

Stormwater Management Report

St. John's Memorial Preserve

6135 Rings Road, Dublin, OH

February 11, 2026



02/11/2026

Date



Seal





1.0 INTRODUCTION

The following report provides a detailed analysis and design of the Stormwater Management Plan for St. John’s Memorial Preserve, a proposed plot expansion in the City of Dublin, Franklin County, Ohio. The proposed site is located south of Rings Road located at 6135 Rings Road, City of Dublin, OH. The project area is divided into multiple drainage areas, as shown in Exhibits 1 and 2 in Appendix A. The Stormwater Management Plan was designed to meet the City of Dublin stormwater management requirements as well as the water quality requirements, and utilizing the Cramer Creek Discharge Rates for sub-basin 1630. The runoff from this site will be routed to several different bio-retention basins with orifice plates for water quality treatment. The detention basins will eventually discharge to proposed 12-inch storm sewers that will eventually discharge to an existing ditch located approximately the center of the project area.

Project Name: St. John’s Memorial Preserve
Location: 6135 Rings Road, City of Dublin, Franklin County, Ohio
Type: Stormwater Management Plan
Reviewing Agency: City of Dublin
Rainfall Data: City of Dublin Stormwater Drainage Manual (January 2019, Table 2-5)

**Table 1-1
Rainfall Event Frequency**

Rain Event	Rainfall (in)
1-yr	2.20"
2-yr	2.63"
5-yr	3.24"
10-yr	3.74"
25-yr	4.44"
50-yr	5.02"
100-yr	5.63"

Rainfall Distribution: NRCS Type II 24 Hour
Detention Policy: City of Dublin
Water Quality: City of Dublin
Hydrology Modeling Program: HydroCAD 10.20

Design:

Detention: Bioretention Basins
Water Quality: Orifice Plate
Receiving Body: Proposed 12-in storm sewers, which eventually discharge to the existing Cramer ditch.



2.0 HYDROLOGIC ANALYSIS

Hydrologic parameters such as Runoff Curve Number (RCN) and Time of Concentration were determined using standard Natural Resources Conservation Service (NRCS) methodology. The 1-, 2-, 5-, 10-, 25-, and 100-year discharge amounts were calculated using the NRCS TR-55 method. This analysis reflects the NRCS Type II distribution, 24-hr storm duration. Rainfall depths were obtained from City of Dublin Stormwater Drainage Manual, January 2019. The peak flow rates were computed using the HydroCAD 10.20 Computer Program.

3.0 PRE-DEVELOPED ANALYSIS

The pre-developed condition, as shown on Exhibit 1 in Appendix A, consists of multiple subareas. Pre-developed subarea characteristics are detailed in Table 3-1. Times of concentration calculations are included in the HydroCAD output in Appendix D. The time of concentration flow paths can be found on Exhibit 1. Table 3-2 shows the peak flow rates for pre-developed conditions.

Table 3-1
Pre-Developed Subarea Characteristics

Subarea Identifier	Tributary Area (Acres)	% Impervious	Runoff Curve Number (equivalent)	Time of Concentration (minutes)
Existing Pond	3.566	44%	87.32	3.5
Existing Pond 1	1.831	4%	80.00	2.5
Existing Pond 2	0.586	8%	81.00	1.8
Existing Ponds 3 and 4	1.831	5%	80.00	6.1
Existing Ponds and 6	0.947	0%	79.00	2.8
Existing Pond 7	1.174	0%	79.00	3.7
Existing Pond 8	0.632	0%	79.00	6.3



**Table 3-2
Pre-Developed Peak Flow Rates**

Storm Event (year)	Existing Pond Peak Flow Rates (cfs)	Existing Pond 1 Peak Flow Rates (cfs)	Existing Pond 2 Peak Flow Rates (cfs)	Existing Pond 3 and 4 Peak Flow Rates (cfs)	Existing Pond 5 and 6 Peak Flow Rates (cfs)
1-yr	7.26	2.49	0.88	2.10	1.24
2-yr	9.61	3.58	1.24	3.03	1.82
5-yr	13.02	5.23	1.79	4.45	2.70
10-yr	15.86	6.65	2.25	5.68	3.45
25-yr	19.84	8.70	2.92	7.44	4.55
50-yr	23.14	10.43	3.49	8.94	5.48
100-yr	26.61	12.27	4.09	10.52	6.48

**Table 3-2 (cont'd)
Pre-Developed Peak Flow Rates**

Storm Event (year)	Existing Pond 7 Peak Flow Rates (cfs)	Existing Pond 8 Peak Flow Rates (cfs)
1-yr	1.37	0.67
2-yr	2.01	0.98
5-yr	2.99	1.46
10-yr	3.85	1.87
25-yr	5.08	2.47
50-yr	6.12	2.98
100-yr	7.24	3.53



4.0 POST-DEVELOPED ANALYSIS

The post-developed condition, as shown on Exhibit 2 in Appendix A, consists of several subareas. Post-developed subarea characteristics are detailed in Table 4-1. The time of concentration calculations for the subareas are included within the HydroCAD output, which can be found in Appendix E. Runoff from the proposed development will be routed to a series of bio-retention basins for water quality treatment and for peak runoff control.

**Table 4-1
Pre-Developed Subarea Characteristics**

Subarea Identifier	Tributary Area (Acres)	% Impervious	Runoff Curve Number (equivalent)	Time of Concentration (minutes)
Existing Pond	3.566	48%	88.07	6.6
Existing Pond 1	1.831	4%	80.00	2.5
Existing Pond 2	0.586	9%	85.00	1.8
Existing Ponds 3 and 4	1.831	5%	80.00	6.1
Existing Ponds 5 and 6	0.947	0%	79.00	2.8
Existing Pond 7	1.174	0%	79.00	3.7
Existing Pond 8	0.632	0%	79.00	6.3



The 1-year runoff volume for Post-Developed increases to based on the following

$$\% \text{ Increase} = \frac{[(\text{POST} - \text{PRE})/\text{PRE}] \times 100}$$

Table 4-2
Post-Developed Subarea Critical Storms

Subarea Identifier	[PRE] 1-Year Storm Runoff Volume (cf)	[POST] 1-Year Storm Runoff Volume (cf)	Percent Increase	Critical Storm
Existing Pond	13,779	14,610	6.03%	1-YR
Proposed Pond 1	4,573	5,556	21.50%	5-YR
Proposed Pond 2	1,563	2,009	28.53%	5-YR
Proposed Ponds 3 and 4	4,573	5,547	21.30%	5-YR
Proposed Ponds 5 and 6	2,347	3,046	29.78%	5-YR
Proposed Pond 7	2,742	3,349	22.14%	5-YR
Proposed Pond 8	1,476	2,039	38.14%	5-YR



Allowable release rates are calculated in Table 4-3.

**Table 4-3
Allowable Release Rates**

Storm Event (year)	Total Allowable Release Rates						
	Existing Pond (cfs)	Proposed Pond 1 (cfs)	Proposed Pond 2 (cfs)	Proposed Ponds 3 and 4 (cfs)	Proposed Ponds 5 and 6 (cfs)	Proposed Pond 7 (cfs)	Proposed Pond 8 (cfs)
1-yr	7.26	2.49	0.88	2.10	1.24	1.37	0.67
2-yr	9.61	2.49	0.88	2.10	1.24	1.37	0.67
5-yr	13.02	2.49	0.88	2.10	1.24	1.37	0.67
10-yr	15.86	6.65	2.25	5.68	3.45	3.85	1.87
25-yr	19.84	8.70	2.92	7.44	4.55	5.08	2.47
50-yr	23.14	10.43	3.49	8.94	5.48	6.12	2.98
100-yr	26.61	12.27	4.09	10.52	6.48	7.24	3.53

**Table 4-4
Proposed Release Rates**

Storm Event (year)	Proposed Release Rates						
	Existing Pond (cfs)	Proposed Pond 1 (cfs)	Proposed Pond 2 (cfs)	Proposed Ponds 3 and 4 (cfs)	Proposed Ponds 5 and 6 (cfs)	Proposed Pond 7 (cfs)	Proposed Pond 8 (cfs)
1-yr	7.26	0.09	0.02	0.16	0.01	0.41	0.10
2-yr	9.61	0.12	0.02	0.25	0.05	0.69	0.29
5-yr	13.02	0.18	0.22	0.34	0.14	0.96	0.66
10-yr	15.86	0.55	0.50	0.81	0.40	1.79	1.22
25-yr	19.84	1.34	1.16	1.73	0.96	3.47	2.02
50-yr	23.14	2.17	1.88	2.72	1.49	3.86	2.45
100-yr	26.61	3.25	2.35	3.58	2.03	4.19	2.79



Proposed ponds 1, 2, 3 and 4, 5 and 6 will outlet into Cramer Creek. A total area of 8.876 acres are tributary to the creek in the pre-developed condition. The release rate for 1-year storm event in sub-basin 1630 in the Cramer Creek Watershed is equal to 0.1 cfs/acre X the total acreage, so the release rate = $(0.1 \text{ cfs/acre} \times 8.876 \text{ acres}) = 0.8876 \text{ cfs}$. Per the City of Dublin Stormwater Design Manual the sum of the release rates for the 5-year critical storm for basins 1, 2, 3 and 4, 5 and 6, must be equal to or less than 0.8876 cfs.

Using the release rates provided in Table 4-4 the sum of the release rates of the above mentioned basins is 0.88 cfs.

5.0 OUTLET DESIGN

The proposed outlet structures, are located on the downstream side of the bio-retention basins and are designed to provide adequate release runoff from the post-developed site at or below the allowable release rates shown in Table 4-2. The proposed outlet structure is described below.

Proposed Outlet Structure – Existing Pond

- Bottom Elevation: 910.42 feet
- 1st stage outlet: 5.2-in orifice drilled into plate, at invert at 910.42 feet
- 2nd stage outlet: broad crested weir invert at 915.00 feet
- Tailwater Control: 18-in outlet pipe with 0.22% slope, invert at 910.42 feet

Proposed Outlet Structure – Proposed Pond 1

- Bottom Elevation: 913.00 feet
- 1st stage outlet: 2.5-in orifice drilled into plate, at invert at 913.35 feet
- 2nd stage outlet: horizontal window (24-in wide x 8-in tall), at invert at 914.30 feet
- Tailwater Control: 12-in outlet pipe with 0.44% slope, invert at 913.00 feet

Proposed Outlet Structure – Proposed Pond 2

- Bottom Elevation: 914.00 feet
- 1st stage outlet: 1.0-in orifice drilled into plate, at invert at 914.60 feet
- 2nd stage outlet: horizontal window (24-in wide x 5-in tall), at invert at 915.38 feet
- Tailwater Control: 12-in outlet pipe with 0.44% slope, invert at 914.00 feet

Proposed Outlet Structure – Proposed Ponds 3 and 4*

- Bottom Elevation: 912.00 feet
- 1st stage outlet: 4-in orifice drilled into plate, at invert at 912.35 feet
- 2nd stage outlet: horizontal window (24-in wide x 6-in tall), at invert at 913.18 feet
- Tailwater Control: 12-in outlet pipe with 0.44% slope, invert at 912.00 feet



Proposed Outlet Structure – Proposed Ponds 5 and 6**

- Bottom Elevation: 916.00 feet
- 1st stage outlet: 3.0-in orifice drilled into plate, at invert at 916.40 feet
- 2nd stage outlet: horizontal window (24-in wide x 6-in tall), at invert at 917.28 feet
- Tailwater Control: 12-in outlet pipe with 0.44% slope, invert at 916.00 feet

Proposed Outlet Structure – Proposed Pond 7

- Bottom Elevation: 917.00 feet
- 1st stage outlet: 6.5-in orifice drilled into plate, at invert at 917.80 feet
- 2nd stage outlet: horizontal window (24-in wide x 6-in tall), at invert at 918.92 feet
- Tailwater Control: 12-in outlet pipe with 0.44% slope, invert at 917.00 feet

Proposed Outlet Structure – Proposed Pond 8

- Bottom Elevation: 918.00 feet
- 1st stage outlet: 2 - 5-in orifices drilled into plate, each orifice at invert at 918.90 feet
- 2nd stage outlet: horizontal window (24-in wide x 3-in tall), at invert at 919.39 feet
- Tailwater Control: 12-in outlet pipe with 0.44% slope, invert at 918.00 feet

*Ponds 3 and 4 will be linked by a 12-in equalizing pipe with invert at 912.00 feet and at 0.00% slope.

**Ponds 5 and 6 will be linked by a 12-in equalizing pipe with invert at 916.00 feet and at 0.00% slope.



6.0 BASIN MAINTENANCE AND INSPECTION

The property owner shall be responsible for the inspection and maintenance of the stormwater facilities and associated outlet structures. Inspections and maintenance that are conducted shall be documented by the owner. For initial sediment control, refer to the Sediment and Erosion Control Plan included with the Construction Plans. The following table details long-term maintenance strategies. Maintenance and inspection procedures for the proposed Basin are included on the construction plans.

**Table 6-1
Maintenance and Inspection Table**

Inspection Item	Maintenance Procedures	Frequency¹
Outlet Structure	Remove accumulated sediment and debris from the pipe and grate.	Every 6 months
Storm Sewer System	Remove debris from the sewer system to ensure positive flow to the basin.	Every 6 months
Stormwater Sediment Accumulation/Clogging	Monitor sediment accumulations and clogging.	Every 6 months

¹The inspection frequency can be adjusted based upon the review of the first year inspection results. Refer to Construction Plans for a more detailed operation and maintenance plan.

7.0 POST-CONSTRUCTION WATER QUALITY

Water quality will be treated through infiltration in each bioretention basin.

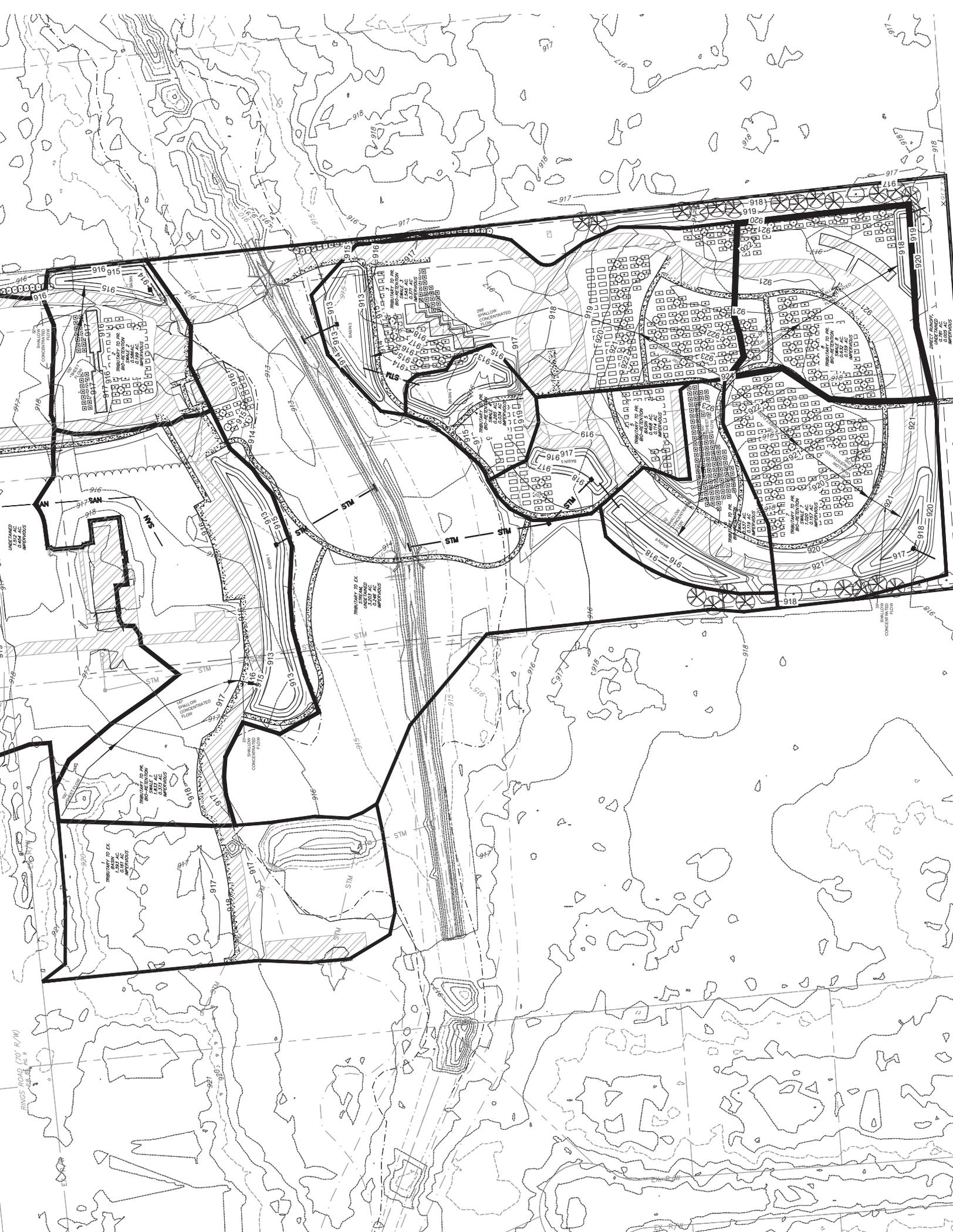
8.0 CONCLUSION

The proposed stormwater management plan for the St. Johns meets all requirements for detention and water quality as set forth by the City of Dublin.

Appendix A:

Exhibits





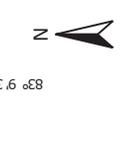
Appendix B:

Soils

Soil Map—Franklin County, Ohio



Map Scale: 1:3,660 if printed on A landscape (11" x 8.5") sheet.
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84



MAP LEGEND

-  Area of Interest (AOI)
-  Soil Map Unit Polygons
-  Soil Map Unit Lines
-  Soil Map Unit Points
- Special Point Features**
-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features
- Water Features**
-  Streams and Canals
- Transportation**
-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads
- Background**
-  Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

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

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

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

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

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

Soil Survey Area: Franklin County, Ohio
 Survey Area Data: Version 24, Aug 27, 2025

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

Date(s) aerial images were photographed: Mar 1, 2024—Jul 1, 2024

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CeB2	Celina silt loam, 2 to 6 percent slopes, eroded	3.8	6.4%
CrA	Crosby silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	28.0	47.8%
Ko	Kokomo silty clay loam, 0 to 2 percent slopes	18.7	32.1%
LeB	Lewisburg-Crosby complex, 2 to 6 percent slopes	8.0	13.7%
Totals for Area of Interest		58.5	100.0%

Appendix C:
Water Quality
Calculation

PRE-CONDITION

1S	Pre Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN	1S	[PRE] 1-Year Storm Runoff Volume (cf) =
	Paved/parking lots, C	1.562	98	68.041	87.322		13,779
	50-75% Grass Cover, Fair, HSG C	2.004	79	87.294			
	subtotal =	3.566		155.335			
		0.438					
	Sheet	160	920	918	0.013	Paved	
	Shallow Concentrated	147	918	915	0.020	Grass	
		307.000					

EXISTING POND

POST-CONDITION

2S	Post Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN	2S	[POST] 1-Year Storm Runoff Volume (cf) =
	Paved/parking lots, C	1.703	98	74.183	88.074		14,610
	50-75% Grass Cover, Fair, HSG C	1.863	79	81.152			
	subtotal =	3.566		155.335			
		0.478					
	Sheet	300	921	918	0.010	Paved	
	Shallow Concentrated	212	918	915	0.014	Grass	
		512.000					

Percent Increase (POST-[PRE])/[PRE] = 6.08%
 Critical Storm Equals = 1-year ***
 Peak Runoff Rate 1-Year, Pre-Developed = 7.26 cfs
 *** Based on Design Manual Table 2-5 "Critical Storm Determination"

TABLE 2-5 CRITICAL STORM DETERMINATION
 If the Percent of Increase in Runoff Volume is

Equal to or Greater than	And less than	The Critical Storm Runoff Rate Will Be Limited to:
---	10	1 year
10	20	2 year
20	50	5 year
50	100	10 year
100	250	25 year
250	500	50 year
500	---	100 year

Year	Rainfall	1S	2S	Diff (cf)
1	2.20	13779	14610	831 Critical Storm
2	2.63	18389	19331	942
5	3.24	25246	26316	1070
10	3.74	31059	32213	1155
25	4.44	39392	40844	1252
50	5.02	46421	47739	1318
100	5.63	53902	55277	1375

Max = 1375 cf

Water Quality Volume

WQV = RV * P / (A * I)
 0.47989831 = 0.05 * 0.90 (I)
 0.4776 = i = fraction of impervious area
 0.9 = P = precipitation depth (in)
 3.57 = A = drainage area (Ac.)
 WQV = 0.128 (Acft)
 5,589.84 ft³

RUNOFF RATES (cfs)

Year	1S	Pre (cfs)	Required	1P	Post (cfs)	Difference
WQV	1	7.26	7.26	1.28	Good	
	2	9.61	9.61	1.37	Good	
	5	13.02	13.02	1.50	Good	
	10	15.86	15.86	4.66	Good	
	25	19.84	19.84	10.21	Good	
	50	23.14	23.14	13.18	Good	
	100	26.61	26.61	23.16	Good	

Critical Storm is the 1-year Storm

PRE-CONDITION

Pre-Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN
3S Paved parking lots, C	0.688	98	2.982	79.706
50-75% Grass Cover, Fair, HSG C	1.763	79	76.796	
subtotal =	1.831		79.758	
	0.037			

Flow Length	US	DS	Slope
100	920	917.41	0.026
200	917.41	916.05	0.007
2,000			

3S [PRE] 1-Year Storm Runoff Volume (cf) = 4.573

BASIN 1

POST-CONDITION

Post-Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN
4S Paved parking lots, C	0.373	98	16.248	82.866
50-75% Grass Cover, Fair, HSG C	1.460	79	63.598	
subtotal =	1.833		79.845	
	0.203			

Flow Length	US	DS	Slope
100	920	918.5	0.015
167	918.5	916	0.015
267,000			

4S [POST] 1-Year Storm Runoff Volume (cf) = 5.566

Percent Increase (POST-[PRE])/[PRE] = 21.50%
 Critical Storm Equals = 5-year ***
 Peak Runoff Rate 1-Year, Pre-Developed = 2.49 cfs
 *** Based on Design Manual Table 2-5 "Critical Storm Determination"

TABLE 2-5 CRITICAL STORM DETERMINATION
 If the Percent of Increase in Runoff Volume is

Equal to or Greater than	And less than	The Critical Storm Runoff Rate Will Be Limited to:
---	10	1 year
10	20	2 year
20	50	5 year
50	100	10 year
100	250	25 year
250	500	50 year
500	--	100 year

Year	Rainfall	3S Pre (cf)	4S Post (cf)	Diff (cf)
1	2.20	4573	5566	983
2	2.63	6513	7865	1172
5	3.24	9523	10926	1403 Critical Storm
10	3.74	12156	13721	1565
25	4.44	16021	17781	1760
50	5.02	19343	21240	1897
100	5.63	22925	24947	2022

Max = 2022 cf

Water Quality Volume

WQV = Rv*P*(A12)
 0.23314239 Rv = Volumetric Runoff Coefficient = 0.05 + 0.90(i)
 i = fraction of impervious area = 0.2035
 P = precipitation depth (in) = 0.9
 A = drainage area (Ac.) = 1.83
 WQV = 0.032 (Acft)
 1,396.15 ft³

RUNOFF RATES (cfs)

Year	3S Pre (cfs)	4S Post (cfs)	Difference
1	2.49	2.49	0.09
2	3.38	2.49	0.12
5	5.23	2.49	0.18 Good
10	6.65	6.65	0.55 Good
25	8.70	8.70	1.34 Good
50	10.43	10.43	2.17 Good
100	12.27	12.27	3.25 Good

Critical Storm is the 5-year Storm

PRE-CONDITION

5S [PRE] 1-Year Storm Runoff Volume (cf) = 1,563

BASIN 2

Pre Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN
Paved parking lots, C	0.047	98	2.047	80.524
50-75% Grass Cover, Fair, HSG C	0.539	79	23.479	
subtotal =	0.586		25.526	
	0.080			

Flow Length	US	DS	Slope
100	916.13	915.63	0.025
			Grass
91	915.63	913.63	0.022
			Grass
191.000			

6S [POST] 1-Year Storm Runoff Volume (cf) = 2,009

Post Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN
Paved parking lots, C	0.199	98	8.888	85.52
50-75% Grass Cover, Fair, HSG C	0.387	79	16.658	
subtotal =	0.586		25.526	
	0.340			

Flow Length	US	DS	Slope
100	916.5	916	0.015
			Paved
32	916.5	916	0.016
			Grass
132.000			

Percent Increase (POST-[PRE])/[PRE] = 28.63%
 Critical Storm Equals = 5-year ***
 Peak Runoff Rate 1-Year, Pre-Developed = 0.88 cfs
 *** Based on Design Manual Table 2-5 "Critical Storm Determination"

TABLE 2-5 CRITICAL STORM DETERMINATION
 If the Percent of Increase in Runoff Volume is

Equal to or Greater than	And less than	The Critical Storm Runoff Rate Will Be Limited to:
---	10	1 year
10	20	2 year
20	50	5 year
50	100	10 year
100	250	25 year
250	500	50 year
500	--	100 year

Year	Rainfall	5S Pre (cf)	6S Post (cf)	Dif (cf)
1	2.20	1563	2009	446
2	2.63	2204	2729	525
5	3.24	3192	3812	620 Critical Storm
10	3.74	4052	4737	685
25	4.44	5310	6072	762
50	5.02	6388	7204	816
100	5.63	7348	8412	864

Max = 864 cf

Water Quality Volume

WQV = Rv*P*(A/12)

0.3568314 Rv = Volumetric Runoff Coefficient

= 0.05 + 0.90(i)

0.386 i = fraction of impervious area

0.9 P = precipitation depth (in)

0.59 A = drainage area (Ac.)

WQV = 0.016 (Ac-ft)

680.84 ft³

RUNOFF RATES (cfs)

Year	5S Pre (cfs)	Required	3P Post (cfs)	Difference
1	0.88	0.88	0.02	Good
2	1.24	0.88	0.02	Good
5	1.79	0.88	0.22	Good
10	2.25	2.25	0.50	Good
25	2.92	2.92	1.16	Good
50	3.49	3.49	1.88	Good
100	4.09	4.09	2.35	Good

Critical Storm is the 5-year Storm

PRE-CONDITION

Basins 3 and 4

9S [PRE] 1-Year Storm Runoff Volume (cf) = 4,573

Basins 3 and 4

Pre Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN
Paved parking lots, C	0.084	98	3.659	79.872
50-75% Grass Cover, Fair, HSG C	1.747	79	76.099	
subtotal =	1.831		79.758	
	0.046			

Flow Length	US	DS	Slope
Sheet	100	916.61	0.005
Shallow Concentrated	279	916.61	0.011
	379.000		

POST-CONDITION

Basins 3 and 4

10S [POST] 1-Year Storm Runoff Volume (cf) = 5,547

Post Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN
Paved parking lots, C	0.405	98	17.642	83.275
50-75% Grass Cover, Fair, HSG C	1.395	79	80.766	
subtotal =	1.800		78.408	
	0.225			

Flow Length	US	DS	Slope
Sheet	100	926.4	0.044
Shallow Concentrated	100	922	0.040
	200.000		

Percent Increase: (POST-PPRE)/PPRE = 21.30%
 Critical Storm Equals = 5-year ***
 Peak Runoff Rate 1-Year, Pre-Developed = 2.10 cfs
 *** Based on Design Manual Table 2-5 "Critical Storm Determination"

TABLE 2-5 CRITICAL STORM DETERMINATION

Equal to or Greater than	And less than	The Critical Storm Runoff Rate Will Be Limited to:
---	10	1 year
10	20	2 year
20	50	5 year
50	100	10 year
100	250	25 year
250	500	50 year
500	--	100 year

Year	Rainfall	9S Pre (cf)	10S Post (cf)	Diff (cf)
1	2.20	4573	5547	974
2	2.63	6513	7672	1159
5	3.24	9823	10908	1385 Critical Storm
10	3.74	12456	13899	1243
25	4.44	16021	17752	1731
50	5.02	19343	21205	1862
100	5.63	22825	24906	1981

Max = 1981 cf

Water Quality Volume

WQV = RV * P * (A/12)
 0.2525 Rv = Volumetric Runoff Coefficient
 = 0.05 + 0.90 (i)
 0.2250 i = fraction of impervious area
 0.9 P = precipitation depth (in)
 1.80 A = drainage area (Ac.)
 WQV = **0.034** (Ac/ft)
1,484.85 ft³

RUNOFF RATES (cfs)

Year	9S Pre (cfs)	Required	5P Post (cfs)	Difference
WQV	1	2.10	2.10	0.16
	2	3.03	2.10	0.25
	5	4.45	2.10	0.34 Good
	10	5.68	5.68	0.81
	25	7.44	7.44	1.73
	50	8.94	8.94	2.72
	100	10.52	10.52	3.58

Critical Storm is the 5-year Storm

PRE-CONDITION

9S [PRE] 1-Year Storm Runoff Volume (cf) = 2,347

BASINS 5 and 6

Pre Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN
Paved parking lots, C	0.000	98	0	79.000
50-75% Grass Cover, Fair, HSG C	0.947	79	41.251	
subtotal =	0.947		41.251	
	0.000			
Flow Length	US	DS	Slope	
Sheet	918.3	916.9	0.014	Grass
Shallow Concentrated	147	916.9	0.014	Grass
	247.000			

POST-CONDITION

10S [POST] 1-Year Storm Runoff Volume (cf) = 3,046

Percent Increase (POST-PPRE)/PPRE = 29.78%
 Critical Storm Equals = 5-year ***
 Peak Runoff Rate 1-Year, Pre-Developed = 1.24 cfs
 *** Based on Design Manual Table 2-5 "Critical Storm Determination"

Post Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN
Paved parking lots, C	0.221	98	8.627	83.434
50-75% Grass Cover, Fair, HSG C	0.726	79	31.625	
subtotal =	0.947		41.251	
	0.233			
Flow Length	US	DS	Slope	
Sheet	137	923	0.023	Grass
Shallow Concentrated	42	923	0.095	Grass
	179.000			

TABLE 2-5 CRITICAL STORM DETERMINATION
 If the Percent of Increase in Runoff Volume is

Equal to or Greater than	And less than	The Critical Storm Runoff Rate Will Be Limited to:
---	10	1 year
10	20	2 year
20	50	5 year
50	100	10 year
100	250	25 year
250	500	50 year
500	---	100 year

Year	Rainfall	9S Pre (cf)	10S Post (cf)	Diff (cf)
1	2.20	2347	3046	699
2	2.63	3377	4213	836
5	3.24	4886	5891	1005 Critical Storm
10	3.74	6401	7523	1122
25	4.44	8486	9749	1263
50	5.02	10284	11646	1362
100	5.63	12225	13876	1453

Max = 1453 cf

Water Quality Volume

WQV = RVP(A)/2
 0.2600378 Rv = Volumetric Runoff Coefficient
 = 0.05 + 0.90 (i)
 0.2334 i = fraction of impervious area
 0.9 P = precipitation depth (in)
 0.95 A = drainage area (Ac.)
 WQV = **0.018 (Ac/ft)**
804.50 ft³

RUNOFF RATES (cfs)

Year	9S Pre (cfs)	Required	5P Post (cfs)	Difference
1	1.24	1.24	0.01	Good
2	1.82	1.24	0.05	Good
5	2.70	1.24	0.14	Good
10	3.45	3.45	0.40	Good
25	4.55	4.55	0.96	Good
50	5.48	5.48	1.49	Good
100	6.48	6.48	2.03	Good

Critical Storm is the 5-year Storm

PRE-CONDITION

9S	Pre Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN
	Paved parking lots, C	0.000	98	0	79.000
	50-75% Grass Cover, Fair, HSG C	1.174	79	51,139	
	subtotal =	1.174		51,139	
		0.000			

9S [PRE] 1-Year Storm Runoff Volume (cf) = 2,742

Basin 7

Flow Length	US	DS	Slope
100	918.3	917.9	0.004
			Grass
101	917.9	917.1	0.008
			Grass
201.000			

POST-CONDITION

10S	Post Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN
	Paved parking lots, C	0.157	98	6,839	81.534
	50-75% Grass Cover, Fair, HSG C	1.020	79	44,431	
	subtotal =	1.177		51,270	
		0.133			

10S [POST] 1-Year Storm Runoff Volume (cf) = 3,349

Percent Increase: (POST-PPRE)/PPRE = 22.14%
 Critical Storm Equals = 5-year ***
 Peak Runoff Rate 1-Year, Pre-Developed = 1.37 cfs
 *** Based on Design Manual Table 2-5 "Critical Storm Determination"

TABLE 2-5 CRITICAL STORM DETERMINATION
 If the Percent of Increase in Runoff Volume is

Equal to or Greater than	And less than	The Critical Storm Runoff Rate Will Be Limited to:
---	10	1 year
10	20	2 year
20	50	5 year
50	100	10 year
100	250	25 year
250	500	50 year
500	--	100 year

Year	Rainfall	9S Pre (cf)	10S Post (cf)	Diff (cf)
1	2.20	2742	3349	607
2	2.63	3945	4676	731
5	3.24	5625	6709	1084
10	3.74	7477	8471	1394
25	4.44	9913	11038	1125
50	5.02	12013	13232	1219
100	5.63	22869	15897	-7372

Max = 1219 cf

Water Quality Volume

WQV = RV*P*(A)/2
 0.17005698 Rv = Volumetric Runoff Coefficient
 = 0.05 + 0.90 (i)
 0.1534 i = fraction of impervious area
 0.9 P = precipitation depth (in)
 1.18 A = drainage area (Ac.)
 WQV = 0.015 (Ac/ft)
 653.89 ft³

RUNOFF RATES (cfs)

Year	9S Pre (cfs)	Required	5P Post (cfs)	Difference
1	1.37	1.37	0.41	Good
2	2.01	1.37	0.69	Good
5	2.99	1.37	0.96	Good
10	3.65	3.85	1.79	Good
25	5.08	5.08	3.47	Good
50	6.12	6.12	3.86	Good
100	7.24	7.24	4.19	Good

Critical Storm is the 5-year Storm

PRE-CONDITION

9S [PRE] 1-Year Storm Runoff Volume (cf) = 1,476

Basin 8

Pre Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN
Paved parking lots, C	0.000	98	0	79.000
50-75% Grass Cover, Fair, HSG C	0.632	79	27.530	
subtotal =	0.632		27.530	
	0.000			

Flow Length	US	DS	Slope
Sheet	100	917.4	0.006
Shallow Concentrated	126	917.4	0.001
#NAME?			

POST-CONDITION

10S [POST] 1-Year Storm Runoff Volume (cf) = 2,039

10S [POST] 1-Year Storm Runoff Volume (cf) = 2,039

Post Condition Area (Ac.)	Ac.	CN	SF	Equivalent CN
Paved parking lots, C	0.159	98	6.926	83.780
50-75% Grass Cover, Fair, HSG C	0.473	79	20.604	
subtotal =	0.632		27.530	
	0.252			

Flow Length	US	DS	Slope
Sheet	140	926.4	0.024
Shallow Concentrated	82	923	0.012
	222.000		

Percent Increase: (POST-PPRE)/PPRE = 38.14%
 Critical Storm Equals = 5-year ***
 Peak Runoff Rate 1-Year, Pre-Developed = 0.67 cfs
 *** Based on Design Manual Table 2-5 "Critical Storm Determination"

TABLE 2-5 CRITICAL STORM DETERMINATION
 If the Percent of Increase in Runoff Volume is

Equal to or Greater than	And less than	The Critical Storm Runoff Rate Will Be Limited to:
---	10	1 year
10	20	2 year
20	50	5 year
50	100	10 year
100	250	25 year
250	500	50 year
500	--	100 year

Year	Rainfall	9S Pre (cf)	10S Post (cf)	Diff (cf)
1	2.20	1476	2039	563
2	2.63	2124	2794	670
5	3.24	3156	3937	801
10	3.74	4025	4918	893
25	4.44	5337	6398	1001
50	5.02	6467	7645	1078
100	5.63	7688	8936	1148

Max = 1148 cf

Water Quality Volume

WQV = RV*P/(A*I2)

0.27642405

Rv = Volumetric Runoff Coefficient
 = 0.05 + 0.90 (i)

0.2516

i = fraction of impervious area

0.9

P = precipitation depth (in)

0.63

A = drainage area (Ac.)

WQV = 0.013 (Ac/ft)

570.74 ft³

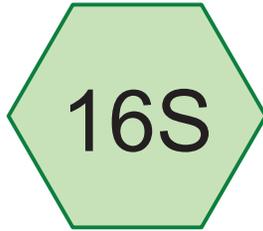
RUNOFF RATES (cfs)

Year	9S Pre (cfs)	Required	5P Post (cfs)	Difference
WQV				
1	0.67	0.67	0.10	Good
2	0.98	0.67	0.29	Good
5	1.46	0.67	0.66	Good
10	1.87	1.87	1.22	Good
25	2.47	2.47	2.02	Good
50	2.98	2.98	2.45	Good
100	3.53	3.53	2.79	Good

Critical Storm is the 5-year Storm

Appendix D:
HydroCAD

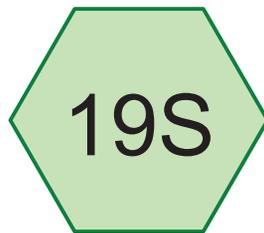
Existing



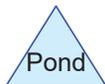
Area 1



Area 2



Areas 3 and 4



Routing Diagram for Pond 1-4

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Pond 1-4

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NOAA 24-hr	A	Default	24.00	1	2.20	2
2	2-Year	NOAA 24-hr	A	Default	24.00	1	2.63	2
3	5-Year	NOAA 24-hr	A	Default	24.00	1	3.24	2
4	10-Year	NOAA 24-hr	A	Default	24.00	1	3.74	2
5	25-Year	NOAA 24-hr	A	Default	24.00	1	4.44	2
6	50-Year	NOAA 24-hr	A	Default	24.00	1	5.02	2
7	100-Year	NOAA 24-hr	A	Default	24.00	1	5.63	2
8	WQv	NOAA 24-hr	A	Default	24.00	1	1.65	2

Pond 1-4

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Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
176,374	79	50-75% Grass cover, Fair, HSG C (16S, 19S, 22S)
5,009	98	Paved parking, HSG C (16S, 22S)
3,659	98	Paved parking, HSG D (19S)
185,043	80	TOTAL AREA

Pond 1-4

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
181,384	HSG C	16S, 19S, 22S
3,659	HSG D	19S
0	Other	
185,043		TOTAL AREA

Pond 1-4

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Ground Covers (selected 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	176,374	0	0	176,374	50-75% Grass cover, Fair
0	0	5,009	3,659	0	8,668	Paved parking
0	0	181,384	3,659	0	185,043	TOTAL AREA

Pond 1-4

NOAA 24-hr A 1-Year Rainfall=2.20"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment16S: Area 1

Runoff Area=1.831 ac 3.71% Impervious Runoff Depth=0.69"
Flow Length=300' Slope=0.0260 '/' Tc=2.5 min CN=80 Runoff=2.49 cfs 4,573 cf

Subcatchment19S: Areas 3 and 4

Runoff Area=1.831 ac 4.59% Impervious Runoff Depth=0.69"
Flow Length=379' Tc=6.1 min CN=80 Runoff=2.10 cfs 4,573 cf

Subcatchment22S: Area 2

Runoff Area=0.586 ac 8.02% Impervious Runoff Depth=0.73"
Flow Length=191' Tc=1.8 min CN=81 Runoff=0.88 cfs 1,563 cf

Total Runoff Area = 185,043 sf Runoff Volume = 10,710 cf Average Runoff Depth = 0.69"
95.32% Pervious = 176,374 sf 4.68% Impervious = 8,668 sf

Pond 1-4

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Subcatchment 16S: Area 1

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 2.49 cfs @ 12.09 hrs, Volume= 4,573 cf, Depth= 0.69"

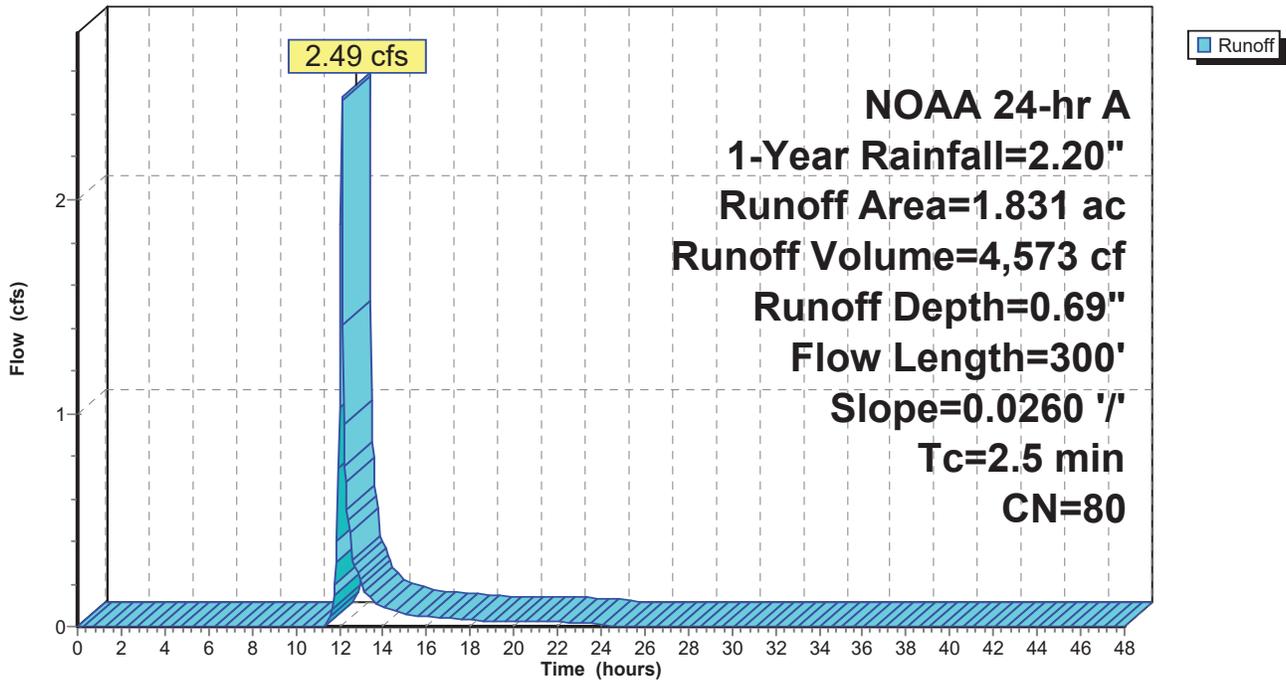
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 1-Year Rainfall=2.20"

Area (ac)	CN	Description
1.763	79	50-75% Grass cover, Fair, HSG C
0.068	98	Paved parking, HSG C
1.831	80	Weighted Average
1.763		96.29% Pervious Area
0.068		3.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0260	1.39		Sheet Flow, Grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
1.3	200	0.0260	2.60		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
2.5	300	Total			

Subcatchment 16S: Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Subcatchment 19S: Areas 3 and 4

Runoff = 2.10 cfs @ 12.14 hrs, Volume= 4,573 cf, Depth= 0.69"

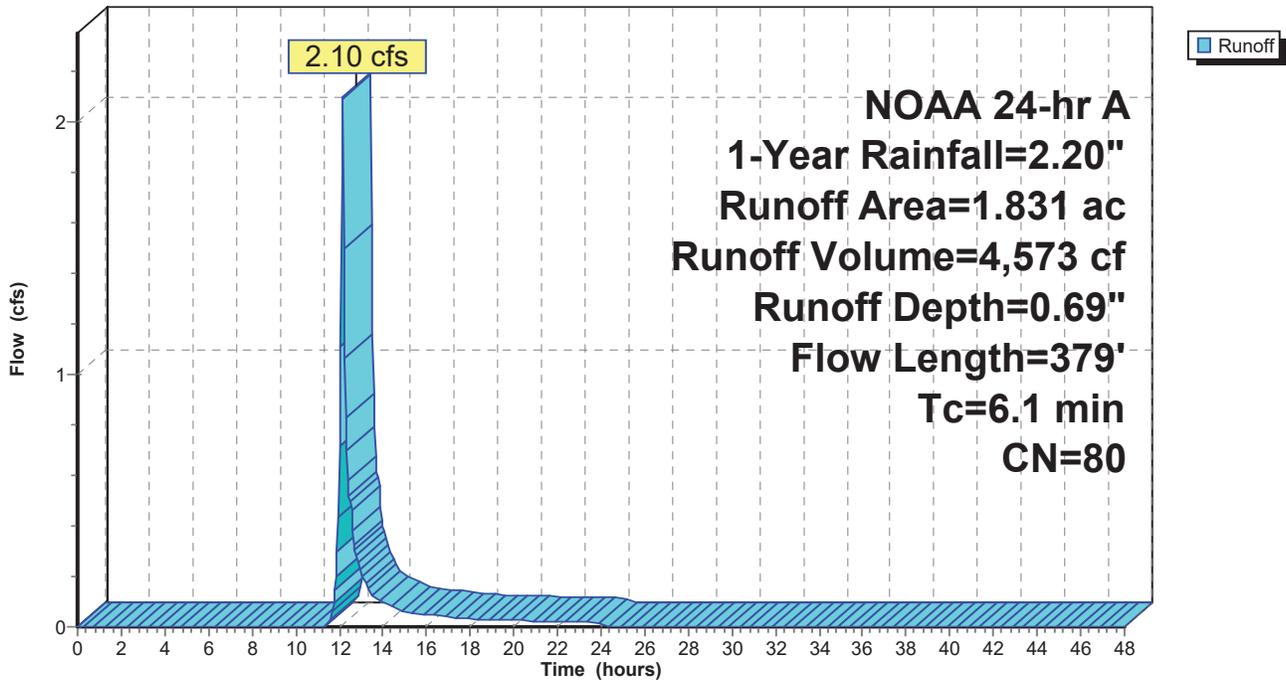
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
NOAA 24-hr A 1-Year Rainfall=2.20"

Area (ac)	CN	Description
1.747	79	50-75% Grass cover, Fair, HSG C
0.084	98	Paved parking, HSG D
1.831	80	Weighted Average
1.747		95.41% Pervious Area
0.084		4.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	100	0.0050	0.72		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
3.8	279	0.0300	1.21		Shallow Concentrated Flow, Grassed Short Grass Pasture Kv= 7.0 fps
6.1	379	Total			

Subcatchment 19S: Areas 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Subcatchment 22S: Area 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.88 cfs @ 12.09 hrs, Volume= 1,563 cf, Depth= 0.73"

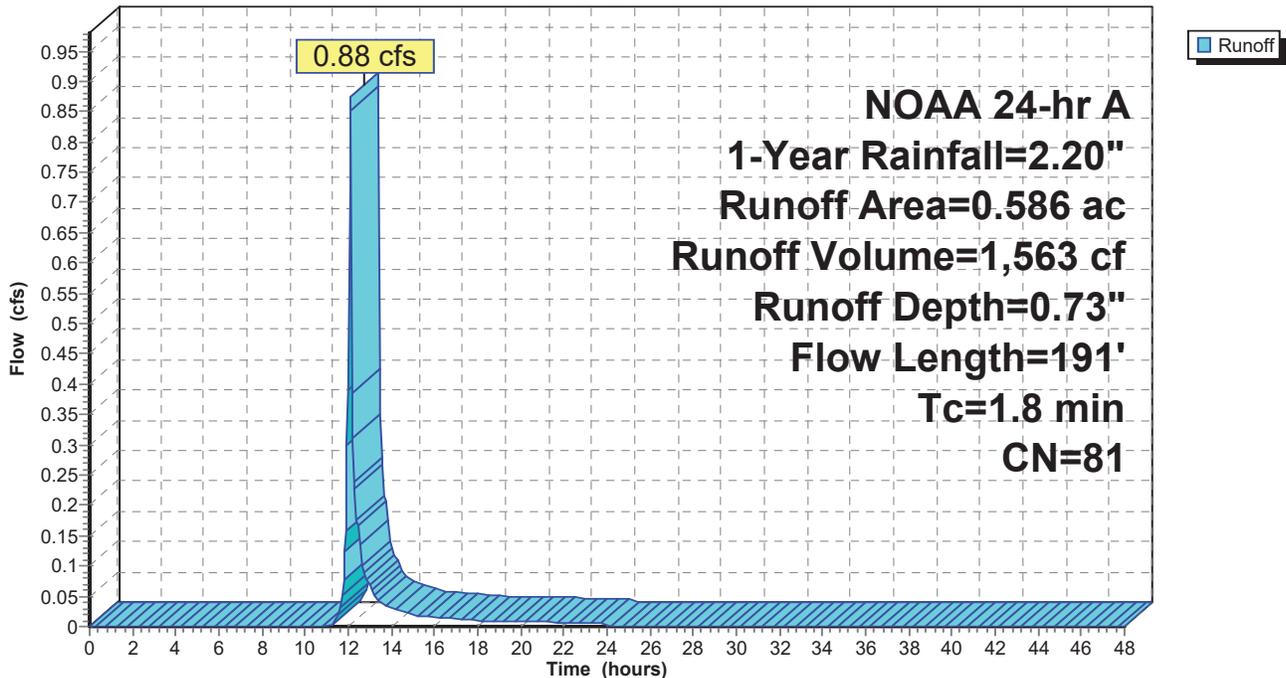
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 1-Year Rainfall=2.20"

Area (ac)	CN	Description
0.539	79	50-75% Grass cover, Fair, HSG C
0.047	98	Paved parking, HSG C
0.586	81	Weighted Average
0.539		91.98% Pervious Area
0.047		8.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0250	1.36		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
0.6	91	0.0220	2.39		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
1.8	191	Total			

Subcatchment 22S: Area 2

Hydrograph



Pond 1-4

NOAA 24-hr A 2-Year Rainfall=2.63"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment16S: Area 1 Runoff Area=1.831 ac 3.71% Impervious Runoff Depth=0.98"
Flow Length=300' Slope=0.0260 '/' Tc=2.5 min CN=80 Runoff=3.58 cfs 6,513 cf

Subcatchment19S: Areas 3 and 4 Runoff Area=1.831 ac 4.59% Impervious Runoff Depth=0.98"
Flow Length=379' Tc=6.1 min CN=80 Runoff=3.03 cfs 6,513 cf

Subcatchment22S: Area 2 Runoff Area=0.586 ac 8.02% Impervious Runoff Depth=1.04"
Flow Length=191' Tc=1.8 min CN=81 Runoff=1.24 cfs 2,204 cf

Total Runoff Area = 185,043 sf Runoff Volume = 15,230 cf Average Runoff Depth = 0.99"
95.32% Pervious = 176,374 sf 4.68% Impervious = 8,668 sf

Pond 1-4

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Subcatchment 16S: Area 1

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 3.58 cfs @ 12.09 hrs, Volume= 6,513 cf, Depth= 0.98"

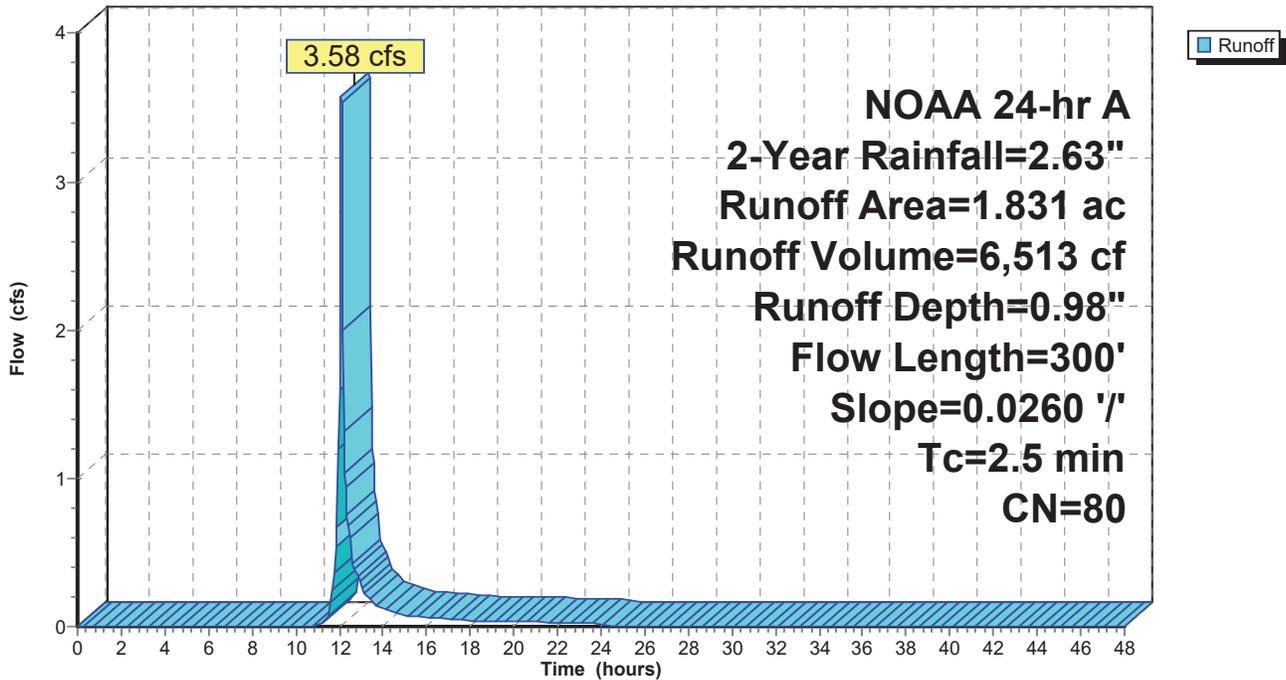
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 2-Year Rainfall=2.63"

Area (ac)	CN	Description
1.763	79	50-75% Grass cover, Fair, HSG C
0.068	98	Paved parking, HSG C
1.831	80	Weighted Average
1.763		96.29% Pervious Area
0.068		3.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0260	1.39		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
1.3	200	0.0260	2.60		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
2.5	300	Total			

Subcatchment 16S: Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Subcatchment 19S: Areas 3 and 4

Runoff = 3.03 cfs @ 12.14 hrs, Volume= 6,513 cf, Depth= 0.98"

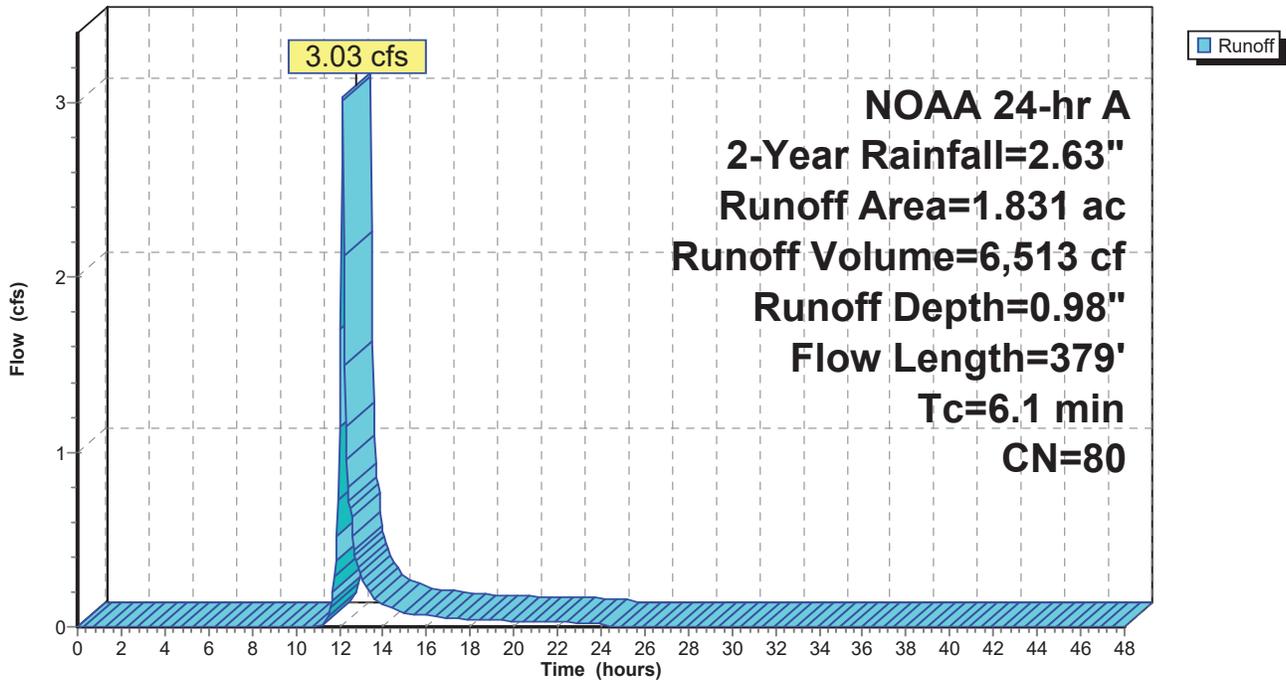
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 2-Year Rainfall=2.63"

Area (ac)	CN	Description
1.747	79	50-75% Grass cover, Fair, HSG C
0.084	98	Paved parking, HSG D
1.831	80	Weighted Average
1.747		95.41% Pervious Area
0.084		4.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	100	0.0050	0.72		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
3.8	279	0.0300	1.21		Shallow Concentrated Flow, Grassed Short Grass Pasture Kv= 7.0 fps
6.1	379	Total			

Subcatchment 19S: Areas 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Subcatchment 22S: Area 2

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 1.24 cfs @ 12.08 hrs, Volume= 2,204 cf, Depth= 1.04"

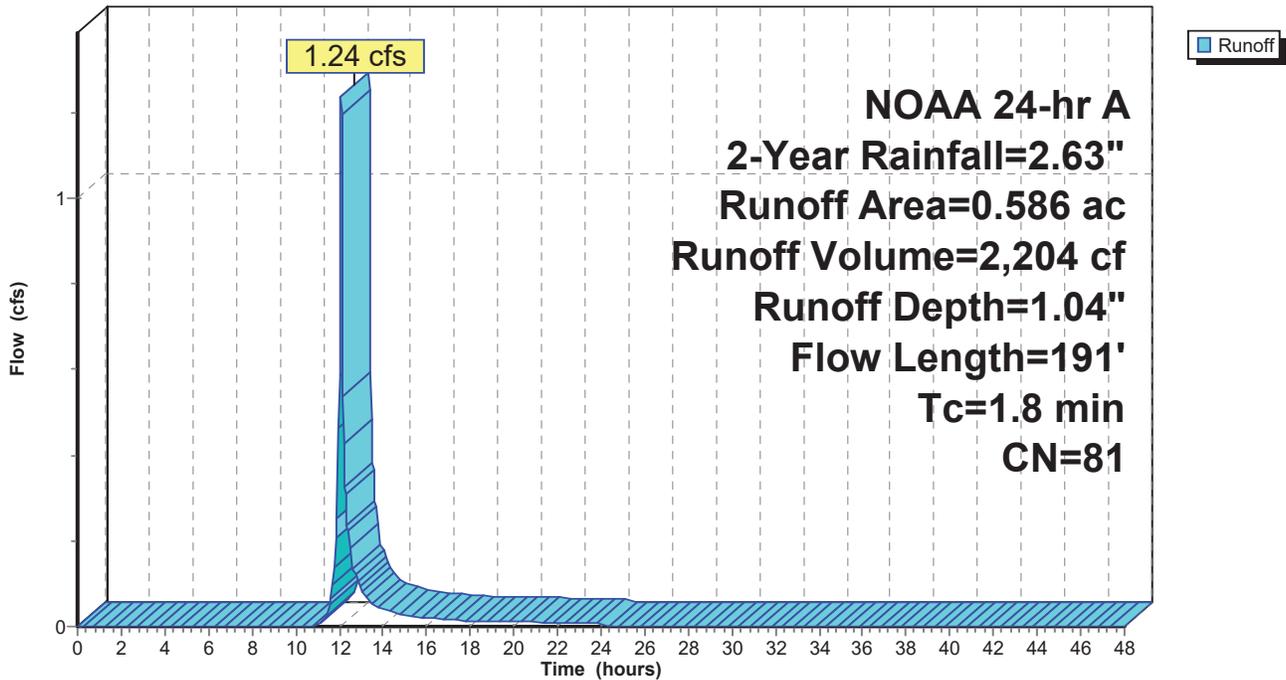
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 2-Year Rainfall=2.63"

Area (ac)	CN	Description
0.539	79	50-75% Grass cover, Fair, HSG C
0.047	98	Paved parking, HSG C
0.586	81	Weighted Average
0.539		91.98% Pervious Area
0.047		8.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0250	1.36		Sheet Flow, grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
0.6	91	0.0220	2.39		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
1.8	191	Total			

Subcatchment 22S: Area 2

Hydrograph



Pond 1-4

NOAA 24-hr A 5-Year Rainfall=3.24"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment16S: Area 1

Runoff Area=1.831 ac 3.71% Impervious Runoff Depth=1.43"
Flow Length=300' Slope=0.0260 '/' Tc=2.5 min CN=80 Runoff=5.23 cfs 9,523 cf

Subcatchment19S: Areas 3 and 4

Runoff Area=1.831 ac 4.59% Impervious Runoff Depth=1.43"
Flow Length=379' Tc=6.1 min CN=80 Runoff=4.45 cfs 9,523 cf

Subcatchment22S: Area 2

Runoff Area=0.586 ac 8.02% Impervious Runoff Depth=1.50"
Flow Length=191' Tc=1.8 min CN=81 Runoff=1.79 cfs 3,192 cf

Total Runoff Area = 185,043 sf Runoff Volume = 22,238 cf Average Runoff Depth = 1.44"
95.32% Pervious = 176,374 sf 4.68% Impervious = 8,668 sf

Pond 1-4

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Summary for Subcatchment 16S: Area 1

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 5.23 cfs @ 12.09 hrs, Volume= 9,523 cf, Depth= 1.43"

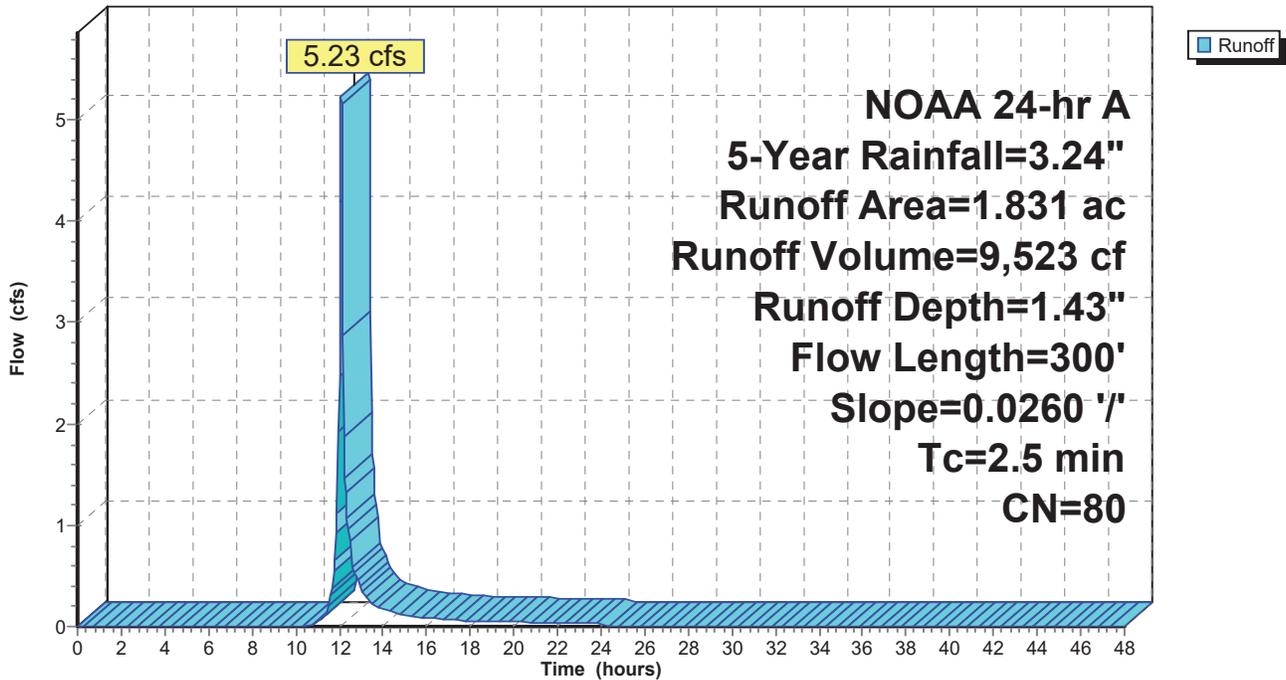
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 5-Year Rainfall=3.24"

Area (ac)	CN	Description
1.763	79	50-75% Grass cover, Fair, HSG C
0.068	98	Paved parking, HSG C
1.831	80	Weighted Average
1.763		96.29% Pervious Area
0.068		3.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0260	1.39		Sheet Flow, Grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
1.3	200	0.0260	2.60		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
2.5	300	Total			

Subcatchment 16S: Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Summary for Subcatchment 19S: Areas 3 and 4

Runoff = 4.45 cfs @ 12.14 hrs, Volume= 9,523 cf, Depth= 1.43"

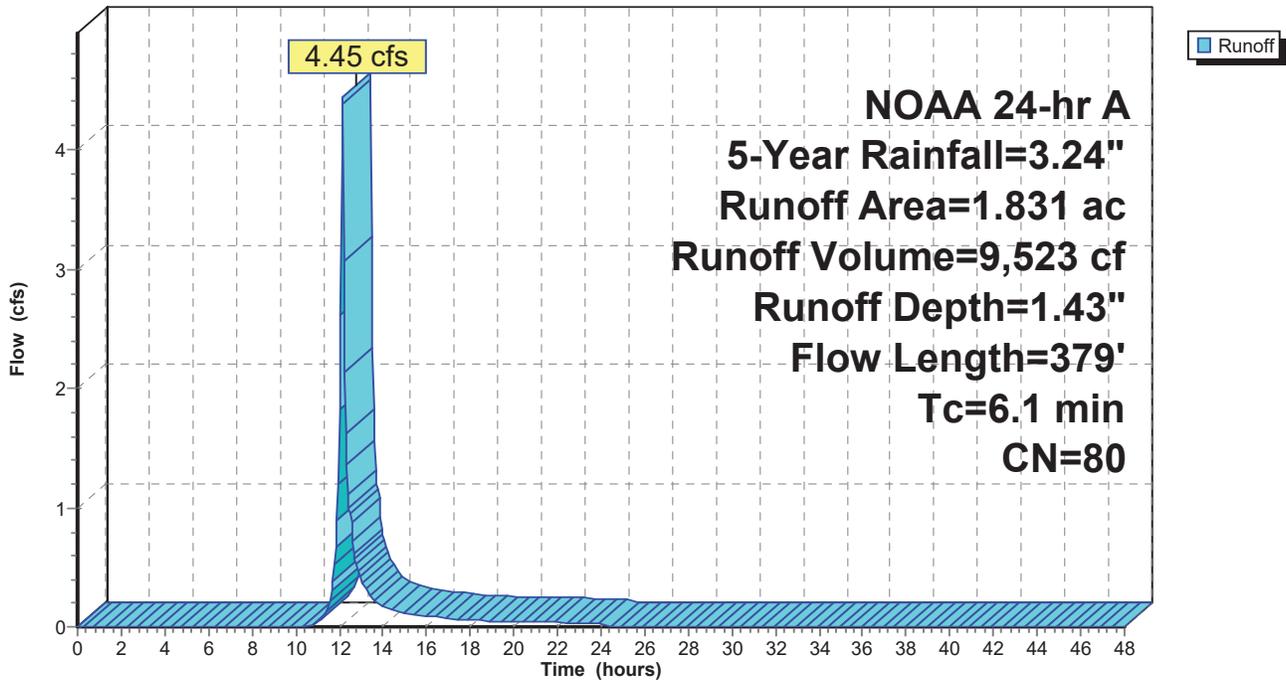
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 5-Year Rainfall=3.24"

Area (ac)	CN	Description
1.747	79	50-75% Grass cover, Fair, HSG C
0.084	98	Paved parking, HSG D
1.831	80	Weighted Average
1.747		95.41% Pervious Area
0.084		4.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	100	0.0050	0.72		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
3.8	279	0.0300	1.21		Shallow Concentrated Flow, Grassed Short Grass Pasture Kv= 7.0 fps
6.1	379	Total			

Subcatchment 19S: Areas 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Summary for Subcatchment 22S: Area 2

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 1.79 cfs @ 12.08 hrs, Volume= 3,192 cf, Depth= 1.50"

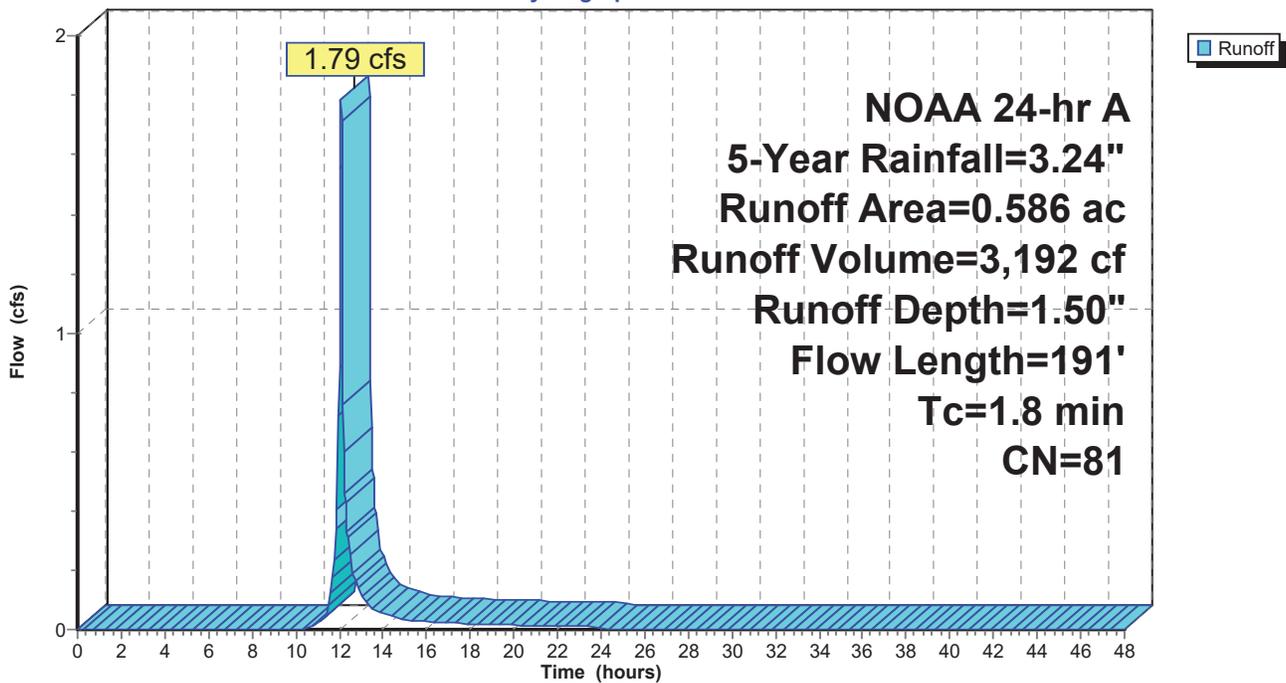
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 5-Year Rainfall=3.24"

Area (ac)	CN	Description
0.539	79	50-75% Grass cover, Fair, HSG C
0.047	98	Paved parking, HSG C
0.586	81	Weighted Average
0.539		91.98% Pervious Area
0.047		8.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0250	1.36		Sheet Flow, grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
0.6	91	0.0220	2.39		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
1.8	191	Total			

Subcatchment 22S: Area 2

Hydrograph



Pond 1-4

NOAA 24-hr A 10-Year Rainfall=3.74"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment16S: Area 1 Runoff Area=1.831 ac 3.71% Impervious Runoff Depth=1.83"
Flow Length=300' Slope=0.0260 '/' Tc=2.5 min CN=80 Runoff=6.65 cfs 12,156 cf

Subcatchment19S: Areas 3 and 4 Runoff Area=1.831 ac 4.59% Impervious Runoff Depth=1.83"
Flow Length=379' Tc=6.1 min CN=80 Runoff=5.68 cfs 12,156 cf

Subcatchment22S: Area 2 Runoff Area=0.586 ac 8.02% Impervious Runoff Depth=1.90"
Flow Length=191' Tc=1.8 min CN=81 Runoff=2.25 cfs 4,052 cf

Total Runoff Area = 185,043 sf Runoff Volume = 28,363 cf Average Runoff Depth = 1.84"
95.32% Pervious = 176,374 sf 4.68% Impervious = 8,668 sf

Pond 1-4

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NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Subcatchment 16S: Area 1

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 6.65 cfs @ 12.09 hrs, Volume= 12,156 cf, Depth= 1.83"

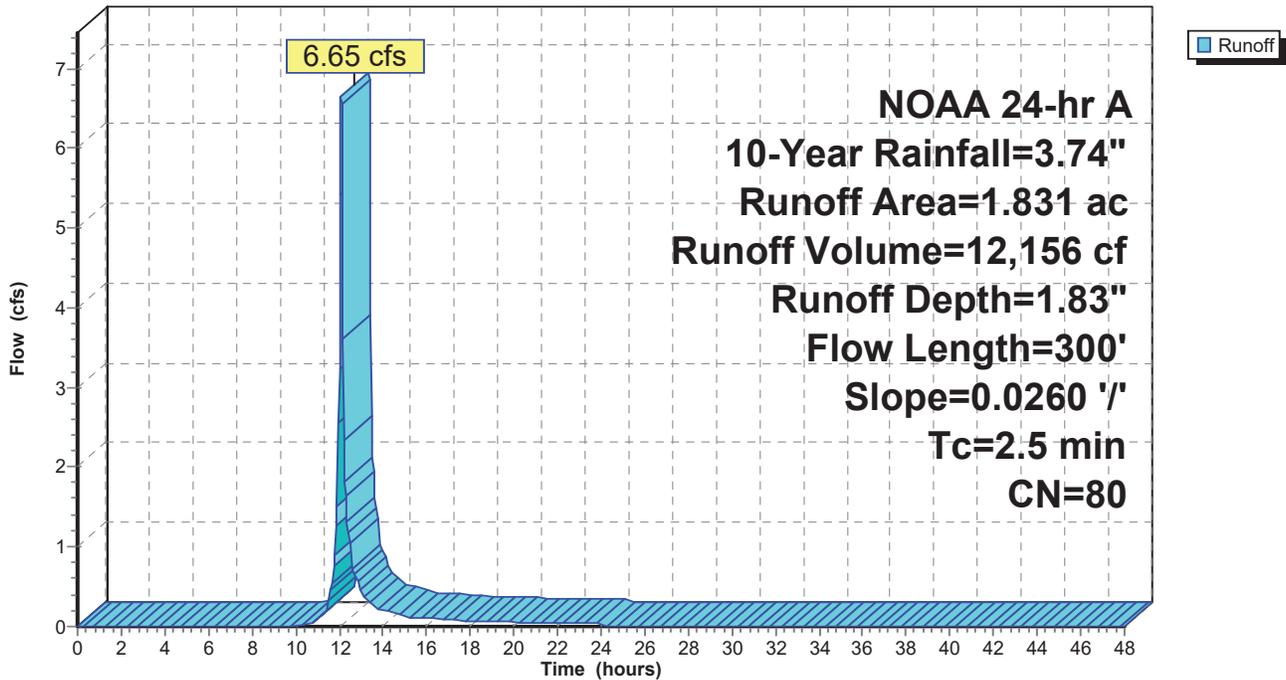
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 10-Year Rainfall=3.74"

Area (ac)	CN	Description
1.763	79	50-75% Grass cover, Fair, HSG C
0.068	98	Paved parking, HSG C
1.831	80	Weighted Average
1.763		96.29% Pervious Area
0.068		3.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0260	1.39		Sheet Flow, Grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
1.3	200	0.0260	2.60		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
2.5	300	Total			

Subcatchment 16S: Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Subcatchment 19S: Areas 3 and 4

Runoff = 5.68 cfs @ 12.14 hrs, Volume= 12,156 cf, Depth= 1.83"

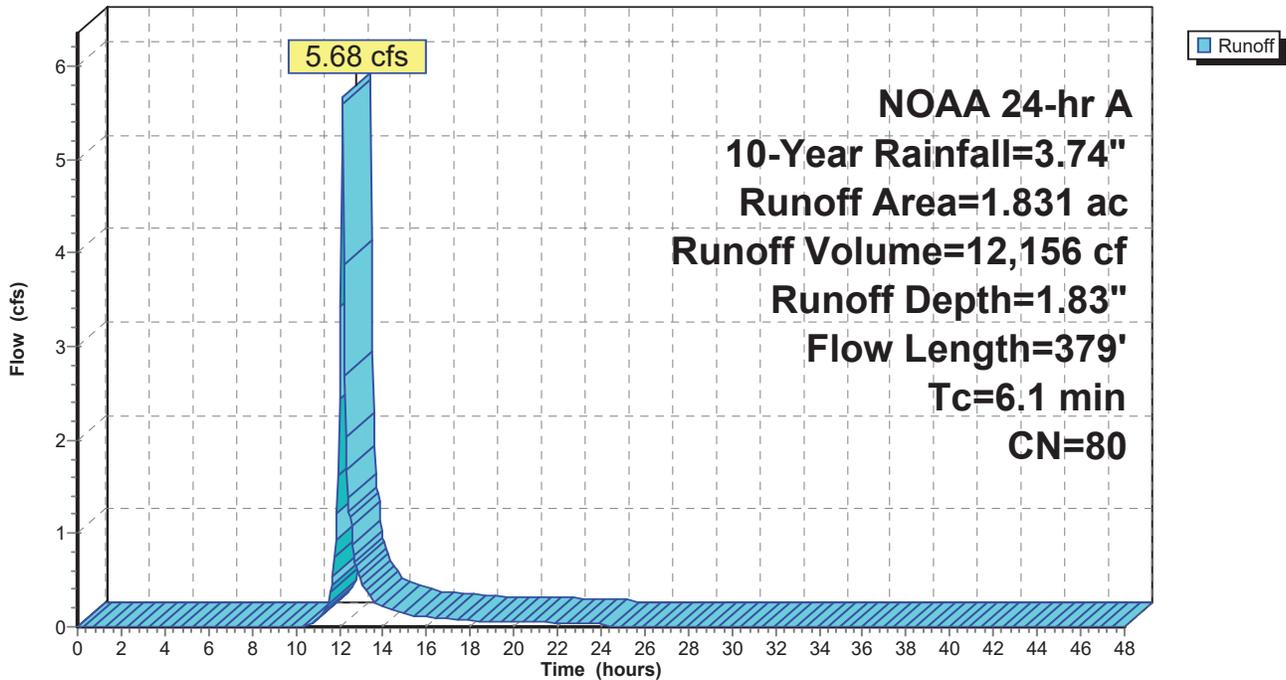
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 10-Year Rainfall=3.74"

Area (ac)	CN	Description
1.747	79	50-75% Grass cover, Fair, HSG C
0.084	98	Paved parking, HSG D
1.831	80	Weighted Average
1.747		95.41% Pervious Area
0.084		4.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	100	0.0050	0.72		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
3.8	279	0.0300	1.21		Shallow Concentrated Flow, Grassed Short Grass Pasture Kv= 7.0 fps
6.1	379	Total			

Subcatchment 19S: Areas 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Subcatchment 22S: Area 2

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 2.25 cfs @ 12.08 hrs, Volume= 4,052 cf, Depth= 1.90"

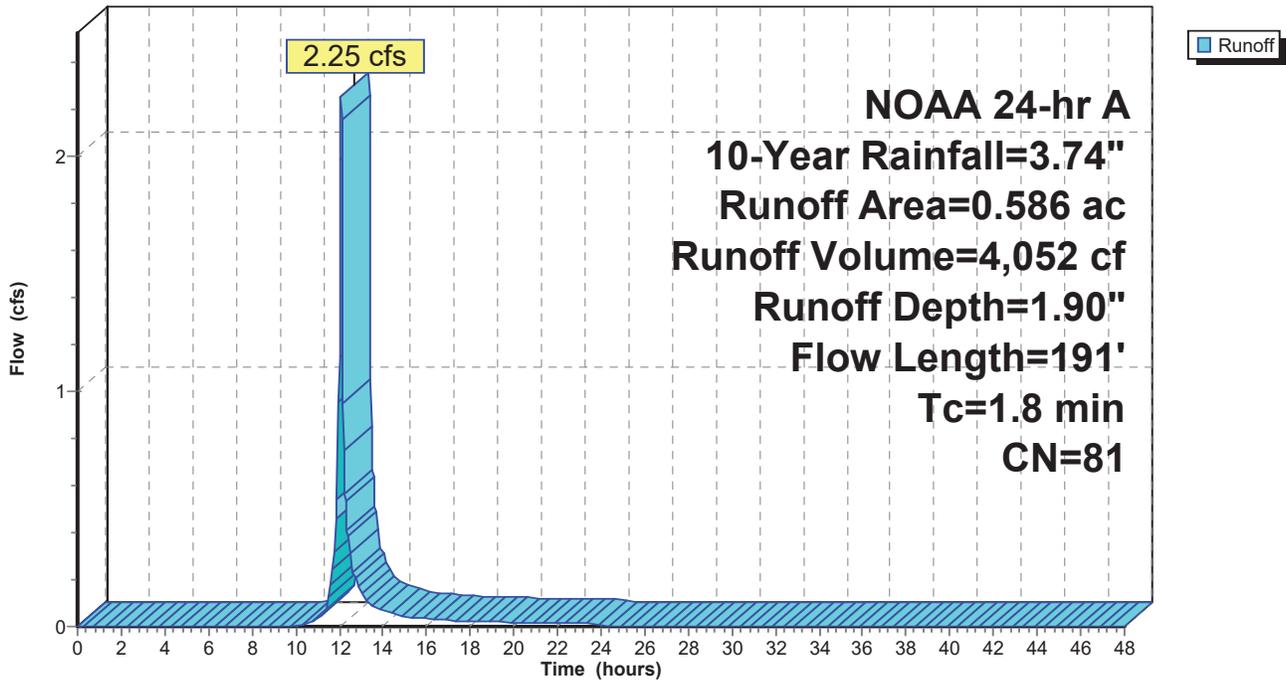
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 10-Year Rainfall=3.74"

Area (ac)	CN	Description
0.539	79	50-75% Grass cover, Fair, HSG C
0.047	98	Paved parking, HSG C
0.586	81	Weighted Average
0.539		91.98% Pervious Area
0.047		8.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0250	1.36		Sheet Flow, grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
0.6	91	0.0220	2.39		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
1.8	191	Total			

Subcatchment 22S: Area 2

Hydrograph



Pond 1-4

NOAA 24-hr A 25-Year Rainfall=4.44"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment16S: Area 1 Runoff Area=1.831 ac 3.71% Impervious Runoff Depth=2.41"
Flow Length=300' Slope=0.0260 '/' Tc=2.5 min CN=80 Runoff=8.70 cfs 16,021 cf

Subcatchment19S: Areas 3 and 4 Runoff Area=1.831 ac 4.59% Impervious Runoff Depth=2.41"
Flow Length=379' Tc=6.1 min CN=80 Runoff=7.44 cfs 16,021 cf

Subcatchment22S: Area 2 Runoff Area=0.586 ac 8.02% Impervious Runoff Depth=2.50"
Flow Length=191' Tc=1.8 min CN=81 Runoff=2.92 cfs 5,310 cf

Total Runoff Area = 185,043 sf Runoff Volume = 37,353 cf Average Runoff Depth = 2.42"
95.32% Pervious = 176,374 sf 4.68% Impervious = 8,668 sf

Pond 1-4

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NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Subcatchment 16S: Area 1

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 8.70 cfs @ 12.09 hrs, Volume= 16,021 cf, Depth= 2.41"

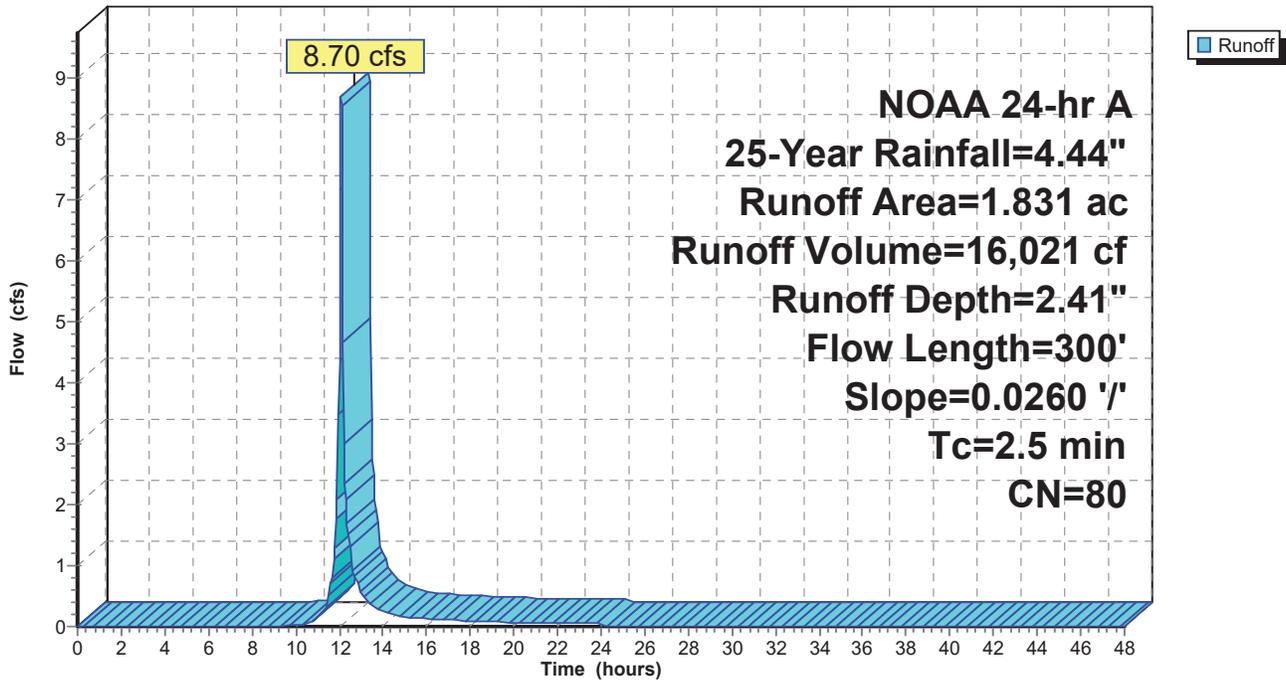
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 25-Year Rainfall=4.44"

Area (ac)	CN	Description
1.763	79	50-75% Grass cover, Fair, HSG C
0.068	98	Paved parking, HSG C
1.831	80	Weighted Average
1.763		96.29% Pervious Area
0.068		3.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0260	1.39		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
1.3	200	0.0260	2.60		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
2.5	300	Total			

Subcatchment 16S: Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Subcatchment 19S: Areas 3 and 4

Runoff = 7.44 cfs @ 12.13 hrs, Volume= 16,021 cf, Depth= 2.41"

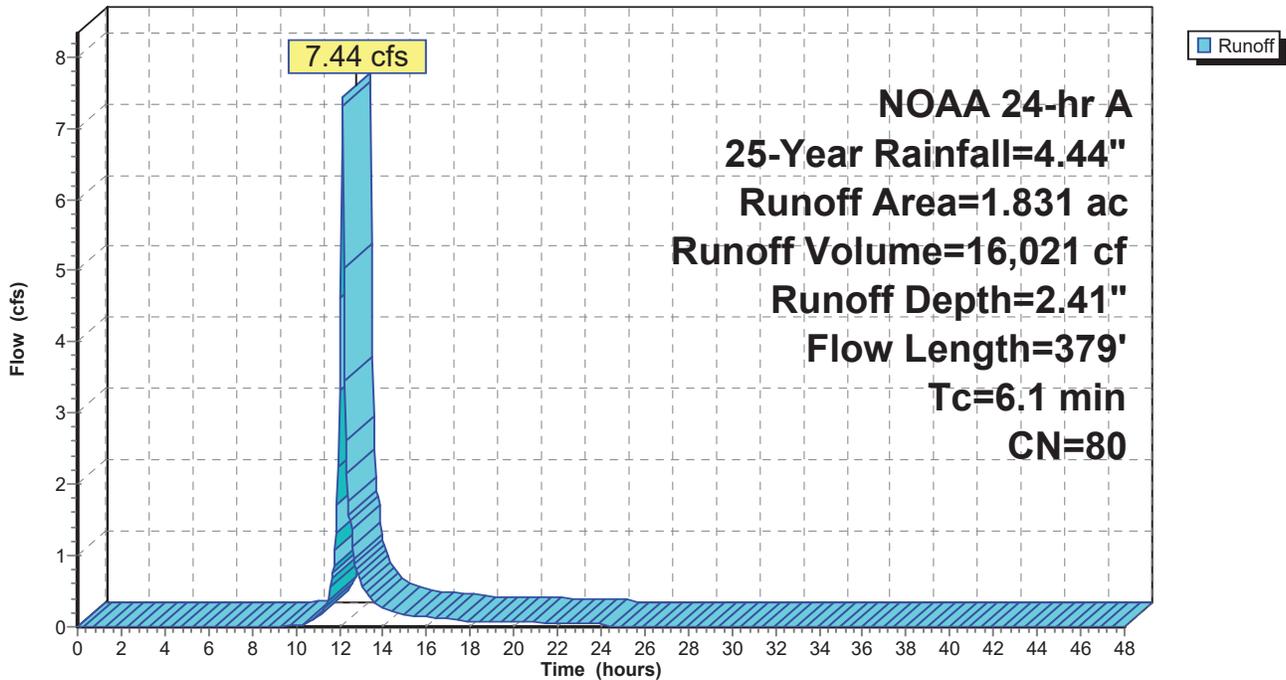
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 25-Year Rainfall=4.44"

Area (ac)	CN	Description
1.747	79	50-75% Grass cover, Fair, HSG C
0.084	98	Paved parking, HSG D
1.831	80	Weighted Average
1.747		95.41% Pervious Area
0.084		4.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	100	0.0050	0.72		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
3.8	279	0.0300	1.21		Shallow Concentrated Flow, Grassed Short Grass Pasture Kv= 7.0 fps
6.1	379	Total			

Subcatchment 19S: Areas 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Subcatchment 22S: Area 2

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 2.92 cfs @ 12.08 hrs, Volume= 5,310 cf, Depth= 2.50"

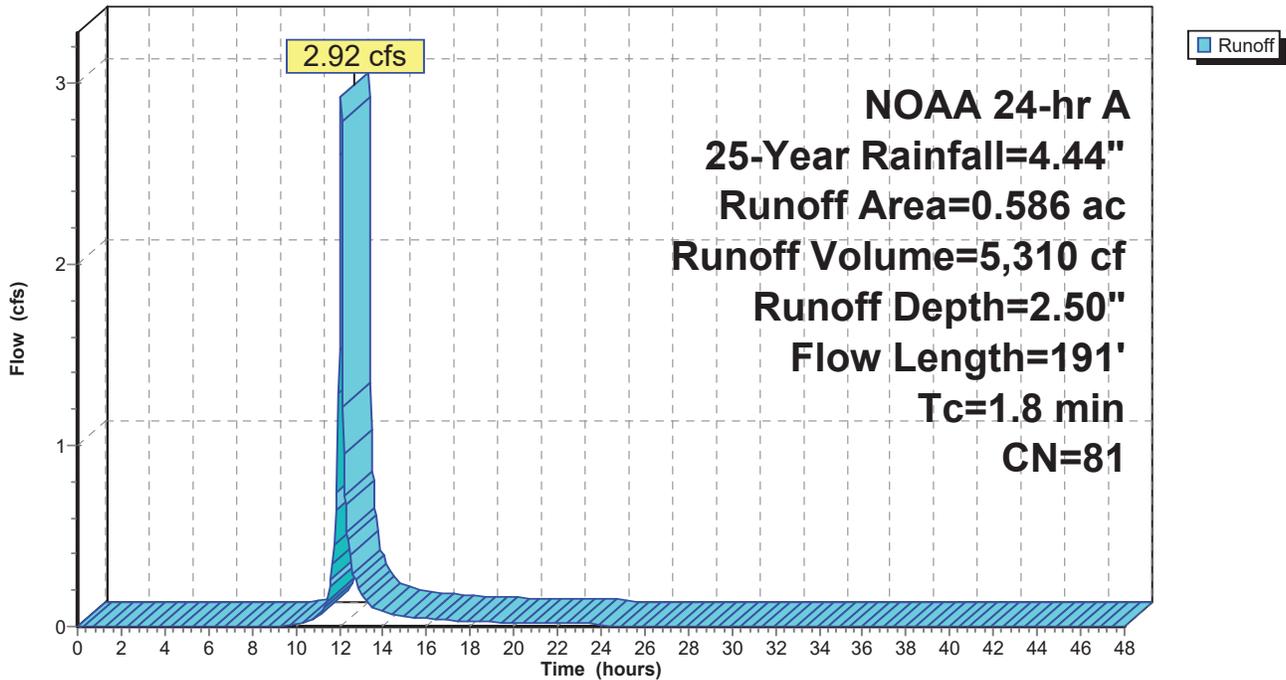
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 25-Year Rainfall=4.44"

Area (ac)	CN	Description
0.539	79	50-75% Grass cover, Fair, HSG C
0.047	98	Paved parking, HSG C
0.586	81	Weighted Average
0.539		91.98% Pervious Area
0.047		8.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0250	1.36		Sheet Flow, grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
0.6	91	0.0220	2.39		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
1.8	191	Total			

Subcatchment 22S: Area 2

Hydrograph



Pond 1-4

NOAA 24-hr A 50-Year Rainfall=5.02"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment16S: Area 1

Runoff Area=1.831 ac 3.71% Impervious Runoff Depth=2.91"
Flow Length=300' Slope=0.0260 '/' Tc=2.5 min CN=80 Runoff=10.43 cfs 19,343 cf

Subcatchment19S: Areas 3 and 4

Runoff Area=1.831 ac 4.59% Impervious Runoff Depth=2.91"
Flow Length=379' Tc=6.1 min CN=80 Runoff=8.94 cfs 19,343 cf

Subcatchment22S: Area 2

Runoff Area=0.586 ac 8.02% Impervious Runoff Depth=3.00"
Flow Length=191' Tc=1.8 min CN=81 Runoff=3.49 cfs 6,388 cf

Total Runoff Area = 185,043 sf Runoff Volume = 45,075 cf Average Runoff Depth = 2.92"
95.32% Pervious = 176,374 sf 4.68% Impervious = 8,668 sf

Pond 1-4

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NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Subcatchment 16S: Area 1

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 10.43 cfs @ 12.09 hrs, Volume= 19,343 cf, Depth= 2.91"

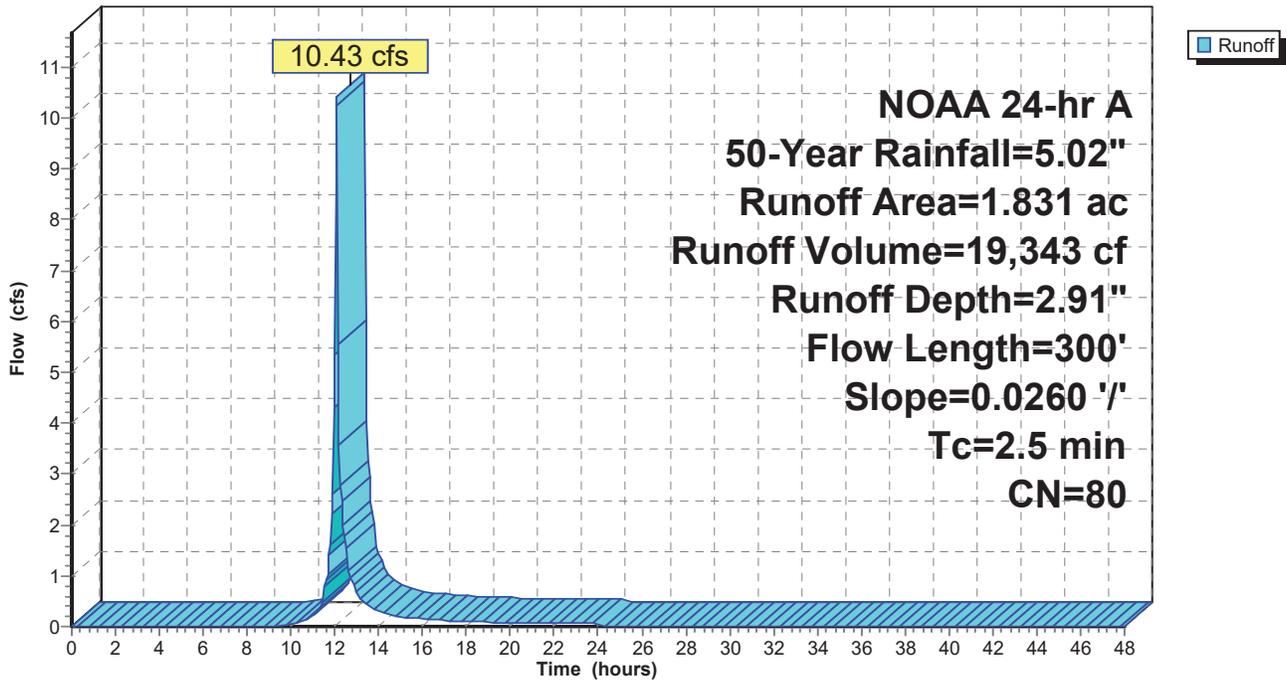
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 50-Year Rainfall=5.02"

Area (ac)	CN	Description
1.763	79	50-75% Grass cover, Fair, HSG C
0.068	98	Paved parking, HSG C
1.831	80	Weighted Average
1.763		96.29% Pervious Area
0.068		3.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0260	1.39		Sheet Flow, Grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
1.3	200	0.0260	2.60		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
2.5	300	Total			

Subcatchment 16S: Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Subcatchment 19S: Areas 3 and 4

Runoff = 8.94 cfs @ 12.13 hrs, Volume= 19,343 cf, Depth= 2.91"

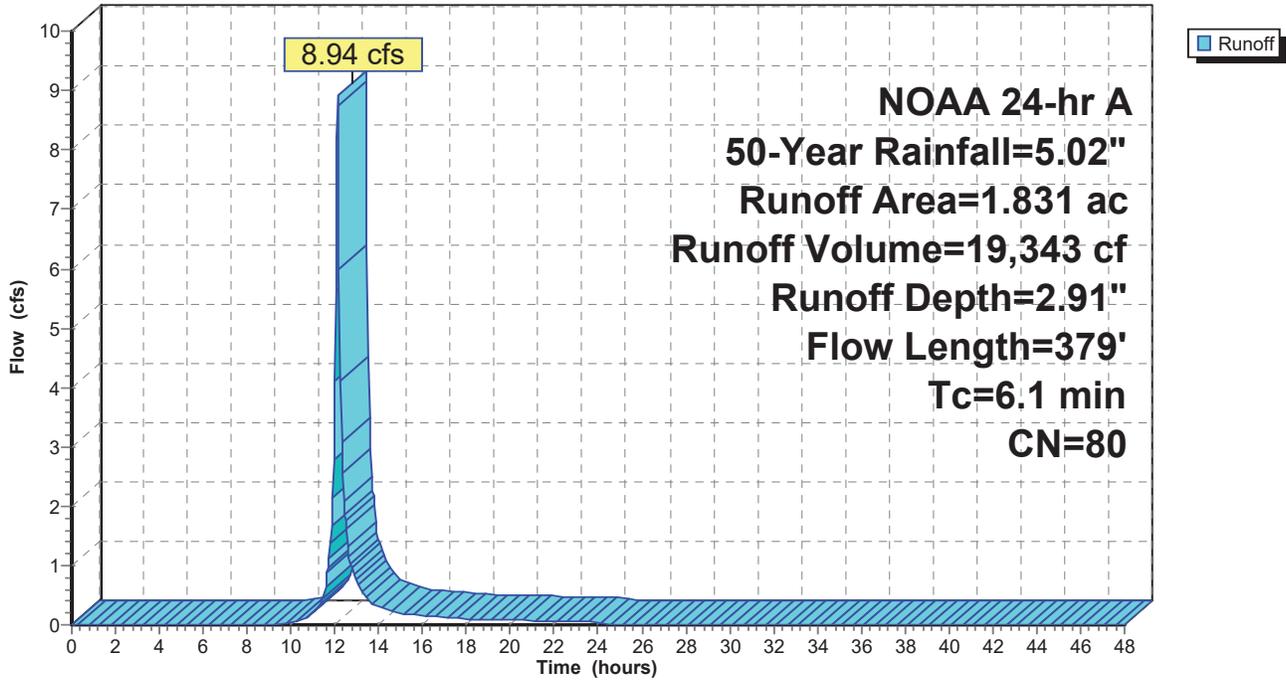
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 50-Year Rainfall=5.02"

Area (ac)	CN	Description
1.747	79	50-75% Grass cover, Fair, HSG C
0.084	98	Paved parking, HSG D
1.831	80	Weighted Average
1.747		95.41% Pervious Area
0.084		4.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	100	0.0050	0.72		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
3.8	279	0.0300	1.21		Shallow Concentrated Flow, Grassed Short Grass Pasture Kv= 7.0 fps
6.1	379	Total			

Subcatchment 19S: Areas 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Subcatchment 22S: Area 2

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 3.49 cfs @ 12.08 hrs, Volume= 6,388 cf, Depth= 3.00"

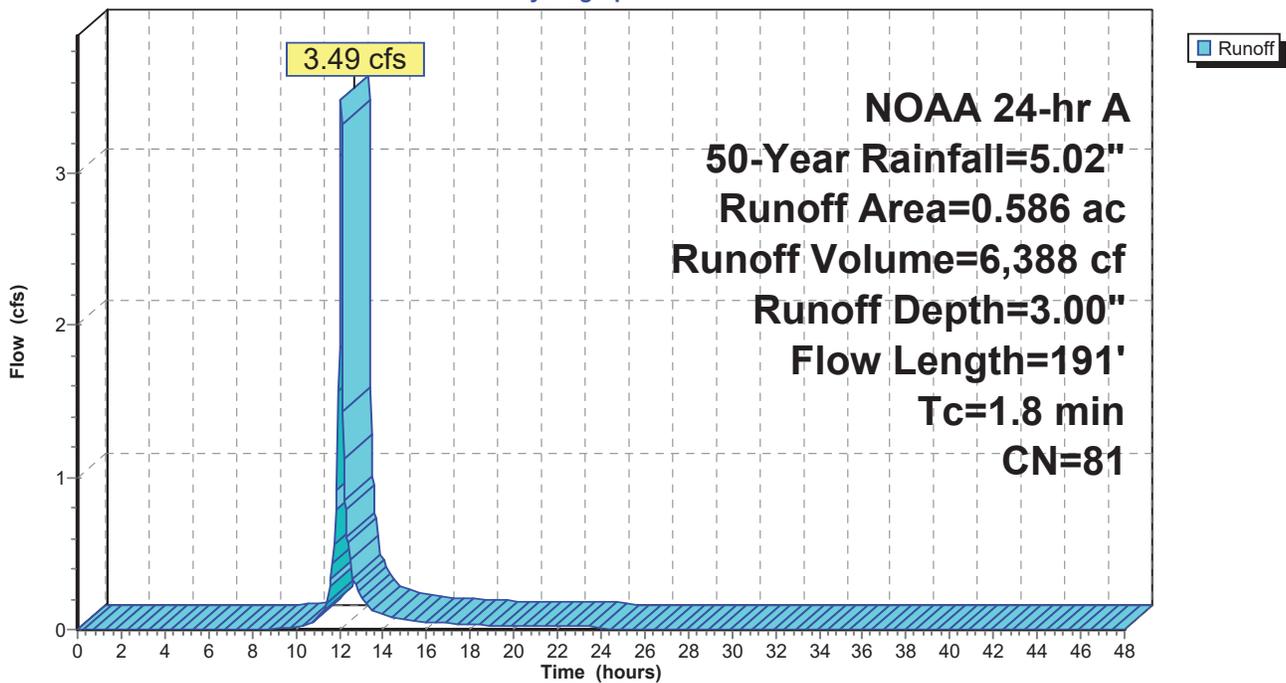
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 50-Year Rainfall=5.02"

Area (ac)	CN	Description
0.539	79	50-75% Grass cover, Fair, HSG C
0.047	98	Paved parking, HSG C
0.586	81	Weighted Average
0.539		91.98% Pervious Area
0.047		8.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0250	1.36		Sheet Flow, grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
0.6	91	0.0220	2.39		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
1.8	191	Total			

Subcatchment 22S: Area 2

Hydrograph



Pond 1-4

NOAA 24-hr A 100-Year Rainfall=5.63"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment16S: Area 1 Runoff Area=1.831 ac 3.71% Impervious Runoff Depth=3.45"
Flow Length=300' Slope=0.0260 '/' Tc=2.5 min CN=80 Runoff=12.27 cfs 22,925 cf

Subcatchment19S: Areas 3 and 4 Runoff Area=1.831 ac 4.59% Impervious Runoff Depth=3.45"
Flow Length=379' Tc=6.1 min CN=80 Runoff=10.52 cfs 22,925 cf

Subcatchment22S: Area 2 Runoff Area=0.586 ac 8.02% Impervious Runoff Depth=3.55"
Flow Length=191' Tc=1.8 min CN=81 Runoff=4.09 cfs 7,548 cf

Total Runoff Area = 185,043 sf Runoff Volume = 53,397 cf Average Runoff Depth = 3.46"
95.32% Pervious = 176,374 sf 4.68% Impervious = 8,668 sf

Pond 1-4

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NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Subcatchment 16S: Area 1

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 12.27 cfs @ 12.09 hrs, Volume= 22,925 cf, Depth= 3.45"

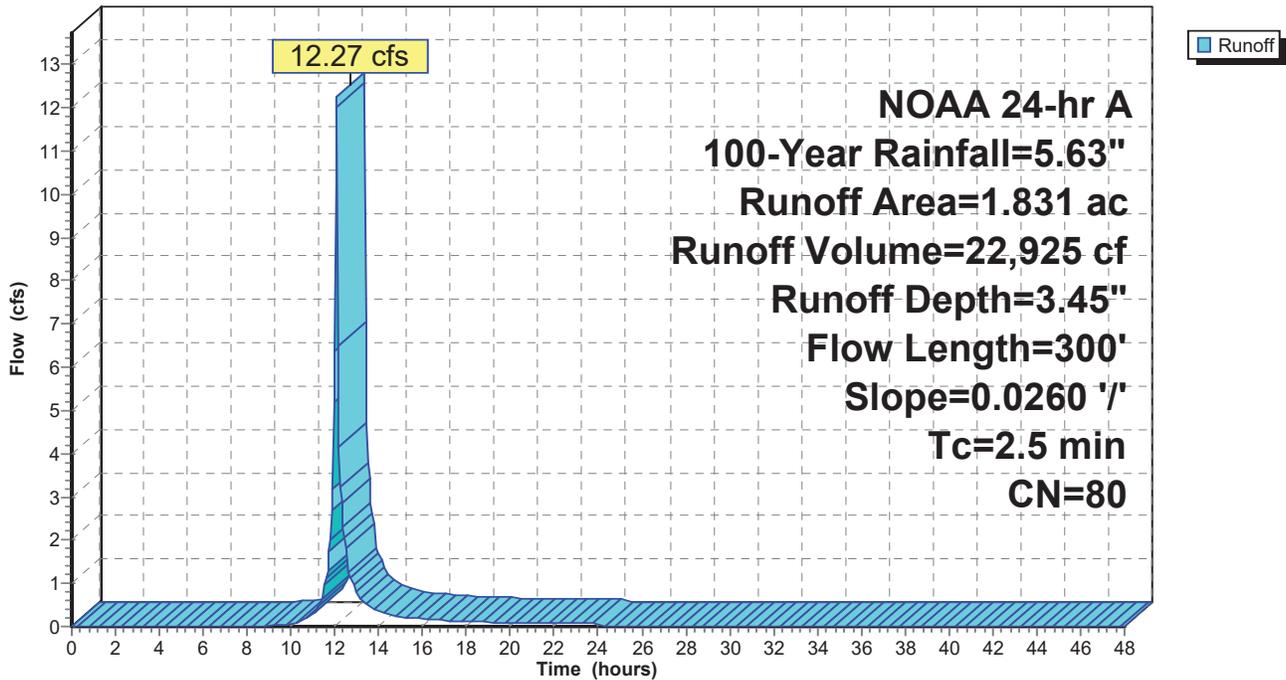
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 100-Year Rainfall=5.63"

Area (ac)	CN	Description
1.763	79	50-75% Grass cover, Fair, HSG C
0.068	98	Paved parking, HSG C
1.831	80	Weighted Average
1.763		96.29% Pervious Area
0.068		3.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0260	1.39		Sheet Flow, Grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
1.3	200	0.0260	2.60		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
2.5	300	Total			

Subcatchment 16S: Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Subcatchment 19S: Areas 3 and 4

Runoff = 10.52 cfs @ 12.13 hrs, Volume= 22,925 cf, Depth= 3.45"

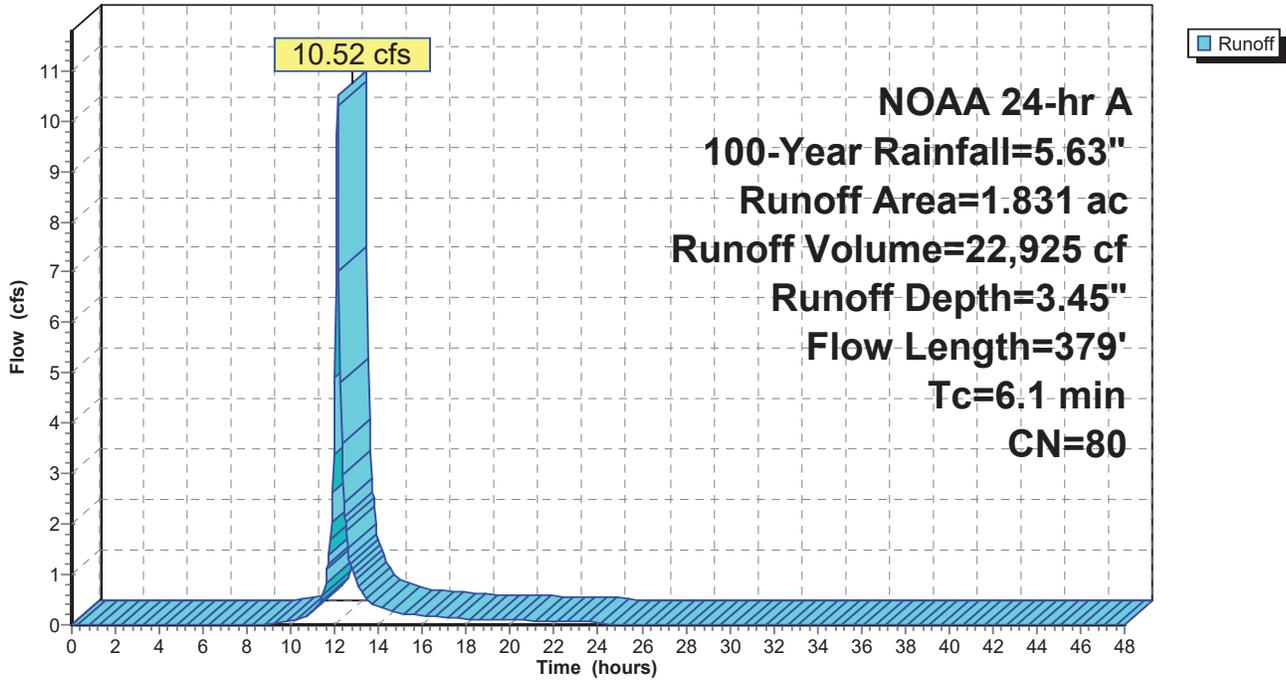
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 100-Year Rainfall=5.63"

Area (ac)	CN	Description
1.747	79	50-75% Grass cover, Fair, HSG C
0.084	98	Paved parking, HSG D
1.831	80	Weighted Average
1.747		95.41% Pervious Area
0.084		4.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	100	0.0050	0.72		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
3.8	279	0.0300	1.21		Shallow Concentrated Flow, Grassed Short Grass Pasture Kv= 7.0 fps
6.1	379	Total			

Subcatchment 19S: Areas 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Subcatchment 22S: Area 2

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 4.09 cfs @ 12.08 hrs, Volume= 7,548 cf, Depth= 3.55"

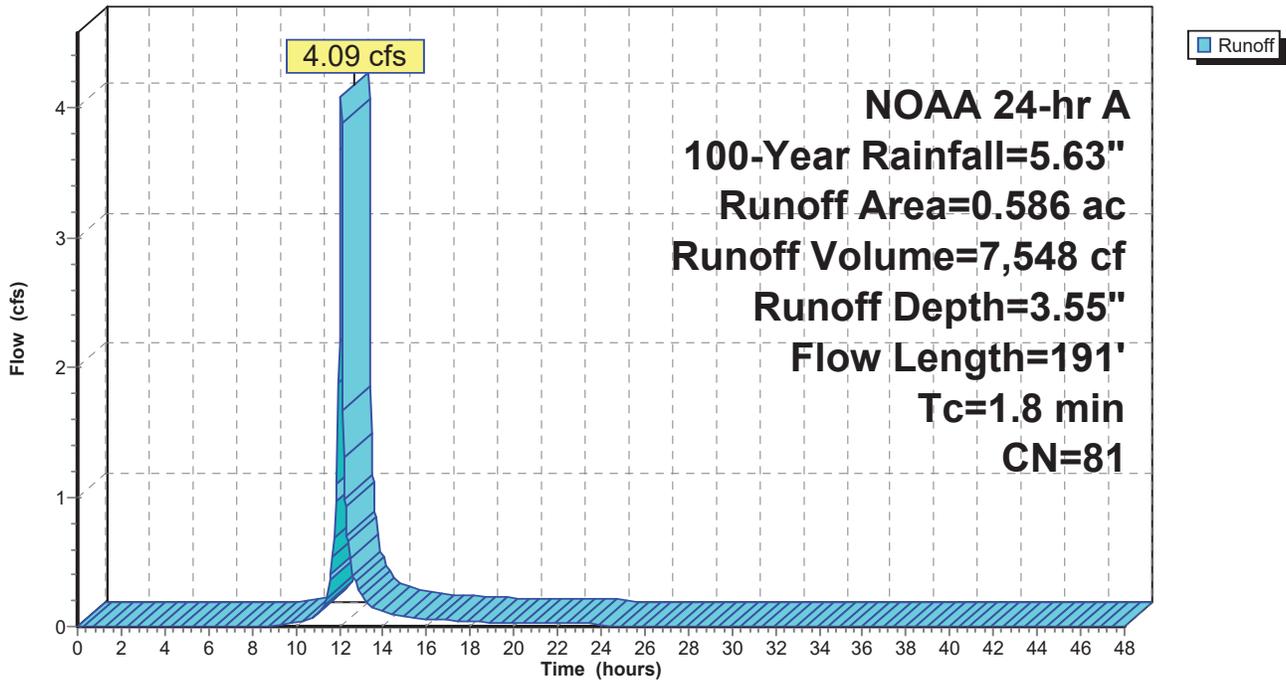
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 100-Year Rainfall=5.63"

Area (ac)	CN	Description
0.539	79	50-75% Grass cover, Fair, HSG C
0.047	98	Paved parking, HSG C
0.586	81	Weighted Average
0.539		91.98% Pervious Area
0.047		8.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0250	1.36		Sheet Flow, grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
0.6	91	0.0220	2.39		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
1.8	191	Total			

Subcatchment 22S: Area 2

Hydrograph



Pond 1-4

NOAA 24-hr A WQv Rainfall=1.65"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment16S: Area 1 Runoff Area=1.831 ac 3.71% Impervious Runoff Depth=0.36"
Flow Length=300' Slope=0.0260 '/' Tc=2.5 min CN=80 Runoff=1.24 cfs 2,408 cf

Subcatchment19S: Areas 3 and 4 Runoff Area=1.831 ac 4.59% Impervious Runoff Depth=0.36"
Flow Length=379' Tc=6.1 min CN=80 Runoff=1.04 cfs 2,408 cf

Subcatchment22S: Area 2 Runoff Area=0.586 ac 8.02% Impervious Runoff Depth=0.40"
Flow Length=191' Tc=1.8 min CN=81 Runoff=0.46 cfs 841 cf

Total Runoff Area = 185,043 sf Runoff Volume = 5,658 cf Average Runoff Depth = 0.37"
95.32% Pervious = 176,374 sf 4.68% Impervious = 8,668 sf

Pond 1-4

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NOAA 24-hr A WQv Rainfall=1.65"

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Summary for Subcatchment 16S: Area 1

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 1.24 cfs @ 12.10 hrs, Volume= 2,408 cf, Depth= 0.36"

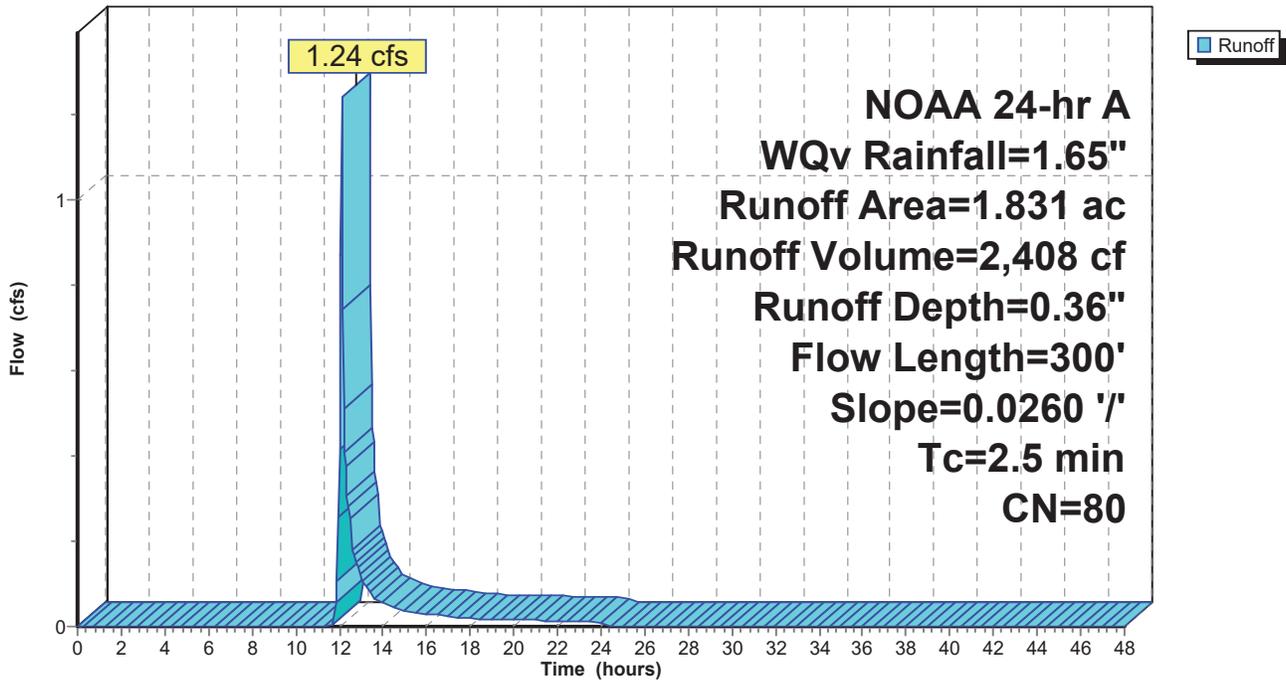
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A WQv Rainfall=1.65"

Area (ac)	CN	Description
1.763	79	50-75% Grass cover, Fair, HSG C
0.068	98	Paved parking, HSG C
1.831	80	Weighted Average
1.763		96.29% Pervious Area
0.068		3.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0260	1.39		Sheet Flow, Grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
1.3	200	0.0260	2.60		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
2.5	300	Total			

Subcatchment 16S: Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A WQv Rainfall=1.65"

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Summary for Subcatchment 19S: Areas 3 and 4

Runoff = 1.04 cfs @ 12.15 hrs, Volume= 2,408 cf, Depth= 0.36"

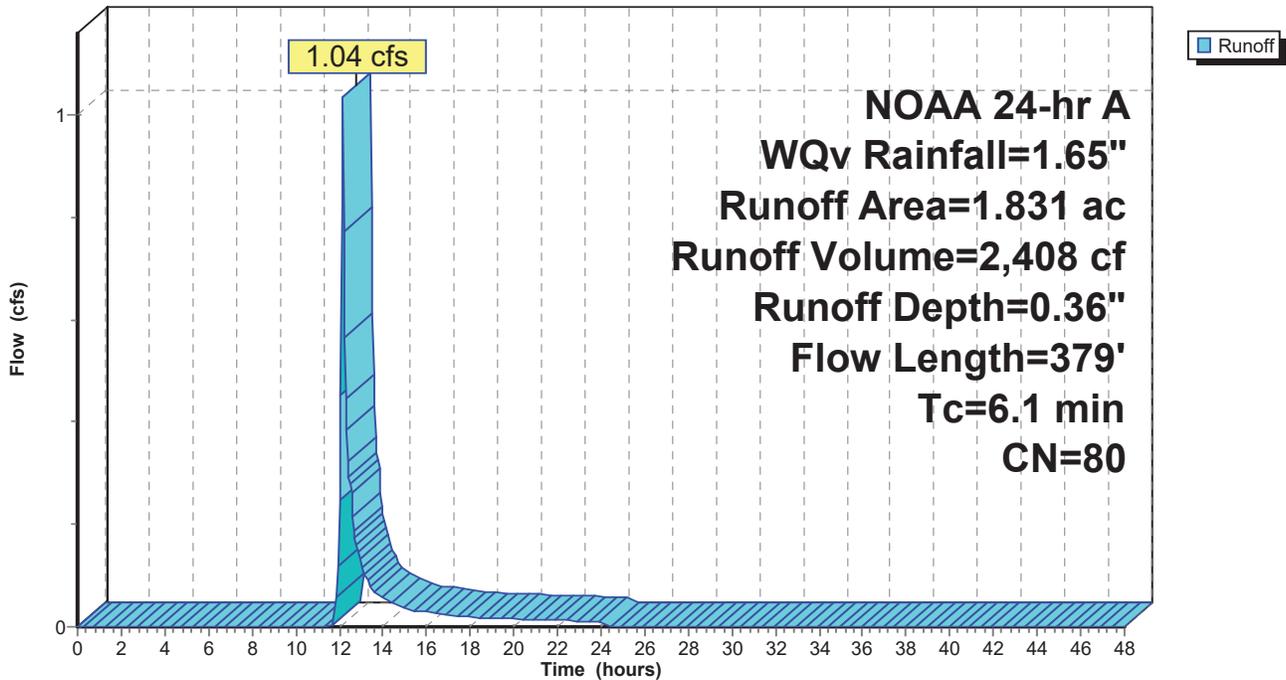
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A WQv Rainfall=1.65"

Area (ac)	CN	Description
1.747	79	50-75% Grass cover, Fair, HSG C
0.084	98	Paved parking, HSG D
1.831	80	Weighted Average
1.747		95.41% Pervious Area
0.084		4.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.3	100	0.0050	0.72		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
3.8	279	0.0300	1.21		Shallow Concentrated Flow, Grassed Short Grass Pasture Kv= 7.0 fps
6.1	379	Total			

Subcatchment 19S: Areas 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A WQv Rainfall=1.65"

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Summary for Subcatchment 22S: Area 2

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 0.46 cfs @ 12.09 hrs, Volume= 841 cf, Depth= 0.40"

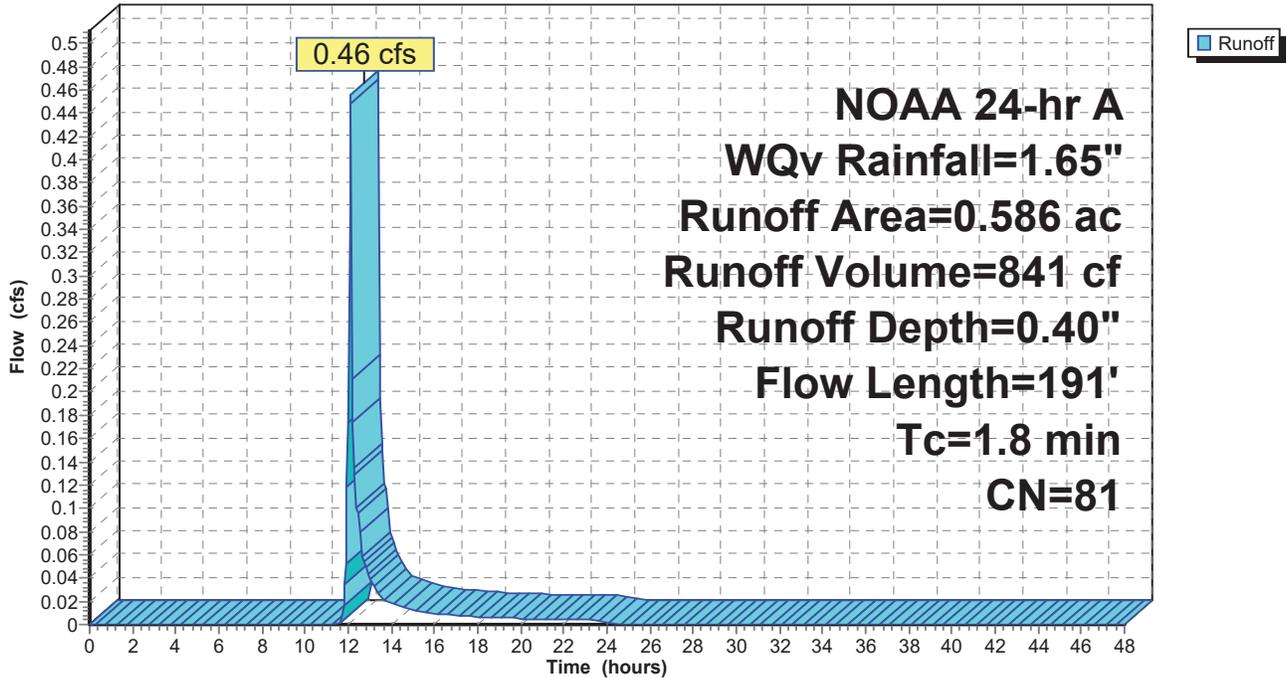
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A WQv Rainfall=1.65"

Area (ac)	CN	Description
0.539	79	50-75% Grass cover, Fair, HSG C
0.047	98	Paved parking, HSG C
0.586	81	Weighted Average
0.539		91.98% Pervious Area
0.047		8.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0250	1.36		Sheet Flow, grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
0.6	91	0.0220	2.39		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
1.8	191	Total			

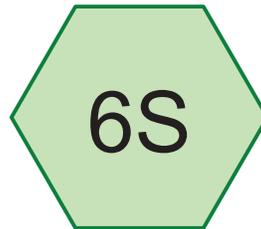
Subcatchment 22S: Area 2

Hydrograph





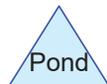
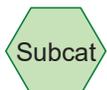
Area 5 and 6



Area 7



Area 8



Routing Diagram for Pond 6-8

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Pond 6-8

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NOAA 24-hr	A	Default	24.00	1	2.20	2
2	2-Year	NOAA 24-hr	A	Default	24.00	1	2.63	2
3	5-Year	NOAA 24-hr	A	Default	24.00	1	3.24	2
4	10-Year	NOAA 24-hr	A	Default	24.00	1	3.74	2
5	25-Year	NOAA 24-hr	A	Default	24.00	1	4.44	2
6	50-Year	NOAA 24-hr	A	Default	24.00	1	5.02	2
7	100-Year	NOAA 24-hr	A	Default	24.00	1	5.63	2
8	WQv	NOAA 24-hr	A	Default	24.00	1	1.65	2

Pond 6-8

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Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
122,447	79	50-75% Grass cover, Fair, HSG C (6S, 13S, 16S)
122,447	79	TOTAL AREA

Pond 6-8

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
122,447	HSG C	6S, 13S, 16S
0	HSG D	
0	Other	
122,447		TOTAL AREA

Pond 6-8

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Ground Covers (selected 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	122,447	0	0	122,447	50-75% Grass cover, Fair
0	0	122,447	0	0	122,447	TOTAL AREA

Pond 6-8

NOAA 24-hr A 1-Year Rainfall=2.20"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment6S: Area 7

Runoff Area=1.174 ac 0.00% Impervious Runoff Depth=0.64"
Flow Length=201' Tc=3.7 min CN=79 Runoff=1.37 cfs 2,742 cf

Subcatchment13S: Area 8

Runoff Area=0.632 ac 0.00% Impervious Runoff Depth=0.64"
Flow Length=226' Tc=6.3 min CN=79 Runoff=0.67 cfs 1,476 cf

Subcatchment16S: Area 5 and 6

Runoff Area=1.005 ac 0.00% Impervious Runoff Depth=0.64"
Flow Length=247' Slope=0.0140 '/' Tc=2.8 min CN=79 Runoff=1.24 cfs 2,347 cf

Total Runoff Area = 122,447 sf Runoff Volume = 6,564 cf Average Runoff Depth = 0.64"
100.00% Pervious = 122,447 sf 0.00% Impervious = 0 sf

Pond 6-8

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Subcatchment 6S: Area 7

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.37 cfs @ 12.11 hrs, Volume= 2,742 cf, Depth= 0.64"

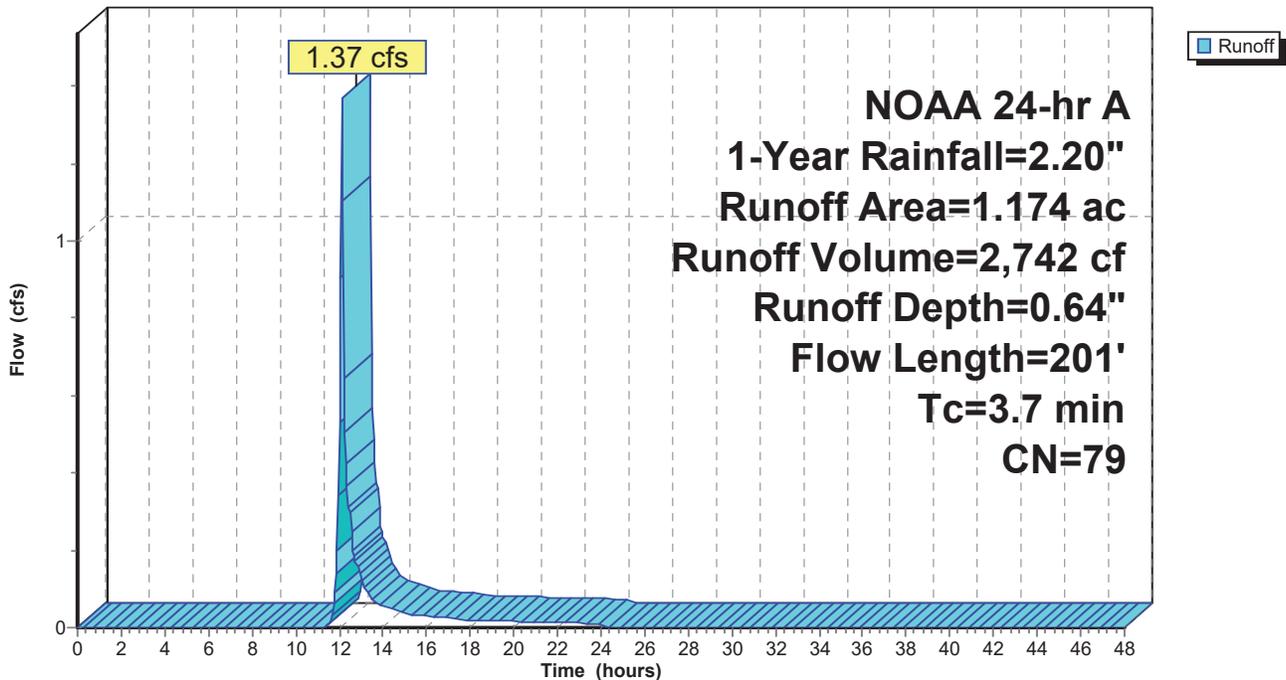
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 1-Year Rainfall=2.20"

Area (ac)	CN	Description
1.174	79	50-75% Grass cover, Fair, HSG C
1.174		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.0040	0.66		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	101	0.0080	1.44		Shallow Concentrated Flow, grassed Unpaved Kv= 16.1 fps
3.7	201	Total			

Subcatchment 6S: Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Subcatchment 13S: Area 8

Runoff = 0.67 cfs @ 12.14 hrs, Volume= 1,476 cf, Depth= 0.64"

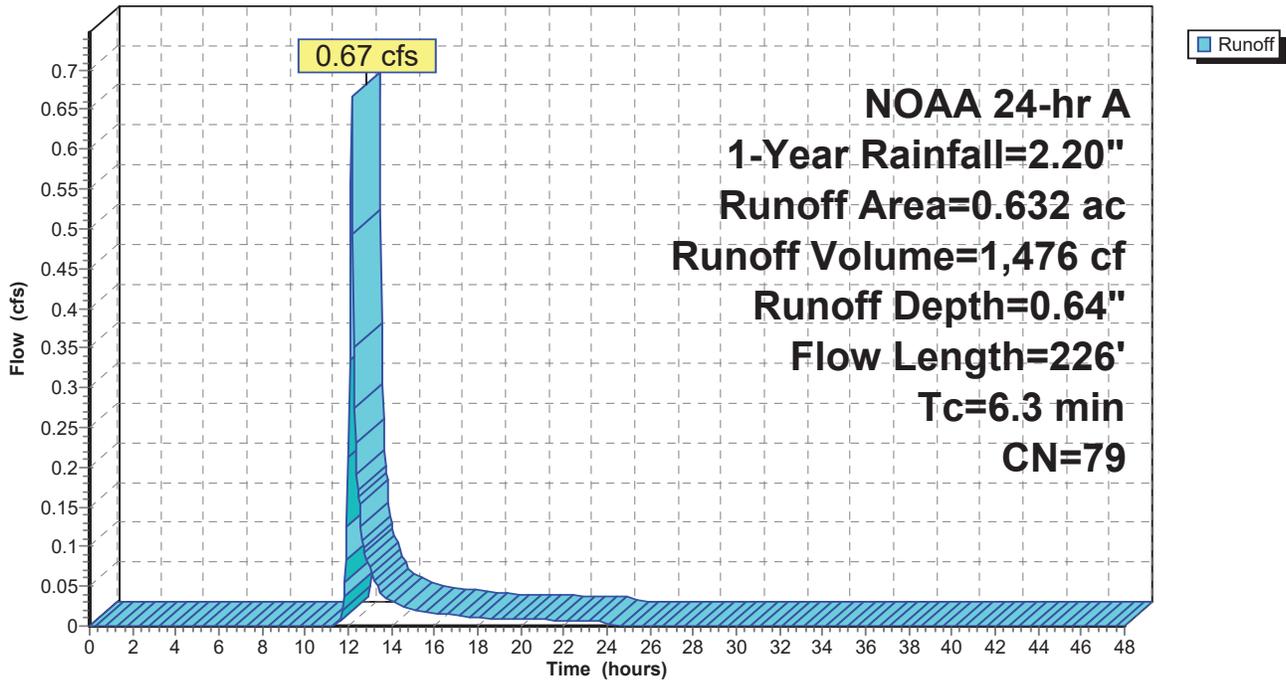
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 1-Year Rainfall=2.20"

Area (ac)	CN	Description
0.632	79	50-75% Grass cover, Fair, HSG C
0.632		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0060	0.77		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
4.1	126	0.0010	0.51		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
6.3	226	Total			

Subcatchment 13S: Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Subcatchment 16S: Area 5 and 6

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 1.24 cfs @ 12.10 hrs, Volume= 2,347 cf, Depth= 0.64"

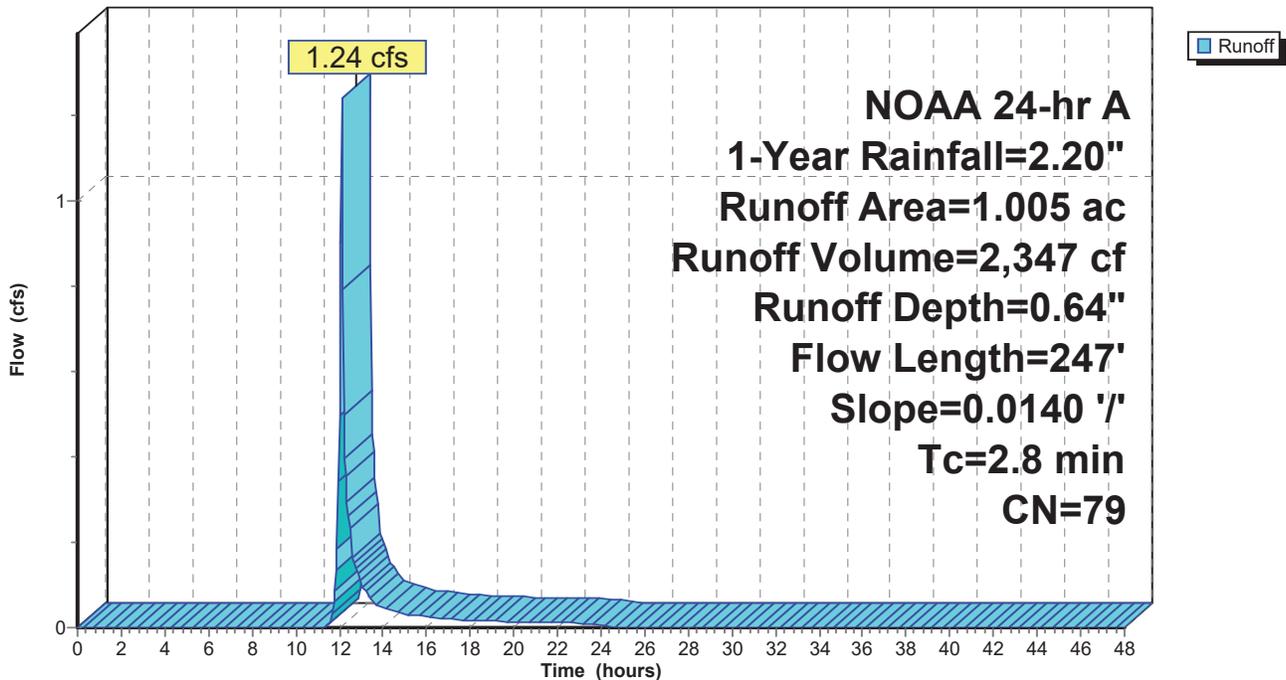
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 1-Year Rainfall=2.20"

Area (ac)	CN	Description
1.005	79	50-75% Grass cover, Fair, HSG C
1.005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0140	1.08		Sheet Flow, Grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
1.3	147	0.0140	1.90		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
2.8	247	Total			

Subcatchment 16S: Area 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 2-Year Rainfall=2.63"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment6S: Area 7

Runoff Area=1.174 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=201' Tc=3.7 min CN=79 Runoff=2.01 cfs 3,945 cf

Subcatchment13S: Area 8

Runoff Area=0.632 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=226' Tc=6.3 min CN=79 Runoff=0.98 cfs 2,124 cf

Subcatchment16S: Area 5 and 6

Runoff Area=1.005 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=247' Slope=0.0140 '/' Tc=2.8 min CN=79 Runoff=1.82 cfs 3,377 cf

Total Runoff Area = 122,447 sf Runoff Volume = 9,446 cf Average Runoff Depth = 0.93"
100.00% Pervious = 122,447 sf 0.00% Impervious = 0 sf

Pond 6-8

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Subcatchment 6S: Area 7

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 2.01 cfs @ 12.10 hrs, Volume= 3,945 cf, Depth= 0.93"

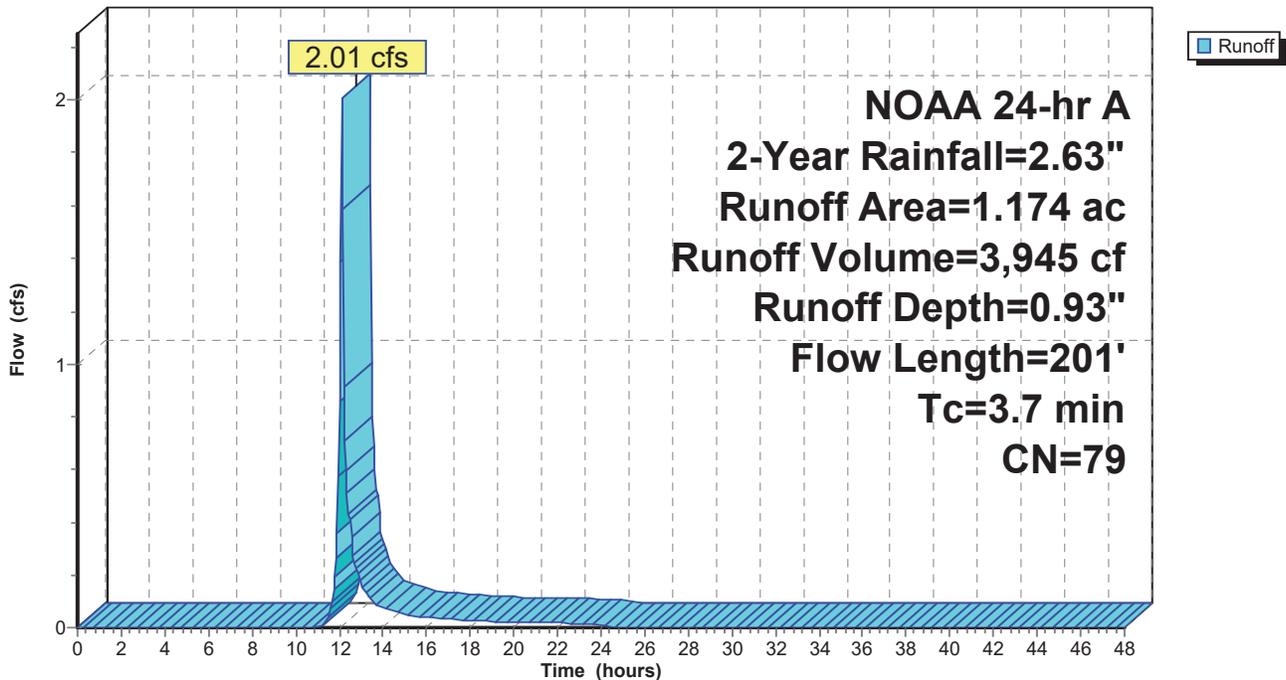
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 2-Year Rainfall=2.63"

Area (ac)	CN	Description
1.174	79	50-75% Grass cover, Fair, HSG C
1.174		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.0040	0.66		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	101	0.0080	1.44		Shallow Concentrated Flow, grassed Unpaved Kv= 16.1 fps
3.7	201	Total			

Subcatchment 6S: Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Subcatchment 13S: Area 8

Runoff = 0.98 cfs @ 12.14 hrs, Volume= 2,124 cf, Depth= 0.93"

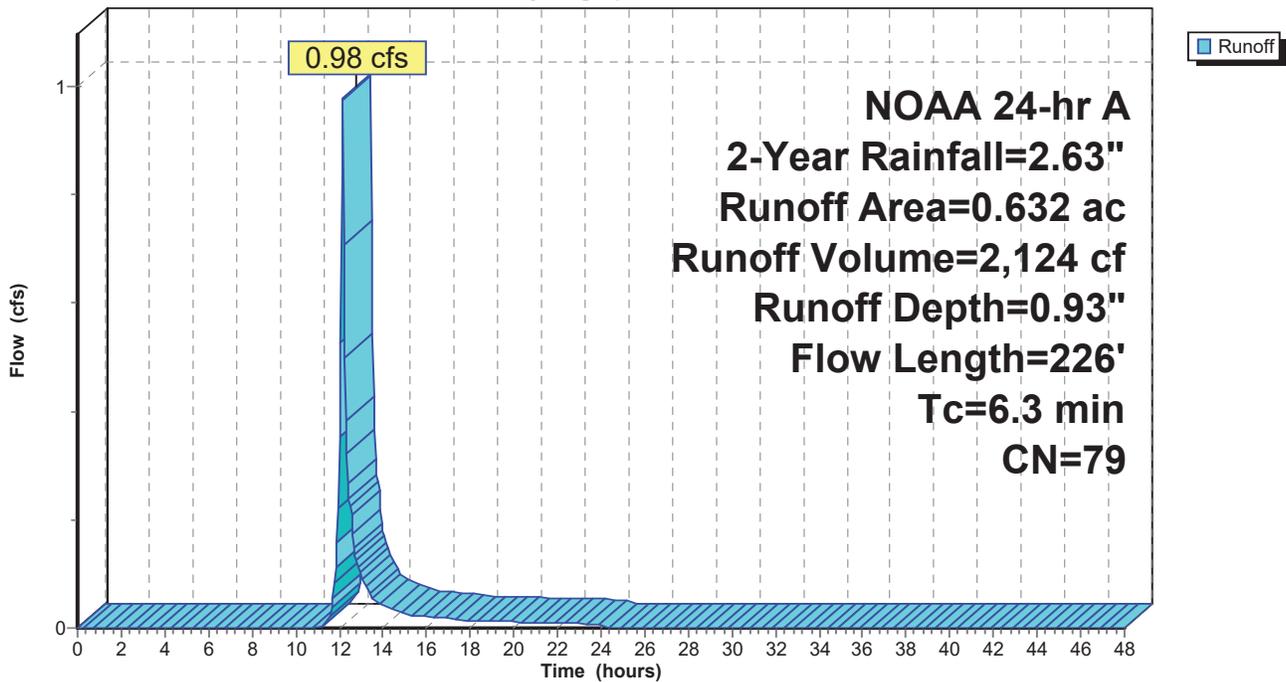
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 2-Year Rainfall=2.63"

Area (ac)	CN	Description
0.632	79	50-75% Grass cover, Fair, HSG C
0.632		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0060	0.77		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
4.1	126	0.0010	0.51		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
6.3	226	Total			

Subcatchment 13S: Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Subcatchment 16S: Area 5 and 6

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 1.82 cfs @ 12.09 hrs, Volume= 3,377 cf, Depth= 0.93"

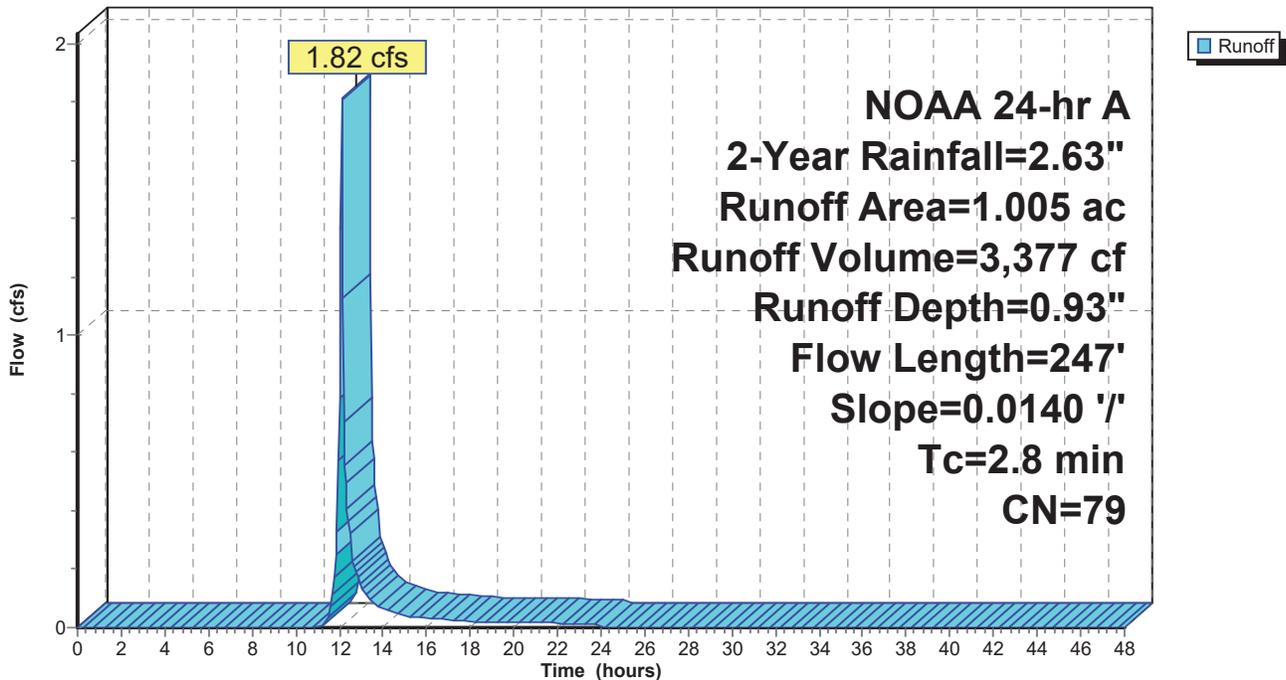
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 2-Year Rainfall=2.63"

Area (ac)	CN	Description
1.005	79	50-75% Grass cover, Fair, HSG C
1.005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0140	1.08		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
1.3	147	0.0140	1.90		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
2.8	247	Total			

Subcatchment 16S: Area 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 5-Year Rainfall=3.24"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment6S: Area 7

Runoff Area=1.174 ac 0.00% Impervious Runoff Depth=1.37"
Flow Length=201' Tc=3.7 min CN=79 Runoff=2.99 cfs 5,825 cf

Subcatchment13S: Area 8

Runoff Area=0.632 ac 0.00% Impervious Runoff Depth=1.37"
Flow Length=226' Tc=6.3 min CN=79 Runoff=1.46 cfs 3,136 cf

Subcatchment16S: Area 5 and 6

Runoff Area=1.005 ac 0.00% Impervious Runoff Depth=1.37"
Flow Length=247' Slope=0.0140 '/' Tc=2.8 min CN=79 Runoff=2.70 cfs 4,986 cf

Total Runoff Area = 122,447 sf Runoff Volume = 13,947 cf Average Runoff Depth = 1.37"
100.00% Pervious = 122,447 sf 0.00% Impervious = 0 sf

Pond 6-8

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Summary for Subcatchment 6S: Area 7

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.99 cfs @ 12.10 hrs, Volume= 5,825 cf, Depth= 1.37"

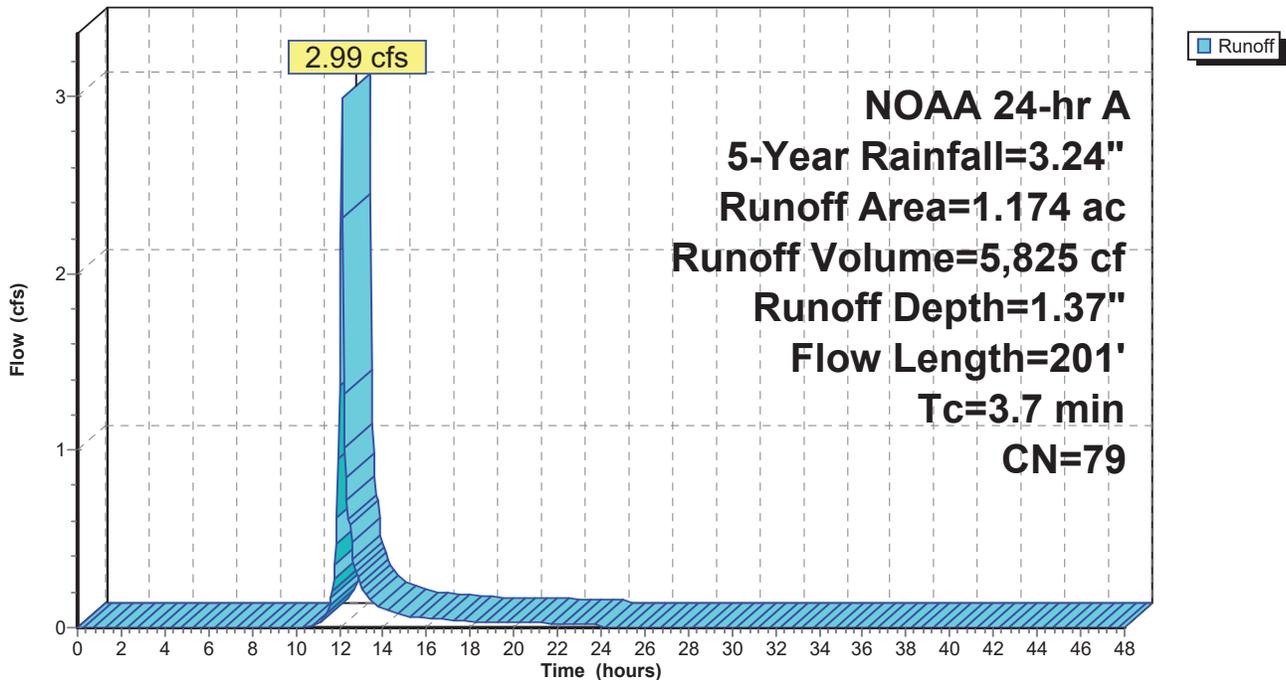
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 5-Year Rainfall=3.24"

Area (ac)	CN	Description
1.174	79	50-75% Grass cover, Fair, HSG C
1.174		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.0040	0.66		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	101	0.0080	1.44		Shallow Concentrated Flow, grassed Unpaved Kv= 16.1 fps
3.7	201	Total			

Subcatchment 6S: Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Summary for Subcatchment 13S: Area 8

Runoff = 1.46 cfs @ 12.14 hrs, Volume= 3,136 cf, Depth= 1.37"

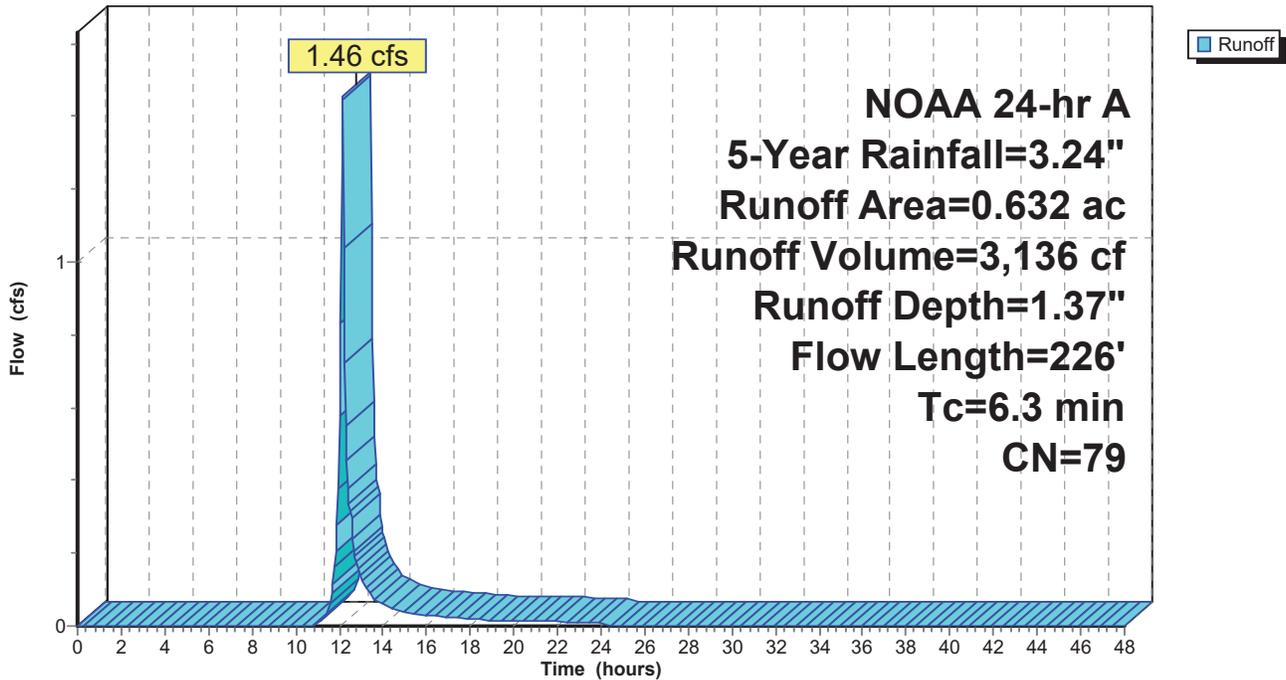
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 5-Year Rainfall=3.24"

Area (ac)	CN	Description
0.632	79	50-75% Grass cover, Fair, HSG C
0.632		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0060	0.77		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
4.1	126	0.0010	0.51		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
6.3	226	Total			

Subcatchment 13S: Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Summary for Subcatchment 16S: Area 5 and 6

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 2.70 cfs @ 12.09 hrs, Volume= 4,986 cf, Depth= 1.37"

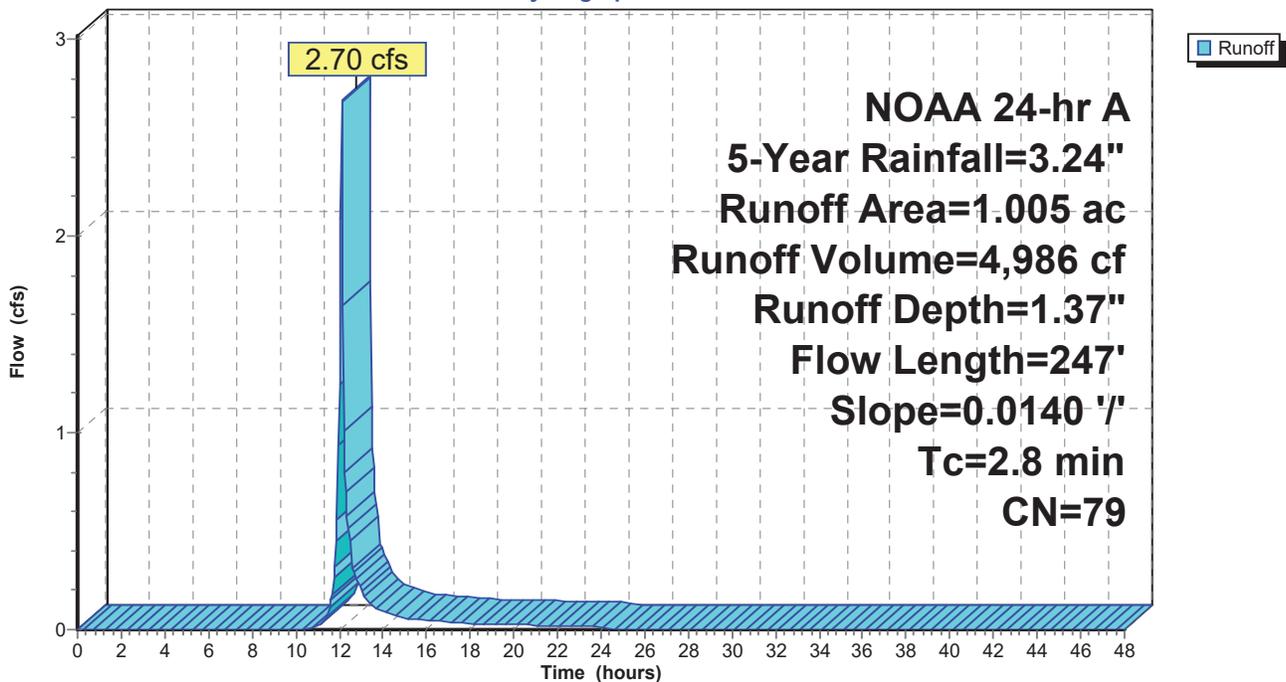
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 5-Year Rainfall=3.24"

Area (ac)	CN	Description
1.005	79	50-75% Grass cover, Fair, HSG C
1.005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0140	1.08		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
1.3	147	0.0140	1.90		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
2.8	247	Total			

Subcatchment 16S: Area 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 10-Year Rainfall=3.74"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment6S: Area 7

Runoff Area=1.174 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=201' Tc=3.7 min CN=79 Runoff=3.85 cfs 7,477 cf

Subcatchment13S: Area 8

Runoff Area=0.632 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=226' Tc=6.3 min CN=79 Runoff=1.87 cfs 4,025 cf

Subcatchment16S: Area 5 and 6

Runoff Area=1.005 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=247' Slope=0.0140 '/' Tc=2.8 min CN=79 Runoff=3.45 cfs 6,401 cf

Total Runoff Area = 122,447 sf Runoff Volume = 17,904 cf Average Runoff Depth = 1.75"
100.00% Pervious = 122,447 sf 0.00% Impervious = 0 sf

Pond 6-8

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NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Subcatchment 6S: Area 7

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 3.85 cfs @ 12.10 hrs, Volume= 7,477 cf, Depth= 1.75"

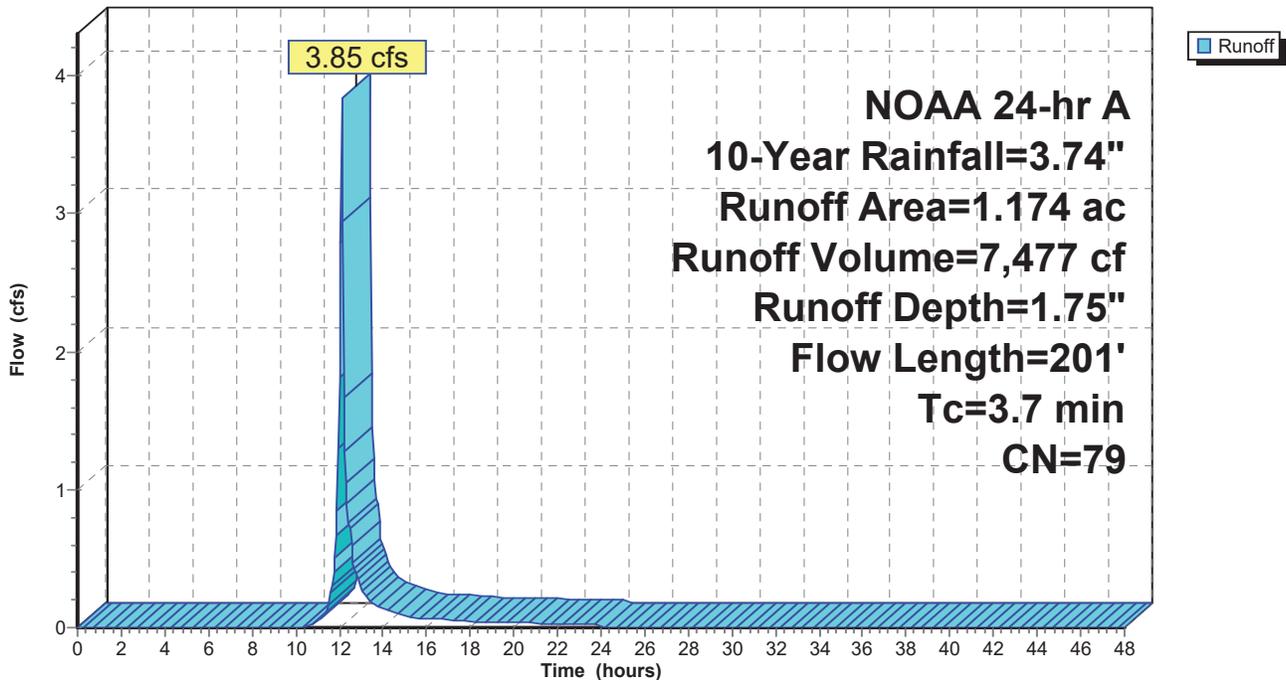
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 10-Year Rainfall=3.74"

Area (ac)	CN	Description
1.174	79	50-75% Grass cover, Fair, HSG C
1.174		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.0040	0.66		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	101	0.0080	1.44		Shallow Concentrated Flow, grassed Unpaved Kv= 16.1 fps
3.7	201	Total			

Subcatchment 6S: Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Subcatchment 13S: Area 8

Runoff = 1.87 cfs @ 12.14 hrs, Volume= 4,025 cf, Depth= 1.75"

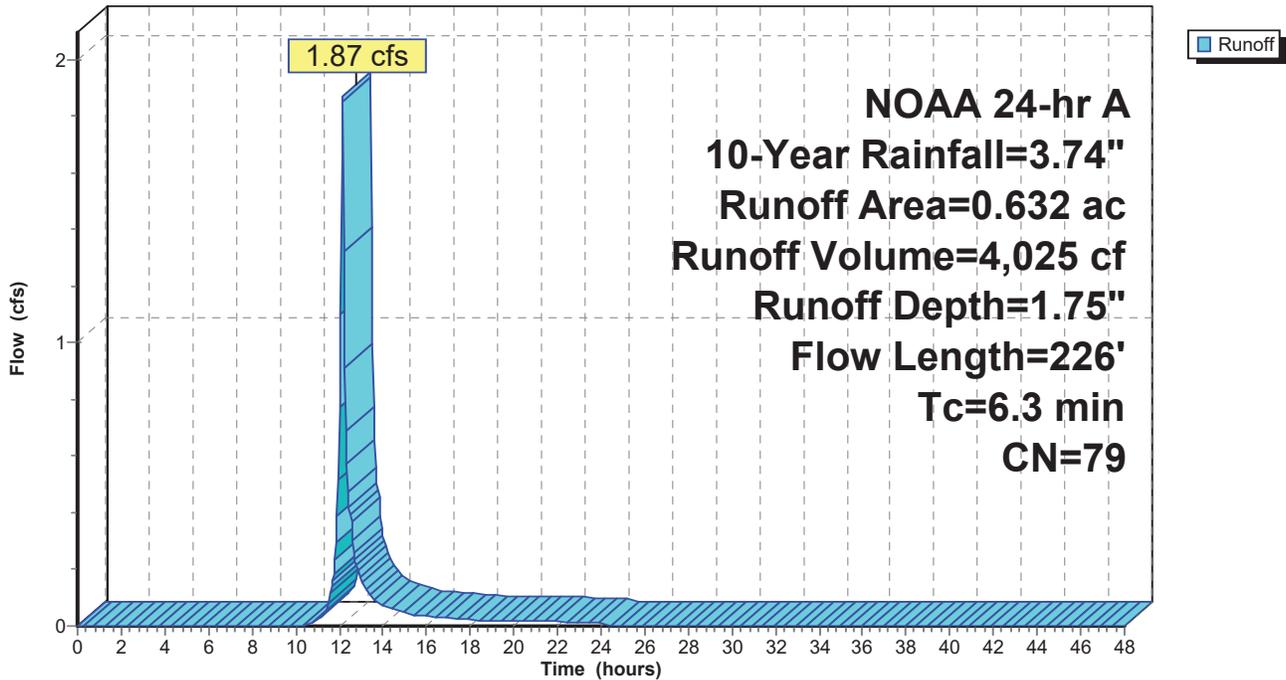
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 10-Year Rainfall=3.74"

Area (ac)	CN	Description
0.632	79	50-75% Grass cover, Fair, HSG C
0.632		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0060	0.77		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
4.1	126	0.0010	0.51		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
6.3	226	Total			

Subcatchment 13S: Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Subcatchment 16S: Area 5 and 6

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 3.45 cfs @ 12.09 hrs, Volume= 6,401 cf, Depth= 1.75"

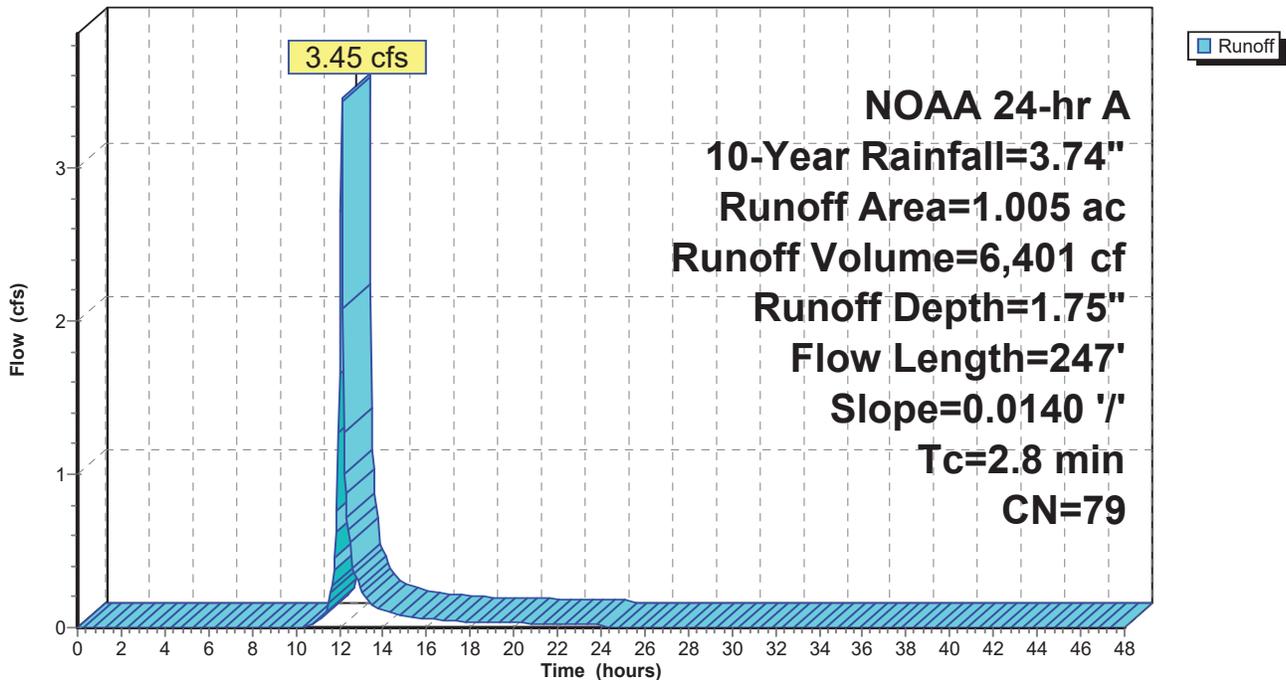
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 10-Year Rainfall=3.74"

Area (ac)	CN	Description
1.005	79	50-75% Grass cover, Fair, HSG C
1.005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0140	1.08		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
1.3	147	0.0140	1.90		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
2.8	247	Total			

Subcatchment 16S: Area 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 25-Year Rainfall=4.44"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment6S: Area 7

Runoff Area=1.174 ac 0.00% Impervious Runoff Depth=2.33"
Flow Length=201' Tc=3.7 min CN=79 Runoff=5.08 cfs 9,913 cf

Subcatchment13S: Area 8

Runoff Area=0.632 ac 0.00% Impervious Runoff Depth=2.33"
Flow Length=226' Tc=6.3 min CN=79 Runoff=2.47 cfs 5,337 cf

Subcatchment16S: Area 5 and 6

Runoff Area=1.005 ac 0.00% Impervious Runoff Depth=2.33"
Flow Length=247' Slope=0.0140 '/' Tc=2.8 min CN=79 Runoff=4.55 cfs 8,486 cf

Total Runoff Area = 122,447 sf Runoff Volume = 23,736 cf Average Runoff Depth = 2.33"
100.00% Pervious = 122,447 sf 0.00% Impervious = 0 sf

Pond 6-8

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NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Subcatchment 6S: Area 7

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 5.08 cfs @ 12.10 hrs, Volume= 9,913 cf, Depth= 2.33"

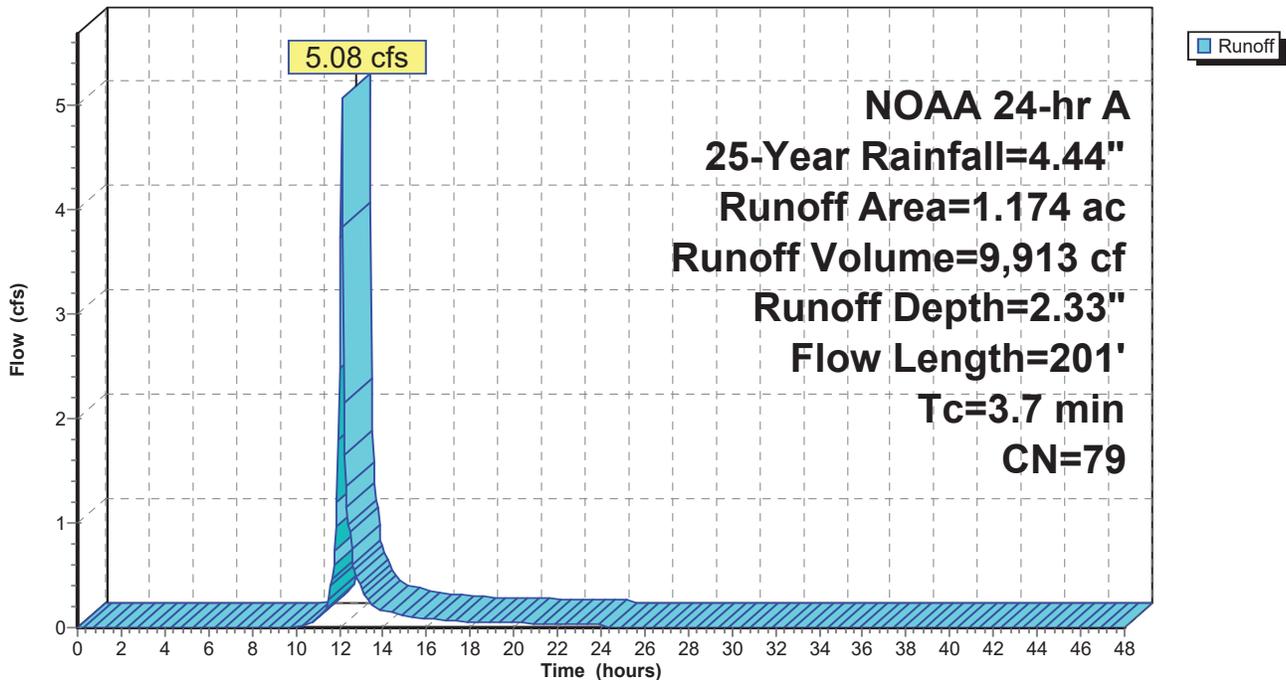
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 25-Year Rainfall=4.44"

Area (ac)	CN	Description
1.174	79	50-75% Grass cover, Fair, HSG C
1.174		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.0040	0.66		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	101	0.0080	1.44		Shallow Concentrated Flow, grassed Unpaved Kv= 16.1 fps
3.7	201	Total			

Subcatchment 6S: Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Subcatchment 13S: Area 8

Runoff = 2.47 cfs @ 12.14 hrs, Volume= 5,337 cf, Depth= 2.33"

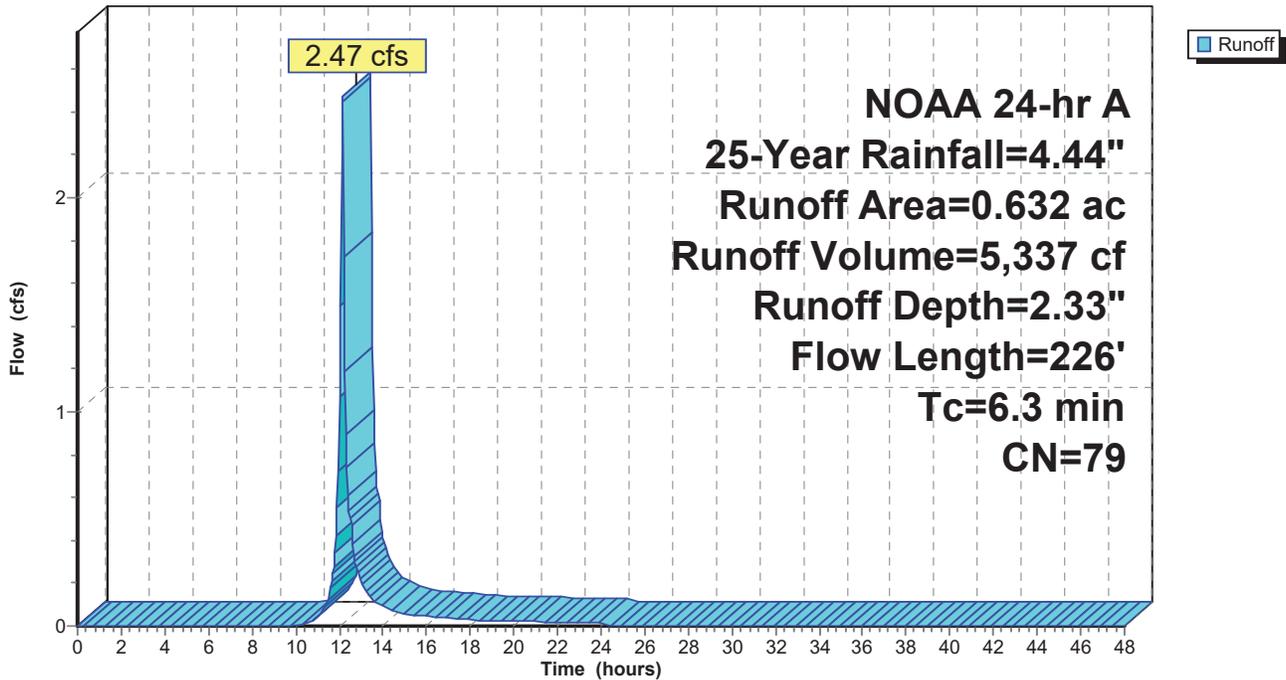
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 25-Year Rainfall=4.44"

Area (ac)	CN	Description
0.632	79	50-75% Grass cover, Fair, HSG C
0.632		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0060	0.77		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
4.1	126	0.0010	0.51		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
6.3	226	Total			

Subcatchment 13S: Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Subcatchment 16S: Area 5 and 6

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 4.55 cfs @ 12.09 hrs, Volume= 8,486 cf, Depth= 2.33"

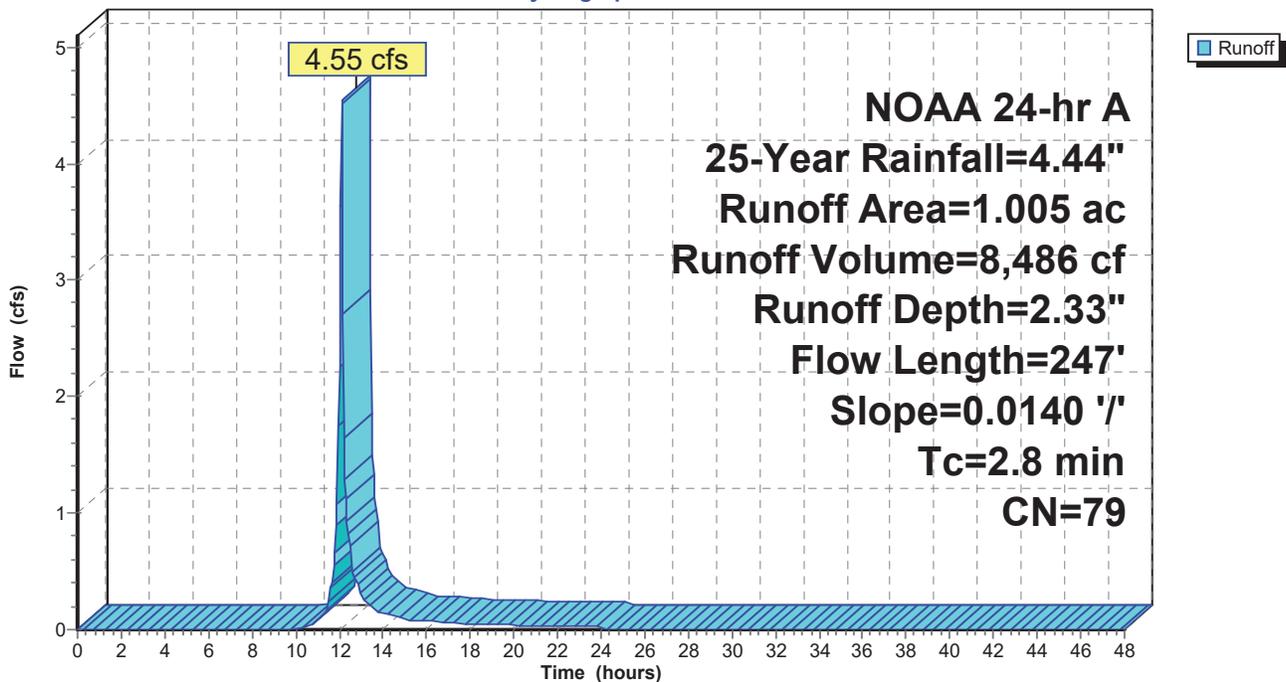
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 25-Year Rainfall=4.44"

Area (ac)	CN	Description
1.005	79	50-75% Grass cover, Fair, HSG C
1.005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0140	1.08		Sheet Flow, Grassed
1.3	147	0.0140	1.90		Shallow Concentrated Flow, unpaved
2.8	247	Total			Unpaved Kv= 16.1 fps

Subcatchment 16S: Area 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 50-Year Rainfall=5.02"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment6S: Area 7

Runoff Area=1.174 ac 0.00% Impervious Runoff Depth=2.82"
Flow Length=201' Tc=3.7 min CN=79 Runoff=6.12 cfs 12,013 cf

Subcatchment13S: Area 8

Runoff Area=0.632 ac 0.00% Impervious Runoff Depth=2.82"
Flow Length=226' Tc=6.3 min CN=79 Runoff=2.98 cfs 6,467 cf

Subcatchment16S: Area 5 and 6

Runoff Area=1.005 ac 0.00% Impervious Runoff Depth=2.82"
Flow Length=247' Slope=0.0140 '/' Tc=2.8 min CN=79 Runoff=5.48 cfs 10,284 cf

Total Runoff Area = 122,447 sf Runoff Volume = 28,764 cf Average Runoff Depth = 2.82"
100.00% Pervious = 122,447 sf 0.00% Impervious = 0 sf

Pond 6-8

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NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Subcatchment 6S: Area 7

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 6.12 cfs @ 12.10 hrs, Volume= 12,013 cf, Depth= 2.82"

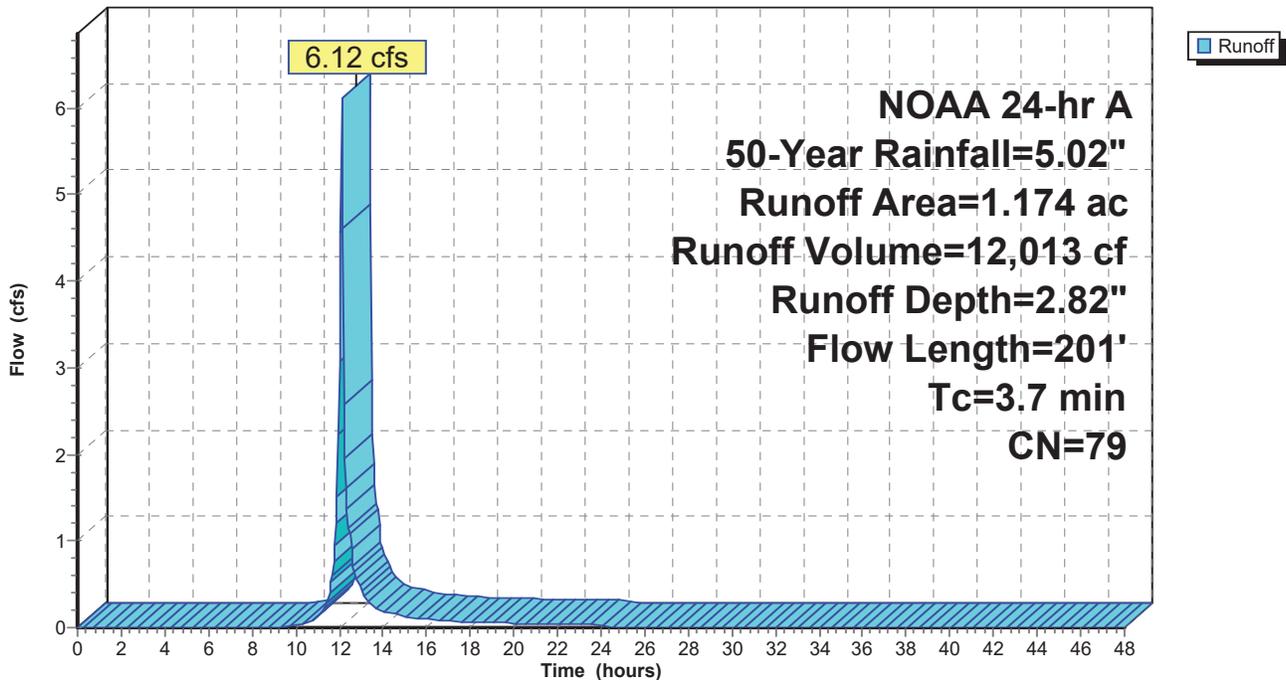
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 50-Year Rainfall=5.02"

Area (ac)	CN	Description
1.174	79	50-75% Grass cover, Fair, HSG C
1.174		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.0040	0.66		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	101	0.0080	1.44		Shallow Concentrated Flow, grassed Unpaved Kv= 16.1 fps
3.7	201	Total			

Subcatchment 6S: Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Subcatchment 13S: Area 8

Runoff = 2.98 cfs @ 12.14 hrs, Volume= 6,467 cf, Depth= 2.82"

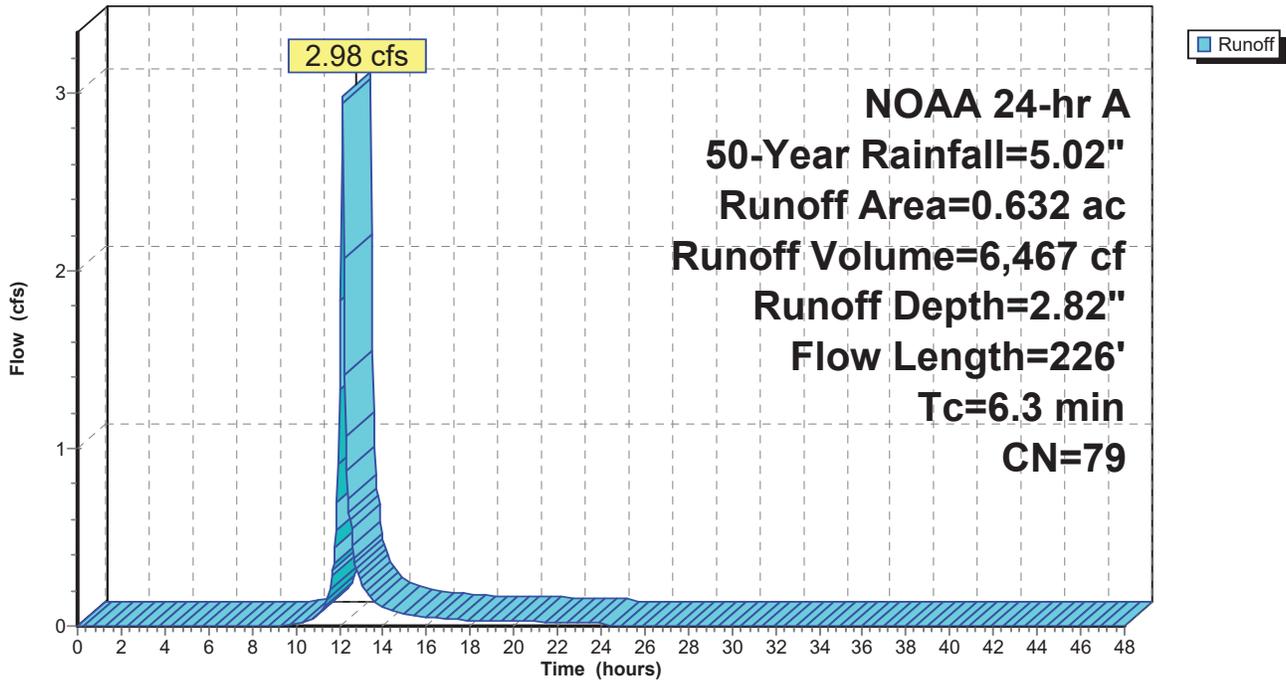
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 50-Year Rainfall=5.02"

Area (ac)	CN	Description
0.632	79	50-75% Grass cover, Fair, HSG C
0.632		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0060	0.77		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
4.1	126	0.0010	0.51		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
6.3	226	Total			

Subcatchment 13S: Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Subcatchment 16S: Area 5 and 6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.48 cfs @ 12.09 hrs, Volume= 10,284 cf, Depth= 2.82"

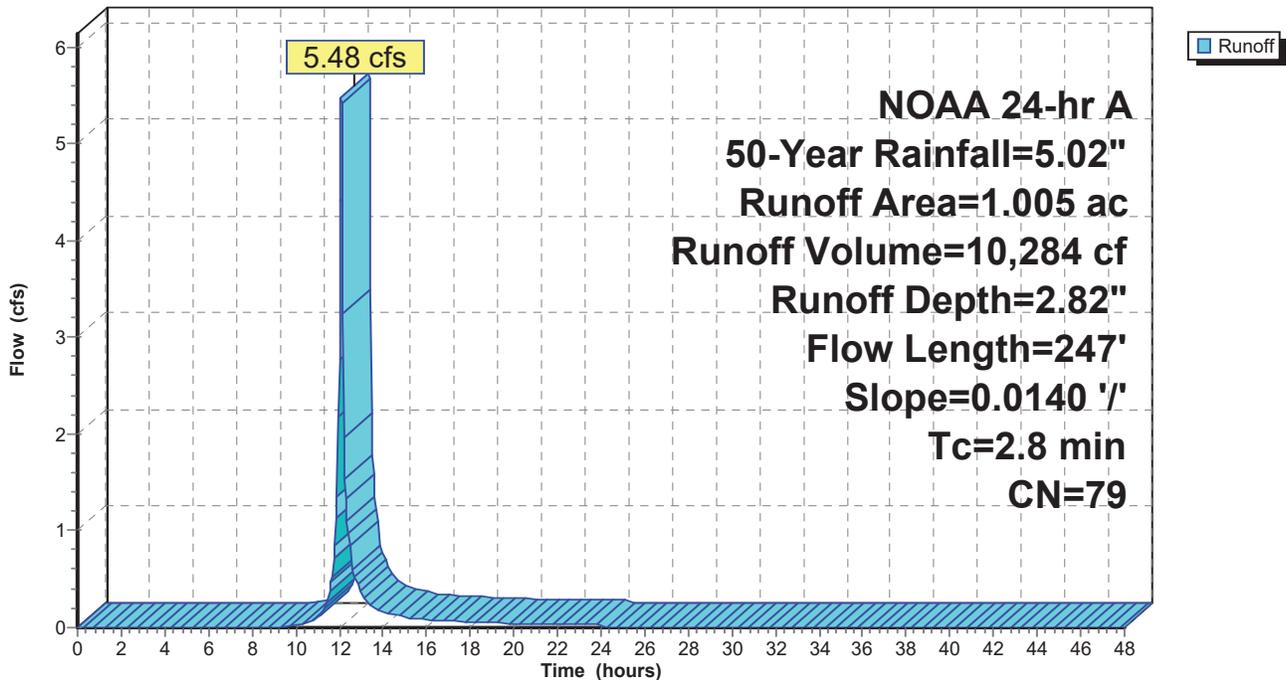
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 50-Year Rainfall=5.02"

Area (ac)	CN	Description
1.005	79	50-75% Grass cover, Fair, HSG C
1.005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0140	1.08		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
1.3	147	0.0140	1.90		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
2.8	247	Total			

Subcatchment 16S: Area 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 100-Year Rainfall=5.63"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment6S: Area 7

Runoff Area=1.174 ac 0.00% Impervious Runoff Depth=3.35"
Flow Length=201' Tc=3.7 min CN=79 Runoff=7.24 cfs 14,281 cf

Subcatchment13S: Area 8

Runoff Area=0.632 ac 0.00% Impervious Runoff Depth=3.35"
Flow Length=226' Tc=6.3 min CN=79 Runoff=3.53 cfs 7,688 cf

Subcatchment16S: Area 5 and 6

Runoff Area=1.005 ac 0.00% Impervious Runoff Depth=3.35"
Flow Length=247' Slope=0.0140 '/' Tc=2.8 min CN=79 Runoff=6.48 cfs 12,225 cf

Total Runoff Area = 122,447 sf Runoff Volume = 34,195 cf Average Runoff Depth = 3.35"
100.00% Pervious = 122,447 sf 0.00% Impervious = 0 sf

Pond 6-8

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NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Subcatchment 6S: Area 7

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 7.24 cfs @ 12.10 hrs, Volume= 14,281 cf, Depth= 3.35"

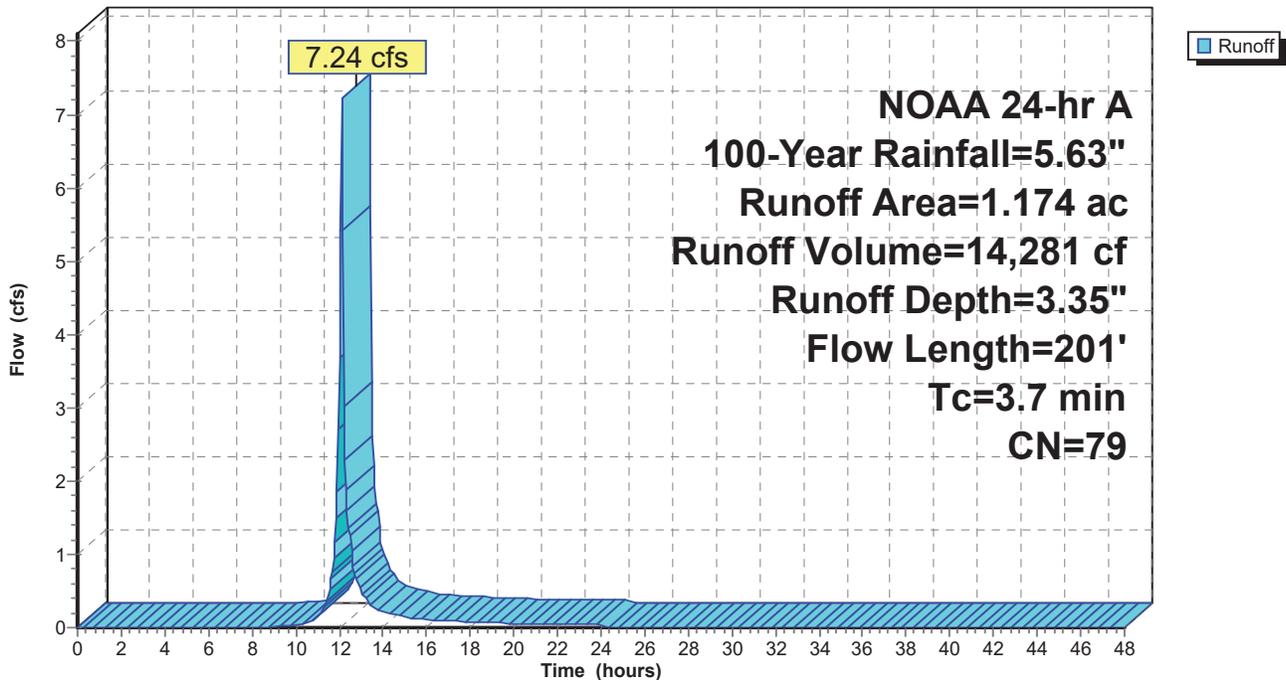
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 100-Year Rainfall=5.63"

Area (ac)	CN	Description
1.174	79	50-75% Grass cover, Fair, HSG C
1.174		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.0040	0.66		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	101	0.0080	1.44		Shallow Concentrated Flow, grassed Unpaved Kv= 16.1 fps
3.7	201	Total			

Subcatchment 6S: Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Subcatchment 13S: Area 8

Runoff = 3.53 cfs @ 12.14 hrs, Volume= 7,688 cf, Depth= 3.35"

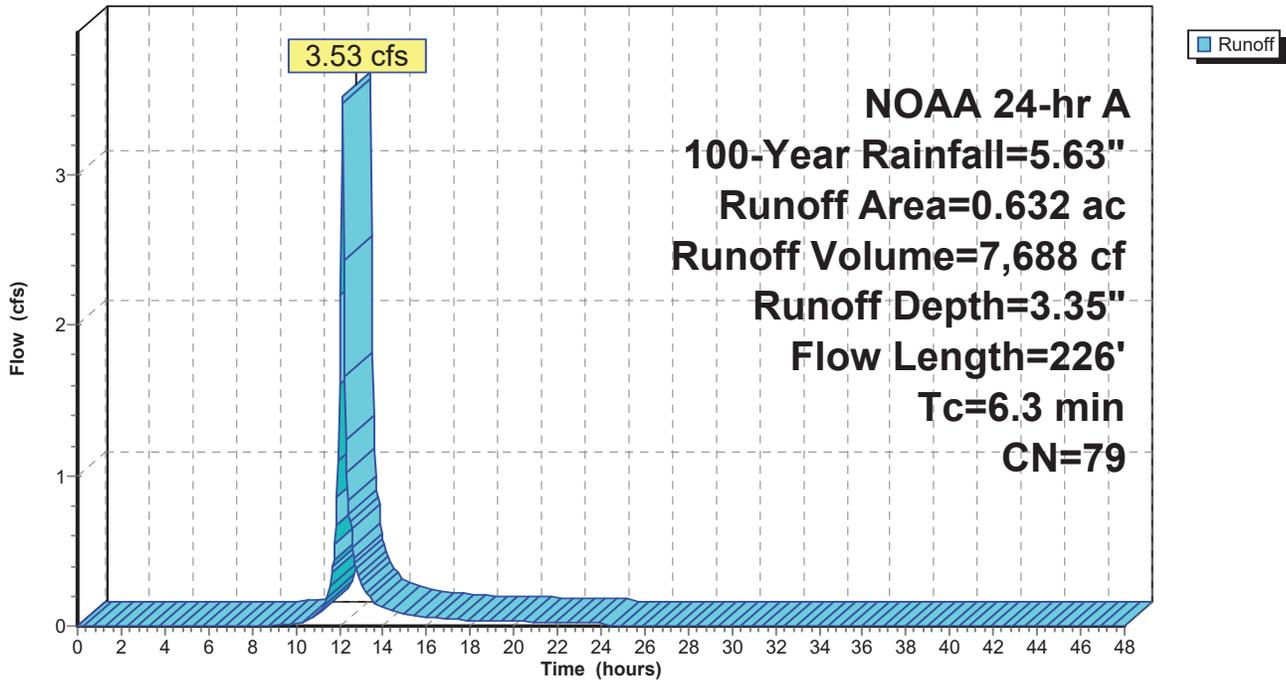
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 100-Year Rainfall=5.63"

Area (ac)	CN	Description
0.632	79	50-75% Grass cover, Fair, HSG C
0.632		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0060	0.77		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
4.1	126	0.0010	0.51		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
6.3	226	Total			

Subcatchment 13S: Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Subcatchment 16S: Area 5 and 6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.48 cfs @ 12.09 hrs, Volume= 12,225 cf, Depth= 3.35"

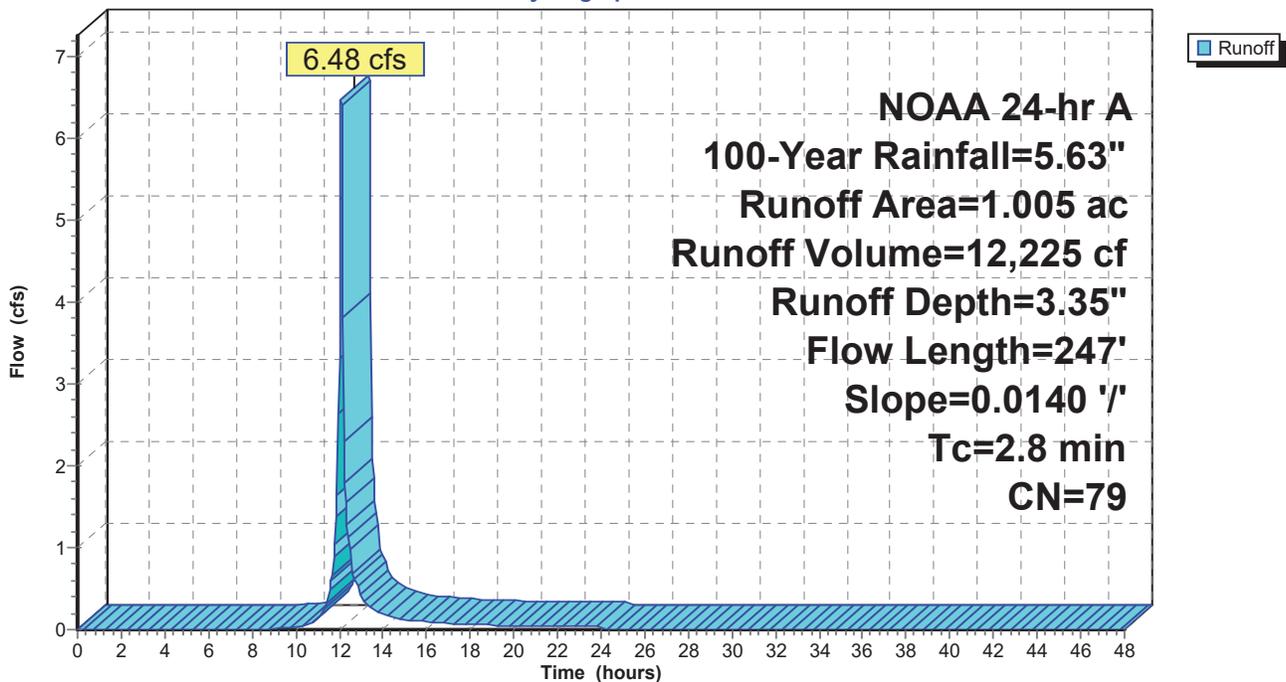
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 100-Year Rainfall=5.63"

Area (ac)	CN	Description
1.005	79	50-75% Grass cover, Fair, HSG C
1.005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0140	1.08		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
1.3	147	0.0140	1.90		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
2.8	247	Total			

Subcatchment 16S: Area 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A WQv Rainfall=1.65"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment6S: Area 7

Runoff Area=1.174 ac 0.00% Impervious Runoff Depth=0.33"
Flow Length=201' Tc=3.7 min CN=79 Runoff=0.65 cfs 1,411 cf

Subcatchment13S: Area 8

Runoff Area=0.632 ac 0.00% Impervious Runoff Depth=0.33"
Flow Length=226' Tc=6.3 min CN=79 Runoff=0.32 cfs 760 cf

Subcatchment16S: Area 5 and 6

Runoff Area=1.005 ac 0.00% Impervious Runoff Depth=0.33"
Flow Length=247' Slope=0.0140 '/' Tc=2.8 min CN=79 Runoff=0.60 cfs 1,208 cf

Total Runoff Area = 122,447 sf Runoff Volume = 3,379 cf Average Runoff Depth = 0.33"
100.00% Pervious = 122,447 sf 0.00% Impervious = 0 sf

Pond 6-8

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NOAA 24-hr A WQv Rainfall=1.65"

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Summary for Subcatchment 6S: Area 7

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.65 cfs @ 12.11 hrs, Volume= 1,411 cf, Depth= 0.33"

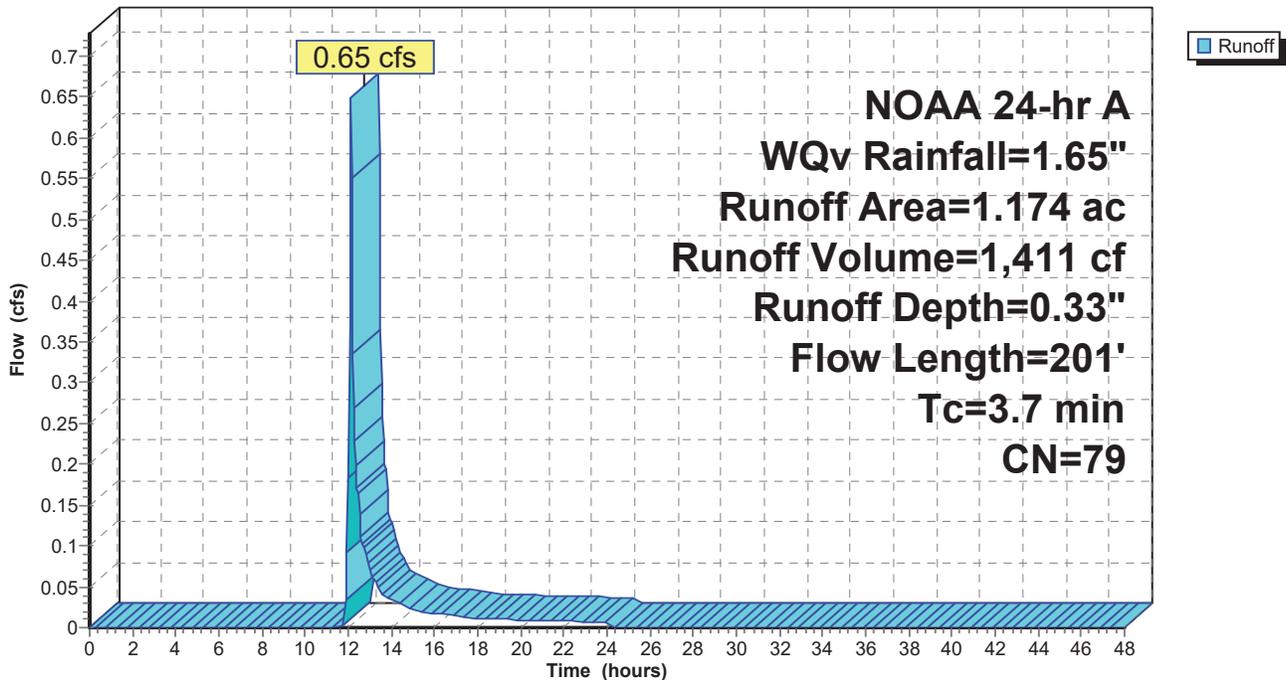
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A WQv Rainfall=1.65"

Area (ac)	CN	Description
1.174	79	50-75% Grass cover, Fair, HSG C
1.174		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.0040	0.66		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	101	0.0080	1.44		Shallow Concentrated Flow, grassed Unpaved Kv= 16.1 fps
3.7	201	Total			

Subcatchment 6S: Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A WQv Rainfall=1.65"

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Summary for Subcatchment 13S: Area 8

Runoff = 0.32 cfs @ 12.15 hrs, Volume= 760 cf, Depth= 0.33"

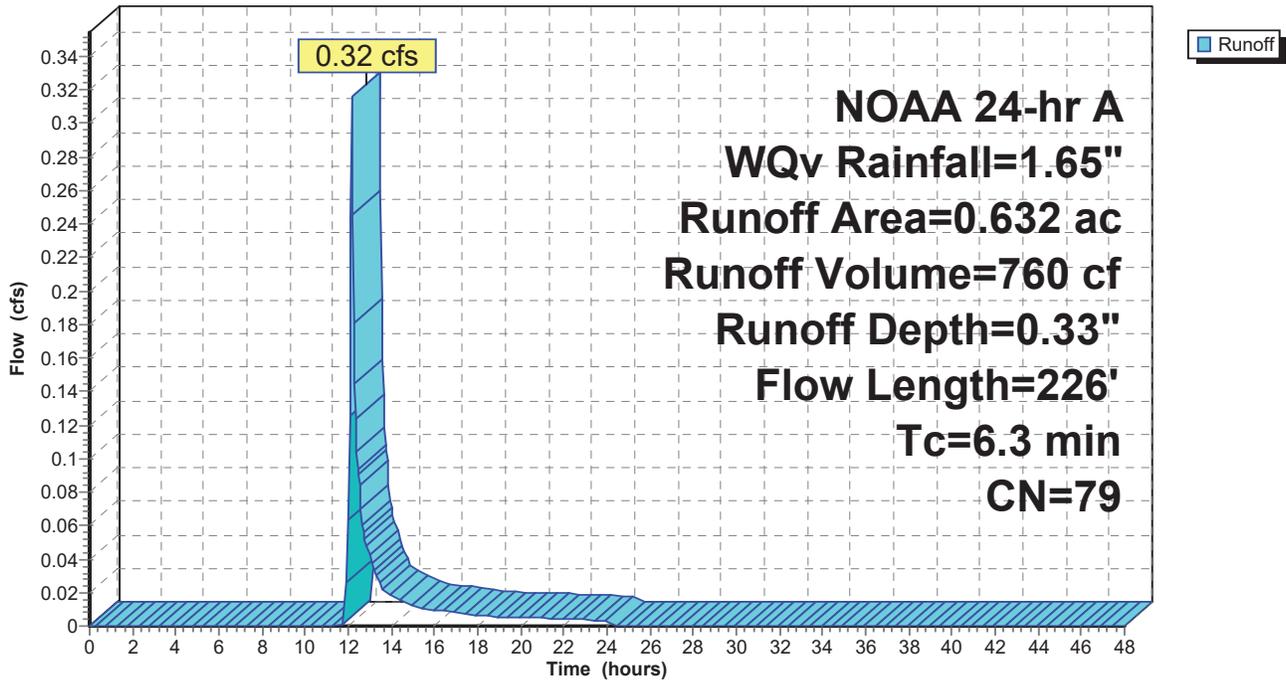
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A WQv Rainfall=1.65"

Area (ac)	CN	Description
0.632	79	50-75% Grass cover, Fair, HSG C
0.632		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.2	100	0.0060	0.77		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
4.1	126	0.0010	0.51		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
6.3	226	Total			

Subcatchment 13S: Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A WQv Rainfall=1.65"

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Summary for Subcatchment 16S: Area 5 and 6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.60 cfs @ 12.10 hrs, Volume= 1,208 cf, Depth= 0.33"

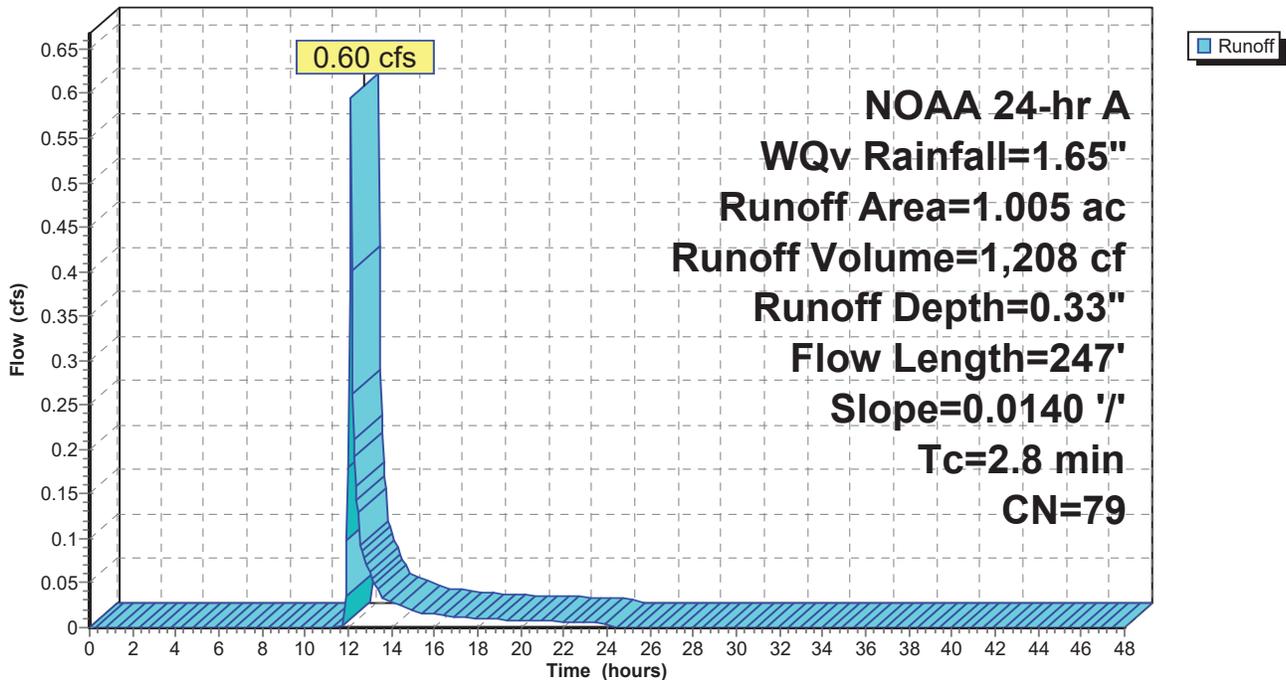
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A WQv Rainfall=1.65"

Area (ac)	CN	Description
1.005	79	50-75% Grass cover, Fair, HSG C
1.005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0140	1.08		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
1.3	147	0.0140	1.90		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
2.8	247	Total			

Subcatchment 16S: Area 5 and 6

Hydrograph



Proposed



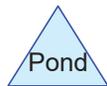
Prop Area 1



Post Area 2



Prop Area 3 and 4



Routing Diagram for Pond 1-4

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Pond 1-4

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NOAA 24-hr	A	Default	24.00	1	2.20	2
2	2-Year	NOAA 24-hr	A	Default	24.00	1	2.63	2
3	5-Year	NOAA 24-hr	A	Default	24.00	1	3.24	2
4	10-Year	NOAA 24-hr	A	Default	24.00	1	3.74	2
5	25-Year	NOAA 24-hr	A	Default	24.00	1	4.44	2
6	50-Year	NOAA 24-hr	A	Default	24.00	1	5.02	2
7	100-Year	NOAA 24-hr	A	Default	24.00	1	5.63	2
8	WQv	NOAA 24-hr	A	Default	24.00	1	1.65	2

Pond 1-4

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Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
142,528	79	50-75% Grass cover, Fair, HSG C (17S, 20S, 23S)
42,558	98	Paved parking, HSG C (17S, 20S, 23S)
185,086	83	TOTAL AREA

Pond 1-4

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
185,086	HSG C	17S, 20S, 23S
0	HSG D	
0	Other	
185,086		TOTAL AREA

Pond 1-4

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Ground Covers (selected 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	142,528	0	0	142,528	50-75% Grass cover, Fair
0	0	42,558	0	0	42,558	Paved parking
0	0	185,086	0	0	185,086	TOTAL AREA

Pond 1-4

NOAA 24-hr A 1-Year Rainfall=2.20"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment17S: Prop Area 1

Runoff Area=1.833 ac 20.35% Impervious Runoff Depth=0.84"
Flow Length=267' Tc=2.4 min CN=83 Runoff=3.06 cfs 5,556 cf

Subcatchment20S: Prop Area 3 and 4

Runoff Area=1.830 ac 22.13% Impervious Runoff Depth=0.84"
Flow Length=399' Tc=2.2 min CN=83 Runoff=3.09 cfs 5,547 cf

Subcatchment23S: Post Area 2

Runoff Area=0.586 ac 33.96% Impervious Runoff Depth=0.94"
Flow Length=132' Tc=1.7 min CN=85 Runoff=1.13 cfs 2,009 cf

Total Runoff Area = 185,086 sf Runoff Volume = 13,113 cf Average Runoff Depth = 0.85"
77.01% Pervious = 142,528 sf 22.99% Impervious = 42,558 sf

Pond 1-4

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Subcatchment 17S: Prop Area 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.06 cfs @ 12.09 hrs, Volume= 5,556 cf, Depth= 0.84"
 Routed to Pond 18P : Pond 1

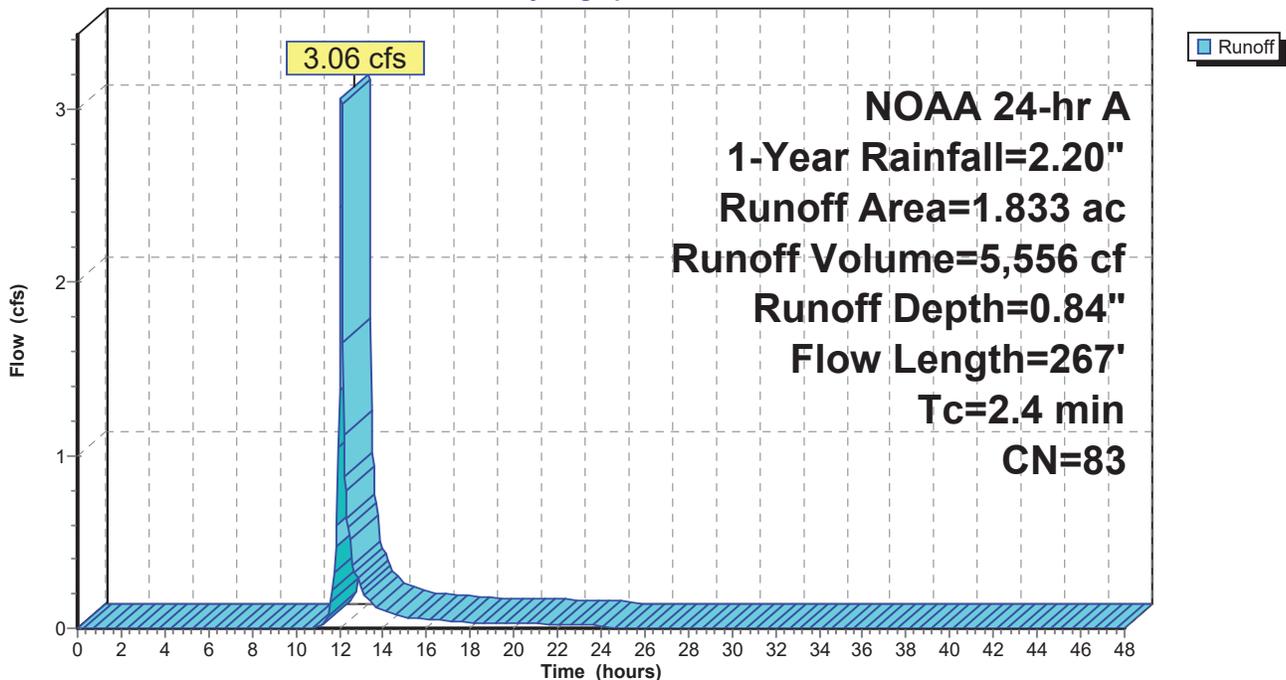
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 1-Year Rainfall=2.20"

Area (ac)	CN	Description
1.460	79	50-75% Grass cover, Fair, HSG C
0.373	98	Paved parking, HSG C
1.833	83	Weighted Average
1.460		79.65% Pervious Area
0.373		20.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.8	147	0.0400	3.22		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.1	20	0.0500	4.54		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.4	267	Total			

Subcatchment 17S: Prop Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Subcatchment 20S: Prop Area 3 and 4

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.09 cfs @ 12.09 hrs, Volume= 5,547 cf, Depth= 0.84"
 Routed to Pond 21P : Ponds 3 and 4

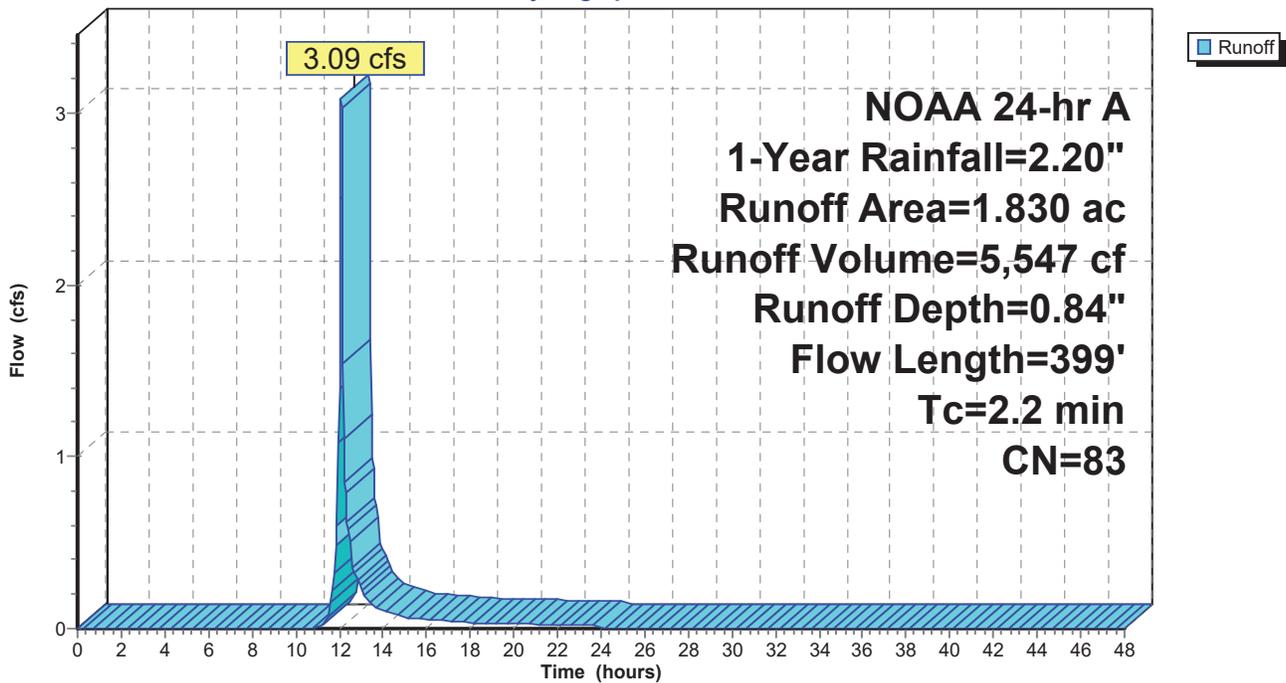
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 1-Year Rainfall=2.20"

Area (ac)	CN	Description
1.425	79	50-75% Grass cover, Fair, HSG C
0.405	98	Paved parking, HSG C
1.830	83	Weighted Average
1.425		77.87% Pervious Area
0.405		22.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0440	1.71		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	299	0.0400	4.06		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.2	399	Total			

Subcatchment 20S: Prop Area 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Subcatchment 23S: Post Area 2

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 1.13 cfs @ 12.08 hrs, Volume= 2,009 cf, Depth= 0.94"
 Routed to Pond 24P : Pond 2

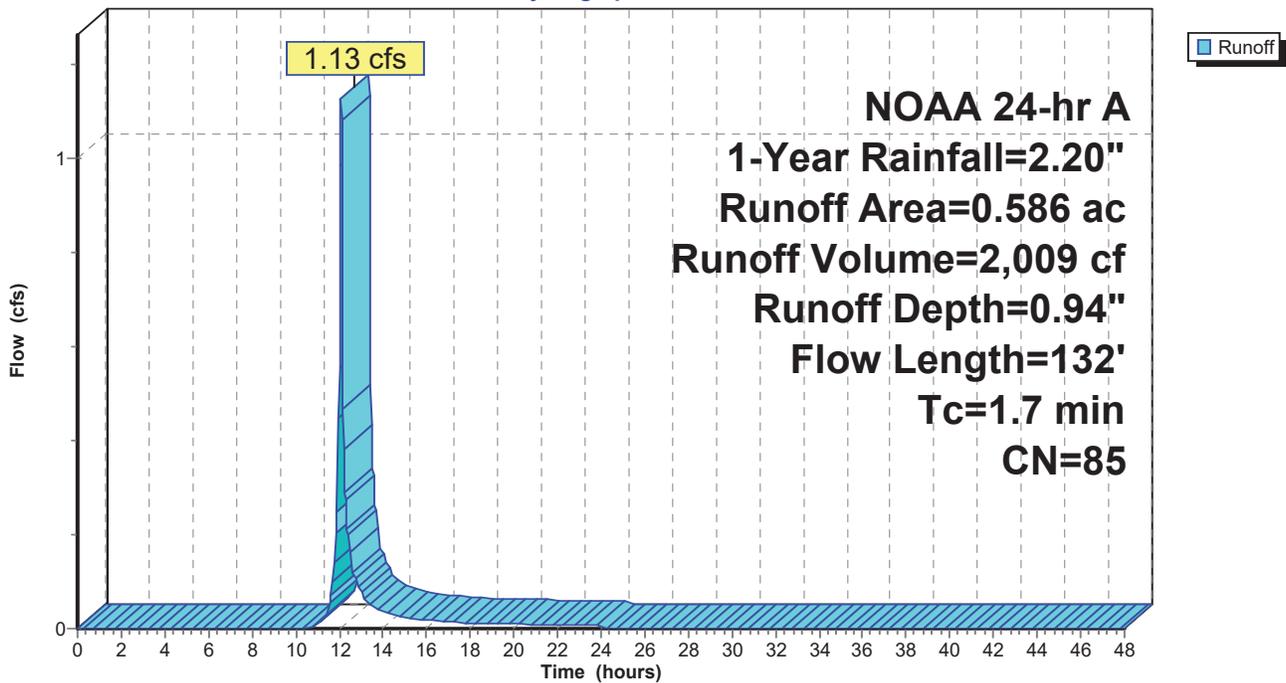
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 1-Year Rainfall=2.20"

Area (ac)	CN	Description
0.387	79	50-75% Grass cover, Fair, HSG C
0.199	98	Paved parking, HSG C
0.586	85	Weighted Average
0.387		66.04% Pervious Area
0.199		33.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
0.2	32	0.0160	2.57		Shallow Concentrated Flow, paved Paved $K_v= 20.3$ fps
1.7	132	Total			

Subcatchment 23S: Post Area 2

Hydrograph



Pond 1-4

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment17S: Prop Area 1

Runoff Area=1.833 ac 20.35% Impervious Runoff Depth=1.15"
Flow Length=267' Tc=2.4 min CN=83 Runoff=4.24 cfs 7,685 cf

Subcatchment20S: Prop Area 3 and 4

Runoff Area=1.830 ac 22.13% Impervious Runoff Depth=1.15"
Flow Length=399' Tc=2.2 min CN=83 Runoff=4.27 cfs 7,672 cf

Subcatchment23S: Post Area 2

Runoff Area=0.586 ac 33.96% Impervious Runoff Depth=1.28"
Flow Length=132' Tc=1.7 min CN=85 Runoff=1.52 cfs 2,729 cf

Total Runoff Area = 185,086 sf Runoff Volume = 18,086 cf Average Runoff Depth = 1.17"
77.01% Pervious = 142,528 sf 22.99% Impervious = 42,558 sf

Pond 1-4

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Subcatchment 17S: Prop Area 1

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 4.24 cfs @ 12.09 hrs, Volume= 7,685 cf, Depth= 1.15"
 Routed to Pond 18P : Pond 1

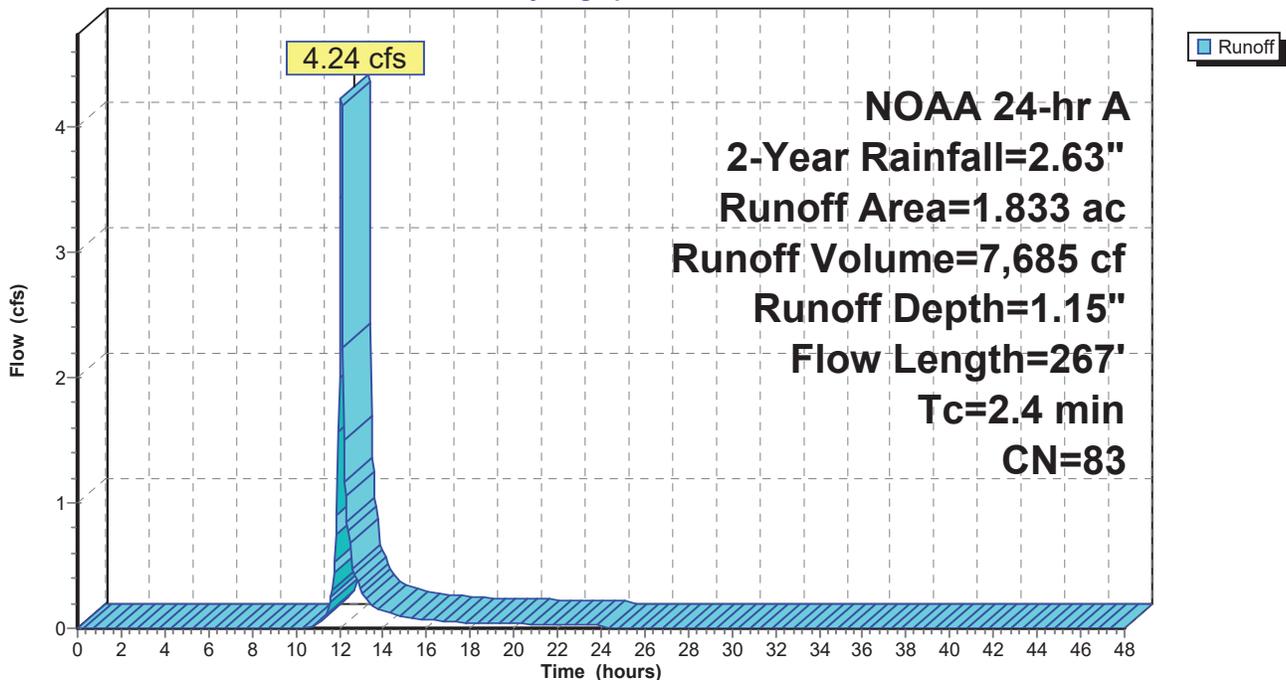
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 2-Year Rainfall=2.63"

Area (ac)	CN	Description
1.460	79	50-75% Grass cover, Fair, HSG C
0.373	98	Paved parking, HSG C
1.833	83	Weighted Average
1.460		79.65% Pervious Area
0.373		20.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.8	147	0.0400	3.22		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.1	20	0.0500	4.54		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.4	267	Total			

Subcatchment 17S: Prop Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Subcatchment 20S: Prop Area 3 and 4

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.27 cfs @ 12.09 hrs, Volume= 7,672 cf, Depth= 1.15"
 Routed to Pond 21P : Ponds 3 and 4

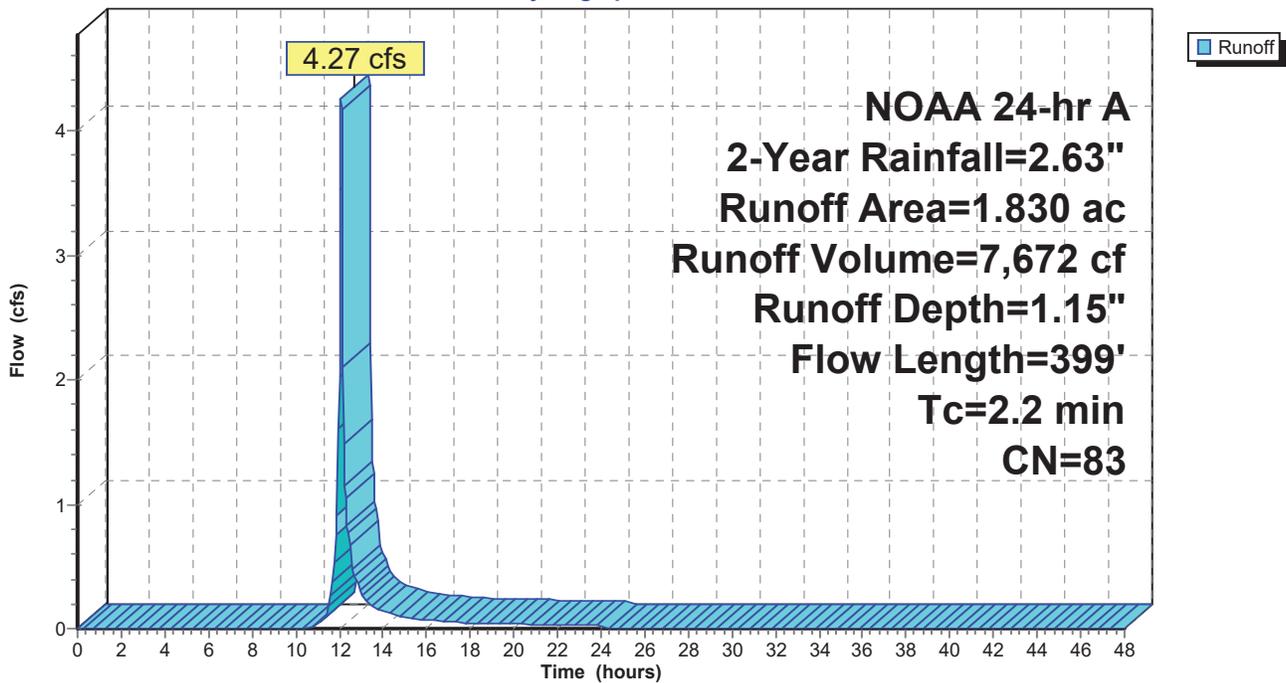
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 2-Year Rainfall=2.63"

Area (ac)	CN	Description
1.425	79	50-75% Grass cover, Fair, HSG C
0.405	98	Paved parking, HSG C
1.830	83	Weighted Average
1.425		77.87% Pervious Area
0.405		22.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0440	1.71		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	299	0.0400	4.06		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.2	399	Total			

Subcatchment 20S: Prop Area 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Subcatchment 23S: Post Area 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.52 cfs @ 12.08 hrs, Volume= 2,729 cf, Depth= 1.28"
 Routed to Pond 24P : Pond 2

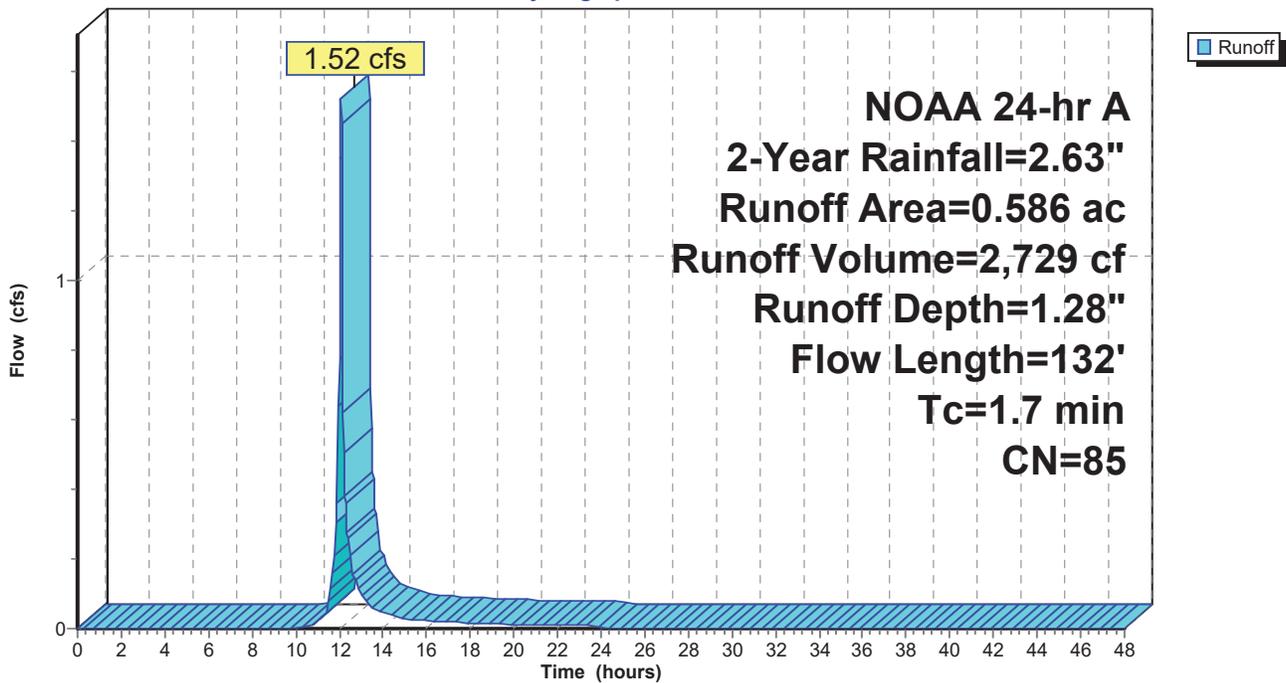
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 2-Year Rainfall=2.63"

Area (ac)	CN	Description
0.387	79	50-75% Grass cover, Fair, HSG C
0.199	98	Paved parking, HSG C
0.586	85	Weighted Average
0.387		66.04% Pervious Area
0.199		33.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	32	0.0160	2.57		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
1.7	132	Total			

Subcatchment 23S: Post Area 2

Hydrograph



Pond 1-4

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment17S: Prop Area 1

Runoff Area=1.833 ac 20.35% Impervious Runoff Depth=1.64"
Flow Length=267' Tc=2.4 min CN=83 Runoff=5.98 cfs 10,926 cf

Subcatchment20S: Prop Area 3 and 4

Runoff Area=1.830 ac 22.13% Impervious Runoff Depth=1.64"
Flow Length=399' Tc=2.2 min CN=83 Runoff=6.02 cfs 10,908 cf

Subcatchment23S: Post Area 2

Runoff Area=0.586 ac 33.96% Impervious Runoff Depth=1.79"
Flow Length=132' Tc=1.7 min CN=85 Runoff=2.10 cfs 3,812 cf

Total Runoff Area = 185,086 sf Runoff Volume = 25,646 cf Average Runoff Depth = 1.66"
77.01% Pervious = 142,528 sf 22.99% Impervious = 42,558 sf

Pond 1-4

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Summary for Subcatchment 17S: Prop Area 1

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 5.98 cfs @ 12.09 hrs, Volume= 10,926 cf, Depth= 1.64"
 Routed to Pond 18P : Pond 1

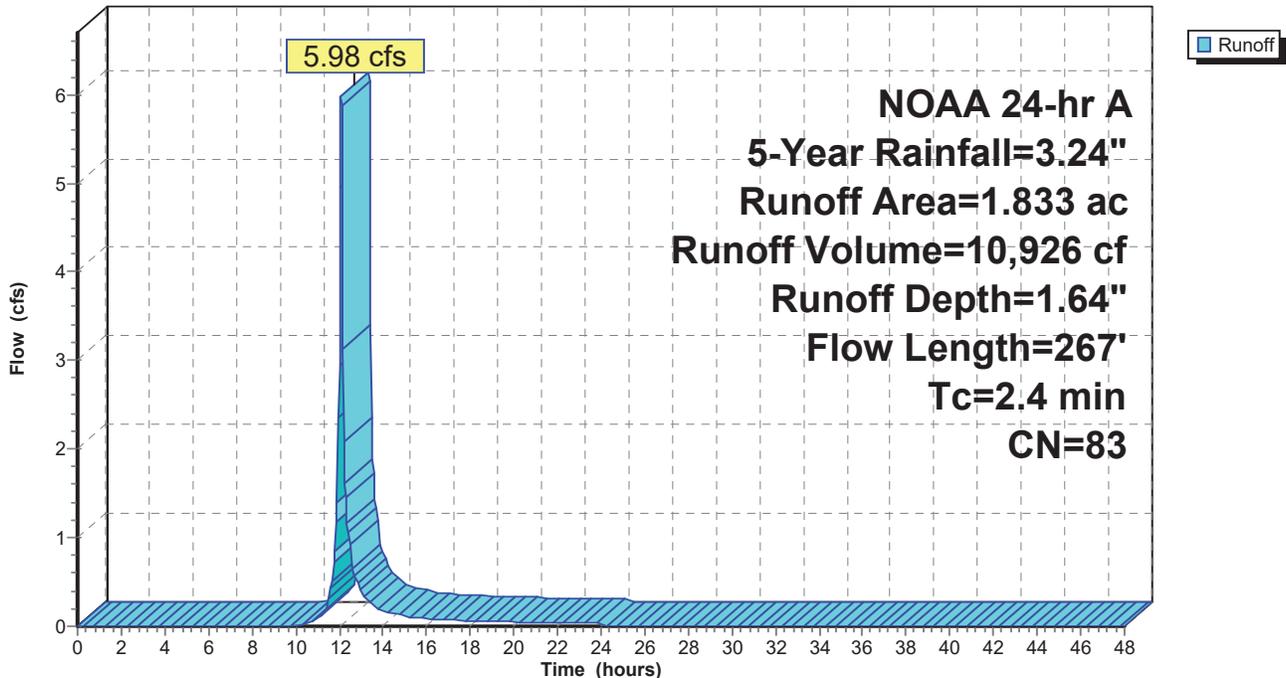
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 5-Year Rainfall=3.24"

Area (ac)	CN	Description
1.460	79	50-75% Grass cover, Fair, HSG C
0.373	98	Paved parking, HSG C
1.833	83	Weighted Average
1.460		79.65% Pervious Area
0.373		20.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.8	147	0.0400	3.22		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.1	20	0.0500	4.54		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.4	267	Total			

Subcatchment 17S: Prop Area 1

Hydrograph



Pond 1-4

Prepared by Decisive Dynamics, LLC

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Summary for Subcatchment 20S: Prop Area 3 and 4

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.02 cfs @ 12.09 hrs, Volume= 10,908 cf, Depth= 1.64"
 Routed to Pond 21P : Ponds 3 and 4

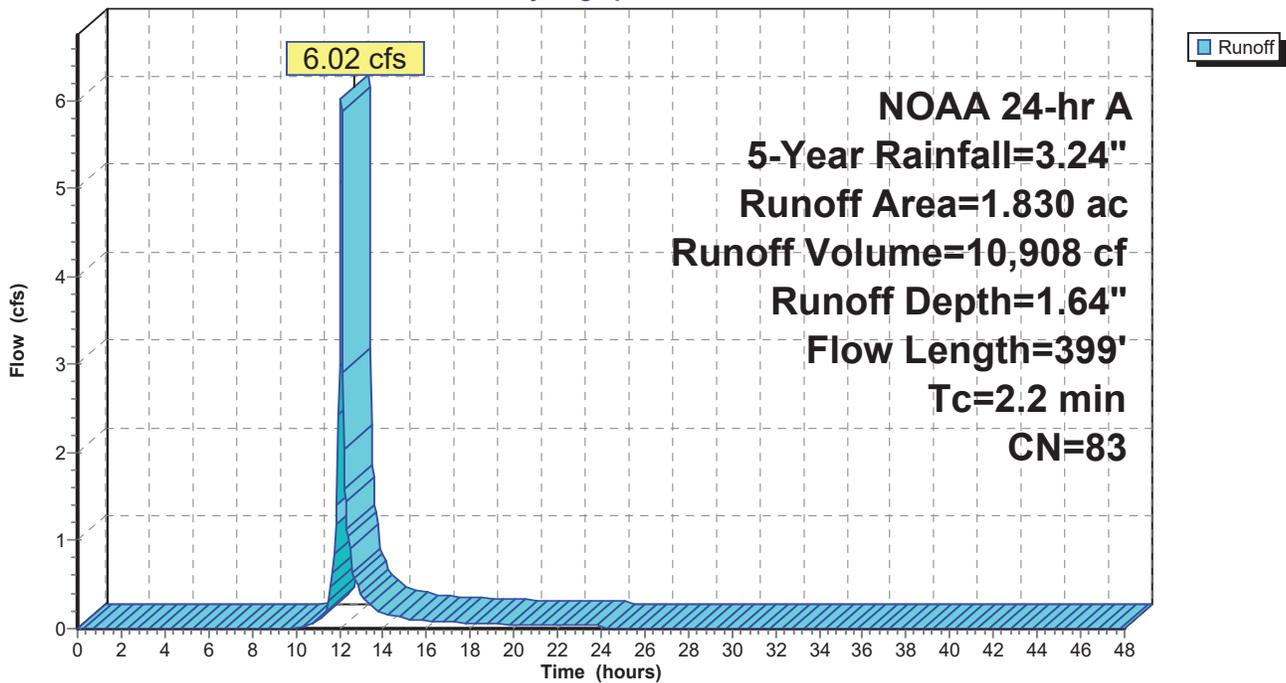
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 5-Year Rainfall=3.24"

Area (ac)	CN	Description
1.425	79	50-75% Grass cover, Fair, HSG C
0.405	98	Paved parking, HSG C
1.830	83	Weighted Average
1.425		77.87% Pervious Area
0.405		22.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0440	1.71		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	299	0.0400	4.06		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.2	399	Total			

Subcatchment 20S: Prop Area 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Summary for Subcatchment 23S: Post Area 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.10 cfs @ 12.08 hrs, Volume= 3,812 cf, Depth= 1.79"
 Routed to Pond 24P : Pond 2

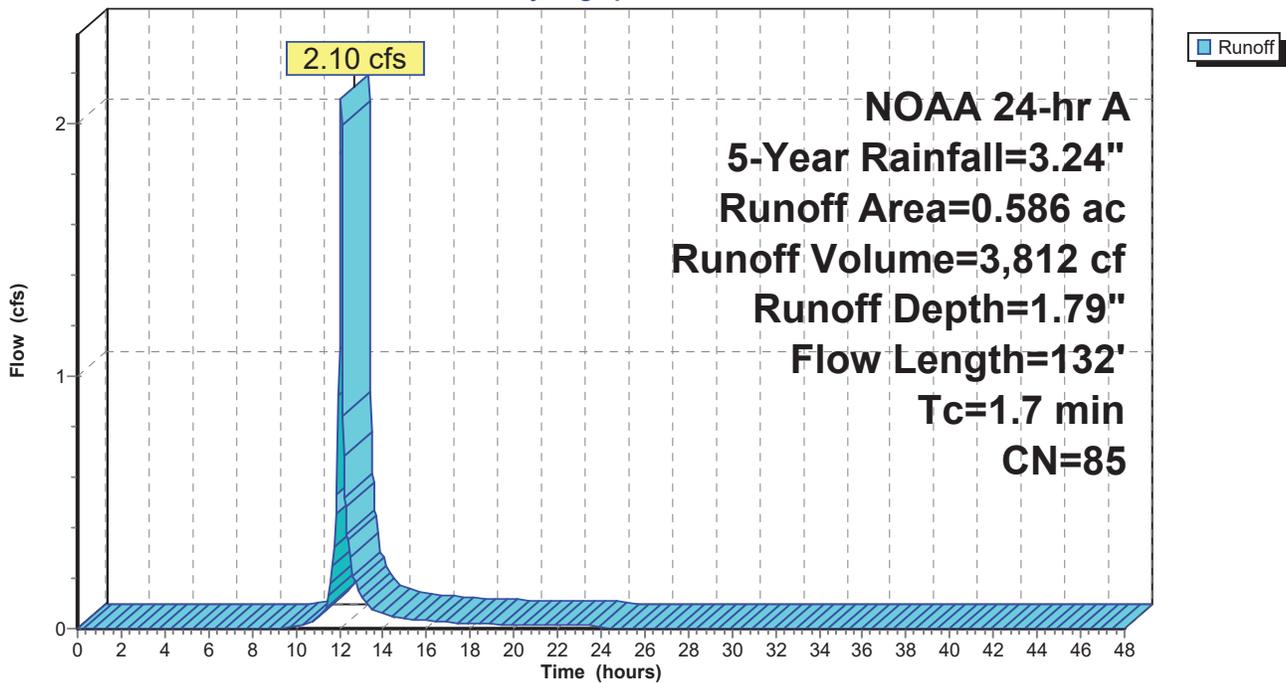
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 5-Year Rainfall=3.24"

Area (ac)	CN	Description
0.387	79	50-75% Grass cover, Fair, HSG C
0.199	98	Paved parking, HSG C
0.586	85	Weighted Average
0.387		66.04% Pervious Area
0.199		33.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	32	0.0160	2.57		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
1.7	132	Total			

Subcatchment 23S: Post Area 2

Hydrograph



Pond 1-4

NOAA 24-hr A 10-Year Rainfall=3.74"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment17S: Prop Area 1

Runoff Area=1.833 ac 20.35% Impervious Runoff Depth=2.06"
Flow Length=267' Tc=2.4 min CN=83 Runoff=7.46 cfs 13,721 cf

Subcatchment20S: Prop Area 3 and 4

Runoff Area=1.830 ac 22.13% Impervious Runoff Depth=2.06"
Flow Length=399' Tc=2.2 min CN=83 Runoff=7.50 cfs 13,699 cf

Subcatchment23S: Post Area 2

Runoff Area=0.586 ac 33.96% Impervious Runoff Depth=2.23"
Flow Length=132' Tc=1.7 min CN=85 Runoff=2.59 cfs 4,737 cf

Total Runoff Area = 185,086 sf Runoff Volume = 32,156 cf Average Runoff Depth = 2.08"
77.01% Pervious = 142,528 sf 22.99% Impervious = 42,558 sf

Pond 1-4

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NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Subcatchment 17S: Prop Area 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 7.46 cfs @ 12.09 hrs, Volume= 13,721 cf, Depth= 2.06"
 Routed to Pond 18P : Pond 1

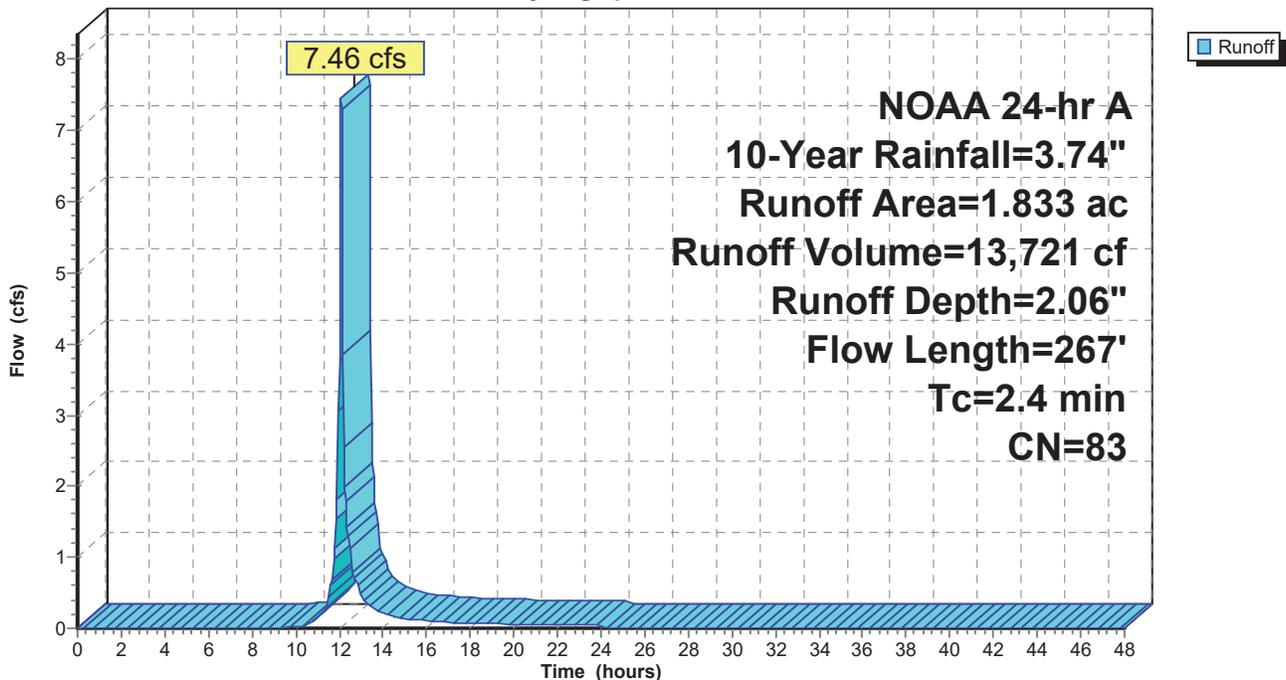
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 10-Year Rainfall=3.74"

Area (ac)	CN	Description
1.460	79	50-75% Grass cover, Fair, HSG C
0.373	98	Paved parking, HSG C
1.833	83	Weighted Average
1.460		79.65% Pervious Area
0.373		20.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.8	147	0.0400	3.22		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.1	20	0.0500	4.54		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.4	267	Total			

Subcatchment 17S: Prop Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Subcatchment 20S: Prop Area 3 and 4

[49] Hint: Tc<2dt may require smaller dt

Runoff = 7.50 cfs @ 12.08 hrs, Volume= 13,699 cf, Depth= 2.06"
 Routed to Pond 21P : Ponds 3 and 4

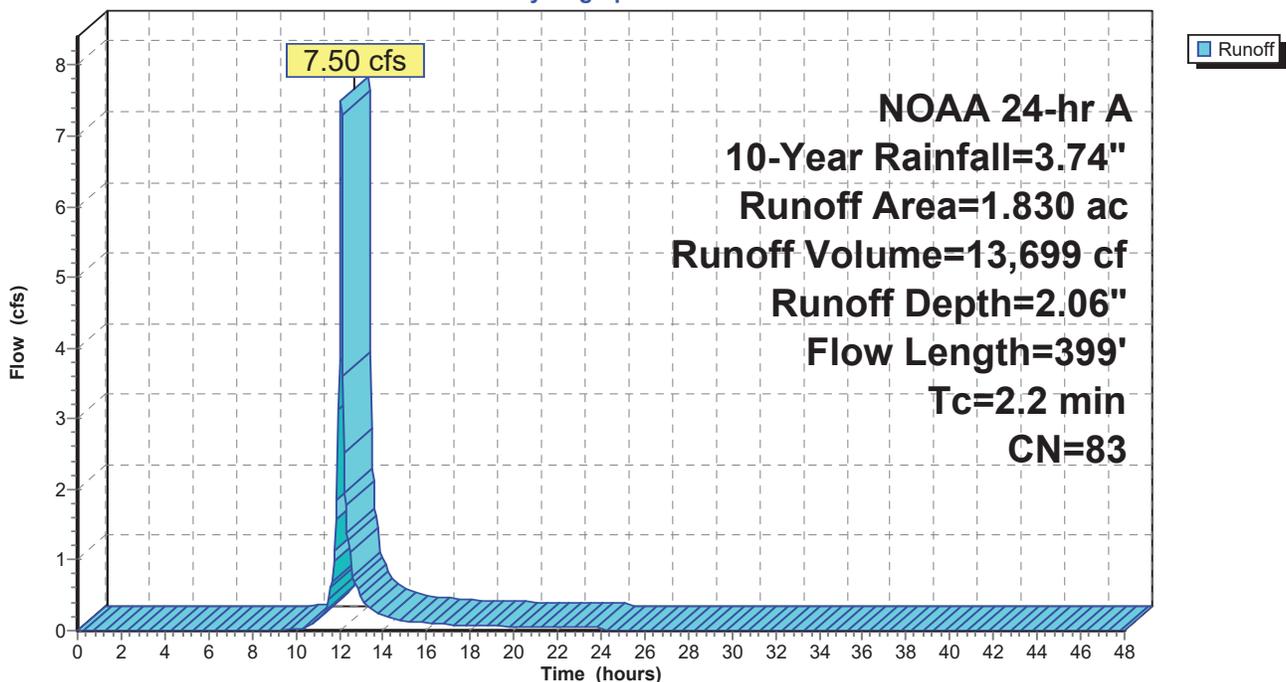
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 10-Year Rainfall=3.74"

Area (ac)	CN	Description
1.425	79	50-75% Grass cover, Fair, HSG C
0.405	98	Paved parking, HSG C
1.830	83	Weighted Average
1.425		77.87% Pervious Area
0.405		22.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0440	1.71		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	299	0.0400	4.06		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.2	399	Total			

Subcatchment 20S: Prop Area 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Subcatchment 23S: Post Area 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.59 cfs @ 12.08 hrs, Volume= 4,737 cf, Depth= 2.23"
 Routed to Pond 24P : Pond 2

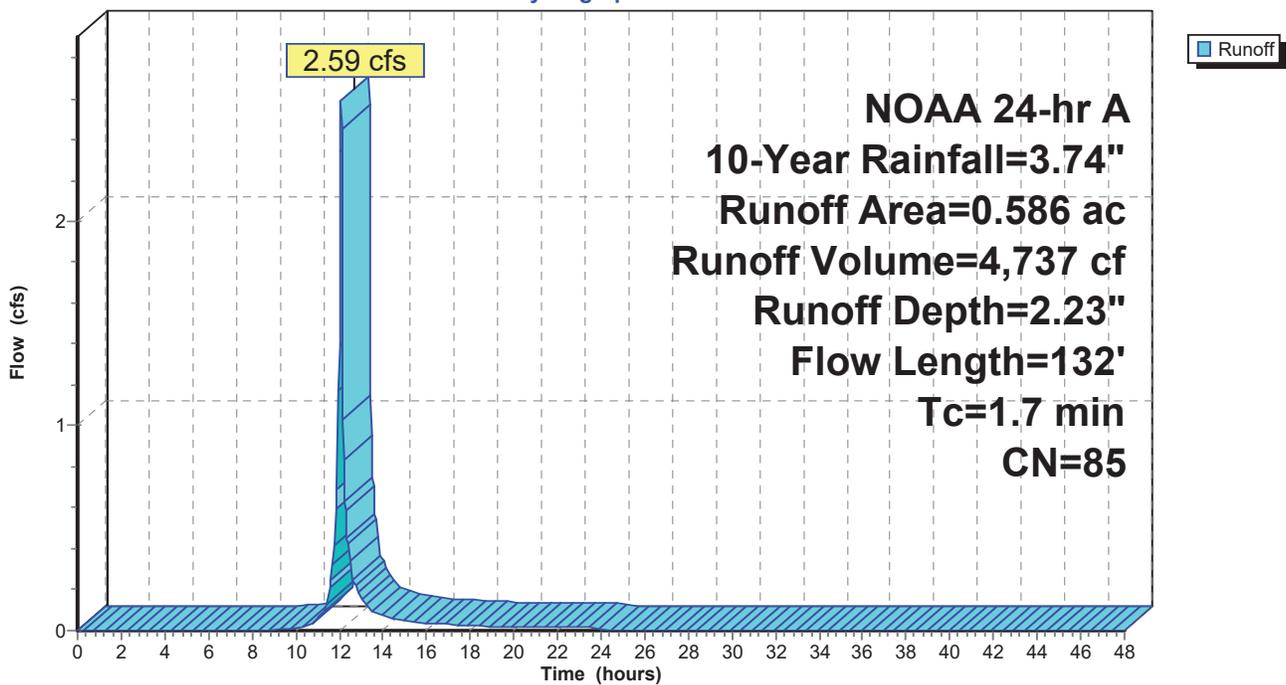
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 10-Year Rainfall=3.74"

Area (ac)	CN	Description
0.387	79	50-75% Grass cover, Fair, HSG C
0.199	98	Paved parking, HSG C
0.586	85	Weighted Average
0.387		66.04% Pervious Area
0.199		33.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	32	0.0160	2.57		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
1.7	132	Total			

Subcatchment 23S: Post Area 2

Hydrograph



Pond 1-4

NOAA 24-hr A 25-Year Rainfall=4.44"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment17S: Prop Area 1

Runoff Area=1.833 ac 20.35% Impervious Runoff Depth=2.67"
Flow Length=267' Tc=2.4 min CN=83 Runoff=9.56 cfs 17,781 cf

Subcatchment20S: Prop Area 3 and 4

Runoff Area=1.830 ac 22.13% Impervious Runoff Depth=2.67"
Flow Length=399' Tc=2.2 min CN=83 Runoff=9.62 cfs 17,752 cf

Subcatchment23S: Post Area 2

Runoff Area=0.586 ac 33.96% Impervious Runoff Depth=2.85"
Flow Length=132' Tc=1.7 min CN=85 Runoff=3.27 cfs 6,072 cf

Total Runoff Area = 185,086 sf Runoff Volume = 41,605 cf Average Runoff Depth = 2.70"
77.01% Pervious = 142,528 sf 22.99% Impervious = 42,558 sf

Pond 1-4

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NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Subcatchment 17S: Prop Area 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 9.56 cfs @ 12.09 hrs, Volume= 17,781 cf, Depth= 2.67"
 Routed to Pond 18P : Pond 1

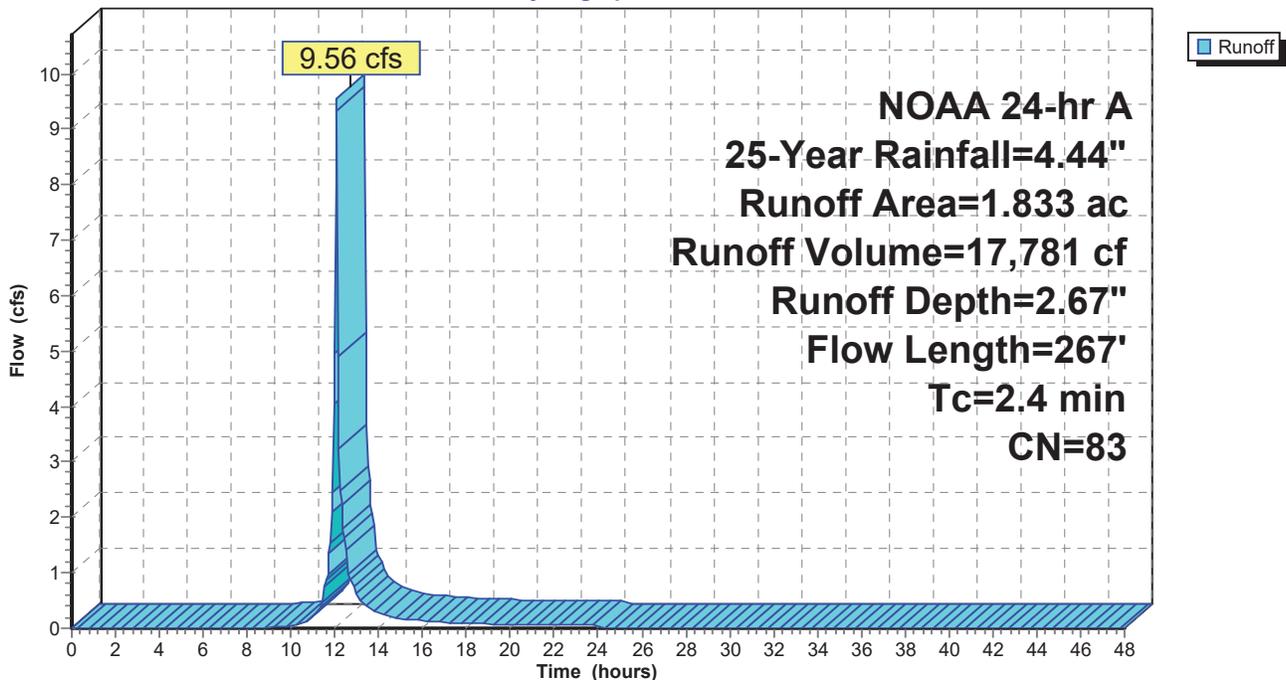
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 25-Year Rainfall=4.44"

Area (ac)	CN	Description
1.460	79	50-75% Grass cover, Fair, HSG C
0.373	98	Paved parking, HSG C
1.833	83	Weighted Average
1.460		79.65% Pervious Area
0.373		20.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.8	147	0.0400	3.22		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.1	20	0.0500	4.54		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.4	267	Total			

Subcatchment 17S: Prop Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Subcatchment 20S: Prop Area 3 and 4

[49] Hint: Tc<2dt may require smaller dt

Runoff = 9.62 cfs @ 12.08 hrs, Volume= 17,752 cf, Depth= 2.67"
 Routed to Pond 21P : Ponds 3 and 4

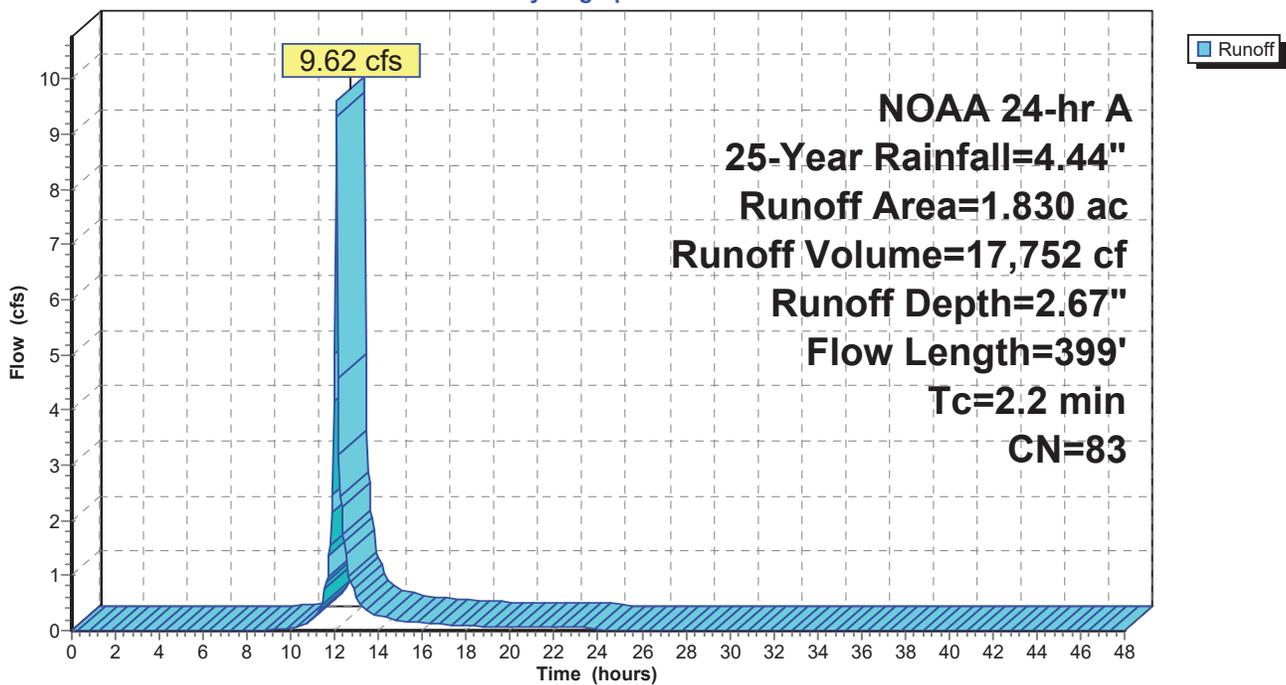
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 25-Year Rainfall=4.44"

Area (ac)	CN	Description
1.425	79	50-75% Grass cover, Fair, HSG C
0.405	98	Paved parking, HSG C
1.830	83	Weighted Average
1.425		77.87% Pervious Area
0.405		22.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0440	1.71		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	299	0.0400	4.06		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.2	399	Total			

Subcatchment 20S: Prop Area 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Subcatchment 23S: Post Area 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.27 cfs @ 12.08 hrs, Volume= 6,072 cf, Depth= 2.85"
 Routed to Pond 24P : Pond 2

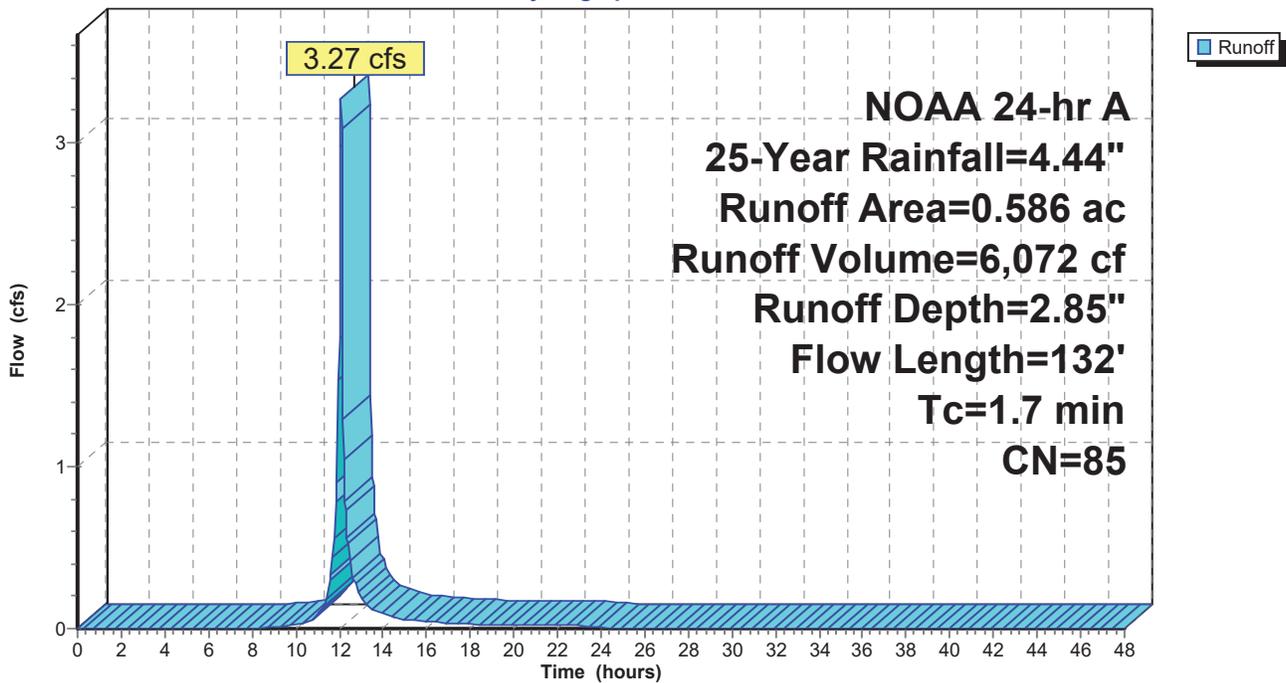
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 25-Year Rainfall=4.44"

Area (ac)	CN	Description
0.387	79	50-75% Grass cover, Fair, HSG C
0.199	98	Paved parking, HSG C
0.586	85	Weighted Average
0.387		66.04% Pervious Area
0.199		33.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	32	0.0160	2.57		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
1.7	132	Total			

Subcatchment 23S: Post Area 2

Hydrograph



Pond 1-4

NOAA 24-hr A 50-Year Rainfall=5.02"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment17S: Prop Area 1

Runoff Area=1.833 ac 20.35% Impervious Runoff Depth=3.19"
Flow Length=267' Tc=2.4 min CN=83 Runoff=11.32 cfs 21,240 cf

Subcatchment20S: Prop Area 3 and 4

Runoff Area=1.830 ac 22.13% Impervious Runoff Depth=3.19"
Flow Length=399' Tc=2.2 min CN=83 Runoff=11.39 cfs 21,205 cf

Subcatchment23S: Post Area 2

Runoff Area=0.586 ac 33.96% Impervious Runoff Depth=3.39"
Flow Length=132' Tc=1.7 min CN=85 Runoff=3.85 cfs 7,204 cf

Total Runoff Area = 185,086 sf Runoff Volume = 49,649 cf Average Runoff Depth = 3.22"
77.01% Pervious = 142,528 sf 22.99% Impervious = 42,558 sf

Pond 1-4

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NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Subcatchment 17S: Prop Area 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 11.32 cfs @ 12.09 hrs, Volume= 21,240 cf, Depth= 3.19"
 Routed to Pond 18P : Pond 1

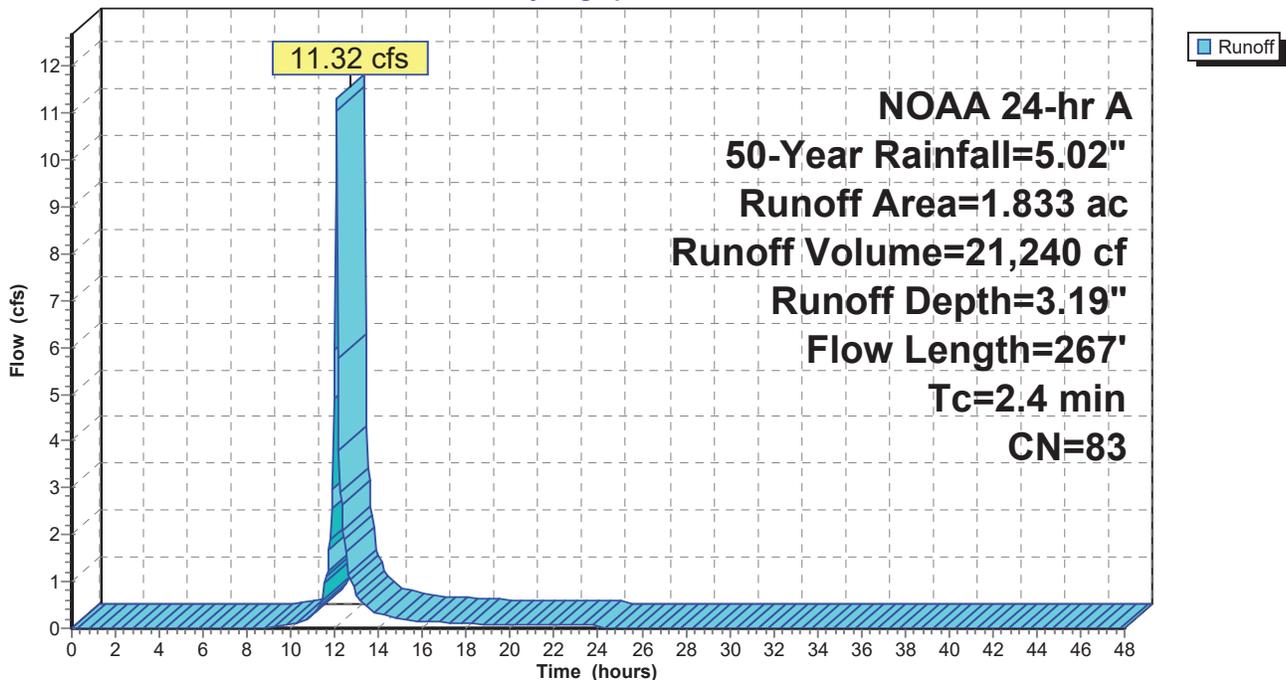
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 50-Year Rainfall=5.02"

Area (ac)	CN	Description
1.460	79	50-75% Grass cover, Fair, HSG C
0.373	98	Paved parking, HSG C
1.833	83	Weighted Average
1.460		79.65% Pervious Area
0.373		20.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.8	147	0.0400	3.22		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.1	20	0.0500	4.54		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.4	267	Total			

Subcatchment 17S: Prop Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Subcatchment 20S: Prop Area 3 and 4

[49] Hint: Tc<2dt may require smaller dt

Runoff = 11.39 cfs @ 12.08 hrs, Volume= 21,205 cf, Depth= 3.19"
 Routed to Pond 21P : Ponds 3 and 4

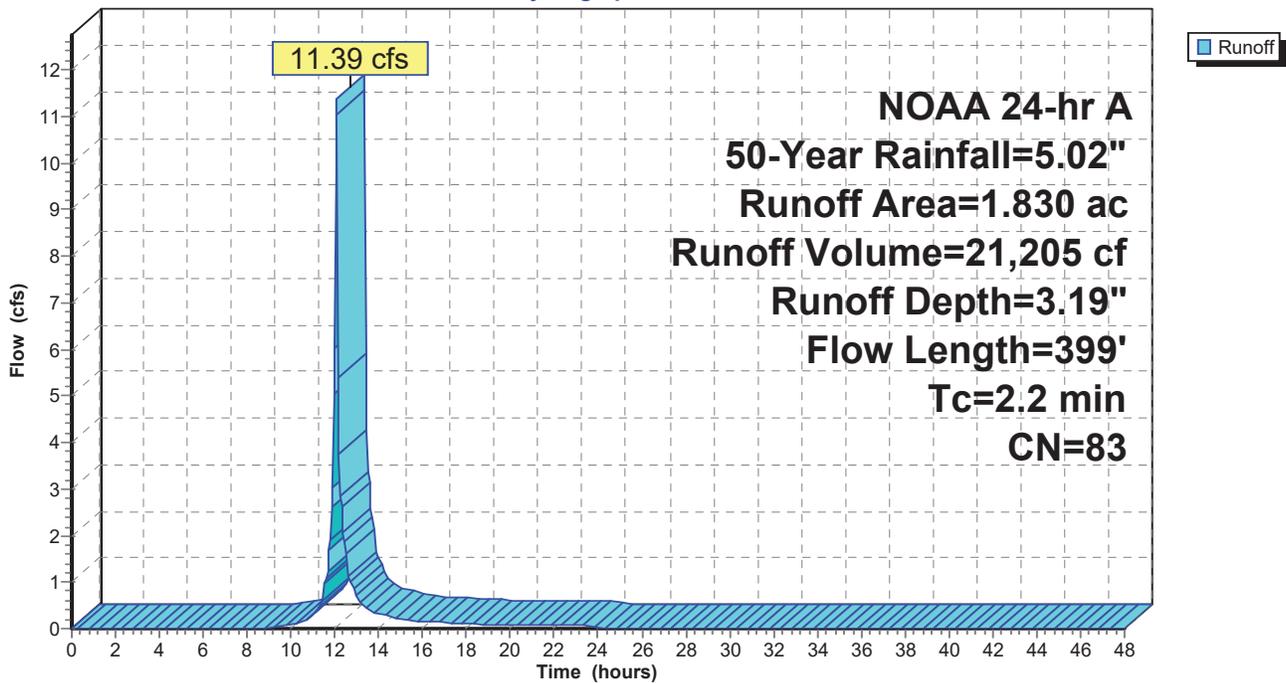
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 50-Year Rainfall=5.02"

Area (ac)	CN	Description
1.425	79	50-75% Grass cover, Fair, HSG C
0.405	98	Paved parking, HSG C
1.830	83	Weighted Average
1.425		77.87% Pervious Area
0.405		22.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0440	1.71		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	299	0.0400	4.06		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.2	399	Total			

Subcatchment 20S: Prop Area 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Subcatchment 23S: Post Area 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.85 cfs @ 12.08 hrs, Volume= 7,204 cf, Depth= 3.39"
 Routed to Pond 24P : Pond 2

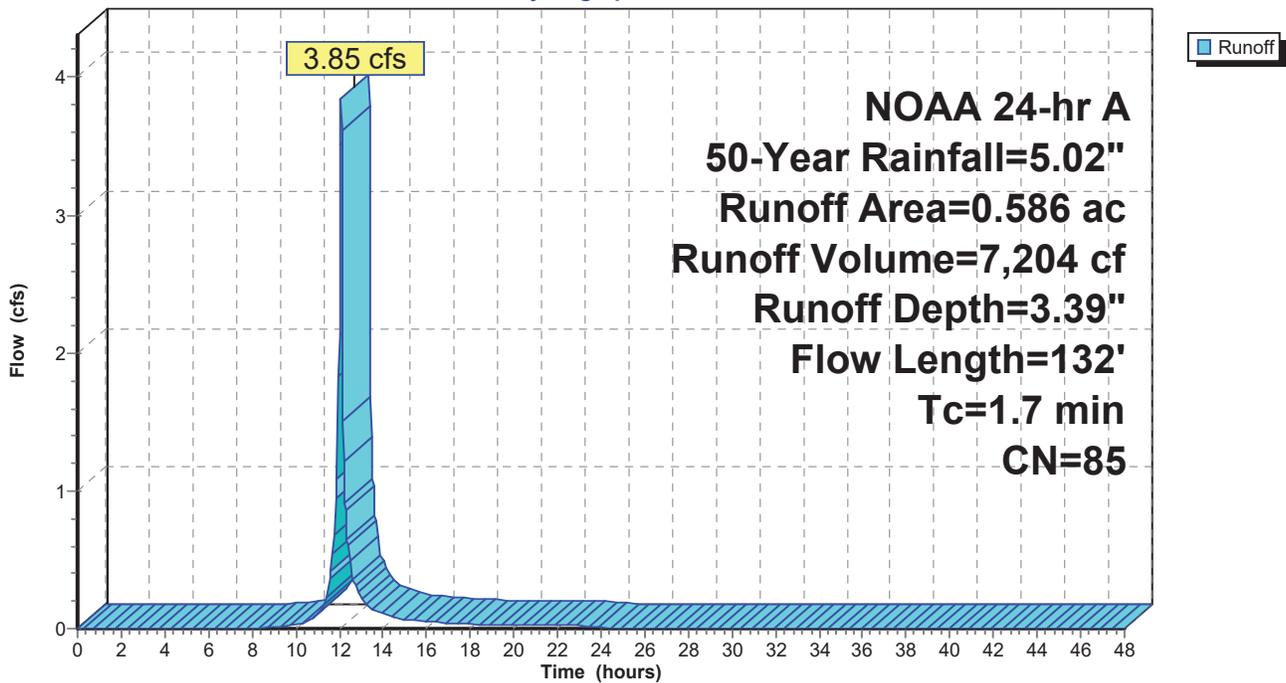
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 50-Year Rainfall=5.02"

Area (ac)	CN	Description
0.387	79	50-75% Grass cover, Fair, HSG C
0.199	98	Paved parking, HSG C
0.586	85	Weighted Average
0.387		66.04% Pervious Area
0.199		33.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	32	0.0160	2.57		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
1.7	132	Total			

Subcatchment 23S: Post Area 2

Hydrograph



Pond 1-4

NOAA 24-hr A 100-Year Rainfall=5.63"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment17S: Prop Area 1

Runoff Area=1.833 ac 20.35% Impervious Runoff Depth=3.75"
Flow Length=267' Tc=2.4 min CN=83 Runoff=13.18 cfs 24,947 cf

Subcatchment20S: Prop Area 3 and 4

Runoff Area=1.830 ac 22.13% Impervious Runoff Depth=3.75"
Flow Length=399' Tc=2.2 min CN=83 Runoff=13.25 cfs 24,906 cf

Subcatchment23S: Post Area 2

Runoff Area=0.586 ac 33.96% Impervious Runoff Depth=3.95"
Flow Length=132' Tc=1.7 min CN=85 Runoff=4.45 cfs 8,412 cf

Total Runoff Area = 185,086 sf Runoff Volume = 58,266 cf Average Runoff Depth = 3.78"
77.01% Pervious = 142,528 sf 22.99% Impervious = 42,558 sf

Pond 1-4

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NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Subcatchment 17S: Prop Area 1

[49] Hint: Tc<2dt may require smaller dt

Runoff = 13.18 cfs @ 12.09 hrs, Volume= 24,947 cf, Depth= 3.75"
 Routed to Pond 18P : Pond 1

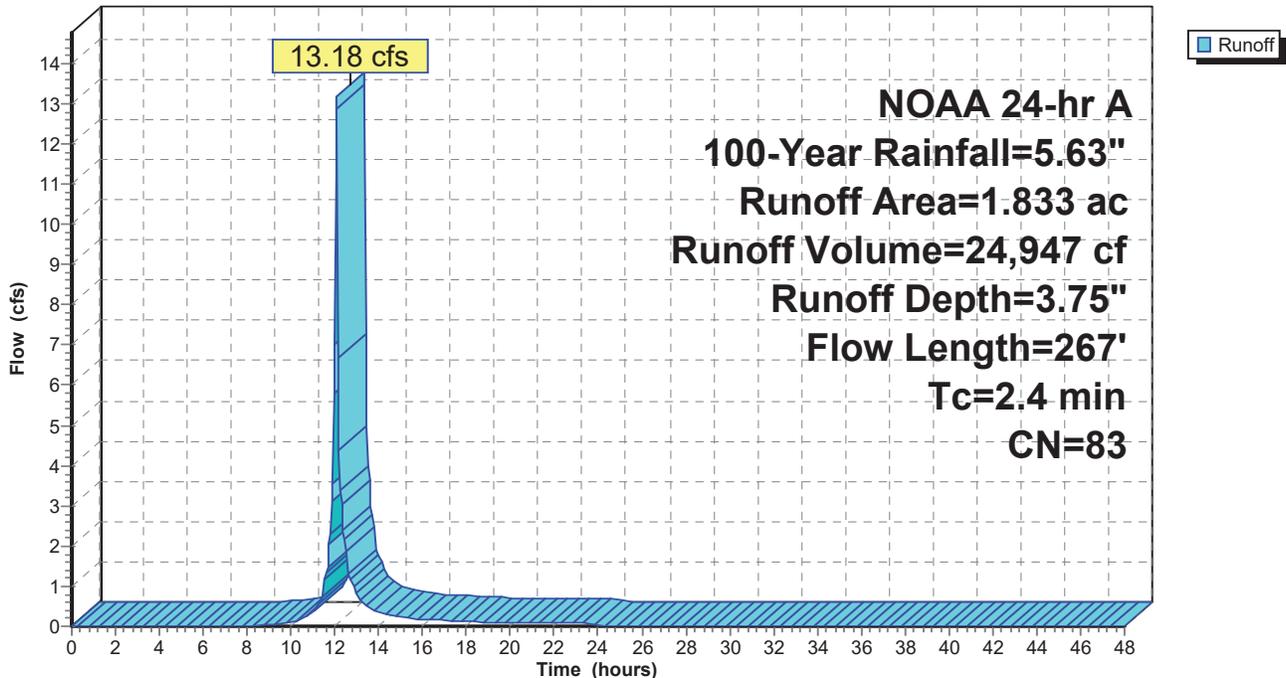
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 100-Year Rainfall=5.63"

Area (ac)	CN	Description
1.460	79	50-75% Grass cover, Fair, HSG C
0.373	98	Paved parking, HSG C
1.833	83	Weighted Average
1.460		79.65% Pervious Area
0.373		20.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.8	147	0.0400	3.22		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.1	20	0.0500	4.54		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.4	267	Total			

Subcatchment 17S: Prop Area 1

Hydrograph



Pond 1-4

Prepared by Decisive Dynamics, LLC

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NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Subcatchment 20S: Prop Area 3 and 4

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 13.25 cfs @ 12.08 hrs, Volume= 24,906 cf, Depth= 3.75"
 Routed to Pond 21P : Ponds 3 and 4

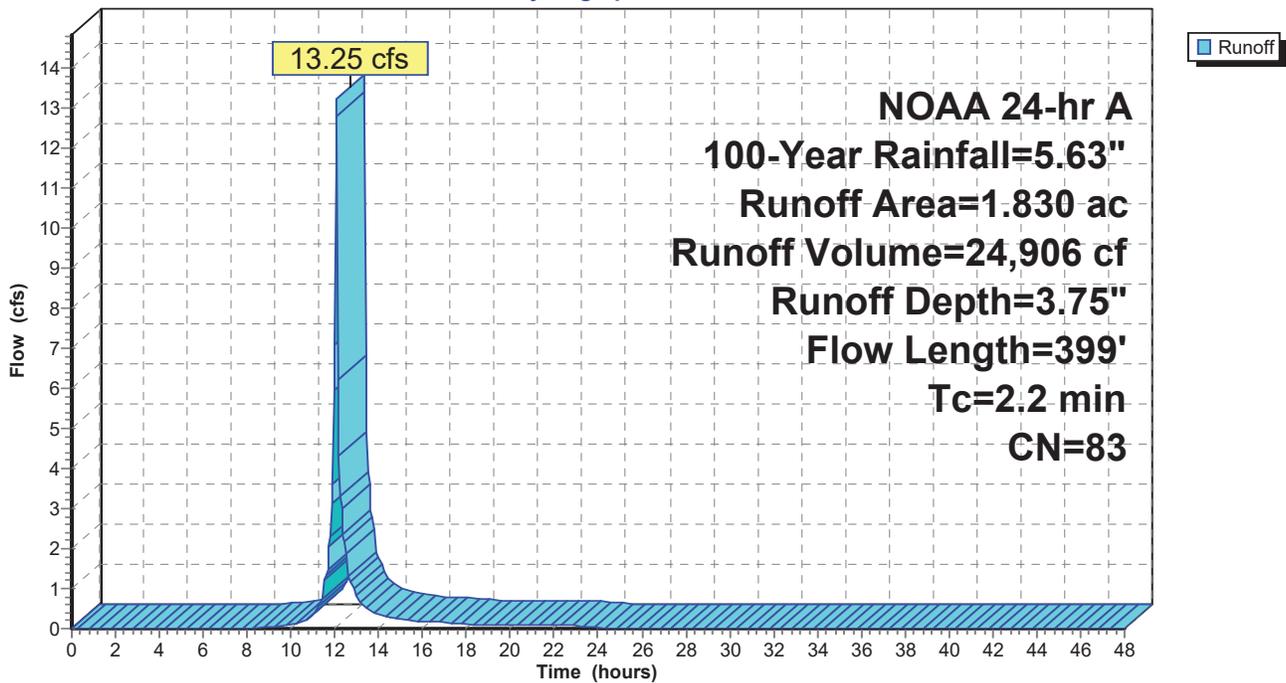
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 100-Year Rainfall=5.63"

Area (ac)	CN	Description
1.425	79	50-75% Grass cover, Fair, HSG C
0.405	98	Paved parking, HSG C
1.830	83	Weighted Average
1.425		77.87% Pervious Area
0.405		22.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0440	1.71		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	299	0.0400	4.06		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.2	399	Total			

Subcatchment 20S: Prop Area 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Subcatchment 23S: Post Area 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.45 cfs @ 12.08 hrs, Volume= 8,412 cf, Depth= 3.95"
 Routed to Pond 24P : Pond 2

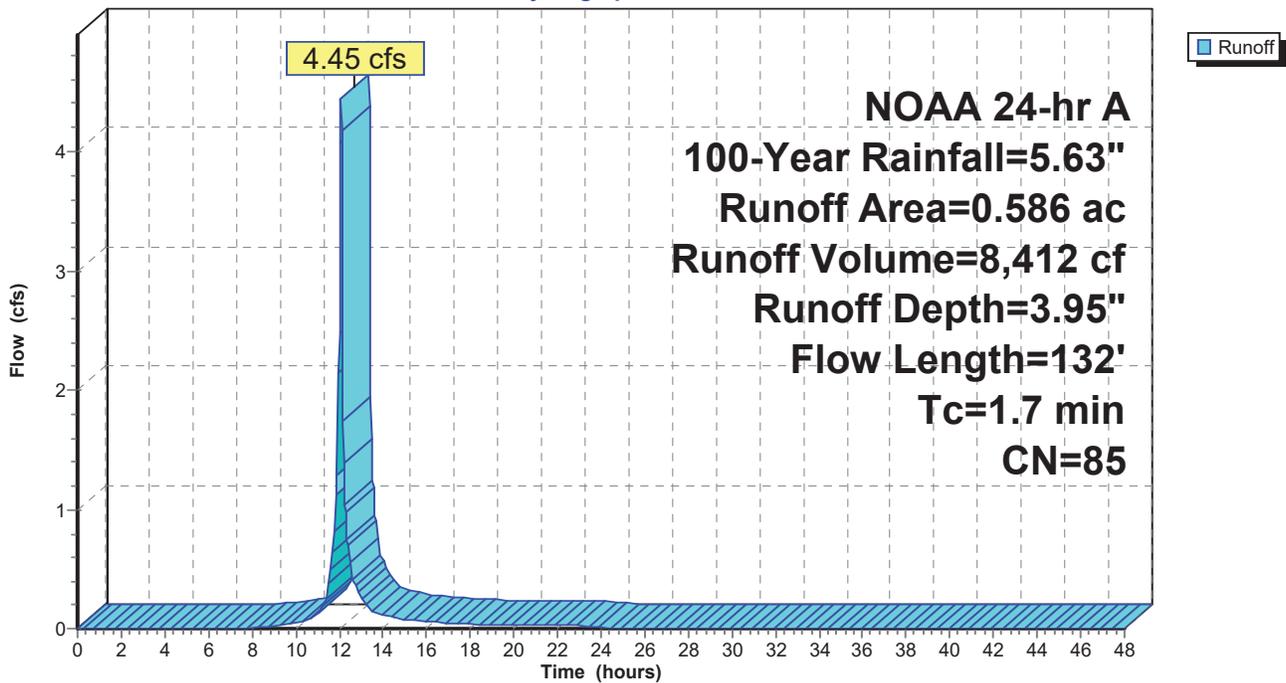
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 100-Year Rainfall=5.63"

Area (ac)	CN	Description
0.387	79	50-75% Grass cover, Fair, HSG C
0.199	98	Paved parking, HSG C
0.586	85	Weighted Average
0.387		66.04% Pervious Area
0.199		33.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	32	0.0160	2.57		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
1.7	132	Total			

Subcatchment 23S: Post Area 2

Hydrograph



Pond 1-4

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NOAA 24-hr A WQv Rainfall=1.65"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment17S: Prop Area 1

Runoff Area=1.833 ac 20.35% Impervious Runoff Depth=0.47"
Flow Length=267' Tc=2.4 min CN=83 Runoff=1.68 cfs 3,113 cf

Subcatchment20S: Prop Area 3 and 4

Runoff Area=1.830 ac 22.13% Impervious Runoff Depth=0.47"
Flow Length=399' Tc=2.2 min CN=83 Runoff=1.70 cfs 3,108 cf

Subcatchment23S: Post Area 2

Runoff Area=0.586 ac 33.96% Impervious Runoff Depth=0.55"
Flow Length=132' Tc=1.7 min CN=85 Runoff=0.65 cfs 1,169 cf

Total Runoff Area = 185,086 sf Runoff Volume = 7,389 cf Average Runoff Depth = 0.48"
77.01% Pervious = 142,528 sf 22.99% Impervious = 42,558 sf

Pond 1-4

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NOAA 24-hr A WQv Rainfall=1.65"

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Summary for Subcatchment 17S: Prop Area 1

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 1.68 cfs @ 12.09 hrs, Volume= 3,113 cf, Depth= 0.47"
 Routed to Pond 18P : Pond 1

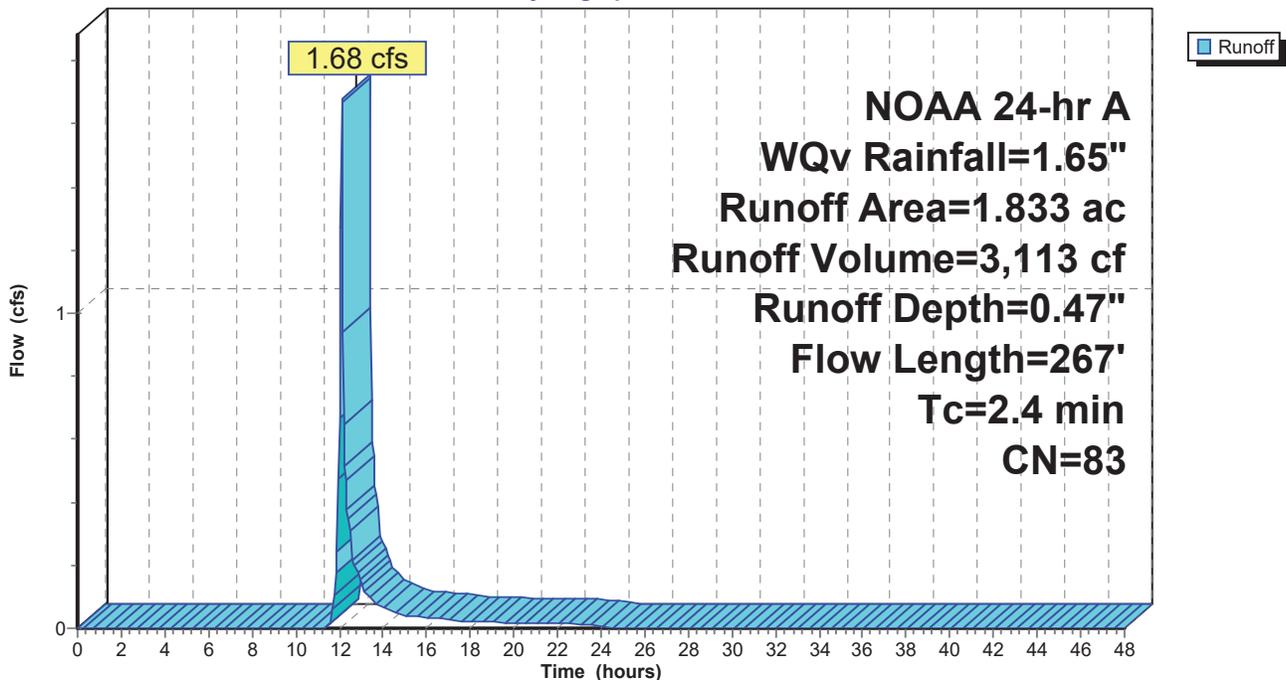
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A WQv Rainfall=1.65"

Area (ac)	CN	Description
1.460	79	50-75% Grass cover, Fair, HSG C
0.373	98	Paved parking, HSG C
1.833	83	Weighted Average
1.460		79.65% Pervious Area
0.373		20.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.8	147	0.0400	3.22		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.1	20	0.0500	4.54		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.4	267	Total			

Subcatchment 17S: Prop Area 1

Hydrograph



Pond 1-4

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NOAA 24-hr A WQv Rainfall=1.65"

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Summary for Subcatchment 20S: Prop Area 3 and 4

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.70 cfs @ 12.09 hrs, Volume= 3,108 cf, Depth= 0.47"
 Routed to Pond 21P : Ponds 3 and 4

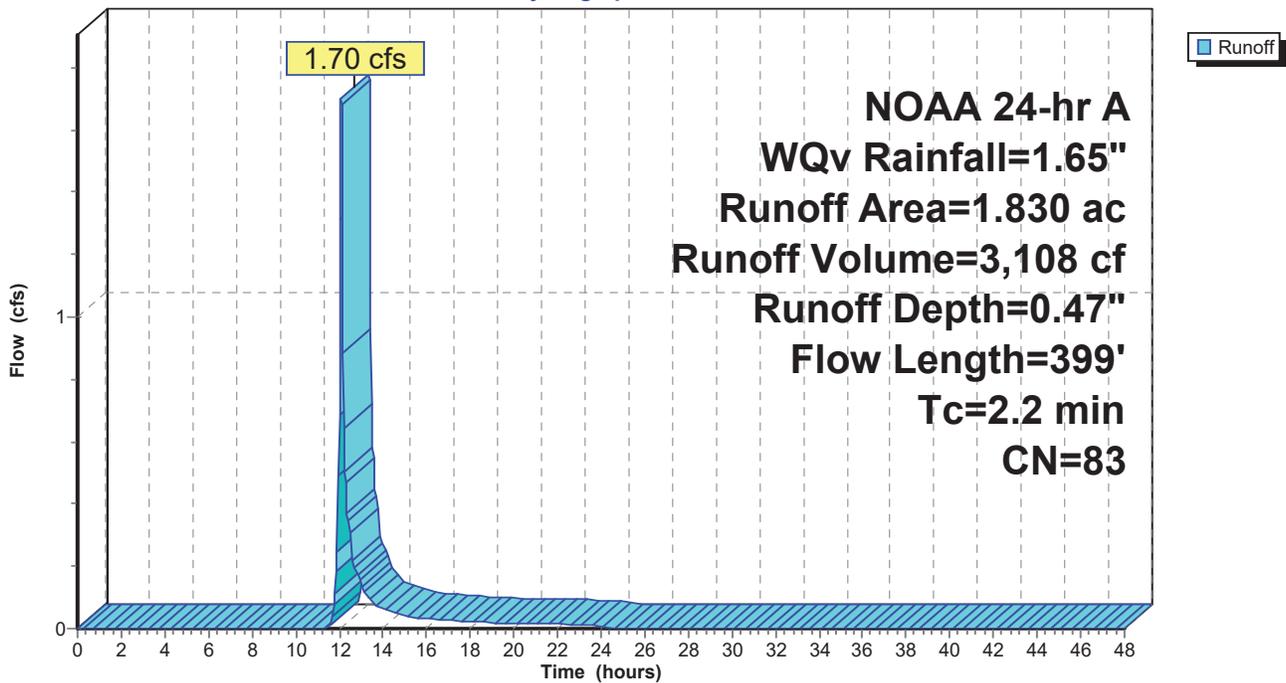
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A WQv Rainfall=1.65"

Area (ac)	CN	Description
1.425	79	50-75% Grass cover, Fair, HSG C
0.405	98	Paved parking, HSG C
1.830	83	Weighted Average
1.425		77.87% Pervious Area
0.405		22.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.0	100	0.0440	1.71		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
1.2	299	0.0400	4.06		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
2.2	399	Total			

Subcatchment 20S: Prop Area 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A WQv Rainfall=1.65"

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Summary for Subcatchment 23S: Post Area 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.65 cfs @ 12.08 hrs, Volume= 1,169 cf, Depth= 0.55"
 Routed to Pond 24P : Pond 2

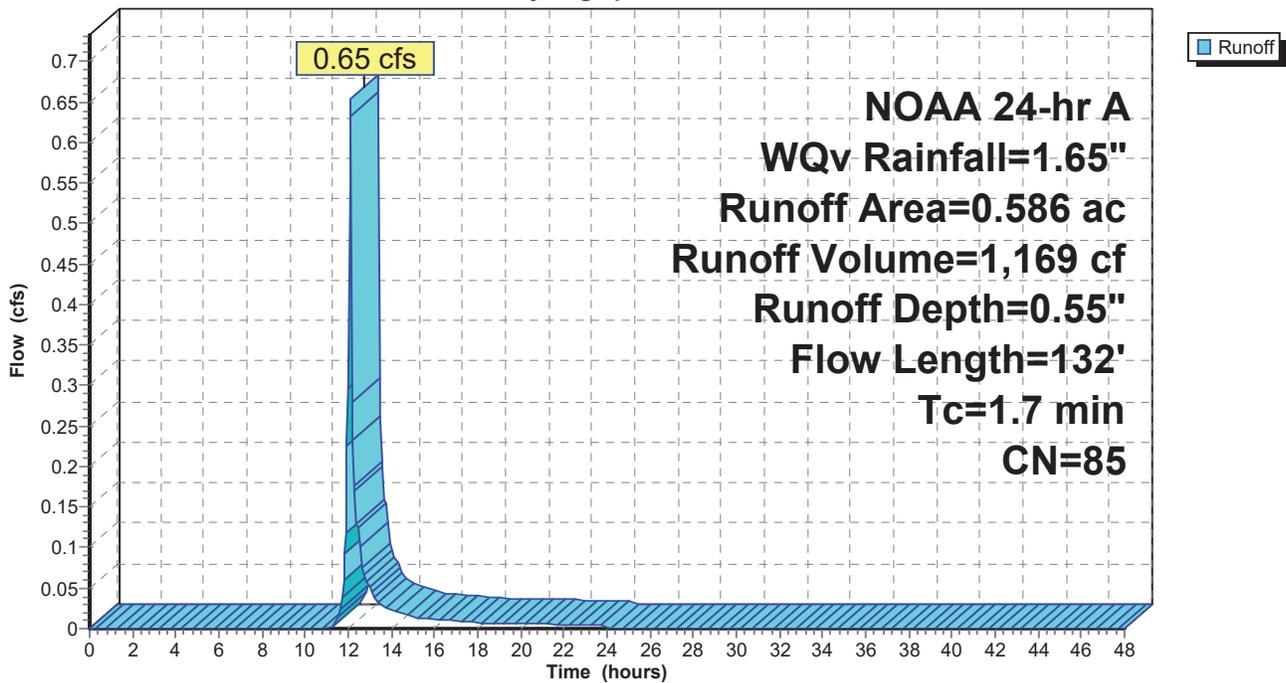
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A WQv Rainfall=1.65"

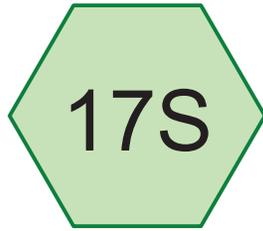
Area (ac)	CN	Description
0.387	79	50-75% Grass cover, Fair, HSG C
0.199	98	Paved parking, HSG C
0.586	85	Weighted Average
0.387		66.04% Pervious Area
0.199		33.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	32	0.0160	2.57		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
1.7	132	Total			

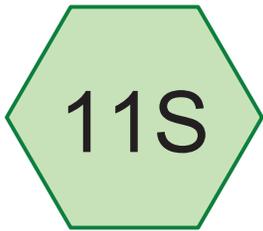
Subcatchment 23S: Post Area 2

Hydrograph





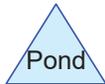
Prop Areas 5 and 6



Prop Area 7



Prop Area 8



Routing Diagram for Pond 6-8

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Pond 6-8

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NOAA 24-hr	A	Default	24.00	1	2.20	2
2	2-Year	NOAA 24-hr	A	Default	24.00	1	2.63	2
3	5-Year	NOAA 24-hr	A	Default	24.00	1	3.24	2
4	10-Year	NOAA 24-hr	A	Default	24.00	1	3.74	2
5	25-Year	NOAA 24-hr	A	Default	24.00	1	4.44	2
6	50-Year	NOAA 24-hr	A	Default	24.00	1	5.02	2
7	100-Year	NOAA 24-hr	A	Default	24.00	1	5.63	2
8	WQv	NOAA 24-hr	A	Default	24.00	1	1.65	2

Pond 6-8

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
44,431	79	1 acre lots, 20% imp, HSG C (11S)
54,668	79	50-75% Grass cover, Fair, HSG C (14S, 17S)
23,479	98	Paved parking, HSG C (11S, 14S, 17S)
122,578	83	TOTAL AREA

Pond 6-8

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
122,578	HSG C	11S, 14S, 17S
0	HSG D	
0	Other	
122,578		TOTAL AREA

Pond 6-8

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Ground Covers (selected 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	44,431	0	0	44,431	1 acre lots, 20% imp
0	0	54,668	0	0	54,668	50-75% Grass cover, Fair
0	0	23,479	0	0	23,479	Paved parking
0	0	122,578	0	0	122,578	TOTAL AREA

Pond 6-8

NOAA 24-hr A 1-Year Rainfall=2.20"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 11S: Prop Area 7

Runoff Area=1.177 ac 30.67% Impervious Runoff Depth=0.78"
Flow Length=240' Tc=4.0 min CN=82 Runoff=1.68 cfs 3,349 cf

Subcatchment 14S: Prop Area 8

Runoff Area=0.632 ac 25.16% Impervious Runoff Depth=0.89"
Flow Length=222' Tc=2.1 min CN=84 Runoff=1.14 cfs 2,039 cf

Subcatchment 17S: Prop Areas 5 and 6

Runoff Area=1.005 ac 22.19% Impervious Runoff Depth=0.84"
Flow Length=170' Tc=1.5 min CN=83 Runoff=1.71 cfs 3,046 cf

Total Runoff Area = 122,578 sf Runoff Volume = 8,434 cf Average Runoff Depth = 0.83"
73.60% Pervious = 90,213 sf 26.40% Impervious = 32,365 sf

Pond 6-8

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Subcatchment 11S: Prop Area 7

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.68 cfs @ 12.11 hrs, Volume= 3,349 cf, Depth= 0.78"
 Routed to Pond 12P : Pond 7

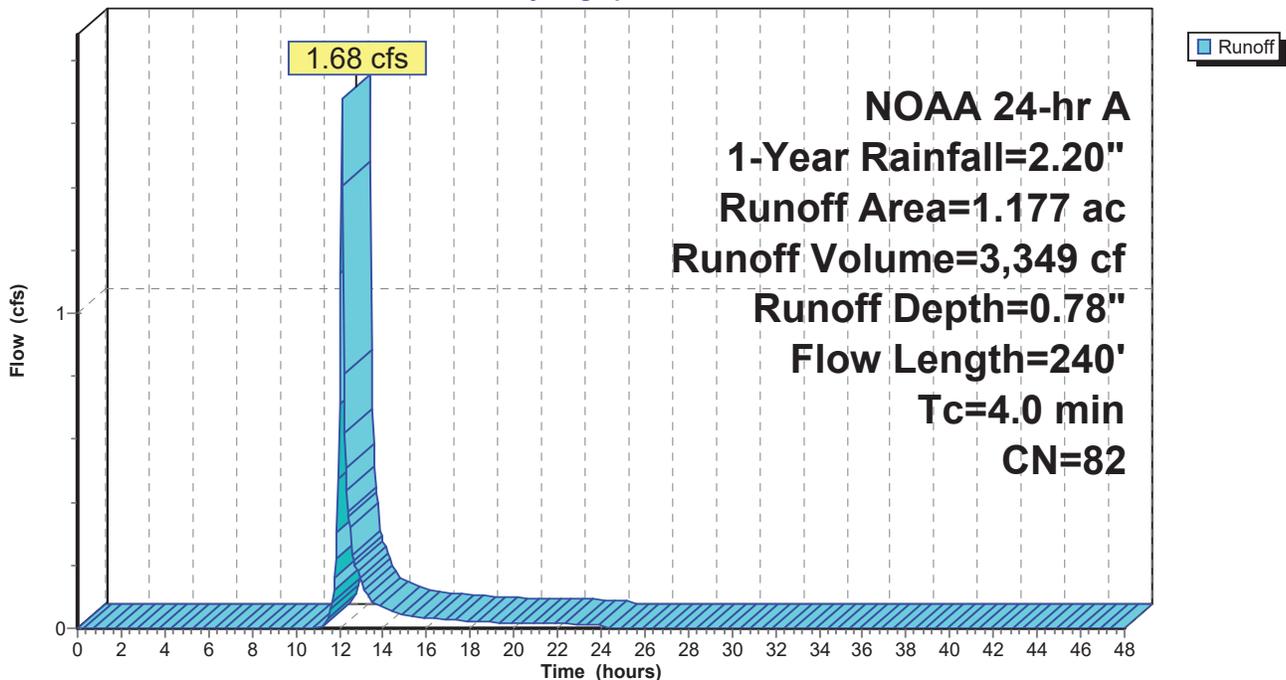
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 1-Year Rainfall=2.20"

Area (ac)	CN	Description
1.020	79	1 acre lots, 20% imp, HSG C
0.157	98	Paved parking, HSG C
1.177	82	Weighted Average
0.816		69.33% Pervious Area
0.361		30.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
2.3	100	0.0021	0.74		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.2	40	0.0250	3.21		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
4.0	240	Total			

Subcatchment 11S: Prop Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Subcatchment 14S: Prop Area 8

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.14 cfs @ 12.09 hrs, Volume= 2,039 cf, Depth= 0.89"
 Routed to Pond 15P : Pond 8

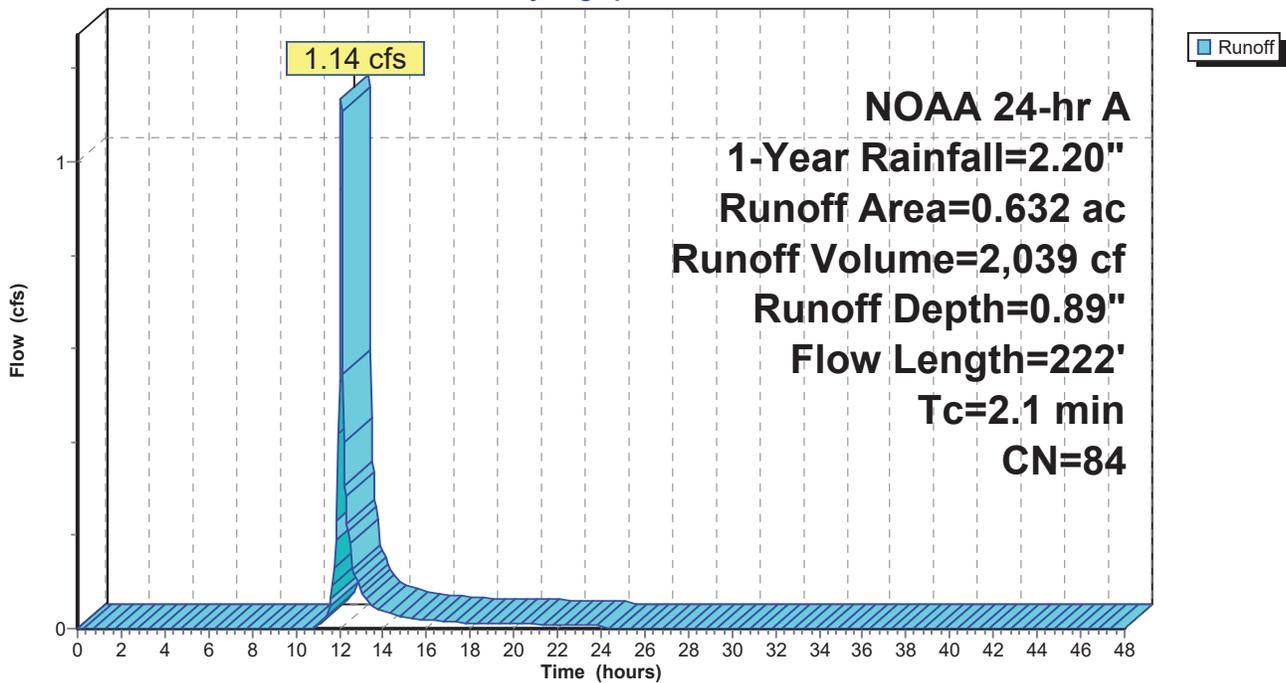
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 1-Year Rainfall=2.20"

Area (ac)	CN	Description
0.473	79	50-75% Grass cover, Fair, HSG C
0.159	98	Paved parking, HSG C
0.632	84	Weighted Average
0.473		74.84% Pervious Area
0.159		25.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0240	1.34		Sheet Flow, Grass Smooth surfaces n= 0.011 P2= 2.63"
0.9	122	0.0120	2.22		Shallow Concentrated Flow, Pavement Paved Kv= 20.3 fps
2.1	222	Total			

Subcatchment 14S: Prop Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Subcatchment 17S: Prop Areas 5 and 6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.71 cfs @ 12.08 hrs, Volume= 3,046 cf, Depth= 0.84"
 Routed to Pond 18P : Ponds 5 and 6

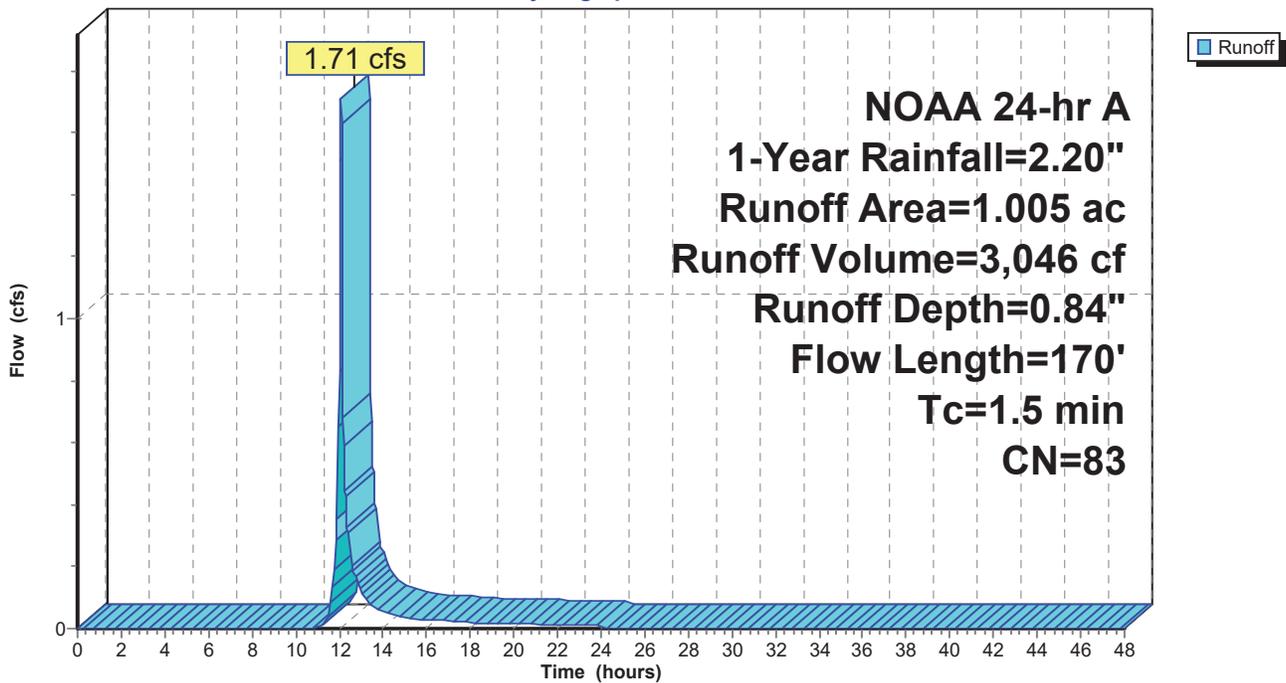
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 1-Year Rainfall=2.20"

Area (ac)	CN	Description
0.782	79	50-75% Grass cover, Fair, HSG C
0.223	98	Paved parking, HSG C
1.005	83	Weighted Average
0.782		77.81% Pervious Area
0.223		22.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0230	1.32		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	70	0.0950	6.26		Shallow Concentrated Flow, Road Paved Kv= 20.3 fps
1.5	170	Total			

Subcatchment 17S: Prop Areas 5 and 6

Hydrograph



Pond 6-8

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 11S: Prop Area 7

Runoff Area=1.177 ac 30.67% Impervious Runoff Depth=1.09"
Flow Length=240' Tc=4.0 min CN=82 Runoff=2.36 cfs 4,676 cf

Subcatchment 14S: Prop Area 8

Runoff Area=0.632 ac 25.16% Impervious Runoff Depth=1.22"
Flow Length=222' Tc=2.1 min CN=84 Runoff=1.55 cfs 2,794 cf

Subcatchment 17S: Prop Areas 5 and 6

Runoff Area=1.005 ac 22.19% Impervious Runoff Depth=1.15"
Flow Length=170' Tc=1.5 min CN=83 Runoff=2.36 cfs 4,213 cf

Total Runoff Area = 122,578 sf Runoff Volume = 11,683 cf Average Runoff Depth = 1.14"
73.60% Pervious = 90,213 sf 26.40% Impervious = 32,365 sf

Pond 6-8

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Subcatchment 11S: Prop Area 7

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 2.36 cfs @ 12.11 hrs, Volume= 4,676 cf, Depth= 1.09"
 Routed to Pond 12P : Pond 7

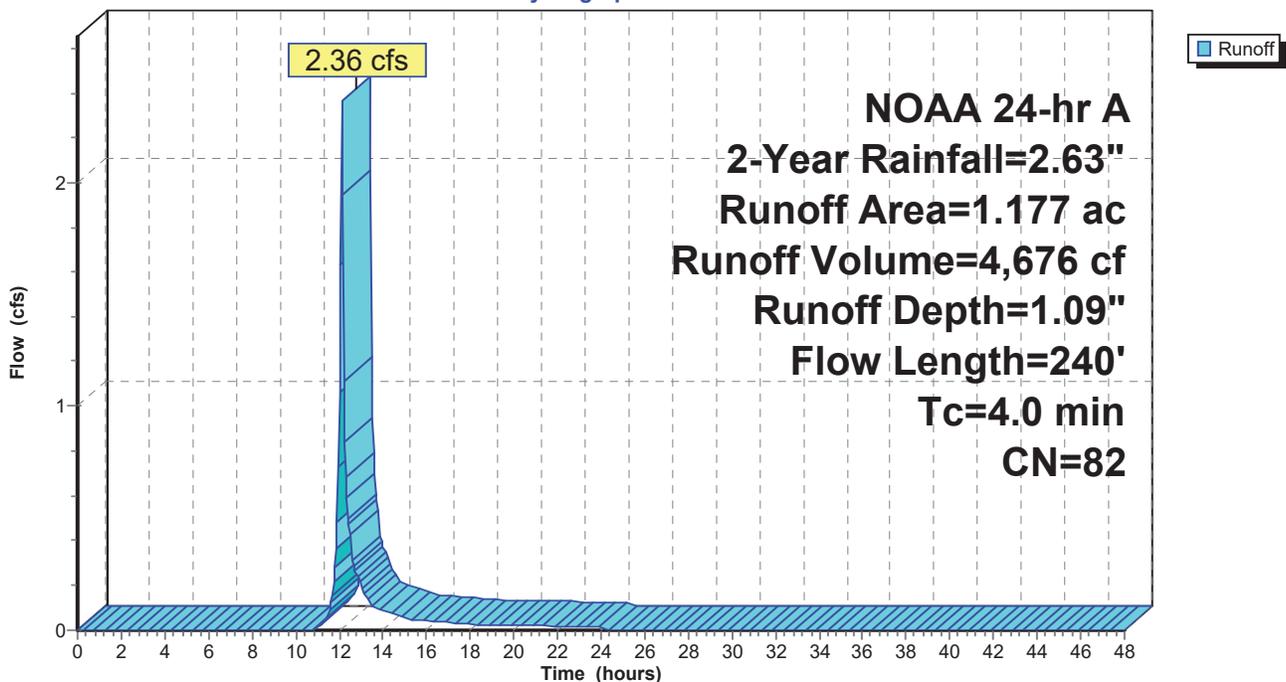
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 2-Year Rainfall=2.63"

Area (ac)	CN	Description
1.020	79	1 acre lots, 20% imp, HSG C
0.157	98	Paved parking, HSG C
1.177	82	Weighted Average
0.816		69.33% Pervious Area
0.361		30.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
2.3	100	0.0021	0.74		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
0.2	40	0.0250	3.21		Shallow Concentrated Flow, paved Paved $K_v= 20.3$ fps
4.0	240	Total			

Subcatchment 11S: Prop Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Subcatchment 14S: Prop Area 8

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.55 cfs @ 12.09 hrs, Volume= 2,794 cf, Depth= 1.22"
 Routed to Pond 15P : Pond 8

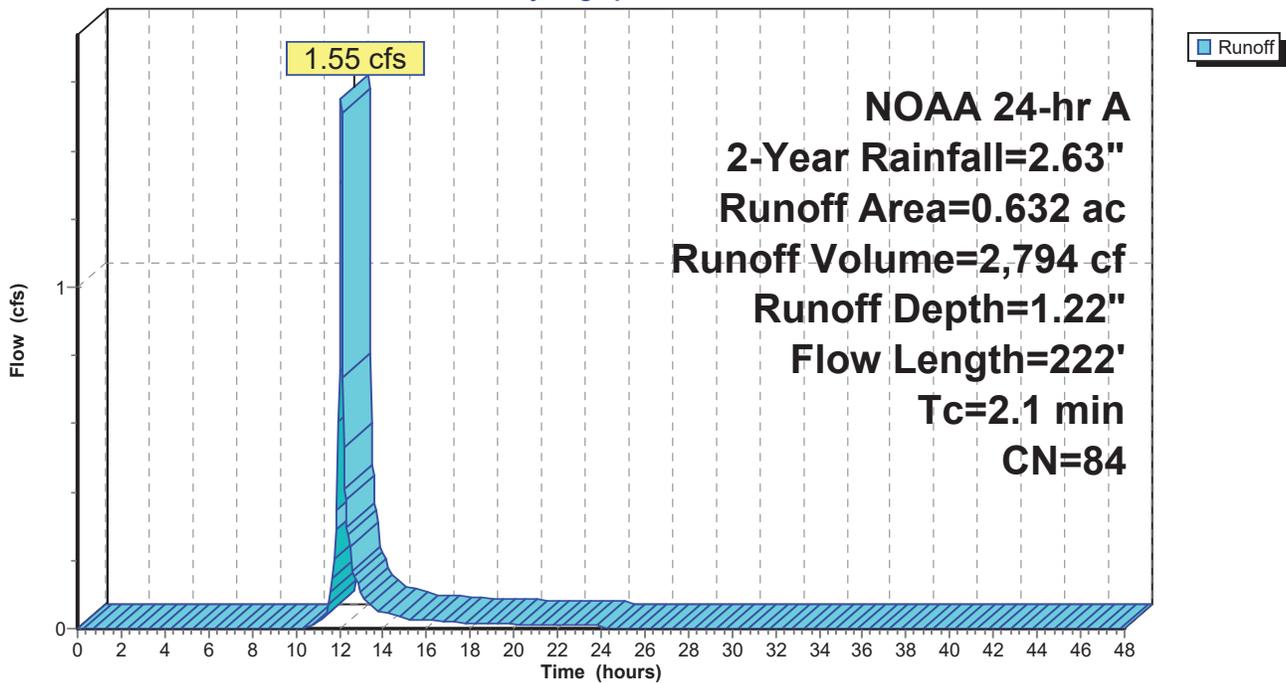
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 2-Year Rainfall=2.63"

Area (ac)	CN	Description
0.473	79	50-75% Grass cover, Fair, HSG C
0.159	98	Paved parking, HSG C
0.632	84	Weighted Average
0.473		74.84% Pervious Area
0.159		25.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0240	1.34		Sheet Flow, Grass Smooth surfaces n= 0.011 P2= 2.63"
0.9	122	0.0120	2.22		Shallow Concentrated Flow, Pavement Paved Kv= 20.3 fps
2.1	222	Total			

Subcatchment 14S: Prop Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Subcatchment 17S: Prop Areas 5 and 6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.36 cfs @ 12.08 hrs, Volume= 4,213 cf, Depth= 1.15"
 Routed to Pond 18P : Ponds 5 and 6

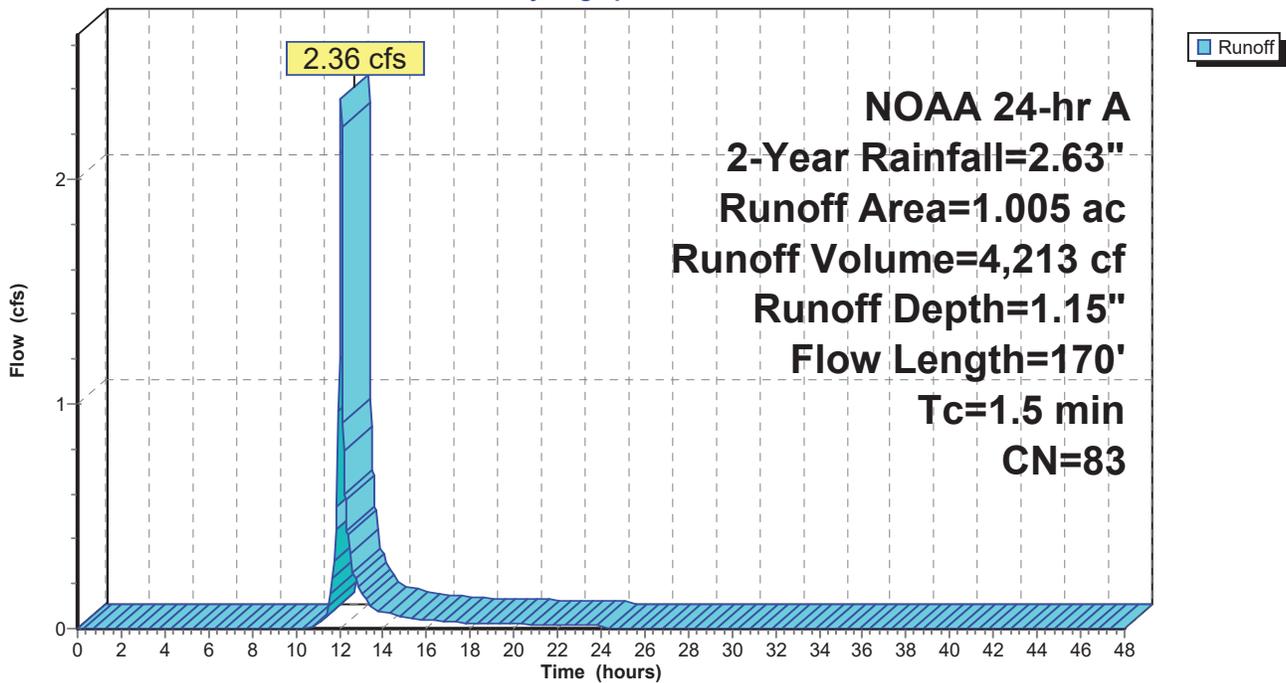
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 2-Year Rainfall=2.63"

Area (ac)	CN	Description
0.782	79	50-75% Grass cover, Fair, HSG C
0.223	98	Paved parking, HSG C
1.005	83	Weighted Average
0.782		77.81% Pervious Area
0.223		22.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0230	1.32		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	70	0.0950	6.26		Shallow Concentrated Flow, Road Paved Kv= 20.3 fps
1.5	170	Total			

Subcatchment 17S: Prop Areas 5 and 6

Hydrograph



Pond 6-8

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 11S: Prop Area 7

Runoff Area=1.177 ac 30.67% Impervious Runoff Depth=1.57"
Flow Length=240' Tc=4.0 min CN=82 Runoff=3.39 cfs 6,709 cf

Subcatchment 14S: Prop Area 8

Runoff Area=0.632 ac 25.16% Impervious Runoff Depth=1.72"
Flow Length=222' Tc=2.1 min CN=84 Runoff=2.17 cfs 3,937 cf

Subcatchment 17S: Prop Areas 5 and 6

Runoff Area=1.005 ac 22.19% Impervious Runoff Depth=1.64"
Flow Length=170' Tc=1.5 min CN=83 Runoff=3.32 cfs 5,991 cf

Total Runoff Area = 122,578 sf Runoff Volume = 16,636 cf Average Runoff Depth = 1.63"
73.60% Pervious = 90,213 sf 26.40% Impervious = 32,365 sf

Pond 6-8

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Summary for Subcatchment 11S: Prop Area 7

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 3.39 cfs @ 12.11 hrs, Volume= 6,709 cf, Depth= 1.57"
 Routed to Pond 12P : Pond 7

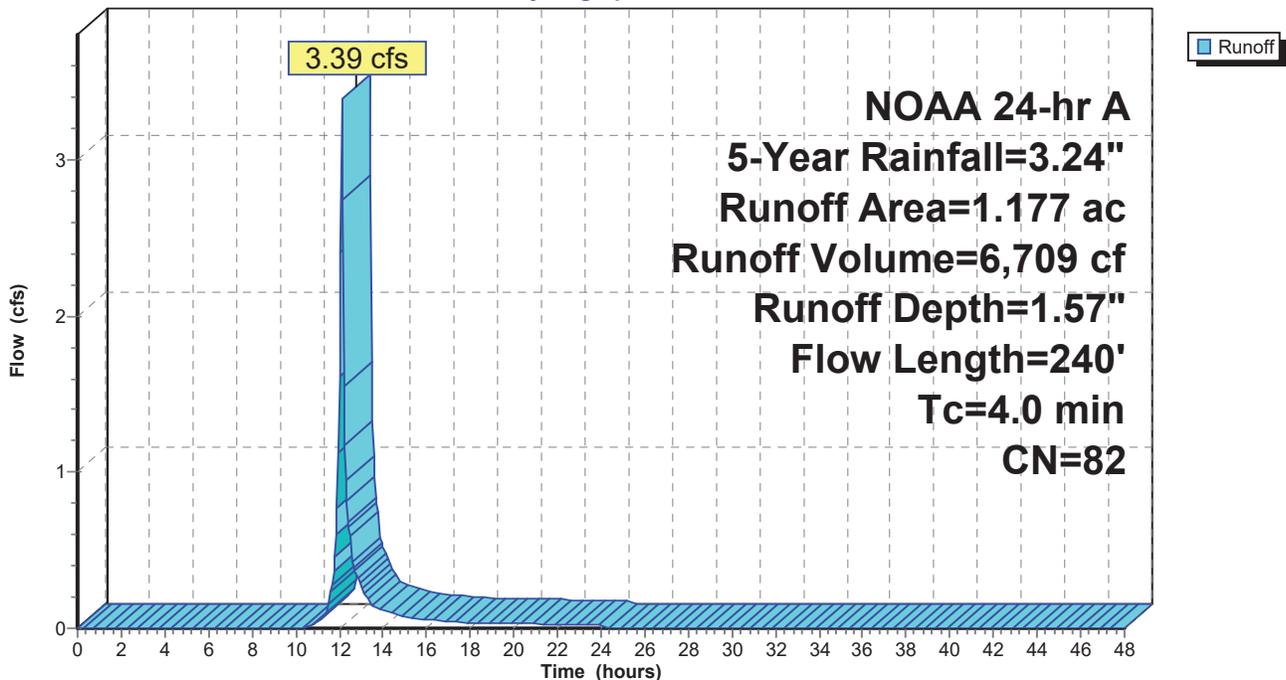
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 5-Year Rainfall=3.24"

Area (ac)	CN	Description
1.020	79	1 acre lots, 20% imp, HSG C
0.157	98	Paved parking, HSG C
1.177	82	Weighted Average
0.816		69.33% Pervious Area
0.361		30.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
2.3	100	0.0021	0.74		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.2	40	0.0250	3.21		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
4.0	240	Total			

Subcatchment 11S: Prop Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Summary for Subcatchment 14S: Prop Area 8

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.17 cfs @ 12.08 hrs, Volume= 3,937 cf, Depth= 1.72"
 Routed to Pond 15P : Pond 8

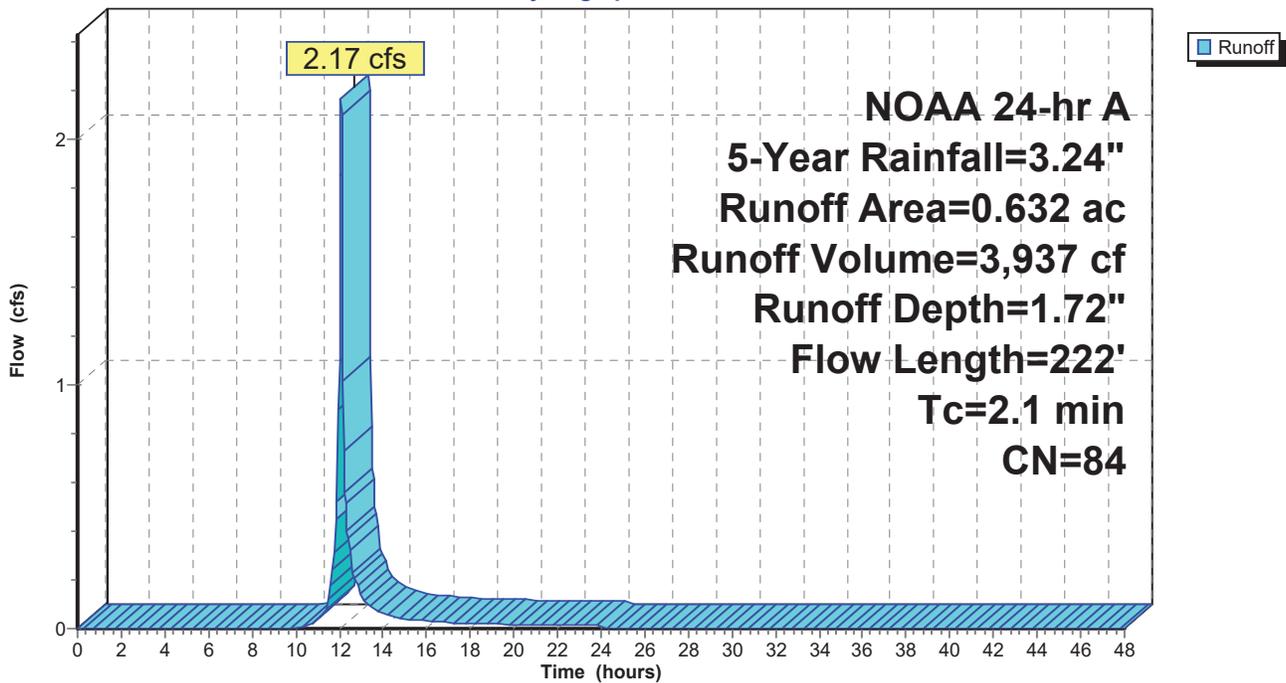
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 5-Year Rainfall=3.24"

Area (ac)	CN	Description
0.473	79	50-75% Grass cover, Fair, HSG C
0.159	98	Paved parking, HSG C
0.632	84	Weighted Average
0.473		74.84% Pervious Area
0.159		25.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0240	1.34		Sheet Flow, Grass Smooth surfaces n= 0.011 P2= 2.63"
0.9	122	0.0120	2.22		Shallow Concentrated Flow, Pavement Paved Kv= 20.3 fps
2.1	222	Total			

Subcatchment 14S: Prop Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 5-Year Rainfall=3.24"

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Summary for Subcatchment 17S: Prop Areas 5 and 6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.32 cfs @ 12.08 hrs, Volume= 5,991 cf, Depth= 1.64"
 Routed to Pond 18P : Ponds 5 and 6

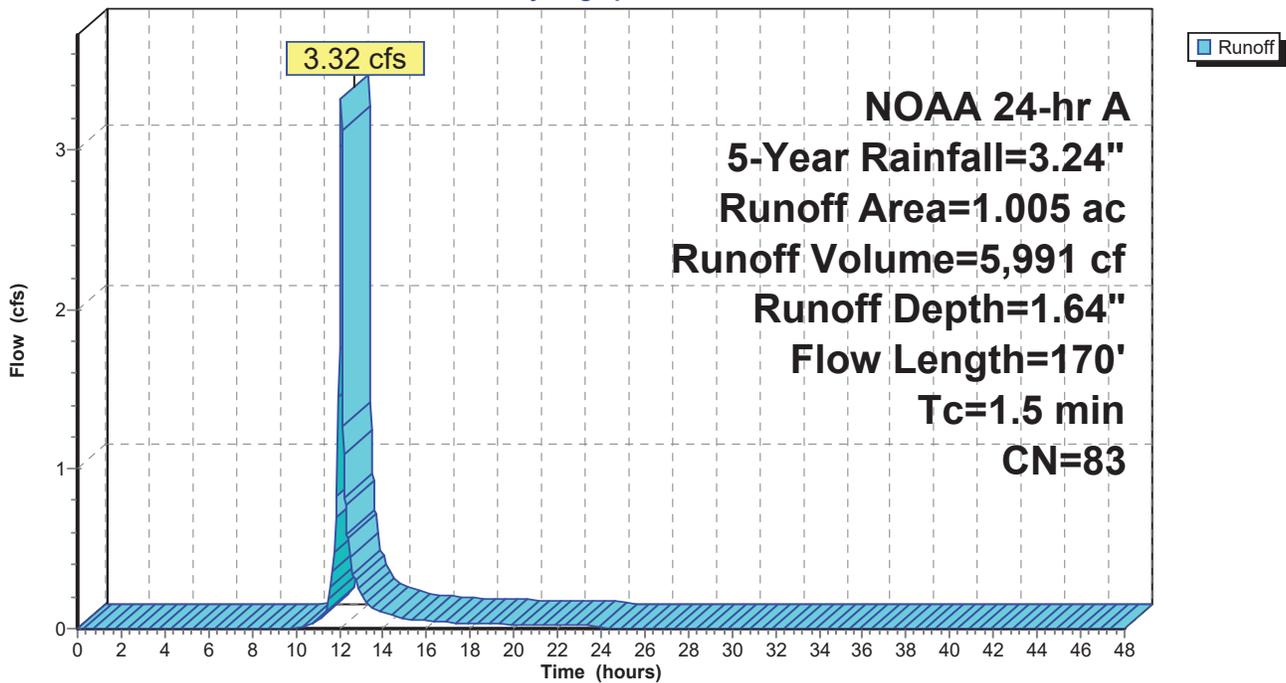
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 5-Year Rainfall=3.24"

Area (ac)	CN	Description
0.782	79	50-75% Grass cover, Fair, HSG C
0.223	98	Paved parking, HSG C
1.005	83	Weighted Average
0.782		77.81% Pervious Area
0.223		22.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0230	1.32		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	70	0.0950	6.26		Shallow Concentrated Flow, Road Paved Kv= 20.3 fps
1.5	170	Total			

Subcatchment 17S: Prop Areas 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 10-Year Rainfall=3.74"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 11S: Prop Area 7

Runoff Area=1.177 ac 30.67% Impervious Runoff Depth=1.98"
Flow Length=240' Tc=4.0 min CN=82 Runoff=4.27 cfs 8,471 cf

Subcatchment 14S: Prop Area 8

Runoff Area=0.632 ac 25.16% Impervious Runoff Depth=2.14"
Flow Length=222' Tc=2.1 min CN=84 Runoff=2.69 cfs 4,918 cf

Subcatchment 17S: Prop Areas 5 and 6

Runoff Area=1.005 ac 22.19% Impervious Runoff Depth=2.06"
Flow Length=170' Tc=1.5 min CN=83 Runoff=4.14 cfs 7,523 cf

Total Runoff Area = 122,578 sf Runoff Volume = 20,911 cf Average Runoff Depth = 2.05"
73.60% Pervious = 90,213 sf 26.40% Impervious = 32,365 sf

Pond 6-8

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NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Subcatchment 11S: Prop Area 7

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.27 cfs @ 12.10 hrs, Volume= 8,471 cf, Depth= 1.98"
 Routed to Pond 12P : Pond 7

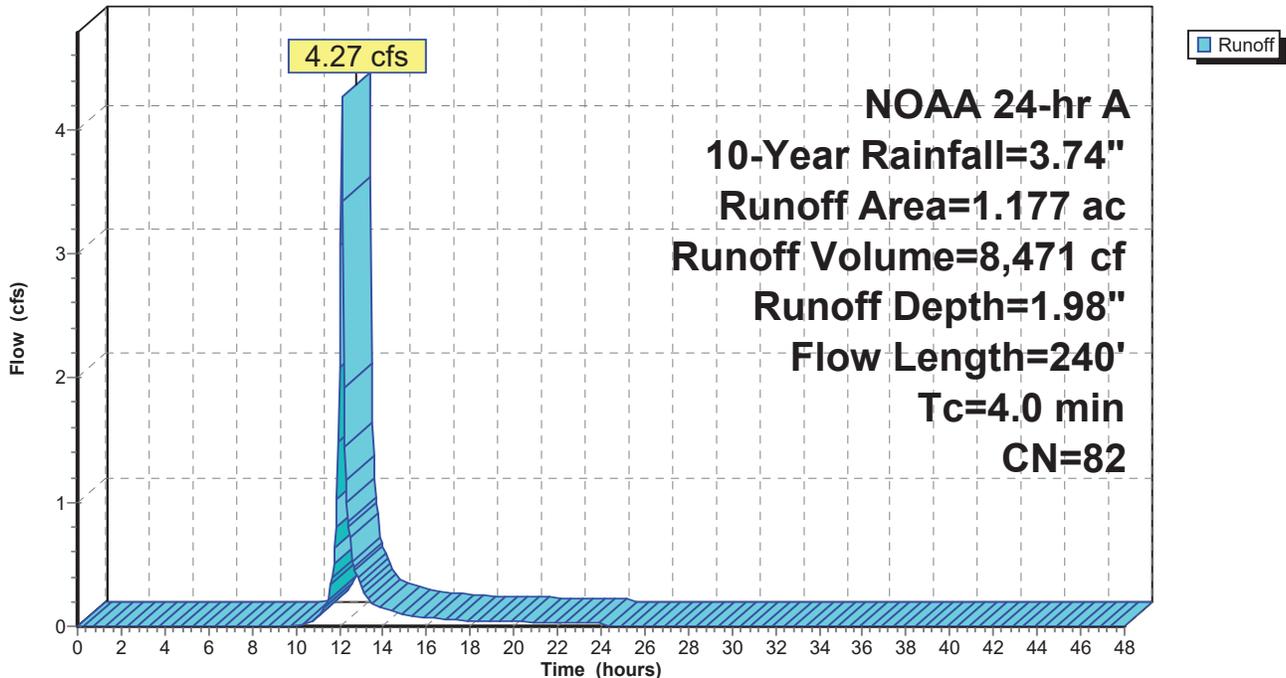
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 10-Year Rainfall=3.74"

Area (ac)	CN	Description
1.020	79	1 acre lots, 20% imp, HSG C
0.157	98	Paved parking, HSG C
1.177	82	Weighted Average
0.816		69.33% Pervious Area
0.361		30.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
2.3	100	0.0021	0.74		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.2	40	0.0250	3.21		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
4.0	240	Total			

Subcatchment 11S: Prop Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Subcatchment 14S: Prop Area 8

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.69 cfs @ 12.08 hrs, Volume= 4,918 cf, Depth= 2.14"
 Routed to Pond 15P : Pond 8

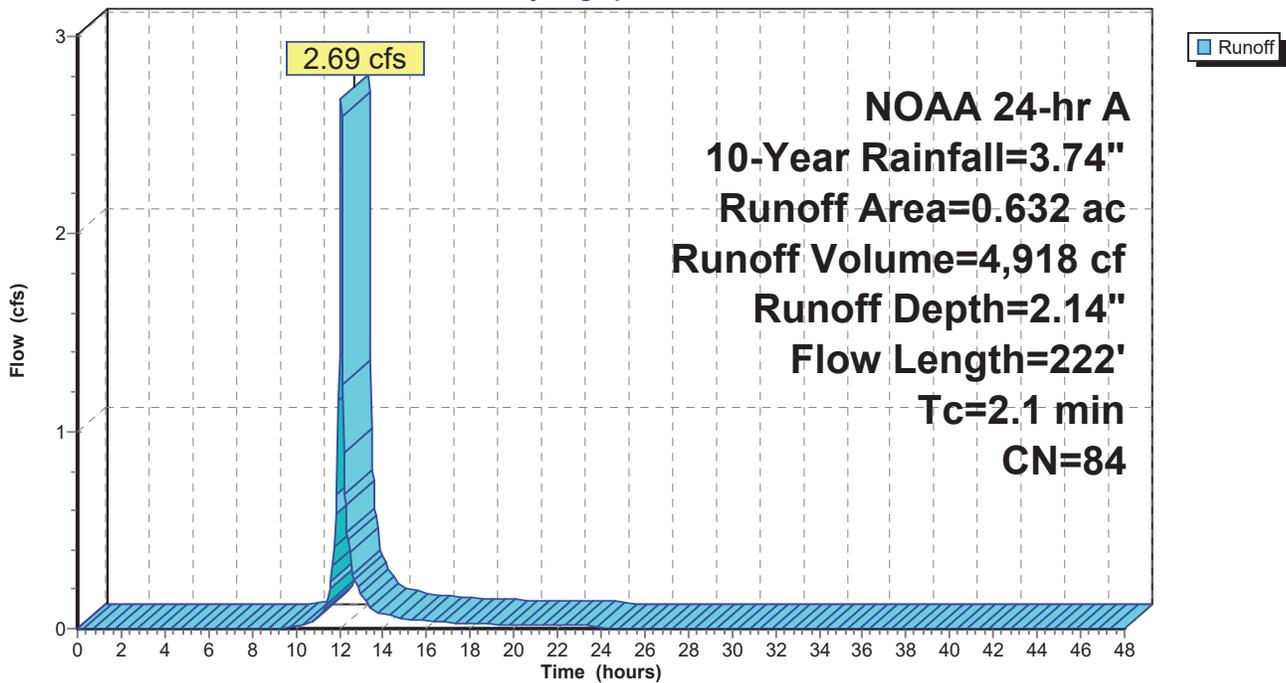
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 10-Year Rainfall=3.74"

Area (ac)	CN	Description
0.473	79	50-75% Grass cover, Fair, HSG C
0.159	98	Paved parking, HSG C
0.632	84	Weighted Average
0.473		74.84% Pervious Area
0.159		25.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0240	1.34		Sheet Flow, Grass Smooth surfaces n= 0.011 P2= 2.63"
0.9	122	0.0120	2.22		Shallow Concentrated Flow, Pavement Paved Kv= 20.3 fps
2.1	222	Total			

Subcatchment 14S: Prop Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Subcatchment 17S: Prop Areas 5 and 6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.14 cfs @ 12.08 hrs, Volume= 7,523 cf, Depth= 2.06"
 Routed to Pond 18P : Ponds 5 and 6

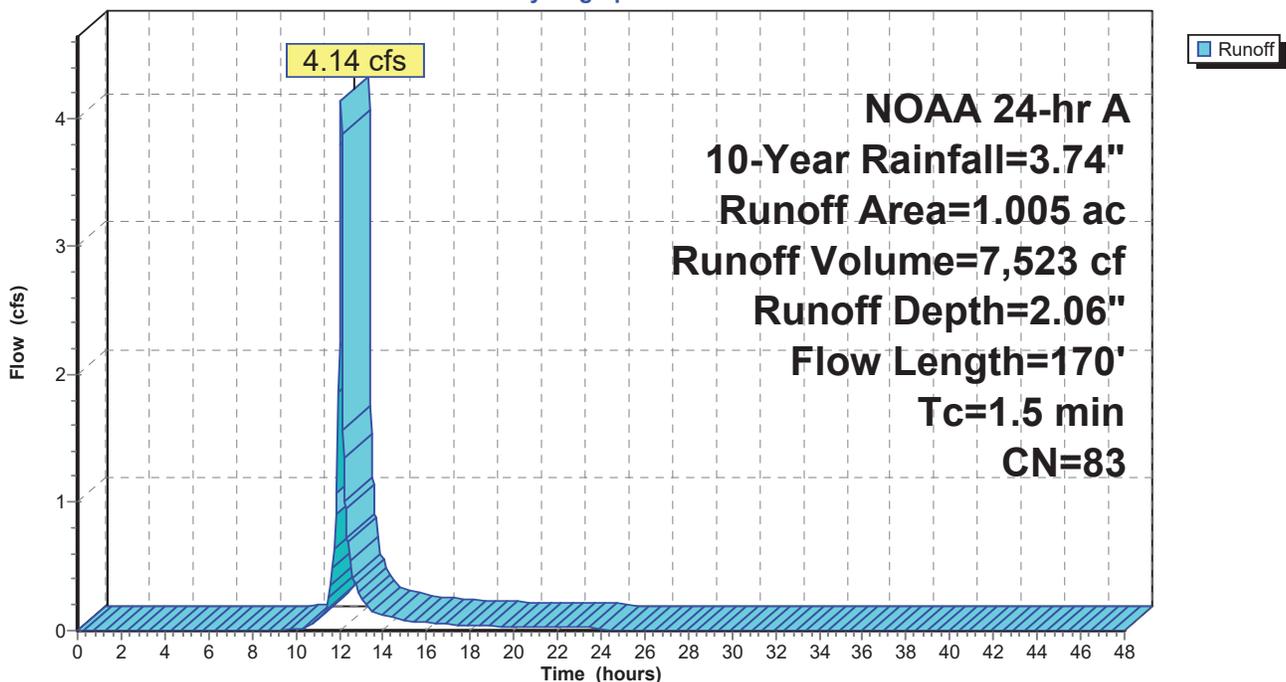
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 10-Year Rainfall=3.74"

Area (ac)	CN	Description
0.782	79	50-75% Grass cover, Fair, HSG C
0.223	98	Paved parking, HSG C
1.005	83	Weighted Average
0.782		77.81% Pervious Area
0.223		22.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0230	1.32		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	70	0.0950	6.26		Shallow Concentrated Flow, Road Paved Kv= 20.3 fps
1.5	170	Total			

Subcatchment 17S: Prop Areas 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 25-Year Rainfall=4.44"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 11S: Prop Area 7

Runoff Area=1.177 ac 30.67% Impervious Runoff Depth=2.58"
Flow Length=240' Tc=4.0 min CN=82 Runoff=5.53 cfs 11,038 cf

Subcatchment 14S: Prop Area 8

Runoff Area=0.632 ac 25.16% Impervious Runoff Depth=2.76"
Flow Length=222' Tc=2.1 min CN=84 Runoff=3.42 cfs 6,338 cf

Subcatchment 17S: Prop Areas 5 and 6

Runoff Area=1.005 ac 22.19% Impervious Runoff Depth=2.67"
Flow Length=170' Tc=1.5 min CN=83 Runoff=5.30 cfs 9,749 cf

Total Runoff Area = 122,578 sf Runoff Volume = 27,125 cf Average Runoff Depth = 2.66"
73.60% Pervious = 90,213 sf 26.40% Impervious = 32,365 sf

Pond 6-8

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NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Subcatchment 11S: Prop Area 7

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.53 cfs @ 12.10 hrs, Volume= 11,038 cf, Depth= 2.58"
 Routed to Pond 12P : Pond 7

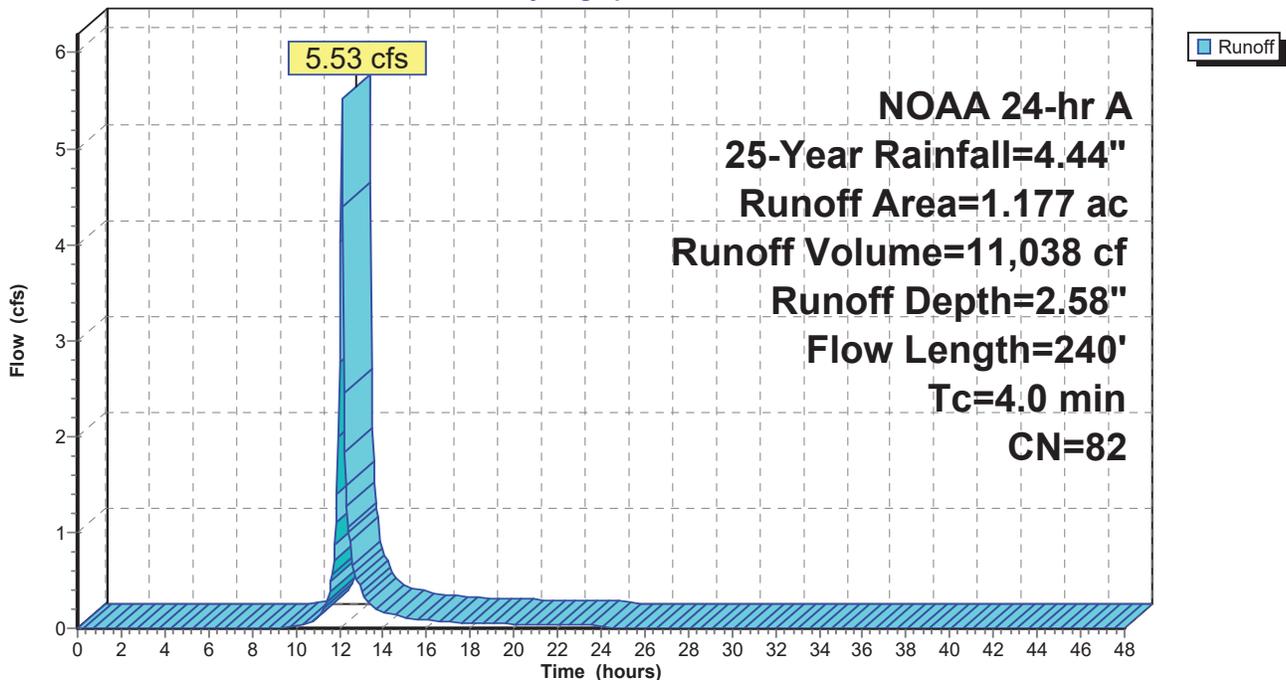
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 25-Year Rainfall=4.44"

Area (ac)	CN	Description
1.020	79	1 acre lots, 20% imp, HSG C
0.157	98	Paved parking, HSG C
1.177	82	Weighted Average
0.816		69.33% Pervious Area
0.361		30.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
2.3	100	0.0021	0.74		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.2	40	0.0250	3.21		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
4.0	240	Total			

Subcatchment 11S: Prop Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Subcatchment 14S: Prop Area 8

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 3.42 cfs @ 12.08 hrs, Volume= 6,338 cf, Depth= 2.76"
 Routed to Pond 15P : Pond 8

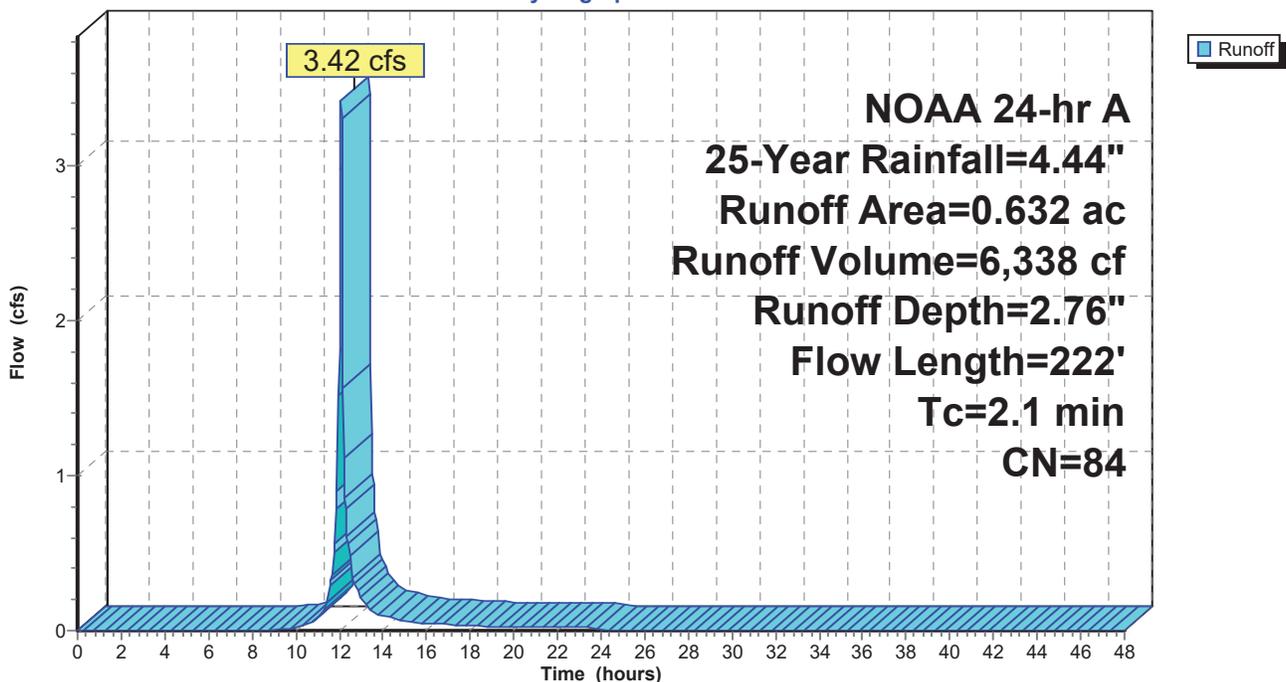
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 25-Year Rainfall=4.44"

Area (ac)	CN	Description
0.473	79	50-75% Grass cover, Fair, HSG C
0.159	98	Paved parking, HSG C
0.632	84	Weighted Average
0.473		74.84% Pervious Area
0.159		25.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0240	1.34		Sheet Flow, Grass Smooth surfaces $n= 0.011$ $P2= 2.63"$
0.9	122	0.0120	2.22		Shallow Concentrated Flow, Pavement Paved $K_v= 20.3$ fps
2.1	222	Total			

Subcatchment 14S: Prop Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Subcatchment 17S: Prop Areas 5 and 6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.30 cfs @ 12.08 hrs, Volume= 9,749 cf, Depth= 2.67"
 Routed to Pond 18P : Ponds 5 and 6

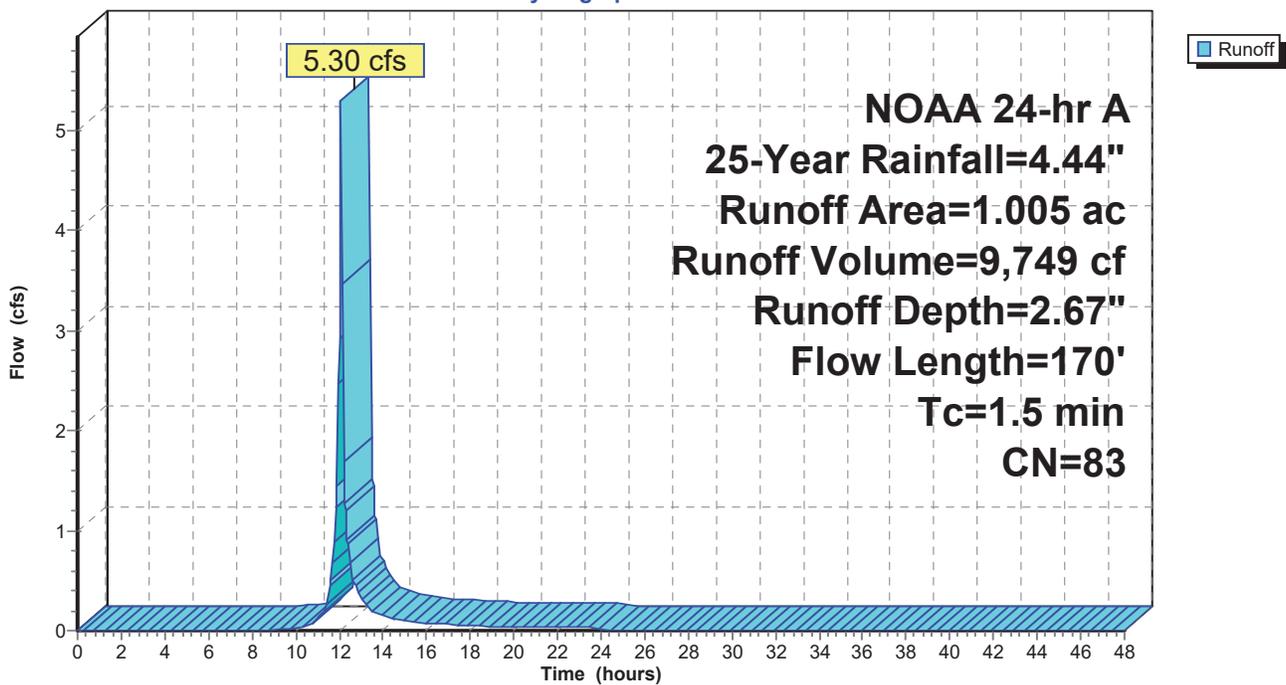
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 25-Year Rainfall=4.44"

Area (ac)	CN	Description
0.782	79	50-75% Grass cover, Fair, HSG C
0.223	98	Paved parking, HSG C
1.005	83	Weighted Average
0.782		77.81% Pervious Area
0.223		22.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0230	1.32		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	70	0.0950	6.26		Shallow Concentrated Flow, Road Paved Kv= 20.3 fps
1.5	170	Total			

Subcatchment 17S: Prop Areas 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 50-Year Rainfall=5.02"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 11S: Prop Area 7

Runoff Area=1.177 ac 30.67% Impervious Runoff Depth=3.10"
Flow Length=240' Tc=4.0 min CN=82 Runoff=6.58 cfs 13,232 cf

Subcatchment 14S: Prop Area 8

Runoff Area=0.632 ac 25.16% Impervious Runoff Depth=3.29"
Flow Length=222' Tc=2.1 min CN=84 Runoff=4.04 cfs 7,545 cf

Subcatchment 17S: Prop Areas 5 and 6

Runoff Area=1.005 ac 22.19% Impervious Runoff Depth=3.19"
Flow Length=170' Tc=1.5 min CN=83 Runoff=6.28 cfs 11,646 cf

Total Runoff Area = 122,578 sf Runoff Volume = 32,422 cf Average Runoff Depth = 3.17"
73.60% Pervious = 90,213 sf 26.40% Impervious = 32,365 sf

Pond 6-8

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NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Subcatchment 11S: Prop Area 7

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.58 cfs @ 12.10 hrs, Volume= 13,232 cf, Depth= 3.10"
 Routed to Pond 12P : Pond 7

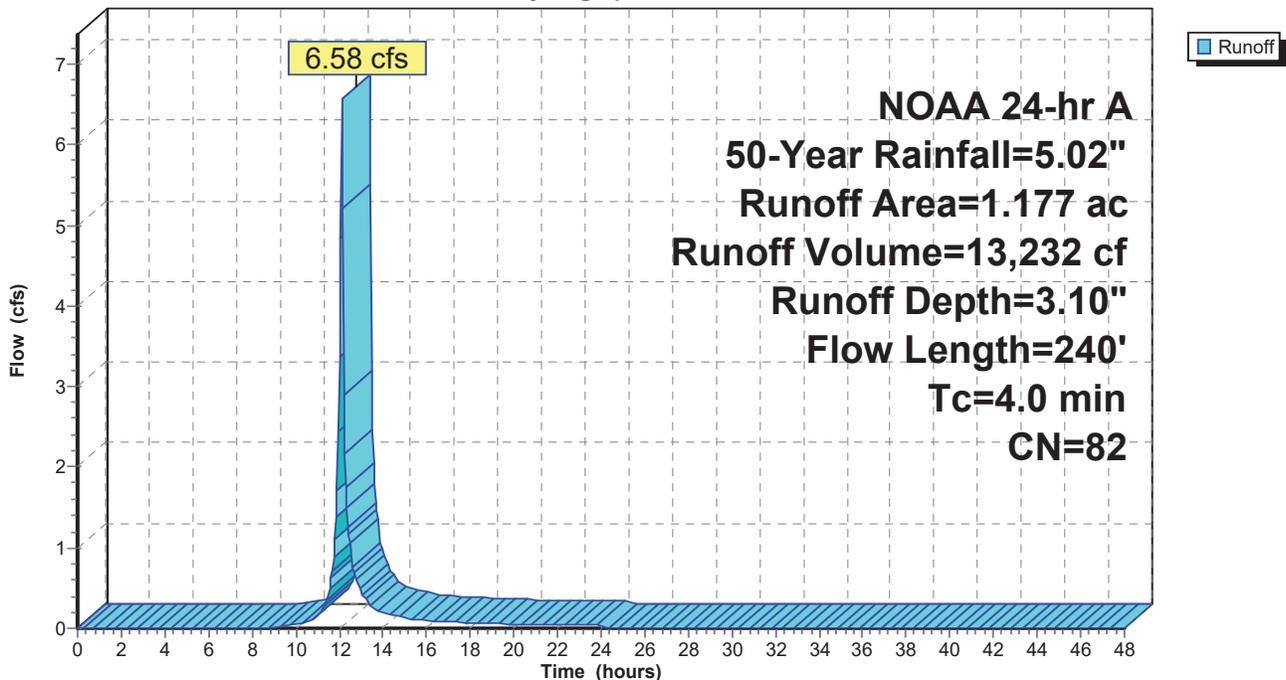
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 50-Year Rainfall=5.02"

Area (ac)	CN	Description
1.020	79	1 acre lots, 20% imp, HSG C
0.157	98	Paved parking, HSG C
1.177	82	Weighted Average
0.816		69.33% Pervious Area
0.361		30.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
2.3	100	0.0021	0.74		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.2	40	0.0250	3.21		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
4.0	240	Total			

Subcatchment 11S: Prop Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Subcatchment 14S: Prop Area 8

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.04 cfs @ 12.08 hrs, Volume= 7,545 cf, Depth= 3.29"
 Routed to Pond 15P : Pond 8

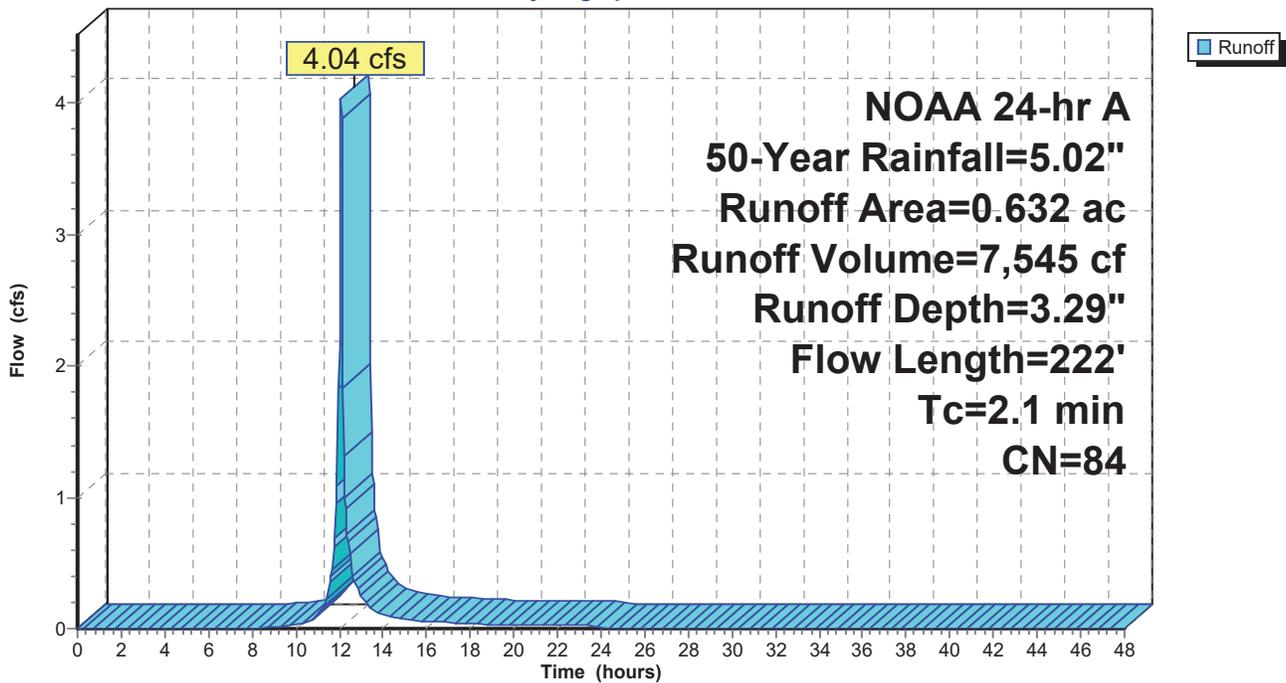
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 50-Year Rainfall=5.02"

Area (ac)	CN	Description
0.473	79	50-75% Grass cover, Fair, HSG C
0.159	98	Paved parking, HSG C
0.632	84	Weighted Average
0.473		74.84% Pervious Area
0.159		25.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0240	1.34		Sheet Flow, Grass Smooth surfaces n= 0.011 P2= 2.63"
0.9	122	0.0120	2.22		Shallow Concentrated Flow, Pavement Paved Kv= 20.3 fps
2.1	222	Total			

Subcatchment 14S: Prop Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Subcatchment 17S: Prop Areas 5 and 6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 6.28 cfs @ 12.08 hrs, Volume= 11,646 cf, Depth= 3.19"
 Routed to Pond 18P : Ponds 5 and 6

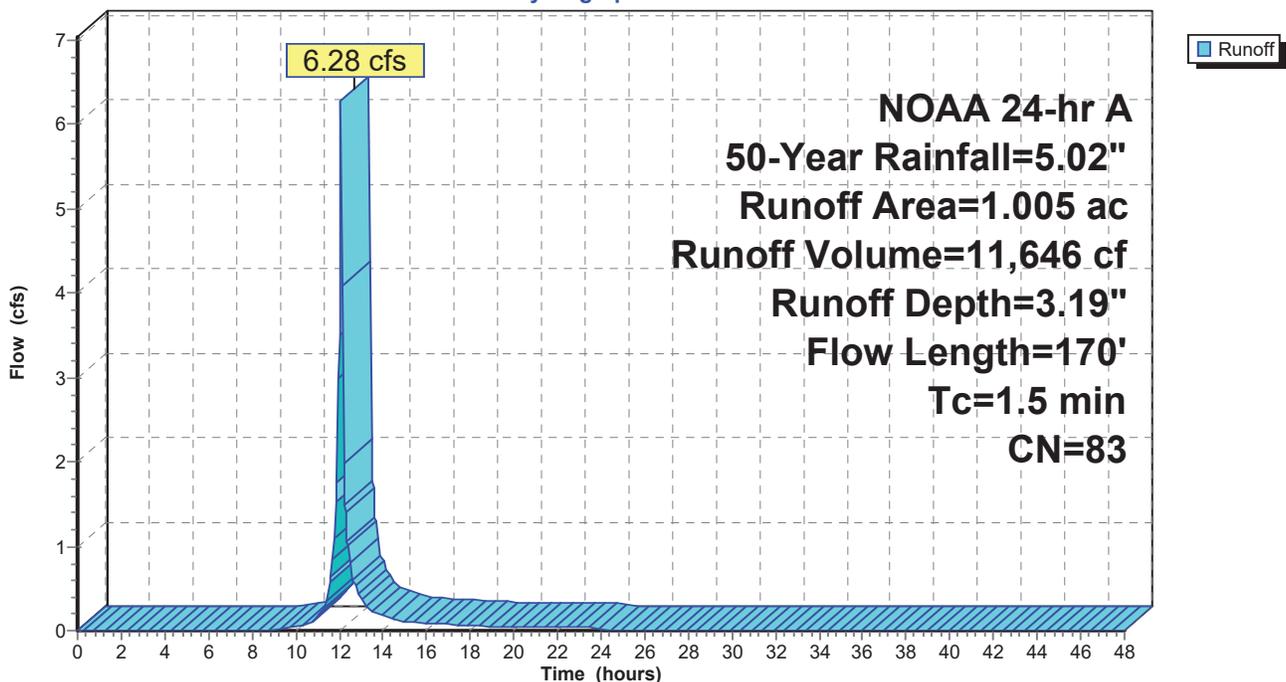
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 50-Year Rainfall=5.02"

Area (ac)	CN	Description
0.782	79	50-75% Grass cover, Fair, HSG C
0.223	98	Paved parking, HSG C
1.005	83	Weighted Average
0.782		77.81% Pervious Area
0.223		22.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0230	1.32		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	70	0.0950	6.26		Shallow Concentrated Flow, Road Paved Kv= 20.3 fps
1.5	170	Total			

Subcatchment 17S: Prop Areas 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 100-Year Rainfall=5.63"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 11S: Prop Area 7

Runoff Area=1.177 ac 30.67% Impervious Runoff Depth=3.65"
Flow Length=240' Tc=4.0 min CN=82 Runoff=7.70 cfs 15,587 cf

Subcatchment 14S: Prop Area 8

Runoff Area=0.632 ac 25.16% Impervious Runoff Depth=3.85"
Flow Length=222' Tc=2.1 min CN=84 Runoff=4.68 cfs 8,836 cf

Subcatchment 17S: Prop Areas 5 and 6

Runoff Area=1.005 ac 22.19% Impervious Runoff Depth=3.75"
Flow Length=170' Tc=1.5 min CN=83 Runoff=7.14 cfs 13,678 cf

Total Runoff Area = 122,578 sf Runoff Volume = 38,101 cf Average Runoff Depth = 3.73"
73.60% Pervious = 90,213 sf 26.40% Impervious = 32,365 sf

Pond 6-8

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NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Subcatchment 11S: Prop Area 7

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 7.70 cfs @ 12.10 hrs, Volume= 15,587 cf, Depth= 3.65"
 Routed to Pond 12P : Pond 7

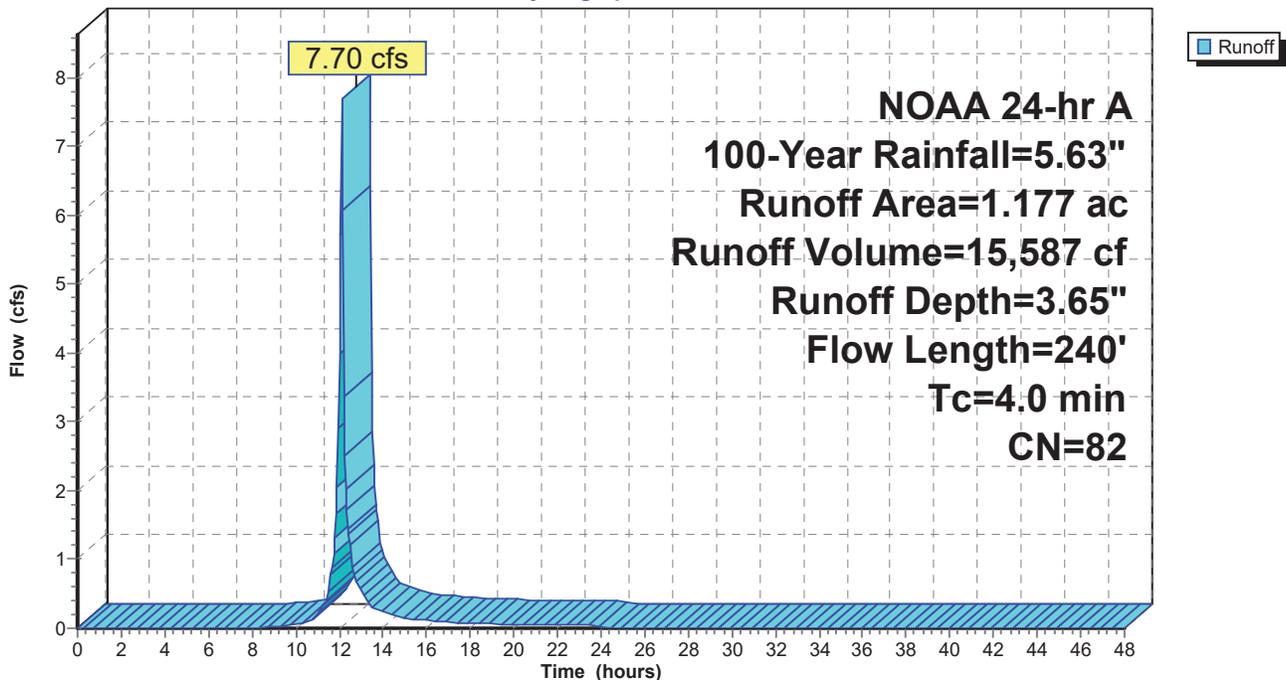
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, $dt= 0.05$ hrs
 NOAA 24-hr A 100-Year Rainfall=5.63"

Area (ac)	CN	Description
1.020	79	1 acre lots, 20% imp, HSG C
0.157	98	Paved parking, HSG C
1.177	82	Weighted Average
0.816		69.33% Pervious Area
0.361		30.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces $n= 0.011$ $P2= 2.63"$
2.3	100	0.0021	0.74		Shallow Concentrated Flow, unpaved Unpaved $K_v= 16.1$ fps
0.2	40	0.0250	3.21		Shallow Concentrated Flow, paved Paved $K_v= 20.3$ fps
4.0	240	Total			

Subcatchment 11S: Prop Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Subcatchment 14S: Prop Area 8

[49] Hint: Tc<2dt may require smaller dt

Runoff = 4.68 cfs @ 12.08 hrs, Volume= 8,836 cf, Depth= 3.85"
 Routed to Pond 15P : Pond 8

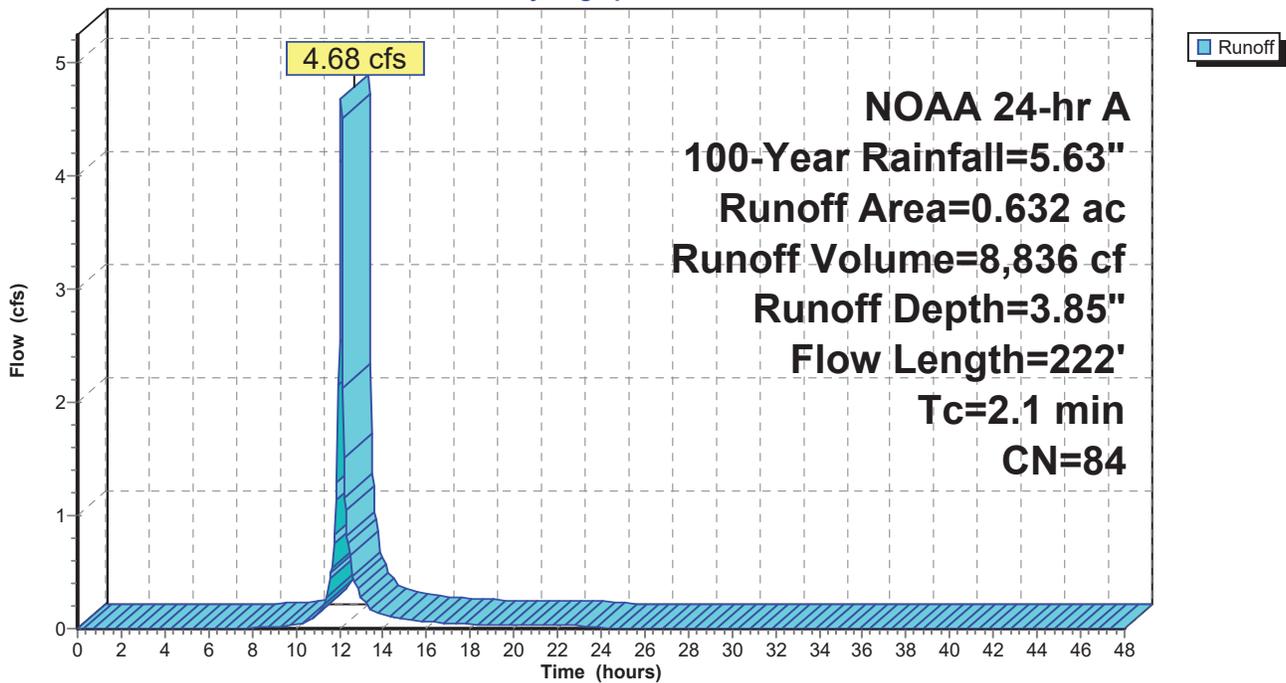
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 100-Year Rainfall=5.63"

Area (ac)	CN	Description
0.473	79	50-75% Grass cover, Fair, HSG C
0.159	98	Paved parking, HSG C
0.632	84	Weighted Average
0.473		74.84% Pervious Area
0.159		25.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0240	1.34		Sheet Flow, Grass Smooth surfaces n= 0.011 P2= 2.63"
0.9	122	0.0120	2.22		Shallow Concentrated Flow, Pavement Paved Kv= 20.3 fps
2.1	222	Total			

Subcatchment 14S: Prop Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Subcatchment 17S: Prop Areas 5 and 6

[49] Hint: $T_c < 2dt$ may require smaller dt

Runoff = 7.14 cfs @ 12.07 hrs, Volume= 13,678 cf, Depth= 3.75"
 Routed to Pond 18P : Ponds 5 and 6

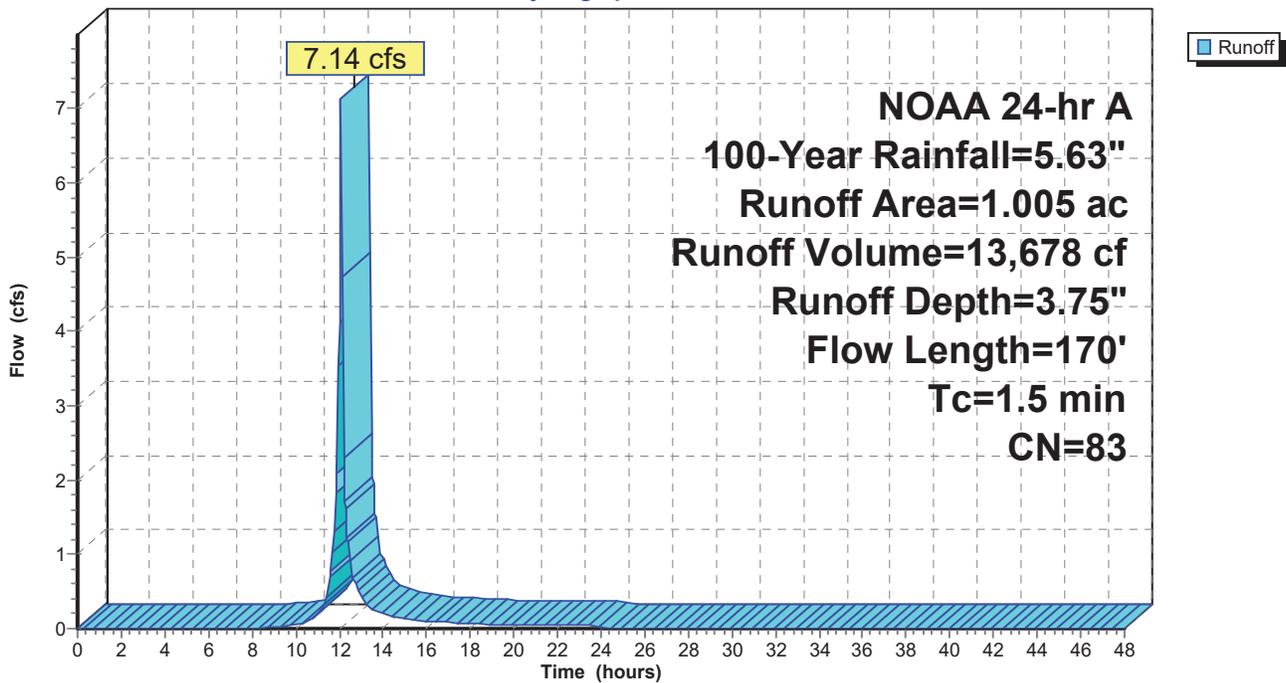
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A 100-Year Rainfall=5.63"

Area (ac)	CN	Description
0.782	79	50-75% Grass cover, Fair, HSG C
0.223	98	Paved parking, HSG C
1.005	83	Weighted Average
0.782		77.81% Pervious Area
0.223		22.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0230	1.32		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	70	0.0950	6.26		Shallow Concentrated Flow, Road Paved Kv= 20.3 fps
1.5	170	Total			

Subcatchment 17S: Prop Areas 5 and 6

Hydrograph



Pond 6-8

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NOAA 24-hr A WQv Rainfall=1.65"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 11S: Prop Area 7

Runoff Area=1.177 ac 30.67% Impervious Runoff Depth=0.43"
Flow Length=240' Tc=4.0 min CN=82 Runoff=0.89 cfs 1,839 cf

Subcatchment 14S: Prop Area 8

Runoff Area=0.632 ac 25.16% Impervious Runoff Depth=0.51"
Flow Length=222' Tc=2.1 min CN=84 Runoff=0.64 cfs 1,164 cf

Subcatchment 17S: Prop Areas 5 and 6

Runoff Area=1.005 ac 22.19% Impervious Runoff Depth=0.47"
Flow Length=170' Tc=1.5 min CN=83 Runoff=0.94 cfs 1,707 cf

Total Runoff Area = 122,578 sf Runoff Volume = 4,710 cf Average Runoff Depth = 0.46"
73.60% Pervious = 90,213 sf 26.40% Impervious = 32,365 sf

Pond 6-8

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NOAA 24-hr A WQv Rainfall=1.65"

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Summary for Subcatchment 11S: Prop Area 7

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.89 cfs @ 12.11 hrs, Volume= 1,839 cf, Depth= 0.43"
 Routed to Pond 12P : Pond 7

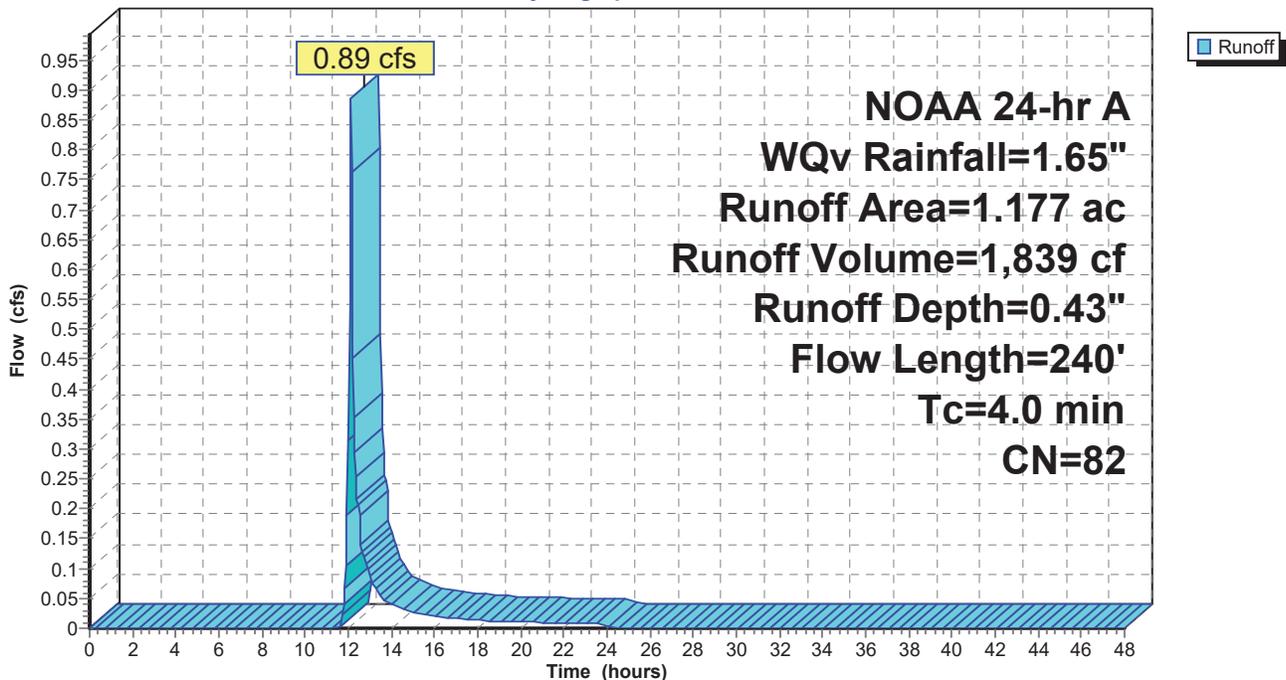
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A WQv Rainfall=1.65"

Area (ac)	CN	Description
1.020	79	1 acre lots, 20% imp, HSG C
0.157	98	Paved parking, HSG C
1.177	82	Weighted Average
0.816		69.33% Pervious Area
0.361		30.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	100	0.0150	1.11		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
2.3	100	0.0021	0.74		Shallow Concentrated Flow, unpaved Unpaved Kv= 16.1 fps
0.2	40	0.0250	3.21		Shallow Concentrated Flow, paved Paved Kv= 20.3 fps
4.0	240	Total			

Subcatchment 11S: Prop Area 7

Hydrograph



Pond 6-8

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NOAA 24-hr A WQv Rainfall=1.65"

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Summary for Subcatchment 14S: Prop Area 8

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.64 cfs @ 12.09 hrs, Volume= 1,164 cf, Depth= 0.51"
 Routed to Pond 15P : Pond 8

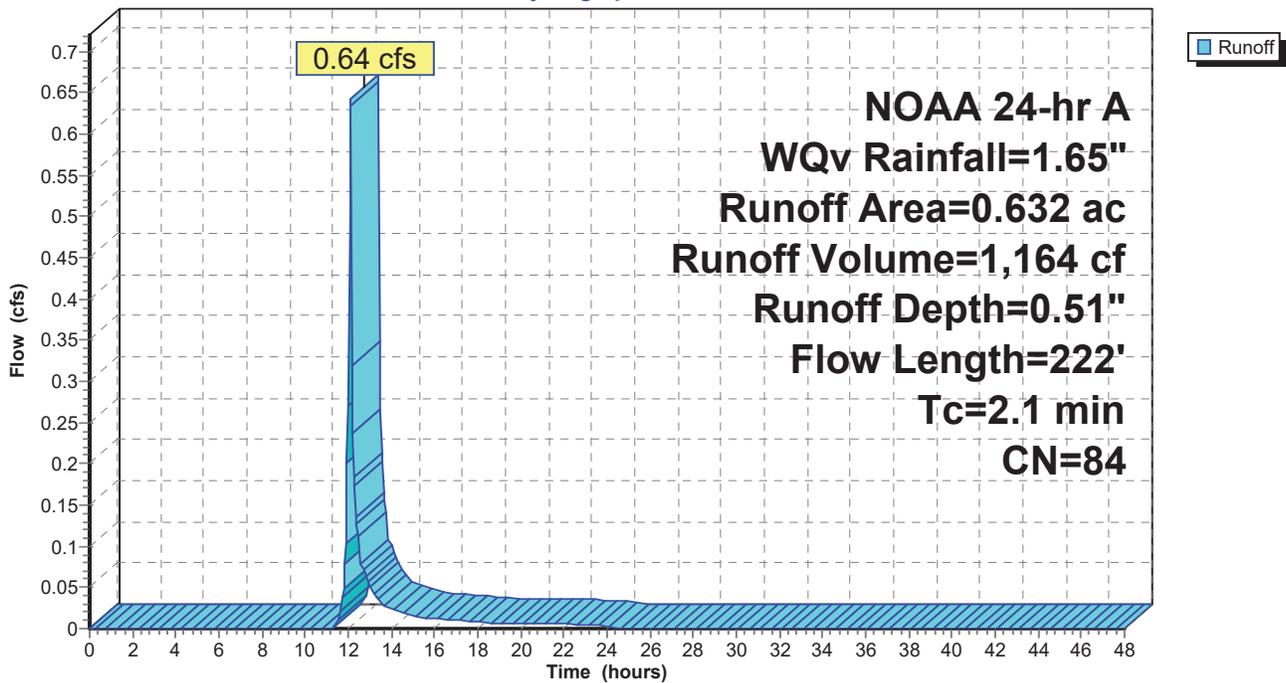
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A WQv Rainfall=1.65"

Area (ac)	CN	Description
0.473	79	50-75% Grass cover, Fair, HSG C
0.159	98	Paved parking, HSG C
0.632	84	Weighted Average
0.473		74.84% Pervious Area
0.159		25.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.2	100	0.0240	1.34		Sheet Flow, Grass Smooth surfaces n= 0.011 P2= 2.63"
0.9	122	0.0120	2.22		Shallow Concentrated Flow, Pavement Paved Kv= 20.3 fps
2.1	222	Total			

Subcatchment 14S: Prop Area 8

Hydrograph



Pond 6-8

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NOAA 24-hr A WQv Rainfall=1.65"

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Summary for Subcatchment 17S: Prop Areas 5 and 6

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.94 cfs @ 12.08 hrs, Volume= 1,707 cf, Depth= 0.47"
 Routed to Pond 18P : Ponds 5 and 6

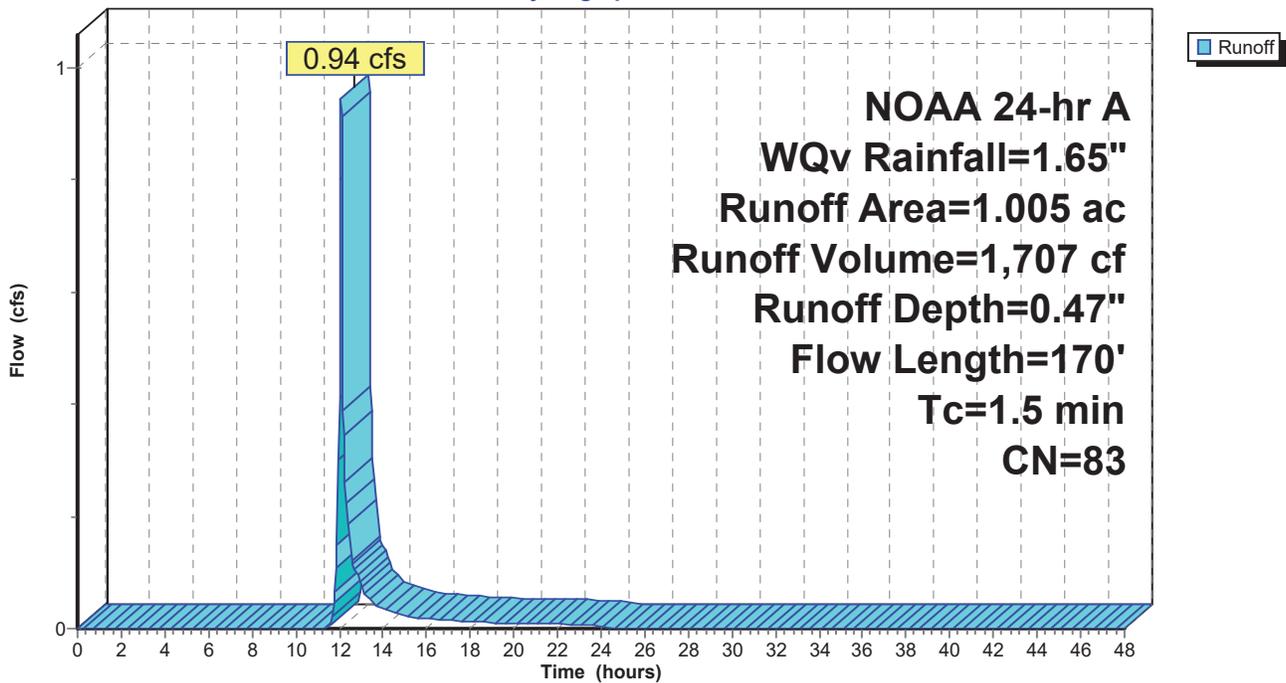
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 NOAA 24-hr A WQv Rainfall=1.65"

Area (ac)	CN	Description
0.782	79	50-75% Grass cover, Fair, HSG C
0.223	98	Paved parking, HSG C
1.005	83	Weighted Average
0.782		77.81% Pervious Area
0.223		22.19% Impervious Area

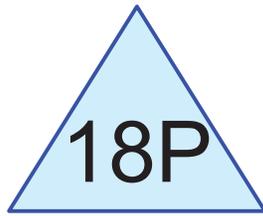
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	100	0.0230	1.32		Sheet Flow, Grassed Smooth surfaces n= 0.011 P2= 2.63"
0.2	70	0.0950	6.26		Shallow Concentrated Flow, Road Paved Kv= 20.3 fps
1.5	170	Total			

Subcatchment 17S: Prop Areas 5 and 6

Hydrograph



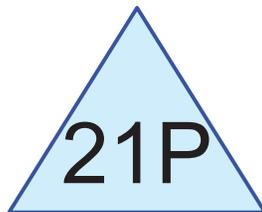
Proposed Basins



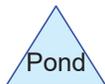
Pond 1



Pond 2



Ponds 3 and 4



Routing Diagram for Pond 1-4

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Pond 1-4

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NOAA 24-hr	A	Default	24.00	1	2.20	2
2	2-Year	NOAA 24-hr	A	Default	24.00	1	2.63	2
3	5-Year	NOAA 24-hr	A	Default	24.00	1	3.24	2
4	10-Year	NOAA 24-hr	A	Default	24.00	1	3.74	2
5	25-Year	NOAA 24-hr	A	Default	24.00	1	4.44	2
6	50-Year	NOAA 24-hr	A	Default	24.00	1	5.02	2
7	100-Year	NOAA 24-hr	A	Default	24.00	1	5.63	2
8	WQv	NOAA 24-hr	A	Default	24.00	1	1.65	2

Pond 1-4

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
0	0	TOTAL AREA

Pond 1-4

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
0		TOTAL AREA

Pond 1-4

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Ground Covers (selected 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	Subcatchment Numbers
0	0	0	0	0	0	TOTAL AREA	

Pond 1-4

NOAA 24-hr A 1-Year Rainfall=2.20"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 18P: Pond 1

Peak Elev=913.74' Storage=3,666 cf Inflow=3.06 cfs 5,556 cf
Outflow=0.09 cfs 3,855 cf

Pond 21P: Ponds 3 and 4

Peak Elev=912.66' Storage=3,315 cf Inflow=3.09 cfs 5,547 cf
Outflow=0.16 cfs 3,792 cf

Pond 24P: Pond 2

Peak Elev=915.10' Storage=1,482 cf Inflow=1.13 cfs 2,009 cf
Outflow=0.02 cfs 1,312 cf

Pond 1-4

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Pond 18P: Pond 1

Inflow Area = 79,845 sf, 20.35% Impervious, Inflow Depth = 0.84" for 1-Year event
 Inflow = 3.06 cfs @ 12.09 hrs, Volume= 5,556 cf
 Outflow = 0.09 cfs @ 14.47 hrs, Volume= 3,855 cf, Atten= 97%, Lag= 142.6 min
 Primary = 0.09 cfs @ 14.47 hrs, Volume= 3,855 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 913.74' @ 14.47 hrs Surf.Area= 5,831 sf Storage= 3,666 cf

Plug-Flow detention time= 470.7 min calculated for 3,855 cf (69% of inflow)
 Center-of-Mass det. time= 384.0 min (1,205.5 - 821.5)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	12,973 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	4,069	0	0
914.00	6,448	5,259	5,259
915.00	8,980	7,714	12,973

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	913.35'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	914.30'	24.0" W x 8.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.09 cfs @ 14.47 hrs HW=913.74' (Free Discharge)

↑ **1=Orifice/Grate** (Passes 0.09 cfs of 1.83 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.09 cfs @ 2.58 fps)

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

Pond 1-4

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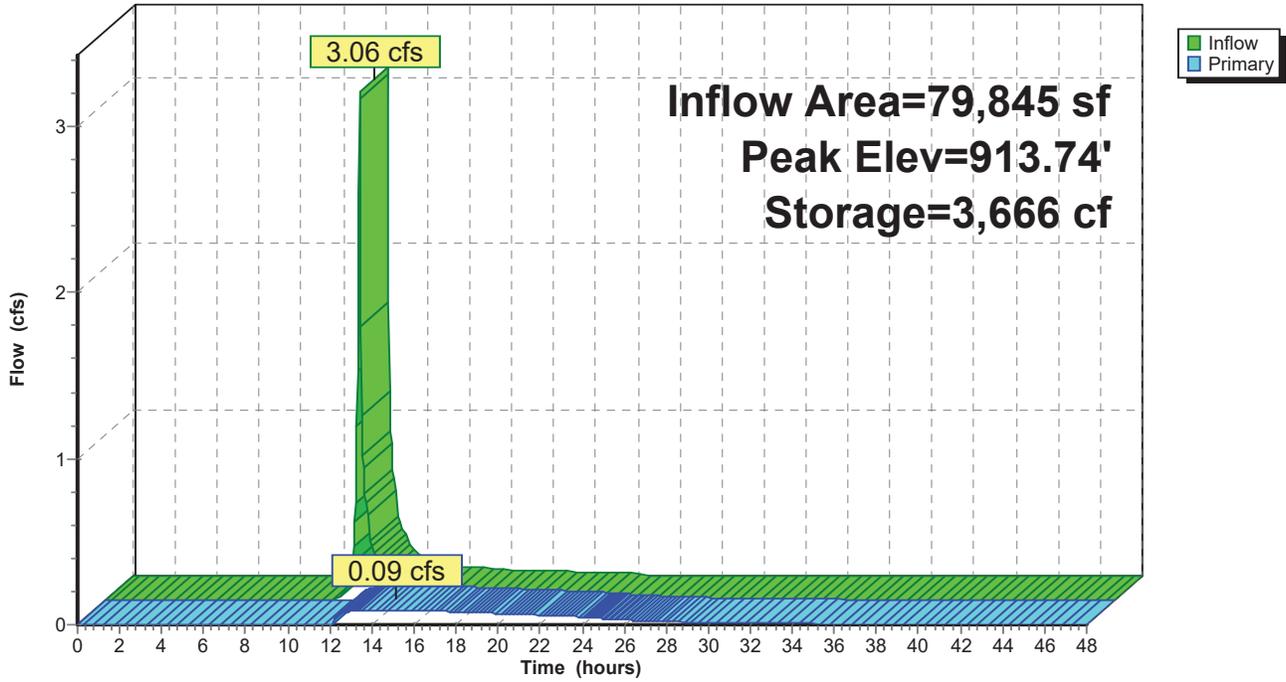
NOAA 24-hr A 1-Year Rainfall=2.20"

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Pond 18P: Pond 1

Hydrograph



Pond 1-4

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Pond 21P: Ponds 3 and 4

Inflow Area = 79,715 sf, 22.13% Impervious, Inflow Depth = 0.84" for 1-Year event
 Inflow = 3.09 cfs @ 12.09 hrs, Volume= 5,547 cf
 Outflow = 0.16 cfs @ 13.35 hrs, Volume= 3,792 cf, Atten= 95%, Lag= 75.7 min
 Primary = 0.16 cfs @ 13.35 hrs, Volume= 3,792 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 912.66' @ 13.35 hrs Surf.Area= 5,643 sf Storage= 3,315 cf

Plug-Flow detention time= 346.5 min calculated for 3,792 cf (68% of inflow)
 Center-of-Mass det. time= 258.9 min (1,080.2 - 821.3)

Volume	Invert	Avail.Storage	Storage Description
#1	912.00'	12,690 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	4,406	0	0
913.00	6,280	5,343	5,343
914.00	8,414	7,347	12,690

Device	Routing	Invert	Outlet Devices
#1	Primary	912.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	912.35'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.18'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.16 cfs @ 13.35 hrs HW=912.66' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.16 cfs of 1.52 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.16 cfs @ 1.90 fps)
- ↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1-4

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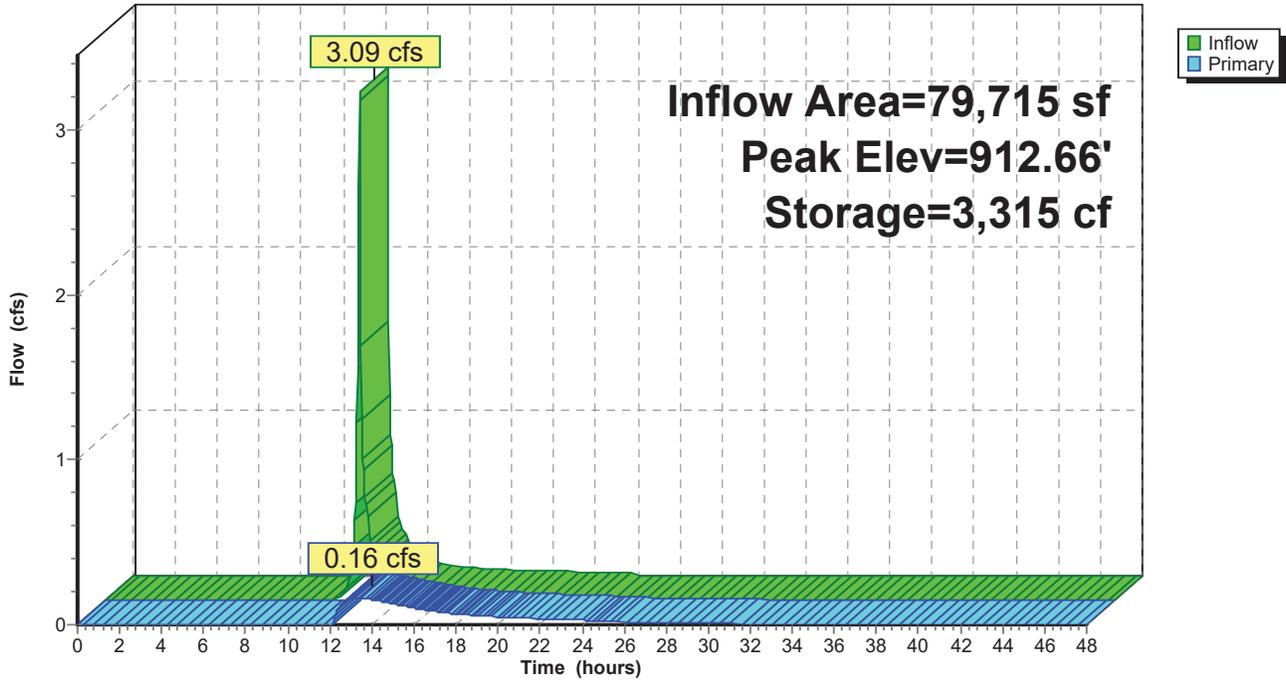
NOAA 24-hr A 1-Year Rainfall=2.20"

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Pond 21P: Ponds 3 and 4

Hydrograph



Pond 1-4

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NOAA 24-hr A 1-Year Rainfall=2.20"

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Summary for Pond 24P: Pond 2

Inflow Area = 25,526 sf, 33.96% Impervious, Inflow Depth = 0.94" for 1-Year event
 Inflow = 1.13 cfs @ 12.08 hrs, Volume= 2,009 cf
 Outflow = 0.02 cfs @ 16.17 hrs, Volume= 1,312 cf, Atten= 98%, Lag= 245.4 min
 Primary = 0.02 cfs @ 16.17 hrs, Volume= 1,312 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 915.10' @ 16.17 hrs Surf.Area= 1,885 sf Storage= 1,482 cf

Plug-Flow detention time= 711.7 min calculated for 1,311 cf (65% of inflow)
 Center-of-Mass det. time= 626.2 min (1,440.9 - 814.8)

Volume	Invert	Avail.Storage	Storage Description
#1	914.00'	3,611 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
914.00	817	0	0
915.00	1,776	1,297	1,297
916.00	2,853	2,315	3,611

Device	Routing	Invert	Outlet Devices
#1	Primary	914.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	914.60'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.38'	24.0" W x 5.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.02 cfs @ 16.17 hrs HW=915.10' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.02 cfs of 2.93 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 3.26 fps)
- ↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1-4

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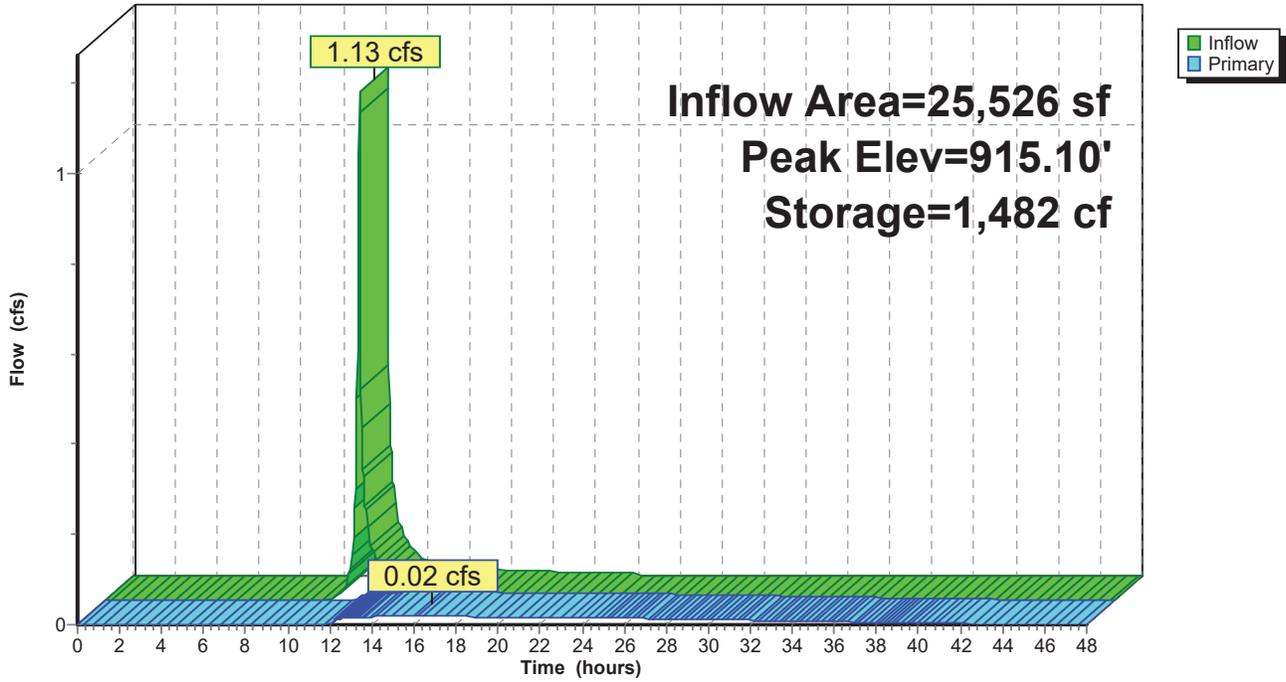
NOAA 24-hr A 1-Year Rainfall=2.20"

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Pond 24P: Pond 2

Hydrograph



Pond 1-4

NOAA 24-hr A 2-Year Rainfall=2.63"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 18P: Pond 1

Peak Elev=913.98' Storage=5,138 cf Inflow=4.24 cfs 7,685 cf
Outflow=0.12 cfs 5,963 cf

Pond 21P: Ponds 3 and 4

Peak Elev=912.86' Storage=4,492 cf Inflow=4.27 cfs 7,672 cf
Outflow=0.25 cfs 5,914 cf

Pond 24P: Pond 2

Peak Elev=915.38' Storage=2,048 cf Inflow=1.52 cfs 2,729 cf
Outflow=0.02 cfs 1,991 cf

Pond 1-4

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Pond 18P: Pond 1

Inflow Area = 79,845 sf, 20.35% Impervious, Inflow Depth = 1.15" for 2-Year event
 Inflow = 4.24 cfs @ 12.09 hrs, Volume= 7,685 cf
 Outflow = 0.12 cfs @ 14.38 hrs, Volume= 5,963 cf, Atten= 97%, Lag= 137.2 min
 Primary = 0.12 cfs @ 14.38 hrs, Volume= 5,963 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 913.98' @ 14.38 hrs Surf.Area= 6,403 sf Storage= 5,138 cf

Plug-Flow detention time= 498.3 min calculated for 5,957 cf (78% of inflow)
 Center-of-Mass det. time= 425.6 min (1,239.9 - 814.3)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	12,973 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	4,069	0	0
914.00	6,448	5,259	5,259
915.00	8,980	7,714	12,973

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	913.35'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	914.30'	24.0" W x 8.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.12 cfs @ 14.38 hrs HW=913.98' (Free Discharge)

↑ **1=Orifice/Grate** (Passes 0.12 cfs of 2.64 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.12 cfs @ 3.50 fps)

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

Pond 1-4

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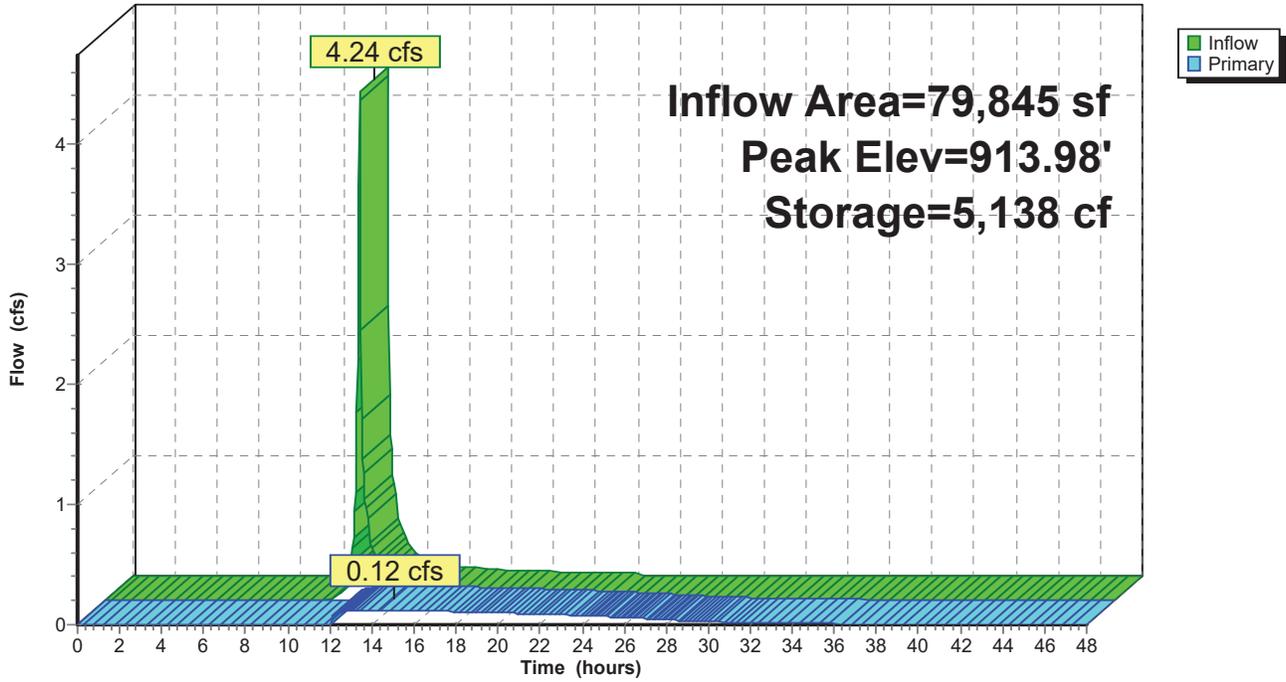
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Pond 18P: Pond 1

Hydrograph



Pond 1-4

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Summary for Pond 21P: Ponds 3 and 4

Inflow Area = 79,715 sf, 22.13% Impervious, Inflow Depth = 1.15" for 2-Year event
 Inflow = 4.27 cfs @ 12.09 hrs, Volume= 7,672 cf
 Outflow = 0.25 cfs @ 13.17 hrs, Volume= 5,914 cf, Atten= 94%, Lag= 65.2 min
 Primary = 0.25 cfs @ 13.17 hrs, Volume= 5,914 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 912.86' @ 13.17 hrs Surf.Area= 6,021 sf Storage= 4,492 cf

Plug-Flow detention time= 300.6 min calculated for 5,908 cf (77% of inflow)
 Center-of-Mass det. time= 227.3 min (1,041.4 - 814.1)

Volume	Invert	Avail.Storage	Storage Description
#1	912.00'	12,690 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	4,406	0	0
913.00	6,280	5,343	5,343
914.00	8,414	7,347	12,690

Device	Routing	Invert	Outlet Devices
#1	Primary	912.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	912.35'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.18'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.25 cfs @ 13.17 hrs HW=912.86' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.25 cfs of 2.27 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.25 cfs @ 2.83 fps)
- ↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1-4

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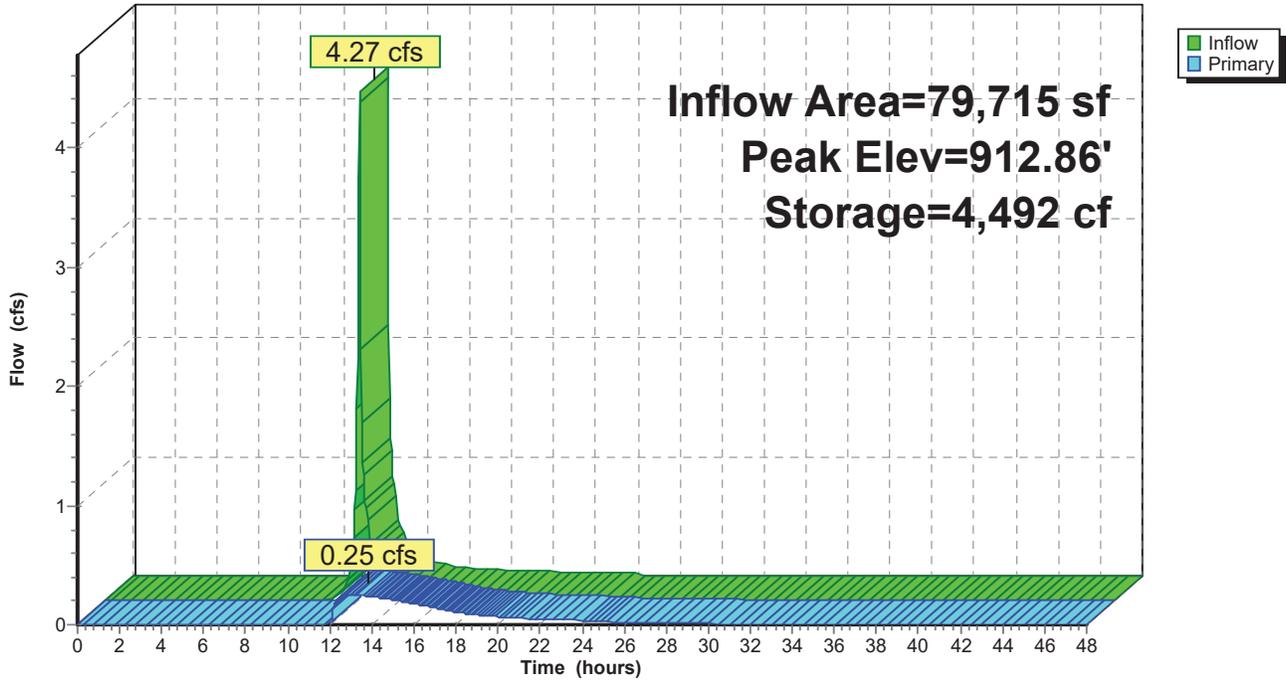
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Pond 21P: Ponds 3 and 4

Hydrograph



Pond 1-4

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Summary for Pond 24P: Pond 2

Inflow Area = 25,526 sf, 33.96% Impervious, Inflow Depth = 1.28" for 2-Year event
 Inflow = 1.52 cfs @ 12.08 hrs, Volume= 2,729 cf
 Outflow = 0.02 cfs @ 16.23 hrs, Volume= 1,991 cf, Atten= 99%, Lag= 249.2 min
 Primary = 0.02 cfs @ 16.23 hrs, Volume= 1,991 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 915.38' @ 16.23 hrs Surf.Area= 2,185 sf Storage= 2,048 cf

Plug-Flow detention time= 833.5 min calculated for 1,991 cf (73% of inflow)
 Center-of-Mass det. time= 755.7 min (1,563.9 - 808.2)

Volume	Invert	Avail.Storage	Storage Description
#1	914.00'	3,611 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
914.00	817	0	0
915.00	1,776	1,297	1,297
916.00	2,853	2,315	3,611

Device	Routing	Invert	Outlet Devices
#1	Primary	914.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	914.60'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.38'	24.0" W x 5.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.02 cfs @ 16.23 hrs HW=915.38' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.02 cfs of 3.55 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 4.14 fps)
- ↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1-4

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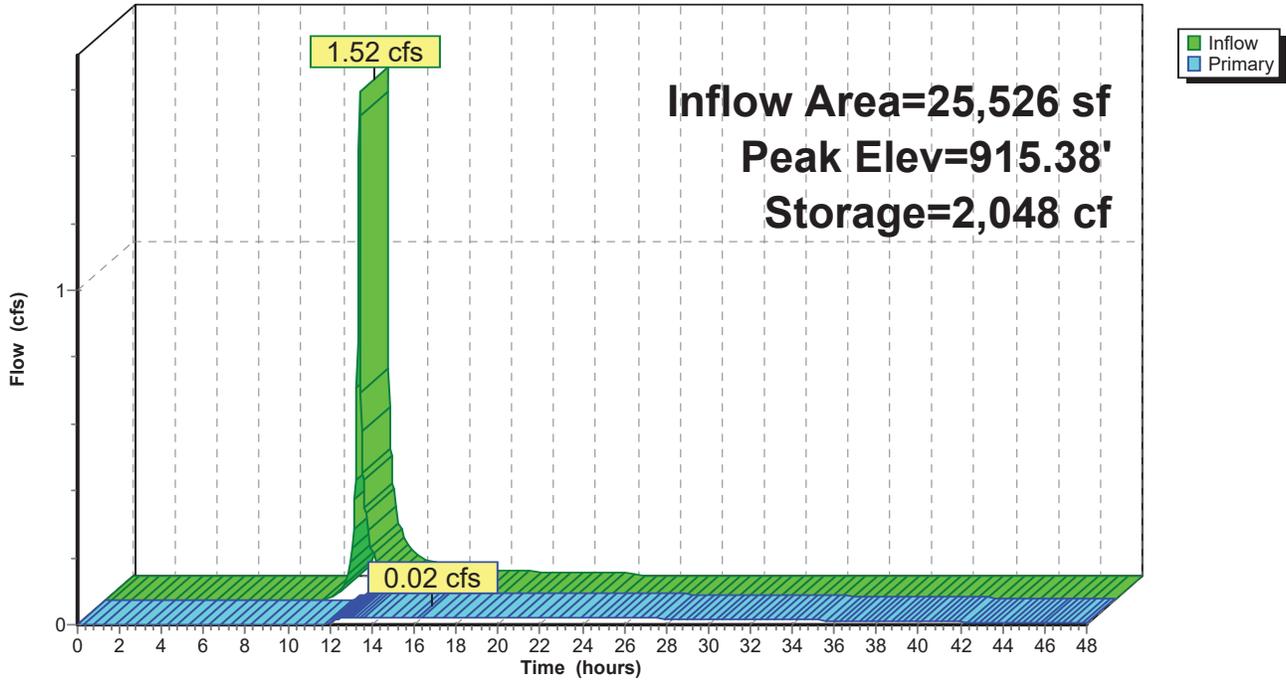
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Pond 24P: Pond 2

Hydrograph



Pond 1-4

NOAA 24-hr A 5-Year Rainfall=3.24"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 18P: Pond 1

Peak Elev=914.32' Storage=7,476 cf Inflow=5.98 cfs 10,926 cf
Outflow=0.18 cfs 9,165 cf

Pond 21P: Ponds 3 and 4

Peak Elev=913.18' Storage=6,525 cf Inflow=6.02 cfs 10,908 cf
Outflow=0.34 cfs 9,147 cf

Pond 24P: Pond 2

Peak Elev=915.48' Storage=2,266 cf Inflow=2.10 cfs 3,812 cf
Outflow=0.22 cfs 3,059 cf

Pond 1-4

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Summary for Pond 18P: Pond 1

Inflow Area = 79,845 sf, 20.35% Impervious, Inflow Depth = 1.64" for 5-Year event
 Inflow = 5.98 cfs @ 12.09 hrs, Volume= 10,926 cf
 Outflow = 0.18 cfs @ 14.14 hrs, Volume= 9,165 cf, Atten= 97%, Lag= 123.0 min
 Primary = 0.18 cfs @ 14.14 hrs, Volume= 9,165 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.32' @ 14.14 hrs Surf.Area= 7,267 sf Storage= 7,476 cf

Plug-Flow detention time= 558.9 min calculated for 9,156 cf (84% of inflow)
 Center-of-Mass det. time= 498.7 min (1,305.5 - 806.8)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	12,973 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	4,069	0	0
914.00	6,448	5,259	5,259
915.00	8,980	7,714	12,973

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	913.35'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	914.30'	24.0" W x 8.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.18 cfs @ 14.14 hrs HW=914.32' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.18 cfs of 3.43 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.15 cfs @ 4.49 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 0.02 cfs @ 0.49 fps)

Pond 1-4

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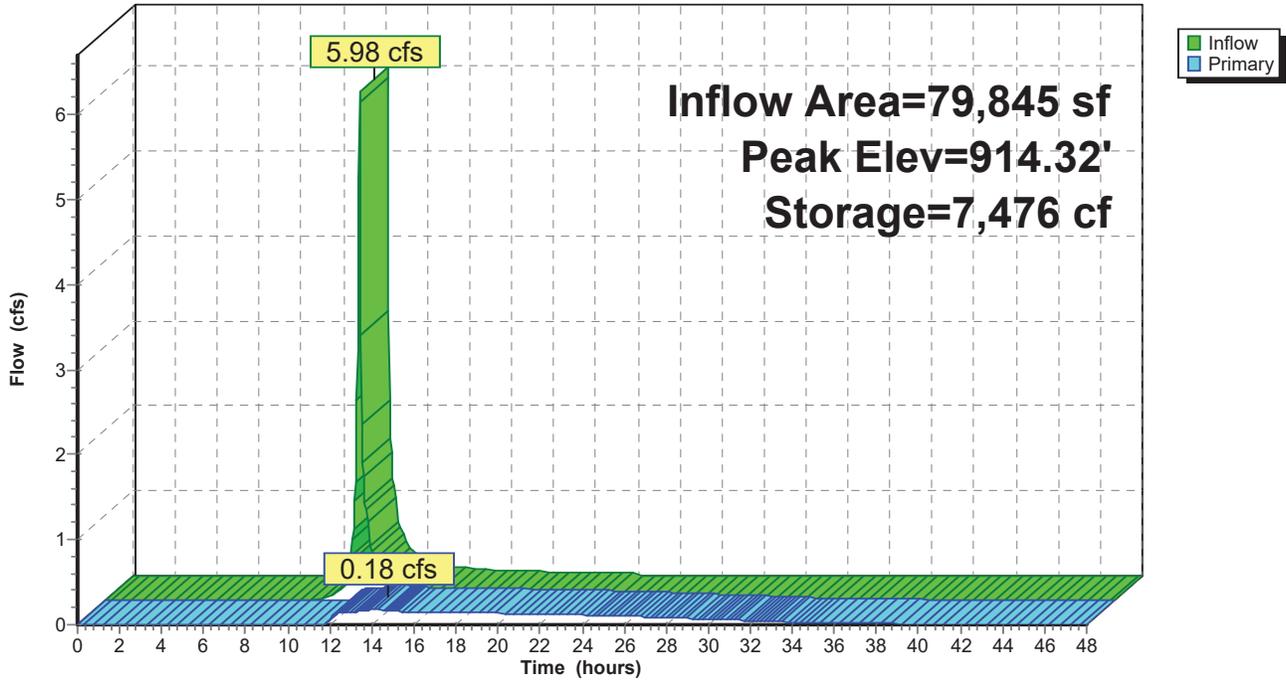
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Pond 18P: Pond 1

Hydrograph



Pond 1-4

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Summary for Pond 21P: Ponds 3 and 4

Inflow Area = 79,715 sf, 22.13% Impervious, Inflow Depth = 1.64" for 5-Year event
 Inflow = 6.02 cfs @ 12.09 hrs, Volume= 10,908 cf
 Outflow = 0.34 cfs @ 13.13 hrs, Volume= 9,147 cf, Atten= 94%, Lag= 62.7 min
 Primary = 0.34 cfs @ 13.13 hrs, Volume= 9,147 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 913.18' @ 13.13 hrs Surf.Area= 6,670 sf Storage= 6,525 cf

Plug-Flow detention time= 288.5 min calculated for 9,137 cf (84% of inflow)
 Center-of-Mass det. time= 228.5 min (1,035.1 - 806.6)

Volume	Invert	Avail.Storage	Storage Description
#1	912.00'	12,690 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	4,406	0	0
913.00	6,280	5,343	5,343
914.00	8,414	7,347	12,690

Device	Routing	Invert	Outlet Devices
#1	Primary	912.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	912.35'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.18'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.34 cfs @ 13.13 hrs HW=913.18' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.34 cfs of 3.12 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.34 cfs @ 3.93 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 0.00 cfs @ 0.16 fps)

Pond 1-4

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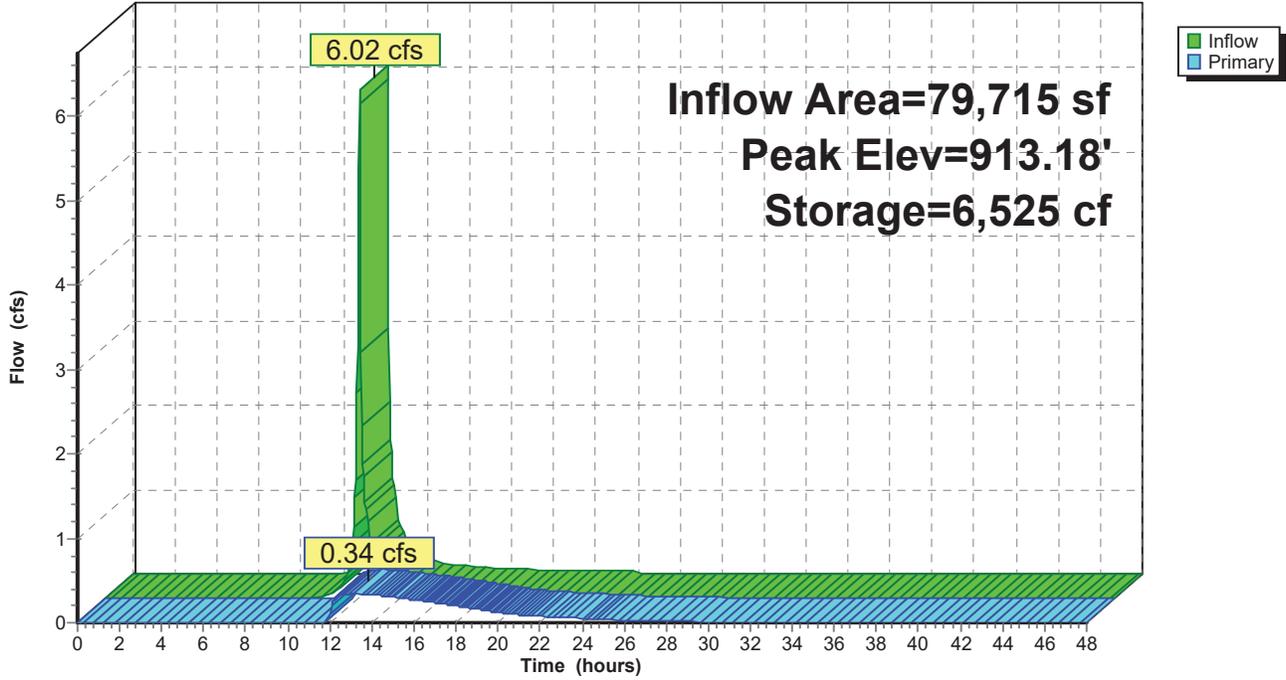
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Pond 21P: Ponds 3 and 4

Hydrograph



Pond 1-4

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Summary for Pond 24P: Pond 2

Inflow Area = 25,526 sf, 33.96% Impervious, Inflow Depth = 1.79" for 5-Year event
 Inflow = 2.10 cfs @ 12.08 hrs, Volume= 3,812 cf
 Outflow = 0.22 cfs @ 12.59 hrs, Volume= 3,059 cf, Atten= 90%, Lag= 30.6 min
 Primary = 0.22 cfs @ 12.59 hrs, Volume= 3,059 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 915.48' @ 12.59 hrs Surf.Area= 2,290 sf Storage= 2,266 cf

Plug-Flow detention time= 605.0 min calculated for 3,059 cf (80% of inflow)
 Center-of-Mass det. time= 538.3 min (1,339.5 - 801.2)

Volume	Invert	Avail.Storage	Storage Description
#1	914.00'	3,611 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
914.00	817	0	0
915.00	1,776	1,297	1,297
916.00	2,853	2,315	3,611

Device	Routing	Invert	Outlet Devices
#1	Primary	914.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	914.60'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.38'	24.0" W x 5.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.22 cfs @ 12.59 hrs HW=915.48' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.22 cfs of 3.74 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 4.40 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 0.19 cfs @ 1.00 fps)

Pond 1-4

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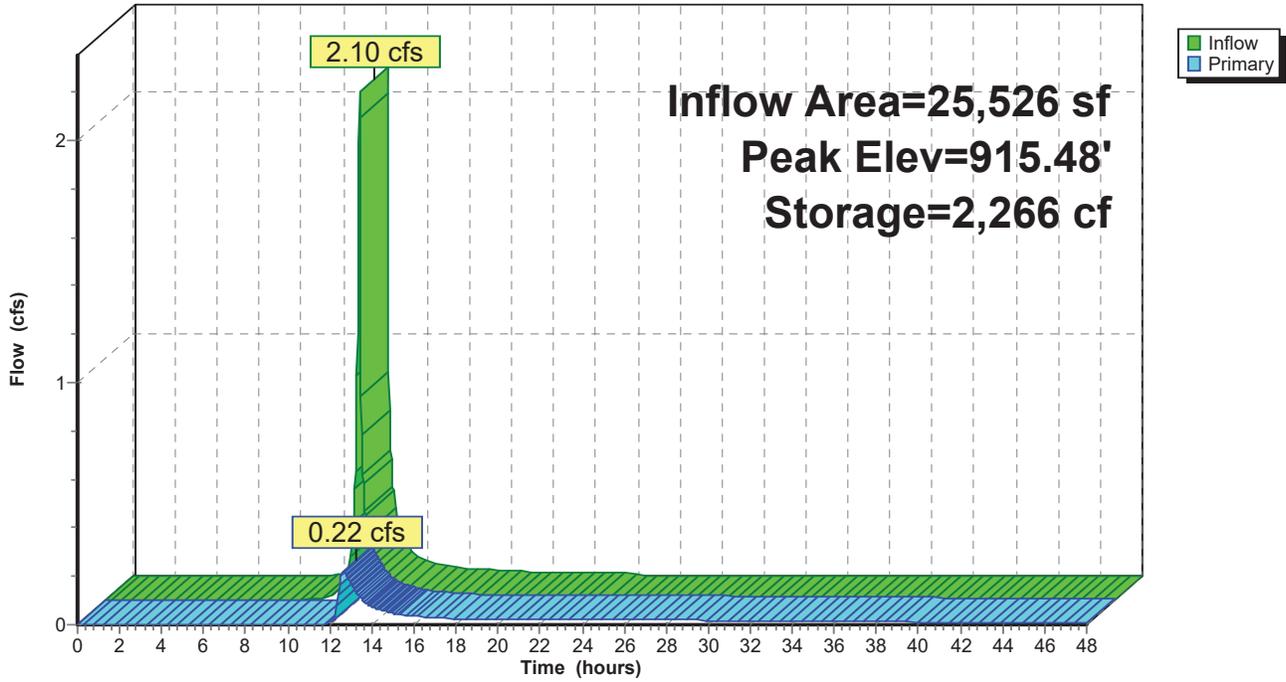
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Pond 24P: Pond 2

Hydrograph



Pond 1-4

NOAA 24-hr A 10-Year Rainfall=3.74"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 18P: Pond 1

Peak Elev=914.45' Storage=8,447 cf Inflow=7.46 cfs 13,721 cf
Outflow=0.55 cfs 11,951 cf

Pond 21P: Ponds 3 and 4

Peak Elev=913.35' Storage=7,638 cf Inflow=7.50 cfs 13,699 cf
Outflow=0.81 cfs 11,935 cf

Pond 24P: Pond 2

Peak Elev=915.56' Storage=2,449 cf Inflow=2.59 cfs 4,737 cf
Outflow=0.50 cfs 3,973 cf

Pond 1-4

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Summary for Pond 18P: Pond 1

Inflow Area = 79,845 sf, 20.35% Impervious, Inflow Depth = 2.06" for 10-Year event
 Inflow = 7.46 cfs @ 12.09 hrs, Volume= 13,721 cf
 Outflow = 0.55 cfs @ 12.92 hrs, Volume= 11,951 cf, Atten= 93%, Lag= 50.0 min
 Primary = 0.55 cfs @ 12.92 hrs, Volume= 11,951 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.45' @ 12.92 hrs Surf.Area= 7,598 sf Storage= 8,447 cf

Plug-Flow detention time= 476.8 min calculated for 11,951 cf (87% of inflow)
 Center-of-Mass det. time= 423.3 min (1,225.3 - 802.0)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	12,973 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	4,069	0	0
914.00	6,448	5,259	5,259
915.00	8,980	7,714	12,973

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	913.35'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	914.30'	24.0" W x 8.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.55 cfs @ 12.92 hrs HW=914.45' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.55 cfs of 3.69 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.16 cfs @ 4.81 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 0.39 cfs @ 1.26 fps)

Pond 1-4

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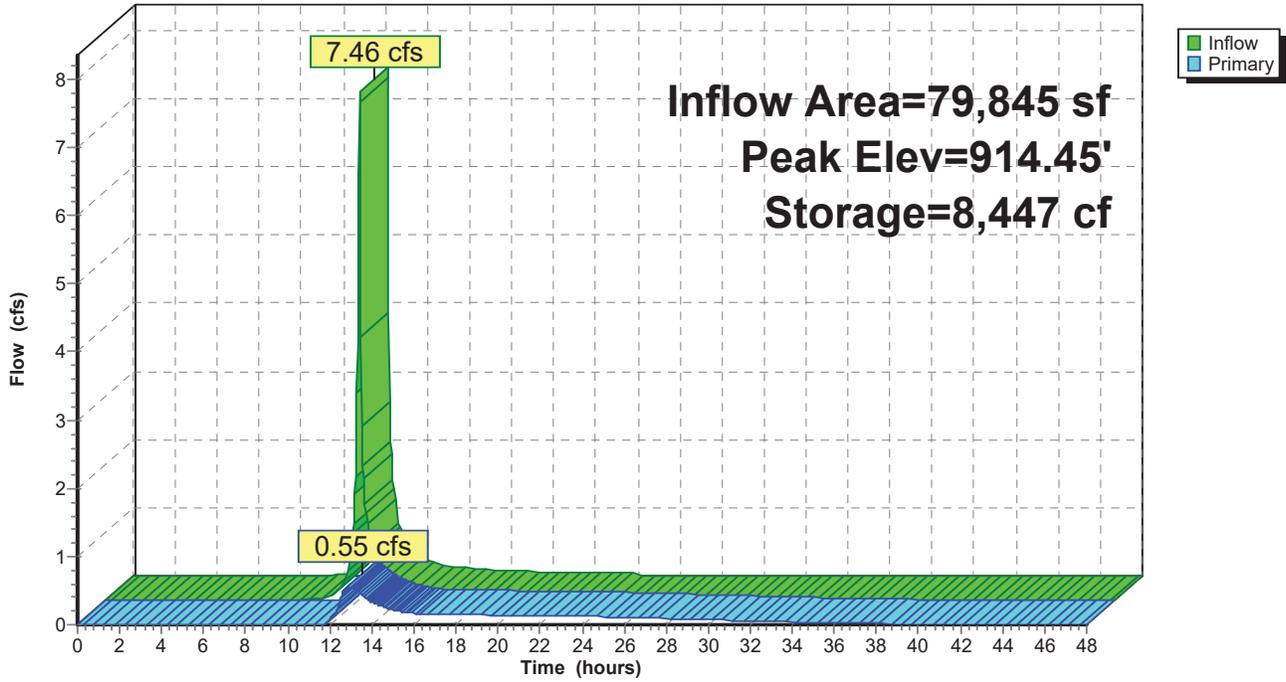
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Pond 18P: Pond 1

Hydrograph



Pond 1-4

NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Pond 21P: Ponds 3 and 4

Inflow Area = 79,715 sf, 22.13% Impervious, Inflow Depth = 2.06" for 10-Year event
 Inflow = 7.50 cfs @ 12.08 hrs, Volume= 13,699 cf
 Outflow = 0.81 cfs @ 12.58 hrs, Volume= 11,935 cf, Atten= 89%, Lag= 29.9 min
 Primary = 0.81 cfs @ 12.58 hrs, Volume= 11,935 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 913.35' @ 12.58 hrs Surf.Area= 7,017 sf Storage= 7,638 cf

Plug-Flow detention time= 255.5 min calculated for 11,923 cf (87% of inflow)
 Center-of-Mass det. time= 203.7 min (1,005.5 - 801.8)

Volume	Invert	Avail.Storage	Storage Description
#1	912.00'	12,690 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	4,406	0	0
913.00	6,280	5,343	5,343
914.00	8,414	7,347	12,690

Device	Routing	Invert	Outlet Devices
#1	Primary	912.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	912.35'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.18'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.81 cfs @ 12.58 hrs HW=913.34' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.81 cfs of 3.48 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.38 cfs @ 4.38 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 0.43 cfs @ 1.30 fps)

Pond 1-4

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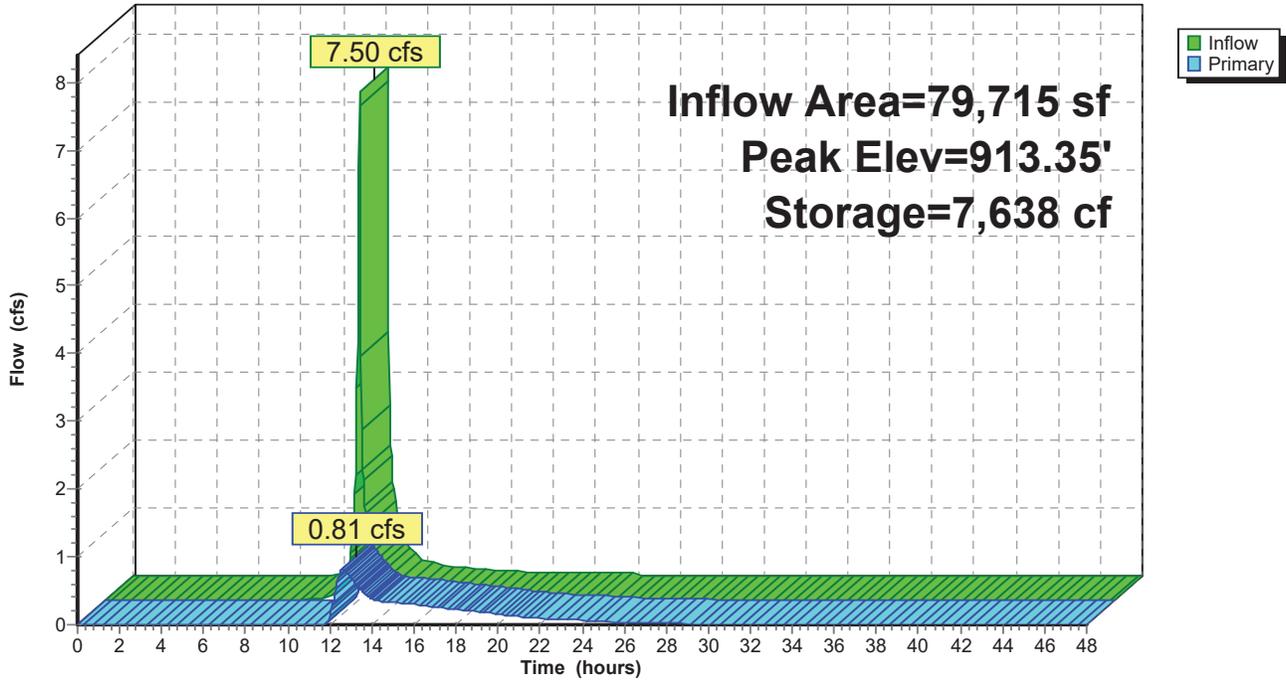
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Pond 21P: Ponds 3 and 4

Hydrograph



Pond 1-4

NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Pond 24P: Pond 2

Inflow Area = 25,526 sf, 33.96% Impervious, Inflow Depth = 2.23" for 10-Year event
 Inflow = 2.59 cfs @ 12.08 hrs, Volume= 4,737 cf
 Outflow = 0.50 cfs @ 12.34 hrs, Volume= 3,973 cf, Atten= 81%, Lag= 15.8 min
 Primary = 0.50 cfs @ 12.34 hrs, Volume= 3,973 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 915.56' @ 12.34 hrs Surf.Area= 2,374 sf Storage= 2,449 cf

Plug-Flow detention time= 488.8 min calculated for 3,969 cf (84% of inflow)
 Center-of-Mass det. time= 430.7 min (1,227.4 - 796.7)

Volume	Invert	Avail.Storage	Storage Description
#1	914.00'	3,611 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
914.00	817	0	0
915.00	1,776	1,297	1,297
916.00	2,853	2,315	3,611

Device	Routing	Invert	Outlet Devices
#1	Primary	914.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	914.60'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.38'	24.0" W x 5.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.50 cfs @ 12.34 hrs HW=915.56' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.50 cfs of 3.88 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 4.60 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 0.47 cfs @ 1.34 fps)

Pond 1-4

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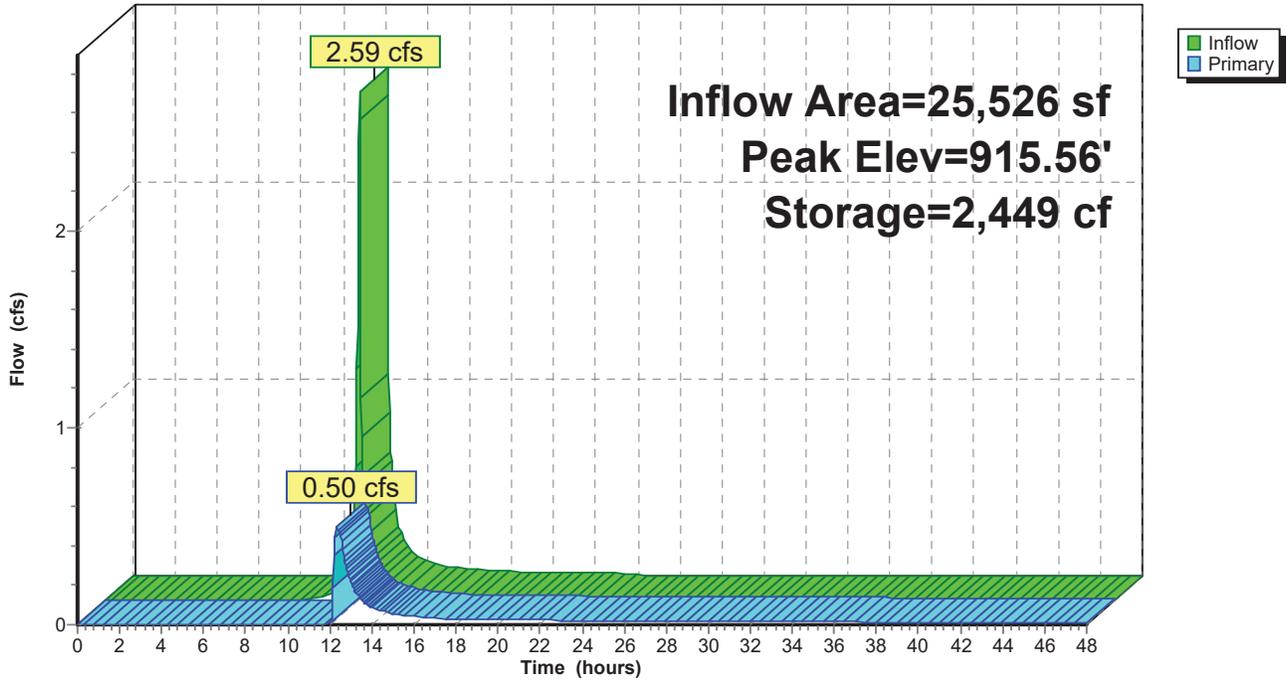
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Pond 24P: Pond 2

Hydrograph



Pond 1-4

NOAA 24-hr A 25-Year Rainfall=4.44"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 18P: Pond 1

Peak Elev=914.62' Storage=9,743 cf Inflow=9.56 cfs 17,781 cf
Outflow=1.34 cfs 16,001 cf

Pond 21P: Ponds 3 and 4

Peak Elev=913.53' Storage=8,940 cf Inflow=9.62 cfs 17,752 cf
Outflow=1.73 cfs 15,987 cf

Pond 24P: Pond 2

Peak Elev=915.69' Storage=2,788 cf Inflow=3.27 cfs 6,072 cf
Outflow=1.16 cfs 5,296 cf

Pond 1-4

NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Pond 18P: Pond 1

Inflow Area = 79,845 sf, 20.35% Impervious, Inflow Depth = 2.67" for 25-Year event
 Inflow = 9.56 cfs @ 12.09 hrs, Volume= 17,781 cf
 Outflow = 1.34 cfs @ 12.52 hrs, Volume= 16,001 cf, Atten= 86%, Lag= 26.2 min
 Primary = 1.34 cfs @ 12.52 hrs, Volume= 16,001 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.62' @ 12.52 hrs Surf.Area= 8,018 sf Storage= 9,743 cf

Plug-Flow detention time= 388.5 min calculated for 15,984 cf (90% of inflow)
 Center-of-Mass det. time= 344.8 min (1,141.5 - 796.6)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	12,973 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	4,069	0	0
914.00	6,448	5,259	5,259
915.00	8,980	7,714	12,973

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	913.35'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	914.30'	24.0" W x 8.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.34 cfs @ 12.52 hrs HW=914.62' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 1.34 cfs of 4.00 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.18 cfs @ 5.20 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 1.16 cfs @ 1.81 fps)

Pond 1-4

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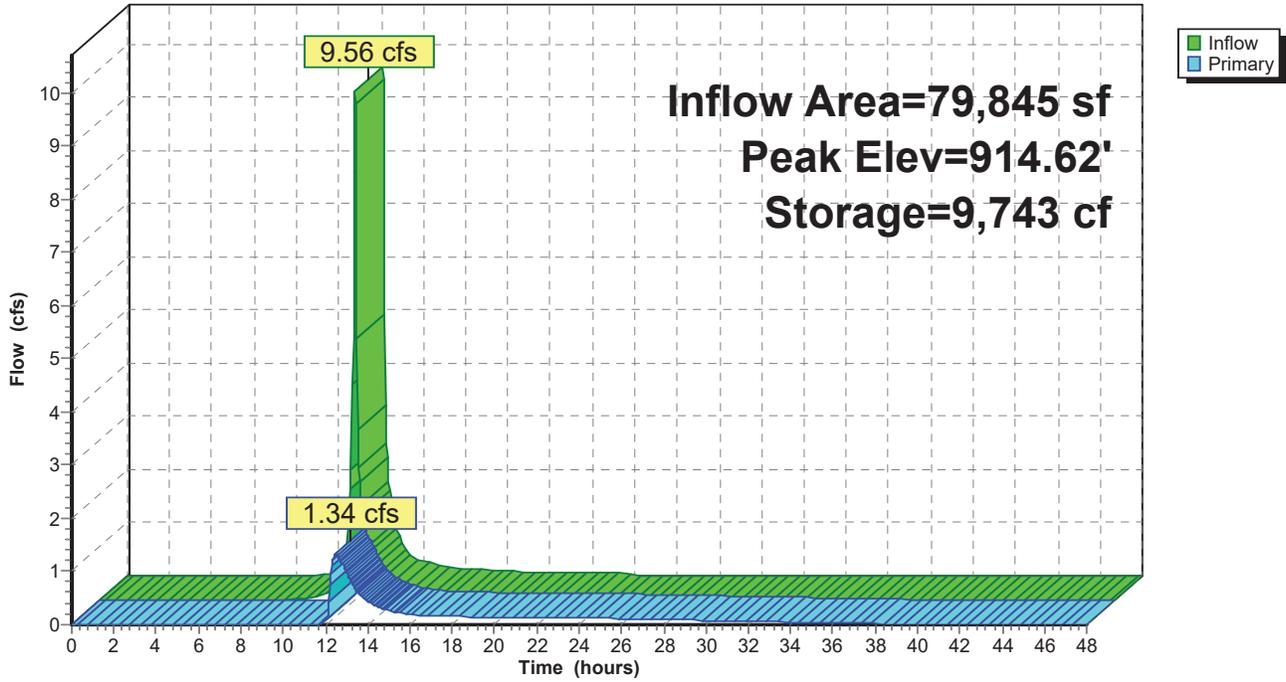
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Pond 18P: Pond 1

Hydrograph



Pond 1-4

NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Pond 21P: Ponds 3 and 4

Inflow Area = 79,715 sf, 22.13% Impervious, Inflow Depth = 2.67" for 25-Year event
 Inflow = 9.62 cfs @ 12.08 hrs, Volume= 17,752 cf
 Outflow = 1.73 cfs @ 12.37 hrs, Volume= 15,987 cf, Atten= 82%, Lag= 17.0 min
 Primary = 1.73 cfs @ 12.37 hrs, Volume= 15,987 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 913.53' @ 12.37 hrs Surf.Area= 7,402 sf Storage= 8,940 cf

Plug-Flow detention time= 214.4 min calculated for 15,970 cf (90% of inflow)
 Center-of-Mass det. time= 171.1 min (967.6 - 796.5)

Volume	Invert	Avail.Storage	Storage Description
#1	912.00'	12,690 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	4,406	0	0
913.00	6,280	5,343	5,343
914.00	8,414	7,347	12,690

Device	Routing	Invert	Outlet Devices
#1	Primary	912.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	912.35'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.18'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.72 cfs @ 12.37 hrs HW=913.52' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 1.72 cfs of 3.83 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.42 cfs @ 4.83 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 1.30 cfs @ 1.88 fps)

Pond 1-4

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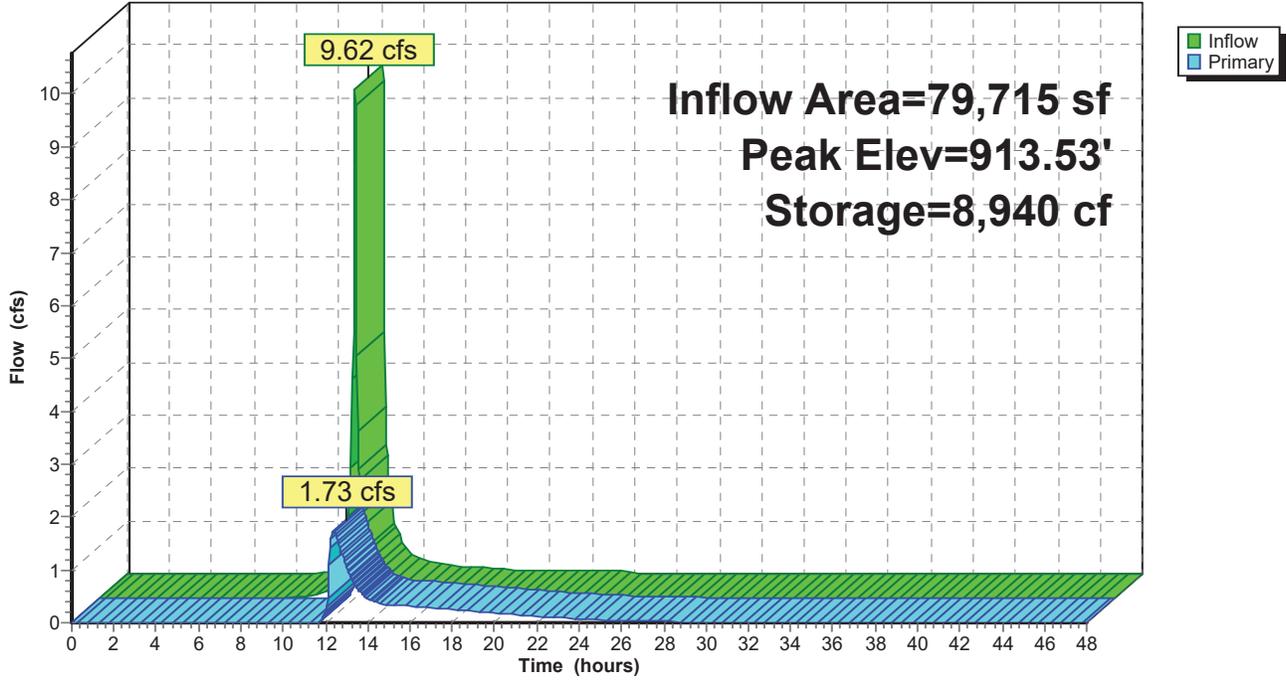
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Pond 21P: Ponds 3 and 4

Hydrograph



Pond 1-4

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Summary for Pond 24P: Pond 2

Inflow Area = 25,526 sf, 33.96% Impervious, Inflow Depth = 2.85" for 25-Year event
 Inflow = 3.27 cfs @ 12.08 hrs, Volume= 6,072 cf
 Outflow = 1.16 cfs @ 12.18 hrs, Volume= 5,296 cf, Atten= 65%, Lag= 6.1 min
 Primary = 1.16 cfs @ 12.18 hrs, Volume= 5,296 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 915.69' @ 12.18 hrs Surf.Area= 2,523 sf Storage= 2,788 cf

Plug-Flow detention time= 386.1 min calculated for 5,291 cf (87% of inflow)
 Center-of-Mass det. time= 335.8 min (1,127.4 - 791.6)

Volume	Invert	Avail.Storage	Storage Description
#1	914.00'	3,611 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
914.00	817	0	0
915.00	1,776	1,297	1,297
916.00	2,853	2,315	3,611

Device	Routing	Invert	Outlet Devices
#1	Primary	914.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	914.60'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.38'	24.0" W x 5.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.15 cfs @ 12.18 hrs HW=915.69' (Free Discharge)

- 1=Orifice/Grate (Passes 1.15 cfs of 4.13 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.03 cfs @ 4.93 fps)
- 3=Orifice/Grate (Orifice Controls 1.12 cfs @ 1.79 fps)

Pond 1-4

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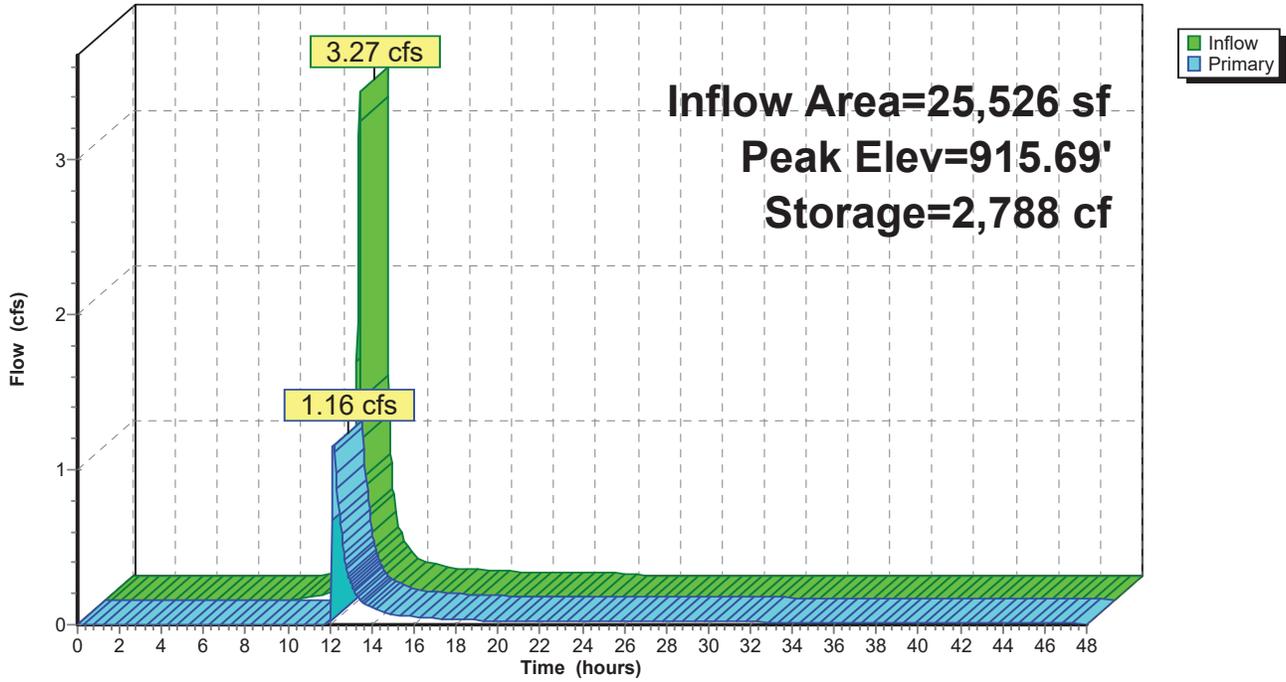
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Pond 24P: Pond 2

Hydrograph



Pond 1-4

NOAA 24-hr A 50-Year Rainfall=5.02"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 18P: Pond 1

Peak Elev=914.76' Storage=10,858 cf Inflow=11.32 cfs 21,240 cf
Outflow=2.17 cfs 19,452 cf

Pond 21P: Ponds 3 and 4

Peak Elev=913.68' Storage=10,103 cf Inflow=11.39 cfs 21,205 cf
Outflow=2.72 cfs 19,439 cf

Pond 24P: Pond 2

Peak Elev=915.82' Storage=3,112 cf Inflow=3.85 cfs 7,204 cf
Outflow=1.88 cfs 6,421 cf

Pond 1-4

NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Pond 18P: Pond 1

Inflow Area = 79,845 sf, 20.35% Impervious, Inflow Depth = 3.19" for 50-Year event
 Inflow = 11.32 cfs @ 12.09 hrs, Volume= 21,240 cf
 Outflow = 2.17 cfs @ 12.35 hrs, Volume= 19,452 cf, Atten= 81%, Lag= 16.0 min
 Primary = 2.17 cfs @ 12.35 hrs, Volume= 19,452 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.76' @ 12.35 hrs Surf.Area= 8,363 sf Storage= 10,858 cf

Plug-Flow detention time= 339.2 min calculated for 19,432 cf (91% of inflow)
 Center-of-Mass det. time= 300.8 min (1,093.8 - 793.0)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	12,973 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	4,069	0	0
914.00	6,448	5,259	5,259
915.00	8,980	7,714	12,973

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	913.35'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	914.30'	24.0" W x 8.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.16 cfs @ 12.35 hrs HW=914.76' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 2.16 cfs of 4.24 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.19 cfs @ 5.49 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 1.98 cfs @ 2.17 fps)

Pond 1-4

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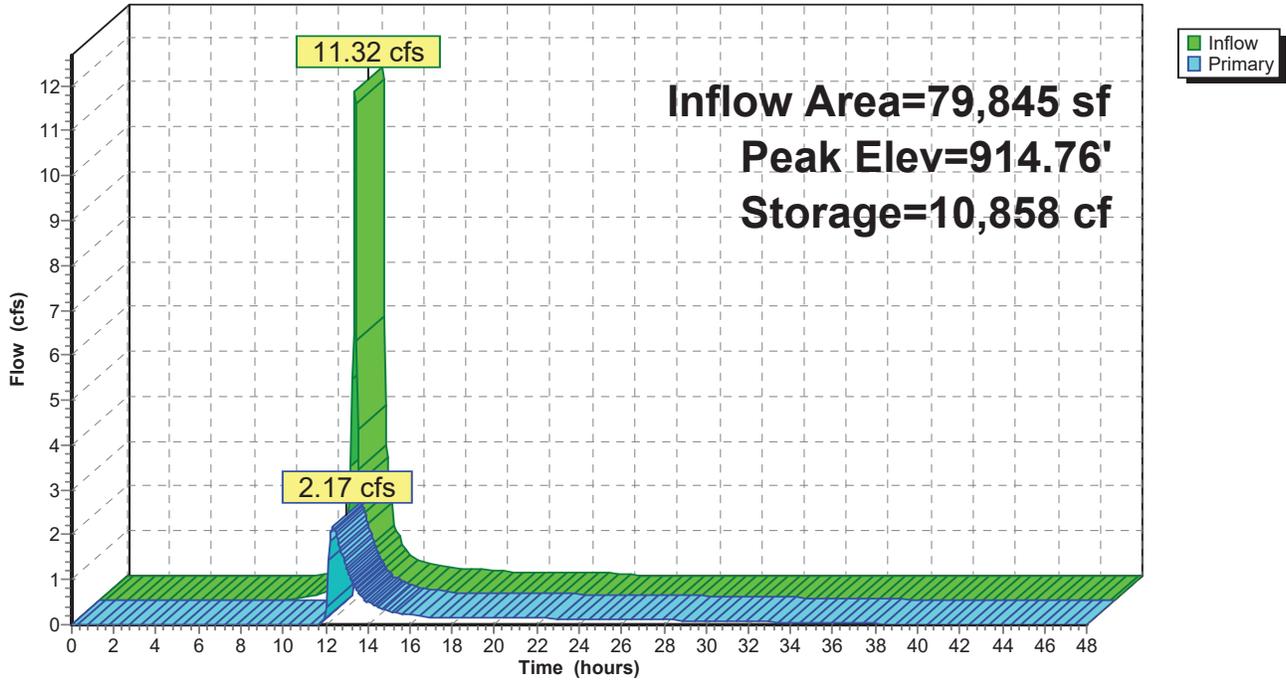
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Pond 18P: Pond 1

Hydrograph



Pond 1-4

NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Pond 21P: Ponds 3 and 4

Inflow Area = 79,715 sf, 22.13% Impervious, Inflow Depth = 3.19" for 50-Year event
 Inflow = 11.39 cfs @ 12.08 hrs, Volume= 21,205 cf
 Outflow = 2.72 cfs @ 12.28 hrs, Volume= 19,439 cf, Atten= 76%, Lag= 11.6 min
 Primary = 2.72 cfs @ 12.28 hrs, Volume= 19,439 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 913.68' @ 12.28 hrs Surf.Area= 7,730 sf Storage= 10,103 cf

Plug-Flow detention time= 192.2 min calculated for 19,439 cf (92% of inflow)
 Center-of-Mass det. time= 152.6 min (945.4 - 792.8)

Volume	Invert	Avail.Storage	Storage Description
#1	912.00'	12,690 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	4,406	0	0
913.00	6,280	5,343	5,343
914.00	8,414	7,347	12,690

Device	Routing	Invert	Outlet Devices
#1	Primary	912.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	912.35'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.18'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.71 cfs @ 12.28 hrs HW=913.68' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 2.71 cfs of 4.11 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.45 cfs @ 5.19 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 2.26 cfs @ 2.27 fps)

Pond 1-4

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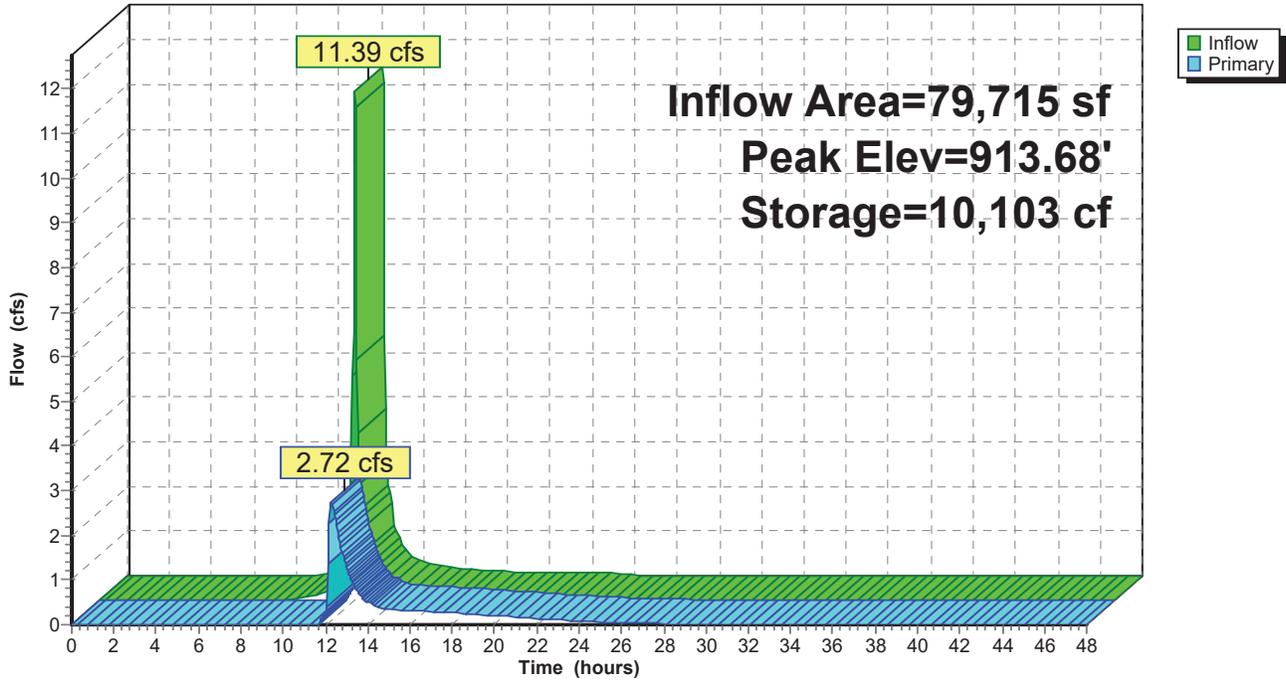
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Pond 21P: Ponds 3 and 4

Hydrograph



Pond 1-4

NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Pond 24P: Pond 2

Inflow Area = 25,526 sf, 33.96% Impervious, Inflow Depth = 3.39" for 50-Year event
 Inflow = 3.85 cfs @ 12.08 hrs, Volume= 7,204 cf
 Outflow = 1.88 cfs @ 12.16 hrs, Volume= 6,421 cf, Atten= 51%, Lag= 4.9 min
 Primary = 1.88 cfs @ 12.16 hrs, Volume= 6,421 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 915.82' @ 12.16 hrs Surf.Area= 2,658 sf Storage= 3,112 cf

Plug-Flow detention time= 330.5 min calculated for 6,421 cf (89% of inflow)
 Center-of-Mass det. time= 283.7 min (1,071.7 - 788.1)

Volume	Invert	Avail.Storage	Storage Description
#1	914.00'	3,611 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
914.00	817	0	0
915.00	1,776	1,297	1,297
916.00	2,853	2,315	3,611

Device	Routing	Invert	Outlet Devices
#1	Primary	914.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	914.60'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.38'	24.0" W x 5.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.84 cfs @ 12.16 hrs HW=915.81' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 1.84 cfs of 4.33 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.21 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 1.81 cfs @ 2.17 fps)

Pond 1-4

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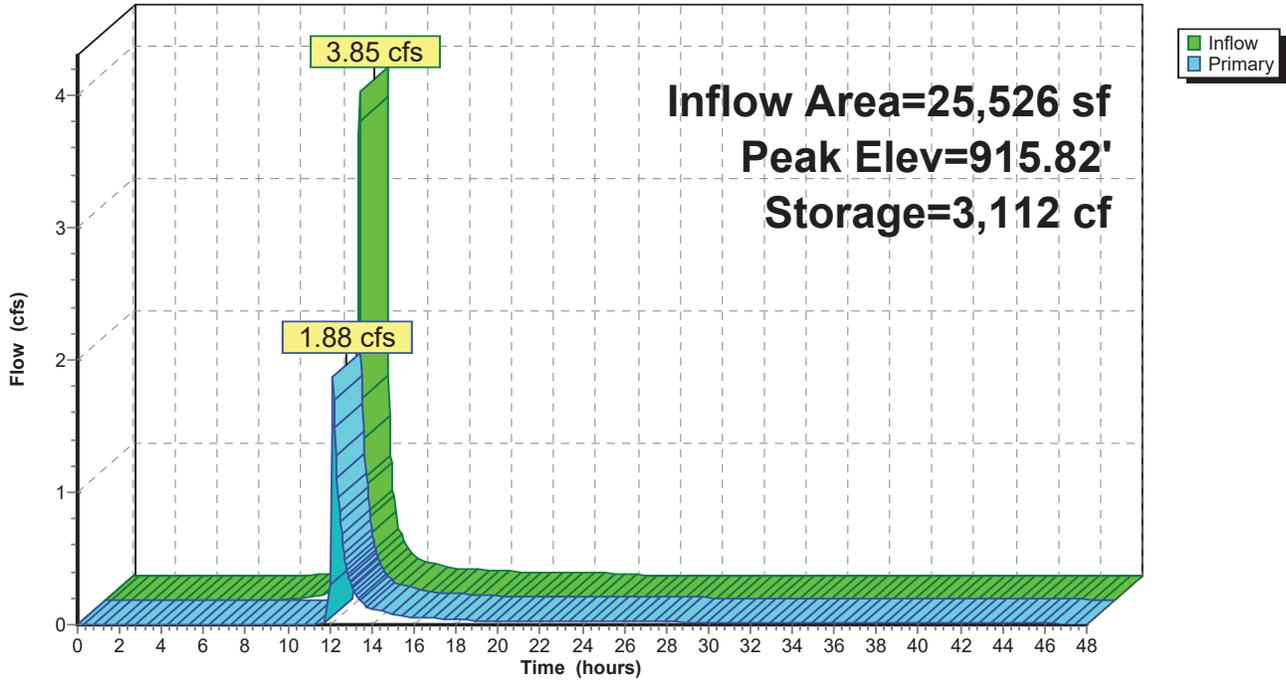
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Pond 24P: Pond 2

Hydrograph



Pond 1-4

NOAA 24-hr A 100-Year Rainfall=5.63"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 18P: Pond 1

Peak Elev=914.91' Storage=12,161 cf Inflow=13.18 cfs 24,947 cf
Outflow=3.25 cfs 23,152 cf

Pond 21P: Ponds 3 and 4

Peak Elev=913.86' Storage=11,494 cf Inflow=13.25 cfs 24,906 cf
Outflow=3.58 cfs 23,138 cf

Pond 24P: Pond 2

Peak Elev=915.93' Storage=3,423 cf Inflow=4.45 cfs 8,412 cf
Outflow=2.35 cfs 7,626 cf

Pond 1-4

NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Pond 18P: Pond 1

Inflow Area = 79,845 sf, 20.35% Impervious, Inflow Depth = 3.75" for 100-Year event
 Inflow = 13.18 cfs @ 12.09 hrs, Volume= 24,947 cf
 Outflow = 3.25 cfs @ 12.27 hrs, Volume= 23,152 cf, Atten= 75%, Lag= 11.2 min
 Primary = 3.25 cfs @ 12.27 hrs, Volume= 23,152 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.91' @ 12.27 hrs Surf.Area= 8,748 sf Storage= 12,161 cf

Plug-Flow detention time= 302.4 min calculated for 23,152 cf (93% of inflow)
 Center-of-Mass det. time= 266.9 min (1,056.6 - 789.7)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	12,973 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	4,069	0	0
914.00	6,448	5,259	5,259
915.00	8,980	7,714	12,973

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	913.35'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	914.30'	24.0" W x 8.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.23 cfs @ 12.27 hrs HW=914.91' (Free Discharge)

- 1=Orifice/Grate (Passes 3.23 cfs of 4.49 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.20 cfs @ 5.80 fps)
- 3=Orifice/Grate (Orifice Controls 3.03 cfs @ 2.50 fps)

Pond 1-4

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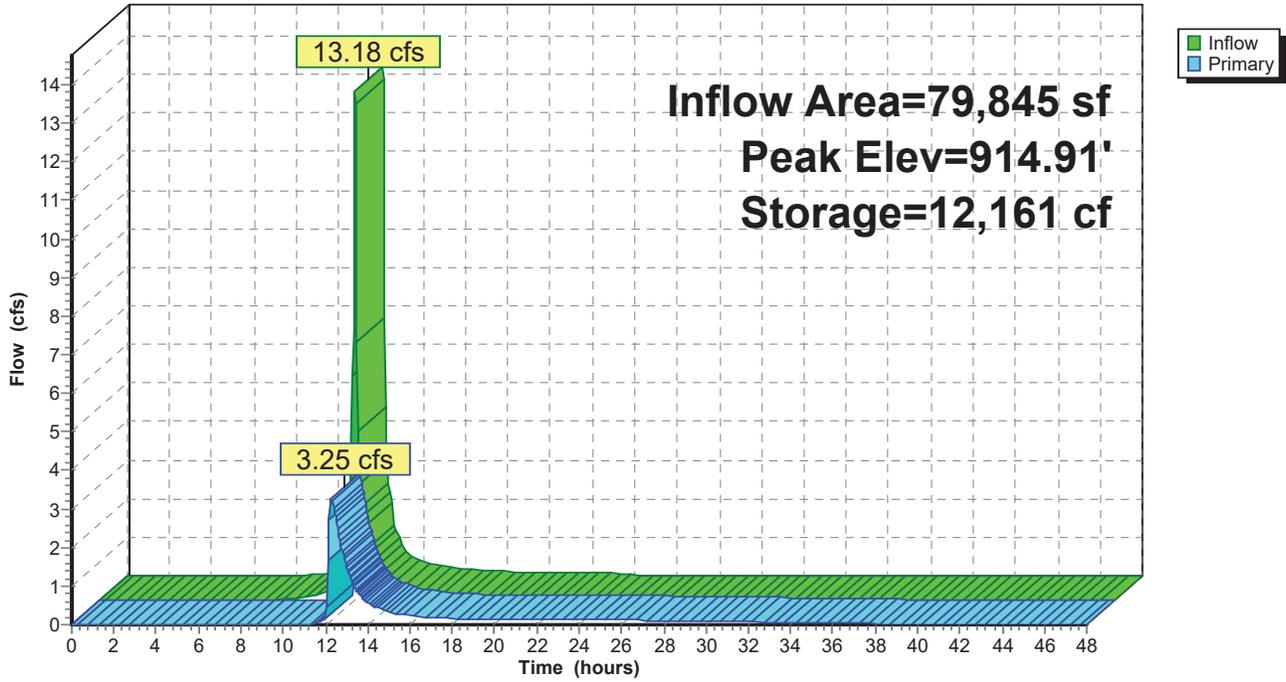
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Pond 18P: Pond 1

Hydrograph



Pond 1-4

NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Pond 21P: Ponds 3 and 4

Inflow Area = 79,715 sf, 22.13% Impervious, Inflow Depth = 3.75" for 100-Year event
 Inflow = 13.25 cfs @ 12.08 hrs, Volume= 24,906 cf
 Outflow = 3.58 cfs @ 12.24 hrs, Volume= 23,138 cf, Atten= 73%, Lag= 9.6 min
 Primary = 3.58 cfs @ 12.24 hrs, Volume= 23,138 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 913.86' @ 12.24 hrs Surf.Area= 8,105 sf Storage= 11,494 cf

Plug-Flow detention time= 174.0 min calculated for 23,138 cf (93% of inflow)
 Center-of-Mass det. time= 138.8 min (928.3 - 789.5)

Volume	Invert	Avail.Storage	Storage Description
#1	912.00'	12,690 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	4,406	0	0
913.00	6,280	5,343	5,343
914.00	8,414	7,347	12,690

Device	Routing	Invert	Outlet Devices
#1	Primary	912.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	912.35'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.18'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.57 cfs @ 12.24 hrs HW=913.85' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 3.57 cfs of 4.40 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.49 cfs @ 5.57 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 3.09 cfs @ 3.09 fps)

Pond 1-4

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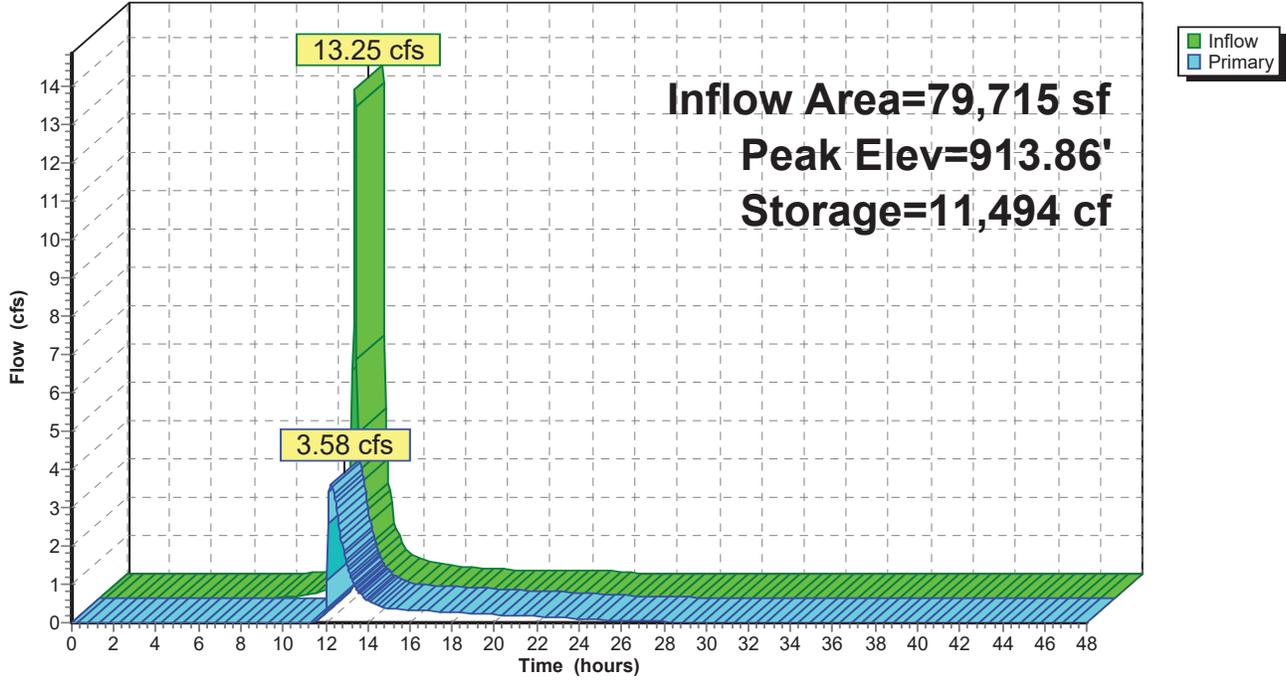
NOAA 24-hr A 100-Year Rainfall=5.63"

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Pond 21P: Ponds 3 and 4

Hydrograph



Pond 1-4

NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Pond 24P: Pond 2

Inflow Area = 25,526 sf, 33.96% Impervious, Inflow Depth = 3.95" for 100-Year event
 Inflow = 4.45 cfs @ 12.08 hrs, Volume= 8,412 cf
 Outflow = 2.35 cfs @ 12.15 hrs, Volume= 7,626 cf, Atten= 47%, Lag= 4.4 min
 Primary = 2.35 cfs @ 12.15 hrs, Volume= 7,626 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 915.93' @ 12.15 hrs Surf.Area= 2,781 sf Storage= 3,423 cf

Plug-Flow detention time= 284.8 min calculated for 7,618 cf (91% of inflow)
 Center-of-Mass det. time= 244.1 min (1,029.0 - 784.9)

Volume	Invert	Avail.Storage	Storage Description
#1	914.00'	3,611 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
914.00	817	0	0
915.00	1,776	1,297	1,297
916.00	2,853	2,315	3,611

Device	Routing	Invert	Outlet Devices
#1	Primary	914.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	914.60'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.38'	24.0" W x 5.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.35 cfs @ 12.15 hrs HW=915.93' (Free Discharge)

- 1=Orifice/Grate (Passes 2.35 cfs of 4.53 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.03 cfs @ 5.47 fps)
- 3=Orifice/Grate (Orifice Controls 2.32 cfs @ 2.78 fps)

Pond 1-4

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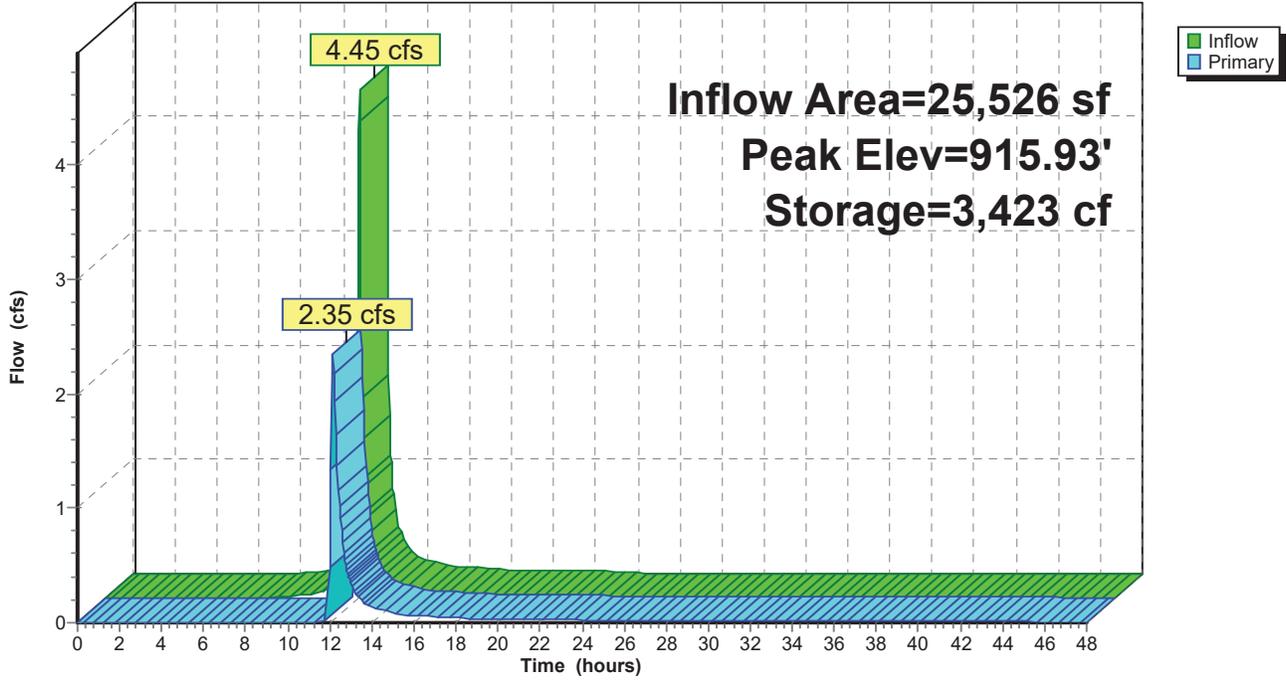
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Pond 24P: Pond 2

Hydrograph



Pond 1-4

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 18P: Pond 1

Peak Elev=913.49' Storage=2,284 cf Inflow=1.68 cfs 3,113 cf
Outflow=0.03 cfs 1,428 cf

Pond 21P: Ponds 3 and 4

Peak Elev=912.47' Storage=2,275 cf Inflow=1.70 cfs 3,108 cf
Outflow=0.03 cfs 1,357 cf

Pond 24P: Pond 2

Peak Elev=914.76' Storage=898 cf Inflow=0.65 cfs 1,169 cf
Outflow=0.01 cfs 487 cf

Pond 1-4

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Summary for Pond 18P: Pond 1

Inflow Area = 79,845 sf, 20.35% Impervious, Inflow Depth = 0.47" for WQv event
 Inflow = 1.68 cfs @ 12.09 hrs, Volume= 3,113 cf
 Outflow = 0.03 cfs @ 16.43 hrs, Volume= 1,428 cf, Atten= 98%, Lag= 260.1 min
 Primary = 0.03 cfs @ 16.43 hrs, Volume= 1,428 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 913.49' @ 16.43 hrs Surf.Area= 5,237 sf Storage= 2,284 cf

Plug-Flow detention time= 584.6 min calculated for 1,426 cf (46% of inflow)
 Center-of-Mass det. time= 477.2 min (1,312.6 - 835.4)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	12,973 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	4,069	0	0
914.00	6,448	5,259	5,259
915.00	8,980	7,714	12,973

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	913.35'	2.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	914.30'	24.0" W x 8.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.03 cfs @ 16.43 hrs HW=913.49' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.03 cfs of 0.92 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 1.28 fps)
- ↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1-4

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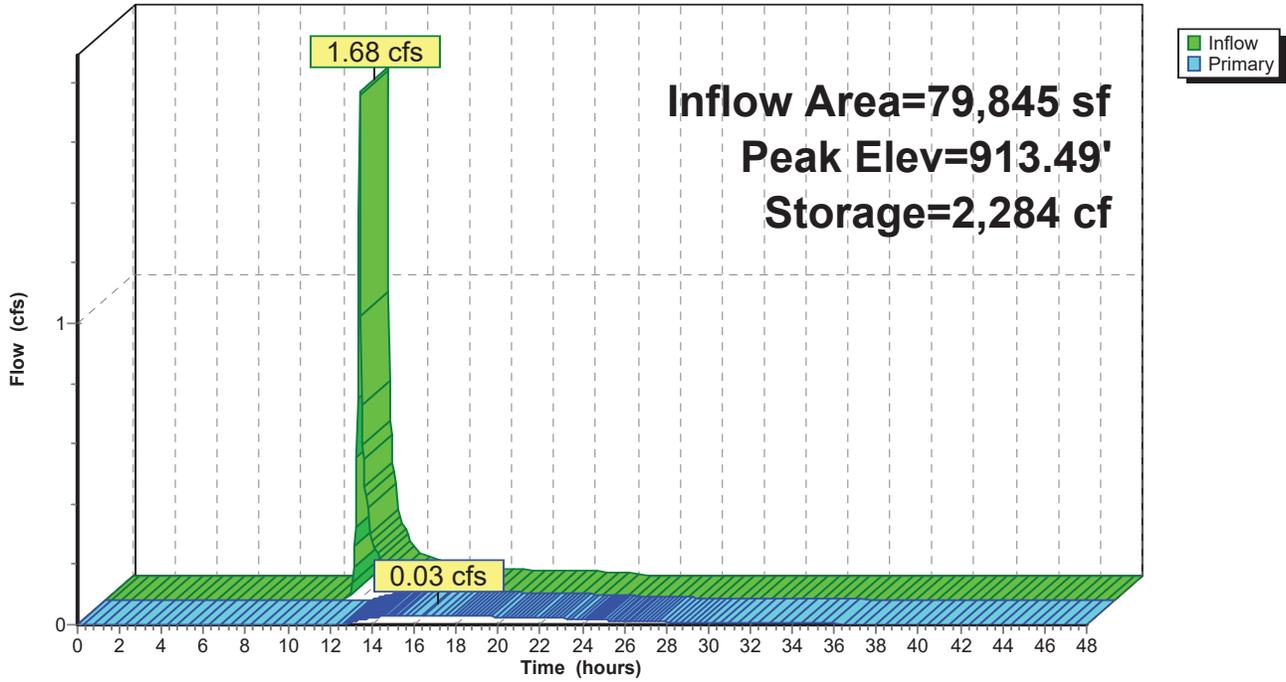
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Pond 18P: Pond 1

Hydrograph



Pond 1-4

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Summary for Pond 21P: Ponds 3 and 4

Inflow Area = 79,715 sf, 22.13% Impervious, Inflow Depth = 0.47" for WQv event
 Inflow = 1.70 cfs @ 12.09 hrs, Volume= 3,108 cf
 Outflow = 0.03 cfs @ 16.13 hrs, Volume= 1,357 cf, Atten= 98%, Lag= 242.5 min
 Primary = 0.03 cfs @ 16.13 hrs, Volume= 1,357 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 912.47' @ 16.13 hrs Surf.Area= 5,286 sf Storage= 2,275 cf

Plug-Flow detention time= 554.6 min calculated for 1,356 cf (44% of inflow)
 Center-of-Mass det. time= 446.4 min (1,281.5 - 835.2)

Volume	Invert	Avail.Storage	Storage Description
#1	912.00'	12,690 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	4,406	0	0
913.00	6,280	5,343	5,343
914.00	8,414	7,347	12,690

Device	Routing	Invert	Outlet Devices
#1	Primary	912.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	912.35'	4.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.18'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.03 cfs @ 16.13 hrs HW=912.47' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.03 cfs of 0.84 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.03 cfs @ 1.18 fps)
- ↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1-4

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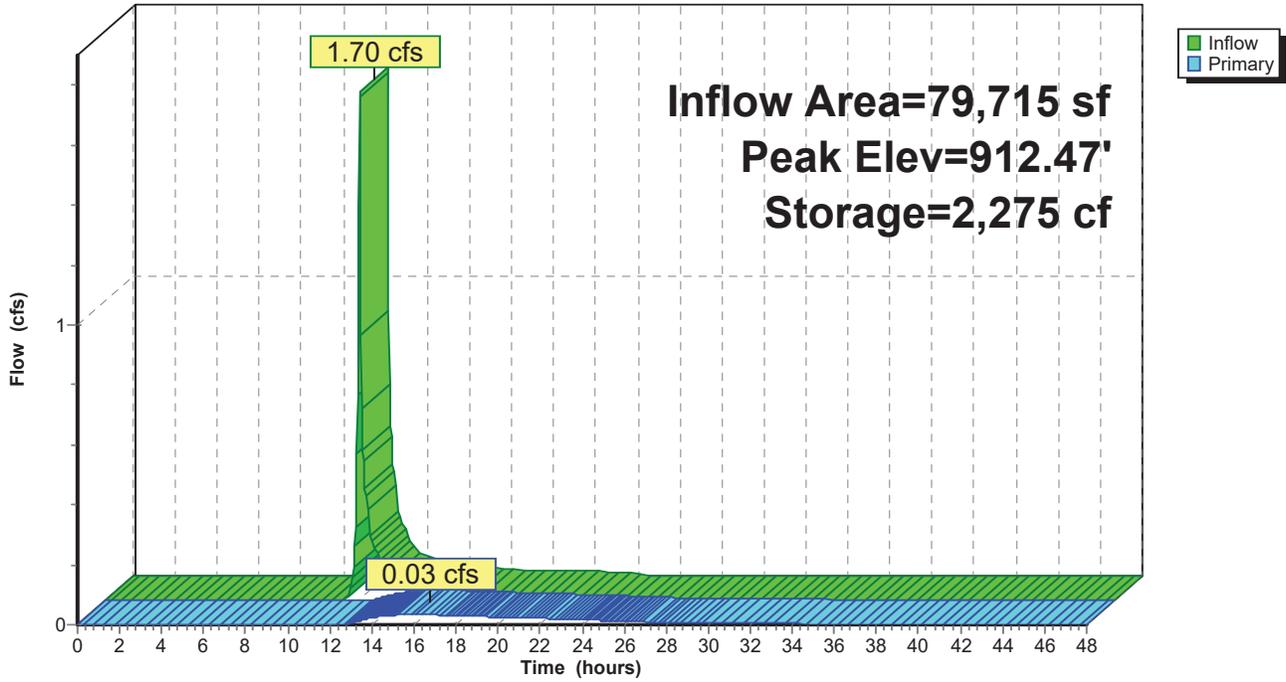
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Pond 21P: Ponds 3 and 4

Hydrograph



Pond 1-4

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Summary for Pond 24P: Pond 2

Inflow Area = 25,526 sf, 33.96% Impervious, Inflow Depth = 0.55" for WQv event
 Inflow = 0.65 cfs @ 12.08 hrs, Volume= 1,169 cf
 Outflow = 0.01 cfs @ 17.33 hrs, Volume= 487 cf, Atten= 99%, Lag= 314.5 min
 Primary = 0.01 cfs @ 17.33 hrs, Volume= 487 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.76' @ 17.33 hrs Surf.Area= 1,546 sf Storage= 898 cf

Plug-Flow detention time= 604.6 min calculated for 487 cf (42% of inflow)
 Center-of-Mass det. time= 499.5 min (1,326.6 - 827.1)

Volume	Invert	Avail.Storage	Storage Description
#1	914.00'	3,611 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
914.00	817	0	0
915.00	1,776	1,297	1,297
916.00	2,853	2,315	3,611

Device	Routing	Invert	Outlet Devices
#1	Primary	914.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	914.60'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.38'	24.0" W x 5.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.01 cfs @ 17.33 hrs HW=914.76' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.01 cfs of 1.90 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.01 cfs @ 1.66 fps)
- ↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Pond 1-4

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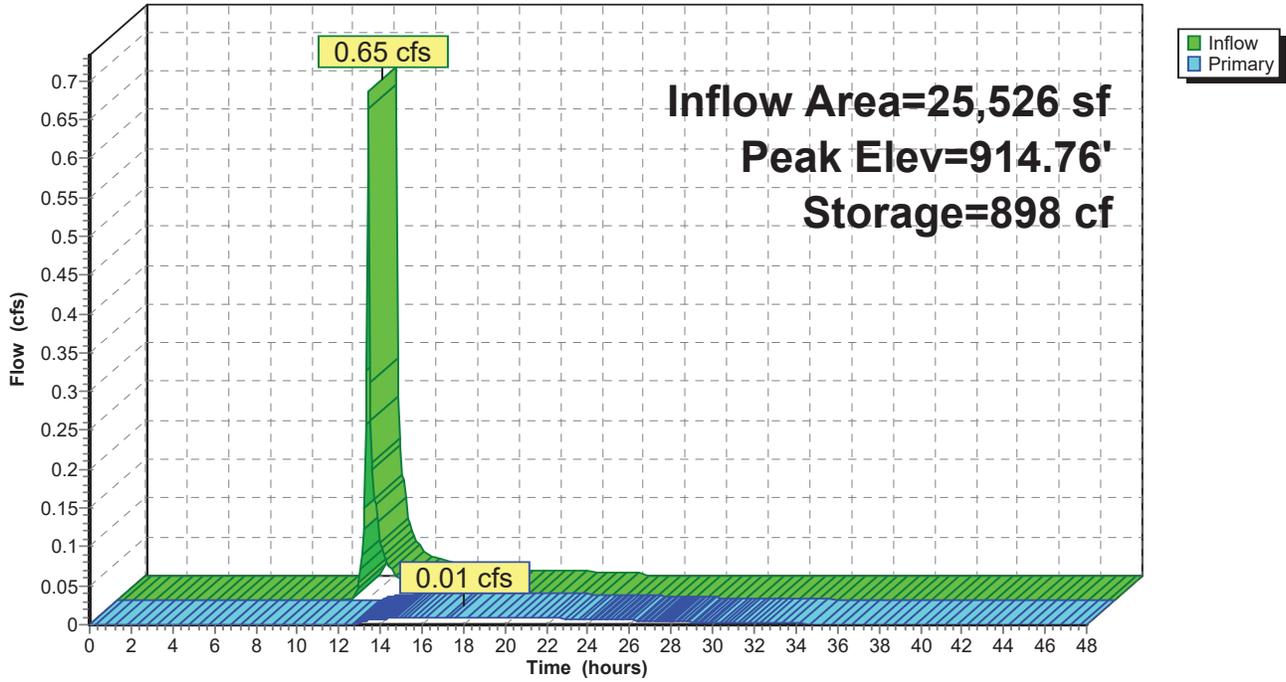
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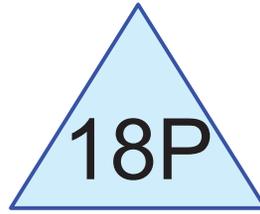
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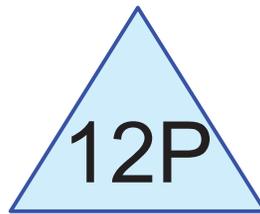
Pond 24P: Pond 2

Hydrograph





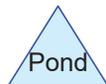
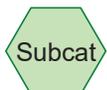
Ponds 5 and 6



Pond 7



Pond 8



Routing Diagram for Pond 6-8

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Pond 6-8

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NOAA 24-hr	A	Default	24.00	1	2.20	2
2	2-Year	NOAA 24-hr	A	Default	24.00	1	2.63	2
3	5-Year	NOAA 24-hr	A	Default	24.00	1	3.24	2
4	10-Year	NOAA 24-hr	A	Default	24.00	1	3.74	2
5	25-Year	NOAA 24-hr	A	Default	24.00	1	4.44	2
6	50-Year	NOAA 24-hr	A	Default	24.00	1	5.02	2
7	100-Year	NOAA 24-hr	A	Default	24.00	1	5.63	2
8	WQv	NOAA 24-hr	A	Default	24.00	1	1.65	2

Pond 6-8

Area Listing (selected nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
0	0	TOTAL AREA

Pond 6-8

Soil Listing (selected nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
0		TOTAL AREA

Pond 6-8

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Ground Covers (selected 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	Subcatchment Numbers
0	0	0	0	0	0	TOTAL AREA	

Pond 6-8

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 12P: Pond 7

Peak Elev=918.21' Storage=1,314 cf Inflow=1.68 cfs 3,349 cf
Outflow=0.41 cfs 2,607 cf

Pond 15P: Pond 8

Peak Elev=919.04' Storage=1,157 cf Inflow=1.14 cfs 2,039 cf
Outflow=0.10 cfs 1,073 cf

Pond 18P: Ponds 5 and 6

Peak Elev=917.05' Storage=2,918 cf Inflow=1.71 cfs 3,046 cf
Outflow=0.01 cfs 279 cf

Pond 6-8

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Summary for Pond 12P: Pond 7

Inflow Area = 51,270 sf, 30.67% Impervious, Inflow Depth = 0.78" for 1-Year event
 Inflow = 1.68 cfs @ 12.11 hrs, Volume= 3,349 cf
 Outflow = 0.41 cfs @ 12.37 hrs, Volume= 2,607 cf, Atten= 76%, Lag= 15.9 min
 Primary = 0.41 cfs @ 12.37 hrs, Volume= 2,607 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 918.21' @ 12.37 hrs Surf.Area= 1,631 sf Storage= 1,314 cf

Plug-Flow detention time= 153.6 min calculated for 2,604 cf (78% of inflow)
 Center-of-Mass det. time= 78.1 min (904.1 - 826.0)

Volume	Invert	Avail.Storage	Storage Description
#1	917.00'	6,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
917.00	618	0	0
918.00	1,377	998	998
919.00	2,582	1,980	2,977
920.00	3,835	3,209	6,186

Device	Routing	Invert	Outlet Devices
#1	Primary	917.80'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	917.80'	6.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	918.92'	24.0" x 6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.41 cfs @ 12.37 hrs HW=918.21' (Free Discharge)
 1=Orifice/Grate (Passes 0.41 cfs of 0.66 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.41 cfs @ 2.18 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

Pond 6-8

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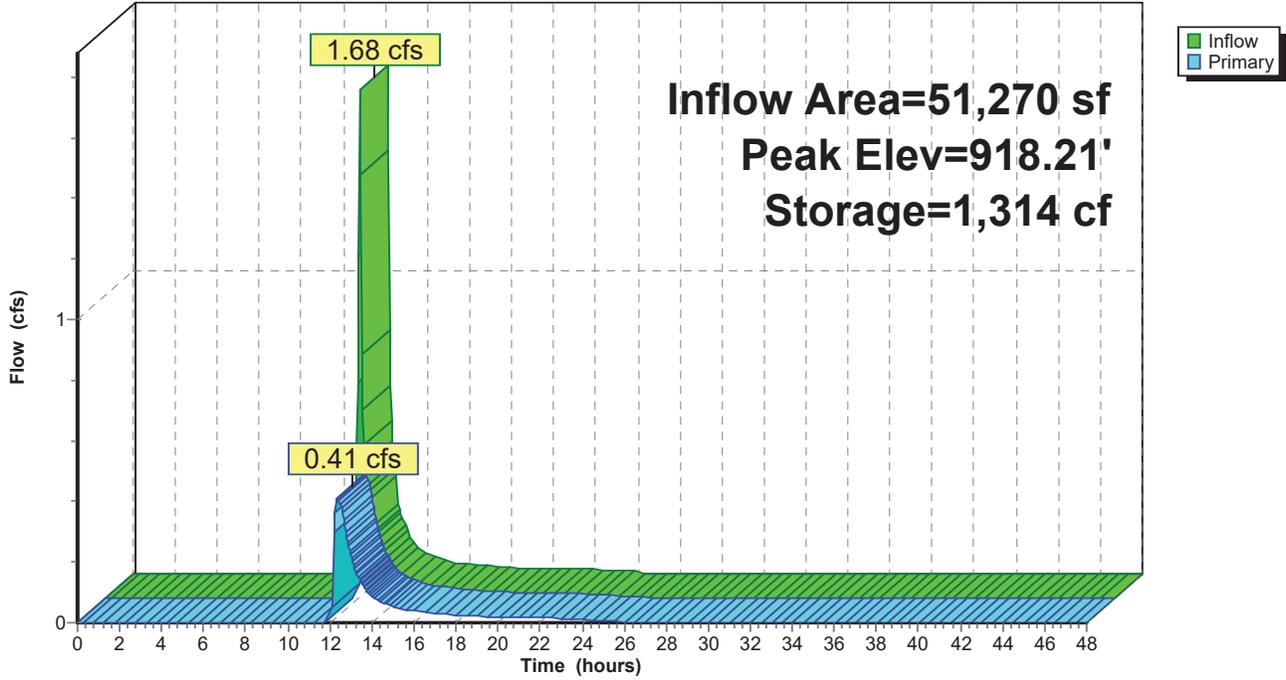
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Pond 12P: Pond 7

Hydrograph



Pond 6-8

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Summary for Pond 15P: Pond 8

Inflow Area = 27,530 sf, 25.16% Impervious, Inflow Depth = 0.89" for 1-Year event
 Inflow = 1.14 cfs @ 12.09 hrs, Volume= 2,039 cf
 Outflow = 0.10 cfs @ 12.82 hrs, Volume= 1,073 cf, Atten= 91%, Lag= 43.8 min
 Primary = 0.10 cfs @ 12.82 hrs, Volume= 1,073 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 919.04' @ 12.82 hrs Surf.Area= 1,422 sf Storage= 1,157 cf

Plug-Flow detention time= 243.4 min calculated for 1,073 cf (53% of inflow)
 Center-of-Mass det. time= 148.0 min (966.2 - 818.2)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	2,819 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	803	0	0
919.00	1,395	1,099	1,099
920.00	2,045	1,720	2,819

Device	Routing	Invert	Outlet Devices
#1	Primary	918.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	918.90'	5.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	919.39'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.10 cfs @ 12.82 hrs HW=919.04' (Free Discharge)
 1=Orifice/Grate (Passes 0.10 cfs of 2.78 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.10 cfs @ 1.28 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

Pond 6-8

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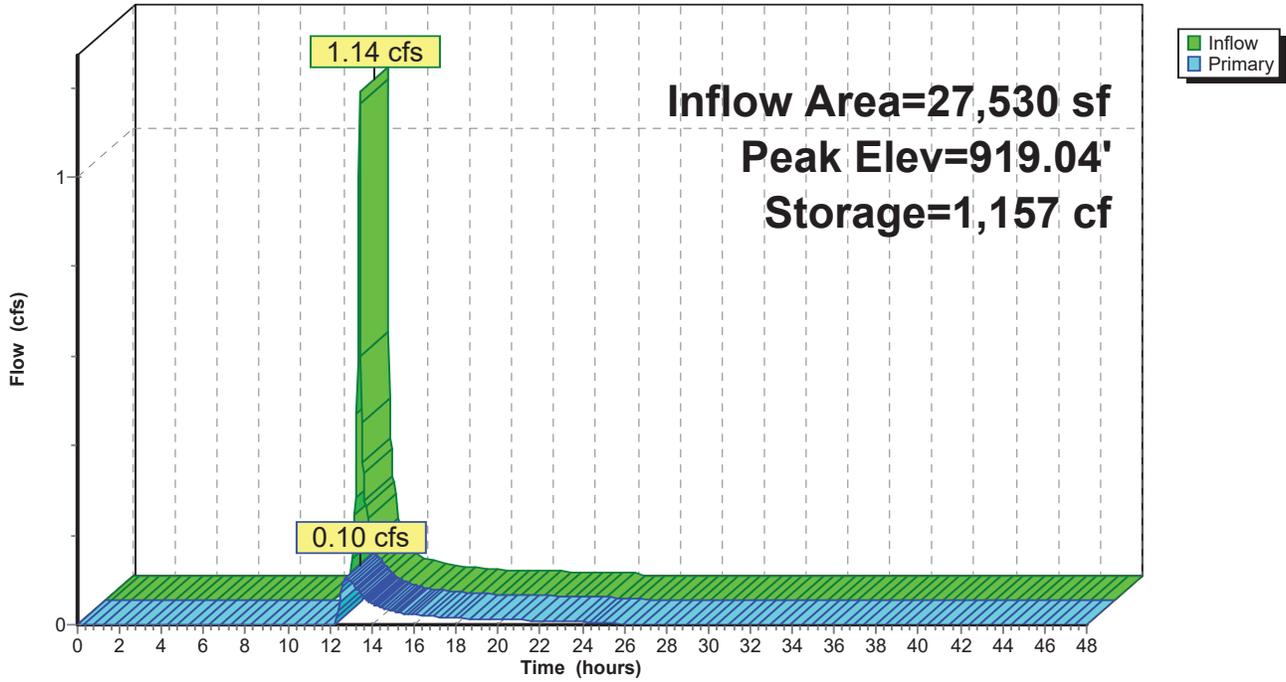
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Pond 15P: Pond 8

Hydrograph



Pond 6-8

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Summary for Pond 18P: Ponds 5 and 6

Inflow Area = 43,778 sf, 22.19% Impervious, Inflow Depth = 0.84" for 1-Year event
 Inflow = 1.71 cfs @ 12.08 hrs, Volume= 3,046 cf
 Outflow = 0.01 cfs @ 23.99 hrs, Volume= 279 cf, Atten= 99%, Lag= 714.5 min
 Primary = 0.01 cfs @ 23.99 hrs, Volume= 279 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 917.05' @ 23.99 hrs Surf.Area= 3,863 sf Storage= 2,918 cf

Plug-Flow detention time= 862.4 min calculated for 279 cf (9% of inflow)
 Center-of-Mass det. time= 746.5 min (1,567.2 - 820.7)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	7,645 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	1,721	0	0
917.00	3,754	2,738	2,738
918.00	6,061	4,908	7,645

Device	Routing	Invert	Outlet Devices
#1	Primary	917.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	916.40'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	917.28'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.01 cfs @ 23.99 hrs HW=917.05' (Free Discharge)

- ↑ **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.74 fps)
- ↑ **2=Orifice/Grate** (Passes 0.01 cfs of 0.05 cfs potential flow)
- ↑ **3=Orifice/Grate** (Controls 0.00 cfs)

Pond 6-8

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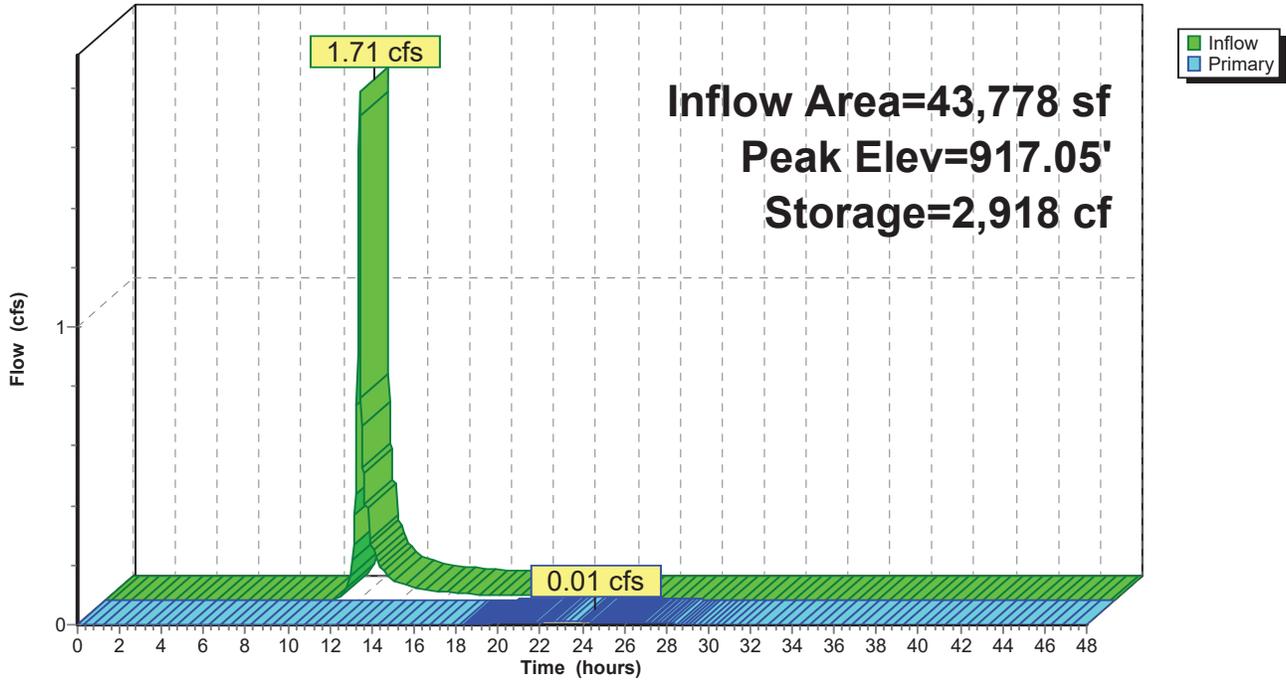
NOAA 24-hr A 1-Year Rainfall=2.20"

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Pond 18P: Ponds 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 2-Year Rainfall=2.63"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 12P: Pond 7

Peak Elev=918.45' Storage=1,749 cf Inflow=2.36 cfs 4,676 cf
Outflow=0.69 cfs 3,934 cf

Pond 15P: Pond 8

Peak Elev=919.15' Storage=1,316 cf Inflow=1.55 cfs 2,794 cf
Outflow=0.29 cfs 1,828 cf

Pond 18P: Ponds 5 and 6

Peak Elev=917.11' Storage=3,166 cf Inflow=2.36 cfs 4,213 cf
Outflow=0.05 cfs 1,444 cf

Pond 6-8

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Pond 12P: Pond 7

Inflow Area = 51,270 sf, 30.67% Impervious, Inflow Depth = 1.09" for 2-Year event
 Inflow = 2.36 cfs @ 12.11 hrs, Volume= 4,676 cf
 Outflow = 0.69 cfs @ 12.31 hrs, Volume= 3,934 cf, Atten= 71%, Lag= 12.0 min
 Primary = 0.69 cfs @ 12.31 hrs, Volume= 3,934 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 918.45' @ 12.31 hrs Surf.Area= 1,925 sf Storage= 1,749 cf

Plug-Flow detention time= 121.8 min calculated for 3,930 cf (84% of inflow)
 Center-of-Mass det. time= 60.1 min (878.6 - 818.5)

Volume	Invert	Avail.Storage	Storage Description
#1	917.00'	6,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
917.00	618	0	0
918.00	1,377	998	998
919.00	2,582	1,980	2,977
920.00	3,835	3,209	6,186

Device	Routing	Invert	Outlet Devices
#1	Primary	917.80'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	917.80'	6.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	918.92'	24.0" x 6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.69 cfs @ 12.31 hrs HW=918.45' (Free Discharge)
 1=Orifice/Grate (Passes 0.69 cfs of 1.50 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.69 cfs @ 2.98 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

Pond 6-8

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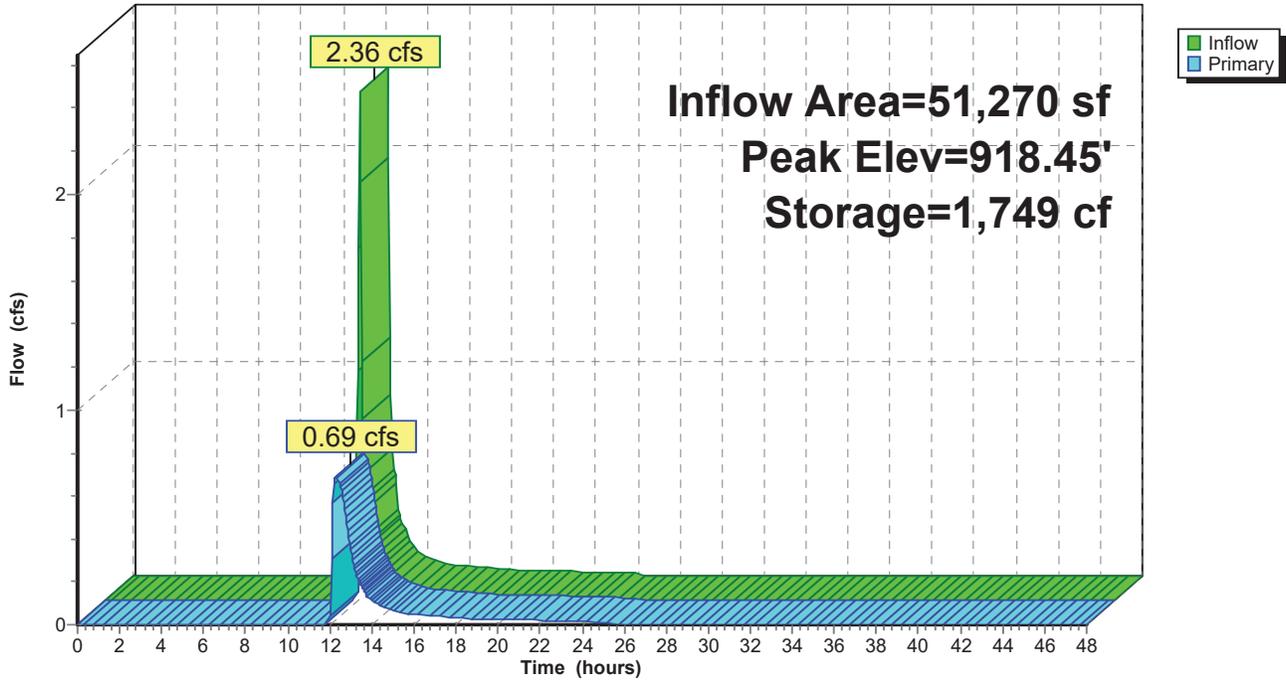
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Pond 12P: Pond 7

Hydrograph



Pond 6-8

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NOAA 24-hr A 2-Year Rainfall=2.63"

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Summary for Pond 15P: Pond 8

Inflow Area = 27,530 sf, 25.16% Impervious, Inflow Depth = 1.22" for 2-Year event
 Inflow = 1.55 cfs @ 12.09 hrs, Volume= 2,794 cf
 Outflow = 0.29 cfs @ 12.37 hrs, Volume= 1,828 cf, Atten= 81%, Lag= 17.2 min
 Primary = 0.29 cfs @ 12.37 hrs, Volume= 1,828 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 919.15' @ 12.37 hrs Surf.Area= 1,493 sf Storage= 1,316 cf

Plug-Flow detention time= 181.1 min calculated for 1,828 cf (65% of inflow)
 Center-of-Mass det. time= 96.0 min (907.3 - 811.3)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	2,819 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	803	0	0
919.00	1,395	1,099	1,099
920.00	2,045	1,720	2,819

Device	Routing	Invert	Outlet Devices
#1	Primary	918.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	918.90'	5.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	919.39'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.29 cfs @ 12.37 hrs HW=919.15' (Free Discharge)
 1=Orifice/Grate (Passes 0.29 cfs of 3.05 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.29 cfs @ 1.70 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

Pond 6-8

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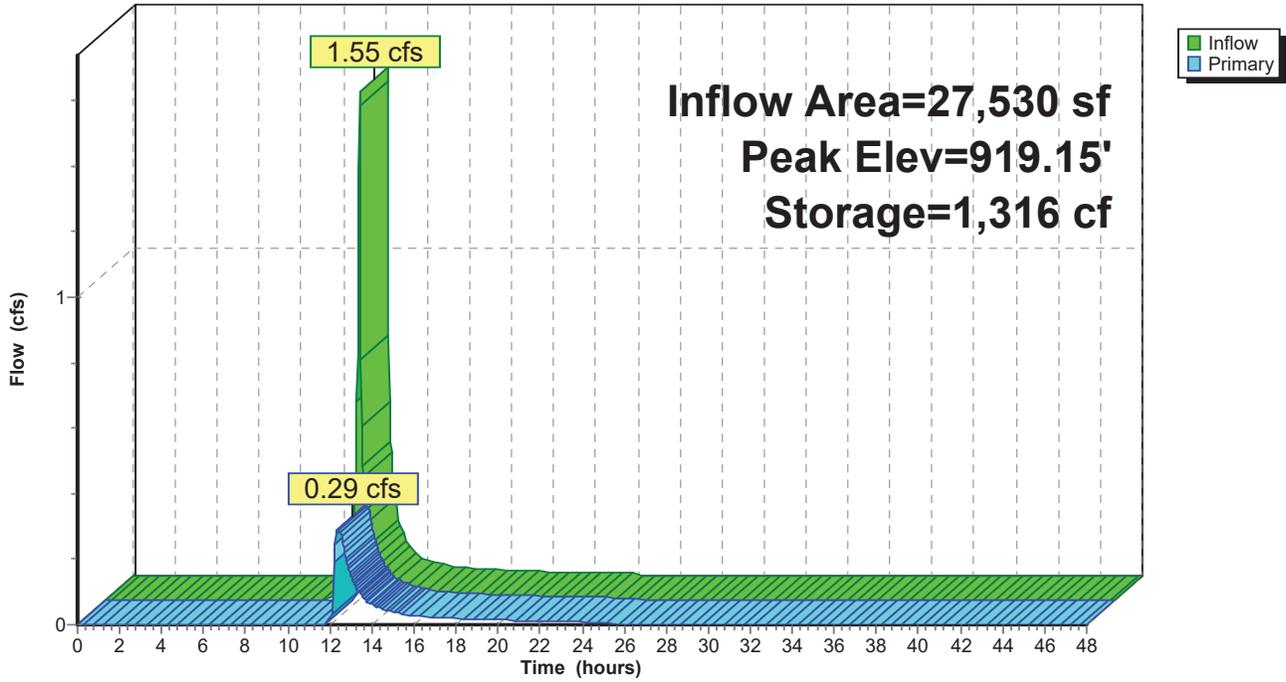
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Pond 15P: Pond 8

Hydrograph



Pond 6-8

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Summary for Pond 18P: Ponds 5 and 6

Inflow Area = 43,778 sf, 22.19% Impervious, Inflow Depth = 1.15" for 2-Year event
 Inflow = 2.36 cfs @ 12.08 hrs, Volume= 4,213 cf
 Outflow = 0.05 cfs @ 14.77 hrs, Volume= 1,444 cf, Atten= 98%, Lag= 161.5 min
 Primary = 0.05 cfs @ 14.77 hrs, Volume= 1,444 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 917.11' @ 14.77 hrs Surf.Area= 4,009 sf Storage= 3,166 cf

Plug-Flow detention time= 435.4 min calculated for 1,443 cf (34% of inflow)
 Center-of-Mass det. time= 338.3 min (1,151.8 - 813.5)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	7,645 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	1,721	0	0
917.00	3,754	2,738	2,738
918.00	6,061	4,908	7,645

Device	Routing	Invert	Outlet Devices
#1	Primary	917.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	916.40'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	917.28'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 14.77 hrs HW=917.11' (Free Discharge)

- 1=Orifice/Grate (Orifice Controls 0.05 cfs @ 1.13 fps)
- 2=Orifice/Grate (Passes 0.05 cfs of 0.08 cfs potential flow)
- 3=Orifice/Grate (Controls 0.00 cfs)

Pond 6-8

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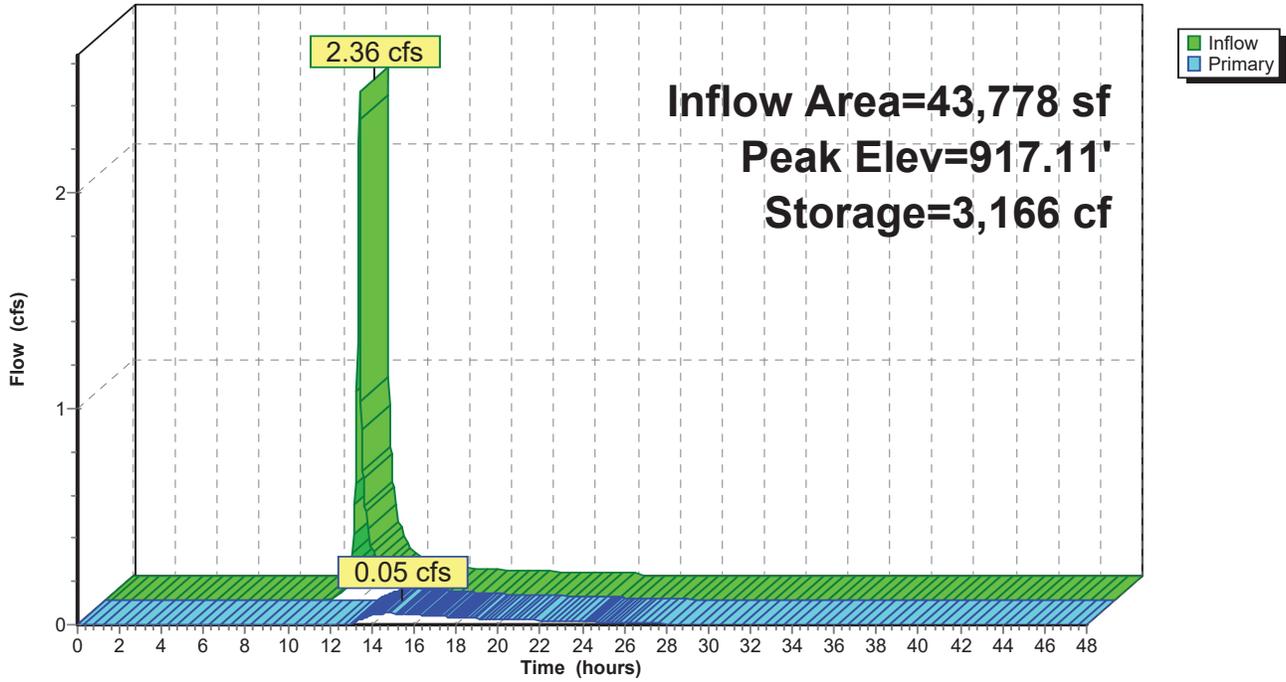
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Pond 18P: Ponds 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 5-Year Rainfall=3.24"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 12P: Pond 7

Peak Elev=918.82' Storage=2,540 cf Inflow=3.39 cfs 6,709 cf
Outflow=0.96 cfs 5,967 cf

Pond 15P: Pond 8

Peak Elev=919.36' Storage=1,649 cf Inflow=2.17 cfs 3,937 cf
Outflow=0.66 cfs 2,971 cf

Pond 18P: Ponds 5 and 6

Peak Elev=917.29' Storage=3,945 cf Inflow=3.32 cfs 5,991 cf
Outflow=0.14 cfs 3,221 cf

Pond 6-8

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Summary for Pond 12P: Pond 7

Inflow Area = 51,270 sf, 30.67% Impervious, Inflow Depth = 1.57" for 5-Year event
 Inflow = 3.39 cfs @ 12.11 hrs, Volume= 6,709 cf
 Outflow = 0.96 cfs @ 12.30 hrs, Volume= 5,967 cf, Atten= 72%, Lag= 11.9 min
 Primary = 0.96 cfs @ 12.30 hrs, Volume= 5,967 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 918.82' @ 12.30 hrs Surf.Area= 2,370 sf Storage= 2,540 cf

Plug-Flow detention time= 99.0 min calculated for 5,961 cf (89% of inflow)
 Center-of-Mass det. time= 50.9 min (861.5 - 810.7)

Volume	Invert	Avail.Storage	Storage Description
#1	917.00'	6,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
917.00	618	0	0
918.00	1,377	998	998
919.00	2,582	1,980	2,977
920.00	3,835	3,209	6,186

Device	Routing	Invert	Outlet Devices
#1	Primary	917.80'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	917.80'	6.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	918.92'	24.0" x 6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.96 cfs @ 12.30 hrs HW=918.82' (Free Discharge)
 1=Orifice/Grate (Passes 0.96 cfs of 2.74 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.96 cfs @ 4.18 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

Pond 6-8

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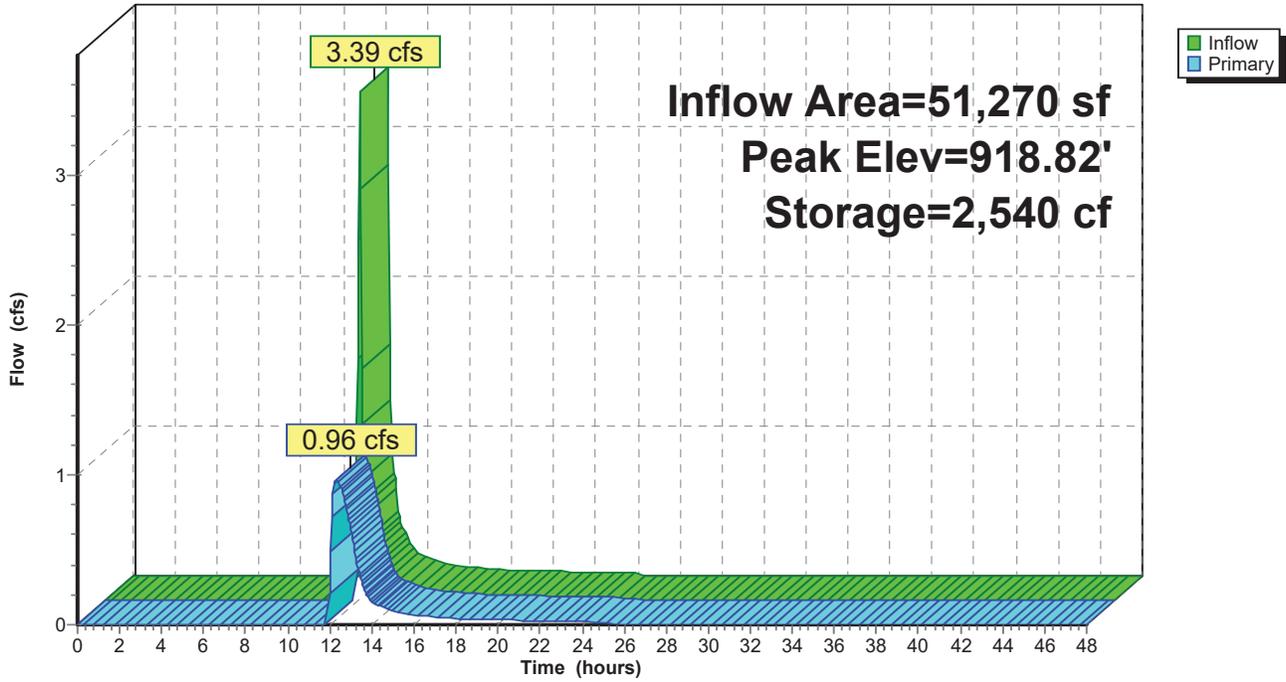
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Pond 12P: Pond 7

Hydrograph



Pond 6-8

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Summary for Pond 15P: Pond 8

Inflow Area = 27,530 sf, 25.16% Impervious, Inflow Depth = 1.72" for 5-Year event
 Inflow = 2.17 cfs @ 12.08 hrs, Volume= 3,937 cf
 Outflow = 0.66 cfs @ 12.22 hrs, Volume= 2,971 cf, Atten= 69%, Lag= 8.2 min
 Primary = 0.66 cfs @ 12.22 hrs, Volume= 2,971 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 919.36' @ 12.22 hrs Surf.Area= 1,631 sf Storage= 1,649 cf

Plug-Flow detention time= 140.7 min calculated for 2,971 cf (75% of inflow)
 Center-of-Mass det. time= 67.1 min (871.1 - 804.1)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	2,819 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	803	0	0
919.00	1,395	1,099	1,099
920.00	2,045	1,720	2,819

Device	Routing	Invert	Outlet Devices
#1	Primary	918.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	918.90'	5.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	919.39'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.66 cfs @ 12.22 hrs HW=919.36' (Free Discharge)
 1=Orifice/Grate (Passes 0.66 cfs of 3.51 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.66 cfs @ 2.42 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

Pond 6-8

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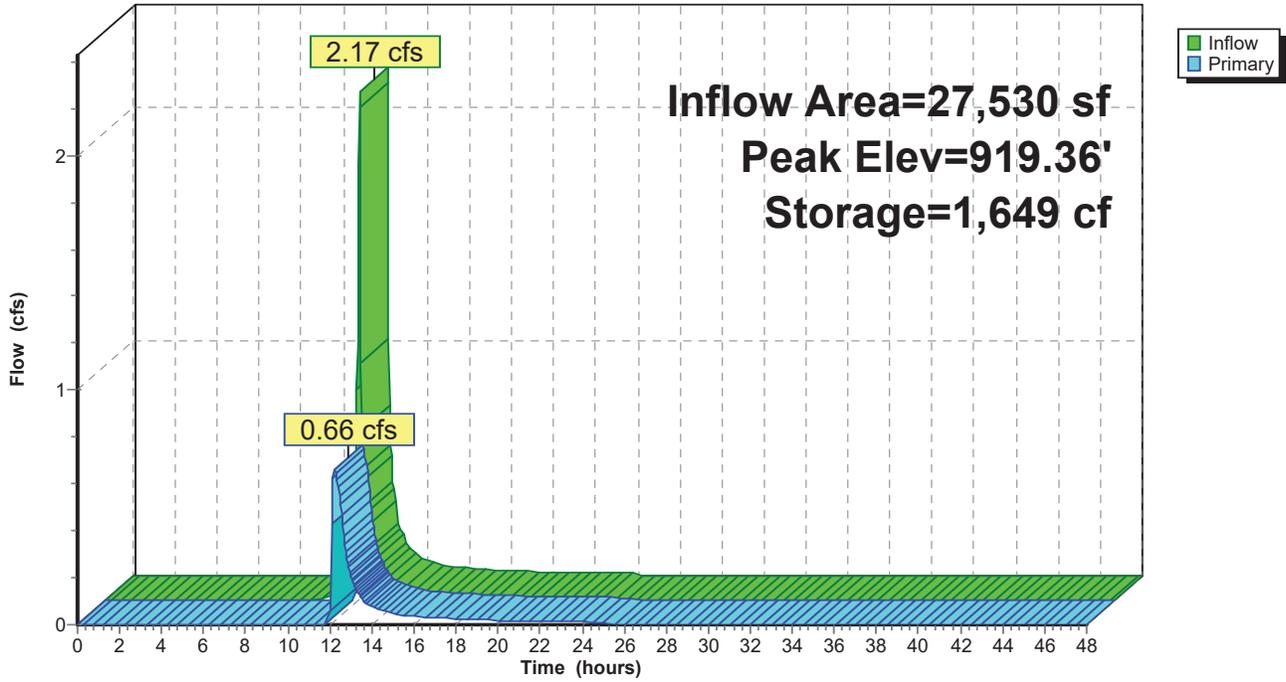
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Pond 15P: Pond 8

Hydrograph



Pond 6-8

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Summary for Pond 18P: Ponds 5 and 6

Inflow Area = 43,778 sf, 22.19% Impervious, Inflow Depth = 1.64" for 5-Year event
 Inflow = 3.32 cfs @ 12.08 hrs, Volume= 5,991 cf
 Outflow = 0.14 cfs @ 13.43 hrs, Volume= 3,221 cf, Atten= 96%, Lag= 81.2 min
 Primary = 0.14 cfs @ 13.43 hrs, Volume= 3,221 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 917.29' @ 13.43 hrs Surf.Area= 4,435 sf Storage= 3,945 cf

Plug-Flow detention time= 312.5 min calculated for 3,221 cf (54% of inflow)
 Center-of-Mass det. time= 224.1 min (1,030.0 - 805.9)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	7,645 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	1,721	0	0
917.00	3,754	2,738	2,738
918.00	6,061	4,908	7,645

Device	Routing	Invert	Outlet Devices
#1	Primary	917.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	916.40'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	917.28'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.14 cfs @ 13.43 hrs HW=917.29' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.14 cfs of 0.36 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.13 cfs @ 2.61 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 0.01 cfs @ 0.39 fps)

Pond 6-8

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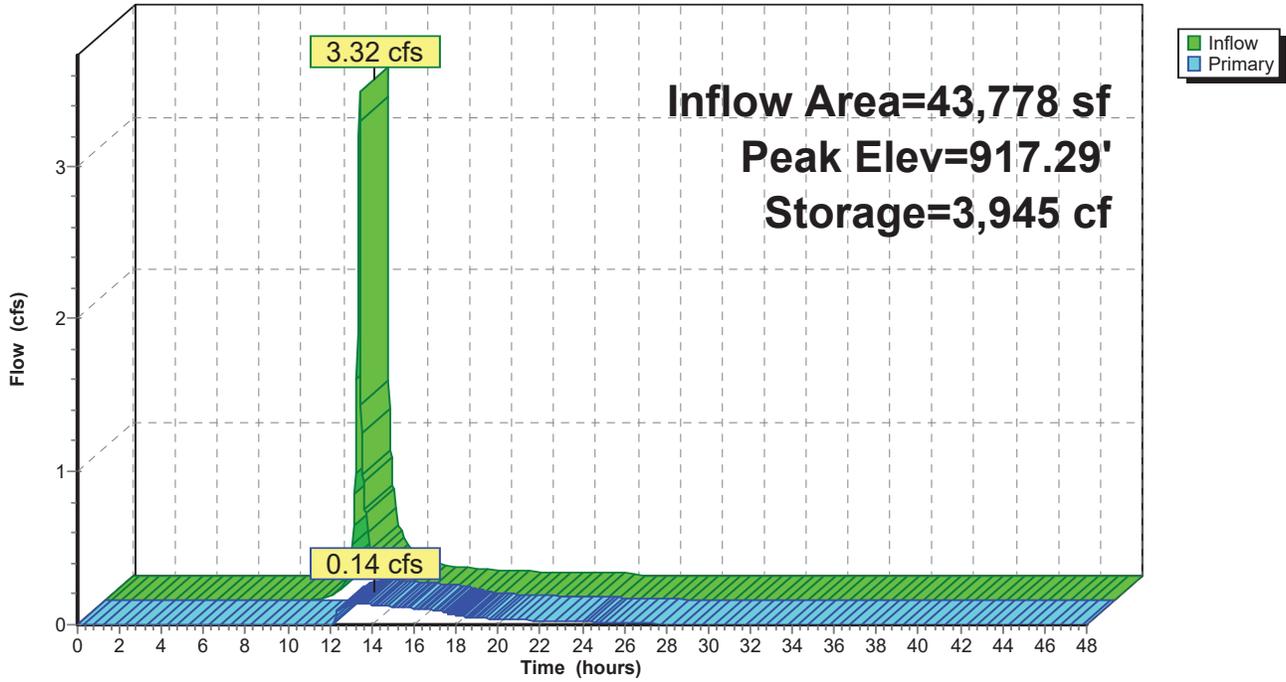
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Pond 18P: Ponds 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 10-Year Rainfall=3.74"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 12P: Pond 7

Peak Elev=919.04' Storage=3,093 cf Inflow=4.27 cfs 8,471 cf
Outflow=1.79 cfs 7,728 cf

Pond 15P: Pond 8

Peak Elev=919.54' Storage=1,944 cf Inflow=2.69 cfs 4,918 cf
Outflow=1.22 cfs 3,952 cf

Pond 18P: Ponds 5 and 6

Peak Elev=917.40' Storage=4,406 cf Inflow=4.14 cfs 7,523 cf
Outflow=0.40 cfs 4,753 cf

Pond 6-8

NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Pond 12P: Pond 7

Inflow Area = 51,270 sf, 30.67% Impervious, Inflow Depth = 1.98" for 10-Year event
 Inflow = 4.27 cfs @ 12.10 hrs, Volume= 8,471 cf
 Outflow = 1.79 cfs @ 12.22 hrs, Volume= 7,728 cf, Atten= 58%, Lag= 7.2 min
 Primary = 1.79 cfs @ 12.22 hrs, Volume= 7,728 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 919.04' @ 12.22 hrs Surf.Area= 2,638 sf Storage= 3,093 cf

Plug-Flow detention time= 88.0 min calculated for 7,728 cf (91% of inflow)
 Center-of-Mass det. time= 46.2 min (851.9 - 805.8)

Volume	Invert	Avail.Storage	Storage Description
#1	917.00'	6,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
917.00	618	0	0
918.00	1,377	998	998
919.00	2,582	1,980	2,977
920.00	3,835	3,209	6,186

Device	Routing	Invert	Outlet Devices
#1	Primary	917.80'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	917.80'	6.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	918.92'	24.0" x 6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.71 cfs @ 12.22 hrs HW=919.03' (Free Discharge)
 1=Orifice/Grate (Passes 1.71 cfs of 3.24 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 1.09 cfs @ 4.72 fps)
 3=Orifice/Grate (Weir Controls 0.62 cfs @ 1.10 fps)

Pond 6-8

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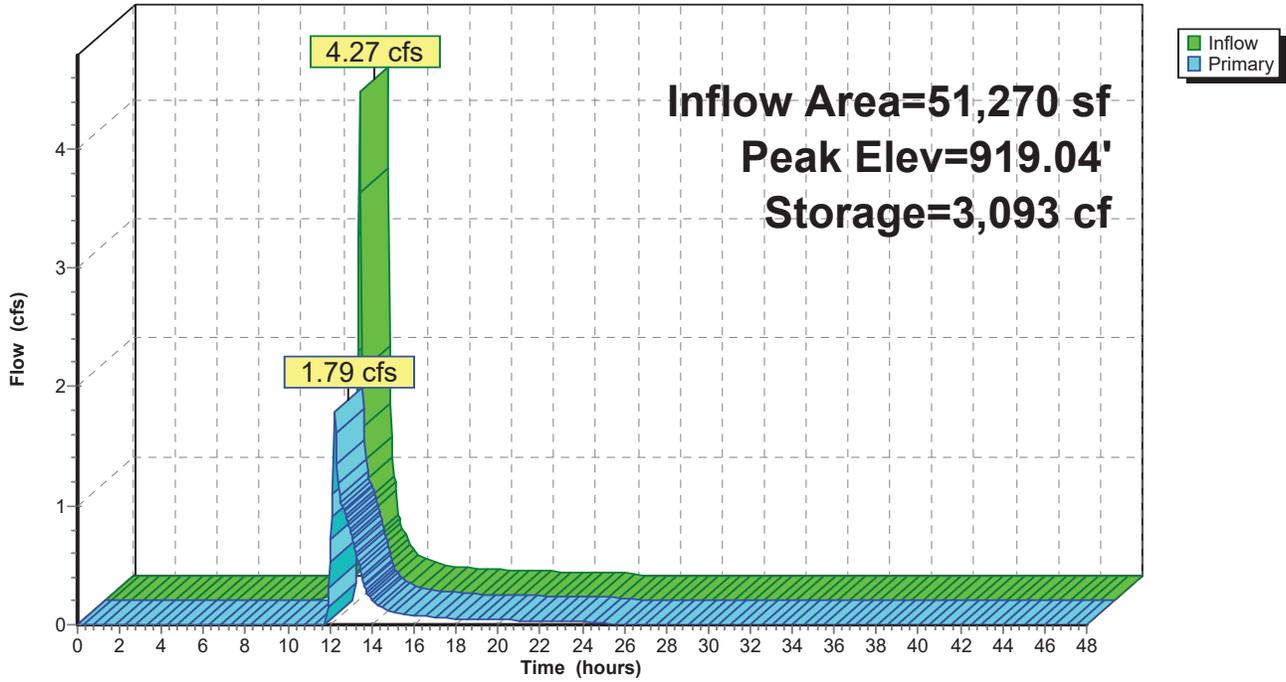
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Pond 12P: Pond 7

Hydrograph



Pond 6-8

NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Pond 15P: Pond 8

Inflow Area = 27,530 sf, 25.16% Impervious, Inflow Depth = 2.14" for 10-Year event
 Inflow = 2.69 cfs @ 12.08 hrs, Volume= 4,918 cf
 Outflow = 1.22 cfs @ 12.17 hrs, Volume= 3,952 cf, Atten= 55%, Lag= 5.2 min
 Primary = 1.22 cfs @ 12.17 hrs, Volume= 3,952 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 919.54' @ 12.17 hrs Surf.Area= 1,745 sf Storage= 1,944 cf

Plug-Flow detention time= 120.4 min calculated for 3,948 cf (80% of inflow)
 Center-of-Mass det. time= 55.8 min (855.2 - 799.4)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	2,819 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	803	0	0
919.00	1,395	1,099	1,099
920.00	2,045	1,720	2,819

Device	Routing	Invert	Outlet Devices
#1	Primary	918.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	918.90'	5.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	919.39'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.17 cfs @ 12.17 hrs HW=919.53' (Free Discharge)
 1=Orifice/Grate (Passes 1.17 cfs of 3.83 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.85 cfs @ 3.11 fps)
 3=Orifice/Grate (Orifice Controls 0.32 cfs @ 1.18 fps)

Pond 6-8

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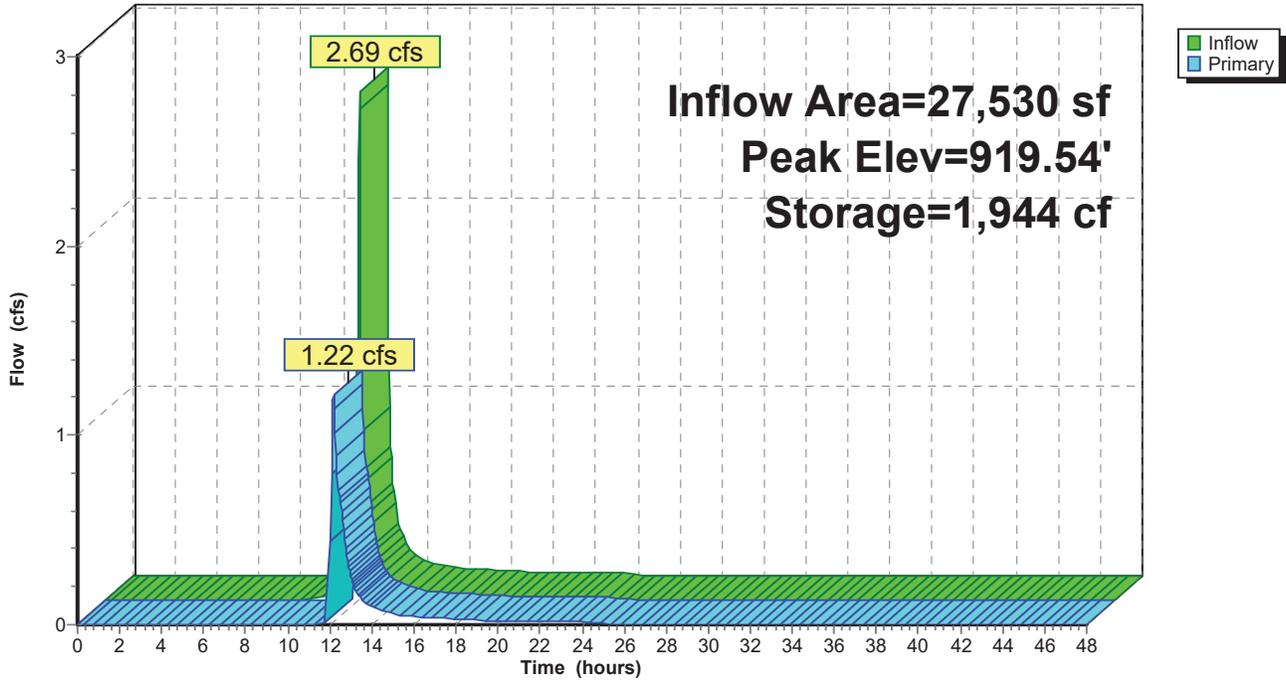
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Pond 15P: Pond 8

Hydrograph



Pond 6-8

NOAA 24-hr A 10-Year Rainfall=3.74"

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Summary for Pond 18P: Ponds 5 and 6

Inflow Area = 43,778 sf, 22.19% Impervious, Inflow Depth = 2.06" for 10-Year event
 Inflow = 4.14 cfs @ 12.08 hrs, Volume= 7,523 cf
 Outflow = 0.40 cfs @ 12.64 hrs, Volume= 4,753 cf, Atten= 90%, Lag= 33.9 min
 Primary = 0.40 cfs @ 12.64 hrs, Volume= 4,753 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 917.40' @ 12.64 hrs Surf.Area= 4,668 sf Storage= 4,406 cf

Plug-Flow detention time= 254.4 min calculated for 4,748 cf (63% of inflow)
 Center-of-Mass det. time= 174.3 min (975.5 - 801.2)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	7,645 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	1,721	0	0
917.00	3,754	2,738	2,738
918.00	6,061	4,908	7,645

Device	Routing	Invert	Outlet Devices
#1	Primary	917.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	916.40'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	917.28'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.40 cfs @ 12.64 hrs HW=917.40' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.40 cfs of 0.62 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.15 cfs @ 3.03 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 0.25 cfs @ 1.09 fps)

Pond 6-8

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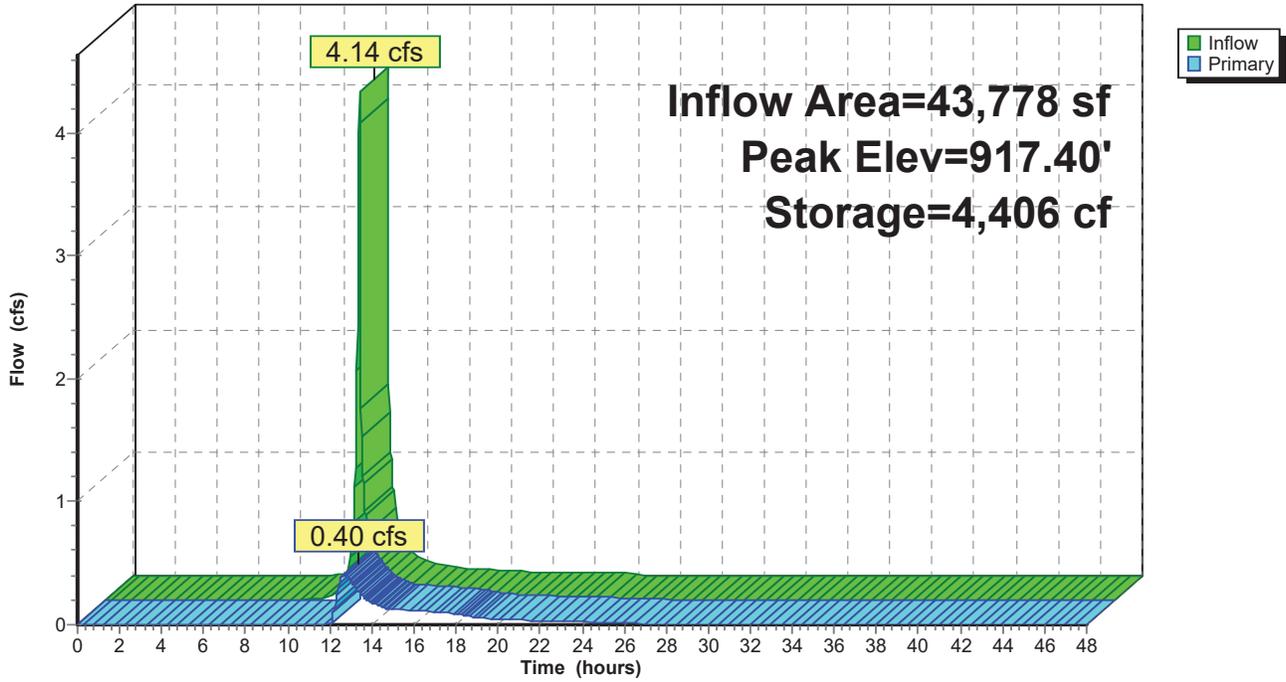
NOAA 24-hr A 10-Year Rainfall=3.74"

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Pond 18P: Ponds 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 25-Year Rainfall=4.44"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 12P: Pond 7

Peak Elev=919.19' Storage=3,493 cf Inflow=5.53 cfs 11,038 cf
Outflow=3.47 cfs 10,296 cf

Pond 15P: Pond 8

Peak Elev=919.70' Storage=2,233 cf Inflow=3.42 cfs 6,338 cf
Outflow=2.02 cfs 5,372 cf

Pond 18P: Ponds 5 and 6

Peak Elev=917.53' Storage=5,033 cf Inflow=5.30 cfs 9,749 cf
Outflow=0.96 cfs 6,979 cf

Pond 6-8

Summary for Pond 12P: Pond 7

Inflow Area = 51,270 sf, 30.67% Impervious, Inflow Depth = 2.58" for 25-Year event
 Inflow = 5.53 cfs @ 12.10 hrs, Volume= 11,038 cf
 Outflow = 3.47 cfs @ 12.18 hrs, Volume= 10,296 cf, Atten= 37%, Lag= 4.4 min
 Primary = 3.47 cfs @ 12.18 hrs, Volume= 10,296 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 919.19' @ 12.18 hrs Surf.Area= 2,821 sf Storage= 3,493 cf

Plug-Flow detention time= 74.2 min calculated for 10,296 cf (93% of inflow)
 Center-of-Mass det. time= 39.9 min (840.2 - 800.3)

Volume	Invert	Avail.Storage	Storage Description
#1	917.00'	6,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
917.00	618	0	0
918.00	1,377	998	998
919.00	2,582	1,980	2,977
920.00	3,835	3,209	6,186

Device	Routing	Invert	Outlet Devices
#1	Primary	917.80'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	917.80'	6.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	918.92'	24.0" x 6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.38 cfs @ 12.18 hrs HW=919.18' (Free Discharge)
 1=Orifice/Grate (Passes 3.38 cfs of 3.55 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 1.17 cfs @ 5.08 fps)
 3=Orifice/Grate (Weir Controls 2.21 cfs @ 1.68 fps)

Pond 6-8

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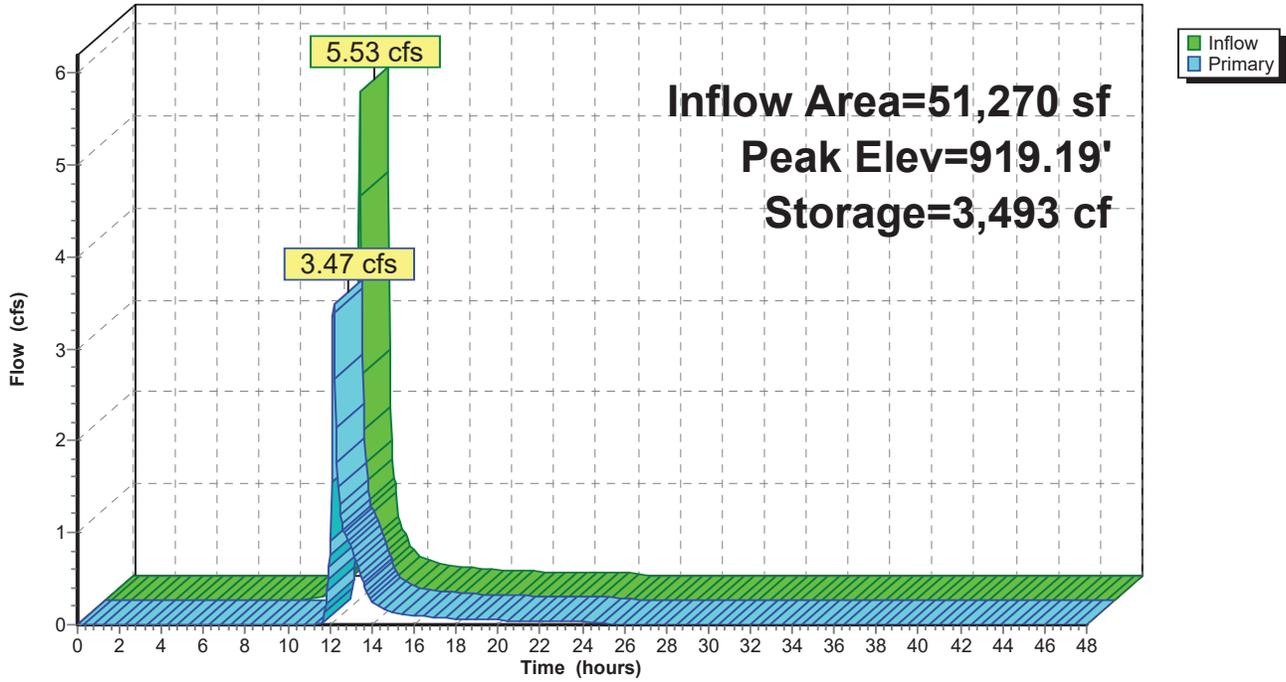
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Pond 12P: Pond 7

Hydrograph



Pond 6-8

NOAA 24-hr A 25-Year Rainfall=4.44"

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Summary for Pond 15P: Pond 8

Inflow Area = 27,530 sf, 25.16% Impervious, Inflow Depth = 2.76" for 25-Year event
 Inflow = 3.42 cfs @ 12.08 hrs, Volume= 6,338 cf
 Outflow = 2.02 cfs @ 12.15 hrs, Volume= 5,372 cf, Atten= 41%, Lag= 4.0 min
 Primary = 2.02 cfs @ 12.15 hrs, Volume= 5,372 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 919.70' @ 12.15 hrs Surf.Area= 1,849 sf Storage= 2,233 cf

Plug-Flow detention time= 104.1 min calculated for 5,372 cf (85% of inflow)
 Center-of-Mass det. time= 46.4 min (840.6 - 794.2)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	2,819 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	803	0	0
919.00	1,395	1,099	1,099
920.00	2,045	1,720	2,819

Device	Routing	Invert	Outlet Devices
#1	Primary	918.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	918.90'	5.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	919.39'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.02 cfs @ 12.15 hrs HW=919.70' (Free Discharge)
 1=Orifice/Grate (Passes 2.02 cfs of 4.14 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 1.01 cfs @ 3.70 fps)
 3=Orifice/Grate (Orifice Controls 1.01 cfs @ 2.02 fps)

Pond 6-8

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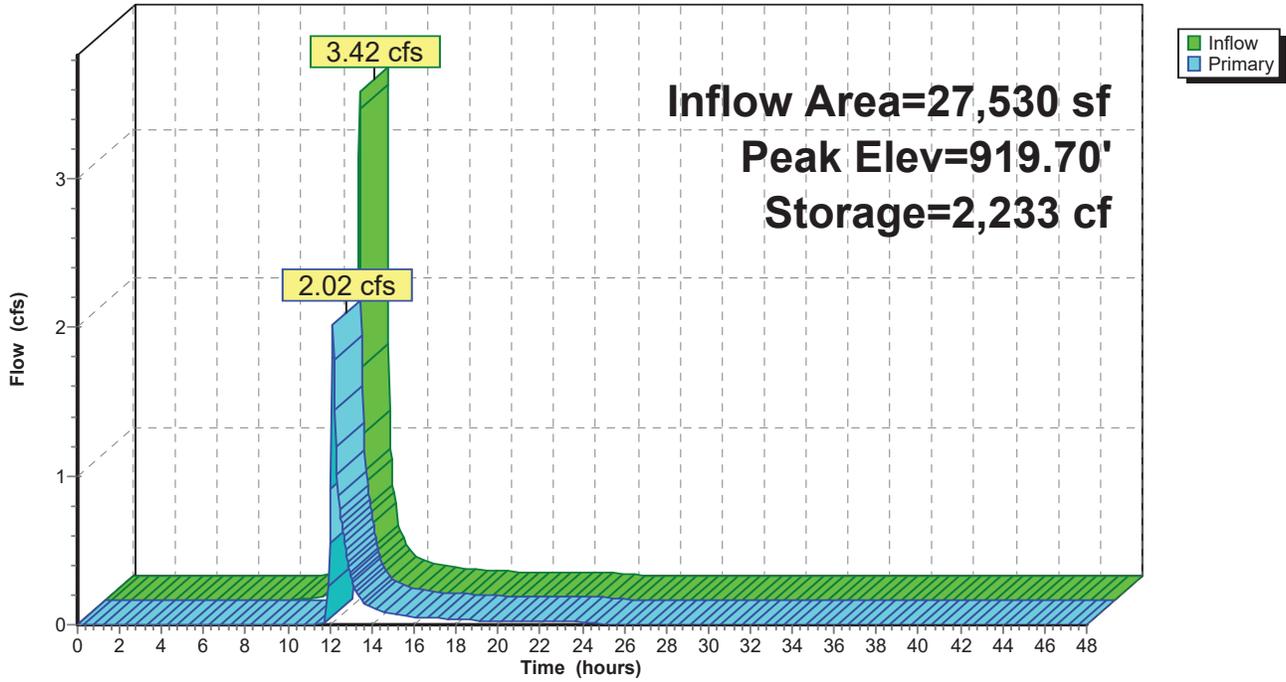
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Pond 15P: Pond 8

Hydrograph



Pond 6-8

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Summary for Pond 18P: Ponds 5 and 6

Inflow Area = 43,778 sf, 22.19% Impervious, Inflow Depth = 2.67" for 25-Year event
 Inflow = 5.30 cfs @ 12.08 hrs, Volume= 9,749 cf
 Outflow = 0.96 cfs @ 12.36 hrs, Volume= 6,979 cf, Atten= 82%, Lag= 16.9 min
 Primary = 0.96 cfs @ 12.36 hrs, Volume= 6,979 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 917.53' @ 12.36 hrs Surf.Area= 4,968 sf Storage= 5,033 cf

Plug-Flow detention time= 206.3 min calculated for 6,971 cf (72% of inflow)
 Center-of-Mass det. time= 133.6 min (929.5 - 795.8)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	7,645 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	1,721	0	0
917.00	3,754	2,738	2,738
918.00	6,061	4,908	7,645

Device	Routing	Invert	Outlet Devices
#1	Primary	917.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	916.40'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	917.28'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.95 cfs @ 12.36 hrs HW=917.53' (Free Discharge)

- ↑ **1=Orifice/Grate** (Passes 0.95 cfs of 1.03 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.17 cfs @ 3.49 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 0.78 cfs @ 1.59 fps)

Pond 6-8

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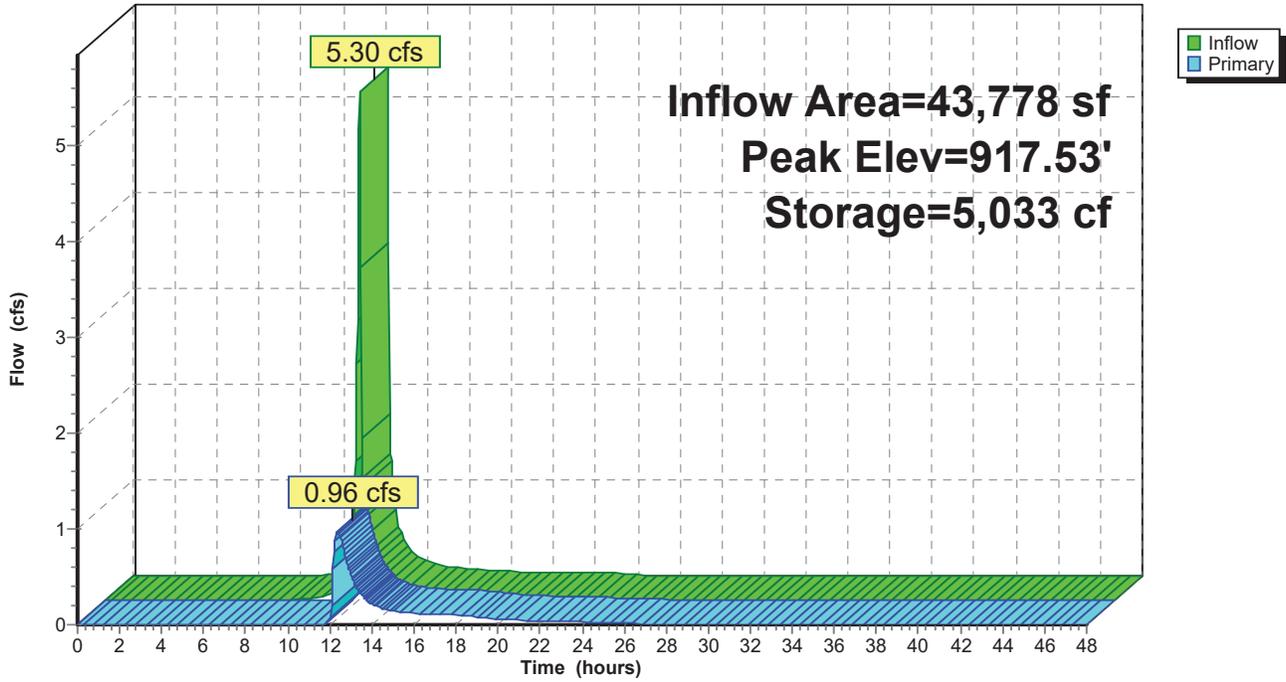
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Pond 18P: Ponds 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 50-Year Rainfall=5.02"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 12P: Pond 7

Peak Elev=919.34' Storage=3,939 cf Inflow=6.58 cfs 13,232 cf
Outflow=3.86 cfs 12,489 cf

Pond 15P: Pond 8

Peak Elev=919.83' Storage=2,474 cf Inflow=4.04 cfs 7,545 cf
Outflow=2.45 cfs 6,579 cf

Pond 18P: Ponds 5 and 6

Peak Elev=917.65' Storage=5,673 cf Inflow=6.28 cfs 11,646 cf
Outflow=1.49 cfs 8,875 cf

Pond 6-8

NOAA 24-hr A 50-Year Rainfall=5.02"

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Summary for Pond 12P: Pond 7

Inflow Area = 51,270 sf, 30.67% Impervious, Inflow Depth = 3.10" for 50-Year event
 Inflow = 6.58 cfs @ 12.10 hrs, Volume= 13,232 cf
 Outflow = 3.86 cfs @ 12.18 hrs, Volume= 12,489 cf, Atten= 41%, Lag= 4.7 min
 Primary = 3.86 cfs @ 12.18 hrs, Volume= 12,489 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 919.34' @ 12.18 hrs Surf.Area= 3,013 sf Storage= 3,939 cf

Plug-Flow detention time= 65.2 min calculated for 12,476 cf (94% of inflow)
 Center-of-Mass det. time= 36.7 min (833.2 - 796.5)

Volume	Invert	Avail.Storage	Storage Description
#1	917.00'	6,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
917.00	618	0	0
918.00	1,377	998	998
919.00	2,582	1,980	2,977
920.00	3,835	3,209	6,186

Device	Routing	Invert	Outlet Devices
#1	Primary	917.80'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	917.80'	6.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	918.92'	24.0" x 6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.84 cfs @ 12.18 hrs HW=919.33' (Free Discharge)

- ↑ **1=Orifice/Grate** (Orifice Controls 3.84 cfs @ 4.90 fps)
- ↑ **2=Orifice/Grate** (Passes < 1.25 cfs potential flow)
- ↑ **3=Orifice/Grate** (Passes < 3.10 cfs potential flow)

Pond 6-8

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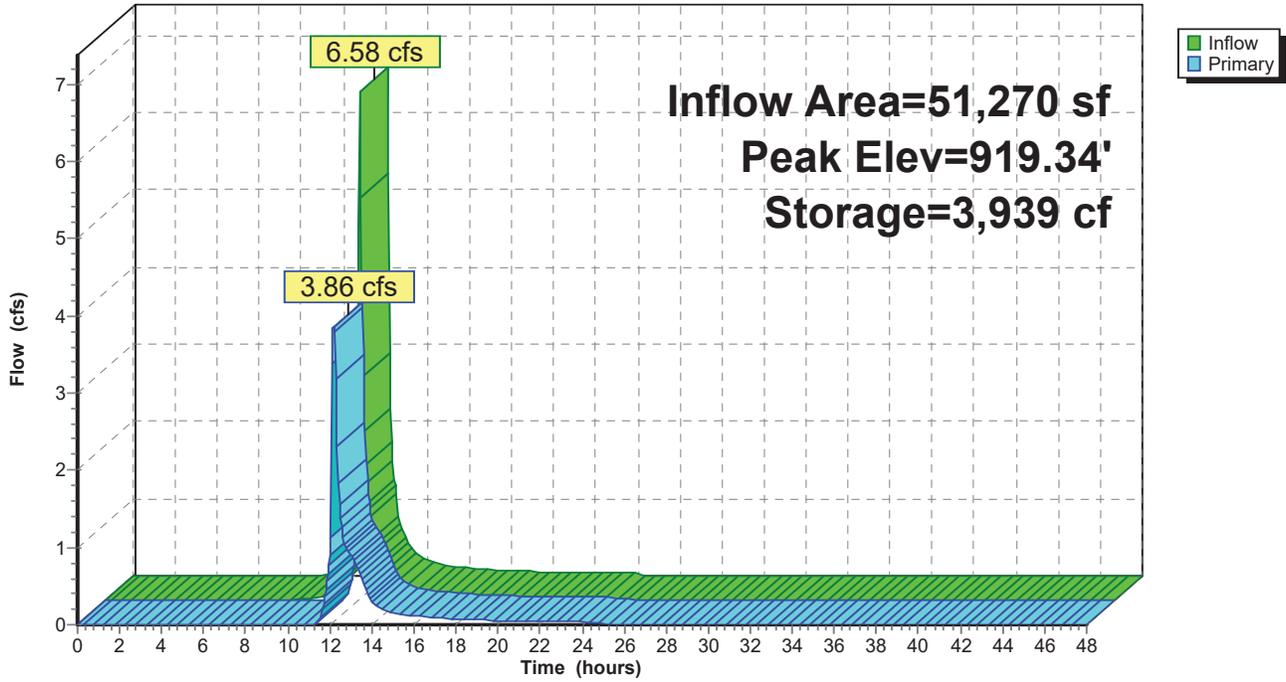
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Pond 12P: Pond 7

Hydrograph



Pond 6-8

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Summary for Pond 15P: Pond 8

Inflow Area = 27,530 sf, 25.16% Impervious, Inflow Depth = 3.29" for 50-Year event
 Inflow = 4.04 cfs @ 12.08 hrs, Volume= 7,545 cf
 Outflow = 2.45 cfs @ 12.14 hrs, Volume= 6,579 cf, Atten= 39%, Lag= 3.7 min
 Primary = 2.45 cfs @ 12.14 hrs, Volume= 6,579 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 919.83' @ 12.14 hrs Surf.Area= 1,932 sf Storage= 2,474 cf

Plug-Flow detention time= 92.5 min calculated for 6,572 cf (87% of inflow)
 Center-of-Mass det. time= 41.8 min (832.4 - 790.6)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	2,819 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	803	0	0
919.00	1,395	1,099	1,099
920.00	2,045	1,720	2,819

Device	Routing	Invert	Outlet Devices
#1	Primary	918.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	918.90'	5.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	919.39'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.43 cfs @ 12.14 hrs HW=919.82' (Free Discharge)
 1=Orifice/Grate (Passes 2.43 cfs of 4.35 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 1.11 cfs @ 4.06 fps)
 3=Orifice/Grate (Orifice Controls 1.32 cfs @ 2.64 fps)

Pond 6-8

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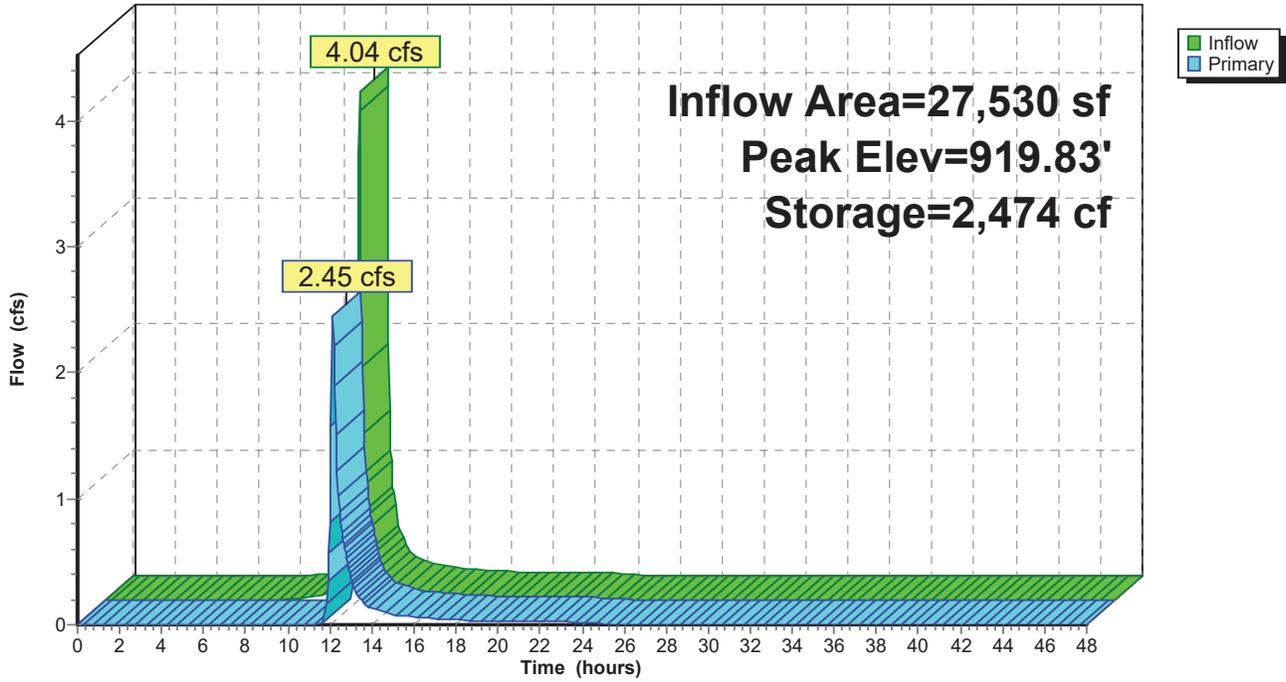
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Pond 15P: Pond 8

Hydrograph



Pond 6-8

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Summary for Pond 18P: Ponds 5 and 6

Inflow Area = 43,778 sf, 22.19% Impervious, Inflow Depth = 3.19" for 50-Year event
 Inflow = 6.28 cfs @ 12.08 hrs, Volume= 11,646 cf
 Outflow = 1.49 cfs @ 12.27 hrs, Volume= 8,875 cf, Atten= 76%, Lag= 11.6 min
 Primary = 1.49 cfs @ 12.27 hrs, Volume= 8,875 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 917.65' @ 12.27 hrs Surf.Area= 5,257 sf Storage= 5,673 cf

Plug-Flow detention time= 182.1 min calculated for 8,866 cf (76% of inflow)
 Center-of-Mass det. time= 114.7 min (906.8 - 792.2)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	7,645 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	1,721	0	0
917.00	3,754	2,738	2,738
918.00	6,061	4,908	7,645

Device	Routing	Invert	Outlet Devices
#1	Primary	917.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	916.40'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	917.28'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.48 cfs @ 12.27 hrs HW=917.65' (Free Discharge)

- ↑ **1=Orifice/Grate** (Orifice Controls 1.48 cfs @ 2.75 fps)
- ↑ **2=Orifice/Grate** (Passes < 0.19 cfs potential flow)
- ↑ **3=Orifice/Grate** (Passes < 1.45 cfs potential flow)

Pond 6-8

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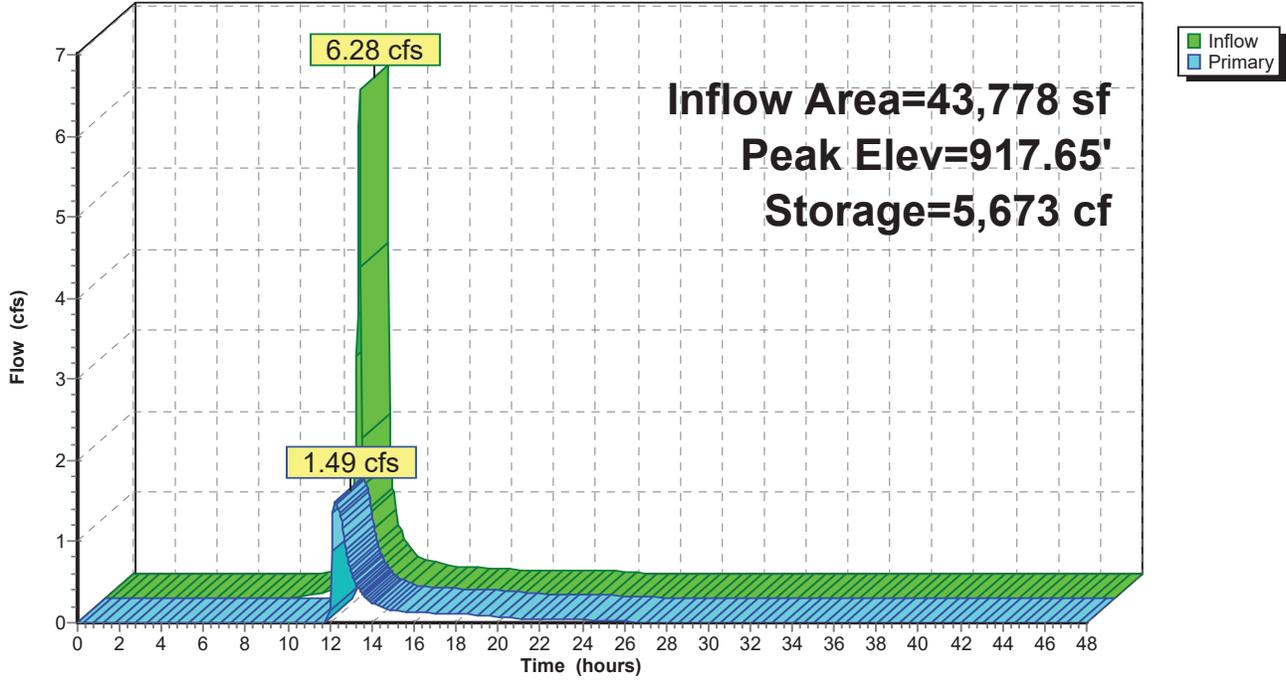
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Pond 18P: Ponds 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A 100-Year Rainfall=5.63"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 12P: Pond 7

Peak Elev=919.53' Storage=4,522 cf Inflow=7.70 cfs 15,587 cf
Outflow=4.19 cfs 14,845 cf

Pond 15P: Pond 8

Peak Elev=919.95' Storage=2,724 cf Inflow=4.68 cfs 8,836 cf
Outflow=2.79 cfs 7,870 cf

Pond 18P: Ponds 5 and 6

Peak Elev=917.79' Storage=6,448 cf Inflow=7.14 cfs 13,678 cf
Outflow=2.03 cfs 10,907 cf

Pond 6-8

NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Pond 12P: Pond 7

Inflow Area = 51,270 sf, 30.67% Impervious, Inflow Depth = 3.65" for 100-Year event
 Inflow = 7.70 cfs @ 12.10 hrs, Volume= 15,587 cf
 Outflow = 4.19 cfs @ 12.19 hrs, Volume= 14,845 cf, Atten= 46%, Lag= 5.3 min
 Primary = 4.19 cfs @ 12.19 hrs, Volume= 14,845 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 919.53' @ 12.19 hrs Surf.Area= 3,246 sf Storage= 4,522 cf

Plug-Flow detention time= 60.6 min calculated for 14,845 cf (95% of inflow)
 Center-of-Mass det. time= 34.6 min (827.7 - 793.2)

Volume	Invert	Avail.Storage	Storage Description
#1	917.00'	6,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
917.00	618	0	0
918.00	1,377	998	998
919.00	2,582	1,980	2,977
920.00	3,835	3,209	6,186

Device	Routing	Invert	Outlet Devices
#1	Primary	917.80'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	917.80'	6.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	918.92'	24.0" x 6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.18 cfs @ 12.19 hrs HW=919.52' (Free Discharge)

- ↑ **1=Orifice/Grate** (Orifice Controls 4.18 cfs @ 5.32 fps)
- ↑ **2=Orifice/Grate** (Passes < 1.34 cfs potential flow)
- ↑ **3=Orifice/Grate** (Passes < 3.74 cfs potential flow)

Pond 6-8

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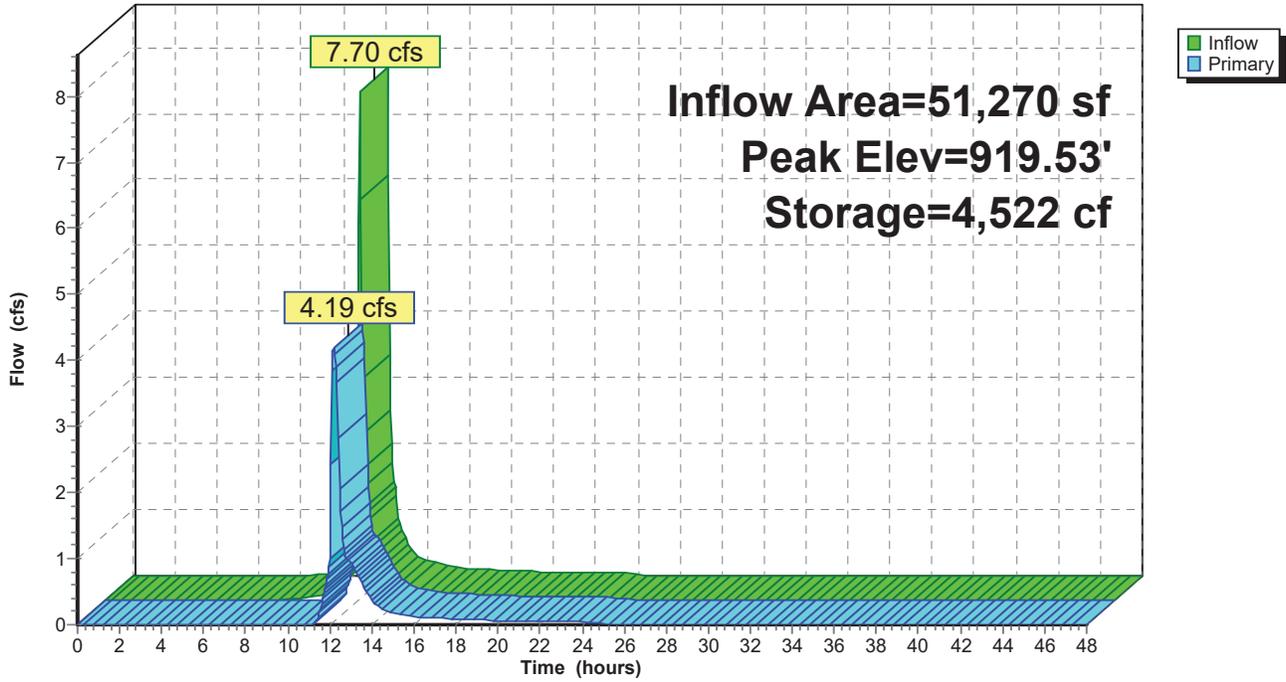
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Pond 12P: Pond 7

Hydrograph



Pond 6-8

NOAA 24-hr A 100-Year Rainfall=5.63"

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Summary for Pond 15P: Pond 8

Inflow Area = 27,530 sf, 25.16% Impervious, Inflow Depth = 3.85" for 100-Year event
 Inflow = 4.68 cfs @ 12.08 hrs, Volume= 8,836 cf
 Outflow = 2.79 cfs @ 12.14 hrs, Volume= 7,870 cf, Atten= 40%, Lag= 3.8 min
 Primary = 2.79 cfs @ 12.14 hrs, Volume= 7,870 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 919.95' @ 12.15 hrs Surf.Area= 2,014 sf Storage= 2,724 cf

Plug-Flow detention time= 84.4 min calculated for 7,862 cf (89% of inflow)
 Center-of-Mass det. time= 38.6 min (826.0 - 787.4)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	2,819 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	803	0	0
919.00	1,395	1,099	1,099
920.00	2,045	1,720	2,819

Device	Routing	Invert	Outlet Devices
#1	Primary	918.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	918.90'	5.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	919.39'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.78 cfs @ 12.14 hrs HW=919.95' (Free Discharge)
 1=Orifice/Grate (Passes 2.78 cfs of 4.55 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 1.20 cfs @ 4.41 fps)
 3=Orifice/Grate (Orifice Controls 1.58 cfs @ 3.15 fps)

Pond 6-8

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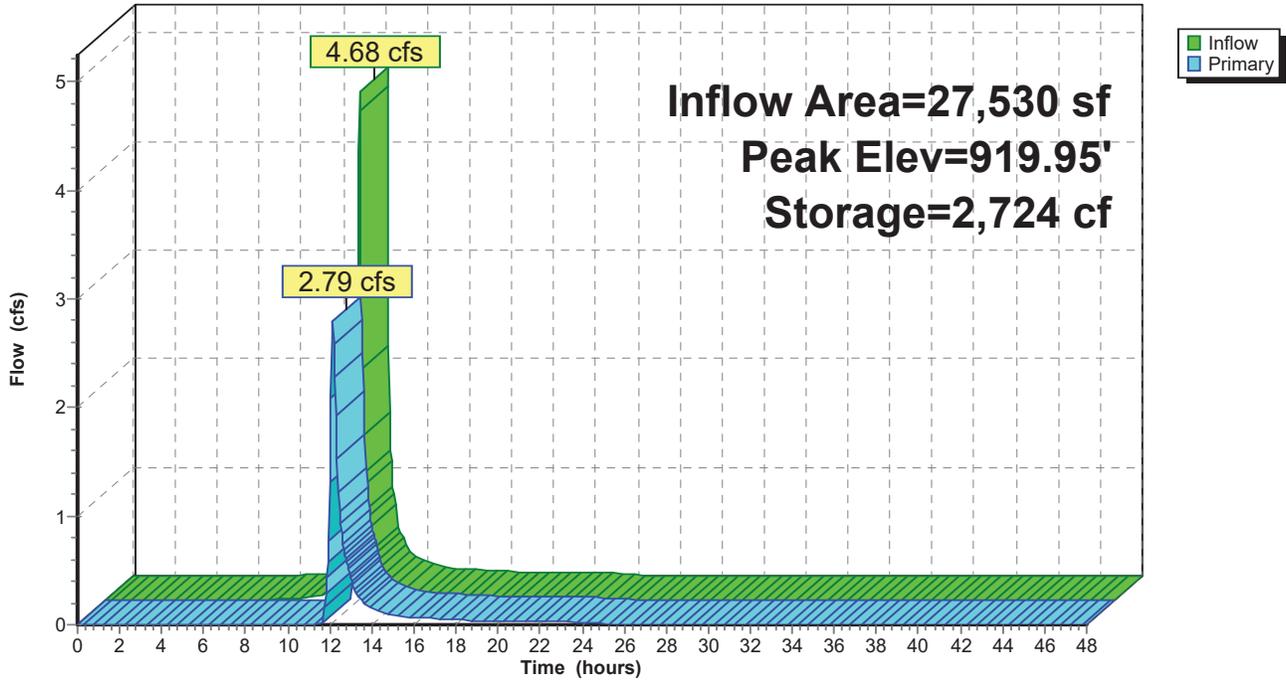
NOAA 24-hr A 100-Year Rainfall=5.63"

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Pond 15P: Pond 8

Hydrograph



Pond 6-8

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Summary for Pond 18P: Ponds 5 and 6

Inflow Area = 43,778 sf, 22.19% Impervious, Inflow Depth = 3.75" for 100-Year event
 Inflow = 7.14 cfs @ 12.07 hrs, Volume= 13,678 cf
 Outflow = 2.03 cfs @ 12.22 hrs, Volume= 10,907 cf, Atten= 72%, Lag= 8.9 min
 Primary = 2.03 cfs @ 12.22 hrs, Volume= 10,907 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 917.79' @ 12.22 hrs Surf.Area= 5,587 sf Storage= 6,448 cf

Plug-Flow detention time= 164.8 min calculated for 10,896 cf (80% of inflow)
 Center-of-Mass det. time= 102.1 min (890.9 - 788.9)

Volume	Invert	Avail.Storage	Storage Description
#1	916.00'	7,645 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	1,721	0	0
917.00	3,754	2,738	2,738
918.00	6,061	4,908	7,645

Device	Routing	Invert	Outlet Devices
#1	Primary	917.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	916.40'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	917.28'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.02 cfs @ 12.22 hrs HW=917.79' (Free Discharge)

- ↑ **1=Orifice/Grate** (Orifice Controls 2.02 cfs @ 3.03 fps)
- ↑ **2=Orifice/Grate** (Passes < 0.21 cfs potential flow)
- ↑ **3=Orifice/Grate** (Passes < 2.35 cfs potential flow)

Pond 6-8

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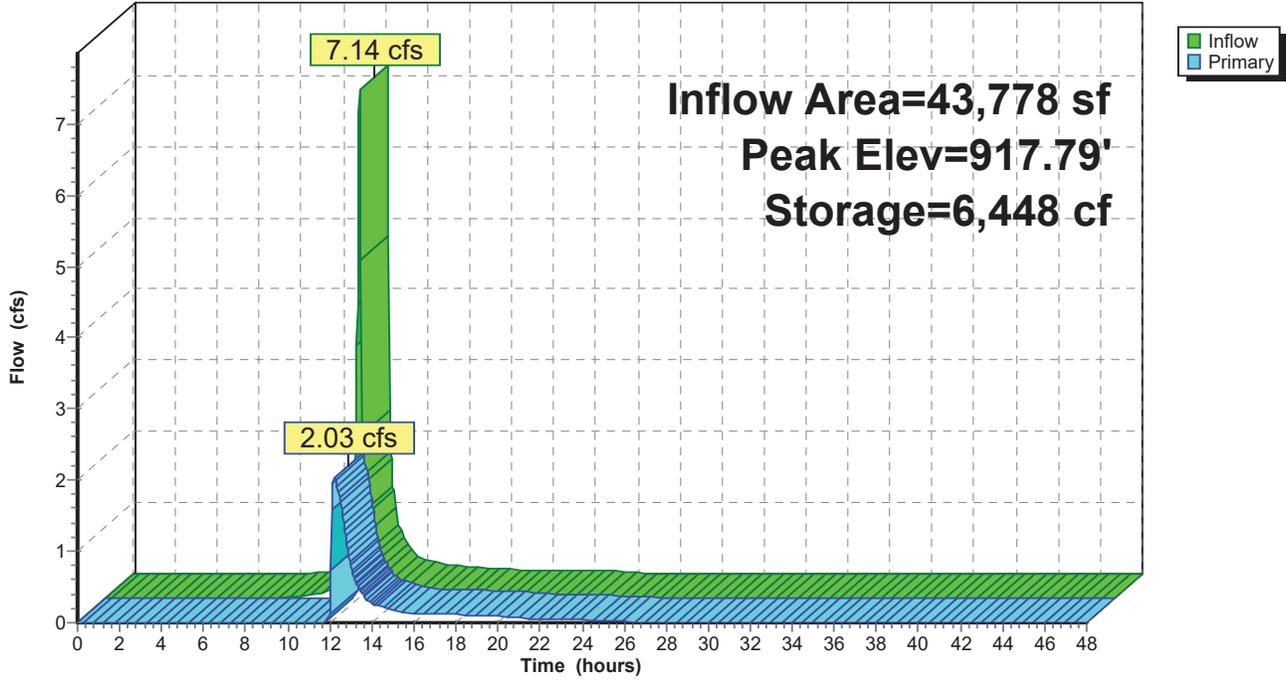
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Pond 18P: Ponds 5 and 6

Hydrograph



Pond 6-8

NOAA 24-hr A WQv Rainfall=1.65"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Pond 12P: Pond 7

Peak Elev=917.97' Storage=958 cf Inflow=0.89 cfs 1,839 cf
Outflow=0.09 cfs 1,097 cf

Pond 15P: Pond 8

Peak Elev=918.94' Storage=1,010 cf Inflow=0.64 cfs 1,164 cf
Outflow=0.01 cfs 198 cf

Pond 18P: Ponds 5 and 6

Peak Elev=916.70' Storage=1,707 cf Inflow=0.94 cfs 1,707 cf
Outflow=0.00 cfs 0 cf

Pond 6-8

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Summary for Pond 12P: Pond 7

Inflow Area = 51,270 sf, 30.67% Impervious, Inflow Depth = 0.43" for WQv event
 Inflow = 0.89 cfs @ 12.11 hrs, Volume= 1,839 cf
 Outflow = 0.09 cfs @ 13.01 hrs, Volume= 1,097 cf, Atten= 90%, Lag= 54.0 min
 Primary = 0.09 cfs @ 13.01 hrs, Volume= 1,097 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 917.97' @ 13.01 hrs Surf.Area= 1,355 sf Storage= 958 cf

Plug-Flow detention time= 254.3 min calculated for 1,096 cf (60% of inflow)
 Center-of-Mass det. time= 151.9 min (992.7 - 840.8)

Volume	Invert	Avail.Storage	Storage Description
#1	917.00'	6,186 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
917.00	618	0	0
918.00	1,377	998	998
919.00	2,582	1,980	2,977
920.00	3,835	3,209	6,186

Device	Routing	Invert	Outlet Devices
#1	Primary	917.80'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	917.80'	6.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	918.92'	24.0" x 6.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.09 cfs @ 13.01 hrs HW=917.97' (Free Discharge)
 1=Orifice/Grate (Passes 0.09 cfs of 0.13 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.09 cfs @ 1.41 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

Pond 6-8

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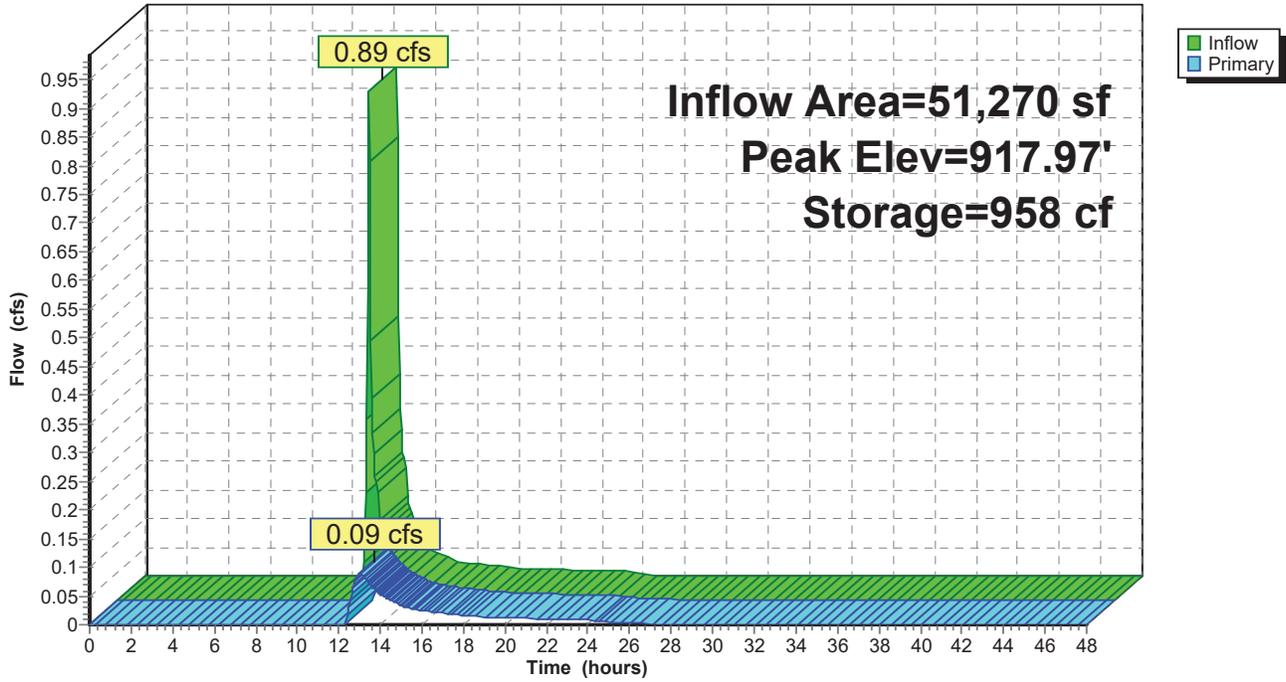
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Pond 12P: Pond 7

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Pond 6-8

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Summary for Pond 15P: Pond 8

Inflow Area = 27,530 sf, 25.16% Impervious, Inflow Depth = 0.51" for WQv event
 Inflow = 0.64 cfs @ 12.09 hrs, Volume= 1,164 cf
 Outflow = 0.01 cfs @ 18.87 hrs, Volume= 198 cf, Atten= 99%, Lag= 406.6 min
 Primary = 0.01 cfs @ 18.87 hrs, Volume= 198 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 918.94' @ 18.87 hrs Surf.Area= 1,357 sf Storage= 1,010 cf

Plug-Flow detention time= 579.5 min calculated for 198 cf (17% of inflow)
 Center-of-Mass det. time= 466.4 min (1,297.7 - 831.2)

Volume	Invert	Avail.Storage	Storage Description
#1	918.00'	2,819 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
918.00	803	0	0
919.00	1,395	1,099	1,099
920.00	2,045	1,720	2,819

Device	Routing	Invert	Outlet Devices
#1	Primary	918.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	918.90'	5.0" Vert. Orifice/Grate X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Device 1	919.39'	24.0" W x 3.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.01 cfs @ 18.87 hrs HW=918.94' (Free Discharge)
 1=Orifice/Grate (Passes 0.01 cfs of 2.52 cfs potential flow)
 2=Orifice/Grate (Orifice Controls 0.01 cfs @ 0.64 fps)
 3=Orifice/Grate (Controls 0.00 cfs)

Pond 6-8

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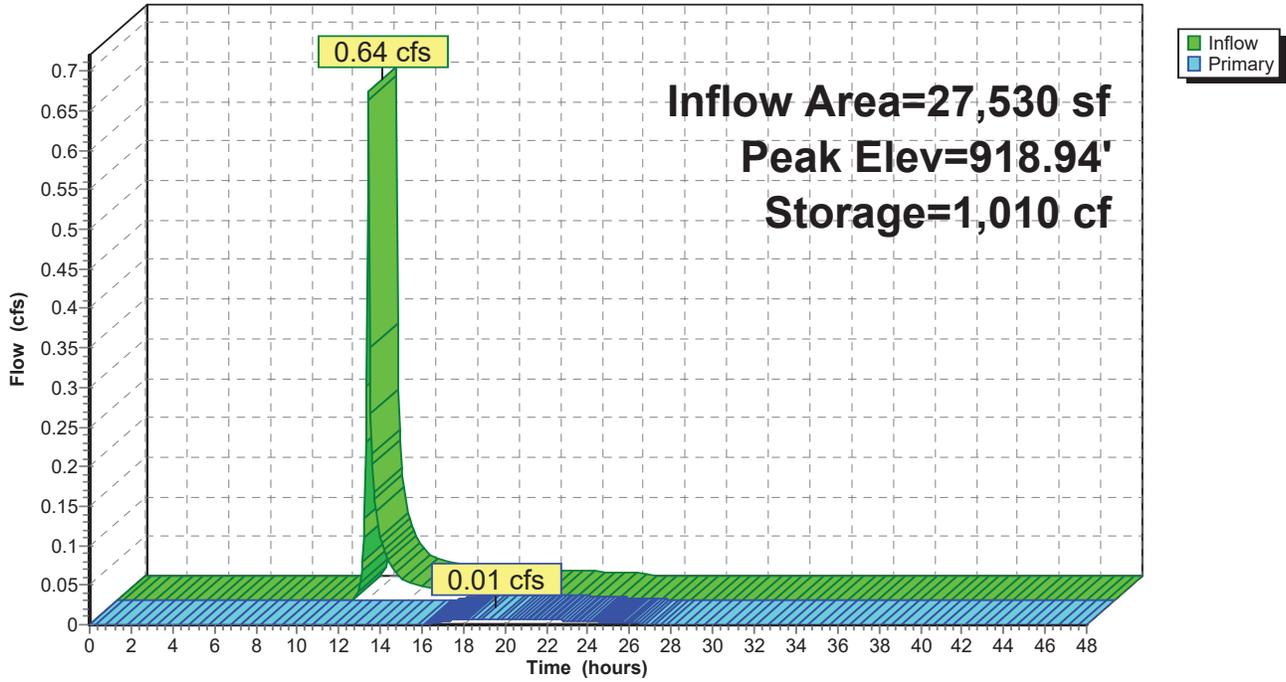
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Pond 15P: Pond 8

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Pond 6-8

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Summary for Pond 18P: Ponds 5 and 6

Inflow Area = 43,778 sf, 22.19% Impervious, Inflow Depth = 0.47" for WQv event
 Inflow = 0.94 cfs @ 12.08 hrs, Volume= 1,707 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

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 916.70' @ 24.15 hrs Surf.Area= 3,147 sf Storage= 1,707 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	916.00'	7,645 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
916.00	1,721	0	0
917.00	3,754	2,738	2,738
918.00	6,061	4,908	7,645

Device	Routing	Invert	Outlet Devices
#1	Primary	917.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#2	Device 1	916.40'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	917.28'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=916.00' (Free Discharge)

- ↑ 1=Orifice/Grate (Controls 0.00 cfs)
- ↑ 2=Orifice/Grate (Controls 0.00 cfs)
- ↑ 3=Orifice/Grate (Controls 0.00 cfs)

Pond 6-8

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Pond 18P: Ponds 5 and 6

Hydrograph

