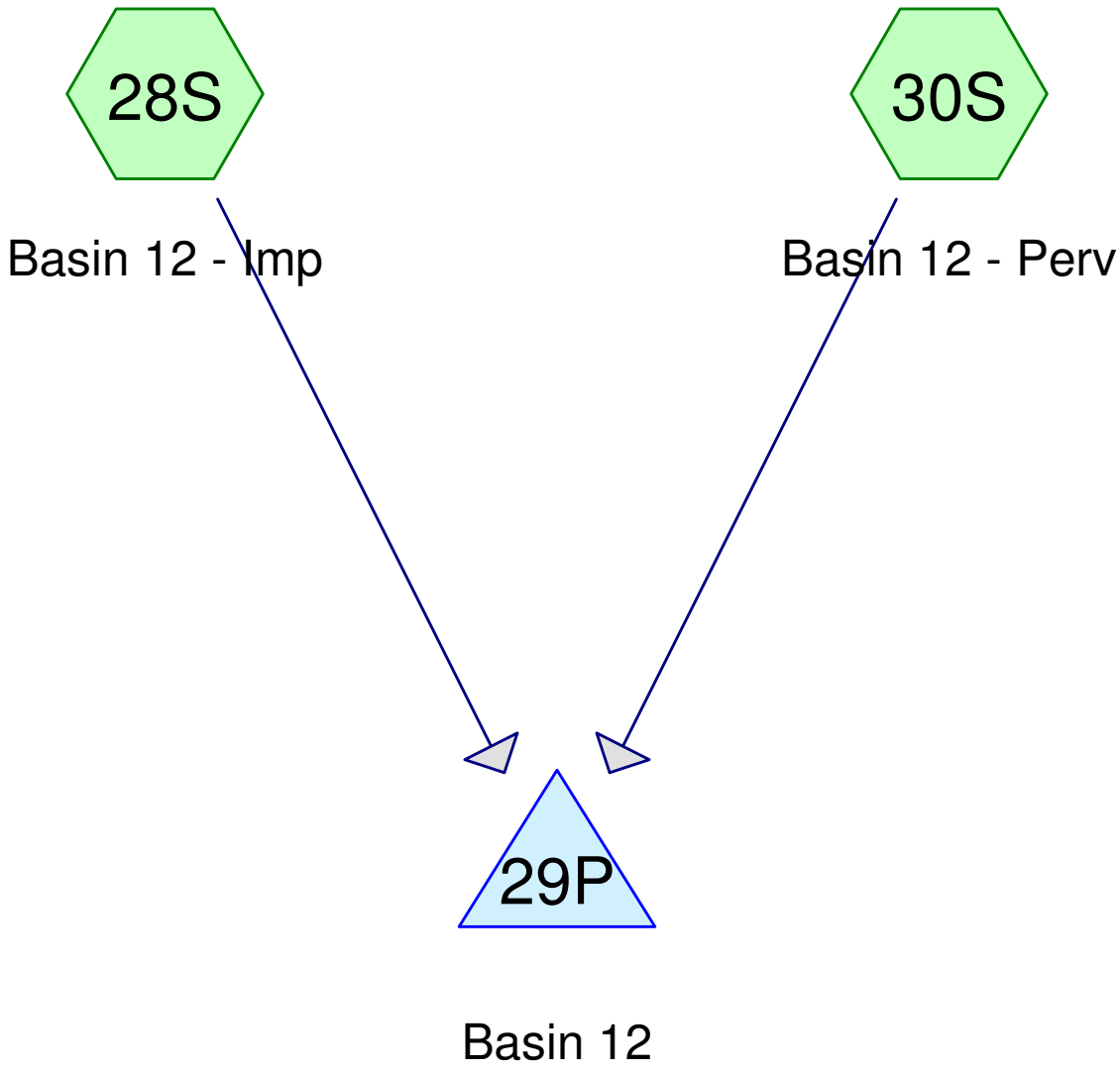
Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	4.44	0.53	531.74	11,169
10-Year	7.67	1.73	532.09	16,775
100-Year	**14.70**	**3.65**	**532.81**	**28,901**
WQ	2.72	0.00	531.31	4,519

Events for Link 28L: POA 2

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
2-Year	7.24	7.24	**0.00**
10-Year	15.29	15.29	0.00
100-Year	**38.99**	**38.99**	0.00
WQ	3.61	3.61	0.00

Events for Link 34L: DA 2 Undetained

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)
2-Year	7.21	7.21	**0.00**
10-Year	13.00	13.00	0.00
100-Year	**24.70**	**24.70**	0.00
WQ	3.61	3.61	0.00



Subcat Reach Pond Link

Routing Diagram for 2024-05-12 HydroCad - Proposed POA 3B
Prepared by Anderson Consulting Services, Printed 10/25/2024
HydroCAD® 10.20-5c s/n 06666 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing

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

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.121	74	>75% Grass cover, Good, HSG C (30S)
0.057	98	Paved parking, HSG C (28S)
0.178	**82**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.178	HSG C	28S, 30S
0.000	HSG D	
0.000	Other	
0.178		**TOTAL AREA**

2024-05-12 HydroCad - Proposed POA 3B

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.121	0.000	0.000	0.121	>75% Grass cover, Good	30S
0.000	0.000	0.057	0.000	0.000	0.057	Paved parking	28S
0.000	**0.000**	**0.178**	**0.000**	**0.000**	**0.178**	**TOTAL AREA**	

Notes Listing (all nodes)

Line#	Node Number	Notes
1	Project	Rainfall events imported from "NJ-2023-Rain.txt" for 6606 NJ Essex
2		Rainfall events imported from "NRCS2-Rain.txt" for 1167 NJ Essex-D
3		Rainfall events imported from "NRCS2-Rain.txt" for 1167 NJ Essex-D

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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 28S: Basin 12 - Imp Runoff Area=2,500 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=98 Runoff=0.20 cfs 0.015 af

Subcatchment 30S: Basin 12 - Perv Runoff Area=5,251 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=74 Runoff=0.18 cfs 0.012 af

Pond 29P: Basin 12 Peak Elev=596.18' Storage=69 cf Inflow=0.38 cfs 0.027 af
Outflow=0.21 cfs 0.027 af

Total Runoff Area = 0.178 ac Runoff Volume = 0.027 af Average Runoff Depth = 1.85"
67.75% Pervious = 0.121 ac 32.25% Impervious = 0.057 ac

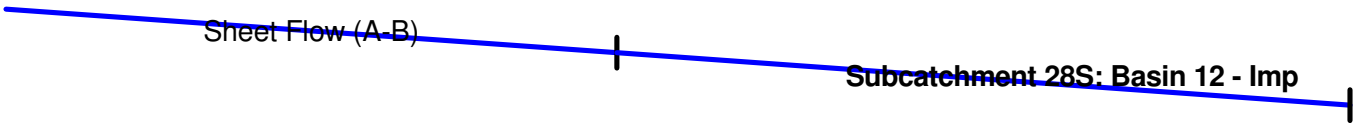
Summary for Subcatchment 28S: Basin 12 - Imp

Runoff = 0.20 cfs @ 12.11 hrs, Volume= 0.015 af, Depth= 3.21"
Routed to Pond 29P : Basin 12

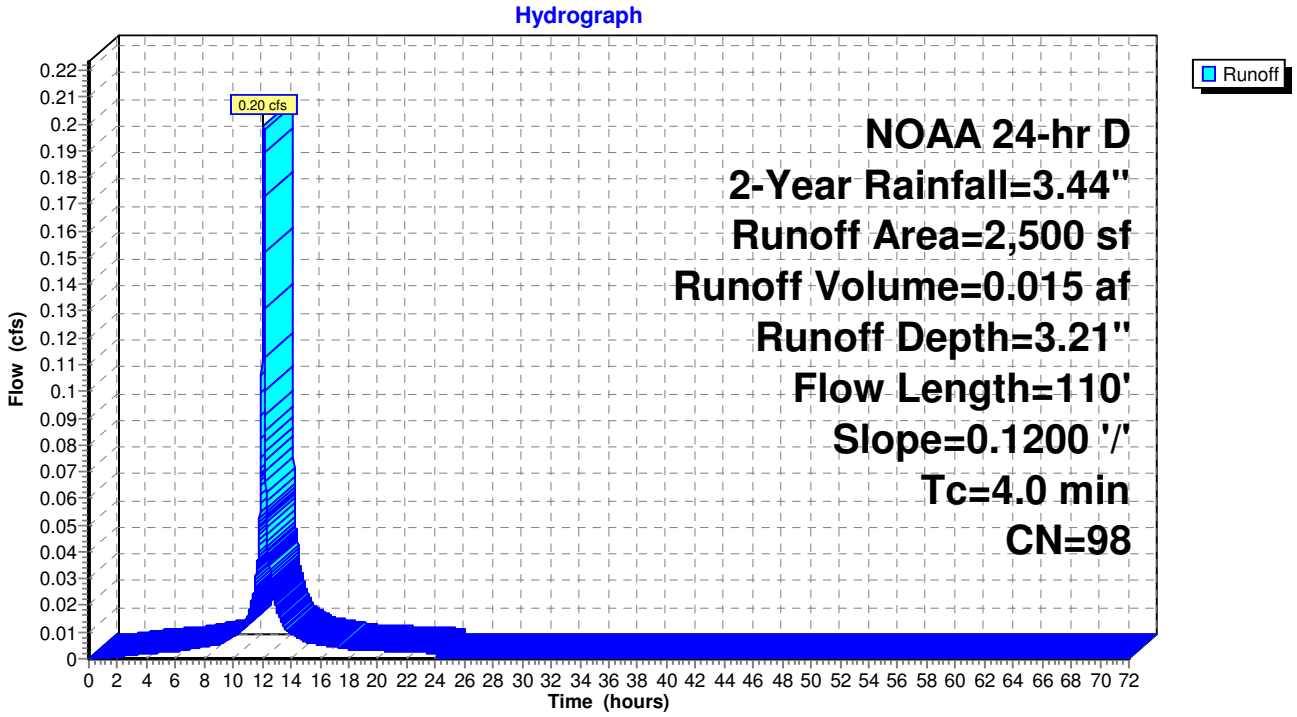
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
2,500	98	Paved parking, HSG C
2,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			



Subcatchment 28S: Basin 12 - Imp



Hydrograph for Subcatchment 28S: Basin 12 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.01	0.00
3.00	0.13	0.03	0.00
4.00	0.18	0.06	0.00
5.00	0.24	0.09	0.00
6.00	0.29	0.14	0.00
7.00	0.36	0.20	0.00
8.00	0.45	0.27	0.00
9.00	0.55	0.36	0.01
10.00	0.68	0.49	0.01
11.00	0.89	0.69	0.02
12.00	1.65	1.43	**0.12**
13.00	2.55	2.32	**0.02**
14.00	2.76	2.53	0.01
15.00	2.89	2.66	0.01
16.00	2.99	2.76	0.01
17.00	3.08	2.85	0.00
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
58.00	3.44	3.21	0.00
59.00	3.44	3.21	0.00
60.00	3.44	3.21	0.00
61.00	3.44	3.21	0.00
62.00	3.44	3.21	0.00
63.00	3.44	3.21	0.00
64.00	3.44	3.21	0.00
65.00	3.44	3.21	0.00
66.00	3.44	3.21	0.00
67.00	3.44	3.21	0.00
68.00	3.44	3.21	0.00
69.00	3.44	3.21	0.00
70.00	3.44	3.21	0.00
71.00	3.44	3.21	0.00
72.00	3.44	3.21	0.00

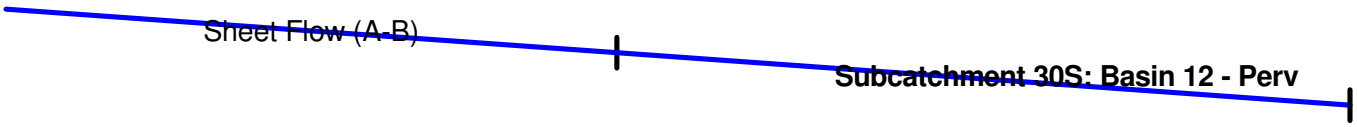
Summary for Subcatchment 30S: Basin 12 - Perv

Runoff = 0.18 cfs @ 12.12 hrs, Volume= 0.012 af, Depth= 1.20"
Routed to Pond 29P : Basin 12

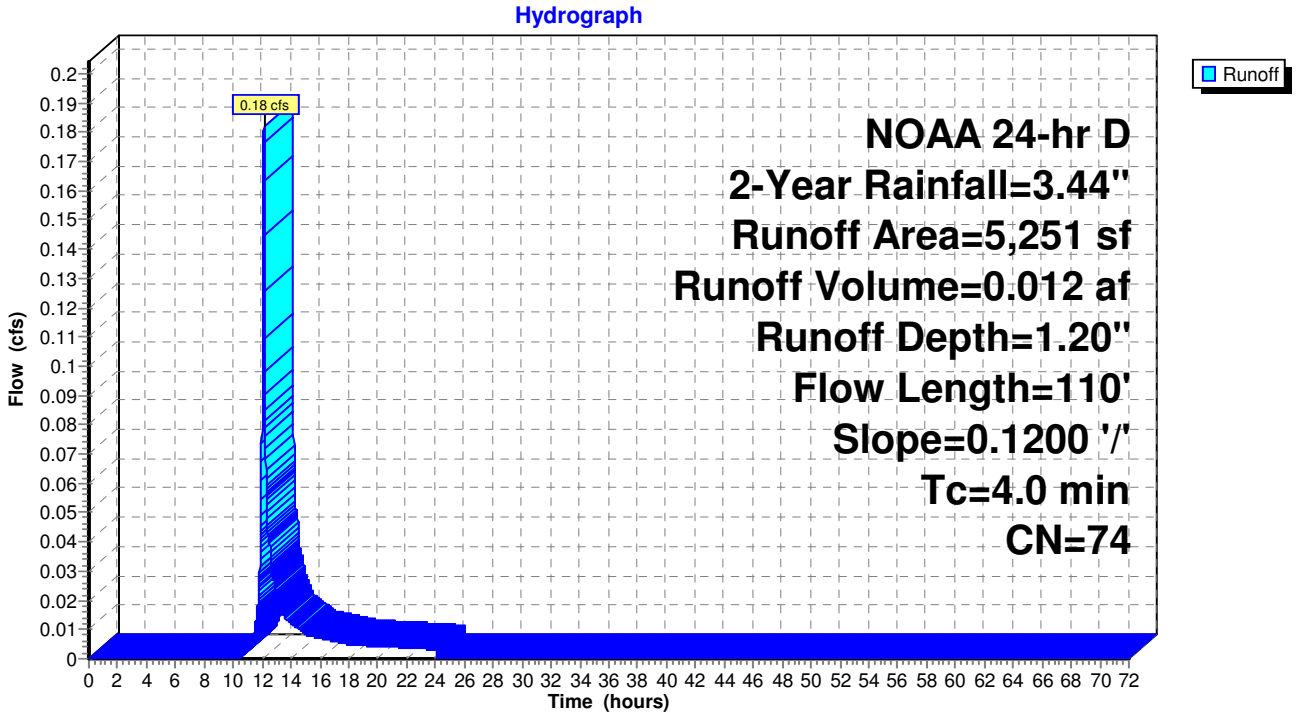
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
5,251	74	>75% Grass cover, Good, HSG C
5,251		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			



Subcatchment 30S: Basin 12 - Perv



Hydrograph for Subcatchment 30S: Basin 12 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.18	0.00	0.00
5.00	0.24	0.00	0.00
6.00	0.29	0.00	0.00
7.00	0.36	0.00	0.00
8.00	0.45	0.00	0.00
9.00	0.55	0.00	0.00
10.00	0.68	0.00	0.00
11.00	0.89	0.01	0.00
12.00	1.65	0.20	**0.09**
13.00	2.55	0.63	**0.02**
14.00	2.76	0.76	0.01
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	0.00
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
58.00	3.44	1.20	0.00
59.00	3.44	1.20	0.00
60.00	3.44	1.20	0.00
61.00	3.44	1.20	0.00
62.00	3.44	1.20	0.00
63.00	3.44	1.20	0.00
64.00	3.44	1.20	0.00
65.00	3.44	1.20	0.00
66.00	3.44	1.20	0.00
67.00	3.44	1.20	0.00
68.00	3.44	1.20	0.00
69.00	3.44	1.20	0.00
70.00	3.44	1.20	0.00
71.00	3.44	1.20	0.00
72.00	3.44	1.20	0.00

Summary for Pond 29P: Basin 12

Inflow Area = 0.178 ac, 32.25% Impervious, Inflow Depth = 1.85" for 2-Year event
Inflow = 0.38 cfs @ 12.12 hrs, Volume= 0.027 af
Outflow = 0.21 cfs @ 12.03 hrs, Volume= 0.027 af, Atten= 45%, Lag= 0.0 min
Discarded = 0.21 cfs @ 12.03 hrs, Volume= 0.027 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 596.18' @ 12.18 hrs Surf.Area= 900 sf Storage= 69 cf

Plug-Flow detention time= 1.5 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 1.5 min (806.3 - 804.8)

Volume	Invert	Avail.Storage	Storage Description
#1	596.00'	1,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 2,700 cf Overall - 191 cf Embedded = 2,509 cf x 40.0% Voids
#2	596.00'	151 cf	**8.00'D x 3.00'H Vertical Cone/Cylinder** Inside #1 191 cf Overall - 6.0" Wall Thickness = 151 cf
		1,154 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
596.00	900	0	0
599.00	900	2,700	2,700

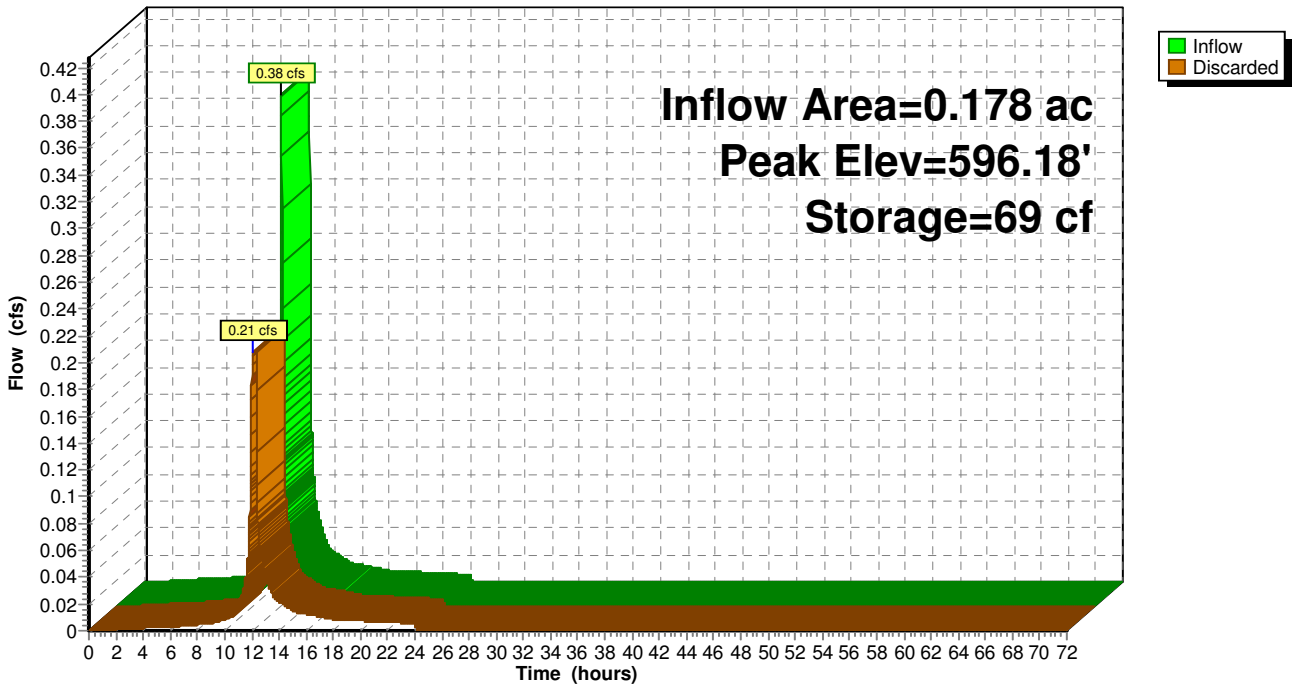
Device	Routing	Invert	Outlet Devices
#1	Discarded	596.00'	**10.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.21 cfs @ 12.03 hrs HW=596.03' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.21 cfs)



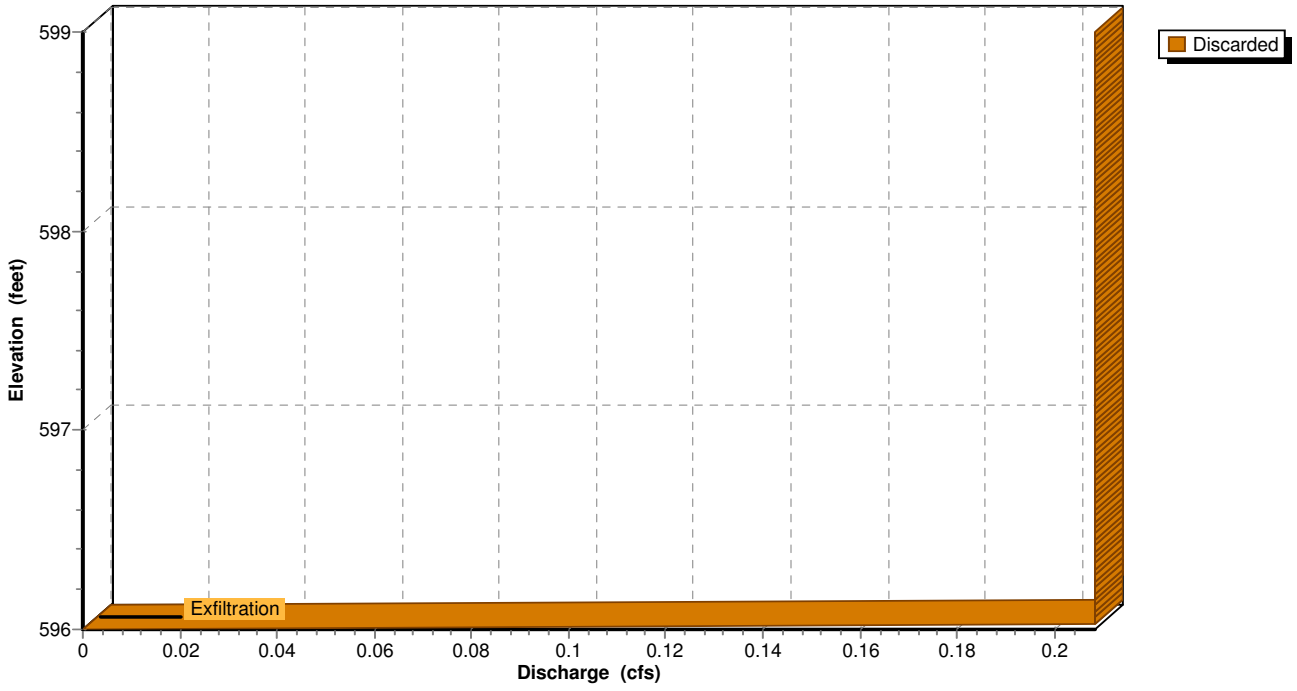
Pond 29P: Basin 12

Hydrograph

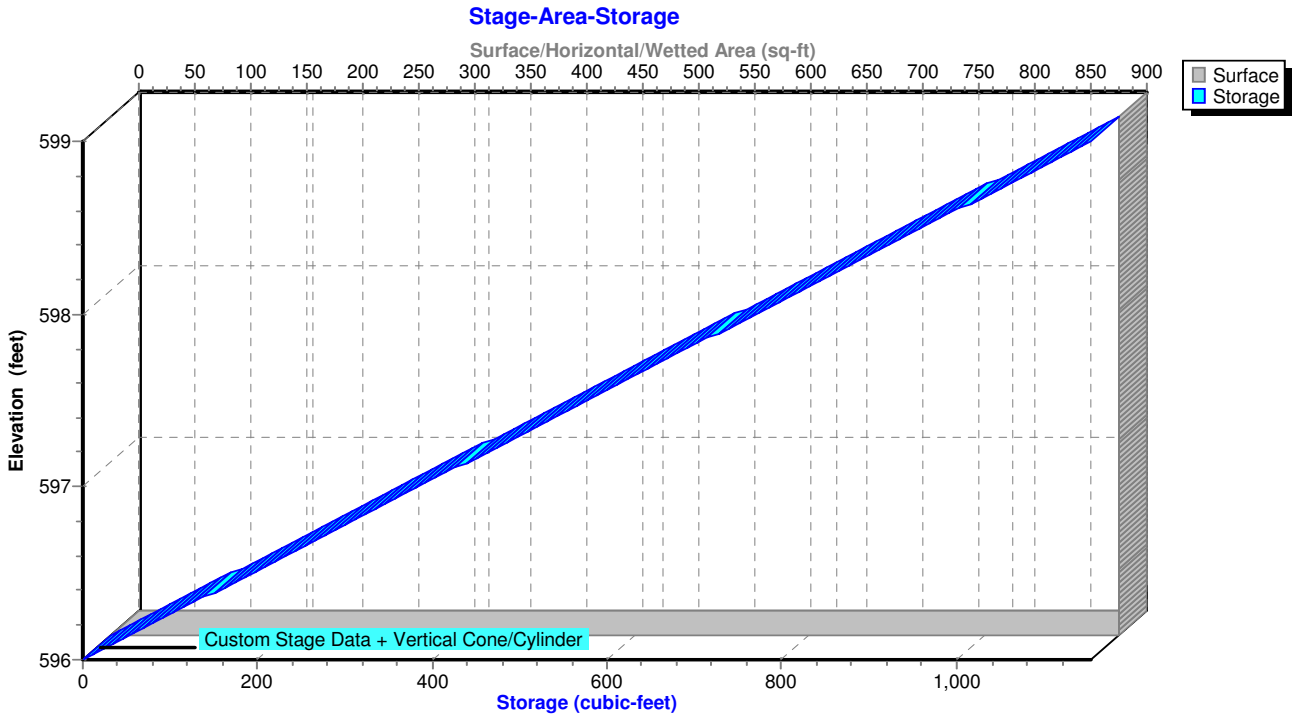


Pond 29P: Basin 12

Stage-Discharge



Pond 29P: Basin 12



Hydrograph for Pond 29P: Basin 12

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	596.00	0.00
2.00	0.00	0	596.00	0.00
4.00	0.00	0	596.00	0.00
6.00	0.00	0	596.00	0.00
8.00	0.00	0	596.00	0.00
10.00	0.01	0	596.00	0.01
12.00	**0.20**	**11**	**596.03**	**0.19**
14.00	**0.02**	**1**	**596.00**	**0.02**
16.00	0.01	1	596.00	0.01
18.00	0.01	0	596.00	0.01
20.00	0.01	0	596.00	0.01
22.00	0.01	0	596.00	0.01
24.00	0.01	0	596.00	0.01
26.00	0.00	0	596.00	0.00
28.00	0.00	0	596.00	0.00
30.00	0.00	0	596.00	0.00
32.00	0.00	0	596.00	0.00
34.00	0.00	0	596.00	0.00
36.00	0.00	0	596.00	0.00
38.00	0.00	0	596.00	0.00
40.00	0.00	0	596.00	0.00
42.00	0.00	0	596.00	0.00
44.00	0.00	0	596.00	0.00
46.00	0.00	0	596.00	0.00
48.00	0.00	0	596.00	0.00
50.00	0.00	0	596.00	0.00
52.00	0.00	0	596.00	0.00
54.00	0.00	0	596.00	0.00
56.00	0.00	0	596.00	0.00
58.00	0.00	0	596.00	0.00
60.00	0.00	0	596.00	0.00
62.00	0.00	0	596.00	0.00
64.00	0.00	0	596.00	0.00
66.00	0.00	0	596.00	0.00
68.00	0.00	0	596.00	0.00
70.00	0.00	0	596.00	0.00
72.00	0.00	0	596.00	0.00

Stage-Discharge for Pond 29P: Basin 12

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
596.00	**0.00**	597.02	0.21	598.04	0.21
596.02	**0.21**	597.04	0.21	598.06	0.21
596.04	0.21	597.06	0.21	598.08	0.21
596.06	0.21	597.08	0.21	598.10	0.21
596.08	0.21	597.10	0.21	598.12	0.21
596.10	0.21	597.12	0.21	598.14	0.21
596.12	0.21	597.14	0.21	598.16	0.21
596.14	0.21	597.16	0.21	598.18	0.21
596.16	0.21	597.18	0.21	598.20	0.21
596.18	0.21	597.20	0.21	598.22	0.21
596.20	0.21	597.22	0.21	598.24	0.21
596.22	0.21	597.24	0.21	598.26	0.21
596.24	0.21	597.26	0.21	598.28	0.21
596.26	0.21	597.28	0.21	598.30	0.21
596.28	0.21	597.30	0.21	598.32	0.21
596.30	0.21	597.32	0.21	598.34	0.21
596.32	0.21	597.34	0.21	598.36	0.21
596.34	0.21	597.36	0.21	598.38	0.21
596.36	0.21	597.38	0.21	598.40	0.21
596.38	0.21	597.40	0.21	598.42	0.21
596.40	0.21	597.42	0.21	598.44	0.21
596.42	0.21	597.44	0.21	598.46	0.21
596.44	0.21	597.46	0.21	598.48	0.21
596.46	0.21	597.48	0.21	598.50	0.21
596.48	0.21	597.50	0.21	598.52	0.21
596.50	0.21	597.52	0.21	598.54	0.21
596.52	0.21	597.54	0.21	598.56	0.21
596.54	0.21	597.56	0.21	598.58	0.21
596.56	0.21	597.58	0.21	598.60	0.21
596.58	0.21	597.60	0.21	598.62	0.21
596.60	0.21	597.62	0.21	598.64	0.21
596.62	0.21	597.64	0.21	598.66	0.21
596.64	0.21	597.66	0.21	598.68	0.21
596.66	0.21	597.68	0.21	598.70	0.21
596.68	0.21	597.70	0.21	598.72	0.21
596.70	0.21	597.72	0.21	598.74	0.21
596.72	0.21	597.74	0.21	598.76	0.21
596.74	0.21	597.76	0.21	598.78	0.21
596.76	0.21	597.78	0.21	598.80	0.21
596.78	0.21	597.80	0.21	598.82	0.21
596.80	0.21	597.82	0.21	598.84	0.21
596.82	0.21	597.84	0.21	598.86	0.21
596.84	0.21	597.86	0.21	598.88	0.21
596.86	0.21	597.88	0.21	598.90	0.21
596.88	0.21	597.90	0.21	598.92	0.21
596.90	0.21	597.92	0.21	598.94	0.21
596.92	0.21	597.94	0.21	598.96	0.21
596.94	0.21	597.96	0.21	598.98	0.21
596.96	0.21	597.98	0.21	599.00	0.21
596.98	0.21	598.00	0.21		
597.00	0.21	598.02	0.21		

Stage-Area-Storage for Pond 29P: Basin 12

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
596.00	**900**	0
596.05	900	19
596.10	900	38
596.15	900	58
596.20	900	77
596.25	900	96
596.30	900	115
596.35	900	135
596.40	900	154
596.45	900	173
596.50	900	192
596.55	900	212
596.60	900	231
596.65	900	250
596.70	900	269
596.75	900	289
596.80	900	308
596.85	900	327
596.90	900	346
596.95	900	366
597.00	900	385
597.05	900	404
597.10	900	423
597.15	900	443
597.20	900	462
597.25	900	481
597.30	900	500
597.35	900	520
597.40	900	539
597.45	900	558
597.50	900	577
597.55	900	596
597.60	900	616
597.65	900	635
597.70	900	654
597.75	900	673
597.80	900	693
597.85	900	712
597.90	900	731
597.95	900	750
598.00	900	770
598.05	900	789
598.10	900	808
598.15	900	827
598.20	900	847
598.25	900	866
598.30	900	885
598.35	900	904
598.40	900	924
598.45	900	943
598.50	900	962
598.55	900	981
598.60	900	1,001
598.65	900	1,020
598.70	900	1,039
598.75	900	1,058
598.80	900	1,077
598.85	900	1,097
598.90	900	1,116
598.95	900	1,135
599.00	900	**1,154**

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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 28S: Basin 12 - Imp Runoff Area=2,500 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=98 Runoff=0.30 cfs 0.024 af

Subcatchment 30S: Basin 12 - Perv Runoff Area=5,251 sf 0.00% Impervious Runoff Depth=2.54"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=74 Runoff=0.39 cfs 0.026 af

Pond 29P: Basin 12 Peak Elev=596.73' Storage=280 cf Inflow=0.69 cfs 0.049 af
Outflow=0.21 cfs 0.049 af

Total Runoff Area = 0.178 ac Runoff Volume = 0.049 af Average Runoff Depth = 3.33"
67.75% Pervious = 0.121 ac 32.25% Impervious = 0.057 ac

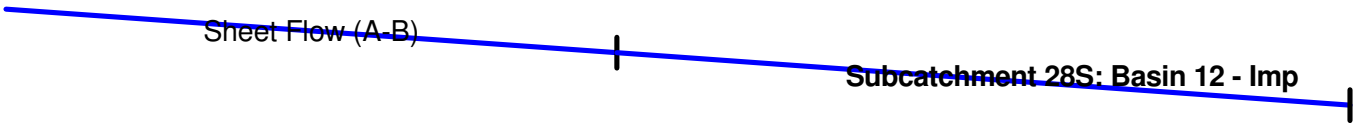
Summary for Subcatchment 28S: Basin 12 - Imp

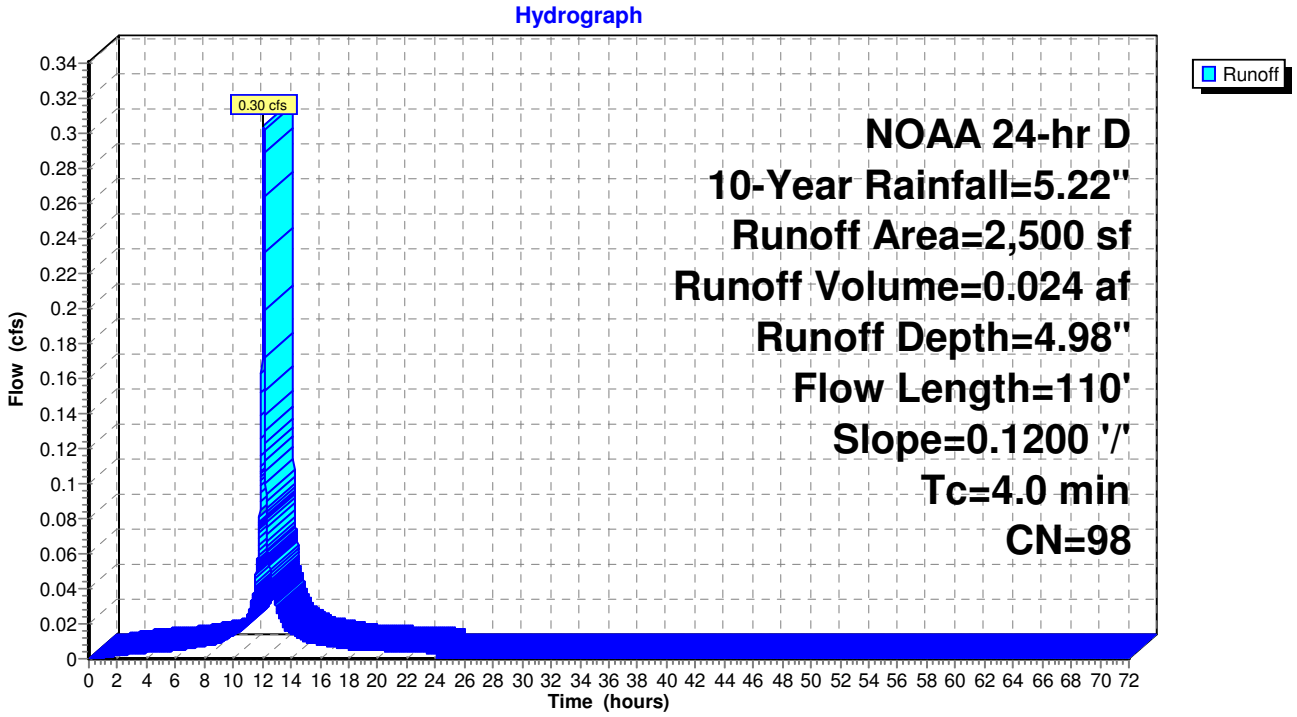
Runoff = 0.30 cfs @ 12.11 hrs, Volume= 0.024 af, Depth= 4.98"
Routed to Pond 29P : Basin 12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
2,500	98	Paved parking, HSG C
2,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			





Hydrograph for Subcatchment 28S: Basin 12 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.13	0.02	0.00
3.00	0.20	0.07	0.00
4.00	0.27	0.12	0.00
5.00	0.36	0.19	0.00
6.00	0.45	0.27	0.00
7.00	0.55	0.36	0.01
8.00	0.68	0.48	0.01
9.00	0.83	0.63	0.01
10.00	1.03	0.82	0.01
11.00	1.36	1.14	0.02
12.00	2.50	2.27	**0.18**
13.00	3.86	3.63	**0.03**
14.00	4.19	3.95	0.01
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	0.00
20.00	4.95	4.71	0.00
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
58.00	5.22	4.98	0.00
59.00	5.22	4.98	0.00
60.00	5.22	4.98	0.00
61.00	5.22	4.98	0.00
62.00	5.22	4.98	0.00
63.00	5.22	4.98	0.00
64.00	5.22	4.98	0.00
65.00	5.22	4.98	0.00
66.00	5.22	4.98	0.00
67.00	5.22	4.98	0.00
68.00	5.22	4.98	0.00
69.00	5.22	4.98	0.00
70.00	5.22	4.98	0.00
71.00	5.22	4.98	0.00
72.00	5.22	4.98	0.00

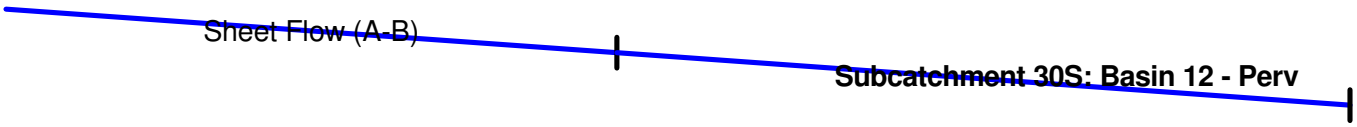
Summary for Subcatchment 30S: Basin 12 - Perv

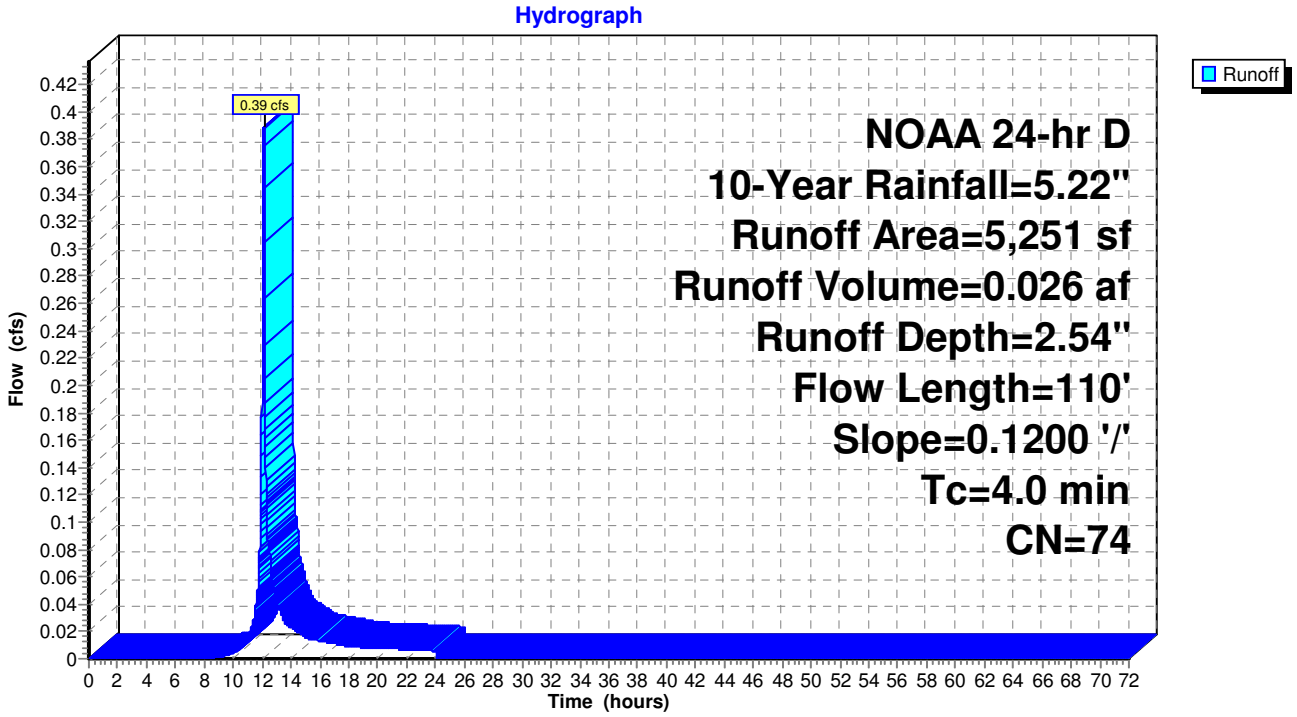
Runoff = 0.39 cfs @ 12.12 hrs, Volume= 0.026 af, Depth= 2.54"
Routed to Pond 29P : Basin 12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
5,251	74	>75% Grass cover, Good, HSG C
5,251		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			





Hydrograph for Subcatchment 30S: Basin 12 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.13	0.00	0.00
3.00	0.20	0.00	0.00
4.00	0.27	0.00	0.00
5.00	0.36	0.00	0.00
6.00	0.45	0.00	0.00
7.00	0.55	0.00	0.00
8.00	0.68	0.00	0.00
9.00	0.83	0.00	0.00
10.00	1.03	0.03	0.00
11.00	1.36	0.10	0.01
12.00	2.50	0.61	**0.20**
13.00	3.86	1.50	**0.04**
14.00	4.19	1.73	0.02
15.00	4.39	1.89	0.02
16.00	4.54	2.01	0.01
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
58.00	5.22	2.54	0.00
59.00	5.22	2.54	0.00
60.00	5.22	2.54	0.00
61.00	5.22	2.54	0.00
62.00	5.22	2.54	0.00
63.00	5.22	2.54	0.00
64.00	5.22	2.54	0.00
65.00	5.22	2.54	0.00
66.00	5.22	2.54	0.00
67.00	5.22	2.54	0.00
68.00	5.22	2.54	0.00
69.00	5.22	2.54	0.00
70.00	5.22	2.54	0.00
71.00	5.22	2.54	0.00
72.00	5.22	2.54	0.00

Summary for Pond 29P: Basin 12

Inflow Area = 0.178 ac, 32.25% Impervious, Inflow Depth = 3.33" for 10-Year event
Inflow = 0.69 cfs @ 12.11 hrs, Volume= 0.049 af
Outflow = 0.21 cfs @ 11.91 hrs, Volume= 0.049 af, Atten= 70%, Lag= 0.0 min
Discarded = 0.21 cfs @ 11.91 hrs, Volume= 0.049 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 596.73' @ 12.28 hrs Surf.Area= 900 sf Storage= 280 cf

Plug-Flow detention time= 5.8 min calculated for 0.049 af (100% of inflow)
Center-of-Mass det. time= 5.8 min (802.8 - 797.0)

Volume	Invert	Avail.Storage	Storage Description
#1	596.00'	1,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 2,700 cf Overall - 191 cf Embedded = 2,509 cf x 40.0% Voids
#2	596.00'	151 cf	**8.00'D x 3.00'H Vertical Cone/Cylinder** Inside #1 191 cf Overall - 6.0" Wall Thickness = 151 cf
		1,154 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
596.00	900	0	0
599.00	900	2,700	2,700

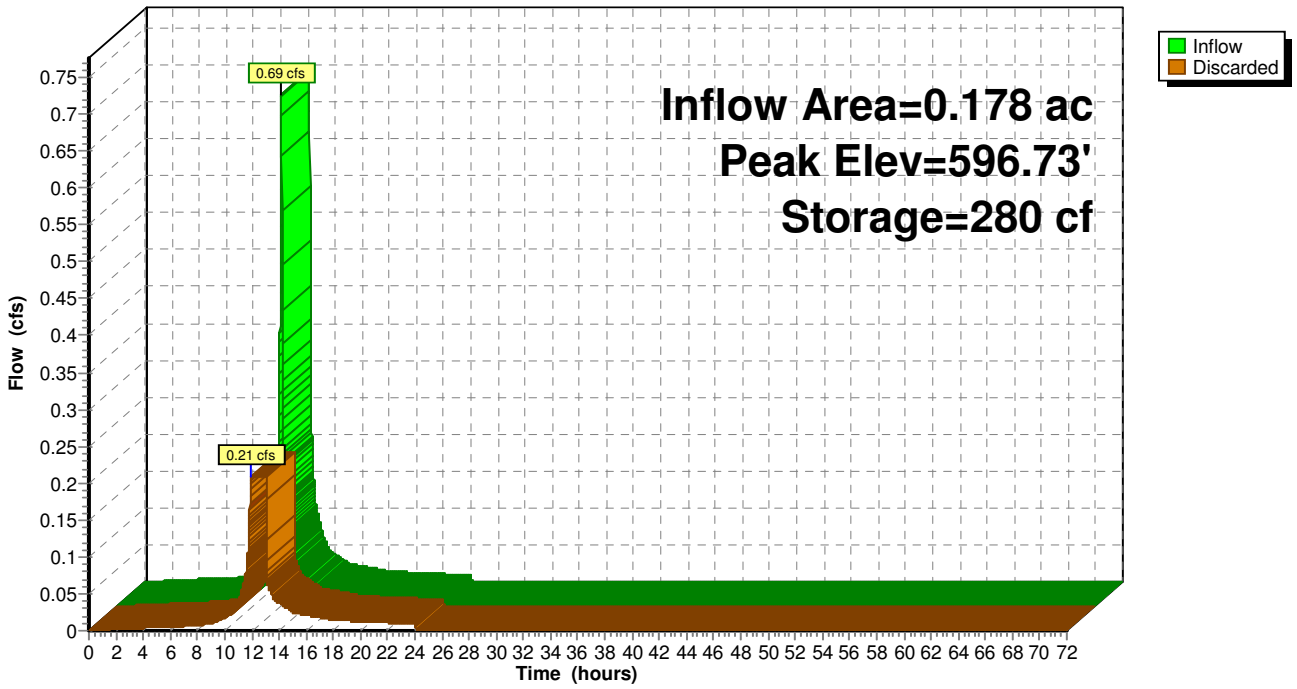
Device	Routing	Invert	Outlet Devices
#1	Discarded	596.00'	**10.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.21 cfs @ 11.91 hrs HW=596.03' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.21 cfs)



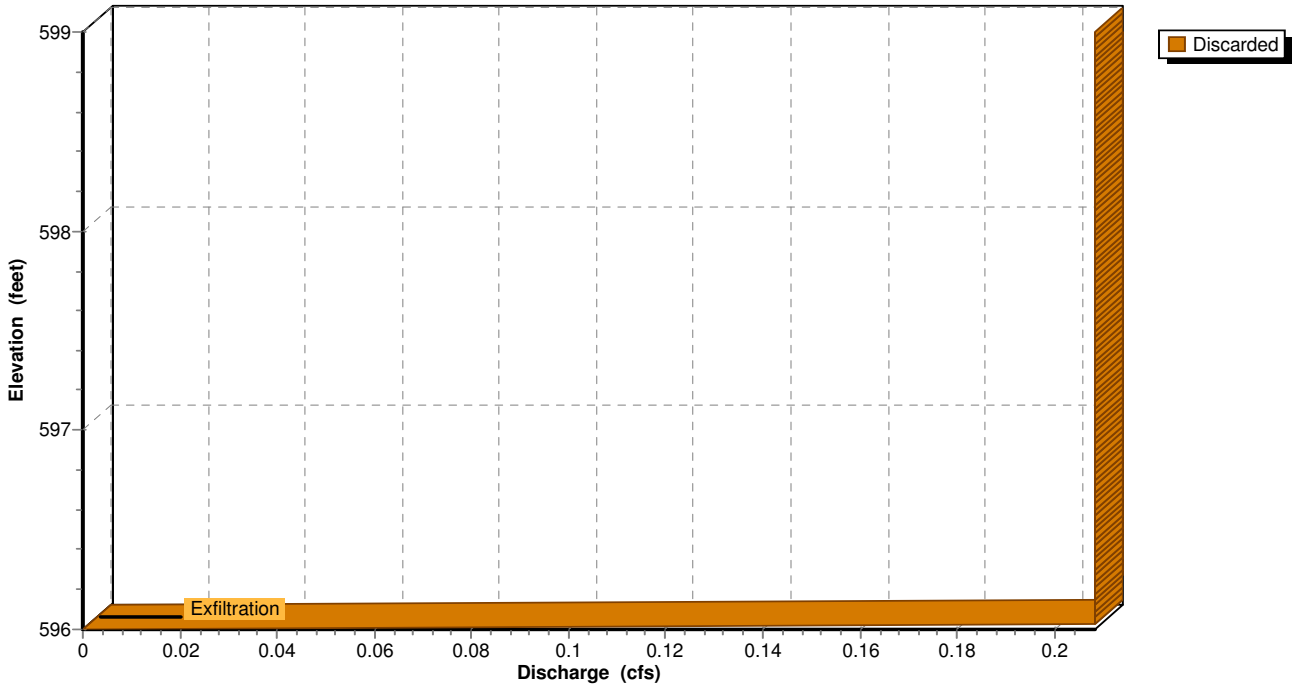
Pond 29P: Basin 12

Hydrograph

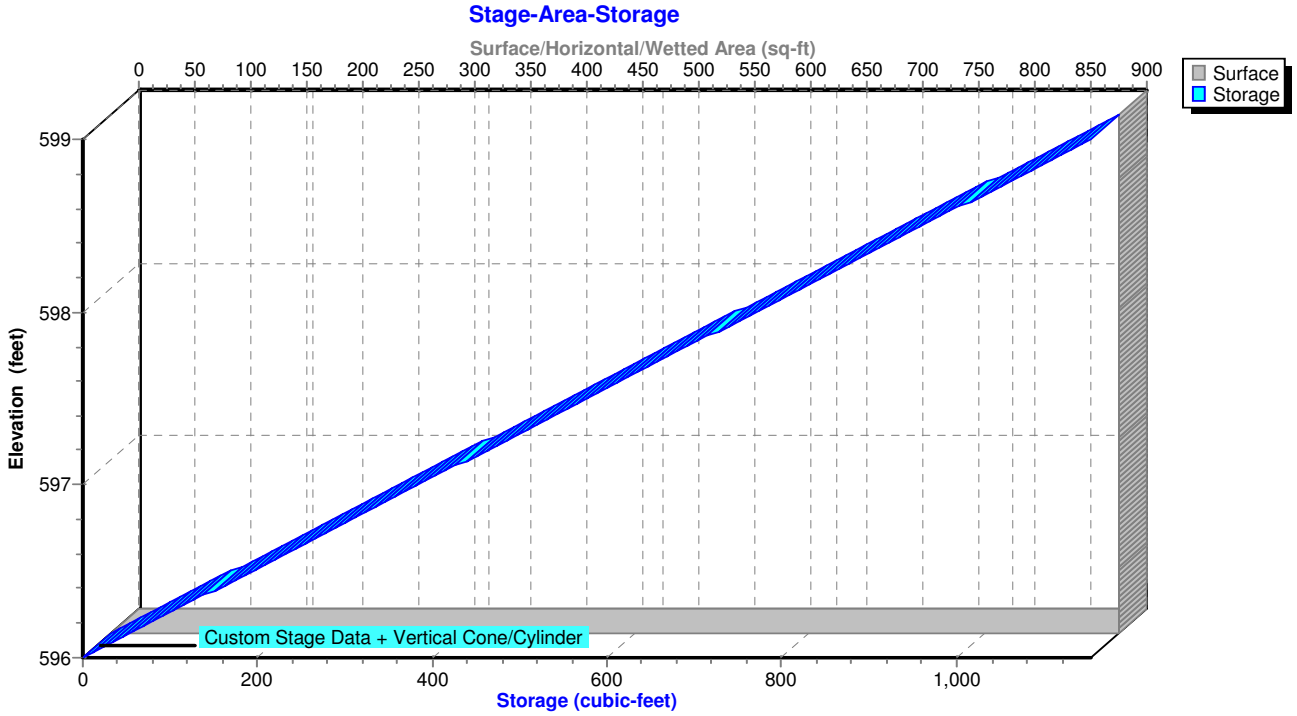


Pond 29P: Basin 12

Stage-Discharge



Pond 29P: Basin 12



Hydrograph for Pond 29P: Basin 12

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	596.00	0.00
2.00	0.00	0	596.00	0.00
4.00	0.00	0	596.00	0.00
6.00	0.00	0	596.00	0.00
8.00	0.01	0	596.00	0.01
10.00	0.02	1	596.00	**0.02**
12.00	**0.38**	**41**	**596.11**	**0.21**
14.00	**0.04**	**2**	**596.01**	0.04
16.00	0.02	1	596.00	0.02
18.00	0.01	1	596.00	0.01
20.00	0.01	1	596.00	0.01
22.00	0.01	1	596.00	0.01
24.00	0.01	0	596.00	0.01
26.00	0.00	0	596.00	0.00
28.00	0.00	0	596.00	0.00
30.00	0.00	0	596.00	0.00
32.00	0.00	0	596.00	0.00
34.00	0.00	0	596.00	0.00
36.00	0.00	0	596.00	0.00
38.00	0.00	0	596.00	0.00
40.00	0.00	0	596.00	0.00
42.00	0.00	0	596.00	0.00
44.00	0.00	0	596.00	0.00
46.00	0.00	0	596.00	0.00
48.00	0.00	0	596.00	0.00
50.00	0.00	0	596.00	0.00
52.00	0.00	0	596.00	0.00
54.00	0.00	0	596.00	0.00
56.00	0.00	0	596.00	0.00
58.00	0.00	0	596.00	0.00
60.00	0.00	0	596.00	0.00
62.00	0.00	0	596.00	0.00
64.00	0.00	0	596.00	0.00
66.00	0.00	0	596.00	0.00
68.00	0.00	0	596.00	0.00
70.00	0.00	0	596.00	0.00
72.00	0.00	0	596.00	0.00

Stage-Discharge for Pond 29P: Basin 12

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
596.00	**0.00**	597.02	0.21	598.04	0.21
596.02	**0.21**	597.04	0.21	598.06	0.21
596.04	0.21	597.06	0.21	598.08	0.21
596.06	0.21	597.08	0.21	598.10	0.21
596.08	0.21	597.10	0.21	598.12	0.21
596.10	0.21	597.12	0.21	598.14	0.21
596.12	0.21	597.14	0.21	598.16	0.21
596.14	0.21	597.16	0.21	598.18	0.21
596.16	0.21	597.18	0.21	598.20	0.21
596.18	0.21	597.20	0.21	598.22	0.21
596.20	0.21	597.22	0.21	598.24	0.21
596.22	0.21	597.24	0.21	598.26	0.21
596.24	0.21	597.26	0.21	598.28	0.21
596.26	0.21	597.28	0.21	598.30	0.21
596.28	0.21	597.30	0.21	598.32	0.21
596.30	0.21	597.32	0.21	598.34	0.21
596.32	0.21	597.34	0.21	598.36	0.21
596.34	0.21	597.36	0.21	598.38	0.21
596.36	0.21	597.38	0.21	598.40	0.21
596.38	0.21	597.40	0.21	598.42	0.21
596.40	0.21	597.42	0.21	598.44	0.21
596.42	0.21	597.44	0.21	598.46	0.21
596.44	0.21	597.46	0.21	598.48	0.21
596.46	0.21	597.48	0.21	598.50	0.21
596.48	0.21	597.50	0.21	598.52	0.21
596.50	0.21	597.52	0.21	598.54	0.21
596.52	0.21	597.54	0.21	598.56	0.21
596.54	0.21	597.56	0.21	598.58	0.21
596.56	0.21	597.58	0.21	598.60	0.21
596.58	0.21	597.60	0.21	598.62	0.21
596.60	0.21	597.62	0.21	598.64	0.21
596.62	0.21	597.64	0.21	598.66	0.21
596.64	0.21	597.66	0.21	598.68	0.21
596.66	0.21	597.68	0.21	598.70	0.21
596.68	0.21	597.70	0.21	598.72	0.21
596.70	0.21	597.72	0.21	598.74	0.21
596.72	0.21	597.74	0.21	598.76	0.21
596.74	0.21	597.76	0.21	598.78	0.21
596.76	0.21	597.78	0.21	598.80	0.21
596.78	0.21	597.80	0.21	598.82	0.21
596.80	0.21	597.82	0.21	598.84	0.21
596.82	0.21	597.84	0.21	598.86	0.21
596.84	0.21	597.86	0.21	598.88	0.21
596.86	0.21	597.88	0.21	598.90	0.21
596.88	0.21	597.90	0.21	598.92	0.21
596.90	0.21	597.92	0.21	598.94	0.21
596.92	0.21	597.94	0.21	598.96	0.21
596.94	0.21	597.96	0.21	598.98	0.21
596.96	0.21	597.98	0.21	599.00	0.21
596.98	0.21	598.00	0.21		
597.00	0.21	598.02	0.21		

Stage-Area-Storage for Pond 29P: Basin 12

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
596.00	**900**	0
596.05	900	19
596.10	900	38
596.15	900	58
596.20	900	77
596.25	900	96
596.30	900	115
596.35	900	135
596.40	900	154
596.45	900	173
596.50	900	192
596.55	900	212
596.60	900	231
596.65	900	250
596.70	900	269
596.75	900	289
596.80	900	308
596.85	900	327
596.90	900	346
596.95	900	366
597.00	900	385
597.05	900	404
597.10	900	423
597.15	900	443
597.20	900	462
597.25	900	481
597.30	900	500
597.35	900	520
597.40	900	539
597.45	900	558
597.50	900	577
597.55	900	596
597.60	900	616
597.65	900	635
597.70	900	654
597.75	900	673
597.80	900	693
597.85	900	712
597.90	900	731
597.95	900	750
598.00	900	770
598.05	900	789
598.10	900	808
598.15	900	827
598.20	900	847
598.25	900	866
598.30	900	885
598.35	900	904
598.40	900	924
598.45	900	943
598.50	900	962
598.55	900	981
598.60	900	1,001
598.65	900	1,020
598.70	900	1,039
598.75	900	1,058
598.80	900	1,077
598.85	900	1,097
598.90	900	1,116
598.95	900	1,135
599.00	900	**1,154**

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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 28S: Basin 12 - Imp Runoff Area=2,500 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=98 Runoff=0.51 cfs 0.040 af

Subcatchment 30S: Basin 12 - Perv Runoff Area=5,251 sf 0.00% Impervious Runoff Depth=5.52"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=74 Runoff=0.83 cfs 0.055 af

Pond 29P: Basin 12 Peak Elev=598.47' Storage=952 cf Inflow=1.33 cfs 0.096 af
Outflow=0.21 cfs 0.096 af

Total Runoff Area = 0.178 ac Runoff Volume = 0.096 af Average Runoff Depth = 6.46"
67.75% Pervious = 0.121 ac 32.25% Impervious = 0.057 ac

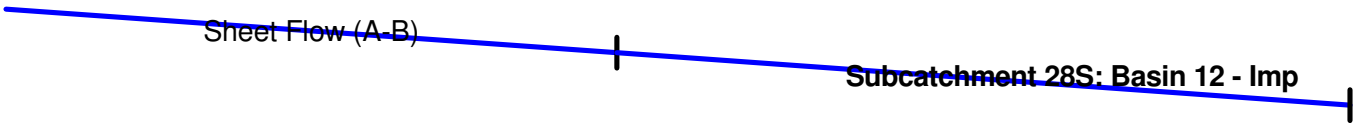
Summary for Subcatchment 28S: Basin 12 - Imp

Runoff = 0.51 cfs @ 12.11 hrs, Volume= 0.040 af, Depth= 8.42"
Routed to Pond 29P : Basin 12

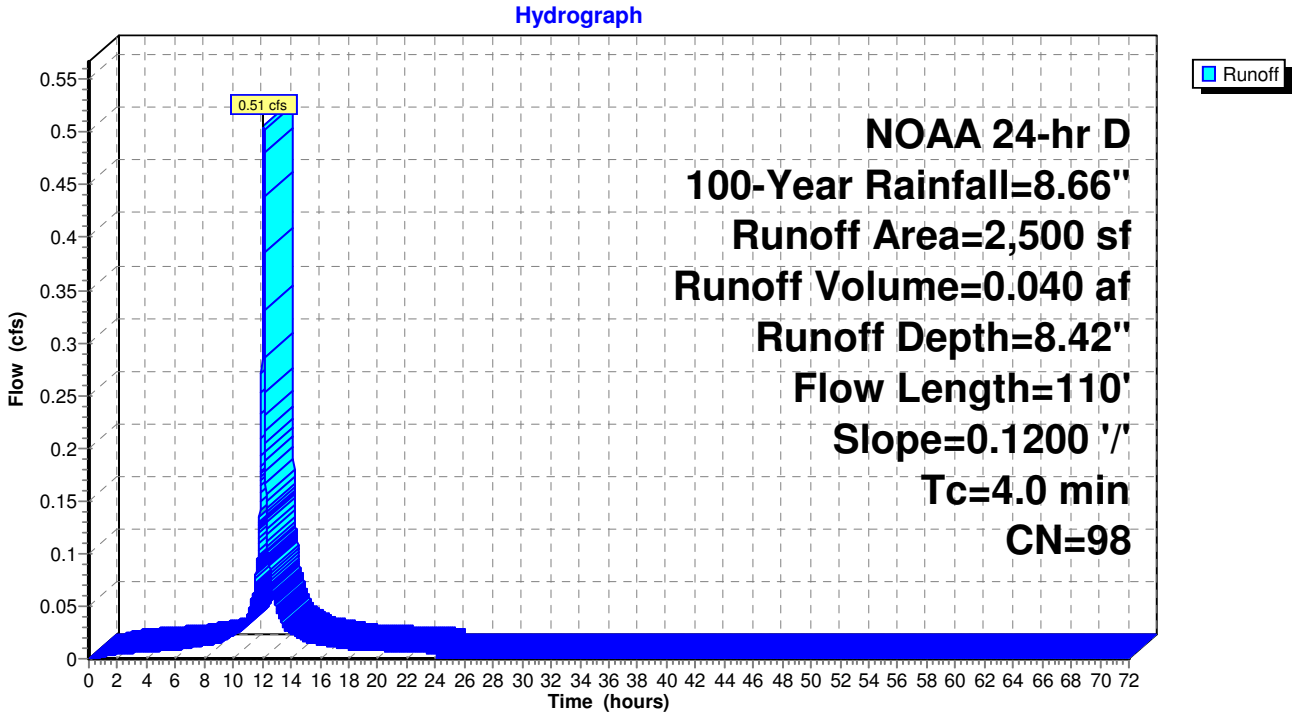
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
2,500	98	Paved parking, HSG C
2,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			



Subcatchment 28S: Basin 12 - Imp



Hydrograph for Subcatchment 28S: Basin 12 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.01	0.00
2.00	0.21	0.08	0.00
3.00	0.33	0.17	0.01
4.00	0.45	0.28	0.01
5.00	0.59	0.40	0.01
6.00	0.74	0.54	0.01
7.00	0.91	0.71	0.01
8.00	1.12	0.91	0.01
9.00	1.37	1.16	0.02
10.00	1.72	1.49	0.02
11.00	2.25	2.02	0.04
12.00	4.15	3.91	**0.30**
13.00	6.41	6.17	**0.05**
14.00	6.94	6.70	0.02
15.00	7.29	7.05	0.02
16.00	7.54	7.30	0.01
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
58.00	8.66	8.42	0.00
59.00	8.66	8.42	0.00
60.00	8.66	8.42	0.00
61.00	8.66	8.42	0.00
62.00	8.66	8.42	0.00
63.00	8.66	8.42	0.00
64.00	8.66	8.42	0.00
65.00	8.66	8.42	0.00
66.00	8.66	8.42	0.00
67.00	8.66	8.42	0.00
68.00	8.66	8.42	0.00
69.00	8.66	8.42	0.00
70.00	8.66	8.42	0.00
71.00	8.66	8.42	0.00
72.00	8.66	8.42	0.00

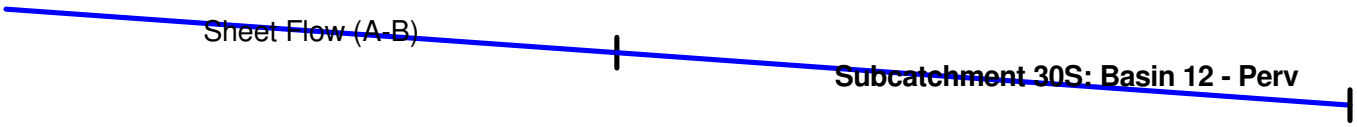
Summary for Subcatchment 30S: Basin 12 - Perv

Runoff = 0.83 cfs @ 12.11 hrs, Volume= 0.055 af, Depth= 5.52"
Routed to Pond 29P : Basin 12

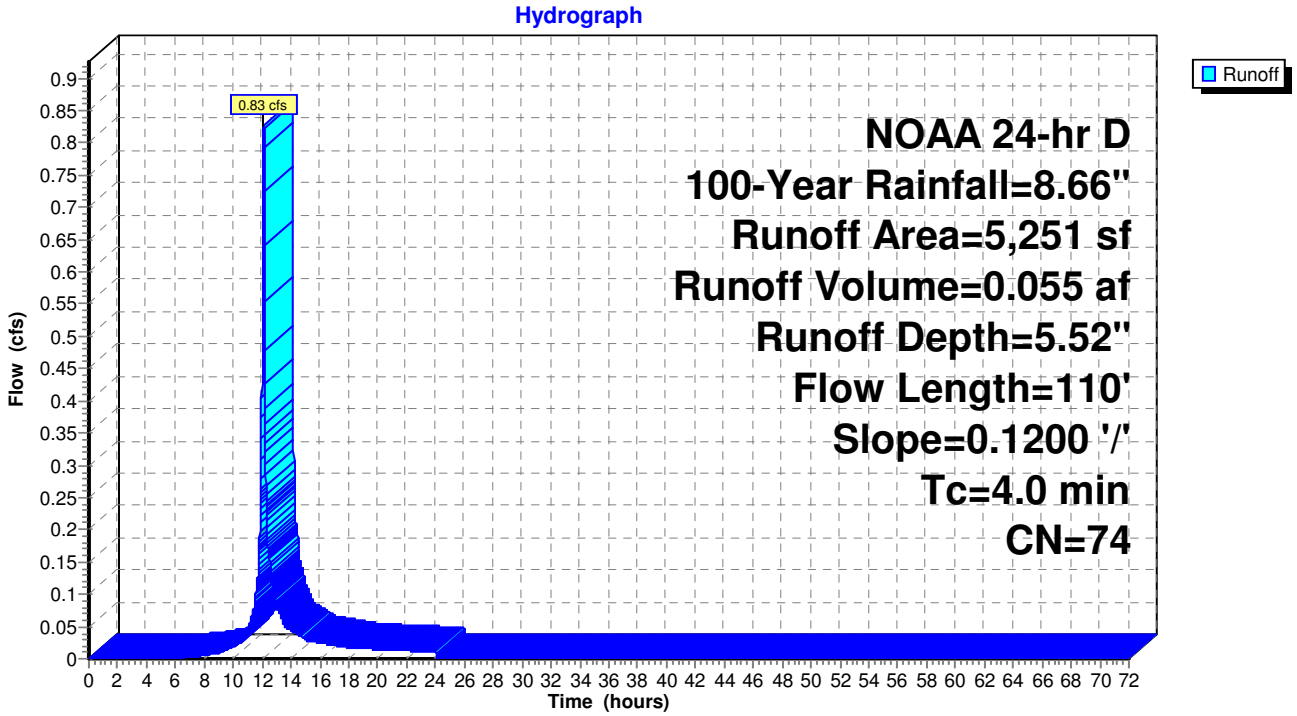
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
5,251	74	>75% Grass cover, Good, HSG C
5,251		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			



Subcatchment 30S: Basin 12 - Perv



Hydrograph for Subcatchment 30S: Basin 12 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.00	0.00
2.00	0.21	0.00	0.00
3.00	0.33	0.00	0.00
4.00	0.45	0.00	0.00
5.00	0.59	0.00	0.00
6.00	0.74	0.00	0.00
7.00	0.91	0.01	0.00
8.00	1.12	0.05	0.01
9.00	1.37	0.11	0.01
10.00	1.72	0.23	0.02
11.00	2.25	0.47	0.04
12.00	4.15	1.71	**0.45**
13.00	6.41	3.53	**0.09**
14.00	6.94	3.99	0.04
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	0.01
21.00	8.33	5.23	0.01
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
58.00	8.66	5.52	0.00
59.00	8.66	5.52	0.00
60.00	8.66	5.52	0.00
61.00	8.66	5.52	0.00
62.00	8.66	5.52	0.00
63.00	8.66	5.52	0.00
64.00	8.66	5.52	0.00
65.00	8.66	5.52	0.00
66.00	8.66	5.52	0.00
67.00	8.66	5.52	0.00
68.00	8.66	5.52	0.00
69.00	8.66	5.52	0.00
70.00	8.66	5.52	0.00
71.00	8.66	5.52	0.00
72.00	8.66	5.52	0.00

Summary for Pond 29P: Basin 12

Inflow Area = 0.178 ac, 32.25% Impervious, Inflow Depth = 6.46" for 100-Year event
Inflow = 1.33 cfs @ 12.11 hrs, Volume= 0.096 af
Outflow = 0.21 cfs @ 11.66 hrs, Volume= 0.096 af, Atten= 84%, Lag= 0.0 min
Discarded = 0.21 cfs @ 11.66 hrs, Volume= 0.096 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 598.47' @ 12.57 hrs Surf.Area= 900 sf Storage= 952 cf

Plug-Flow detention time= 25.6 min calculated for 0.096 af (100% of inflow)
Center-of-Mass det. time= 25.6 min (811.1 - 785.6)

Volume	Invert	Avail.Storage	Storage Description
#1	596.00'	1,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 2,700 cf Overall - 191 cf Embedded = 2,509 cf x 40.0% Voids
#2	596.00'	151 cf	**8.00'D x 3.00'H Vertical Cone/Cylinder** Inside #1 191 cf Overall - 6.0" Wall Thickness = 151 cf
		1,154 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
596.00	900	0	0
599.00	900	2,700	2,700

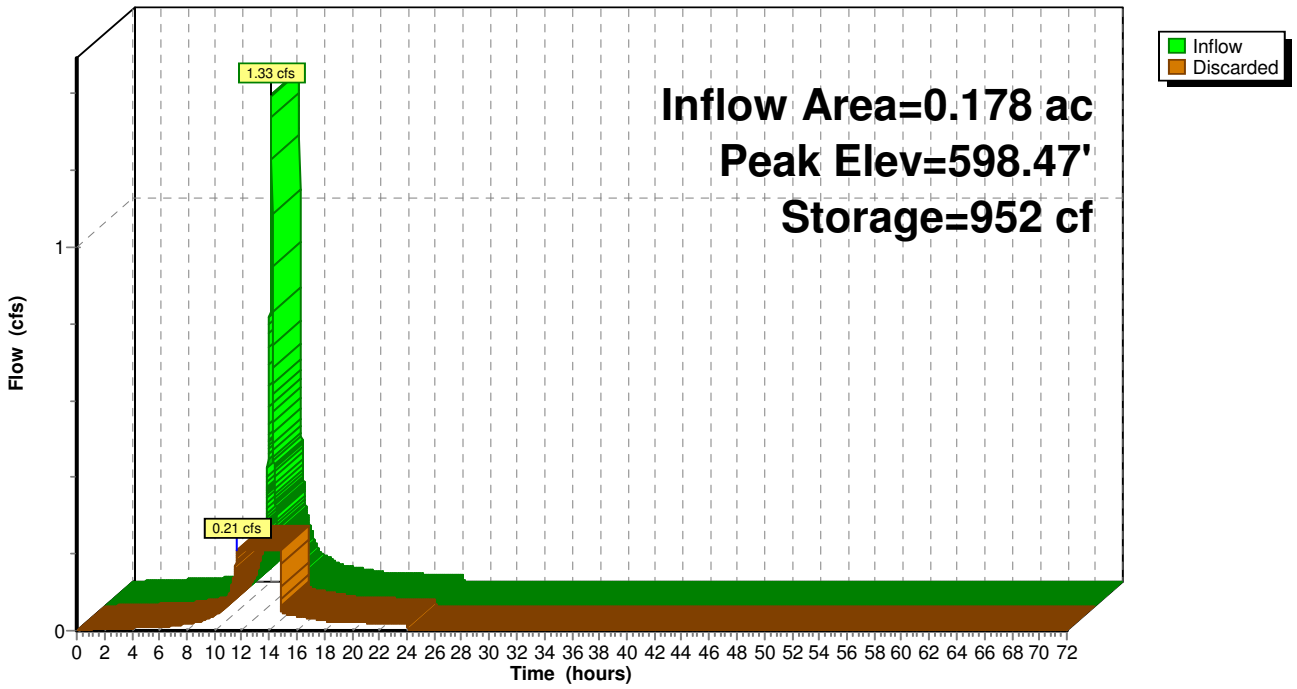
Device	Routing	Invert	Outlet Devices
#1	Discarded	596.00'	**10.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.21 cfs @ 11.66 hrs HW=596.03' (Free Discharge)
↳**1=Exfiltration** (Exfiltration Controls 0.21 cfs)



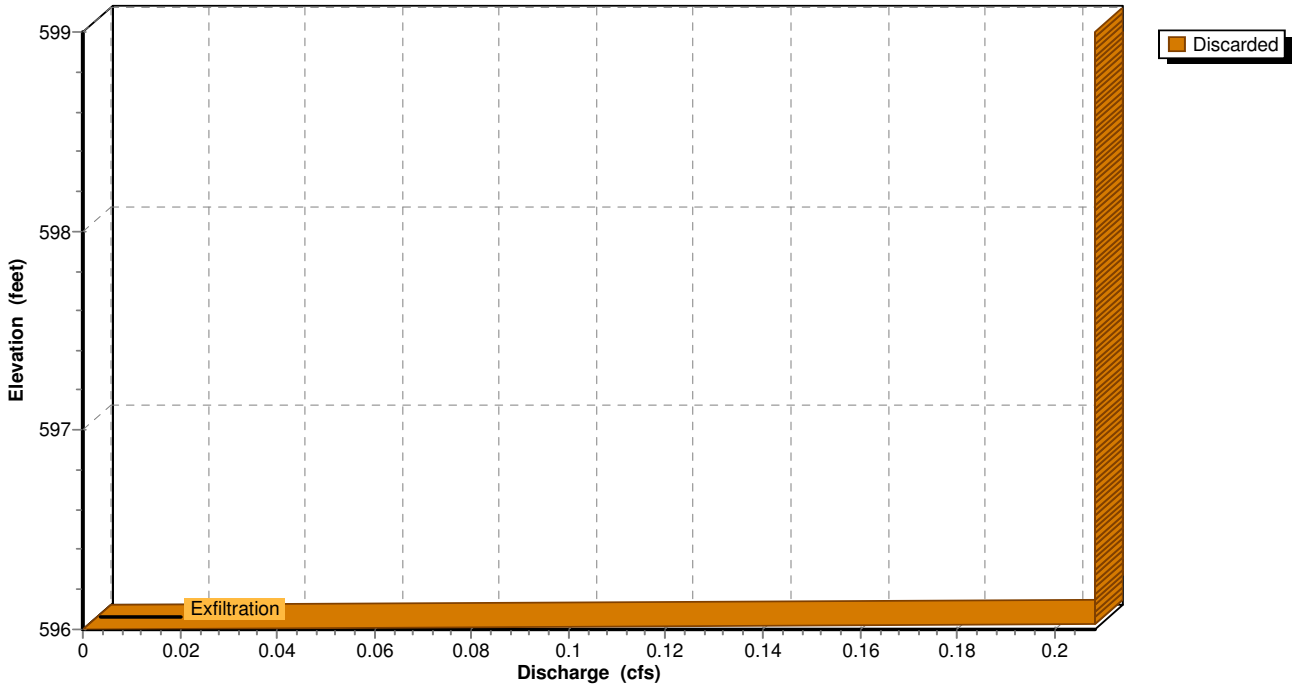
Pond 29P: Basin 12

Hydrograph

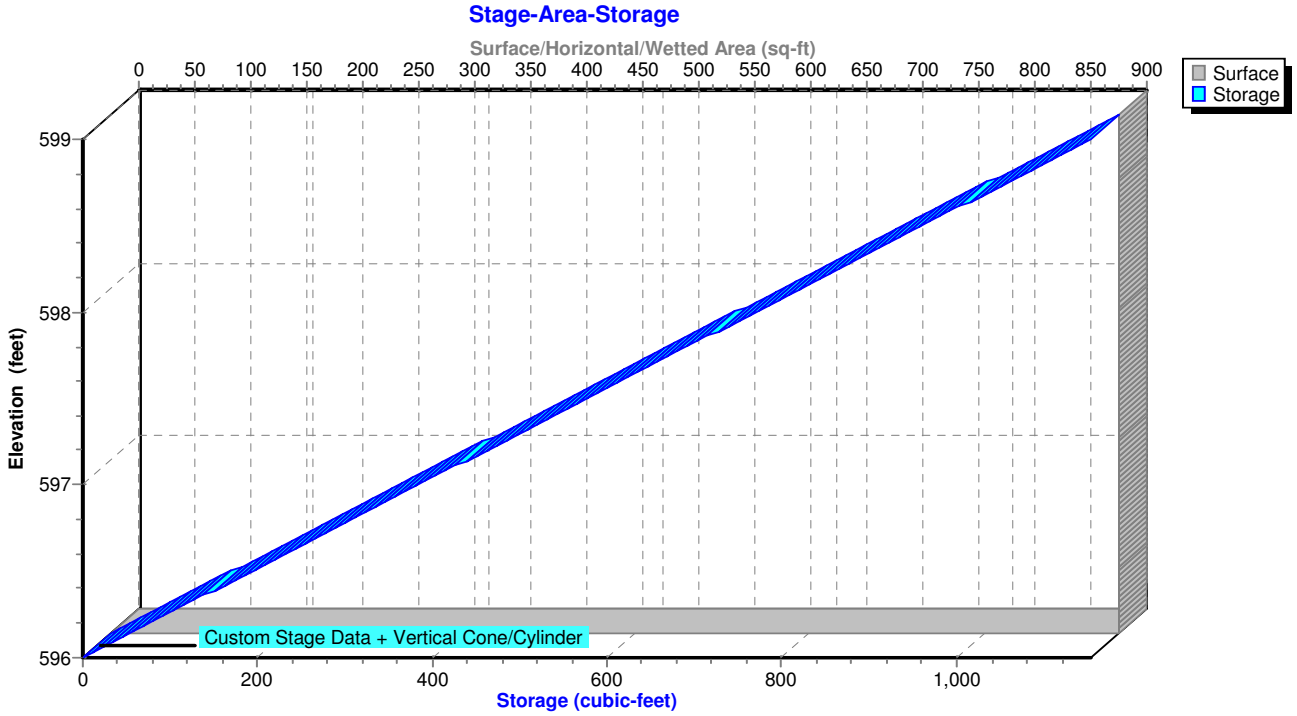


Pond 29P: Basin 12

Stage-Discharge



Pond 29P: Basin 12



Hydrograph for Pond 29P: Basin 12

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	596.00	0.00
2.00	0.00	0	596.00	0.00
4.00	0.01	0	596.00	0.01
6.00	0.01	0	596.00	0.01
8.00	0.02	1	596.00	0.02
10.00	0.04	2	596.01	**0.04**
12.00	**0.75**	**219**	**596.57**	**0.21**
14.00	**0.07**	**459**	**597.19**	0.21
16.00	0.04	2	596.01	0.04
18.00	0.03	1	596.00	0.03
20.00	0.02	1	596.00	0.02
22.00	0.02	1	596.00	0.02
24.00	0.02	1	596.00	0.02
26.00	0.00	0	596.00	0.00
28.00	0.00	0	596.00	0.00
30.00	0.00	0	596.00	0.00
32.00	0.00	0	596.00	0.00
34.00	0.00	0	596.00	0.00
36.00	0.00	0	596.00	0.00
38.00	0.00	0	596.00	0.00
40.00	0.00	0	596.00	0.00
42.00	0.00	0	596.00	0.00
44.00	0.00	0	596.00	0.00
46.00	0.00	0	596.00	0.00
48.00	0.00	0	596.00	0.00
50.00	0.00	0	596.00	0.00
52.00	0.00	0	596.00	0.00
54.00	0.00	0	596.00	0.00
56.00	0.00	0	596.00	0.00
58.00	0.00	0	596.00	0.00
60.00	0.00	0	596.00	0.00
62.00	0.00	0	596.00	0.00
64.00	0.00	0	596.00	0.00
66.00	0.00	0	596.00	0.00
68.00	0.00	0	596.00	0.00
70.00	0.00	0	596.00	0.00
72.00	0.00	0	596.00	0.00

Stage-Discharge for Pond 29P: Basin 12

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
596.00	**0.00**	597.02	0.21	598.04	0.21
596.02	**0.21**	597.04	0.21	598.06	0.21
596.04	0.21	597.06	0.21	598.08	0.21
596.06	0.21	597.08	0.21	598.10	0.21
596.08	0.21	597.10	0.21	598.12	0.21
596.10	0.21	597.12	0.21	598.14	0.21
596.12	0.21	597.14	0.21	598.16	0.21
596.14	0.21	597.16	0.21	598.18	0.21
596.16	0.21	597.18	0.21	598.20	0.21
596.18	0.21	597.20	0.21	598.22	0.21
596.20	0.21	597.22	0.21	598.24	0.21
596.22	0.21	597.24	0.21	598.26	0.21
596.24	0.21	597.26	0.21	598.28	0.21
596.26	0.21	597.28	0.21	598.30	0.21
596.28	0.21	597.30	0.21	598.32	0.21
596.30	0.21	597.32	0.21	598.34	0.21
596.32	0.21	597.34	0.21	598.36	0.21
596.34	0.21	597.36	0.21	598.38	0.21
596.36	0.21	597.38	0.21	598.40	0.21
596.38	0.21	597.40	0.21	598.42	0.21
596.40	0.21	597.42	0.21	598.44	0.21
596.42	0.21	597.44	0.21	598.46	0.21
596.44	0.21	597.46	0.21	598.48	0.21
596.46	0.21	597.48	0.21	598.50	0.21
596.48	0.21	597.50	0.21	598.52	0.21
596.50	0.21	597.52	0.21	598.54	0.21
596.52	0.21	597.54	0.21	598.56	0.21
596.54	0.21	597.56	0.21	598.58	0.21
596.56	0.21	597.58	0.21	598.60	0.21
596.58	0.21	597.60	0.21	598.62	0.21
596.60	0.21	597.62	0.21	598.64	0.21
596.62	0.21	597.64	0.21	598.66	0.21
596.64	0.21	597.66	0.21	598.68	0.21
596.66	0.21	597.68	0.21	598.70	0.21
596.68	0.21	597.70	0.21	598.72	0.21
596.70	0.21	597.72	0.21	598.74	0.21
596.72	0.21	597.74	0.21	598.76	0.21
596.74	0.21	597.76	0.21	598.78	0.21
596.76	0.21	597.78	0.21	598.80	0.21
596.78	0.21	597.80	0.21	598.82	0.21
596.80	0.21	597.82	0.21	598.84	0.21
596.82	0.21	597.84	0.21	598.86	0.21
596.84	0.21	597.86	0.21	598.88	0.21
596.86	0.21	597.88	0.21	598.90	0.21
596.88	0.21	597.90	0.21	598.92	0.21
596.90	0.21	597.92	0.21	598.94	0.21
596.92	0.21	597.94	0.21	598.96	0.21
596.94	0.21	597.96	0.21	598.98	0.21
596.96	0.21	597.98	0.21	599.00	0.21
596.98	0.21	598.00	0.21		
597.00	0.21	598.02	0.21		

Stage-Area-Storage for Pond 29P: Basin 12

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
596.00	**900**	0
596.05	900	19
596.10	900	38
596.15	900	58
596.20	900	77
596.25	900	96
596.30	900	115
596.35	900	135
596.40	900	154
596.45	900	173
596.50	900	192
596.55	900	212
596.60	900	231
596.65	900	250
596.70	900	269
596.75	900	289
596.80	900	308
596.85	900	327
596.90	900	346
596.95	900	366
597.00	900	385
597.05	900	404
597.10	900	423
597.15	900	443
597.20	900	462
597.25	900	481
597.30	900	500
597.35	900	520
597.40	900	539
597.45	900	558
597.50	900	577
597.55	900	596
597.60	900	616
597.65	900	635
597.70	900	654
597.75	900	673
597.80	900	693
597.85	900	712
597.90	900	731
597.95	900	750
598.00	900	770
598.05	900	789
598.10	900	808
598.15	900	827
598.20	900	847
598.25	900	866
598.30	900	885
598.35	900	904
598.40	900	924
598.45	900	943
598.50	900	962
598.55	900	981
598.60	900	1,001
598.65	900	1,020
598.70	900	1,039
598.75	900	1,058
598.80	900	1,077
598.85	900	1,097
598.90	900	1,116
598.95	900	1,135
599.00	900	**1,154**

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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 28S: Basin 12 - Imp Runoff Area=2,500 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=98 Runoff=0.17 cfs 0.005 af

Subcatchment 30S: Basin 12 - Perv Runoff Area=5,251 sf 0.00% Impervious Runoff Depth=0.07"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=74 Runoff=0.02 cfs 0.001 af

Pond 29P: Basin 12 Peak Elev=596.03' Storage=10 cf Inflow=0.19 cfs 0.006 af
Outflow=0.18 cfs 0.006 af

Total Runoff Area = 0.178 ac Runoff Volume = 0.006 af Average Runoff Depth = 0.38"
67.75% Pervious = 0.121 ac 32.25% Impervious = 0.057 ac

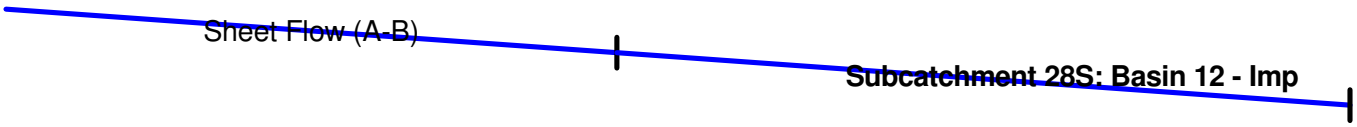
Summary for Subcatchment 28S: Basin 12 - Imp

Runoff = 0.17 cfs @ 1.09 hrs, Volume= 0.005 af, Depth= 1.03"
Routed to Pond 29P : Basin 12

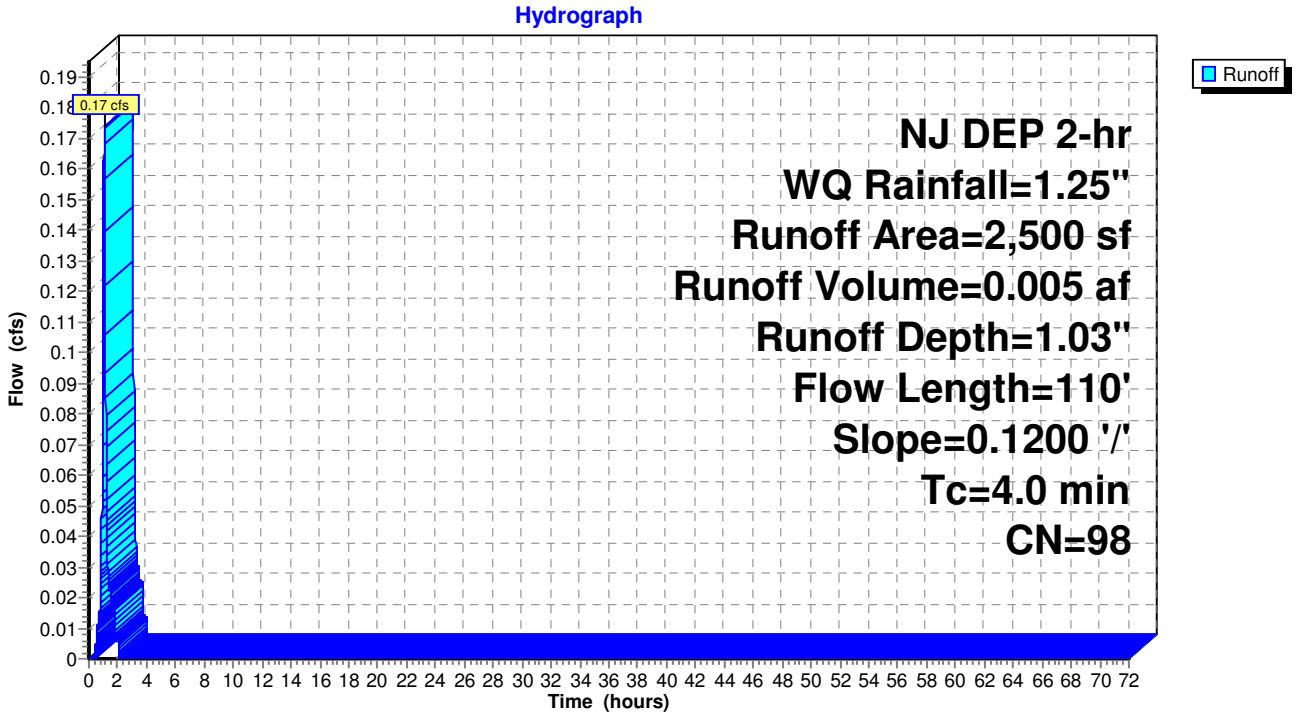
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
2,500	98	Paved parking, HSG C
2,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			



Subcatchment 28S: Basin 12 - Imp



Hydrograph for Subcatchment 28S: Basin 12 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.63	0.43	**0.14**
2.00	**1.25**	**1.03**	**0.01**
3.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00
14.00	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
58.00	1.25	1.03	0.00
59.00	1.25	1.03	0.00
60.00	1.25	1.03	0.00
61.00	1.25	1.03	0.00
62.00	1.25	1.03	0.00
63.00	1.25	1.03	0.00
64.00	1.25	1.03	0.00
65.00	1.25	1.03	0.00
66.00	1.25	1.03	0.00
67.00	1.25	1.03	0.00
68.00	1.25	1.03	0.00
69.00	1.25	1.03	0.00
70.00	1.25	1.03	0.00
71.00	1.25	1.03	0.00
72.00	1.25	1.03	0.00

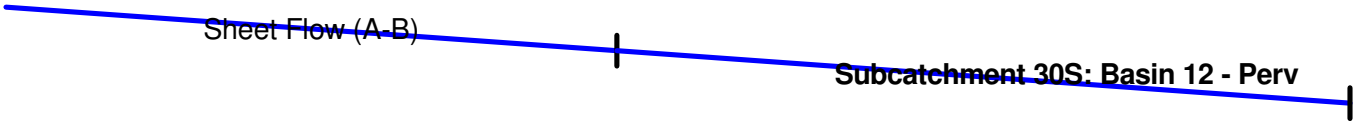
Summary for Subcatchment 30S: Basin 12 - Perv

Runoff = 0.02 cfs @ 1.13 hrs, Volume= 0.001 af, Depth= 0.07"
Routed to Pond 29P : Basin 12

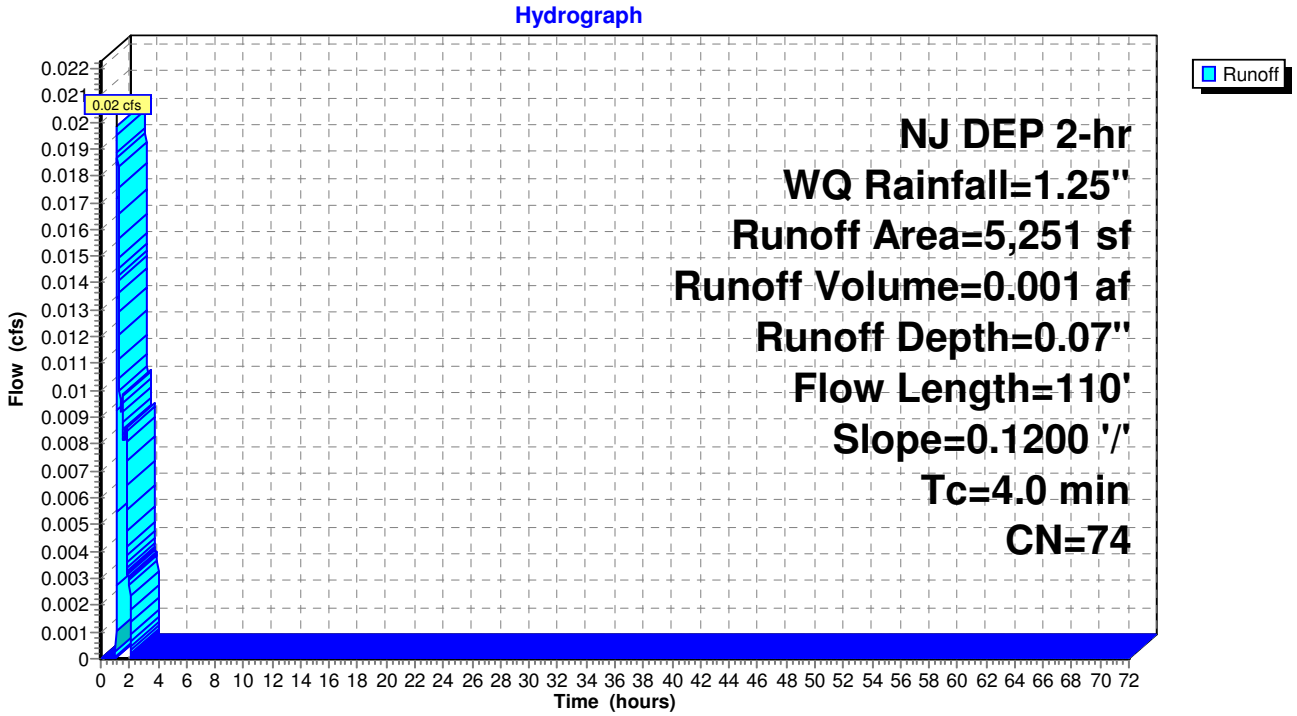
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
5,251	74	>75% Grass cover, Good, HSG C
5,251		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			



Subcatchment 30S: Basin 12 - Perv



Hydrograph for Subcatchment 30S: Basin 12 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.63	0.00	**0.00**
2.00	**1.25**	**0.07**	**0.00**
3.00	1.25	0.07	0.00
4.00	1.25	0.07	0.00
5.00	1.25	0.07	0.00
6.00	1.25	0.07	0.00
7.00	1.25	0.07	0.00
8.00	1.25	0.07	0.00
9.00	1.25	0.07	0.00
10.00	1.25	0.07	0.00
11.00	1.25	0.07	0.00
12.00	1.25	0.07	0.00
13.00	1.25	0.07	0.00
14.00	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
58.00	1.25	0.07	0.00
59.00	1.25	0.07	0.00
60.00	1.25	0.07	0.00
61.00	1.25	0.07	0.00
62.00	1.25	0.07	0.00
63.00	1.25	0.07	0.00
64.00	1.25	0.07	0.00
65.00	1.25	0.07	0.00
66.00	1.25	0.07	0.00
67.00	1.25	0.07	0.00
68.00	1.25	0.07	0.00
69.00	1.25	0.07	0.00
70.00	1.25	0.07	0.00
71.00	1.25	0.07	0.00
72.00	1.25	0.07	0.00

Summary for Pond 29P: Basin 12

Inflow Area = 0.178 ac, 32.25% Impervious, Inflow Depth = 0.38" for WQ event
Inflow = 0.19 cfs @ 1.10 hrs, Volume= 0.006 af
Outflow = 0.18 cfs @ 1.11 hrs, Volume= 0.006 af, Atten= 2%, Lag= 0.6 min
Discarded = 0.18 cfs @ 1.11 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 596.03' @ 1.11 hrs Surf.Area= 900 sf Storage= 10 cf

Plug-Flow detention time= 0.9 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (71.7 - 70.7)

Volume	Invert	Avail.Storage	Storage Description
#1	596.00'	1,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 2,700 cf Overall - 191 cf Embedded = 2,509 cf x 40.0% Voids
#2	596.00'	151 cf	**8.00'D x 3.00'H Vertical Cone/Cylinder** Inside #1 191 cf Overall - 6.0" Wall Thickness = 151 cf
		1,154 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
596.00	900	0	0
599.00	900	2,700	2,700

Device	Routing	Invert	Outlet Devices
#1	Discarded	596.00'	**10.000 in/hr Exfiltration over Surface area**

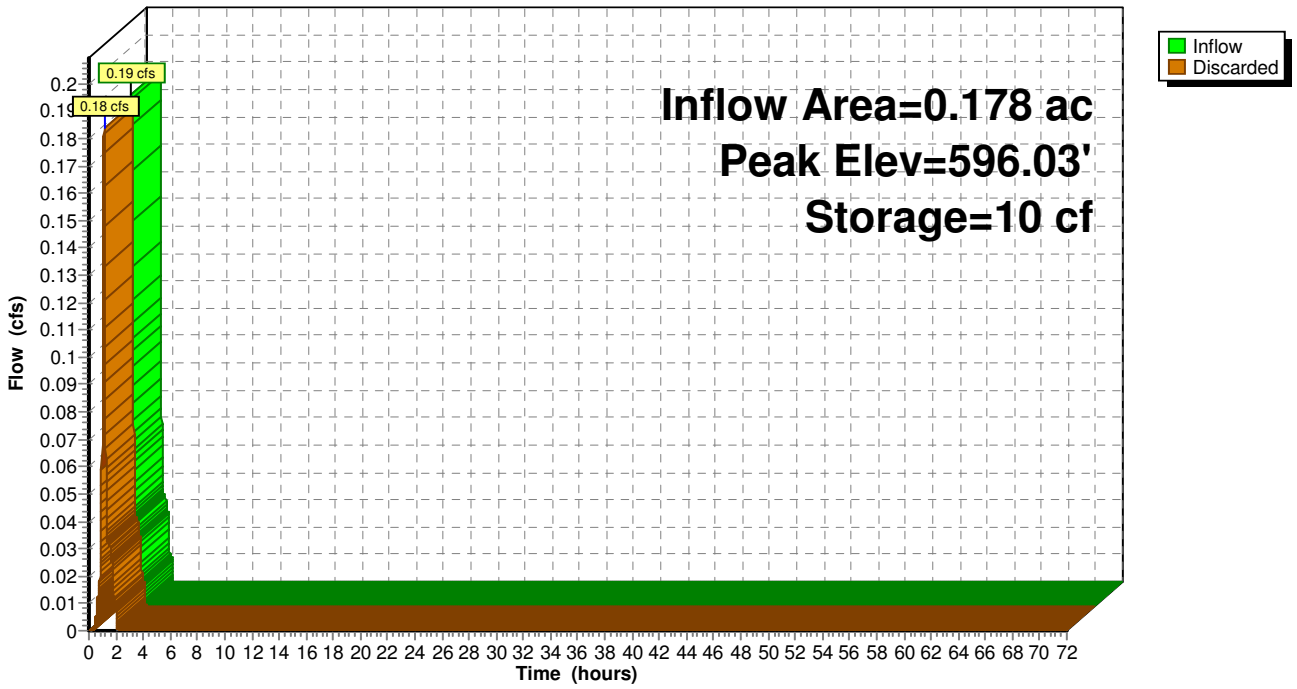
Discarded OutFlow Max=0.21 cfs @ 1.11 hrs HW=596.03' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.21 cfs)

Pond 29P: Basin 12

Exfiltration

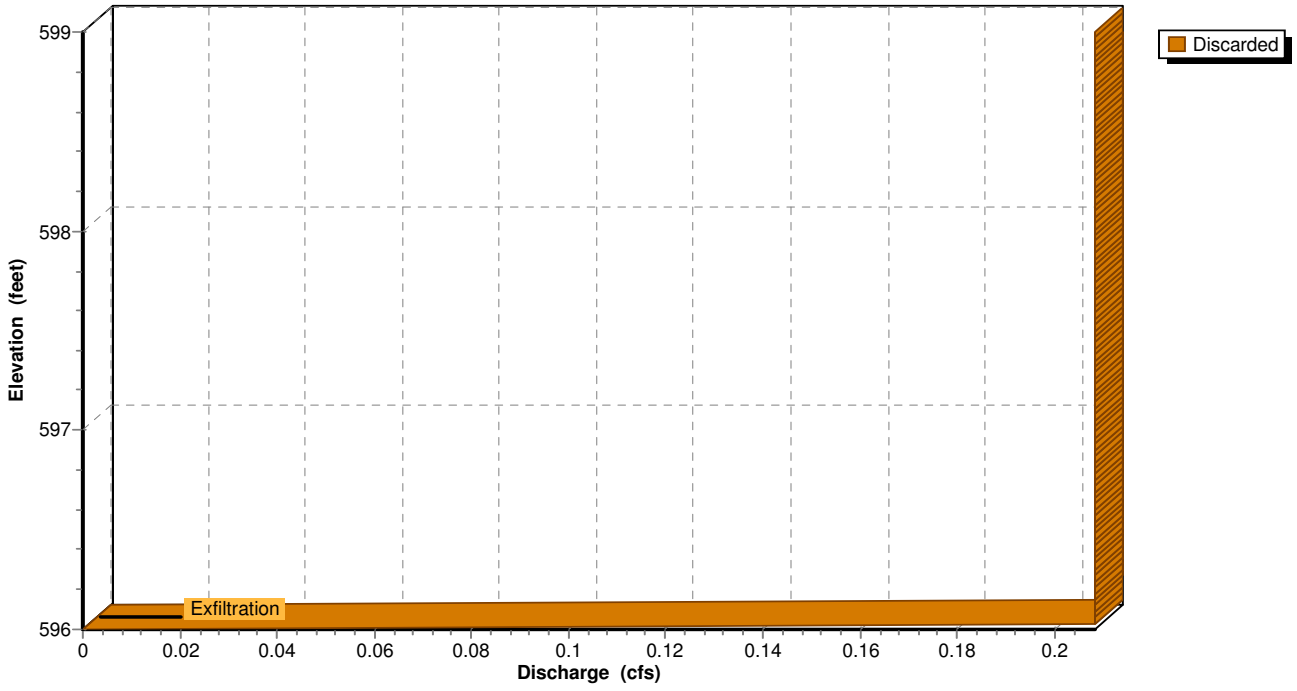
Pond 29P: Basin 12

Hydrograph

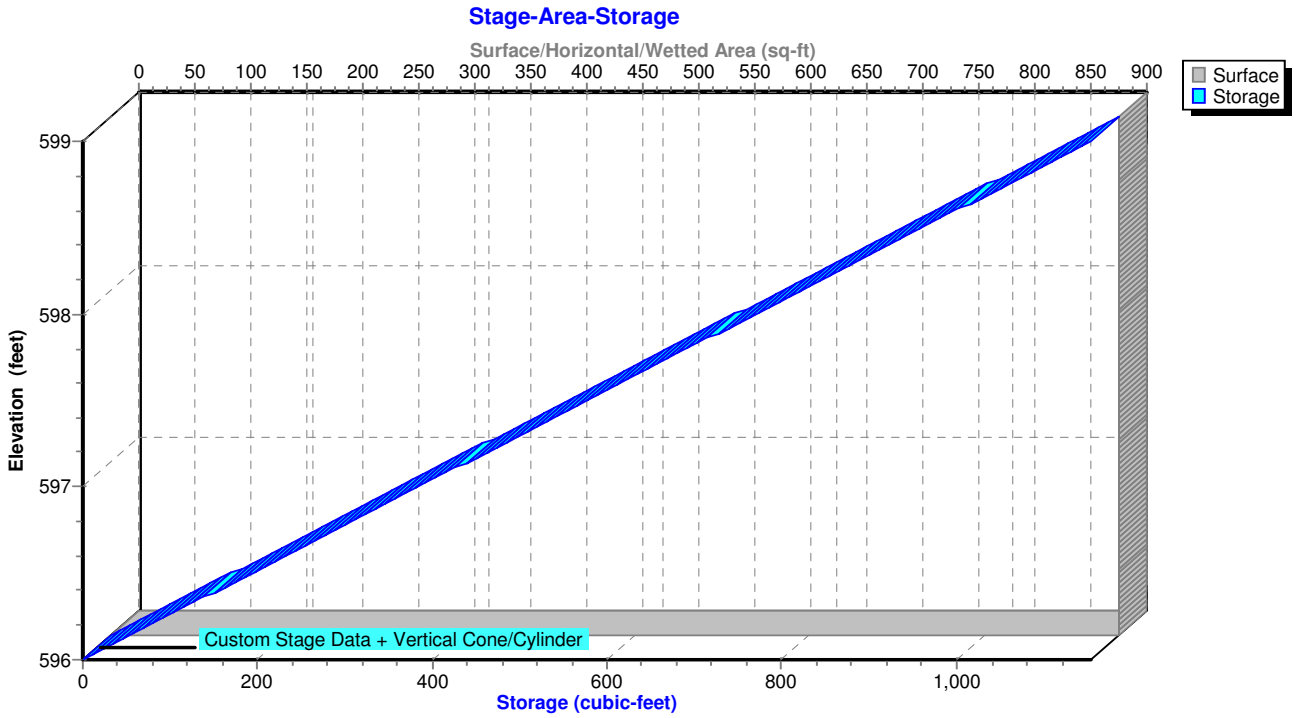


Pond 29P: Basin 12

Stage-Discharge



Pond 29P: Basin 12



Hydrograph for Pond 29P: Basin 12

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	**0.00**	**0**	**596.00**	**0.00**
2.00	**0.01**	**0**	**596.00**	**0.01**
4.00	0.00	0	596.00	0.00
6.00	0.00	0	596.00	0.00
8.00	0.00	0	596.00	0.00
10.00	0.00	0	596.00	0.00
12.00	0.00	0	596.00	0.00
14.00	0.00	0	596.00	0.00
16.00	0.00	0	596.00	0.00
18.00	0.00	0	596.00	0.00
20.00	0.00	0	596.00	0.00
22.00	0.00	0	596.00	0.00
24.00	0.00	0	596.00	0.00
26.00	0.00	0	596.00	0.00
28.00	0.00	0	596.00	0.00
30.00	0.00	0	596.00	0.00
32.00	0.00	0	596.00	0.00
34.00	0.00	0	596.00	0.00
36.00	0.00	0	596.00	0.00
38.00	0.00	0	596.00	0.00
40.00	0.00	0	596.00	0.00
42.00	0.00	0	596.00	0.00
44.00	0.00	0	596.00	0.00
46.00	0.00	0	596.00	0.00
48.00	0.00	0	596.00	0.00
50.00	0.00	0	596.00	0.00
52.00	0.00	0	596.00	0.00
54.00	0.00	0	596.00	0.00
56.00	0.00	0	596.00	0.00
58.00	0.00	0	596.00	0.00
60.00	0.00	0	596.00	0.00
62.00	0.00	0	596.00	0.00
64.00	0.00	0	596.00	0.00
66.00	0.00	0	596.00	0.00
68.00	0.00	0	596.00	0.00
70.00	0.00	0	596.00	0.00
72.00	0.00	0	596.00	0.00

Stage-Discharge for Pond 29P: Basin 12

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
596.00	**0.00**	597.02	0.21	598.04	0.21
596.02	**0.21**	597.04	0.21	598.06	0.21
596.04	0.21	597.06	0.21	598.08	0.21
596.06	0.21	597.08	0.21	598.10	0.21
596.08	0.21	597.10	0.21	598.12	0.21
596.10	0.21	597.12	0.21	598.14	0.21
596.12	0.21	597.14	0.21	598.16	0.21
596.14	0.21	597.16	0.21	598.18	0.21
596.16	0.21	597.18	0.21	598.20	0.21
596.18	0.21	597.20	0.21	598.22	0.21
596.20	0.21	597.22	0.21	598.24	0.21
596.22	0.21	597.24	0.21	598.26	0.21
596.24	0.21	597.26	0.21	598.28	0.21
596.26	0.21	597.28	0.21	598.30	0.21
596.28	0.21	597.30	0.21	598.32	0.21
596.30	0.21	597.32	0.21	598.34	0.21
596.32	0.21	597.34	0.21	598.36	0.21
596.34	0.21	597.36	0.21	598.38	0.21
596.36	0.21	597.38	0.21	598.40	0.21
596.38	0.21	597.40	0.21	598.42	0.21
596.40	0.21	597.42	0.21	598.44	0.21
596.42	0.21	597.44	0.21	598.46	0.21
596.44	0.21	597.46	0.21	598.48	0.21
596.46	0.21	597.48	0.21	598.50	0.21
596.48	0.21	597.50	0.21	598.52	0.21
596.50	0.21	597.52	0.21	598.54	0.21
596.52	0.21	597.54	0.21	598.56	0.21
596.54	0.21	597.56	0.21	598.58	0.21
596.56	0.21	597.58	0.21	598.60	0.21
596.58	0.21	597.60	0.21	598.62	0.21
596.60	0.21	597.62	0.21	598.64	0.21
596.62	0.21	597.64	0.21	598.66	0.21
596.64	0.21	597.66	0.21	598.68	0.21
596.66	0.21	597.68	0.21	598.70	0.21
596.68	0.21	597.70	0.21	598.72	0.21
596.70	0.21	597.72	0.21	598.74	0.21
596.72	0.21	597.74	0.21	598.76	0.21
596.74	0.21	597.76	0.21	598.78	0.21
596.76	0.21	597.78	0.21	598.80	0.21
596.78	0.21	597.80	0.21	598.82	0.21
596.80	0.21	597.82	0.21	598.84	0.21
596.82	0.21	597.84	0.21	598.86	0.21
596.84	0.21	597.86	0.21	598.88	0.21
596.86	0.21	597.88	0.21	598.90	0.21
596.88	0.21	597.90	0.21	598.92	0.21
596.90	0.21	597.92	0.21	598.94	0.21
596.92	0.21	597.94	0.21	598.96	0.21
596.94	0.21	597.96	0.21	598.98	0.21
596.96	0.21	597.98	0.21	599.00	0.21
596.98	0.21	598.00	0.21		
597.00	0.21	598.02	0.21		

Stage-Area-Storage for Pond 29P: Basin 12

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
596.00	**900**	0
596.05	900	19
596.10	900	38
596.15	900	58
596.20	900	77
596.25	900	96
596.30	900	115
596.35	900	135
596.40	900	154
596.45	900	173
596.50	900	192
596.55	900	212
596.60	900	231
596.65	900	250
596.70	900	269
596.75	900	289
596.80	900	308
596.85	900	327
596.90	900	346
596.95	900	366
597.00	900	385
597.05	900	404
597.10	900	423
597.15	900	443
597.20	900	462
597.25	900	481
597.30	900	500
597.35	900	520
597.40	900	539
597.45	900	558
597.50	900	577
597.55	900	596
597.60	900	616
597.65	900	635
597.70	900	654
597.75	900	673
597.80	900	693
597.85	900	712
597.90	900	731
597.95	900	750
598.00	900	770
598.05	900	789
598.10	900	808
598.15	900	827
598.20	900	847
598.25	900	866
598.30	900	885
598.35	900	904
598.40	900	924
598.45	900	943
598.50	900	962
598.55	900	981
598.60	900	1,001
598.65	900	1,020
598.70	900	1,039
598.75	900	1,058
598.80	900	1,077
598.85	900	1,097
598.90	900	1,116
598.95	900	1,135
599.00	900	**1,154**

Events for Subcatchment 28S: Basin 12 - Imp

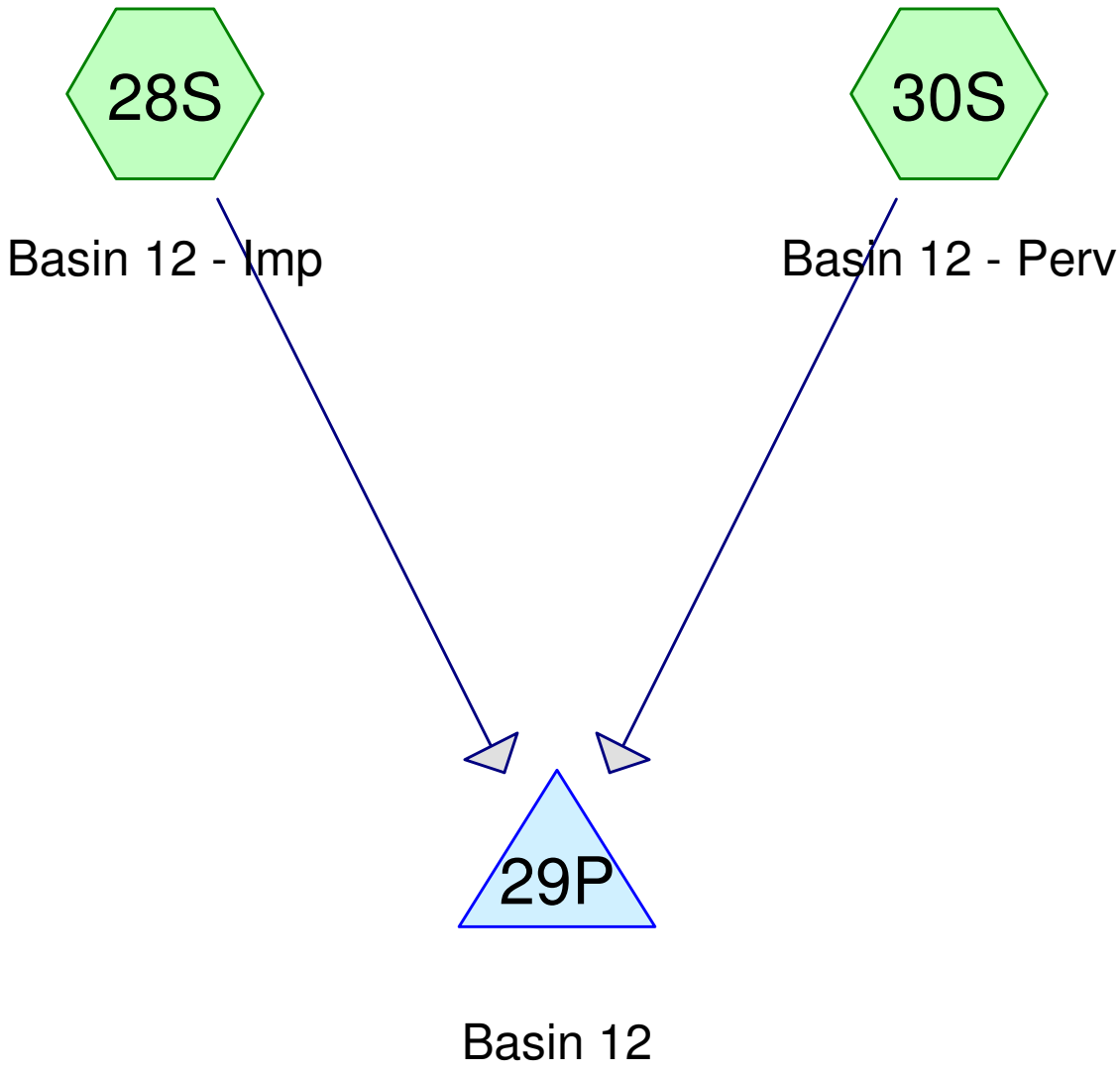
Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2-Year	3.44	0.20	0.015	3.21
10-Year	5.22	0.30	0.024	4.98
100-Year	**8.66**	**0.51**	**0.040**	**8.42**
WQ	1.25	0.17	0.005	1.03

Events for Subcatchment 30S: Basin 12 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2-Year	3.44	0.18	0.012	1.20
10-Year	5.22	0.39	0.026	2.54
100-Year	**8.66**	**0.83**	**0.055**	**5.52**
WQ	1.25	0.02	0.001	0.07

Events for Pond 29P: Basin 12

Event	Inflow (cfs)	Discarded (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	0.38	**0.21**	596.18	69
10-Year	0.69	0.21	596.73	280
100-Year	**1.33**	0.21	**598.47**	**952**
WQ	0.19	0.18	596.03	10



Subcat Reach Pond Link

Routing Diagram for 2024-05-12 HydroCad - Proposed POA 3B
Prepared by Anderson Consulting Services, Printed 10/25/2024
HydroCAD® 10.20-5c s/n 06666 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing

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

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.121	74	>75% Grass cover, Good, HSG C (30S)
0.057	98	Paved parking, HSG C (28S)
0.178	**82**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.178	HSG C	28S, 30S
0.000	HSG D	
0.000	Other	
0.178		**TOTAL AREA**

2024-05-12 HydroCad - Proposed POA 3B

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.121	0.000	0.000	0.121	>75% Grass cover, Good	30S
0.000	0.000	0.057	0.000	0.000	0.057	Paved parking	28S
0.000	**0.000**	**0.178**	**0.000**	**0.000**	**0.178**	**TOTAL AREA**	

Notes Listing (all nodes)

Line#	Node Number	Notes
1	Project	Rainfall events imported from "NJ-2023-Rain.txt" for 6606 NJ Essex
2		Rainfall events imported from "NRCS2-Rain.txt" for 1167 NJ Essex-D
3		Rainfall events imported from "NRCS2-Rain.txt" for 1167 NJ Essex-D

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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 28S: Basin 12 - Imp Runoff Area=2,500 sf 100.00% Impervious Runoff Depth=3.21"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=98 Runoff=0.20 cfs 0.015 af

Subcatchment 30S: Basin 12 - Perv Runoff Area=5,251 sf 0.00% Impervious Runoff Depth=1.20"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=74 Runoff=0.18 cfs 0.012 af

Pond 29P: Basin 12 Peak Elev=596.18' Storage=69 cf Inflow=0.38 cfs 0.027 af
Outflow=0.21 cfs 0.027 af

Total Runoff Area = 0.178 ac Runoff Volume = 0.027 af Average Runoff Depth = 1.85"
67.75% Pervious = 0.121 ac 32.25% Impervious = 0.057 ac

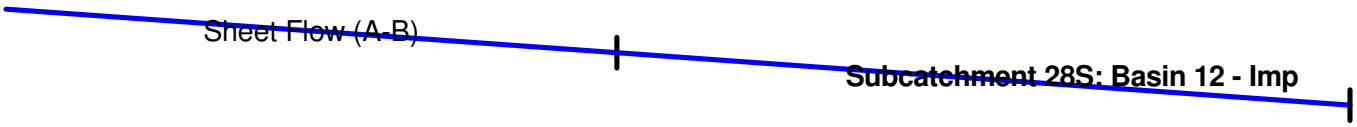
Summary for Subcatchment 28S: Basin 12 - Imp

Runoff = 0.20 cfs @ 12.11 hrs, Volume= 0.015 af, Depth= 3.21"
Routed to Pond 29P : Basin 12

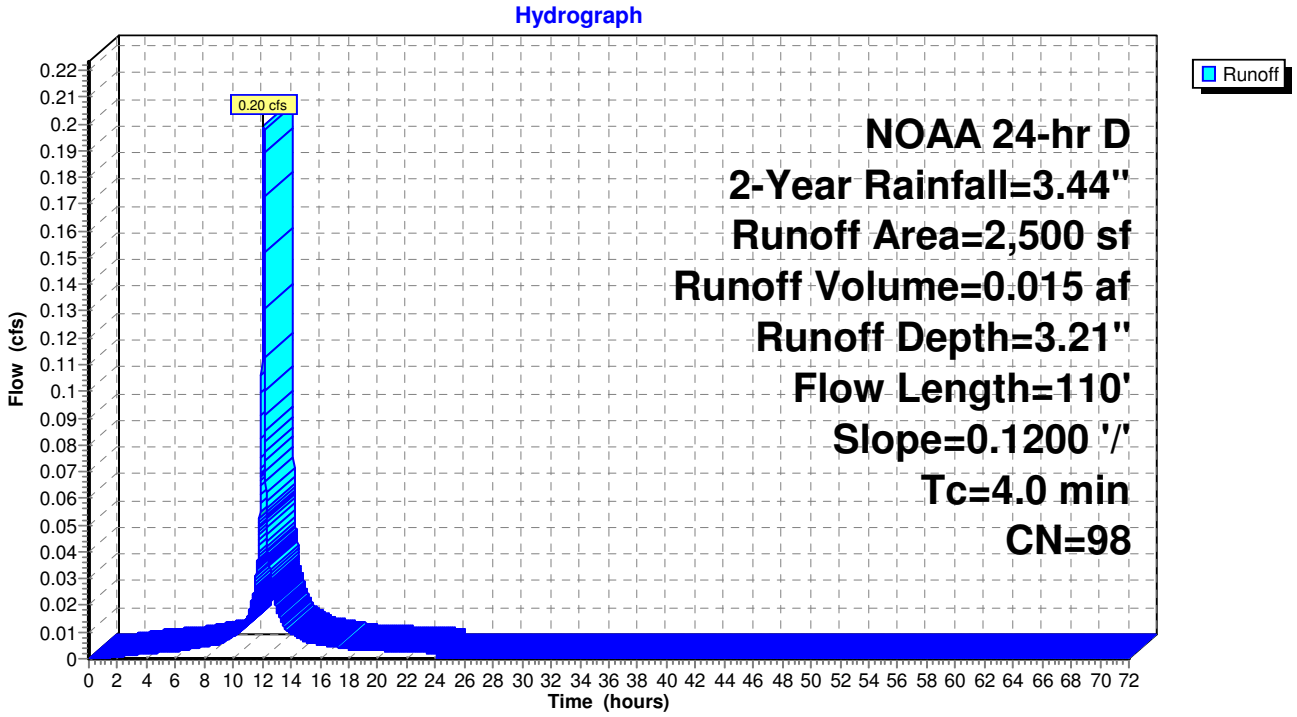
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
2,500	98	Paved parking, HSG C
2,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			



Subcatchment 28S: Basin 12 - Imp



Hydrograph for Subcatchment 28S: Basin 12 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.01	0.00
3.00	0.13	0.03	0.00
4.00	0.18	0.06	0.00
5.00	0.24	0.09	0.00
6.00	0.29	0.14	0.00
7.00	0.36	0.20	0.00
8.00	0.45	0.27	0.00
9.00	0.55	0.36	0.01
10.00	0.68	0.49	0.01
11.00	0.89	0.69	0.02
12.00	1.65	1.43	**0.12**
13.00	2.55	2.32	**0.02**
14.00	2.76	2.53	0.01
15.00	2.89	2.66	0.01
16.00	2.99	2.76	0.01
17.00	3.08	2.85	0.00
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
58.00	3.44	3.21	0.00
59.00	3.44	3.21	0.00
60.00	3.44	3.21	0.00
61.00	3.44	3.21	0.00
62.00	3.44	3.21	0.00
63.00	3.44	3.21	0.00
64.00	3.44	3.21	0.00
65.00	3.44	3.21	0.00
66.00	3.44	3.21	0.00
67.00	3.44	3.21	0.00
68.00	3.44	3.21	0.00
69.00	3.44	3.21	0.00
70.00	3.44	3.21	0.00
71.00	3.44	3.21	0.00
72.00	3.44	3.21	0.00

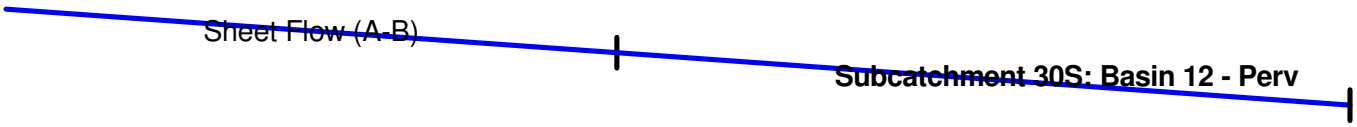
Summary for Subcatchment 30S: Basin 12 - Perv

Runoff = 0.18 cfs @ 12.12 hrs, Volume= 0.012 af, Depth= 1.20"
Routed to Pond 29P : Basin 12

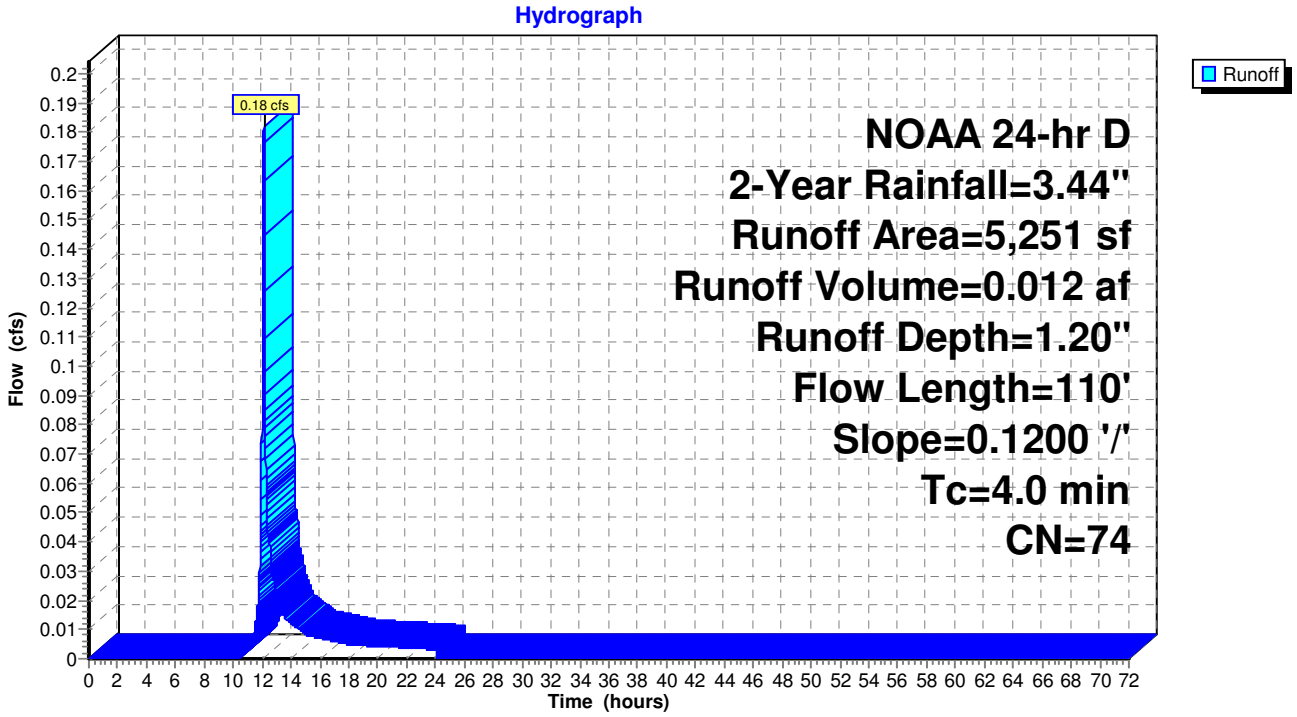
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 2-Year Rainfall=3.44"

Area (sf)	CN	Description
5,251	74	>75% Grass cover, Good, HSG C
5,251		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			



Subcatchment 30S: Basin 12 - Perv



Hydrograph for Subcatchment 30S: Basin 12 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.04	0.00	0.00
2.00	0.08	0.00	0.00
3.00	0.13	0.00	0.00
4.00	0.18	0.00	0.00
5.00	0.24	0.00	0.00
6.00	0.29	0.00	0.00
7.00	0.36	0.00	0.00
8.00	0.45	0.00	0.00
9.00	0.55	0.00	0.00
10.00	0.68	0.00	0.00
11.00	0.89	0.01	0.00
12.00	1.65	0.20	**0.09**
13.00	2.55	0.63	**0.02**
14.00	2.76	0.76	0.01
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	0.00
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
58.00	3.44	1.20	0.00
59.00	3.44	1.20	0.00
60.00	3.44	1.20	0.00
61.00	3.44	1.20	0.00
62.00	3.44	1.20	0.00
63.00	3.44	1.20	0.00
64.00	3.44	1.20	0.00
65.00	3.44	1.20	0.00
66.00	3.44	1.20	0.00
67.00	3.44	1.20	0.00
68.00	3.44	1.20	0.00
69.00	3.44	1.20	0.00
70.00	3.44	1.20	0.00
71.00	3.44	1.20	0.00
72.00	3.44	1.20	0.00

Summary for Pond 29P: Basin 12

Inflow Area = 0.178 ac, 32.25% Impervious, Inflow Depth = 1.85" for 2-Year event
Inflow = 0.38 cfs @ 12.12 hrs, Volume= 0.027 af
Outflow = 0.21 cfs @ 12.03 hrs, Volume= 0.027 af, Atten= 45%, Lag= 0.0 min
Discarded = 0.21 cfs @ 12.03 hrs, Volume= 0.027 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 596.18' @ 12.18 hrs Surf.Area= 900 sf Storage= 69 cf

Plug-Flow detention time= 1.5 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 1.5 min (806.3 - 804.8)

Volume	Invert	Avail.Storage	Storage Description
#1	596.00'	1,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 2,700 cf Overall - 191 cf Embedded = 2,509 cf x 40.0% Voids
#2	596.00'	151 cf	**8.00'D x 3.00'H Vertical Cone/Cylinder** Inside #1 191 cf Overall - 6.0" Wall Thickness = 151 cf
		1,154 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
596.00	900	0	0
599.00	900	2,700	2,700

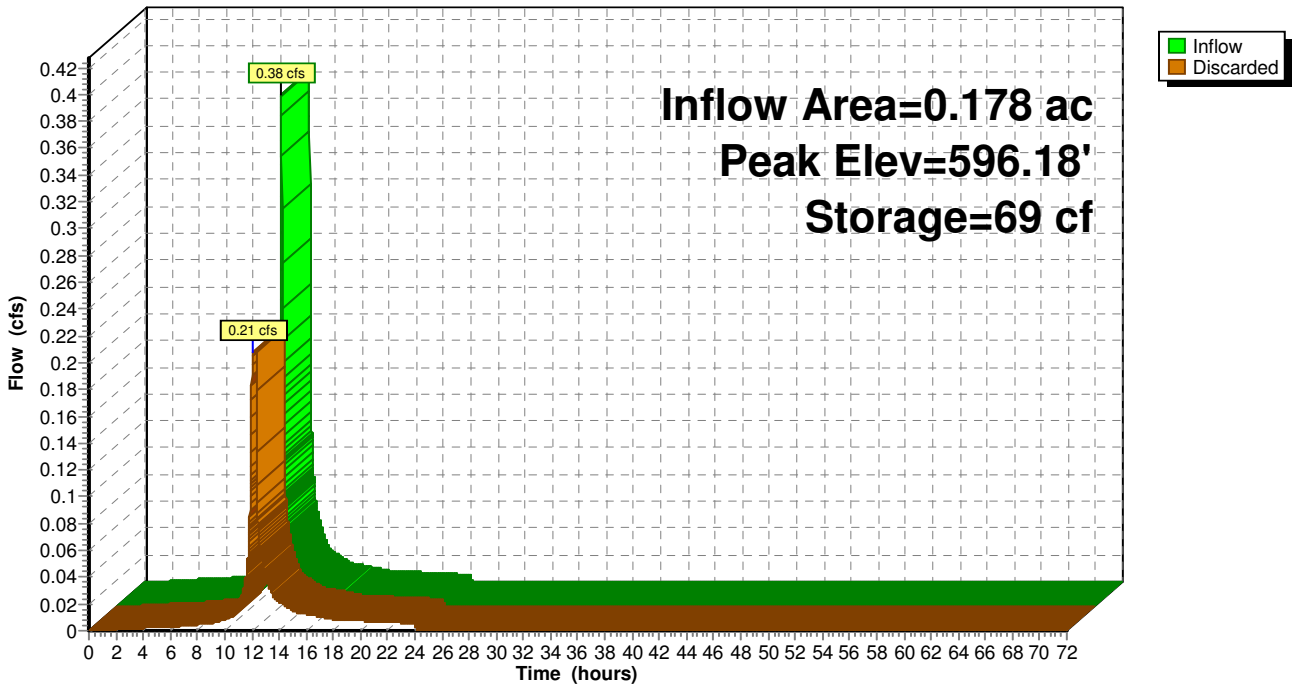
Device	Routing	Invert	Outlet Devices
#1	Discarded	596.00'	**10.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.21 cfs @ 12.03 hrs HW=596.03' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.21 cfs)



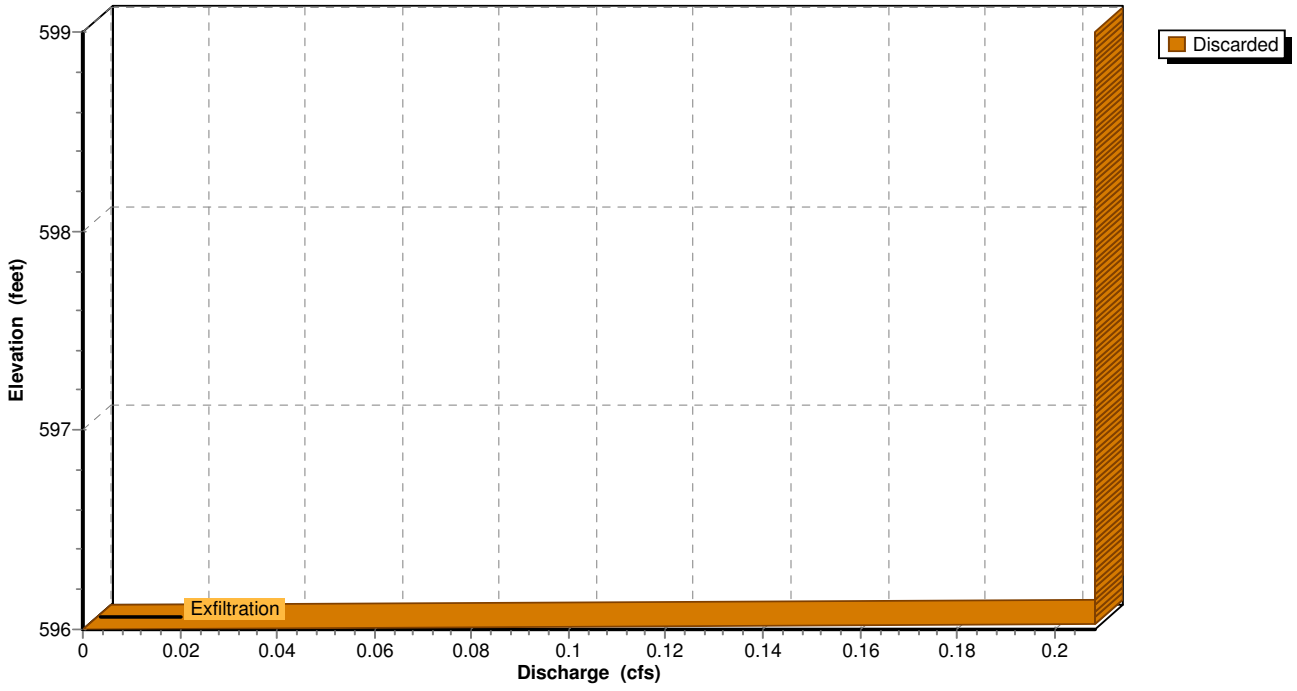
Pond 29P: Basin 12

Hydrograph

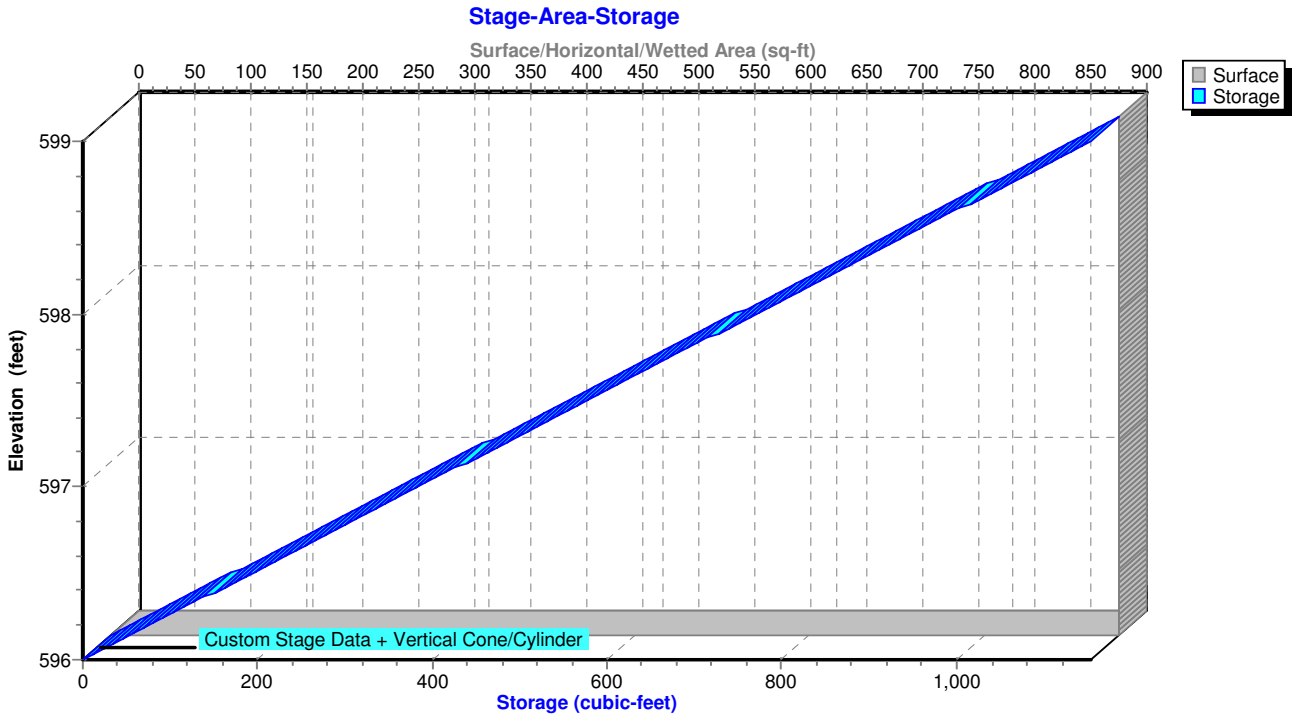


Pond 29P: Basin 12

Stage-Discharge



Pond 29P: Basin 12



Hydrograph for Pond 29P: Basin 12

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	596.00	0.00
2.00	0.00	0	596.00	0.00
4.00	0.00	0	596.00	0.00
6.00	0.00	0	596.00	0.00
8.00	0.00	0	596.00	0.00
10.00	0.01	0	596.00	0.01
12.00	**0.20**	**11**	**596.03**	**0.19**
14.00	**0.02**	**1**	**596.00**	**0.02**
16.00	0.01	1	596.00	0.01
18.00	0.01	0	596.00	0.01
20.00	0.01	0	596.00	0.01
22.00	0.01	0	596.00	0.01
24.00	0.01	0	596.00	0.01
26.00	0.00	0	596.00	0.00
28.00	0.00	0	596.00	0.00
30.00	0.00	0	596.00	0.00
32.00	0.00	0	596.00	0.00
34.00	0.00	0	596.00	0.00
36.00	0.00	0	596.00	0.00
38.00	0.00	0	596.00	0.00
40.00	0.00	0	596.00	0.00
42.00	0.00	0	596.00	0.00
44.00	0.00	0	596.00	0.00
46.00	0.00	0	596.00	0.00
48.00	0.00	0	596.00	0.00
50.00	0.00	0	596.00	0.00
52.00	0.00	0	596.00	0.00
54.00	0.00	0	596.00	0.00
56.00	0.00	0	596.00	0.00
58.00	0.00	0	596.00	0.00
60.00	0.00	0	596.00	0.00
62.00	0.00	0	596.00	0.00
64.00	0.00	0	596.00	0.00
66.00	0.00	0	596.00	0.00
68.00	0.00	0	596.00	0.00
70.00	0.00	0	596.00	0.00
72.00	0.00	0	596.00	0.00

Stage-Discharge for Pond 29P: Basin 12

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
596.00	**0.00**	597.02	0.21	598.04	0.21
596.02	**0.21**	597.04	0.21	598.06	0.21
596.04	0.21	597.06	0.21	598.08	0.21
596.06	0.21	597.08	0.21	598.10	0.21
596.08	0.21	597.10	0.21	598.12	0.21
596.10	0.21	597.12	0.21	598.14	0.21
596.12	0.21	597.14	0.21	598.16	0.21
596.14	0.21	597.16	0.21	598.18	0.21
596.16	0.21	597.18	0.21	598.20	0.21
596.18	0.21	597.20	0.21	598.22	0.21
596.20	0.21	597.22	0.21	598.24	0.21
596.22	0.21	597.24	0.21	598.26	0.21
596.24	0.21	597.26	0.21	598.28	0.21
596.26	0.21	597.28	0.21	598.30	0.21
596.28	0.21	597.30	0.21	598.32	0.21
596.30	0.21	597.32	0.21	598.34	0.21
596.32	0.21	597.34	0.21	598.36	0.21
596.34	0.21	597.36	0.21	598.38	0.21
596.36	0.21	597.38	0.21	598.40	0.21
596.38	0.21	597.40	0.21	598.42	0.21
596.40	0.21	597.42	0.21	598.44	0.21
596.42	0.21	597.44	0.21	598.46	0.21
596.44	0.21	597.46	0.21	598.48	0.21
596.46	0.21	597.48	0.21	598.50	0.21
596.48	0.21	597.50	0.21	598.52	0.21
596.50	0.21	597.52	0.21	598.54	0.21
596.52	0.21	597.54	0.21	598.56	0.21
596.54	0.21	597.56	0.21	598.58	0.21
596.56	0.21	597.58	0.21	598.60	0.21
596.58	0.21	597.60	0.21	598.62	0.21
596.60	0.21	597.62	0.21	598.64	0.21
596.62	0.21	597.64	0.21	598.66	0.21
596.64	0.21	597.66	0.21	598.68	0.21
596.66	0.21	597.68	0.21	598.70	0.21
596.68	0.21	597.70	0.21	598.72	0.21
596.70	0.21	597.72	0.21	598.74	0.21
596.72	0.21	597.74	0.21	598.76	0.21
596.74	0.21	597.76	0.21	598.78	0.21
596.76	0.21	597.78	0.21	598.80	0.21
596.78	0.21	597.80	0.21	598.82	0.21
596.80	0.21	597.82	0.21	598.84	0.21
596.82	0.21	597.84	0.21	598.86	0.21
596.84	0.21	597.86	0.21	598.88	0.21
596.86	0.21	597.88	0.21	598.90	0.21
596.88	0.21	597.90	0.21	598.92	0.21
596.90	0.21	597.92	0.21	598.94	0.21
596.92	0.21	597.94	0.21	598.96	0.21
596.94	0.21	597.96	0.21	598.98	0.21
596.96	0.21	597.98	0.21	599.00	0.21
596.98	0.21	598.00	0.21		
597.00	0.21	598.02	0.21		

Stage-Area-Storage for Pond 29P: Basin 12

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
596.00	**900**	0
596.05	900	19
596.10	900	38
596.15	900	58
596.20	900	77
596.25	900	96
596.30	900	115
596.35	900	135
596.40	900	154
596.45	900	173
596.50	900	192
596.55	900	212
596.60	900	231
596.65	900	250
596.70	900	269
596.75	900	289
596.80	900	308
596.85	900	327
596.90	900	346
596.95	900	366
597.00	900	385
597.05	900	404
597.10	900	423
597.15	900	443
597.20	900	462
597.25	900	481
597.30	900	500
597.35	900	520
597.40	900	539
597.45	900	558
597.50	900	577
597.55	900	596
597.60	900	616
597.65	900	635
597.70	900	654
597.75	900	673
597.80	900	693
597.85	900	712
597.90	900	731
597.95	900	750
598.00	900	770
598.05	900	789
598.10	900	808
598.15	900	827
598.20	900	847
598.25	900	866
598.30	900	885
598.35	900	904
598.40	900	924
598.45	900	943
598.50	900	962
598.55	900	981
598.60	900	1,001
598.65	900	1,020
598.70	900	1,039
598.75	900	1,058
598.80	900	1,077
598.85	900	1,097
598.90	900	1,116
598.95	900	1,135
599.00	900	**1,154**

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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 28S: Basin 12 - Imp Runoff Area=2,500 sf 100.00% Impervious Runoff Depth=4.98"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=98 Runoff=0.30 cfs 0.024 af

Subcatchment 30S: Basin 12 - Perv Runoff Area=5,251 sf 0.00% Impervious Runoff Depth=2.54"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=74 Runoff=0.39 cfs 0.026 af

Pond 29P: Basin 12 Peak Elev=596.73' Storage=280 cf Inflow=0.69 cfs 0.049 af
Outflow=0.21 cfs 0.049 af

Total Runoff Area = 0.178 ac Runoff Volume = 0.049 af Average Runoff Depth = 3.33"
67.75% Pervious = 0.121 ac 32.25% Impervious = 0.057 ac

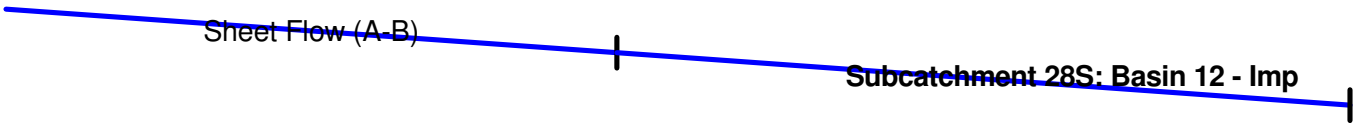
Summary for Subcatchment 28S: Basin 12 - Imp

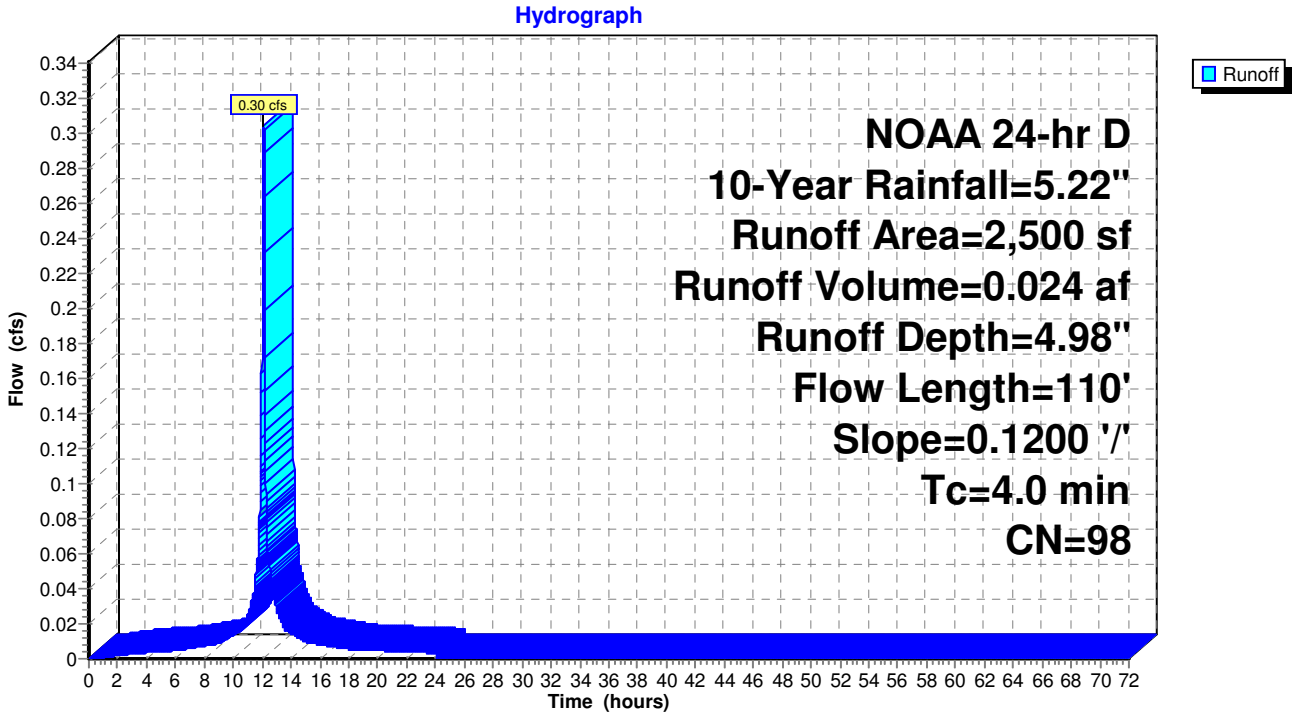
Runoff = 0.30 cfs @ 12.11 hrs, Volume= 0.024 af, Depth= 4.98"
Routed to Pond 29P : Basin 12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
2,500	98	Paved parking, HSG C
2,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			





Hydrograph for Subcatchment 28S: Basin 12 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.13	0.02	0.00
3.00	0.20	0.07	0.00
4.00	0.27	0.12	0.00
5.00	0.36	0.19	0.00
6.00	0.45	0.27	0.00
7.00	0.55	0.36	0.01
8.00	0.68	0.48	0.01
9.00	0.83	0.63	0.01
10.00	1.03	0.82	0.01
11.00	1.36	1.14	0.02
12.00	2.50	2.27	**0.18**
13.00	3.86	3.63	**0.03**
14.00	4.19	3.95	0.01
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	0.00
20.00	4.95	4.71	0.00
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
58.00	5.22	4.98	0.00
59.00	5.22	4.98	0.00
60.00	5.22	4.98	0.00
61.00	5.22	4.98	0.00
62.00	5.22	4.98	0.00
63.00	5.22	4.98	0.00
64.00	5.22	4.98	0.00
65.00	5.22	4.98	0.00
66.00	5.22	4.98	0.00
67.00	5.22	4.98	0.00
68.00	5.22	4.98	0.00
69.00	5.22	4.98	0.00
70.00	5.22	4.98	0.00
71.00	5.22	4.98	0.00
72.00	5.22	4.98	0.00

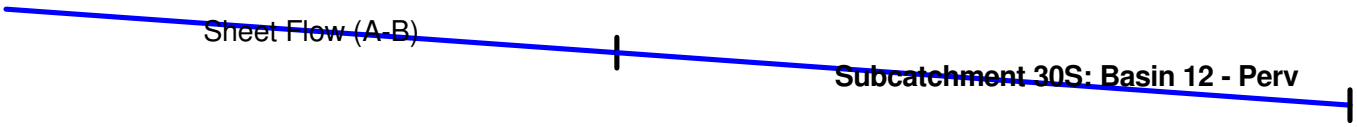
Summary for Subcatchment 30S: Basin 12 - Perv

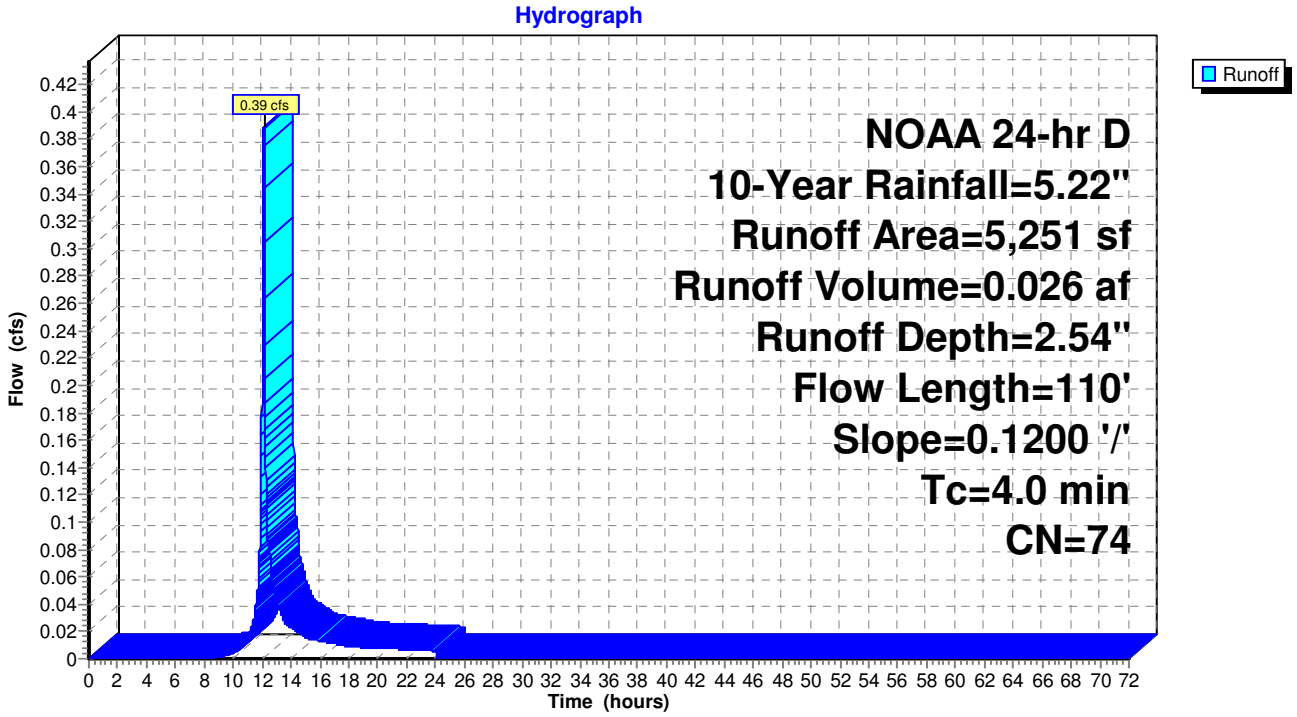
Runoff = 0.39 cfs @ 12.12 hrs, Volume= 0.026 af, Depth= 2.54"
Routed to Pond 29P : Basin 12

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 10-Year Rainfall=5.22"

Area (sf)	CN	Description
5,251	74	>75% Grass cover, Good, HSG C
5,251		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			





Hydrograph for Subcatchment 30S: Basin 12 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.06	0.00	0.00
2.00	0.13	0.00	0.00
3.00	0.20	0.00	0.00
4.00	0.27	0.00	0.00
5.00	0.36	0.00	0.00
6.00	0.45	0.00	0.00
7.00	0.55	0.00	0.00
8.00	0.68	0.00	0.00
9.00	0.83	0.00	0.00
10.00	1.03	0.03	0.00
11.00	1.36	0.10	0.01
12.00	2.50	0.61	**0.20**
13.00	3.86	1.50	**0.04**
14.00	4.19	1.73	0.02
15.00	4.39	1.89	0.02
16.00	4.54	2.01	0.01
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
58.00	5.22	2.54	0.00
59.00	5.22	2.54	0.00
60.00	5.22	2.54	0.00
61.00	5.22	2.54	0.00
62.00	5.22	2.54	0.00
63.00	5.22	2.54	0.00
64.00	5.22	2.54	0.00
65.00	5.22	2.54	0.00
66.00	5.22	2.54	0.00
67.00	5.22	2.54	0.00
68.00	5.22	2.54	0.00
69.00	5.22	2.54	0.00
70.00	5.22	2.54	0.00
71.00	5.22	2.54	0.00
72.00	5.22	2.54	0.00

Summary for Pond 29P: Basin 12

Inflow Area = 0.178 ac, 32.25% Impervious, Inflow Depth = 3.33" for 10-Year event
Inflow = 0.69 cfs @ 12.11 hrs, Volume= 0.049 af
Outflow = 0.21 cfs @ 11.91 hrs, Volume= 0.049 af, Atten= 70%, Lag= 0.0 min
Discarded = 0.21 cfs @ 11.91 hrs, Volume= 0.049 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 596.73' @ 12.28 hrs Surf.Area= 900 sf Storage= 280 cf

Plug-Flow detention time= 5.8 min calculated for 0.049 af (100% of inflow)
Center-of-Mass det. time= 5.8 min (802.8 - 797.0)

Volume	Invert	Avail.Storage	Storage Description
#1	596.00'	1,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 2,700 cf Overall - 191 cf Embedded = 2,509 cf x 40.0% Voids
#2	596.00'	151 cf	**8.00'D x 3.00'H Vertical Cone/Cylinder** Inside #1 191 cf Overall - 6.0" Wall Thickness = 151 cf
		1,154 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
596.00	900	0	0
599.00	900	2,700	2,700

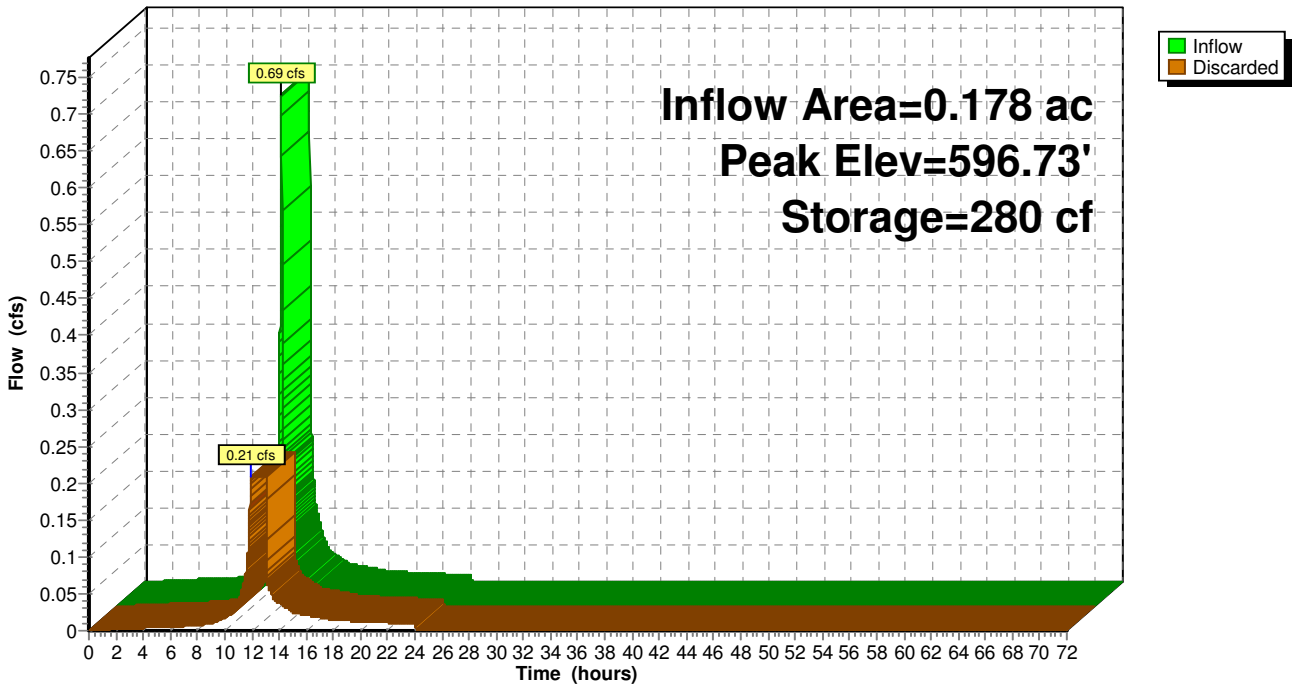
Device	Routing	Invert	Outlet Devices
#1	Discarded	596.00'	**10.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.21 cfs @ 11.91 hrs HW=596.03' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.21 cfs)



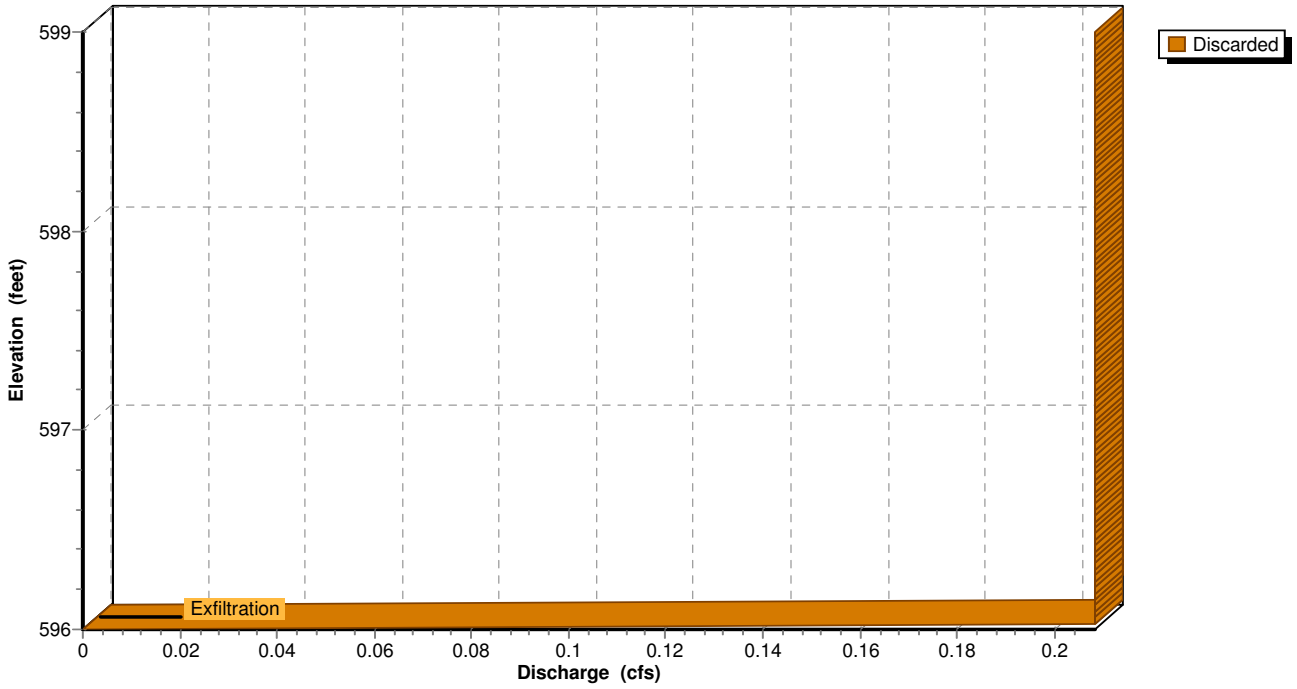
Pond 29P: Basin 12

Hydrograph

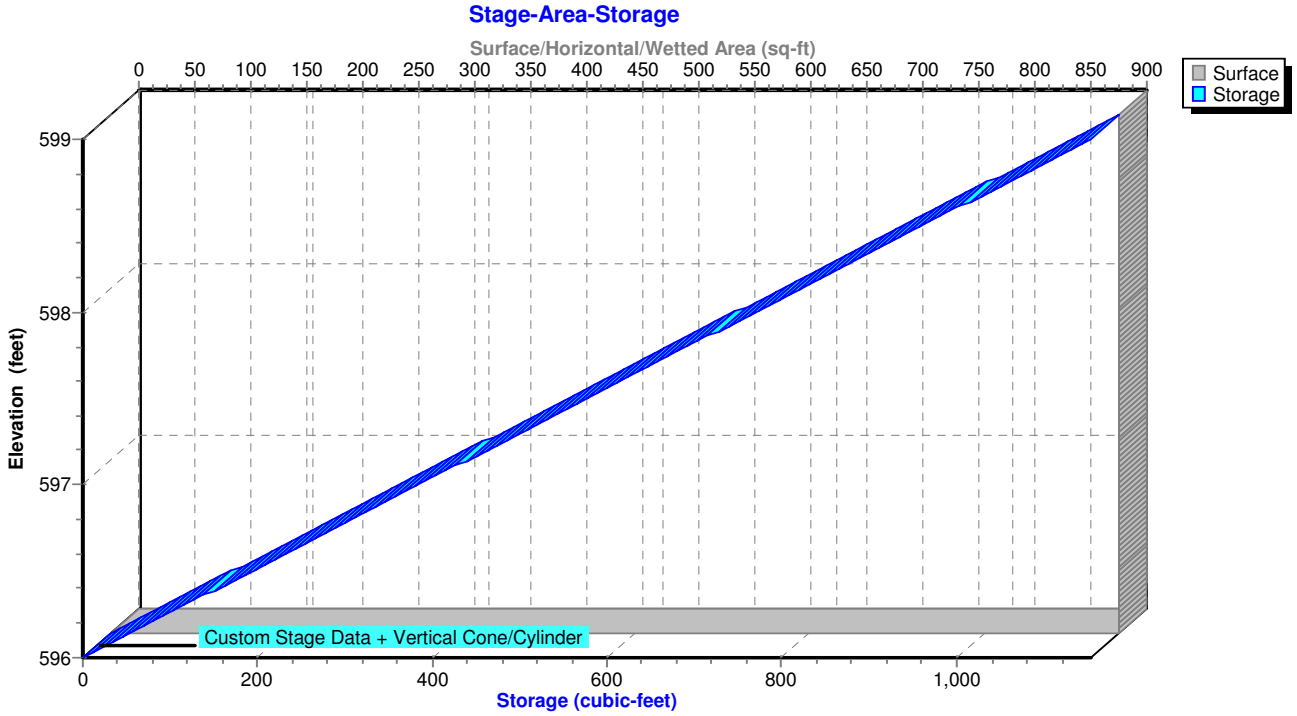


Pond 29P: Basin 12

Stage-Discharge



Pond 29P: Basin 12



Hydrograph for Pond 29P: Basin 12

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	596.00	0.00
2.00	0.00	0	596.00	0.00
4.00	0.00	0	596.00	0.00
6.00	0.00	0	596.00	0.00
8.00	0.01	0	596.00	0.01
10.00	0.02	1	596.00	**0.02**
12.00	**0.38**	**41**	**596.11**	**0.21**
14.00	**0.04**	**2**	**596.01**	0.04
16.00	0.02	1	596.00	0.02
18.00	0.01	1	596.00	0.01
20.00	0.01	1	596.00	0.01
22.00	0.01	1	596.00	0.01
24.00	0.01	0	596.00	0.01
26.00	0.00	0	596.00	0.00
28.00	0.00	0	596.00	0.00
30.00	0.00	0	596.00	0.00
32.00	0.00	0	596.00	0.00
34.00	0.00	0	596.00	0.00
36.00	0.00	0	596.00	0.00
38.00	0.00	0	596.00	0.00
40.00	0.00	0	596.00	0.00
42.00	0.00	0	596.00	0.00
44.00	0.00	0	596.00	0.00
46.00	0.00	0	596.00	0.00
48.00	0.00	0	596.00	0.00
50.00	0.00	0	596.00	0.00
52.00	0.00	0	596.00	0.00
54.00	0.00	0	596.00	0.00
56.00	0.00	0	596.00	0.00
58.00	0.00	0	596.00	0.00
60.00	0.00	0	596.00	0.00
62.00	0.00	0	596.00	0.00
64.00	0.00	0	596.00	0.00
66.00	0.00	0	596.00	0.00
68.00	0.00	0	596.00	0.00
70.00	0.00	0	596.00	0.00
72.00	0.00	0	596.00	0.00

Stage-Discharge for Pond 29P: Basin 12

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
596.00	**0.00**	597.02	0.21	598.04	0.21
596.02	**0.21**	597.04	0.21	598.06	0.21
596.04	0.21	597.06	0.21	598.08	0.21
596.06	0.21	597.08	0.21	598.10	0.21
596.08	0.21	597.10	0.21	598.12	0.21
596.10	0.21	597.12	0.21	598.14	0.21
596.12	0.21	597.14	0.21	598.16	0.21
596.14	0.21	597.16	0.21	598.18	0.21
596.16	0.21	597.18	0.21	598.20	0.21
596.18	0.21	597.20	0.21	598.22	0.21
596.20	0.21	597.22	0.21	598.24	0.21
596.22	0.21	597.24	0.21	598.26	0.21
596.24	0.21	597.26	0.21	598.28	0.21
596.26	0.21	597.28	0.21	598.30	0.21
596.28	0.21	597.30	0.21	598.32	0.21
596.30	0.21	597.32	0.21	598.34	0.21
596.32	0.21	597.34	0.21	598.36	0.21
596.34	0.21	597.36	0.21	598.38	0.21
596.36	0.21	597.38	0.21	598.40	0.21
596.38	0.21	597.40	0.21	598.42	0.21
596.40	0.21	597.42	0.21	598.44	0.21
596.42	0.21	597.44	0.21	598.46	0.21
596.44	0.21	597.46	0.21	598.48	0.21
596.46	0.21	597.48	0.21	598.50	0.21
596.48	0.21	597.50	0.21	598.52	0.21
596.50	0.21	597.52	0.21	598.54	0.21
596.52	0.21	597.54	0.21	598.56	0.21
596.54	0.21	597.56	0.21	598.58	0.21
596.56	0.21	597.58	0.21	598.60	0.21
596.58	0.21	597.60	0.21	598.62	0.21
596.60	0.21	597.62	0.21	598.64	0.21
596.62	0.21	597.64	0.21	598.66	0.21
596.64	0.21	597.66	0.21	598.68	0.21
596.66	0.21	597.68	0.21	598.70	0.21
596.68	0.21	597.70	0.21	598.72	0.21
596.70	0.21	597.72	0.21	598.74	0.21
596.72	0.21	597.74	0.21	598.76	0.21
596.74	0.21	597.76	0.21	598.78	0.21
596.76	0.21	597.78	0.21	598.80	0.21
596.78	0.21	597.80	0.21	598.82	0.21
596.80	0.21	597.82	0.21	598.84	0.21
596.82	0.21	597.84	0.21	598.86	0.21
596.84	0.21	597.86	0.21	598.88	0.21
596.86	0.21	597.88	0.21	598.90	0.21
596.88	0.21	597.90	0.21	598.92	0.21
596.90	0.21	597.92	0.21	598.94	0.21
596.92	0.21	597.94	0.21	598.96	0.21
596.94	0.21	597.96	0.21	598.98	0.21
596.96	0.21	597.98	0.21	599.00	0.21
596.98	0.21	598.00	0.21		
597.00	0.21	598.02	0.21		

Stage-Area-Storage for Pond 29P: Basin 12

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
596.00	**900**	0
596.05	900	19
596.10	900	38
596.15	900	58
596.20	900	77
596.25	900	96
596.30	900	115
596.35	900	135
596.40	900	154
596.45	900	173
596.50	900	192
596.55	900	212
596.60	900	231
596.65	900	250
596.70	900	269
596.75	900	289
596.80	900	308
596.85	900	327
596.90	900	346
596.95	900	366
597.00	900	385
597.05	900	404
597.10	900	423
597.15	900	443
597.20	900	462
597.25	900	481
597.30	900	500
597.35	900	520
597.40	900	539
597.45	900	558
597.50	900	577
597.55	900	596
597.60	900	616
597.65	900	635
597.70	900	654
597.75	900	673
597.80	900	693
597.85	900	712
597.90	900	731
597.95	900	750
598.00	900	770
598.05	900	789
598.10	900	808
598.15	900	827
598.20	900	847
598.25	900	866
598.30	900	885
598.35	900	904
598.40	900	924
598.45	900	943
598.50	900	962
598.55	900	981
598.60	900	1,001
598.65	900	1,020
598.70	900	1,039
598.75	900	1,058
598.80	900	1,077
598.85	900	1,097
598.90	900	1,116
598.95	900	1,135
599.00	900	**1,154**

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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 28S: Basin 12 - Imp Runoff Area=2,500 sf 100.00% Impervious Runoff Depth=8.42"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=98 Runoff=0.51 cfs 0.040 af

Subcatchment 30S: Basin 12 - Perv Runoff Area=5,251 sf 0.00% Impervious Runoff Depth=5.52"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=74 Runoff=0.83 cfs 0.055 af

Pond 29P: Basin 12 Peak Elev=598.47' Storage=952 cf Inflow=1.33 cfs 0.096 af
Outflow=0.21 cfs 0.096 af

Total Runoff Area = 0.178 ac Runoff Volume = 0.096 af Average Runoff Depth = 6.46"
67.75% Pervious = 0.121 ac 32.25% Impervious = 0.057 ac

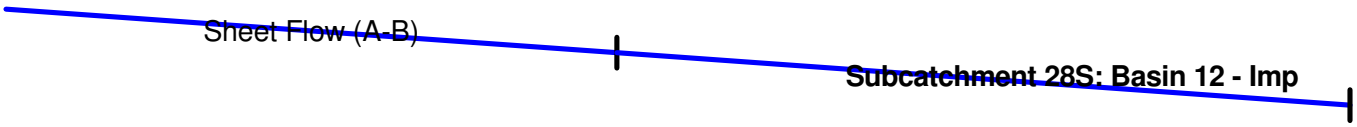
Summary for Subcatchment 28S: Basin 12 - Imp

Runoff = 0.51 cfs @ 12.11 hrs, Volume= 0.040 af, Depth= 8.42"
Routed to Pond 29P : Basin 12

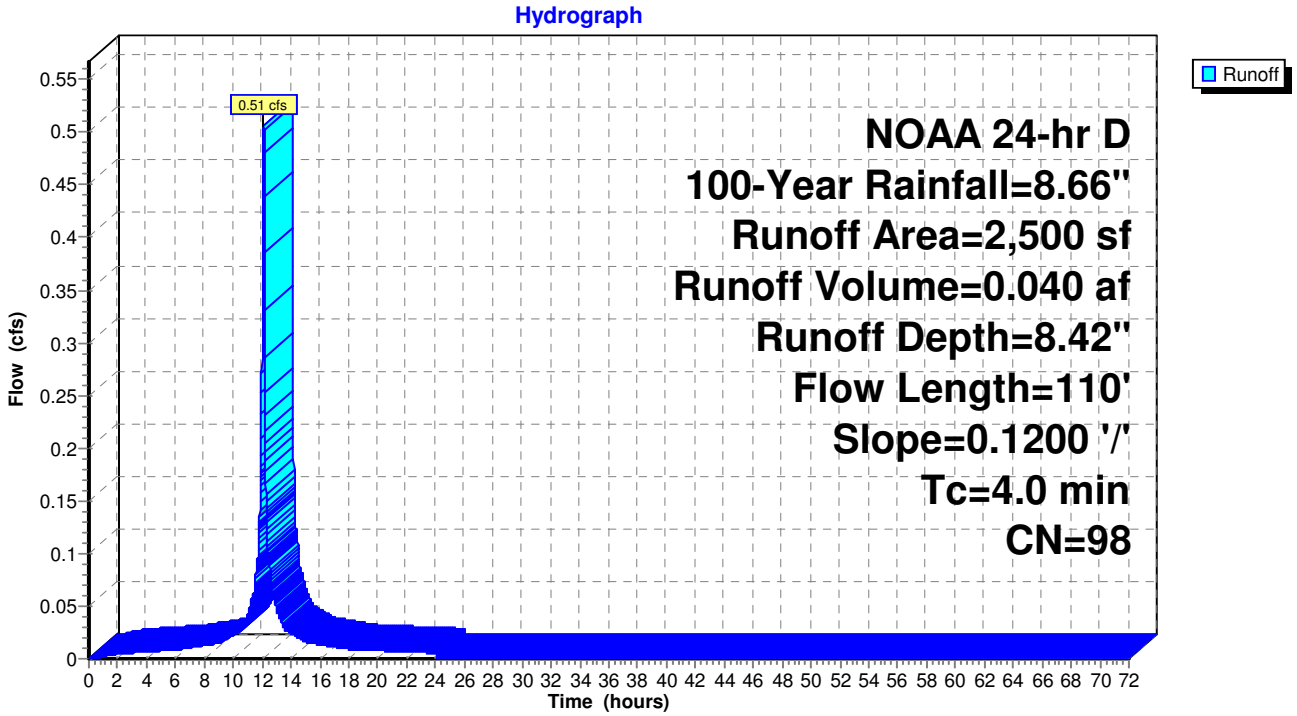
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
2,500	98	Paved parking, HSG C
2,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			



Subcatchment 28S: Basin 12 - Imp



Hydrograph for Subcatchment 28S: Basin 12 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.01	0.00
2.00	0.21	0.08	0.00
3.00	0.33	0.17	0.01
4.00	0.45	0.28	0.01
5.00	0.59	0.40	0.01
6.00	0.74	0.54	0.01
7.00	0.91	0.71	0.01
8.00	1.12	0.91	0.01
9.00	1.37	1.16	0.02
10.00	1.72	1.49	0.02
11.00	2.25	2.02	0.04
12.00	4.15	3.91	**0.30**
13.00	6.41	6.17	**0.05**
14.00	6.94	6.70	0.02
15.00	7.29	7.05	0.02
16.00	7.54	7.30	0.01
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
58.00	8.66	8.42	0.00
59.00	8.66	8.42	0.00
60.00	8.66	8.42	0.00
61.00	8.66	8.42	0.00
62.00	8.66	8.42	0.00
63.00	8.66	8.42	0.00
64.00	8.66	8.42	0.00
65.00	8.66	8.42	0.00
66.00	8.66	8.42	0.00
67.00	8.66	8.42	0.00
68.00	8.66	8.42	0.00
69.00	8.66	8.42	0.00
70.00	8.66	8.42	0.00
71.00	8.66	8.42	0.00
72.00	8.66	8.42	0.00

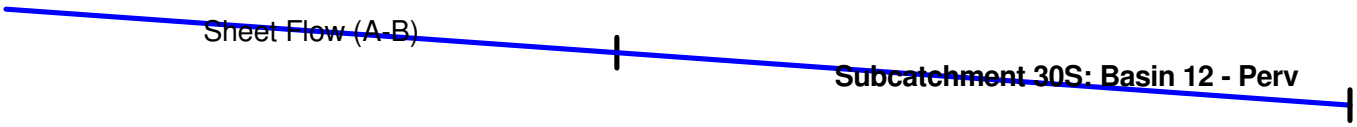
Summary for Subcatchment 30S: Basin 12 - Perv

Runoff = 0.83 cfs @ 12.11 hrs, Volume= 0.055 af, Depth= 5.52"
Routed to Pond 29P : Basin 12

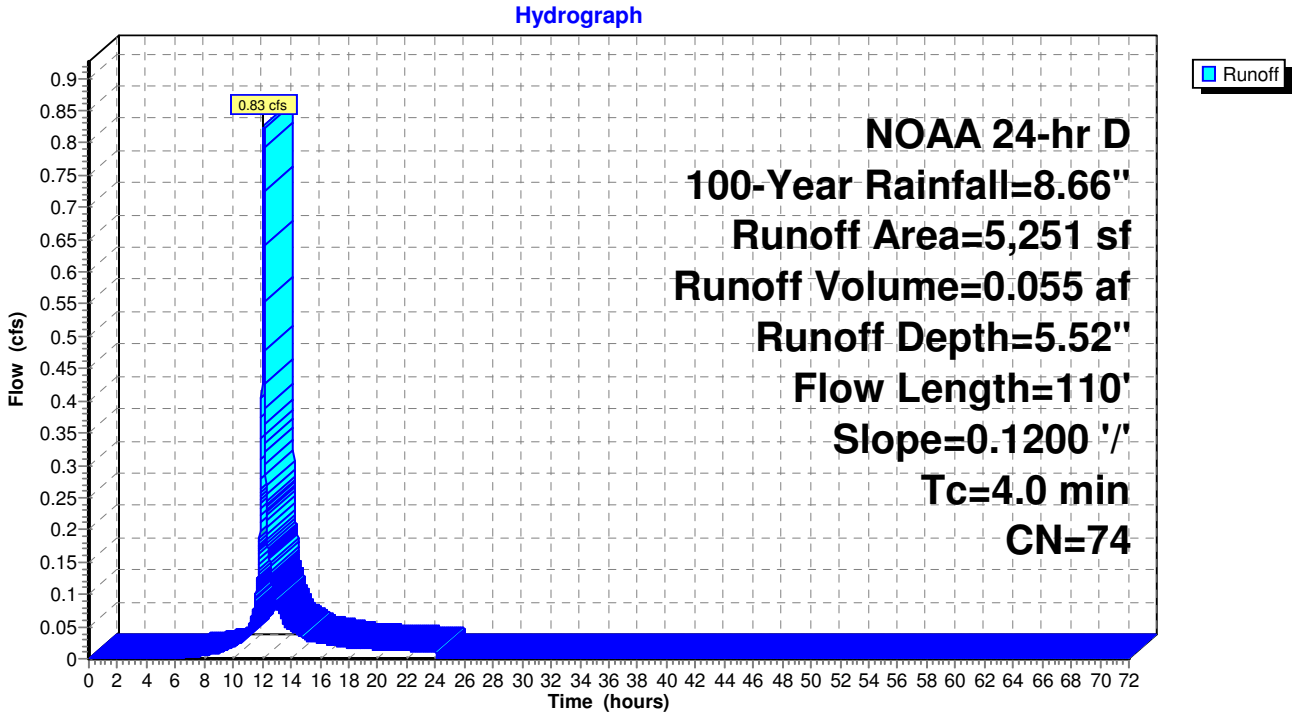
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NOAA 24-hr D 100-Year Rainfall=8.66"

Area (sf)	CN	Description
5,251	74	>75% Grass cover, Good, HSG C
5,251		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			



Subcatchment 30S: Basin 12 - Perv



Hydrograph for Subcatchment 30S: Basin 12 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.10	0.00	0.00
2.00	0.21	0.00	0.00
3.00	0.33	0.00	0.00
4.00	0.45	0.00	0.00
5.00	0.59	0.00	0.00
6.00	0.74	0.00	0.00
7.00	0.91	0.01	0.00
8.00	1.12	0.05	0.01
9.00	1.37	0.11	0.01
10.00	1.72	0.23	0.02
11.00	2.25	0.47	0.04
12.00	4.15	1.71	**0.45**
13.00	6.41	3.53	**0.09**
14.00	6.94	3.99	0.04
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	0.01
21.00	8.33	5.23	0.01
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
58.00	8.66	5.52	0.00
59.00	8.66	5.52	0.00
60.00	8.66	5.52	0.00
61.00	8.66	5.52	0.00
62.00	8.66	5.52	0.00
63.00	8.66	5.52	0.00
64.00	8.66	5.52	0.00
65.00	8.66	5.52	0.00
66.00	8.66	5.52	0.00
67.00	8.66	5.52	0.00
68.00	8.66	5.52	0.00
69.00	8.66	5.52	0.00
70.00	8.66	5.52	0.00
71.00	8.66	5.52	0.00
72.00	8.66	5.52	0.00

Summary for Pond 29P: Basin 12

Inflow Area = 0.178 ac, 32.25% Impervious, Inflow Depth = 6.46" for 100-Year event
Inflow = 1.33 cfs @ 12.11 hrs, Volume= 0.096 af
Outflow = 0.21 cfs @ 11.66 hrs, Volume= 0.096 af, Atten= 84%, Lag= 0.0 min
Discarded = 0.21 cfs @ 11.66 hrs, Volume= 0.096 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 598.47' @ 12.57 hrs Surf.Area= 900 sf Storage= 952 cf

Plug-Flow detention time= 25.6 min calculated for 0.096 af (100% of inflow)
Center-of-Mass det. time= 25.6 min (811.1 - 785.6)

Volume	Invert	Avail.Storage	Storage Description
#1	596.00'	1,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 2,700 cf Overall - 191 cf Embedded = 2,509 cf x 40.0% Voids
#2	596.00'	151 cf	**8.00'D x 3.00'H Vertical Cone/Cylinder** Inside #1 191 cf Overall - 6.0" Wall Thickness = 151 cf
		1,154 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
596.00	900	0	0
599.00	900	2,700	2,700

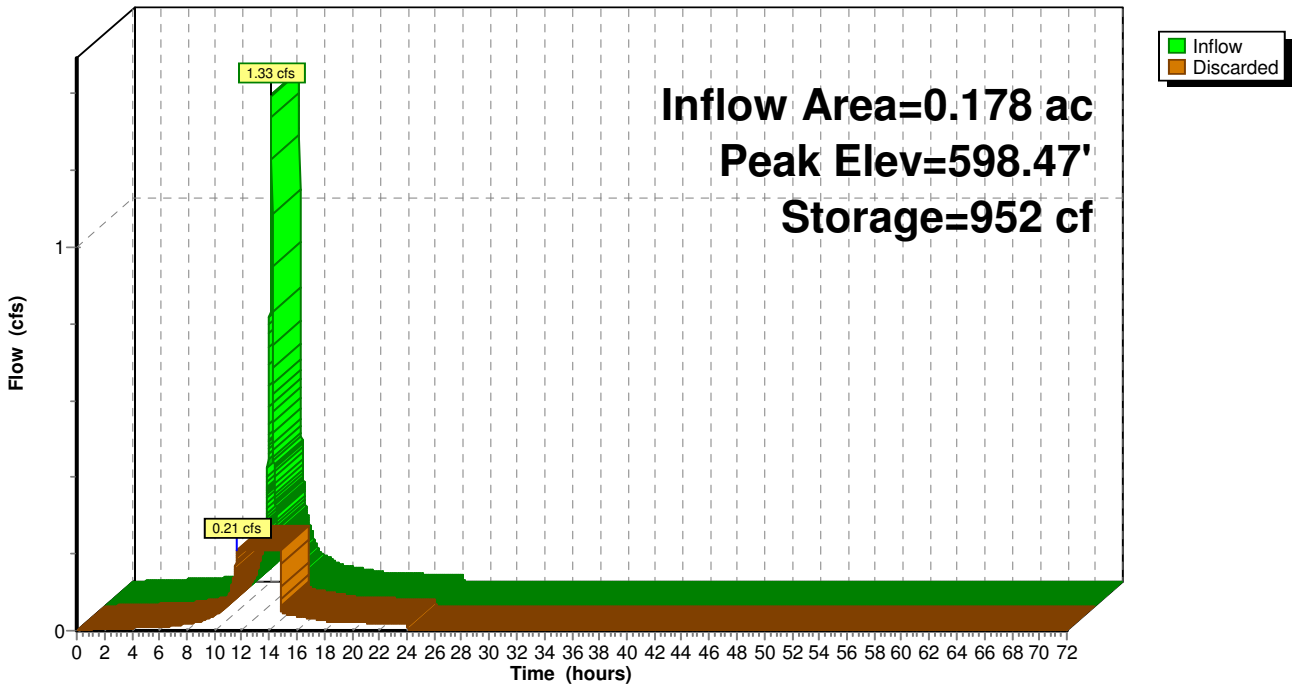
Device	Routing	Invert	Outlet Devices
#1	Discarded	596.00'	**10.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.21 cfs @ 11.66 hrs HW=596.03' (Free Discharge)
↳**1=Exfiltration** (Exfiltration Controls 0.21 cfs)



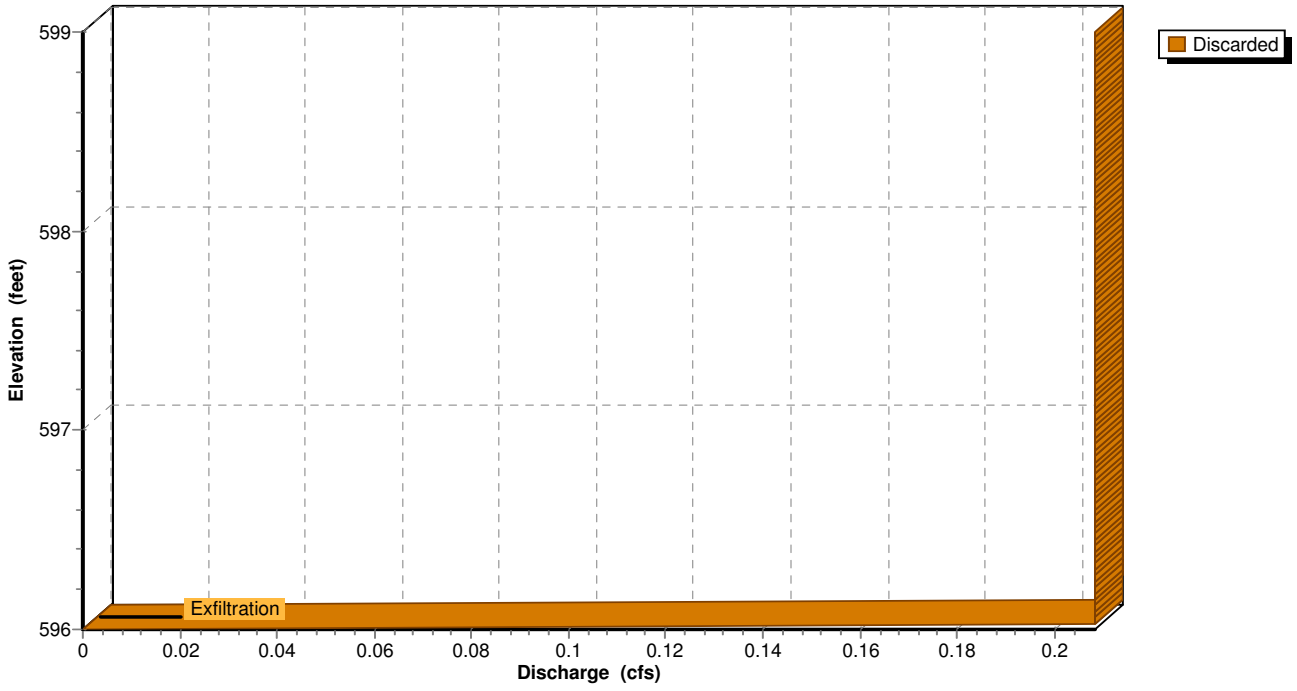
Pond 29P: Basin 12

Hydrograph

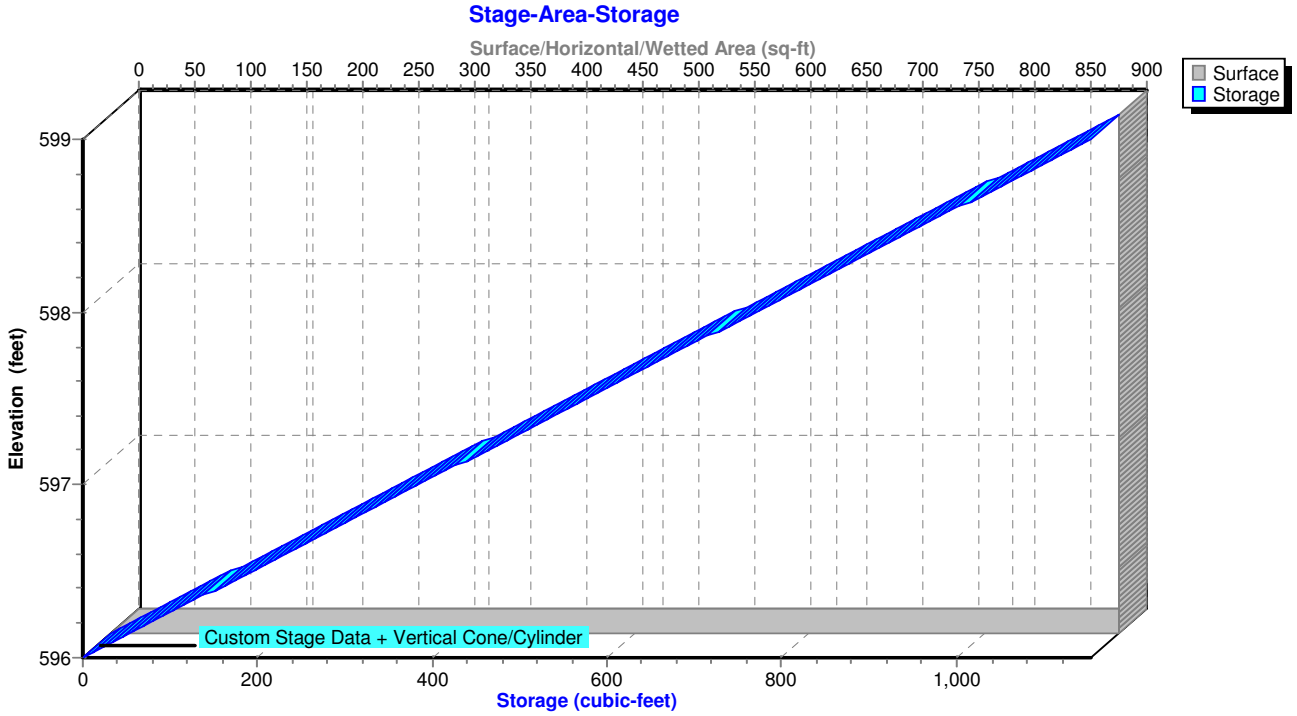


Pond 29P: Basin 12

Stage-Discharge



Pond 29P: Basin 12



Hydrograph for Pond 29P: Basin 12

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	0.00	0	596.00	0.00
2.00	0.00	0	596.00	0.00
4.00	0.01	0	596.00	0.01
6.00	0.01	0	596.00	0.01
8.00	0.02	1	596.00	0.02
10.00	0.04	2	596.01	**0.04**
12.00	**0.75**	**219**	**596.57**	**0.21**
14.00	**0.07**	**459**	**597.19**	0.21
16.00	0.04	2	596.01	0.04
18.00	0.03	1	596.00	0.03
20.00	0.02	1	596.00	0.02
22.00	0.02	1	596.00	0.02
24.00	0.02	1	596.00	0.02
26.00	0.00	0	596.00	0.00
28.00	0.00	0	596.00	0.00
30.00	0.00	0	596.00	0.00
32.00	0.00	0	596.00	0.00
34.00	0.00	0	596.00	0.00
36.00	0.00	0	596.00	0.00
38.00	0.00	0	596.00	0.00
40.00	0.00	0	596.00	0.00
42.00	0.00	0	596.00	0.00
44.00	0.00	0	596.00	0.00
46.00	0.00	0	596.00	0.00
48.00	0.00	0	596.00	0.00
50.00	0.00	0	596.00	0.00
52.00	0.00	0	596.00	0.00
54.00	0.00	0	596.00	0.00
56.00	0.00	0	596.00	0.00
58.00	0.00	0	596.00	0.00
60.00	0.00	0	596.00	0.00
62.00	0.00	0	596.00	0.00
64.00	0.00	0	596.00	0.00
66.00	0.00	0	596.00	0.00
68.00	0.00	0	596.00	0.00
70.00	0.00	0	596.00	0.00
72.00	0.00	0	596.00	0.00

Stage-Discharge for Pond 29P: Basin 12

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
596.00	**0.00**	597.02	0.21	598.04	0.21
596.02	**0.21**	597.04	0.21	598.06	0.21
596.04	0.21	597.06	0.21	598.08	0.21
596.06	0.21	597.08	0.21	598.10	0.21
596.08	0.21	597.10	0.21	598.12	0.21
596.10	0.21	597.12	0.21	598.14	0.21
596.12	0.21	597.14	0.21	598.16	0.21
596.14	0.21	597.16	0.21	598.18	0.21
596.16	0.21	597.18	0.21	598.20	0.21
596.18	0.21	597.20	0.21	598.22	0.21
596.20	0.21	597.22	0.21	598.24	0.21
596.22	0.21	597.24	0.21	598.26	0.21
596.24	0.21	597.26	0.21	598.28	0.21
596.26	0.21	597.28	0.21	598.30	0.21
596.28	0.21	597.30	0.21	598.32	0.21
596.30	0.21	597.32	0.21	598.34	0.21
596.32	0.21	597.34	0.21	598.36	0.21
596.34	0.21	597.36	0.21	598.38	0.21
596.36	0.21	597.38	0.21	598.40	0.21
596.38	0.21	597.40	0.21	598.42	0.21
596.40	0.21	597.42	0.21	598.44	0.21
596.42	0.21	597.44	0.21	598.46	0.21
596.44	0.21	597.46	0.21	598.48	0.21
596.46	0.21	597.48	0.21	598.50	0.21
596.48	0.21	597.50	0.21	598.52	0.21
596.50	0.21	597.52	0.21	598.54	0.21
596.52	0.21	597.54	0.21	598.56	0.21
596.54	0.21	597.56	0.21	598.58	0.21
596.56	0.21	597.58	0.21	598.60	0.21
596.58	0.21	597.60	0.21	598.62	0.21
596.60	0.21	597.62	0.21	598.64	0.21
596.62	0.21	597.64	0.21	598.66	0.21
596.64	0.21	597.66	0.21	598.68	0.21
596.66	0.21	597.68	0.21	598.70	0.21
596.68	0.21	597.70	0.21	598.72	0.21
596.70	0.21	597.72	0.21	598.74	0.21
596.72	0.21	597.74	0.21	598.76	0.21
596.74	0.21	597.76	0.21	598.78	0.21
596.76	0.21	597.78	0.21	598.80	0.21
596.78	0.21	597.80	0.21	598.82	0.21
596.80	0.21	597.82	0.21	598.84	0.21
596.82	0.21	597.84	0.21	598.86	0.21
596.84	0.21	597.86	0.21	598.88	0.21
596.86	0.21	597.88	0.21	598.90	0.21
596.88	0.21	597.90	0.21	598.92	0.21
596.90	0.21	597.92	0.21	598.94	0.21
596.92	0.21	597.94	0.21	598.96	0.21
596.94	0.21	597.96	0.21	598.98	0.21
596.96	0.21	597.98	0.21	599.00	0.21
596.98	0.21	598.00	0.21		
597.00	0.21	598.02	0.21		

Stage-Area-Storage for Pond 29P: Basin 12

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
596.00	**900**	0
596.05	900	19
596.10	900	38
596.15	900	58
596.20	900	77
596.25	900	96
596.30	900	115
596.35	900	135
596.40	900	154
596.45	900	173
596.50	900	192
596.55	900	212
596.60	900	231
596.65	900	250
596.70	900	269
596.75	900	289
596.80	900	308
596.85	900	327
596.90	900	346
596.95	900	366
597.00	900	385
597.05	900	404
597.10	900	423
597.15	900	443
597.20	900	462
597.25	900	481
597.30	900	500
597.35	900	520
597.40	900	539
597.45	900	558
597.50	900	577
597.55	900	596
597.60	900	616
597.65	900	635
597.70	900	654
597.75	900	673
597.80	900	693
597.85	900	712
597.90	900	731
597.95	900	750
598.00	900	770
598.05	900	789
598.10	900	808
598.15	900	827
598.20	900	847
598.25	900	866
598.30	900	885
598.35	900	904
598.40	900	924
598.45	900	943
598.50	900	962
598.55	900	981
598.60	900	1,001
598.65	900	1,020
598.70	900	1,039
598.75	900	1,058
598.80	900	1,077
598.85	900	1,097
598.90	900	1,116
598.95	900	1,135
599.00	900	**1,154**

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 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 28S: Basin 12 - Imp Runoff Area=2,500 sf 100.00% Impervious Runoff Depth=1.03"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=98 Runoff=0.17 cfs 0.005 af

Subcatchment 30S: Basin 12 - Perv Runoff Area=5,251 sf 0.00% Impervious Runoff Depth=0.07"
Flow Length=110' Slope=0.1200 '/' Tc=4.0 min CN=74 Runoff=0.02 cfs 0.001 af

Pond 29P: Basin 12 Peak Elev=596.03' Storage=10 cf Inflow=0.19 cfs 0.006 af
Outflow=0.18 cfs 0.006 af

Total Runoff Area = 0.178 ac Runoff Volume = 0.006 af Average Runoff Depth = 0.38"
67.75% Pervious = 0.121 ac 32.25% Impervious = 0.057 ac

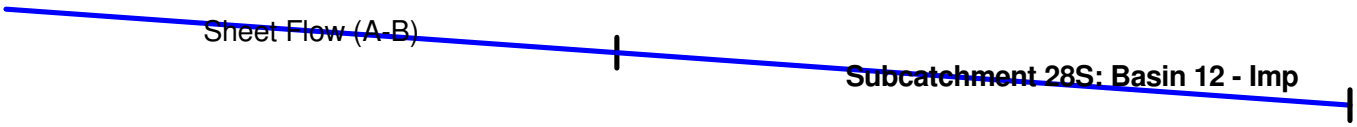
Summary for Subcatchment 28S: Basin 12 - Imp

Runoff = 0.17 cfs @ 1.09 hrs, Volume= 0.005 af, Depth= 1.03"
Routed to Pond 29P : Basin 12

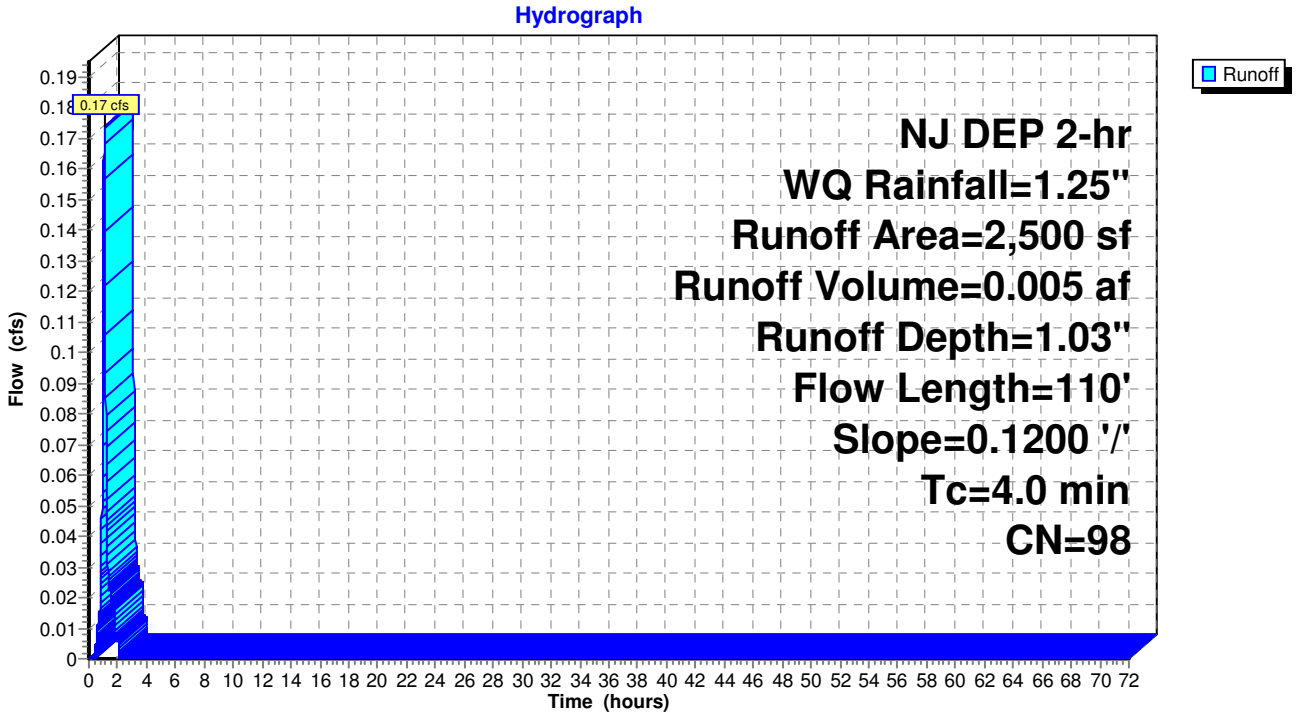
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
2,500	98	Paved parking, HSG C
2,500		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			



Subcatchment 28S: Basin 12 - Imp



Hydrograph for Subcatchment 28S: Basin 12 - Imp

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.63	0.43	**0.14**
2.00	**1.25**	**1.03**	**0.01**
3.00	1.25	1.03	0.00
4.00	1.25	1.03	0.00
5.00	1.25	1.03	0.00
6.00	1.25	1.03	0.00
7.00	1.25	1.03	0.00
8.00	1.25	1.03	0.00
9.00	1.25	1.03	0.00
10.00	1.25	1.03	0.00
11.00	1.25	1.03	0.00
12.00	1.25	1.03	0.00
13.00	1.25	1.03	0.00
14.00	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
58.00	1.25	1.03	0.00
59.00	1.25	1.03	0.00
60.00	1.25	1.03	0.00
61.00	1.25	1.03	0.00
62.00	1.25	1.03	0.00
63.00	1.25	1.03	0.00
64.00	1.25	1.03	0.00
65.00	1.25	1.03	0.00
66.00	1.25	1.03	0.00
67.00	1.25	1.03	0.00
68.00	1.25	1.03	0.00
69.00	1.25	1.03	0.00
70.00	1.25	1.03	0.00
71.00	1.25	1.03	0.00
72.00	1.25	1.03	0.00

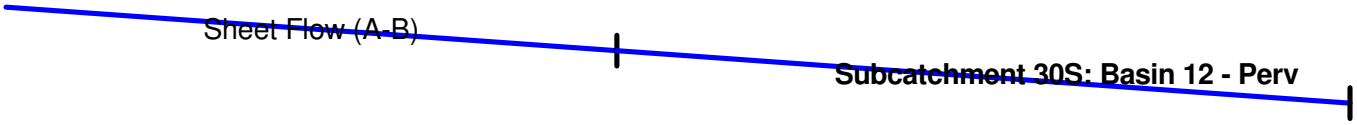
Summary for Subcatchment 30S: Basin 12 - Perv

Runoff = 0.02 cfs @ 1.13 hrs, Volume= 0.001 af, Depth= 0.07"
Routed to Pond 29P : Basin 12

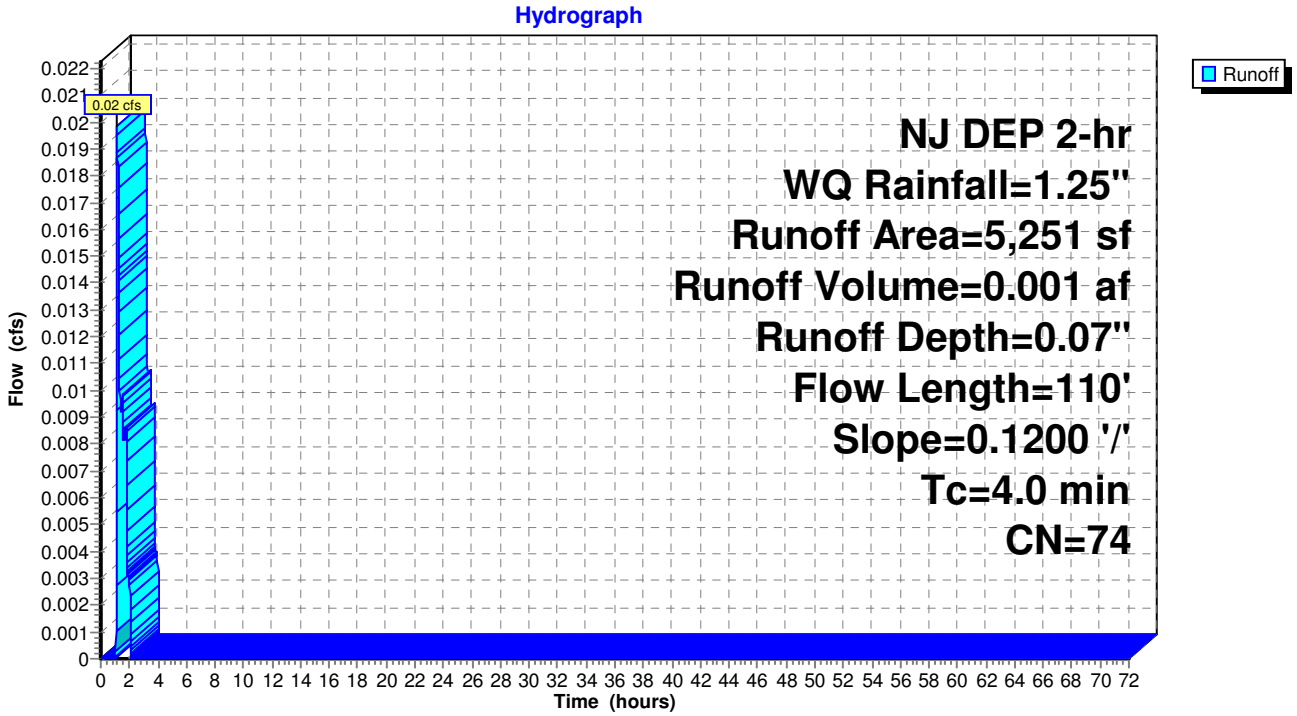
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
5,251	74	>75% Grass cover, Good, HSG C
5,251		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.1200	0.22		**Sheet Flow, Sheet Flow (A-B)** Grass: Dense n= 0.240 P2= 3.47"
0.2	60	0.1200	5.20		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
4.0	110	Total			



Subcatchment 30S: Basin 12 - Perv



Hydrograph for Subcatchment 30S: Basin 12 - Perv

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
1.00	0.63	0.00	**0.00**
2.00	**1.25**	**0.07**	**0.00**
3.00	1.25	0.07	0.00
4.00	1.25	0.07	0.00
5.00	1.25	0.07	0.00
6.00	1.25	0.07	0.00
7.00	1.25	0.07	0.00
8.00	1.25	0.07	0.00
9.00	1.25	0.07	0.00
10.00	1.25	0.07	0.00
11.00	1.25	0.07	0.00
12.00	1.25	0.07	0.00
13.00	1.25	0.07	0.00
14.00	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
58.00	1.25	0.07	0.00
59.00	1.25	0.07	0.00
60.00	1.25	0.07	0.00
61.00	1.25	0.07	0.00
62.00	1.25	0.07	0.00
63.00	1.25	0.07	0.00
64.00	1.25	0.07	0.00
65.00	1.25	0.07	0.00
66.00	1.25	0.07	0.00
67.00	1.25	0.07	0.00
68.00	1.25	0.07	0.00
69.00	1.25	0.07	0.00
70.00	1.25	0.07	0.00
71.00	1.25	0.07	0.00
72.00	1.25	0.07	0.00

Summary for Pond 29P: Basin 12

Inflow Area = 0.178 ac, 32.25% Impervious, Inflow Depth = 0.38" for WQ event
Inflow = 0.19 cfs @ 1.10 hrs, Volume= 0.006 af
Outflow = 0.18 cfs @ 1.11 hrs, Volume= 0.006 af, Atten= 2%, Lag= 0.6 min
Discarded = 0.18 cfs @ 1.11 hrs, Volume= 0.006 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 596.03' @ 1.11 hrs Surf.Area= 900 sf Storage= 10 cf

Plug-Flow detention time= 0.9 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 0.9 min (71.7 - 70.7)

Volume	Invert	Avail.Storage	Storage Description
#1	596.00'	1,004 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc) 2,700 cf Overall - 191 cf Embedded = 2,509 cf x 40.0% Voids
#2	596.00'	151 cf	**8.00'D x 3.00'H Vertical Cone/Cylinder** Inside #1 191 cf Overall - 6.0" Wall Thickness = 151 cf
		1,154 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
596.00	900	0	0
599.00	900	2,700	2,700

Device	Routing	Invert	Outlet Devices
#1	Discarded	596.00'	**10.000 in/hr Exfiltration over Surface area**

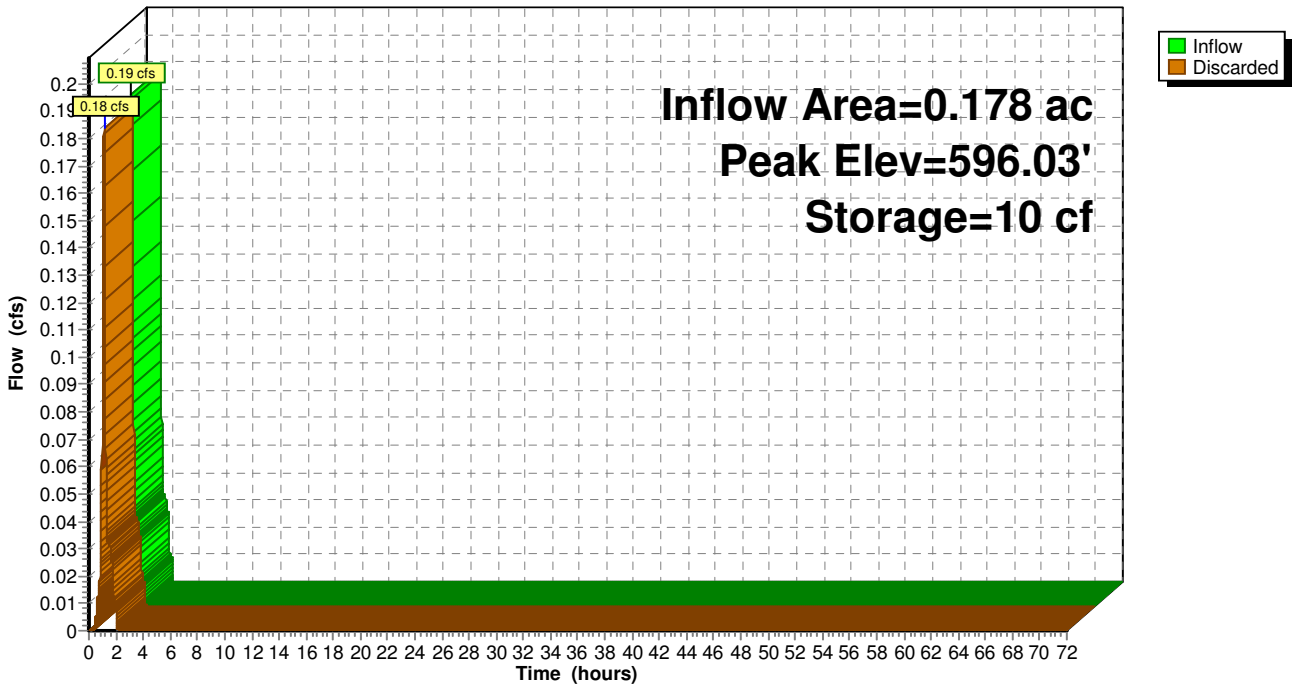
Discarded OutFlow Max=0.21 cfs @ 1.11 hrs HW=596.03' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.21 cfs)

Pond 29P: Basin 12

Exfiltration

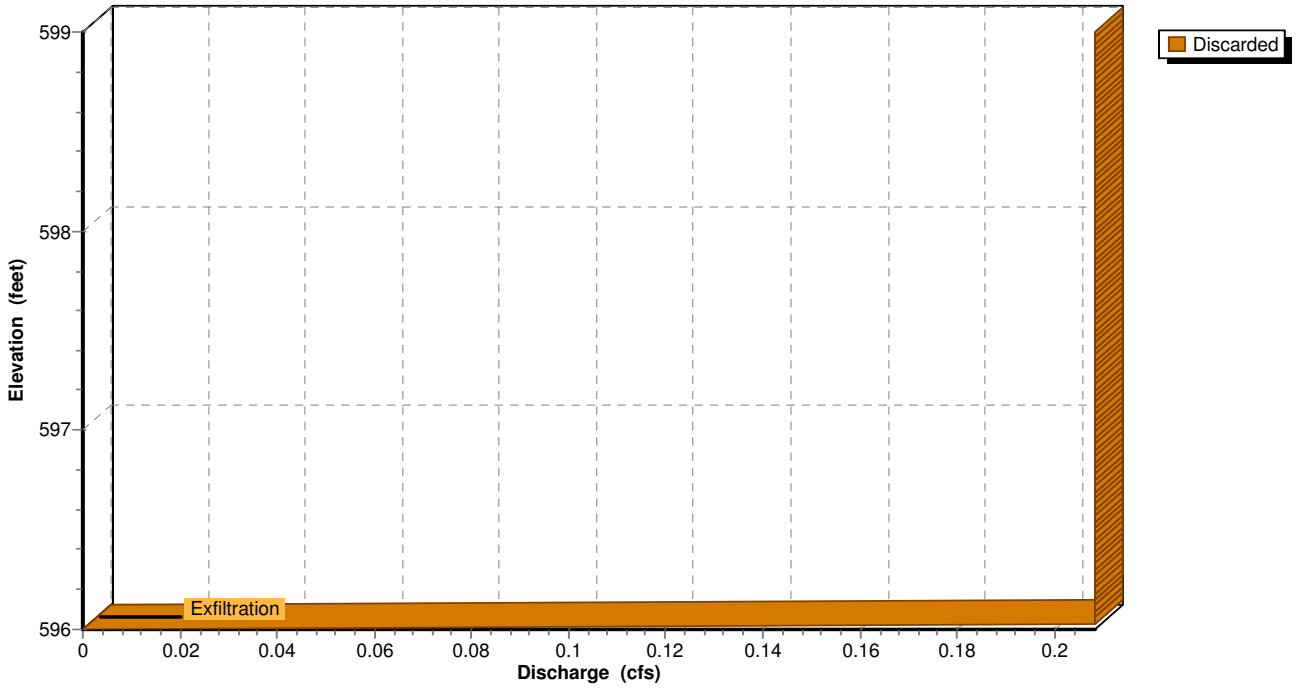
Pond 29P: Basin 12

Hydrograph

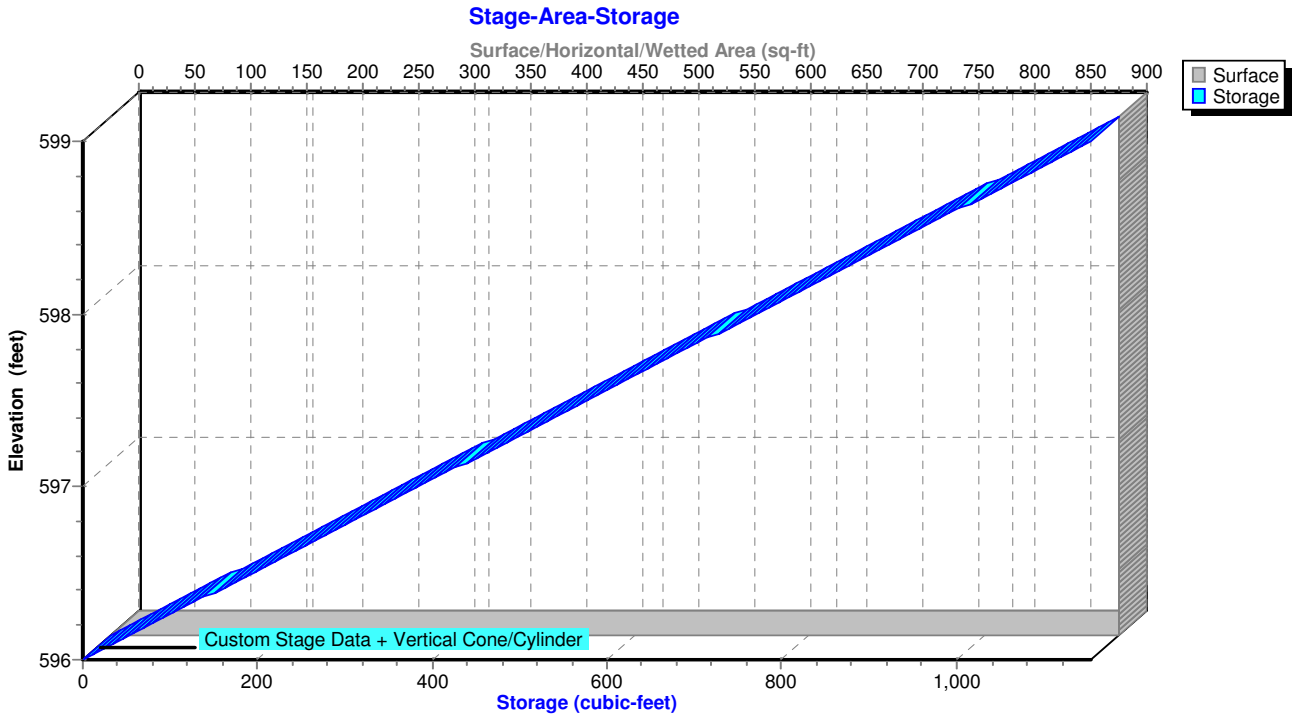


Pond 29P: Basin 12

Stage-Discharge



Pond 29P: Basin 12



Hydrograph for Pond 29P: Basin 12

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Discarded (cfs)
0.00	**0.00**	**0**	**596.00**	**0.00**
2.00	**0.01**	**0**	**596.00**	**0.01**
4.00	0.00	0	596.00	0.00
6.00	0.00	0	596.00	0.00
8.00	0.00	0	596.00	0.00
10.00	0.00	0	596.00	0.00
12.00	0.00	0	596.00	0.00
14.00	0.00	0	596.00	0.00
16.00	0.00	0	596.00	0.00
18.00	0.00	0	596.00	0.00
20.00	0.00	0	596.00	0.00
22.00	0.00	0	596.00	0.00
24.00	0.00	0	596.00	0.00
26.00	0.00	0	596.00	0.00
28.00	0.00	0	596.00	0.00
30.00	0.00	0	596.00	0.00
32.00	0.00	0	596.00	0.00
34.00	0.00	0	596.00	0.00
36.00	0.00	0	596.00	0.00
38.00	0.00	0	596.00	0.00
40.00	0.00	0	596.00	0.00
42.00	0.00	0	596.00	0.00
44.00	0.00	0	596.00	0.00
46.00	0.00	0	596.00	0.00
48.00	0.00	0	596.00	0.00
50.00	0.00	0	596.00	0.00
52.00	0.00	0	596.00	0.00
54.00	0.00	0	596.00	0.00
56.00	0.00	0	596.00	0.00
58.00	0.00	0	596.00	0.00
60.00	0.00	0	596.00	0.00
62.00	0.00	0	596.00	0.00
64.00	0.00	0	596.00	0.00
66.00	0.00	0	596.00	0.00
68.00	0.00	0	596.00	0.00
70.00	0.00	0	596.00	0.00
72.00	0.00	0	596.00	0.00

Stage-Discharge for Pond 29P: Basin 12

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
596.00	**0.00**	597.02	0.21	598.04	0.21
596.02	**0.21**	597.04	0.21	598.06	0.21
596.04	0.21	597.06	0.21	598.08	0.21
596.06	0.21	597.08	0.21	598.10	0.21
596.08	0.21	597.10	0.21	598.12	0.21
596.10	0.21	597.12	0.21	598.14	0.21
596.12	0.21	597.14	0.21	598.16	0.21
596.14	0.21	597.16	0.21	598.18	0.21
596.16	0.21	597.18	0.21	598.20	0.21
596.18	0.21	597.20	0.21	598.22	0.21
596.20	0.21	597.22	0.21	598.24	0.21
596.22	0.21	597.24	0.21	598.26	0.21
596.24	0.21	597.26	0.21	598.28	0.21
596.26	0.21	597.28	0.21	598.30	0.21
596.28	0.21	597.30	0.21	598.32	0.21
596.30	0.21	597.32	0.21	598.34	0.21
596.32	0.21	597.34	0.21	598.36	0.21
596.34	0.21	597.36	0.21	598.38	0.21
596.36	0.21	597.38	0.21	598.40	0.21
596.38	0.21	597.40	0.21	598.42	0.21
596.40	0.21	597.42	0.21	598.44	0.21
596.42	0.21	597.44	0.21	598.46	0.21
596.44	0.21	597.46	0.21	598.48	0.21
596.46	0.21	597.48	0.21	598.50	0.21
596.48	0.21	597.50	0.21	598.52	0.21
596.50	0.21	597.52	0.21	598.54	0.21
596.52	0.21	597.54	0.21	598.56	0.21
596.54	0.21	597.56	0.21	598.58	0.21
596.56	0.21	597.58	0.21	598.60	0.21
596.58	0.21	597.60	0.21	598.62	0.21
596.60	0.21	597.62	0.21	598.64	0.21
596.62	0.21	597.64	0.21	598.66	0.21
596.64	0.21	597.66	0.21	598.68	0.21
596.66	0.21	597.68	0.21	598.70	0.21
596.68	0.21	597.70	0.21	598.72	0.21
596.70	0.21	597.72	0.21	598.74	0.21
596.72	0.21	597.74	0.21	598.76	0.21
596.74	0.21	597.76	0.21	598.78	0.21
596.76	0.21	597.78	0.21	598.80	0.21
596.78	0.21	597.80	0.21	598.82	0.21
596.80	0.21	597.82	0.21	598.84	0.21
596.82	0.21	597.84	0.21	598.86	0.21
596.84	0.21	597.86	0.21	598.88	0.21
596.86	0.21	597.88	0.21	598.90	0.21
596.88	0.21	597.90	0.21	598.92	0.21
596.90	0.21	597.92	0.21	598.94	0.21
596.92	0.21	597.94	0.21	598.96	0.21
596.94	0.21	597.96	0.21	598.98	0.21
596.96	0.21	597.98	0.21	599.00	0.21
596.98	0.21	598.00	0.21		
597.00	0.21	598.02	0.21		

Stage-Area-Storage for Pond 29P: Basin 12

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
596.00	**900**	0
596.05	900	19
596.10	900	38
596.15	900	58
596.20	900	77
596.25	900	96
596.30	900	115
596.35	900	135
596.40	900	154
596.45	900	173
596.50	900	192
596.55	900	212
596.60	900	231
596.65	900	250
596.70	900	269
596.75	900	289
596.80	900	308
596.85	900	327
596.90	900	346
596.95	900	366
597.00	900	385
597.05	900	404
597.10	900	423
597.15	900	443
597.20	900	462
597.25	900	481
597.30	900	500
597.35	900	520
597.40	900	539
597.45	900	558
597.50	900	577
597.55	900	596
597.60	900	616
597.65	900	635
597.70	900	654
597.75	900	673
597.80	900	693
597.85	900	712
597.90	900	731
597.95	900	750
598.00	900	770
598.05	900	789
598.10	900	808
598.15	900	827
598.20	900	847
598.25	900	866
598.30	900	885
598.35	900	904
598.40	900	924
598.45	900	943
598.50	900	962
598.55	900	981
598.60	900	1,001
598.65	900	1,020
598.70	900	1,039
598.75	900	1,058
598.80	900	1,077
598.85	900	1,097
598.90	900	1,116
598.95	900	1,135
599.00	900	**1,154**

Events for Subcatchment 28S: Basin 12 - Imp

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2-Year	3.44	0.20	0.015	3.21
10-Year	5.22	0.30	0.024	4.98
100-Year	**8.66**	**0.51**	**0.040**	**8.42**
WQ	1.25	0.17	0.005	1.03

Events for Subcatchment 30S: Basin 12 - Perv

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2-Year	3.44	0.18	0.012	1.20
10-Year	5.22	0.39	0.026	2.54
100-Year	**8.66**	**0.83**	**0.055**	**5.52**
WQ	1.25	0.02	0.001	0.07

Events for Pond 29P: Basin 12

Event	Inflow (cfs)	Discarded (cfs)	Elevation (feet)	Storage (cubic-feet)
2-Year	0.38	**0.21**	596.18	69
10-Year	0.69	0.21	596.73	280
100-Year	**1.33**	0.21	**598.47**	**952**
WQ	0.19	0.18	596.03	10

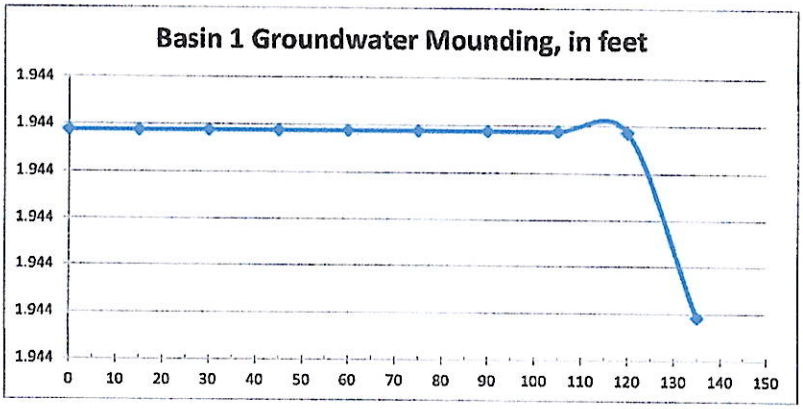
Input Values

10.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.05	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
154.000	x	1/2 length of basin (x direction, in feet)
53.000	y	1/2 width of basin (y direction, in feet)
0.35	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.944	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.944	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.944	0
1.944	15
1.944	30
1.944	45
1.944	60
1.944	75
1.944	90
1.944	105
1.944	120
1.944	135

Re-Calculate Now



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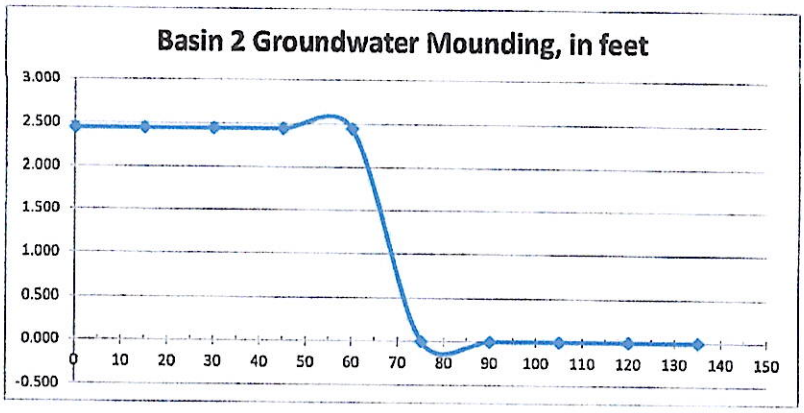
Input Values

4.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.13	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
68.500	x	1/2 length of basin (x direction, in feet)
92.200	y	1/2 width of basin (y direction, in feet)
1.10	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.445	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.445	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.445	0
2.445	15
2.445	30
2.445	45
2.445	60
0.001	75
0.001	90
0.001	105
0.001	120
0.001	135

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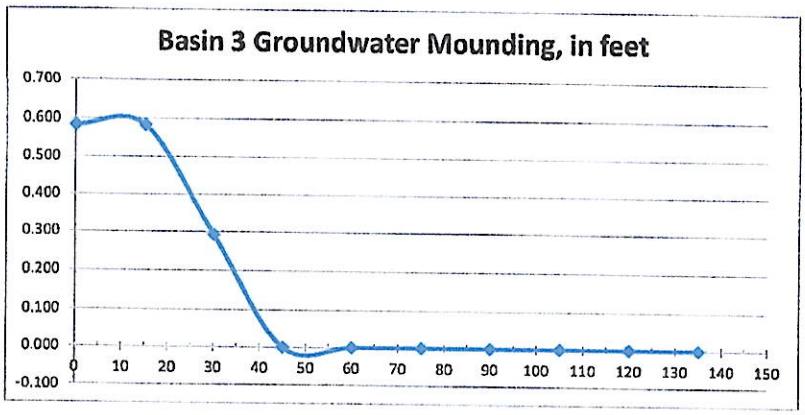
Input Values

5.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.28	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
30.000	x	1/2 length of basin (x direction, in feet)
43.560	y	1/2 width of basin (y direction, in feet)
0.21	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.583	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.583	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.583	0
0.583	15
0.292	30
0.000	45
0.000	60
0.000	75
0.000	90
0.000	105
0.000	120
0.000	135

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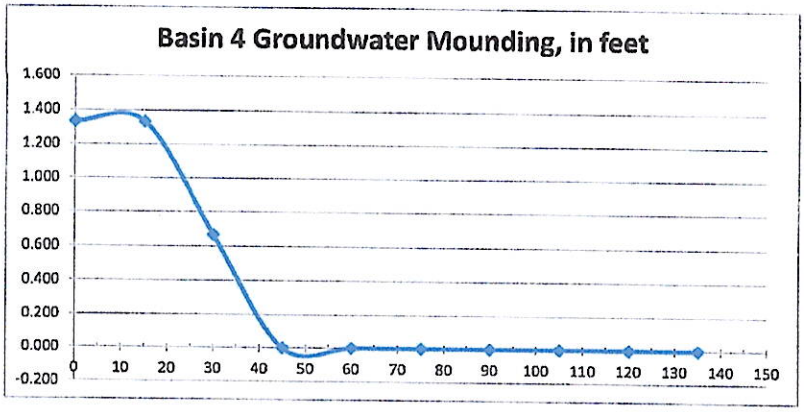
Input Values

4.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.05	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
30.000	x	1/2 length of basin (x direction, in feet)
101.640	y	1/2 width of basin (y direction, in feet)
0.60	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.333	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.333	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.333	0
1.333	15
0.667	30
0.000	45
0.000	60
0.000	75
0.000	90
0.000	105
0.000	120
0.000	135

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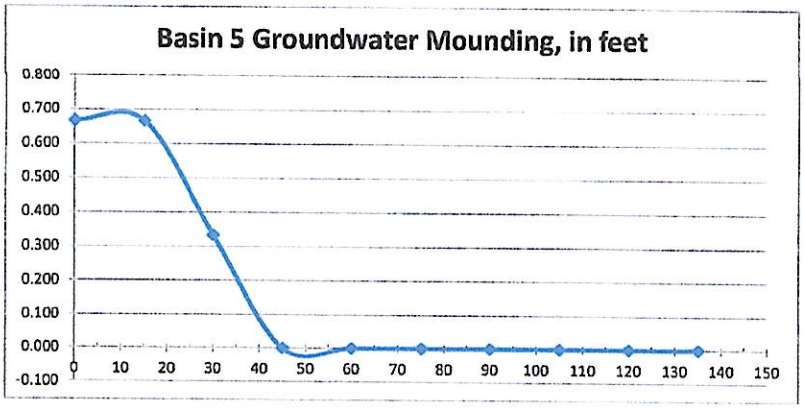
Input Values

4.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.10	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
30.000	x	1/2 length of basin (x direction, in feet)
123.420	y	1/2 width of basin (y direction, in feet)
0.30	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.667	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.667	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.667	0
0.667	15
0.333	30
0.000	45
0.000	60
0.000	75
0.000	90
0.000	105
0.000	120
0.000	135

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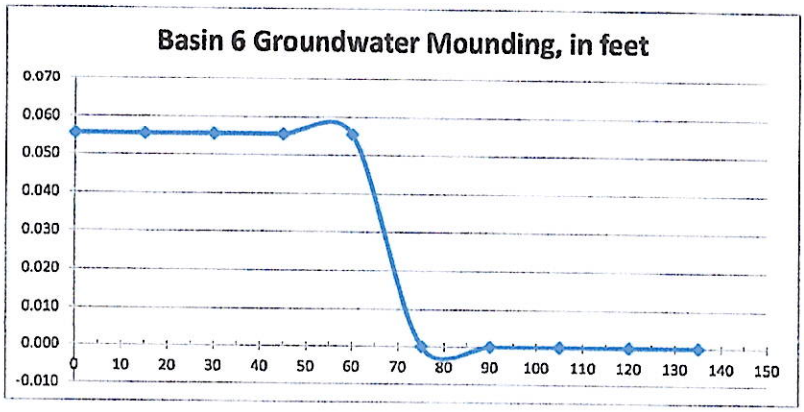
Input Values

10.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.03	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
65.000	x	1/2 length of basin (x direction, in feet)
137.000	y	1/2 width of basin (y direction, in feet)
0.01	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.056	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.056	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.056	0
0.056	15
0.056	30
0.056	45
0.056	60
0.000	75
0.000	90
0.000	105
0.000	120
0.000	135

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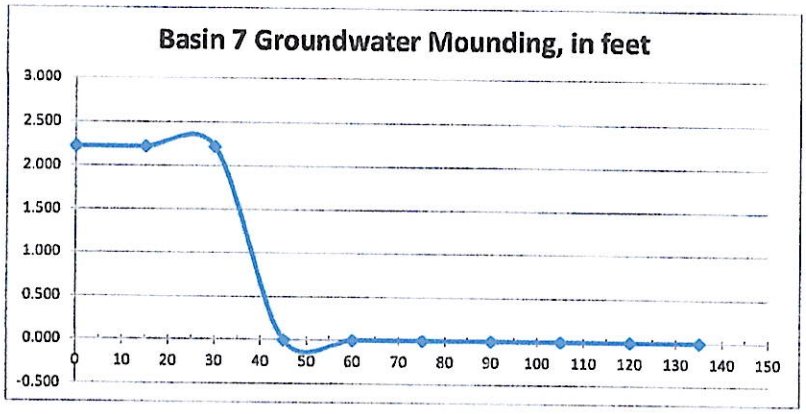
Input Values

4.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.37	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
38.000	x	1/2 length of basin (x direction, in feet)
94.500	y	1/2 width of basin (y direction, in feet)
1.00	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.222	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.222	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.222	0
2.222	15
2.222	30
0.001	45
0.001	60
0.001	75
0.001	90
0.001	105
0.001	120
0.001	135

Re-Calculate Now



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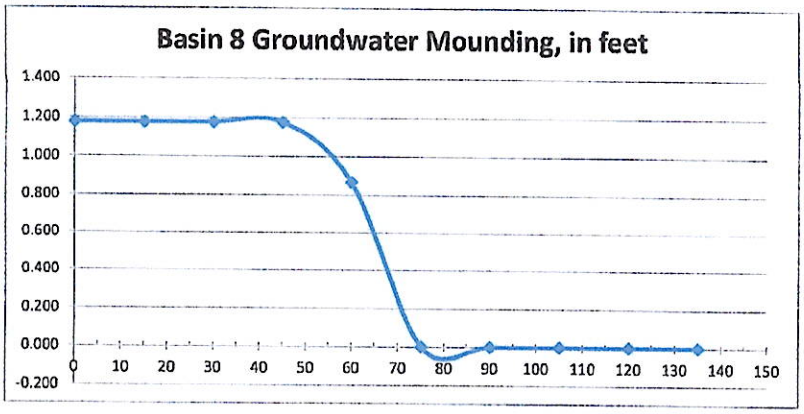
Input Values

4.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.07	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
60.250	x	1/2 length of basin (x direction, in feet)
41.500	y	1/2 width of basin (y direction, in feet)
0.53	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.178	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.178	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.178	0
1.178	15
1.178	30
1.178	45
0.870	60
0.000	75
0.000	90
0.000	105
0.000	120
0.000	135

Re-Calculate Now



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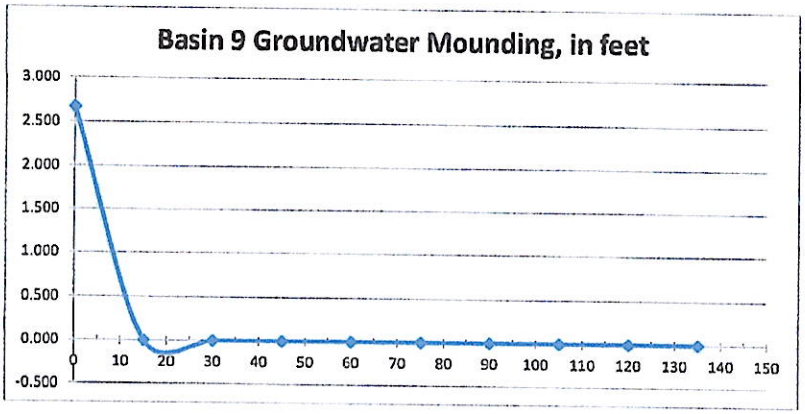
Input Values

4.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.10	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
12.000	x	1/2 length of basin (x direction, in feet)
136.000	y	1/2 width of basin (y direction, in feet)
1.20	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.667	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.667	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.667	0
0.003	15
0.001	30
0.001	45
0.001	60
0.001	75
0.001	90
0.001	105
0.001	120
0.001	135

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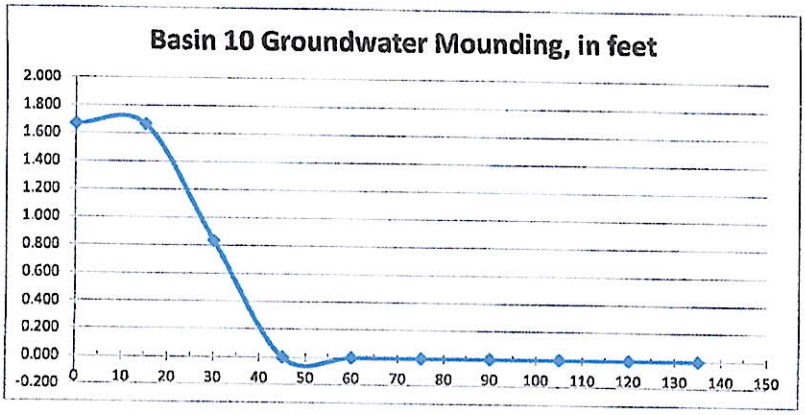
Input Values

10.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.23	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
30.000	x	1/2 length of basin (x direction, in feet)
79.860	y	1/2 width of basin (y direction, in feet)
0.30	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.667	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.667	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.667	0
1.667	15
0.834	30
0.001	45
0.001	60
0.001	75
0.001	90
0.001	105
0.001	120
0.001	135

Re-Calculate Now



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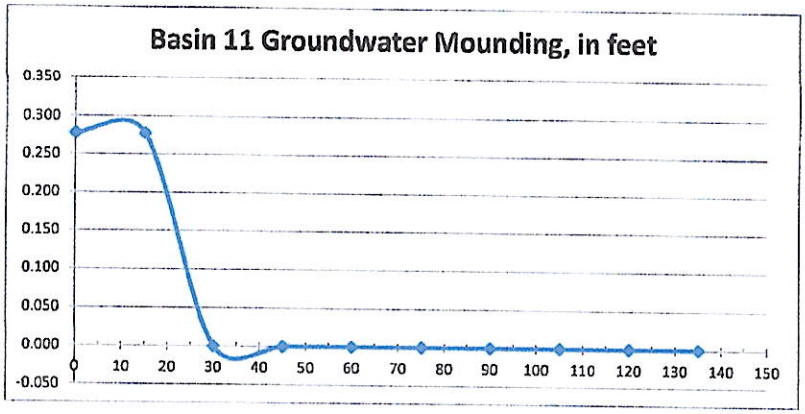
Input Values

10.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.25	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
22.500	x	1/2 length of basin (x direction, in feet)
150.000	y	1/2 width of basin (y direction, in feet)
0.05	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.278	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.278	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.278	0
0.278	15
0.000	30
0.000	45
0.000	60
0.000	75
0.000	90
0.000	105
0.000	120
0.000	135

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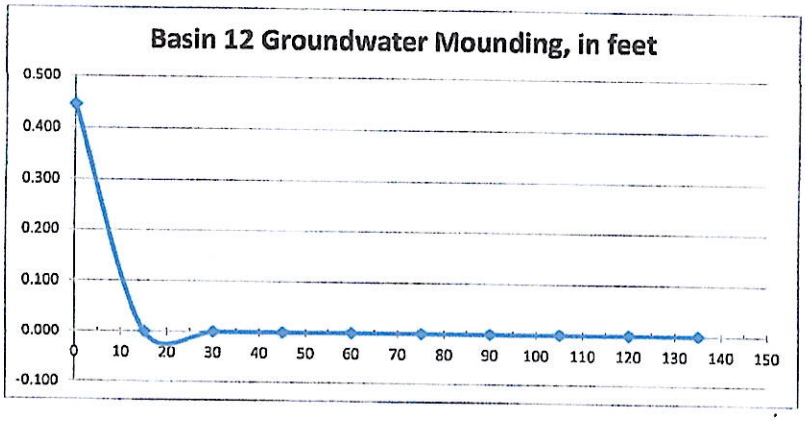
Input Values

10.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.31	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
8.000	x	1/2 length of basin (x direction, in feet)
34.030	y	1/2 width of basin (y direction, in feet)
0.08	t	Duration of infiltration period (hours)
10.00	hI(0)	Initial thickness of saturated zone (feet)

10.444	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.444	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.444	0
0.000	15
0.000	30
0.000	45
0.000	60
0.000	75
0.000	90
0.000	105
0.000	120
0.000	135

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100 YR

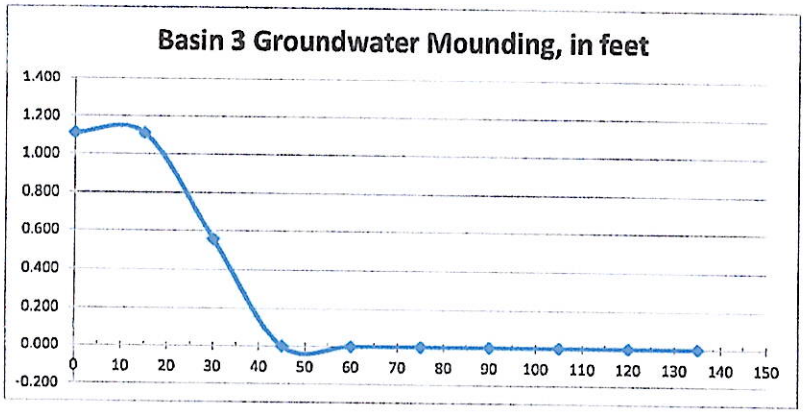
Input Values

10.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.28	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
30.000	x	1/2 length of basin (x direction, in feet)
43.560	y	1/2 width of basin (y direction, in feet)
0.20	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.111	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.111	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.111	0
1.111	15
0.556	30
0.000	45
0.000	60
0.000	75
0.000	90
0.000	105
0.000	120
0.000	135

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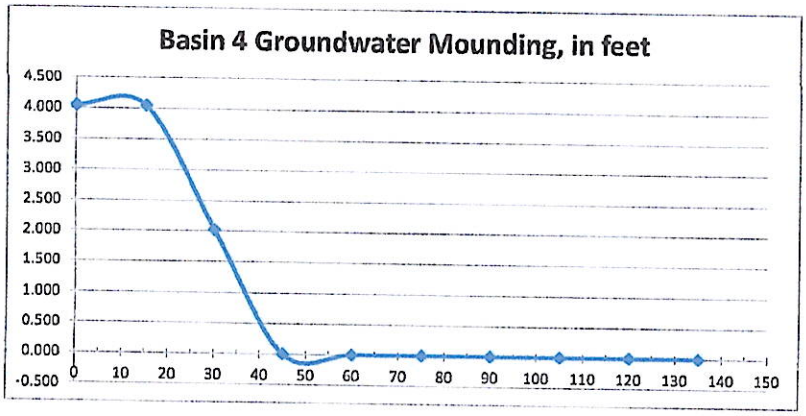
Input Values

4.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.05	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
30.000	x	1/2 length of basin (x direction, in feet)
101.640	y	1/2 width of basin (y direction, in feet)
1.82	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

14.045	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
4.045	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.045	0
4.045	15
2.023	30
0.001	45
0.001	60
0.001	75
0.001	90
0.001	105
0.001	120
0.001	135

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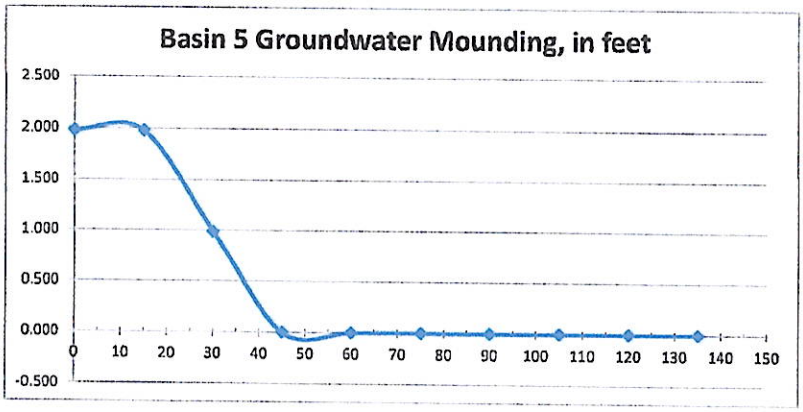
Input Values

4.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.10	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
30.000	x	1/2 length of basin (x direction, in feet)
123.420	y	1/2 width of basin (y direction, in feet)
0.89	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.978	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.978	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.978	0
1.978	15
0.989	30
0.001	45
0.001	60
0.001	75
0.001	90
0.001	105
0.001	120
0.001	135

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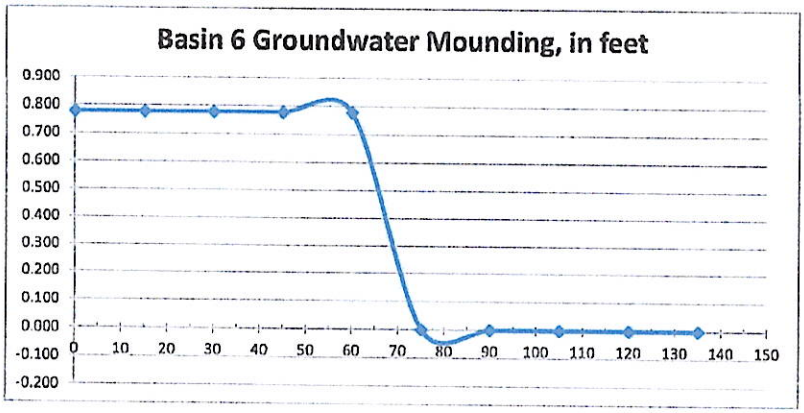
Input Values

10.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.03	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
65.000	x	1/2 length of basin (x direction, in feet)
137.000	y	1/2 width of basin (y direction, in feet)
0.14	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

10.778	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
0.778	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
0.778	0
0.778	15
0.778	30
0.778	45
0.778	60
0.000	75
0.000	90
0.000	105
0.000	120
0.000	135

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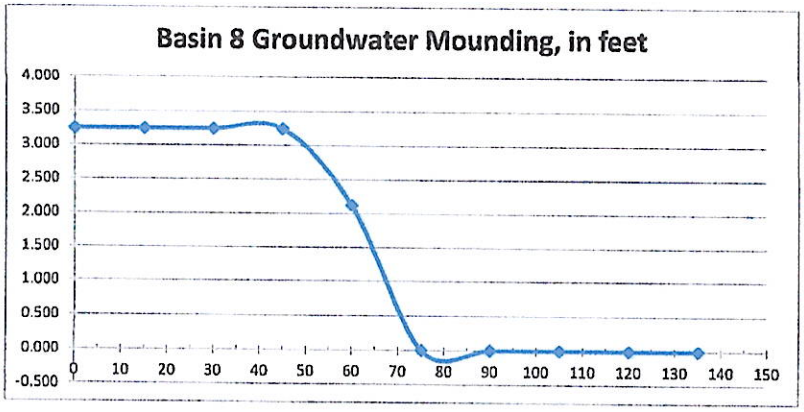
Input Values

4.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.07	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
60.250	x	1/2 length of basin (x direction, in feet)
41.500	y	1/2 width of basin (y direction, in feet)
1.46	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

13.245	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
3.245	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
3.245	0
3.245	15
3.245	30
3.245	45
2.124	60
0.001	75
0.001	90
0.001	105
0.001	120
0.001	135

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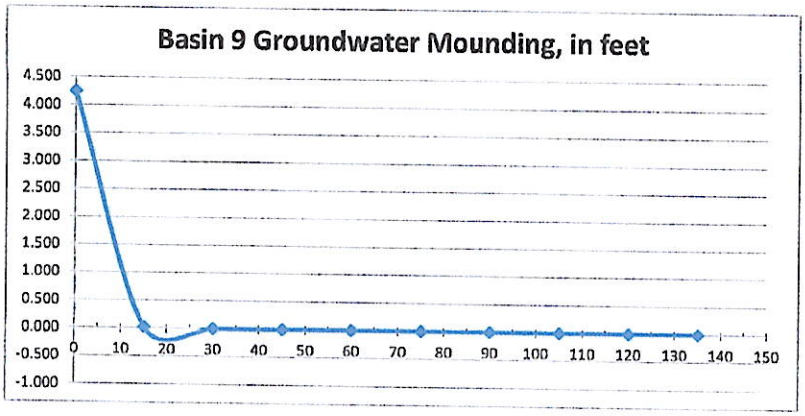
Input Values

4.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.10	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
12.000	x	1/2 length of basin (x direction, in feet)
136.000	y	1/2 width of basin (y direction, in feet)
1.91	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

14.245	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
4.245	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
4.245	0
0.022	15
0.001	30
0.001	45
0.001	60
0.001	75
0.001	90
0.001	105
0.001	120
0.001	135

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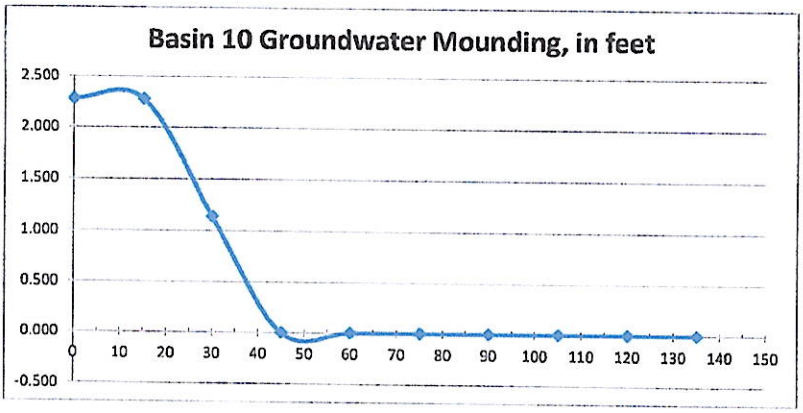
Input Values

10.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.23	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
30.000	x	1/2 length of basin (x direction, in feet)
181.500	y	1/2 width of basin (y direction, in feet)
0.41	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

12.278	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
2.278	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
2.278	0
2.278	15
1.139	30
0.001	45
0.001	60
0.001	75
0.001	90
0.001	105
0.001	120
0.001	135

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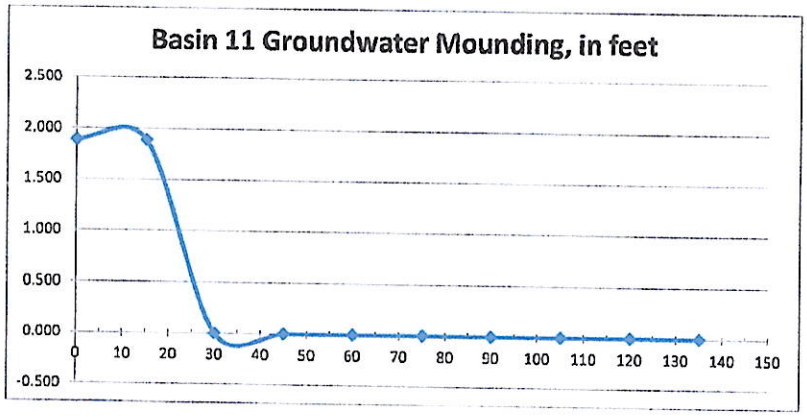
Input Values

10.00	R	Recharge rate (permeability rate) (in/hr)
0.150	Sy	Specific yield, Sy (dimensionless) default value is 0.15; max value is 0.2 provided that a lab test data is submitted
0.25	Kh	Horizontal hydraulic conductivity (in/hr) Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
22.500	x	1/2 length of basin (x direction, in feet)
150.000	y	1/2 width of basin (y direction, in feet)
0.34	t	Duration of infiltration period (hours)
10.00	hi(0)	Initial thickness of saturated zone (feet)

11.889	h(max)	Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
1.889	Δh(max)	Maximum groundwater mounding (beneath center of basin at end of infiltration period)

Ground-water Mounding, in feet	Distance from center of basin in x direction, in feet
1.889	0
1.889	15
0.001	30
0.001	45
0.001	60
0.001	75
0.001	90
0.001	105
0.001	120
0.001	135

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Pre-Developed Total Annual Recharge Volume	1,063,036 CF
Post-Development Total Annual Recharge Volume	441,904 CF
Post-Development Annual Recharge Deficit	621,132 CF
Aboveground Infiltration Basin 2	96,727 CF
Pervious Pavement 3	20,254 CF
Pervious Pavement 4	128,382 CF
Pervious Pavement 5	118,298 CF
Pervious Pavement 6	14,828 CF
Aboveground Infiltration Basin 7	135,505 CF
Pervious Pavement 8	112,832 CF
Pervious Pavement 9	53,990 CF
Aboveground Infiltration Basin 10	119,397 CF
Pervious Pavement 11	189,645 CF
Pervious Pavement 12	8,305 CF
Total Annual Recharge Volume Provided	1,440,067 CF

New Jersey Groundwater Recharge Spreadsheet Version 2.0 November 2003

Annual Groundwater Recharge Analysis (based on GSR-32)

Select Township ↓	Average Annual P (in)	Climatic Factor
ESSEX CO., WEST ORANGE TOWN	49.0	1.67

Project Name:	**West Essex Highlands**
Description:	**West Orange, New Jersey**
Analysis Date:	**05/31/24**

Pre-Developed Conditions

Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	0.66	Open space	Adrian	0.0	-
2	8.66	Woods	Adrian	0.0	-
3	0.16	Woods	Hasbrouck	0.0	-
4	0.02	Open space	Haledon	14.7	1,070
5	1.62	Woods	Haledon	15.5	90,995
6	0.81	Open space	Boonton	14.9	43,952
7	16.31	Woods	Boonton	15.7	927,019
8	0				
9	0				
10	0				
11	0				
12	0				
13	0				
14	0				
15	0				
Total =	28.2			Total Annual Recharge (in)	Total Annual Recharge (cu-ft)
				10.4	1,063,036

Post-Developed Conditions

Land Segment	Area (acres)	TR-55 Land Cover	Soil	Annual Recharge (in)	Annual Recharge (cu.ft)
1	6.27	Open space	Adrian	0.0	-
2	3.05	Impervious areas	Adrian	0.0	-
3	0.08	Open space	Hasbrouck	0.0	-
4	0.08	Impervious areas	Hasbrouck	0.0	-
5	1.14	Open space	Haledon	14.7	60,987
6	0.5	Impervious areas	Haledon	0.0	-
7	7.02	Open space	Boonton	14.9	380,916
8	10.1	Impervious areas	Boonton	0.0	-
9					
10					
11					
12	0				
13	0				
14	0				
15	0				
Total =	28.2			Total Annual Recharge (in)	Total Annual Recharge (cu.ft)
				4.3	441,904

Annual Recharge Requirements Calculation ↓

% of Pre-Developed Annual Recharge to Preserve =	100%	Total Impervious Area (sq.ft)
		598,079
Post-Development Annual Recharge Deficit=	***621,132***	(cubic feet)

Recharge Efficiency Parameters Calculations (area averages)

RWC=	#N/A	(in)	DRWC=	#N/A	(in)
ERWC =	#N/A	(in)	EDRWC=	#N/A	(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
West Essex Highlands	West Orange, Essex County	05/31/24	Aboveground Basin 2

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	26023.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	4.2	in
Upper level of the BMP surface (negative if above ground)	dBMPu	37.8	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	42.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.39	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	3.05	in
Inches of Rainfall to capture	Pdesign	3.28	in
Recharge Provided Avg. over Imp. Area		38.5	in
Runoff Captured Avg. over imp. Area		38.5	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.86	unitless
BMP Volume	VBMP	9,108	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	621,132	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	30,173	sq.ft
Root Zone Water Capacity	RWC	2.37	in
RWC Modified to consider dEXC	DRWC	0.00	in
Climatic Factor	C-factor	1.67	no units
Average Annual P	Pavg	49.0	in
Recharge Requirement over Imp. Area	dr	12.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		96,727	cu.ft
Avg BMP Recharge Efficiency		100.0%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.5%	%
%Runoff Infiltrated		100.0%	%
%Runoff Recharged		4.9%	%
%Rainfall Recharged		3.9%	%

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 sensetive 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 clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
West Essex Highlands	West Orange, Essex County	05/31/24	Pervious Pavement 3

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	5227.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	2.6	in
Upper level of the BMP surface (negative if above ground)	dBMPu	23.4	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	26.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.39	in
ERWC Modified to consider dEXC	EDRWC	0.03	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.03	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	2.19	in
Inches of Rainfall to capture	Pdesign	2.42	in
Recharge Provided Avg. over Imp. Area		35.6	in
Runoff Captured Avg. over imp. Area		37.3	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.77	unitless
BMP Volume	VBMP	1,150	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	621,132	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	6,824	sq.ft
Root Zone Water Capacity	RWC	2.37	in
RWC Modified to consider dEXC	DRWC	0.21	in
Climatic Factor	C-factor	1.67	no units
Average Annual P	Pavg	49.0	in
Recharge Requirement over Imp. Area	dr	12.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		20,254	cu.ft
Avg BMP Recharge Efficiency		95.5%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.5%	%
%Runoff Infiltrated		96.9%	%
%Runoff Recharged		1.0%	%
%Rainfall Recharged		0.8%	%

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 sensetive 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 clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
West Essex Highlands	West Orange, Essex County	05/31/24	Pervious Pavement 4

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	12200.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	6.0	in
Upper level of the BMP surface (negative if above ground)	dBMPu	28.9	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	34.9	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.39	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.84	in
Inches of Rainfall to capture	Pdesign	2.07	in
Recharge Provided Avg. over Imp. Area		36.6	in
Runoff Captured Avg. over imp. Area		36.6	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.29	unitless
BMP Volume	VBMP	6,100	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	621,132	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	42,085	sq.ft
Root Zone Water Capacity	RWC	2.37	in
RWC Modified to consider dEXC	DRWC	0.00	in
Climatic Factor	C-factor	1.67	no units
Average Annual P	Pavg	49.0	in
Recharge Requirement over Imp. Area	dr	12.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		128,382	cu.ft
Avg BMP Recharge Efficiency		100.0%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.5%	%
%Runoff Infiltrated		95.2%	%
%Runoff Recharged		6.5%	%
%Rainfall Recharged		5.1%	%

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 sensetive 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 clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
West Essex Highlands	West Orange, Essex County	05/31/24	Pervious Pavement 5

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	14800.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	3.0	in
Upper level of the BMP surface (negative if above ground)	dBMPu	60.6	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	63.6	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.39	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.06	in
Inches of Rainfall to capture	Pdesign	1.27	in
Recharge Provided Avg. over Imp. Area		32.9	in
Runoff Captured Avg. over imp. Area		32.9	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.34	unitless
BMP Volume	VBMP	3,700	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	621,132	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	43,200	sq.ft
Root Zone Water Capacity	RWC	2.37	in
RWC Modified to consider dEXC	DRWC	0.00	in
Climatic Factor	C-factor	1.67	no units
Average Annual P	Pavg	49.0	in
Recharge Requirement over Imp. Area	dr	12.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		118,298	cu.ft
Avg BMP Recharge Efficiency		100.0%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.5%	%
%Runoff Infiltrated		85.4%	%
%Runoff Recharged		6.0%	%
%Rainfall Recharged		4.7%	%

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 sensetive 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 clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
West Essex Highlands	West Orange, Essex County	05/31/24	Pervious Pavement 6

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	35700.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	0.1	in
Upper level of the BMP surface (negative if above ground)	dBMPu	23.8	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	24.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.39	in
ERWC Modified to consider dEXC	EDRWC	0.05	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.04	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.05	in
Inches of Rainfall to capture	Pdesign	0.10	in
Recharge Provided Avg. over Imp. Area		1.6	in
Runoff Captured Avg. over imp. Area		2.5	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.31	unitless
BMP Volume	VBMP	298	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	621,132	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	113,900	sq.ft
Root Zone Water Capacity	RWC	2.37	in
RWC Modified to consider dEXC	DRWC	0.29	in
Climatic Factor	C-factor	1.67	no units
Average Annual P	Pavg	49.0	in
Recharge Requirement over Imp. Area	dr	12.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		14,828	cu.ft
Avg BMP Recharge Efficiency		63.1%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.5%	%
%Runoff Infiltrated		6.4%	%
%Runoff Recharged		0.8%	%
%Rainfall Recharged		0.6%	%

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 sensetive 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 clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
West Essex Highlands	West Orange, Essex County	05/31/24	Aboveground Basin 7

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	14400.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	4.6	in
Upper level of the BMP surface (negative if above ground)	dBMPu	31.4	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	36.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.39	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.44	in
Inches of Rainfall to capture	Pdesign	1.67	in
Recharge Provided Avg. over Imp. Area		35.5	in
Runoff Captured Avg. over imp. Area		35.5	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.31	unitless
BMP Volume	VBMP	5,472	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	621,132	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	45,800	sq.ft
Root Zone Water Capacity	RWC	2.37	in
RWC Modified to consider dEXC	DRWC	0.00	in
Climatic Factor	C-factor	1.67	no units
Average Annual P	Pavg	49.0	in
Recharge Requirement over Imp. Area	dr	12.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		135,505	cu.ft
Avg BMP Recharge Efficiency		100.0%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.5%	%
%Runoff Infiltrated		92.3%	%
%Runoff Recharged		6.9%	%
%Rainfall Recharged		5.4%	%

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 sensetive 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 clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
West Essex Highlands	West Orange, Essex County	05/31/24	Pervious Pavement 8

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	10000.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	5.4	in
Upper level of the BMP surface (negative if above ground)	dBMPu	30.6	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	36.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.39	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	1.44	in
Inches of Rainfall to capture	Pdesign	1.67	in
Recharge Provided Avg. over Imp. Area		35.4	in
Runoff Captured Avg. over imp. Area		35.4	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.26	unitless
BMP Volume	VBMP	4,500	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	621,132	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	38,256	sq.ft
Root Zone Water Capacity	RWC	2.37	in
RWC Modified to consider dEXC	DRWC	0.00	in
Climatic Factor	C-factor	1.67	no units
Average Annual P	Pavg	49.0	in
Recharge Requirement over Imp. Area	dr	12.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		112,832	cu.ft
Avg BMP Recharge Efficiency		100.0%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.5%	%
%Runoff Infiltrated		92.0%	%
%Runoff Recharged		5.7%	%
%Rainfall Recharged		4.5%	%

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 sensetive 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 clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
West Essex Highlands	West Orange, Essex County	05/31/24	Pervious Pavement 9

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	6500.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	12.0	in
Upper level of the BMP surface (negative if above ground)	dBMPu	17.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	29.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.39	in
ERWC Modified to consider dEXC	EDRWC	0.06	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.05	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	3.05	in
Inches of Rainfall to capture	Pdesign	3.28	in
Recharge Provided Avg. over Imp. Area		37.1	in
Runoff Captured Avg. over imp. Area		38.5	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.37	unitless
BMP Volume	VBMP	6,500	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	621,132	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	17,461	sq.ft
Root Zone Water Capacity	RWC	2.37	in
RWC Modified to consider dEXC	DRWC	0.36	in
Climatic Factor	C-factor	1.67	no units
Average Annual P	Pavg	49.0	in
Recharge Requirement over Imp. Area	dr	12.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		53,990	cu.ft
Avg BMP Recharge Efficiency		96.5%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.5%	%
%Runoff Infiltrated		100.0%	%
%Runoff Recharged		2.7%	%
%Rainfall Recharged		2.2%	%

OTHER NOTES

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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 clik the "Default Vdef & Aimp" button.

Project Name	Description	Analysis Date	BMP or LID Type
West Essex Highlands	West Orange, Essex County	05/31/24	Aboveground Basin 10

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	9600.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	3.0	in
Upper level of the BMP surface (negative if above ground)	dBMPu	33.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	36.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.39	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	0.50	in
Inches of Rainfall to capture	Pdesign	0.62	in
Recharge Provided Avg. over Imp. Area		23.9	in
Runoff Captured Avg. over imp. Area		23.9	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.16	unitless
BMP Volume	VBMP	2,400	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	621,132	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	60,000	sq.ft
Root Zone Water Capacity	RWC	2.37	in
RWC Modified to consider dEXC	DRWC	0.00	in
Climatic Factor	C-factor	1.67	no units
Average Annual P	Pavg	49.0	in
Recharge Requirement over Imp. Area	dr	12.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		119,397	cu.ft
Avg BMP Recharge Efficiency		100.0%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.5%	%
%Runoff Infiltrated		62.1%	%
%Runoff Recharged		6.1%	%
%Rainfall Recharged		4.8%	%

OTHER NOTES

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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.
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Project Name	Description	Analysis Date	BMP or LID Type
West Essex Highlands	West Orange, Essex County	05/31/24	Pervious Pavement 11

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	13500.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	12.0	in
Upper level of the BMP surface (negative if above ground)	dBMPu	27.8	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	29.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.39	in
ERWC Modified to consider dEXC	EDRWC	0.01	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.01	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	3.05	in
Inches of Rainfall to capture	Pdesign	3.28	in
Recharge Provided Avg. over Imp. Area		38.0	in
Runoff Captured Avg. over imp. Area		38.1	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.23	unitless
BMP Volume	VBMP	13,500	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> dBMP must be<=dEXC-dBMPu, adjust parameters
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	621,132	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	59,900	sq.ft
Root Zone Water Capacity	RWC	2.37	in
RWC Modified to consider dEXC	DRWC	0.06	in
Climatic Factor	C-factor	1.67	no units
Average Annual P	Pavg	49.0	in
Recharge Requirement over Imp. Area	dr	12.1	in

System Performance Calculated Parameters

Annual BMP Recharge Volume		189,645	cu.ft
Avg BMP Recharge Efficiency		99.6%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.5%	%
%Runoff Infiltrated		99.1%	%
%Runoff Recharged		9.6%	%
%Rainfall Recharged		7.6%	%

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 sensetive 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.

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Project Name	Description	Analysis Date	BMP or LID Type
West Essex Highlands	West Orange, Essex County	05/31/24	Pervious Pavement 12

Recharge BMP Input Parameters

Parameter	Symbol	Value	Unit
BMP Area	ABMP	2100.0	sq.ft
BMP Effective Depth, this is the design variable	dBMP	3.6	in
Upper level of the BMP surface (negative if above ground)	dBMPu	27.0	in
Depth of lower surface of BMP, must be>=dBMPu	dEXC	48.0	in
Post-development Land Segment Location of BMP , Input Zero if Location is distributed or undetermined	SegBMP	0	unitless

Root Zone Water capacity Calculated Parameters

Parameter	Symbol	Value	Unit
Empty Portion of RWC under Post-D Natural Recharge	ERWC	0.39	in
ERWC Modified to consider dEXC	EDRWC	0.00	in
Empty Portion of RWC under Infilt. BMP	RERWC	0.00	in

Recharge Design Parameters

Parameter	Symbol	Value	Unit
Inches of Runoff to capture	Qdesign	3.05	in
Inches of Rainfall to capture	Pdesign	3.28	in
Recharge Provided Avg. over Imp. Area		38.3	in
Runoff Captured Avg. over imp. Area		38.3	in

BMP Calculated Size Parameters

ABMP/Aimp	Aratio	0.81	unitless
BMP Volume	VBMP	630	cu.ft

CALCULATION CHECK MESSAGES

Volume Balance-> Solve Problem to satisfy Annual Recharge
dBMP Check---> OK
dEXC Check---> OK

BMP Location---> Location is selected as distributed or undetermined

Parameters from Annual Recharge Worksheet

Post-D Deficit Recharge (or desired recharge volume)	Vdef	629,658	cu.ft
Post-D Impervious Area (or target Impervious Area)	Aimp	2,600	sq.ft
Root Zone Water Capacity	RWC	2.37	in
RWC Modified to consider dEXC	DRWC	0.00	in
Climatic Factor	C-factor	1.67	no units
Average Annual P	Pavg	49.0	in
Recharge Requirement over Imp. Area	dr	12.3	in

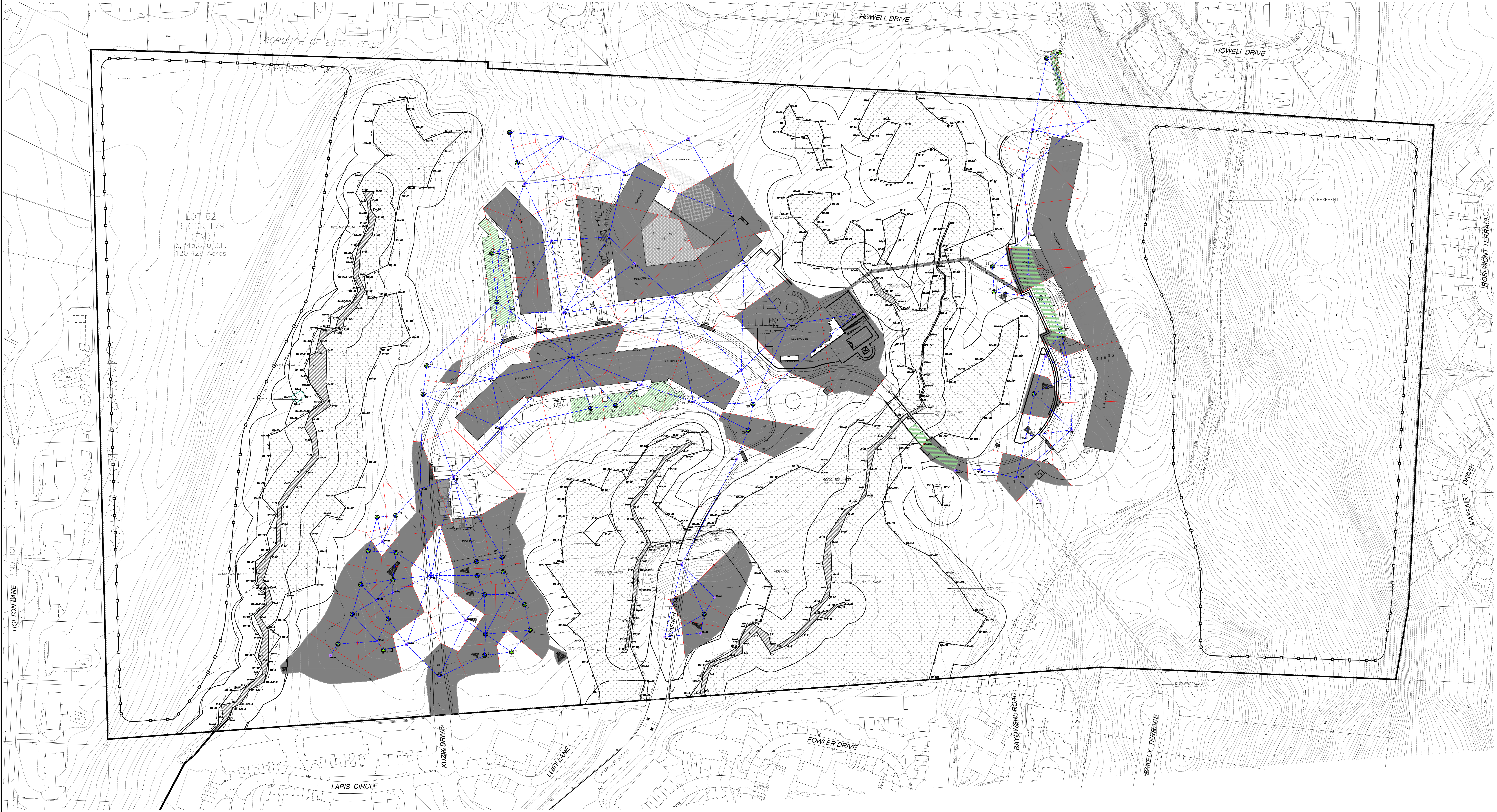
System Performance Calculated Parameters

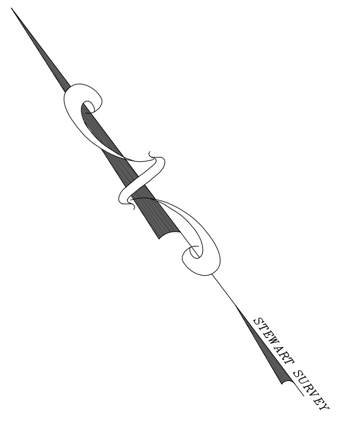
Annual BMP Recharge Volume		8,305	cu.ft
Avg BMP Recharge Efficiency		100.0%	Represents % Infiltration Recharged
%Rainfall became Runoff		78.5%	%
%Runoff Infiltrated		99.6%	%
%Runoff Recharged		0.4%	%
%Rainfall Recharged		0.3%	%

OTHER NOTES

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TP-#
▨ PREVIOUSLY PERFORMED TEST PIT LOCATION

B-#
⊕ PREVIOUSLY PERFORMED SOIL BORING LOCATION

▲ - NEW SOIL PERMEABILITY AND SEASONAL HIGH GROUNDWATER TESTING LOCATION

HSG-D SOIL AREA = 421,633 SF
9.68 AC

GRAPHIC SCALE



(IN FEET)
1 inch = 120 ft.

NEW JERSEY STATE LAW REQUIRES NOTIFICATION 3 BUSINESS DAYS PRIOR TO ANY LAND DISTURBANCE. CONTRACTOR IS RESPONSIBLE FOR CALLING 811 OR 1-800-272-1000 FOR UTILITY MARKOUTS. UTILITY INFORMATION SHOWN IS PROVIDED BY THE SURVEYOR AND IS CURRENT AT THE TIME OF THE SURVEY. ANDERSON CONSULTING SERVICES IS NOT RESPONSIBLE FOR THE ACCURACY OF THE DATA.

811 Know what's below. Call before you dig.

MAP REFERENCE:

1. TOPOGRAPHIC INFORMATION BASED ON SURVEY ENTITLED "TOPOGRAPHIC SURVEY OF PROPERTY" TAX LOTS 1, 2.04, & 3 – BLOCK 161 TAX LOT 3.01 – BLOCK 161, 1701–1711 ROUTE 10, TOWNSHIP OF MORRIS PLAINS, MORRIS COUNTY, NEW JERSEY" DATED 1/15/16 AND LAST REVISED 1-20-20 PREPARED BY LAKELAND SURVEYING, ROCKAWAY NJ. SIGNED BY MARC J. CIFONE, PLS
2. VERTICAL DATUM IS NAVD 1988
3. NGVD29 TO NGVD1988 = + 1.03 FT
4. FRESHWATERS WETLANDS/BOUNDARY LINE AS VERIFIED BY NJDEP FILE No. 1423-07-0001.1, FWWW190001

PAUL W. ANDERSON
N.J. PROFESSIONAL ENGINEER
No 33410

SIGNATURE INVALID WITHOUT EMBOSSED SEAL OF P.E.

10/26/23	PER NJDEP COMMENTS
10/23/23	PER NJDEP COMMENTS
10/03/23	PER NJDEP COMMENTS
9/07/23	PER NJDEP COMMENTS
7/11/23	PER NJDEP WETLANDS COMMENTS
6/07/23	PER NJDEP COMMENTS
Revisions	

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CERTIFICATE OF AUTHORIZATION
24GA28182400

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Fax: 973.975.0703
www.pwanderson-cs.com

Proj. No.	WEMF2022
Date	9-23-22
Drawn by	BCA
Designed by	PWA
Checked by	PWA
Scale	AS SHOWN

PRELIMINARY AND FINAL SITE PLAN
WEST ESSEX HIGHLANDS
BLOCK 179 LOT 32
TOWNSHIP OF WEST ORANGE
ESSEX COUNTY, NEW JERSEY

OVERALL SOIL TESTING PLAN

OA

SHEET OF 66

Stormwater Collection System Calculations

Project: WEH
County: Essex County
Municipality: West Orange
Design Storm: 25 yr storm

Computed By: ASM
Checked By: PWA
Date: 6/26/2024
Revised:

NOTES:
1) Design method used is Rational Method
2) Refer to Weighted Runoff Coefficient table for calculation of incremental areas and C values

PIPE SECTION		SUBCATCHMENT AREA	INCREMENTAL		CUMULATIVE	TIME OF CONCENTRATION			I	PEAK RUNOFF		PIPING INPUT			PIPING DATA			
FROM	TO	Area (Acres)	"C"	A x C Ac	A x C (acres)	Tc to Inlet (min)	Tc in Pipe (min.)	Final Tc (min)	(In/Hr)	Q to Inlet (CFS)	Q cum. for Pipe (CFS)	Dia. (In)	Length (Ft)	Man. "n"	Slope (ft/ft)	Pipe Capacity (cfs)	Full Pipe Velocity (fps)	Actual Pipe Velocity (fps)
K-14.1	K-14	0.15	0.91	0.14	0.14	10.00	0.04	10.00	6.80	0.95	0.95	15	31.0	0.010	0.0289	14.27	11.63	3.72
K-14	K-13	0.05	0.89	0.04	0.18	10.00	0.05	10.04	6.80	0.27	1.22	15	22.0	0.010	0.0100	8.39	6.84	3.55
K-13	K-MH.12	0.21	0.63	0.13	0.31	10.00	0.28	10.09	6.80	0.88	2.11	15	116.0	0.010	0.0100	8.39	6.84	4.81
K-MH.12	K-MH.11	0.00	0.00	0.00	0.31	10.00	0.50	10.37	6.80	0.00	2.11	15	206.0	0.010	0.0100	8.39	6.84	4.81
K-MH.11	K-9	0.00	0.00	0.00	0.31	10.00	0.28	10.87	6.68	0.00	2.07	15	136.0	0.010	0.0143	10.04	8.19	5.19
K-10	K-9	0.06	0.95	0.06	0.06	10.00	0.05	10.00	6.80	0.41	0.41	15	22.0	0.010	0.0100	8.39	6.84	1.76
K-9	K-MH.8	0.34	0.65	0.22	0.59	10.00	0.11	11.15	6.56	1.44	3.87	15	113.0	0.010	0.0653	21.45	17.49	10.12
K-MH.8	K-6	0.00	0.00	0.00	0.59	10.00	0.13	11.26	6.56	0.00	3.87	15	158.0	0.010	0.0872	24.79	20.21	10.90
K-7.1	K-7	0.48	0.45	0.22	0.22	10.00	0.02	10.00	6.80	1.50	1.50	15	30.0	0.010	0.0903	25.23	20.57	5.96
K-7	K-6	0.07	0.95	0.07	0.29	10.00	0.05	10.02	6.80	0.48	1.97	15	22.0	0.010	0.0100	8.39	6.84	4.58
K-6	K-MH.5	0.20	0.75	0.15	1.03	10.00	0.13	11.39	6.56	0.98	6.76	15	140.0	0.010	0.0675	21.81	17.78	14.08
K-MH.5	K-3	0.00	0.00	0.00	1.03	10.00	0.23	11.52	6.44	0.00	6.63	15	163.0	0.010	0.0295	14.42	11.76	11.36
A-5	A-6	0.32	0.46	0.15	0.15	10.00	0.05	10.00	6.80	1.02	1.02	15	46.0	0.010	0.0486	18.51	15.09	4.38
A-6	A-7	0.03	0.79	0.02	0.17	10.00	0.06	10.05	6.80	0.14	1.16	15	24.0	0.010	0.0102	8.48	6.91	3.43
A-7	K-4	0.03	0.85	0.03	0.20	10.00	0.16	10.11	6.80	0.20	1.36	15	114.0	0.010	0.0305	14.66	11.95	4.49
K-4	K-3	0.14	0.80	0.11	0.31	10.00	0.05	10.27	6.80	0.75	2.11	15	22.0	0.010	0.0100	8.39	6.84	4.81
K-3	BRR-1	0.04	0.84	0.03	1.37	10.00	0.09	11.75	6.44	0.19	8.82	24	106.0	0.010	0.0446	62.09	19.77	9.81
K-2	K-1	0.06	0.95	0.06	0.06	10.00	0.08	10.00	6.80	0.41	0.41	15	22.0	0.010	0.0045	5.63	4.59	1.47
K-1	BRR-2.1	0.06	0.95	0.06	0.12	10.00	0.12	10.08	6.80	0.41	0.82	15	41.0	0.010	0.0067	6.87	5.60	2.53
K-17	K-18	0.12	0.95	0.11	0.11	10.00	0.11	10.00	6.80	0.75	0.75	15	40.0	0.010	0.0074	7.22	5.89	2.37
K-18	EX. INLET	0.12	0.84	0.10	0.21	10.00	0.23	10.11	6.80	0.68	1.43	15	133.0	0.010	0.0200	11.87	9.68	4.36
A-2	A-1	0.07	0.95	0.07	0.07	10.00	0.22	10.00	6.80	0.48	0.48	15	187.0	0.010	0.0439	17.59	14.34	2.64
A-4	A-1	0.42	0.79	0.33	0.33	10.00	0.19	10.00	6.80	2.24	2.24	15	89.0	0.010	0.0137	9.83	8.01	5.36
A-1	A-1.1	0.16	0.95	0.15	0.55	10.00	0.11	10.22	6.80	1.02	3.74	15	46.0	0.010	0.0101	8.44	6.88	6.51
A-1.1	A-MH.1	0.35	0.40	0.14	0.69	10.00	0.05	10.33	6.80	0.95	4.69	15	36.0	0.010	0.0307	14.71	11.99	9.66
A-MH.1	BRR-2.2	0.00	0.00	0.00	0.69	10.00	0.11	10.38	6.80	0.00	4.69	15	133.0	0.010	0.0926	25.54	20.82	12.06
C-5	C-6	0.16	0.40	0.06	0.06	10.00	0.09	10.00	6.80	0.41	0.41	15	83.0	0.010	0.0480	18.39	14.99	2.12
C-6	C-7	0.50	0.40	0.20	0.26	10.00	0.76	10.09	6.80	1.36	1.77	15	221.0	0.010	0.0050	5.94	4.84	3.77
C-7	C-8	0.16	0.40	0.06	0.32	10.00	0.30	10.85	6.68	0.40	2.14	15	91.0	0.010	0.0055	6.23	5.08	4.22
C-8	BPP-6	0.12	0.40	0.05	0.37	10.00	0.68	11.15	6.56	0.33	2.43	15	159.0	0.010	0.0032	4.75	3.87	3.91

PIPE SECTION		SUBCATCHMENT AREA	INCREMENTAL		CUMULATIVE	TIME OF CONCENTRATION			I	PEAK RUNOFF		PIPING INPUT			PIPING DATA			
FROM	TO	Area (Acres)	"C"	A x C Ac	A x C (acres)	Tc to Inlet (min)	Tc in Pipe (min.)	Final Tc (min)	(In/Hr)	Q to Inlet (CFS)	Q cum. for Pipe (CFS)	Dia. (In)	Length (Ft)	Man. "n"	Slope (ft/ft)	Pipe Capacity (cfs)	Full Pipe Velocity (fps)	Actual Pipe Velocity (fps)
C-4	C-2	0.08	0.68	0.05	0.05	10.00	0.10	10.00	6.80	0.34	0.34	15	73.0	0.010	0.0343	15.55	12.68	1.79
C-3	C-2	0.15	0.79	0.12	0.12	10.00	0.09	10.00	6.80	0.82	0.82	15	65.0	0.010	0.0308	14.73	12.01	3.48
C-2	C-1	0.10	0.78	0.08	0.25	10.00	0.14	10.10	6.80	0.54	1.70	15	61.0	0.010	0.0114	8.96	7.30	4.37
C-1	K-15	0.17	0.80	0.14	0.39	10.00	0.06	10.24	6.80	0.95	2.65	15	69.0	0.010	0.0700	22.21	18.11	8.16
K-15	K-16	0.51	0.75	0.38	0.77	10.00	0.04	10.30	6.80	2.58	5.24	15	22.0	0.010	0.0182	11.32	9.23	8.92
K-16	K-MH.17	0.02	0.83	0.02	0.79	10.00	0.12	10.34	6.80	0.14	5.37	15	140.0	0.010	0.0750	22.99	18.74	12.55
K-MH.17	W-6	0.00	0.00	0.00	0.79	10.00	0.22	10.46	6.80	0.00	5.37	15	168.0	0.010	0.0355	15.82	12.90	10.73
W-7	OCS-8	0.21	0.46	0.10	0.10	10.00	0.11	10.00	6.80	0.68	0.68	15	51.0	0.010	0.0119	9.16	7.47	2.39
OCS-8	W-6	0.00	0.00	0.00	0.10	10.00	0.05	10.11	6.80	0.00	0.68	15	45.0	0.010	0.0456	17.93	14.62	3.26
W-6	W-5	0.15	0.53	0.08	0.97	10.00	0.07	10.68	6.68	0.53	6.48	15	81.0	0.010	0.0735	22.76	18.56	13.90
W-5.1	W-5	0.26	0.85	0.22	0.22	10.00	0.05	10.00	6.80	1.50	1.50	15	22.0	0.010	0.0100	8.39	6.84	3.96
W-5	W-4	0.40	0.47	0.19	1.38	10.00	0.12	10.75	6.68	1.27	9.22	15	135.0	0.010	0.0729	22.67	18.48	16.91
W-4.1	W-4	0.05	0.93	0.05	0.05	10.00	0.05	10.00	6.80	0.34	0.34	15	22.0	0.010	0.0108	8.72	7.11	1.59
W-4	W-3	0.04	0.95	0.04	1.47	10.00	0.15	10.87	6.68	0.27	9.82	15	165.0	0.010	0.0732	22.71	18.52	17.34
W-3.1	W-3	0.06	0.95	0.06	0.06	10.00	0.05	10.00	6.80	0.41	0.41	15	22.0	0.010	0.0100	8.39	6.84	1.76
W-3	W-2	0.06	0.85	0.05	1.58	10.00	0.15	11.02	6.56	0.33	10.36	15	153.0	0.010	0.0588	20.36	16.60	16.78
W-2	W-1	0.07	0.77	0.05	1.63	10.00	0.05	11.17	6.56	0.33	10.69	18	22.0	0.010	0.0100	13.65	7.73	8.82
W-1	CS	0.07	0.77	0.05	1.68	10.00	0.06	11.22	6.56	0.33	11.02	24	34.0	0.010	0.0087	27.42	8.73	7.90
CS	BRR-7	0.00	0.00	0.00	1.68	10.00	0.02	11.28	6.56	0.00	11.02	24	12.0	0.010	0.0101	29.55	9.41	8.18
W-8	W-MH.2	0.05	0.78	0.04	0.04	10.00	0.05	10.00	6.80	0.27	0.27	15	17.0	0.010	0.0060	6.50	5.30	1.18
W-9	W-MH.2	0.10	0.66	0.07	0.07	10.00	0.05	10.00	6.80	0.48	0.48	15	17.0	0.010	0.0060	6.50	5.30	1.70
W-MH.2	W-CULVERT	0.00	0.00	0.00	0.11	10.00	0.10	10.05	6.80	0.00	0.75	15	33.0	0.010	0.0061	6.56	5.35	2.28
D-18	D-17/18	0.30	0.84	0.25	0.25	10.00	0.02	10.00	6.80	1.70	1.70	15	11.0	0.010	0.0287	14.22	11.59	5.23
D-17	D-17/18	0.34	0.70	0.24	0.24	10.00	0.02	10.00	6.80	1.63	1.63	15	11.0	0.010	0.0281	14.07	11.47	5.17
D-17/18	BRR-9	0.00	0.00	0.00	0.49	10.00	0.06	10.02	6.80	0.00	3.33	15	26.0	0.010	0.0100	8.39	6.84	6.19
D-1	D-2	0.38	0.64	0.24	0.24	10.00	0.05	10.00	6.80	1.63	1.63	15	23.0	0.010	0.0108	8.72	7.11	4.25
D-2	D-MH.1	0.08	0.73	0.06	0.30	10.00	0.10	10.05	6.80	0.41	2.04	15	34.0	0.010	0.0073	7.17	5.85	4.38
D-MH.1	BRR-10	0.00	0.00	0.00	0.30	10.00	0.12	10.15	6.80	0.00	2.04	15	46.0	0.010	0.0087	7.83	6.38	4.59
D-3	D-4	0.16	0.47	0.08	0.08	10.00	0.11	10.00	6.80	0.54	0.54	15	46.0	0.010	0.0100	8.39	6.84	1.98
D-4	D-5	0.02	0.84	0.02	0.10	10.00	0.15	10.11	6.80	0.14	0.68	15	62.0	0.010	0.0101	8.44	6.88	2.40
D-5	D-6	0.22	0.84	0.18	0.28	10.00	0.14	10.26	6.80	1.22	1.90	15	58.0	0.010	0.0103	8.52	6.95	4.53
D-6	BRR-10.1	0.11	0.95	0.10	0.38	10.00	0.03	10.40	6.80	0.68	2.58	15	12.0	0.010	0.0105	8.60	7.01	5.46
D-7	D-8	0.18	0.68	0.12	0.12	10.00	0.15	10.00	6.80	0.82	0.82	15	60.0	0.010	0.0100	8.39	6.84	2.75
D-8	BRR-10.2	0.08	0.95	0.08	0.20	10.00	0.04	10.15	6.80	0.54	1.36	15	17.0	0.010	0.0116	9.04	7.37	3.82
D-12	D-11	0.03	0.40	0.01	0.01	10.00	0.15	10.00	6.80	0.07	0.07	15	126.0	0.010	0.0436	17.53	14.29	#N/A
D-11	D-10	0.08	0.40	0.03	0.04	10.00	0.14	10.15	6.80	0.20	0.27	15	99.0	0.010	0.0304	14.64	11.94	1.68
D-9	D-10	0.15	0.40	0.06	0.06	10.00	0.26	10.00	6.80	0.41	0.41	15	107.0	0.010	0.0103	8.52	6.95	1.79
D-10	D-MH.7	0.16	0.40	0.06	0.16	10.00	0.16	10.29	6.80	0.41	1.09	15	110.0	0.010	0.0265	13.67	11.14	3.89
D-MH.7	BPP-11	0.00	0.00	0.00	0.16	10.00	0.03	10.45	6.80	0.00	1.09	15	24.0	0.010	0.0532	19.36	15.78	4.58

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Date: 10/25/2024
Project: WEH
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Calculated By: ASM
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Conduit Outlet Protection Calculations

Rip Rap Pad # B-1.1

Design Parameters:

Design Storm Flow for 25 Year, Q	14.30	cfs
Vertical Dimension of Outlet Pipe, D_o	36	in
Horizontal Dimension of Outlet Pipe, W_o	36	in
Tailwater Depth, TW[1]	0.60	ft

Apron Dimension Calculations:

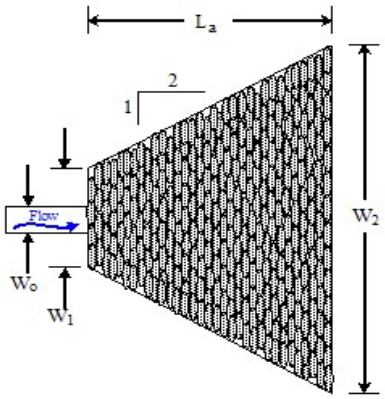
Unit Dicharge, $q = Q/D_o$ = 4.77 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = 25.95 ft or **L_a = 26 ft**

Width, $W_1 = 3W_o$ = 9. ft or **W_1 = 9 ft**

Width, $W_2 = 3W_o + L_a$ = 34.95 ft or **W_2 = 35 ft**

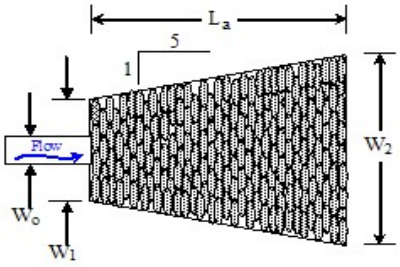


- **Case II: $TW \geq 1/2\ D_o$**

Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = **L_a =**

Width, $W_1 = 3W_o$ = **W_1 =**

Width, $W_2 = 3W_o + 0.4L_a$ = **W_2 =**



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 3.19 in **d_{50} = 6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4W_o$.

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Conduit Outlet Protection Calculations

Rip Rap Pad # B-1

Design Parameters:

Design Storm Flow for 25 Year, Q	0.73	cfs
Vertical Dimension of Outlet Pipe, D_o	15	in
Horizontal Dimension of Outlet Pipe, W_o	15	in
Tailwater Depth, TW[1]	0.25	ft

Apron Dimension Calculations:

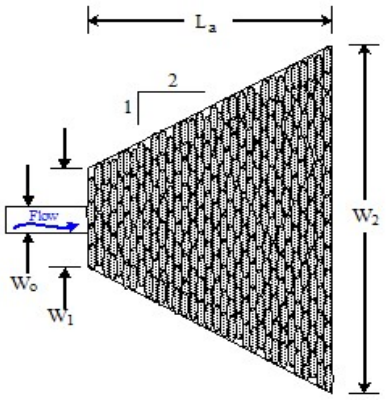
Unit Dicharge, $q = Q/D_o$ = 0.58 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = 9.69 ft or L_a = **10 ft**

Width, $W_1 = 3W_o$ = 3.75 ft or W_1 = **4 ft**

Width, $W_2 = 3W_o + L_a$ = 13.44 ft or W_2 = **14 ft**

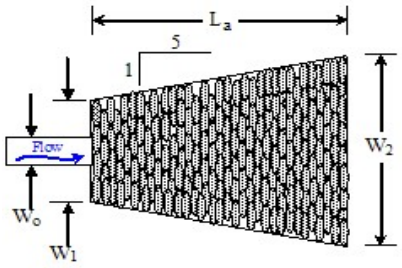


- **Case II: $TW \geq 1/2\ D_o$**

Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = L_a =

Width, $W_1 = 3W_o$ = W_1 =

Width, $W_2 = 3W_o + 0.4L_a$ = W_2 =



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 0.47 in d_{50} = **6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4W_o$.

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Conduit Outlet Protection Calculations

Rip Rap Pad # B-2.1

Design Parameters:

Design Storm Flow for 25 Year, Q	0.82	cfs
Vertical Dimension of Outlet Pipe, D_o	15	in
Horizontal Dimension of Outlet Pipe, W_o	15	in
Tailwater Depth, TW[1]	0.25	ft

Apron Dimension Calculations:

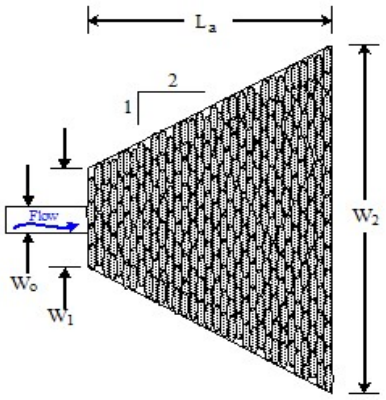
Unit Dicharge, $q = Q/D_o$ = 0.66 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = 9.81 ft or **L_a = 10 ft**

Width, $W_1 = 3W_o$ = 3.75 ft or **W_1 = 4 ft**

Width, $W_2 = 3W_o + L_a$ = 13.56 ft or **W_2 = 14 ft**

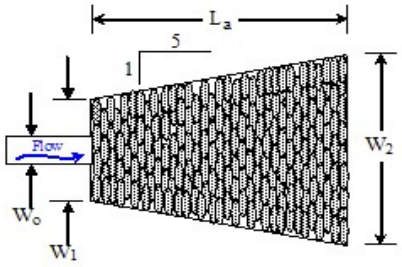


- **Case II: $TW \geq 1/2\ D_o$**

Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = **L_a =**

Width, $W_1 = 3W_o$ = **W_1 =**

Width, $W_2 = 3W_o + 0.4L_a$ = **W_2 =**



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 0.55 in **d_{50} = 6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4W_o$.

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Conduit Outlet Protection Calculations

Rip Rap Pad # B-2.2

Design Parameters:

Design Storm Flow for 25 Year, Q	8.02	cfs
Vertical Dimension of Outlet Pipe, D_o	24	in
Horizontal Dimension of Outlet Pipe, W_o	24	in
Tailwater Depth, TW[1]	0.40	ft

Apron Dimension Calculations:

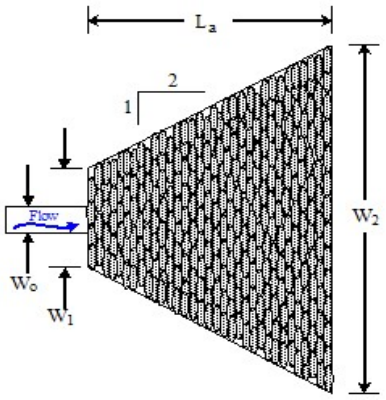
Unit Dicharge, $q = Q/D_o$ = 4.01 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = 19.1 ft or **L_a = 20 ft**

Width, $W_1 = 3W_o$ = 6. ft or **W_1 = 6 ft**

Width, $W_2 = 3W_o + L_a$ = 25.1 ft or **W_2 = 26 ft**

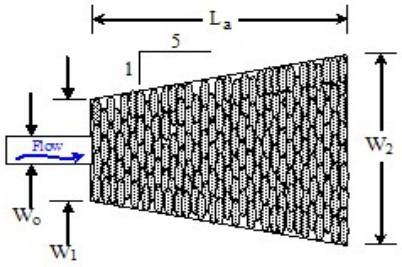


- **Case II: $TW \geq 1/2\ D_o$**

Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = **L_a =**

Width, $W_1 = 3W_o$ = **W_1 =**

Width, $W_2 = 3W_o + 0.4L_a$ = **W_2 =**



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 3.80 in **d_{50} = 6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4W_o$.

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Conduit Outlet Protection Calculations

Rip Rap Pad # B-7

Design Parameters:

Design Storm Flow for 25 Year, Q	11.02	cfs
Vertical Dimension of Outlet Pipe, D_o	24	in
Horizontal Dimension of Outlet Pipe, W_o	24	in
Tailwater Depth, TW[1]	0.40	ft

Apron Dimension Calculations:

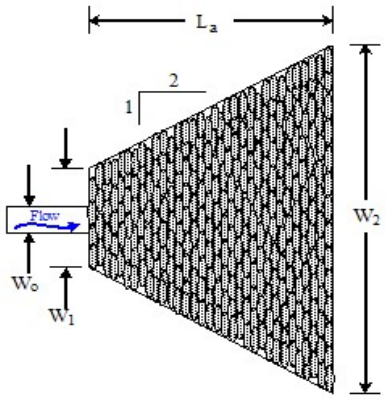
Unit Dicharge, $q = Q/D_o$ = 5.51 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = 21.01 ft or **L_a = 22 ft**

Width, $W_1 = 3W_o$ = 6. ft or **W_1 = 6 ft**

Width, $W_2 = 3W_o + L_a$ = 27.01 ft or **W_2 = 28 ft**

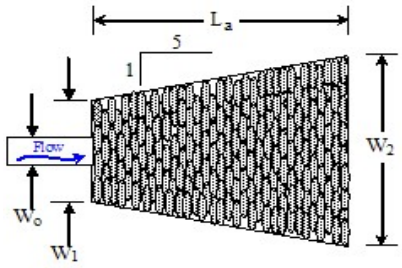


- **Case II: $TW \geq 1/2\ D_o$**

Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = **L_a =**

Width, $W_1 = 3W_o$ = **W_1 =**

Width, $W_2 = 3W_o + 0.4L_a$ = **W_2 =**



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 5.81 in **d_{50} = 6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4W_o$.

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Conduit Outlet Protection Calculations

Rip Rap Pad # B-10.1

Design Parameters:

Design Storm Flow for 25 Year, Q	2.58	cfs
Vertical Dimension of Outlet Pipe, D_o	15	in
Horizontal Dimension of Outlet Pipe, W_o	15	in
Tailwater Depth, TW[1]	0.25	ft

Apron Dimension Calculations:

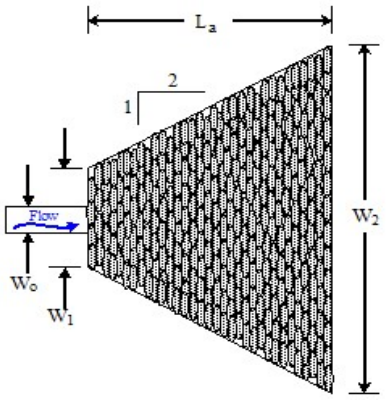
Unit Dicharge, $q = Q/D_o$ = 2.06 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = 12.07 ft or **L_a = 13 ft**

Width, $W_1 = 3W_o$ = 3.75 ft or **W_1 = 4 ft**

Width, $W_2 = 3W_o + L_a$ = 15.82 ft or **W_2 = 16 ft**

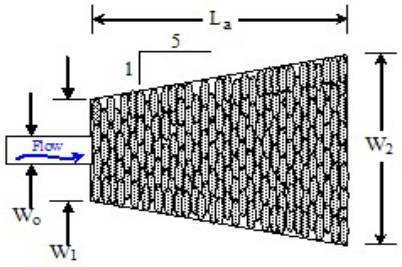


- **Case II: $TW \geq 1/2\ D_o$**

Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = **L_a =**

Width, $W_1 = 3W_o$ = **W_1 =**

Width, $W_2 = 3W_o + 0.4L_a$ = **W_2 =**



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 2.52 in **d_{50} = 6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4W_o$.

ANDERSON CONSULTING SERVICES
40 Miller Drive; Boonton, NJ 07005
(973) 975-0703

Date: 10/25/2024
Project: WEH
Project No: -

Calculated By: ASM
Checked By: PWA

Conduit Outlet Protection Calculations

Rip Rap Pad # B-10.2

Design Parameters:

Design Storm Flow for 25 Year, Q	1.36	cfs
Vertical Dimension of Outlet Pipe, D_o	15	in
Horizontal Dimension of Outlet Pipe, W_o	15	in
Tailwater Depth, TW[1]	0.25	ft

Apron Dimension Calculations:

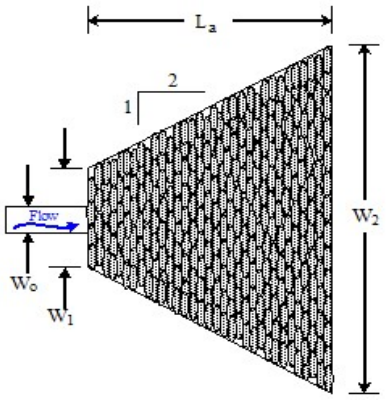
Unit Dicharge, $q = Q/D_o$ = 1.09 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = 10.5 ft or L_a = **11 ft**

Width, $W_1 = 3W_o$ = 3.75 ft or W_1 = **4 ft**

Width, $W_2 = 3W_o + L_a$ = 14.25 ft or W_2 = **15 ft**

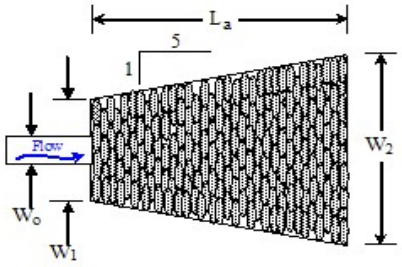


- **Case II: $TW \geq 1/2\ D_o$**

Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = L_a =

Width, $W_1 = 3W_o$ = W_1 =

Width, $W_2 = 3W_o + 0.4L_a$ = W_2 =



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 1.07 in d_{50} = **6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4W_o$.

ANDERSON CONSULTING SERVICES

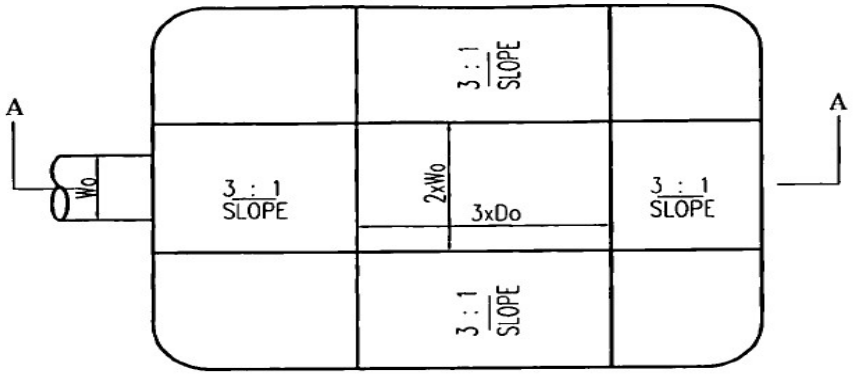
Scour Hole Design

Project:	WEH
Job #:	-
Location:	West Orange, NJ
Design Storm:	25-YR
Computed By:	ASM
Checked By:	PWA
Date:	10/25/2024

Discharge not in Basin, Therefore Tailwater is less than 0.5 x Do

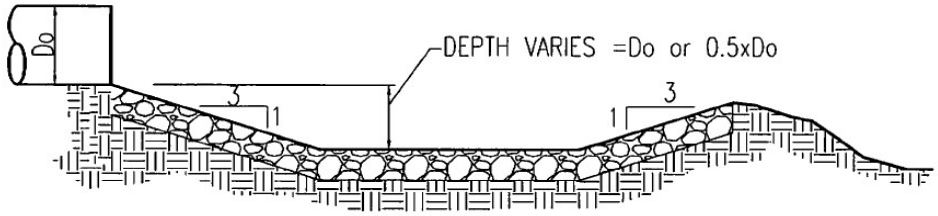
Discharge Point	PP-9
Q (25-yr storm cfs)	**0.61**
Inside Height of Outlet Culvert, Do (in)	**12**
Inside Height of Outlet Culvert, Do (ft)	1.0
Tailwater (ft), Tw	0.20
Length of Apron, L (ft)	**3.00**
Width of Culvert, Wo(in)	**12**
Width of Culvert, Wo(ft)	**1.0**
Width of Apron, W(ft)	**2.00**
Where Y = 1/2 Do, Y(ft)	**0.500**
Median Stone Diameter, D50 (ft)	**0.03**
Where Y = Do, Y(ft)	**1.000**
Median Stone Diameter, D50 (ft)	**0.02**

Note: Use D50 of 6 inches minimum



PLAN

Equations used:
L=3*Do
W=2*Wo
Tw=0.2*Do (If Tw cannot be computed)
Where Y=1/2 Do
D50=(0.0125/Tw)*(q^1.33)
Where Y=Do
D50=(0.0082/Tw)*(q^1.33)



SECTION A–A

Notes:
1. The use of scour holes shall comply with county or local ordinances which would restrict the use of such devices due to the possible problems with mosquito breeding.
2. No bends or curves at the intersection of the conduit and apron or scour hole will be permitted.
3. There shall be no over fall from the end of the apron to the receiving material.
4. The thickness of the riprap lining, filter, and quality shall meet the requirements in the Riprap Standard Section of the Standards for Soil Erosion Control in New Jersey.

ANDERSON CONSULTING SERVICES
40 Miller Drive; Boonton, NJ 07005
(973) 975-0703

Date: 10/25/2024
Project: WEH
Project No: -

Calculated By: ASM
Checked By: PWA

Conduit Outlet Protection Calculations

Rip Rap Pad # PP-11

Design Parameters:

Design Storm Flow for 25 Year, Q	3.29	cfs
Vertical Dimension of Outlet Pipe, D_o	15	in
Horizontal Dimension of Outlet Pipe, W_o	15	in
Tailwater Depth, TW[1]	0.25	ft

Apron Dimension Calculations:

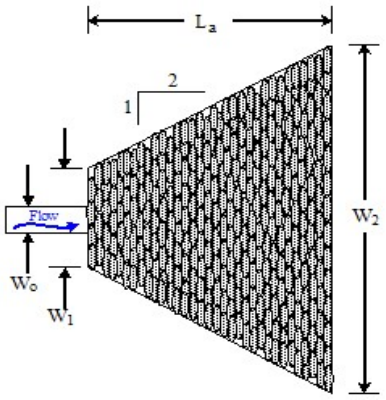
Unit Dicharge, $q = Q/D_o$ = 2.63 cfs per foot

- **Case I: $TW < 1/2\ D_o$**

Apron Length, $L_a = \frac{1.8q}{D_o^{1/2}} + 7D_o$ = 12.99 ft or **L_a = 13 ft**

Width, $W_1 = 3W_o$ = 3.75 ft or **W_1 = 4 ft**

Width, $W_2 = 3W_o + L_a$ = 16.74 ft or **W_2 = 17 ft**

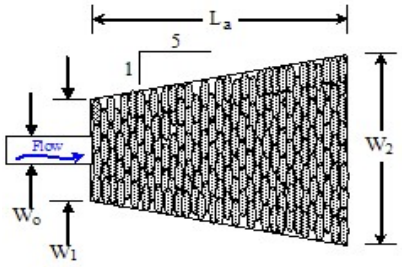


- **Case II: $TW \geq 1/2\ D_o$**

Apron Length, $L_a = \frac{3q}{D_o^{1/2}}$ = **L_a =**

Width, $W_1 = 3W_o$ = **W_1 =**

Width, $W_2 = 3W_o + 0.4L_a$ = **W_2 =**



Rip Rap Stone Size Calculations:

Median Stone, $d_{50} = \frac{0.02q^{1.33}}{TW}$ = 3.48 in **d_{50} = 6 in**

Notes:

1. Where there is a well-defined channel downstream of the apron, the bottom width of the apron shall be at least equal to the bottom width of the channel and the structural lining shall extend at least one foot above the tailwater elevation, but no lower than two-thirds of the vertical conduit dimension above the conduit invert.
2. The side slopes shall be 2:1 or flatter.
3. The bottom grade shall be 0.0% (level).
4. There shall be no overfall at the end of the apron or at the end of the culvert.
5. Fifty (50) percent by weight of the rip-rap mixture shall be smaller than the median size stone designated as d_{50}. The largest stone size in the mixture shall be 1.5 times the d_{50} size. The rip-rap shall be reasonably well graded.
6. The thickness of the rip-rap apron may be two (2) times the median stone diameter provided that the apron is constructed on a bedding of four (4) inches of 3/4 inch clean stone on approved filter fabric material.
7. Rip-rap and filter fabric shall meet the standards of the governing Soil Conservation District as well as the requirements of the local municipality.
8. No bends or curves at the intersection of the conduit and apron will be permitted.

Footnote:

1. Tailwater depth shall be the 2-year storm if discharging into a detention basin. For areas where tailwater cannot be computed, use $TW = 0.2D_o$.
2. For multiple pipes, increase rip-rap sizes by 25% when pipe spacing is greater than or equal to $1/4W_o$.

West Essex Highlands
West Orange Twp, NJ
8/26/24

Sizing Basis:
Filterra High Capacity biofiltration system has received final certification from the NJDEP for 80% TSS removal. Per the NJDEP, Filterra HC is considered a Green Infrastructure (GI) MTD. The sizing for the Filterra HC system under NJDEP regulations is based on the methodology outlined in Chapter 5 of the NJDEP BMP Manual. The NRCS method is utilized to determine a water quality flow rate for the drainage area in question. To validate the sizing, the parameters below were assumed.

Design Parameters:
Design Storm = NJDEP Water Quality Design Storm (1.25-inch/2-hour storm event)
Filterra HC Media Flow Rate = 300 inches/hour
Allowable Ponding in Filterra = 9”

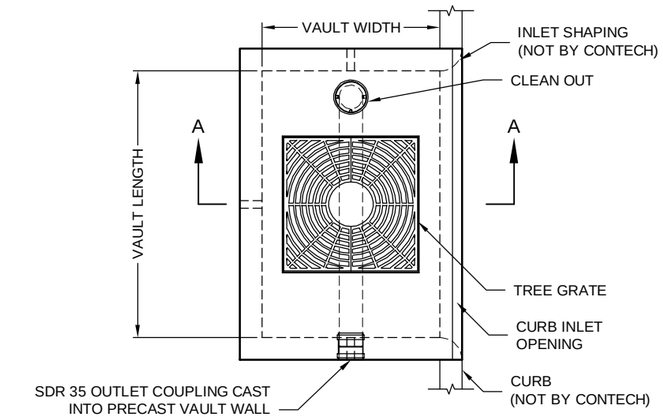
Design Summary:
Utilizing NRCS Method and HydroCAD software, a hydrograph can be derived to represent the design storm. The WQ flow is routed to an appropriately sized Filterra unit. Since the Filterra system can provide up to 9” of ponding, some flow attenuation is possible. The Filterra system is able to accommodate a portion of the water quality volume in the head space above the media and release it at the system’s NJDEP certified maximum treatment flow rate.

Site Designation	Impervious Drainage Area (sf)	Pervious Drainage Area (sf)	Tc (min)	Filterra HC Model Size
POA-3-FT-1	963	3,241	5.40	4'x4' Standard Offline Filterra HC
POA-3-FT-2	1,325	1,537	5.40	4'x4' Standard Offline Filterra HC
MTD-3	2,008	1,368	0.70	6'x4' Standard Offline Filterra HC
MTD-4	7,201	9,187	1.50	12'x6' Standard Offline Filterra HC
MTD-9	2,050	270	1.50	6'x4' Standard Offline Filterra HC
MTD-10	3,893	5,247	1.50	8'x6' Standard Offline Filterra HC
MTD-11	6,684	8,130	1.80	12'x6' Standard Offline Filterra HC
MTD-12	2,694		1.80	6'x4' Standard Offline Filterra HC
MTD-13	5,554	3,290	1.20	10'x6' Standard Offline Filterra HC
MTD-14	2,943		1.10	7.83'x4.5' Standard Offline Filterra HC
MTD-15	869	368	0.40	4'x4' Standard Offline Filterra HC
MTD-16	957	216	0.60	4'x4' Standard Offline Filterra HC
MTD-17	4,626	1,159	1.60	8'x6' Standard Offline Filterra HC
MTD-18	4,582	1,677	1.50	8'x6' Standard Offline Filterra HC
MTD-21	2,050	270	1.30	6'x4' Standard Offline Filterra HC
MTD-22	3,893	5,247	1.30	8'x6' Standard Offline Filterra HC

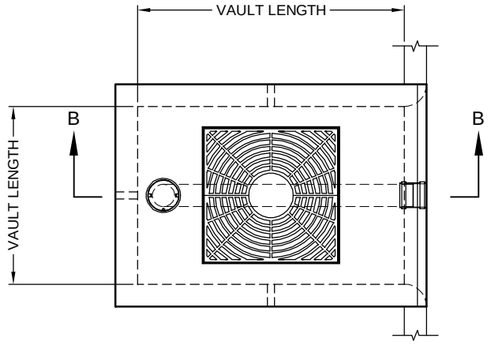
Thank you for the opportunity to present this to you and your client. Please do not hesitate to contact me should you have any additional questions.

Sincerely,

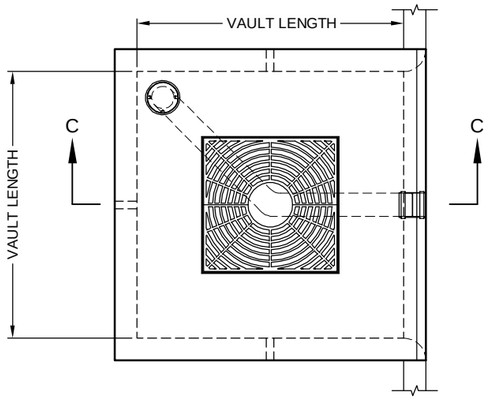
Taylor Murdock
Project Engineer
Contech Engineered Solutions, LLC.



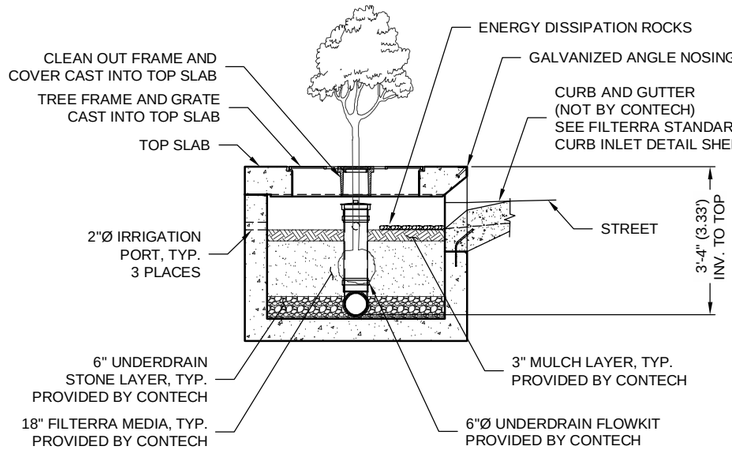
PLAN VIEW



PLAN VIEW



PLAN VIEW

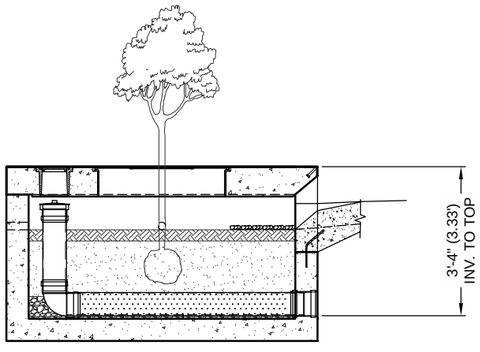


SECTION A-A

FT-HC LONG SIDE INLET CONFIGURATION					
DESIGNATION	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (L x W)	OUTLET PIPE DIA	TREE GRATE QTY & SIZE
FT0604-HC	ALL	6 x 4	6 x 4	6" SDR 35	(1) 3' x 3'
FT078045-HC	DE, MD, NJ, PA, VA, WV ONLY	7.83 x 4.5	7.83 x 4.5	6" SDR 35	(1) 3' x 3'
FT0804-HC	N/A DE, MD, NJ, PA, VA, WV	8 x 4	8 x 4	6" SDR 35	(1) 3' x 3'
FT0806-HC	ALL	8 x 6	8 x 6	6" SDR 35	(1) 4' x 4'
FT1006-HC	ALL	10 x 6	10 x 6	6" SDR 35	(1) 4' x 4'
FT1206-HC	ALL	12 x 6	12 x 6	6" SDR 35	(2) 4' x 4'
FT1307-HC	ALL	13 x 7	13 x 7	6" SDR 35	(2) 4' x 4'
FT1408-HC	CALL CONTECH	14 x 8	14 x 8	6" SDR 35	(2) 4' x 4'
FT1509-HC	CALL CONTECH	15 x 9	15 x 9	6" SDR 35	(2) 4' x 4'
FT1608-HC	CALL CONTECH	16 x 8	16 x 8	6" SDR 35	(2) 4' x 4'
FT1808-HC	CALL CONTECH	18 x 8	18 x 8	6" SDR 35	(2) 4' x 4'
FT2008-HC	CALL CONTECH	20 x 8	20 x 8	6" SDR 35	(3) 4' x 4'
FT2208-HC	CALL CONTECH	22 x 8	22 x 8	6" SDR 35	(3) 4' x 4'

N/A = NOT AVAILABLE

PLAN VIEW

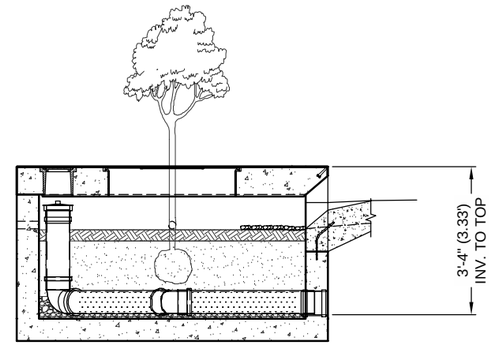


SECTION B-B

FT-HC SHORT SIDE INLET CONFIGURATION					
DESIGNATION	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (W x L)	OUTLET PIPE DIA	TREE GRATE QTY & SIZE
FT0406-HC	ALL	4 x 6	4 x 6	6" SDR 35	(1) 3' x 3'
FT0408-HC	N/A DE, MD, NJ, PA, VA, WV	4 x 8	4 x 8	6" SDR 35	(1) 3' x 3'
FT045078-HC	DE, MD, NJ, PA, VA, WV ONLY	4.5 x 7.83	4.5 x 7.83	6" SDR 35	(1) 3' x 3'
FT0608-HC	ALL	6 x 8	6 x 8	6" SDR 35	(1) 4' x 4'
FT0610-HC	ALL	6 x 10	6 x 10	6" SDR 35	(1) 4' x 4'
FT0612-HC	ALL	6 x 12	6 x 12	6" SDR 35	(2) 4' x 4'
FT0713-HC	ALL	7 x 13	7 x 13	6" SDR 35	(2) 4' x 4'

N/A = NOT AVAILABLE

PLAN VIEW



SECTION C-C

FT-HC SQUARE INLET CONFIGURATION					
DESIGNATION	AVAILABILITY	MEDIA BAY SIZE	VAULT SIZE (W x L)	OUTLET PIPE DIA	TREE GRATE QTY & SIZE
FT0404-HC	ALL	4 x 4	4 x 4	6" SDR 35	(1) 3' x 3'
FT0606-HC	ALL	6 x 6	6 x 6	6" SDR 35	(1) 3' x 3'

N/A = NOT AVAILABLE

INTERNAL PIPE CONFIGURATION MAY VARY DEPENDING UPON OUTLET LOCATION.

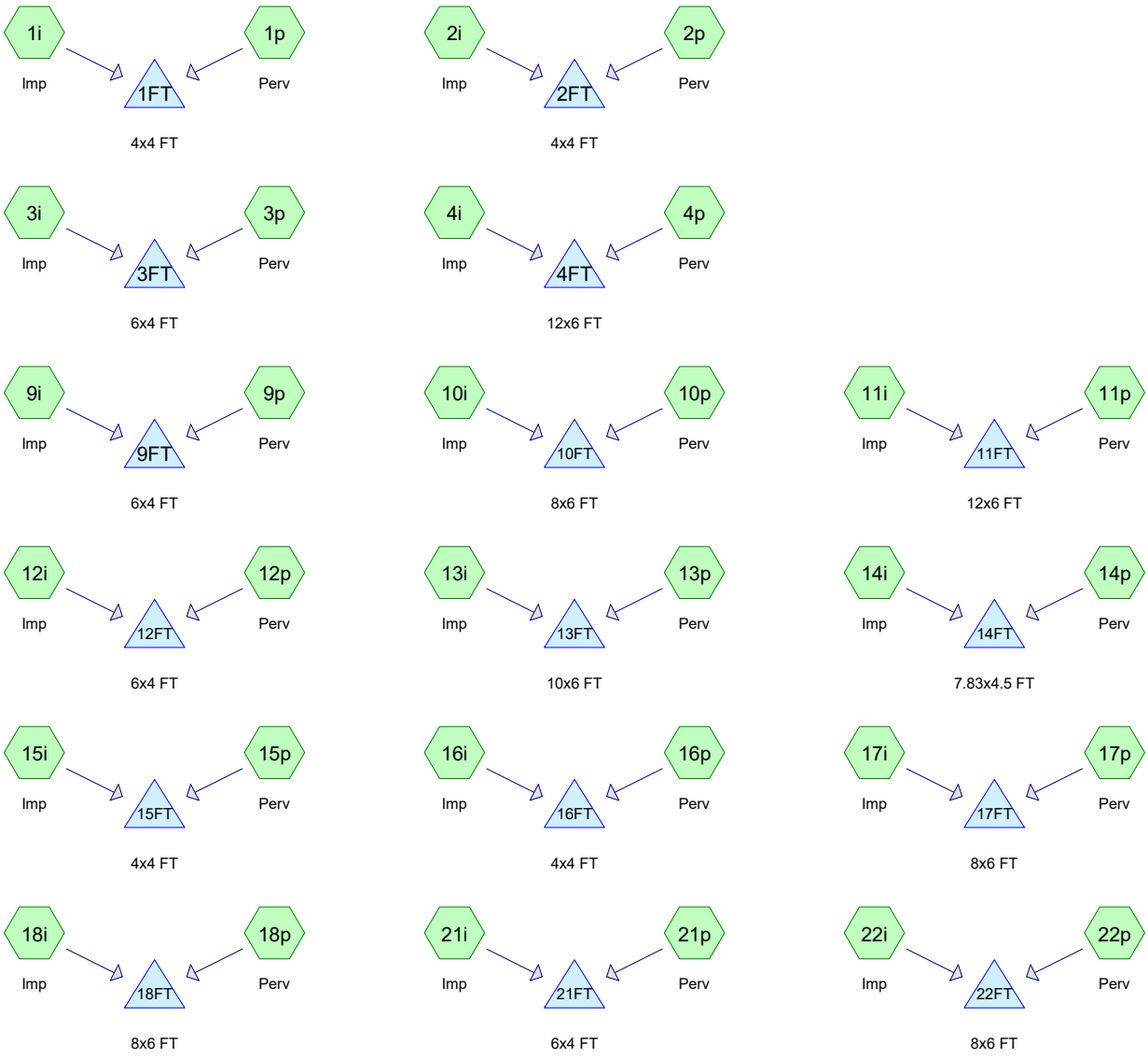
filterra
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 6,277,274; 6,569,321; 7,625,485; 7,425,261; 7,833,412; RELATED FOREIGN PATENTS.

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FILTERRA HC OFFLINE (FT-HC) CONFIGURATION DETAIL

I:\STORMWATER\COMMOPS\54 FILTERRA\40 STANDARD DRAWINGS\FT-HC - FILTERRA HC (NEW JERSEY ONLY)\FT-HC - FILTERRA OFFLINE CONFIG DTL.DWG 9/8/2022 11:23 AM



Subcat Reach Pond Link

Routing Diagram for Combined FT (8-22-24)

Prepared by Contech Engineered Solutions, Printed 8/26/2024

HydroCAD® 10.20-3f s/n 00447 © 2023 HydroCAD Software Solutions LLC

Summary for Subcatchment 1i: Imp

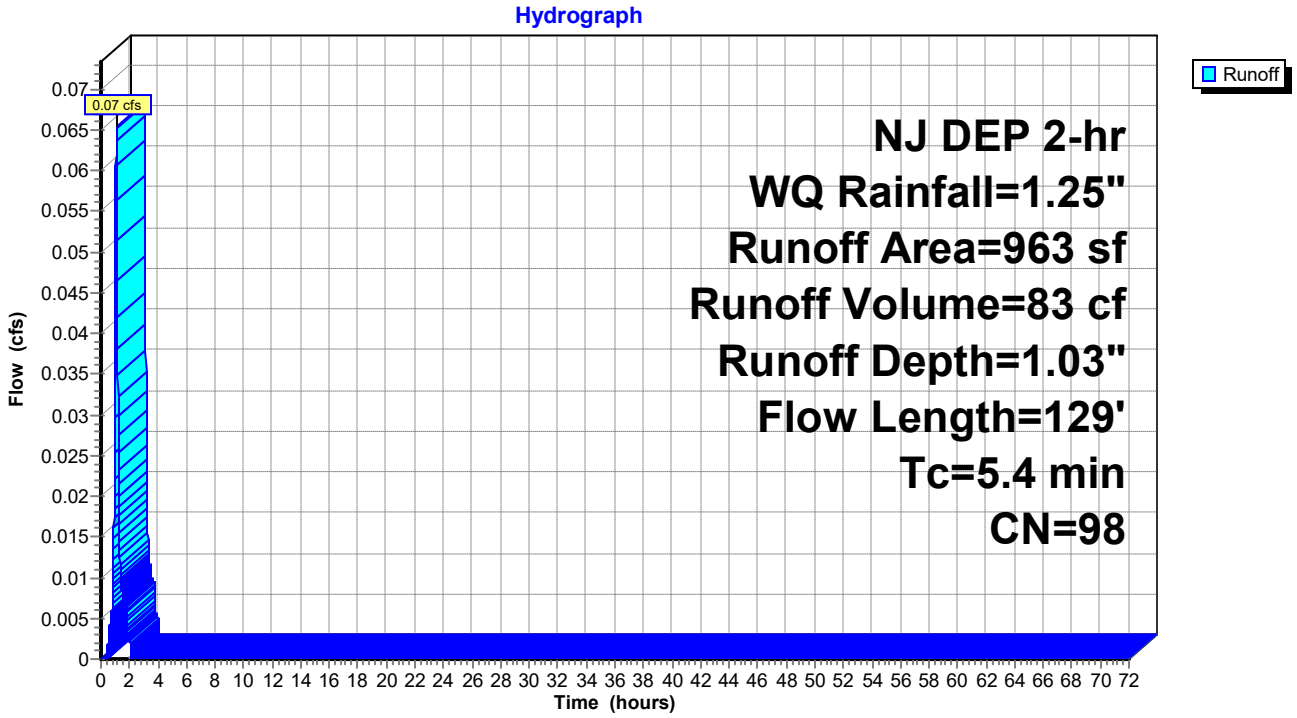
Runoff = 0.07 cfs @ 1.10 hrs, Volume= 83 cf, Depth= 1.03"
Routed to Pond 1FT : 4x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
963	98	Paved parking, HSG D
963		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0850	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.47"
0.1	29	0.1000	5.09		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
5.4	129	Total			

Subcatchment 1i: Imp



Summary for Subcatchment 1p: Perv

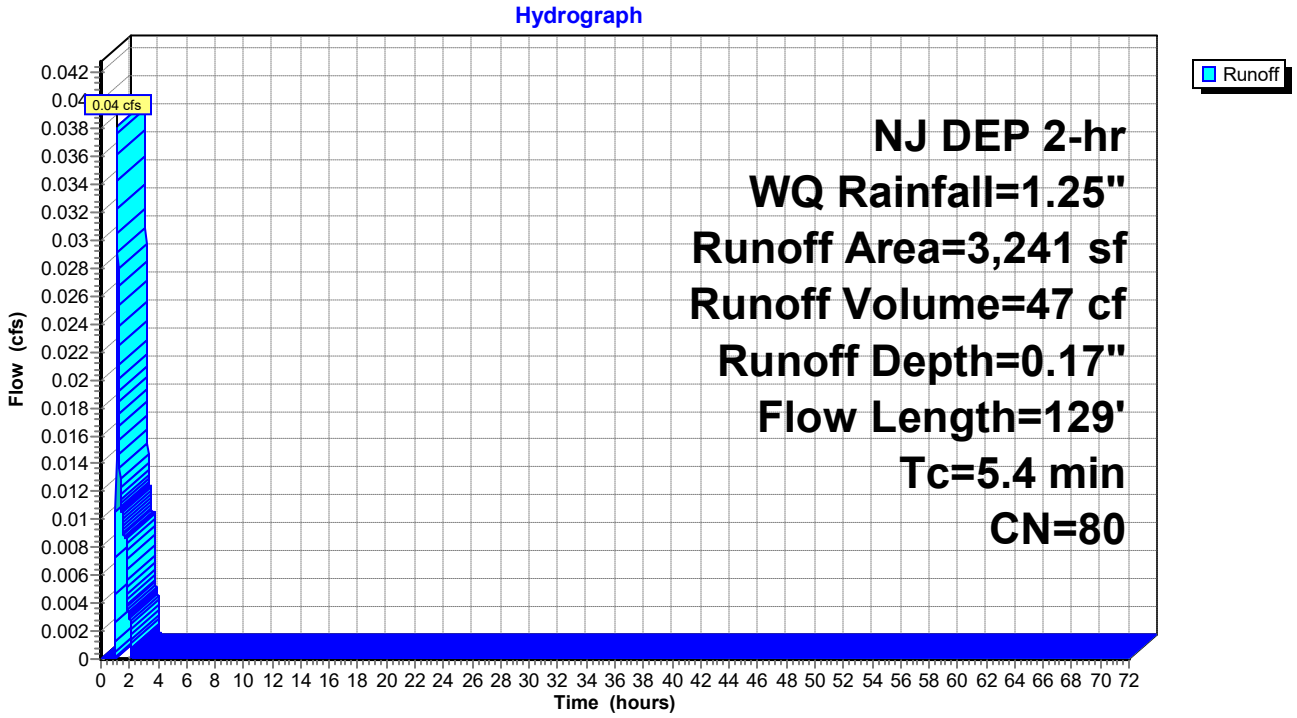
Runoff = 0.04 cfs @ 1.13 hrs, Volume= 47 cf, Depth= 0.17"
Routed to Pond 1FT : 4x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
3,241	80	>75% Grass cover, Good, HSG D
3,241		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0850	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.47"
0.1	29	0.1000	5.09		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
5.4	129	Total			

Subcatchment 1p: Perv



Summary for Subcatchment 2i: Imp

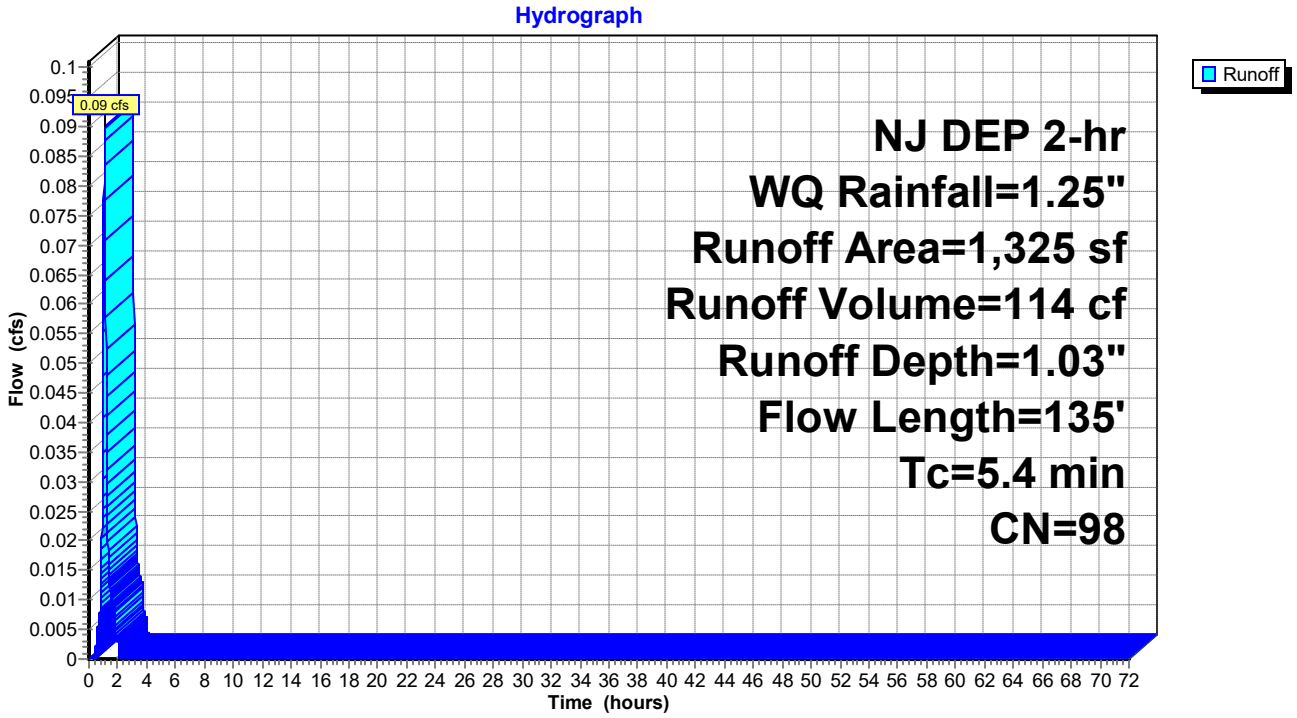
Runoff = 0.09 cfs @ 1.10 hrs, Volume= 114 cf, Depth= 1.03"
Routed to Pond 2FT : 4x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
1,325	98	Paved parking, HSG D
1,325		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0850	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.47"
0.1	35	0.0860	4.72		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
5.4	135	Total			

Subcatchment 2i: Imp



Summary for Subcatchment 2p: Perv

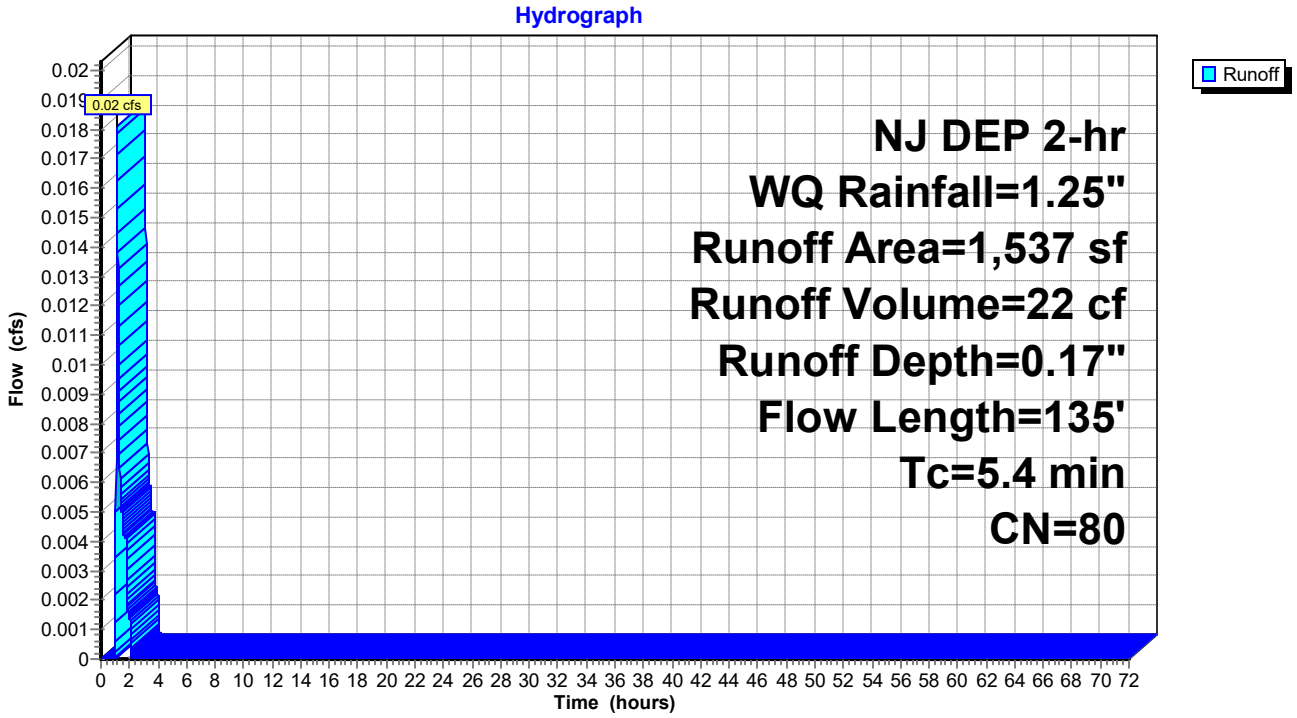
Runoff = 0.02 cfs @ 1.13 hrs, Volume= 22 cf, Depth= 0.17"
Routed to Pond 2FT : 4x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
1,537	80	>75% Grass cover, Good, HSG D
1,537		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	100	0.0850	0.32		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.47"
0.1	35	0.0860	4.72		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
5.4	135	Total			

Subcatchment 2p: Perv



Summary for Subcatchment 3i: Imp

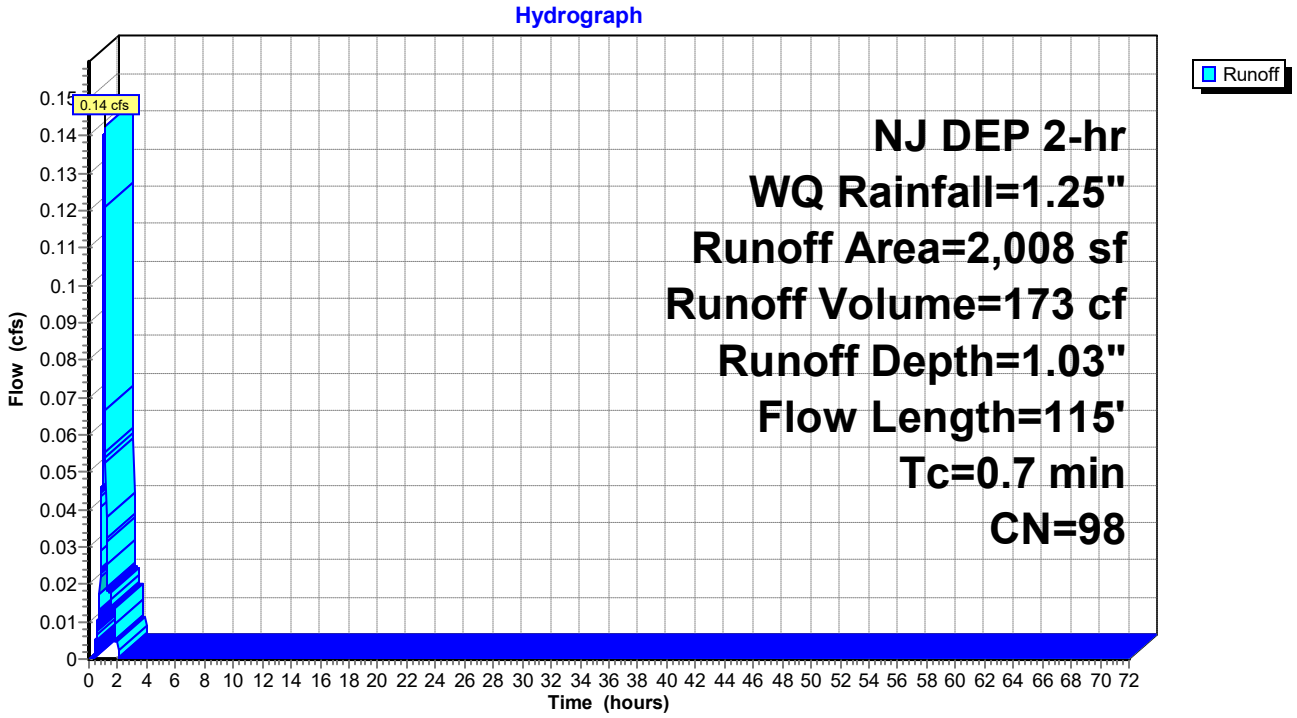
Runoff = 0.14 cfs @ 1.08 hrs, Volume= 173 cf, Depth= 1.03"
Routed to Pond 3FT : 6x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
2,008	98	Paved parking, HSG D
2,008		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0680	2.34		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.0	15	0.1170	6.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	115	Total			

Subcatchment 3i: Imp



Summary for Subcatchment 3p: Perv

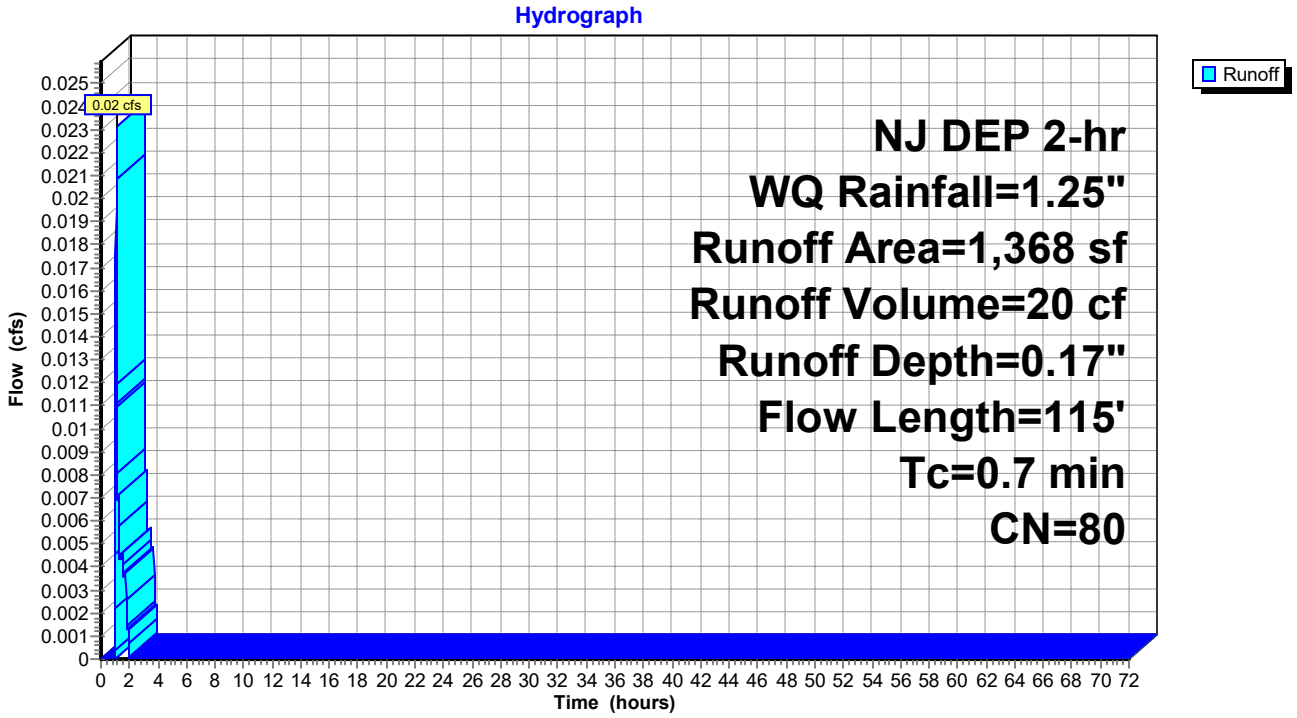
Runoff = 0.02 cfs @ 1.08 hrs, Volume= 20 cf, Depth= 0.17"
Routed to Pond 3FT : 6x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
1,368	80	>75% Grass cover, Good, HSG D
1,368		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0680	2.34		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.0	15	0.1170	6.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	115	Total			

Subcatchment 3p: Perv



Summary for Subcatchment 4i: Imp

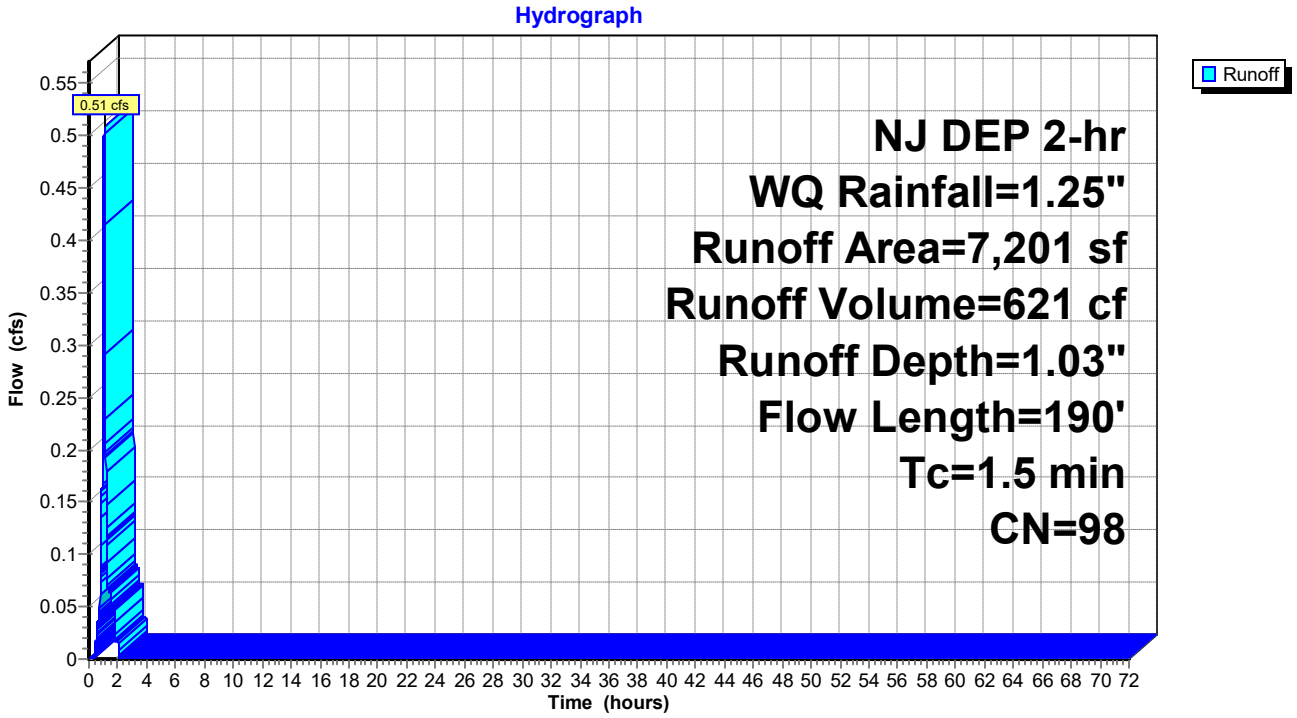
Runoff = 0.51 cfs @ 1.08 hrs, Volume= 621 cf, Depth= 1.03"
Routed to Pond 4FT : 12x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
7,201	98	Paved parking, HSG D
7,201		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0170	1.34		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.3	90	0.0510	4.58		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	190	Total			

Subcatchment 4i: Imp



Summary for Subcatchment 4p: Perv

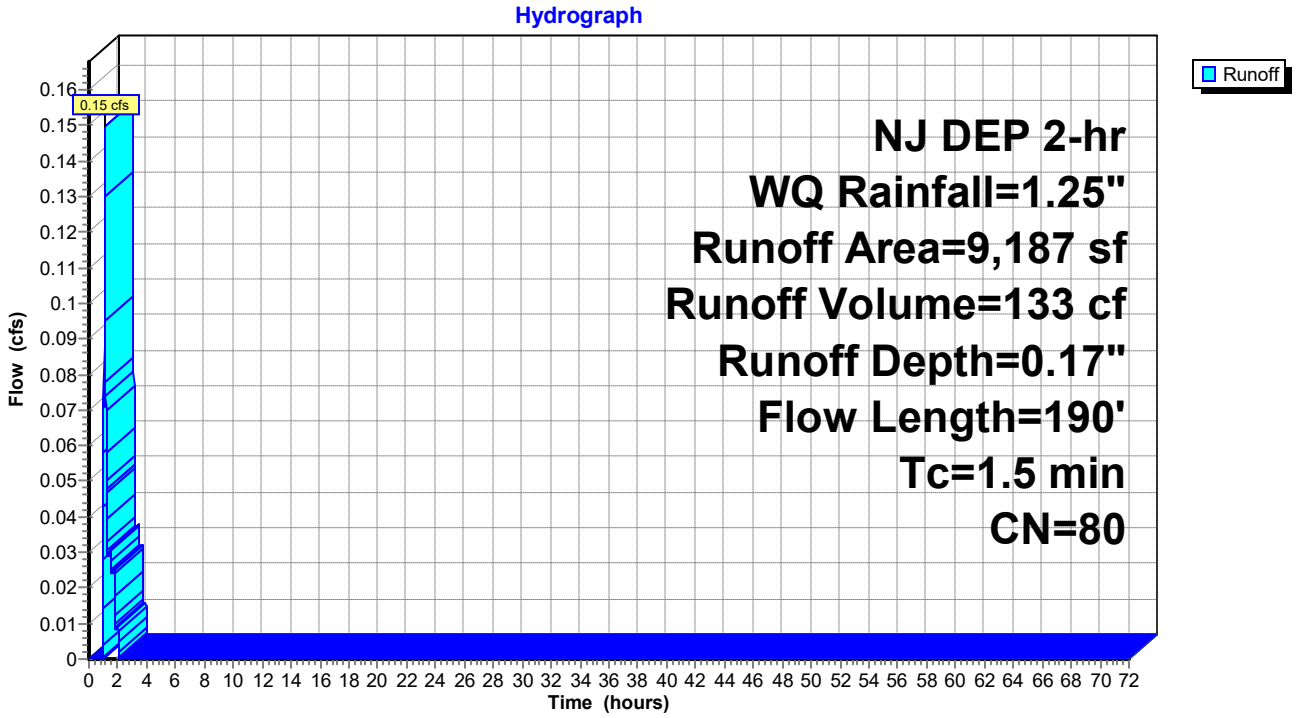
Runoff = 0.15 cfs @ 1.09 hrs, Volume= 133 cf, Depth= 0.17"
Routed to Pond 4FT : 12x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
9,187	80	>75% Grass cover, Good, HSG D
9,187		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0170	1.34		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.3	90	0.0510	4.58		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	190	Total			

Subcatchment 4p: Perv



Summary for Subcatchment 9i: Imp

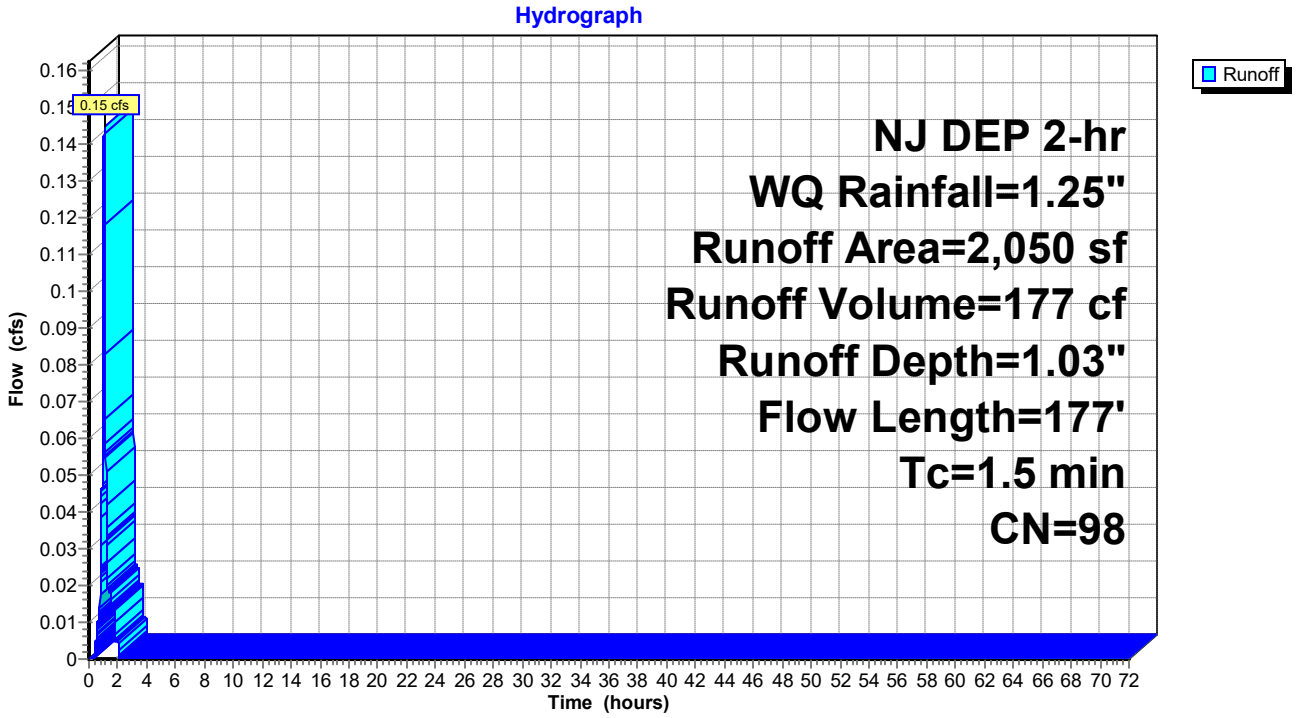
Runoff = 0.15 cfs @ 1.08 hrs, Volume= 177 cf, Depth= 1.03"
Routed to Pond 9FT : 6x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
2,050	98	Paved parking, HSG D
2,050		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.43		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.3	77	0.0510	4.58		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	177	Total			

Subcatchment 9i: Imp



Summary for Subcatchment 9p: Perv

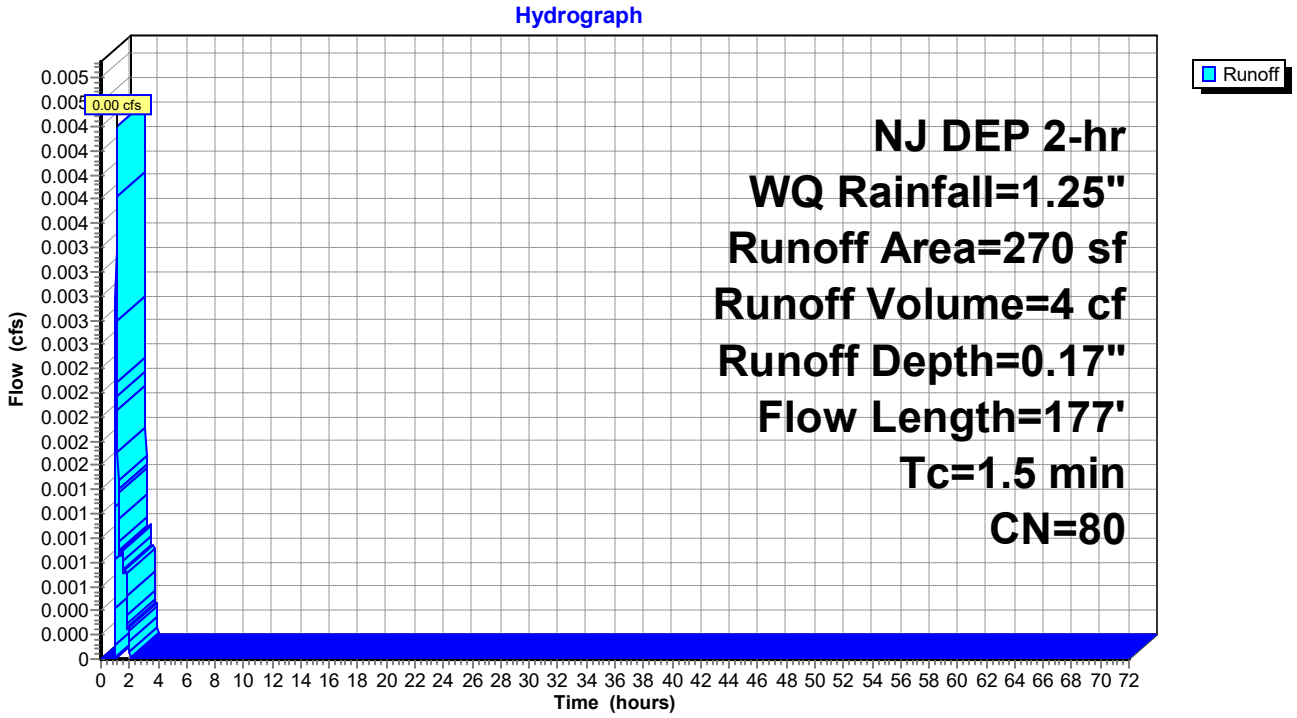
Runoff = 0.00 cfs @ 1.09 hrs, Volume= 4 cf, Depth= 0.17"
Routed to Pond 9FT : 6x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
270	80	>75% Grass cover, Good, HSG D
270		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.43		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.3	77	0.0510	4.58		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	177	Total			

Subcatchment 9p: Perv



Summary for Subcatchment 10i: Imp

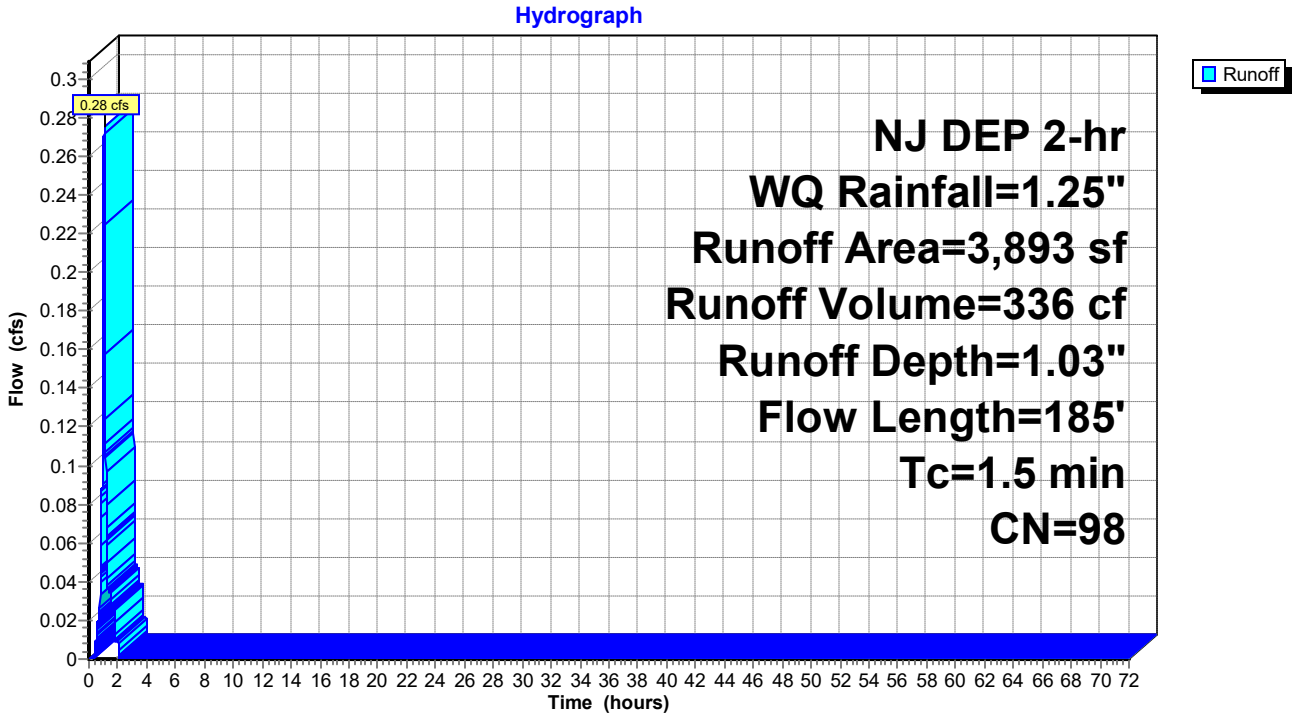
Runoff = 0.28 cfs @ 1.08 hrs, Volume= 336 cf, Depth= 1.03"
Routed to Pond 10FT : 8x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
3,893	98	Paved parking, HSG D
3,893		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.43		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.3	85	0.0460	4.35		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	185	Total			

Subcatchment 10i: Imp



Summary for Subcatchment 10p: Perv

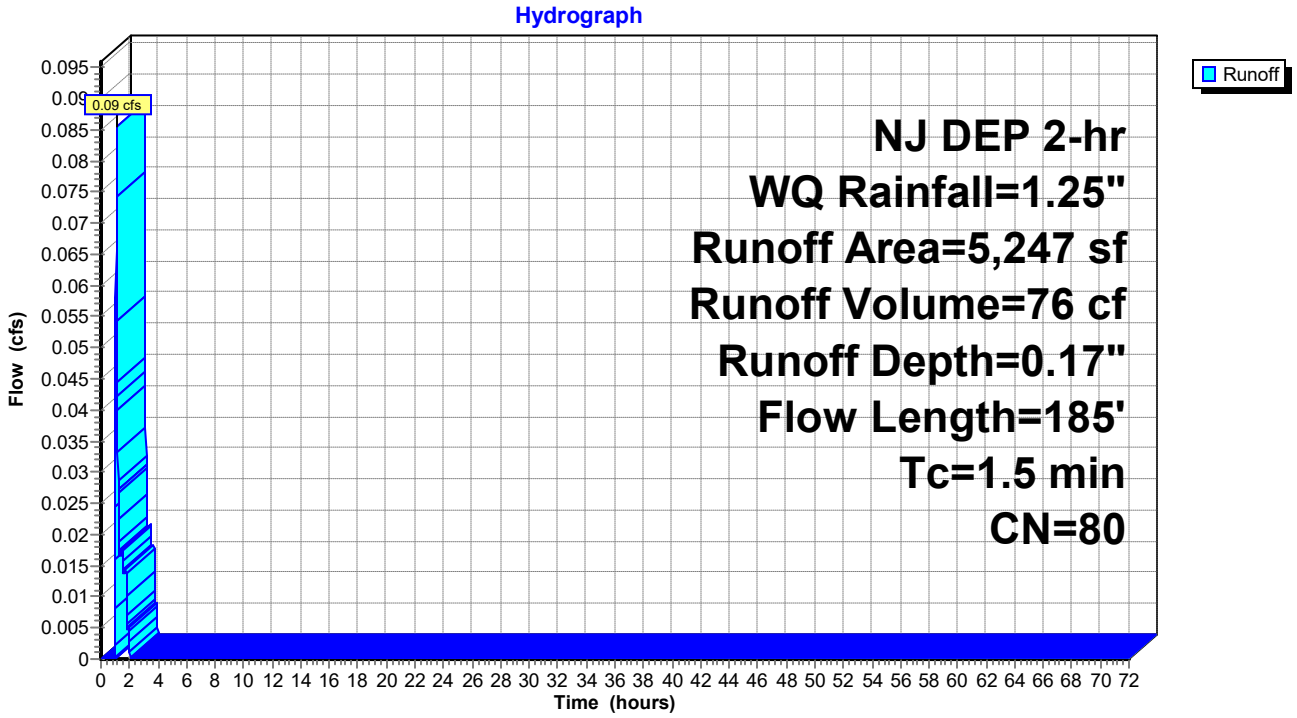
Runoff = 0.09 cfs @ 1.09 hrs, Volume= 76 cf, Depth= 0.17"
Routed to Pond 10FT : 8x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
5,247	80	>75% Grass cover, Good, HSG D
5,247		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.43		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.3	85	0.0460	4.35		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	185	Total			

Subcatchment 10p: Perv



Summary for Subcatchment 11i: Imp

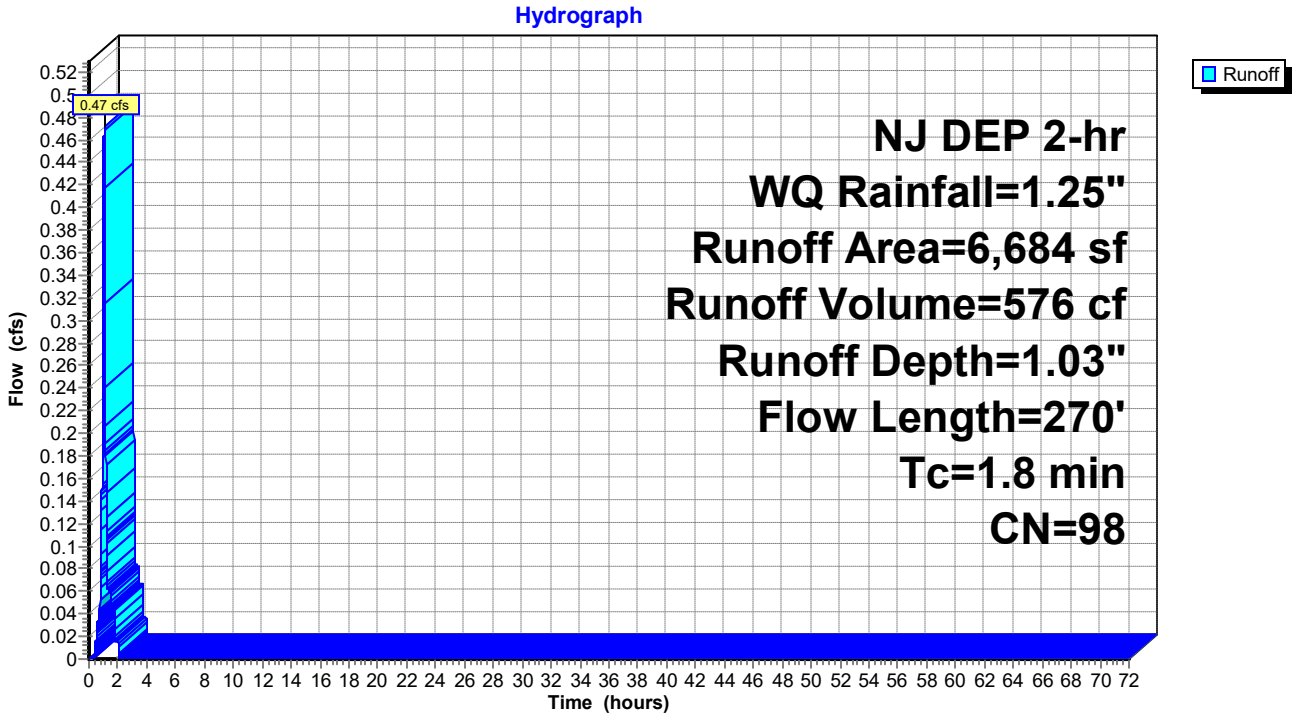
Runoff = 0.47 cfs @ 1.08 hrs, Volume= 576 cf, Depth= 1.03"
Routed to Pond 11FT : 12x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
6,684	98	Paved parking, HSG D
6,684		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.43		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.6	170	0.0560	4.80		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	270	Total			

Subcatchment 11i: Imp



Summary for Subcatchment 11p: Perv

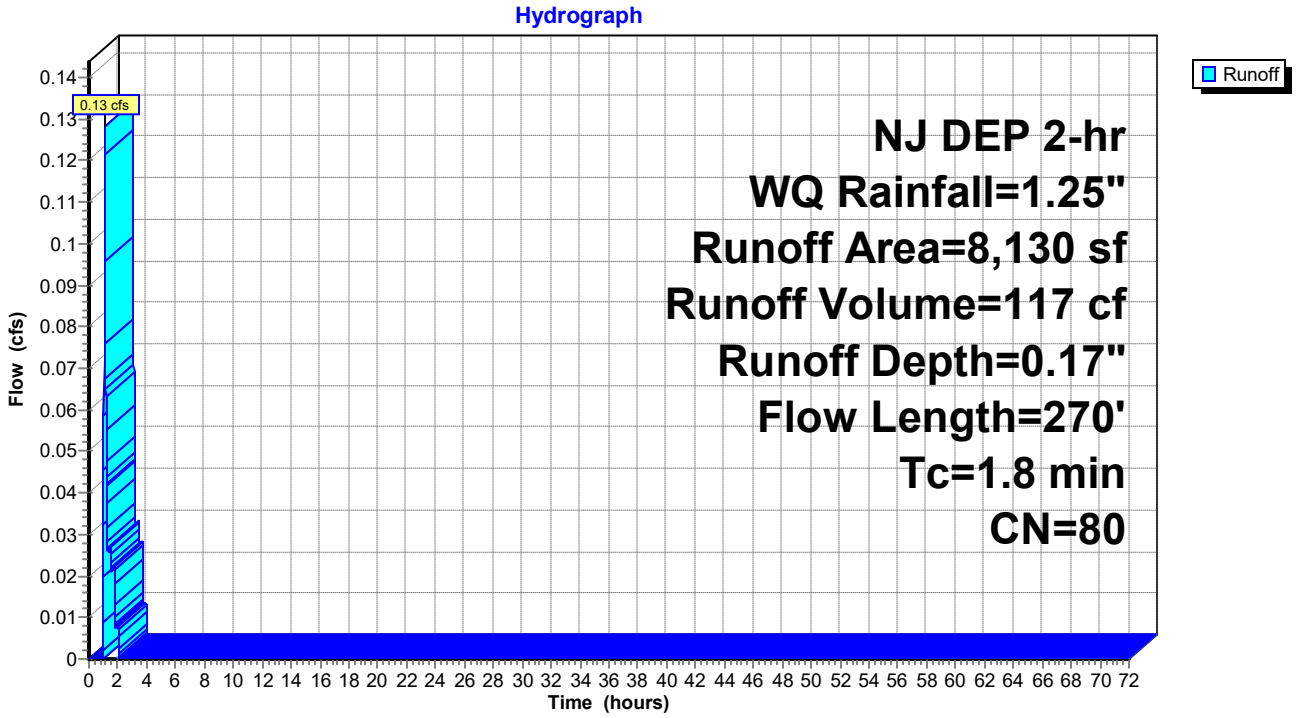
Runoff = 0.13 cfs @ 1.09 hrs, Volume= 117 cf, Depth= 0.17"
Routed to Pond 11FT : 12x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
8,130	80	>75% Grass cover, Good, HSG D
8,130		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.43		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.6	170	0.0560	4.80		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	270	Total			

Subcatchment 11p: Perv



Summary for Subcatchment 12i: Imp

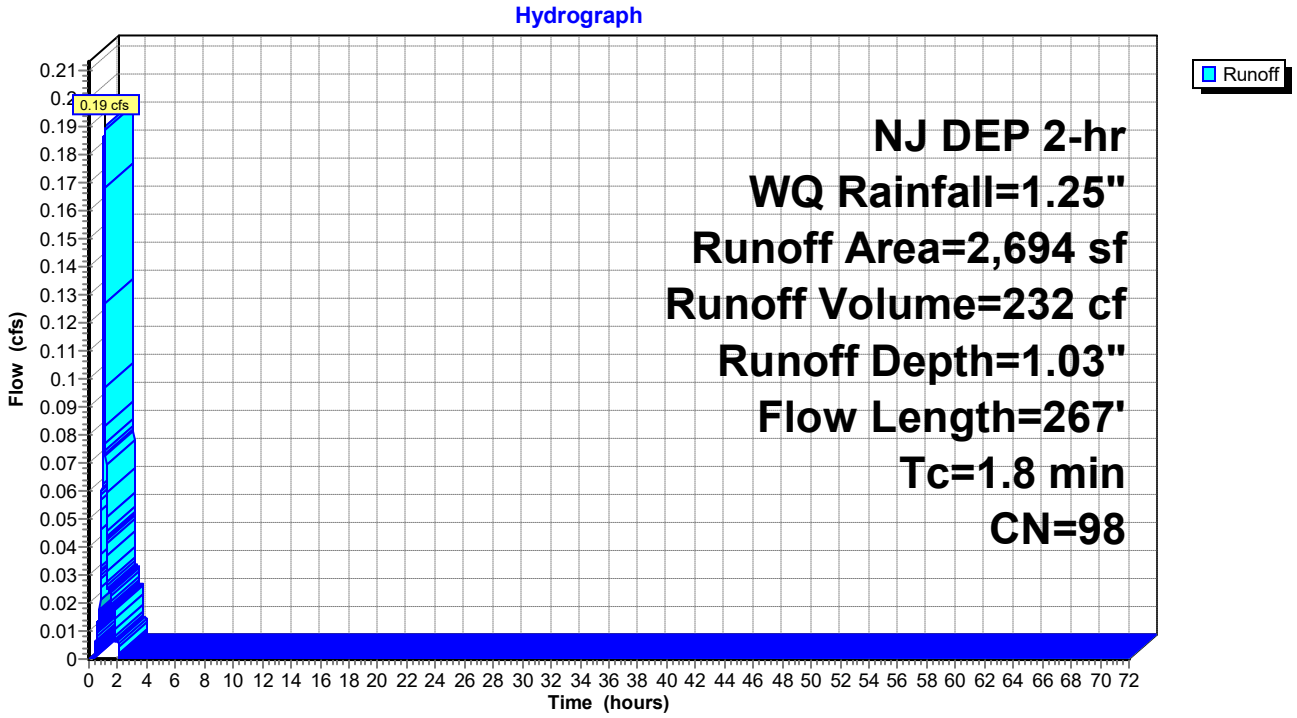
Runoff = 0.19 cfs @ 1.08 hrs, Volume= 232 cf, Depth= 1.03"
Routed to Pond 12FT : 6x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
2,694	98	Paved parking, HSG D
2,694		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.43		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.6	167	0.0580	4.89		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	267	Total			

Subcatchment 12i: Imp



Summary for Subcatchment 12p: Perv

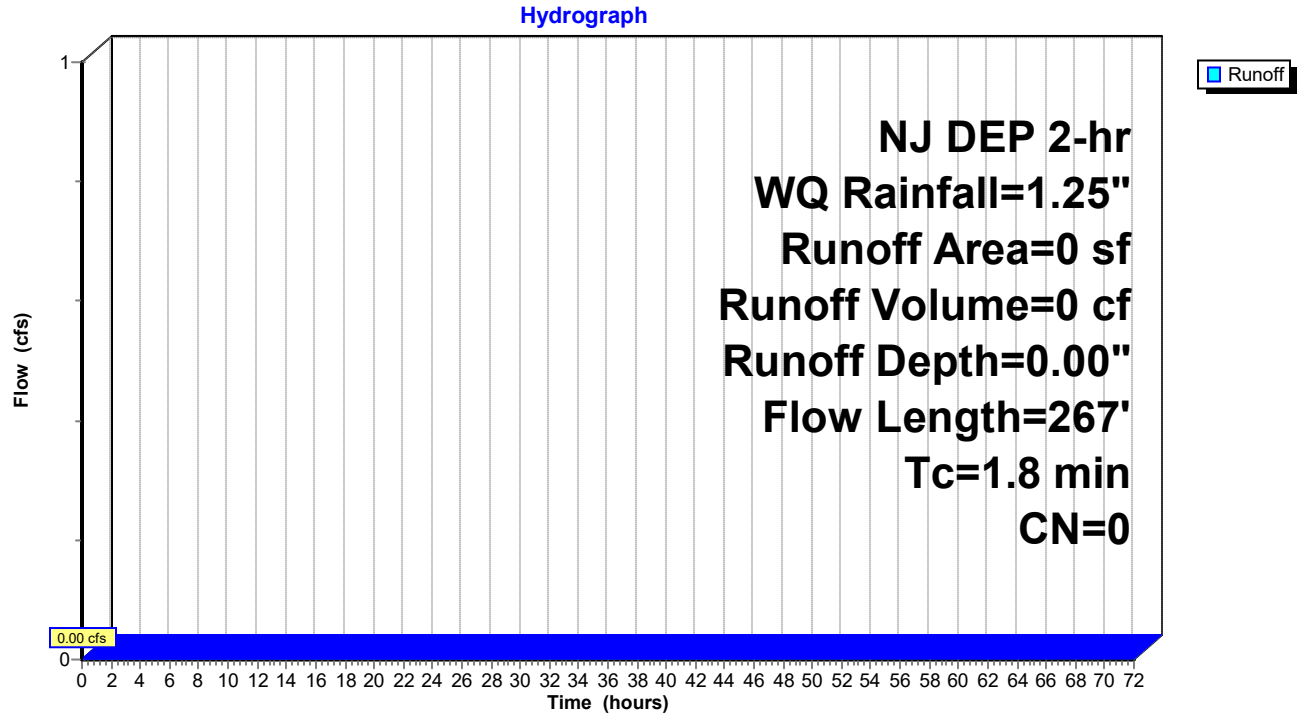
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Pond 12FT : 6x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
0	80	>75% Grass cover, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0200	1.43		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.6	167	0.0580	4.89		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	267	Total			

Subcatchment 12p: Perv



Summary for Subcatchment 13i: Imp

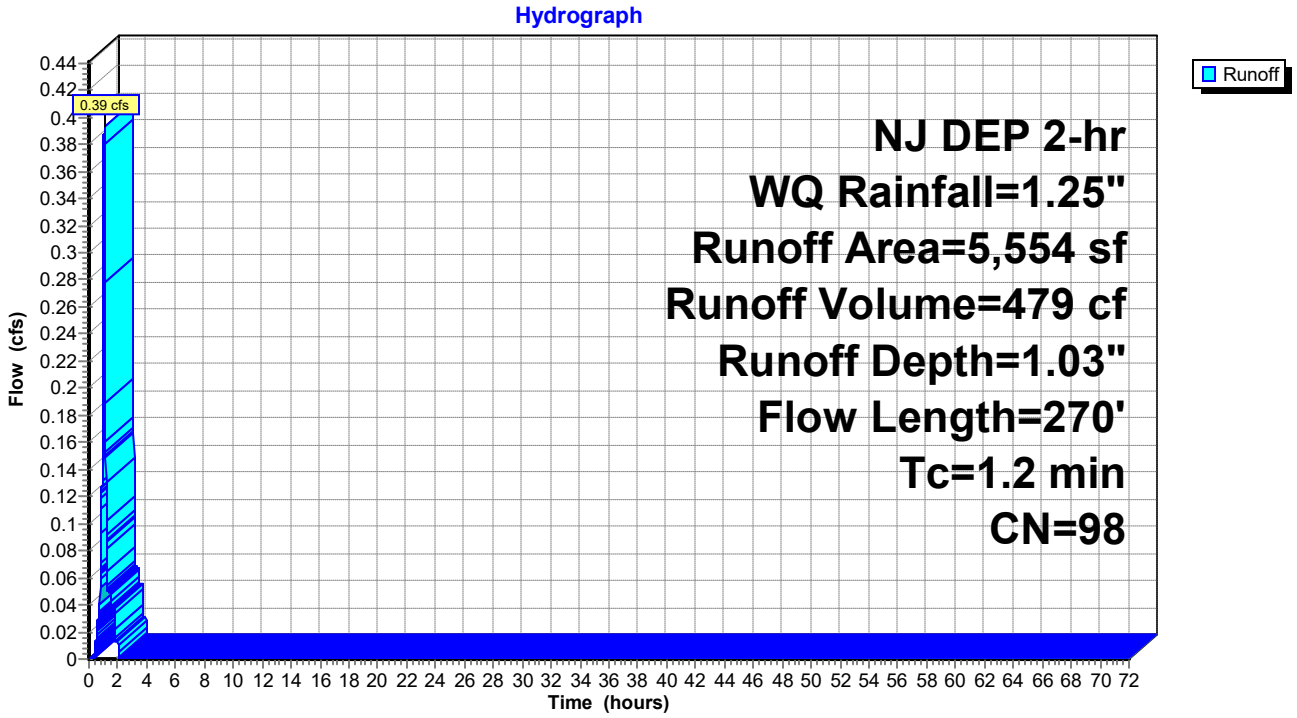
Runoff = 0.39 cfs @ 1.08 hrs, Volume= 479 cf, Depth= 1.03"
Routed to Pond 13FT : 10x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
5,554	98	Paved parking, HSG D
5,554		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0670	2.32		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.5	170	0.0870	5.99		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.2	270	Total			

Subcatchment 13i: Imp



Summary for Subcatchment 13p: Perv

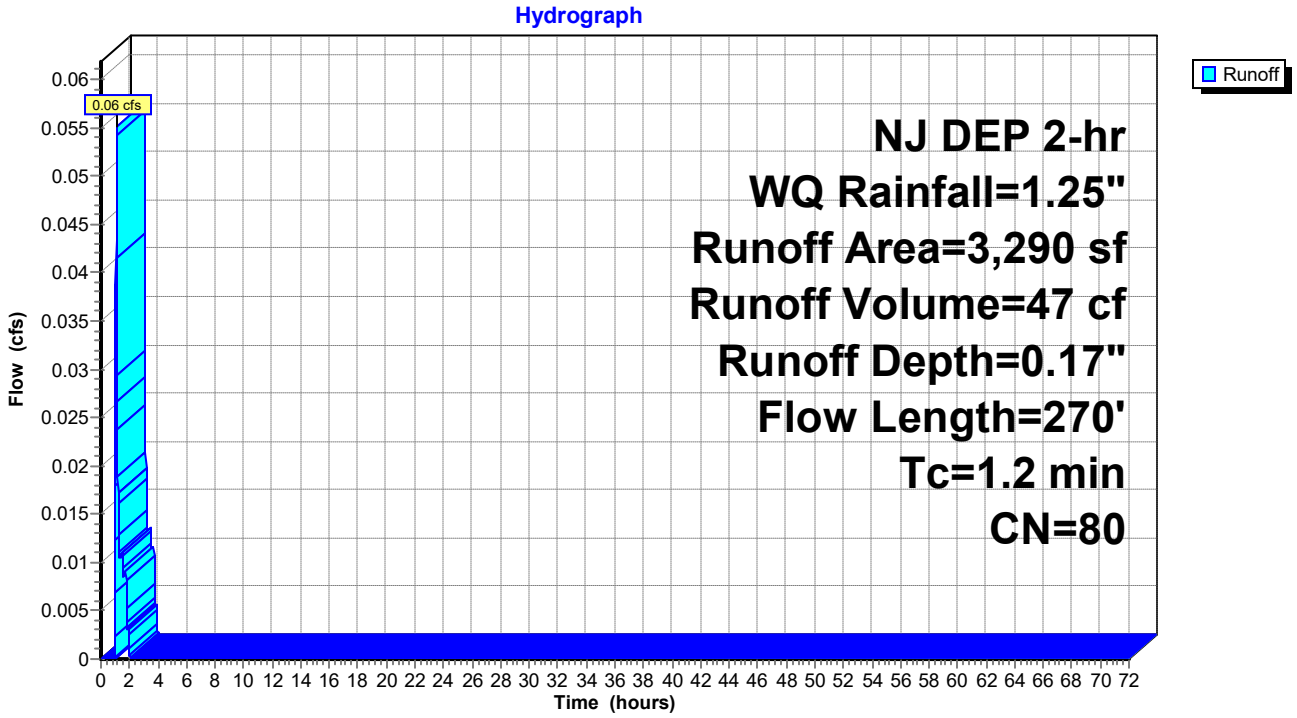
Runoff = 0.06 cfs @ 1.09 hrs, Volume= 47 cf, Depth= 0.17"
Routed to Pond 13FT : 10x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
3,290	80	>75% Grass cover, Good, HSG D
3,290		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0670	2.32		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.5	170	0.0870	5.99		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.2	270	Total			

Subcatchment 13p: Perv



Summary for Subcatchment 14i: Imp

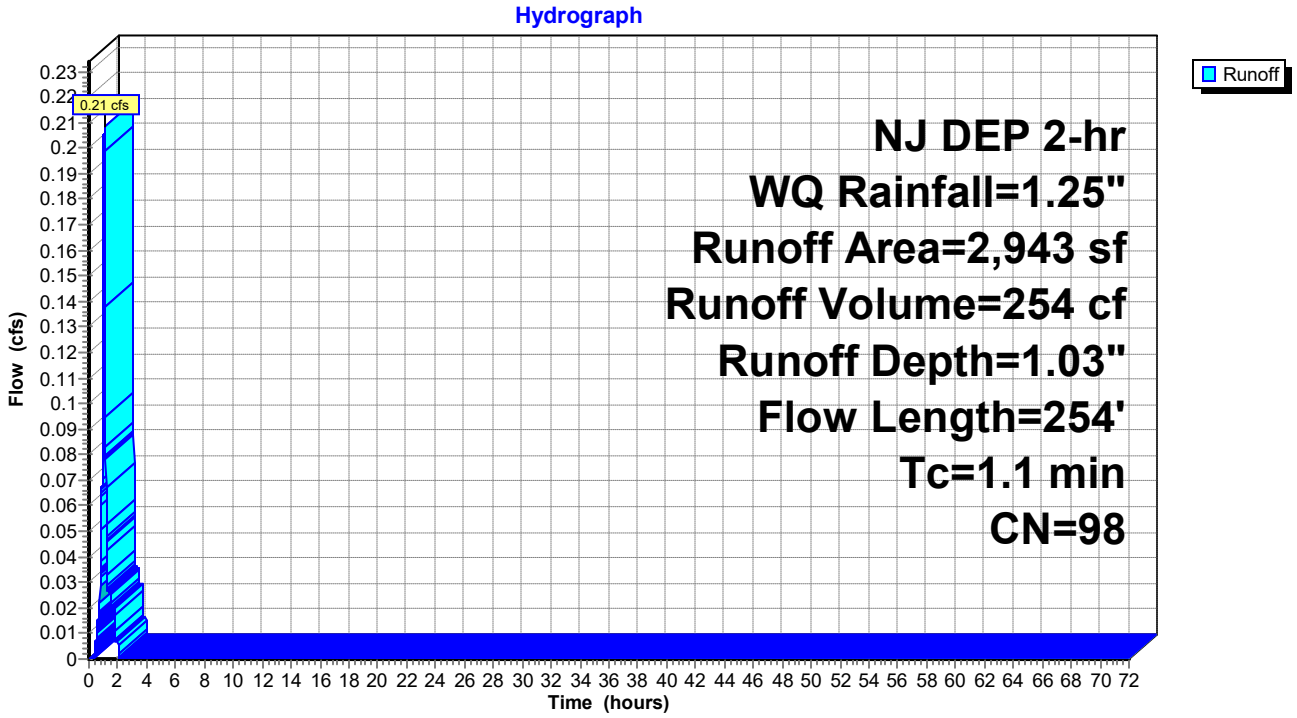
Runoff = 0.21 cfs @ 1.08 hrs, Volume= 254 cf, Depth= 1.03"
Routed to Pond 14FT : 7.83x4.5 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
2,943	98	Paved parking, HSG D
2,943		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0710	2.38		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.4	154	0.0930	6.19		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	254	Total			

Subcatchment 14i: Imp



Summary for Subcatchment 14p: Perv

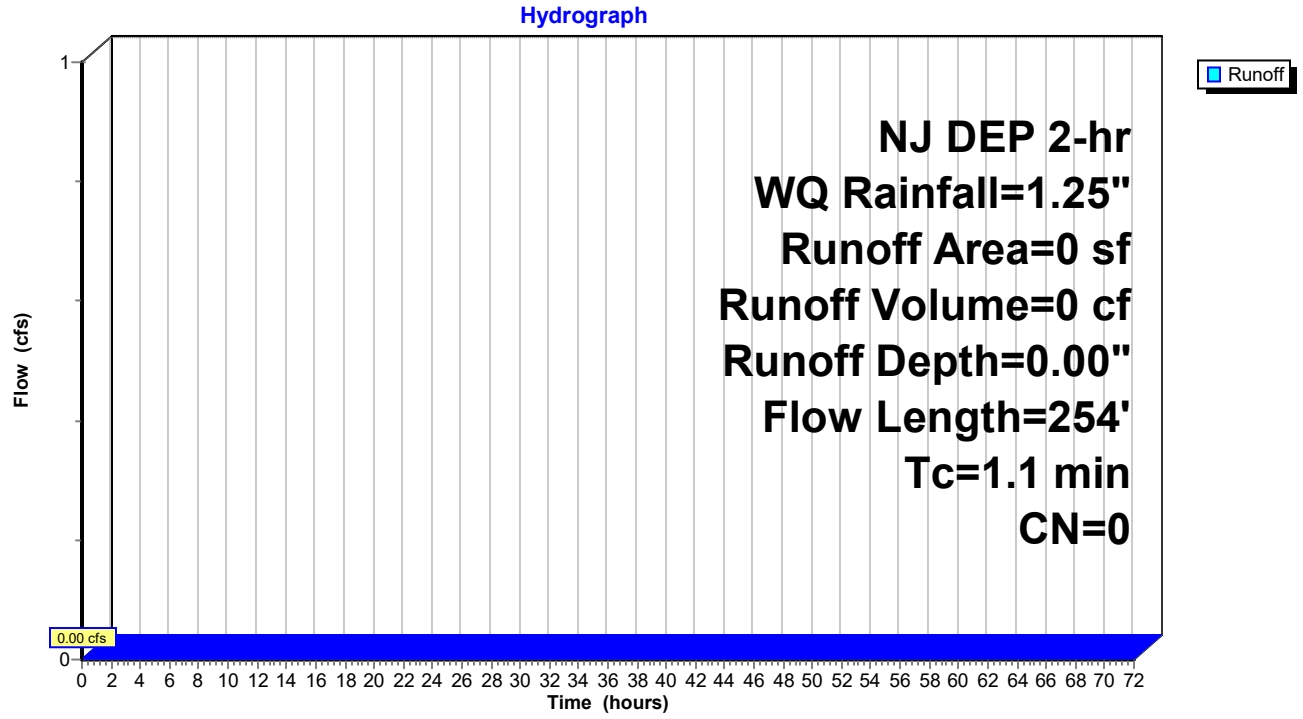
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Pond 14FT : 7.83x4.5 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
0	80	>75% Grass cover, Good, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0710	2.38		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.4	154	0.0930	6.19		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	254	Total			

Subcatchment 14p: Perv



Summary for Subcatchment 15i: Imp

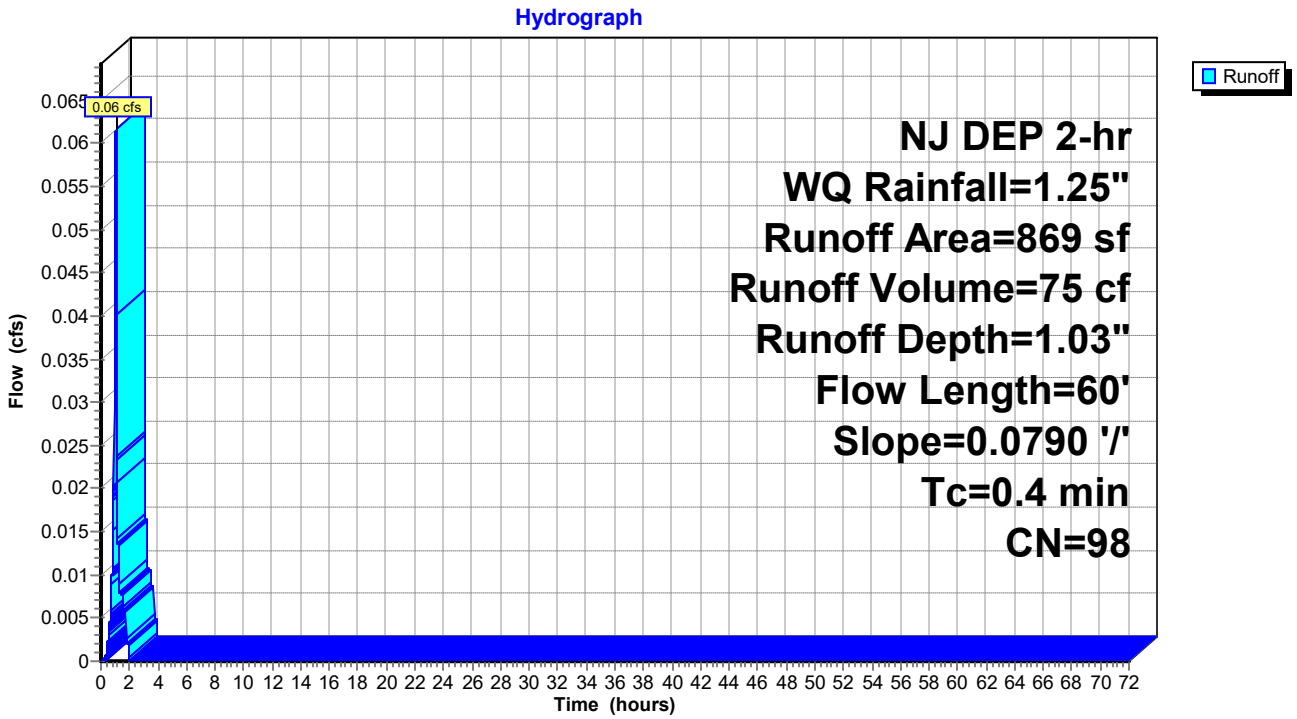
Runoff = 0.06 cfs @ 1.08 hrs, Volume= 75 cf, Depth= 1.03"
Routed to Pond 15FT : 4x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
869	98	Paved parking, HSG D
869		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	60	0.0790	2.24		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"

Subcatchment 15i: Imp



Summary for Subcatchment 15p: Perv

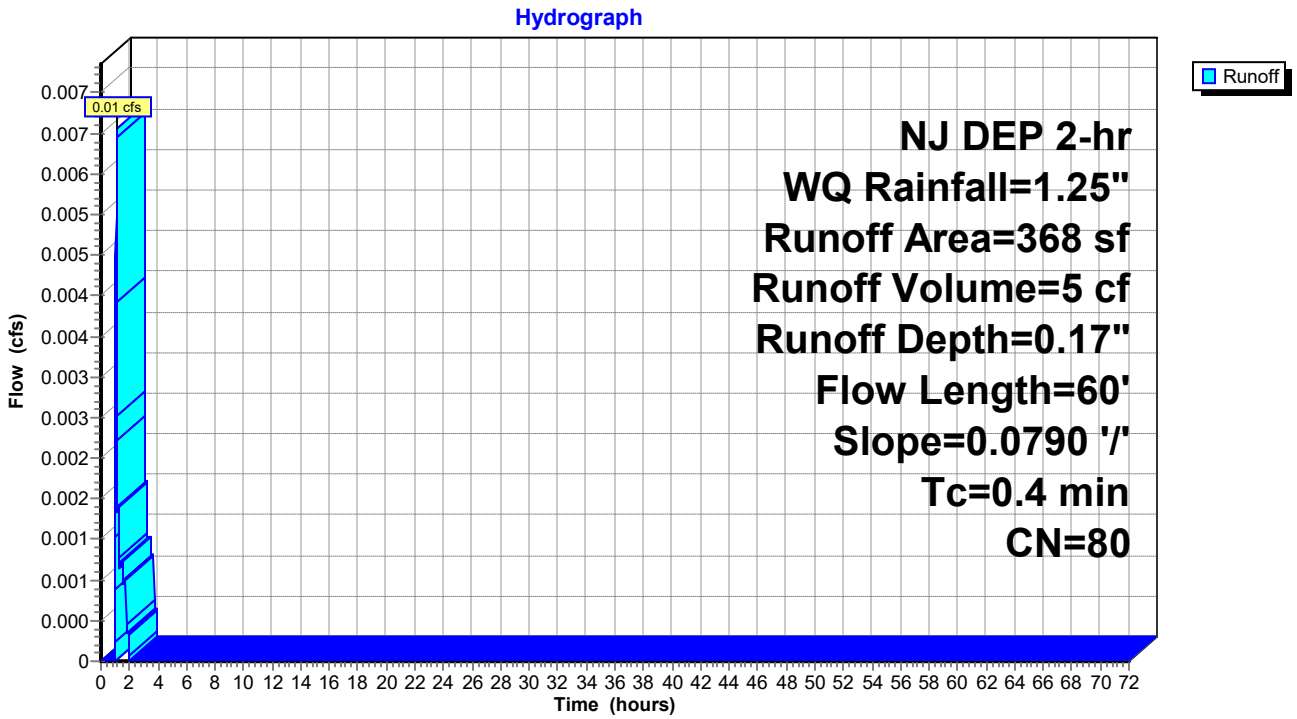
Runoff = 0.01 cfs @ 1.08 hrs, Volume= 5 cf, Depth= 0.17"
Routed to Pond 15FT : 4x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
368	80	>75% Grass cover, Good, HSG D
368		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	60	0.0790	2.24		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"

Subcatchment 15p: Perv



Summary for Subcatchment 16i: Imp

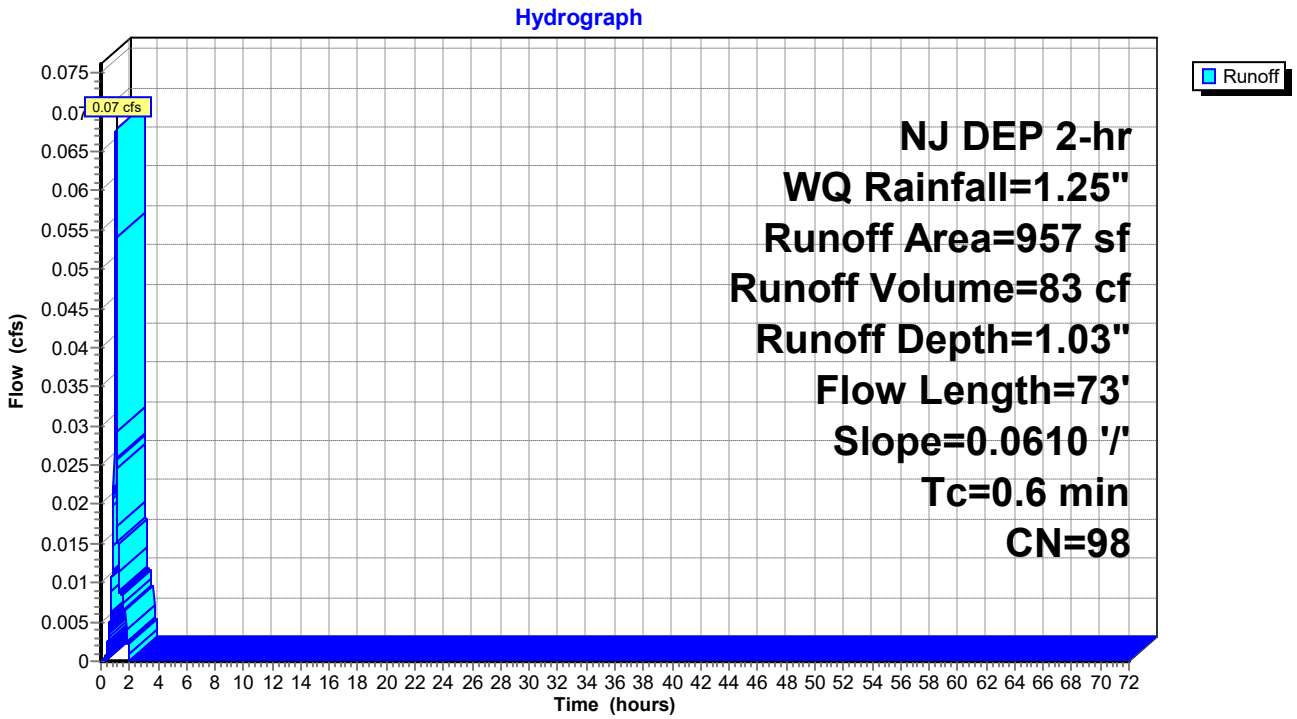
Runoff = 0.07 cfs @ 1.08 hrs, Volume= 83 cf, Depth= 1.03"
Routed to Pond 16FT : 4x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
957	98	Paved parking, HSG D
957		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	73	0.0610	2.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"

Subcatchment 16i: Imp



Summary for Subcatchment 16p: Perv

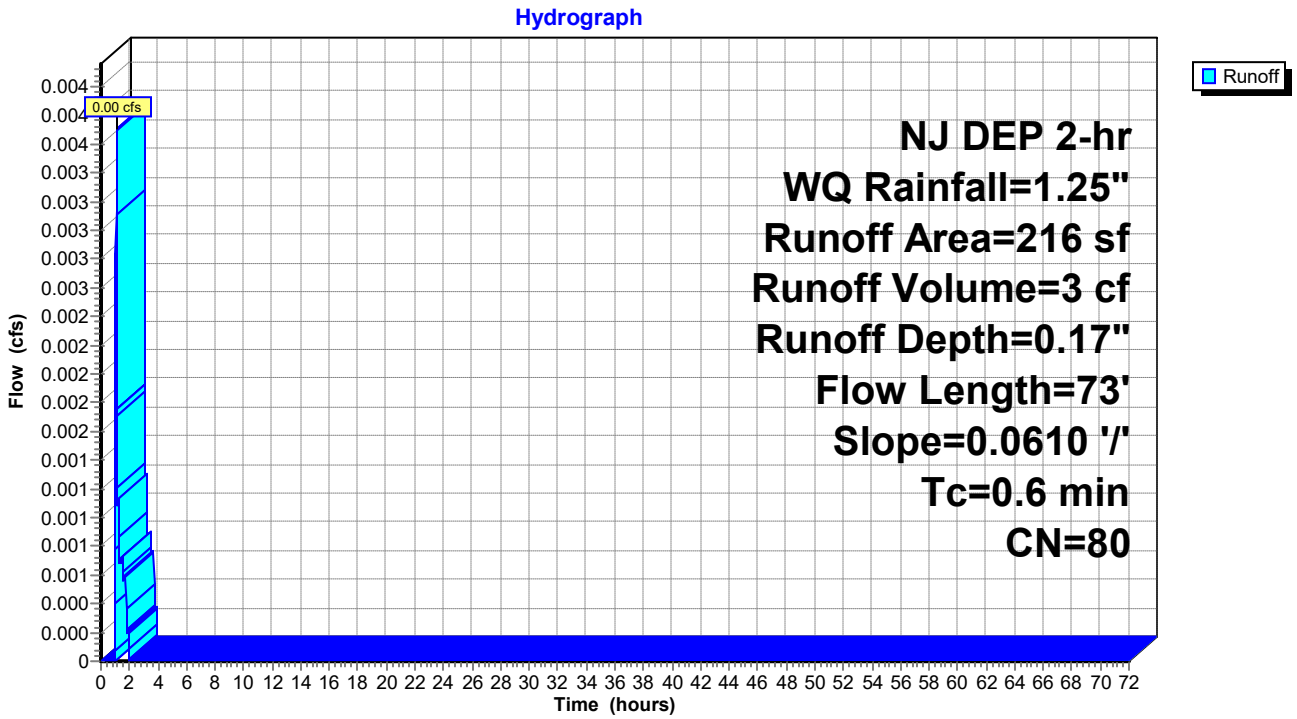
Runoff = 0.00 cfs @ 1.08 hrs, Volume= 3 cf, Depth= 0.17"
Routed to Pond 16FT : 4x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
216	80	>75% Grass cover, Good, HSG D
216		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.6	73	0.0610	2.10		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"

Subcatchment 16p: Perv



Summary for Subcatchment 17i: Imp

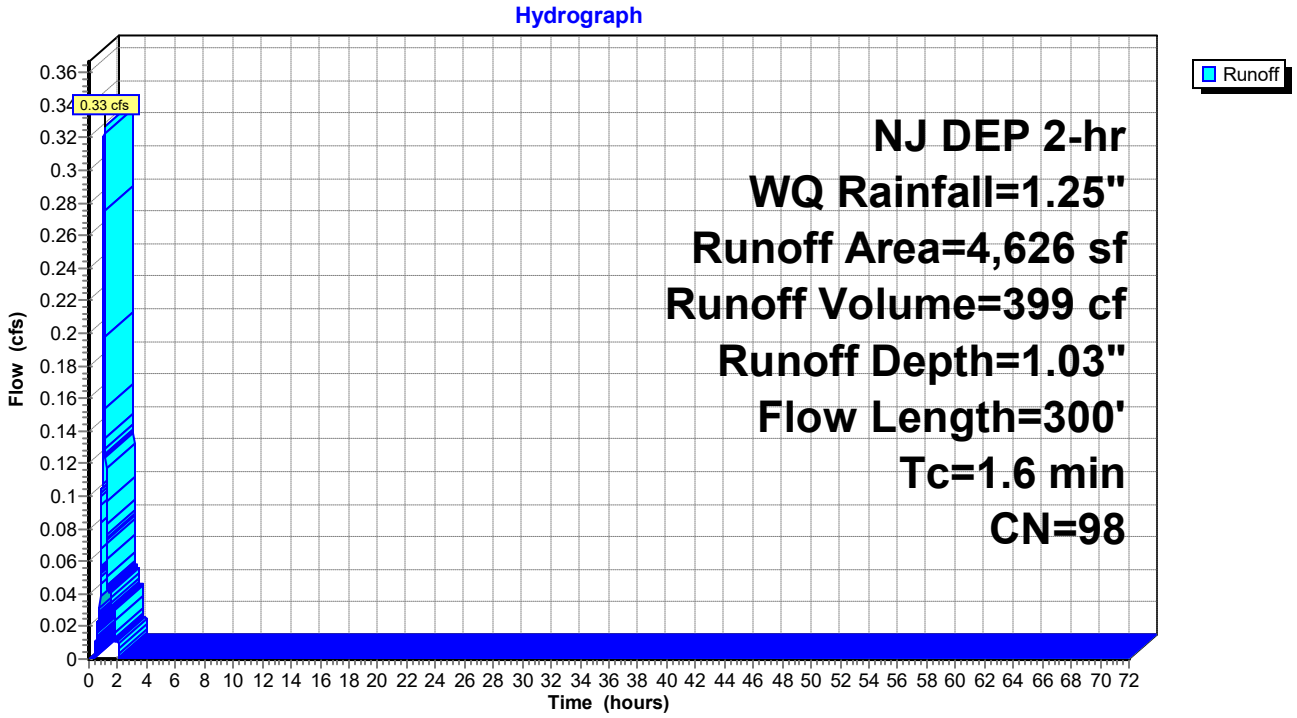
Runoff = 0.33 cfs @ 1.08 hrs, Volume= 399 cf, Depth= 1.03"
Routed to Pond 17FT : 8x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
4,626	98	Paved parking, HSG D
4,626		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0700	2.36		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.9	200	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	300	Total			

Subcatchment 17i: Imp



Summary for Subcatchment 17p: Perv

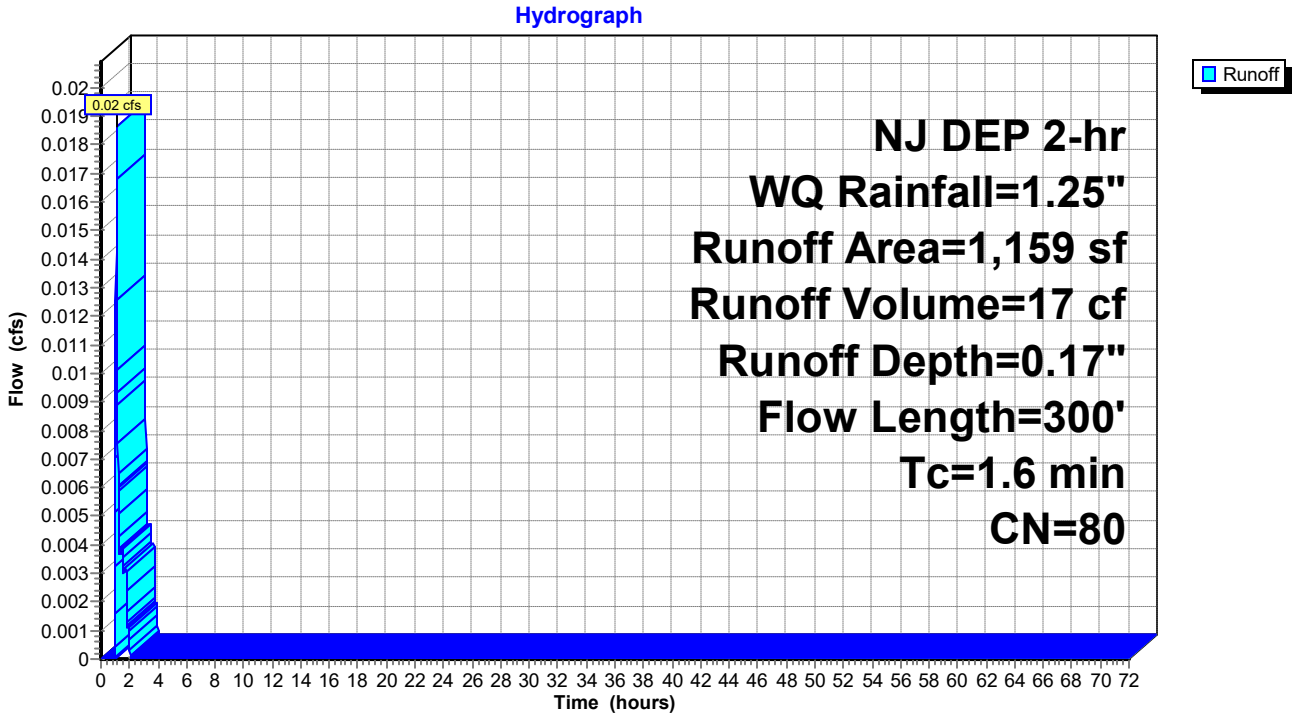
Runoff = 0.02 cfs @ 1.09 hrs, Volume= 17 cf, Depth= 0.17"
Routed to Pond 17FT : 8x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
1,159	80	>75% Grass cover, Good, HSG D
1,159		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0700	2.36		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.9	200	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	300	Total			

Subcatchment 17p: Perv



Summary for Subcatchment 18i: Imp

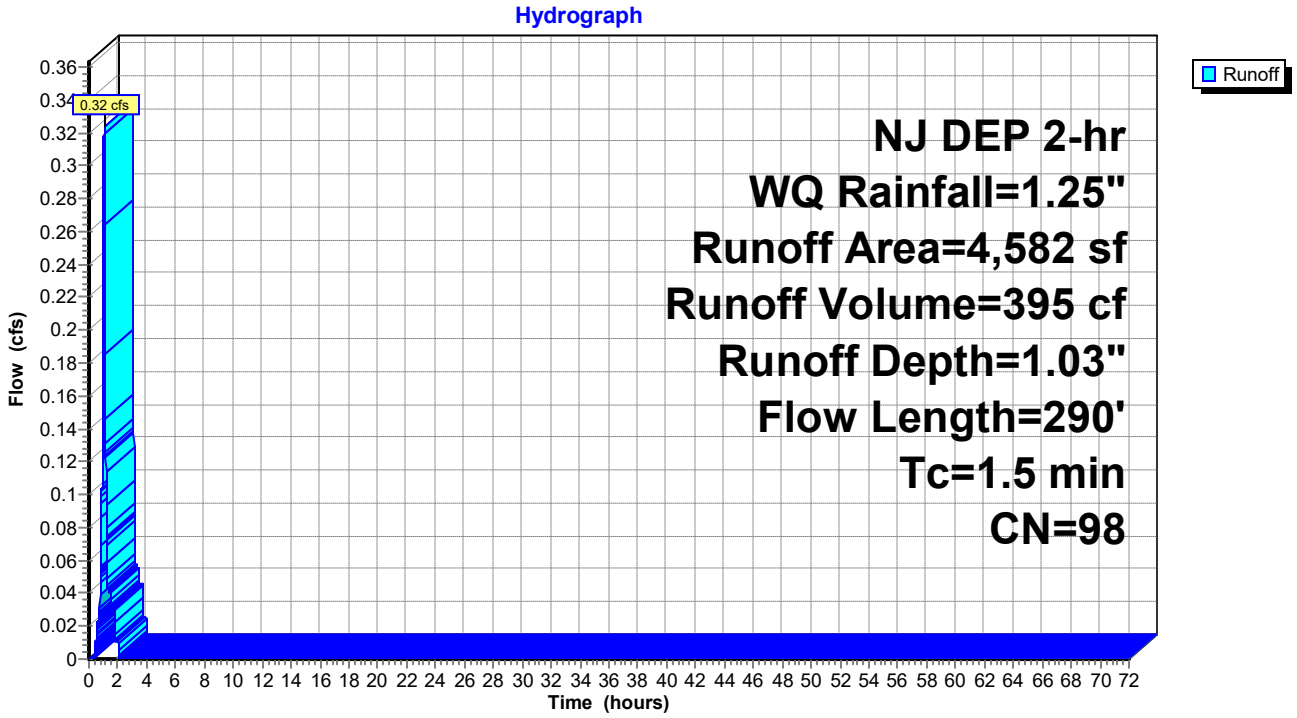
Runoff = 0.32 cfs @ 1.08 hrs, Volume= 395 cf, Depth= 1.03"
Routed to Pond 18FT : 8x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
4,582	98	Paved parking, HSG D
4,582		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	100	0.0700	2.36		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.8	190	0.0380	3.96		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.5	290	Total			

Subcatchment 18i: Imp



Summary for Subcatchment 18p: Perv

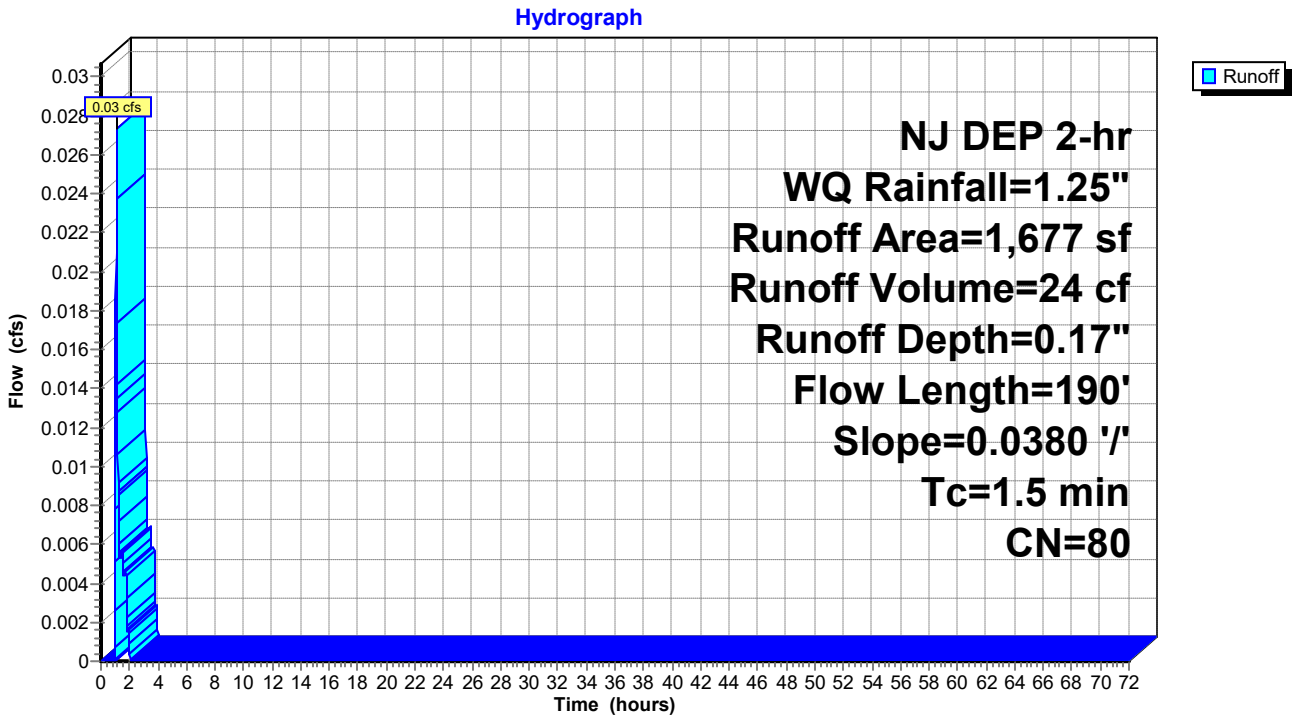
Runoff = 0.03 cfs @ 1.09 hrs, Volume= 24 cf, Depth= 0.17"
Routed to Pond 18FT : 8x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
1,677	80	>75% Grass cover, Good, HSG D
1,677		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	190	0.0380	2.11		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"

Subcatchment 18p: Perv



Summary for Subcatchment 21i: Imp

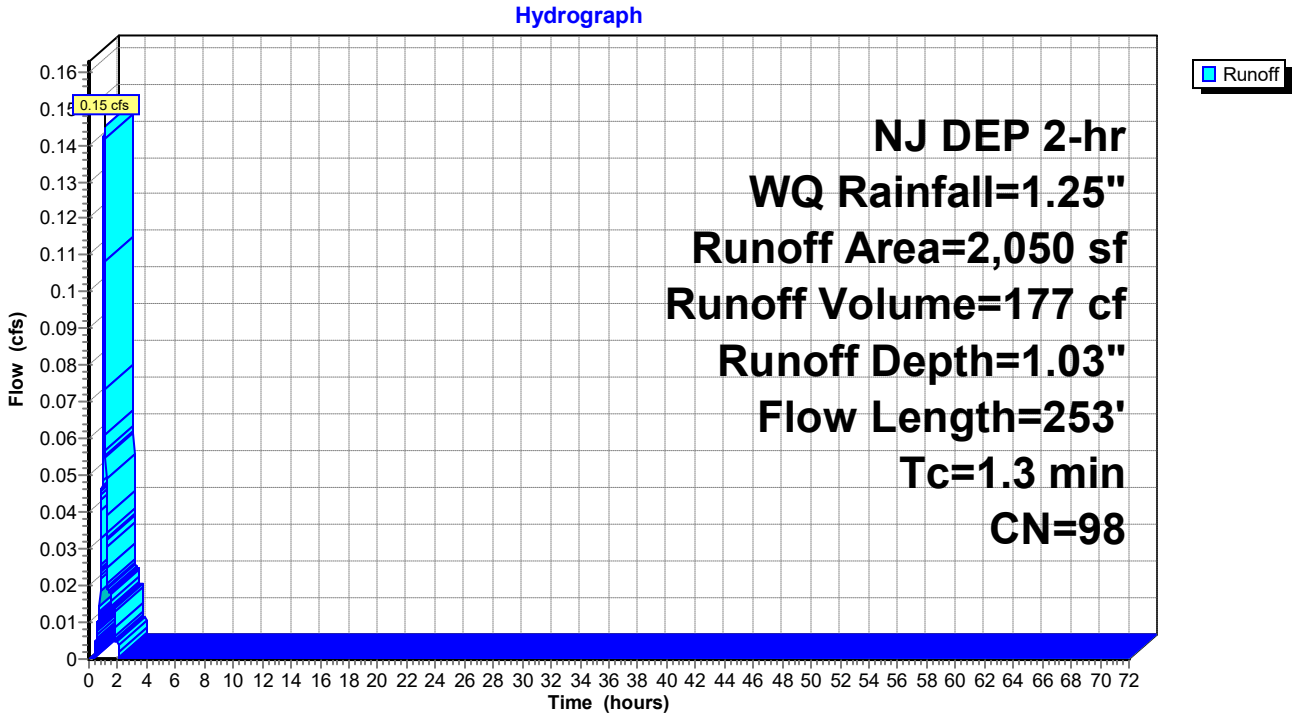
Runoff = 0.15 cfs @ 1.08 hrs, Volume= 177 cf, Depth= 1.03"
Routed to Pond 21FT : 6x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
2,050	98	Paved parking, HSG D
2,050		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0500	2.07		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.5	153	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	253	Total			

Subcatchment 21i: Imp



Summary for Subcatchment 21p: Perv

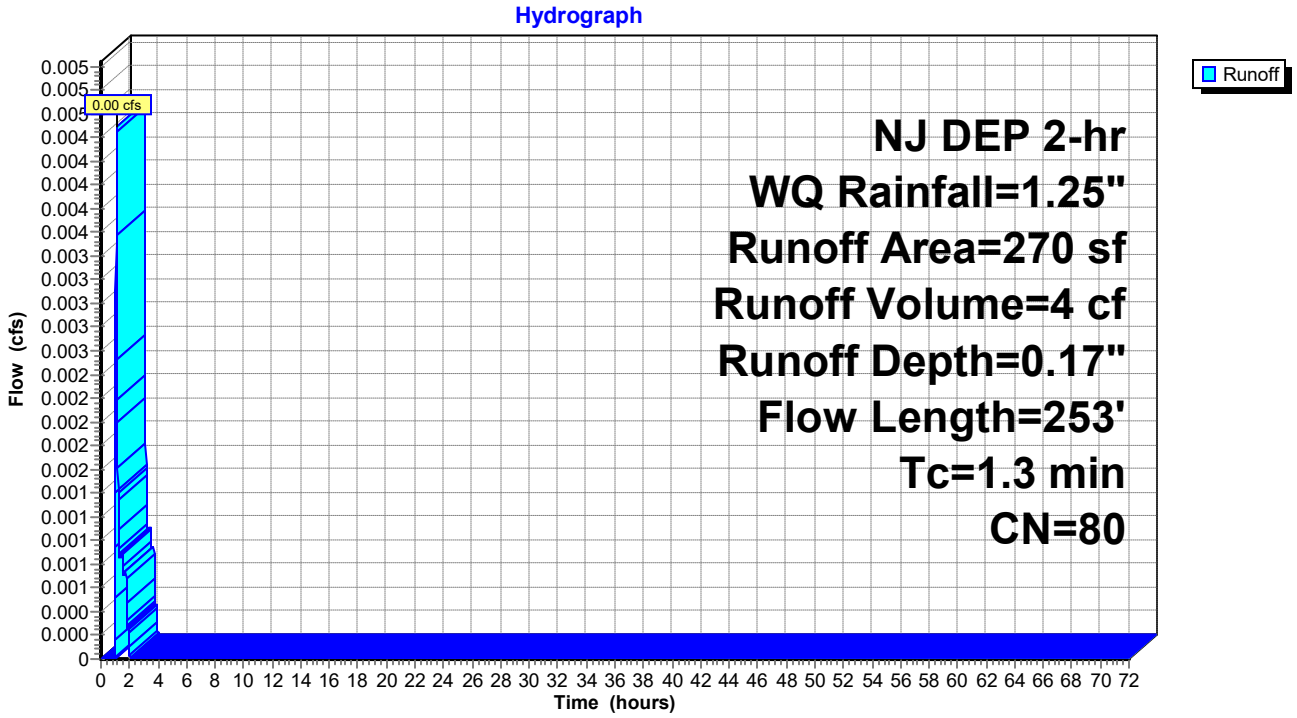
Runoff = 0.00 cfs @ 1.09 hrs, Volume= 4 cf, Depth= 0.17"
Routed to Pond 21FT : 6x4 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
270	80	>75% Grass cover, Good, HSG D
270		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0500	2.07		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.5	153	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	253	Total			

Subcatchment 21p: Perv



Summary for Subcatchment 22i: Imp

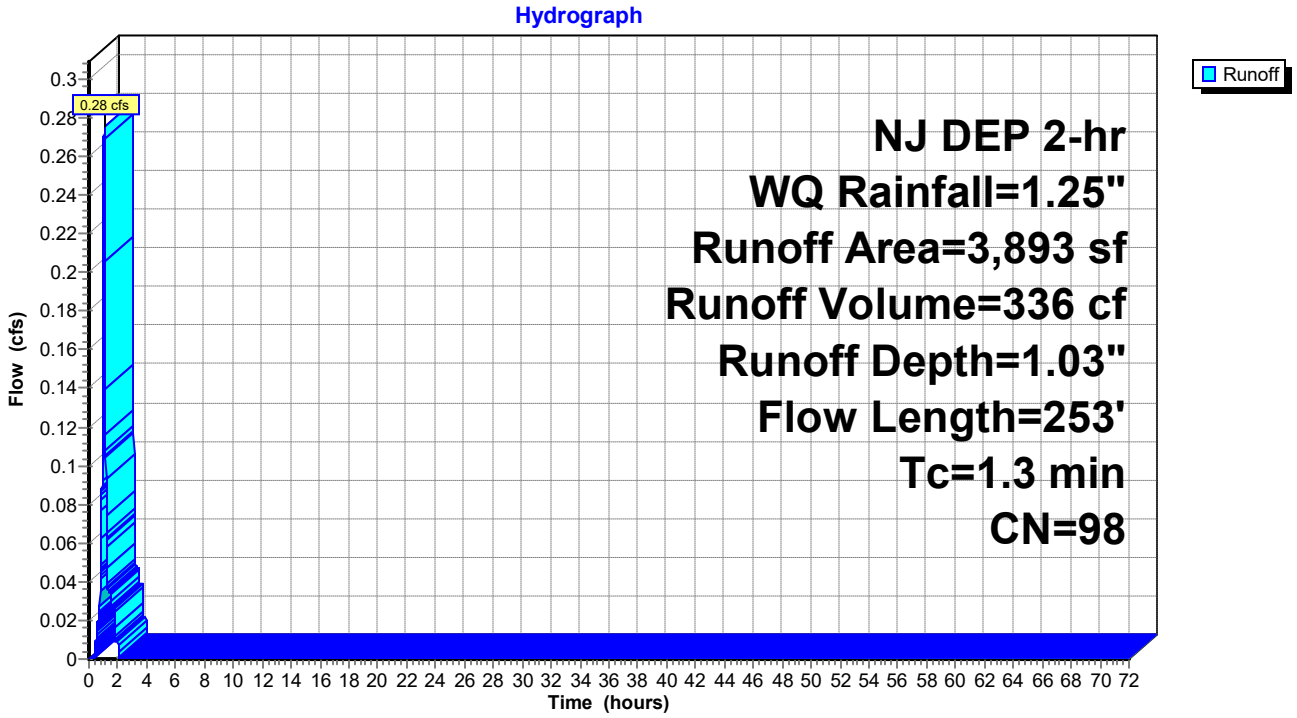
Runoff = 0.28 cfs @ 1.08 hrs, Volume= 336 cf, Depth= 1.03"
Routed to Pond 22FT : 8x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
3,893	98	Paved parking, HSG D
3,893		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0500	2.07		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.5	153	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	253	Total			

Subcatchment 22i: Imp



Summary for Subcatchment 22p: Perv

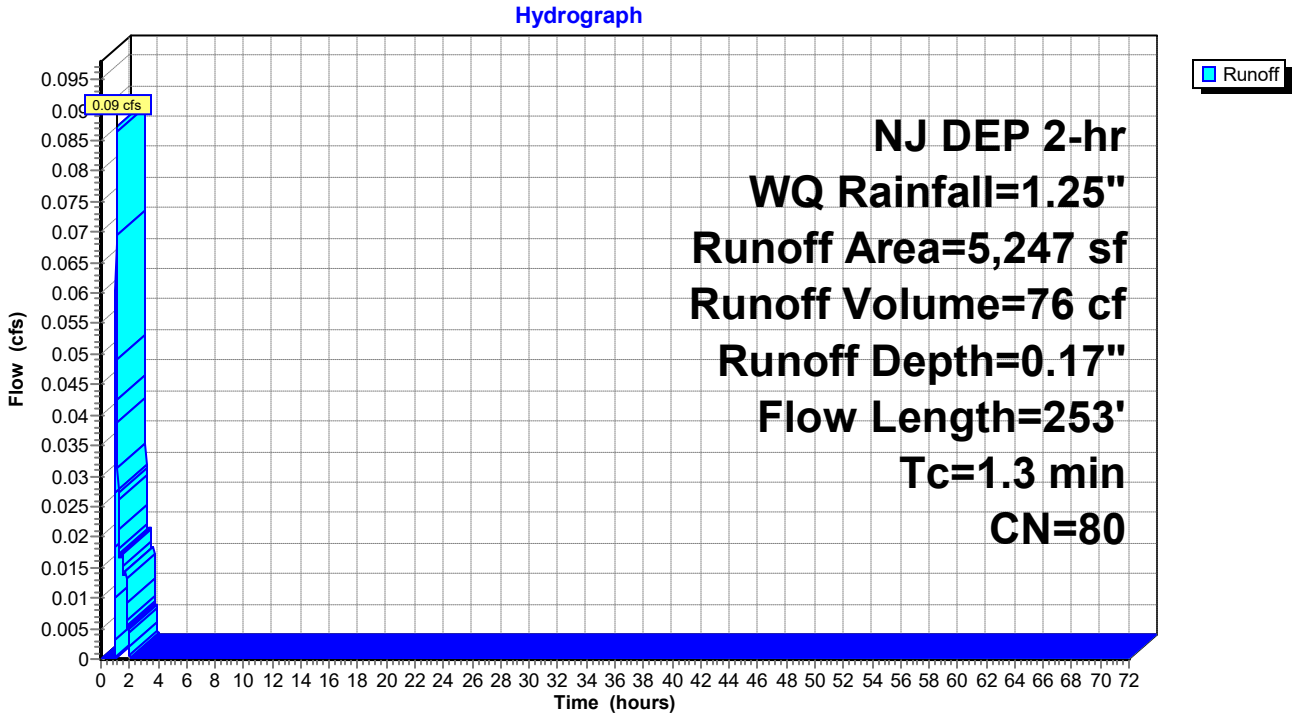
Runoff = 0.09 cfs @ 1.09 hrs, Volume= 76 cf, Depth= 0.17"
Routed to Pond 22FT : 8x6 FT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
NJ DEP 2-hr WQ Rainfall=1.25"

Area (sf)	CN	Description
5,247	80	>75% Grass cover, Good, HSG D
5,247		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.8	100	0.0500	2.07		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.47"
0.5	153	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	253	Total			

Subcatchment 22p: Perv



Summary for Pond 1FT: 4x4 FT

Inflow Area = 4,204 sf, 22.91% Impervious, Inflow Depth = 0.37" for WQ event
Inflow = 0.10 cfs @ 1.12 hrs, Volume= 130 cf
Outflow = 0.10 cfs @ 1.12 hrs, Volume= 130 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.10 cfs @ 1.12 hrs, Volume= 130 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.01' @ 1.12 hrs Surf.Area= 16 sf Storage= 0 cf

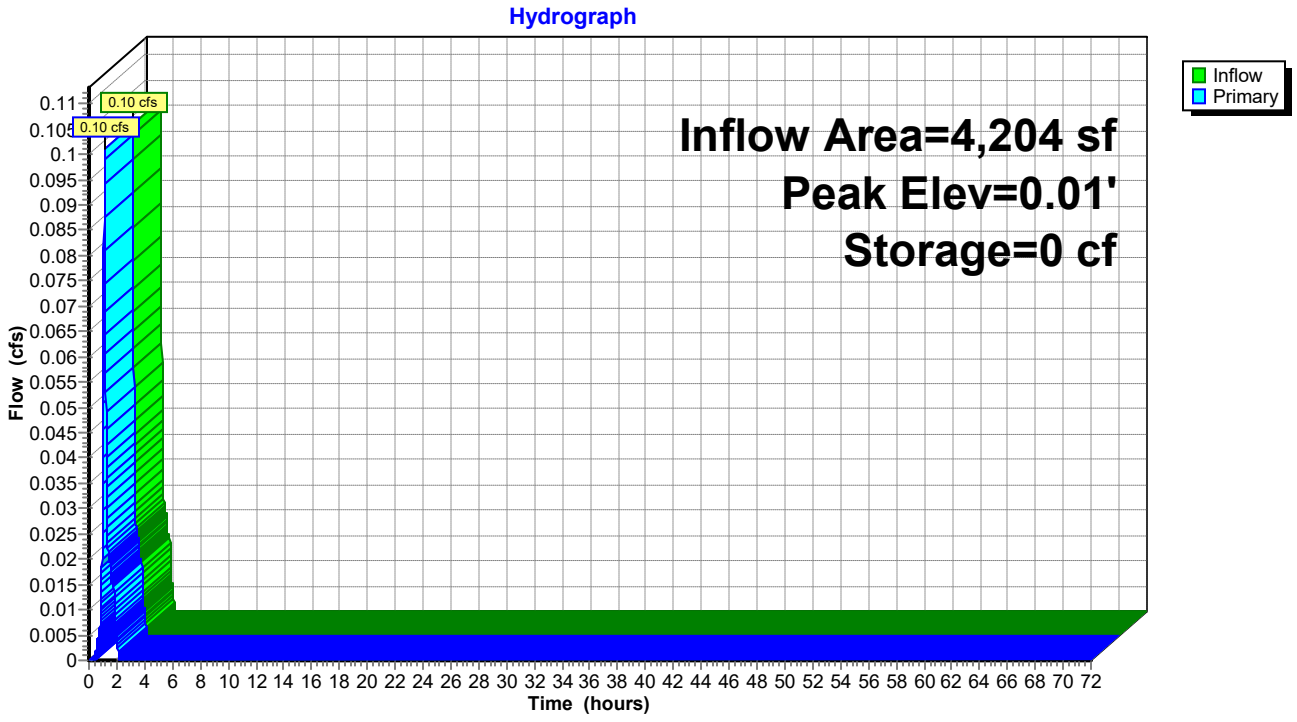
Plug-Flow detention time= 0.0 min calculated for 130 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (74.2 - 74.2)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	12 cf	**4.00'W x 4.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.11 cfs @ 1.12 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.11 cfs @ 0.01 fps)

Pond 1FT: 4x4 FT



Summary for Pond 2FT: 4x4 FT

Inflow Area = 2,862 sf, 46.30% Impervious, Inflow Depth = 0.57" for WQ event
Inflow = 0.11 cfs @ 1.11 hrs, Volume= 136 cf
Outflow = 0.11 cfs @ 1.11 hrs, Volume= 136 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.11 cfs @ 1.11 hrs, Volume= 136 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.01' @ 1.11 hrs Surf.Area= 16 sf Storage= 0 cf

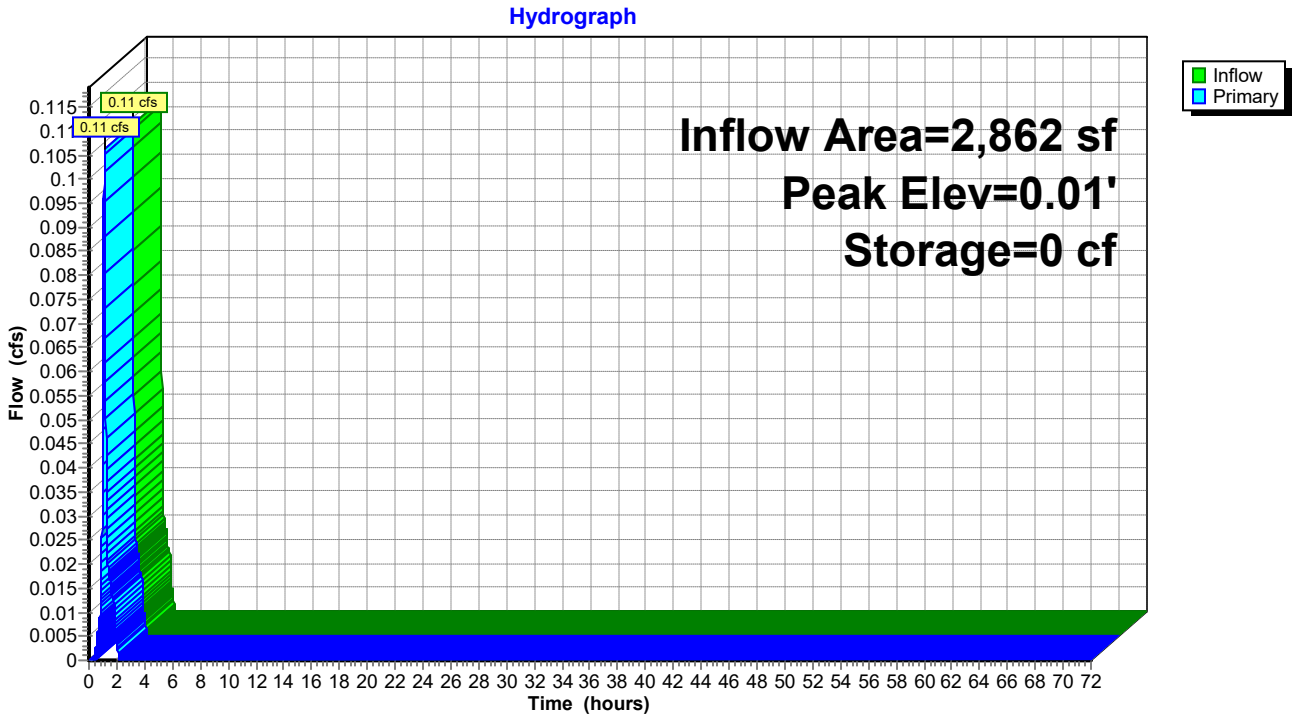
Plug-Flow detention time= 0.0 min calculated for 136 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (71.8 - 71.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	12 cf	**4.00'W x 4.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.11 cfs @ 1.11 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.11 cfs @ 0.01 fps)

Pond 2FT: 4x4 FT



Summary for Pond 3FT: 6x4 FT

Inflow Area = 3,376 sf, 59.48% Impervious, Inflow Depth = 0.69" for WQ event
Inflow = 0.17 cfs @ 1.08 hrs, Volume= 193 cf
Outflow = 0.17 cfs @ 1.08 hrs, Volume= 193 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.17 cfs @ 1.08 hrs, Volume= 193 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.01' @ 1.08 hrs Surf.Area= 24 sf Storage= 0 cf

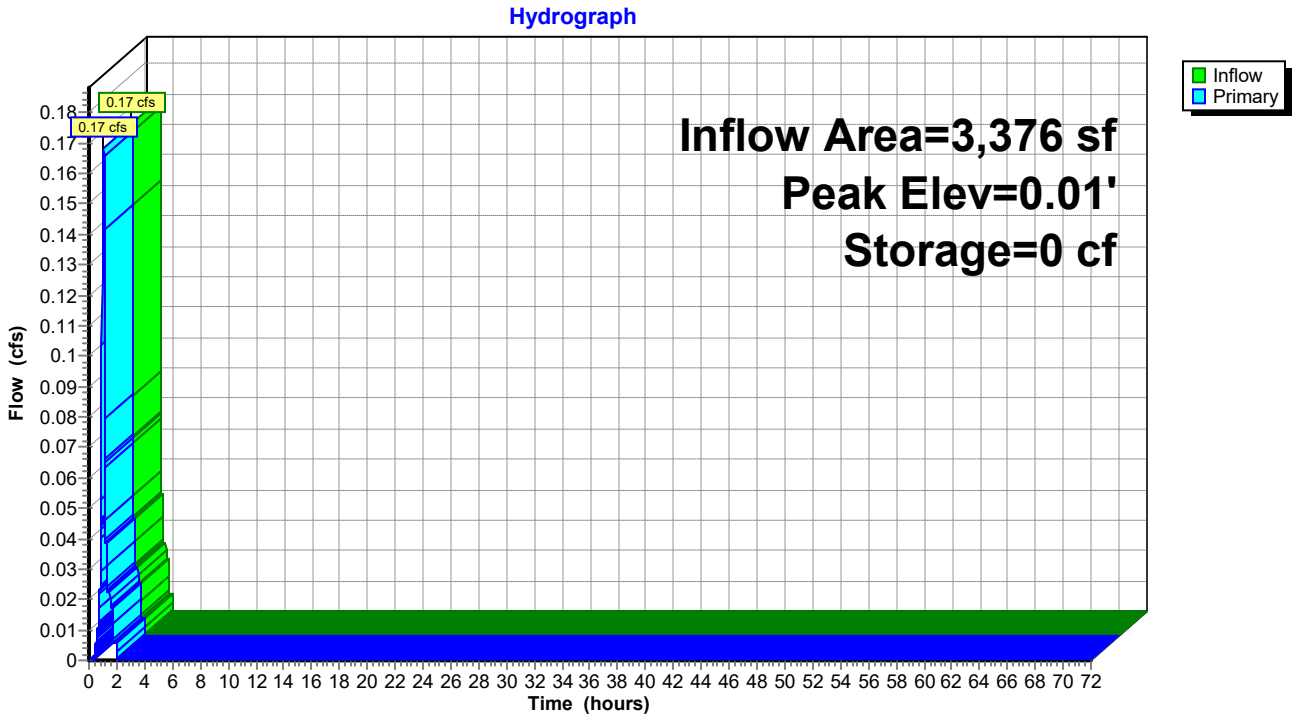
Plug-Flow detention time= 0.0 min calculated for 193 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (66.7 - 66.6)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	18 cf	**6.00'W x 4.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.17 cfs @ 1.08 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.17 cfs @ 0.01 fps)

Pond 3FT: 6x4 FT



Summary for Pond 4FT: 12x6 FT

Inflow Area = 16,388 sf, 43.94% Impervious, Inflow Depth = 0.55" for WQ event
Inflow = 0.66 cfs @ 1.09 hrs, Volume= 753 cf
Outflow = 0.50 cfs @ 1.00 hrs, Volume= 740 cf, Atten= 25%, Lag= 0.0 min
Primary = 0.50 cfs @ 1.00 hrs, Volume= 740 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.49' @ 1.10 hrs Surf.Area= 72 sf Storage= 35 cf

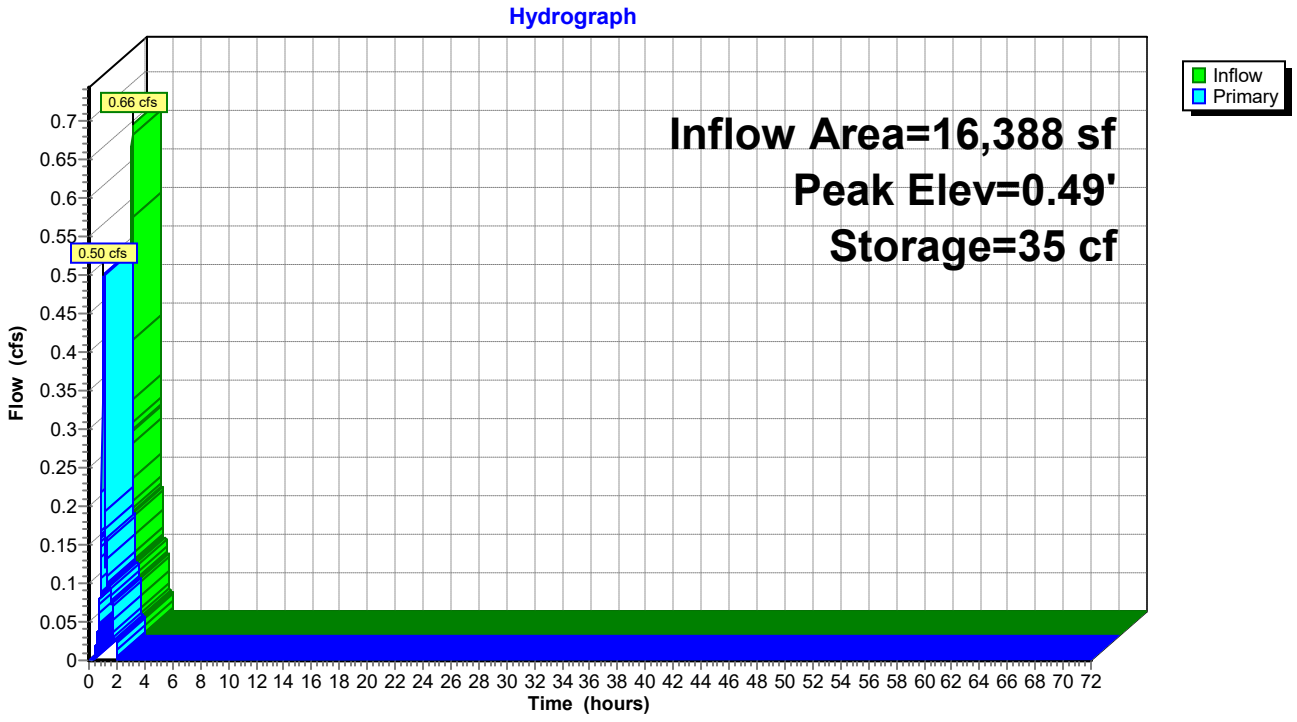
Plug-Flow detention time= 1.1 min calculated for 740 cf (98% of inflow)
Center-of-Mass det. time= 0.2 min (68.5 - 68.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	54 cf	**12.00'W x 6.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.50 cfs @ 1.00 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.50 cfs @ 0.01 fps)

Pond 4FT: 12x6 FT



Summary for Pond 9FT: 6x4 FT

Inflow Area = 2,320 sf, 88.36% Impervious, Inflow Depth = 0.93" for WQ event
Inflow = 0.15 cfs @ 1.08 hrs, Volume= 181 cf
Outflow = 0.15 cfs @ 1.08 hrs, Volume= 181 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.15 cfs @ 1.08 hrs, Volume= 181 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.01' @ 1.08 hrs Surf.Area= 24 sf Storage= 0 cf

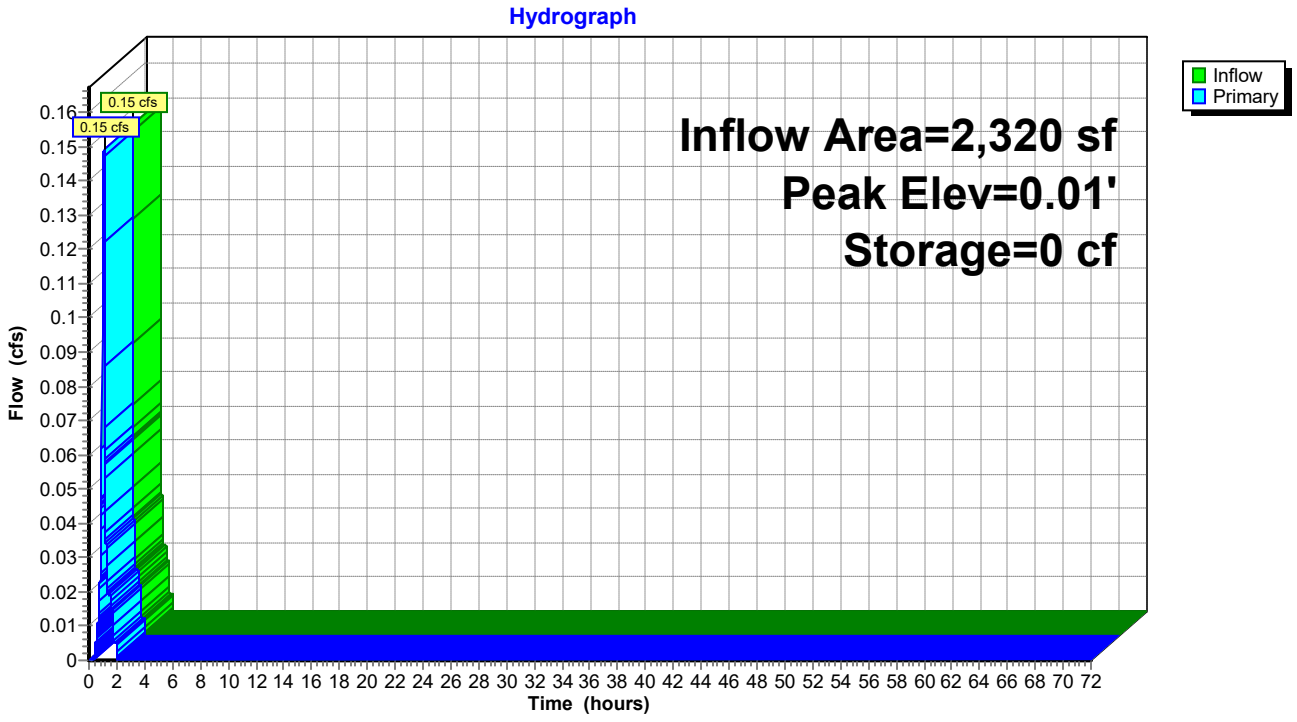
Plug-Flow detention time= 0.0 min calculated for 181 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (66.4 - 66.4)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	18 cf	**6.00'W x 4.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.17 cfs @ 1.08 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.17 cfs @ 0.01 fps)

Pond 9FT: 6x4 FT



Summary for Pond 10FT: 8x6 FT

Inflow Area = 9,140 sf, 42.59% Impervious, Inflow Depth = 0.54" for WQ event
Inflow = 0.36 cfs @ 1.09 hrs, Volume= 411 cf
Outflow = 0.33 cfs @ 1.06 hrs, Volume= 411 cf, Atten= 8%, Lag= 0.0 min
Primary = 0.33 cfs @ 1.06 hrs, Volume= 411 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.05' @ 1.09 hrs Surf.Area= 48 sf Storage= 2 cf

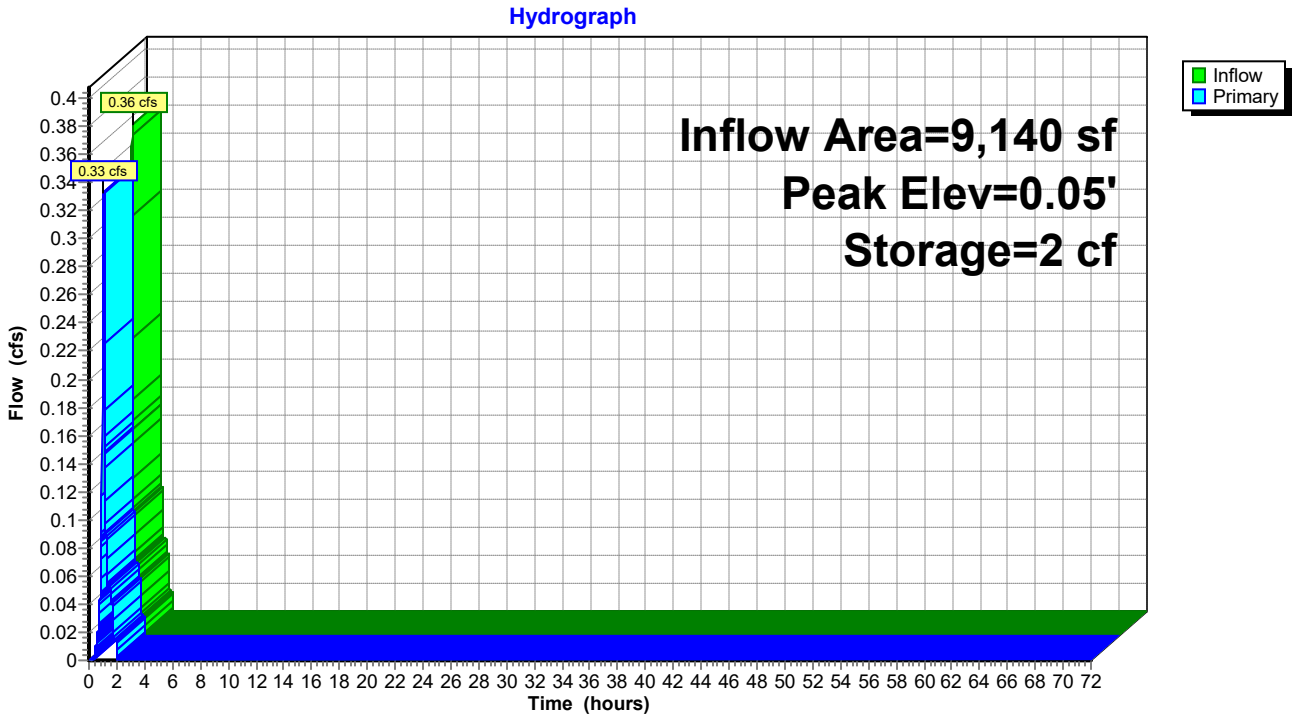
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.0 min (68.4 - 68.4)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	36 cf	**8.00'W x 6.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.33 cfs @ 1.06 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.33 cfs @ 0.01 fps)

Pond 10FT: 8x6 FT



Summary for Pond 11FT: 12x6 FT

Inflow Area = 14,814 sf, 45.12% Impervious, Inflow Depth = 0.56" for WQ event
Inflow = 0.60 cfs @ 1.09 hrs, Volume= 694 cf
Outflow = 0.50 cfs @ 1.02 hrs, Volume= 681 cf, Atten= 17%, Lag= 0.0 min
Primary = 0.50 cfs @ 1.02 hrs, Volume= 681 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.24' @ 1.10 hrs Surf.Area= 72 sf Storage= 17 cf

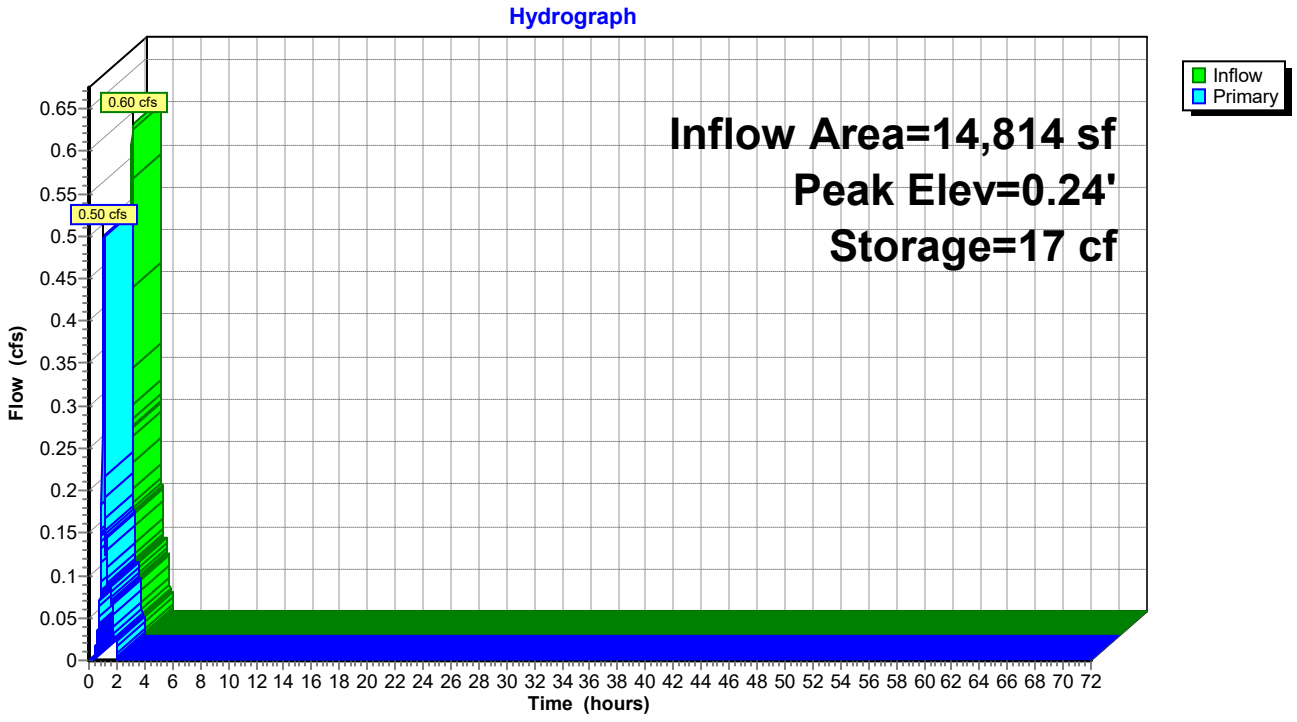
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.1 min (68.6 - 68.5)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	54 cf	**12.00'W x 6.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.50 cfs @ 1.02 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.50 cfs @ 0.01 fps)

Pond 11FT: 12x6 FT



Summary for Pond 12FT: 6x4 FT

Inflow Area = 2,694 sf,100.00% Impervious, Inflow Depth = 1.03" for WQ event
Inflow = 0.19 cfs @ 1.08 hrs, Volume= 232 cf
Outflow = 0.17 cfs @ 0.97 hrs, Volume= 237 cf, Atten= 12%, Lag= 0.0 min
Primary = 0.17 cfs @ 0.97 hrs, Volume= 237 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.35' @ 1.10 hrs Surf.Area= 24 sf Storage= 9 cf

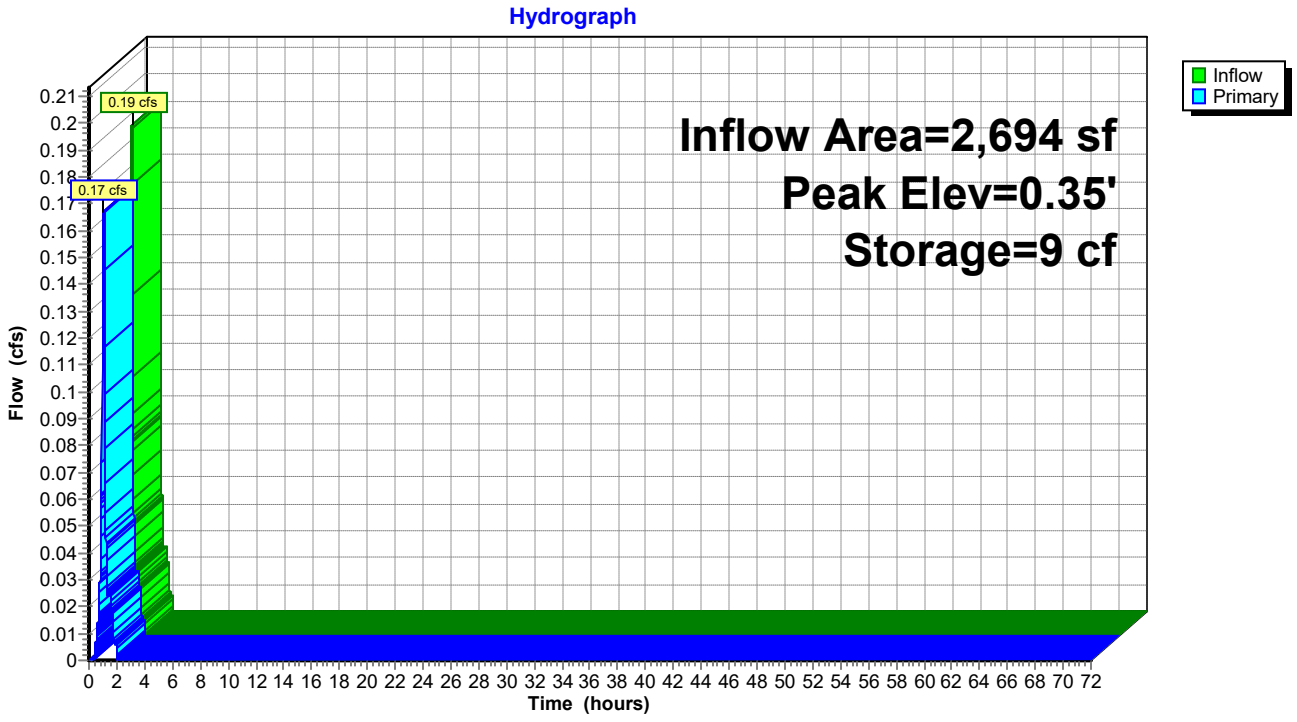
Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 0.3 min (66.6 - 66.4)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	18 cf	**6.00'W x 4.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.17 cfs @ 0.97 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.17 cfs @ 0.01 fps)

Pond 12FT: 6x4 FT



Summary for Pond 13FT: 10x6 FT

Inflow Area = 8,844 sf, 62.80% Impervious, Inflow Depth = 0.71" for WQ event
Inflow = 0.45 cfs @ 1.08 hrs, Volume= 526 cf
Outflow = 0.42 cfs @ 1.04 hrs, Volume= 517 cf, Atten= 7%, Lag= 0.0 min
Primary = 0.42 cfs @ 1.04 hrs, Volume= 517 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.07' @ 1.09 hrs Surf.Area= 60 sf Storage= 4 cf

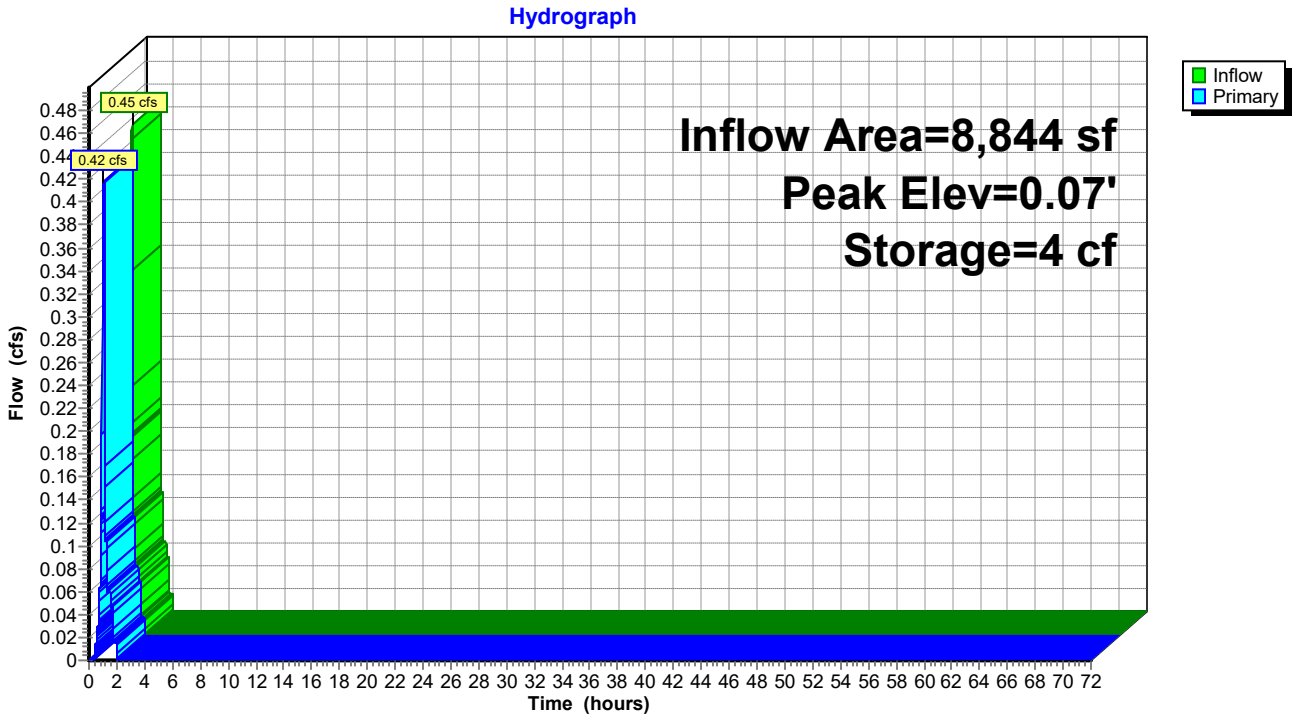
Plug-Flow detention time= 0.9 min calculated for 517 cf (98% of inflow)
Center-of-Mass det. time= 0.0 min (67.0 - 67.0)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	45 cf	**10.00'W x 6.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.42 cfs @ 1.04 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.42 cfs @ 0.01 fps)

Pond 13FT: 10x6 FT



Summary for Pond 14FT: 7.83x4.5 FT

Inflow Area = 2,943 sf,100.00% Impervious, Inflow Depth = 1.03" for WQ event
Inflow = 0.21 cfs @ 1.08 hrs, Volume= 254 cf
Outflow = 0.21 cfs @ 1.08 hrs, Volume= 254 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.21 cfs @ 1.08 hrs, Volume= 254 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.01' @ 1.08 hrs Surf.Area= 35 sf Storage= 0 cf

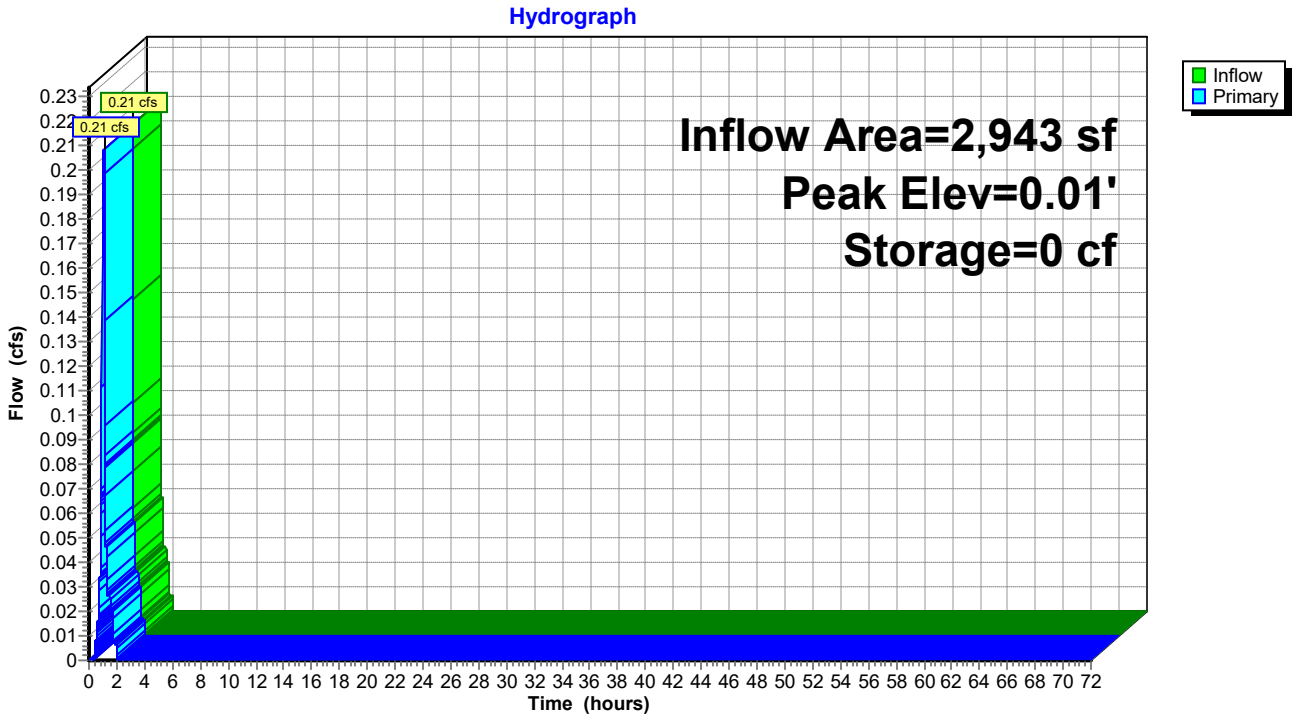
Plug-Flow detention time= 0.0 min calculated for 254 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (65.8 - 65.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	26 cf	**7.83'W x 4.50'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.24 cfs @ 1.08 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.24 cfs @ 0.01 fps)

Pond 14FT: 7.83x4.5 FT



Summary for Pond 15FT: 4x4 FT

Inflow Area = 1,237 sf, 70.25% Impervious, Inflow Depth = 0.78" for WQ event
Inflow = 0.07 cfs @ 1.08 hrs, Volume= 80 cf
Outflow = 0.07 cfs @ 1.08 hrs, Volume= 80 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.07 cfs @ 1.08 hrs, Volume= 80 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.00' @ 1.08 hrs Surf.Area= 16 sf Storage= 0 cf

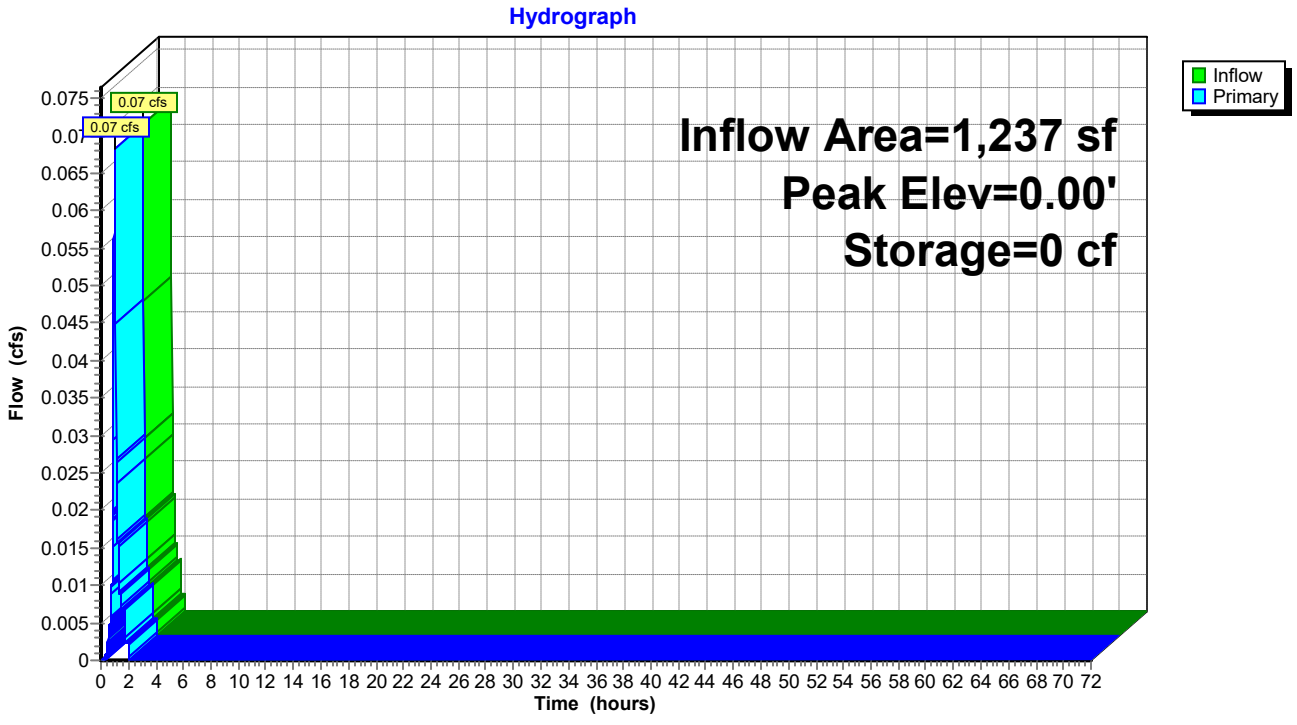
Plug-Flow detention time= 0.0 min calculated for 80 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (65.9 - 65.9)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	12 cf	**4.00'W x 4.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.11 cfs @ 1.08 hrs HW=0.00' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.11 cfs @ 0.01 fps)

Pond 15FT: 4x4 FT



Summary for Pond 16FT: 4x4 FT

Inflow Area = 1,173 sf, 81.59% Impervious, Inflow Depth = 0.88" for WQ event
Inflow = 0.07 cfs @ 1.08 hrs, Volume= 86 cf
Outflow = 0.07 cfs @ 1.08 hrs, Volume= 86 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.07 cfs @ 1.08 hrs, Volume= 86 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.00' @ 1.08 hrs Surf.Area= 16 sf Storage= 0 cf

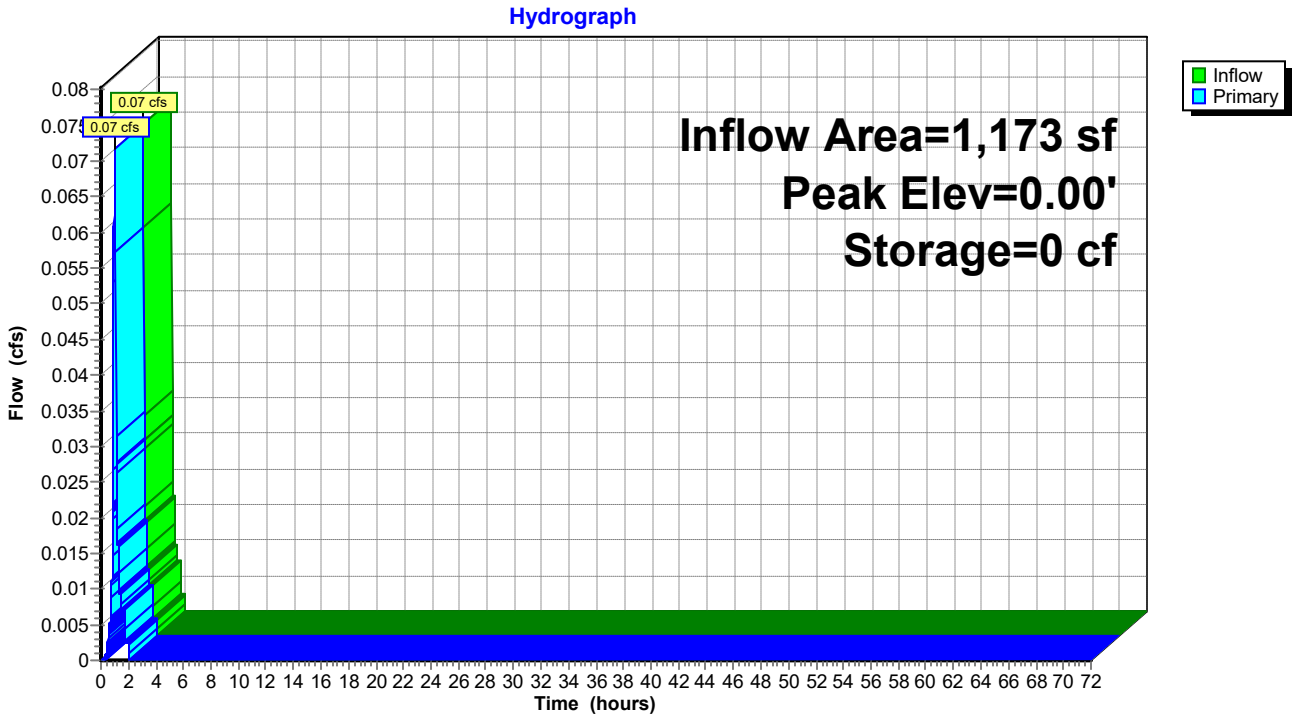
Plug-Flow detention time= 0.0 min calculated for 86 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (65.7 - 65.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	12 cf	**4.00'W x 4.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.11 cfs @ 1.08 hrs HW=0.00' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.11 cfs @ 0.01 fps)

Pond 16FT: 4x4 FT



Summary for Pond 17FT: 8x6 FT

Inflow Area = 5,785 sf, 79.97% Impervious, Inflow Depth = 0.86" for WQ event
Inflow = 0.34 cfs @ 1.08 hrs, Volume= 416 cf
Outflow = 0.33 cfs @ 1.05 hrs, Volume= 414 cf, Atten= 3%, Lag= 0.0 min
Primary = 0.33 cfs @ 1.05 hrs, Volume= 414 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.03' @ 1.09 hrs Surf.Area= 48 sf Storage= 2 cf

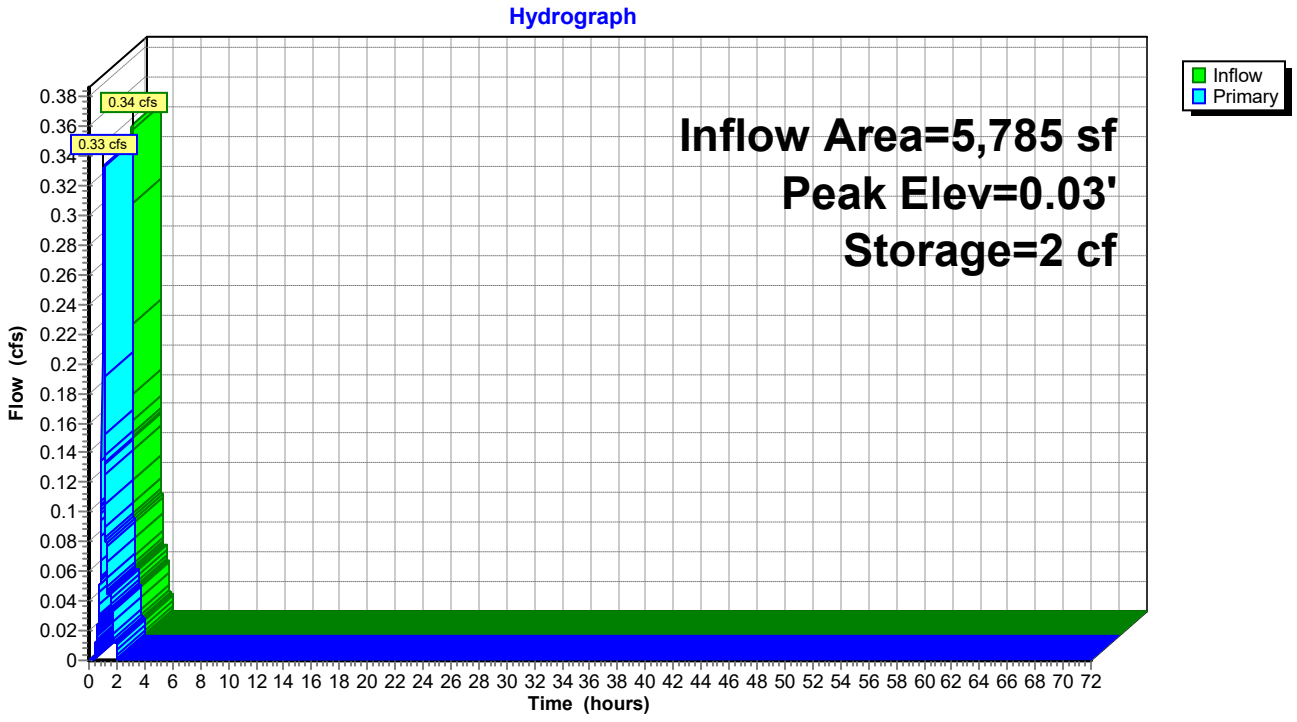
Plug-Flow detention time= 0.3 min calculated for 414 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (66.7 - 66.7)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	36 cf	**8.00'W x 6.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.33 cfs @ 1.05 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.33 cfs @ 0.01 fps)

Pond 17FT: 8x6 FT



Summary for Pond 18FT: 8x6 FT

Inflow Area = 6,259 sf, 73.21% Impervious, Inflow Depth = 0.80" for WQ event
Inflow = 0.35 cfs @ 1.08 hrs, Volume= 419 cf
Outflow = 0.33 cfs @ 1.04 hrs, Volume= 414 cf, Atten= 5%, Lag= 0.0 min
Primary = 0.33 cfs @ 1.04 hrs, Volume= 414 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.05' @ 1.09 hrs Surf.Area= 48 sf Storage= 2 cf

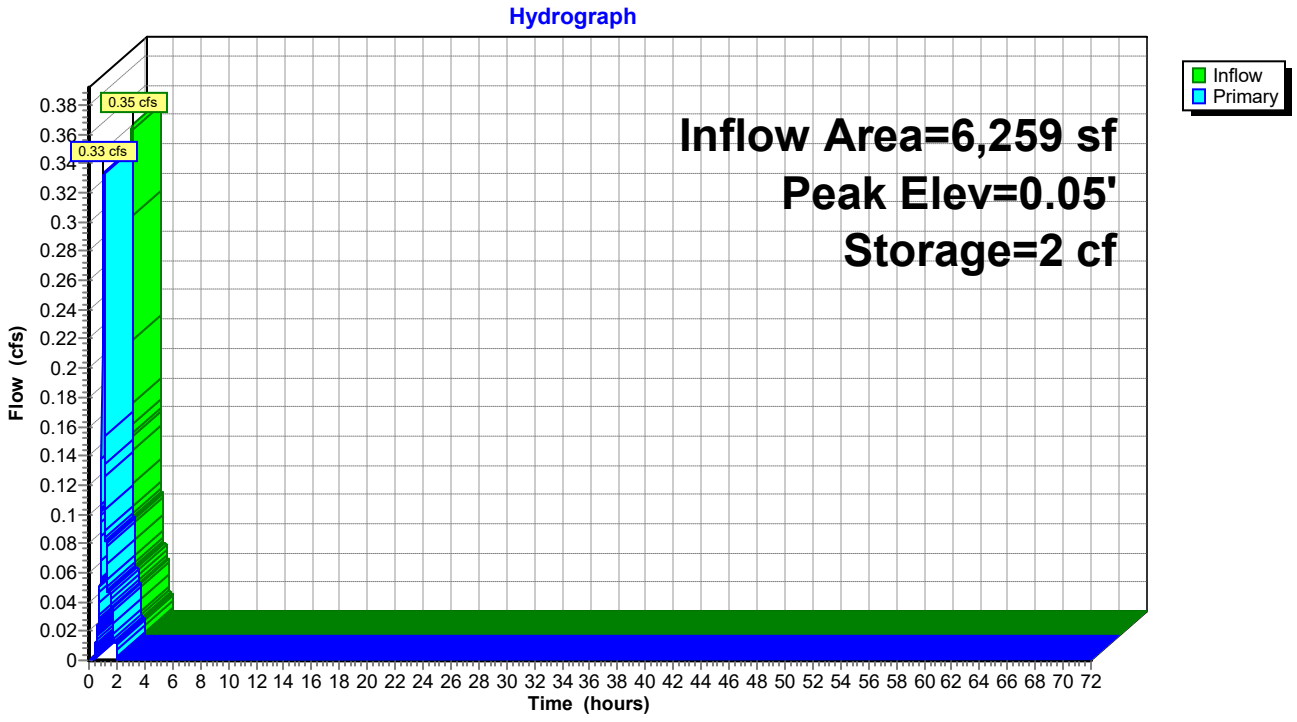
Plug-Flow detention time= 0.7 min calculated for 414 cf (99% of inflow)
Center-of-Mass det. time= 0.0 min (66.8 - 66.8)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	36 cf	**8.00'W x 6.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.33 cfs @ 1.04 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.33 cfs @ 0.01 fps)

Pond 18FT: 8x6 FT



Summary for Pond 21FT: 6x4 FT

Inflow Area = 2,320 sf, 88.36% Impervious, Inflow Depth = 0.93" for WQ event
Inflow = 0.15 cfs @ 1.08 hrs, Volume= 181 cf
Outflow = 0.15 cfs @ 1.08 hrs, Volume= 181 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.15 cfs @ 1.08 hrs, Volume= 181 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.01' @ 1.08 hrs Surf.Area= 24 sf Storage= 0 cf

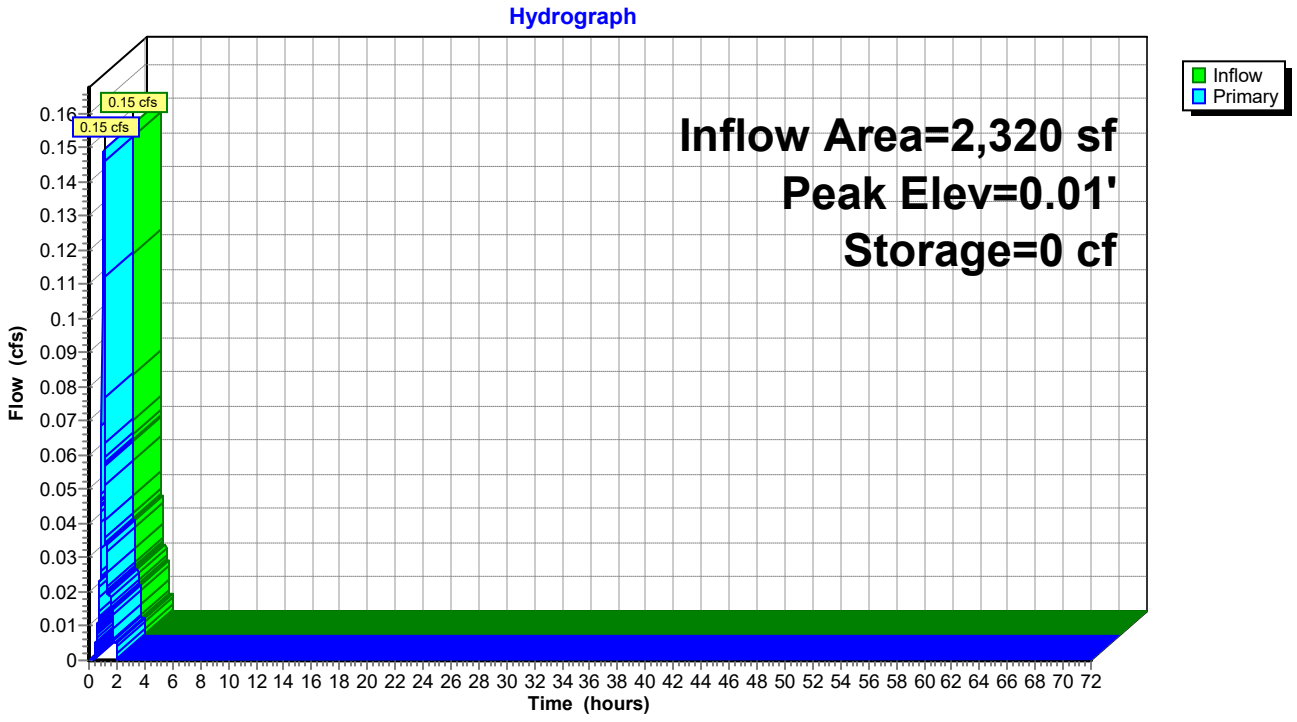
Plug-Flow detention time= 0.0 min calculated for 181 cf (100% of inflow)
Center-of-Mass det. time= 0.0 min (66.2 - 66.2)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	18 cf	**6.00'W x 4.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.17 cfs @ 1.08 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.17 cfs @ 0.01 fps)

Pond 21FT: 6x4 FT



Summary for Pond 22FT: 8x6 FT

Inflow Area = 9,140 sf, 42.59% Impervious, Inflow Depth = 0.54" for WQ event
Inflow = 0.36 cfs @ 1.08 hrs, Volume= 411 cf
Outflow = 0.33 cfs @ 1.06 hrs, Volume= 405 cf, Atten= 7%, Lag= 0.0 min
Primary = 0.33 cfs @ 1.06 hrs, Volume= 405 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 0.05' @ 1.09 hrs Surf.Area= 48 sf Storage= 3 cf

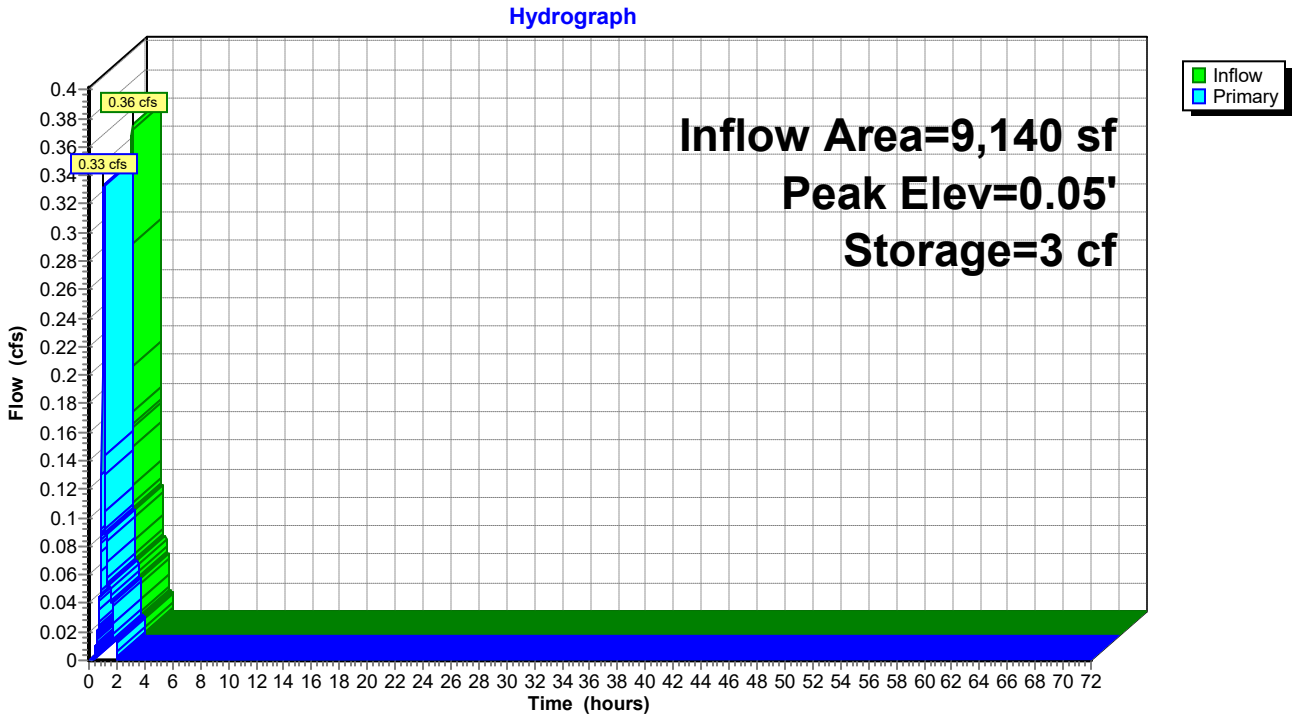
Plug-Flow detention time= 0.8 min calculated for 405 cf (98% of inflow)
Center-of-Mass det. time= 0.0 min (68.3 - 68.2)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	36 cf	**8.00'W x 6.00'L x 0.75'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**300.000 in/hr Exfiltration over Surface area**

Primary OutFlow Max=0.33 cfs @ 1.06 hrs HW=0.01' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.33 cfs @ 0.01 fps)

Pond 22FT: 8x6 FT



State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER QUALITY
Bureau of Stormwater Permitting
401 East State Street
P.O. Box 420 Mail Code 401-02B
Trenton, NJ 08625-0420
Tel. (609) 633-7021 • Fax (609) 777-0432
www.nj.gov/dep/dwq/bnpc_home.htm

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

SHAWN M. LATOURETTE
Acting Commissioner

February 12, 2021

Derek M. Berg
Director – Stormwater Regulatory Management - East
Contech Engineered Solutions LLC
71 US Route 1, Suite F
Scarborough, ME 04074

Re: MTD Lab Certification
Filterra® HC Bioretention System
Off-line Installation Approved

TSS Removal Rate 80%

Dear Mr. Berg:

The Stormwater Management rules under N.J.A.C. 7:8-5.5(b) and 5.7(c) allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards at N.J.A.C. 7:8-5 if the pollutant removal rates have been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and have been certified by the New Jersey Department of Environmental Protection (NJDEP). Contech Engineered Solutions LLC has requested a Laboratory Certification for the Filterra® HC Bioretention System (Filterra® HC.)

The project falls under the "Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advance Technology" dated January 25, 2013. The applicable protocol is the "New Jersey Department of Environmental Protection Laboratory Protocol to Assess Total Suspended Solids Removal by a Filtration Manufactured Treatment Device" dated January 25, 2013.

NJCAT verification documents submitted to the NJDEP indicate that the requirements of the aforementioned protocol have been met or exceeded. The NJCAT letter also included a recommended certification TSS removal rate and the required maintenance plan. The NJCAT Verification Report with the Verification Appendix (dated January 2021) for this device is published online at http://www.njcat.org/uploads/newDocs/NJCATFilterraTechnologyVerificationReportFinal._.pdf.

The NJDEP certifies the use of the Filterra® HC stormwater treatment unit by Contech Engineered Solutions LLC at a TSS removal rate of 80% when designed, operated, and maintained in accordance with the information provided in the Verification Appendix and the following conditions:

1. The maximum treatment flow rate (MTFR) for the manufactured treatment device (MTD) is calculated using the New Jersey Water Quality Design Storm (1.25 inches in 2 hrs) in N.J.A.C. 7:8-5.5. The MTFR is calculated based on a verified loading rate of 3.12 gpm/ft^2 of effective filtration treatment area.

2. The Filterra® HC stormwater treatment unit shall be installed using the same configuration reviewed by NJCAT, and sized in accordance with the criteria specified in item 7 below.

3. This device cannot be used in series with another MTD or a media filter (such as a sand filter) to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.

4. Additional design criteria for MTDs can be found in the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual, which can be found online at www.njstormwater.org.

5. The maintenance plan for a site using this device shall incorporate, at a minimum, the maintenance requirements for the Filterra® HC. A copy of the maintenance plan is attached to this certification. However, it is recommended to review the maintenance website at https://www.conteches.com/Portals/0/Documents/Maintenance%20Guides/Filterra%20HC%20OM%20Packet.pdf for any changes to the maintenance requirements.

6. For an MTD to be considered "green infrastructure" (GI) in accordance with the March 2, 2020 amendments to the Stormwater Management rules at N.J.A.C. 7:8, the MTD must meet the GI definition noted at amended N.J.A.C. 7:8-1.2. Specifically, the MTD shall (1) treat stormwater runoff through infiltration into subsoil; and/or (2) treat stormwater runoff through filtration by vegetation or soil; or (3) store stormwater runoff for reuse.

   The Filterra® HC filters stormwater runoff through an engineered biofiltration soil media and, thus, meets the definition of GI. Filterra® HC can be configured with or without a precast vault. Installations that will not include a precast vault will additionally need to comply the NJDEP Stormwater BMP Manual conditions regarding separation from the seasonal high water table and, if infiltration is proposed as an outlet, minimum vertical saturated hydraulic conductivity of the subsoil. Installations without a precast vault that do not rely on infiltration are required to maintain at least a one-foot separation from the seasonal high water table measured from the lowest point of the system. Installations without a precast vault that utilize infiltration are required to have the most hydraulically restrictive soil layer below the MTD meet the minimum tested vertical saturated hydraulic conductivity of one inch per hour and have at least two feet of separation from the seasonal high water table measured from the lowest point of the system.

7. Sizing Requirement:

The example below demonstrates the sizing procedure for the Filterra® HC:

Example: A 0.25-acre impervious site is to be treated to 80% TSS removal using the Filterra® HC. The impervious site runoff (Q) based on the New Jersey Water Quality Design Storm was determined to be 0.79 cfs.

The selection of the appropriate model of Filterra® HC is based upon both the maximum inflow drainage area and the MTFR. It is necessary to calculate the required model using both methods and to use the largest model determined by the two methods.

Inflow Drainage Area Evaluation:

The drainage area to the Filterra® HC in this example is 0.25 acres. Included in Table 1 below, all of the Filterra® HC models are designed with a maximum allowable drainage area greater than 0.25 acres. Specifically, the Filterra® HC with a 4'x4' media bay and a maximum allowable drainage area of 0.40 acres would be the smallest model able to treat runoff without exceeding the maximum allowable drainage area.

Maximum Treatment Flow Rate (MTFR) Evaluation:

The site runoff (Q) was based on the following:
time of concentration = 10 minutes
i = 3.2 in/hr (page 5-8, Fig. 5-3 of the NJ Stormwater BMP Manual)
c = 0.99 (runoff coefficient for impervious)
Q = ciA = 0.99 x 3.2 x 0.25 = 0.79 cfs

Given the site runoff is 0.79 cfs and based on the MTFR's listed in Table 1 below, the Filterra® HC with a 16'x8' media bay and an MTFR of 0.889 cfs would be the smallest model that could be used to treat the impervious area without exceeding the MTFR. If using more than one unit for treating runoff, the units should be configured such that the flowrate to each unit does not exceed the design MTFR for each unit and ensuring the entire 0.25 acre area is treated.

The MTFR evaluation results will be used since that method results in the highest minimum configuration determined by the two methods.

The sizing table corresponding to the available system models is noted below:

Table 1. Filterra® HC MTFRs and Maximum Allowable Drainage Areas

	Available Filterra® Media Bay Sizes (feet)	Effective Filtration Treatment Area (ft^2)	Treatment Flow Rate (cfs)	Maximum Allowable Drainage Area (ac)
Standard Configuration Filterra and Filterra Biosape Vaults	4x4	16	0.111	0.40
	4x6 or 6x4	24	0.167	0.60
	4.5x7.83 or 7.83x4.5 (Nominal 4x8/8x4)	35.24	0.245	0.89
	6x6	36	0.250	0.91
	6x8 or 8x6	48	0.333	1.21
	6x10 or 10x6	60	0.417	1.51
	6x12 or 12x6	72	0.500	1.81
	7x13 or 13x7	91	0.632	2.29
	14x8	112	0.778	2.82
	16x8	128	0.889	3.22
	18x8	144	1.000	3.62
	20x8	160	1.111	4.03
	22x8	176	1.222	4.43
Peak Diversion Filterra Vaults	4x4	16	0.111	0.40
	4.5x5.83 (Nominal 4x6)	26.24	0.182	0.66
	6x4	24	0.167	0.60
	6x6	36	0.250	0.91
	6x8	48	0.333	1.21
	6x10 or 10x6	60	0.417	1.51
	7x10	70	0.486	1.76
	8x10.5	84	0.583	2.11
	8x12.5	100	0.694	2.52
	Custom and/or Filterra Bioscape	Media Area in ft^2	0.00694 * (Media Area in ft^2)	0.0252 * (Media Area in ft^2)

Be advised a detailed maintenance plan is mandatory for any project with a Stormwater BMP subject to the Stormwater Management rules, N.J.A.C. 7:8. The plan must include all of the items identified in the Stormwater Management rules, N.J.A.C. 7:8-5.8. Such items include, but are not limited to, the list of inspection and maintenance equipment and tools, specific corrective and preventative maintenance tasks, indication of problems in the system, and training of maintenance personnel. Additional information can be found in Chapter 8: Maintenance and Retrofit of Stormwater Management Measures.

If you have any questions regarding the above information, please contact me at (609) 633-7021.

Sincerely,



Gabriel Mahon, Chief
Bureau of Stormwater Permitting

Attachment: Maintenance Plan
cc: Chron File
Richard Magee, NJCAT
Vince Mazzei, NJDEP – Water & Land Management
Nancy Kempel, NJDEP– BSTP
Keith Stampfel, NJDEP – DLRP
Dennis Contois, NJDEP – DLRP

Filterra HC
Owner's Manual



filterra®

Bioretention Systems

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Bioretention Systems

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CONTECH®
ENGINEERED SOLUTIONS

Introduction

Thank you for your purchase of the Filterra® HC Bioretention System. Filterra HC is a specially engineered stormwater treatment system incorporating high performance biofiltration media to remove pollutants from stormwater runoff. All components of the system work together to provide a sustainable long-term solution for treating stormwater runoff.

The Filterra HC system has been delivered to you with protection in place to resist intrusion of construction related sediment which can contaminate the biofiltration media and result in inadequate system performance. These protection devices are intended as a best practice and cannot fully prevent contamination. It is the purchaser's responsibility to provide adequate measures to prevent construction related runoff from entering the Filterra HC system.

Included with your purchase is Activation of the Filterra HC system by the manufacturer as well as a 1-year warranty from delivery of the system and 1-year of routine maintenance (mulch replacement, debris removal, and pruning of vegetation) up to twice during the first year after activation.

Design and Installation

Each project presents different scopes for the use of Filterra HC systems. Information and help may be provided to the design engineer during the planning process. Correct Filterra HC box sizing (per local regulations) is essential to predict pollutant removal rates for a given area. The engineer shall submit calculations for approval by the local jurisdiction. The contractor is responsible for the correct installation of Filterra HC units as shown in approved plans. A comprehensive installation manual covering all Filterra configurations is available at www.ContechES.com.

Activation Overview

Activation of the Filterra HC system is a procedure completed by the manufacturer to place the system into working condition. This involves the following items:

- Removal of construction runoff protection devices
- Planting of the system's vegetation
- Placement of pretreatment mulch layer using mulch certified for use in Filterra HC systems.

Activation MUST be provided by the manufacturer to ensure proper site conditions are met for Activation, proper installation of the vegetation, and use of pretreatment mulch certified for use in Filterra HC systems.



Minimum Requirements

The minimum requirements for Filterra HC Activation are as follows:

1. The site landscaping must be fully stabilized, i.e. full landscaping installed and some grass cover (not just straw and seed) is required to reduce sediment transport. Construction debris and materials should be removed from surrounding area.



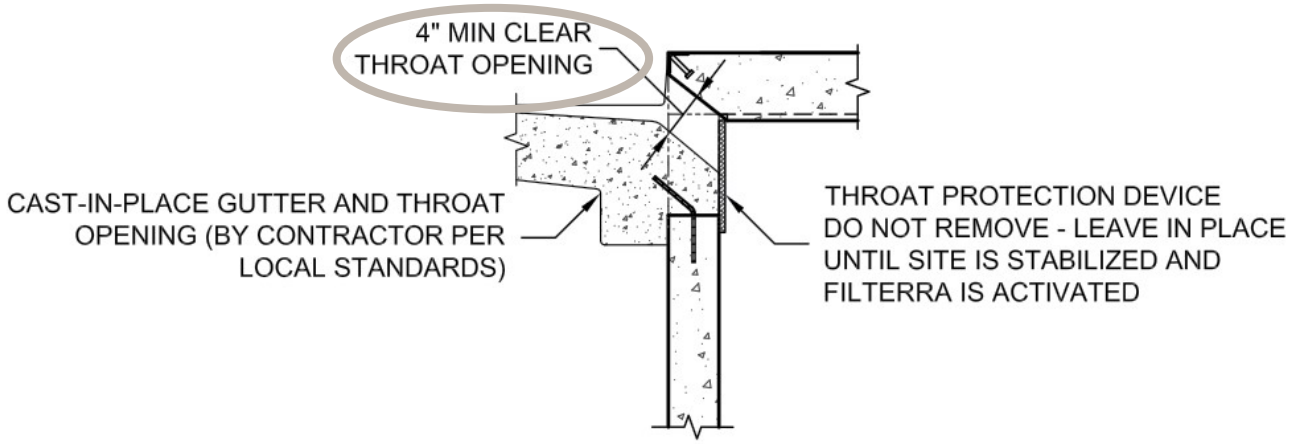


2. Final paving must be completed. Final paving ensures that paving materials will not enter and contaminate the Filterra HC system during the paving process, and that the plant will receive runoff from the drainage area, assisting with plant survival for the Filterra HC system.





3. Filterra HC throat opening (if applicable) should be at least 4" in order to ensure adequate capacity for inflow and debris.



An Activation Checklist is included on page 12 to ensure proper conditions are met for Contech to perform the Activation services. A charge of $500.00 will be invoiced for each Activation visit requested by Customer where Contech determines that the site does not meet the conditions required for Activation.

Filterra HC Plant Selection Overview

Plant Lists are available on the Contech website highlighting recommended plants for Filterra systems in your area. Keep in mind that plants are subject to availability due to seasonality and required minimum size for the Filterra HC system. Plants installed in the Filterra HC system are container plants (max 15 gallon) from nursery stock and will be immature in height and spread at Activation.

It is the responsibility of the owner to provide adequate irrigation when necessary to the plant of the Filterra HC system.

The "Planting Requirements for Filterra HC Systems" document is included as an appendix and discusses proper selection and care of the plants within Filterra HC systems.

Warranty Overview

Refer to the Contech Engineered Solutions LLC Stormwater Treatment System LIMITED WARRANTY for further information. The following conditions may void the Filterra HC system's warranty and waive the manufacturer provided Activation and Maintenance services:

- Unauthorized activation or performance of any of the items listed in the activation overview
- Any tampering, modifications or damage to the Filterra HC system or runoff protection devices
- Removal of any Filterra HC system components
- Failure to prevent construction related runoff from entering the Filterra HC system
- Failure to properly store and protect any Filterra HC components (including media and underdrain stone) that may be shipped separately from the vault

Routine Maintenance Guidelines

Routine maintenance is included by the manufacturer on all Filterra HC systems for the first year after activation. This includes a maximum of 2 visits to remove debris, replace pretreatment mulch, and prune the vegetation. More information is provided in the Operations and Maintenance Guidelines. Some Filterra HC systems also contain diversion bypass or outlet bays. Depending on site pollutant loading, these bays may require periodic removal of debris, however this is not included in the first year of maintenance and would likely not be required within the first year of operation.

These services, as well as routine maintenance outside of the included first year, can be provided by certified maintenance providers listed on the Contech website. Training can also be provided to other stormwater maintenance or landscape providers.



Why Maintain?

All stormwater treatment systems require maintenance for effective operation. This necessity is often incorporated in your property's permitting process as a legally binding BMP maintenance agreement. Other reasons to maintain are:

- Avoiding legal challenges from your jurisdiction's maintenance enforcement program.
- Prolonging the expected lifespan the media in the Filterra HC system.
- Avoiding more costly media replacement.
- Helping reduce pollutant loads leaving your property.

Simple maintenance of the Filterra HC is required to continue effective pollutant removal from stormwater runoff before discharge into downstream waters. This procedure will also extend the longevity of the living biofilter system. The Filterra HC system is also subjected to various materials entering the inlet, including trash, silt, leaves, etc. which will be contained above the mulch layer. Too much silt may inhibit the Filterra HC system flow rate, which is the reason for site stabilization before activation. Regular replacement of the mulch stops accumulation of such sediment.

If the system is not maintained on regular intervals, is subject to a catastrophic spill or other event, or subject to unusual pollutant loading, full media bed replacement could be required. Please contact Contech for further evaluation if you feel this may be necessary.

When to Maintain?

Contech includes a 1-year maintenance plan with each system purchase. Annual included maintenance consists of a maximum of two (2) scheduled visits. Additional maintenance may be necessary depending on sediment and trash loading (by Owner or at additional cost). The start of the maintenance plan begins when the system is activated.

Maintenance visits are scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands while the fall visit helps the system by removing excessive leaf litter.

It has been found that in regions which receive between 30-50 inches of annual rainfall, (2) two visits are generally required; regions with less rainfall often only require (1) one visit per annum. Varying land uses can affect maintenance frequency;

e.g. some fast food restaurants require more frequent trash removal. Contributing drainage areas which are subject to new development wherein the recommended erosion and sediment control measures have not been implemented may require additional maintenance visits.

Some sites may be subjected to extreme sediment or trash loads, requiring more frequent maintenance visits. This is the reason for detailed notes of maintenance actions per unit, helping the Supplier and Owner predict future maintenance frequencies, reflecting individual site conditions.

Owners must promptly notify the (maintenance) Supplier of any damage to the plant(s), which constitute(s) an integral part of the bioretention technology. Owners should also advise other landscape or maintenance contractors to leave all maintenance to the Supplier (i.e. no pruning or fertilizing) during the first year.



Exclusion of Services

Clean up due to major contamination such as oils, chemicals, toxic spills, etc. will result in additional costs and are not covered under the Supplier maintenance contract. Should a major contamination event occur the Owner must block off the outlet pipe of the Filterra HC (where the cleaned runoff drains to, such as drop inlet) and block off the inlet of the Filterra HC. The Supplier should be informed immediately.

Maintenance Visit Summary

Each maintenance visit consists of the following simple tasks (detailed instructions below).

1. Inspection of Filterra HC and surrounding area
2. Removal of tree grate and erosion control stones
3. Removal of debris, trash and mulch
4. Mulch replacement
5. Plant health evaluation & pruning or replacement as necessary
6. Clean area around Filterra HC
7. Complete paperwork

Maintenance Tools, Safety Equipment and Supplies

Ideal tools include camera, bucket, shovel, broom, pruners, hoe/rake, and tape measure. Appropriate Personal Protective Equipment (PPE) should be used in accordance with local or company procedures. This may include impervious gloves where the type of trash is unknown, high visibility clothing and barricades when working near traffic and also safety hats and shoes. A T-Bar or crowbar should be used for moving the tree grates (up to 170 lbs ea.). Most visits require minor trash removal and a full replacement of mulch. See below for actual number of bagged mulch that is required in each media bay size. Mulch should be a double shredded, hardwood variety. Some visits may require additional Filterra engineered soil media for the Filterra HC system, available from the Supplier.

	Available Filterra® HC Media Bay Sizes (feet)	Filter Surface Area (ft^2)	Mulch Volume at 3" Depth (ft^2)	# of 2 ft^2 Mulch Bags
Standard Configuration Filterra and Filterra Biosape Vaults	4x4	16	4	2
	4x6 or 6x4	24	6	3
	4.5x7.83 or 7.83x4.5 (Nominal 4x8/8x4)	35.24	9	5
	6x6	36	9	5
	6x8 or 8x6	48	12	6
	6x10 or 10x6	60	15	8
	6x12 or 12x6	72	18	9
	7x13 or 13x7	91	23	12
	14x8	112	28	14
	16x8	128	32	16
	18x8	144	36	18
	20x8	160	40	20
	22x8	176	44	22
Peak Diversion Filterra Vaults	4x4	16	4	2
	4.5x5.83 or 5.83x4.5 (Nominal 4x6/6x4)	26.24	7	4
	6x6	36	9	5
	6x8	48	12	6
	6x10 or 10x6	60	15	8
	7x10	70	18	9
	8x10.5	84	21	11
	8x12.5	100	25	13
	Custom and/or Filterra Bioscape	Media Area in ft^2	0.25 x (Media Area in ft^2)	0.125 x (Media Area in ft^2)

Maintenance Visit Procedure

Keep sufficient documentation of maintenance actions to predict location specific maintenance frequencies and needs. An example Maintenance Report is included in this manual.



1. Inspection of Filterra HC and surrounding area

- Record individual unit before maintenance with photograph (numbered). Record on Maintenance Report (see example in this document) the following:

Record on Maintenance Report the following:

Standing Water	yes | no
Damage to Box Structure	yes | no
Damage to Grate	yes | no
Is Bypass Clear	yes | no

If yes answered to any of these observations, record with close-up photograph (numbered).



2. Removal of tree grate and erosion control stones

- Remove cast iron grates for access into Filterra HC box.
- Dig out silt (if any) and mulch and remove trash & foreign items.

3. Removal of debris, trash and mulch

Record on Maintenance Report the following:

Silt/Clay	yes | no
Cups/ Bags	yes | no
Leaves	yes | no
Buckets Removed	_____



- After removal of mulch and debris, measure distance from the top of the Filterra engineered media soil to the top of the top slab. Compare the measured distance to the distance shown on the approved Contract Drawings for the system. Add Filterra media (not top soil or other) to bring media up as needed to distance indicated on drawings.

Record on Maintenance Report the following:

Distance to Top of Top Slab (inches)	_____
Inches of Media Added	_____



4. Mulch replacement

- Add double shredded mulch evenly across the entire unit to a depth of 3″.
- Refer to Filterra Mulch Specifications for information on acceptable sources.
- Ensure correct repositioning of erosion control stones by the Filterra HC inlet to allow for entry of trash during a storm event.
- Replace Filterra HC grates correctly using appropriate lifting or moving tools, taking care not to damage the plant.



5. Plant health evaluation and pruning or replacement as necessary

- Examine the plant's health and replace if necessary.
- Prune as necessary to encourage growth in the correct directions

Record on Maintenance Report the following:

Height above Grate	_____ (ft)
Width at Widest Point	_____ (ft)
Health	healthy | unhealthy
Damage to Plant	yes | no
Plant Replaced	yes | no



6. Clean area around Filterra HC

- Clean area around unit and remove all refuse to be disposed of appropriately.



7. Complete paperwork

- Deliver Maintenance Report and photographs to appropriate location (normally Contech during maintenance contract period).
- Some jurisdictions may require submission of maintenance reports in accordance with approvals. It is the responsibility of the Owner to comply with local regulations.

Maintenance Checklist

Drainage System Failure	Problem	Conditions to Check	Condition that Should Exist	Actions
Inlet	Excessive sediment or trash accumulation.	Accumulated sediments or trash impair free flow of water into Filterra HC.	Inlet should be free of obstructions allowing free distributed flow of water into Filterra HC HC.	Sediments and/or trash should be removed.
Mulch Cover	Trash and floatable debris accumulation.	Excessive trash and/or debris accumulation.	Minimal trash or other debris on mulch cover.	Trash and debris should be removed and mulch cover raked level. Ensure bark nugget mulch is not used.
Mulch Cover	"Ponding" of water on mulch cover.	"Ponding" in unit could be indicative of clogging due to excessive fine sediment accumulation or spill of petroleum oils.	Stormwater should drain freely and evenly through mulch cover.	Recommend contact manufacturer and replace mulch as a minimum.
Vegetation	Plants not growing or in poor condition.	Soil/mulch too wet, evidence of spill. Incorrect plant selection. Pest infestation. Vandalism to plants.	Plants should be healthy and pest free.	Contact manufacturer for advice.
Vegetation	Plant growth excessive.	Plants should be appropriate to the species and location of Filterra HC.		Trim/prune plants in accordance with typical landscaping and safety needs.
Structure	Structure has visible cracks.	Cracks wider than 1/2 inch or evidence of soil particles entering the structure through the cracks.		Vault should be repaired.
Maintenance is ideally to be performed twice annually.				

Filterra HC Inspection & Maintenance Log

Filterra HC System Size/Model: _____ **Location:** _____

Date	Mulch & Debris Removed	Depth of Mulch Added	Mulch Brand	Height of Vegetation Above Grate	Vegetation Species	Issues with System	Comments
1/1/17	*5 – 5 gal Buckets*	*3"*	*Lowe's Premium Brown Mulch*	*4'*	*Galaxy Magnolia*	*- Standing water in downstream structure*	*- Removed blockage in downstream structure*

Appendix 1 – Filterra® Activation Checklist

CONTECH® ENGINEERED SOLUTIONS

Project Name: _____ Company: _____

Site Contact Name: _____ Site Contact Phone/Email: _____

Site Owner/End User Name: _____ Site Owner/End User Phone/Email: _____

Preferred Activation Date: _____ (provide 2 weeks minimum from date this form is submitted)

Site Designation	System Size	Final Pavement / Top Coat Complete	Landscaping Complete / Grass Emerging	Construction materials / Piles / Debris Removed	Throat Opening Measures 4" Min. Height	Plant Species Requested
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	
		☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	

Attach additional sheets as necessary.

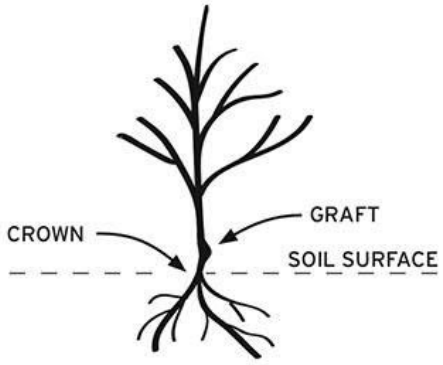
NOTE: A charge of $500.00 will be invoiced for each Activation visit requested by Customer where Contech determines that the site does not meet the conditions required for Activation. ONLY Contech authorized representatives can perform Activation of Filterra HC systems; unauthorized Activations will void the system warranty and waive manufacturer supplied Activation and 1st Year Maintenance.

_____ _____

Signature Date

Appendix 2 – Planting Requirements for Filterra® HC Systems

Plant Material Selection



- Select plant(s) as specified in the engineering plans and specifications.
- Select plant(s) with full root development but not to the point where root bound.
- Use local nursery container plants only. Ball and burlapped plants are not permitted.
- For precast Filterra HC systems with a tree grate, plant(s) must not have scaffold limbs at least 14 inches from the crown due to spacing between the top of the mulch and the tree grate. Lower branches can be pruned away provided there are sufficient scaffold branches for tree or shrub development.
- For precast Filterra HC systems with a tree grate, at the time of installation, it is required that plant(s) must be at least 6" above the tree grate opening at installation for all Filterra configurations. This DOES NOT apply to Full Grate Cover designs.
- Plant(s) shall not have a mature height greater than 25-30 feet.
- A 7-15 gallon container size shall be used.
- For precast Filterra HC systems, plant(s) should have a single trunk at installation, and pruning may be necessary at activation and maintenance for some of the faster growing species, or species known to produce basal sprouts

Plant Installation

- During transport protect the plant leaves from wind and excessive jostling.
- Prior to removing the plant(s) from the container, ensure the soil moisture is sufficient to maintain the integrity of the root ball. If needed, pre-wet the container plant.
- Cut away any roots which are growing out of the container drain holes. Plants with excessive root growth from the drain holes should be rejected.
- Plant(s) should be carefully removed from the pot by gently pounding on the sides of the container with the fist to loosen root ball. Then carefully slide out. Do not lift plant(s) by trunk as this can break roots and cause soil to fall off. Extract the root ball in a horizontal position and support it to prevent it from breaking apart. Alternatively, the pot can be cut away to minimize root ball disturbance.
- Remove any excess soil from above the root flare after removing plant(s) from container.
- Excavate a hole with a diameter 4" greater than the root ball, gently place the plant(s).
- If plant(s) have any circling roots from being pot bound, gently tease them loose without breaking them.
- If root ball has a root mat on the bottom, it should be shaved off with a knife just above the mat line.
- Plant the tree/shrub/grass with the top of the root ball 1" above surrounding media to allow for settling.
- All plants should have the main stem centered in the tree grate (where applicable) upon completion of installation.
- With all trees/shrubs, remove dead, diseased, crossed/rubbing, sharply crotched branches or branches growing excessively long or in wrong direction compared to majority of branches.
- To prevent transplant shock (especially if planting takes place in the hot season), it may be necessary to prune some of the foliage to compensate for reduced root uptake capacity. This is accomplished by pruning away some of the smaller secondary branches or a main scaffold branch if there are too many. Too much foliage relative to the root ball can dehydrate and damage the plant.
- Plant staking may be required.

Mulch Installation

- Only mulch that has been meeting Contech Engineered Solutions' mulch specifications can be used in the Filterra HC system.
- Mulch must be applied to a depth of 3" evenly over the surface of the media.

Irrigation Requirements

- Each Filterra HC system must receive adequate irrigation to ensure survival of the living system during periods of drier weather.
- Irrigation sources include rainfall runoff from downspouts and/or gutter flow, applied water through the tree grate or in some cases from an irrigation system with emitters installed during construction.
- At Activation: Apply about one (cool climates) to two (warm climates) gallons of water per inch of trunk diameter over the root ball.
- During Establishment: In common with all plants, each Filterra HC plant will require more frequent watering during the establishment period. One inch of applied water per week for the first three months is recommended for cooler climates (2 to 3 inches for warmer climates). If the system is receiving rainfall runoff from the drainage area, then irrigation may not be needed. Inspection of the soil moisture content can be evaluated by gently brushing aside the mulch layer and feeling the soil. Be sure to replace the mulch when the assessment is complete. Irrigate as needed**.
- Established Plants: Established plants have fully developed root systems and can access the entire water column in the media. Therefore, irrigation is less frequent but requires more applied water when performed. For a mature system assume 3.5 inches of available water within the media matrix. Irrigation demand can be estimated as 1" of irrigation demand per week. Therefore, if dry periods exceed 3 weeks, irrigation may be required. It is also important to recognize that plants which are exposed to windy areas and reflected heat from paved surfaces may need more frequent irrigation. Long term care should develop a history which is more site specific.

** Five gallons per square yard approximates 1 inch of water. Therefore, for a 6' by 6' Filterra HC approximately 20-60 gallons of water is needed. To ensure even distribution of water it needs to be evenly sprinkled over the entire surface of the filter bed, with special attention to make sure the root ball is completely wetted. NOTE: if needed, measure the time it takes to fill a five-gallon bucket to estimate the applied water flow rate then calculate the time needed to irrigate the Filterra HC system. For example, if the flow rate of the sprinkler is 5 gallons/minute then it would take 12 minutes to irrigate a 6' by 6' filter.



Notes

filterra®
Bioretention Systems

CONTECH®
ENGINEERED SOLUTIONS

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www.ContechES.com

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PDF 1/21

Cascade Design Summary

West Essex Highlands

West Orange Twp, NJ
8/26/24

Information provided by Engineer:

- Presiding Agency = NJDEP
- TSS Removal Required = 50%

Sizing Summary:

The Cascade Separator is a hydrodynamic separator designed to protect waterways from stormwater runoff. The Cascade Separator is commonly used as a standalone stormwater quality control practice that provides pretreatment to detention, infiltration, bioretention, and rainwater harvesting systems. This innovative treatment product excels at sediment capture and retention while also removing hydrocarbons, trash, and debris from the stormwater runoff. The Cascade Separator is NJCAT verified and as a result has received final certification from the NJDEP for 50% TSS removal.

For this project, each Cascade Separator was designed to treat the water quality design storm. The required Cascade model size was based on the information provided by the Engineer of Record summarized below:

Site Designation	WQ Flow Rate (cfs)	Cascade Separator Model Size	NJDEP Certified MTFR (cfs)
MTD-1	0.26	CS-3	1.02
MTD-2	0.35	CS-3	1.02
MTD-19	1.68	CS-4	1.80
MTD-20	0.38	CS-3	1.02

Maintenance:

Like any stormwater best management practice, the Cascade Separator requires regular inspection and maintenance to ensure optimal performance. Maintenance frequency will be driven by site conditions. Bi-annual visual inspections are recommended, at which time the accumulation of pollutants can be determined. On average, the Cascade Separator requires annual removal of accumulated pollutants.

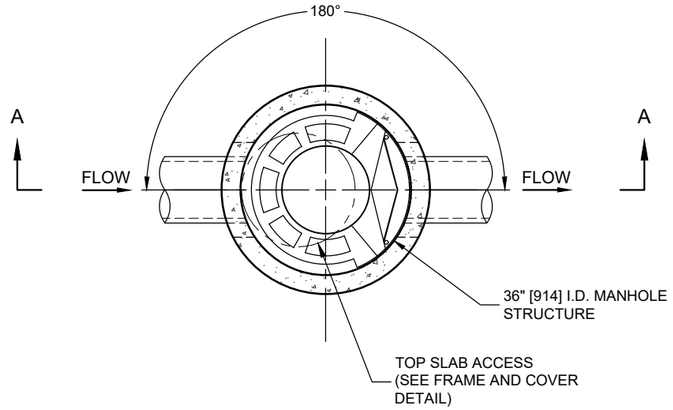
Thank you for the opportunity to present this information to you and your client.

Sincerely,

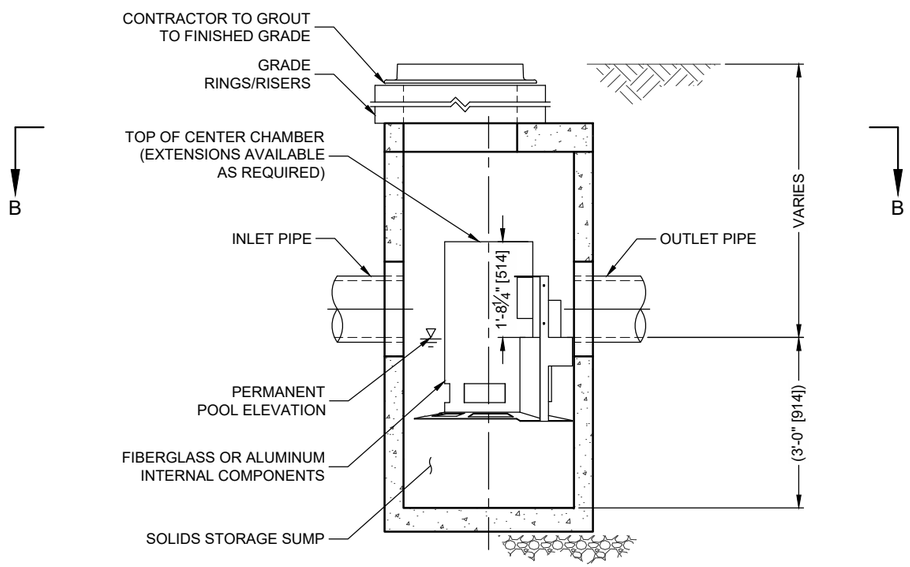
Taylor Murdock
Stormwater Design Engineer
Contech Engineered Solutions LLC

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7037 Ridge Road, Suite 350 | Hanover, MD 21076
Office: 443.457.1500 Fax: 410.740.8492



PLAN VIEW B-B
NOT TO SCALE

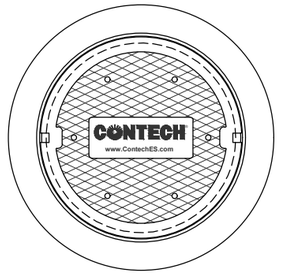


ELEVATION A-A
NOT TO SCALE

CASCADE separator™

CASCADE SEPARATOR DESIGN NOTES

THE STANDARD CS-3 CONFIGURATION IS SHOWN



FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (cfs [L/s])	
PEAK FLOW RATE (cfs [L/s])	
RETURN PERIOD OF PEAK FLOW (yrs)	
RIM ELEVATION	

PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			

NOTES / SPECIAL REQUIREMENTS:

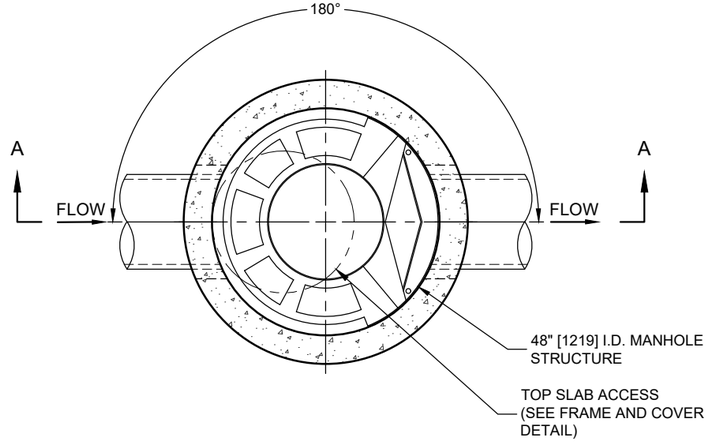
GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

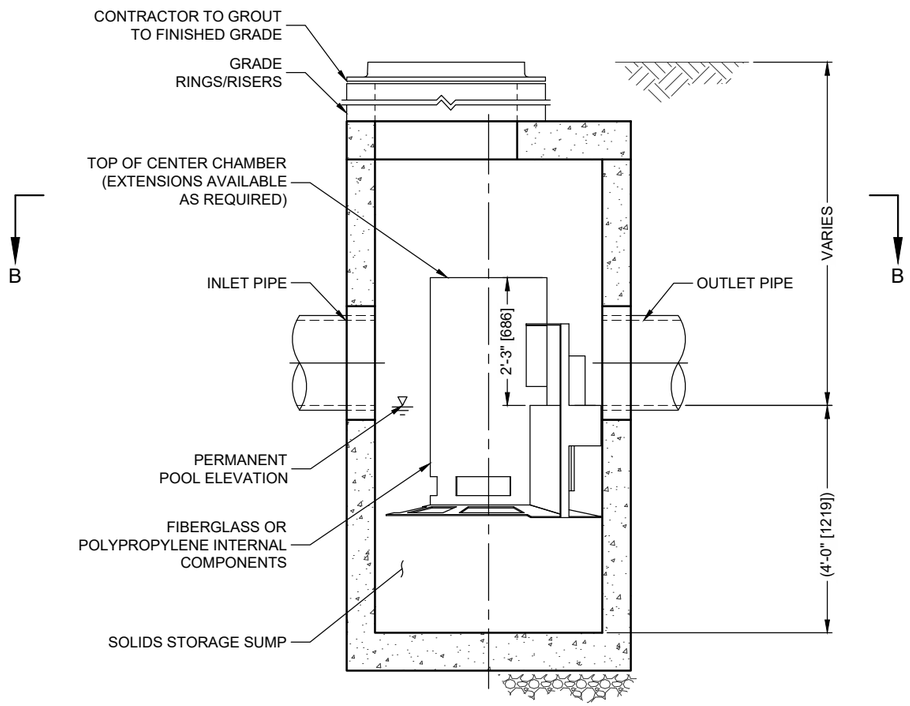
CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CS-3
CASCADE SEPARATOR
STANDARD DETAIL

I:\COMMON\CAD\TREATMENT\21 CASCADE\40 STANDARD DRAWINGS\INJ SPECIFICATION DTLS\DWG\IN PROCESS\CS-3-NJ-DTL.DWG 6/26/2023 2:20 PM



PLAN VIEW B-B
NOT TO SCALE

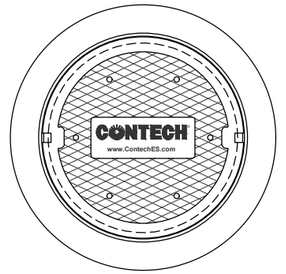


ELEVATION A-A
NOT TO SCALE

CASCADE separator™

CASCADE SEPARATOR DESIGN NOTES

THE STANDARD CS-4 CONFIGURATION IS SHOWN.



FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (cfs [L/s])	
PEAK FLOW RATE (cfs [L/s])	
RETURN PERIOD OF PEAK FLOW (yrs)	
RIM ELEVATION	

PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			

NOTES / SPECIAL REQUIREMENTS:

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C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CS-4
CASCADE SEPARATOR
STANDARD DETAIL

I:\COMMON\CAD\TREATMENT\21 CASCADE\40 STANDARD DRAWINGS\NJ SPECIFICATION DTL\SIDWG\IN PROCESS\CS-4-NJ-DTL.DWG 6/26/2023 2:17 PM

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Nonpoint Pollution Control
Division of Water Quality
401-02B
Post Office Box 420
Trenton, New Jersey 08625-0420
609-633-7021 Fax: 609-777-0432
http://www.state.nj.us/dep/dwq/bnpc_home.htm

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

CATHERINE R. MCCABE
Commissioner

May 18, 2020

Derek M. Berg
Director – Stormwater Regulatory Management - East
Contech Engineered Solutions LLC
71 US Route 1, Suite F
Scarborough, ME 04074

Re: MTD Lab Certification
Cascade Separator™
On-line Installation

TSS Removal Rate 50%

Dear Mr. Berg:

This revised certification letter supersedes the Department's prior certification dated October 1, 2019. This revision was completed to reflect Contech's enhanced fabrication capability to manufacture a smaller-size unit of its the Cascade Separator™ Manufactured Treatment Device (MTD), while still meeting the scaling methodology as agreed upon by the manufacturers' working group on September 19, 2016. Based on this modification, Table A-1 of the New Jersey Corporation for Advanced Technology (NJCAT) Verification report located at http://www.njcat.org/uploads/newDocs/NJCATTechnologyVerificationFinal.pdf has been revised to specify this smaller unit and associated maximum treatment flow rate. Table 1 below has been revised to reflect this same updated model size and flow rate.

The Stormwater Management rules under N.J.A.C. 7:8-5.5(b) and 5.7(c) allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards at N.J.A.C. 7:8-5 if the pollutant removal rates have been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and have been certified by the New Jersey Department of Environmental Protection (NJDEP). Contech Engineered Solutions, LLC (Contech) has requested an MTD Laboratory Certification for the Cascade Separator™ stormwater treatment system.

The project falls under the "Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advance Technology" dated January 25,

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2013. The applicable protocol is the "New Jersey Laboratory Testing Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device" dated January 25, 2013.

NJCAT verification documents submitted to the NJDEP indicate that the requirements of the aforementioned protocol have been met or exceeded. The NJCAT letter also included a recommended certification TSS removal rate and the required maintenance plan. The NJCAT Verification Report with the Verification Appendix (dated September 2019) for this device is published online at http://www.njcat.org/verification-process/technology-verification-database.html.

The NJDEP certifies the use of the Cascade Separator™ stormwater treatment system at a TSS removal rate of 50% when designed, operated, and maintained in accordance with the information provided in the Verification Appendix and the following conditions:

1. The maximum treatment flow rate (MTFR) for the manufactured treatment device (MTD) is calculated using the New Jersey Water Quality Design Storm (1.25 inches in 2 hrs) in N.J.A.C. 7:8-5.5.

2. The Cascade Separator™ shall be installed using the same configuration reviewed by NJCAT and shall be sized in accordance with the criteria specified in item 6 below.

3. This Cascade Separator™ cannot be used in series with another MTD or a media filter (such as a sand filter) to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.

4. Additional design criteria for MTDs can be found in Chapter 9.6 of the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual, which can be found online at www.njstormwater.org.

5. The maintenance plan for a site using this device shall incorporate, at a minimum, the maintenance requirements for the Cascade Separator™. A copy of the maintenance plan is attached to this certification. However, it is recommended to review the maintenance website at https://www.conteches.com/Portals/0/Documents/Maintenance%20Guides/Cascade-Maintenance%20Guide.pdf?ver=2018-11-05-093254-300. for any changes to the maintenance requirements.

6. Sizing Requirement:

   The example below demonstrates the sizing procedure for the Cascade Separator™:

   Example: A 0.25-acre impervious site is to be treated to 50% TSS removal using a Cascade Separator™. The impervious site runoff (Q) based on the New Jersey Water Quality Design Storm was determined to be 0.79 cfs.

   Maximum Treatment Flow Rate (MTFR) Evaluation:

   The site runoff (Q) was based on the following:

time of concentration = 10 minutes
i = 3.2 in/hr (page 5-8, Fig. 5-3 of the NJ Stormwater BMP Manual)
c = 0.99 (runoff coefficient for impervious)
Q = ciA = 0.99 x 3.2 x 0.25 = 0.79 cfs

Given the site runoff is 0.79 cfs and based on Table A-1 below, the Cascade Separator™ Model CS-3 with an MTFR of 1.02 cfs would be the smallest model approved that could be used for this site to remove 50% of the TSS from the impervious area without exceeding the MTFR.

The sizing table corresponding to the available system models is noted below. Additional specifications regarding each model can be found in the Verification Appendix under Table A-1.

Table A-1 Cascade Separator™ Models and Associated MTFRs

Model	Manhole Diameter (ft)	MTFR (cfs)	50% Maximum Sediment Storage Area Volume (ft^3)
CS-3	3	1.02	5.3
CS-4	4	1.80	9.4
CS-5	5	2.81	14.7
CS-6	6	4.05	21.2
CS-8	8	7.20	37.7
CS-10	10	11.3	58.9
CS-12	12	16.2	84.8

A detailed maintenance plan is mandatory for any project with a stormwater BMP subject to the Stormwater Management rules under N.J.A.C. 7:8. The plan must include all of the items identified in the Maintenance requirements section of the Stormwater Management rules under N.J.A.C. 7:8-5.8. Such items include, but are not limited to, the list of inspection and maintenance equipment and tools, specific corrective and preventative maintenance tasks, indication of problems in the system, and training of maintenance personnel. Additional information can be found in Chapter 8: Maintenance and Retrofit of Stormwater Management Measures.

If you have any questions regarding the above information, please contact Brian Salvo of my office at (609) 633-7021.

Sincerely,

Gabriel Mahon

Gabriel Mahon, Chief
Bureau of Nonpoint Pollution Control

Attachment: Maintenance Plan

cc: Chron File
Richard Magee, NJCAT
Jim Murphy, NJDEP-BNPC
Vince Mazzei, NJDEP-DLUR
Brian Salvo, NJDEP-BNPC

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Cascade Separator™ Inspection and Maintenance Guide



CASCADE
separator™

Maintenance

The Cascade Separator™ system should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects sediment and debris will depend upon on-site activities and site pollutant characteristics. For example, unstable soils or heavy winter sanding will cause the sediment storage sump to fill more quickly but regular sweeping of paved surfaces will slow accumulation.

Inspection

Inspection is the key to effective maintenance and is easily performed. Pollutant transport and deposition may vary from year to year and regular inspections will help ensure that the system is cleaned out at the appropriate time. At a minimum, inspections should be performed twice per year (i.e. spring and fall). However, more frequent inspections may be necessary in climates where winter sanding operations may lead to rapid accumulations, or in equipment wash-down areas. Installations should also be inspected more frequently where excessive amounts of trash are expected.

A visual inspection should ascertain that the system components are in working order and that there are no blockages or obstructions in the inlet chamber, flumes or outlet channel. The inspection should also quantify the accumulation of hydrocarbons, trash and sediment in the system. Measuring pollutant accumulation can be done with a calibrated dipstick, tape measure or other measuring instrument. If absorbent material is used for enhanced removal of hydrocarbons, the level of discoloration of the sorbent material should also be identified during inspection. It is useful and often required as part of an operating permit to keep a record of each inspection. A simple form for doing so is provided in this Inspection and Maintenance Guide.

Access to the Cascade Separator unit is typically achieved through one manhole access cover. The opening allows for inspection and cleanout of the center chamber (cylinder) and sediment storage sump, as well as inspection of the inlet chamber and slanted skirt. For large units, multiple manhole covers allow access to the chambers and sump.

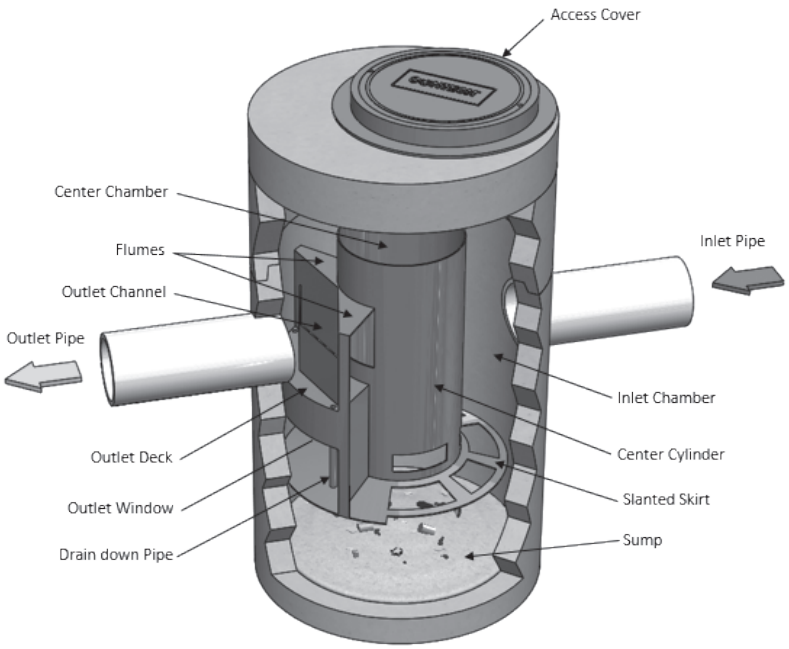
The Cascade Separator system should be cleaned before the level of sediment in the sump reaches the maximum sediment depth and/or when an appreciable level of hydrocarbons and trash has accumulated. If sorbent material is used, it must be replaced when significant discoloration has occurred. Performance may be impacted when maximum sediment storage capacity is exceeded. Contech recommends maintaining the system when sediment level reaches the 50% storage volume. The level of sediment is easily determined by measuring from finished grade down to the top of the sediment pile. To avoid underestimating the level of sediment in the chamber, the measuring device must be lowered to the top of the sediment pile carefully. Finer, silty particles at the top of the pile typically offer less resistance to the end of the rod than larger particles toward the bottom of the pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine if the height of the sediment pile off the bottom of the sump floor exceeds 50% of the total height of sediment storage sump.

Cleaning

Cleaning of a Cascade Separator system should be done during dry weather conditions when no flow is entering the system. The use of a vacuum truck is generally the most effective and convenient method of removing pollutants from the system. Simply remove the manhole cover and insert the vacuum hose down through the center chamber and into the sump. The system should be completely drained down and the sump fully evacuated of sediment. The areas outside the center chamber and the slanted skirt should also be washed off if pollutant build-up exists in these areas.

In installations where the risk of petroleum spills is small, liquid contaminants may not accumulate as quickly as sediment. However, the system should be cleaned out immediately in the event of an oil or gasoline spill. Motor oil and other hydrocarbons that accumulate on a more routine basis should be removed when an appreciable layer has been captured. To remove these pollutants, it may be preferable to use absorbent pads since they are usually less expensive to dispose than the oil/water emulsion that may be created by vacuuming the oily layer. Trash and debris can be netted out to separate it from the other pollutants. Then the system should be power washed to ensure it is free of trash and debris.

Manhole covers should be securely seated following cleaning activities to prevent leakage of runoff into the system from above and to ensure proper safety precautions. Confined space entry procedures need to be followed if physical access is required. Disposal of all material removed from the Cascade Separator system must be done is accordance with local regulations. In many locations, disposal of evacuated sediments may be handled in the same manner as disposal of sediments removed from catch basins or deep sump manholes. Check your local regulations for specific requirements on disposal. If any components are damaged, replacement parts can be ordered from the manufacturer.



Cascade Separator Inspection & Maintenance Log

Cascade Model:			Location:		
Date	Water Depth to Sediment[1]	Floatable Layer Thickness[2]	Describe Maintenance Performed	Maintenance Personnel	Comments

1. The depth to sediment is determined by taking a measurement from the manhole opening to the top of the sediment pile. Once this measurement is recorded, it should be compared to the as-built drawing for the unit to determine if the height of the sediment pile off the bottom of the sump floor exceeds 50% of the total height of sediment storage sump. Note: to avoid underestimating the volume of sediment in the chamber, the measuring device must be carefully lowered to the top of the sediment pile.
2. For optimum performance, the system should be cleaned out when the floating hydrocarbon layer accumulates to an appreciable thickness. In the event of an oil spill, the system should be cleaned immediately.



A Cascade Separator unit can be easily cleaned in less than 30 minutes.



A vacuum truck excavates pollutants from the systems.

SUPPORT

- Drawings and specifications are available at www.ContechES.com.
- Site-specific design support is available from our engineers.

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