STORMWATER REPORT

North Stonington Solar

227 Boombridge Road
North Stonington, Connecticut

PREPARED FOR

Greenskies Development Company LLC
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May 2020
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Table of Contents

List of Figures

List of Tables

Appendices

1

Project Summary

Project Description

The Petitioner, Greenskies Clean Energy, LLC, is proposing to construct a 5 Megawatt (MW) solar farm on undeveloped low brush land along with all associated utilities, access paths, fencing, and landscaping to support this use (the Project). When the Project reaches the end of its life cycle, the improvements constructed as part of this petition will be removed and the land will be restored in accordance with the decommissioning plan.

Site Description

The Project Site will be comprised on approximately ±30 acres at the northeastern end of the ±97-acre land comprised of three separate parcels at 227 Boom Bridge Road, (Map 119 / Lot 7862, 0928, 6313) in North Stonington, Connecticut (see Figure 1). The site is bounded by I-95 to the north, residential land to the south and west (zoned Medium Density Residential (R-60)), and commercial land to the east (zoned Highway Commercial (HC)). The site parcels are all within the R-60 zone (Medium Density Residential).

Approximately 4-5 years ago (2015-2016) the site consisted of heavily wooded forestland. According to the land owner, it was cleared of trees for potential farming purposes but the soils were not found to be suitable for agricultural purposes. The area was left uninhabited and has since grown to be covered with low lying brush and saplings. In addition, there are on-site wetland systems in the northern, western, and southwestern portions of the Project area.

Under existing conditions, runoff from the Project area generally flows untreated towards the on-site wetland systems with approximately 1/3 of the site flowing to the east towards adjacent properties to waterways that appear to be tributary to the Pawcatuck River located about one (1) mile from the Site.

According to available soil mapping[1], the on-Site soils within the Project area belong to the Hydraulic Soil Group "B", indicating that the soils have a moderate infiltration rate when thoroughly wet. However, additional NRCS mapping indicates approximately 56 centimeters to a restrictive layer. Hydrologic soil group test pit investigation and a basin geotechnical investigation performed February 10-11, 2020, show traces of mottling (in 6 out of 9 locations) at approximately 2 feet below the ground surface. This indicates seasonal high groundwater just below the surface and confirms the depth to restrictive layer as shown in the additional NRCS mapping. See Appendix B for NRCS Web Soil Survey output and field-performed test pit and infiltration data.

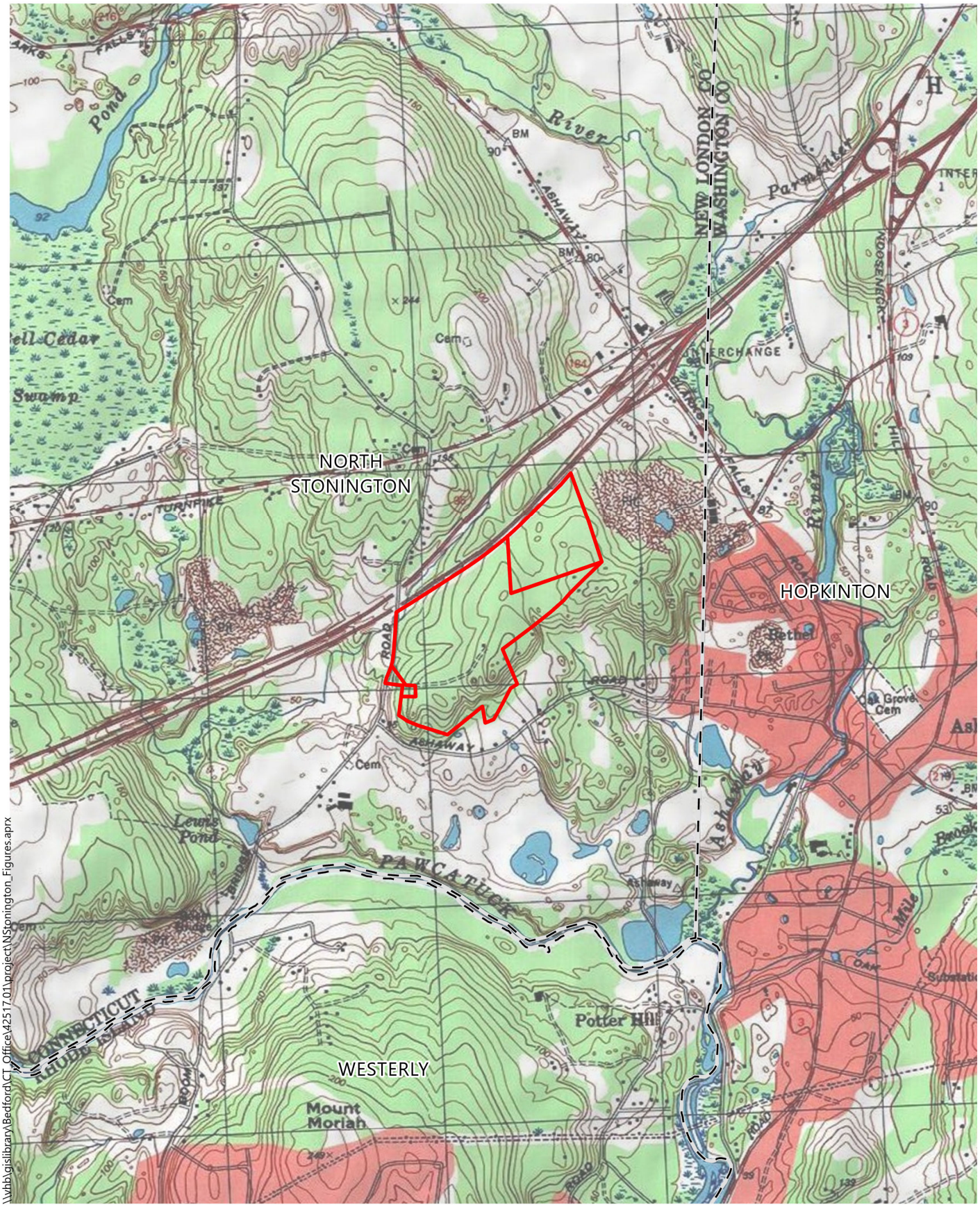
According to available CTDEEP Groundwater Classification maps, groundwater at the site is GA, indicating designated uses are existing private and potential public or private supplies of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. The CTDEEP Aquifer Protection Areas Mapping website does not show the site within an Aquifer Protection Area. See Appendix A for mapping.

Methodology

The Project was designed to incorporate measures provided in the Connecticut Stormwater Quality Manual (CTDEEP 2004). The conclusion of this analysis is that the proposed improvements will not increase the post-development peak runoff rates in comparison to existing pre-development rates at any of the critical design points analyzed and the quality of stormwater runoff leaving the Site will be treated prior to discharge from the Site. It is also proposed to meet State channel protection requirements for frequent rainfall events.

[1] https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

Figure 1: Site Location Map



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0 1000 2000 4000 Feet

Limit of Investigation

Town Boundary

Clean Focus | North Stonington, Connecticut

Site Locus

Source: VHB, CTDEEP, USGS, ArcGIS Online

2

Existing Drainage Conditions

Summary

Under existing conditions, untreated stormwater runoff from most of the Site flows overland towards the on-site wetlands. A small area of the eastern portion of the site runs overland to the neighboring properties where it is likely captured and discharged to a waterbody tributary of the Pawcatuck River (See Figure 2). The Site is generally at its highest elevation in the central-southern portion of the Project and slopes down in all directions to the adjacent wetland systems and adjacent woodland east of the site. The majority of the Project area is comprised of brush and saplings. The site was cleared 4-5 years ago by the landowner for farming purposes. Upon discovering the area was unsuitable for farming, the land was left vacant and has since become overgrown with brush and weeds. Terrain slopes in the Project area range from 0% to approximately 25% with the majority of the Project area at less than 15% existing slope. Most of the Project Site perimeter is woodland.

Hydrologic Information

For the existing conditions hydrologic analysis, the Site is divided into 9 drainage areas, which have been identified as areas at the Project limits where flow begins to concentrate naturally. Table 1 provides a summary of the existing conditions hydrologic data. Figure 2 illustrates the existing drainage patterns on the Site. Only the areas of the Site that are proposed to be affected by construction have been included in this drainage analysis, while portions of the Site unaffected by construction have been excluded.

Drainage Area 1 - This ±4.7-acre area is located in the central western portion of the Site. Stormwater in this area flows untreated to the western pocket wetlands located on-site which drains south across residential property.

Drainage Area 2 - This ±1.7-acre area is located at the northwestern portion of the Site. Stormwater in this area flows untreated generally to the west to the pocket wetlands located on-site adjacent to Interstate 95.

Drainage Area 3 - This ±3.2-acre area is located at the central-northwestern portion of the Site. Stormwater in this area flows untreated generally to the west to the pocket wetlands located on-site adjacent to Interstate 95.

Drainage Area 4- This ±2.0-acre area is located at the central-northeastern portion of the Site. Stormwater in this area flows untreated generally to the north to a wetland system which drains parallel to Interstate 95.

Drainage Area 5- This ±2.0-acre area is located at the northeastern portion of the Site. Stormwater in this area flows east off-site to commercial property.

Drainage Area 6- This ±5.7-acre area is located at the western portion of the Site. Stormwater in this area flows untreated generally to the east off-site to commercial property.

Drainage Area 7- This ±3.6-acre area is located in the southeastern portion of the Site. Stormwater in this area flows untreated generally to the south across residential property.

Drainage Area 8- This ±1.9-acre area is located in the southern portion of the Site. Stormwater in this area flows untreated generally to the south across residential property.

Drainage Area 9- This ±3.6-acre area is located in the southwestern portion of the Site. Stormwater in this area flows untreated generally to the south across residential property.

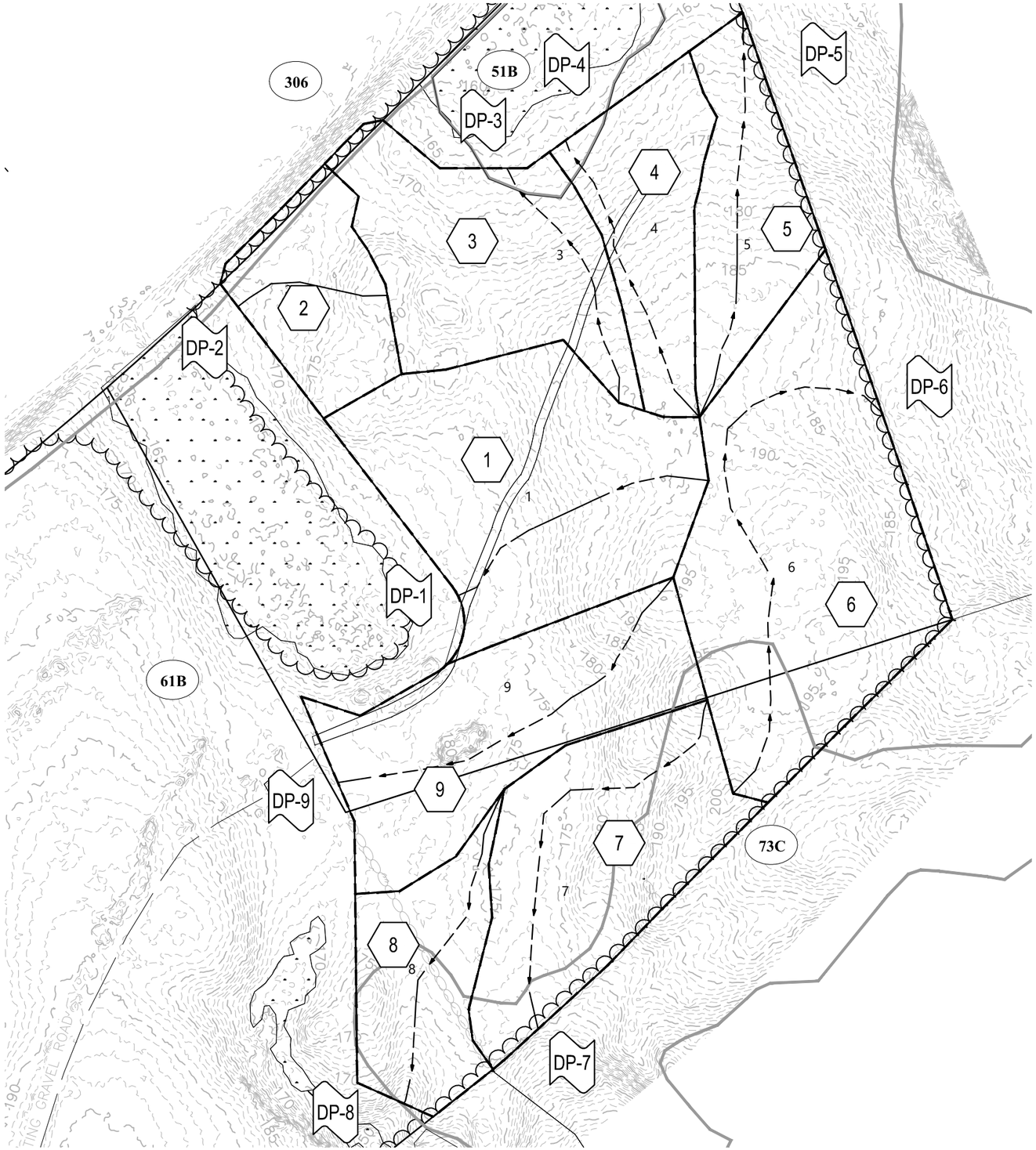
Table 1 summarizes the key hydrologic parameters for each drainage area used in the existing conditions analysis.

Table 1 Existing Conditions Hydrologic Data

Drainage Area	*Discharge Location*	*Area (acres)*	*Curve Number*	*Time of Concentration (min)*
1	DP-1	4.7	49	23.2
2	DP-2	1.7	48	15.6
3	DP-3	3.2	49	15.9
4	DP-4	2.0	49	19.9
5	DP-5	2.0	48	23.7
6	DP-6	5.7	48	28.0

7	DP-7	3.6	48	22.1
8	DP-8	1.9	48	31.9
9	DP-9	3.6	49	27.9

Figure 2: Existing Drainage Areas



Legend

SYMBOLS

DP-X — **DESIGN POINT**

X — **DRAINAGE AREA DESIGNATION**

LINETYPES

DRAINAGE AREA BOUNDARY

TIME OF CONCENTRATION FLOW LINE

SOIL TYPE BOUNDARY

WETLAND BOUNDARY

SCS SOIL CLASSIFICATIONS

61B — **CANTON AND CHARLTON FINE SANDY LOAMS, 0 TO 8 PERCENT SLOPES, VERY STONY**

73C — **CHARLTON-CHATFIELD COMPLEX, 0 TO 15 PERCENT SLOPES, VERY ROCKY**

51B — **SUTTON FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY**

306 — **UDORTHENTS-URBAN LAND COMPLEX**

0 100 200 Feet

Existing Drainage Conditions **Figure 2**

North Stonington Solar
227 Boom Bridge Road

04/20/20

3

Proposed Drainage Conditions

Summary

The Site has been designed to mimic existing topography and drainage patterns to maintain the current hydrologic balance. In the majority of the on-Site areas, the Project proposes to install permanent turf-forming grasses to help stabilize the topsoil from erosion, sequester nutrients and pollutants, and lower runoff rates from the facility to the surrounding discharge points. Mature vegetation has been preserved to the maximum extents practicable and no tree clearing is proposed. As a result, the proposed Project will have minimal impact to surrounding ecologically sensitive areas.

The only impervious surfaces that exist at the Site today are the existing access paths, and the only impervious surfaces proposed to be constructed are access roads and small concrete pads for utility equipment. Minimal work will be performed within 100 feet of the on-Site wetlands - a small section of the gravel access road in the southwestern portion of the site as well as a portion of stormwater basin 9 encroaches within the 100-ft wetland buffer. Once operational, vehicular access to the Project will be limited to infrequent maintenance visits. The vegetated buffers and proposed stormwater basins will provide water quality treatment in all portions of the Site.

Hydrologic Information

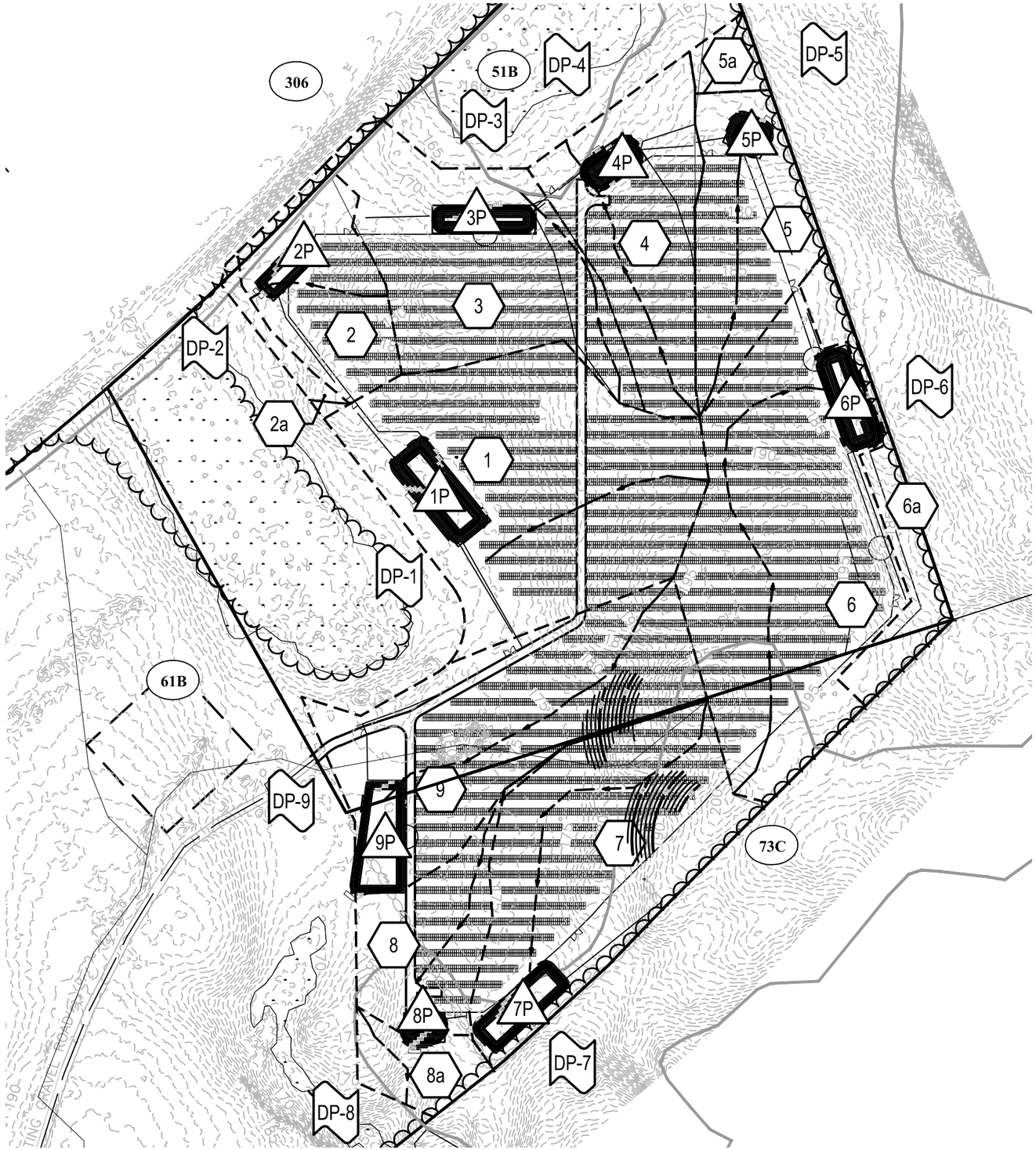
Natural drainage patterns will be maintained throughout the Site so that the proposed hydrologic conditions will closely match existing conditions. The proposed conditions analysis utilized the same 9 drainage areas from existing conditions. The 9 drainage areas are broken down further to sub drainage areas as shown in the proposed conditions area map (see Figure 3). In accordance with the CTDEEP guidance document Guidance Regarding Solar Arrays, a reduction in Hydrologic Soil Group of one step has been considered in the proposed conditions hydrologic model for developed portions of the site.

Table 2 summarizes the key hydrologic parameters for each drainage area used in the proposed conditions analysis. Only the areas of the Site that are proposed to be disturbed by construction have been included in this drainage analysis, while portions of the Site unaffected by construction have been excluded.

Table 2 Proposed Conditions Hydrologic Data

Drainage Area	*Discharge Location*	*Area (acres)*	*Curve Number*	*Time of Concentration (min)*
1	DP-1	4.7	68	14.8
2	DP-2	1.5	59	10.5
2a	DP-2	0.2	48	10.3
3	DP-3	3.2	68	10.4
4	DP-4	2.0	67	13.6
5	DP-5	1.7	62	14.8
5a	DP-5	0.3	48	9.2
6	DP-6	4.8	66	24.1
6a	DP-6	0.9	48	10.0
7	DP-7	3.6	64	13.6
8	DP-8	1.3	61	29.2
8a	DP-8	0.6	48	9.0
9	DP-9	3.6	68	15.5

Figure 3: Proposed Drainage Areas



0 100 200 Feet

Legend

SYMBOLS

- DP-X — DESIGN POINT
- X — DRAINAGE AREA DESIGNATION
- 6P — DRAINAGE POND

LINETYPES

- DRAINAGE AREA BOUNDARY
- TIME OF CONCENTRATION FLOW LINE
- SOIL TYPE BOUNDARY
- WETLAND BOUNDARY

SCS SOIL CLASSIFICATIONS

- 61B — CANTON AND CHARLTON FINE SANDY LOAMS, 0 TO 8 PERCENT SLOPES, VERY STONY
- 73C — CHARLTON-CHATFIELD COMPLEX, 0 TO 15 PERCENT SLOPES, VERY ROCKY
- 51B — SUTTON FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY
- 306 — UDORTHENTS-URBAN LAND COMPLEX

vhb

Proposed Drainage Conditions **Figure 3**

North Stonington Solar
227 Boom Bridge Road

04/20/20

4

Hydrologic Analysis

Hydrologic Analysis

The rainfall-runoff was evaluated for the 2-, 25-, 50-, and 100-year storm recurrence. Rainfall volumes used for this analysis were based on the National Weather Service NOAA Hydrometeorological Design Studies Center, Type III, 24—hour storm event for the Site. Rainfall depths were 3.42, 6.10, 6.87, 7.68 inches respectively. Runoff coefficients for the pre- and post- development conditions provided in the tables below were determined using NRCS Technical Release 55 (TR-55) methodology as provided in the HydroCAD reports found in Appendix D.

In accordance with the guidance of CTDEEP's Guidance Regarding Solar Arrays, the proposed conditions have been modelled with a loss of one Hydrologic Soil Group class to conservatively estimate the effects of compaction during construction. The results of the pre- and post-development hydrologic models indicate that peak runoff rates from the Site will be reduced at all design points for all design storms with the implementation of the proposed permanent stormwater basins. The field soil test data was used in the design of the stormwater basins. One-half of the lowest field-tested infiltration rate for each infiltration basin has been assumed in the hydrologic model, to be conservative.

It is noted that no hydraulic analysis has been performed because no closed pipe systems are proposed or impacted by the proposed development.

Table 3 presents a summary of the existing and proposed conditions peak discharge rates where stormwater basins are proposed.

Table 3 Peak Discharge Rates (cfs*)

Watershed	2-year	25-year	50-year	100-year
Design Point 1				
Existing	0.12	3.05	4.44	6.08
Proposed	0.00	1.26	2.86	5.67
Design Point 2				
Existing	0.03	1.13	1.70	2.37
Proposed	0.00	0.52	1.39	2.43
Design Point 3				
Existing	0.09	2.40	3.52	4.82
Proposed	0.00	0.87	2.08	4.41
Design Point 4				
Existing	0.06	1.39	2.04	2.79
Proposed	0.00	0.22	0.84	2.38
Design Point 5				
Existing	0.04	1.14	1.69	2.34
Proposed	0.01	0.21	0.54	1.66
Design Point 6				
Existing	0.11	3.13	4.63	6.39
Proposed	0.02	0.71	1.47	4.16
Design Point 7				
Existing	0.07	2.13	3.16	4.38
Proposed	0.00	0.96	2.28	4.33
Design Point 8				
Existing	0.04	0.98	1.45	2.00
Proposed	0.01	0.46	1.07	1.97
Design Point 9				
Existing	0.07	2.17	3.15	4.30
Proposed	0.00	0.94	2.12	4.30

* Expressed in cubic feet per second

Floodplain Information / Analysis

The Site is generally elevated above the surrounding wetlands. The entire portion of the Site is within unshaded Zone X (Area of Minimal Flood Hazard) according to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map No. 09011C0416G, dated July 18, 2011 (included in Appendix A).

Water Quality Volume

Water Quality Volume (WQV) is based upon the first inch of rainfall, or a 1-inch rainfall event, over the acreage of proposed impervious surfaces for the development. Neither the solar panels nor the concrete equipment pads will be subject to vehicular access nor will they produce any pollutants to stormwater runoff. The crushed stone access paths will be trafficked infrequently and the grassy meadows downstream of the paths will provide residence time of stormwater runoff to remove the small amount of sediment from runoff.

Water Quality Flow

Water Quality Flow (WQF) is a rate of stormwater runoff based upon the first inch of rainfall, or a 1-inch rainfall event. This regulation is generally followed for "flow-through" treatment devices. As the proposed development does not incorporate any "flow-through" water quality treatment devices, WQF is not applicable to this project.

Stream Channel Protection

Stream channel protection is provided at the discharge point of each permanent stormwater basin, in accordance with the guidance in 2004 CTDEEP Stormwater Quality Manual. The 2-year, 24-hour post-development peak flow rate is mitigated to 50% or less of the 2-year, 24-hour pre-development peak flow for each watershed containing development.

Appendix A:

FEMA Flood Insurance Rate Map

NOAA Rainfall Depth Estimates

CTDEEP Groundwater Classification Map

Aquifer Protection Area Mapping

NOAA Rainfall Depth Estimates

NOAA Atlas 14, Volume 10, Version 3
Location name: North Stonington, Connecticut, USA*
Latitude: 41.4289°, Longitude: -71.8092°
Elevation: 187.47 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.331 (0.255-0.429)	0.399 (0.307-0.518)	0.511 (0.392-0.664)	0.603 (0.460-0.789)	0.731 (0.541-0.987)	0.826 (0.601-1.13)	0.927 (0.656-1.31)	1.04 (0.699-1.49)	1.21 (0.783-1.77)	1.35 (0.853-2.01)
10-min	0.469 (0.361-0.608)	0.565 (0.435-0.734)	0.723 (0.555-0.941)	0.854 (0.651-1.12)	1.03 (0.767-1.40)	1.17 (0.850-1.61)	1.31 (0.930-1.86)	1.48 (0.991-2.11)	1.71 (1.11-2.51)	1.91 (1.21-2.84)
15-min	0.551 (0.425-0.715)	0.665 (0.512-0.863)	0.851 (0.653-1.11)	1.01 (0.767-1.31)	1.22 (0.902-1.65)	1.38 (1.00-1.89)	1.55 (1.09-2.19)	1.74 (1.17-2.48)	2.02 (1.30-2.96)	2.25 (1.42-3.34)
30-min	0.764 (0.588-0.990)	0.924 (0.710-1.20)	1.19 (0.909-1.54)	1.40 (1.07-1.83)	1.70 (1.26-2.30)	1.92 (1.40-2.64)	2.16 (1.53-3.05)	2.43 (1.63-3.47)	2.82 (1.83-4.14)	3.14 (1.99-4.68)
60-min	0.976 (0.751-1.26)	1.18 (0.909-1.53)	1.52 (1.17-1.98)	1.80 (1.37-2.35)	2.18 (1.62-2.95)	2.47 (1.80-3.39)	2.78 (1.97-3.92)	3.12 (2.10-4.46)	3.62 (2.35-5.31)	4.04 (2.56-6.01)
2-hr	1.28 (0.994-1.66)	1.55 (1.20-2.01)	1.99 (1.54-2.58)	2.36 (1.81-3.06)	2.86 (2.13-3.84)	3.24 (2.36-4.42)	3.63 (2.59-5.11)	4.09 (2.76-5.80)	4.75 (3.09-6.92)	5.30 (3.37-7.83)
3-hr	1.50 (1.16-1.93)	1.81 (1.40-2.33)	2.31 (1.79-2.99)	2.73 (2.10-3.54)	3.31 (2.47-4.44)	3.75 (2.74-5.10)	4.20 (3.00-5.89)	4.73 (3.19-6.69)	5.49 (3.58-7.96)	6.13 (3.91-9.01)
6-hr	1.93 (1.51-2.47)	2.31 (1.80-2.96)	2.94 (2.28-3.78)	3.46 (2.67-4.46)	4.18 (3.13-5.56)	4.72 (3.47-6.38)	5.28 (3.79-7.35)	5.94 (4.03-8.34)	6.89 (4.51-9.92)	7.69 (4.92-11.2)
12-hr	2.42 (1.90-3.09)	2.89 (2.26-3.68)	3.65 (2.84-4.65)	4.28 (3.32-5.48)	5.14 (3.87-6.80)	5.79 (4.28-7.78)	6.47 (4.66-8.95)	7.27 (4.95-10.1)	8.42 (5.53-12.0)	9.38 (6.03-13.6)
24-hr	2.87 (2.26-3.63)	3.42 (2.69-4.33)	4.32 (3.39-5.49)	5.07 (3.95-6.46)	6.10 (4.62-8.02)	6.87 (5.10-9.17)	7.68 (5.56-10.6)	8.63 (5.90-11.9)	10.0 (6.60-14.2)	11.2 (7.19-16.0)
2-day	3.21 (2.54-4.04)	3.85 (3.05-4.85)	4.91 (3.86-6.19)	5.78 (4.53-7.32)	6.98 (5.31-9.13)	7.88 (5.88-10.5)	8.83 (6.42-12.1)	9.93 (6.83-13.7)	11.5 (7.64-16.2)	12.9 (8.34-18.4)
3-day	3.47 (2.75-4.36)	4.16 (3.30-5.23)	5.29 (4.18-6.66)	6.22 (4.89-7.86)	7.51 (5.73-9.79)	8.48 (6.34-11.2)	9.50 (6.92-12.9)	10.7 (7.35-14.6)	12.4 (8.22-17.3)	13.8 (8.95-19.6)
4-day	3.72 (2.95-4.65)	4.43 (3.52-5.56)	5.61 (4.44-7.05)	6.59 (5.19-8.30)	7.93 (6.06-10.3)	8.94 (6.70-11.8)	10.0 (7.29-13.5)	11.2 (7.75-15.3)	13.0 (8.64-18.1)	14.4 (9.39-20.4)
7-day	4.41 (3.52-5.49)	5.18 (4.13-6.47)	6.45 (5.13-8.07)	7.51 (5.93-9.42)	8.96 (6.87-11.6)	10.0 (7.55-13.2)	11.2 (8.18-15.0)	12.5 (8.66-16.9)	14.3 (9.58-19.9)	15.9 (10.4-22.3)
10-day	5.09 (4.07-6.33)	5.90 (4.72-7.35)	7.23 (5.76-9.02)	8.33 (6.60-10.4)	9.85 (7.57-12.7)	11.0 (8.28-14.3)	12.2 (8.91-16.3)	13.5 (9.39-18.2)	15.4 (10.3-21.2)	16.9 (11.0-23.6)
20-day	7.21 (5.80-8.91)	8.09 (6.50-10.0)	9.52 (7.63-11.8)	10.7 (8.54-13.3)	12.4 (9.52-15.7)	13.6 (10.3-17.5)	14.9 (10.8-19.5)	16.2 (11.3-21.7)	17.8 (12.0-24.4)	19.1 (12.6-26.5)
30-day	8.97 (7.24-11.1)	9.90 (7.98-12.2)	11.4 (9.18-14.1)	12.7 (10.1-15.7)	14.4 (11.1-18.2)	15.8 (11.9-20.2)	17.1 (12.4-22.2)	18.3 (12.9-24.5)	19.9 (13.4-27.1)	20.9 (13.8-28.9)
45-day	11.1 (9.02-13.7)	12.2 (9.82-14.9)	13.8 (11.1-17.0)	15.2 (12.1-18.7)	17.0 (13.2-21.4)	18.5 (14.0-23.5)	19.9 (14.5-25.6)	21.1 (14.9-28.0)	22.5 (15.3-30.6)	23.4 (15.5-32.2)
60-day	13.0 (10.5-15.9)	14.0 (11.4-17.2)	15.8 (12.7-19.4)	17.2 (13.8-21.3)	19.3 (14.9-24.1)	20.9 (15.8-26.4)	22.3 (16.2-28.6)	23.6 (16.6-31.1)	24.9 (16.9-33.7)	25.7 (17.0-35.3)

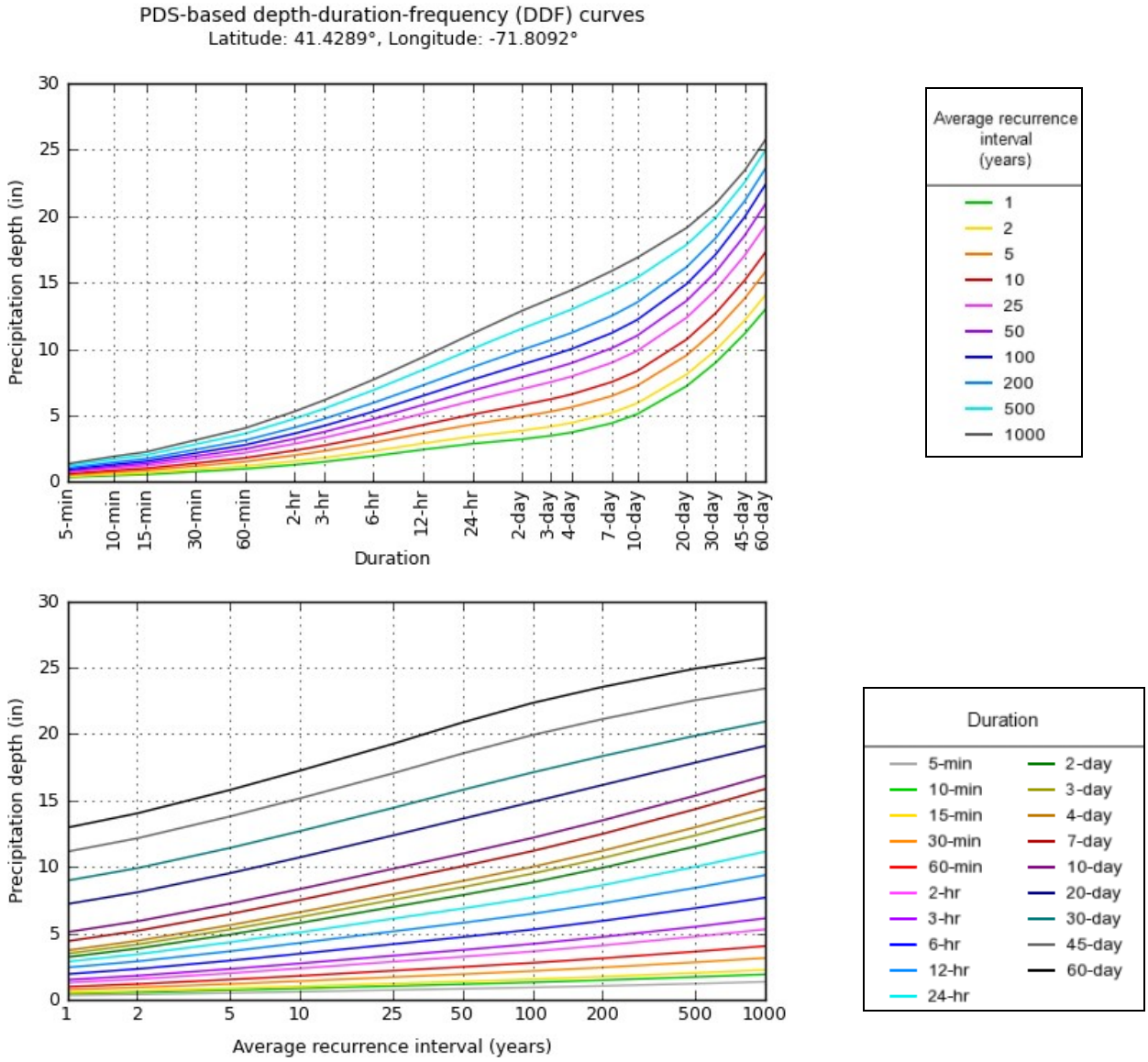
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



NOAA Atlas 14, Volume 10, Version 3

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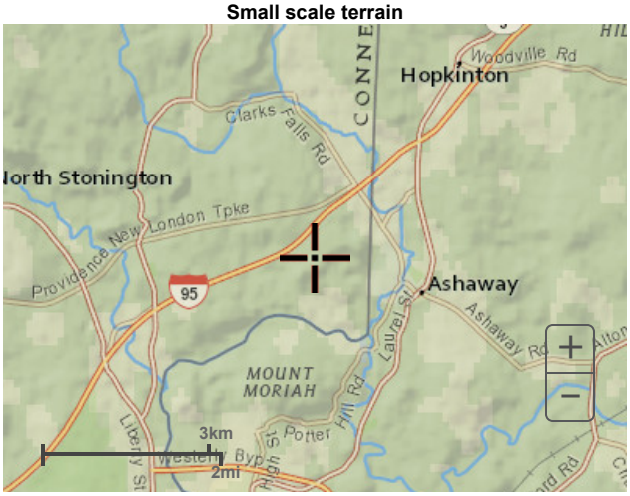
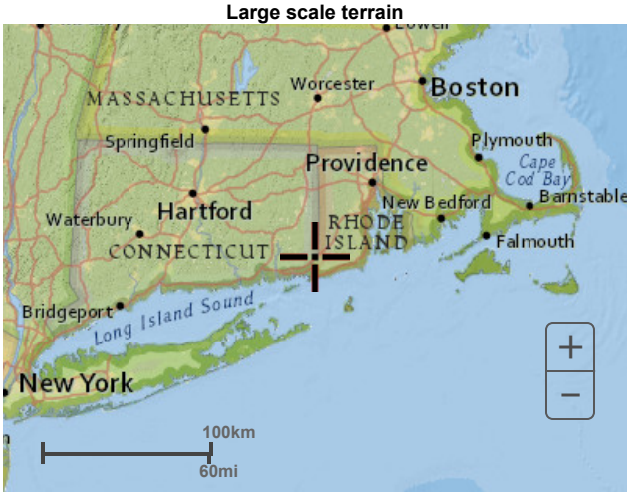
Back to Top

Maps & aerials

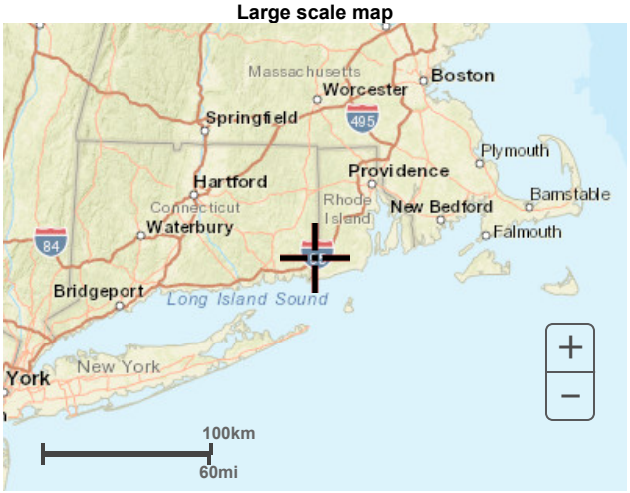
Small scale terrain



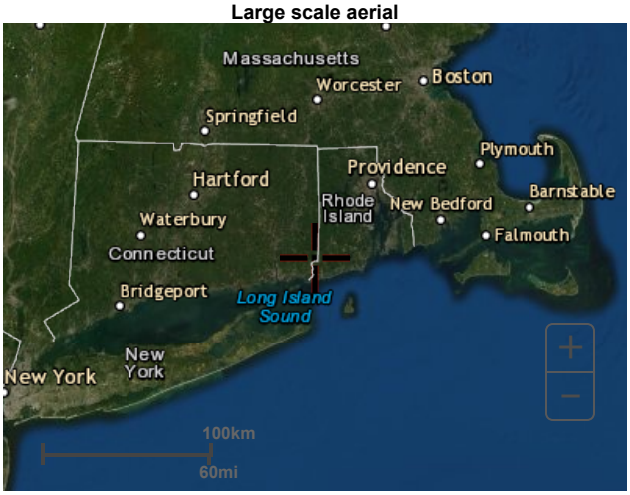
Large scale terrain



Large scale map



Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

FEMA Flood Insurance Rate Map

National Flood Hazard Layer FIRMette

FEMA

41°26'13.45"N

71°48'36.27"W

71°47'58.82"W

41°25'46.48"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/9/2020 at 3:12:44 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

CTDEEP Groundwater Classification Map

WATER QUALITY CLASSIFICATIONS
NORTH STONINGTON, CT

SURFACE WATER QUALITY CLASSES

A	A
AA	AA
B, B*	B, B*
SA	SA
SB	SB

NOTES:
Surface Water Classifications beginning with S refer to Coastal and Marine Surface Water.
B* is a subset of Class B where no direct wastewater discharges are allowed other than those consistent with Class AA, A and SA surface waters.

GROUND WATER QUALITY CLASSES

- GA (white background)
- GAA, GAAs
- GA, GAA may not meet current standards
- GB
- GC
- Area of Contribution to Public Supply Well
- Final Aquifer Protection Area (Level A)
- Major Basin Boundary

EXPLANATION

WATER QUALITY CLASSIFICATIONS (WQC) MAPS are one of the elements of the Water Quality Standards (WQS) for the State of Connecticut. The WQS are a part of Connecticut's clean water program and are essential for protecting and improving water quality. The WQS follow the principles of Connecticut's Clean Water Act which is in Chapter 446K of the Connecticut General Statutes. The WQS provide policy guidance in many areas, for example decisions on acceptable discharges to water resources, siting of landfills, remediation or prioritization of municipal sewerage system projects. The first two elements of the WQS are the Standards, which set an overall policy for management of water quality, and the Criteria, which are descriptive and numerical standards that describe the allowable parameters and goals for various water quality classifications. A discussion of these two elements is found in the Water Quality Standards document available on the CT DEEP website. The third element is the Classifications and the Water Quality Classification Maps which show the Classification assigned to each surface and groundwater resource throughout the State. The WQS are adopted using a public participation process. The WQC maps are also adopted using a public participation process but go through hearings separately from the Standards and Criteria hearings. Revision and adoption of the WQC data occurs in accordance with the public participation procedures contained in Section 22a-426 of the Connecticut General Statutes. Ground WQC is subject to Connecticut regulation and changes must be reviewed and adopted. All changes to the Surface WQC require an adoption process which is subject to federal review and approval in addition to CT regulation. The adoption dates for the WQC by major drainage basin are: Housatonic River, Hudson River and Southwest Coastal Basins - March 1999; Connecticut River and South Central Coastal Basins - February 1993; Thames River, Pawcatuck River and Southeast Coastal Basins - December 1986. Surface Water Classifications do not change after the adoption date until the next major revision. Ground Water Classifications may change after the adoption date under specific circumstances. The map may have more than one WQC adoption date because a town may be in more than one major drainage basin.

SURFACE WATERS in Connecticut are divided into freshwater classified as AA, A, B or B* and saline waters classified as SA or SB. Class AA designated uses are existing or proposed drinking water supplies; habitat for fish and other aquatic life and wildlife; recreation; and water supply for industry and agriculture. Class A designated uses are habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; navigation; and water supply for industry and agriculture. Class SA designated uses are habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for direct human consumption; recreation; industrial water supply; and navigation. Class B designated uses are habitat for fish and aquatic life and wildlife; recreation; navigation; and industrial and agricultural water supply. Class B*, applicable to Candlewood Lake, is a subset of Class B and is identical in all ways to the designated uses, criteria and standards for Class B waters except for the restriction on direct discharges. Class SB designated uses are habitat for marine fish and aquatic life and wildlife; commercial shellfish harvesting; recreation; industrial water supply; and navigation.

Surface waters which are not specifically classified shall be considered as Class A or Class AA. Surface waters in GA ground water areas are assumed Class A or Class SA unless otherwise indicated. Surface waters in GAA ground water areas are assumed Class AA unless otherwise indicated.

On the WQC map a surface water quality goal of A is represented by blue colored water bodies. Surface water quality goal of AA is represented by purple colored water bodies. Surface water quality goal of B is represented by gold colored water bodies.

GROUND WATERS in Connecticut are classified as GAA, GA, GB and GC. Class GAA designated uses are existing or potential public supply of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. The Class GAAs is a subclass of GAA for ground water that is tributary to a public water supply reservoir. The area of contribution to a public water supply well is represented by a 500-foot radius around the well and is assumed to be Class GAA unless otherwise classified. Class GA designated uses are existing private and potential public or private supplies of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. All ground waters not specifically classified are considered as Class GA. Class GB designated uses are industrial process water and cooling waters and baseflow for hydraulically-connected water bodies and is presumed not suitable for human consumption without treatment. Class GC designated uses are assimilation of discharges authorized by the Commissioner pursuant to Section 22a-430 of the General Statutes.

On the WQC map GA is represented by white colored land areas. Class GAA and class GAAs are represented by blue colored land areas. The area of contribution to a public water supply well is shown by a blue cross-hatch overprint. A notation of GAA followed by a state abbreviation indicates a watershed that contributes to the public water supply for a state other than Connecticut. Class GA or Class GAA areas that currently may not be meeting the GA or GAA standards are represented on the WQC maps by tan colored land areas. Class GB is represented by green colored land areas. Class GC is represented by magenta colored land areas.

FINAL AQUIFER PROTECTION AREAS (Level A) are included on the WQC maps for informational purposes. These areas are anticipated to be reclassified GAA during the next major basin updates, subject to public participation. The Aquifer Protection Program helps protect Connecticut's public drinking water resources by delineating aquifer protection areas (also called wellhead protection areas) for public supply wells and establishing land use regulations within these areas. These areas represent the land area contributing ground water to active public water supply wells or well fields that serve more than 1000 people and are set in sand and gravel aquifers (stratified drift deposits).

DATA SOURCES

WATER QUALITY CLASSIFICATIONS DATA – Water quality classifications shown on this map are based on information from the following digital spatial datasets that are typically shown together – Ground Water Quality Classifications Poly, Surface Water Quality Classifications Line, and Surface Water Quality Classifications Poly. The map legend above reflects the content of these three data sources. These WQC data were initially compiled on 1:24,000-scale 7.5 minute USGS topographic quadrangle maps and later digitized at 1:24,000 scale. For example, the Surface Water Quality Classifications Line and Surface Water Quality Classifications Poly digital data assigns surface water quality classifications to water bodies such as rivers, streams, reservoirs, lakes, ponds and coves found in 1:24,000-scale hydrography data available from CT DEEP. The hydrography may not include all the waterbodies in Connecticut. The Ground Water Quality Classifications Poly data assigns ground water quality classifications, at 1:24,000 scale, to the remaining land areas in Connecticut.

AQUIFER PROTECTION AREA DATA – Aquifer Protection Areas shown on this map are from the Aquifer Protection Area digital dataset which contains polygon data intended to be used at 1:24,000 scale. The dataset contains regulated areas classified as Level A Aquifer Protection Area (Final) and Level B Aquifer Protection Area (Preliminary). The Level B areas are not shown on the WQC maps. The data was collected from 1991 to the present and is actively updated as Final area mapping replaces earlier Preliminary areas. The Aquifer Protection Areas are delineated by the individual water companies owning the well fields and submitted to the CT DEEP for approval. Preliminary mapping provides a general estimate of the area contributing ground water to the well field. Final mapping is based on extensive, site-specific, detailed modeling of the ground water flow system. CT DEEP may adjust Final area boundaries to be consistent with 1:24,000 scale topography and base map data where appropriate during the approval process.

MAJOR DRAINAGE BASIN DATA – Major drainage basins shown on this map are from Major Basin Line data developed by CT DEEP and intended to be used at 1:24,000 scale.

BASE MAP DATA - Based on data originally from 1:24,000-scale USGS 7.5 minute topographic quadrangle maps published between 1969 and 1992. It includes political boundaries, railroads, airports, hydrography, geographic names and geographic places. Streets and street names are from Tele Atlas® copyrighted data. Base map information is neither current nor complete.

RELATED INFORMATION
This map is intended to be printed at its original dimensions in order to maintain the 1:24,000 scale (1 inch = 2000 feet).
WATER QUALITY STANDARDS - Go to the CT DEEP website for a summary and the full text of the "Water Quality Standards" and for other information on water quality.
AQUIFER PROTECTION AREAS - Go to the CT DEEP website for more information.

ADOPTED DATES

Water Quality Standards
February 25, 2011

Thames River, Pawcatuck River and Southeast Coastal Basins: December 1986

Connecticut River and South Central Coastal Basins: February 1993

Housatonic River, Hudson River and Southwest Coastal Basins: March 1999

MAJOR BASINS

1 Pawcatuck
2 Southeast Coast
3 Thames
4 Connecticut
5 South Central Coast
6 Housatonic
7 Southwest Coast
8 Hudson

MAP LOCATION

State Plane Coordinate System of 1983, Zone 3526
Lambert Conformal Conic Projection
North American Datum of 1983

SCALE 1:24,000 (1 inch = 2000 feet) when map is printed at original size

STATE OF CONNECTICUT
DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION
79 Elm Street
Hartford, CT 06106-5127

Map created by CT DEEP
October 2018

Map is not colorfast
Protect from light and moisture

SITE

Aquifer Protection Area Mapping

AQUIFER PROTECTION AREAS

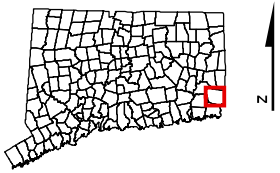
North Stonington, CT

August 26, 2019

- Level A APA (Final Adopted)
- Level A APA (Final)
- Level B APA (Preliminary)
- Town Boundary
- Rhode Island WHPA
  More information at
  www.dem.ri.gov

NOTE: The Aquifer Protection Areas were delineated through Connecitcut's Level A and Level B Mapping Processes. Aquifer Protection Areas are delineated for active public water supply wells in stratified drift that serve more than 1000 people, in accordance with Sections 22a-354c and 22a-354z of the Connecticut General Statutes. Level B Mapping delineates a preliminary aquifer protection area, providing an estimate of the land area from which the well draws its water. Level A Mapping delineates the final Aquifer Protection Area, which becomes the regulatory boundary for land use controls designed to protect the well from contamination. As Level A Mapping is completed for each well field and approved by DEEP, it replaces the Level B Mapping. Final Adopted Level A Areas are those where towns have land use regulations for them.
Masschusetts and Rhode Island Wellhead Protection Areas may be shown for informational purposes.

QUESTIONS:
Bureau of Water Protection and Land Reuse
Planning and Standards Division
Phone: (860) 424-3020
www.ct.gov/deep/aquiferprotection



STATE OF CONNECTICUT
DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION
79 Elm Street
Hartford, CT 06106-5127

Griswold
North Stonington
Ledyard
Stonington
Rhode Island
A 117
North Stonington
09/16/2010
A 152
Loftus Site
04/03/2007
A 34
Lantern
Hill
A 152
Loftus Site
12/05/2005
A 34
Lantern Hill
04/20/2010
Exit 92
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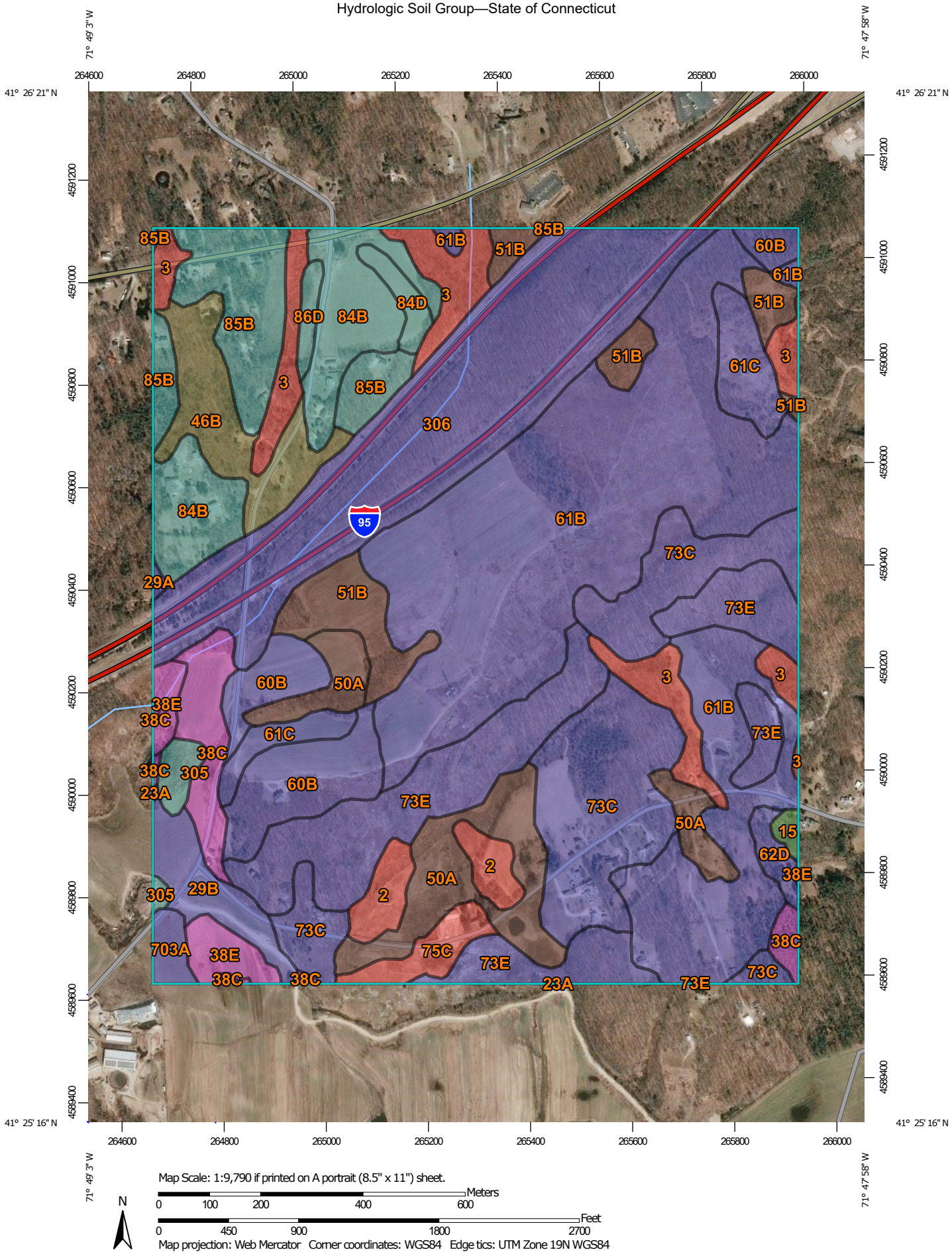
214
2
49
216
184
95

Appendix B:

NRCS Soil Survey Information
Test Pit and Infiltration Testing Data

NRCS Soil Survey Information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71° 47' 58" W
41° 26' 21" N
41° 25' 16" N
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264800
265000
265200
265400
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266000
4591200
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4590400
4590200
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4589400
85B
3
61B
51B
85B
60B
61B
51B
84D
3
85B
86D
84B
51B
61C
3
85B
3
85B
51B
46B
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61B
73C
29A
51B
73E
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50A
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38E
38C
61B
61C
73E
38C
38C
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3
60B
23A
73E
73C
50A
15
62D
38E
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703A
38E
75C
73E
38C
38C
38C
23A
73E
73C
95
Map Scale: 1:9,790 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0
100
200
400
600
Feet
0
450
900
1800
2700
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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: State of Connecticut
Survey Area Data: Version 19, Sep 13, 2019

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

Date(s) aerial images were photographed: Mar 20, 2019—Mar 27, 2019

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2	Ridgebury fine sandy loam, 0 to 3 percent slopes	D	7.0	1.5%
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	21.3	4.6%
15	Scarboro muck, 0 to 3 percent slopes	A/D	0.9	0.2%
23A	Sudbury sandy loam, 0 to 5 percent slopes	B	0.1	0.0%
29A	Agawam fine sandy loam, 0 to 3 percent slopes	B	0.3	0.1%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	B	7.9	1.7%
38C	Hinckley loamy sand, 3 to 15 percent slopes	A	10.4	2.2%
38E	Hinckley loamy sand, 15 to 45 percent slopes	A	6.0	1.3%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	C/D	14.5	3.1%
50A	Sutton fine sandy loam, 0 to 3 percent slopes	B/D	24.2	5.2%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	B/D	15.4	3.3%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	19.1	4.1%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	B	118.6	25.7%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	B	10.1	2.2%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	B	2.3	0.5%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	44.1	9.5%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	43.2	9.3%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	D	4.6	1.0%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	C	21.8	4.7%
84D	Paxton and Montauk fine sandy loams, 15 to 25 percent slopes	C	2.6	0.6%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	C	20.2	4.4%
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	C	1.8	0.4%
305	Udorthents-Pits complex, gravelly	C	2.8	0.6%
306	Udorthents-Urban land complex	B	60.7	13.1%
703A	Haven silt loam, 0 to 3 percent slopes	B	2.4	0.5%
Totals for Area of Interest			**462.3**	**100.0%**

Description

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

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

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

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

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

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

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

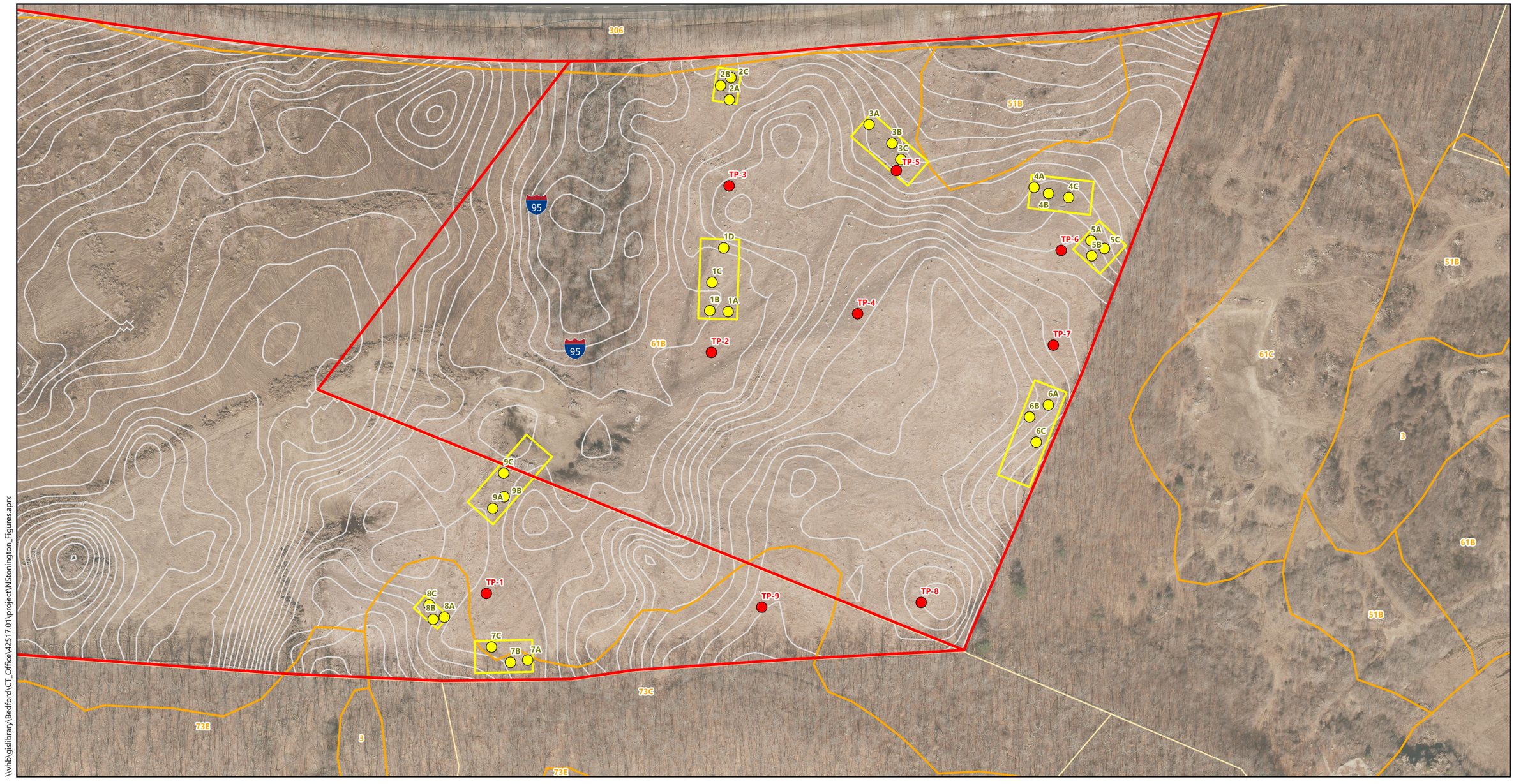
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Test Pit and Infiltration Testing Data



\\vhb\gislibrary\Bedford\CT_Office\42517.01\project\NStonington_Figures.apnx

0 100 200 400 Feet

- Stormwater Test Pits
- Site-Specific HSG Soil Survey
- NRSC Soil Boundary
- Stormwater Test Pit Areas
- Property Boundary
- 2-ft Contours
- Parcel Boundary

Greenskies Clean Energy, LLC | North Stonington, Connecticut

Test Pit Locations

Source: VHB, CTDEEP, ArcGIS Online

Test Pit **1**

Oe	0-2 inches	Black (10YR 2/1) fine granular structure, many roots, friable, abrupt wavy boundary
A	2-4 inches	Very dark brown (10YR 2/2) sandy loam, fine to medium granular structure, friable, many roots, clear wavy boundary
Bw1	4-7 inches	Brown (10YR 4/3) sandy loam, medium subangular blocky structure, friable, many roots, clear wavy boundary
Bw2	7-17 inches	Dark yellowish brown (10YR 4/6) sandy loam, fine to medium subangular blocky structure, friable, common roots, clear wavy boundary
Bw3	17-25 inches	Light olive brown (2.5Y 5/4) sandy loam, weak medium subangular blocky structure, friable, few roots, abrupt wavy boundary
1C1	25-41 inches	Light yellowish brown (2.5Y 6/3) silt loam, massive structure, friable, common, coarse and prominent strong brown (7.5YR 5/6) concentrations, abrupt wavy boundary
2C2	41-50+ inches	Light brownish gray (2.5Y 6/2) very gravely loamy sand, some silt lenses around stones, some firm peds, firm, fine to medium platy structure

Estimated SHWT at 25 inches

Test Pit **2**

	0-1	Litter layer
Oa	1-3 inches	Black (10YR 2/1) fine granular structure, friable, many roots, abrupt wavy boundary
A	3-7 inches	Dark brown (10YR 3/3) sandy loam, fine to medium subangular blocky structure, friable, common roots, abrupt wavy boundary
Bw1	7-17 inches	Yellowish brown (10YR 5/4) sandy loam, medium subangular blocky structure, friable, common roots, clear wavy boundary
Bw2	17-25 inches	Light olive brown (2.5Y 5/4) sandy loam, massive structure, friable, clear wavy boundary
1C1	25-32 inches	Light brownish gray (2.5Y 6/2) silt loam, massive, friable, common, coarse and prominent strong brown (7.5YR 5/6) concentrations, abrupt smooth boundary
2C2	32-41 inches	Strong brown (7.5YR 5/8) very gravely loamy sand, single grain loose
$2C_d3$	41-55 inches	Light yellowish brown (2.5Y 6/3) extremely gravelly loamy sand, firm peds, medium platy structure, silt lenses around larger stones

Estimated SHWT at 25 inches

Test Pit **3**

Oe-i	0-1	Litter layer
Oa	1-3 inches	Black (10YR 2/2) fine granular structure, friable, many roots, abrupt smooth boundary
A	3-7 inches	Dark brown (10YR 3/3) sandy loam, fine to medium subangular blocky structure, friable, many roots, abrupt smooth boundary
Bw1	7-14 inches	Dark yellowish brown (10YR 4/4) stony sandy loam, medium subangular blocky structure, friable, common roots, clear wavy boundary
Bw2	14-24 inches	Dark yellowish brown (10YR 4/6) stony sandy loam, medium subangular block structure, friable, common roots, clear abrupt boundary
Bw3	24-37 inches	Light olive brown (2.5Y 5/4) stony sandy loam, massive structure, friable, clear abrupt boundary
1C1	37-55+ inches	Light grayish brown (2.5Y 6/2) silt loam, massive structure, friable, many, coarse, and prominent strong brown (7.5YR 5/8) concentrations

Estimated SHWT 37 inches

Test Pit **4**

Oe-i	0-1	Litter layer
Oa	1-2 inches	Black (10YR 2/1) fine granular structure, friable, many roots, abrupt smooth boundary
A	2-4 inches	Dark brown (10YR 3/3) sandy loam, medium subangular blocky structure, friable, many roots, clear abrupt boundary
Bw1	4-18 inches	Yellowish brown (10YR 5/6) Stony loamy sand, weak medium subangular blocky structure, friable, common roots, clear abrupt boundary
Bw2	18-30 inches	Light olive brown (2.5Y 5/6) Stony sandy loam, massive structure, friable, few roots, clear abrupt boundary
C1	30-51 inches	Light grayish brown (2.5Y 6/2) Stony very cobbly sandy loam, cobbles have silt lenses, single grain, loose, abrupt smooth boundary
Cd2	51-55+ inches	Light yellowish brown (2.5Y 6/3) Stony loamy sand, firm, medium platy structure

Strong brown (10YR 5/6) concentrations at the interface of the C and the Cd layer
Stoniness (15%) throughout profile

Test Pit **5**

Oa	0-1 inches	Very dark brown (10YR 2/2) granular structure, friable, many roots, abrupt smooth boundary
A	1-7 inches	Dark brown (10YR 3/3) sandy loam, 15-20% cobbles, fine to granular structure, friable, many roots, abrupt smooth boundary
Bw1	7-18 inches	Dark yellowish brown (10YR 4/6) gravely sandy loam, medium subangular blocky structure, friable, common roots, clear abrupt boundary
Bw2	18-22 inches	Light olive brown (10YR 5/6) sandy loam, weak medium subangular blocky structure, friable, few roots, clear abrupt boundary
Bw3	22-35 inches	Light olive brown (2.5Y 5/6) loamy sand, massive structure, friable, few roots, common, coarse and prominent strong brown (7.5YR 5/6) concentrations, common, coarse, and prominent light grayish brown (2/5Y 6/2) depletions, abrupt smooth boundary
C	35-44 inches	Olive brown (2.5Y 6/6) gravely loamy sand, friable, weak platy structure, abrupt smooth boundary
Cd	44-46 inches	Olive brown (2.5Y 6/6) gravely loamy sand, firm, medium platy structure, abrupt smooth boundary
2C	46-52 inches	Light olive brown (2.5Y 5/4) loamy sand, massive structure, friable, common, coarse, and prominent strong brown (7.5YR 5/8)

Test Pit **6**

Oa	0-3 inches	Very dark brown (10YR 2/2) granular structure, friable, many roots, abrupt smooth boundary
A	3-7 inches	Dark yellowish brown (10YR 3/4) gravely sandy loam, medium subangular blocky structure, friable, many roots, abrupt wavy boundary
Bw1	7-17 inches	Dark yellowish brown (10YR 4/6) stony gravely loamy sand, weak medium subangular blocky structure, friable, few roots, clear wavy boundary
Bw2	17-20 inches	Light olive brown (10YR 5/6) stony sandy loam, weak medium subangular blocky structure, friable, few roots, clear abrupt boundary
C1	20-52 inches	Light olive brown (2.5Y 5/3) stony very cobbly sand, single grain, loose
Cd	52-56 inches	Light grayish brown (2.5Y 6/2) very gravely loamy sand, firm, medium platy structure, common and medium yellowish brown (10YR 5/8) concentrations

Estimated SHWT 52 inches, Stoniness (10-15%) throughout profile

Test Pit **7**

Oi	0-1 inches	
Oa	1-3 inches	Black (10YR 2/1) fine granular structure, friable, many roots, abrupt wavy boundary
A	3-7 inches	Dark brown (10YR 3/3) stony sandy loam, medium subangular blocky structure, friable, many roots, clear abrupt boundary
Bw1	7-16 inches	Dark yellowish brown (10YR 4/6) stony loamy sand, medium subangular blocky structure, friable, common roots, clear wavy boundary
Bw2	16-26 inches	Light olive brown (10YR 5/6) stony sandy loam, weak medium subangular blocky structure, friable, few roots, clear abrupt boundary
1C1	26-35 inches	Pale brown (10YR 6/3) stony very cobbly sand, loose, single grain, common, medium, and distinct yellowish brown (10YR 5/6) concentrations
2C2	35-48 inches	Light grayish brown (2.5Y 6/2) very gravely loamy sand, dense, massive, friable, yellowish brown (10YR 5/6) common, medium, and prominent concentrations
2Cd3	48-55 inches	Light grayish brown (2.5Y 6/2) very gravely loamy sand, firm medium peds, dense

Estimated SHWT 26 inches

Test Pit **8**

Oa	0-3 inches	Black (10YR 2/1) fine granular structure, friable, many roots, abrupt wavy boundary
A	3-7 inches	Dark brown (10YR 3/3) sandy loam, fine subangular blocky structure, friable, many roots, clear abrupt boundary
Bw1	7-22 inches	Yellowish brown (10YR 5/4) cobbly sandy loam, medium subangular blocky structure, friable, common roots, clear wavy boundary
Bw2	22-35 inches	Light olive brown (10YR 5/6) cobbly sandy loam, medium subangular blocky structure, friable, few roots, strong brown (7.5YR 5/6) many, coarse, and prominent concentrations, clear abrupt boundary
C1	35-49 inches	Light yellowish brown (2.5Y 6/4) very gravelly and cobbly coarse sand, loose, single grain, abrupt smooth boundary
C2	49-56 inches	Light yellowish brown (2.5Y 6/3) sand, dense, single grain loose

Estimated SHWT 22 inches

Test Pit **9**

Oa	0-2 inches	Black (10YR 2/1) fine granular structure, friable, many roots, abrupt wavy boundary. Surface stoniness approximately 10%.
A	2-3 inches	Dark brown (10YR 3/3) sandy loam, granular structure, friable, many roots, abrupt smooth boundary
Bw1	3-14 inches	Dark yellowish brown (10YR 4/4) stony gravely loamy sand, weak medium subangular blocky structure, friable, common roots, clear abrupt boundary
Bw2	14-21 inches	Light olive brown (2.5Y 5/4) stony gravely loamy sand, massive, friable, clear abrupt boundary
BC	21-31 inches	Light olive brown (2.5Y 5/6) stony extremely gravelly and cobbly loamy sand, loose, single grain, abrupt smooth boundary
C2	31-54 inches	Light olive brown (2.5Y 5/4) stony extremely cobbly and gravelly coarse sand, dense, single grain, loose, reddish brown (5YR 4/4) few, coarse, prominent concentrations.

Estimated SHWT 31 inches

Form #2 Technical Standards for Subsurface Sewage Disposal Systems

SITE INVESTIGATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

Application/Permit #: _____

Property Owner_____Location 233 Boombridge Rd North Stonington, CT

DEEP TEST PIT DATA/SOIL DESCRIPTIONS

DATE: 2/7/2020 (Record all Test Pits)

TEST PIT: 1A	TEST PIT: 1B	TEST PIT: 1C	TEST PIT: 1D
0-4" organic 4-24" dark brown silty clay loam 24-45" brown tan silt loam with mottles 45-87" cobbly sandy loam	0-3" organic 3-23" brown silty loam 23-47" grey silty clay loam with mottles 47-88" fine sandy loam with large cobbles	0-2" organic 2-20" dark brown 20-65" grey tan sand silt loam 65-75" sandy clay loam	0-3" organic 3-18" dark brown silty clay 18-38" sandy loam 38-98" sandy loam with cobbles and mottles
Mottles: 24"	Mottles: 23"	Mottles: 26"	Mottles: 38"
GW:	GW: 88", Seepage @ 75"	GW: 75", Seepage @ 65"	GW:
Ledge:	Ledge:	Ledge:	Ledge:
Roots:	Roots:	Roots:	Roots:
Restrictive:	Restrictive:	Restrictive:	Restrictive:

COMMENTS: _____

_____

GROUNDWATER TABLE (Near max., below max., etc.)_____

SOIL MOISTURE (High, medium, low, etc): _____

PERCOLATION TEST DATA

DATE:_____ (Record all Perc Tests)

PERC:		PERC:		PERC:		PERC:	
DEPTH:		DEPTH:		DEPTH:		DEPTH:	
PRESOAK:		PRESOAK:		PRESOAK:		PRESOAK:	
TIME	READING	TIME	READING	TIME	READING	TIME	READING
PERC RATE:		PERC RATE:		PERC RATE:		PERC RATE:	

COMMENTS: _____

_____

Form #2 Technical Standards for Subsurface Sewage Disposal Systems

SITE INVESTIGATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

Application/Permit #: _____

Property Owner_____Location 233 Boombridge Rd North Stonington, CT

DEEP TEST PIT DATA/SOIL DESCRIPTIONS

DATE: 2/7/2020 (Record all Test Pits)

TEST PIT: 2A	TEST PIT: 2B	TEST PIT: 2C	TEST PIT:
0-5" organic 5-24" brown silty clay 24-68" light brown sandy loam with mottles 68-91" grey silt loam	0-3" organic 3-15" dark brown silty clay 15-27" tan brown silty clay 27-58" sandy loam with mottles 58-95" sandy loam	0-4" organic 4-16" silt loam 16-25" tan silty clay loam 25-68" grey brown sandy loam 68-90" sandy loam with cobbles	
Mottles: 24"	Mottles: 27"	Mottles: 25"	Mottles:
GW:	GW: 95, Seepage @ 88"	GW:	GW:
Ledge:	Ledge:	Ledge:	Ledge:
Roots:	Roots:	Roots:	Roots:
Restrictive:	Restrictive:	Restrictive:	Restrictive:

COMMENTS: _____

_____

GROUNDWATER TABLE (Near max., below max., etc.)_____

SOIL MOISTURE (High, medium, low, etc): _____

PERCOLATION TEST DATA

DATE:_____ (Record all Perc Tests)

PERC:		PERC:		PERC:		PERC:	
DEPTH:		DEPTH:		DEPTH:		DEPTH:	
PRESOAK:		PRESOAK:		PRESOAK:		PRESOAK:	
TIME	READING	TIME	READING	TIME	READING	TIME	READING
PERC RATE:		PERC RATE:		PERC RATE:		PERC RATE:	

COMMENTS: _____

_____

Form #2 Technical Standards for Subsurface Sewage Disposal Systems

SITE INVESTIGATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

Application/Permit #: _____

Property Owner_____Location 233 Boombridge Rd North Stonington, CT

DEEP TEST PIT DATA/SOIL DESCRIPTIONS

DATE: 2/7/2020 (Record all Test Pits)

TEST PIT: 3A	TEST PIT: 3B	TEST PIT: 3C	TEST PIT:
0-4" organic 4-9" dark brown silty clay 9-32" brown silty clay 32-101" grey silty loam with mottles	0-4" organic, bigger rocks 4-12" dark brown silty clay 12-25" brown silty clay 25-71" grey silty loam with mottles 71-111" grey brown sandy loam	0-5" organic 5-12" MC dark brown sand, silt, clay 12-29" grey cobbly silt loam 29-101" beige tan cobbly silt loam	
Mottles: 32"	Mottles: 25"	Mottles: 29"	Mottles:
GW:	GW: 111", Seepage @ 96"	GW: 101, Seepage @ 83"	GW:
Ledge:	Ledge:	Ledge:	Ledge:
Roots:	Roots:	Roots:	Roots:
Restrictive:	Restrictive:	Restrictive:	Restrictive:

COMMENTS: _____

_____

GROUNDWATER TABLE (Near max., below max., etc.)_____

SOIL MOISTURE (High, medium, low, etc): _____

PERCOLATION TEST DATA

DATE: 2/7/2020 (Record all Perc Tests)

PERC: 3A		PERC: 3B		PERC: 3C		PERC:	
DEPTH: 12" @ 36" bench		DEPTH: 14" @ 36" bench		DEPTH: 16" @ 36" bench		DEPTH:	
PRESOAK:		PRESOAK:		PRESOAK:		PRESOAK:	
TIME	READING	TIME	READING	TIME	READING	TIME	READING
12:04 12:19 12:34 12:49 1:04	2.8" 4.5" 5.5" 6.2" 6.7"	12:01 12:16 12:31 12:46 1:01	3.2" 4.4" 4.9" 5.4" 6.0"	11:56 12:11 12:26 refill 12:31 12:46	4.5" 9.8" empty 15" empty 3.1" 7.1"		
PERC RATE: 2.0 in./hr		PERC RATE: 2.0 in./hr		PERC RATE:		PERC RATE:	

COMMENTS: _____

_____

Form #2 Technical Standards for Subsurface Sewage Disposal Systems

SITE INVESTIGATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

Application/Permit #: _____

Property Owner_____Location 233 Boombridge Rd North Stonington, CT

DEEP TEST PIT DATA/SOIL DESCRIPTIONS

DATE: 2/10/2020 (Record all Test Pits)

TEST PIT: 4A	TEST PIT: 4B	TEST PIT: 4C	TEST PIT:
0-5" organic 5-24" brown sandy loam with cobbles 24-44" grey silty loam with cobbles 44-90" tan brown silty loam with cobbles	0-5" organic 5-33" light brown sandy loam with large rocks 33-94" grey sandy loam with cobbles	0-4" organic 4-32" light brown sandy loam with large rocks 32-87" grey sand with cobbles	
Mottles:	Mottles:	Mottles:	Mottles:
GW:	GW:	GW:	GW:
Ledge:	Ledge:	Ledge:	Ledge:
Roots:	Roots:	Roots:	Roots:
Restrictive:	Restrictive:	Restrictive:	Restrictive:

COMMENTS: _____

_____

GROUNDWATER TABLE (Near max., below max., etc.)_____

SOIL MOISTURE (High, medium, low, etc): _____

PERCOLATION TEST DATA

DATE: 2/10/2020 (Record all Perc Tests)

PERC: 4A		PERC: 4B		PERC: 4C		PERC:	
DEPTH: 20" @ 30" bench		DEPTH: 20" @ 30" bench		DEPTH: 20" @ 30" bench		DEPTH:	
PRESOAK:		PRESOAK:		PRESOAK:		PRESOAK:	
TIME	READING	TIME	READING	TIME	READING	TIME	READING
10:12 10:27 10:42 10:57	5.5" 11.5" 14.5" 16.5" empty	10:13 10:28 10:43 10:58	4.6" 9.6" 12.6" 17" empty	10:17 10:32 10:47 11:02 11:17	6.2" 9.1" 11.1" 12.2" 13.6"		
PERC RATE: 8.0 in./hr		PERC RATE: 12.0 in./hr		PERC RATE: 4.4 in./hr		PERC RATE:	

COMMENTS: _____

_____

Form #2 Technical Standards for Subsurface Sewage Disposal Systems

SITE INVESTIGATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

Application/Permit #: _____

Property Owner_____Location 233 Boombridge Rd North Stonington, CT

DEEP TEST PIT DATA/SOIL DESCRIPTIONS

DATE: 2/10/2020 (Record all Test Pits)

TEST PIT: 5A	TEST PIT: 5B	TEST PIT: 5C	TEST PIT:
0-5" organic 5-32" light brown silty clay loam with boulders 32-101" grey sand with cobbles	0-5" organic 5-28" light brown fine sand loam with large rocks 28-106" grey course sand with cobbles	0-4" organic 4-31" light brown silt loam with large rocks 31" small pocket of clay with mottles 31-91" grey sandy loam with cobbles	
Mottles:	Mottles:	Mottles: isolated pocket @ 31"	Mottles:
GW:	GW:	GW:	GW:
Ledge:	Ledge:	Ledge:	Ledge:
Roots:	Roots:	Roots:	Roots:
Restrictive:	Restrictive:	Restrictive:	Restrictive:

COMMENTS: _____

_____

GROUNDWATER TABLE (Near max., below max., etc.)_____

SOIL MOISTURE (High, medium, low, etc): _____

PERCOLATION TEST DATA

DATE: 2/10/2020 (Record all Perc Tests)

PERC: 5A		PERC: 5B		PERC: 5C		PERC:	
DEPTH: 22" @ 30" bench		DEPTH: 23" @ 30" bench		DEPTH: 20" @ 30" bench		DEPTH:	
PRESOAK:		PRESOAK:		PRESOAK:		PRESOAK:	
TIME	READING	TIME	READING	TIME	READING	TIME	READING
11:37 11:52 12:07	8.7" 17" 21" empty	11:39 11:54 12:09 12:24 12:39	8.5" 12.8" 14.8" 15.7" 16.7"	11:41 11:56 12:11 12:26 12:41	3.1" 8.2" 11.6" 13.1" 14.5"		
PERC RATE: 16.0 in./hr		PERC RATE: 3.6 in./hr		PERC RATE: 5.6 in./hr		PERC RATE:	

COMMENTS: _____

_____

Form #2 Technical Standards for Subsurface Sewage Disposal Systems

SITE INVESTIGATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

Application/Permit #: _____

Property Owner_____Location 233 Boombridge Rd North Stonington, CT

DEEP TEST PIT DATA/SOIL DESCRIPTIONS

DATE: 2/10/2020 (Record all Test Pits)

TEST PIT: 6A	TEST PIT: 6B	TEST PIT: 6C	TEST PIT:
0-3" organic 3-24" light brown silt loam with large rocks 24-96" grey sand with cobbles	0-5" organic 5-22" light brown silty loam with shale 22-96" grey sandy loam with cobbles, pockets of grey clay	0-4" organic 4-22" light brown snady clay loam with boulders 22-96" grey sand with cobbles, pockets of grey clay	
Mottles:	Mottles:	Mottles:	Mottles:
GW:	GW:	GW:	GW:
Ledge:	Ledge:	Ledge:	Ledge:
Roots:	Roots:	Roots:	Roots:
Restrictive:	Restrictive:	Restrictive:	Restrictive:

COMMENTS: _____

_____

GROUNDWATER TABLE (Near max., below max., etc.)_____

SOIL MOISTURE (High, medium, low, etc): _____

PERCOLATION TEST DATA

DATE: 2/10/2020 (Record all Perc Tests)

PERC: 6A		PERC: 6B		PERC: 6C		PERC:	
DEPTH: 24" @ 30" bench		DEPTH: 24" @ 30" bench		DEPTH: 24" @ 30" bench		DEPTH:	
PRESOAK:		PRESOAK:		PRESOAK:		PRESOAK:	
TIME	READING	TIME	READING	TIME	READING	TIME	READING
1:27 1:42 1:57	10.5" 18.5" 21.5" empty	1:29 1:44 1:59 2:14 2:29	9" 16.5" 18" 19.5" 21"	1:31 1:46 2:01 2:16 2:31	7.5" 10" 12.1" 13.5" 14.8"		
PERC RATE: 12.0 in./hr		PERC RATE: 6.0 in./hr		PERC RATE: 5.2 in./hr		PERC RATE:	

COMMENTS: _____

_____

Form #2 Technical Standards for Subsurface Sewage Disposal Systems

SITE INVESTIGATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

Application/Permit #: _____

Property Owner_____Location 233 Boombridge Rd North Stonington, CT

DEEP TEST PIT DATA/SOIL DESCRIPTIONS

DATE: 2/11/2020 (Record all Test Pits)

TEST PIT: 7A	TEST PIT: 7B	TEST PIT: 7C	TEST PIT:
0-3" organic 3-30" light brown silty loam with large rocks 30-51" grey clay with boulders 51-81" boulders with sand	0-4" organic 4-22" light brown silty loam with large rocks 22-44" grey clay 44-91" brown course sand with boulders	0-4" organic 4-15" light brown silty clay loam 15-34" tan clay 34-83" brown course sand with boulders	
Mottles: 30"	Mottles: 22"	Mottles: 24"	Mottles:
GW:	GW:	GW:	GW:
Ledge:	Ledge:	Ledge:	Ledge:
Roots:	Roots:	Roots:	Roots:
Restrictive:	Restrictive:	Restrictive:	Restrictive:

COMMENTS: _____

_____

GROUNDWATER TABLE (Near max., below max., etc.)_____

SOIL MOISTURE (High, medium, low, etc): _____

PERCOLATION TEST DATA

DATE:_____ (Record all Perc Tests)

PERC:		PERC:		PERC:		PERC:	
DEPTH:		DEPTH:		DEPTH:		DEPTH:	
PRESOAK:		PRESOAK:		PRESOAK:		PRESOAK:	
TIME	READING	TIME	READING	TIME	READING	TIME	READING
PERC RATE:		PERC RATE:		PERC RATE:		PERC RATE:	

COMMENTS: _____

_____

Form #2 Technical Standards for Subsurface Sewage Disposal Systems

SITE INVESTIGATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

Application/Permit #: _____

Property Owner_____Location 233 Boombridge Rd North Stonington, CT

DEEP TEST PIT DATA/SOIL DESCRIPTIONS

DATE: 2/11/2020 (Record all Test Pits)

TEST PIT: 8A	TEST PIT: 8B	TEST PIT: 8C	TEST PIT:
0-3" organic 3-20" light brown silt loam with large rocks 20-41" tan clay 41-82" sandy loam with boulders	0-4" organic 4-31" brown silty clay loam with large rocks 31-91" grey sandy loam with large rocks	0-5" organic 5-25" cobbley light brown silt loam 25-47" grey silt loam 47-98" grey silty clay	
Mottles: 31"	Mottles: 31"	Mottles: 25"	Mottles:
GW:	GW:	GW: 98", Seepage @ 85"	GW:
Ledge:	Ledge:	Ledge:	Ledge:
Roots:	Roots:	Roots:	Roots:
Restrictive:	Restrictive:	Restrictive:	Restrictive:

COMMENTS: _____

_____

GROUNDWATER TABLE (Near max., below max., etc.)_____

SOIL MOISTURE (High, medium, low, etc): _____

PERCOLATION TEST DATA

DATE:_____ (Record all Perc Tests)

PERC:		PERC:		PERC:		PERC:	
DEPTH:		DEPTH:		DEPTH:		DEPTH:	
PRESOAK:		PRESOAK:		PRESOAK:		PRESOAK:	
TIME	READING	TIME	READING	TIME	READING	TIME	READING
PERC RATE:		PERC RATE:		PERC RATE:		PERC RATE:	

COMMENTS: _____

_____

Form #2 Technical Standards for Subsurface Sewage Disposal Systems

SITE INVESTIGATION FOR A SUBSURFACE SEWAGE DISPOSAL SYSTEM

Application/Permit #: _____

Property Owner_____Location 233 Boombridge Rd North Stonington, CT

DEEP TEST PIT DATA/SOIL DESCRIPTIONS

DATE: 2/11/2020 (Record all Test Pits)

TEST PIT: 9A	TEST PIT: 9B	TEST PIT: 9C	TEST PIT:
0-4" organic 4-25" light brown silt loam with large rocks 25-40" grey clay 40-62" brown sandy loam with cobbles	0-4" organic 4-30" light brown silty loam with large rocks 30-65" grey clay 65-77" brown sandy loam with cobbles	0-6" organic 6-28" brown sandy loam 28-41" gray fine sandy loam 41-70" gray loamy sand with cobbles	
Mottles: 25"	Mottles: 30"	Mottles: 28"	Mottles:
GW: 62", Seepage @ 49"	GW: 77", Seepage @ 62"	GW: 70", Seepage @ 67"	GW:
Ledge:	Ledge:	Ledge:	Ledge:
Roots:	Roots:	Roots:	Roots:
Restrictive:	Restrictive:	Restrictive:	Restrictive:

COMMENTS: _____

_____

GROUNDWATER TABLE (Near max., below max., etc.)_____

SOIL MOISTURE (High, medium, low, etc): _____

PERCOLATION TEST DATA

DATE:_____ (Record all Perc Tests)

PERC:		PERC:		PERC:		PERC:	
DEPTH:		DEPTH:		DEPTH:		DEPTH:	
PRESOAK:		PRESOAK:		PRESOAK:		PRESOAK:	
TIME	READING	TIME	READING	TIME	READING	TIME	READING
PERC RATE:		PERC RATE:		PERC RATE:		PERC RATE:	

COMMENTS: _____

_____

Appendix C:

Erosion and Sedimentation Control Checklist
Long Term Stormwater Operation and Maintenance Measures

Erosion and Sedimentation Control Checklist

Photovoltaic Installation – North Stonington, CT – Boom Bridge Road

Best Management Practices – Maintenance/ Evaluation Checklist

Construction Practices

Best Management Practice	Inspection Frequency	Date Inspected	Inspector	Minimum Maintenance and Key Items to Check	Cleaning/Repair Needed ☐yes ☐no (List Items)	Date of Cleaning/Repair	Performed by
Silt Fencing	Once per week or after a 0.5″ or greater storm event						
Compost Filter Sock	Once per week or after a 0.5″ or greater storm event						
Straw Wattles	Once per week or after a 0.5″ or greater storm event						
Stabilized Construction Exit	Once per week or after a 0.5″ or greater storm event						
Temporary Sediment Trap/Basin & Diversion Swales	Once per week or after a 0.5″ or greater storm event						
Vegetated Slope Stabilization	Once per week or after a 0.5″ or greater storm event						
Energy Dissipators	Once per week or after a 0.5″ or greater storm event						

Stormwater Control Manager _____

Long Term Stormwater Operation and Maintenance Measures

Photovoltaic Installation – North Stonington, CT – Boom Bridge Road

Best Management Practices – Maintenance/ Evaluation Checklist

Long Term Practices

Best Management Practice	Inspection Frequency	Date Inspected	Inspector	Minimum Maintenance and Key Items to Check	Cleaning/Repair Needed ☐yes ☐no (List Items)	Date of Cleaning/Repair	Performed by
Trash/Litter	Routinely pick up and remove litter from entire property as required.						
Vegetated Areas	Inspect bi-annually. Replant bare areas upon identification.						
Energy Dissipators	Inspect monthly for the first 3 months and after any rain event exceeding 0.5″. Inspect 2x per year thereafter.						
Diversion Swales	Inspect monthly for the first 3 months and after any rain event exceeding 0.5″. Inspect 2x per year thereafter.						
Sand Filter	Inspect monthly for the first 3 months and after any rain event exceeding 0.5″. Inspect 2x per year thereafter.						
Wet Pond	Inspect monthly for the first 3 months and after any rain event exceeding 0.5″. Inspect 2x per year thereafter.						
Infiltration Basin	Inspect monthly for the first 3 months and after any rain event exceeding 0.5″. Inspect 2x per year thereafter.						

Stormwater Control Manager _____

Project Information

Site

Project Name:	North Stonington Solar
Address or Locus:	227 Boom Bridge Road
City, State & Zip:	North Stonington, CT 06359

Developer

Client Name:	Greenskies Clean Energy, LLC
Client Address:	180 Johnson Street
Client City, State & Zip:	Middletown, CT 06457
Client Telephone No.:	(860) 398-5408
Client Cell Phone:	
Client E-Mail:	cross@greenskies.com

Site Supervisor

Site Manager Name:	To be determined
Site Manager Address:	
Site Manager City, State & Zip:	
Site Manager Telephone No.:	
Site Manager Cell Phone:	
Site Manager E-Mail:	

Appendix D:

Diversion Swale & Sediment Trap/Basin Sizing
Water Quality Computations
HydroCAD: Existing Conditions
HydroCAD: Proposed Conditions

Diversion Swale & Sediment Trap/Basin Sizing

Temporary Diversion Sizing

TD	1-1
96,398	sf
2.21	ac

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.010	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	6.22	cfs	
Bottom width, w =	1	ft	
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.8	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**1.56**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	2.72	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	6.06	ft	
R = A / P =	0.45	ft	
A * R^(2/3) =	**1.59**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.50**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**2.29**	fps	< 5.00 fps for ECB - OK

Temporary Diversion Sizing

TD	1-2
7,884	sf
0.18	ac

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.040	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	0.41	cfs	
Bottom width, w =	1	ft	
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.15	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**0.05**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	0.22	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	1.95	ft	
R = A / P =	0.11	ft	
A * R^(2/3) =	**0.05**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.37**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**1.89**	fps	< 5.00 fps for ECB - OK

Temporary Diversion Sizing

TD	2-1
10,000	sf
0.23	ac

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.037	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	0.90	cfs	
Bottom width, w =	1	ft	
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.25	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**0.12**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	0.44	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	2.58	ft	
R = A / P =	0.17	ft	
A * R^(2/3) =	**0.13**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.58**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**2.06**	fps	< 5.00 fps for ECB - OK

Temporary Diversion Sizing

TD	3-1		
10,106	sf		
0.23	ac		

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.018	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	0.43	cfs	
Bottom width, w =	1	ft	
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.2	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**0.08**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	0.32	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	2.26	ft	
R = A / P =	0.14	ft	
A * R^(2/3) =	**0.09**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.22**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**1.34**	fps	< 5.00 fps for ECB - OK

Temporary Diversion Sizing

TD	3-2
20,623	sf
0.47	ac

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.010	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	1.64	cfs	
Bottom width, w =	1	ft	
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.43	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**0.41**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	0.98	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	3.72	ft	
R = A / P =	0.26	ft	
A * R^(2/3) =	**0.41**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.27**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**1.67**	fps	< 5.00 fps for ECB - OK

Temporary Diversion Sizing

TD	4-1
25,656	sf
0.59	ac

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.0125	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	1.76	cfs	
Bottom width, w =	1	ft	
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.42	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**0.39**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	0.95	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	3.66	ft	
R = A / P =	0.26	ft	
A * R^(2/3) =	**0.39**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.33**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**1.85**	fps	< 5.00 fps for ECB - OK

Temporary Diversion Sizing

TD	4-2	
10,716	sf	
0.25	ac	

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.045	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	0.45	cfs	
Bottom width, w =	1	ft	
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.15	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**0.05**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	0.22	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	1.95	ft	
R = A / P =	0.11	ft	
A * R^(2/3) =	**0.05**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.42**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**2.07**	fps	< 5.00 fps for ECB - OK

Temporary Diversion Sizing

TD 5-1

10,149 sf

0.23 ac

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.040	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	1.15	cfs	
Bottom width, w =	1	ft	
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.18	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**0.14**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	0.28	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	2.14	ft	
R = A / P =	0.13	ft	
A * R^(2/3) =	**0.07**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.45**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**4.14**	fps	< 5.00 fps for ECB - OK

Temporary Diversion Sizing

TD	5-2
12,893	sf
0.30	ac

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.058	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	0.24	cfs	
Bottom width, w =	1		
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.1	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**0.02**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	0.13	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	1.63	ft	
R = A / P =	0.08	ft	
A * R^(2/3) =	**0.02**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.36**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**1.85**	fps	< 5.00 fps for ECB - OK

Temporary Diversion Sizing

TD	6-1		
7,362	sf		
0.17	ac		

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.033	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	0.38	cfs	
Bottom width, w =	1	ft	
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.15	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**0.05**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	0.22	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	1.95	ft	
R = A / P =	0.11	ft	
A * R^(2/3) =	**0.05**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.31**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**1.75**	fps	< 5.00 fps for ECB - OK

Temporary Diversion Sizing

TD	6-2
31,059	sf
0.71	ac

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.068	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	1.05	cfs	
Bottom width, w =	1	ft	
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.2	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**0.10**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	0.32	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	2.26	ft	
R = A / P =	0.14	ft	
A * R^(2/3) =	**0.09**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.85**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**3.28**	fps	< 5.00 fps for ECB - OK

Temporary Diversion Sizing

TD	7-1	
15,987	sf	
0.37	ac	

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.090	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	0.30	cfs	
Bottom width, w =	1	ft	
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.1	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**0.02**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	0.13	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	1.63	ft	
R = A / P =	0.08	ft	
A * R^(2/3) =	**0.02**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.56**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**2.31**	fps	< 5.00 fps for ECB - OK

Temporary Diversion Sizing

TD	8-1
7,711	sf
0.18	ac

Reference DOT Drainage Manual 2000

Swale Slope, S =	0.025	ft / ft	
Manning's n for bare soil / ECB, n =	0.025		
Q25 (disturbed soil) =	0.46	cfs	
Bottom width, w =	1	ft	
Side slopes, X:1 =	3		
Estimated flow depth, d =	0.18	ft	
Q = (1/n) * A * R^(2/3) * S^(1/2)			
A * R^(2/3) = Q / (1/n) / S^(1/2) =	**0.07**	(target for variable depth)	
A = (w * d) + 2 * (0.5d * Xd) =	0.28	sf	
P = w + 2 * (sqrt(d^2 + (Xd)^2) =	2.14	ft	
R = A / P =	0.13	ft	
A * R^(2/3) =	**0.07**	(must be close to target)	
y =	62.4	pcf	
ŧd = y * d * S =	**0.28**	psf	< 1.45 psf for ECB - OK
Velocity, V = Q / A =	**1.66**	fps	< 5.00 fps for ECB - OK

Temporary Sediment Trap Sizing
North Stonington Solar
April 2020

TST #	Tributary Acreage, ac	*(134 cy / acre)** Volume Required Below Top of Spillway, cf	Volume Provided in Permanent Basin Below Top of Spillway, cf
1	4.7	17,005	53,219
2	1.5	5,427	10,910
3	3.2	11,578	27,455
4	2.0	7,236	15,090
5	1.7	6,151	11,148
6	4.8	17,366	39,333
7	3.6	13,025	31,212
8	1.3	4,703	9,981
9	3.6	13,025	44,650

* Per 2002 Connecticut Guidelines for Soil Erosion and Sediment Control

Water Quality Computations

Water Quality Volume Calculations

Project: **North Stonington Solar** By: KJT Date: 4/15/20
Location: 227 Boom Bridge Road, North Stonington, CT Checked: SJK Date:

Basin Name	1P	2P	3P	4P	
Rainfall, P	1.0 in.	1.0 in.	1.0 in.	1.0 in.	a
Area, A	1.30 ac	0.00 ac	0.96 ac	0.61 ac	b
Access Road & Equipment Pad Area	0.15 ac	0.00 ac	0.10 ac	0.03 ac	c
% Impervious, I	12 %	0 %	10 %	5 %	
Volumetric Runoff Coeff., R	0.154		0.144	0.094	d
Water Quality Volume for impervious areas, WQV	**0.017** ac-ft	**0.000** ac-ft	**0.012** ac-ft	**0.005** ac-ft	e
	726 cf	**0** cf	**501** cf	**209** cf	
HSG 'B' Pervious Area Unit	sf	sf	sf	sf	f
WQV per Unit	cf	cf	cf	cf	g
HSG 'B' Panel Area in Watershed	ac	ac	ac	ac	
Water Quality Volume for panelized areas, WQV	ac-ft	ac-ft	ac-ft	ac-ft	h
	cf	cf	cf	cf	
HSG 'C' Pervious Area Unit	88.20 sf	88.20 sf	88.20 sf	88.20 sf	f
WQV per Unit	1.29 cf	1.29 cf	1.29 cf	1.29 cf	g
HSG 'C' Panel Area in Watershed	3.42 ac	0.63 ac	2.29 ac	1.43 ac	
Water Quality Volume for panelized areas, WQV	**0.050** ac-ft	**0.009** ac-ft	**0.033** ac-ft	**0.021** ac-ft	h
	2,179 cf	**401** cf	**1,459** cf	**911** cf	
HSG 'D' Pervious Area Unit	sf	sf	sf	sf	f
WQV per Unit	cf	cf	cf	cf	g
HSG 'D' Panel Area in Watershed	ac	ac	ac	ac	
Water Quality Volume for panelized areas, WQV	ac-ft	ac-ft	ac-ft	ac-ft	h
	cf	cf	cf	cf	
Total WQV required	**0.067** ac-ft	**0.009** ac-ft	**0.045** ac-ft	**0.026** ac-ft	
	2,905 cf	**401** cf	**1,960** cf	**1,120** cf	
Total WQV Provided in Basin	***34,850 cf***	***7,299 cf***	***20,750 cf***	***10,775 cf***	i

[a] First one inch of rainfall; 2004 Connecticut Stormwater Quality Manual

[b] Area tributary to the stormwater management basin

[c] Impervious cover area tributary to the stormwater management basin

[d] R=0.05+0.009*I; Section 7.4.1 from 2004 Connecticut Stormwater Quality Manual

[e] WQV=P*R*A/12; Section 7.4.1 from 2004 Connecticut Stormwater Quality Manual

[f] Width of solar panel multiplied by length of 2 panels in portrait and pervious clear area; Solar Panel Calculator from Minnesota Public Drainage Manual

[g] Water quality volume to be treated per unit of 2-panels in portrait; Solar Panel Calculator from Minnesota Public Drainage Manual

[h] Computed by Solar Panel Calculator from Minnesota Public Drainage Manual

[i] Volume below crest of spillway from proposed stormwater basin

Water Quality Volume Calculations

Project: **North Stonington Solar** By: KJT Date: 4/15/20
Location: 227 Boom Bridge Road, North Stonington, CT Checked: SJK Date:

Basin Name	5P	6P	7P	8P	
Rainfall, P	1.0 in.	1.0 in.	1.0 in.	1.0 in.	a
Area, A	0.00 ac	0.00 ac	0.00 ac	0.00 ac	b
Access Road & Equipment Pad Area	0.00 ac	0.00 ac	0.00 ac	0.00 ac	c
% Impervious, I	0 %	0 %	0 %	0 %	
Volumetric Runoff Coeff., R					d
Water Quality Volume for impervious areas, WQV	**0.000** ac-ft	**0.000** ac-ft	**0.000** ac-ft	**0.000** ac-ft	e
	0 cf	**0** cf	**0** cf	**0** cf	
HSG 'B' Pervious Area Unit	sf	sf	sf	sf	f
WQV per Unit	cf	cf	cf	cf	g
HSG 'B' Panel Area in Watershed	ac	ac	ac	ac	
Water Quality Volume for panelized areas, WQV	ac-ft	ac-ft	ac-ft	ac-ft	h
	cf	cf	cf	cf	
HSG 'C' Pervious Area Unit	88.20 sf	88.20 sf	88.20 sf	88.20 sf	f
WQV per Unit	1.29 cf	1.29 cf	1.29 cf	1.29 cf	g
HSG 'C' Panel Area in Watershed	0.92 ac	3.42 ac	2.14 ac	0.65 ac	
Water Quality Volume for panelized areas, WQV	**0.013** ac-ft	**0.050** ac-ft	**0.031** ac-ft	**0.010** ac-ft	h
	586 cf	**2,179** cf	**1,363** cf	**414** cf	
HSG 'D' Pervious Area Unit	sf	sf	sf	sf	f
WQV per Unit	cf	cf	cf	cf	g
HSG 'D' Panel Area in Watershed	ac	ac	ac	ac	
Water Quality Volume for panelized areas, WQV	ac-ft	ac-ft	ac-ft	ac-ft	h
	cf	cf	cf	cf	
Total WQV required	**0.013** ac-ft	**0.050** ac-ft	**0.031** ac-ft	**0.010** ac-ft	
	586 cf	**2,179** cf	**1,363** cf	**414** cf	
Total WQV Provided in Basin	***7,895 cf***	***26,000 cf***	***24,719 cf***	***6,000 cf***	i

[a] First one inch of rainfall; 2004 Connecticut Stormwater Quality Manual

[b] Area tributary to the stormwater management basin

[c] Impervious cover area tributary to the stormwater management basin

[d] R=0.05+0.009*I; Section 7.4.1 from 2004 Connecticut Stormwater Quality Manual

[e] WQV=P*R*A/12; Section 7.4.1 from 2004 Connecticut Stormwater Quality Manual

[f] Width of solar panel multiplied by length of 2 panels in portrait and pervious clear area; Solar Panel Calculator from Minnesota Public Drainage Manual

[g] Water quality volume to be treated per unit of 2-panels in portrait; Solar Panel Calculator from Minnesota Public Drainage Manual

[h] Computed by Solar Panel Calculator from Minnesota Public Drainage Manual

[i] Volume below crest of spillway from proposed stormwater basin

Water Quality Volume Calculations

Project: **North Stonington Solar** By: KJT Date: 4/15/20
Location: 227 Boom Bridge Road, North Stonington, CT Checked: SJK Date:

Basin Name	**9P**				
Rainfall, P	1.0 in.				a
Area, A	1.09 ac				b
Access Road & Equipment Pad Area	0.17 ac				c
% Impervious, I	16 %				
Volumetric Runoff Coeff., R	0.190				d
Water Quality Volume for impervious areas, WQV	**0.017** ac-ft				e
	753 cf				
HSG 'B' Pervious Area Unit	sf				f
WQV per Unit	cf				g
HSG 'B' Panel Area in Watershed	ac				
Water Quality Volume for panelized areas, WQV	ac-ft				h
	cf				
HSG 'C' Pervious Area Unit	88.20 sf				f
WQV per Unit	1.29 cf				g
HSG 'C' Panel Area in Watershed	2.51 ac				
Water Quality Volume for panelized areas, WQV	**0.037** ac-ft				h
	1,599 cf				
HSG 'D' Pervious Area Unit	sf				f
WQV per Unit	cf				g
HSG 'D' Panel Area in Watershed	ac				
Water Quality Volume for panelized areas, WQV	ac-ft				h
	cf				
Total WQV required	**0.054** ac-ft				
	2,352 cf				
Total WQV Provided in Basin	***37,788 cf***				i

[a] First one inch of rainfall; 2004 Connecticut Stormwater Quality Manual

[b] Area tributary to the stormwater management basin

[c] Impervious cover area tributary to the stormwater management basin

[d] R=0.05+0.009*I; Section 7.4.1 from 2004 Connecticut Stormwater Quality Manual

[e] WQV=P*R*A/12; Section 7.4.1 from 2004 Connecticut Stormwater Quality Manual

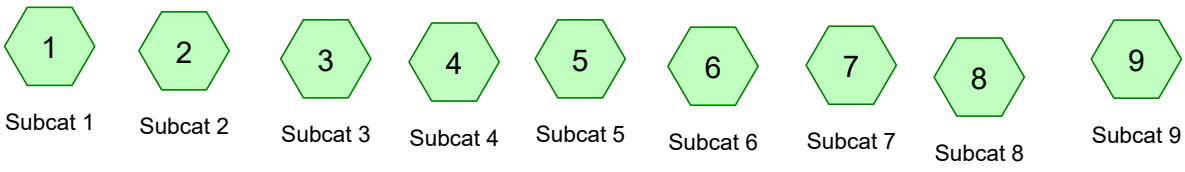
[f] Width of solar panel multiplied by length of 2 panels in portrait and pervious clear area; Solar Panel Calculator from Minnesota Public Drainage Manual

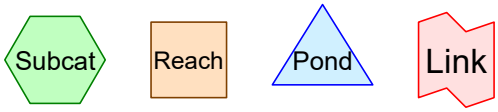
[g] Water quality volume to be treated per unit of 2-panels in portrait; Solar Panel Calculator from Minnesota Public Drainage Manual

[h] Computed by Solar Panel Calculator from Minnesota Public Drainage Manual

[i] Volume below crest of spillway from proposed stormwater basin

HydroCAD Analysis: Existing Conditions





Routing Diagram for 42517.01 HydroCAD Existing
Prepared by VHB, Printed 4/20/2020

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
28.100	48	Brush, Good, HSG B (1, 2, 3, 4, 5, 6, 7, 8, 9)
0.402	82	Dirt roads, HSG B (1, 3, 4, 9)
28.502	**48**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
28.502	HSG B	1, 2, 3, 4, 5, 6, 7, 8, 9
0.000	HSG C	
0.000	HSG D	
0.000	Other	
28.502		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	28.100	0.000	0.000	0.000	28.100	Brush, Good	1, 2, 3, 4, 5, 6, 7, 8, 9
0.000	0.402	0.000	0.000	0.000	0.402	Dirt roads	1, 3, 4, 9
0.000	**28.502**	**0.000**	**0.000**	**0.000**	**28.502**	**TOTAL AREA**	

2-Year Storm Event – Existing

Time span=4.00-20.00 hrs, dt=0.05 hrs, 321 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Subcat 1 Runoff Area=4.727 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=485' Tc=23.2 min CN=49 Runoff=0.12 cfs 0.047 af

Subcatchment2: Subcat 2 Runoff Area=1.692 ac 0.00% Impervious Runoff Depth>0.10"
Flow Length=265' Tc=15.6 min CN=48 Runoff=0.03 cfs 0.014 af

Subcatchment3: Subcat 3 Runoff Area=3.241 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=455' Tc=15.9 min CN=49 Runoff=0.09 cfs 0.033 af

Subcatchment4: Subcat 4 Runoff Area=2.044 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=530' Tc=19.9 min CN=49 Runoff=0.06 cfs 0.020 af

Subcatchment5: Subcat 5 Runoff Area=1.968 ac 0.00% Impervious Runoff Depth>0.10"
Flow Length=690' Tc=23.7 min CN=48 Runoff=0.04 cfs 0.016 af

Subcatchment6: Subcat 6 Runoff Area=5.749 ac 0.00% Impervious Runoff Depth>0.10"
Flow Length=845' Tc=28.0 min CN=48 Runoff=0.11 cfs 0.048 af

Subcatchment7: Subcat 7 Runoff Area=3.573 ac 0.00% Impervious Runoff Depth>0.10"
Flow Length=740' Tc=22.1 min CN=48 Runoff=0.07 cfs 0.030 af

Subcatchment8: Subcat 8 Runoff Area=1.900 ac 0.00% Impervious Runoff Depth>0.10"
Flow Length=540' Tc=31.9 min CN=48 Runoff=0.04 cfs 0.016 af

Subcatchment9: Subcat 9 Runoff Area=3.608 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=695' Tc=27.9 min CN=49 Runoff=0.09 cfs 0.036 af

Total Runoff Area = 28.502 ac Runoff Volume = 0.259 af Average Runoff Depth = 0.11"
100.00% Pervious = 28.502 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

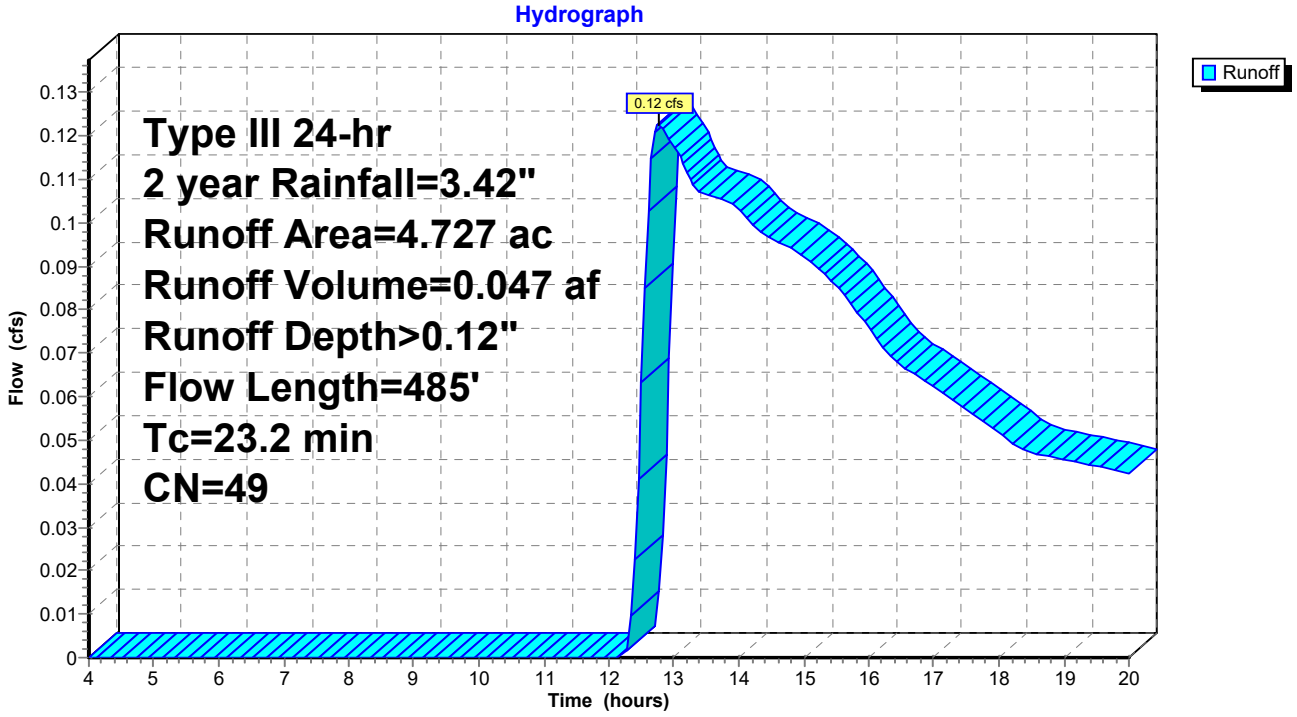
Runoff = 0.12 cfs @ 12.77 hrs, Volume= 0.047 af, Depth> 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
4.557	48	Brush, Good, HSG B
0.171	82	Dirt roads, HSG B
4.727	49	Weighted Average
4.727		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.6	155	0.0387	0.98		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	105	0.0762	1.38		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	175	0.0257	0.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.2	485	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2: Subcat 2

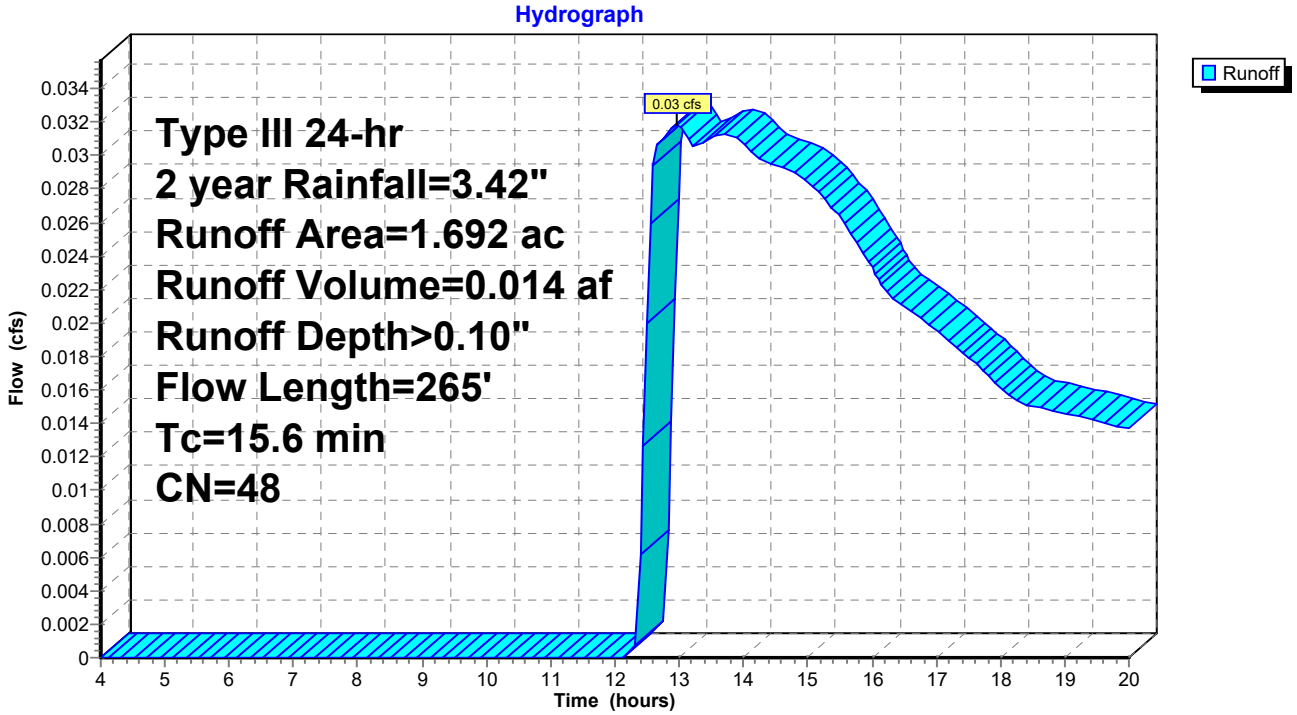
Runoff = 0.03 cfs @ 12.97 hrs, Volume= 0.014 af, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
1.692	48	Brush, Good, HSG B
1.692		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
0.9	86	0.1105	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	61	0.0164	0.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	68	0.0367	0.96		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.6	265	Total			

Subcatchment 2: Subcat 2



Summary for Subcatchment 3: Subcat 3

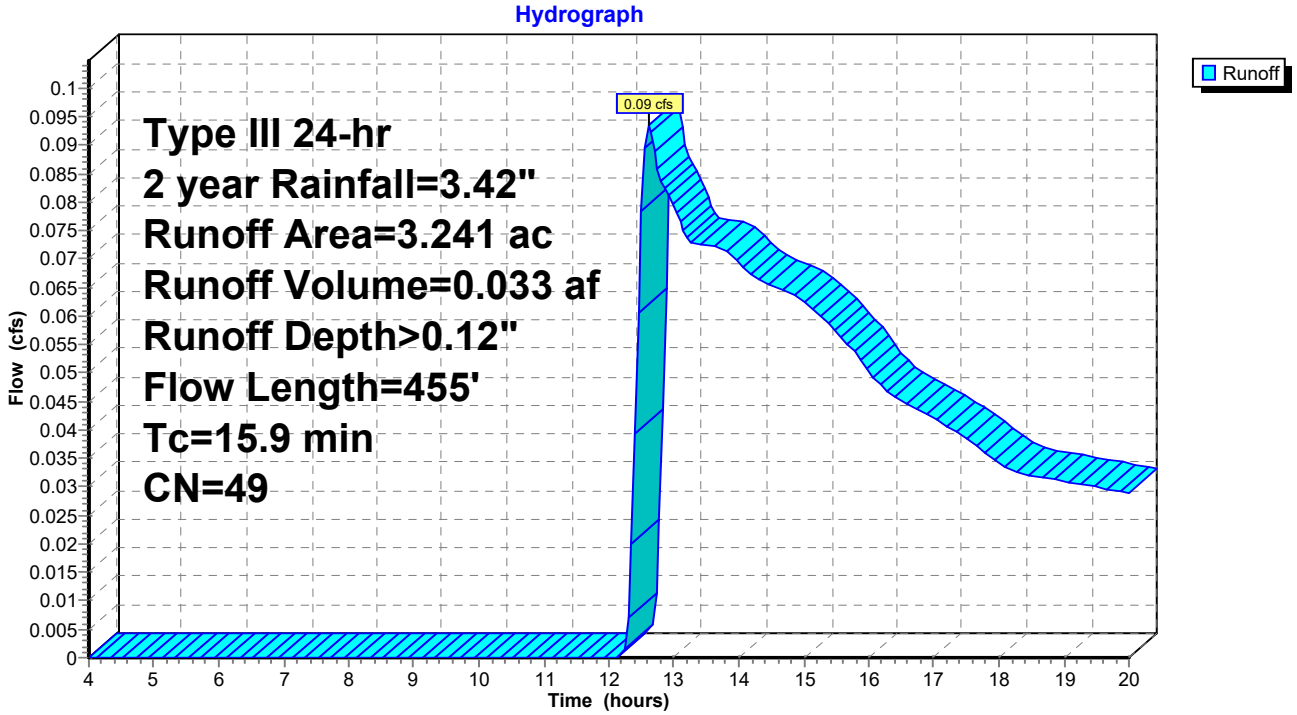
Runoff = 0.09 cfs @ 12.61 hrs, Volume= 0.033 af, Depth> 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
3.182	48	Brush, Good, HSG B
0.059	82	Dirt roads, HSG B
3.241	49	Weighted Average
3.241		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.3	140	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	265	0.0642	1.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.9	455	Total			

Subcatchment 3: Subcat 3



Summary for Subcatchment 4: Subcat 4

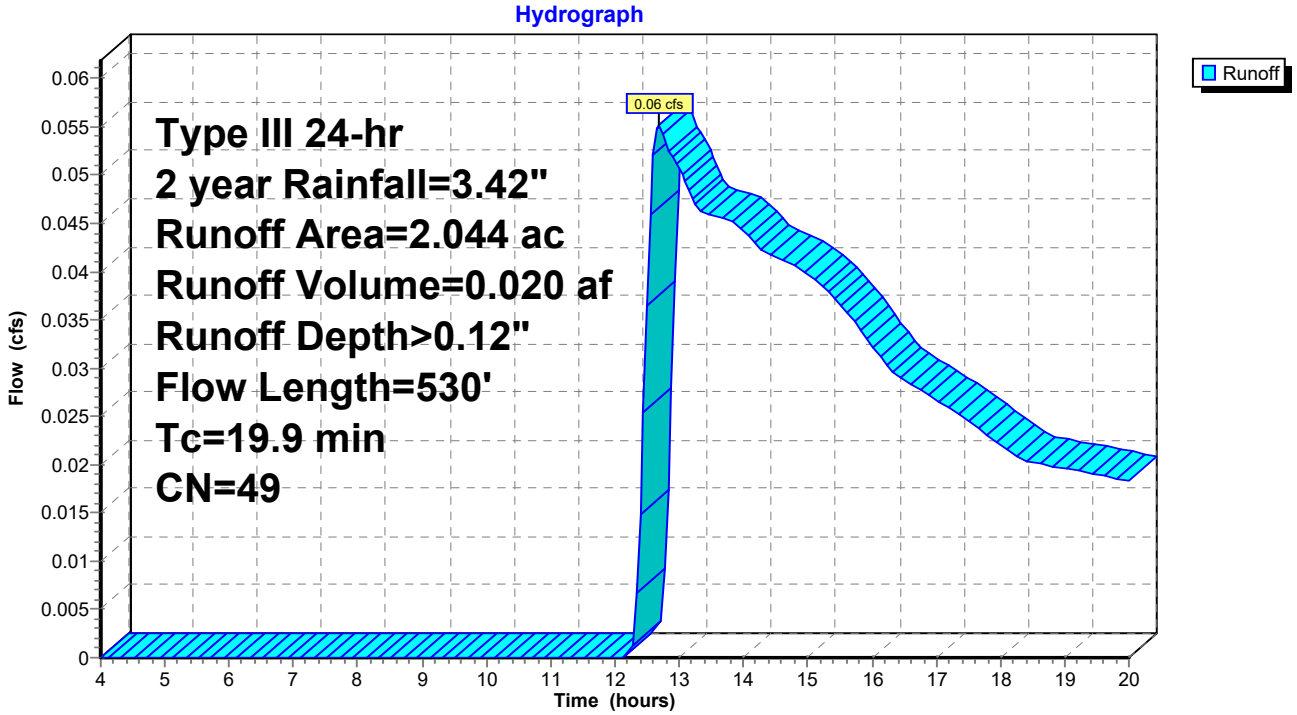
Runoff = 0.06 cfs @ 12.69 hrs, Volume= 0.020 af, Depth> 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
1.982	48	Brush, Good, HSG B
0.062	82	Dirt roads, HSG B
2.044	49	Weighted Average
2.044		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
3.0	120	0.0183	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	360	0.0583	1.21		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.9	530	Total			

Subcatchment 4: Subcat 4



Summary for Subcatchment 5: Subcat 5

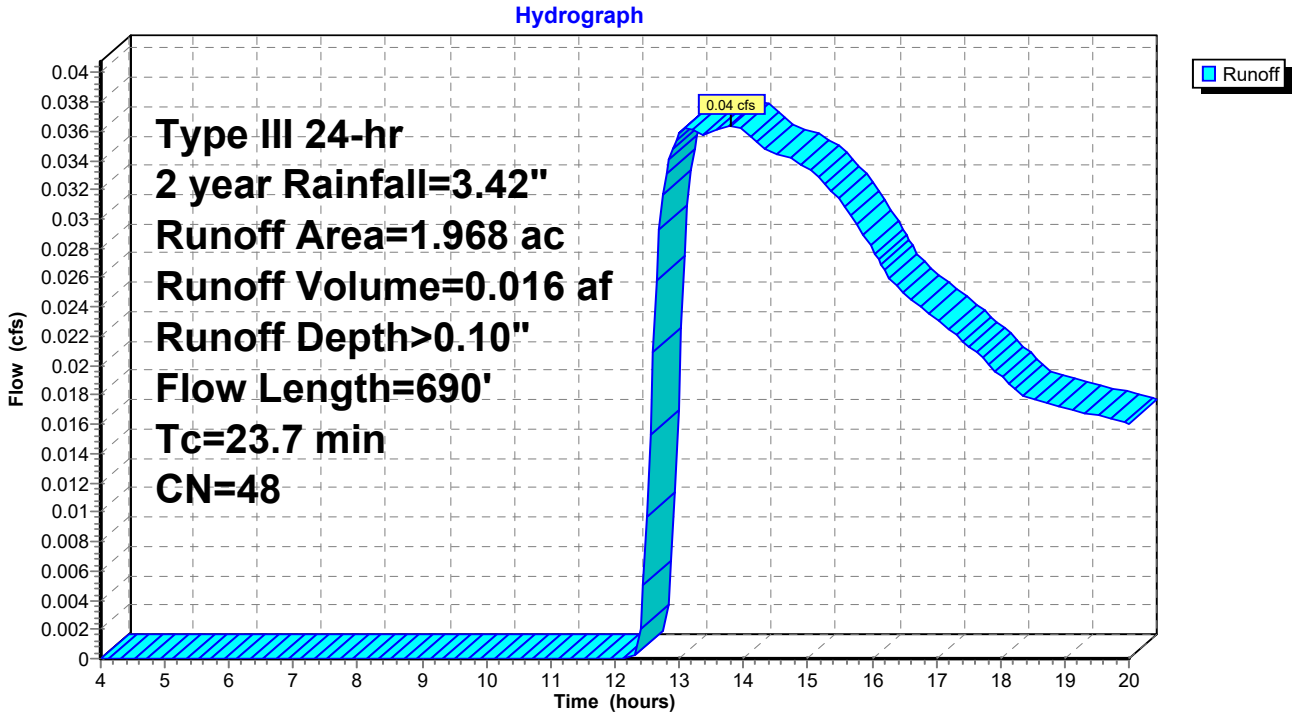
Runoff = 0.04 cfs @ 13.81 hrs, Volume= 0.016 af, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
1.968	48	Brush, Good, HSG B
1.968		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
5.3	215	0.0186	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.5	425	0.0471	1.09		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.7	690	Total			

Subcatchment 5: Subcat 5



Summary for Subcatchment 6: Subcat 6

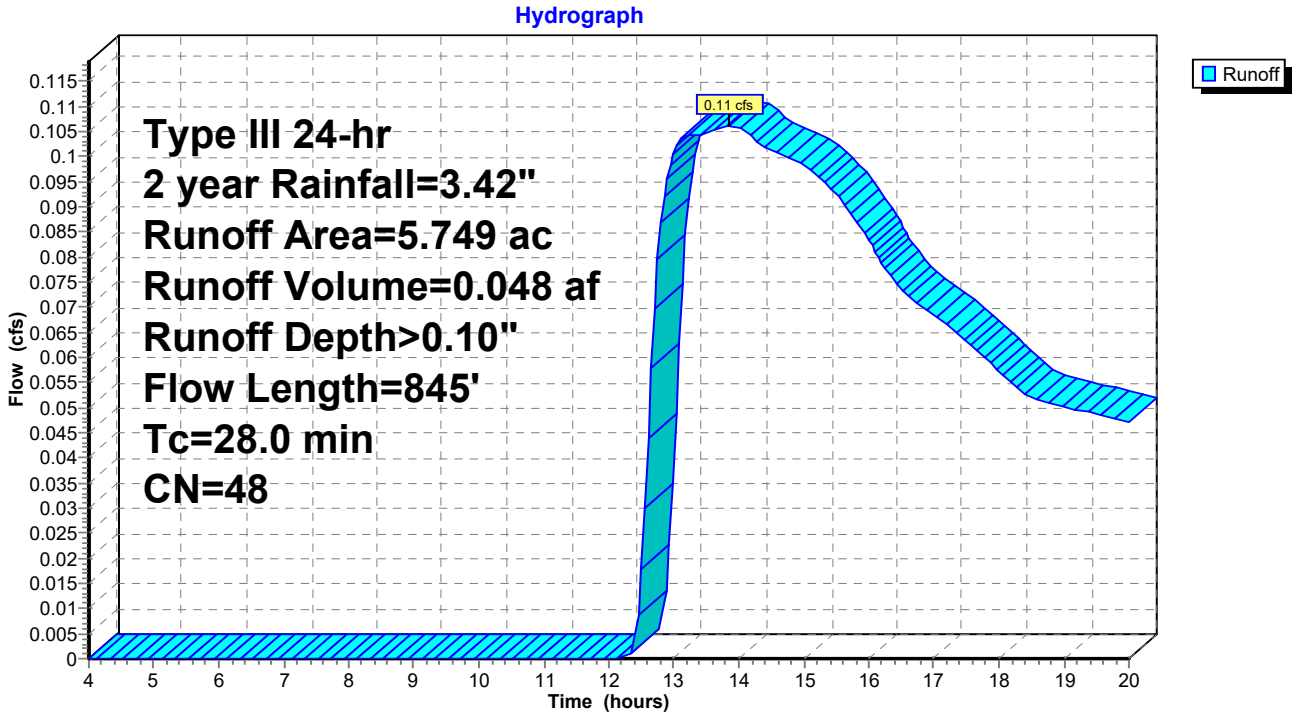
Runoff = 0.11 cfs @ 13.86 hrs, Volume= 0.048 af, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
5.749	48	Brush, Good, HSG B
5.749		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0800	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
18.5	600	0.0117	0.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.6	195	0.0615	1.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.0	845	Total			

Subcatchment 6: Subcat 6



Summary for Subcatchment 7: Subcat 7

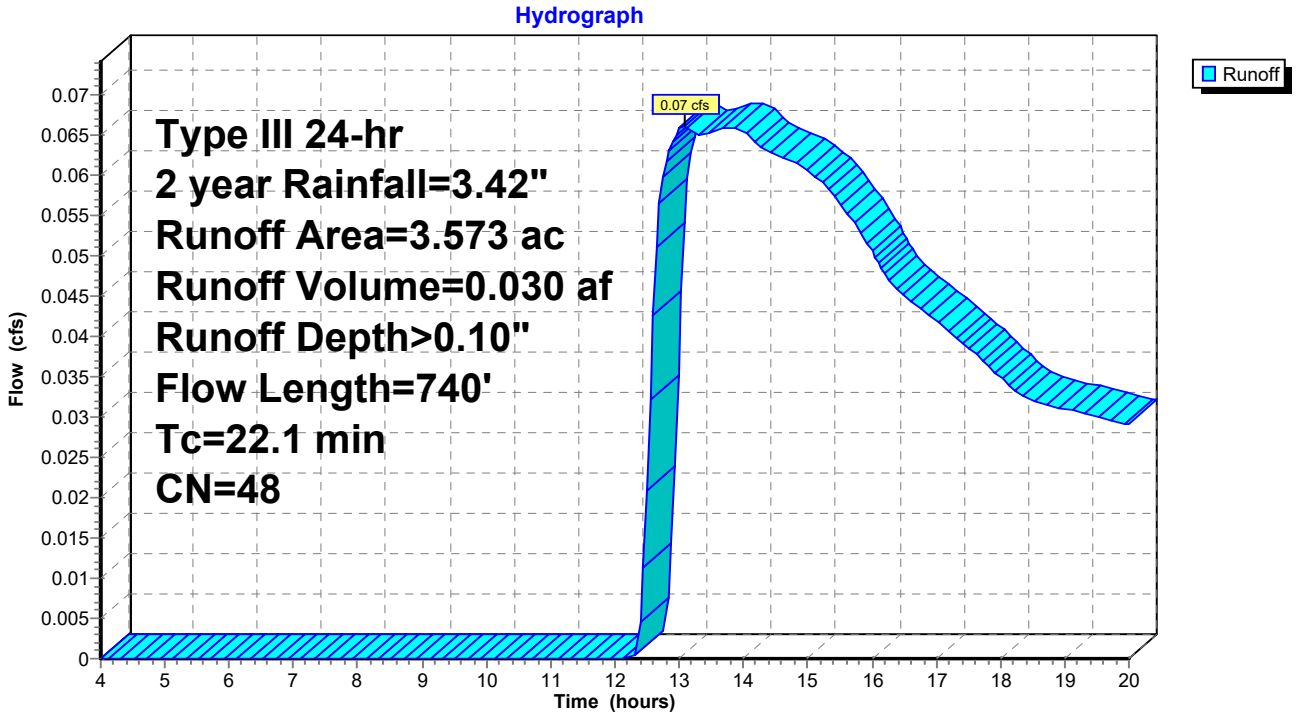
Runoff = 0.07 cfs @ 13.08 hrs, Volume= 0.030 af, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
3.573	48	Brush, Good, HSG B
3.573		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1000	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.8	240	0.0812	1.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.0	450	0.0134	0.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
22.1	740	Total			

Subcatchment 7: Subcat 7



Summary for Subcatchment 8: Subcat 8

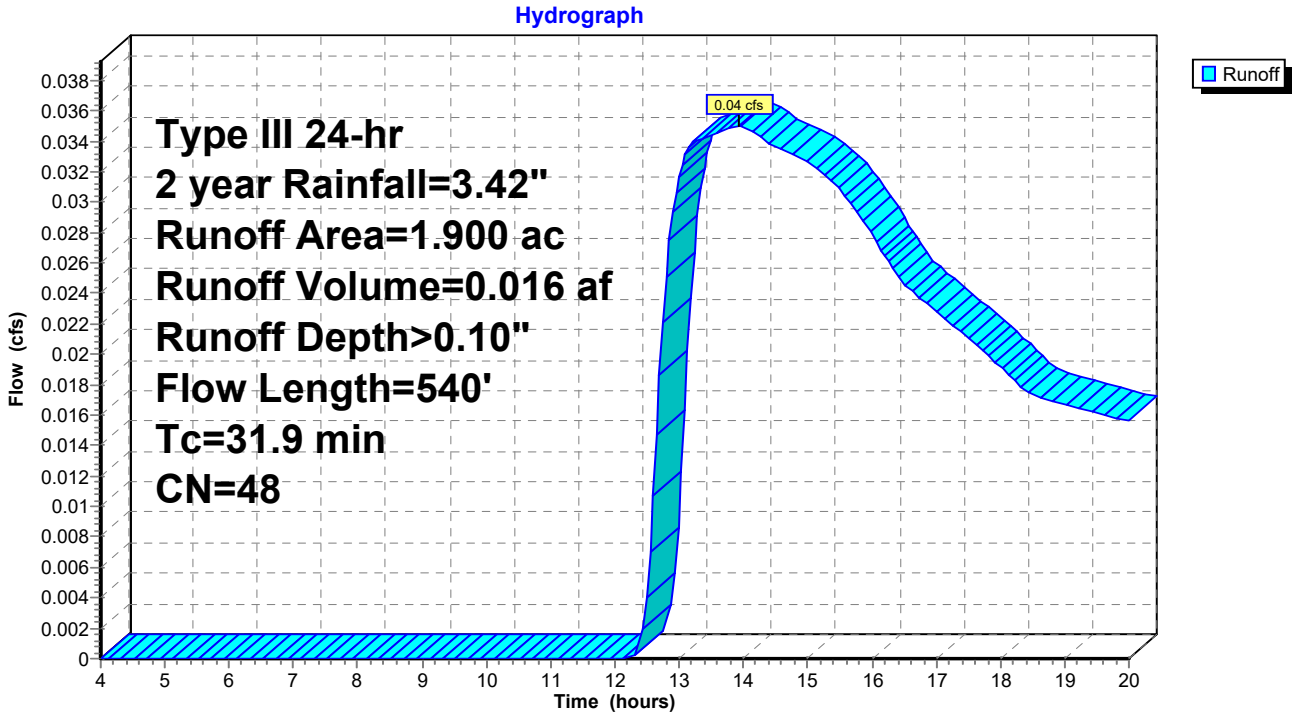
Runoff = 0.04 cfs @ 13.93 hrs, Volume= 0.016 af, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
1.900	48	Brush, Good, HSG B
1.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	50	0.0050	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
8.9	315	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	175	0.0686	1.31		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.9	540	Total			

Subcatchment 8: Subcat 8



Summary for Subcatchment 9: Subcat 9

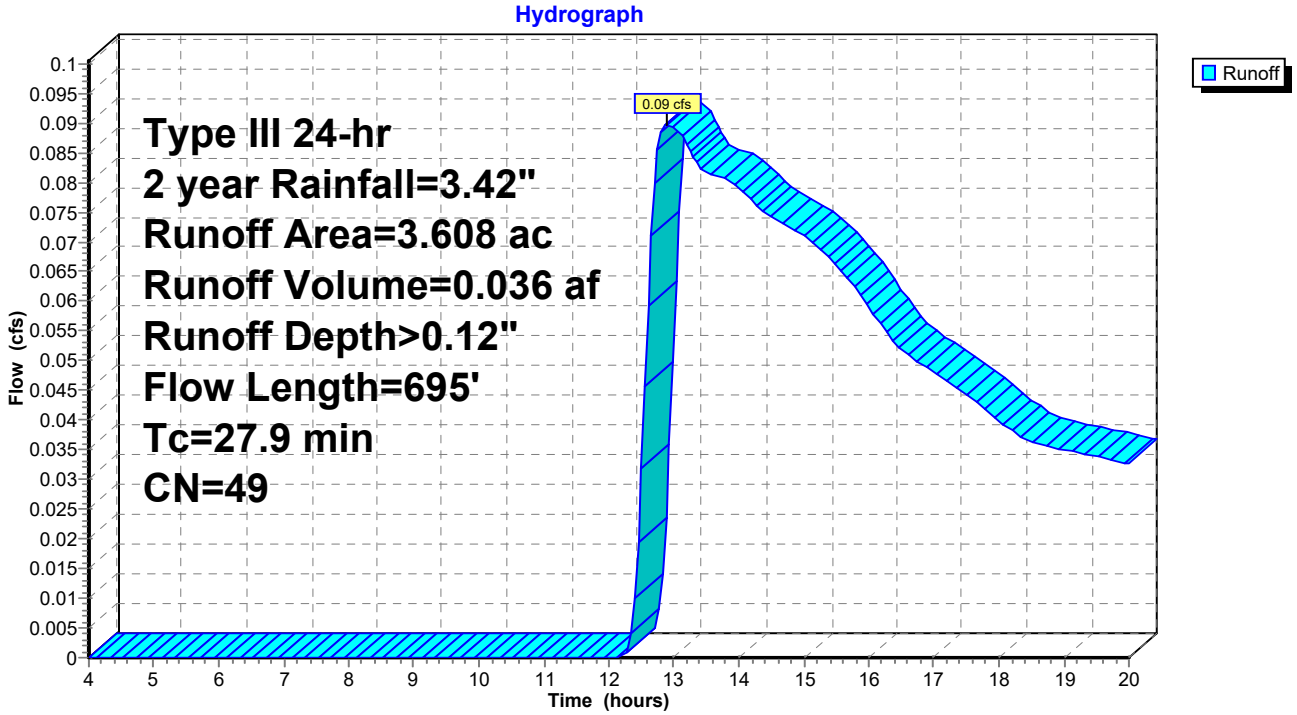
Runoff = 0.09 cfs @ 12.90 hrs, Volume= 0.036 af, Depth> 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
3.498	48	Brush, Good, HSG B
0.110	82	Dirt roads, HSG B
3.608	49	Weighted Average
3.608		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.0360	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.5	215	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.0	430	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.9	695	Total			

Subcatchment 9: Subcat 9



25-Year Storm Event – Existing

Time span=4.00-20.00 hrs, dt=0.05 hrs, 321 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Subcat 1 Runoff Area=4.727 ac 0.00% Impervious Runoff Depth>0.98"
Flow Length=485' Tc=23.2 min CN=49 Runoff=3.05 cfs 0.387 af

Subcatchment2: Subcat 2 Runoff Area=1.692 ac 0.00% Impervious Runoff Depth>0.92"
Flow Length=265' Tc=15.6 min CN=48 Runoff=1.13 cfs 0.130 af

Subcatchment3: Subcat 3 Runoff Area=3.241 ac 0.00% Impervious Runoff Depth>0.99"
Flow Length=455' Tc=15.9 min CN=49 Runoff=2.40 cfs 0.267 af

Subcatchment4: Subcat 4 Runoff Area=2.044 ac 0.00% Impervious Runoff Depth>0.99"
Flow Length=530' Tc=19.9 min CN=49 Runoff=1.39 cfs 0.168 af

Subcatchment5: Subcat 5 Runoff Area=1.968 ac 0.00% Impervious Runoff Depth>0.92"
Flow Length=690' Tc=23.7 min CN=48 Runoff=1.14 cfs 0.150 af

Subcatchment6: Subcat 6 Runoff Area=5.749 ac 0.00% Impervious Runoff Depth>0.91"
Flow Length=845' Tc=28.0 min CN=48 Runoff=3.13 cfs 0.438 af

Subcatchment7: Subcat 7 Runoff Area=3.573 ac 0.00% Impervious Runoff Depth>0.92"
Flow Length=740' Tc=22.1 min CN=48 Runoff=2.13 cfs 0.273 af

Subcatchment8: Subcat 8 Runoff Area=1.900 ac 0.00% Impervious Runoff Depth>0.91"
Flow Length=540' Tc=31.9 min CN=48 Runoff=0.98 cfs 0.144 af

Subcatchment9: Subcat 9 Runoff Area=3.608 ac 0.00% Impervious Runoff Depth>0.98"
Flow Length=695' Tc=27.9 min CN=49 Runoff=2.17 cfs 0.295 af

Total Runoff Area = 28.502 ac Runoff Volume = 2.253 af Average Runoff Depth = 0.95"
100.00% Pervious = 28.502 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

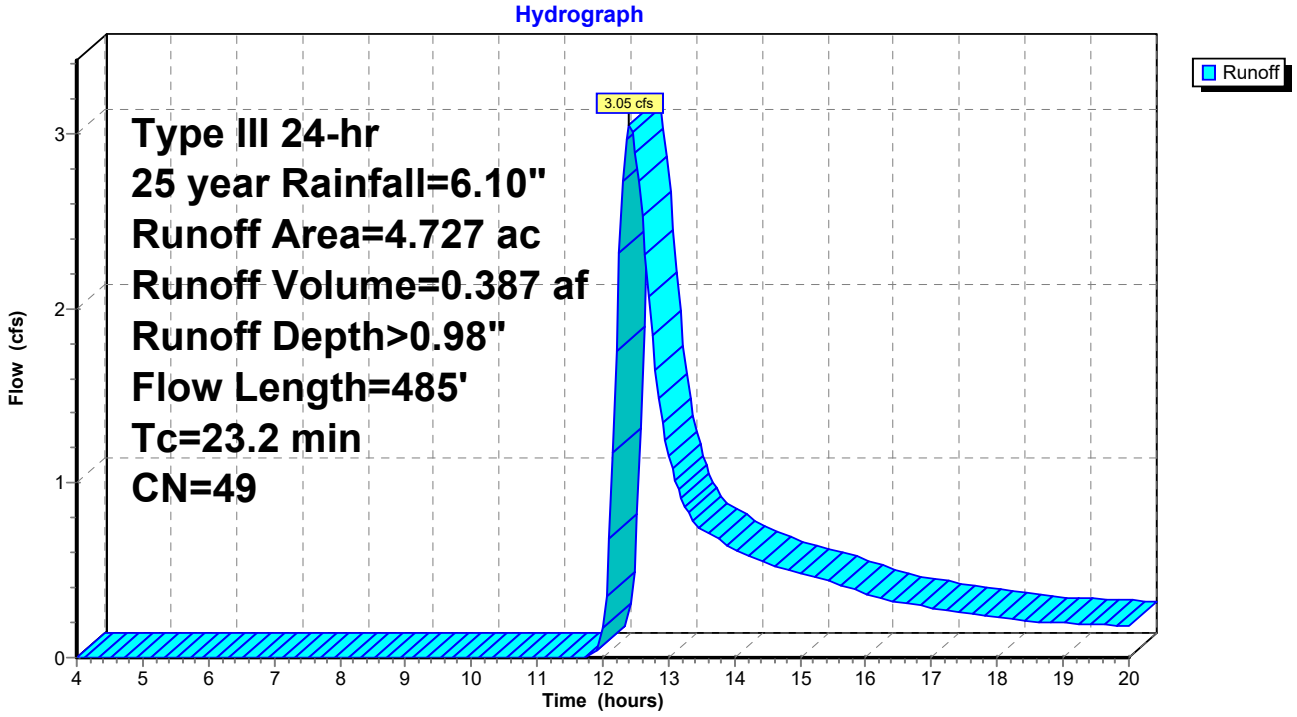
Runoff = 3.05 cfs @ 12.41 hrs, Volume= 0.387 af, Depth> 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
4.557	48	Brush, Good, HSG B
0.171	82	Dirt roads, HSG B
4.727	49	Weighted Average
4.727		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.6	155	0.0387	0.98		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	105	0.0762	1.38		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	175	0.0257	0.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.2	485	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2: Subcat 2

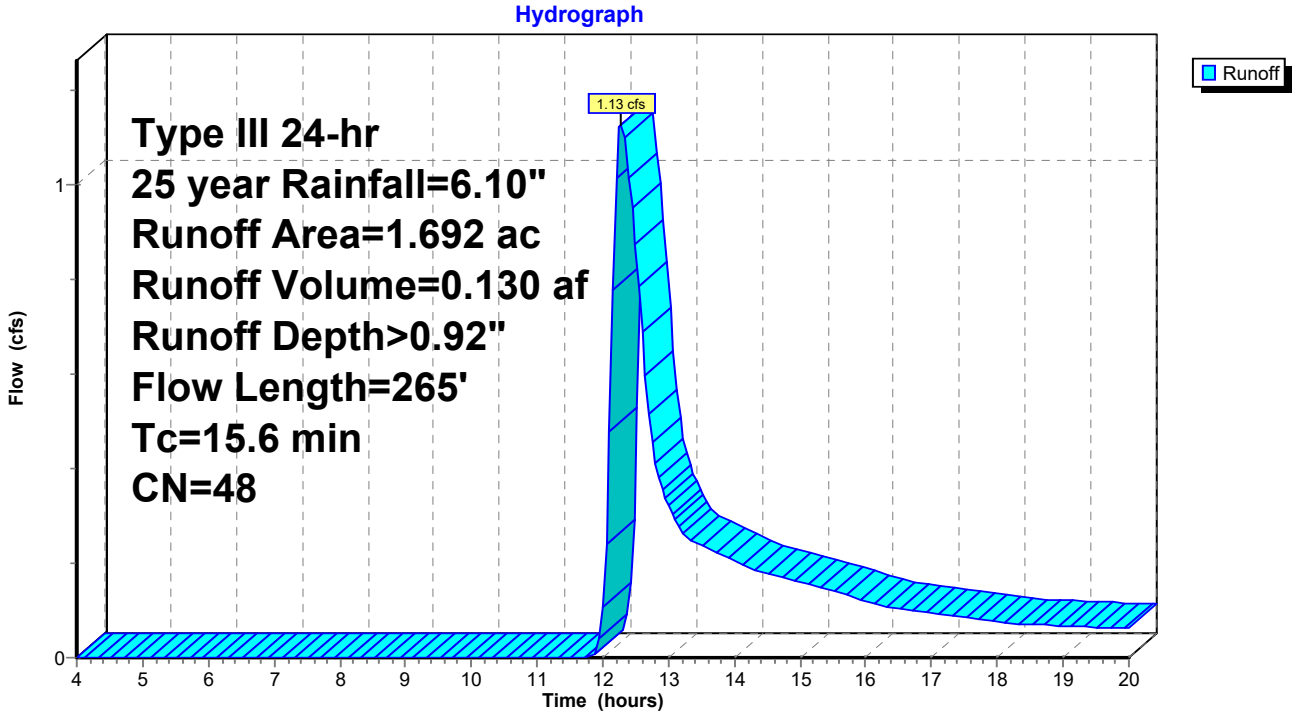
Runoff = 1.13 cfs @ 12.28 hrs, Volume= 0.130 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
1.692	48	Brush, Good, HSG B
1.692		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
0.9	86	0.1105	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	61	0.0164	0.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	68	0.0367	0.96		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.6	265	Total			

Subcatchment 2: Subcat 2



Summary for Subcatchment 3: Subcat 3

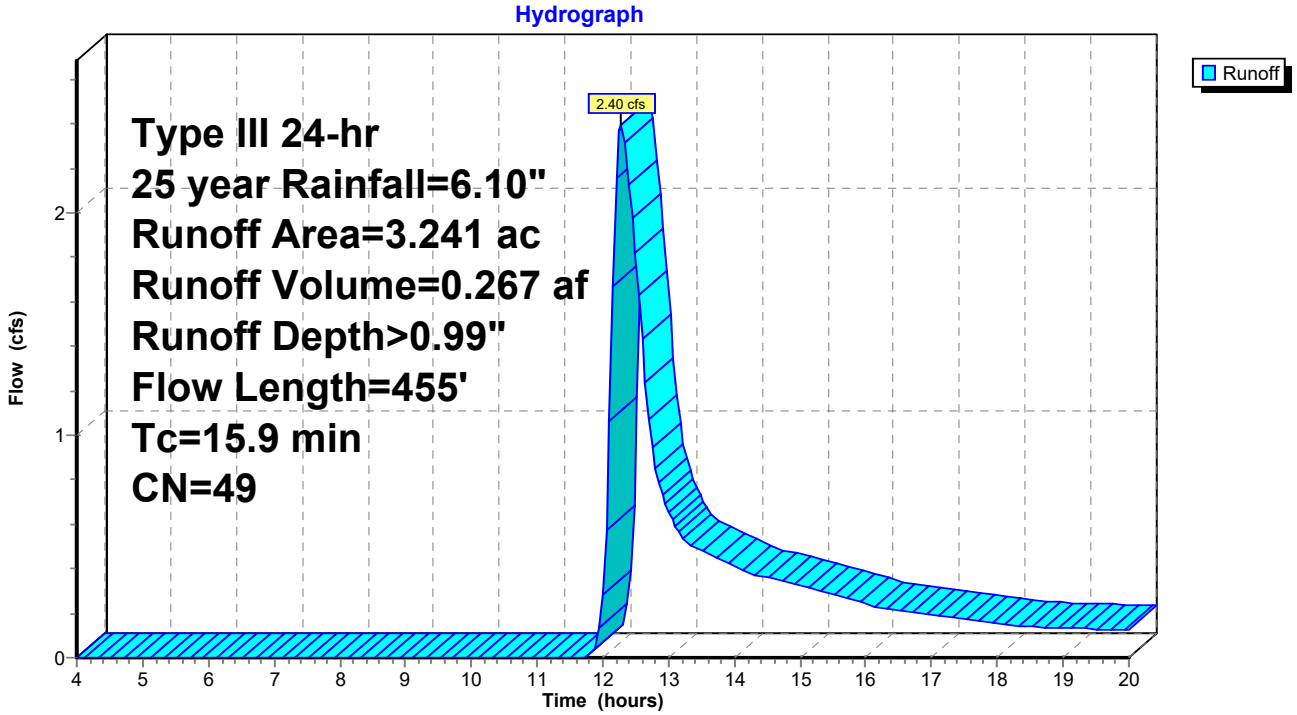
Runoff = 2.40 cfs @ 12.27 hrs, Volume= 0.267 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
3.182	48	Brush, Good, HSG B
0.059	82	Dirt roads, HSG B
3.241	49	Weighted Average
3.241		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.3	140	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	265	0.0642	1.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.9	455	Total			

Subcatchment 3: Subcat 3



Summary for Subcatchment 4: Subcat 4

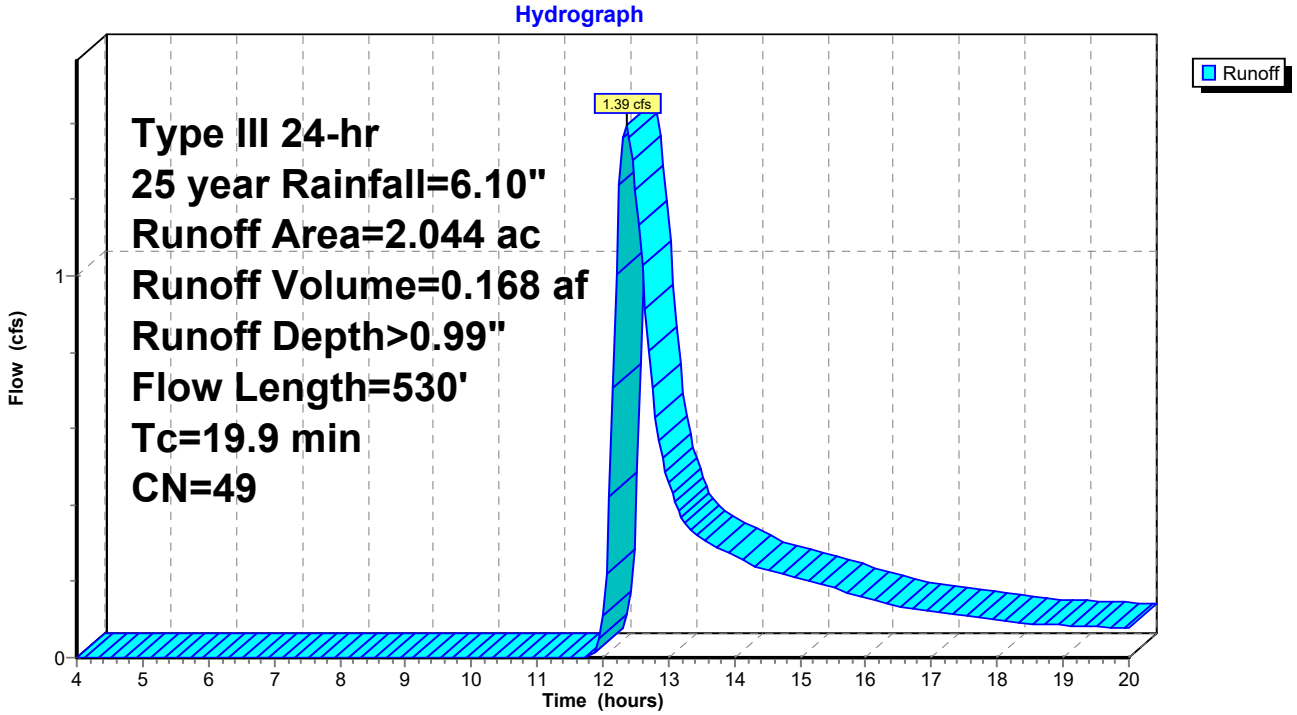
Runoff = 1.39 cfs @ 12.35 hrs, Volume= 0.168 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
1.982	48	Brush, Good, HSG B
0.062	82	Dirt roads, HSG B
2.044	49	Weighted Average
2.044		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
3.0	120	0.0183	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	360	0.0583	1.21		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.9	530	Total			

Subcatchment 4: Subcat 4



Summary for Subcatchment 5: Subcat 5

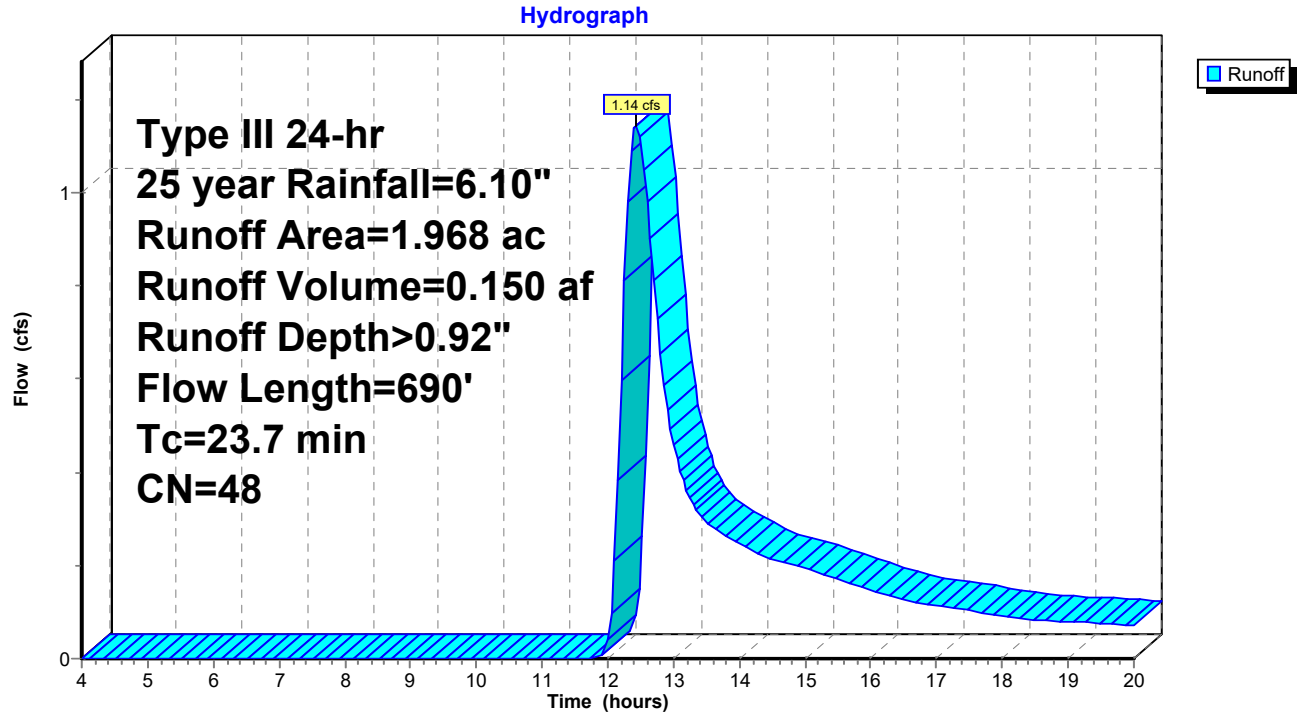
Runoff = 1.14 cfs @ 12.42 hrs, Volume= 0.150 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
1.968	48	Brush, Good, HSG B
1.968		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
5.3	215	0.0186	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.5	425	0.0471	1.09		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.7	690	Total			

Subcatchment 5: Subcat 5



Summary for Subcatchment 6: Subcat 6

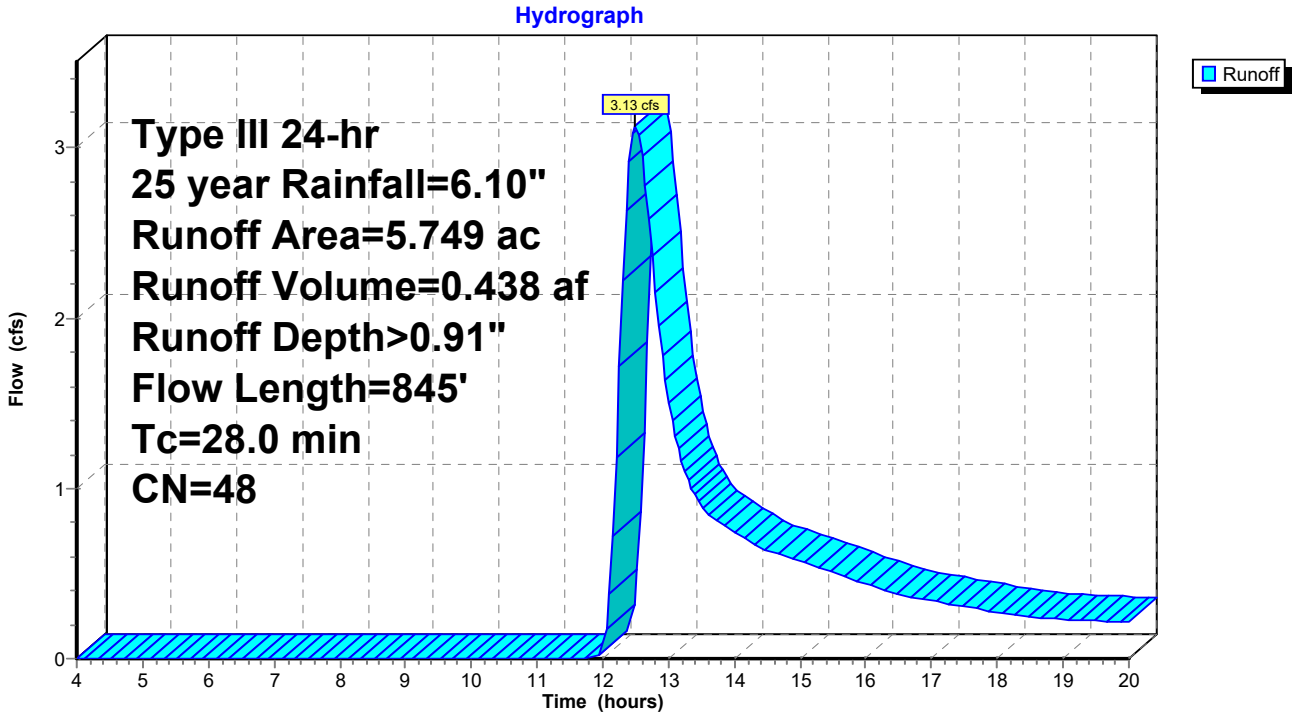
Runoff = 3.13 cfs @ 12.50 hrs, Volume= 0.438 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
5.749	48	Brush, Good, HSG B
5.749		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0800	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
18.5	600	0.0117	0.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.6	195	0.0615	1.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.0	845	Total			

Subcatchment 6: Subcat 6



Summary for Subcatchment 7: Subcat 7

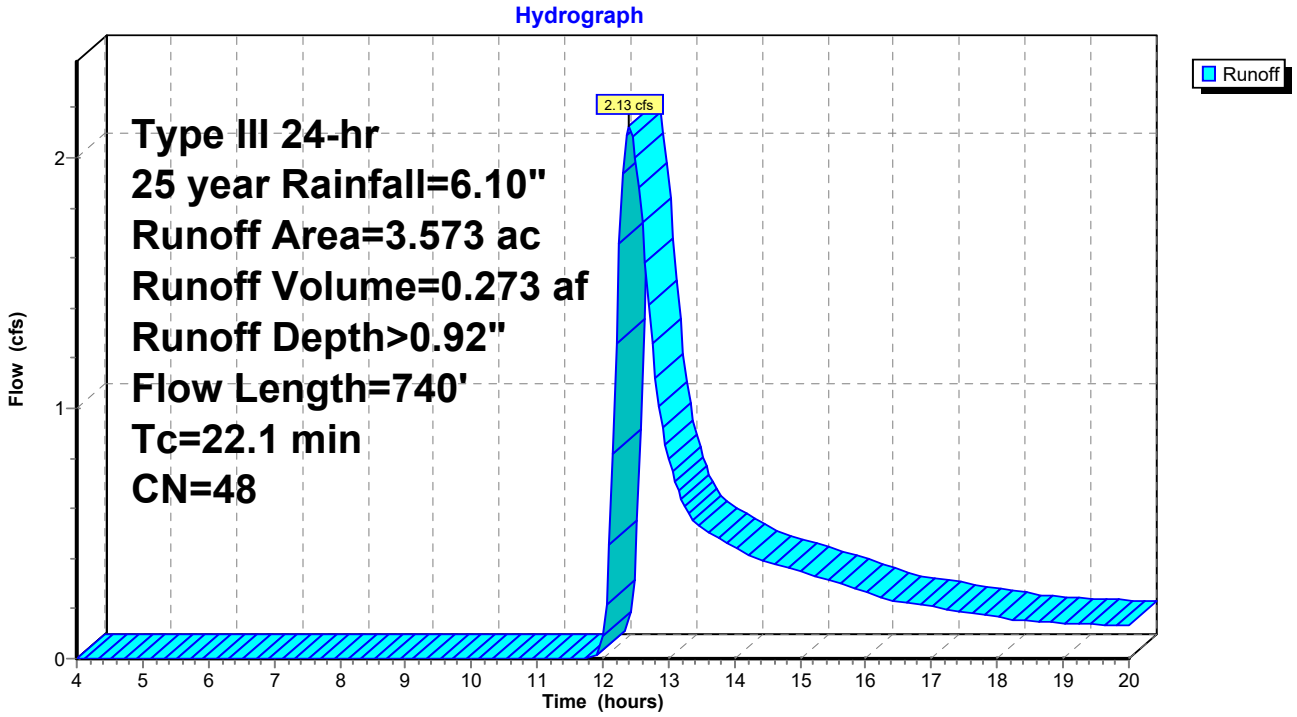
Runoff = 2.13 cfs @ 12.40 hrs, Volume= 0.273 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
3.573	48	Brush, Good, HSG B
3.573		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1000	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.8	240	0.0812	1.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.0	450	0.0134	0.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
22.1	740	Total			

Subcatchment 7: Subcat 7



Summary for Subcatchment 8: Subcat 8

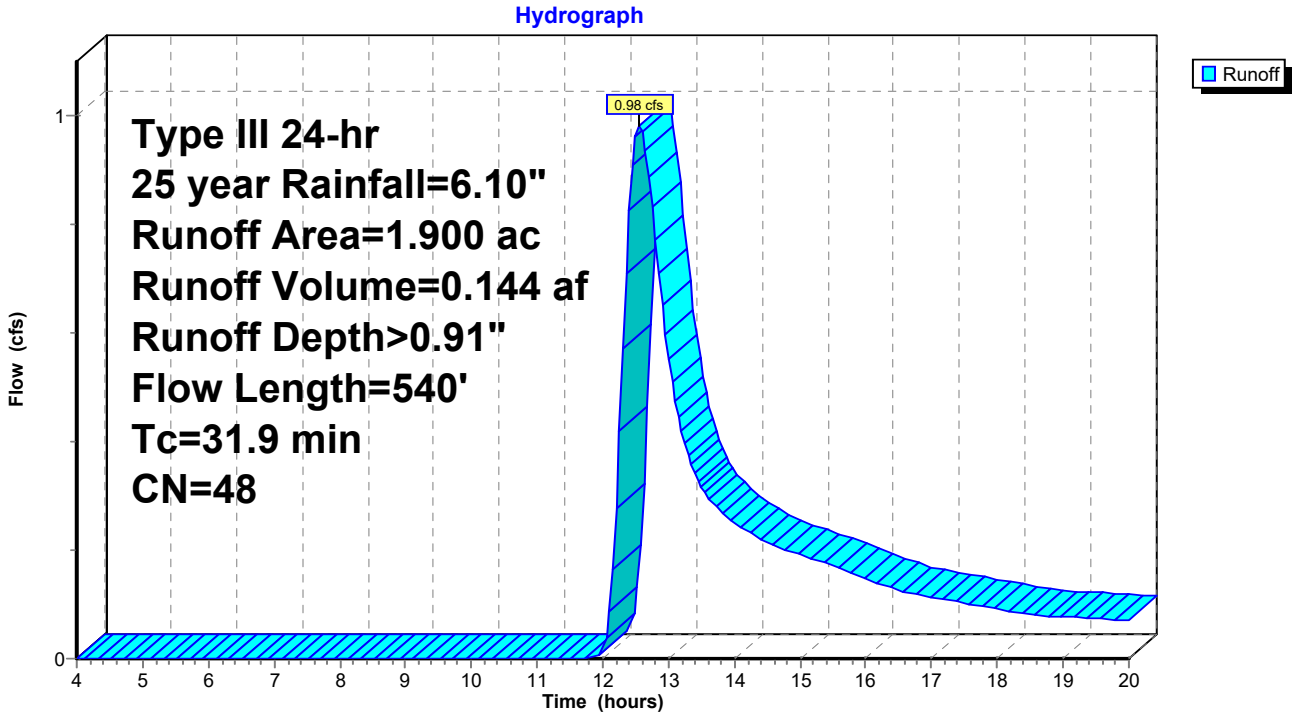
Runoff = 0.98 cfs @ 12.56 hrs, Volume= 0.144 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
1.900	48	Brush, Good, HSG B
1.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	50	0.0050	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
8.9	315	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	175	0.0686	1.31		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.9	540	Total			

Subcatchment 8: Subcat 8



Summary for Subcatchment 9: Subcat 9

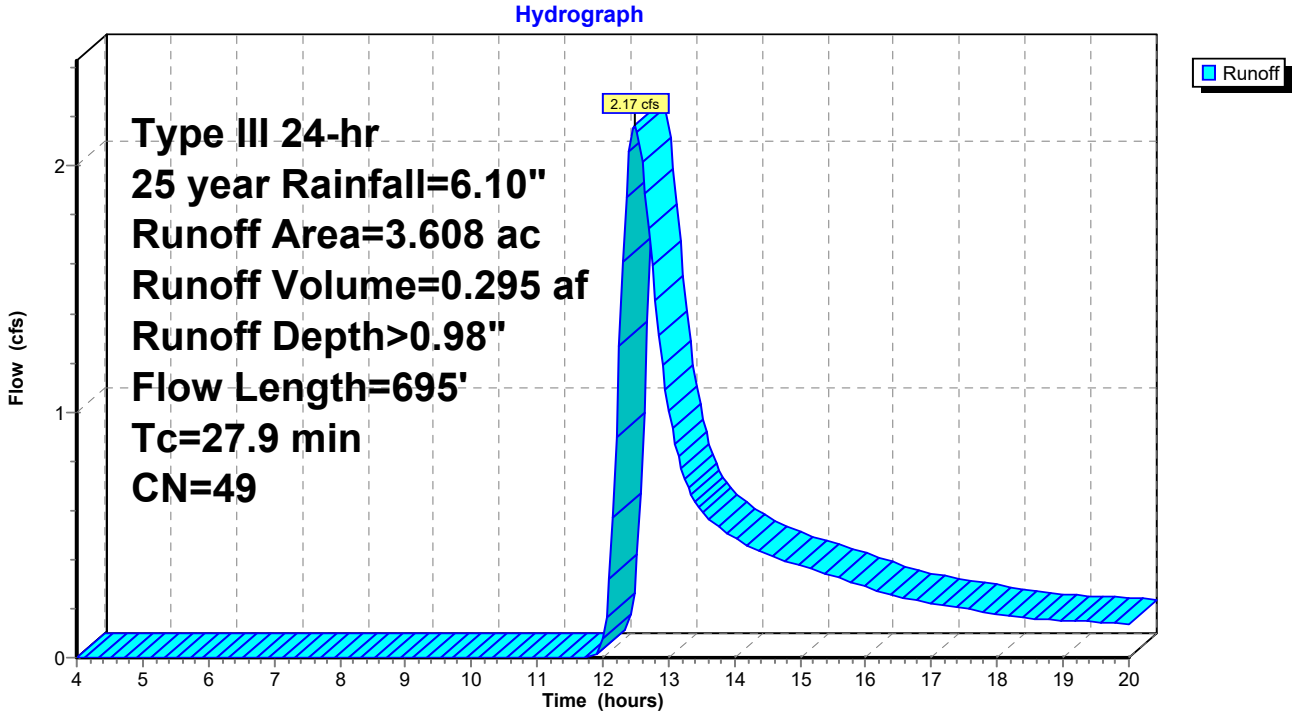
Runoff = 2.17 cfs @ 12.48 hrs, Volume= 0.295 af, Depth> 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
3.498	48	Brush, Good, HSG B
0.110	82	Dirt roads, HSG B
3.608	49	Weighted Average
3.608		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.0360	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.5	215	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.0	430	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.9	695	Total			

Subcatchment 9: Subcat 9



50-Year Storm Event- Existing

Time span=4.00-20.00 hrs, dt=0.05 hrs, 321 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Subcat 1 Runoff Area=4.727 ac 0.00% Impervious Runoff Depth>1.34"
Flow Length=485' Tc=23.2 min CN=49 Runoff=4.44 cfs 0.528 af

Subcatchment2: Subcat 2 Runoff Area=1.692 ac 0.00% Impervious Runoff Depth>1.27"
Flow Length=265' Tc=15.6 min CN=48 Runoff=1.70 cfs 0.178 af

Subcatchment3: Subcat 3 Runoff Area=3.241 ac 0.00% Impervious Runoff Depth>1.34"
Flow Length=455' Tc=15.9 min CN=49 Runoff=3.52 cfs 0.363 af

Subcatchment4: Subcat 4 Runoff Area=2.044 ac 0.00% Impervious Runoff Depth>1.34"
Flow Length=530' Tc=19.9 min CN=49 Runoff=2.04 cfs 0.229 af

Subcatchment5: Subcat 5 Runoff Area=1.968 ac 0.00% Impervious Runoff Depth>1.26"
Flow Length=690' Tc=23.7 min CN=48 Runoff=1.69 cfs 0.207 af

Subcatchment6: Subcat 6 Runoff Area=5.749 ac 0.00% Impervious Runoff Depth>1.26"
Flow Length=845' Tc=28.0 min CN=48 Runoff=4.63 cfs 0.602 af

Subcatchment7: Subcat 7 Runoff Area=3.573 ac 0.00% Impervious Runoff Depth>1.26"
Flow Length=740' Tc=22.1 min CN=48 Runoff=3.16 cfs 0.375 af

Subcatchment8: Subcat 8 Runoff Area=1.900 ac 0.00% Impervious Runoff Depth>1.25"
Flow Length=540' Tc=31.9 min CN=48 Runoff=1.45 cfs 0.198 af

Subcatchment9: Subcat 9 Runoff Area=3.608 ac 0.00% Impervious Runoff Depth>1.34"
Flow Length=695' Tc=27.9 min CN=49 Runoff=3.15 cfs 0.402 af

Total Runoff Area = 28.502 ac Runoff Volume = 3.081 af Average Runoff Depth = 1.30"
100.00% Pervious = 28.502 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

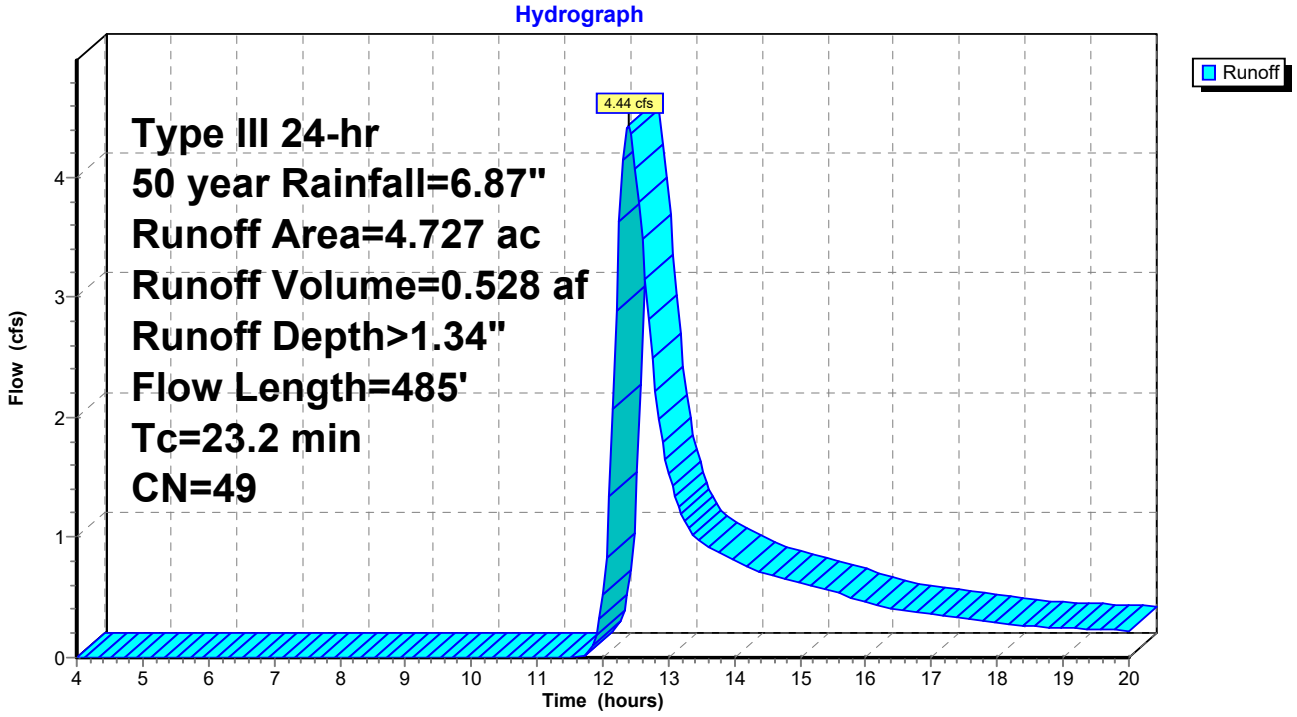
Runoff = 4.44 cfs @ 12.38 hrs, Volume= 0.528 af, Depth> 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
4.557	48	Brush, Good, HSG B
0.171	82	Dirt roads, HSG B
4.727	49	Weighted Average
4.727		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.6	155	0.0387	0.98		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	105	0.0762	1.38		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	175	0.0257	0.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.2	485	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2: Subcat 2

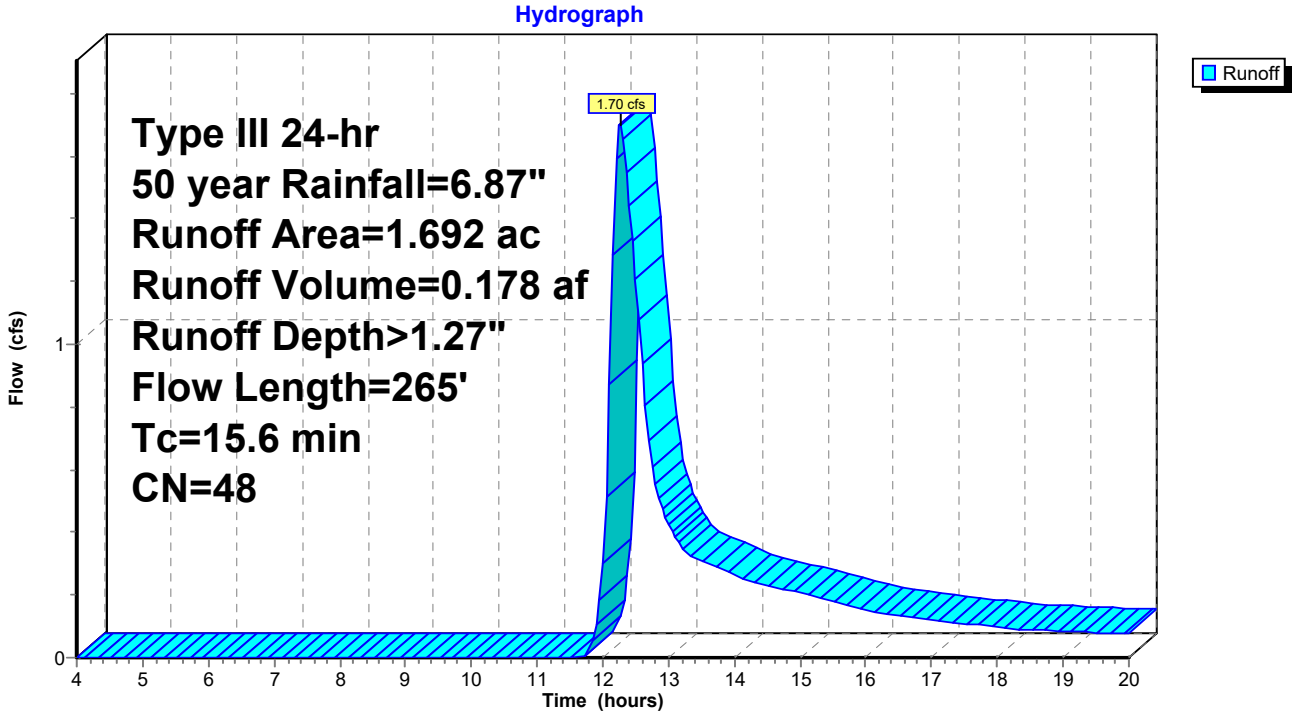
Runoff = 1.70 cfs @ 12.26 hrs, Volume= 0.178 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
1.692	48	Brush, Good, HSG B
1.692		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
0.9	86	0.1105	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	61	0.0164	0.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	68	0.0367	0.96		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.6	265	Total			

Subcatchment 2: Subcat 2



Summary for Subcatchment 3: Subcat 3

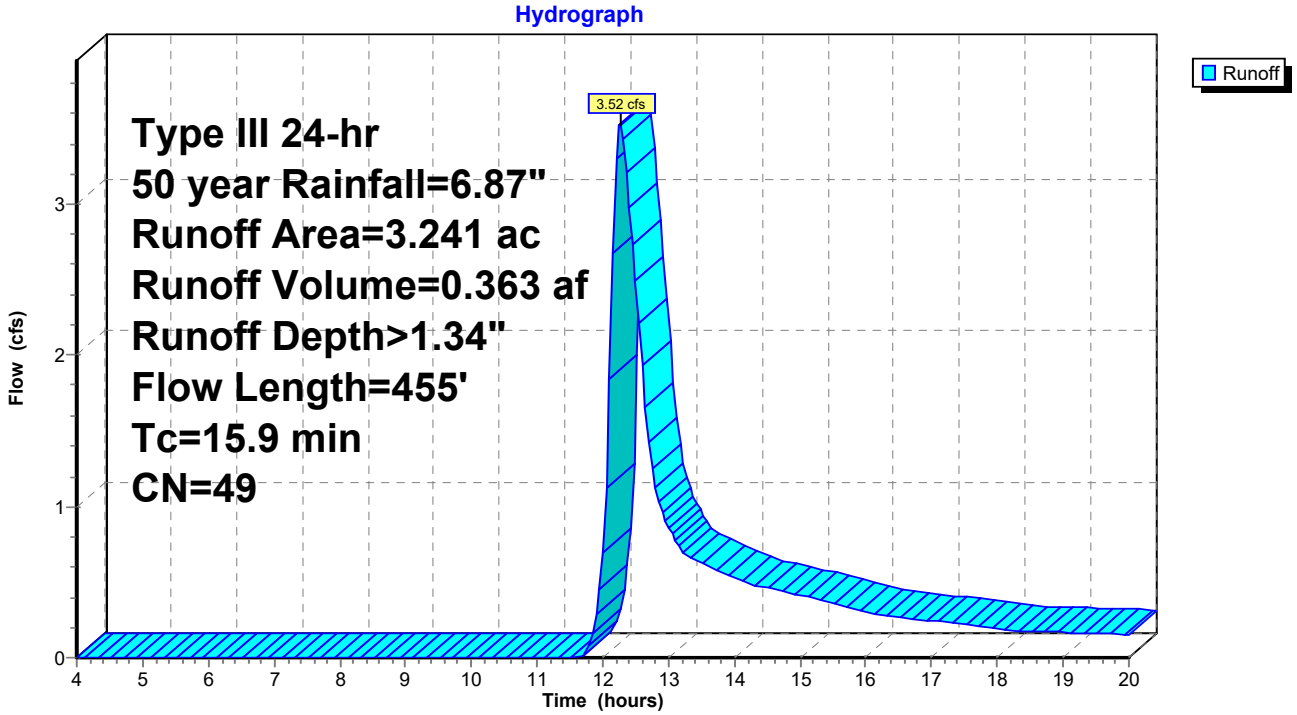
Runoff = 3.52 cfs @ 12.26 hrs, Volume= 0.363 af, Depth> 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
3.182	48	Brush, Good, HSG B
0.059	82	Dirt roads, HSG B
3.241	49	Weighted Average
3.241		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.3	140	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	265	0.0642	1.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.9	455	Total			

Subcatchment 3: Subcat 3



Summary for Subcatchment 4: Subcat 4

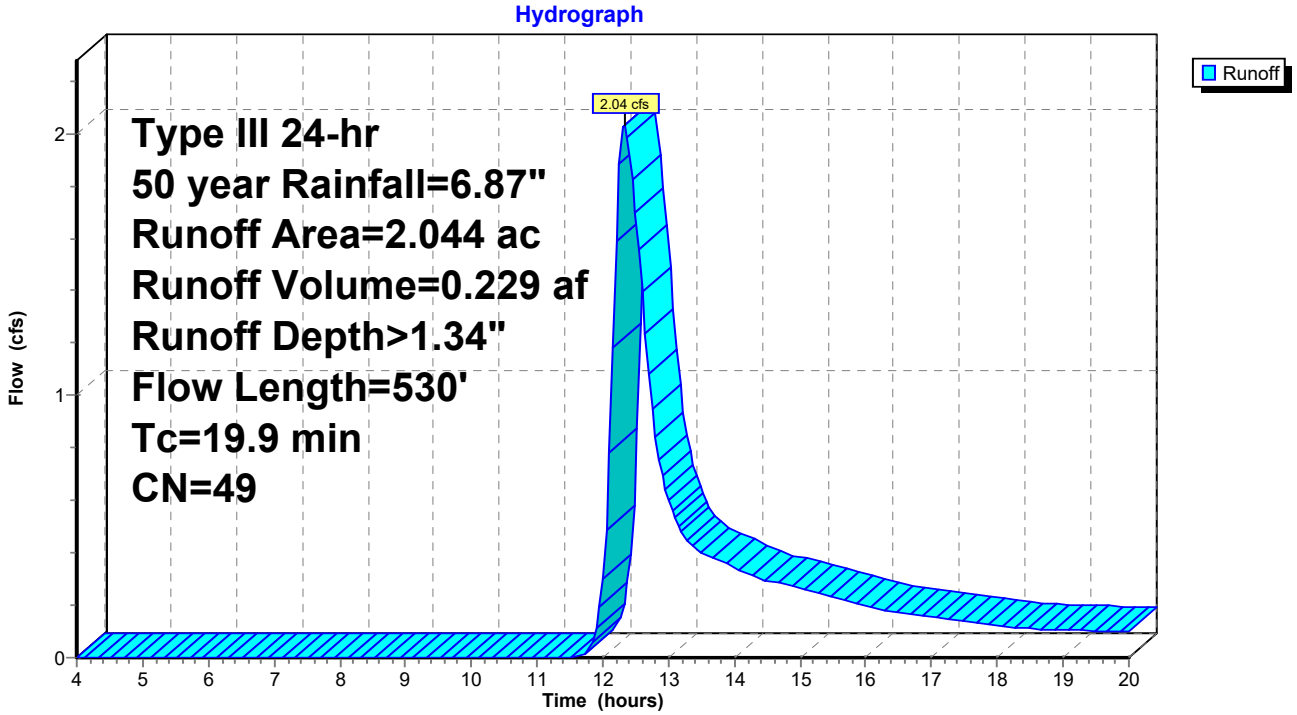
Runoff = 2.04 cfs @ 12.33 hrs, Volume= 0.229 af, Depth> 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
1.982	48	Brush, Good, HSG B
0.062	82	Dirt roads, HSG B
2.044	49	Weighted Average
2.044		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
3.0	120	0.0183	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	360	0.0583	1.21		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.9	530	Total			

Subcatchment 4: Subcat 4



Summary for Subcatchment 5: Subcat 5

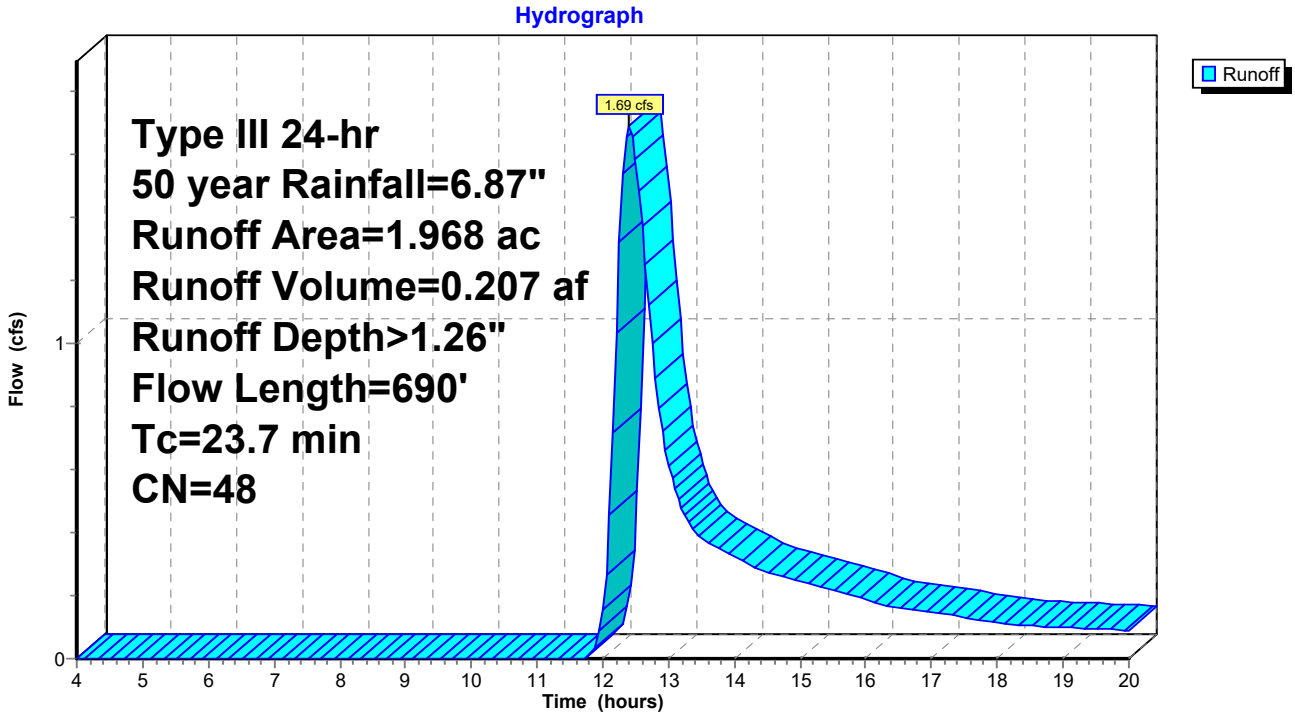
Runoff = 1.69 cfs @ 12.40 hrs, Volume= 0.207 af, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
1.968	48	Brush, Good, HSG B
1.968		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
5.3	215	0.0186	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.5	425	0.0471	1.09		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.7	690	Total			

Subcatchment 5: Subcat 5



Summary for Subcatchment 6: Subcat 6

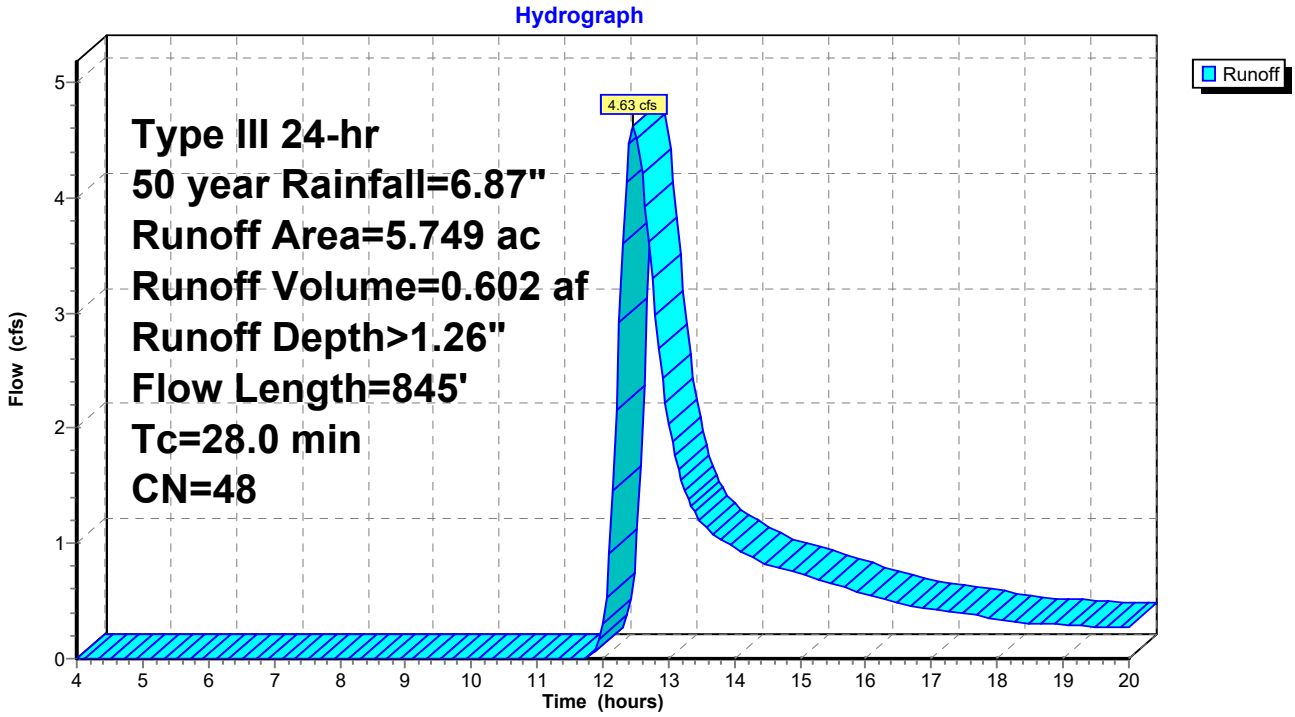
Runoff = 4.63 cfs @ 12.47 hrs, Volume= 0.602 af, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
5.749	48	Brush, Good, HSG B
5.749		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0800	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
18.5	600	0.0117	0.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.6	195	0.0615	1.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.0	845	Total			

Subcatchment 6: Subcat 6



Summary for Subcatchment 7: Subcat 7

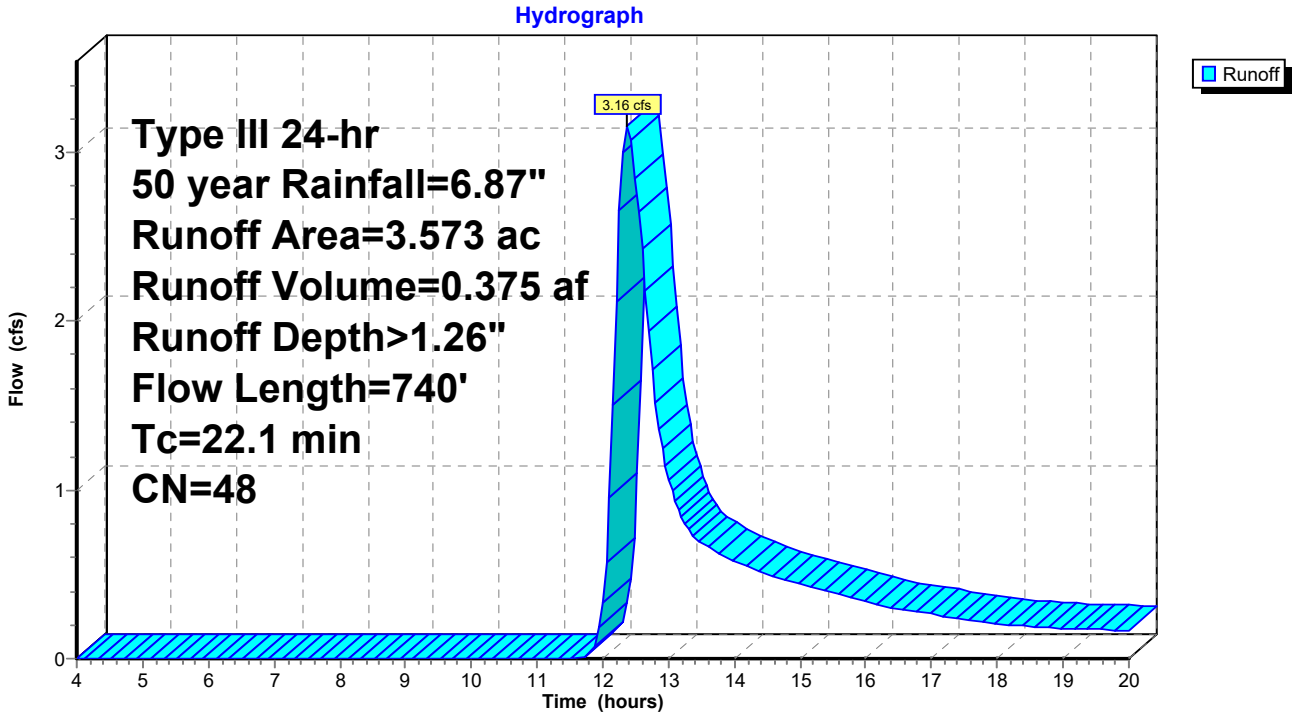
Runoff = 3.16 cfs @ 12.37 hrs, Volume= 0.375 af, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
3.573	48	Brush, Good, HSG B
3.573		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1000	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.8	240	0.0812	1.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.0	450	0.0134	0.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
22.1	740	Total			

Subcatchment 7: Subcat 7



Summary for Subcatchment 8: Subcat 8

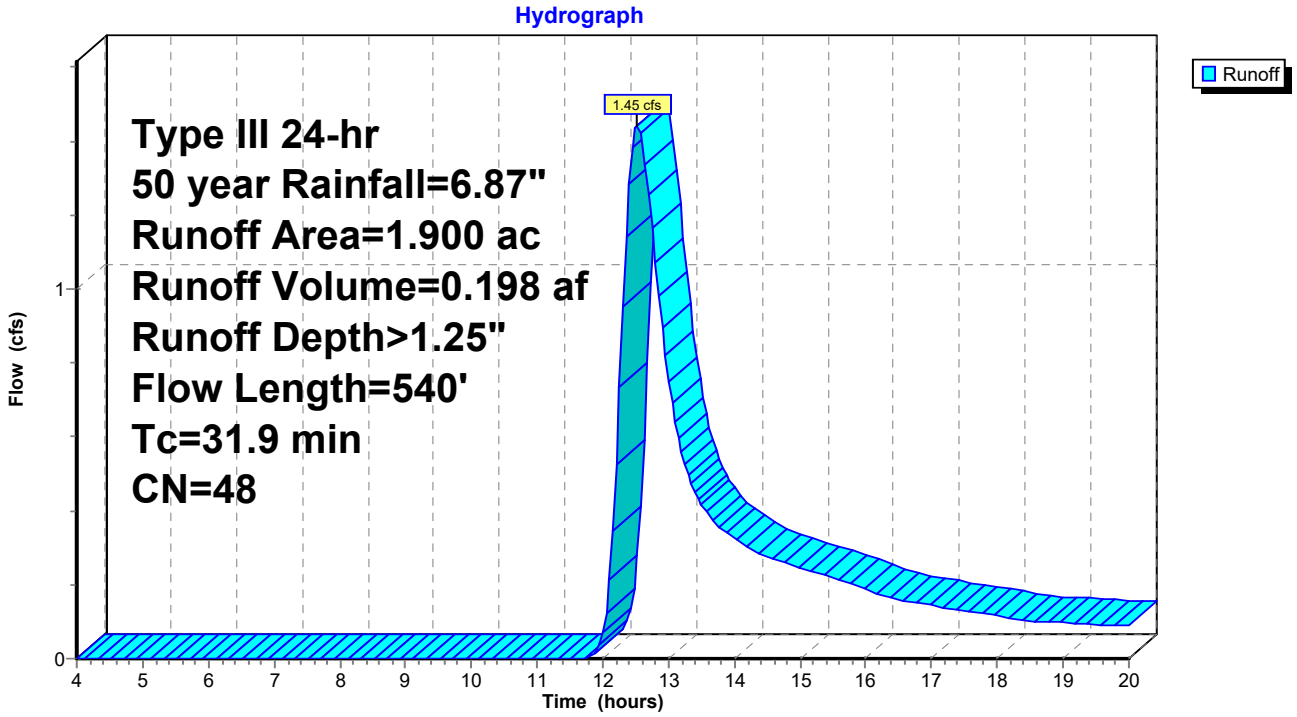
Runoff = 1.45 cfs @ 12.53 hrs, Volume= 0.198 af, Depth> 1.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
1.900	48	Brush, Good, HSG B
1.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	50	0.0050	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
8.9	315	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	175	0.0686	1.31		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.9	540	Total			

Subcatchment 8: Subcat 8



Summary for Subcatchment 9: Subcat 9

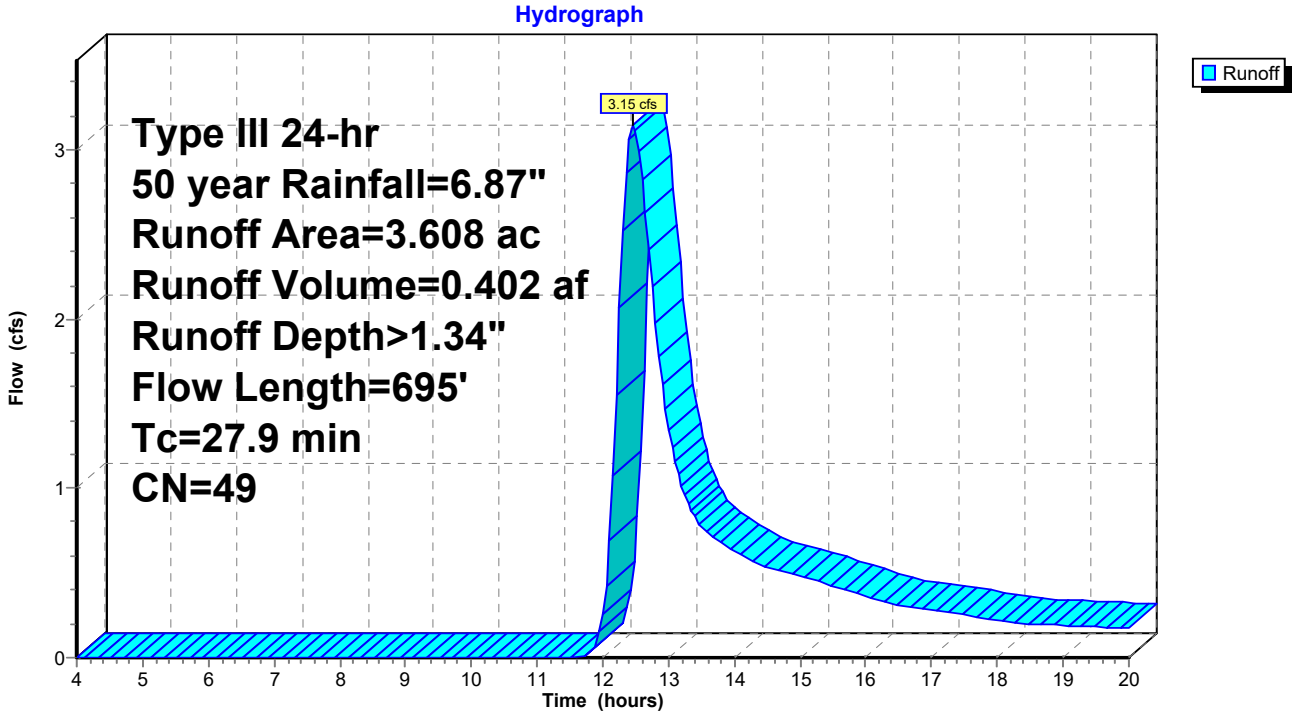
Runoff = 3.15 cfs @ 12.46 hrs, Volume= 0.402 af, Depth> 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
3.498	48	Brush, Good, HSG B
0.110	82	Dirt roads, HSG B
3.608	49	Weighted Average
3.608		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.0360	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.5	215	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.0	430	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.9	695	Total			

Subcatchment 9: Subcat 9



100-Year Storm Event – Existing

Time span=4.00-20.00 hrs, dt=0.05 hrs, 321 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Subcat 1 Runoff Area=4.727 ac 0.00% Impervious Runoff Depth>1.75"
Flow Length=485' Tc=23.2 min CN=49 Runoff=6.08 cfs 0.690 af

Subcatchment2: Subcat 2 Runoff Area=1.692 ac 0.00% Impervious Runoff Depth>1.67"
Flow Length=265' Tc=15.6 min CN=48 Runoff=2.37 cfs 0.235 af

Subcatchment3: Subcat 3 Runoff Area=3.241 ac 0.00% Impervious Runoff Depth>1.76"
Flow Length=455' Tc=15.9 min CN=49 Runoff=4.82 cfs 0.475 af

Subcatchment4: Subcat 4 Runoff Area=2.044 ac 0.00% Impervious Runoff Depth>1.75"
Flow Length=530' Tc=19.9 min CN=49 Runoff=2.79 cfs 0.299 af

Subcatchment5: Subcat 5 Runoff Area=1.968 ac 0.00% Impervious Runoff Depth>1.66"
Flow Length=690' Tc=23.7 min CN=48 Runoff=2.34 cfs 0.272 af

Subcatchment6: Subcat 6 Runoff Area=5.749 ac 0.00% Impervious Runoff Depth>1.65"
Flow Length=845' Tc=28.0 min CN=48 Runoff=6.39 cfs 0.793 af

Subcatchment7: Subcat 7 Runoff Area=3.573 ac 0.00% Impervious Runoff Depth>1.66"
Flow Length=740' Tc=22.1 min CN=48 Runoff=4.38 cfs 0.494 af

Subcatchment8: Subcat 8 Runoff Area=1.900 ac 0.00% Impervious Runoff Depth>1.65"
Flow Length=540' Tc=31.9 min CN=48 Runoff=2.00 cfs 0.261 af

Subcatchment9: Subcat 9 Runoff Area=3.608 ac 0.00% Impervious Runoff Depth>1.75"
Flow Length=695' Tc=27.9 min CN=49 Runoff=4.30 cfs 0.525 af

Total Runoff Area = 28.502 ac Runoff Volume = 4.044 af Average Runoff Depth = 1.70"
100.00% Pervious = 28.502 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

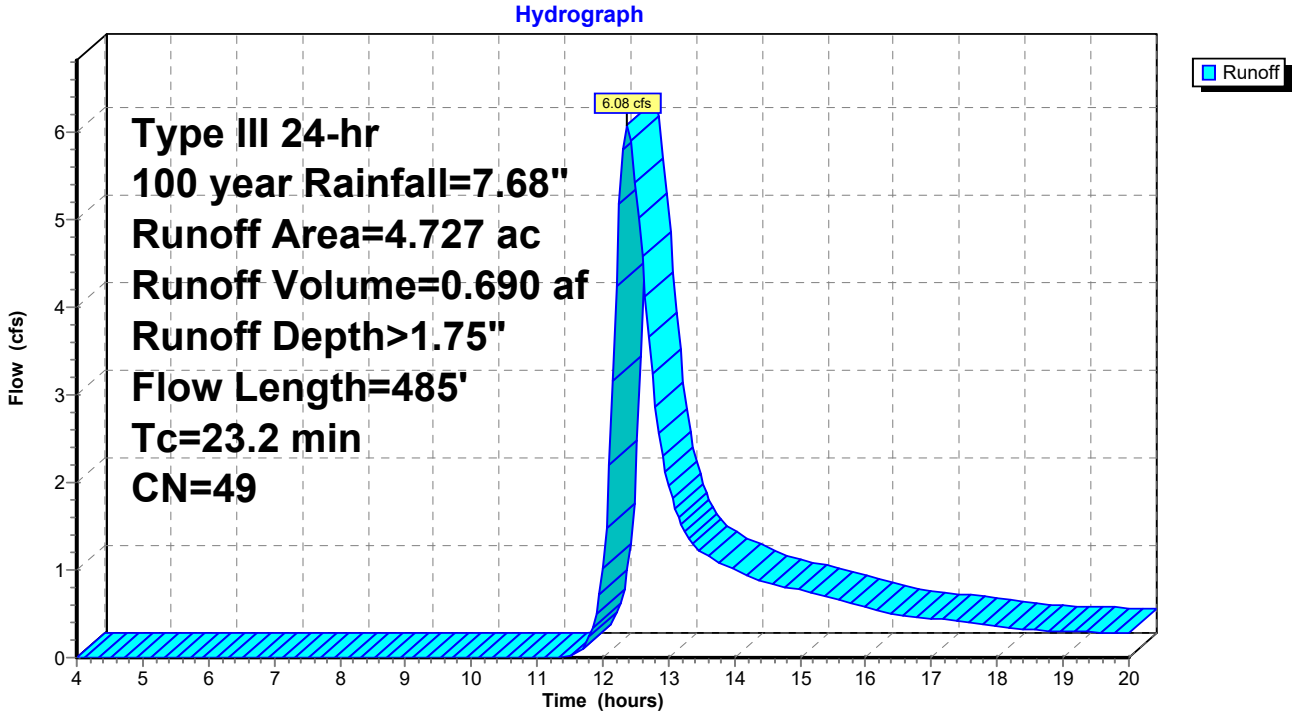
Runoff = 6.08 cfs @ 12.37 hrs, Volume= 0.690 af, Depth> 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
4.557	48	Brush, Good, HSG B
0.171	82	Dirt roads, HSG B
4.727	49	Weighted Average
4.727		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0100	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.6	155	0.0387	0.98		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	105	0.0762	1.38		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	175	0.0257	0.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.2	485	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2: Subcat 2

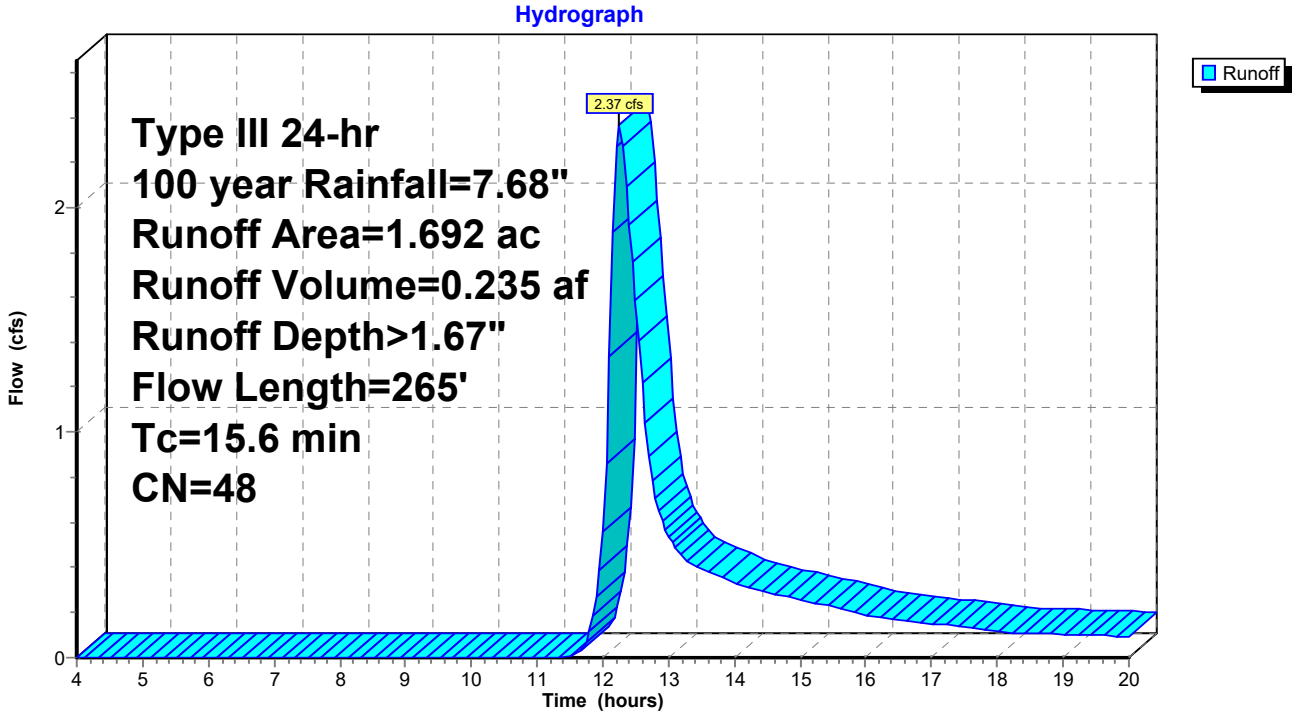
Runoff = 2.37 cfs @ 12.25 hrs, Volume= 0.235 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
1.692	48	Brush, Good, HSG B
1.692		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
0.9	86	0.1105	1.66		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	61	0.0164	0.64		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.2	68	0.0367	0.96		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.6	265	Total			

Subcatchment 2: Subcat 2



Summary for Subcatchment 3: Subcat 3

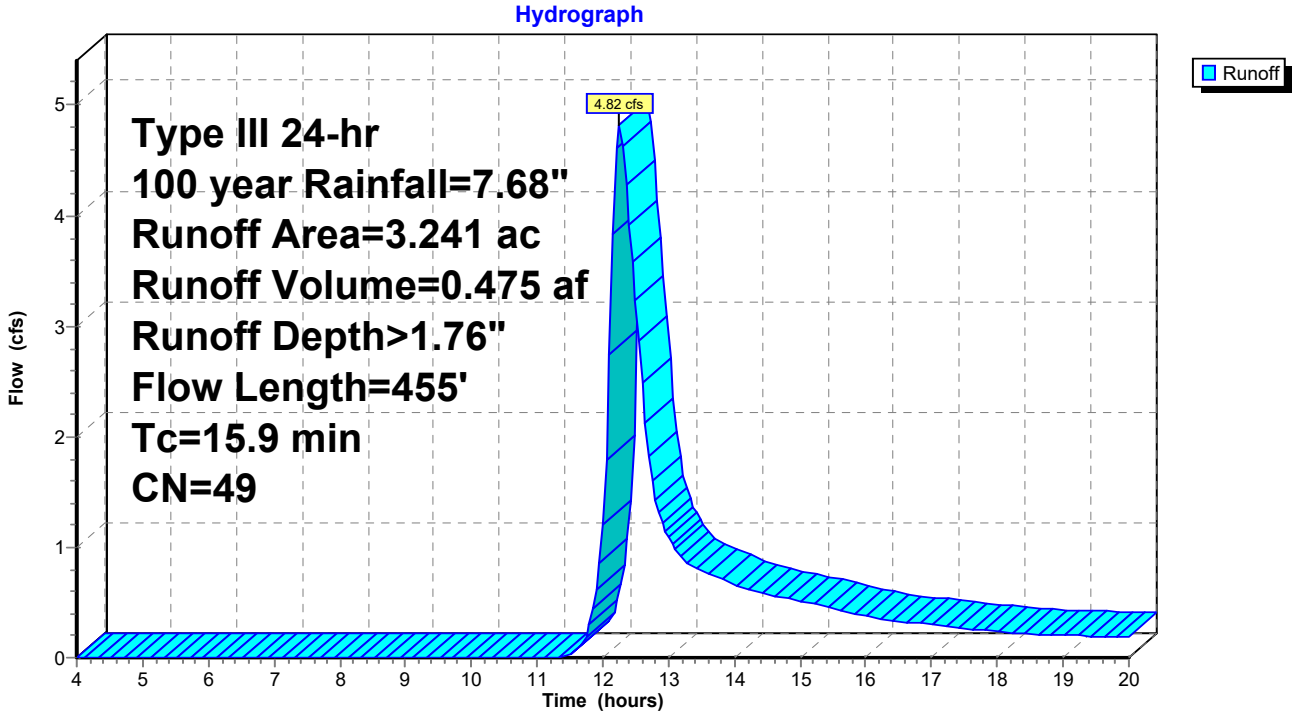
Runoff = 4.82 cfs @ 12.25 hrs, Volume= 0.475 af, Depth> 1.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
3.182	48	Brush, Good, HSG B
0.059	82	Dirt roads, HSG B
3.241	49	Weighted Average
3.241		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.3	140	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	265	0.0642	1.27		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.9	455	Total			

Subcatchment 3: Subcat 3



Summary for Subcatchment 4: Subcat 4

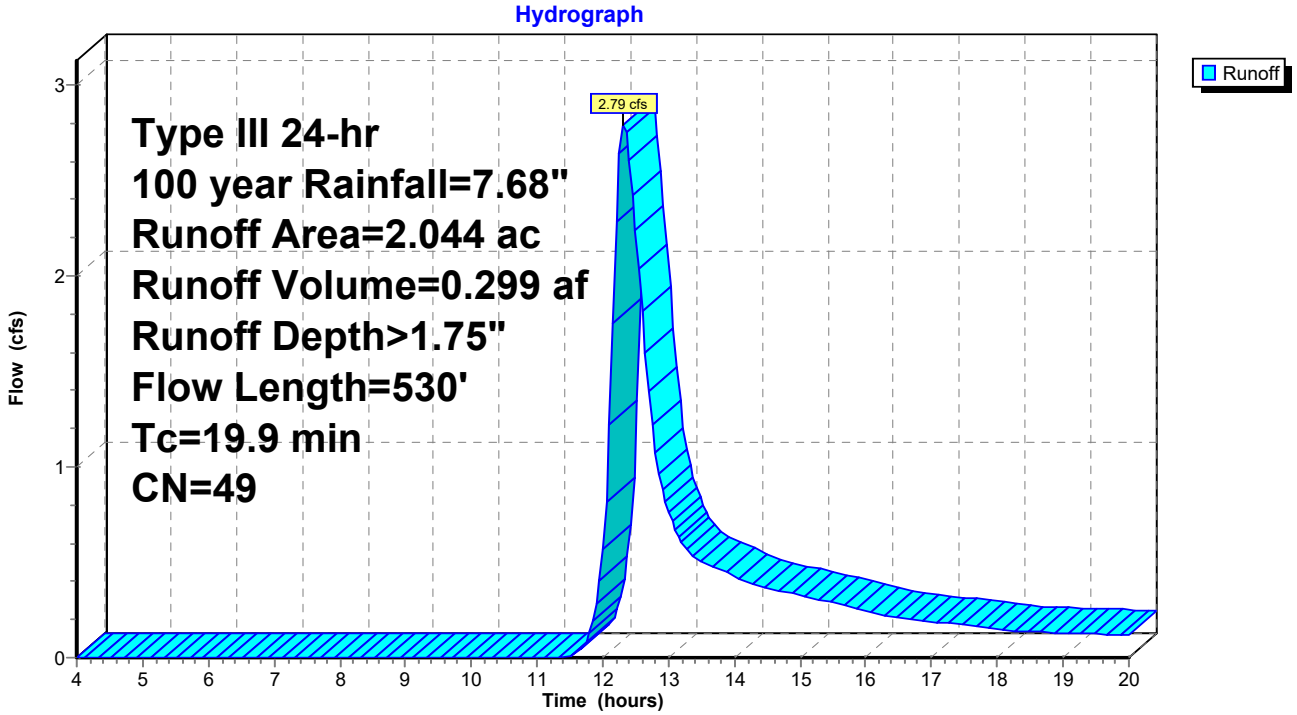
Runoff = 2.79 cfs @ 12.32 hrs, Volume= 0.299 af, Depth> 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
1.982	48	Brush, Good, HSG B
0.062	82	Dirt roads, HSG B
2.044	49	Weighted Average
2.044		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
3.0	120	0.0183	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.0	360	0.0583	1.21		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.9	530	Total			

Subcatchment 4: Subcat 4



Summary for Subcatchment 5: Subcat 5

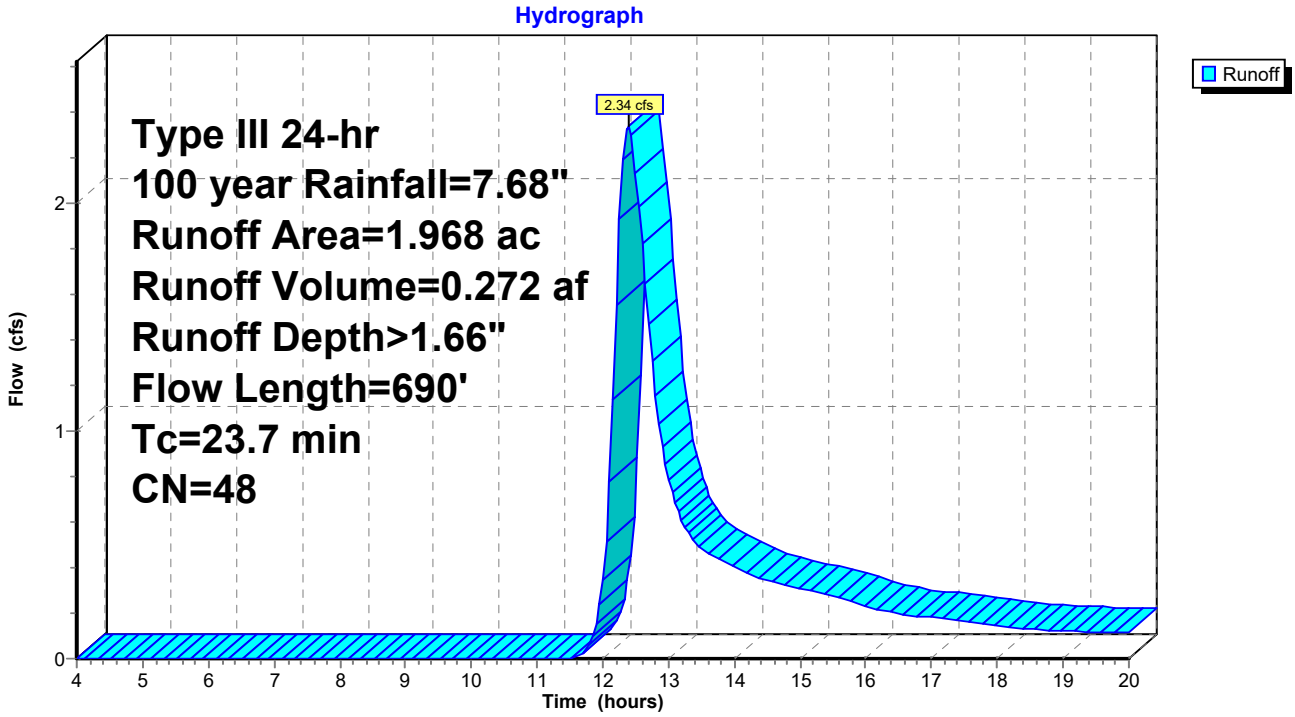
Runoff = 2.34 cfs @ 12.38 hrs, Volume= 0.272 af, Depth> 1.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
1.968	48	Brush, Good, HSG B
1.968		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	50	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
5.3	215	0.0186	0.68		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
6.5	425	0.0471	1.09		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.7	690	Total			

Subcatchment 5: Subcat 5



Summary for Subcatchment 6: Subcat 6

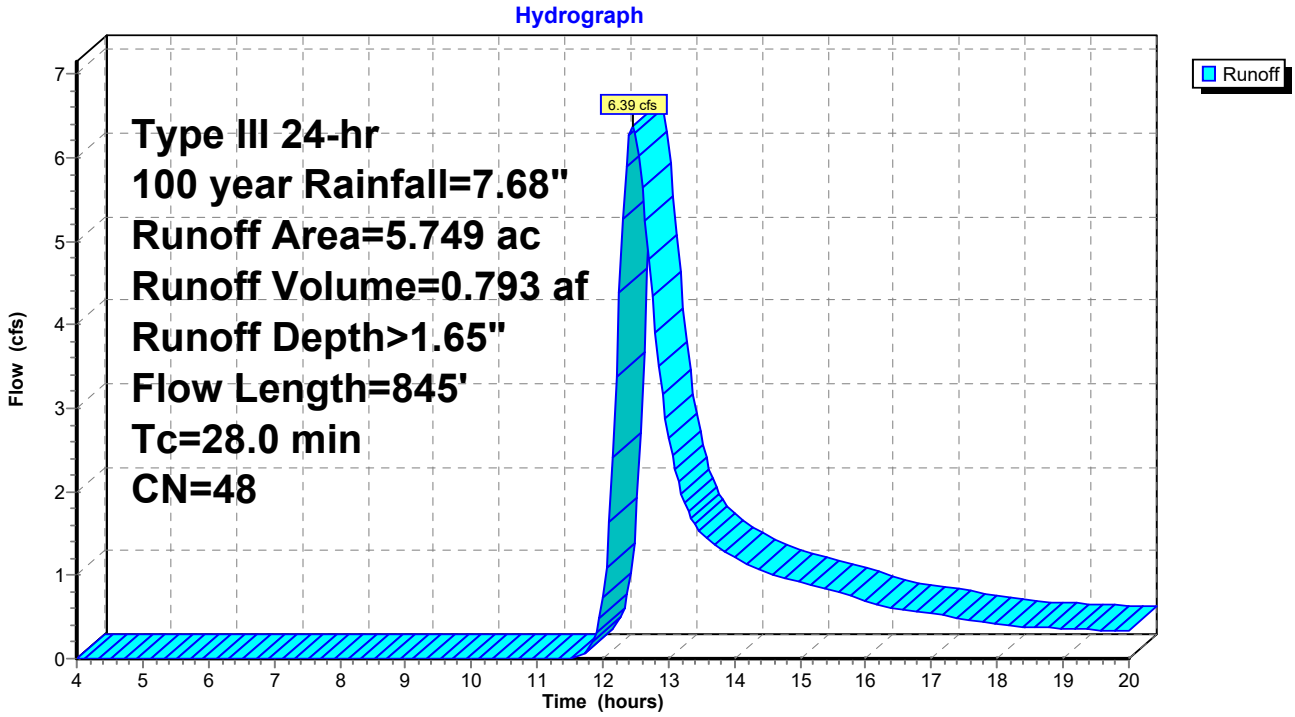
Runoff = 6.39 cfs @ 12.45 hrs, Volume= 0.793 af, Depth> 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
5.749	48	Brush, Good, HSG B
5.749		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0800	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
18.5	600	0.0117	0.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.6	195	0.0615	1.24		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.0	845	Total			

Subcatchment 6: Subcat 6



Summary for Subcatchment 7: Subcat 7

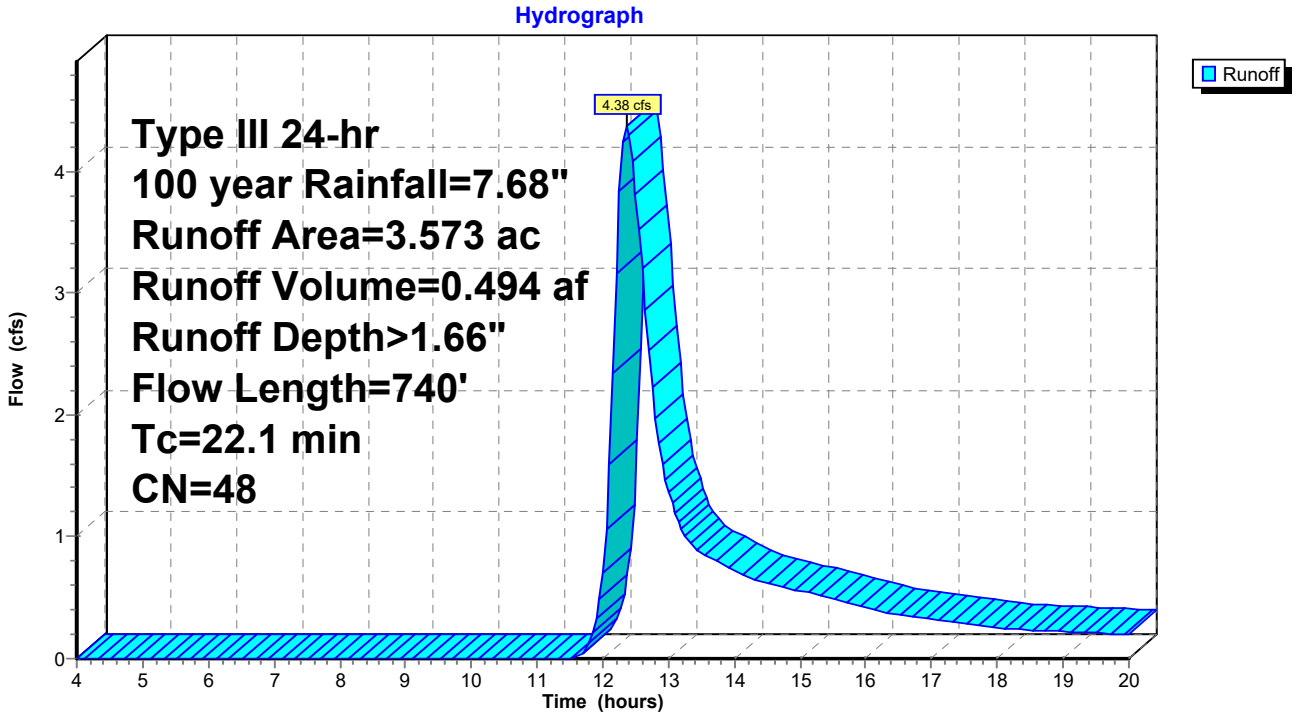
Runoff = 4.38 cfs @ 12.36 hrs, Volume= 0.494 af, Depth> 1.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
3.573	48	Brush, Good, HSG B
3.573		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.1000	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.8	240	0.0812	1.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.0	450	0.0134	0.58		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
22.1	740	Total			

Subcatchment 7: Subcat 7



Summary for Subcatchment 8: Subcat 8

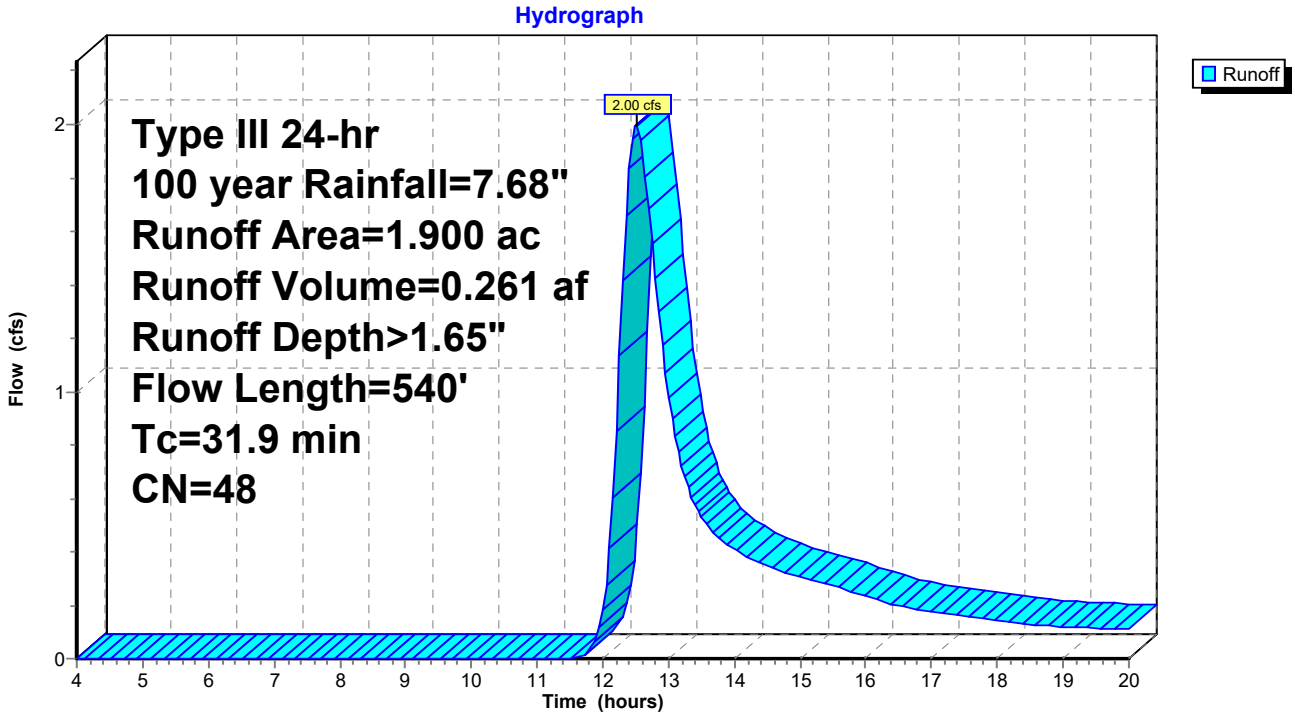
Runoff = 2.00 cfs @ 12.51 hrs, Volume= 0.261 af, Depth> 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
1.900	48	Brush, Good, HSG B
1.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.8	50	0.0050	0.04		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
8.9	315	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	175	0.0686	1.31		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.9	540	Total			

Subcatchment 8: Subcat 8



Summary for Subcatchment 9: Subcat 9

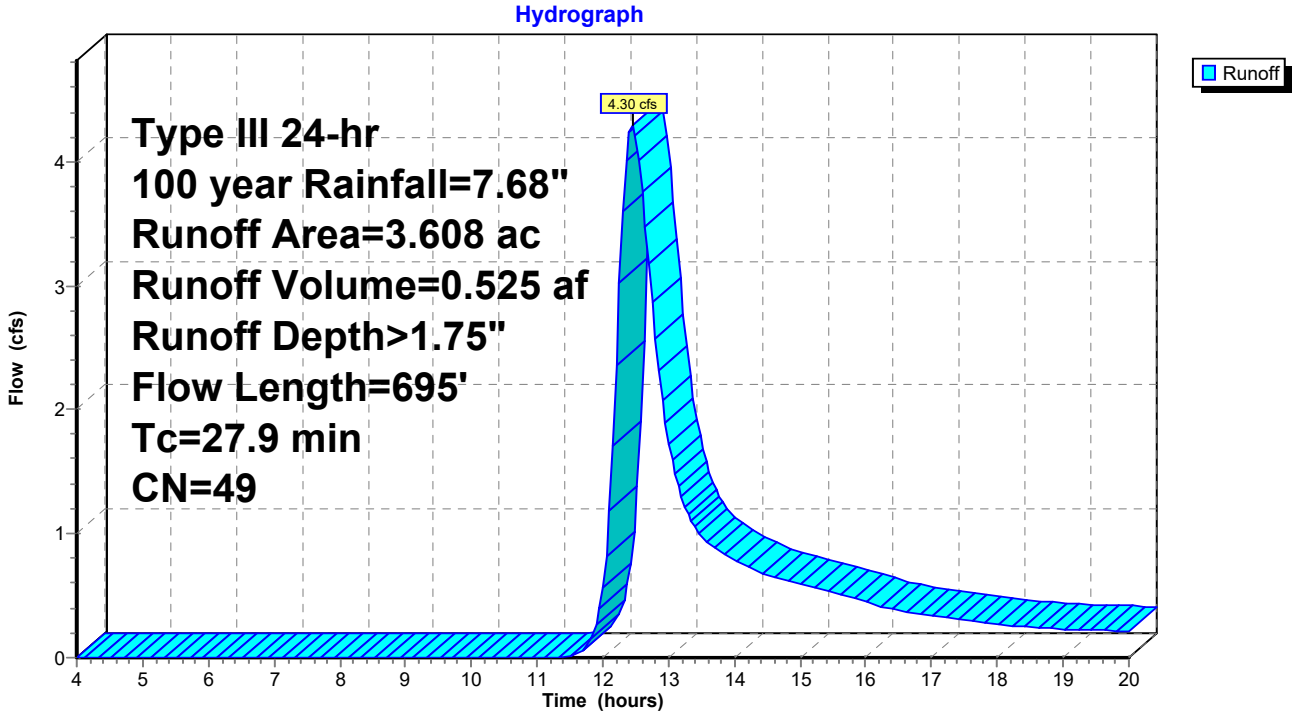
Runoff = 4.30 cfs @ 12.45 hrs, Volume= 0.525 af, Depth> 1.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 4.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

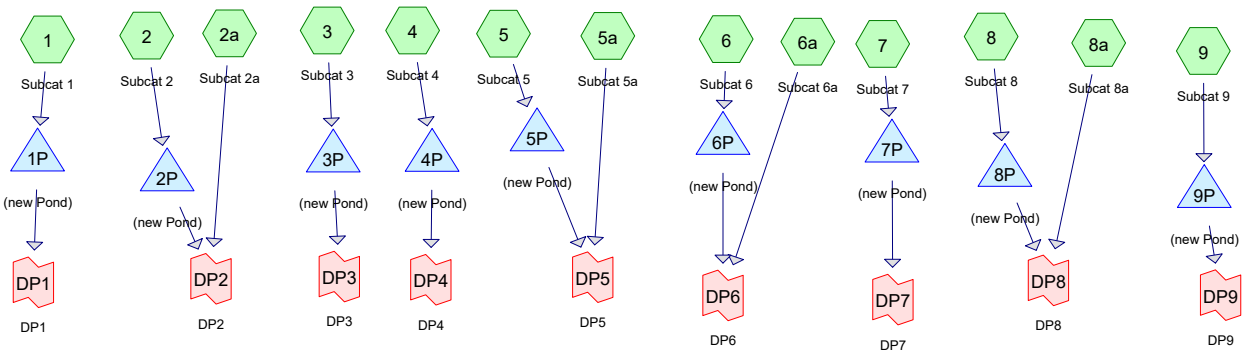
Area (ac)	CN	Description
3.498	48	Brush, Good, HSG B
0.110	82	Dirt roads, HSG B
3.608	49	Weighted Average
3.608		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.0360	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.5	215	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.0	430	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.9	695	Total			

Subcatchment 9: Subcat 9



HydroCAD Analysis: Proposed Conditions



Subcat Reach Pond Link

Routing Diagram for 42517.01 HydroCAD Proposed
Prepared by VHB, Printed 5/18/2020

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
17.404	74	>75% Grass cover, Good, HSG C (1, 2, 3, 4, 5, 6, 7, 8, 9)
10.652	48	Brush, Good, HSG B (1, 2, 2a, 3, 4, 5, 5a, 6, 6a, 7, 8, 8a, 9)
0.440	96	Gravel surface, HSG C (1, 3, 4, 9)
28.496	**65**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
10.652	HSG B	1, 2, 2a, 3, 4, 5, 5a, 6, 6a, 7, 8, 8a, 9
17.844	HSG C	1, 2, 3, 4, 5, 6, 7, 8, 9
0.000	HSG D	
0.000	Other	
28.496		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	17.404	0.000	0.000	17.404	>75% Grass cover, Good	1, 2, 3, 4, 5, 6, 7, 8, 9
0.000	10.652	0.000	0.000	0.000	10.652	Brush, Good	1, 2, 2a, 3, 4, 5, 5a, 6, 6a, 7, 8, 8a, 9
0.000	0.000	0.440	0.000	0.000	0.440	Gravel surface	1, 3, 4, 9
0.000	**10.652**	**17.844**	**0.000**	**0.000**	**28.496**	**TOTAL AREA**	

2-Year Storm Event – Proposed

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Subcat 1 Runoff Area=4.726 ac 0.00% Impervious Runoff Depth>0.77"
Flow Length=410' Tc=14.8 min CN=68 Runoff=3.12 cfs 0.302 af

Subcatchment2: Subcat 2 Runoff Area=1.477 ac 0.00% Impervious Runoff Depth>0.40"
Flow Length=245' Tc=10.5 min CN=59 Runoff=0.41 cfs 0.049 af

Subcatchment2a: Subcat 2a Runoff Area=0.214 ac 0.00% Impervious Runoff Depth>0.10"
Flow Length=70' Tc=10.3 min CN=48 Runoff=0.00 cfs 0.002 af

Subcatchment3: Subcat 3 Runoff Area=3.240 ac 0.00% Impervious Runoff Depth>0.77"
Flow Length=415' Tc=10.4 min CN=68 Runoff=2.44 cfs 0.208 af

Subcatchment4: Subcat 4 Runoff Area=2.043 ac 0.00% Impervious Runoff Depth>0.72"
Flow Length=530' Tc=13.6 min CN=67 Runoff=1.29 cfs 0.123 af

Subcatchment5: Subcat 5 Runoff Area=1.710 ac 0.00% Impervious Runoff Depth>0.51"
Flow Length=510' Tc=14.8 min CN=62 Runoff=0.64 cfs 0.072 af

Subcatchment5a: Subcat 5a Runoff Area=0.259 ac 0.00% Impervious Runoff Depth>0.10"
Flow Length=150' Tc=9.2 min CN=48 Runoff=0.01 cfs 0.002 af

Subcatchment6: Subcat 6 Runoff Area=4.816 ac 0.00% Impervious Runoff Depth>0.67"
Flow Length=840' Tc=24.1 min CN=66 Runoff=2.25 cfs 0.270 af

Subcatchment6a: Subcat 6a Runoff Area=0.930 ac 0.00% Impervious Runoff Depth>0.10"
Tc=10.0 min CN=48 Runoff=0.02 cfs 0.008 af

Subcatchment7: Subcat 7 Runoff Area=3.573 ac 0.00% Impervious Runoff Depth>0.59"
Flow Length=640' Tc=13.6 min CN=64 Runoff=1.70 cfs 0.176 af

Subcatchment8: Subcat 8 Runoff Area=1.332 ac 0.00% Impervious Runoff Depth>0.47"
Flow Length=525' Tc=29.2 min CN=61 Runoff=0.35 cfs 0.052 af

Subcatchment8a: Subcat 8a Runoff Area=0.568 ac 0.00% Impervious Runoff Depth>0.10"
Flow Length=190' Tc=9.0 min CN=48 Runoff=0.01 cfs 0.005 af

Subcatchment9: Subcat 9 Runoff Area=3.608 ac 0.00% Impervious Runoff Depth>0.77"
Flow Length=640' Tc=15.5 min CN=68 Runoff=2.35 cfs 0.231 af

Pond 1P: (new Pond) Peak Elev=171.20' Storage=0.557 af Inflow=3.12 cfs 0.302 af
Outflow=0.00 cfs 0.000 af

Pond 2P: (new Pond) Peak Elev=168.86' Storage=0.124 af Inflow=0.41 cfs 0.049 af
Outflow=0.00 cfs 0.000 af

Pond 3P: (new Pond) Peak Elev=169.21' Storage=0.298 af Inflow=2.44 cfs 0.208 af
Outflow=0.00 cfs 0.000 af

Pond 4P: (new Pond) Peak Elev=167.32' Storage=0.070 af Inflow=1.29 cfs 0.123 af
Discarded=0.10 cfs 0.063 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.063 af

Pond 5P: (new Pond) Peak Elev=170.04' Storage=0.042 af Inflow=0.64 cfs 0.072 af
Discarded=0.05 cfs 0.034 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.034 af

Pond 6P: (new Pond) Peak Elev=177.13' Storage=0.144 af Inflow=2.25 cfs 0.270 af
Discarded=0.24 cfs 0.152 af Primary=0.00 cfs 0.000 af Outflow=0.24 cfs 0.152 af

Pond 7P: (new Pond) Peak Elev=170.06' Storage=0.426 af Inflow=1.70 cfs 0.176 af
Outflow=0.00 cfs 0.000 af

Pond 8P: (new Pond) Peak Elev=167.24' Storage=0.079 af Inflow=0.35 cfs 0.052 af
Outflow=0.00 cfs 0.000 af

Pond 9P: (new Pond) Peak Elev=170.86' Storage=29,490 cf Inflow=2.35 cfs 0.231 af
Outflow=0.00 cfs 0.000 af

Link DP1: DP1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP2: DP2 Inflow=0.00 cfs 0.002 af
Primary=0.00 cfs 0.002 af

Link DP3: DP3 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP4: DP4 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP5: DP5 Inflow=0.01 cfs 0.002 af
Primary=0.01 cfs 0.002 af

Link DP6: DP6 Inflow=0.02 cfs 0.008 af
Primary=0.02 cfs 0.008 af

Link DP7: DP7 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP8: DP8 Inflow=0.01 cfs 0.005 af
Primary=0.01 cfs 0.005 af

Link DP9: DP9 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 28.496 ac Runoff Volume = 1.499 af Average Runoff Depth = 0.63"
100.00% Pervious = 28.496 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

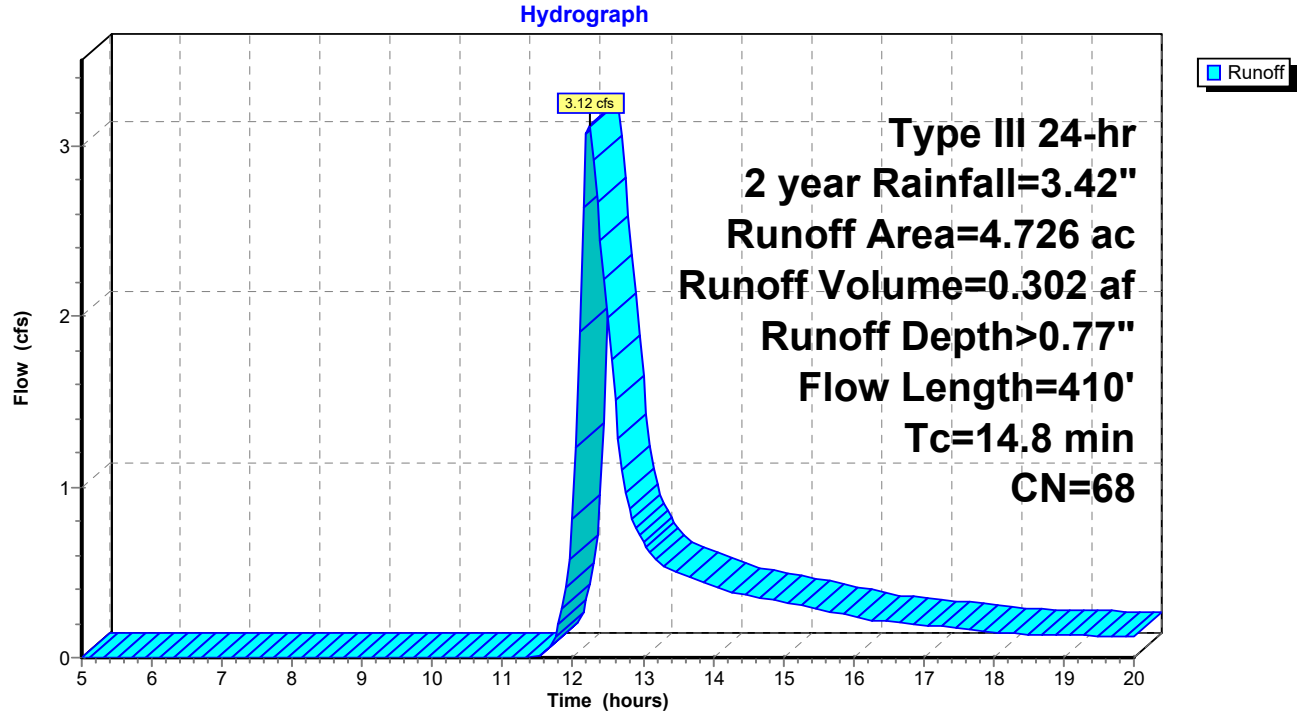
Runoff = 3.12 cfs @ 12.23 hrs, Volume= 0.302 af, Depth> 0.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
3.416	74	>75% Grass cover, Good, HSG C
1.164	48	Brush, Good, HSG B
0.146	96	Gravel surface, HSG C
4.726	68	Weighted Average
4.726		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.9	155	0.0387	1.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	175	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	30	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.8	410	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2: Subcat 2

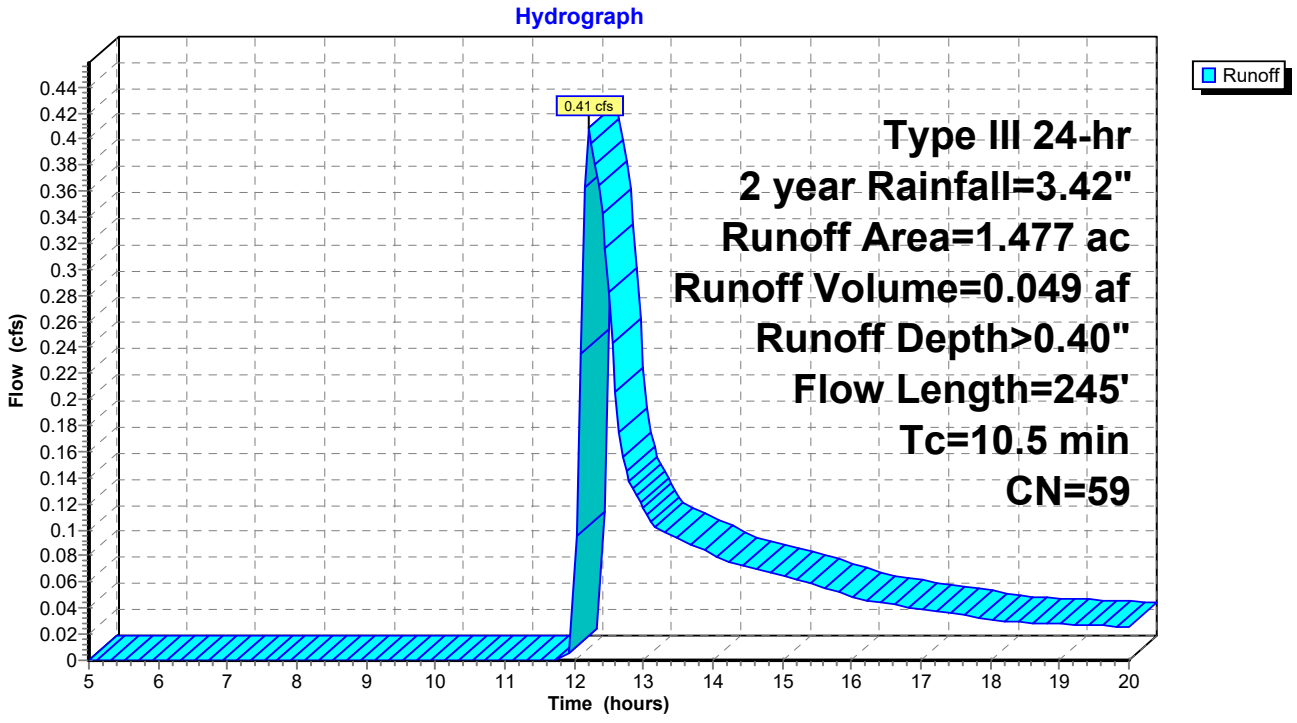
Runoff = 0.41 cfs @ 12.22 hrs, Volume= 0.049 af, Depth> 0.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
0.625	74	>75% Grass cover, Good, HSG C
0.852	48	Brush, Good, HSG B
1.477	59	Weighted Average
1.477		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.3	120	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	75	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.5	245	Total			

Subcatchment 2: Subcat 2



Summary for Subcatchment 2a: Subcat 2a

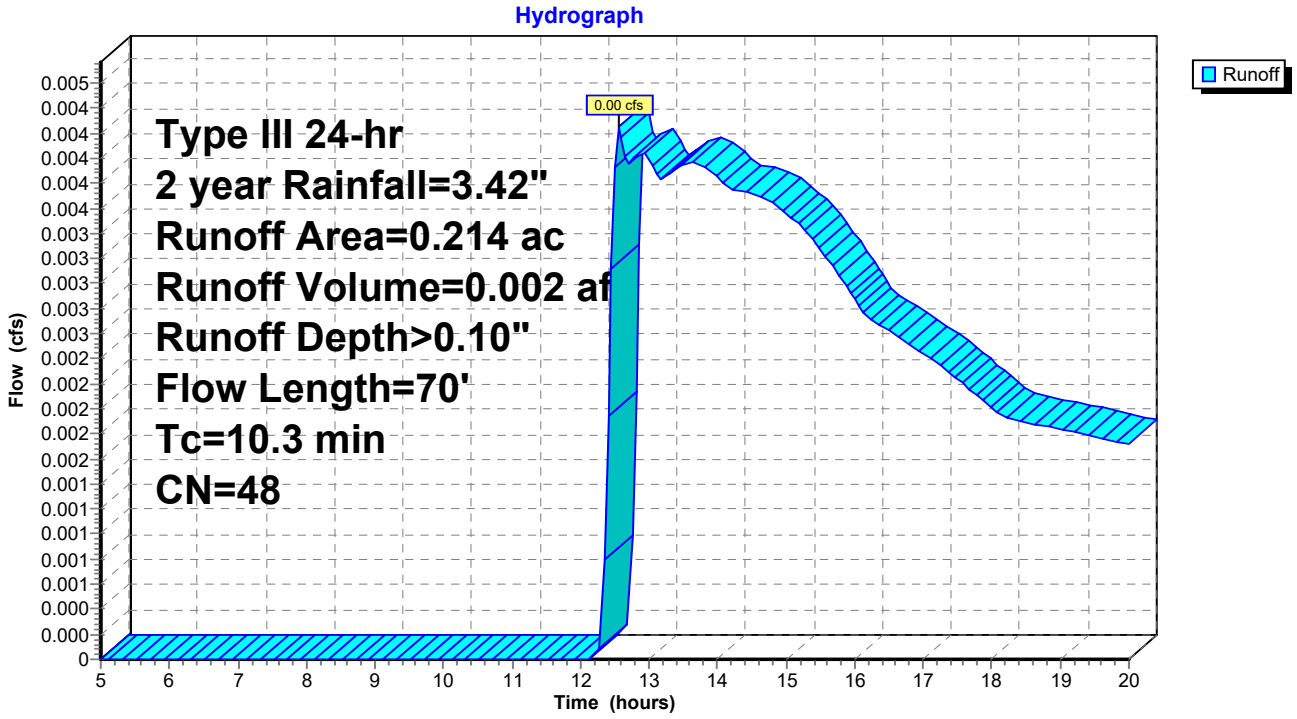
Runoff = 0.00 cfs @ 12.56 hrs, Volume= 0.002 af, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
0.214	48	Brush, Good, HSG B
0.214		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
0.2	20	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.3	70	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 3: Subcat 3

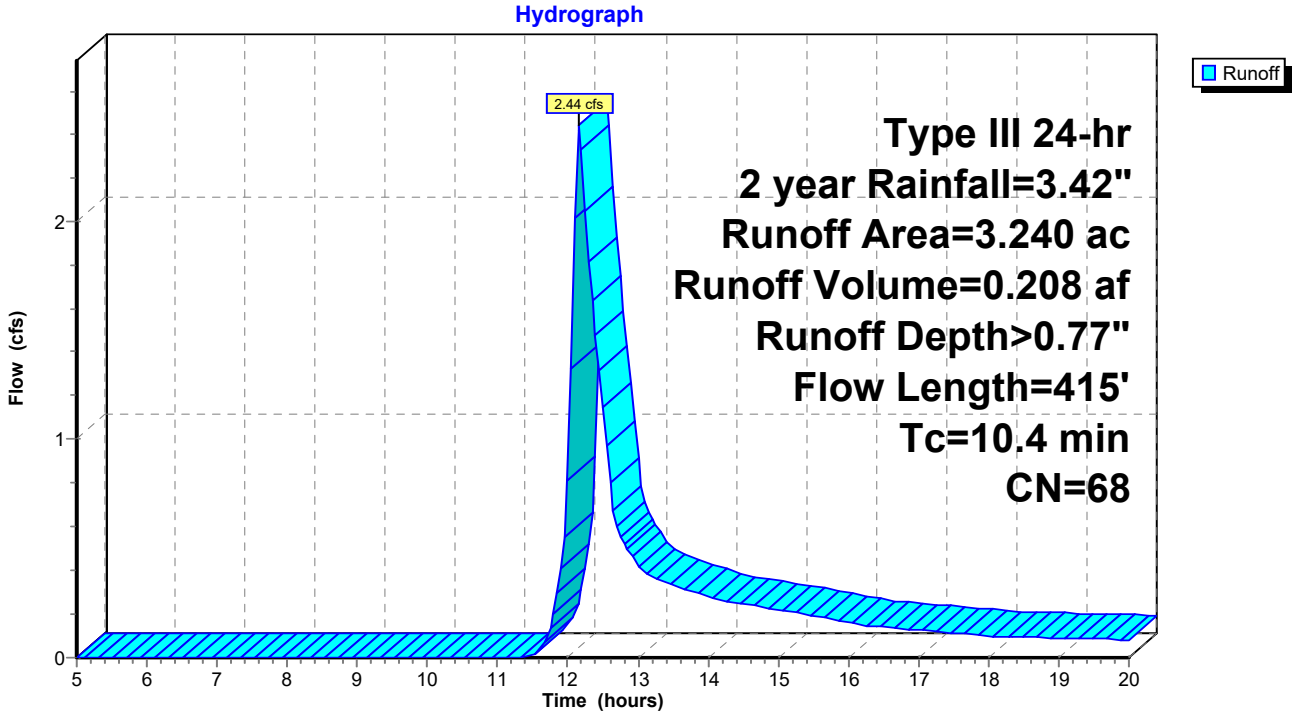
Runoff = 2.44 cfs @ 12.17 hrs, Volume= 0.208 af, Depth> 0.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
2.286	74	>75% Grass cover, Good, HSG C
0.860	48	Brush, Good, HSG B
0.094	96	Gravel surface, HSG C
3.240	68	Weighted Average
3.240		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	50	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.6	140	0.0430	1.45		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	225	0.0666	1.81		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.4	415	Total			

Subcatchment 3: Subcat 3



Summary for Subcatchment 4: Subcat 4

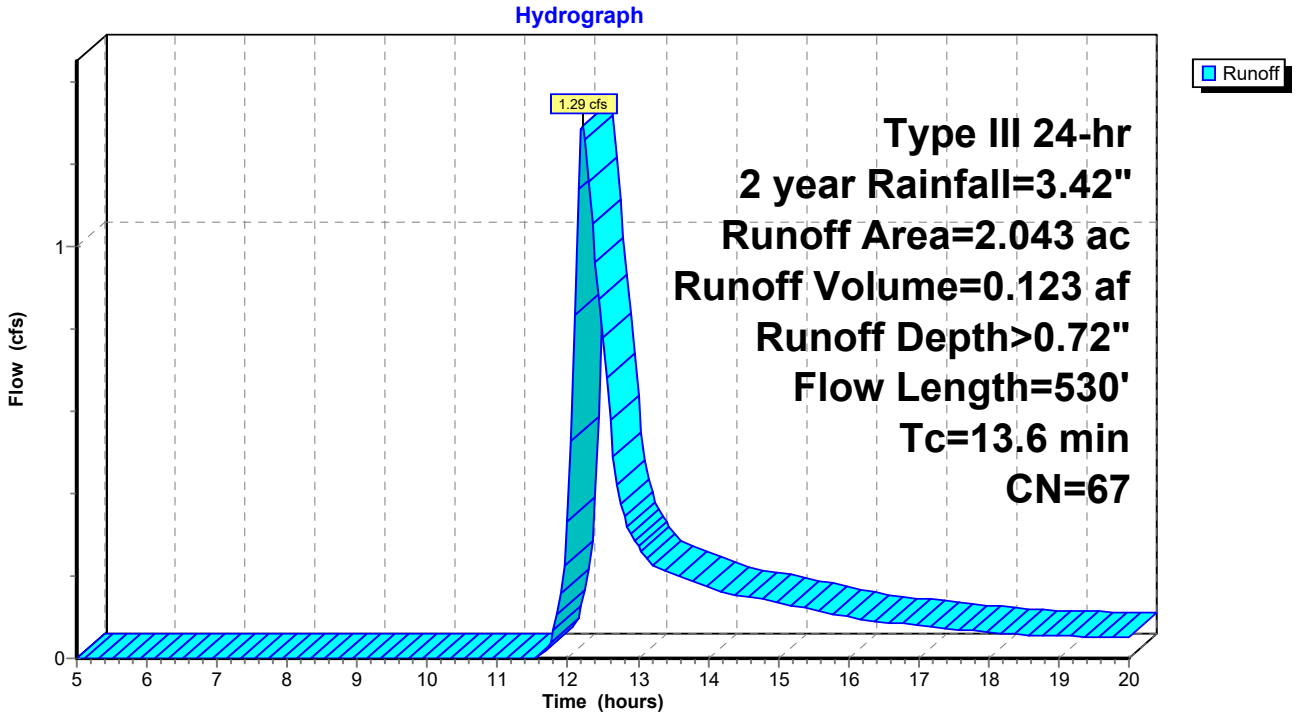
Runoff = 1.29 cfs @ 12.22 hrs, Volume= 0.123 af, Depth> 0.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
1.433	74	>75% Grass cover, Good, HSG C
0.582	48	Brush, Good, HSG B
0.028	96	Gravel surface, HSG C
2.043	67	Weighted Average
2.043		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
2.1	120	0.0183	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	295	0.0610	1.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	25	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.7	40	0.0375	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	530	Total			

Subcatchment 4: Subcat 4



Summary for Subcatchment 5: Subcat 5

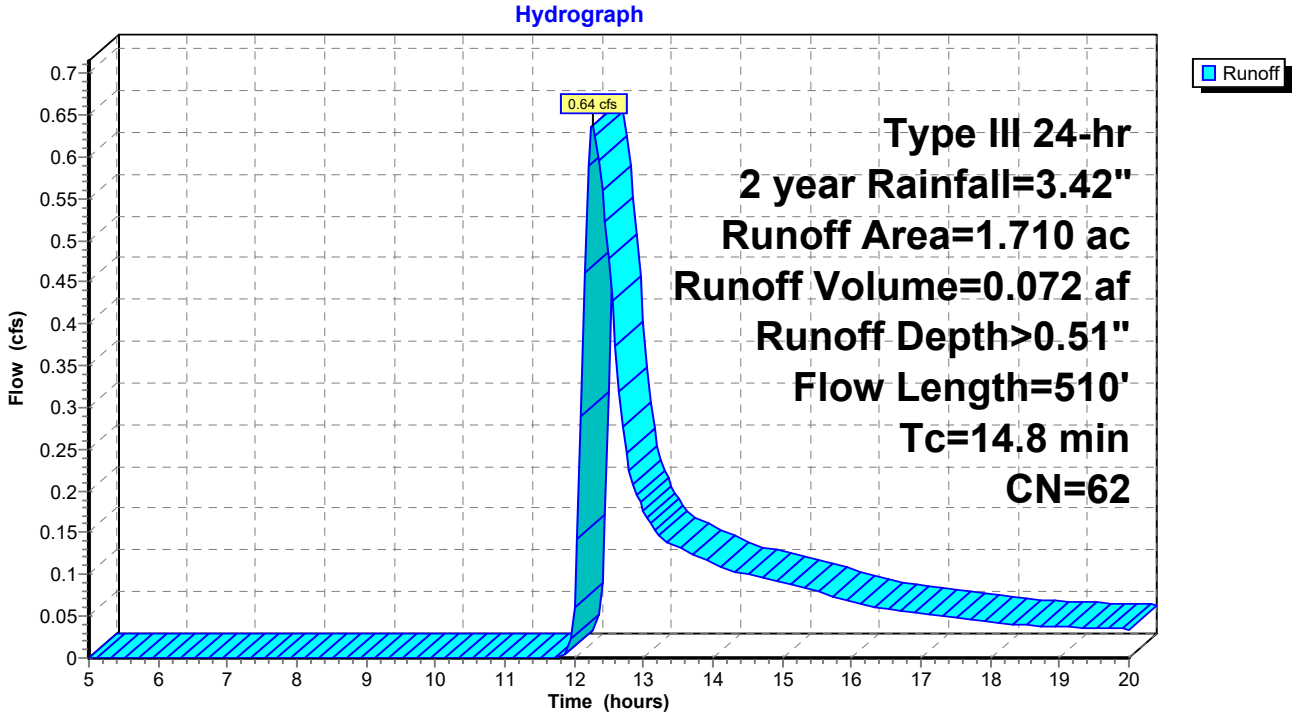
Runoff = 0.64 cfs @ 12.27 hrs, Volume= 0.072 af, Depth> 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
0.922	74	>75% Grass cover, Good, HSG C
0.788	48	Brush, Good, HSG B
1.710	62	Weighted Average
1.710		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
3.8	215	0.0186	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	150	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	95	0.0470	1.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.8	510	Total			

Subcatchment 5: Subcat 5



Summary for Subcatchment 5a: Subcat 5a

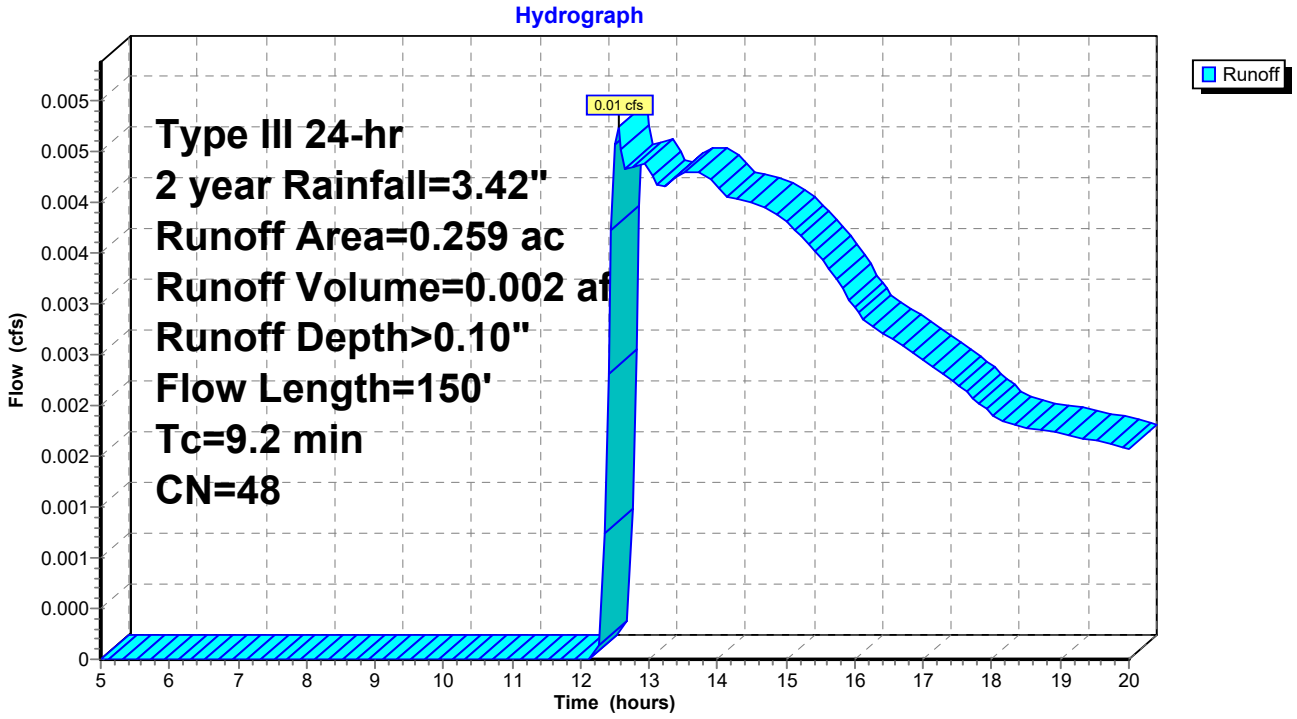
Runoff = 0.01 cfs @ 12.55 hrs, Volume= 0.002 af, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
0.259	48	Brush, Good, HSG B
0.259		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
1.5	100	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.2	150	Total			

Subcatchment 5a: Subcat 5a



Summary for Subcatchment 6: Subcat 6

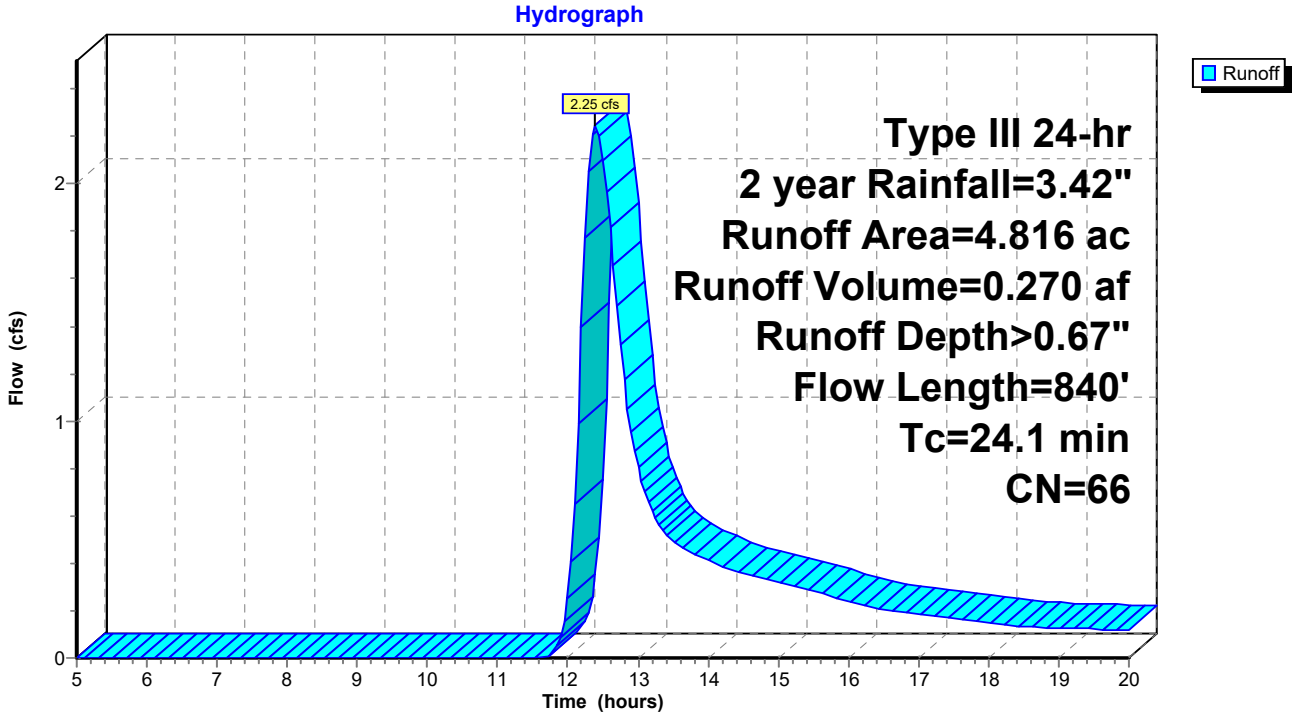
Runoff = 2.25 cfs @ 12.40 hrs, Volume= 0.270 af, Depth> 0.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
3.416	74	>75% Grass cover, Good, HSG C
1.400	48	Brush, Good, HSG B
4.816	66	Weighted Average
4.816		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0800	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.9	100	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	505	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	185	0.0375	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	840	Total			

Subcatchment 6: Subcat 6



Summary for Subcatchment 6a: Subcat 6a

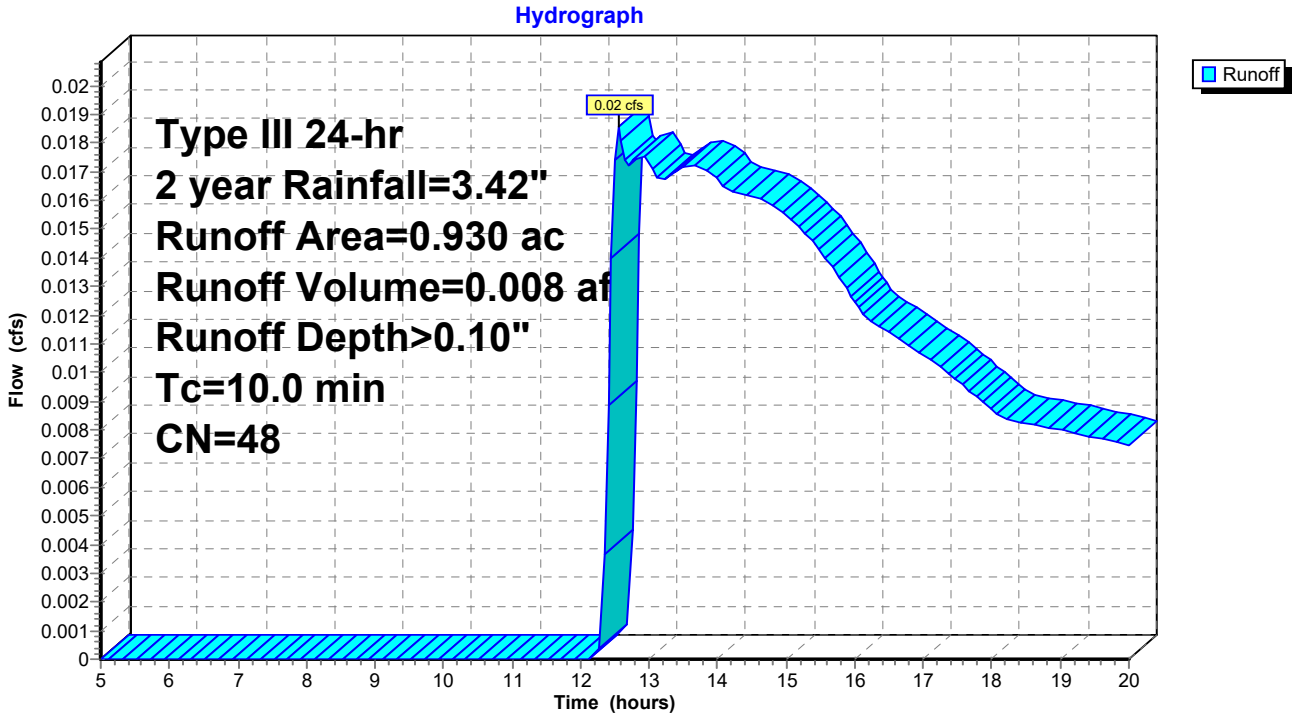
Runoff = 0.02 cfs @ 12.56 hrs, Volume= 0.008 af, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
0.930	48	Brush, Good, HSG B
0.930		100.00% Pervious Area

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

Subcatchment 6a: Subcat 6a



Summary for Subcatchment 7: Subcat 7

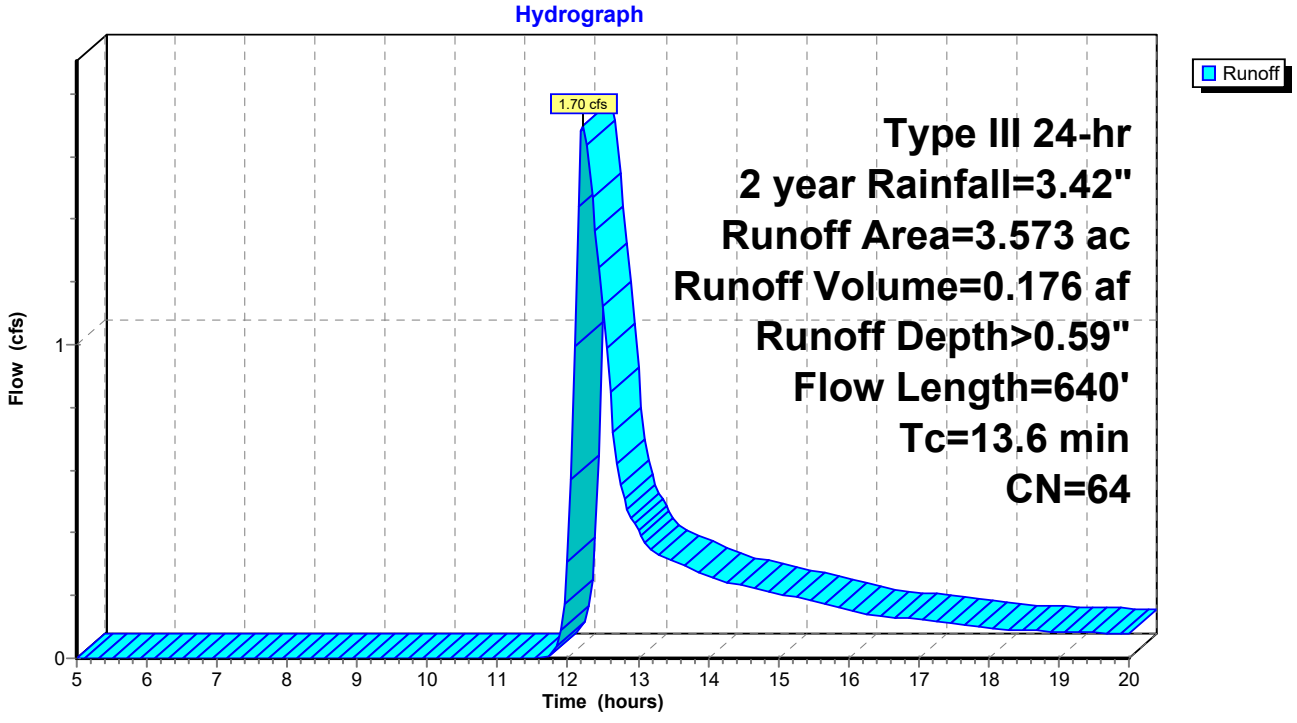
Runoff = 1.70 cfs @ 12.23 hrs, Volume= 0.176 af, Depth> 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
2.142	74	>75% Grass cover, Good, HSG C
1.431	48	Brush, Good, HSG B
3.573	64	Weighted Average
3.573		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1000	0.20		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
2.0	240	0.0812	1.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.4	350	0.0128	0.79		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.6	640	Total			

Subcatchment 7: Subcat 7



Summary for Subcatchment 8: Subcat 8

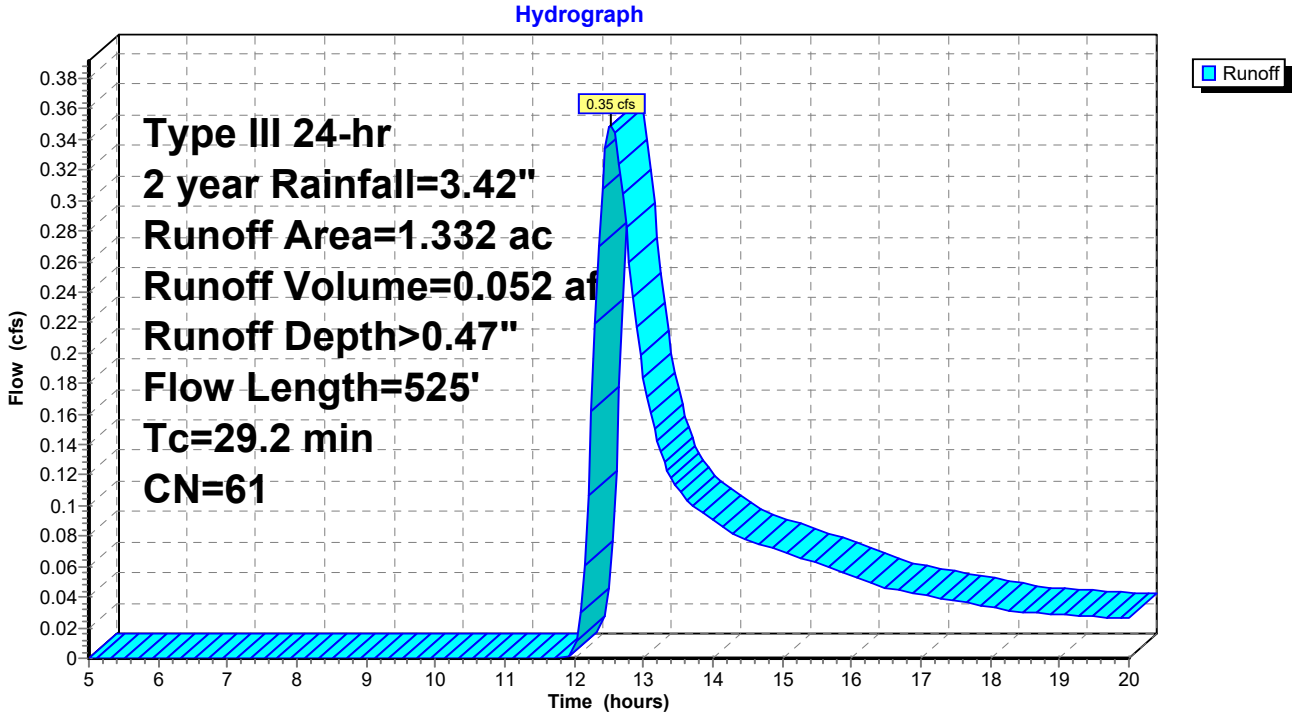
Runoff = 0.35 cfs @ 12.53 hrs, Volume= 0.052 af, Depth> 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.680	48	Brush, Good, HSG B
1.332	61	Weighted Average
1.332		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	50	0.0100	0.05		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 3.42"
13.1	475	0.0147	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
29.2	525	Total			

Subcatchment 8: Subcat 8



Summary for Subcatchment 8a: Subcat 8a

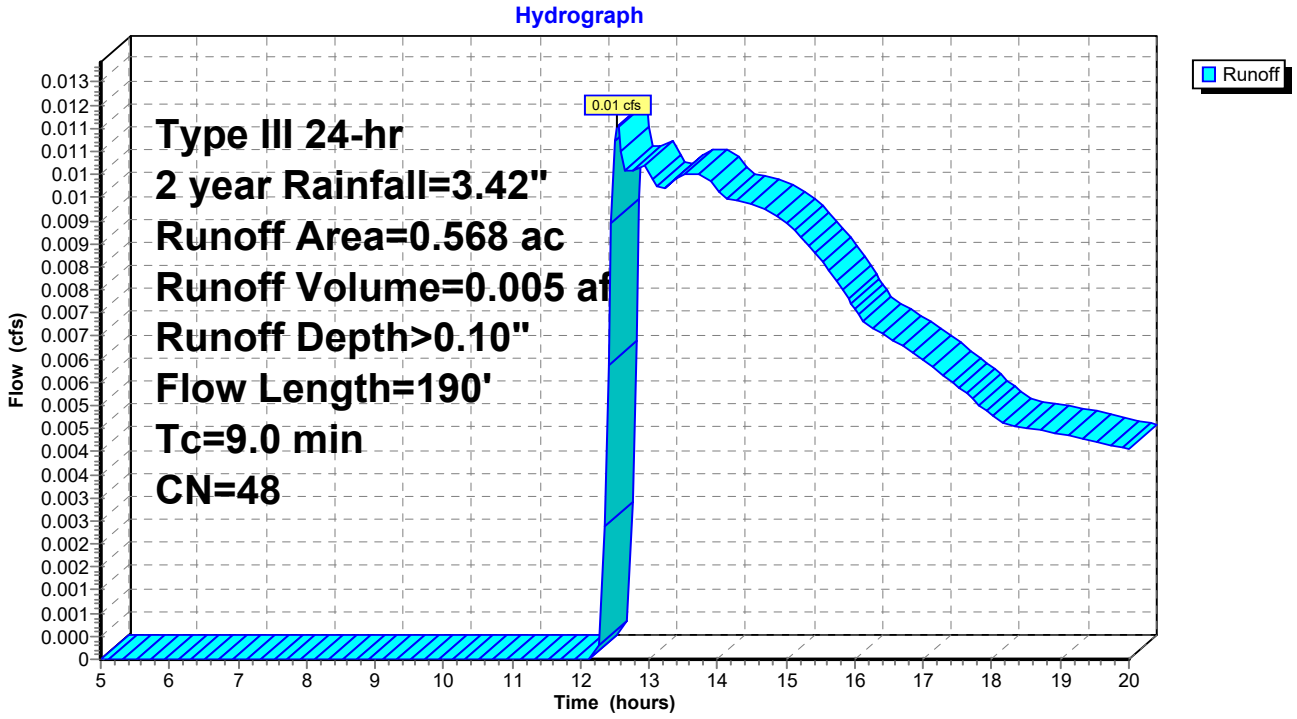
Runoff = 0.01 cfs @ 12.54 hrs, Volume= 0.005 af, Depth> 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
0.568	48	Brush, Good, HSG B
0.568		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
1.3	140	0.1220	1.75		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.0	190	Total			

Subcatchment 8a: Subcat 8a



Summary for Subcatchment 9: Subcat 9

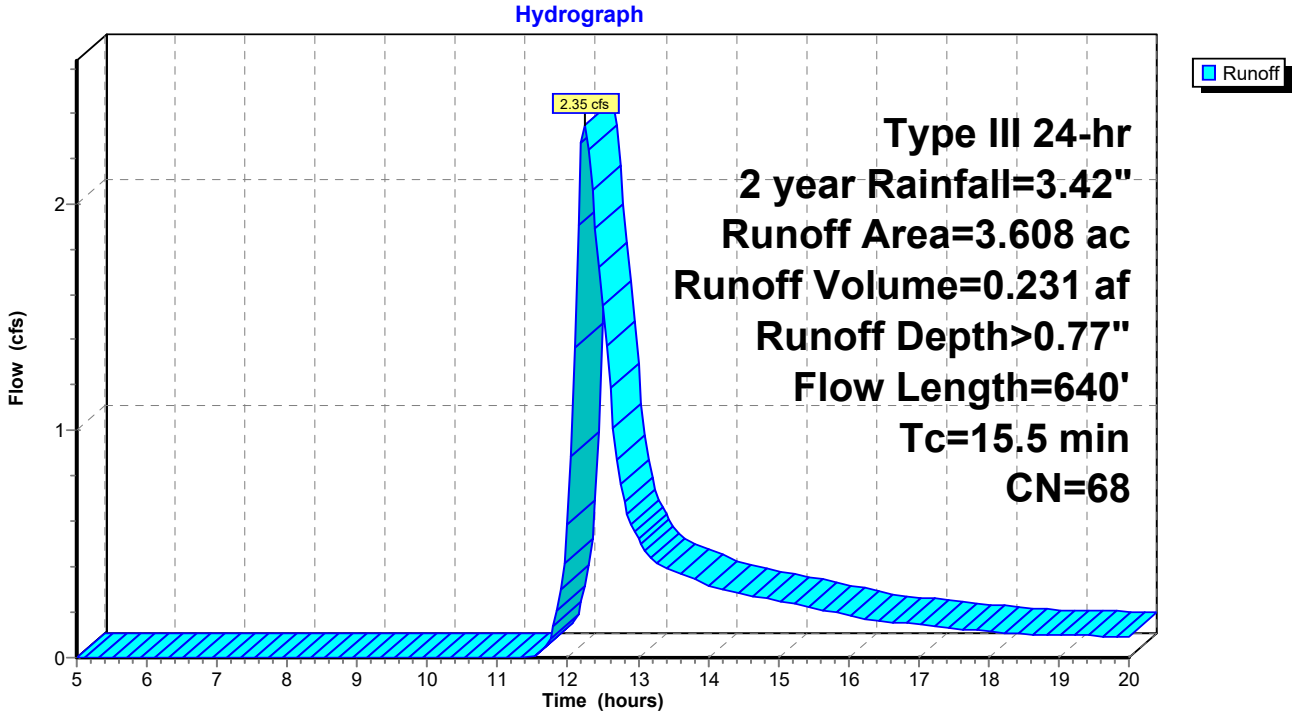
Runoff = 2.35 cfs @ 12.25 hrs, Volume= 0.231 af, Depth> 0.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2 year Rainfall=3.42"

Area (ac)	CN	Description
2.512	74	>75% Grass cover, Good, HSG C
0.924	48	Brush, Good, HSG B
0.172	96	Gravel surface, HSG C
3.608	68	Weighted Average
3.608		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0360	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.8	215	0.0850	2.04		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.4	375	0.0147	0.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.5	640	Total			

Subcatchment 9: Subcat 9



Summary for Pond 1P: (new Pond)

Inflow Area = 4.726 ac, 0.00% Impervious, Inflow Depth > 0.77" for 2 year event
Inflow = 3.12 cfs @ 12.23 hrs, Volume= 0.302 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 169.50' Surf.Area= 0.154 ac Storage= 0.255 af
Peak Elev= 171.20' @ 20.00 hrs Surf.Area= 0.203 ac Storage= 0.557 af (0.302 af above start)

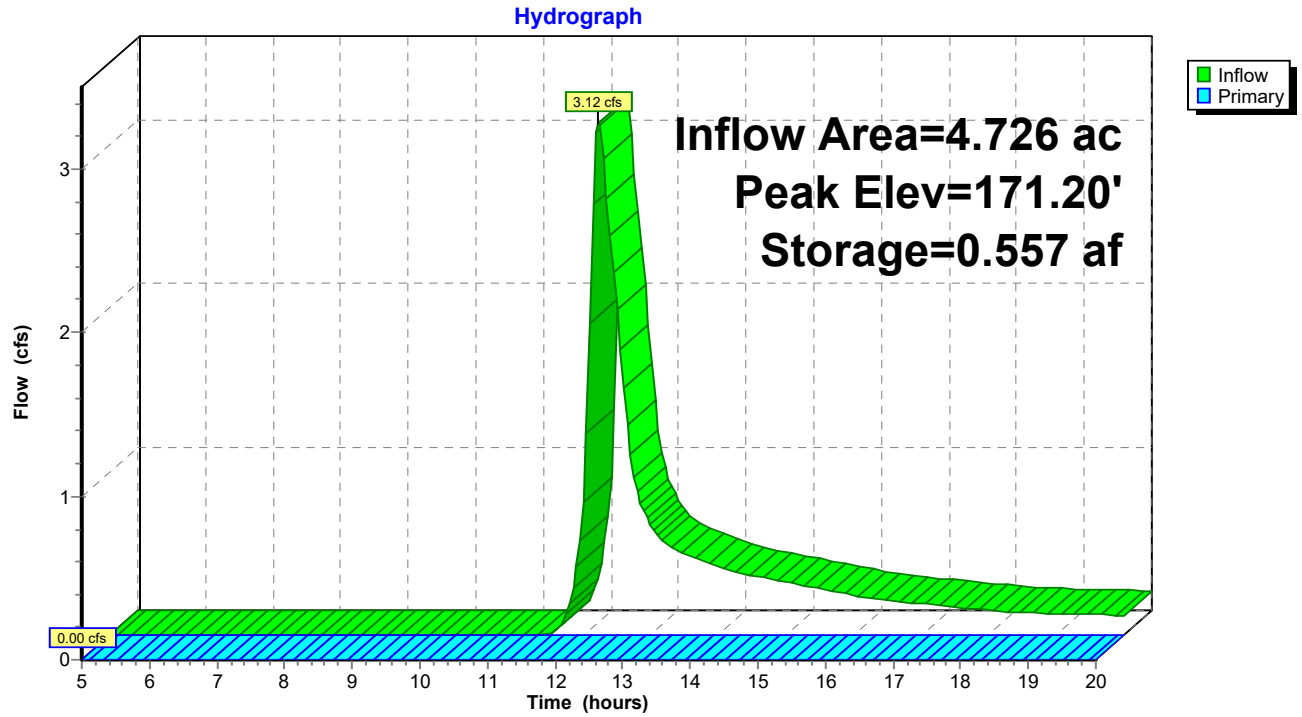
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	167.50'	1.251 af	**31.00'W x 144.00'L x 6.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	172.30'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=169.50' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: (new Pond)



Summary for Pond 2P: (new Pond)

Inflow Area = 1.477 ac, 0.00% Impervious, Inflow Depth > 0.40" for 2 year event
Inflow = 0.41 cfs @ 12.22 hrs, Volume= 0.049 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 168.00' Surf.Area= 0.051 ac Storage= 0.074 af
Peak Elev= 168.86' @ 20.00 hrs Surf.Area= 0.064 ac Storage= 0.124 af (0.049 af above start)

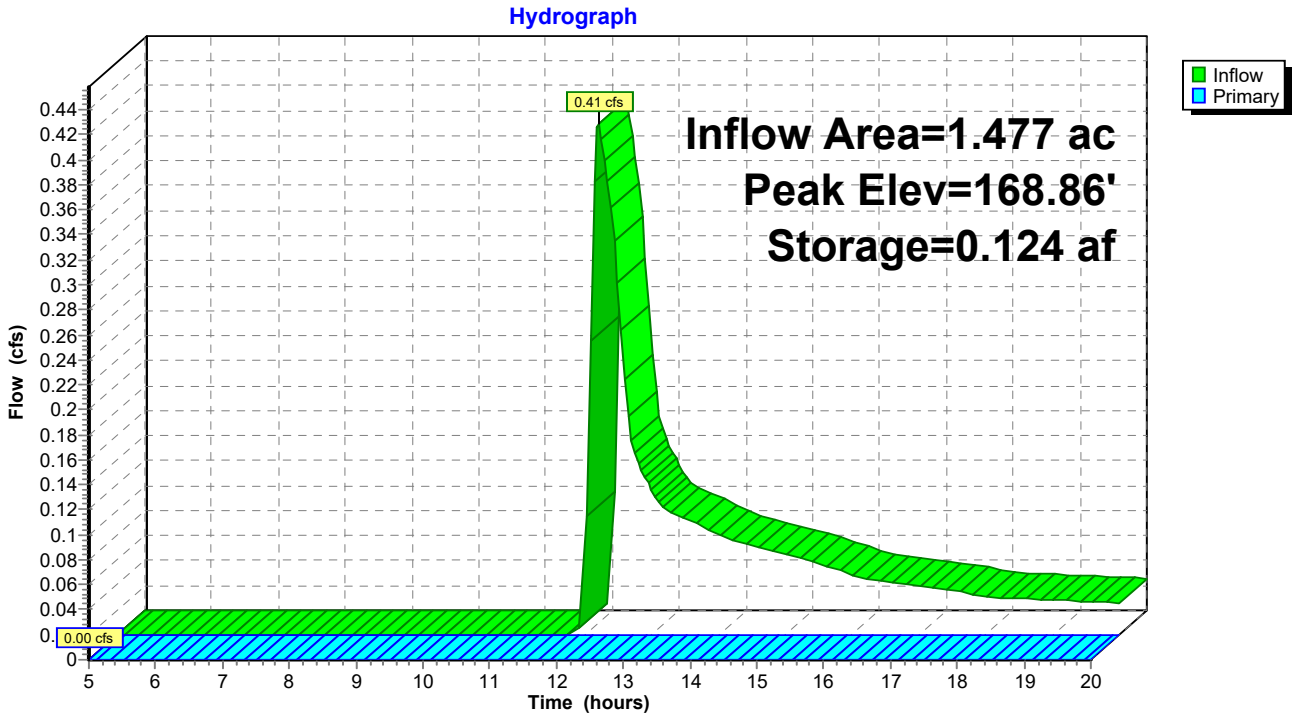
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	166.00'	0.250 af	**17.00'W x 64.00'L x 4.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	169.50'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=168.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 2P: (new Pond)



Summary for Pond 3P: (new Pond)

Inflow Area = 3.240 ac, 0.00% Impervious, Inflow Depth > 0.77" for 2 year event
Inflow = 2.44 cfs @ 12.17 hrs, Volume= 0.208 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 167.00' Surf.Area= 0.067 ac Storage= 0.091 af
Peak Elev= 169.21' @ 20.00 hrs Surf.Area= 0.122 ac Storage= 0.298 af (0.208 af above start)

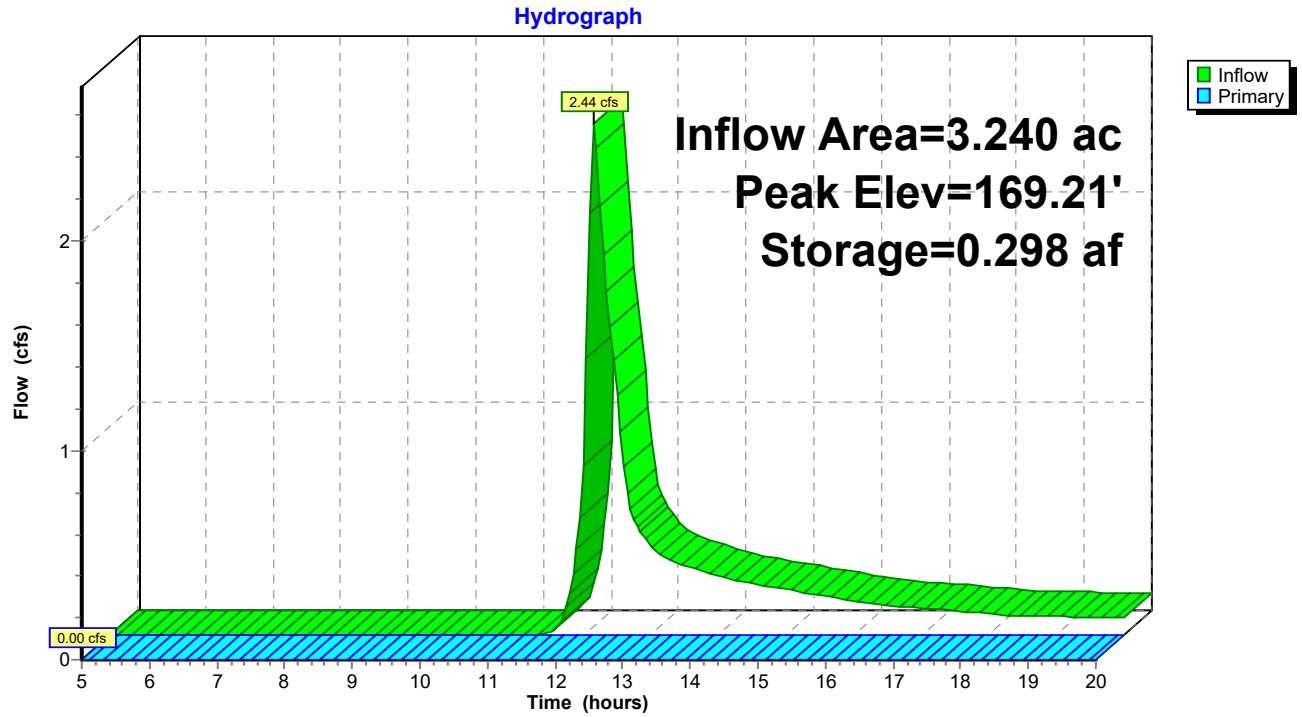
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	165.00'	0.649 af	**8.00'W x 134.00'L x 6.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	170.50'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=167.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 3P: (new Pond)



Summary for Pond 4P: (new Pond)

Inflow Area = 2.043 ac, 0.00% Impervious, Inflow Depth > 0.72" for 2 year event
Inflow = 1.29 cfs @ 12.22 hrs, Volume= 0.123 af
Outflow = 0.10 cfs @ 15.98 hrs, Volume= 0.063 af, Atten= 92%, Lag= 226.0 min
Discarded = 0.10 cfs @ 15.98 hrs, Volume= 0.063 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 167.32' @ 15.98 hrs Surf.Area= 0.045 ac Storage= 0.070 af

Plug-Flow detention time= 222.1 min calculated for 0.063 af (51% of inflow)
Center-of-Mass det. time= 127.6 min (965.8 - 838.2)

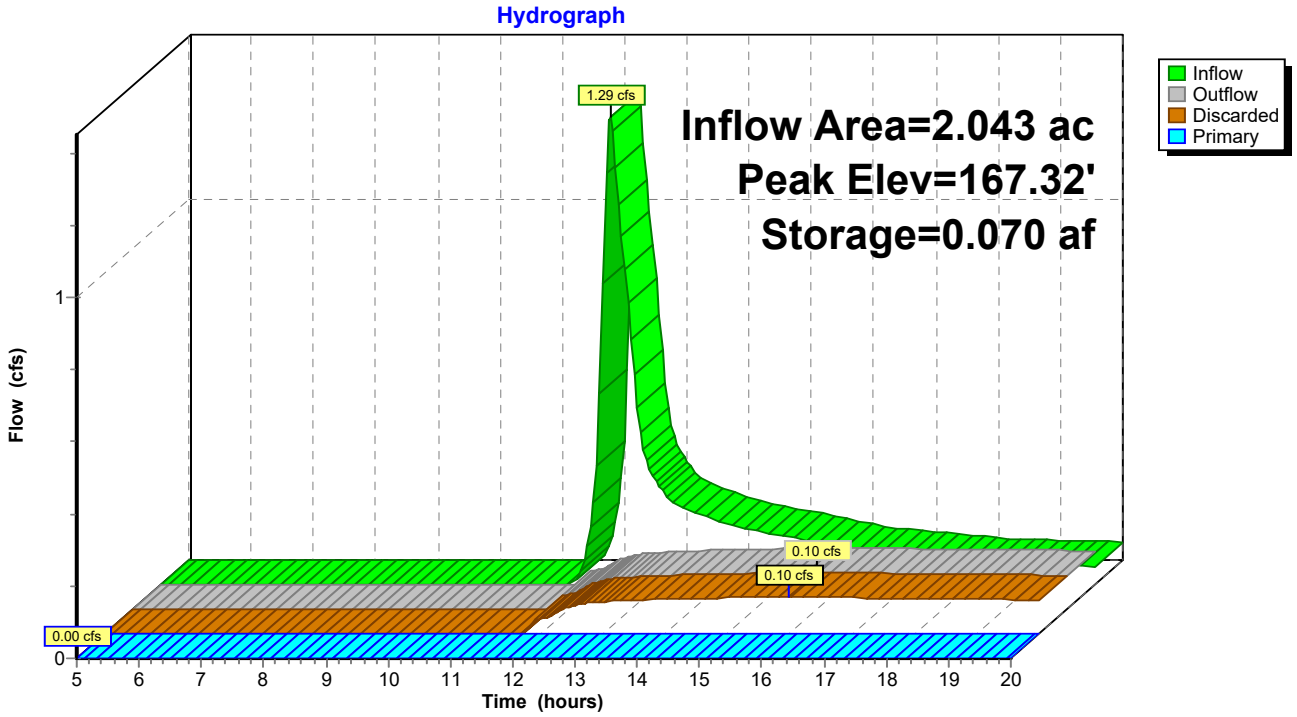
Volume	Invert	Avail.Storage	Storage Description
#1	165.00'	0.346 af	**11.00'W x 65.00'L x 6.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	170.00'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	165.00'	**2.200 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.10 cfs @ 15.98 hrs HW=167.32' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=165.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 4P: (new Pond)



Summary for Pond 5P: (new Pond)

Inflow Area = 1.710 ac, 0.00% Impervious, Inflow Depth > 0.51" for 2 year event
Inflow = 0.64 cfs @ 12.27 hrs, Volume= 0.072 af
Outflow = 0.05 cfs @ 16.91 hrs, Volume= 0.034 af, Atten= 91%, Lag= 278.4 min
Discarded = 0.05 cfs @ 16.91 hrs, Volume= 0.034 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 170.04' @ 16.91 hrs Surf.Area= 0.030 ac Storage= 0.042 af

Plug-Flow detention time= 222.7 min calculated for 0.034 af (46% of inflow)
Center-of-Mass det. time= 119.0 min (972.8 - 853.8)

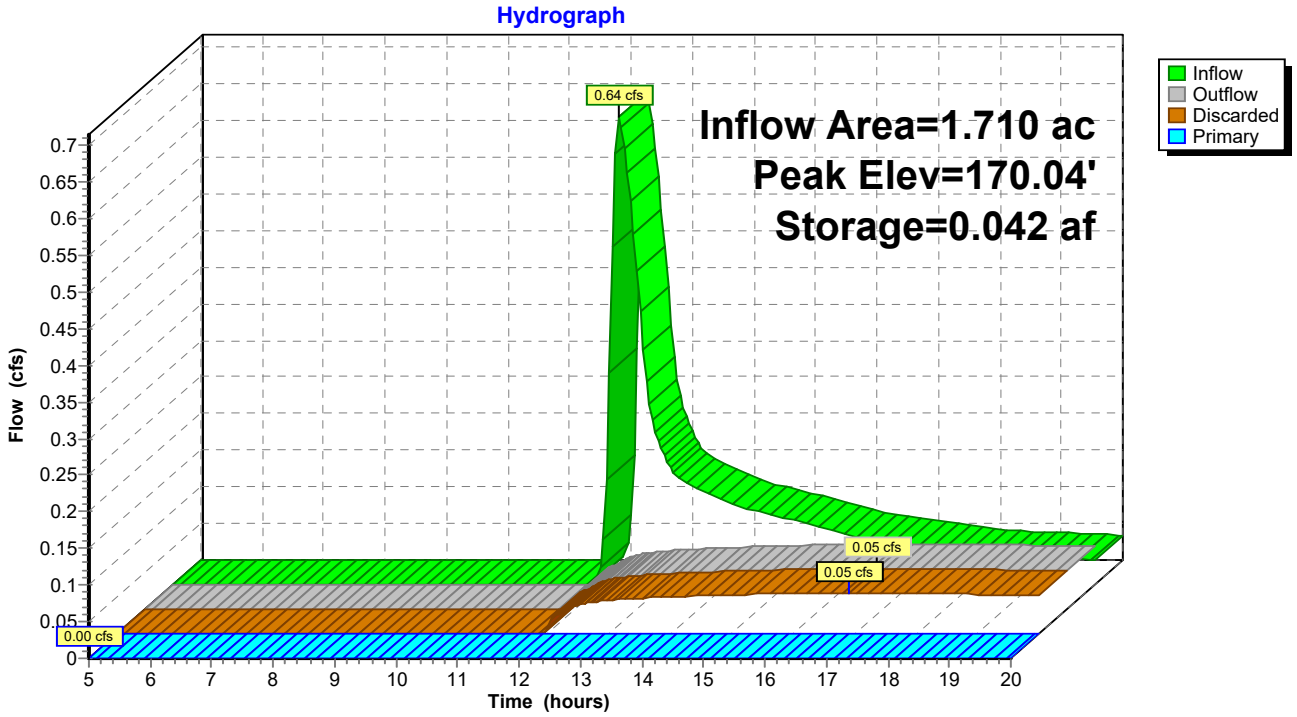
Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	0.256 af	**32.00'W x 17.00'L x 6.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	173.00'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	168.00'	**1.800 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 90.00' Phase-In= 0.01'

Discarded OutFlow Max=0.05 cfs @ 16.91 hrs HW=170.04' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=168.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 5P: (new Pond)



Summary for Pond 6P: (new Pond)

Inflow Area = 4.816 ac, 0.00% Impervious, Inflow Depth > 0.67" for 2 year event
Inflow = 2.25 cfs @ 12.40 hrs, Volume= 0.270 af
Outflow = 0.24 cfs @ 15.93 hrs, Volume= 0.152 af, Atten= 89%, Lag= 212.1 min
Discarded = 0.24 cfs @ 15.93 hrs, Volume= 0.152 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 177.13' @ 15.93 hrs Surf.Area= 0.092 ac Storage= 0.144 af

Plug-Flow detention time= 207.9 min calculated for 0.152 af (56% of inflow)
Center-of-Mass det. time= 119.4 min (967.9 - 848.5)

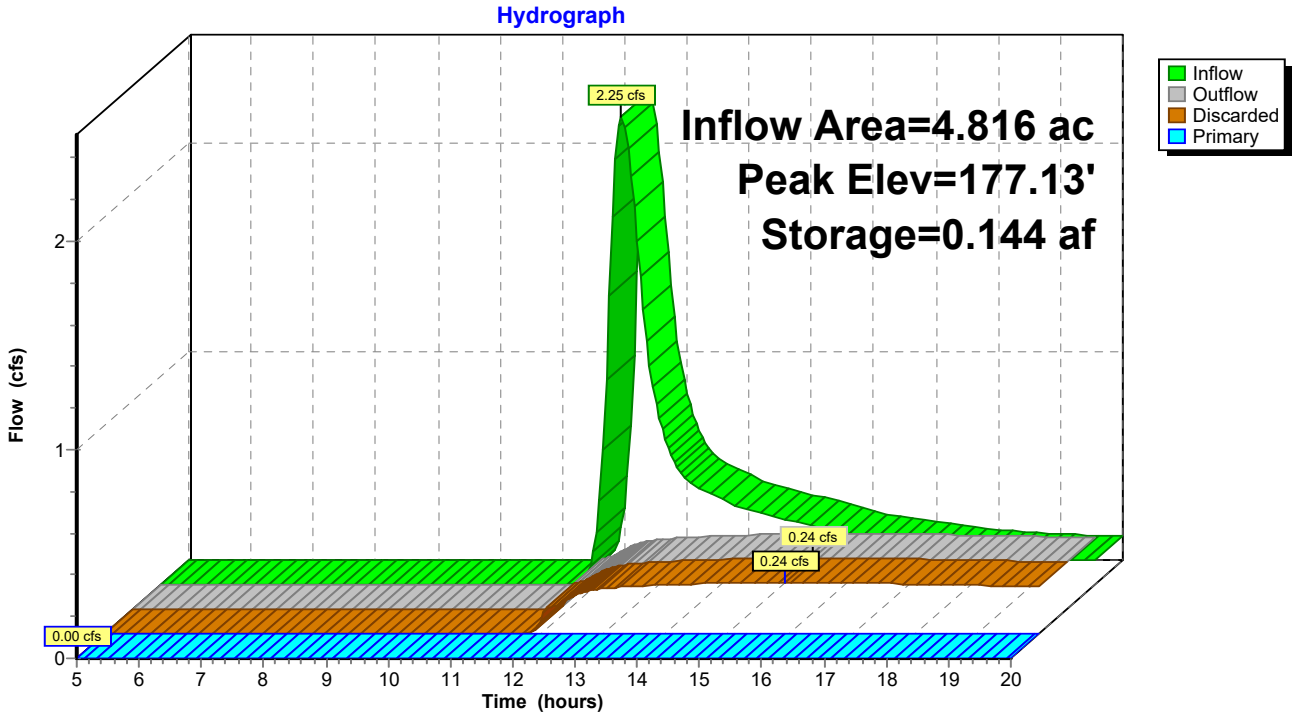
Volume	Invert	Avail.Storage	Storage Description
#1	175.00'	0.903 af	**15.00'W x 131.00'L x 7.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	180.50'	**6.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	175.00'	**2.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 90.00' Phase-In= 0.01'

Discarded OutFlow Max=0.24 cfs @ 15.93 hrs HW=177.13' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.24 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=175.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 6P: (new Pond)



Summary for Pond 7P: (new Pond)

Inflow Area = 3.573 ac, 0.00% Impervious, Inflow Depth > 0.59" for 2 year event
Inflow = 1.70 cfs @ 12.23 hrs, Volume= 0.176 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 169.00' Surf.Area= 0.151 ac Storage= 0.250 af
Peak Elev= 170.06' @ 20.00 hrs Surf.Area= 0.181 ac Storage= 0.426 af (0.175 af above start)

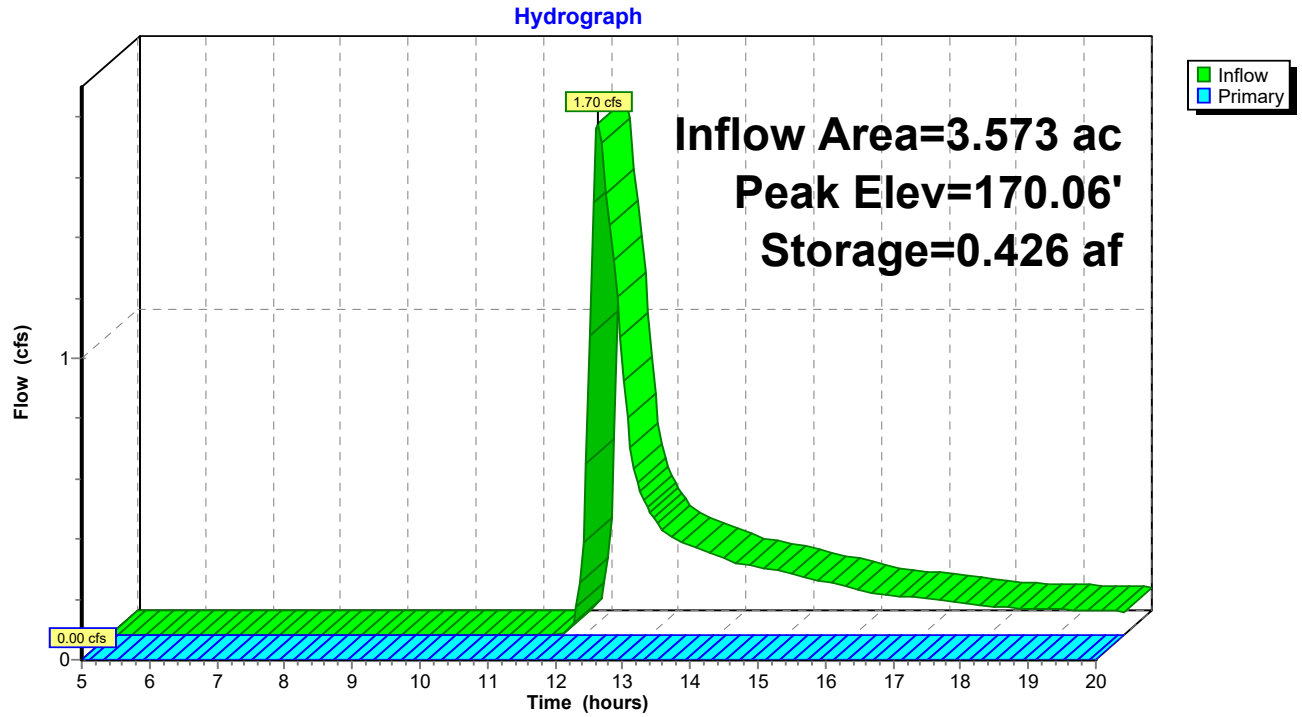
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	167.00'	0.717 af	**31.00'W x 141.00'L x 4.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	170.80'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=169.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 7P: (new Pond)



Summary for Pond 8P: (new Pond)

Inflow Area = 1.332 ac, 0.00% Impervious, Inflow Depth > 0.47" for 2 year event
Inflow = 0.35 cfs @ 12.53 hrs, Volume= 0.052 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 165.50' Surf.Area= 0.021 ac Storage= 0.027 af
Peak Elev= 167.24' @ 20.00 hrs Surf.Area= 0.039 ac Storage= 0.079 af (0.052 af above start)

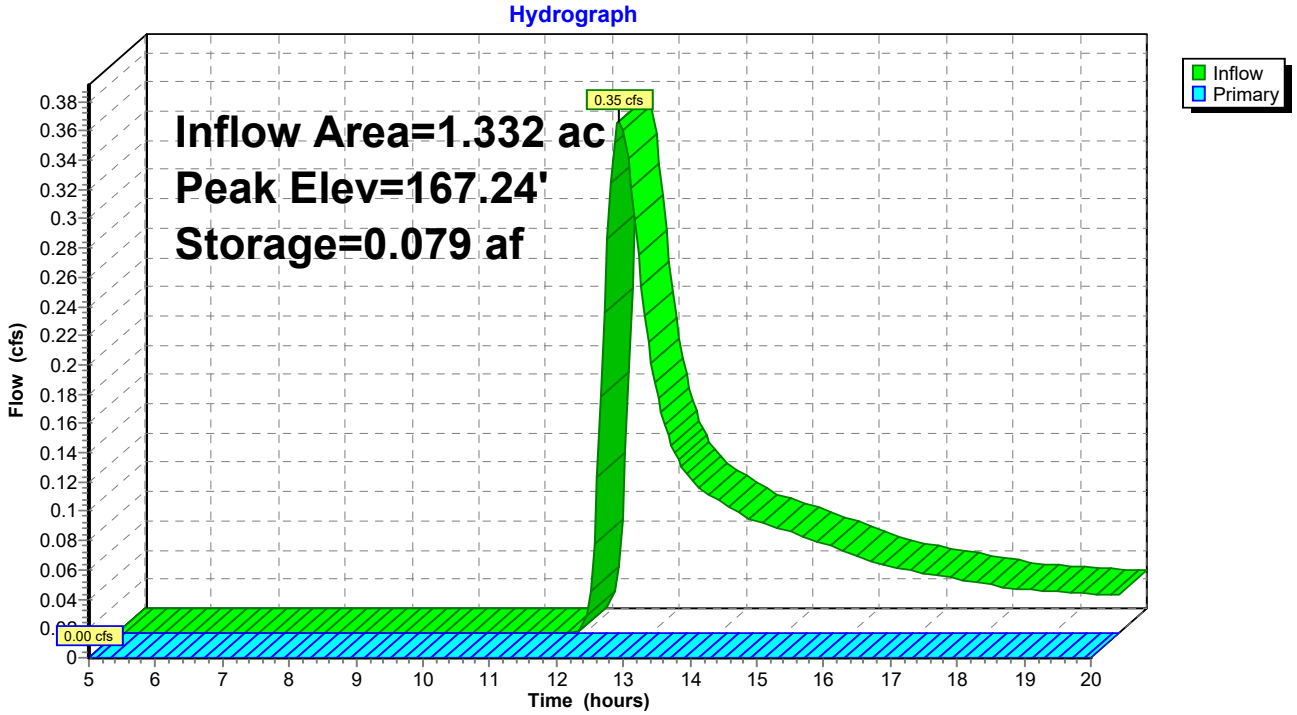
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	163.50'	0.237 af	**10.00'W x 30.00'L x 6.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	168.50'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=165.50' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 8P: (new Pond)



Summary for Pond 9P: (new Pond)

Inflow Area = 3.608 ac, 0.00% Impervious, Inflow Depth > 0.77" for 2 year event
Inflow = 2.35 cfs @ 12.25 hrs, Volume= 0.231 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 170.00' Surf.Area= 11,100 sf Storage= 19,450 cf
Peak Elev= 170.86' @ 20.00 hrs Surf.Area= 12,383 sf Storage= 29,490 cf (10,040 cf above start)

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

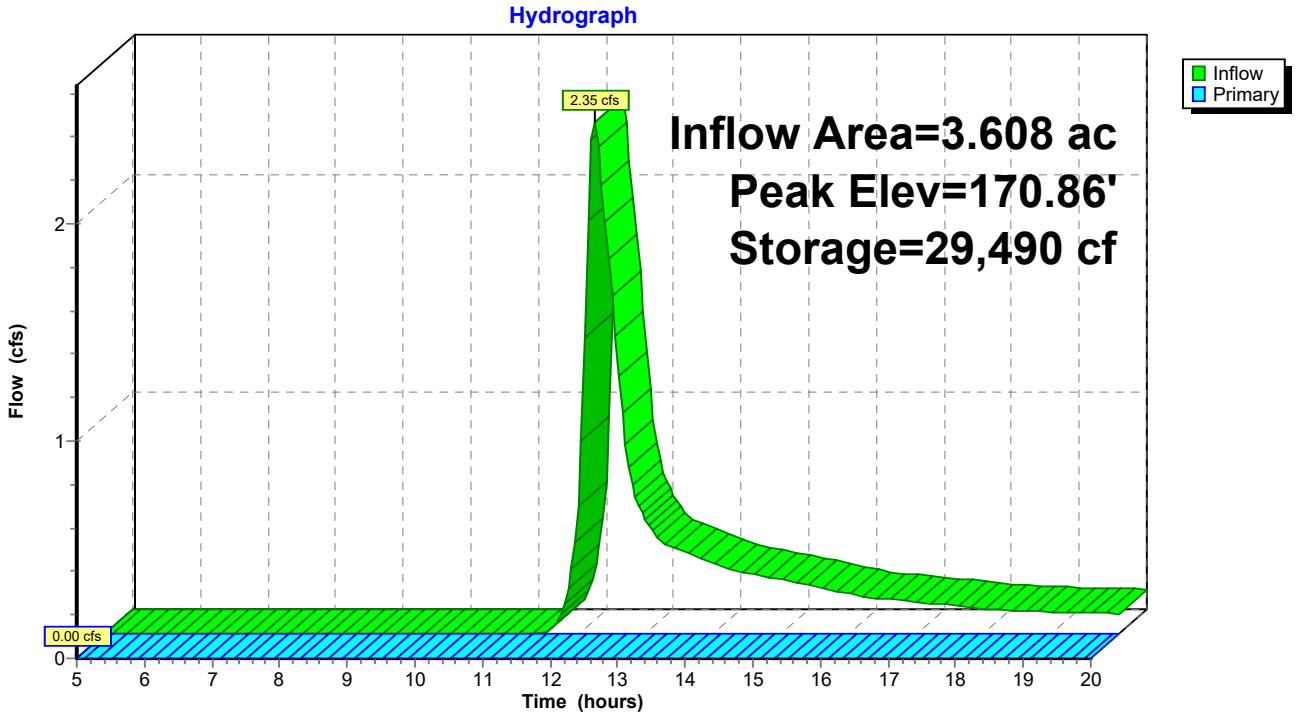
Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	44,650 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	8,400	0	0
169.00	9,700	9,050	9,050
170.00	11,100	10,400	19,450
171.00	12,600	11,850	31,300
172.00	14,100	13,350	44,650

Device	Routing	Invert	Outlet Devices
#1	Primary	171.50'	**7.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=170.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 9P: (new Pond)

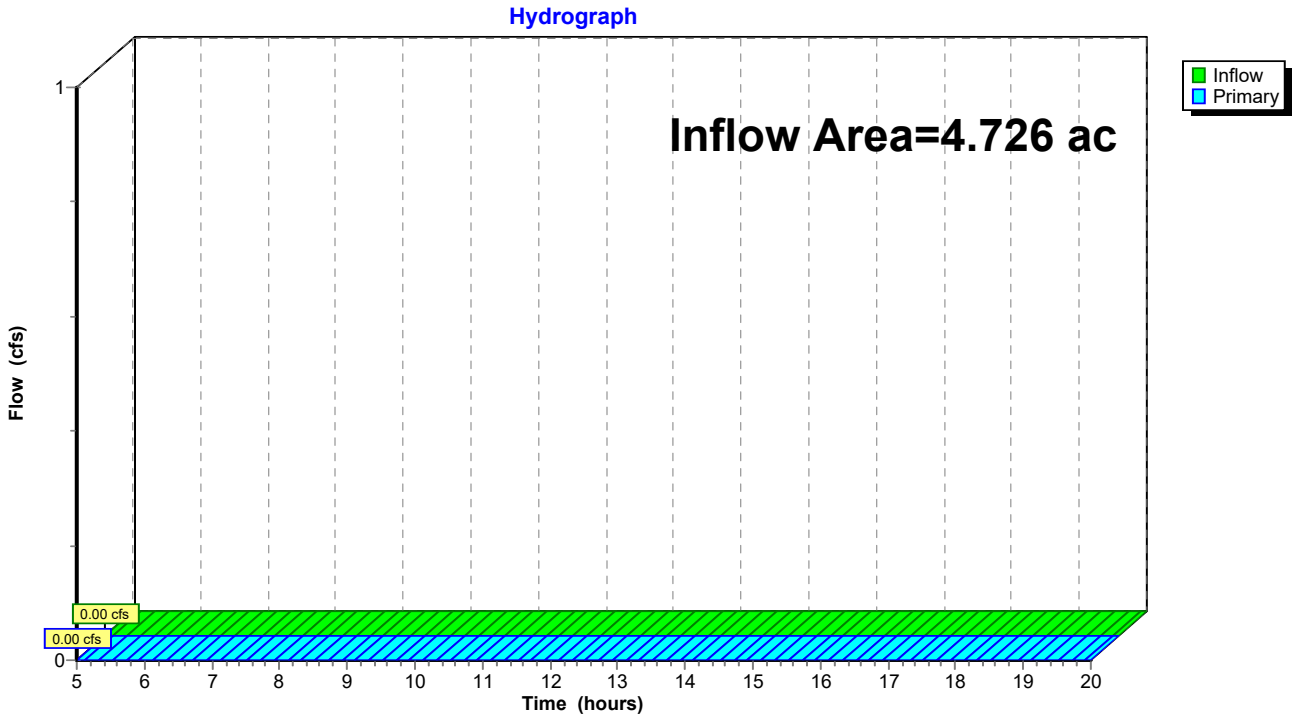


Summary for Link DP1: DP1

Inflow Area = 4.726 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP1: DP1

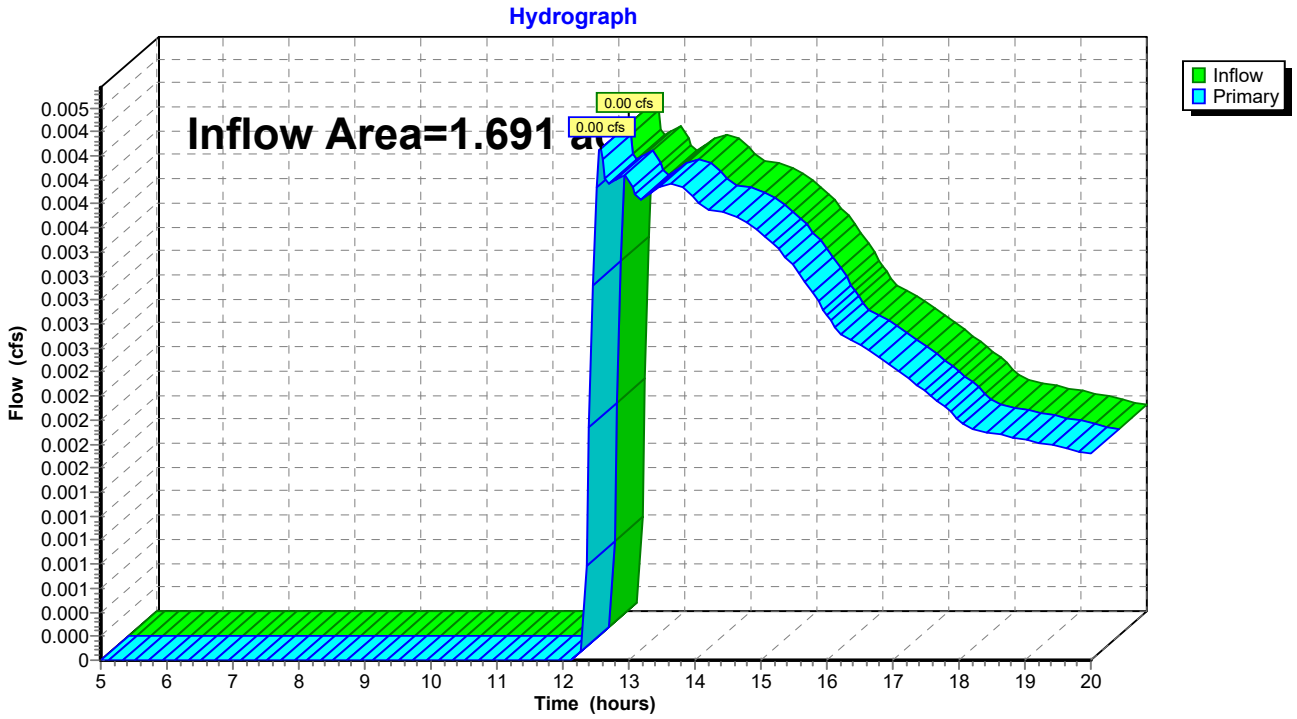


Summary for Link DP2: DP2

Inflow Area = 1.691 ac, 0.00% Impervious, Inflow Depth > 0.01" for 2 year event
Inflow = 0.00 cfs @ 12.56 hrs, Volume= 0.002 af
Primary = 0.00 cfs @ 12.56 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP2: DP2

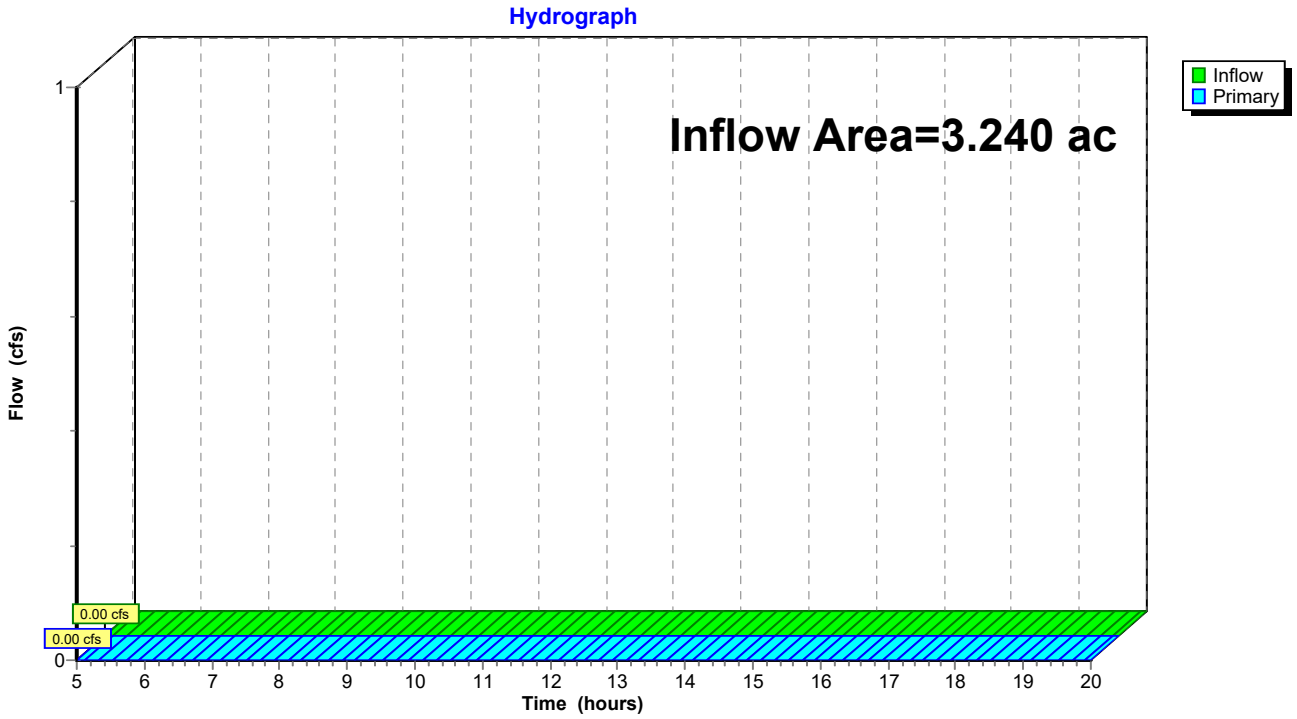


Summary for Link DP3: DP3

Inflow Area = 3.240 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP3: DP3

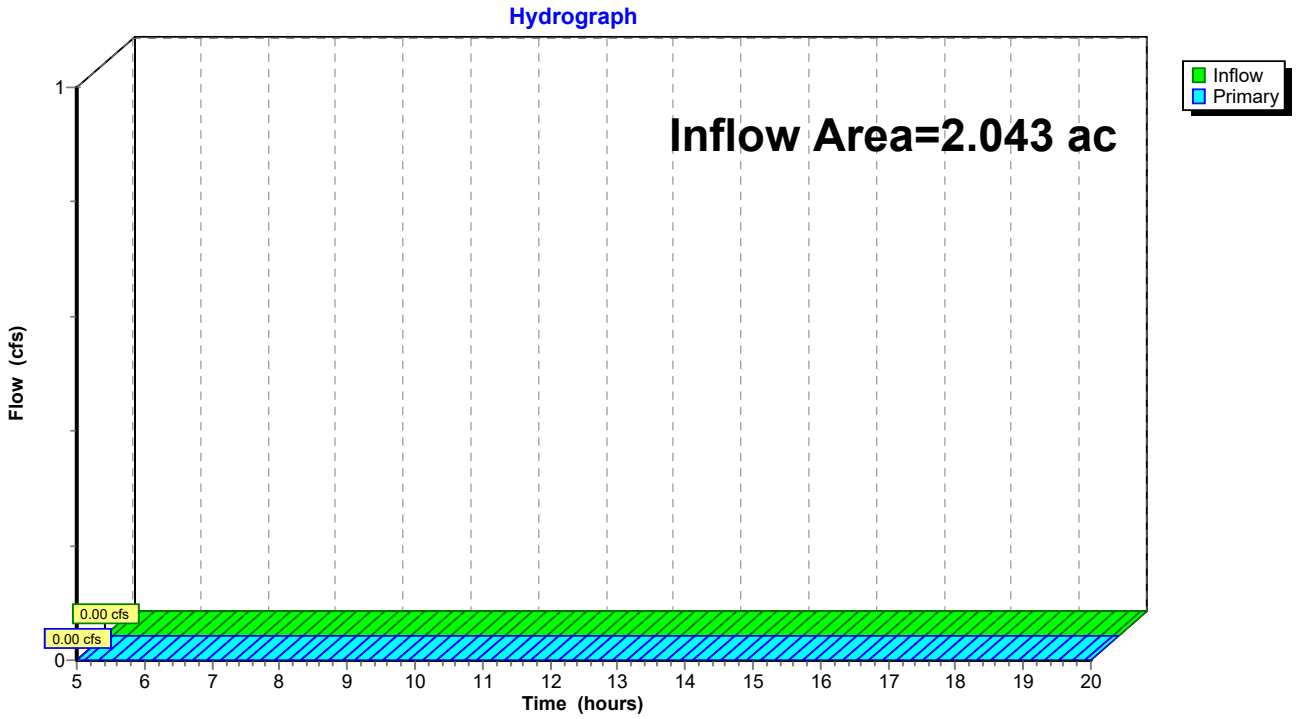


Summary for Link DP4: DP4

Inflow Area = 2.043 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP4: DP4

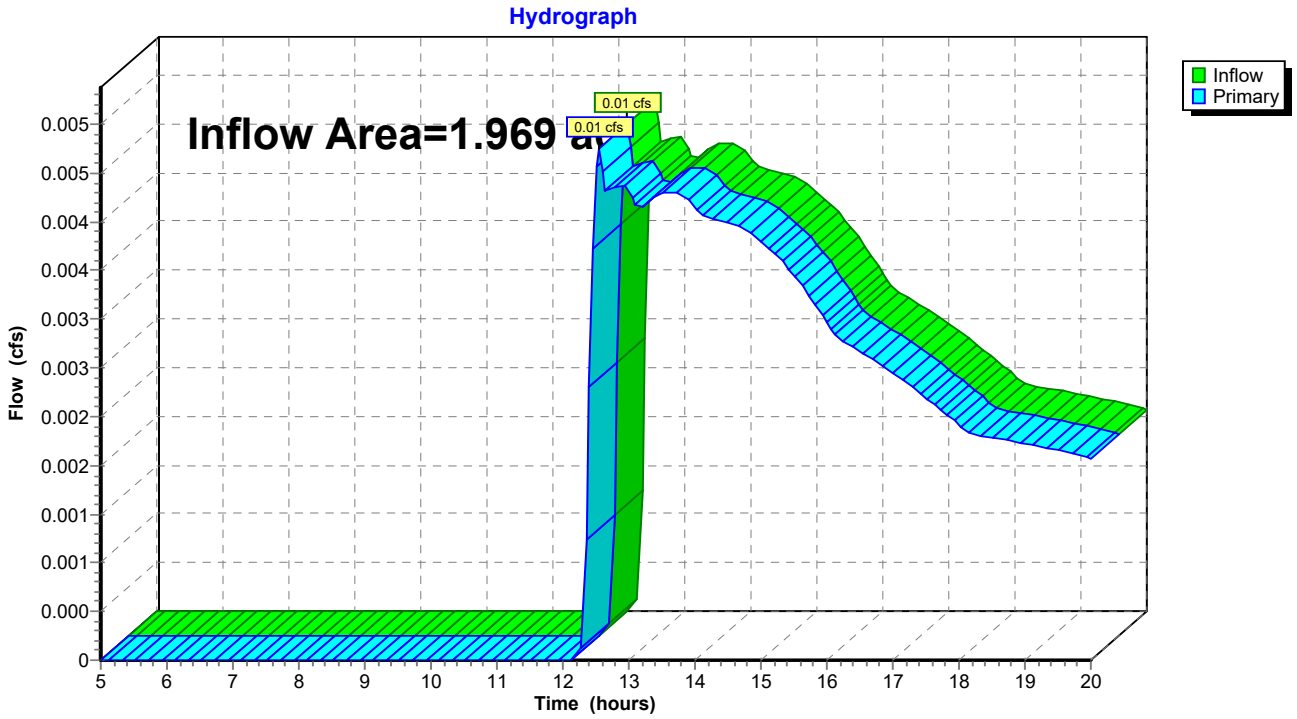


Summary for Link DP5: DP5

Inflow Area = 1.969 ac, 0.00% Impervious, Inflow Depth > 0.01" for 2 year event
Inflow = 0.01 cfs @ 12.55 hrs, Volume= 0.002 af
Primary = 0.01 cfs @ 12.55 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP5: DP5

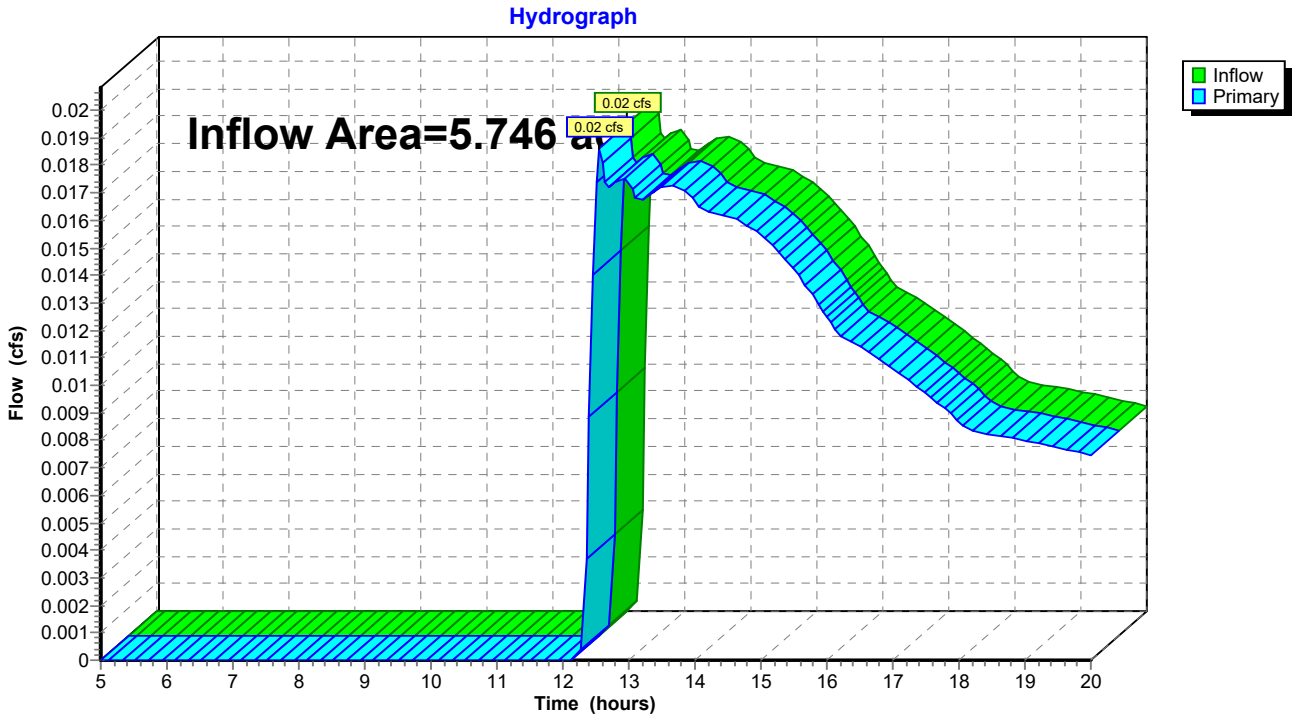


Summary for Link DP6: DP6

Inflow Area = 5.746 ac, 0.00% Impervious, Inflow Depth > 0.02" for 2 year event
Inflow = 0.02 cfs @ 12.56 hrs, Volume= 0.008 af
Primary = 0.02 cfs @ 12.56 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP6: DP6

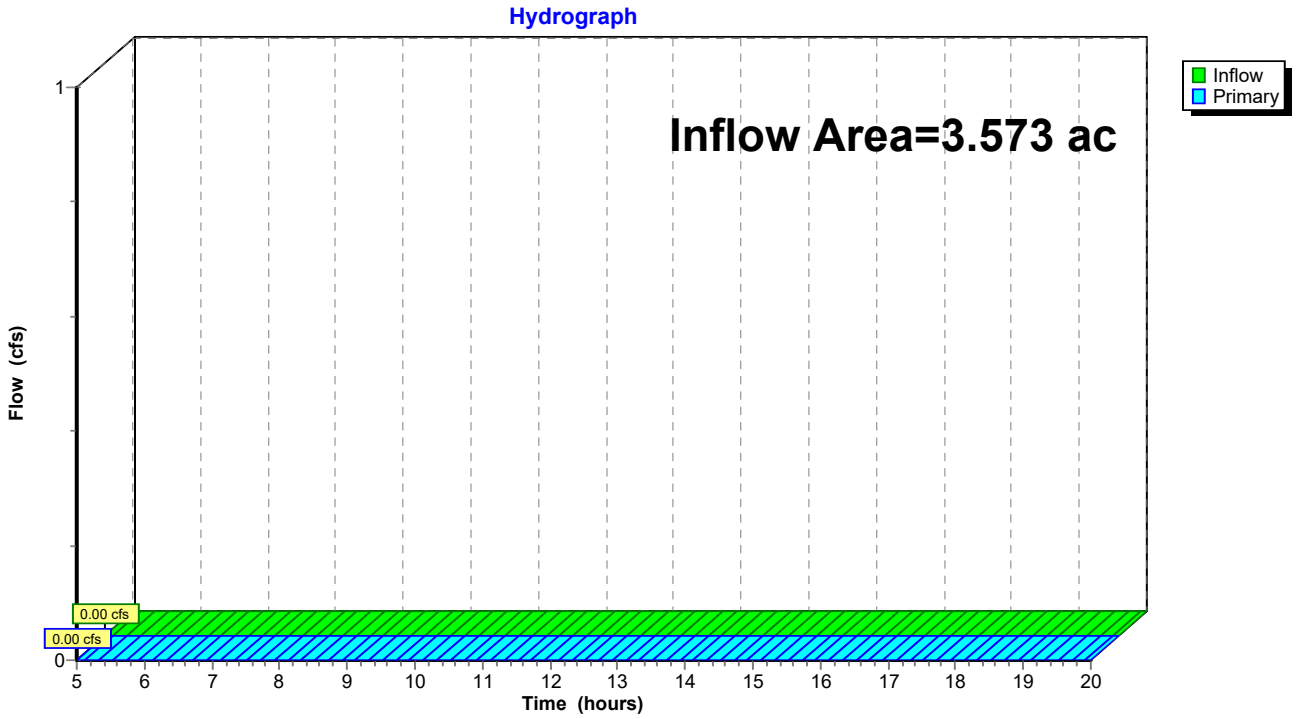


Summary for Link DP7: DP7

Inflow Area = 3.573 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP7: DP7

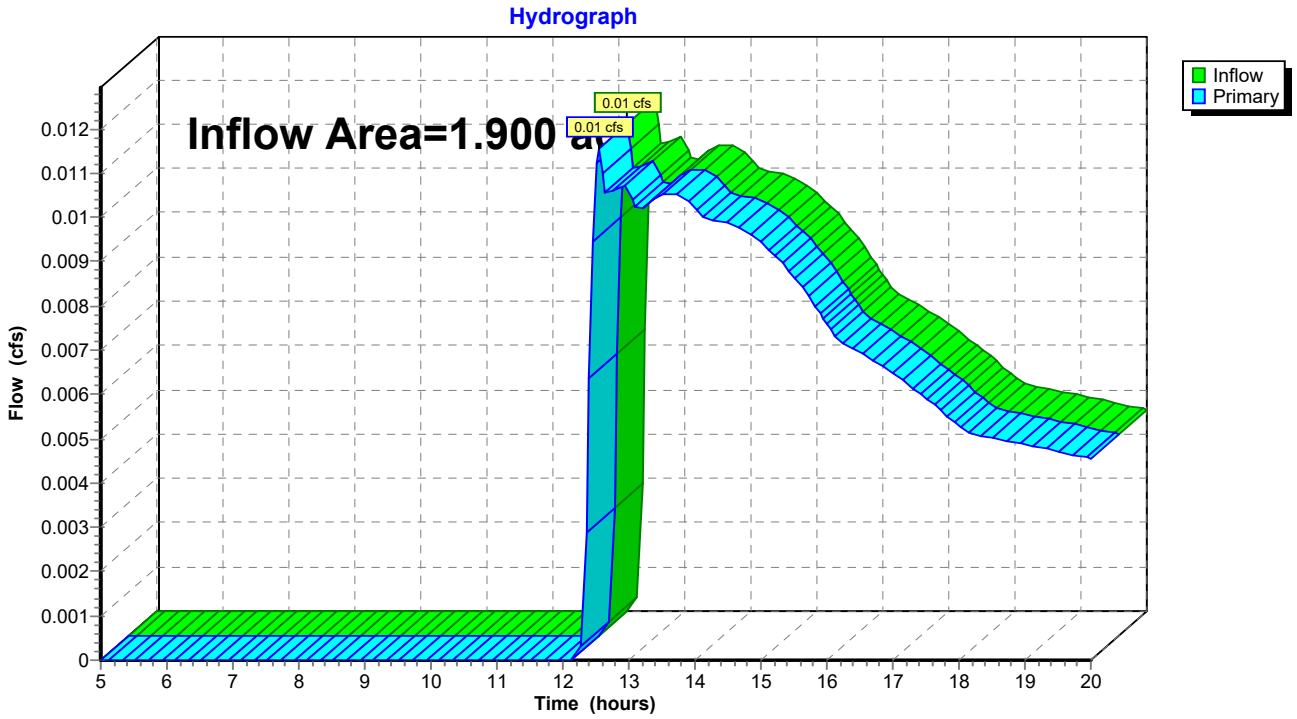


Summary for Link DP8: DP8

Inflow Area = 1.900 ac, 0.00% Impervious, Inflow Depth > 0.03" for 2 year event
Inflow = 0.01 cfs @ 12.54 hrs, Volume= 0.005 af
Primary = 0.01 cfs @ 12.54 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP8: DP8

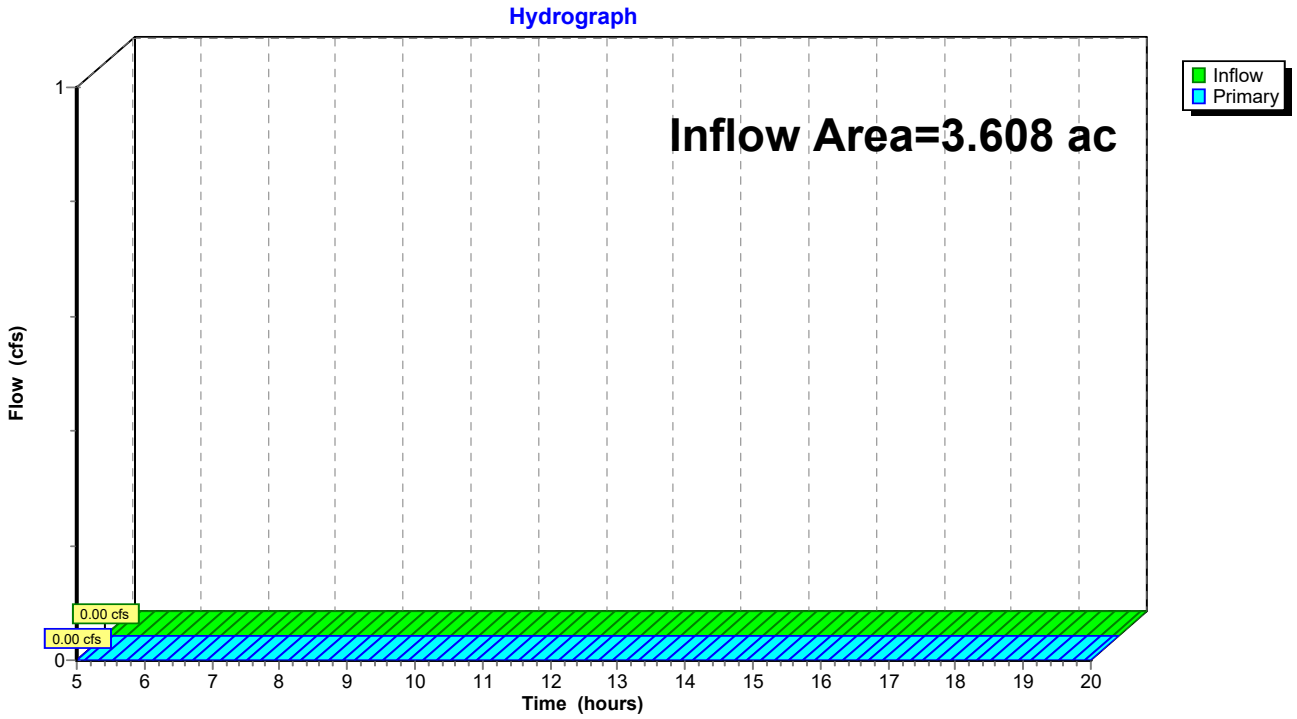


Summary for Link DP9: DP9

Inflow Area = 3.608 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2 year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP9: DP9



25-Year Storm Event- Proposed

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Subcat 1 Runoff Area=4.726 ac 0.00% Impervious Runoff Depth>2.48"
Flow Length=410' Tc=14.8 min CN=68 Runoff=11.18 cfs 0.978 af

Subcatchment2: Subcat 2 Runoff Area=1.477 ac 0.00% Impervious Runoff Depth>1.73"
Flow Length=245' Tc=10.5 min CN=59 Runoff=2.63 cfs 0.213 af

Subcatchment2a: Subcat 2a Runoff Area=0.214 ac 0.00% Impervious Runoff Depth>0.92"
Flow Length=70' Tc=10.3 min CN=48 Runoff=0.16 cfs 0.016 af

Subcatchment3: Subcat 3 Runoff Area=3.240 ac 0.00% Impervious Runoff Depth>2.49"
Flow Length=415' Tc=10.4 min CN=68 Runoff=8.66 cfs 0.672 af

Subcatchment4: Subcat 4 Runoff Area=2.043 ac 0.00% Impervious Runoff Depth>2.40"
Flow Length=530' Tc=13.6 min CN=67 Runoff=4.79 cfs 0.408 af

Subcatchment5: Subcat 5 Runoff Area=1.710 ac 0.00% Impervious Runoff Depth>1.97"
Flow Length=510' Tc=14.8 min CN=62 Runoff=3.14 cfs 0.281 af

Subcatchment5a: Subcat 5a Runoff Area=0.259 ac 0.00% Impervious Runoff Depth>0.92"
Flow Length=150' Tc=9.2 min CN=48 Runoff=0.21 cfs 0.020 af

Subcatchment6: Subcat 6 Runoff Area=4.816 ac 0.00% Impervious Runoff Depth>2.30"
Flow Length=840' Tc=24.1 min CN=66 Runoff=8.65 cfs 0.923 af

Subcatchment6a: Subcat 6a Runoff Area=0.930 ac 0.00% Impervious Runoff Depth>0.92"
Tc=10.0 min CN=48 Runoff=0.71 cfs 0.072 af

Subcatchment7: Subcat 7 Runoff Area=3.573 ac 0.00% Impervious Runoff Depth>2.14"
Flow Length=640' Tc=13.6 min CN=64 Runoff=7.40 cfs 0.637 af

Subcatchment8: Subcat 8 Runoff Area=1.332 ac 0.00% Impervious Runoff Depth>1.87"
Flow Length=525' Tc=29.2 min CN=61 Runoff=1.76 cfs 0.208 af

Subcatchment8a: Subcat 8a Runoff Area=0.568 ac 0.00% Impervious Runoff Depth>0.93"
Flow Length=190' Tc=9.0 min CN=48 Runoff=0.46 cfs 0.044 af

Subcatchment9: Subcat 9 Runoff Area=3.608 ac 0.00% Impervious Runoff Depth>2.48"
Flow Length=640' Tc=15.5 min CN=68 Runoff=8.39 cfs 0.747 af

Pond 1P: (new Pond) Peak Elev=172.55' Storage=0.861 af Inflow=11.18 cfs 0.978 af
Outflow=1.26 cfs 0.410 af

Pond 2P: (new Pond) Peak Elev=169.63' Storage=0.178 af Inflow=2.63 cfs 0.213 af
Outflow=0.48 cfs 0.117 af

Pond 3P: (new Pond) Peak Elev=170.70' Storage=0.509 af Inflow=8.66 cfs 0.672 af
Outflow=0.87 cfs 0.274 af

Pond 4P: (new Pond) Peak Elev=170.08' Storage=0.254 af Inflow=4.79 cfs 0.408 af
Discarded=0.20 cfs 0.135 af Primary=0.22 cfs 0.037 af Outflow=0.42 cfs 0.171 af

Pond 5P: (new Pond) Peak Elev=173.05' Storage=0.185 af Inflow=3.14 cfs 0.281 af
Discarded=0.13 cfs 0.082 af Primary=0.13 cfs 0.021 af Outflow=0.26 cfs 0.103 af

Pond 6P: (new Pond) Peak Elev=180.56' Storage=0.609 af Inflow=8.65 cfs 0.923 af
Discarded=0.50 cfs 0.325 af Primary=0.24 cfs 0.029 af Outflow=0.73 cfs 0.354 af

Pond 7P: (new Pond) Peak Elev=171.01' Storage=0.611 af Inflow=7.40 cfs 0.637 af
Outflow=0.96 cfs 0.303 af

Pond 8P: (new Pond) Peak Elev=168.61' Storage=0.144 af Inflow=1.76 cfs 0.208 af
Outflow=0.37 cfs 0.096 af

Pond 9P: (new Pond) Peak Elev=171.64' Storage=39,737 cf Inflow=8.39 cfs 0.747 af
Outflow=0.94 cfs 0.308 af

Link DP1: DP1 Inflow=1.26 cfs 0.410 af
Primary=1.26 cfs 0.410 af

Link DP2: DP2 Inflow=0.52 cfs 0.133 af
Primary=0.52 cfs 0.133 af

Link DP3: DP3 Inflow=0.87 cfs 0.274 af
Primary=0.87 cfs 0.274 af

Link DP4: DP4 Inflow=0.22 cfs 0.037 af
Primary=0.22 cfs 0.037 af

Link DP5: DP5 Inflow=0.21 cfs 0.041 af
Primary=0.21 cfs 0.041 af

Link DP6: DP6 Inflow=0.71 cfs 0.101 af
Primary=0.71 cfs 0.101 af

Link DP7: DP7 Inflow=0.96 cfs 0.303 af
Primary=0.96 cfs 0.303 af

Link DP8: DP8 Inflow=0.46 cfs 0.139 af
Primary=0.46 cfs 0.139 af

Link DP9: DP9 Inflow=0.94 cfs 0.308 af
Primary=0.94 cfs 0.308 af

Total Runoff Area = 28.496 ac Runoff Volume = 5.218 af Average Runoff Depth = 2.20"
100.00% Pervious = 28.496 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

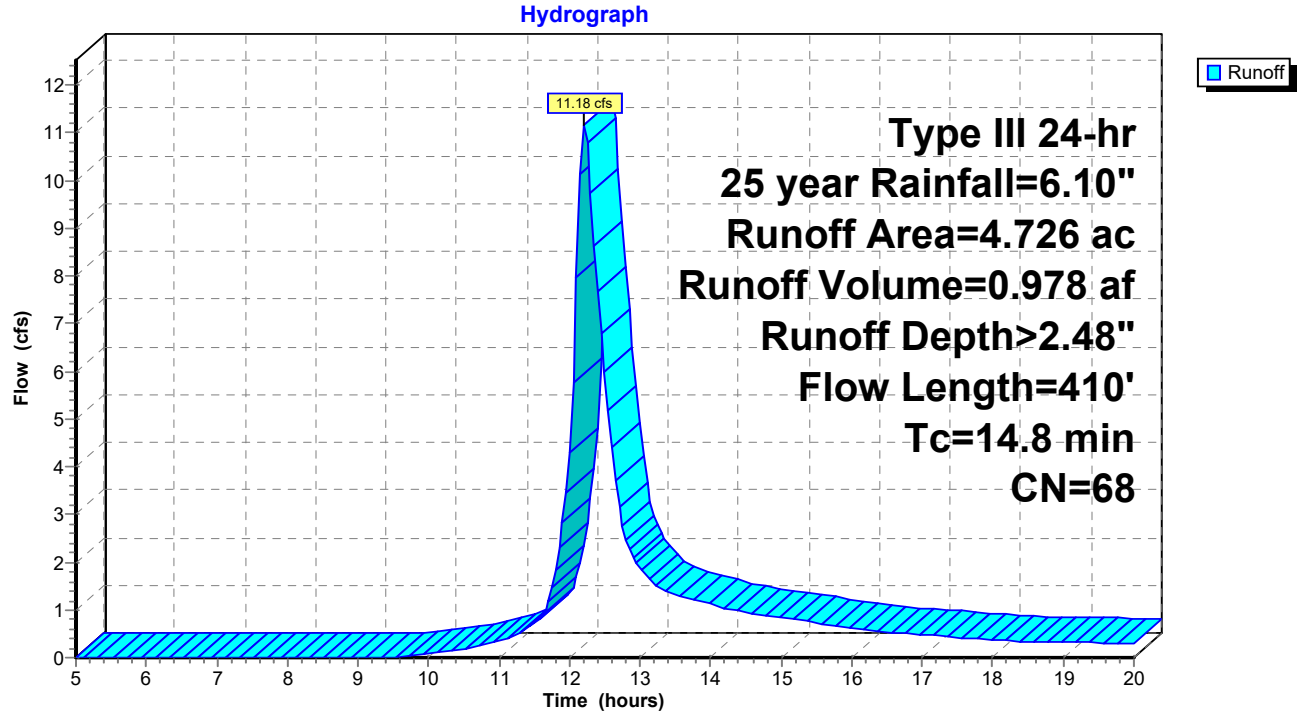
Runoff = 11.18 cfs @ 12.21 hrs, Volume= 0.978 af, Depth> 2.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
3.416	74	>75% Grass cover, Good, HSG C
1.164	48	Brush, Good, HSG B
0.146	96	Gravel surface, HSG C
4.726	68	Weighted Average
4.726		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.9	155	0.0387	1.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	175	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	30	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.8	410	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2: Subcat 2

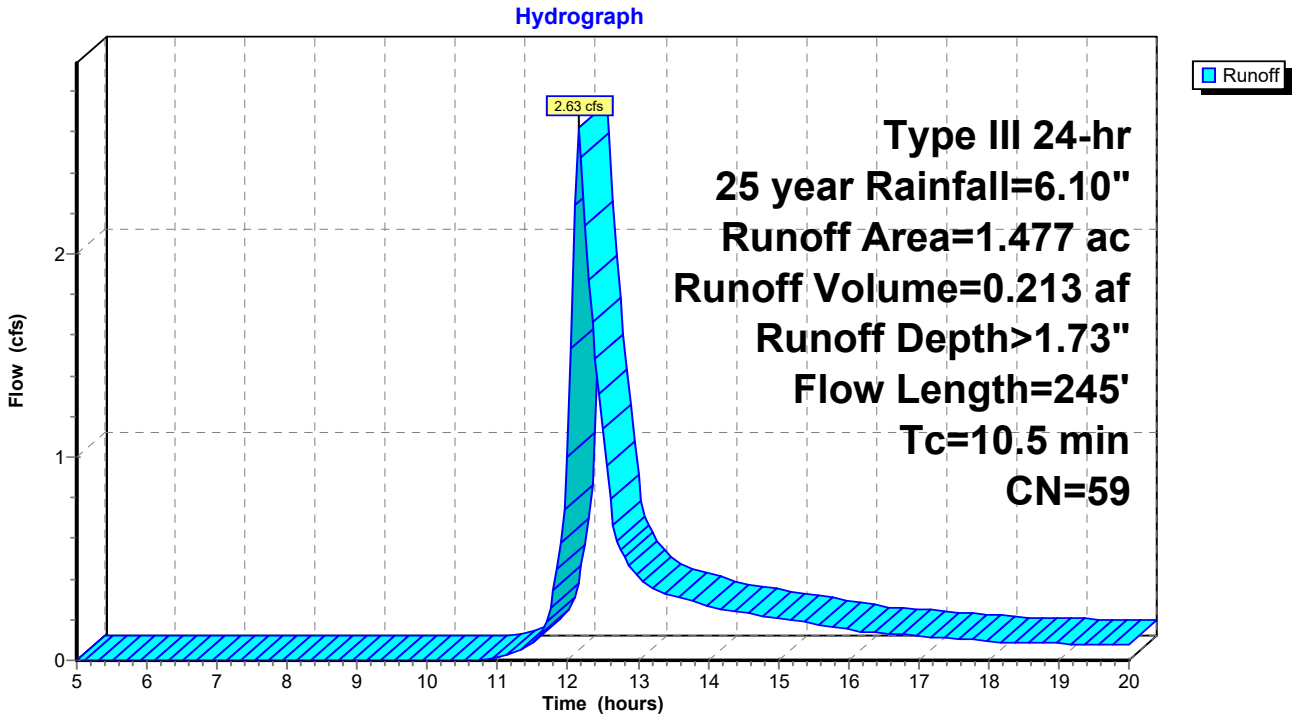
Runoff = 2.63 cfs @ 12.16 hrs, Volume= 0.213 af, Depth> 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
0.625	74	>75% Grass cover, Good, HSG C
0.852	48	Brush, Good, HSG B
1.477	59	Weighted Average
1.477		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.3	120	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	75	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.5	245	Total			

Subcatchment 2: Subcat 2



Summary for Subcatchment 2a: Subcat 2a

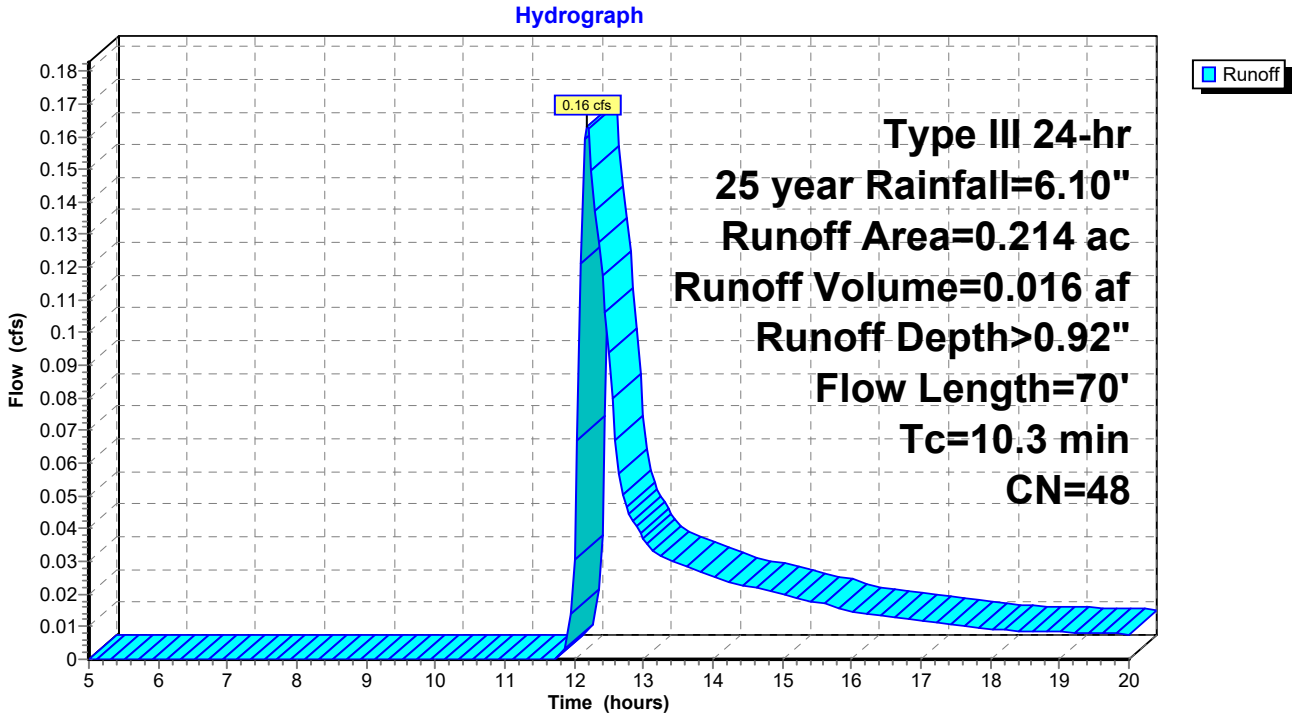
Runoff = 0.16 cfs @ 12.19 hrs, Volume= 0.016 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
0.214	48	Brush, Good, HSG B
0.214		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
0.2	20	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.3	70	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 3: Subcat 3

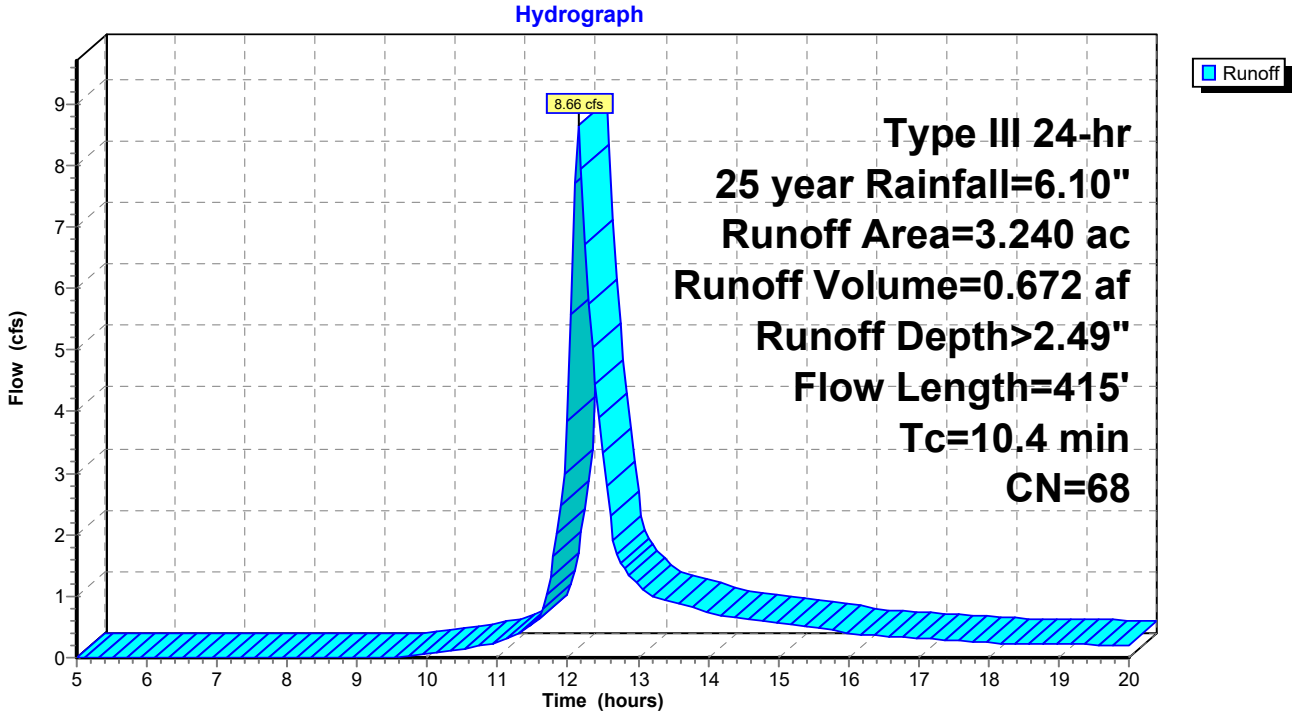
Runoff = 8.66 cfs @ 12.15 hrs, Volume= 0.672 af, Depth> 2.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
2.286	74	>75% Grass cover, Good, HSG C
0.860	48	Brush, Good, HSG B
0.094	96	Gravel surface, HSG C
3.240	68	Weighted Average
3.240		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	50	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.6	140	0.0430	1.45		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	225	0.0666	1.81		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.4	415	Total			

Subcatchment 3: Subcat 3



Summary for Subcatchment 4: Subcat 4

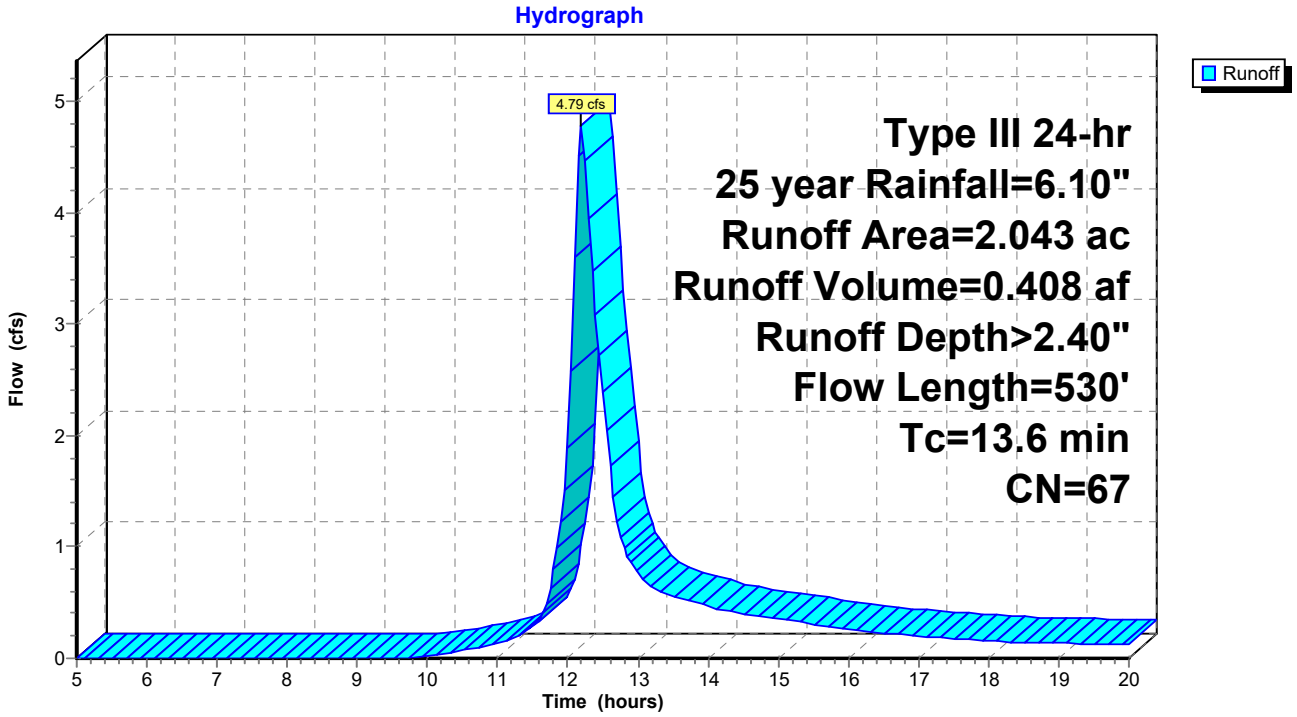
Runoff = 4.79 cfs @ 12.20 hrs, Volume= 0.408 af, Depth> 2.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
1.433	74	>75% Grass cover, Good, HSG C
0.582	48	Brush, Good, HSG B
0.028	96	Gravel surface, HSG C
2.043	67	Weighted Average
2.043		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
2.1	120	0.0183	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	295	0.0610	1.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	25	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.7	40	0.0375	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	530	Total			

Subcatchment 4: Subcat 4



Summary for Subcatchment 5: Subcat 5

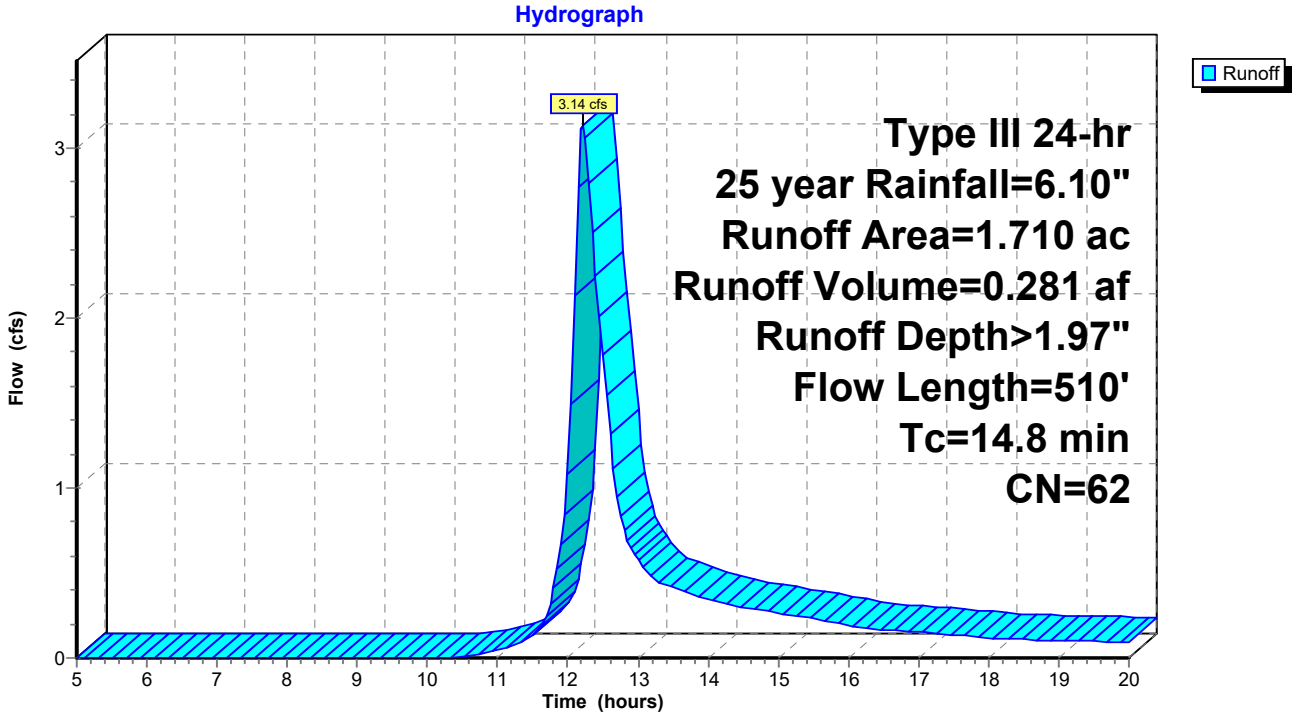
Runoff = 3.14 cfs @ 12.22 hrs, Volume= 0.281 af, Depth> 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
0.922	74	>75% Grass cover, Good, HSG C
0.788	48	Brush, Good, HSG B
1.710	62	Weighted Average
1.710		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
3.8	215	0.0186	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	150	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	95	0.0470	1.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.8	510	Total			

Subcatchment 5: Subcat 5



Summary for Subcatchment 5a: Subcat 5a

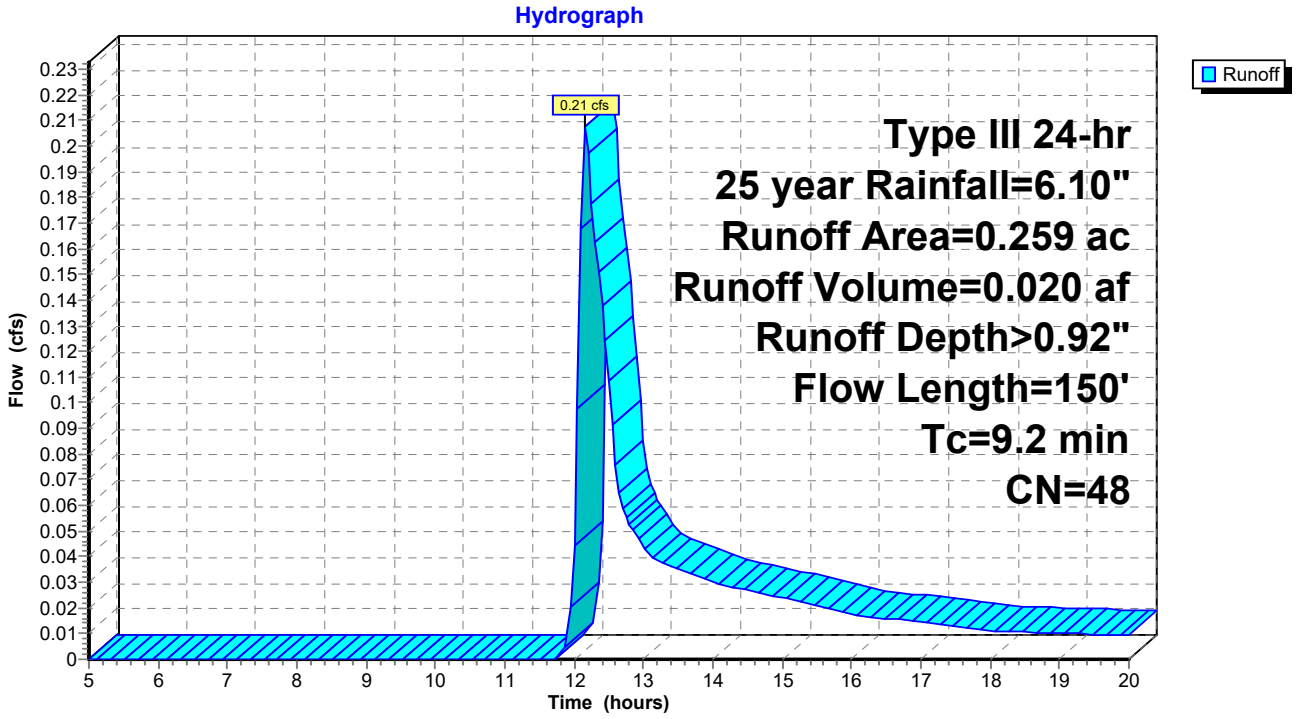
Runoff = 0.21 cfs @ 12.17 hrs, Volume= 0.020 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
0.259	48	Brush, Good, HSG B
0.259		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
1.5	100	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.2	150	Total			

Subcatchment 5a: Subcat 5a



Summary for Subcatchment 6: Subcat 6

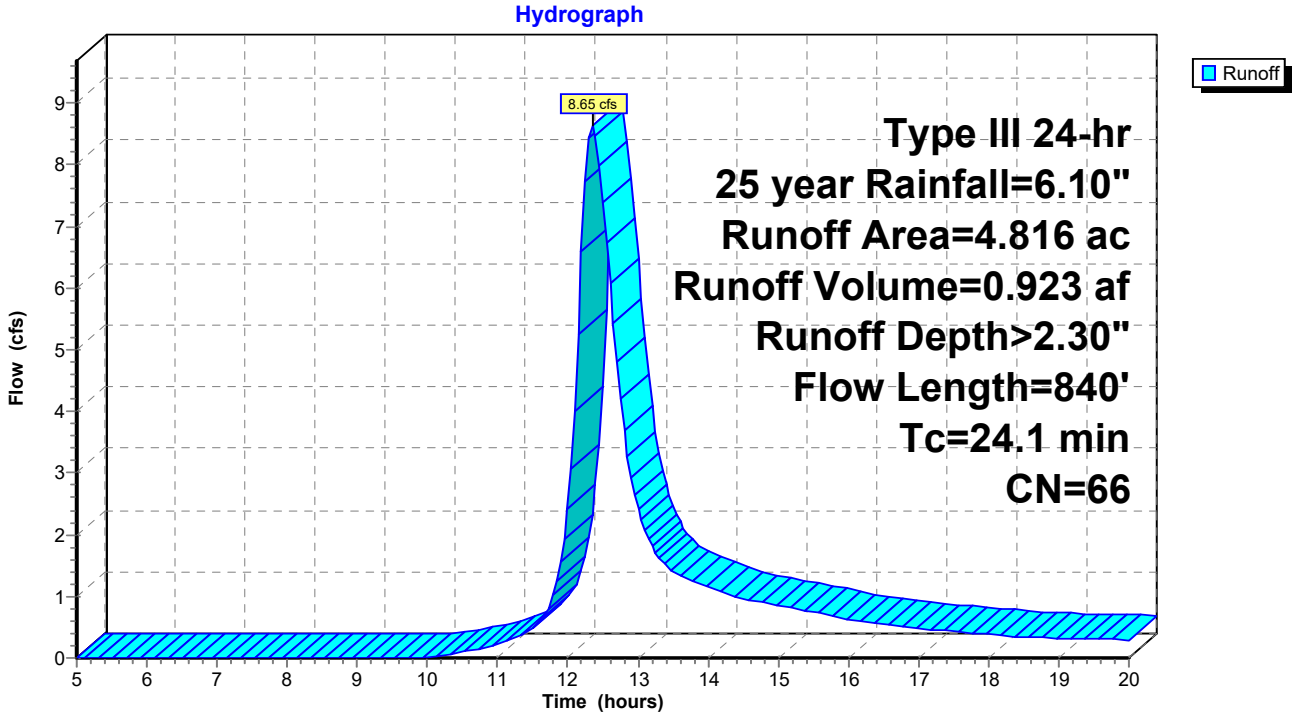
Runoff = 8.65 cfs @ 12.35 hrs, Volume= 0.923 af, Depth> 2.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
3.416	74	>75% Grass cover, Good, HSG C
1.400	48	Brush, Good, HSG B
4.816	66	Weighted Average
4.816		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0800	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.9	100	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	505	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	185	0.0375	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	840	Total			

Subcatchment 6: Subcat 6



Summary for Subcatchment 6a: Subcat 6a

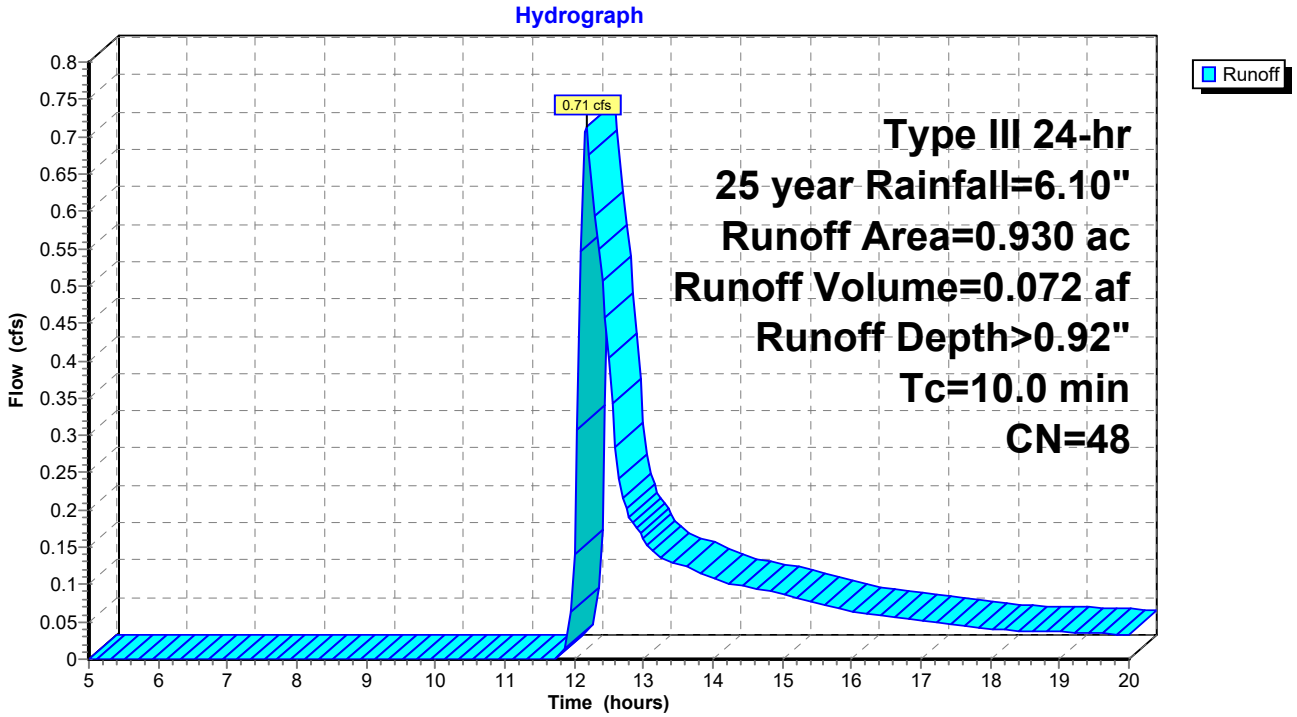
Runoff = 0.71 cfs @ 12.18 hrs, Volume= 0.072 af, Depth> 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
0.930	48	Brush, Good, HSG B
0.930		100.00% Pervious Area

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

Subcatchment 6a: Subcat 6a



Summary for Subcatchment 7: Subcat 7

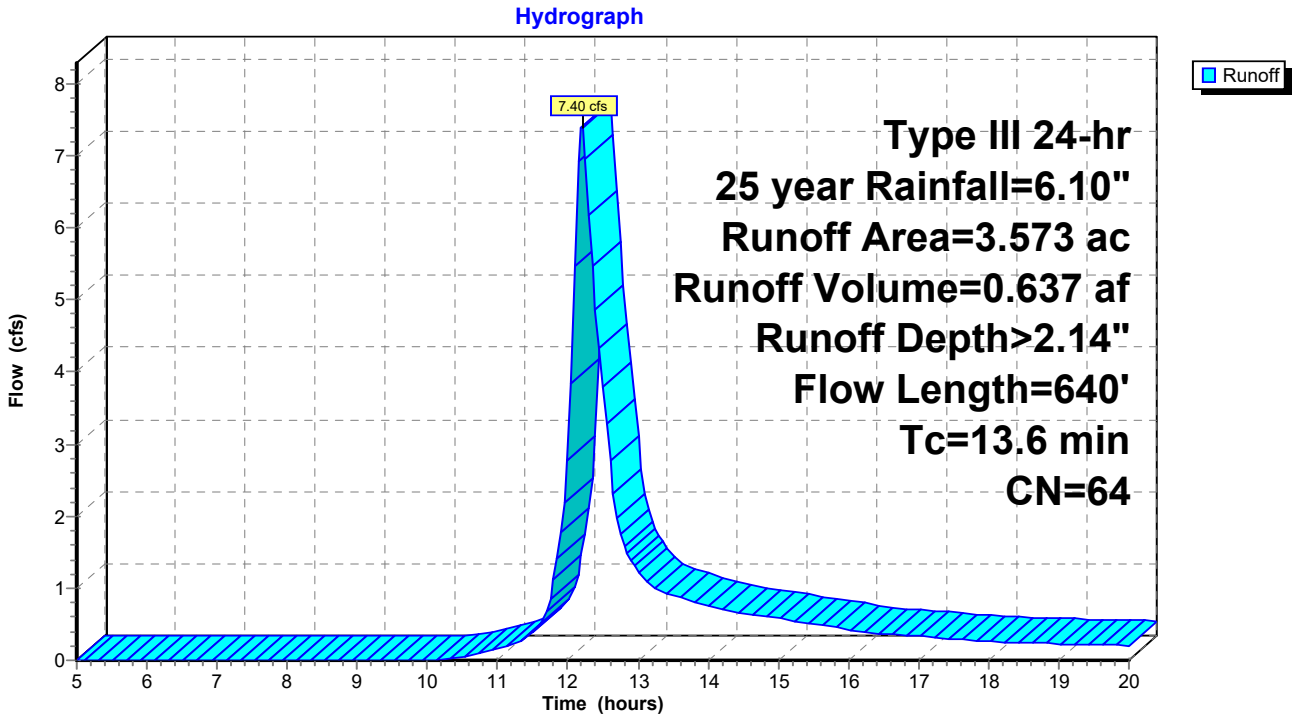
Runoff = 7.40 cfs @ 12.20 hrs, Volume= 0.637 af, Depth> 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
2.142	74	>75% Grass cover, Good, HSG C
1.431	48	Brush, Good, HSG B
3.573	64	Weighted Average
3.573		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1000	0.20		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
2.0	240	0.0812	1.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.4	350	0.0128	0.79		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.6	640	Total			

Subcatchment 7: Subcat 7



Summary for Subcatchment 8: Subcat 8

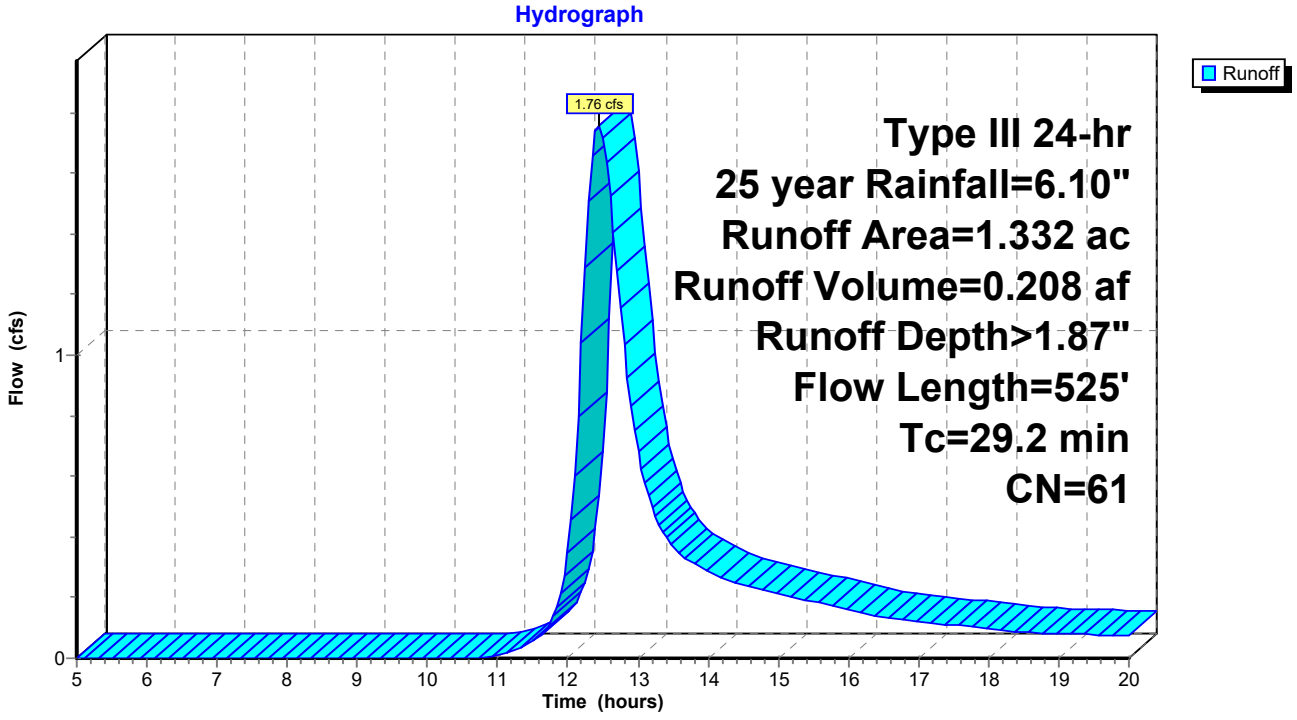
Runoff = 1.76 cfs @ 12.44 hrs, Volume= 0.208 af, Depth> 1.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.680	48	Brush, Good, HSG B
1.332	61	Weighted Average
1.332		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	50	0.0100	0.05		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 3.42"
13.1	475	0.0147	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
29.2	525	Total			

Subcatchment 8: Subcat 8



Summary for Subcatchment 8a: Subcat 8a

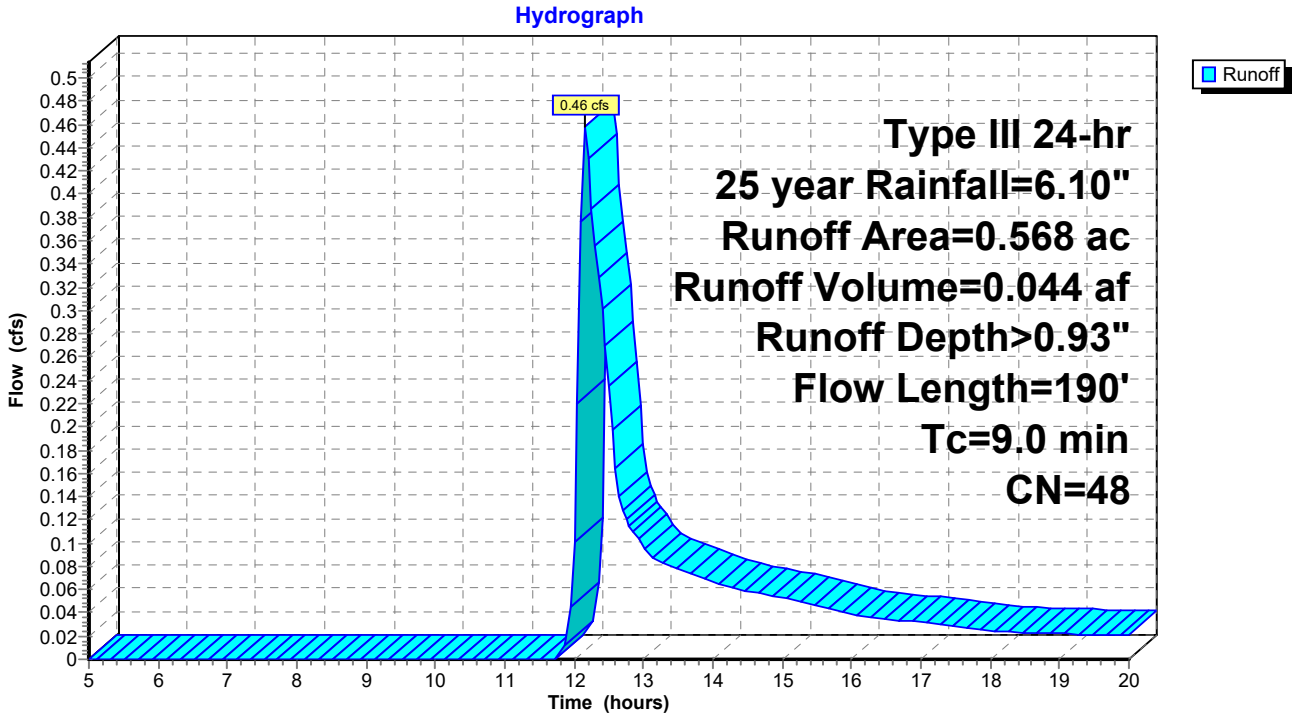
Runoff = 0.46 cfs @ 12.16 hrs, Volume= 0.044 af, Depth> 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
0.568	48	Brush, Good, HSG B
0.568		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
1.3	140	0.1220	1.75		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.0	190	Total			

Subcatchment 8a: Subcat 8a



Summary for Subcatchment 9: Subcat 9

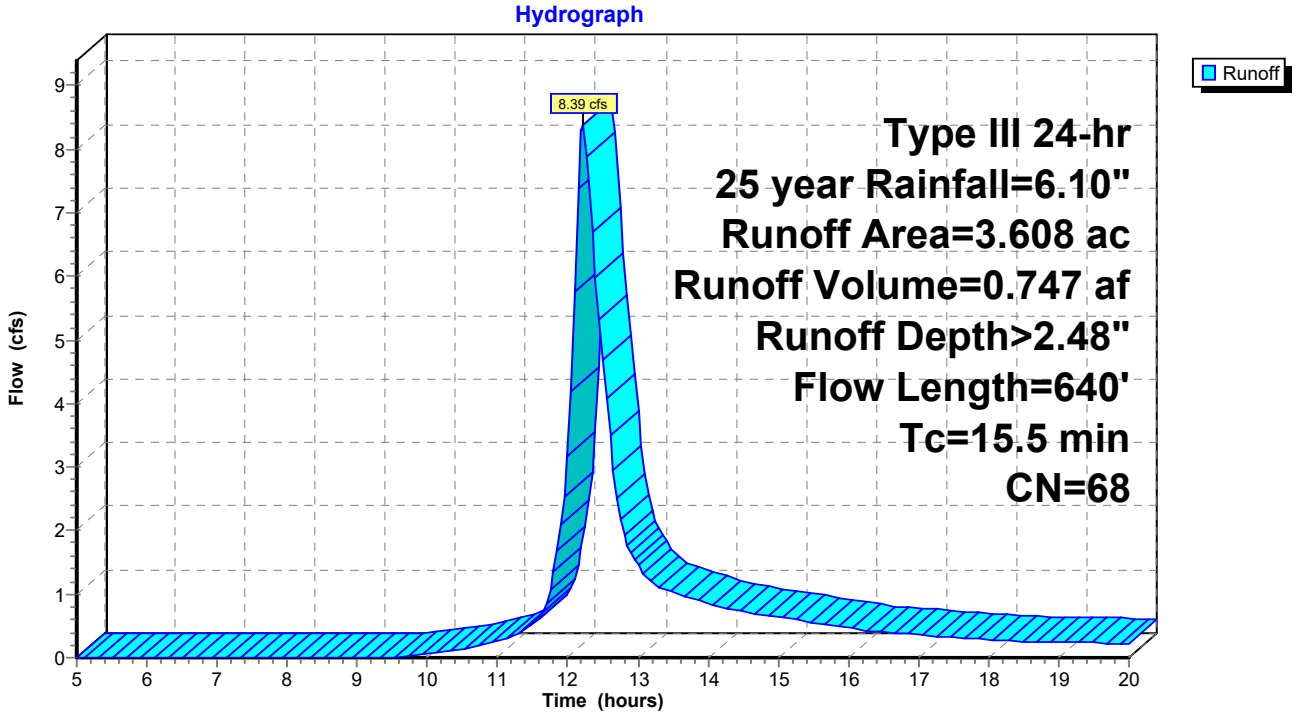
Runoff = 8.39 cfs @ 12.22 hrs, Volume= 0.747 af, Depth> 2.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 year Rainfall=6.10"

Area (ac)	CN	Description
2.512	74	>75% Grass cover, Good, HSG C
0.924	48	Brush, Good, HSG B
0.172	96	Gravel surface, HSG C
3.608	68	Weighted Average
3.608		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0360	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.8	215	0.0850	2.04		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.4	375	0.0147	0.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.5	640	Total			

Subcatchment 9: Subcat 9



Summary for Pond 1P: (new Pond)

Inflow Area = 4.726 ac, 0.00% Impervious, Inflow Depth > 2.48" for 25 year event
Inflow = 11.18 cfs @ 12.21 hrs, Volume= 0.978 af
Outflow = 1.26 cfs @ 13.68 hrs, Volume= 0.410 af, Atten= 89%, Lag= 88.2 min
Primary = 1.26 cfs @ 13.68 hrs, Volume= 0.410 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 169.50' Surf.Area= 0.154 ac Storage= 0.255 af
Peak Elev= 172.55' @ 13.68 hrs Surf.Area= 0.245 ac Storage= 0.861 af (0.605 af above start)

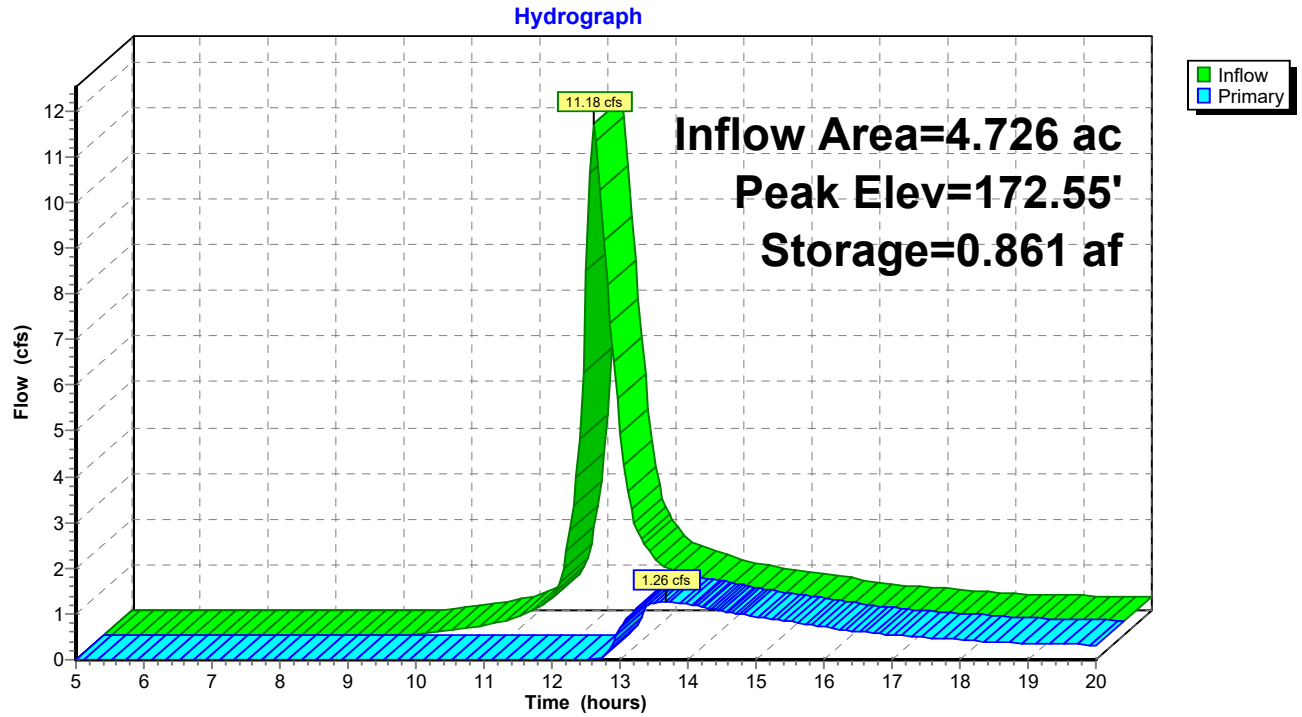
Plug-Flow detention time= 362.5 min calculated for 0.154 af (16% of inflow)
Center-of-Mass det. time= 126.5 min (936.5 - 810.0)

Volume	Invert	Avail.Storage	Storage Description
#1	167.50'	1.251 af	**31.00'W x 144.00'L x 6.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	172.30'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=1.25 cfs @ 13.68 hrs HW=172.55' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 1.25 cfs @ 1.24 fps)

Pond 1P: (new Pond)



Summary for Pond 2P: (new Pond)

Inflow Area = 1.477 ac, 0.00% Impervious, Inflow Depth > 1.73" for 25 year event
Inflow = 2.63 cfs @ 12.16 hrs, Volume= 0.213 af
Outflow = 0.48 cfs @ 12.87 hrs, Volume= 0.117 af, Atten= 82%, Lag= 42.3 min
Primary = 0.48 cfs @ 12.87 hrs, Volume= 0.117 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 168.00' Surf.Area= 0.051 ac Storage= 0.074 af
Peak Elev= 169.63' @ 12.87 hrs Surf.Area= 0.076 ac Storage= 0.178 af (0.103 af above start)

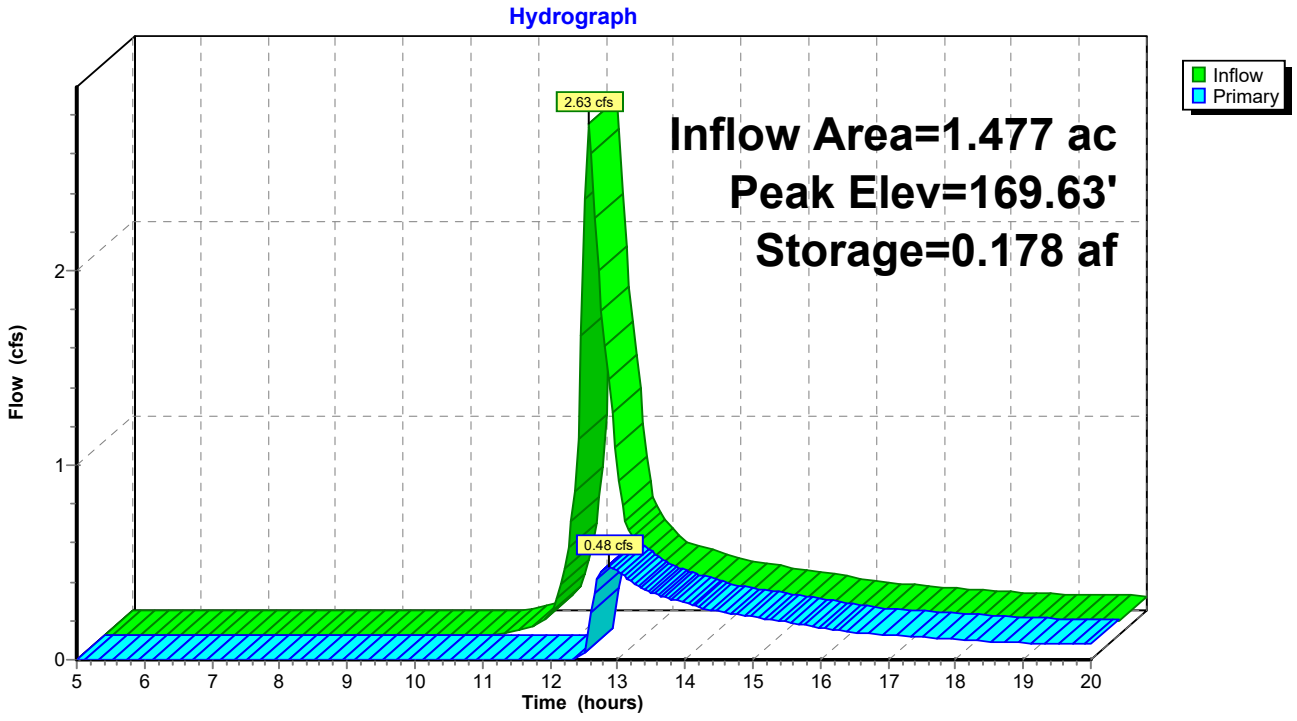
Plug-Flow detention time= 328.5 min calculated for 0.042 af (20% of inflow)
Center-of-Mass det. time= 85.5 min (909.0 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	166.00'	0.250 af	**17.00'W x 64.00'L x 4.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	169.50'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.47 cfs @ 12.87 hrs HW=169.63' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.47 cfs @ 0.89 fps)

Pond 2P: (new Pond)



Summary for Pond 3P: (new Pond)

Inflow Area = 3.240 ac, 0.00% Impervious, Inflow Depth > 2.49" for 25 year event
Inflow = 8.66 cfs @ 12.15 hrs, Volume= 0.672 af
Outflow = 0.87 cfs @ 13.58 hrs, Volume= 0.274 af, Atten= 90%, Lag= 85.7 min
Primary = 0.87 cfs @ 13.58 hrs, Volume= 0.274 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 167.00' Surf.Area= 0.067 ac Storage= 0.091 af
Peak Elev= 170.70' @ 13.58 hrs Surf.Area= 0.163 ac Storage= 0.509 af (0.418 af above start)

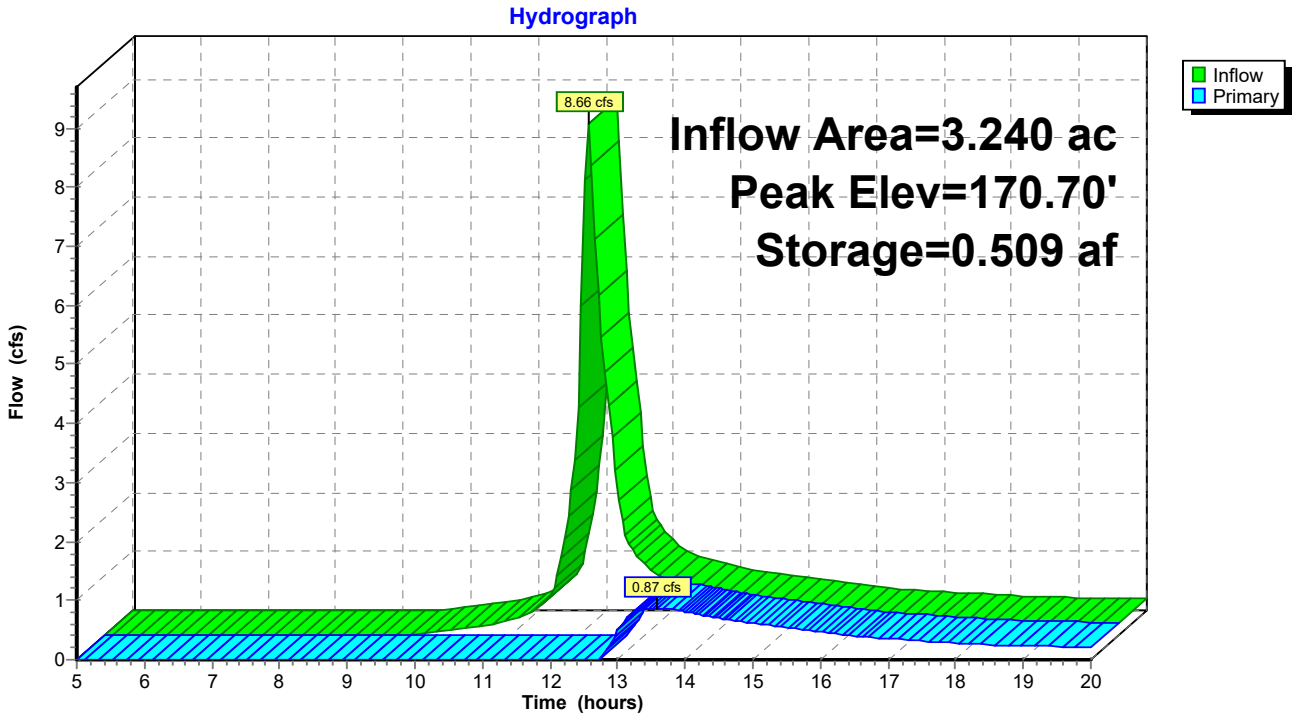
Plug-Flow detention time= 283.5 min calculated for 0.183 af (27% of inflow)
Center-of-Mass det. time= 127.6 min (934.2 - 806.6)

Volume	Invert	Avail.Storage	Storage Description
#1	165.00'	0.649 af	**8.00'W x 134.00'L x 6.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	170.50'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.86 cfs @ 13.58 hrs HW=170.70' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.86 cfs @ 1.09 fps)

Pond 3P: (new Pond)



Summary for Pond 4P: (new Pond)

Inflow Area = 2.043 ac, 0.00% Impervious, Inflow Depth > 2.40" for 25 year event
Inflow = 4.79 cfs @ 12.20 hrs, Volume= 0.408 af
Outflow = 0.42 cfs @ 14.28 hrs, Volume= 0.171 af, Atten= 91%, Lag= 125.1 min
Discarded = 0.20 cfs @ 14.28 hrs, Volume= 0.135 af
Primary = 0.22 cfs @ 14.28 hrs, Volume= 0.037 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 170.08' @ 14.28 hrs Surf.Area= 0.091 ac Storage= 0.254 af

Plug-Flow detention time= 217.6 min calculated for 0.171 af (42% of inflow)
Center-of-Mass det. time= 129.5 min (940.4 - 810.9)

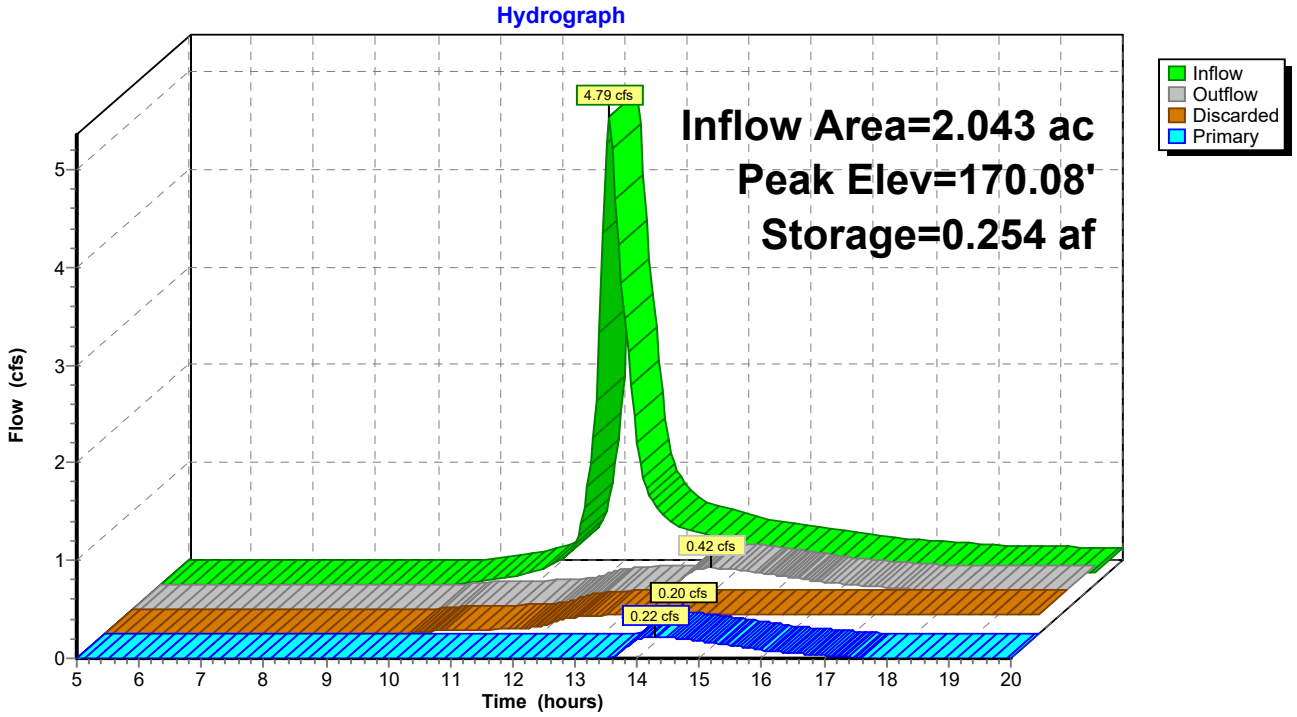
Volume	Invert	Avail.Storage	Storage Description
#1	165.00'	0.346 af	**11.00'W x 65.00'L x 6.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	170.00'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	165.00'	**2.200 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.20 cfs @ 14.28 hrs HW=170.08' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.20 cfs)

Primary OutFlow Max=0.21 cfs @ 14.28 hrs HW=170.08' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.21 cfs @ 0.68 fps)

Pond 4P: (new Pond)



Summary for Pond 5P: (new Pond)

Inflow Area = 1.710 ac, 0.00% Impervious, Inflow Depth > 1.97" for 25 year event
Inflow = 3.14 cfs @ 12.22 hrs, Volume= 0.281 af
Outflow = 0.26 cfs @ 15.07 hrs, Volume= 0.103 af, Atten= 92%, Lag= 171.1 min
Discarded = 0.13 cfs @ 15.07 hrs, Volume= 0.082 af
Primary = 0.13 cfs @ 15.07 hrs, Volume= 0.021 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 173.05' @ 15.07 hrs Surf.Area= 0.068 ac Storage= 0.185 af

Plug-Flow detention time= 231.2 min calculated for 0.102 af (36% of inflow)
Center-of-Mass det. time= 137.6 min (958.6 - 821.0)

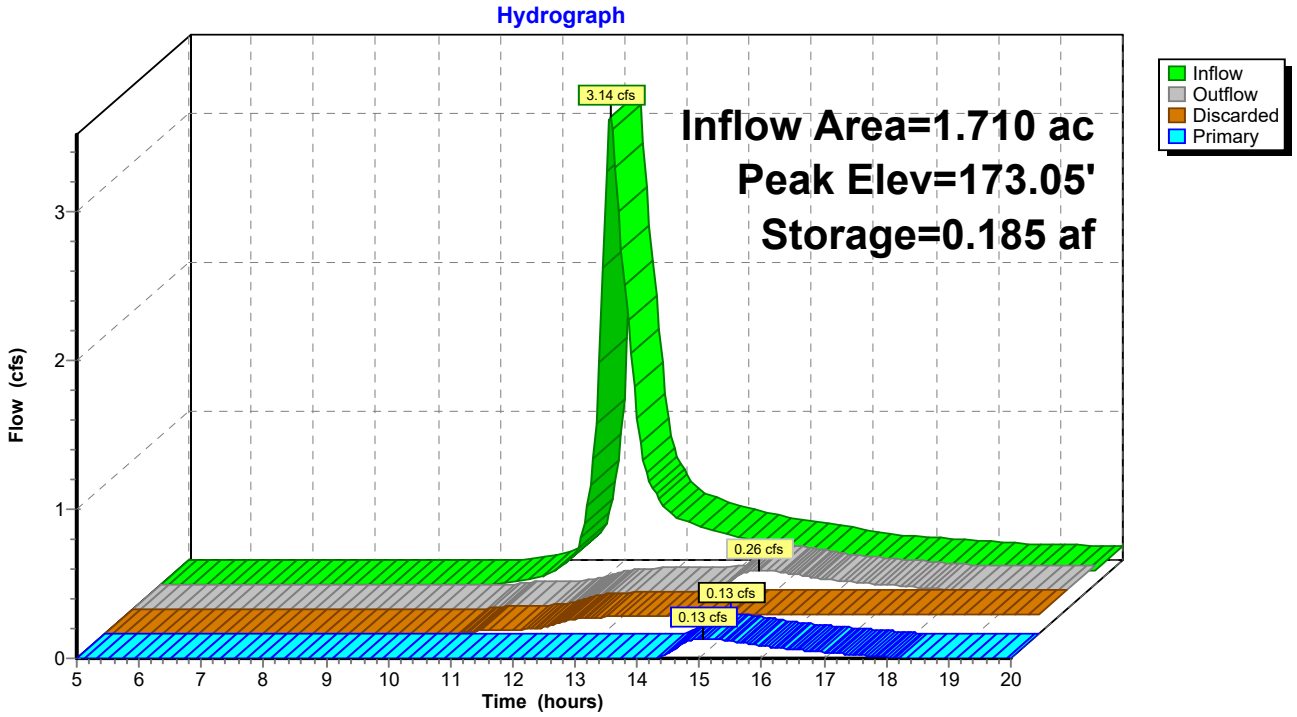
Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	0.256 af	**32.00'W x 17.00'L x 6.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	173.00'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	168.00'	**1.800 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 90.00' Phase-In= 0.01'

Discarded OutFlow Max=0.13 cfs @ 15.07 hrs HW=173.05' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.13 cfs)

Primary OutFlow Max=0.12 cfs @ 15.07 hrs HW=173.05' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.12 cfs @ 0.57 fps)

Pond 5P: (new Pond)



Summary for Pond 6P: (new Pond)

Inflow Area = 4.816 ac, 0.00% Impervious, Inflow Depth > 2.30" for 25 year event
Inflow = 8.65 cfs @ 12.35 hrs, Volume= 0.923 af
Outflow = 0.73 cfs @ 15.55 hrs, Volume= 0.354 af, Atten= 92%, Lag= 191.8 min
Discarded = 0.50 cfs @ 15.55 hrs, Volume= 0.325 af
Primary = 0.24 cfs @ 15.55 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 180.56' @ 15.55 hrs Surf.Area= 0.182 ac Storage= 0.609 af

Plug-Flow detention time= 226.5 min calculated for 0.354 af (38% of inflow)
Center-of-Mass det. time= 135.6 min (956.4 - 820.8)

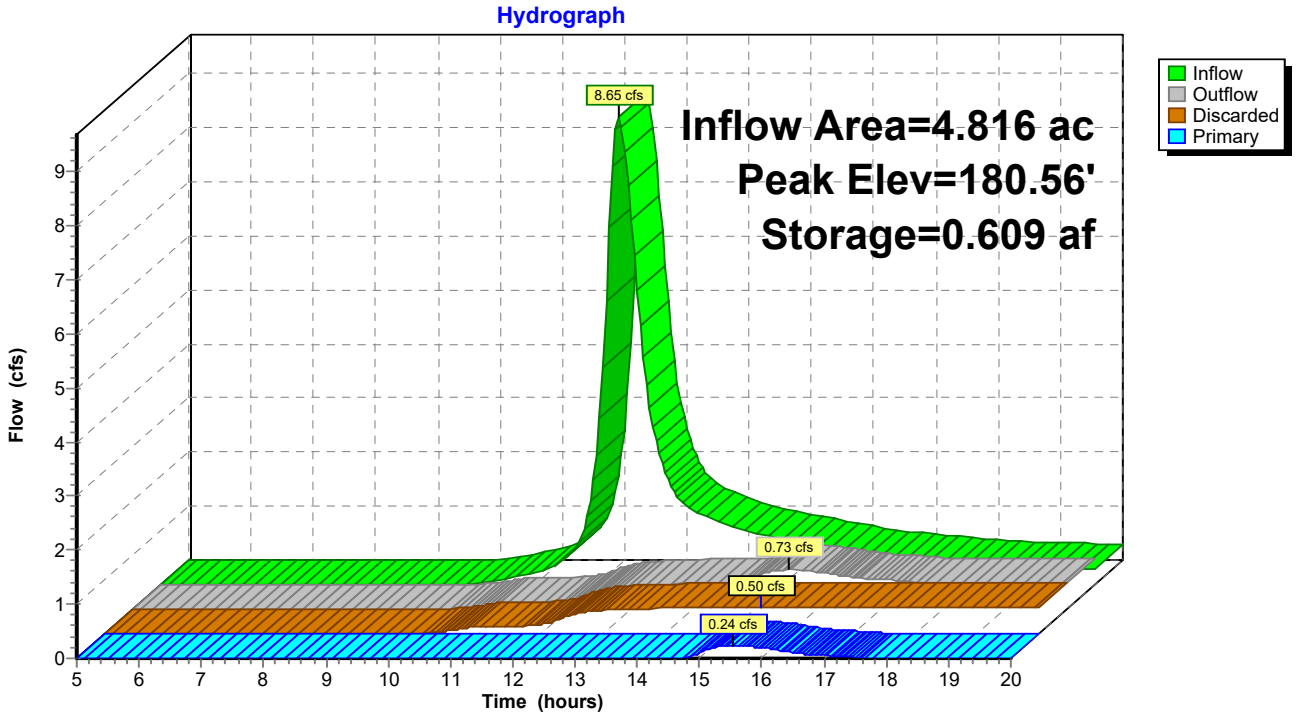
Volume	Invert	Avail.Storage	Storage Description
#1	175.00'	0.903 af	**15.00'W x 131.00'L x 7.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	180.50'	**6.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	175.00'	**2.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 90.00' Phase-In= 0.01'

Discarded OutFlow Max=0.50 cfs @ 15.55 hrs HW=180.56' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.50 cfs)

Primary OutFlow Max=0.21 cfs @ 15.55 hrs HW=180.56' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.21 cfs @ 0.59 fps)

Pond 6P: (new Pond)



Summary for Pond 7P: (new Pond)

Inflow Area = 3.573 ac, 0.00% Impervious, Inflow Depth > 2.14" for 25 year event
Inflow = 7.40 cfs @ 12.20 hrs, Volume= 0.637 af
Outflow = 0.96 cfs @ 13.36 hrs, Volume= 0.303 af, Atten= 87%, Lag= 69.5 min
Primary = 0.96 cfs @ 13.36 hrs, Volume= 0.303 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 169.00' Surf.Area= 0.151 ac Storage= 0.250 af
Peak Elev= 171.01' @ 13.36 hrs Surf.Area= 0.209 ac Storage= 0.611 af (0.361 af above start)

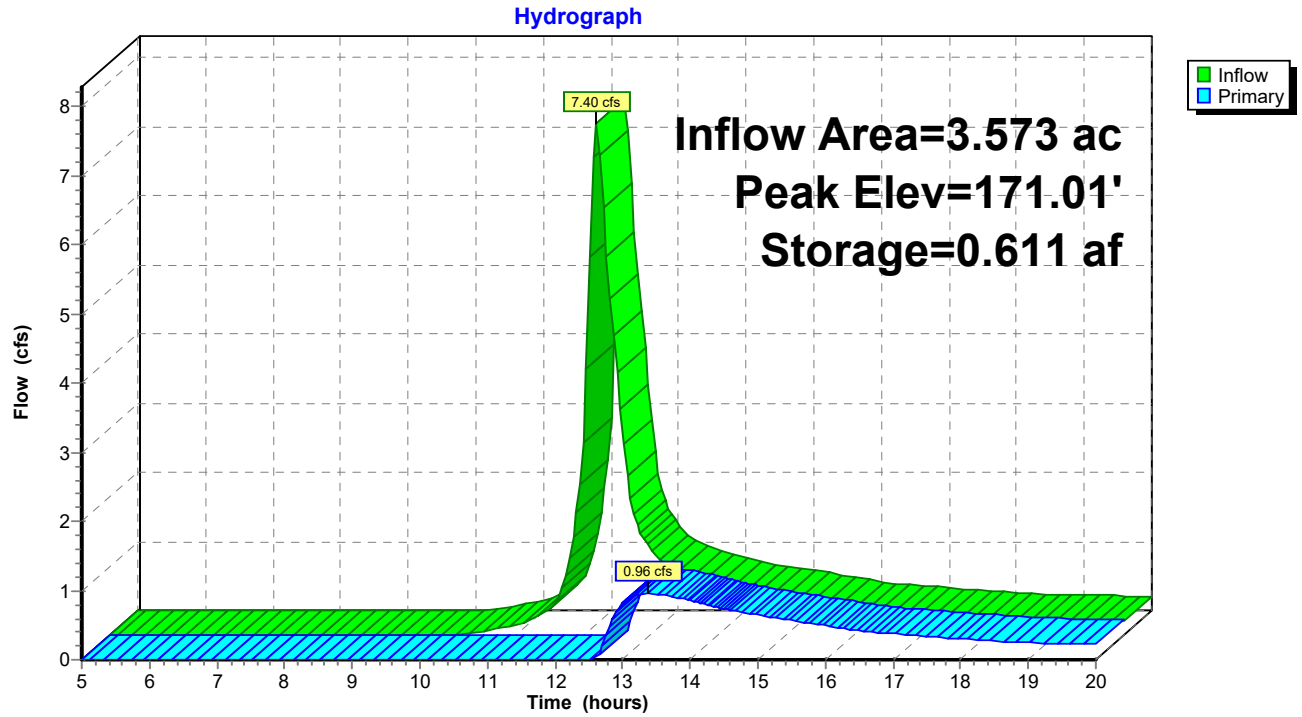
Plug-Flow detention time= 426.7 min calculated for 0.053 af (8% of inflow)
Center-of-Mass det. time= 109.9 min (926.3 - 816.4)

Volume	Invert	Avail.Storage	Storage Description
#1	167.00'	0.717 af	**31.00'W x 141.00'L x 4.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	170.80'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.95 cfs @ 13.36 hrs HW=171.01' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.95 cfs @ 1.13 fps)

Pond 7P: (new Pond)



Summary for Pond 8P: (new Pond)

Inflow Area = 1.332 ac, 0.00% Impervious, Inflow Depth > 1.87" for 25 year event
Inflow = 1.76 cfs @ 12.44 hrs, Volume= 0.208 af
Outflow = 0.37 cfs @ 13.50 hrs, Volume= 0.096 af, Atten= 79%, Lag= 63.4 min
Primary = 0.37 cfs @ 13.50 hrs, Volume= 0.096 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 165.50' Surf.Area= 0.021 ac Storage= 0.027 af
Peak Elev= 168.61' @ 13.50 hrs Surf.Area= 0.057 ac Storage= 0.144 af (0.117 af above start)

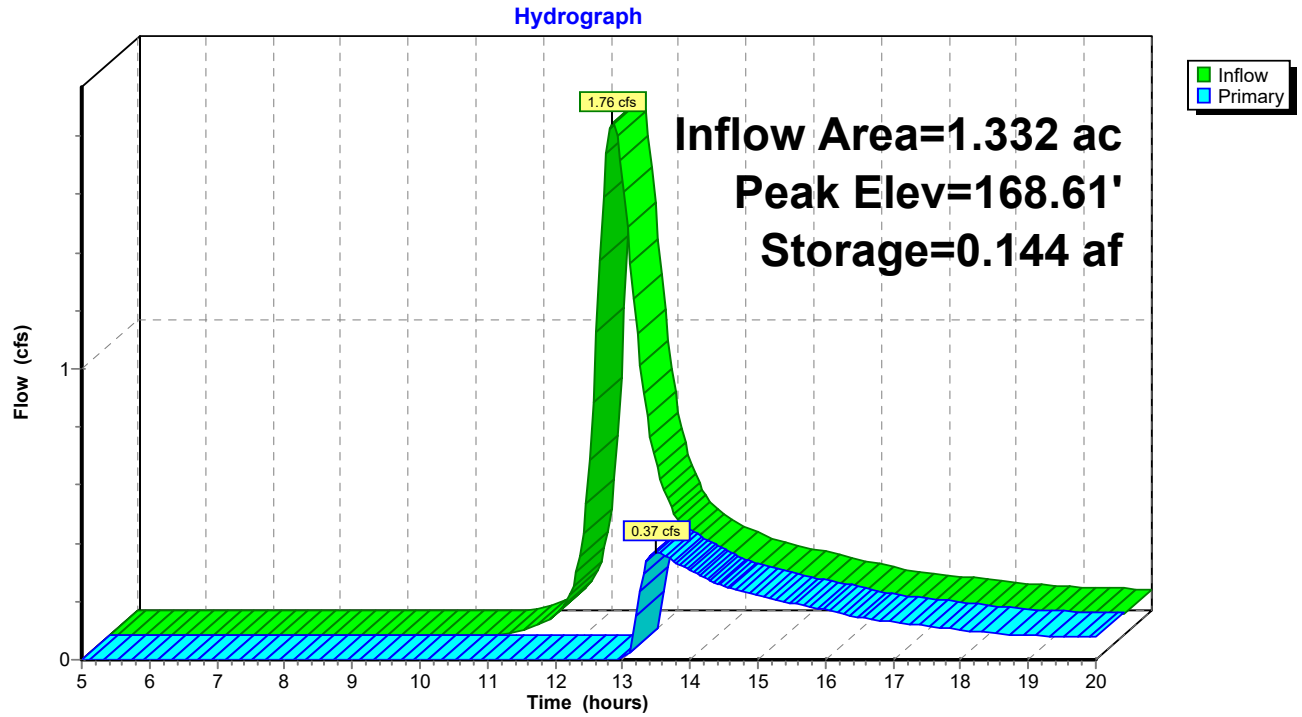
Plug-Flow detention time= 249.3 min calculated for 0.068 af (33% of inflow)
Center-of-Mass det. time= 106.1 min (939.8 - 833.8)

Volume	Invert	Avail.Storage	Storage Description
#1	163.50'	0.237 af	**10.00'W x 30.00'L x 6.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	168.50'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.36 cfs @ 13.50 hrs HW=168.61' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.36 cfs @ 0.81 fps)

Pond 8P: (new Pond)



Summary for Pond 9P: (new Pond)

Inflow Area = 3.608 ac, 0.00% Impervious, Inflow Depth > 2.48" for 25 year event
Inflow = 8.39 cfs @ 12.22 hrs, Volume= 0.747 af
Outflow = 0.94 cfs @ 13.74 hrs, Volume= 0.308 af, Atten= 89%, Lag= 91.0 min
Primary = 0.94 cfs @ 13.74 hrs, Volume= 0.308 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 170.00' Surf.Area= 11,100 sf Storage= 19,450 cf
Peak Elev= 171.64' @ 13.74 hrs Surf.Area= 13,567 sf Storage= 39,737 cf (20,287 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 127.8 min (938.3 - 810.6)

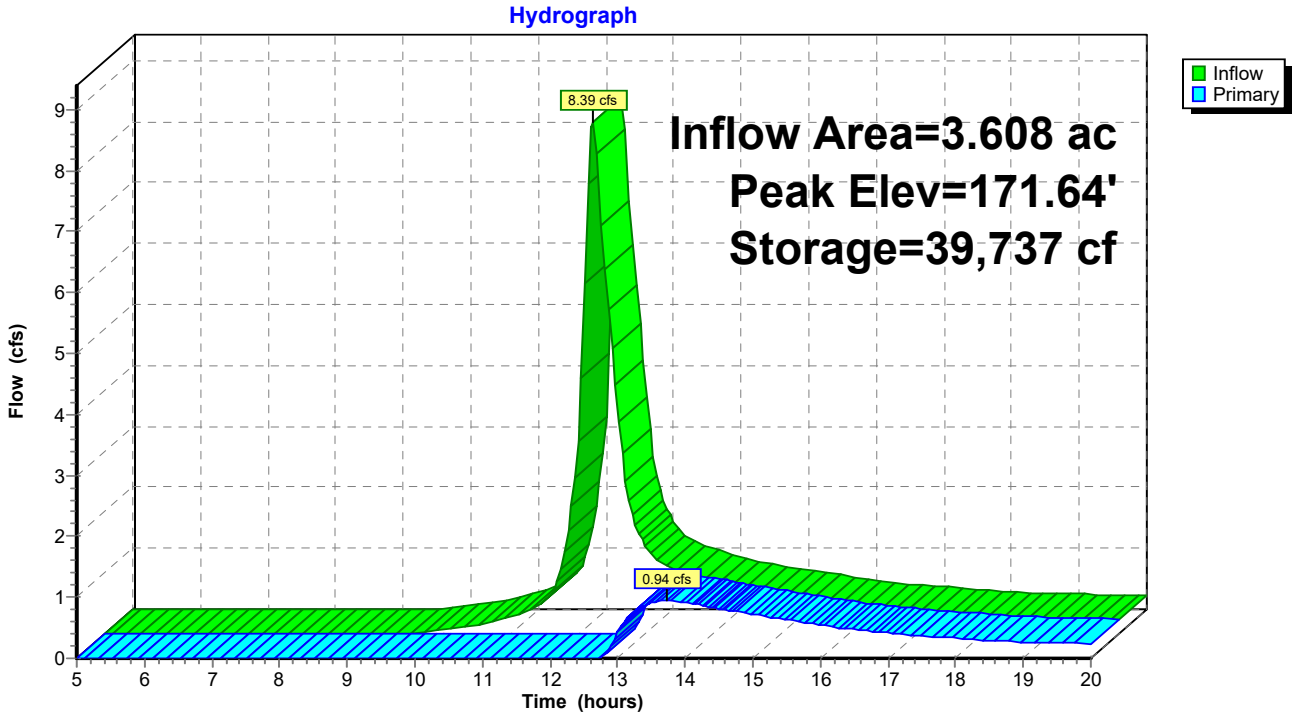
Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	44,650 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	8,400	0	0
169.00	9,700	9,050	9,050
170.00	11,100	10,400	19,450
171.00	12,600	11,850	31,300
172.00	14,100	13,350	44,650

Device	Routing	Invert	Outlet Devices
#1	Primary	171.50'	**7.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.94 cfs @ 13.74 hrs HW=171.64' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.94 cfs @ 0.93 fps)

Pond 9P: (new Pond)

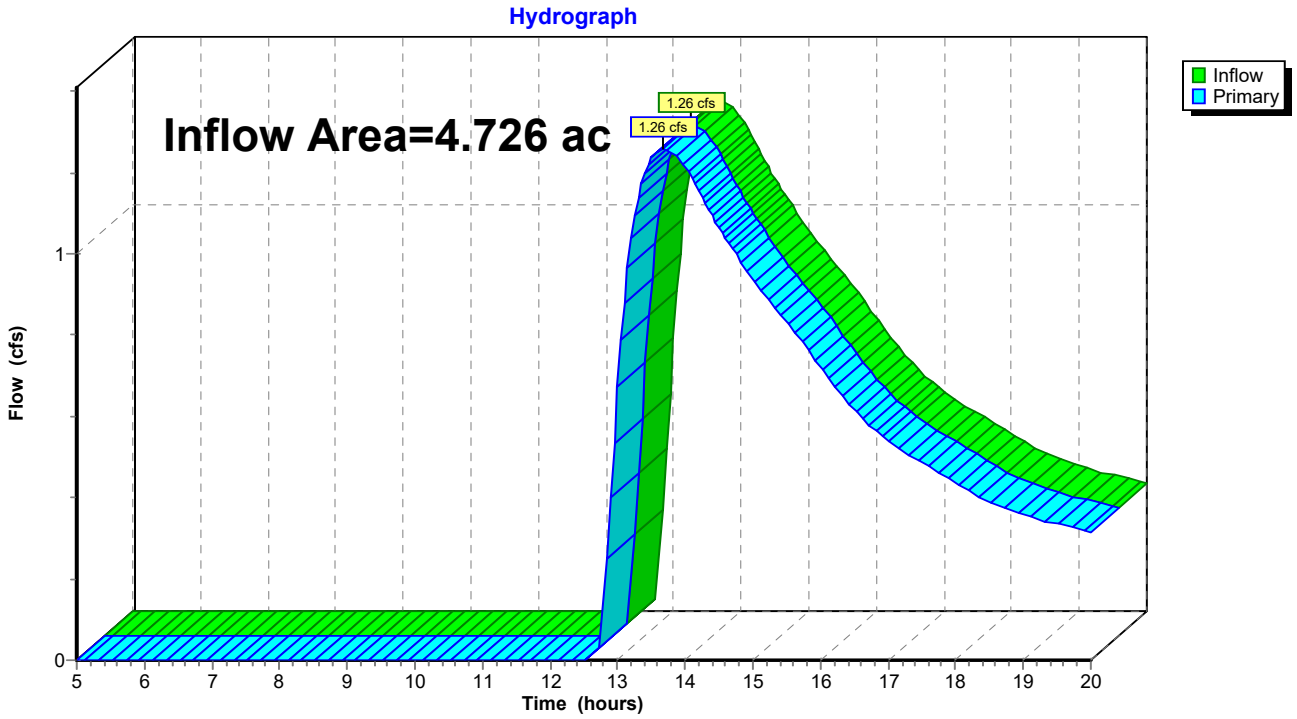


Summary for Link DP1: DP1

Inflow Area = 4.726 ac, 0.00% Impervious, Inflow Depth > 1.04" for 25 year event
Inflow = 1.26 cfs @ 13.68 hrs, Volume= 0.410 af
Primary = 1.26 cfs @ 13.68 hrs, Volume= 0.410 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP1: DP1

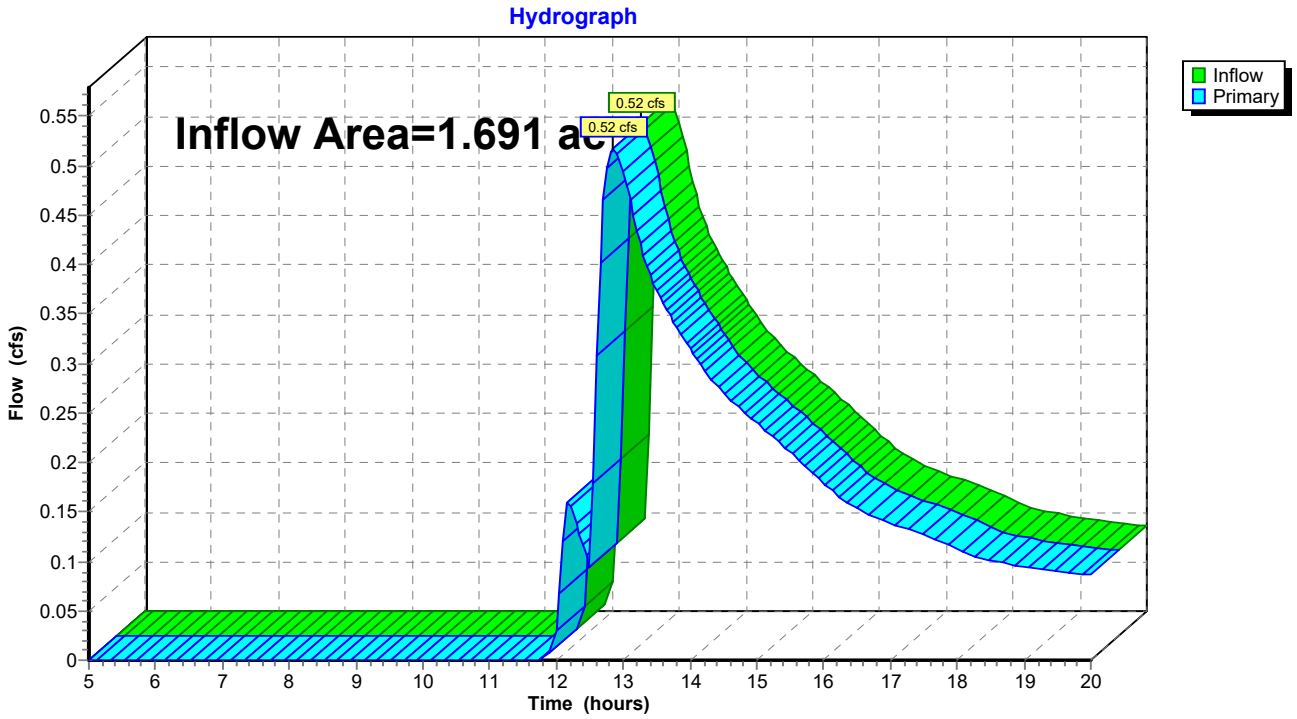


Summary for Link DP2: DP2

Inflow Area = 1.691 ac, 0.00% Impervious, Inflow Depth > 0.95" for 25 year event
Inflow = 0.52 cfs @ 12.85 hrs, Volume= 0.133 af
Primary = 0.52 cfs @ 12.85 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP2: DP2

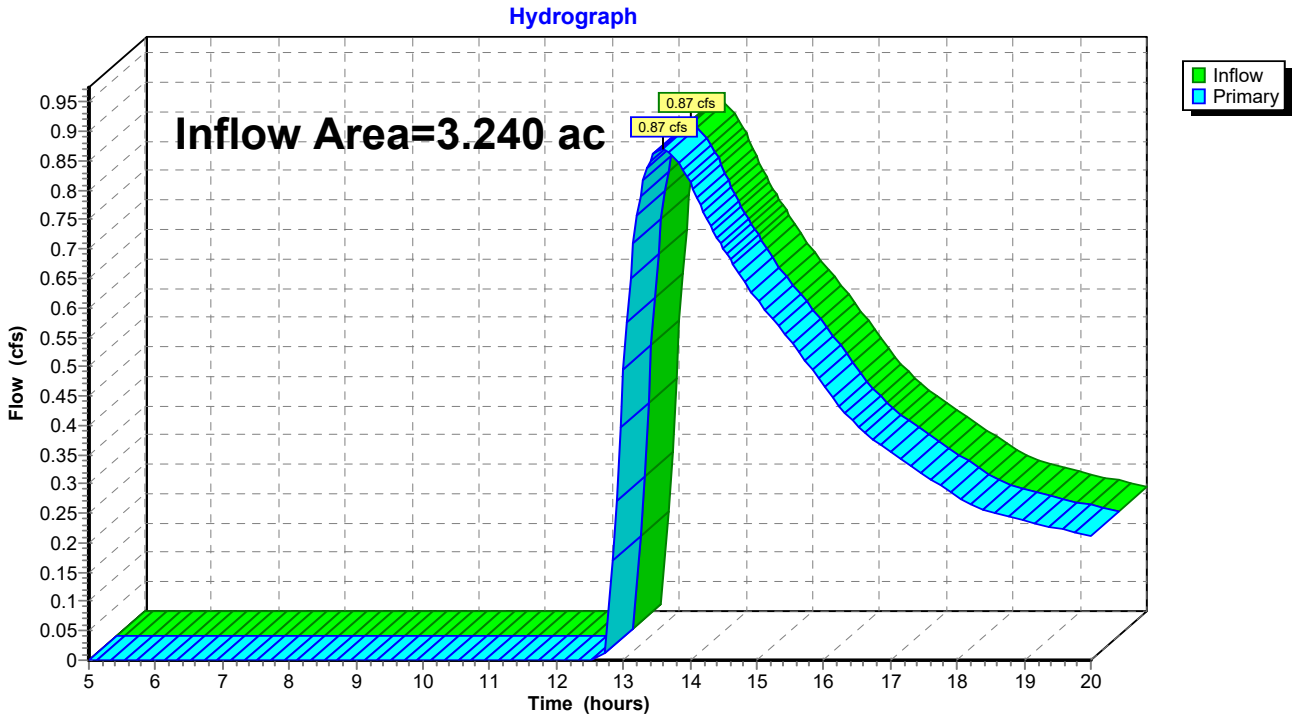


Summary for Link DP3: DP3

Inflow Area = 3.240 ac, 0.00% Impervious, Inflow Depth > 1.01" for 25 year event
Inflow = 0.87 cfs @ 13.58 hrs, Volume= 0.274 af
Primary = 0.87 cfs @ 13.58 hrs, Volume= 0.274 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP3: DP3

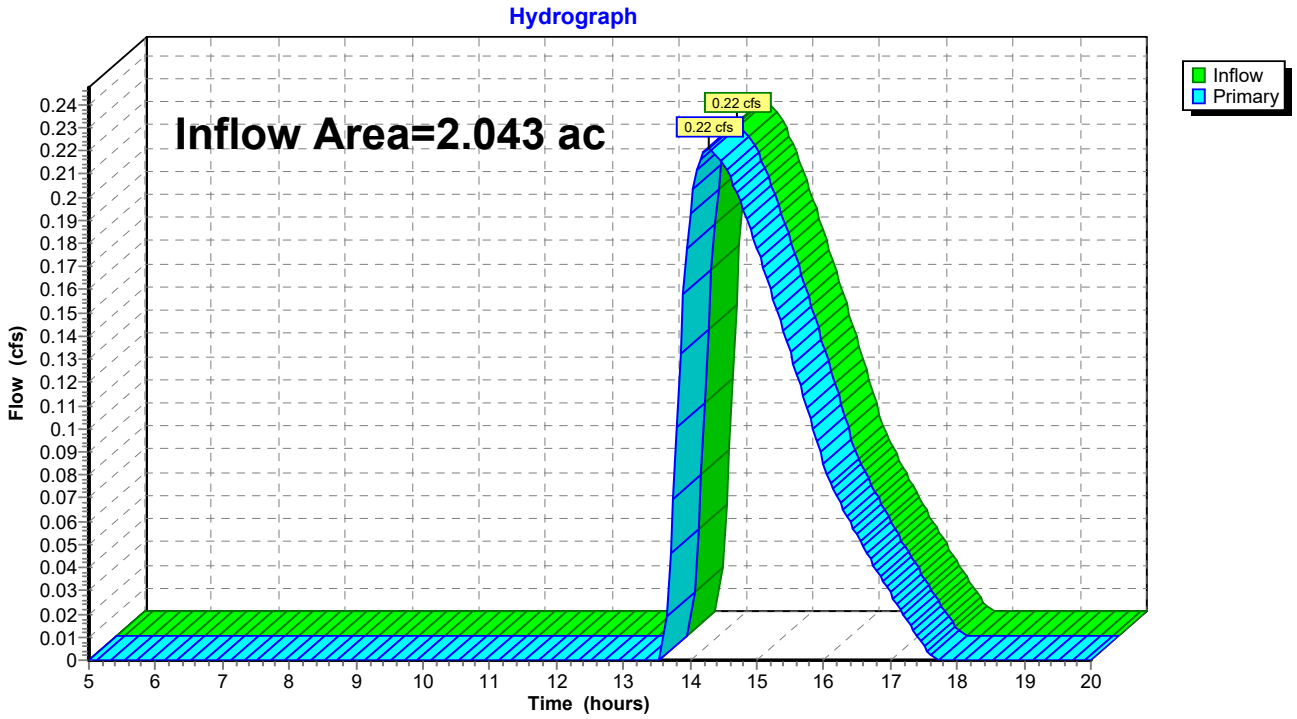


Summary for Link DP4: DP4

Inflow Area = 2.043 ac, 0.00% Impervious, Inflow Depth = 0.21" for 25 year event
Inflow = 0.22 cfs @ 14.28 hrs, Volume= 0.037 af
Primary = 0.22 cfs @ 14.28 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP4: DP4

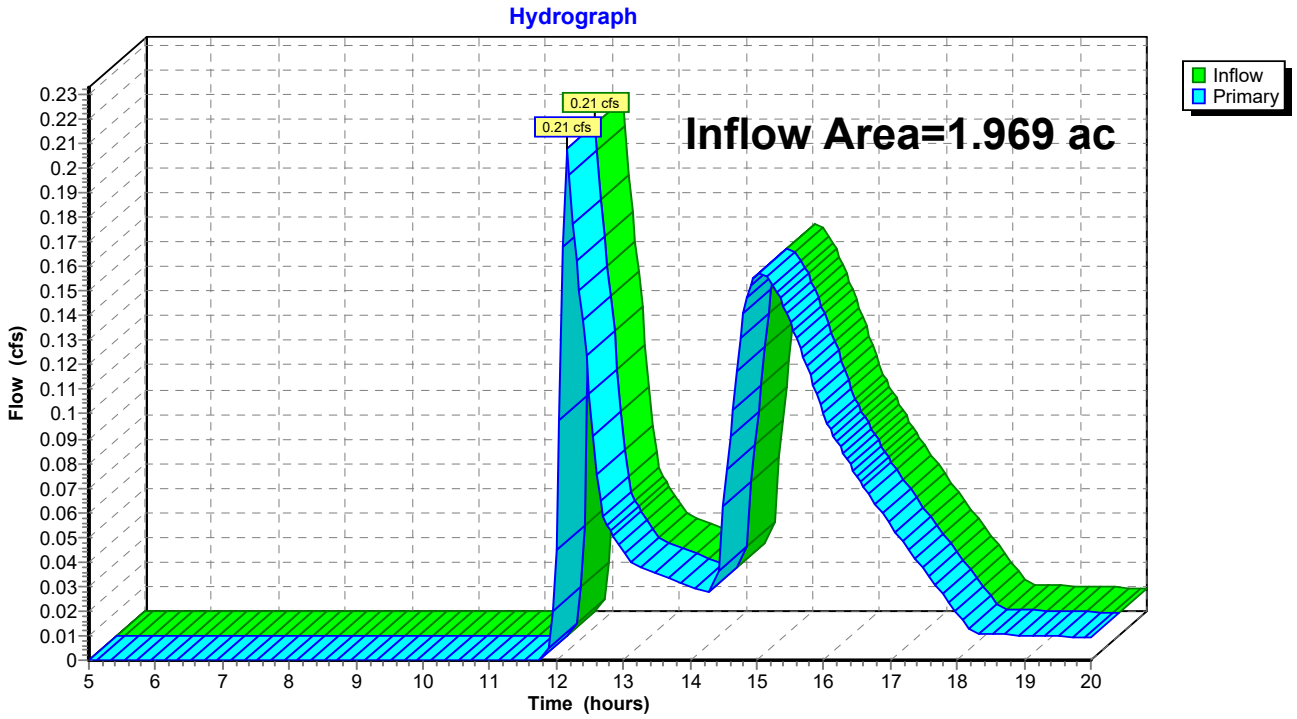


Summary for Link DP5: DP5

Inflow Area = 1.969 ac, 0.00% Impervious, Inflow Depth > 0.25" for 25 year event
Inflow = 0.21 cfs @ 12.17 hrs, Volume= 0.041 af
Primary = 0.21 cfs @ 12.17 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP5: DP5

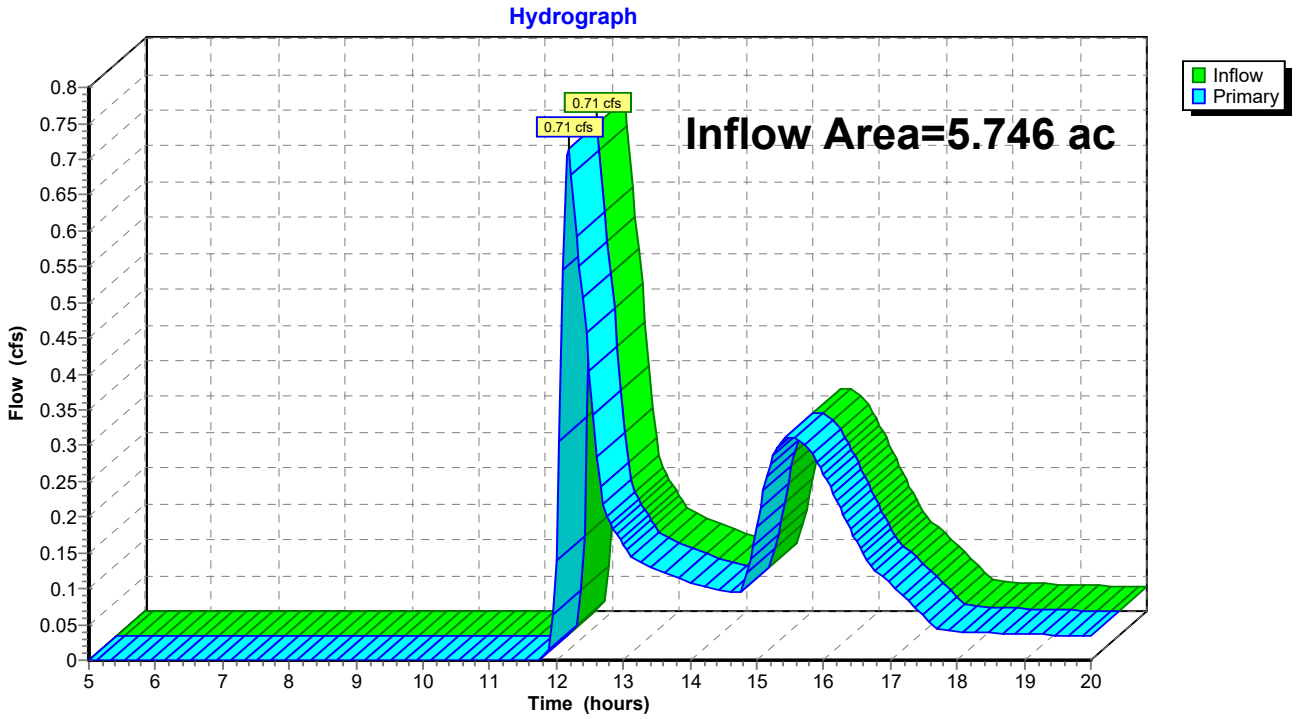


Summary for Link DP6: DP6

Inflow Area = 5.746 ac, 0.00% Impervious, Inflow Depth > 0.21" for 25 year event
Inflow = 0.71 cfs @ 12.18 hrs, Volume= 0.101 af
Primary = 0.71 cfs @ 12.18 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP6: DP6

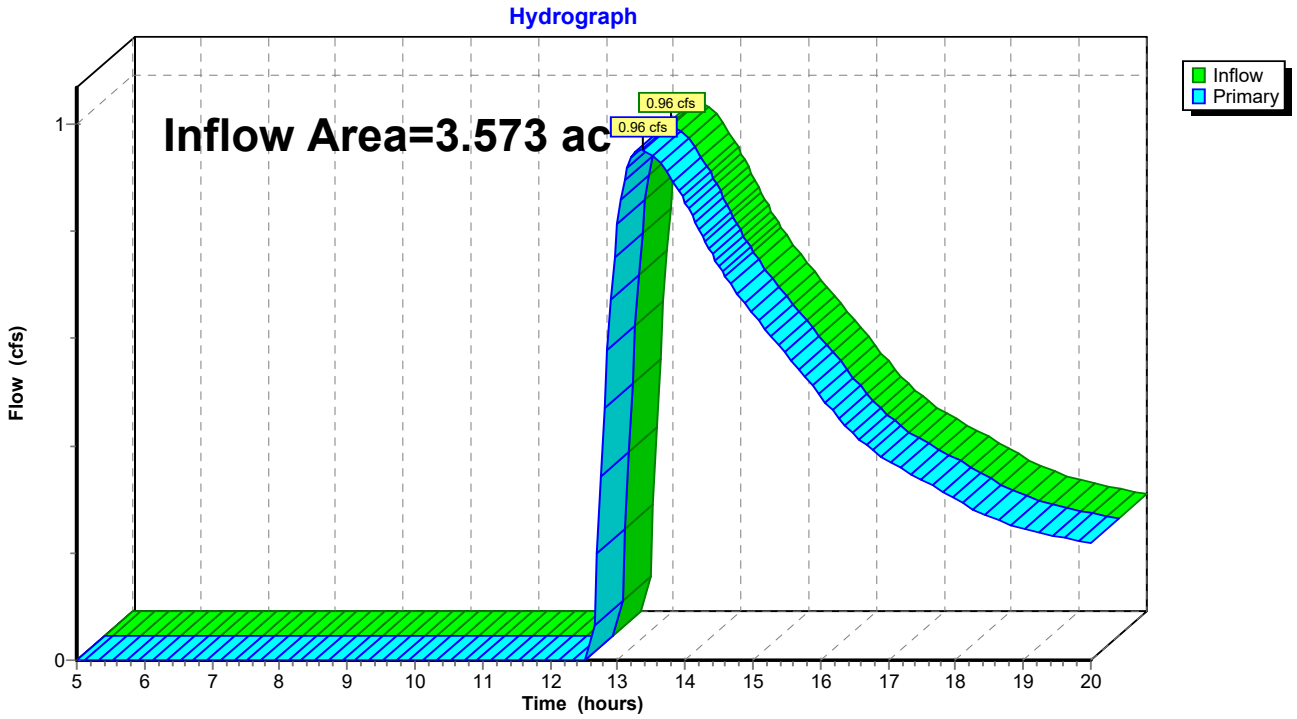


Summary for Link DP7: DP7

Inflow Area = 3.573 ac, 0.00% Impervious, Inflow Depth > 1.02" for 25 year event
Inflow = 0.96 cfs @ 13.36 hrs, Volume= 0.303 af
Primary = 0.96 cfs @ 13.36 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP7: DP7

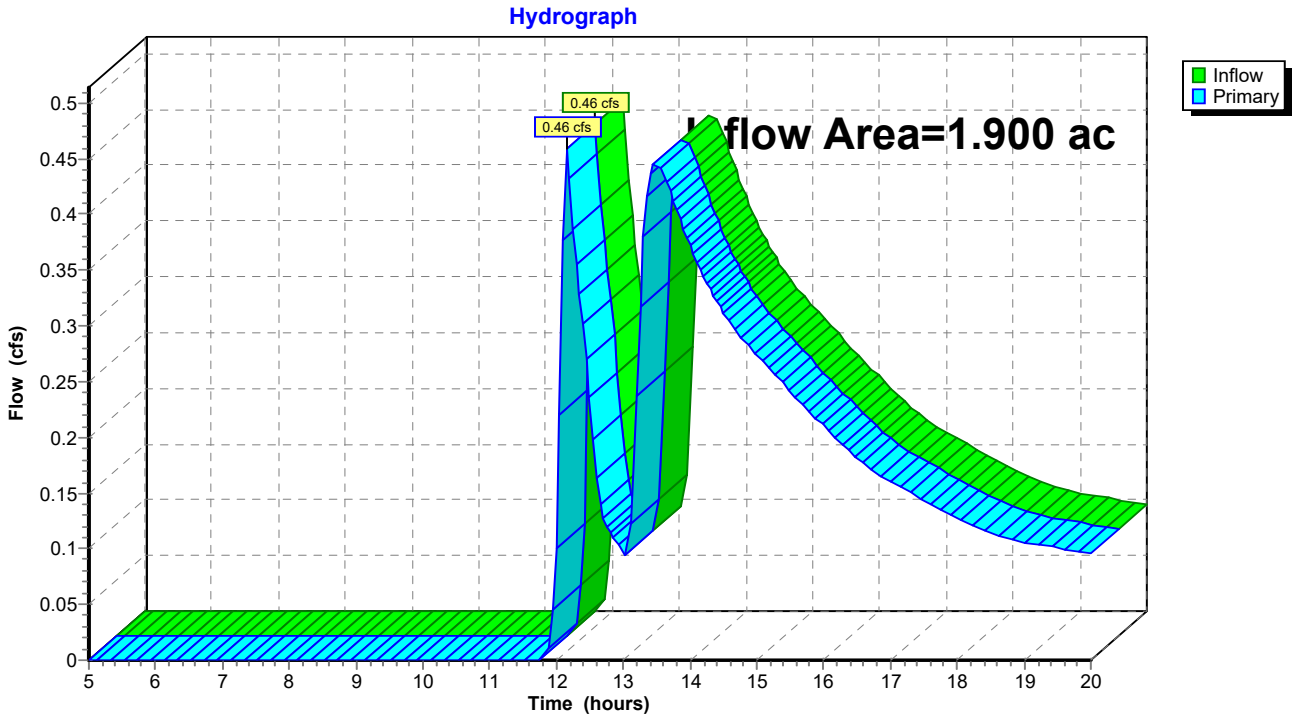


Summary for Link DP8: DP8

Inflow Area = 1.900 ac, 0.00% Impervious, Inflow Depth > 0.88" for 25 year event
Inflow = 0.46 cfs @ 12.16 hrs, Volume= 0.139 af
Primary = 0.46 cfs @ 12.16 hrs, Volume= 0.139 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP8: DP8

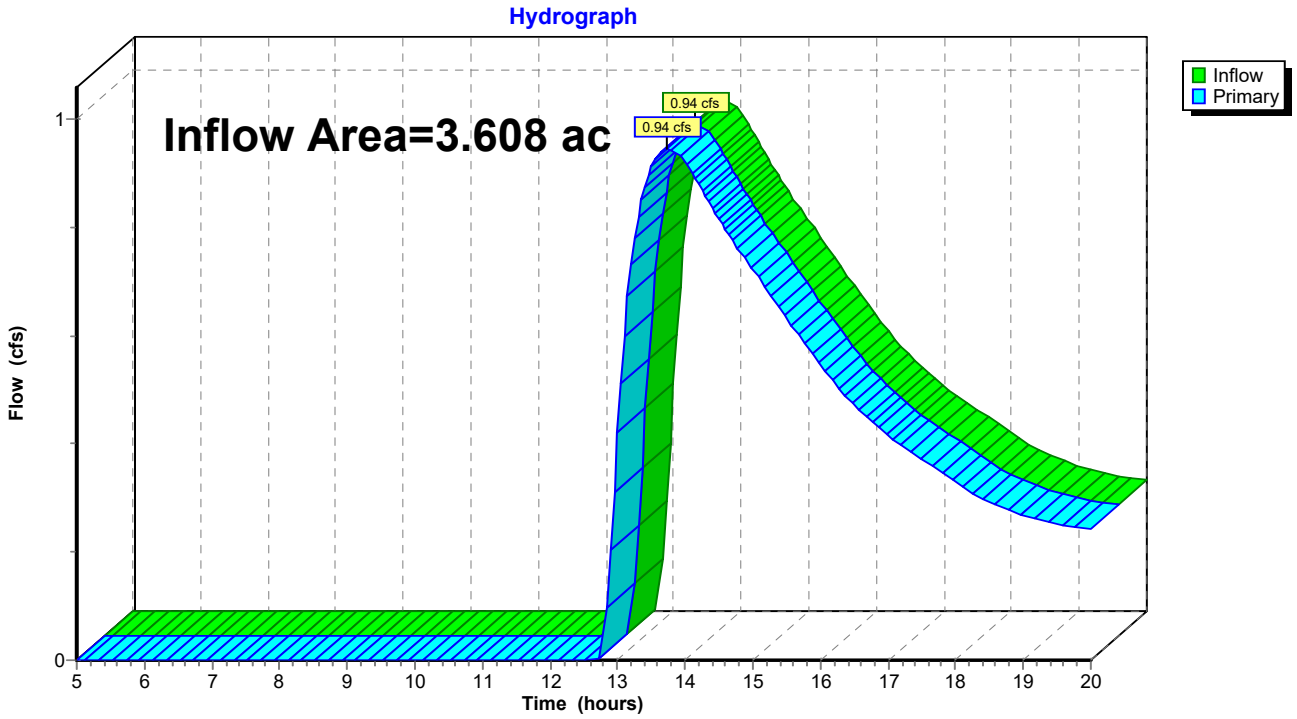


Summary for Link DP9: DP9

Inflow Area = 3.608 ac, 0.00% Impervious, Inflow Depth > 1.02" for 25 year event
Inflow = 0.94 cfs @ 13.74 hrs, Volume= 0.308 af
Primary = 0.94 cfs @ 13.74 hrs, Volume= 0.308 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP9: DP9



50-Year Storm Event- Proposed

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Subcat 1 Runoff Area=4.726 ac 0.00% Impervious Runoff Depth>3.05"
Flow Length=410' Tc=14.8 min CN=68 Runoff=13.79 cfs 1.203 af

Subcatchment2: Subcat 2 Runoff Area=1.477 ac 0.00% Impervious Runoff Depth>2.21"
Flow Length=245' Tc=10.5 min CN=59 Runoff=3.42 cfs 0.272 af

Subcatchment2a: Subcat 2a Runoff Area=0.214 ac 0.00% Impervious Runoff Depth>1.27"
Flow Length=70' Tc=10.3 min CN=48 Runoff=0.25 cfs 0.023 af

Subcatchment3: Subcat 3 Runoff Area=3.240 ac 0.00% Impervious Runoff Depth>3.06"
Flow Length=415' Tc=10.4 min CN=68 Runoff=10.68 cfs 0.826 af

Subcatchment4: Subcat 4 Runoff Area=2.043 ac 0.00% Impervious Runoff Depth>2.96"
Flow Length=530' Tc=13.6 min CN=67 Runoff=5.93 cfs 0.504 af

Subcatchment5: Subcat 5 Runoff Area=1.710 ac 0.00% Impervious Runoff Depth>2.48"
Flow Length=510' Tc=14.8 min CN=62 Runoff=4.00 cfs 0.353 af

Subcatchment5a: Subcat 5a Runoff Area=0.259 ac 0.00% Impervious Runoff Depth>1.27"
Flow Length=150' Tc=9.2 min CN=48 Runoff=0.31 cfs 0.027 af

Subcatchment6: Subcat 6 Runoff Area=4.816 ac 0.00% Impervious Runoff Depth>2.85"
Flow Length=840' Tc=24.1 min CN=66 Runoff=10.77 cfs 1.144 af

Subcatchment6a: Subcat 6a Runoff Area=0.930 ac 0.00% Impervious Runoff Depth>1.27"
Tc=10.0 min CN=48 Runoff=1.10 cfs 0.098 af

Subcatchment7: Subcat 7 Runoff Area=3.573 ac 0.00% Impervious Runoff Depth>2.67"
Flow Length=640' Tc=13.6 min CN=64 Runoff=9.32 cfs 0.795 af

Subcatchment8: Subcat 8 Runoff Area=1.332 ac 0.00% Impervious Runoff Depth>2.37"
Flow Length=525' Tc=29.2 min CN=61 Runoff=2.26 cfs 0.263 af

Subcatchment8a: Subcat 8a Runoff Area=0.568 ac 0.00% Impervious Runoff Depth>1.27"
Flow Length=190' Tc=9.0 min CN=48 Runoff=0.69 cfs 0.060 af

Subcatchment9: Subcat 9 Runoff Area=3.608 ac 0.00% Impervious Runoff Depth>3.05"
Flow Length=640' Tc=15.5 min CN=68 Runoff=10.35 cfs 0.918 af

Pond 1P: (new Pond) Peak Elev=172.72' Storage=0.903 af Inflow=13.79 cfs 1.203 af
Outflow=2.86 cfs 0.632 af

Pond 2P: (new Pond) Peak Elev=169.75' Storage=0.187 af Inflow=3.42 cfs 0.272 af
Outflow=1.28 cfs 0.175 af

Pond 3P: (new Pond) Peak Elev=170.85' Storage=0.533 af Inflow=10.68 cfs 0.826 af
Outflow=2.08 cfs 0.426 af

Pond 4P: (new Pond) Peak Elev=170.19' Storage=0.265 af Inflow=5.93 cfs 0.504 af
Discarded=0.21 cfs 0.140 af Primary=0.84 cfs 0.121 af Outflow=1.04 cfs 0.262 af

Pond 5P: (new Pond) Peak Elev=173.13' Storage=0.190 af Inflow=4.00 cfs 0.353 af
Discarded=0.13 cfs 0.086 af Primary=0.48 cfs 0.087 af Outflow=0.61 cfs 0.173 af

Pond 6P: (new Pond) Peak Elev=180.70' Storage=0.634 af Inflow=10.77 cfs 1.144 af
Discarded=0.51 cfs 0.341 af Primary=1.30 cfs 0.220 af Outflow=1.81 cfs 0.561 af

Pond 7P: (new Pond) Peak Elev=171.17' Storage=0.644 af Inflow=9.32 cfs 0.795 af
Outflow=2.28 cfs 0.460 af

Pond 8P: (new Pond) Peak Elev=168.71' Storage=0.150 af Inflow=2.26 cfs 0.263 af
Outflow=0.94 cfs 0.150 af

Pond 9P: (new Pond) Peak Elev=171.75' Storage=41,121 cf Inflow=10.35 cfs 0.918 af
Outflow=2.12 cfs 0.478 af

Link DP1: DP1 Inflow=2.86 cfs 0.632 af
Primary=2.86 cfs 0.632 af

Link DP2: DP2 Inflow=1.39 cfs 0.198 af
Primary=1.39 cfs 0.198 af

Link DP3: DP3 Inflow=2.08 cfs 0.426 af
Primary=2.08 cfs 0.426 af

Link DP4: DP4 Inflow=0.84 cfs 0.121 af
Primary=0.84 cfs 0.121 af

Link DP5: DP5 Inflow=0.54 cfs 0.114 af
Primary=0.54 cfs 0.114 af

Link DP6: DP6 Inflow=1.47 cfs 0.318 af
Primary=1.47 cfs 0.318 af

Link DP7: DP7 Inflow=2.28 cfs 0.460 af
Primary=2.28 cfs 0.460 af

Link DP8: DP8 Inflow=1.07 cfs 0.211 af
Primary=1.07 cfs 0.211 af

Link DP9: DP9 Inflow=2.12 cfs 0.478 af
Primary=2.12 cfs 0.478 af

Total Runoff Area = 28.496 ac Runoff Volume = 6.486 af Average Runoff Depth = 2.73"
100.00% Pervious = 28.496 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

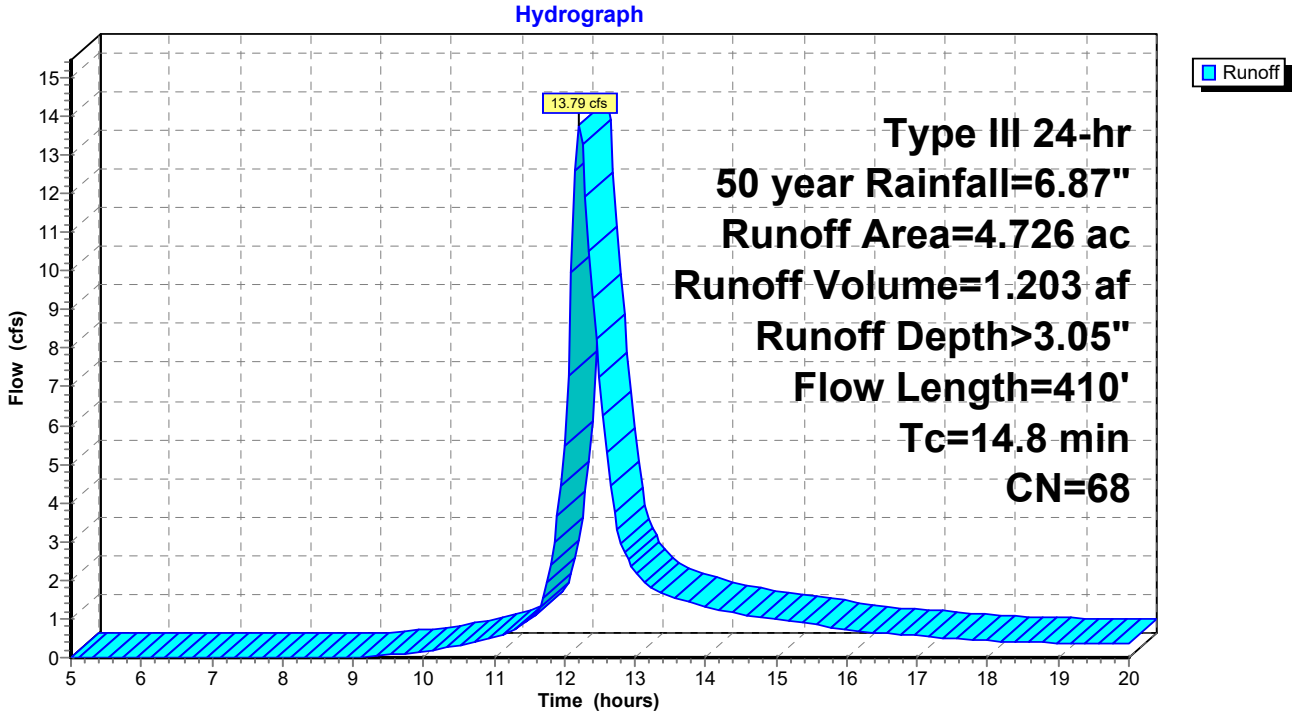
Runoff = 13.79 cfs @ 12.21 hrs, Volume= 1.203 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
3.416	74	>75% Grass cover, Good, HSG C
1.164	48	Brush, Good, HSG B
0.146	96	Gravel surface, HSG C
4.726	68	Weighted Average
4.726		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.9	155	0.0387	1.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	175	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	30	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.8	410	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2: Subcat 2

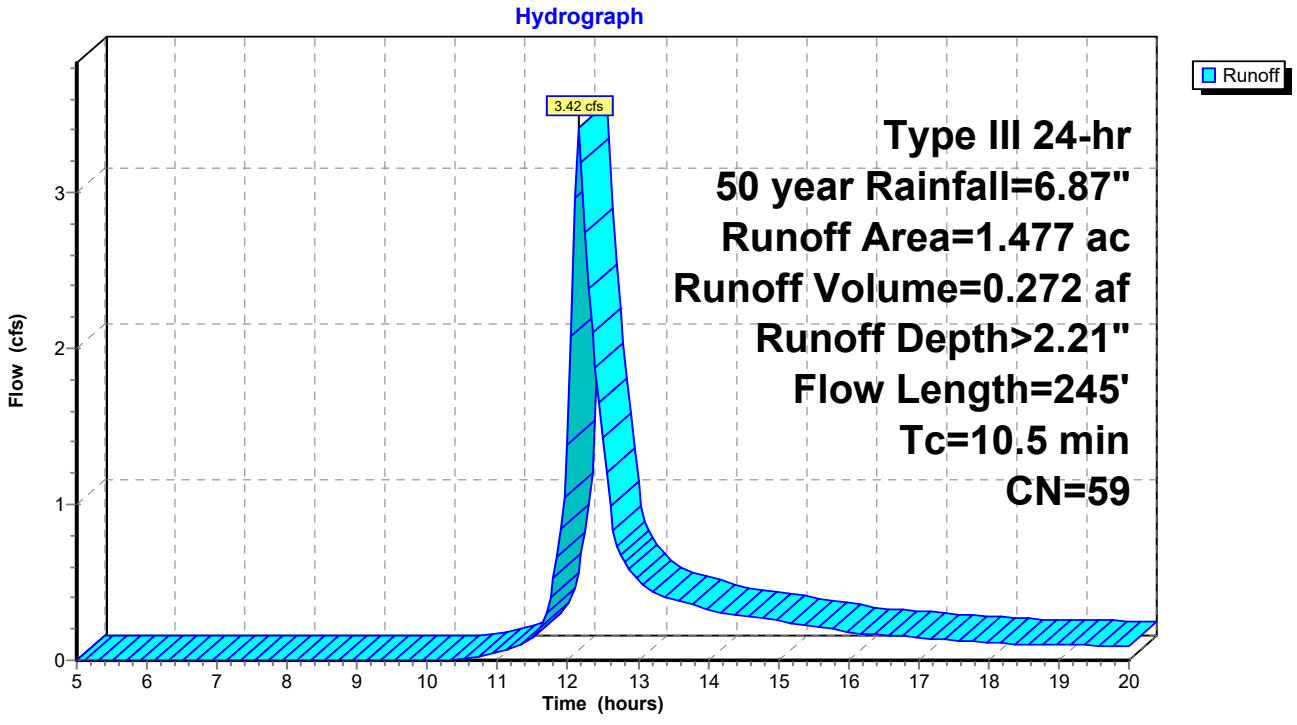
Runoff = 3.42 cfs @ 12.16 hrs, Volume= 0.272 af, Depth> 2.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
0.625	74	>75% Grass cover, Good, HSG C
0.852	48	Brush, Good, HSG B
1.477	59	Weighted Average
1.477		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.3	120	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	75	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.5	245	Total			

Subcatchment 2: Subcat 2



Summary for Subcatchment 2a: Subcat 2a

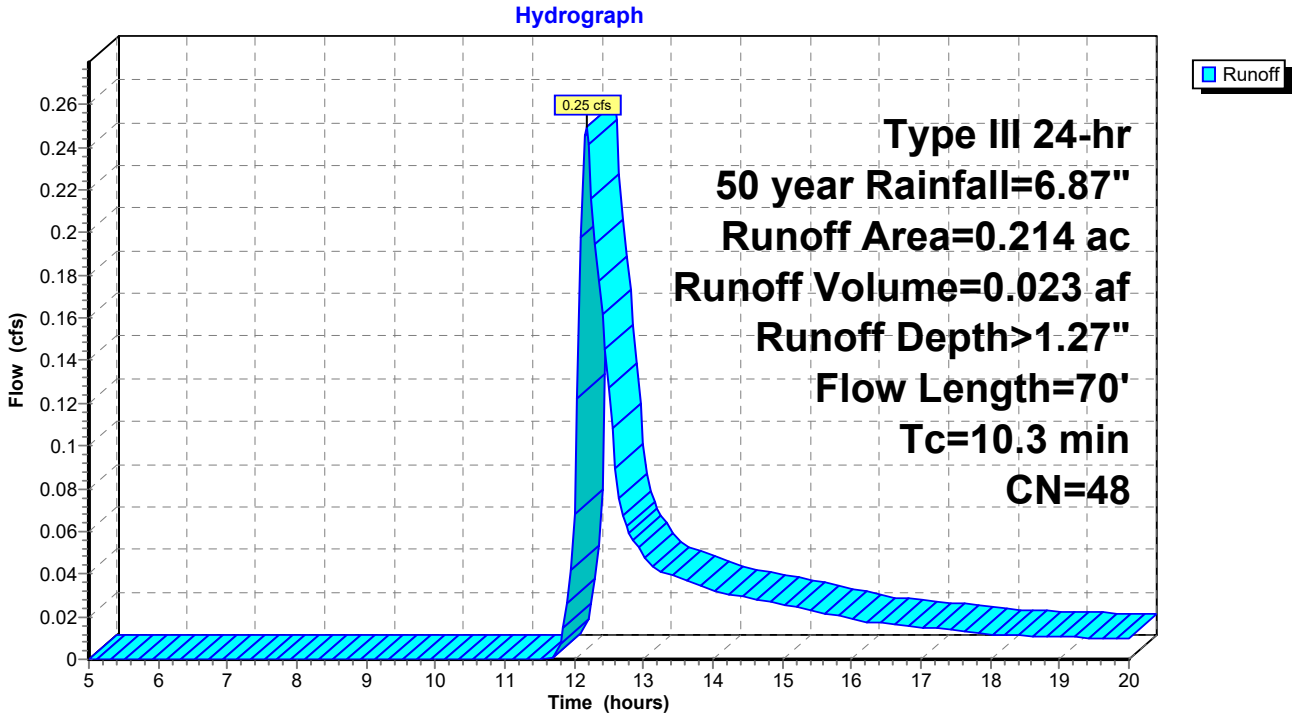
Runoff = 0.25 cfs @ 12.17 hrs, Volume= 0.023 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
0.214	48	Brush, Good, HSG B
0.214		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
0.2	20	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.3	70	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 3: Subcat 3

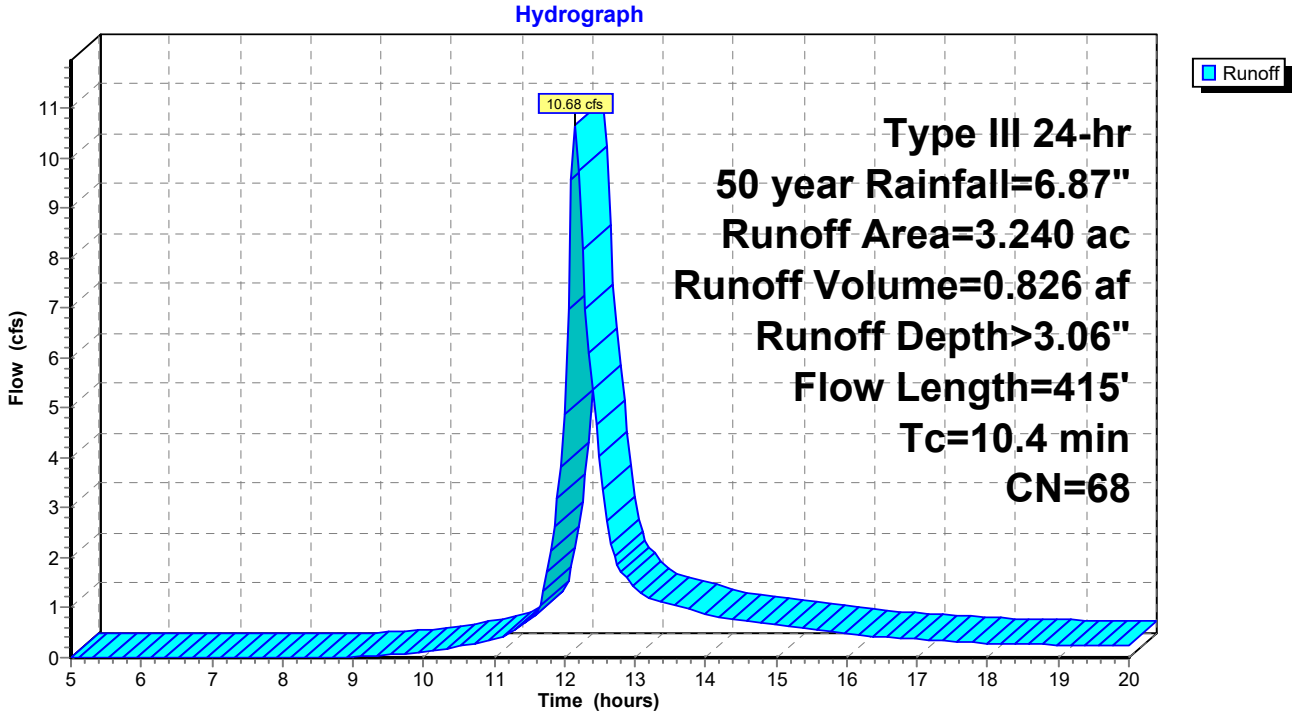
Runoff = 10.68 cfs @ 12.15 hrs, Volume= 0.826 af, Depth> 3.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
2.286	74	>75% Grass cover, Good, HSG C
0.860	48	Brush, Good, HSG B
0.094	96	Gravel surface, HSG C
3.240	68	Weighted Average
3.240		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	50	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.6	140	0.0430	1.45		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	225	0.0666	1.81		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.4	415	Total			

Subcatchment 3: Subcat 3



Summary for Subcatchment 4: Subcat 4

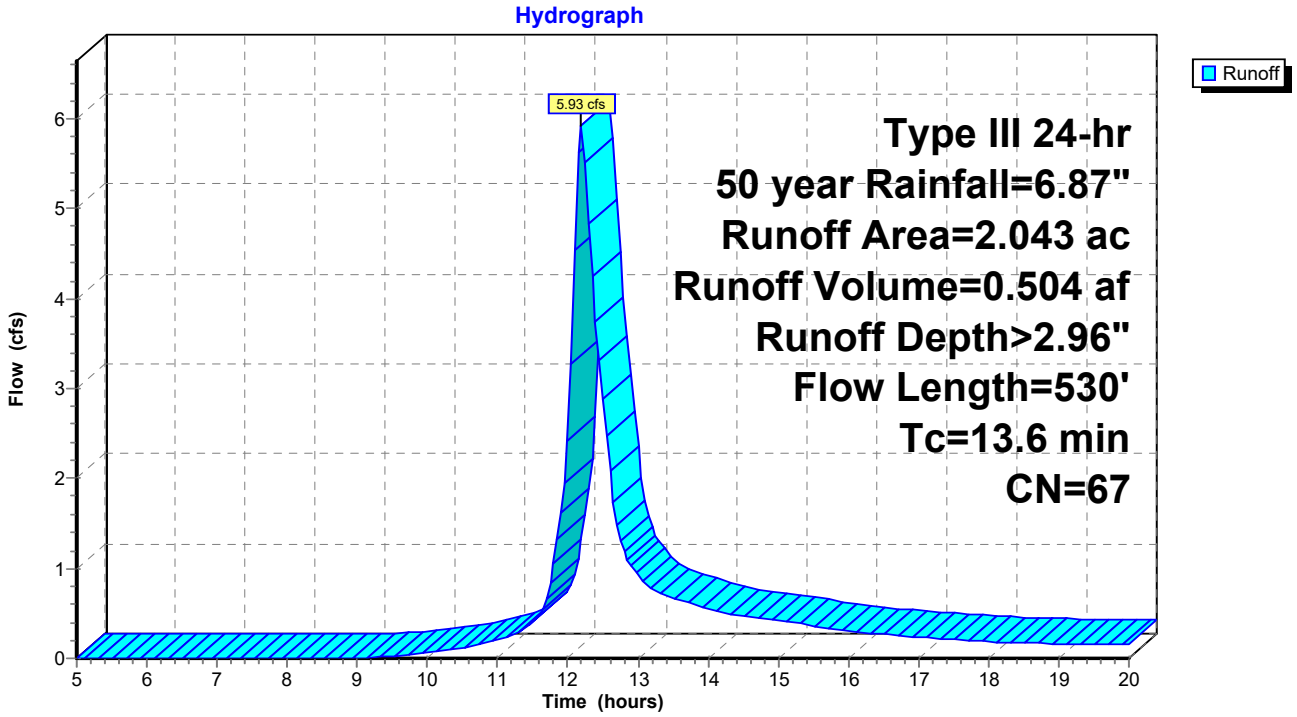
Runoff = 5.93 cfs @ 12.20 hrs, Volume= 0.504 af, Depth> 2.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
1.433	74	>75% Grass cover, Good, HSG C
0.582	48	Brush, Good, HSG B
0.028	96	Gravel surface, HSG C
2.043	67	Weighted Average
2.043		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
2.1	120	0.0183	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	295	0.0610	1.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	25	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.7	40	0.0375	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	530	Total			

Subcatchment 4: Subcat 4



Summary for Subcatchment 5: Subcat 5

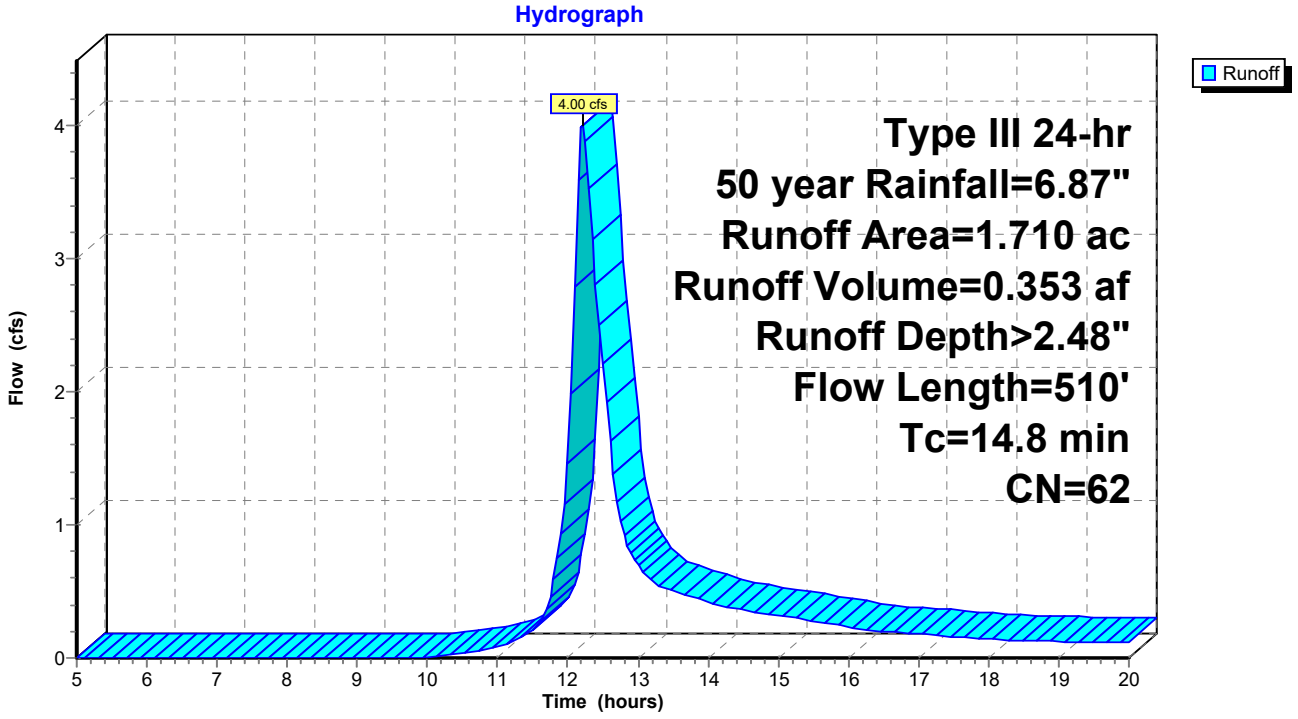
Runoff = 4.00 cfs @ 12.22 hrs, Volume= 0.353 af, Depth> 2.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
0.922	74	>75% Grass cover, Good, HSG C
0.788	48	Brush, Good, HSG B
1.710	62	Weighted Average
1.710		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
3.8	215	0.0186	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	150	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	95	0.0470	1.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.8	510	Total			

Subcatchment 5: Subcat 5



Summary for Subcatchment 5a: Subcat 5a

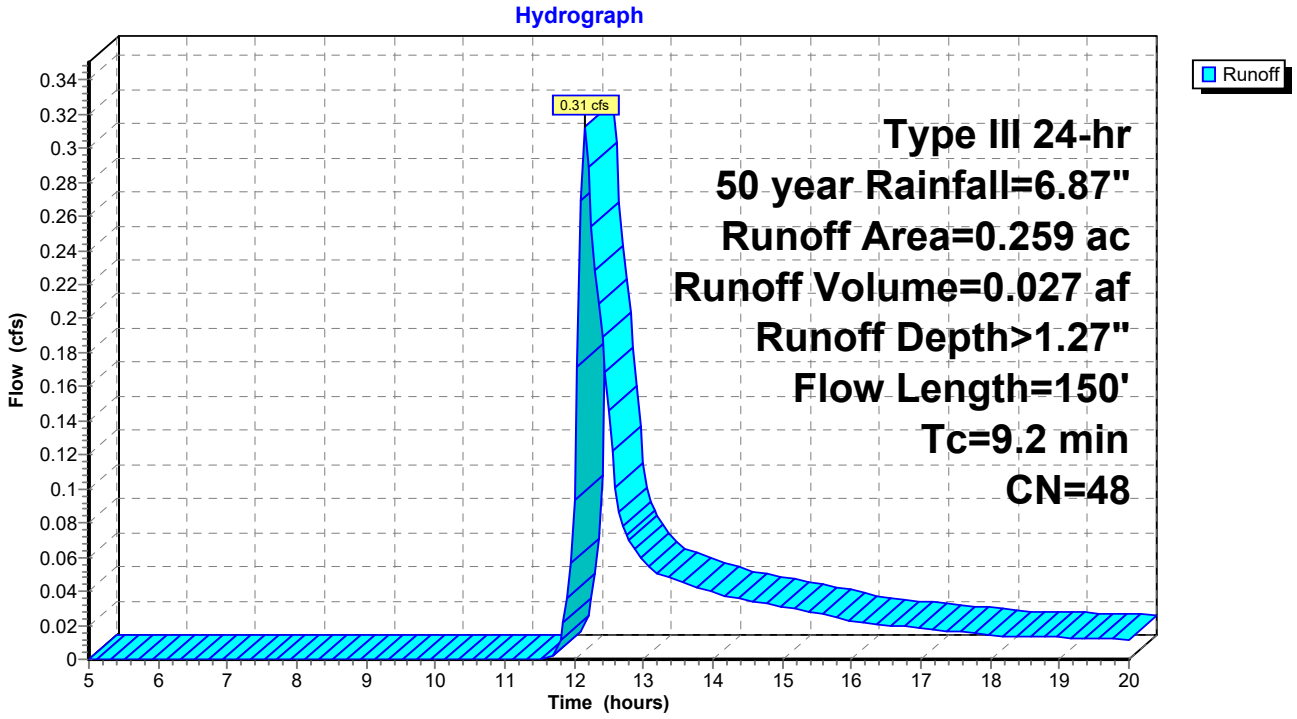
Runoff = 0.31 cfs @ 12.16 hrs, Volume= 0.027 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
0.259	48	Brush, Good, HSG B
0.259		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
1.5	100	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.2	150	Total			

Subcatchment 5a: Subcat 5a



Summary for Subcatchment 6: Subcat 6

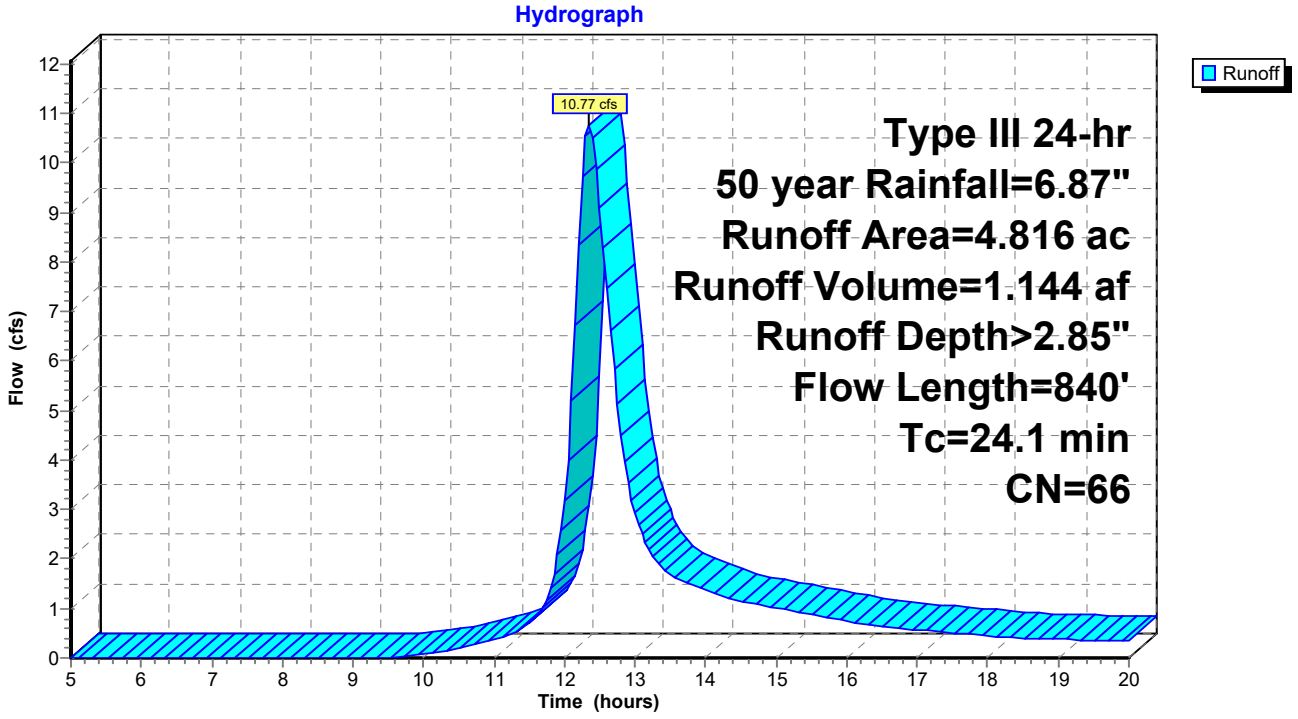
Runoff = 10.77 cfs @ 12.35 hrs, Volume= 1.144 af, Depth> 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
3.416	74	>75% Grass cover, Good, HSG C
1.400	48	Brush, Good, HSG B
4.816	66	Weighted Average
4.816		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0800	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.9	100	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	505	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	185	0.0375	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	840	Total			

Subcatchment 6: Subcat 6



Summary for Subcatchment 6a: Subcat 6a

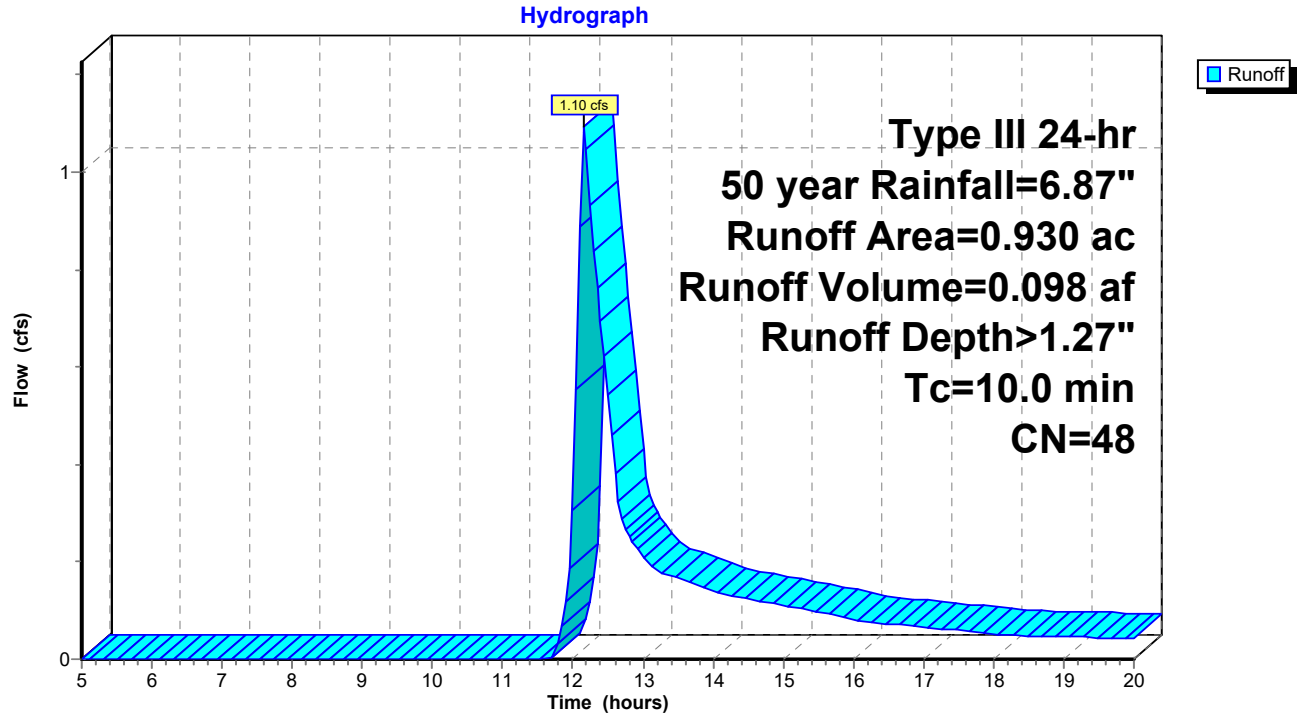
Runoff = 1.10 cfs @ 12.17 hrs, Volume= 0.098 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
0.930	48	Brush, Good, HSG B
0.930		100.00% Pervious Area

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

Subcatchment 6a: Subcat 6a



Summary for Subcatchment 7: Subcat 7

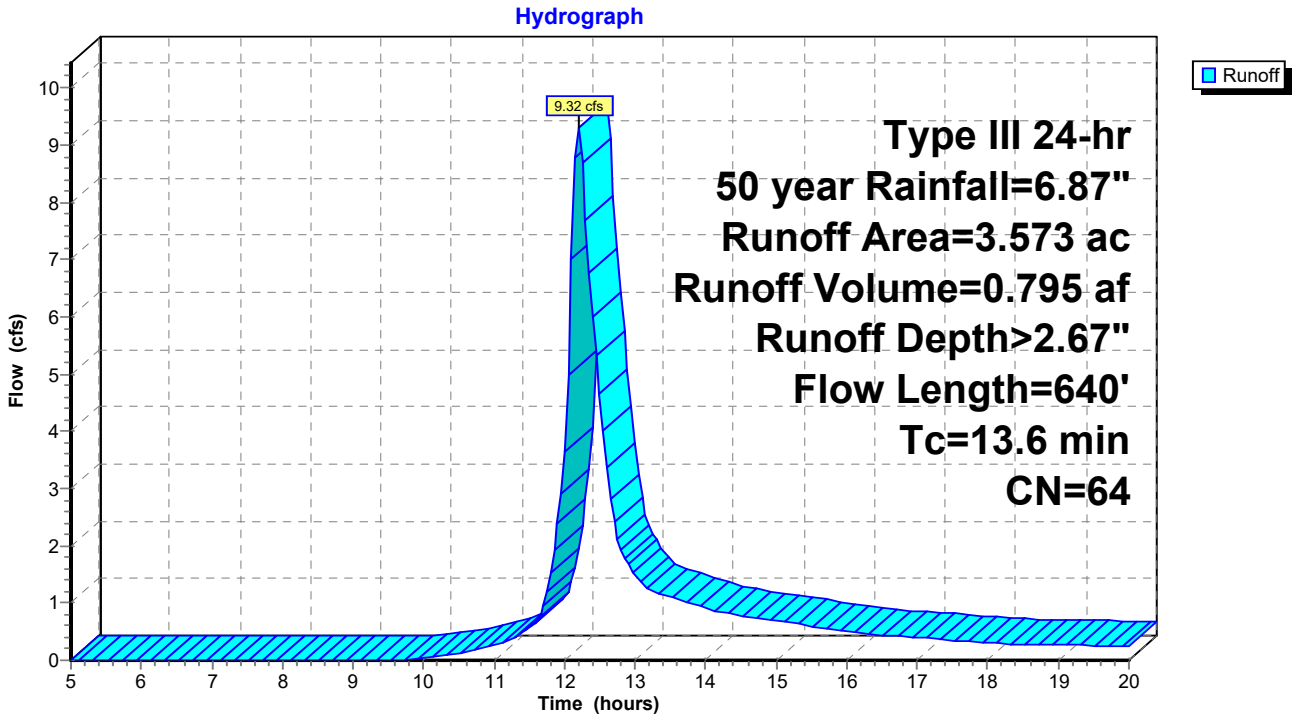
Runoff = 9.32 cfs @ 12.20 hrs, Volume= 0.795 af, Depth> 2.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
2.142	74	>75% Grass cover, Good, HSG C
1.431	48	Brush, Good, HSG B
3.573	64	Weighted Average
3.573		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1000	0.20		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
2.0	240	0.0812	1.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.4	350	0.0128	0.79		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.6	640	Total			

Subcatchment 7: Subcat 7



Summary for Subcatchment 8: Subcat 8

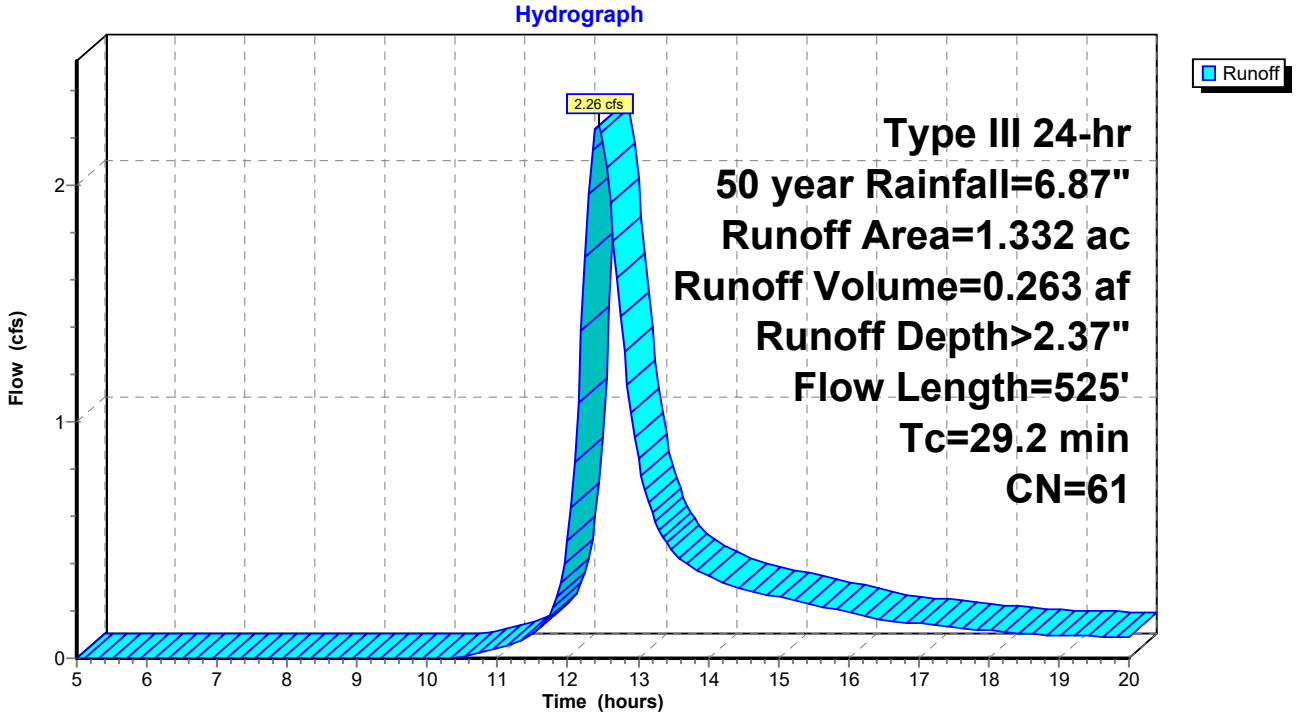
Runoff = 2.26 cfs @ 12.43 hrs, Volume= 0.263 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.680	48	Brush, Good, HSG B
1.332	61	Weighted Average
1.332		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	50	0.0100	0.05		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 3.42"
13.1	475	0.0147	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
29.2	525	Total			

Subcatchment 8: Subcat 8



Summary for Subcatchment 8a: Subcat 8a

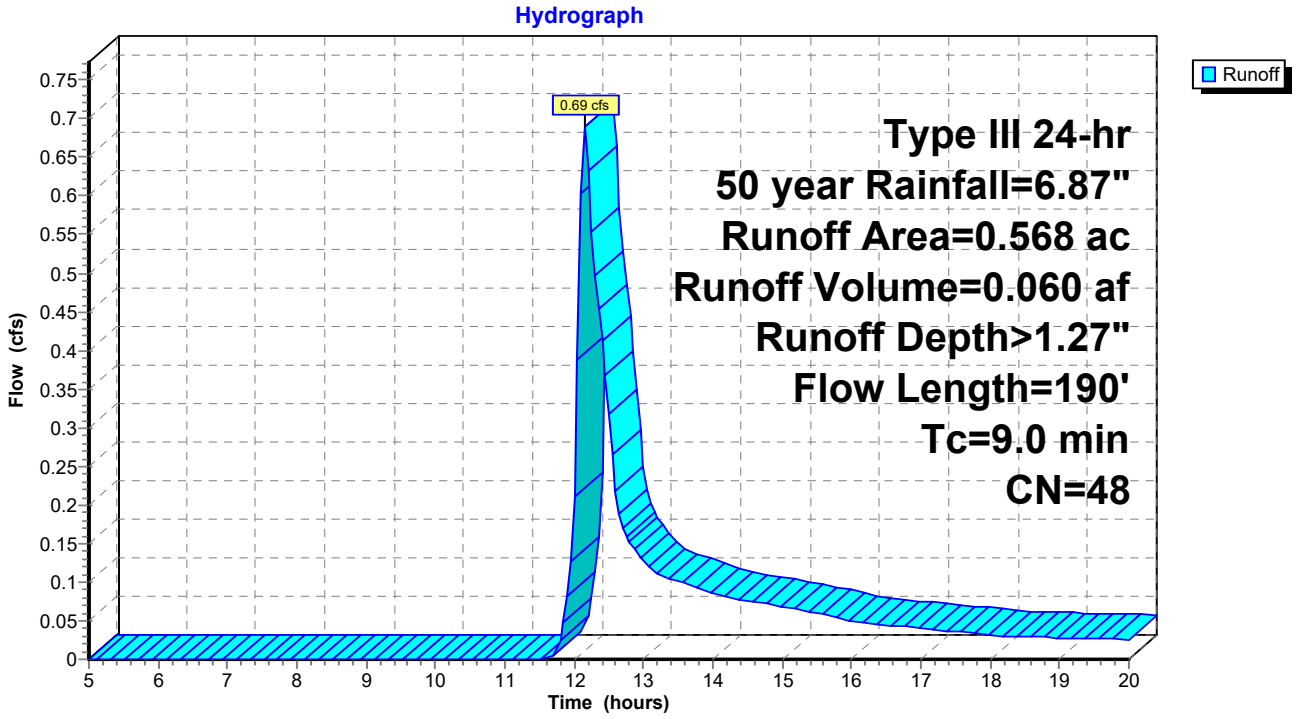
Runoff = 0.69 cfs @ 12.16 hrs, Volume= 0.060 af, Depth> 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
0.568	48	Brush, Good, HSG B
0.568		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
1.3	140	0.1220	1.75		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.0	190	Total			

Subcatchment 8a: Subcat 8a



Summary for Subcatchment 9: Subcat 9

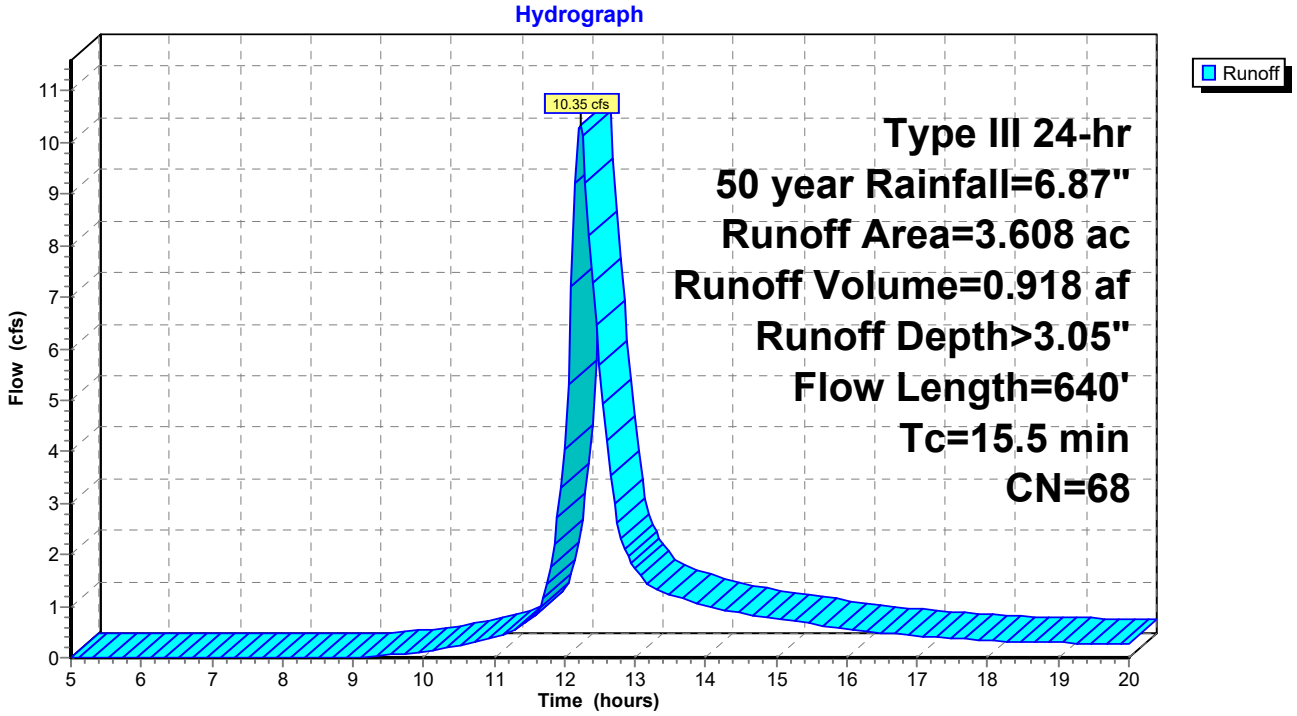
Runoff = 10.35 cfs @ 12.22 hrs, Volume= 0.918 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 50 year Rainfall=6.87"

Area (ac)	CN	Description
2.512	74	>75% Grass cover, Good, HSG C
0.924	48	Brush, Good, HSG B
0.172	96	Gravel surface, HSG C
3.608	68	Weighted Average
3.608		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0360	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.8	215	0.0850	2.04		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.4	375	0.0147	0.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.5	640	Total			

Subcatchment 9: Subcat 9



Summary for Pond 1P: (new Pond)

Inflow Area = 4.726 ac, 0.00% Impervious, Inflow Depth > 3.05" for 50 year event
Inflow = 13.79 cfs @ 12.21 hrs, Volume= 1.203 af
Outflow = 2.86 cfs @ 12.82 hrs, Volume= 0.632 af, Atten= 79%, Lag= 36.7 min
Primary = 2.86 cfs @ 12.82 hrs, Volume= 0.632 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 169.50' Surf.Area= 0.154 ac Storage= 0.255 af
Peak Elev= 172.72' @ 12.82 hrs Surf.Area= 0.251 ac Storage= 0.903 af (0.648 af above start)

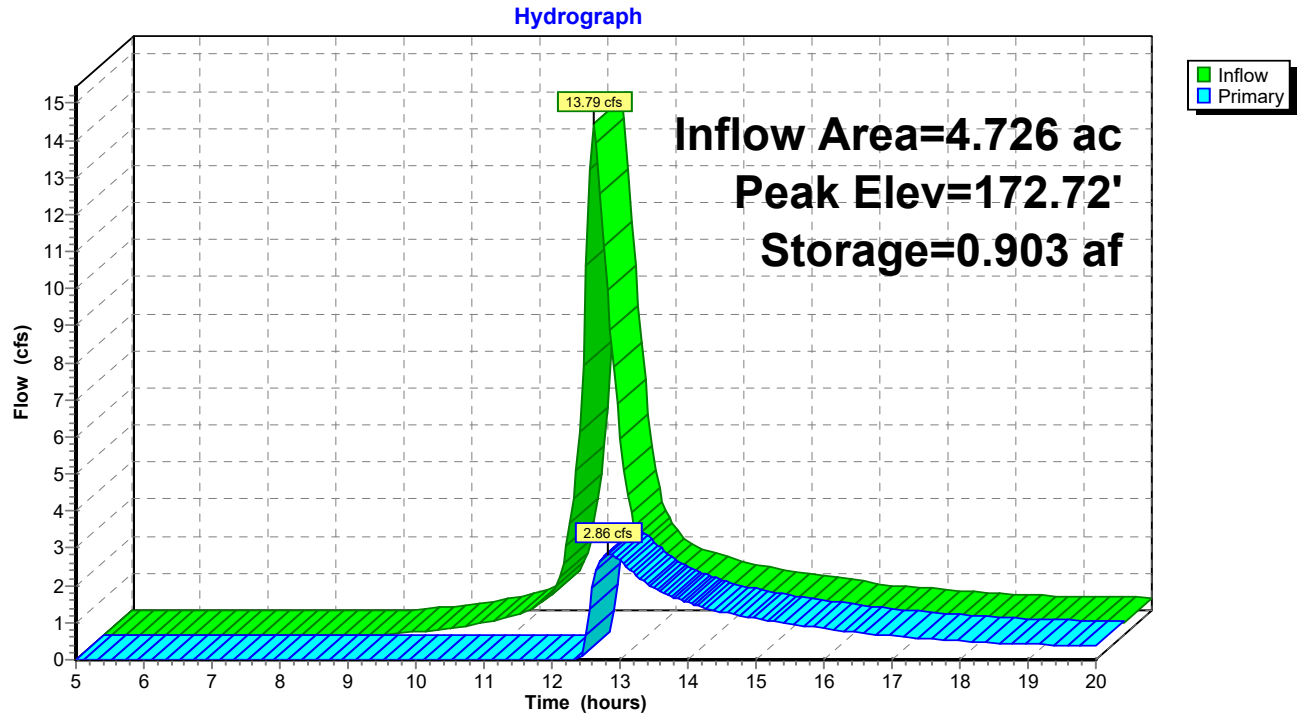
Plug-Flow detention time= 262.6 min calculated for 0.377 af (31% of inflow)
Center-of-Mass det. time= 93.4 min (898.8 - 805.4)

Volume	Invert	Avail.Storage	Storage Description
#1	167.50'	1.251 af	**31.00'W x 144.00'L x 6.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	172.30'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=2.84 cfs @ 12.82 hrs HW=172.72' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 2.84 cfs @ 1.68 fps)

Pond 1P: (new Pond)



Summary for Pond 2P: (new Pond)

Inflow Area = 1.477 ac, 0.00% Impervious, Inflow Depth > 2.21" for 50 year event
Inflow = 3.42 cfs @ 12.16 hrs, Volume= 0.272 af
Outflow = 1.28 cfs @ 12.54 hrs, Volume= 0.175 af, Atten= 63%, Lag= 22.7 min
Primary = 1.28 cfs @ 12.54 hrs, Volume= 0.175 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 168.00' Surf.Area= 0.051 ac Storage= 0.074 af
Peak Elev= 169.75' @ 12.54 hrs Surf.Area= 0.079 ac Storage= 0.187 af (0.112 af above start)

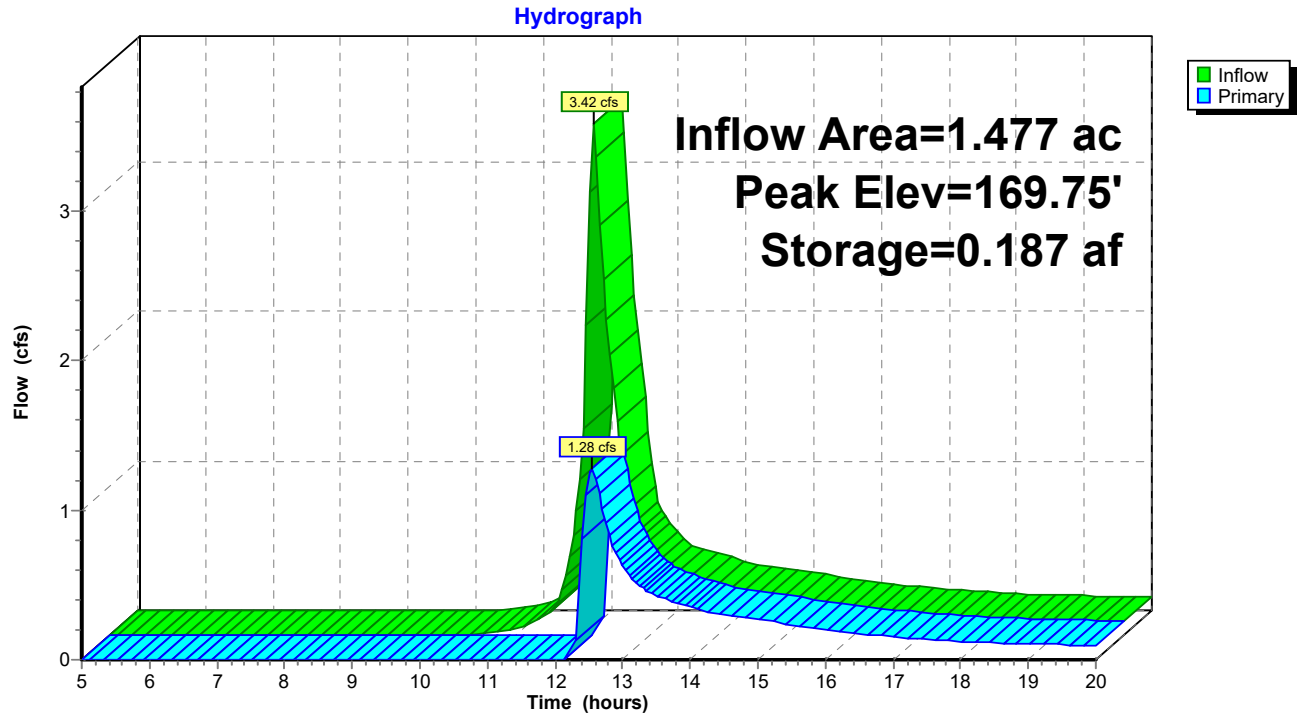
Plug-Flow detention time= 235.9 min calculated for 0.101 af (37% of inflow)
Center-of-Mass det. time= 60.9 min (878.9 - 818.0)

Volume	Invert	Avail.Storage	Storage Description
#1	166.00'	0.250 af	**17.00'W x 64.00'L x 4.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	169.50'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=1.26 cfs @ 12.54 hrs HW=169.75' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 1.26 cfs @ 1.25 fps)

Pond 2P: (new Pond)



Summary for Pond 3P: (new Pond)

Inflow Area = 3.240 ac, 0.00% Impervious, Inflow Depth > 3.06" for 50 year event
Inflow = 10.68 cfs @ 12.15 hrs, Volume= 0.826 af
Outflow = 2.08 cfs @ 12.70 hrs, Volume= 0.426 af, Atten= 81%, Lag= 32.6 min
Primary = 2.08 cfs @ 12.70 hrs, Volume= 0.426 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 167.00' Surf.Area= 0.067 ac Storage= 0.091 af
Peak Elev= 170.85' @ 12.70 hrs Surf.Area= 0.167 ac Storage= 0.533 af (0.443 af above start)

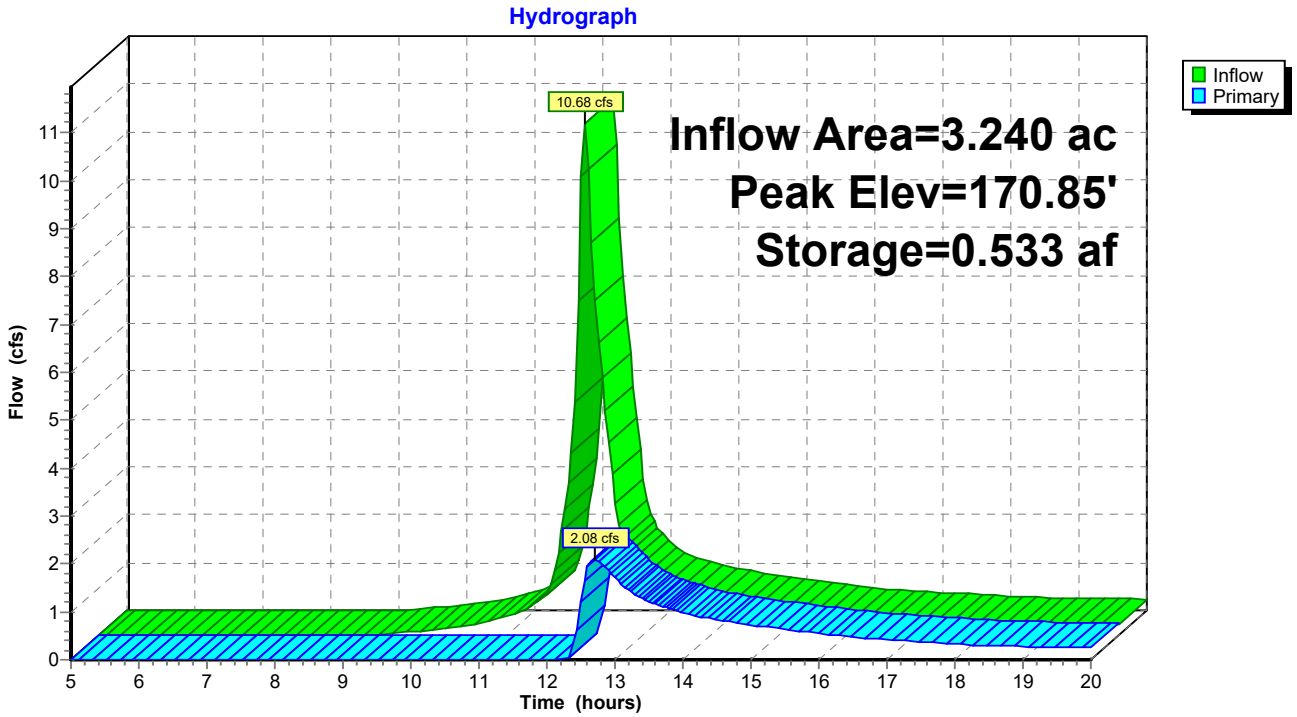
Plug-Flow detention time= 215.0 min calculated for 0.334 af (40% of inflow)
Center-of-Mass det. time= 92.0 min (894.0 - 802.0)

Volume	Invert	Avail.Storage	Storage Description
#1	165.00'	0.649 af	**8.00'W x 134.00'L x 6.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	170.50'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=2.08 cfs @ 12.70 hrs HW=170.85' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 2.08 cfs @ 1.50 fps)

Pond 3P: (new Pond)



Summary for Pond 4P: (new Pond)

Inflow Area = 2.043 ac, 0.00% Impervious, Inflow Depth > 2.96" for 50 year event
Inflow = 5.93 cfs @ 12.20 hrs, Volume= 0.504 af
Outflow = 1.04 cfs @ 12.90 hrs, Volume= 0.262 af, Atten= 82%, Lag= 42.0 min
Discarded = 0.21 cfs @ 12.90 hrs, Volume= 0.140 af
Primary = 0.84 cfs @ 12.90 hrs, Volume= 0.121 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 170.19' @ 12.90 hrs Surf.Area= 0.093 ac Storage= 0.265 af

Plug-Flow detention time= 174.4 min calculated for 0.262 af (52% of inflow)
Center-of-Mass det. time= 92.1 min (898.3 - 806.2)

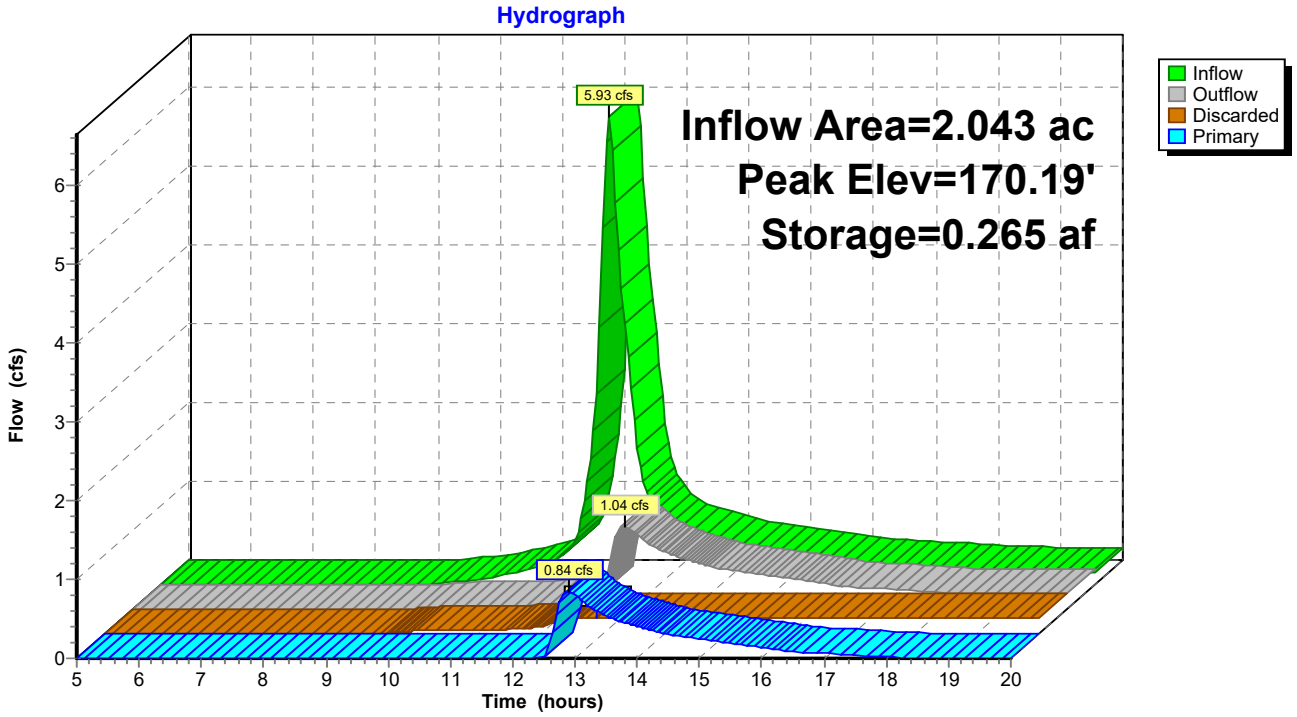
Volume	Invert	Avail.Storage	Storage Description
#1	165.00'	0.346 af	**11.00'W x 65.00'L x 6.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	170.00'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	165.00'	**2.200 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.21 cfs @ 12.90 hrs HW=170.19' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.21 cfs)

Primary OutFlow Max=0.82 cfs @ 12.90 hrs HW=170.19' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.82 cfs @ 1.07 fps)

Pond 4P: (new Pond)



Summary for Pond 5P: (new Pond)

Inflow Area = 1.710 ac, 0.00% Impervious, Inflow Depth > 2.48" for 50 year event
Inflow = 4.00 cfs @ 12.22 hrs, Volume= 0.353 af
Outflow = 0.61 cfs @ 13.13 hrs, Volume= 0.173 af, Atten= 85%, Lag= 55.1 min
Discarded = 0.13 cfs @ 13.13 hrs, Volume= 0.086 af
Primary = 0.48 cfs @ 13.13 hrs, Volume= 0.087 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 173.13' @ 13.13 hrs Surf.Area= 0.069 ac Storage= 0.190 af

Plug-Flow detention time= 182.1 min calculated for 0.172 af (49% of inflow)
Center-of-Mass det. time= 96.5 min (912.4 - 815.9)

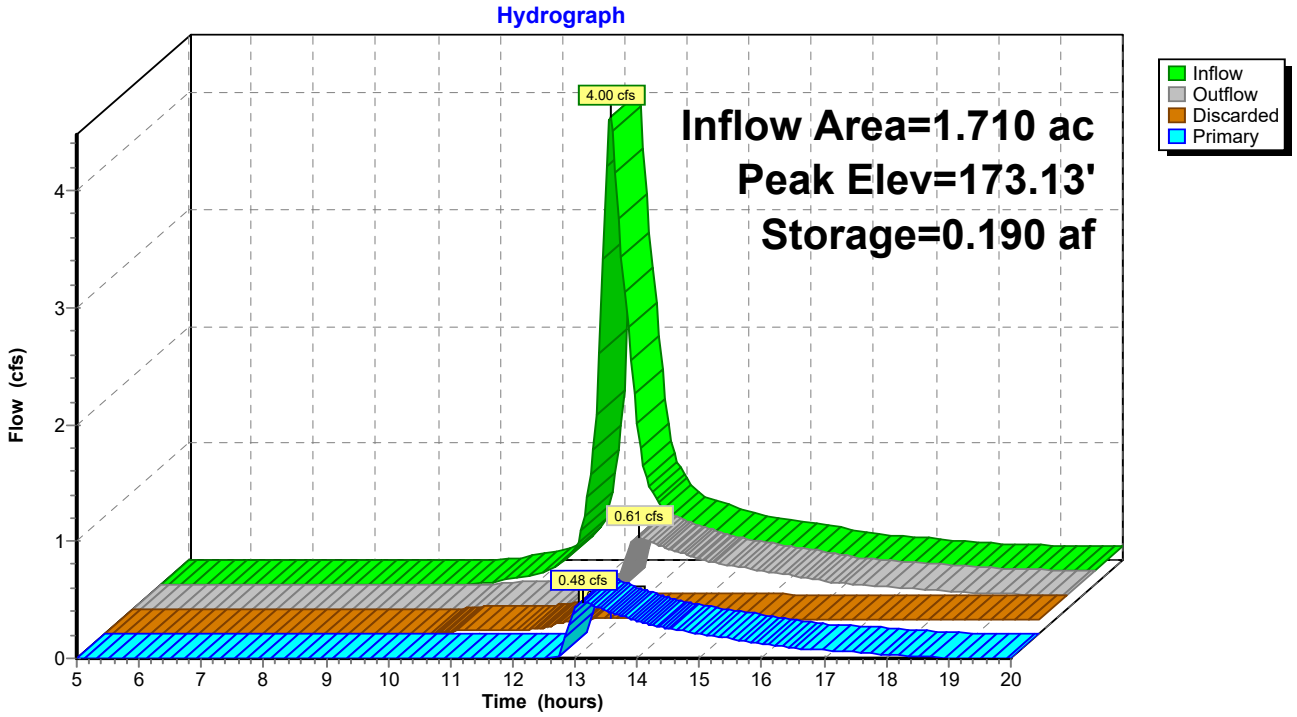
Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	0.256 af	**32.00'W x 17.00'L x 6.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	173.00'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	168.00'	**1.800 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 90.00' Phase-In= 0.01'

Discarded OutFlow Max=0.13 cfs @ 13.13 hrs HW=173.13' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.13 cfs)

Primary OutFlow Max=0.47 cfs @ 13.13 hrs HW=173.13' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.47 cfs @ 0.89 fps)

Pond 5P: (new Pond)



Summary for Pond 6P: (new Pond)

Inflow Area = 4.816 ac, 0.00% Impervious, Inflow Depth > 2.85" for 50 year event
Inflow = 10.77 cfs @ 12.35 hrs, Volume= 1.144 af
Outflow = 1.81 cfs @ 13.39 hrs, Volume= 0.561 af, Atten= 83%, Lag= 62.6 min
Discarded = 0.51 cfs @ 13.39 hrs, Volume= 0.341 af
Primary = 1.30 cfs @ 13.39 hrs, Volume= 0.220 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 180.70' @ 13.39 hrs Surf.Area= 0.187 ac Storage= 0.634 af

Plug-Flow detention time= 184.0 min calculated for 0.559 af (49% of inflow)
Center-of-Mass det. time= 101.2 min (917.3 - 816.1)

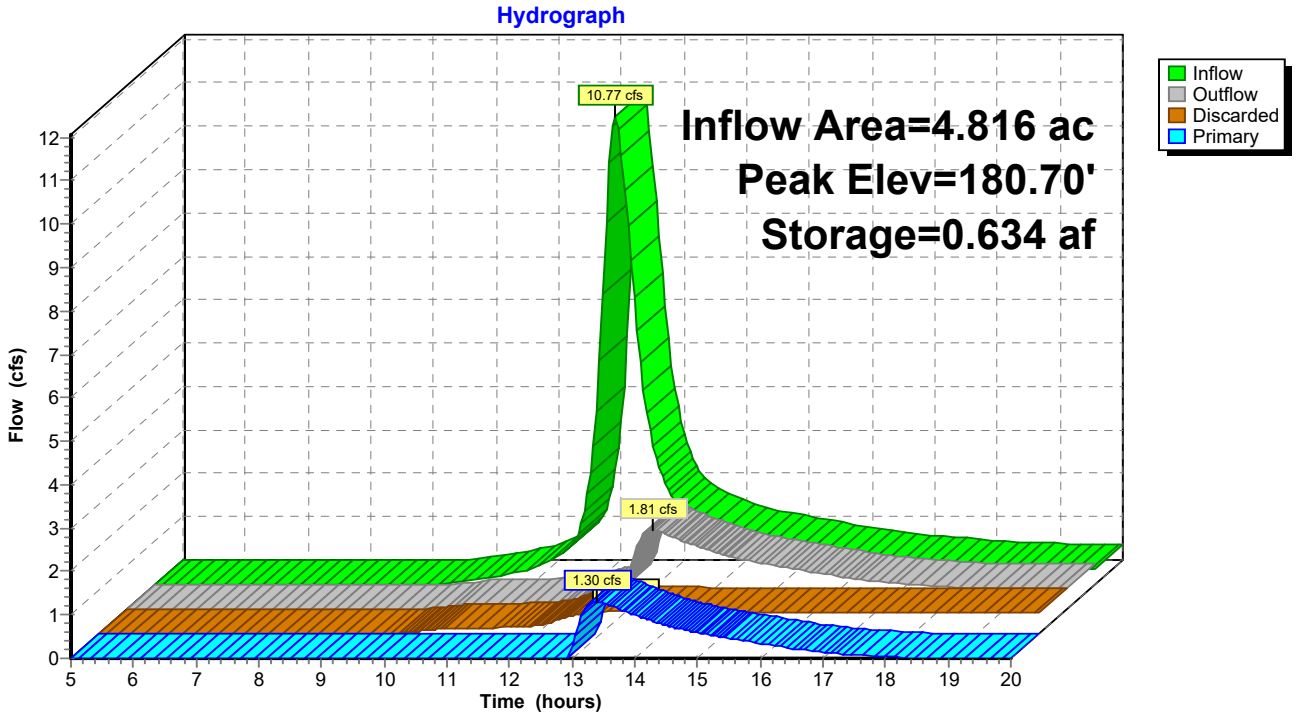
Volume	Invert	Avail.Storage	Storage Description
#1	175.00'	0.903 af	**15.00'W x 131.00'L x 7.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	180.50'	**6.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	175.00'	**2.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 90.00' Phase-In= 0.01'

Discarded OutFlow Max=0.51 cfs @ 13.39 hrs HW=180.70' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.51 cfs)

Primary OutFlow Max=1.28 cfs @ 13.39 hrs HW=180.70' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 1.28 cfs @ 1.08 fps)

Pond 6P: (new Pond)



Summary for Pond 7P: (new Pond)

Inflow Area = 3.573 ac, 0.00% Impervious, Inflow Depth > 2.67" for 50 year event
Inflow = 9.32 cfs @ 12.20 hrs, Volume= 0.795 af
Outflow = 2.28 cfs @ 12.72 hrs, Volume= 0.460 af, Atten= 76%, Lag= 31.6 min
Primary = 2.28 cfs @ 12.72 hrs, Volume= 0.460 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 169.00' Surf.Area= 0.151 ac Storage= 0.250 af
Peak Elev= 171.17' @ 12.72 hrs Surf.Area= 0.213 ac Storage= 0.644 af (0.393 af above start)

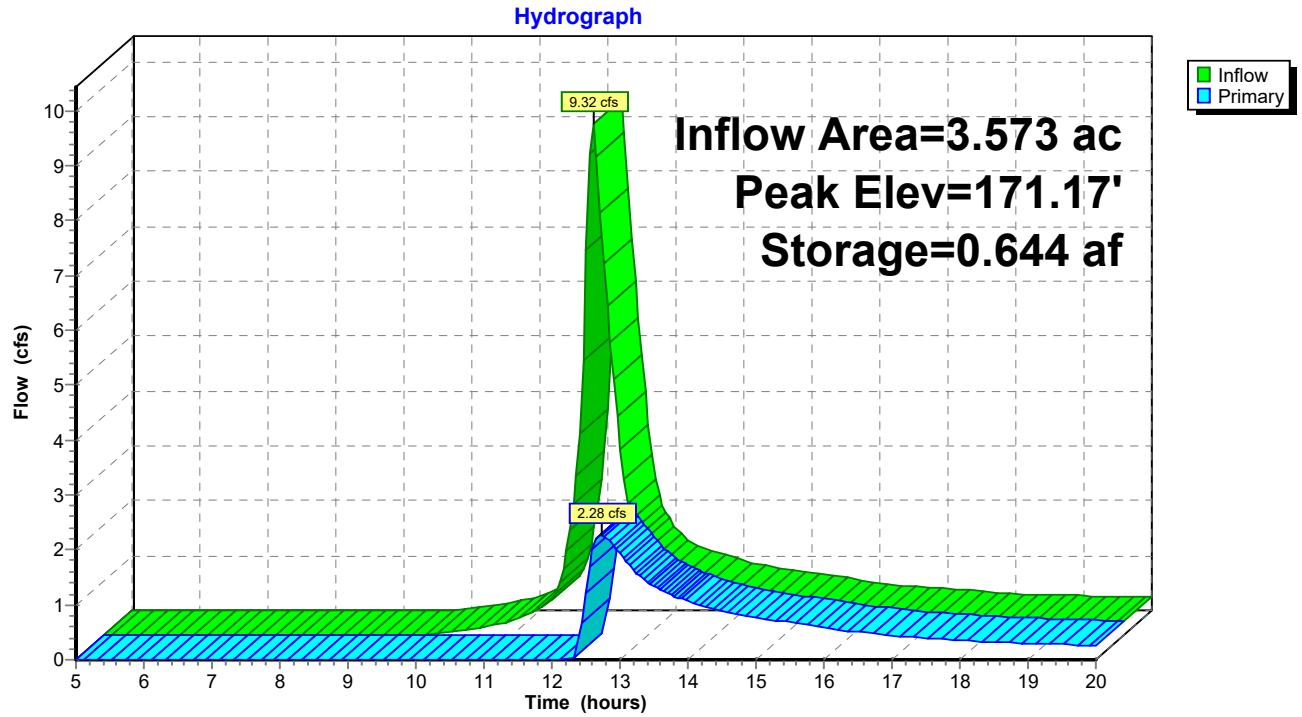
Plug-Flow detention time= 290.5 min calculated for 0.209 af (26% of inflow)
Center-of-Mass det. time= 81.3 min (892.8 - 811.5)

Volume	Invert	Avail.Storage	Storage Description
#1	167.00'	0.717 af	**31.00'W x 141.00'L x 4.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	170.80'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=2.26 cfs @ 12.72 hrs HW=171.17' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 2.26 cfs @ 1.55 fps)

Pond 7P: (new Pond)



Summary for Pond 8P: (new Pond)

Inflow Area = 1.332 ac, 0.00% Impervious, Inflow Depth > 2.37" for 50 year event
Inflow = 2.26 cfs @ 12.43 hrs, Volume= 0.263 af
Outflow = 0.94 cfs @ 12.96 hrs, Volume= 0.150 af, Atten= 58%, Lag= 31.4 min
Primary = 0.94 cfs @ 12.96 hrs, Volume= 0.150 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 165.50' Surf.Area= 0.021 ac Storage= 0.027 af
Peak Elev= 168.71' @ 12.96 hrs Surf.Area= 0.058 ac Storage= 0.150 af (0.123 af above start)

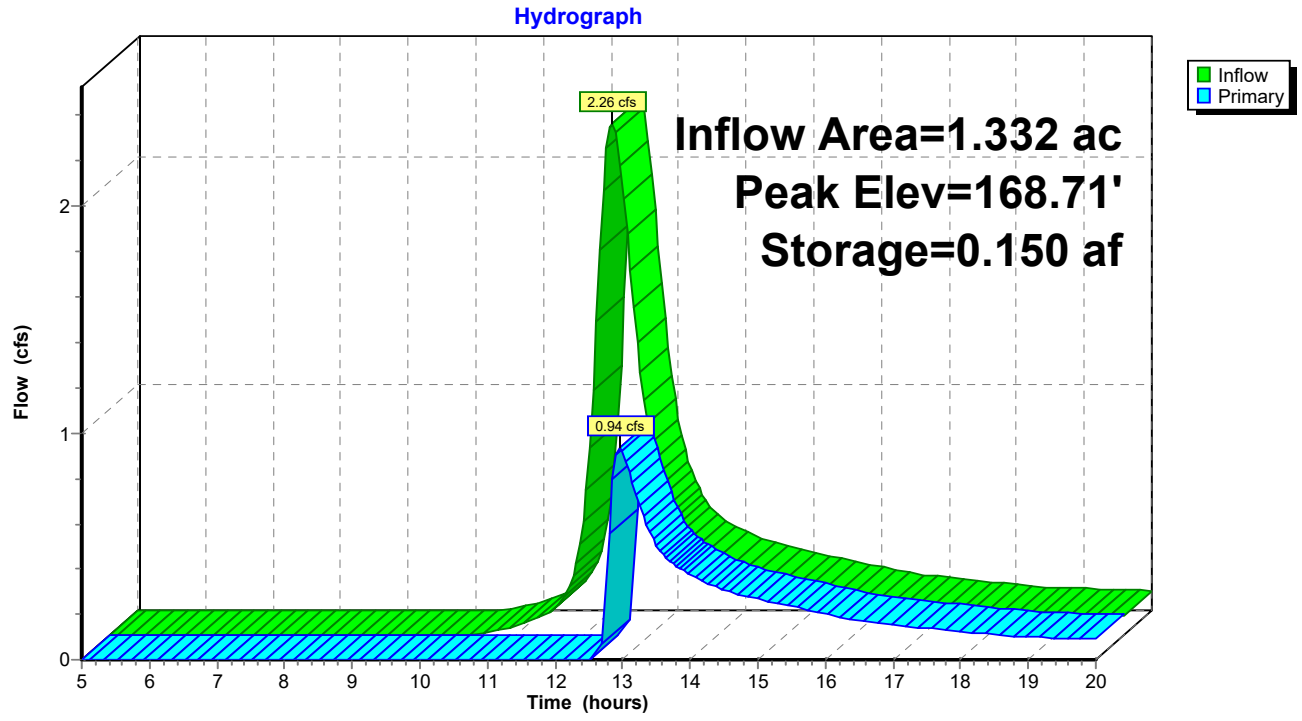
Plug-Flow detention time= 187.9 min calculated for 0.123 af (47% of inflow)
Center-of-Mass det. time= 73.9 min (902.6 - 828.7)

Volume	Invert	Avail.Storage	Storage Description
#1	163.50'	0.237 af	**10.00'W x 30.00'L x 6.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	168.50'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.93 cfs @ 12.96 hrs HW=168.71' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.93 cfs @ 1.12 fps)

Pond 8P: (new Pond)



Summary for Pond 9P: (new Pond)

Inflow Area = 3.608 ac, 0.00% Impervious, Inflow Depth > 3.05" for 50 year event
Inflow = 10.35 cfs @ 12.22 hrs, Volume= 0.918 af
Outflow = 2.12 cfs @ 12.86 hrs, Volume= 0.478 af, Atten= 80%, Lag= 38.2 min
Primary = 2.12 cfs @ 12.86 hrs, Volume= 0.478 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 170.00' Surf.Area= 11,100 sf Storage= 19,450 cf
Peak Elev= 171.75' @ 12.86 hrs Surf.Area= 13,719 sf Storage= 41,121 cf (21,671 cf above start)

Plug-Flow detention time= 530.2 min calculated for 0.031 af (3% of inflow)
Center-of-Mass det. time= 94.2 min (900.2 - 806.0)

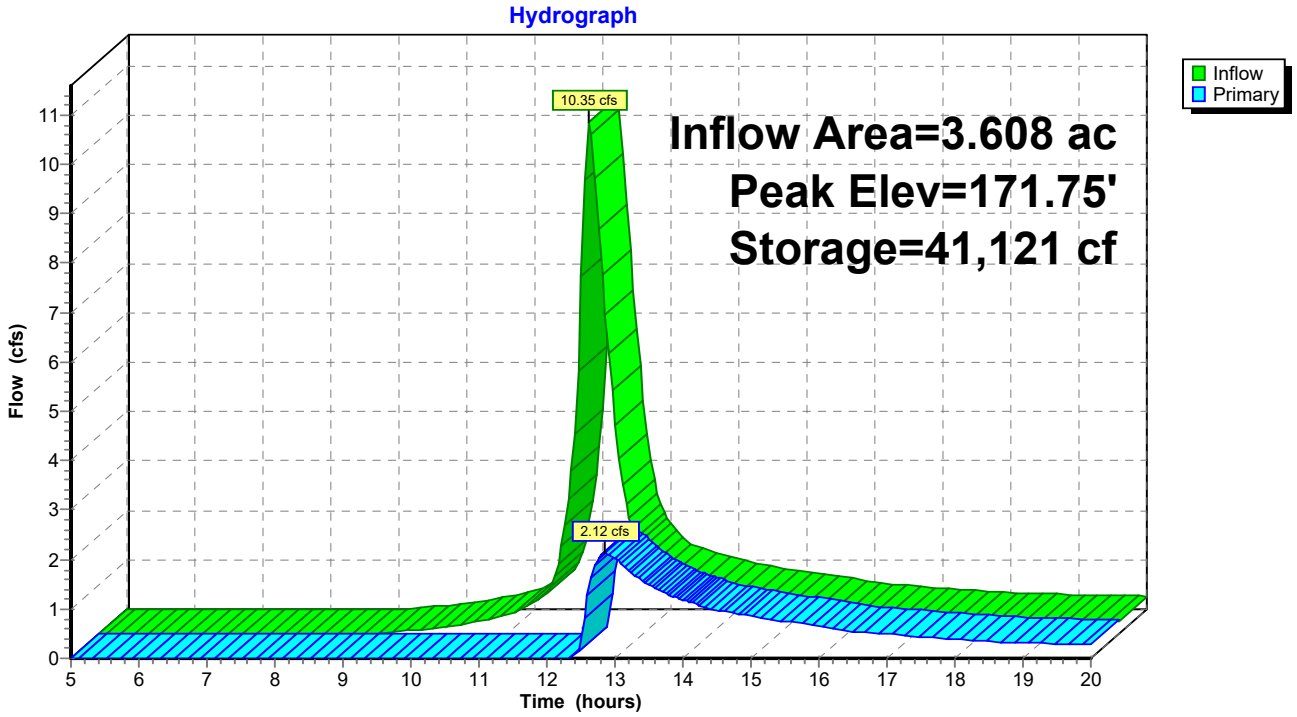
Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	44,650 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	8,400	0	0
169.00	9,700	9,050	9,050
170.00	11,100	10,400	19,450
171.00	12,600	11,850	31,300
172.00	14,100	13,350	44,650

Device	Routing	Invert	Outlet Devices
#1	Primary	171.50'	**7.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=2.11 cfs @ 12.86 hrs HW=171.75' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 2.11 cfs @ 1.23 fps)

Pond 9P: (new Pond)

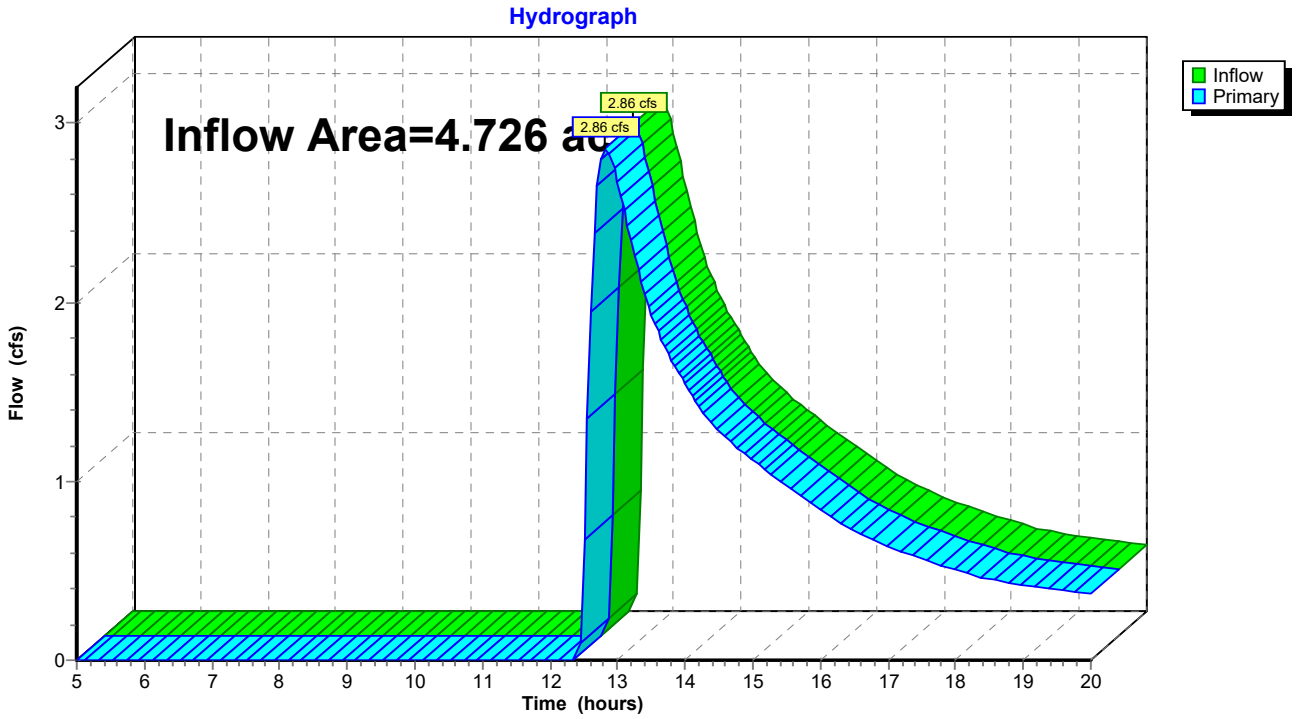


Summary for Link DP1: DP1

Inflow Area = 4.726 ac, 0.00% Impervious, Inflow Depth > 1.60" for 50 year event
Inflow = 2.86 cfs @ 12.82 hrs, Volume= 0.632 af
Primary = 2.86 cfs @ 12.82 hrs, Volume= 0.632 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP1: DP1

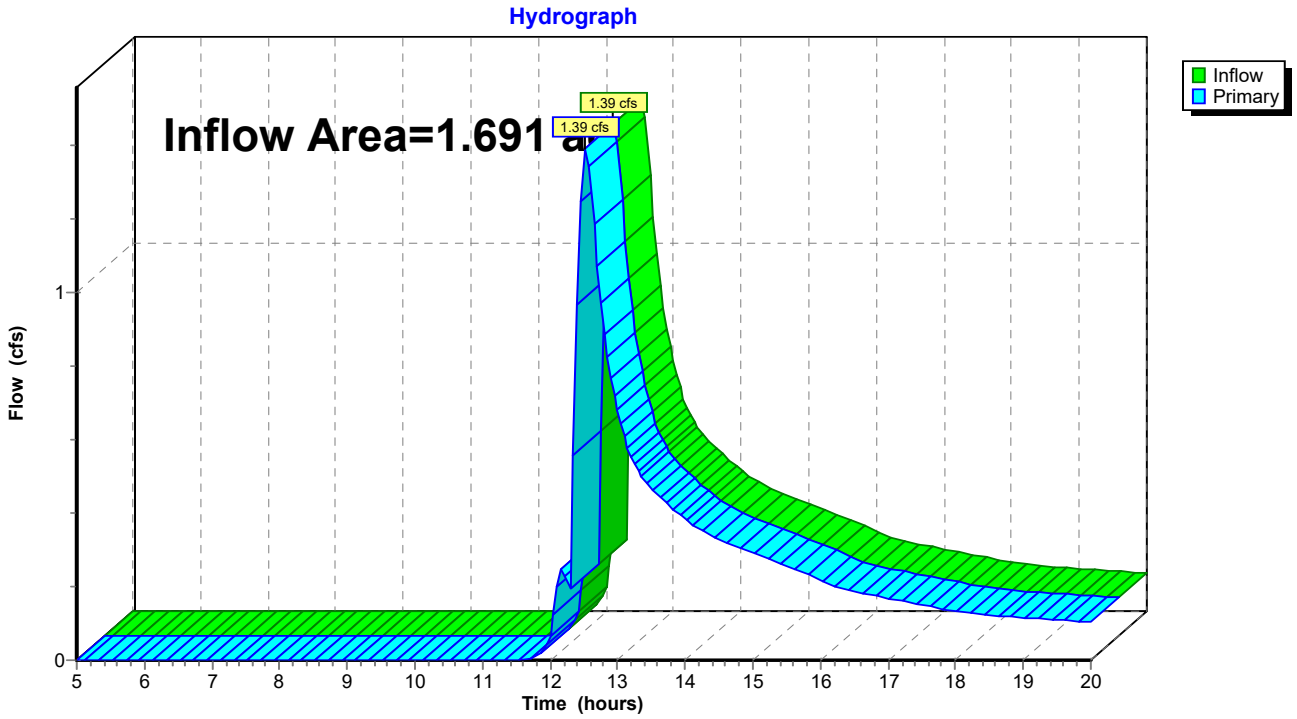


Summary for Link DP2: DP2

Inflow Area = 1.691 ac, 0.00% Impervious, Inflow Depth > 1.41" for 50 year event
Inflow = 1.39 cfs @ 12.53 hrs, Volume= 0.198 af
Primary = 1.39 cfs @ 12.53 hrs, Volume= 0.198 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP2: DP2

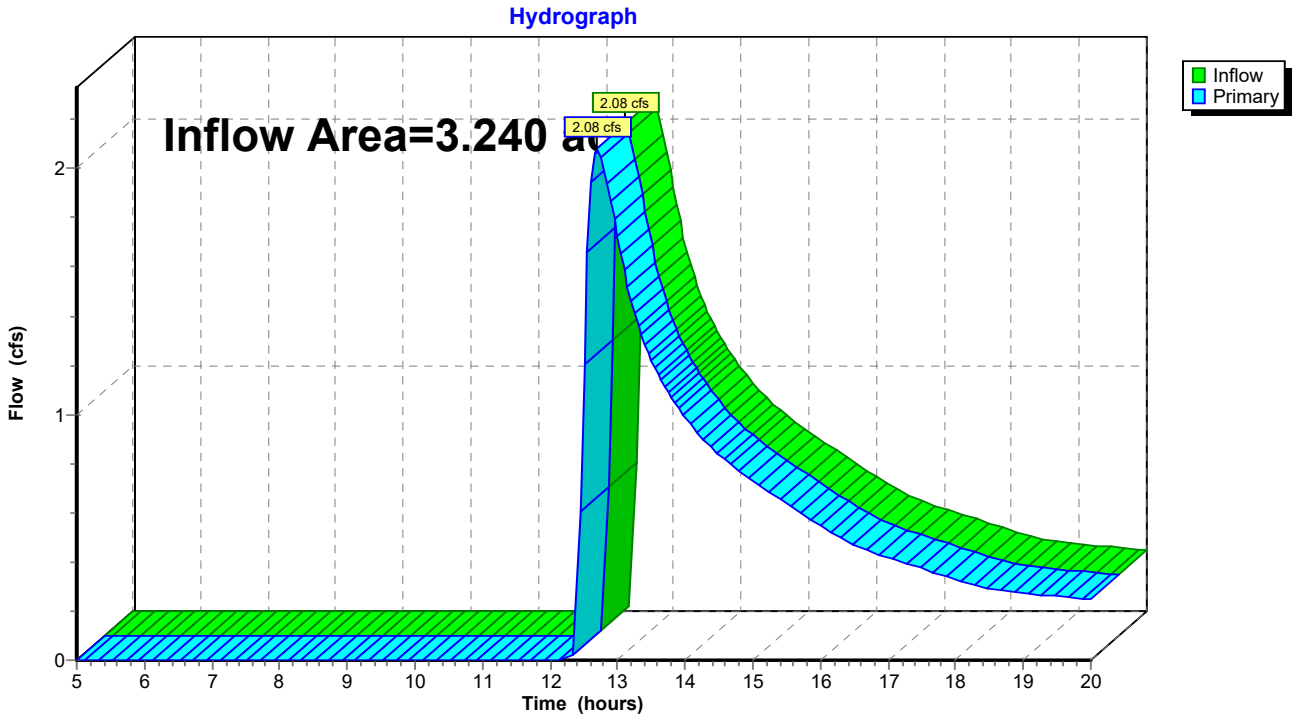


Summary for Link DP3: DP3

Inflow Area = 3.240 ac, 0.00% Impervious, Inflow Depth > 1.58" for 50 year event
Inflow = 2.08 cfs @ 12.70 hrs, Volume= 0.426 af
Primary = 2.08 cfs @ 12.70 hrs, Volume= 0.426 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP3: DP3

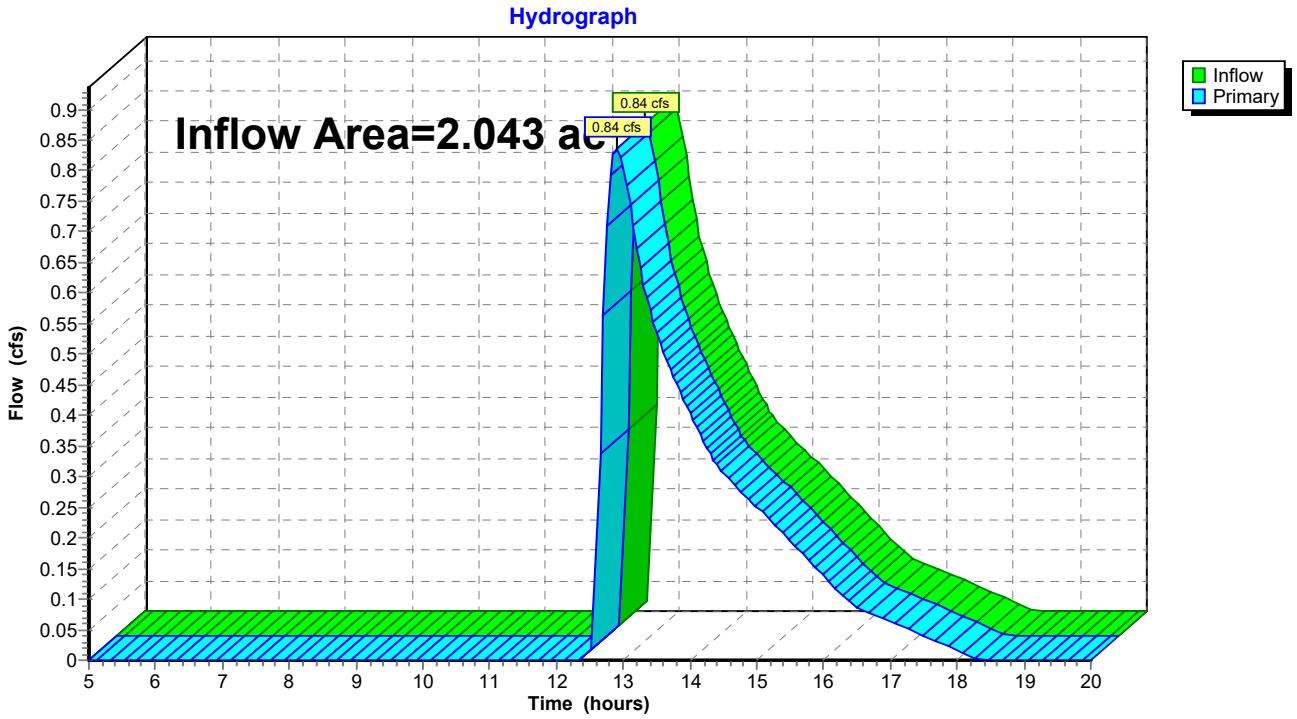


Summary for Link DP4: DP4

Inflow Area = 2.043 ac, 0.00% Impervious, Inflow Depth = 0.71" for 50 year event
Inflow = 0.84 cfs @ 12.90 hrs, Volume= 0.121 af
Primary = 0.84 cfs @ 12.90 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP4: DP4

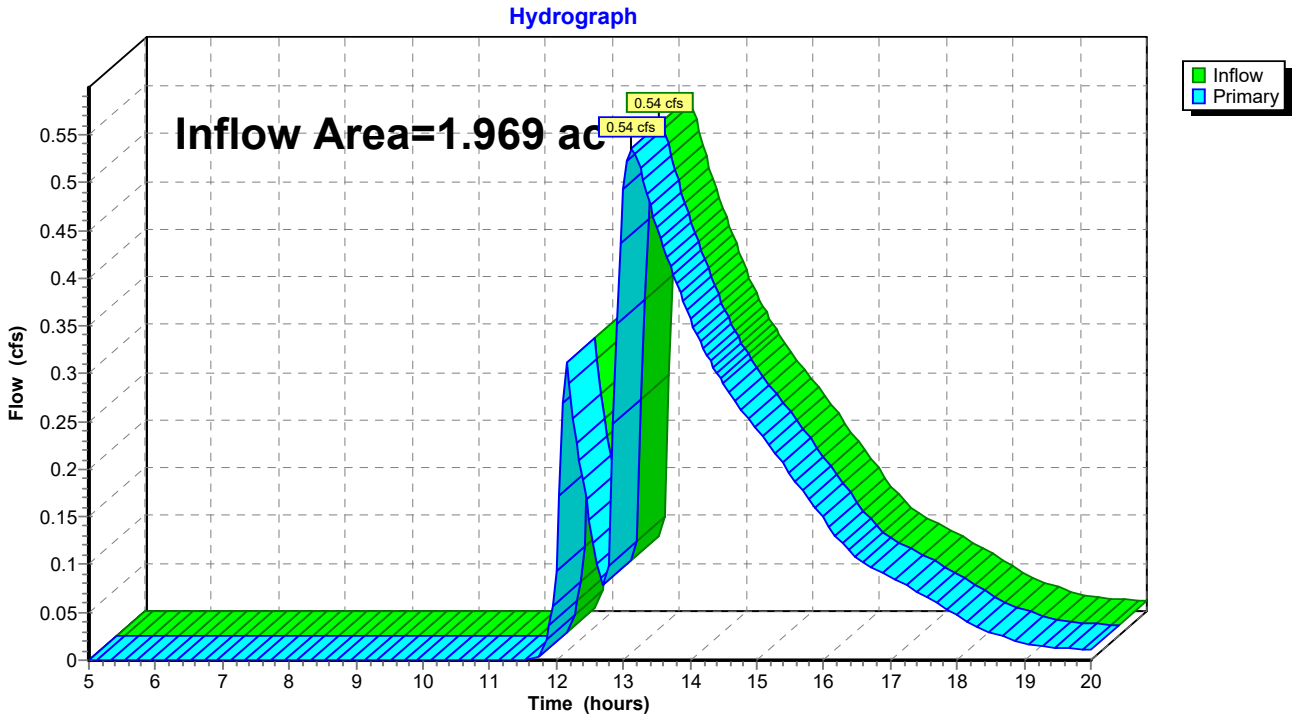


Summary for Link DP5: DP5

Inflow Area = 1.969 ac, 0.00% Impervious, Inflow Depth > 0.70" for 50 year event
Inflow = 0.54 cfs @ 13.12 hrs, Volume= 0.114 af
Primary = 0.54 cfs @ 13.12 hrs, Volume= 0.114 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP5: DP5

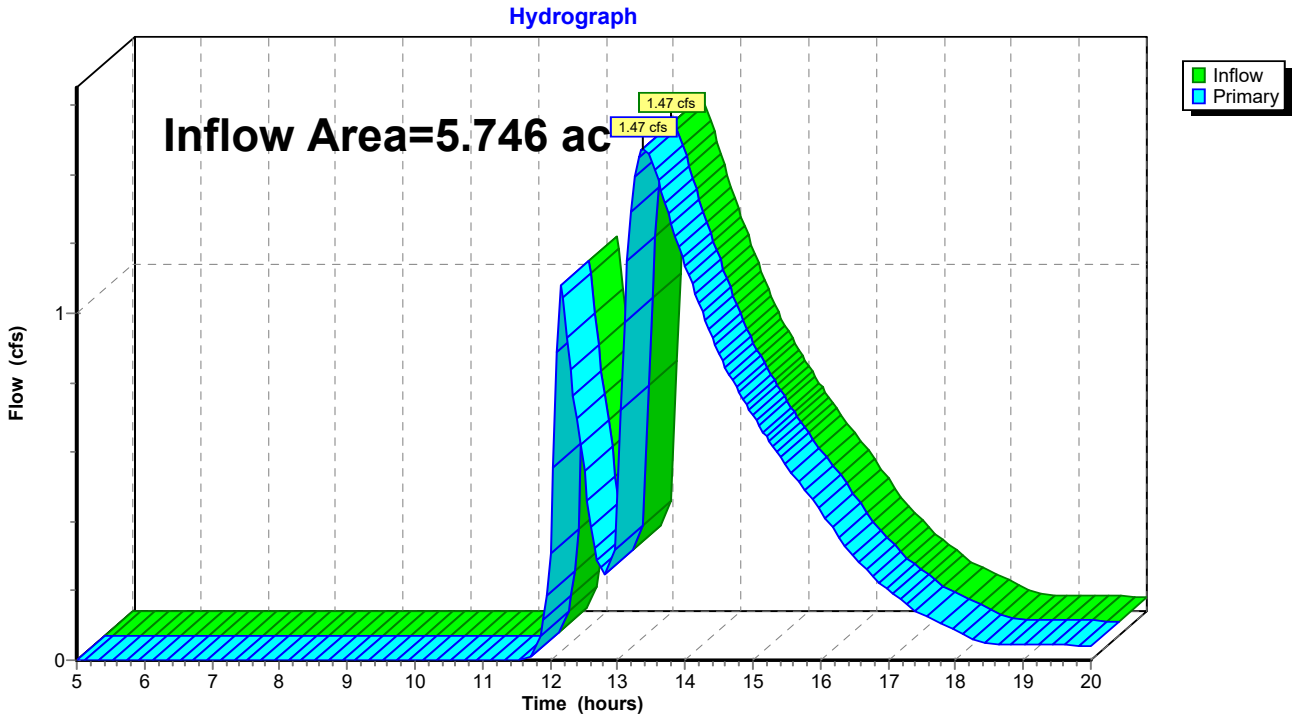


Summary for Link DP6: DP6

Inflow Area = 5.746 ac, 0.00% Impervious, Inflow Depth > 0.66" for 50 year event
Inflow = 1.47 cfs @ 13.38 hrs, Volume= 0.318 af
Primary = 1.47 cfs @ 13.38 hrs, Volume= 0.318 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP6: DP6

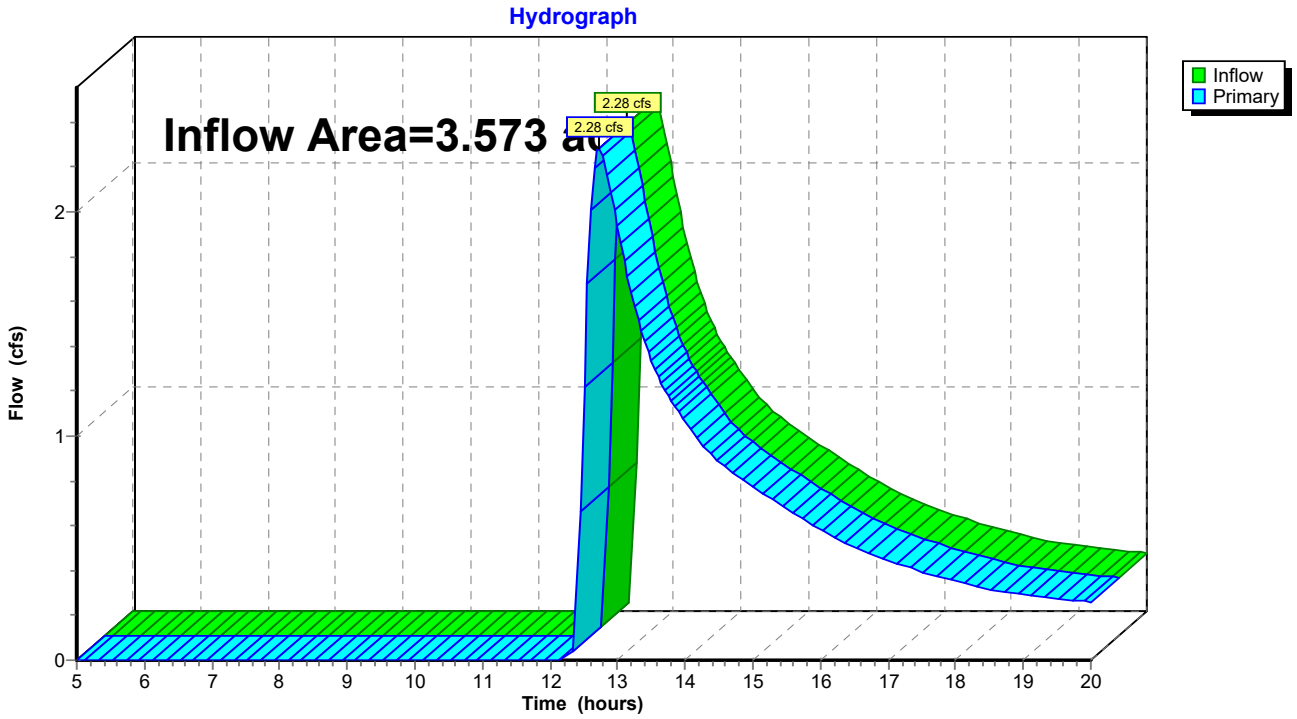


Summary for Link DP7: DP7

Inflow Area = 3.573 ac, 0.00% Impervious, Inflow Depth > 1.54" for 50 year event
Inflow = 2.28 cfs @ 12.72 hrs, Volume= 0.460 af
Primary = 2.28 cfs @ 12.72 hrs, Volume= 0.460 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP7: DP7

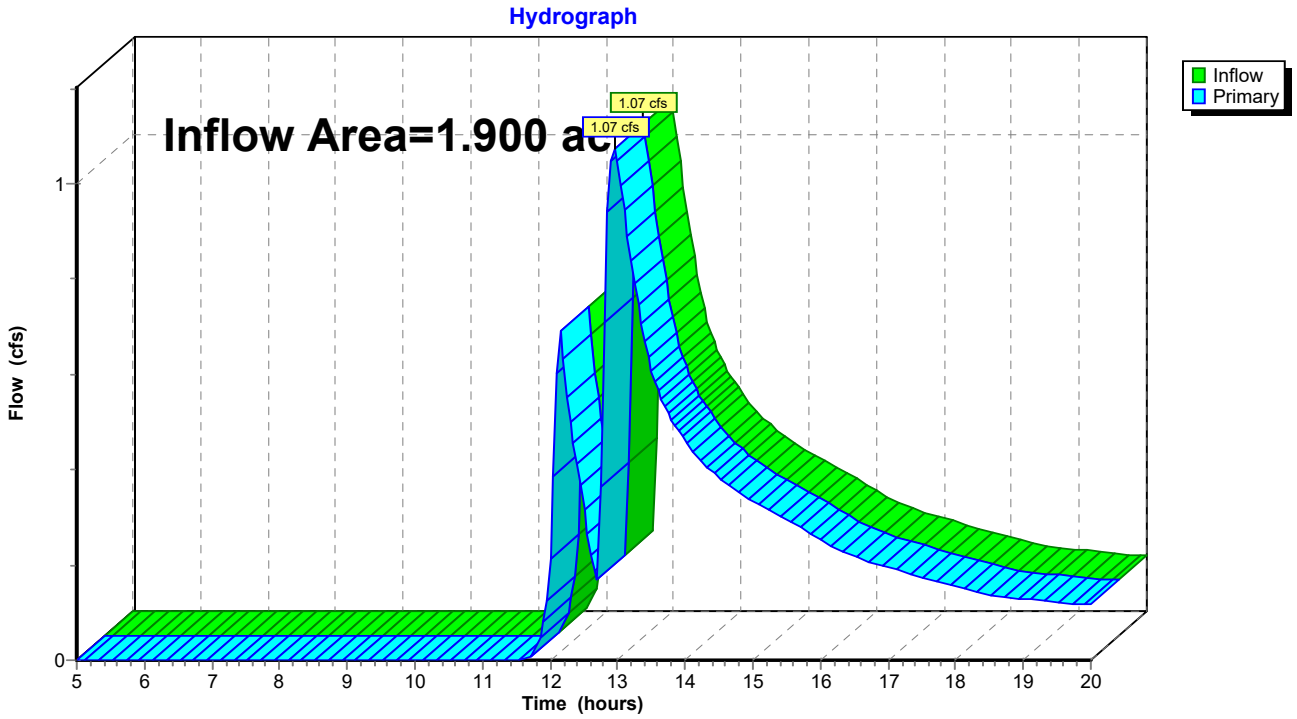


Summary for Link DP8: DP8

Inflow Area = 1.900 ac, 0.00% Impervious, Inflow Depth > 1.33" for 50 year event
Inflow = 1.07 cfs @ 12.95 hrs, Volume= 0.211 af
Primary = 1.07 cfs @ 12.95 hrs, Volume= 0.211 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP8: DP8

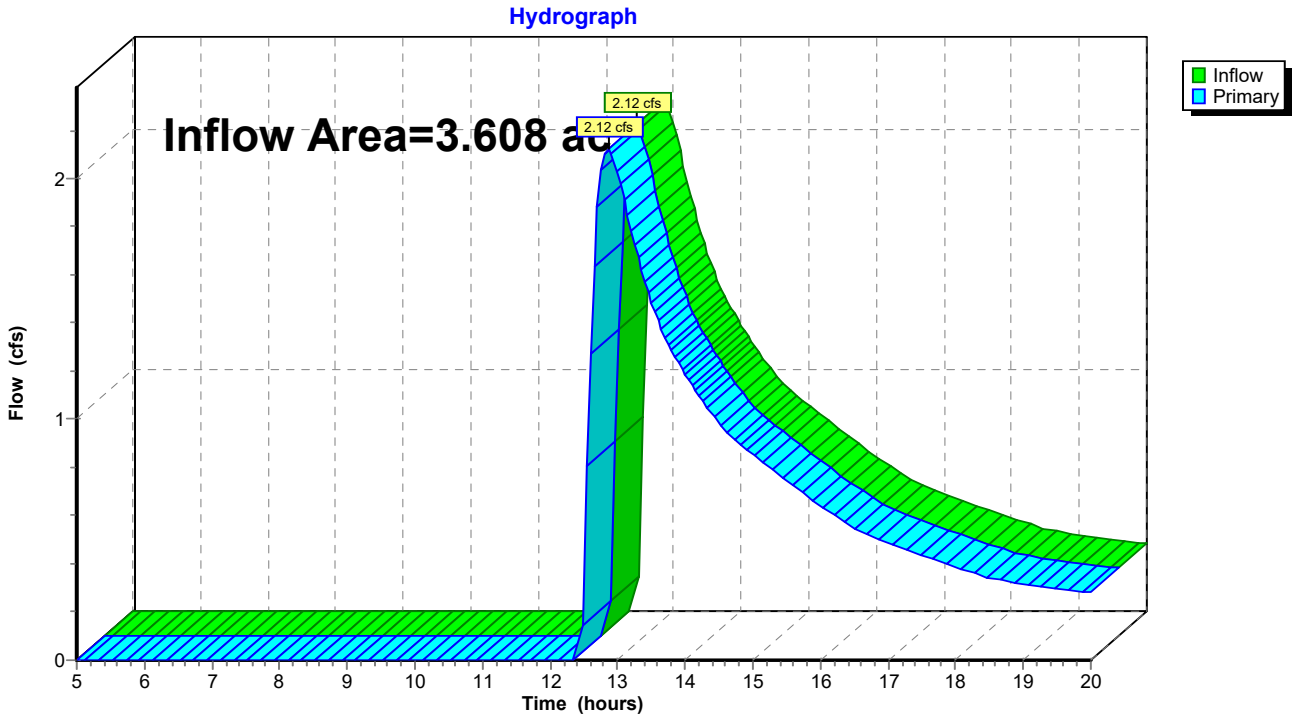


Summary for Link DP9: DP9

Inflow Area = 3.608 ac, 0.00% Impervious, Inflow Depth > 1.59" for 50 year event
Inflow = 2.12 cfs @ 12.86 hrs, Volume= 0.478 af
Primary = 2.12 cfs @ 12.86 hrs, Volume= 0.478 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP9: DP9



100-Year Storm Event – Proposed

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1: Subcat 1 Runoff Area=4.726 ac 0.00% Impervious Runoff Depth>3.68"
Flow Length=410' Tc=14.8 min CN=68 Runoff=16.62 cfs 1.449 af

Subcatchment2: Subcat 2 Runoff Area=1.477 ac 0.00% Impervious Runoff Depth>2.74"
Flow Length=245' Tc=10.5 min CN=59 Runoff=4.30 cfs 0.337 af

Subcatchment2a: Subcat 2a Runoff Area=0.214 ac 0.00% Impervious Runoff Depth>1.67"
Flow Length=70' Tc=10.3 min CN=48 Runoff=0.35 cfs 0.030 af

Subcatchment3: Subcat 3 Runoff Area=3.240 ac 0.00% Impervious Runoff Depth>3.68"
Flow Length=415' Tc=10.4 min CN=68 Runoff=12.87 cfs 0.995 af

Subcatchment4: Subcat 4 Runoff Area=2.043 ac 0.00% Impervious Runoff Depth>3.57"
Flow Length=530' Tc=13.6 min CN=67 Runoff=7.18 cfs 0.608 af

Subcatchment5: Subcat 5 Runoff Area=1.710 ac 0.00% Impervious Runoff Depth>3.05"
Flow Length=510' Tc=14.8 min CN=62 Runoff=4.95 cfs 0.434 af

Subcatchment5a: Subcat 5a Runoff Area=0.259 ac 0.00% Impervious Runoff Depth>1.67"
Flow Length=150' Tc=9.2 min CN=48 Runoff=0.44 cfs 0.036 af

Subcatchment6: Subcat 6 Runoff Area=4.816 ac 0.00% Impervious Runoff Depth>3.45"
Flow Length=840' Tc=24.1 min CN=66 Runoff=13.08 cfs 1.386 af

Subcatchment6a: Subcat 6a Runoff Area=0.930 ac 0.00% Impervious Runoff Depth>1.67"
Tc=10.0 min CN=48 Runoff=1.53 cfs 0.129 af

Subcatchment7: Subcat 7 Runoff Area=3.573 ac 0.00% Impervious Runoff Depth>3.26"
Flow Length=640' Tc=13.6 min CN=64 Runoff=11.41 cfs 0.969 af

Subcatchment8: Subcat 8 Runoff Area=1.332 ac 0.00% Impervious Runoff Depth>2.92"
Flow Length=525' Tc=29.2 min CN=61 Runoff=2.80 cfs 0.325 af

Subcatchment8a: Subcat 8a Runoff Area=0.568 ac 0.00% Impervious Runoff Depth>1.67"
Flow Length=190' Tc=9.0 min CN=48 Runoff=0.96 cfs 0.079 af

Subcatchment9: Subcat 9 Runoff Area=3.608 ac 0.00% Impervious Runoff Depth>3.68"
Flow Length=640' Tc=15.5 min CN=68 Runoff=12.48 cfs 1.106 af

Pond 1P: (new Pond) Peak Elev=172.95' Storage=0.962 af Inflow=16.62 cfs 1.449 af
Outflow=5.67 cfs 0.875 af

Pond 2P: (new Pond) Peak Elev=169.86' Storage=0.196 af Inflow=4.30 cfs 0.337 af
Outflow=2.23 cfs 0.241 af

Pond 3P: (new Pond) Peak Elev=171.06' Storage=0.569 af Inflow=12.87 cfs 0.995 af
Outflow=4.41 cfs 0.593 af

Pond 4P: (new Pond) Peak Elev=170.38' Storage=0.282 af Inflow=7.18 cfs 0.608 af
Discarded=0.21 cfs 0.144 af Primary=2.38 cfs 0.218 af Outflow=2.60 cfs 0.362 af

Pond 5P: (new Pond) Peak Elev=173.29' Storage=0.201 af Inflow=4.95 cfs 0.434 af
Discarded=0.13 cfs 0.088 af Primary=1.55 cfs 0.164 af Outflow=1.68 cfs 0.252 af

Pond 6P: (new Pond) Peak Elev=180.90' Storage=0.672 af Inflow=13.08 cfs 1.386 af
Discarded=0.52 cfs 0.353 af Primary=3.86 cfs 0.440 af Outflow=4.38 cfs 0.793 af

Pond 7P: (new Pond) Peak Elev=171.35' Storage=0.683 af Inflow=11.41 cfs 0.969 af
Outflow=4.33 cfs 0.632 af

Pond 8P: (new Pond) Peak Elev=168.81' Storage=0.156 af Inflow=2.80 cfs 0.325 af
Outflow=1.77 cfs 0.212 af

Pond 9P: (new Pond) Peak Elev=171.89' Storage=43,043 cf Inflow=12.48 cfs 1.106 af
Outflow=4.30 cfs 0.663 af

Link DP1: DP1 Inflow=5.67 cfs 0.875 af
Primary=5.67 cfs 0.875 af

Link DP2: DP2 Inflow=2.43 cfs 0.270 af
Primary=2.43 cfs 0.270 af

Link DP3: DP3 Inflow=4.41 cfs 0.593 af
Primary=4.41 cfs 0.593 af

Link DP4: DP4 Inflow=2.38 cfs 0.218 af
Primary=2.38 cfs 0.218 af

Link DP5: DP5 Inflow=1.66 cfs 0.200 af
Primary=1.66 cfs 0.200 af

Link DP6: DP6 Inflow=4.16 cfs 0.570 af
Primary=4.16 cfs 0.570 af

Link DP7: DP7 Inflow=4.33 cfs 0.632 af
Primary=4.33 cfs 0.632 af

Link DP8: DP8 Inflow=1.97 cfs 0.291 af
Primary=1.97 cfs 0.291 af

Link DP9: DP9 Inflow=4.30 cfs 0.663 af
Primary=4.30 cfs 0.663 af

Total Runoff Area = 28.496 ac Runoff Volume = 7.883 af Average Runoff Depth = 3.32"
100.00% Pervious = 28.496 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

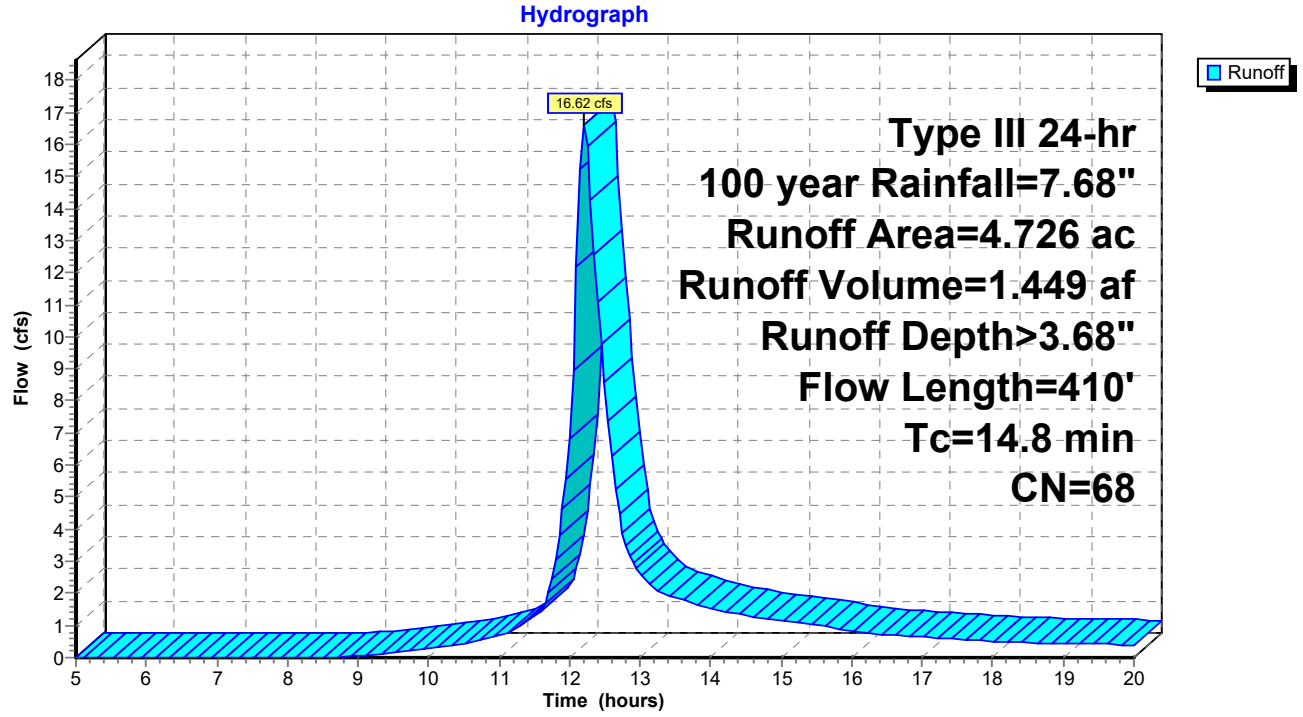
Runoff = 16.62 cfs @ 12.21 hrs, Volume= 1.449 af, Depth> 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
3.416	74	>75% Grass cover, Good, HSG C
1.164	48	Brush, Good, HSG B
0.146	96	Gravel surface, HSG C
4.726	68	Weighted Average
4.726		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.9	155	0.0387	1.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	175	0.0600	1.71		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	30	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.8	410	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2: Subcat 2

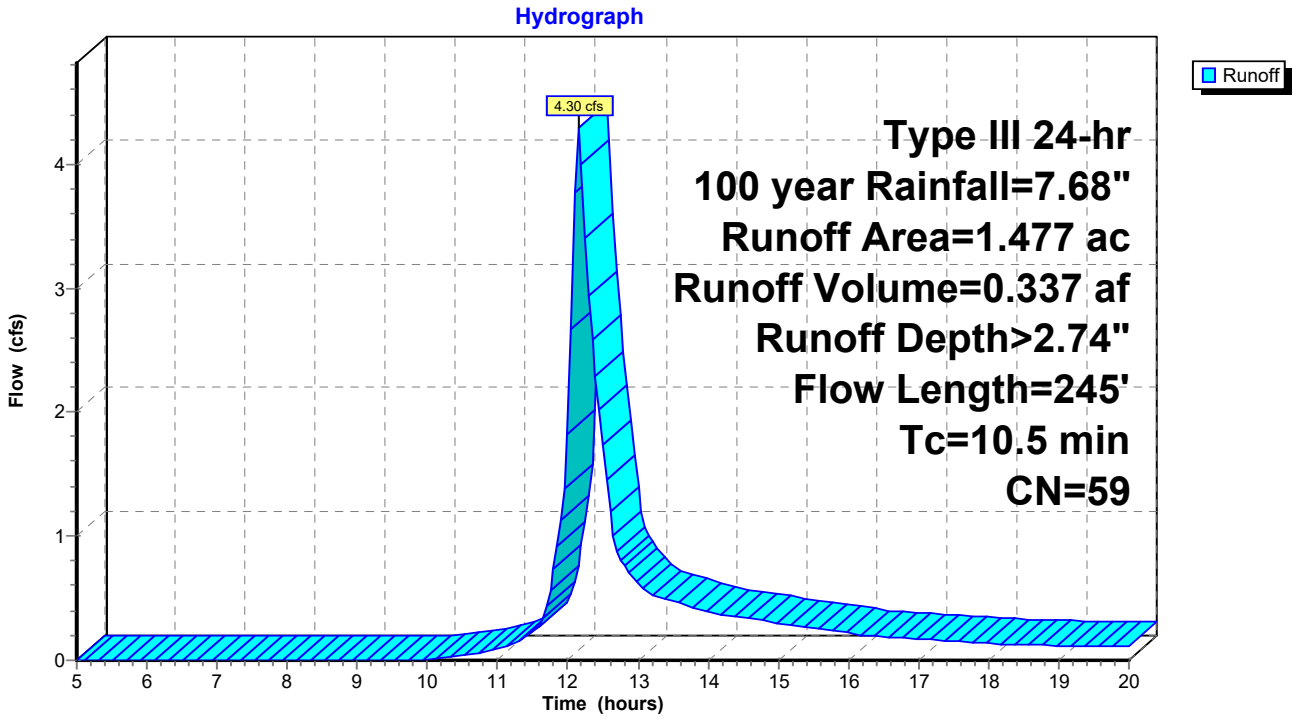
Runoff = 4.30 cfs @ 12.16 hrs, Volume= 0.337 af, Depth> 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
0.625	74	>75% Grass cover, Good, HSG C
0.852	48	Brush, Good, HSG B
1.477	59	Weighted Average
1.477		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.3	120	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	75	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.5	245	Total			

Subcatchment 2: Subcat 2



Summary for Subcatchment 2a: Subcat 2a

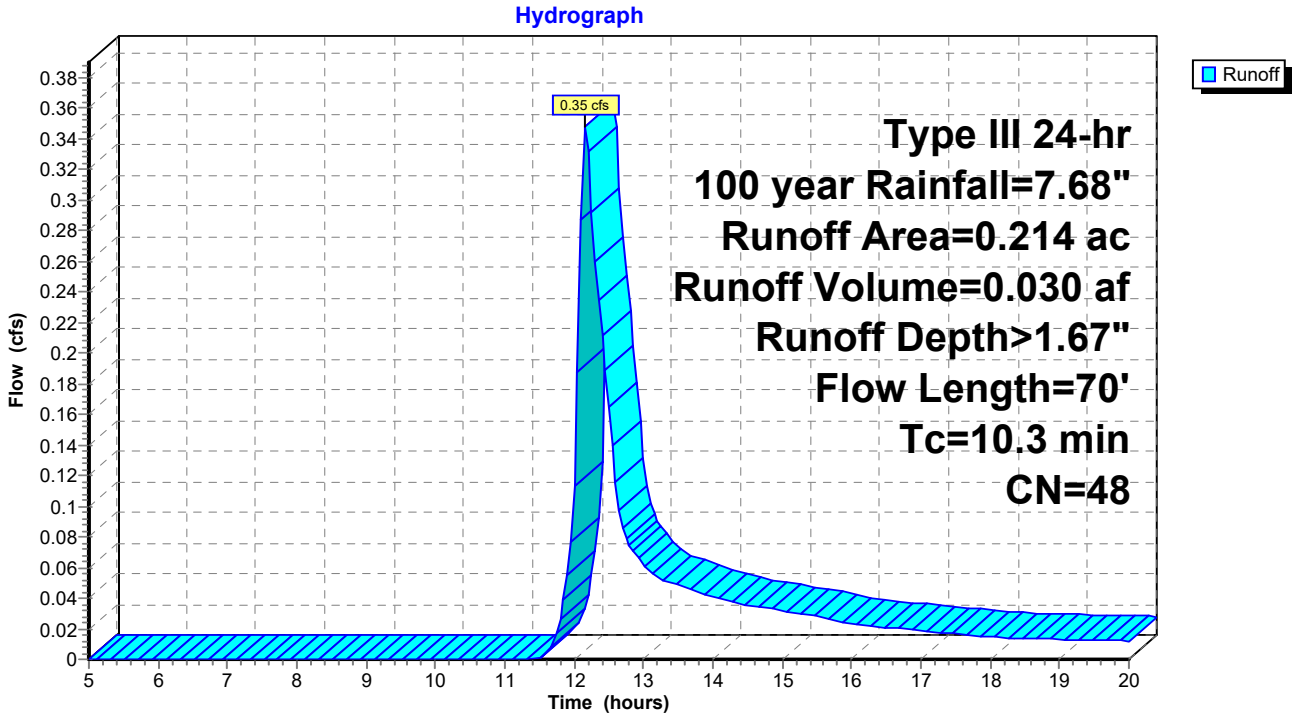
Runoff = 0.35 cfs @ 12.17 hrs, Volume= 0.030 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
0.214	48	Brush, Good, HSG B
0.214		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
0.2	20	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.3	70	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 3: Subcat 3

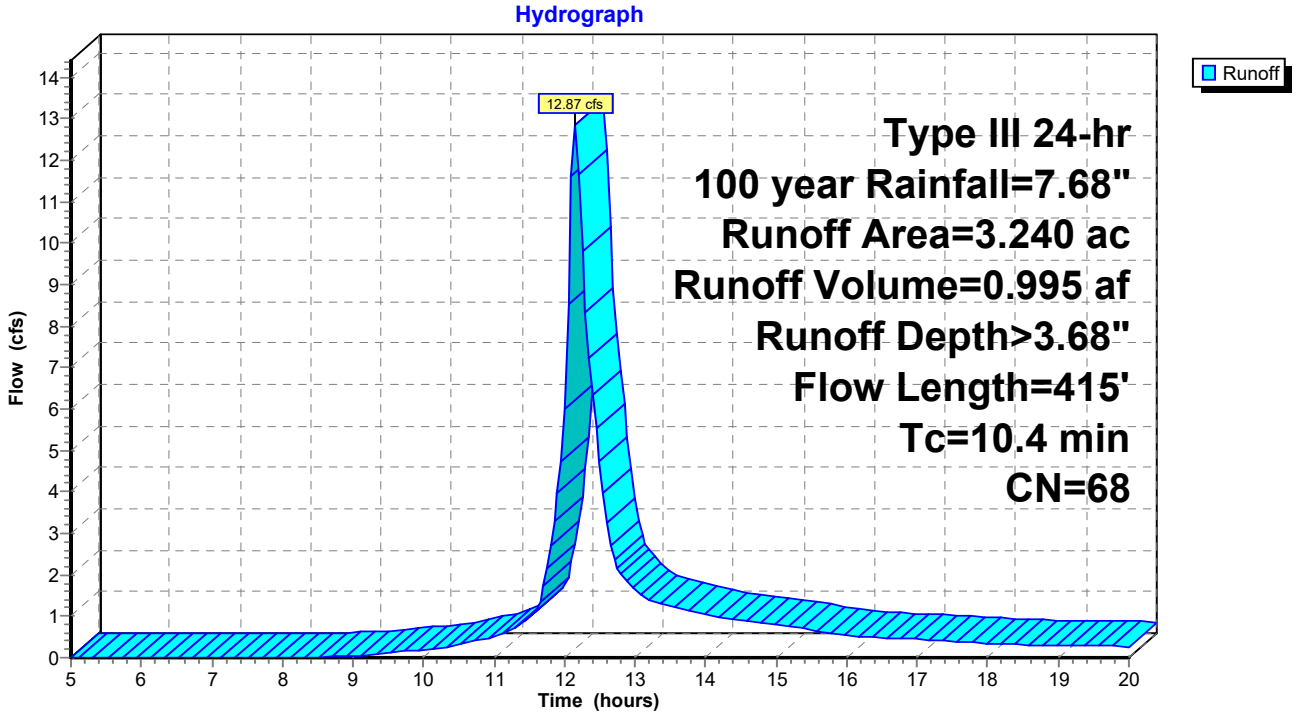
Runoff = 12.87 cfs @ 12.15 hrs, Volume= 0.995 af, Depth> 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
2.286	74	>75% Grass cover, Good, HSG C
0.860	48	Brush, Good, HSG B
0.094	96	Gravel surface, HSG C
3.240	68	Weighted Average
3.240		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	50	0.0300	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.6	140	0.0430	1.45		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	225	0.0666	1.81		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.4	415	Total			

Subcatchment 3: Subcat 3



Summary for Subcatchment 4: Subcat 4

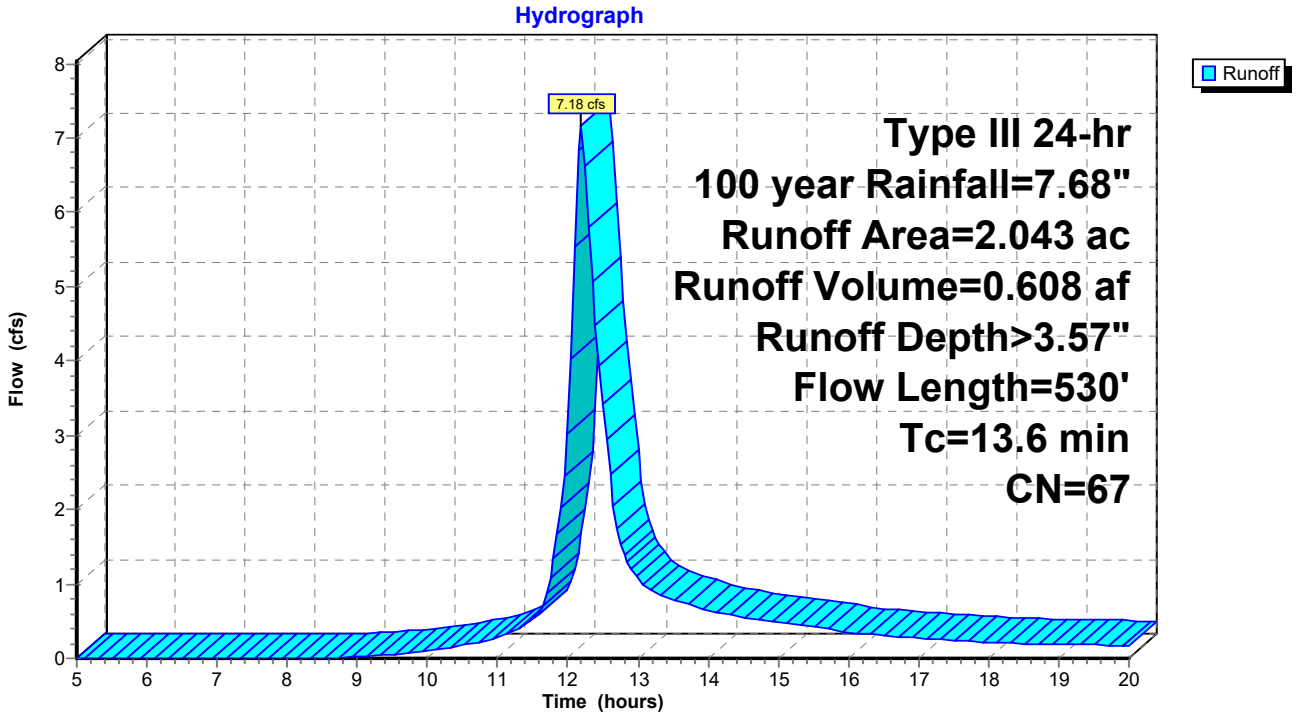
Runoff = 7.18 cfs @ 12.19 hrs, Volume= 0.608 af, Depth> 3.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
1.433	74	>75% Grass cover, Good, HSG C
0.582	48	Brush, Good, HSG B
0.028	96	Gravel surface, HSG C
2.043	67	Weighted Average
2.043		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
2.1	120	0.0183	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.8	295	0.0610	1.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	25	0.0400	3.22		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.7	40	0.0375	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	530	Total			

Subcatchment 4: Subcat 4



Summary for Subcatchment 5: Subcat 5

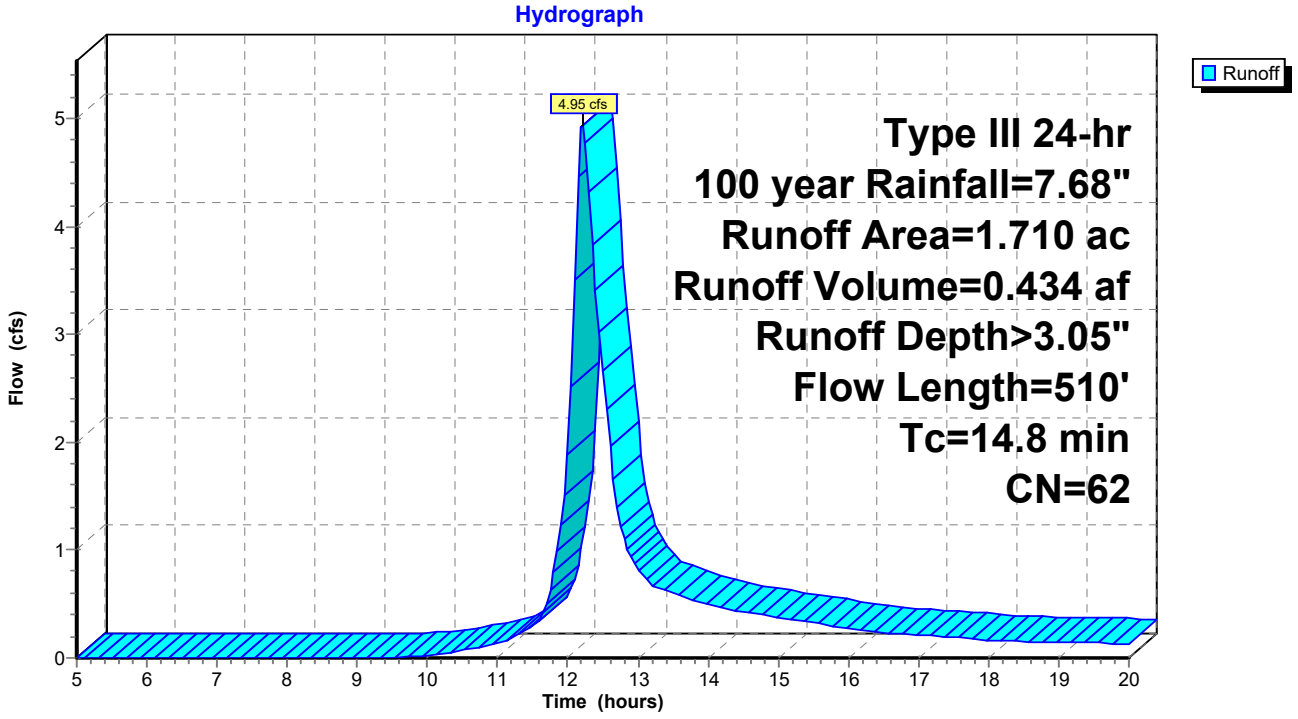
Runoff = 4.95 cfs @ 12.21 hrs, Volume= 0.434 af, Depth> 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
0.922	74	>75% Grass cover, Good, HSG C
0.788	48	Brush, Good, HSG B
1.710	62	Weighted Average
1.710		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.9	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
3.8	215	0.0186	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	150	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	95	0.0470	1.08		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.8	510	Total			

Subcatchment 5: Subcat 5



Summary for Subcatchment 5a: Subcat 5a

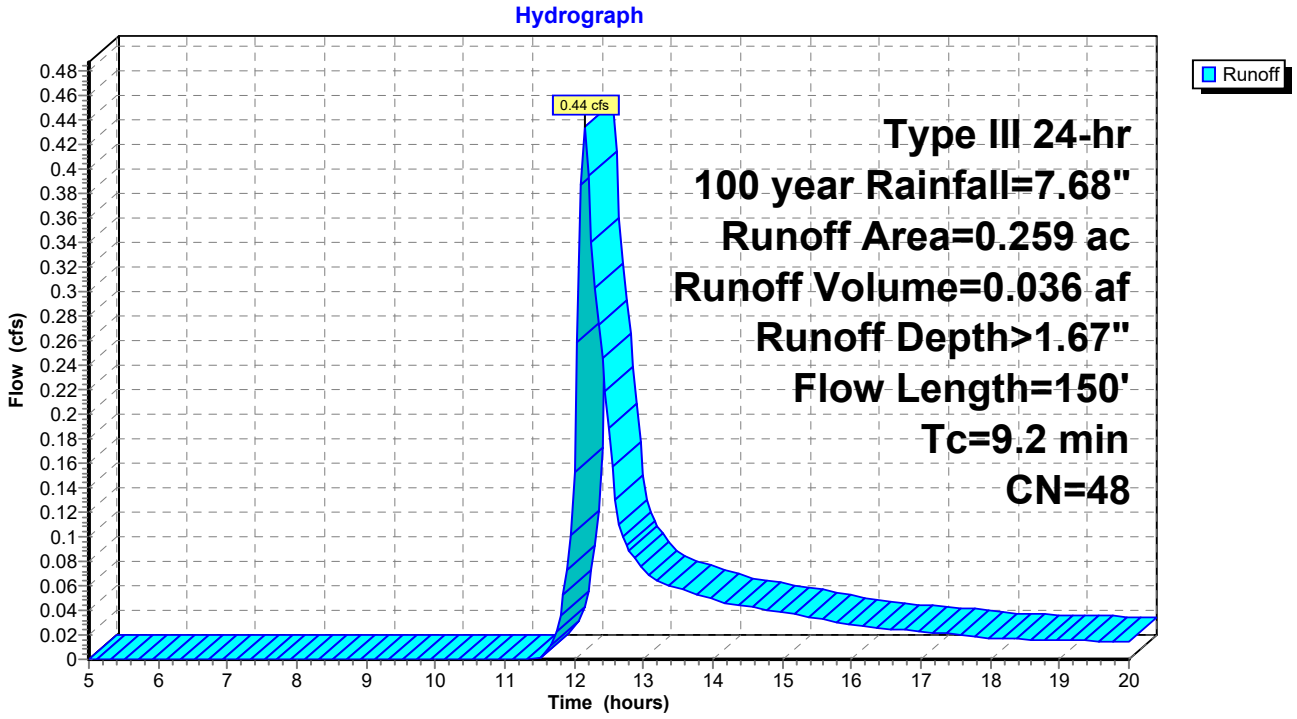
Runoff = 0.44 cfs @ 12.15 hrs, Volume= 0.036 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
0.259	48	Brush, Good, HSG B
0.259		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
1.5	100	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.2	150	Total			

Subcatchment 5a: Subcat 5a



Summary for Subcatchment 6: Subcat 6

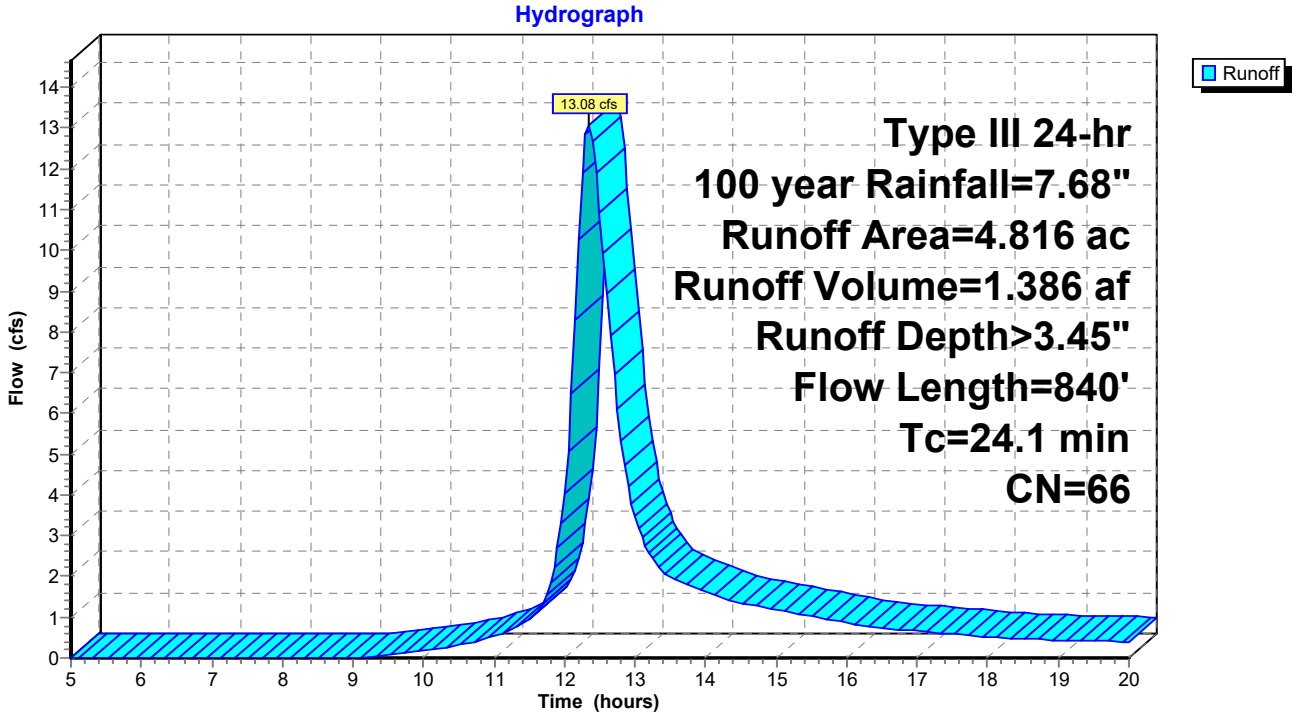
Runoff = 13.08 cfs @ 12.34 hrs, Volume= 1.386 af, Depth> 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
3.416	74	>75% Grass cover, Good, HSG C
1.400	48	Brush, Good, HSG B
4.816	66	Weighted Average
4.816		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0800	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
2.9	100	0.0130	0.57		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
12.0	505	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	185	0.0375	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	840	Total			

Subcatchment 6: Subcat 6



Summary for Subcatchment 6a: Subcat 6a

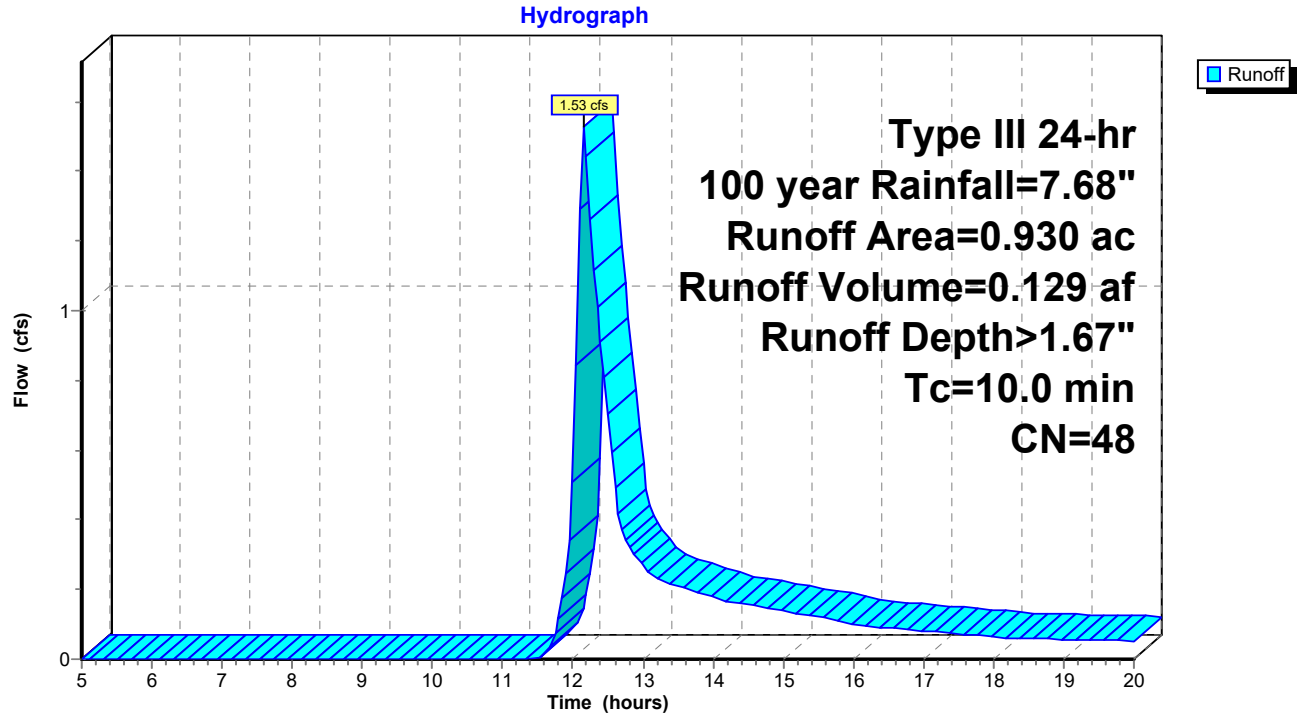
Runoff = 1.53 cfs @ 12.16 hrs, Volume= 0.129 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
0.930	48	Brush, Good, HSG B
0.930		100.00% Pervious Area

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

Subcatchment 6a: Subcat 6a



Summary for Subcatchment 7: Subcat 7

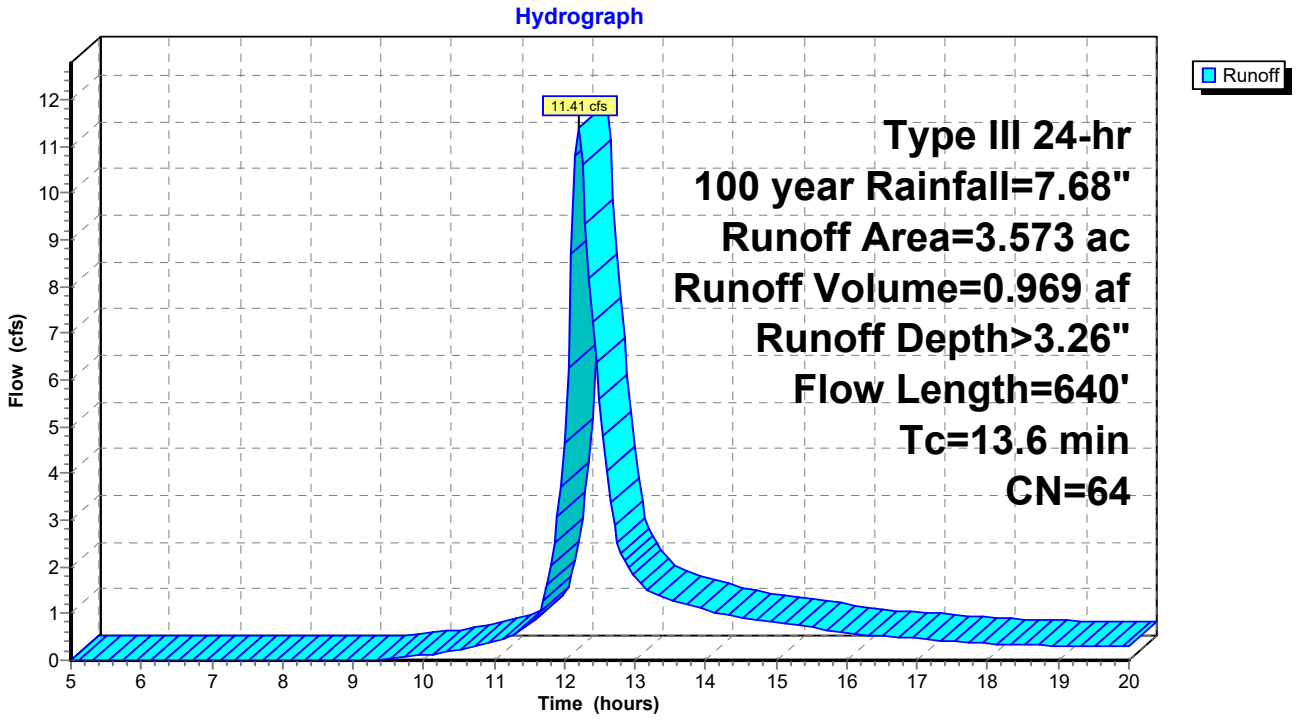
Runoff = 11.41 cfs @ 12.20 hrs, Volume= 0.969 af, Depth> 3.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
2.142	74	>75% Grass cover, Good, HSG C
1.431	48	Brush, Good, HSG B
3.573	64	Weighted Average
3.573		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1000	0.20		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
2.0	240	0.0812	1.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.4	350	0.0128	0.79		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.6	640	Total			

Subcatchment 7: Subcat 7



Summary for Subcatchment 8: Subcat 8

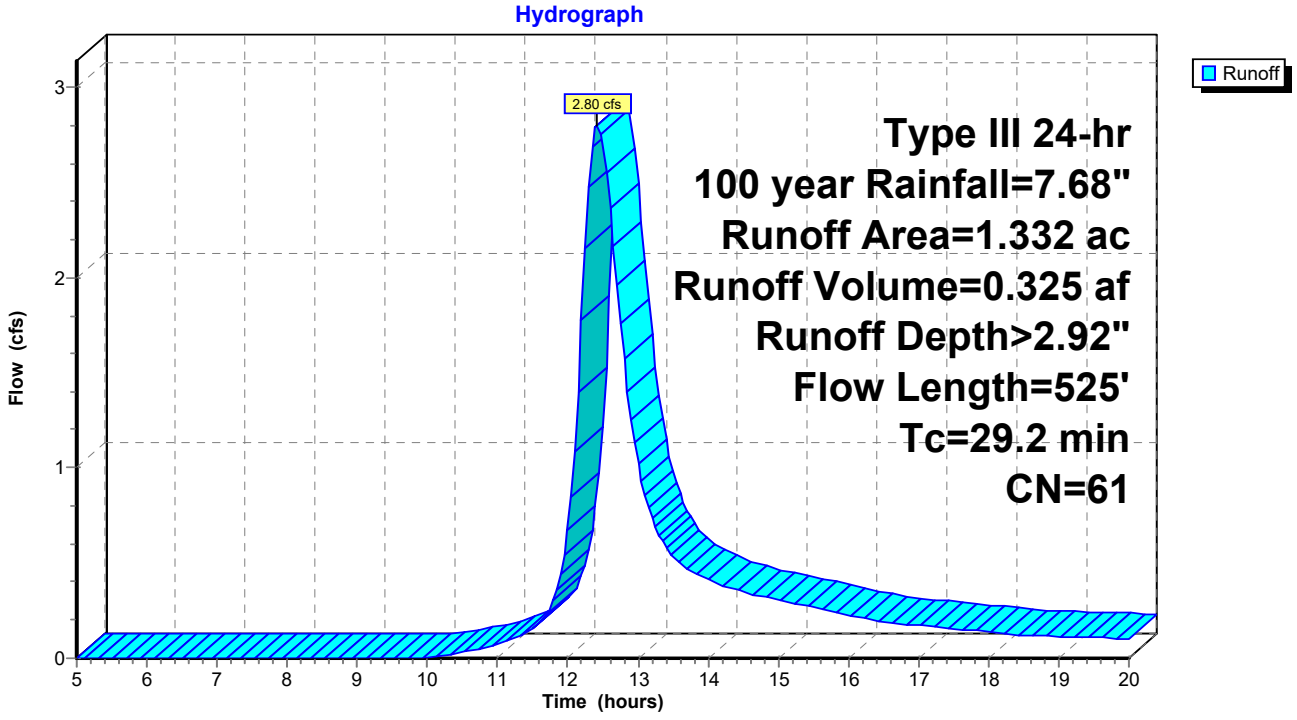
Runoff = 2.80 cfs @ 12.43 hrs, Volume= 0.325 af, Depth> 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
0.652	74	>75% Grass cover, Good, HSG C
0.680	48	Brush, Good, HSG B
1.332	61	Weighted Average
1.332		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.1	50	0.0100	0.05		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 3.42"
13.1	475	0.0147	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
29.2	525	Total			

Subcatchment 8: Subcat 8



Summary for Subcatchment 8a: Subcat 8a

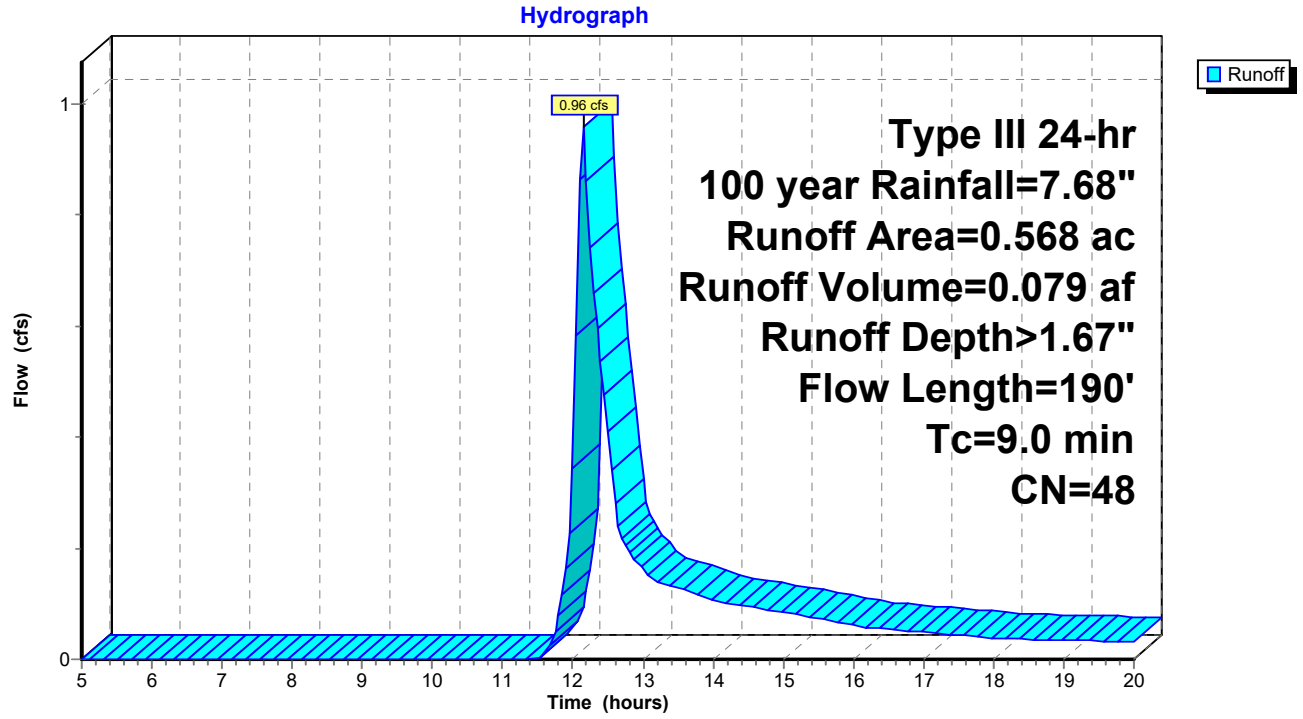
Runoff = 0.96 cfs @ 12.15 hrs, Volume= 0.079 af, Depth> 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
0.568	48	Brush, Good, HSG B
0.568		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.42"
1.3	140	0.1220	1.75		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.0	190	Total			

Subcatchment 8a: Subcat 8a



Summary for Subcatchment 9: Subcat 9

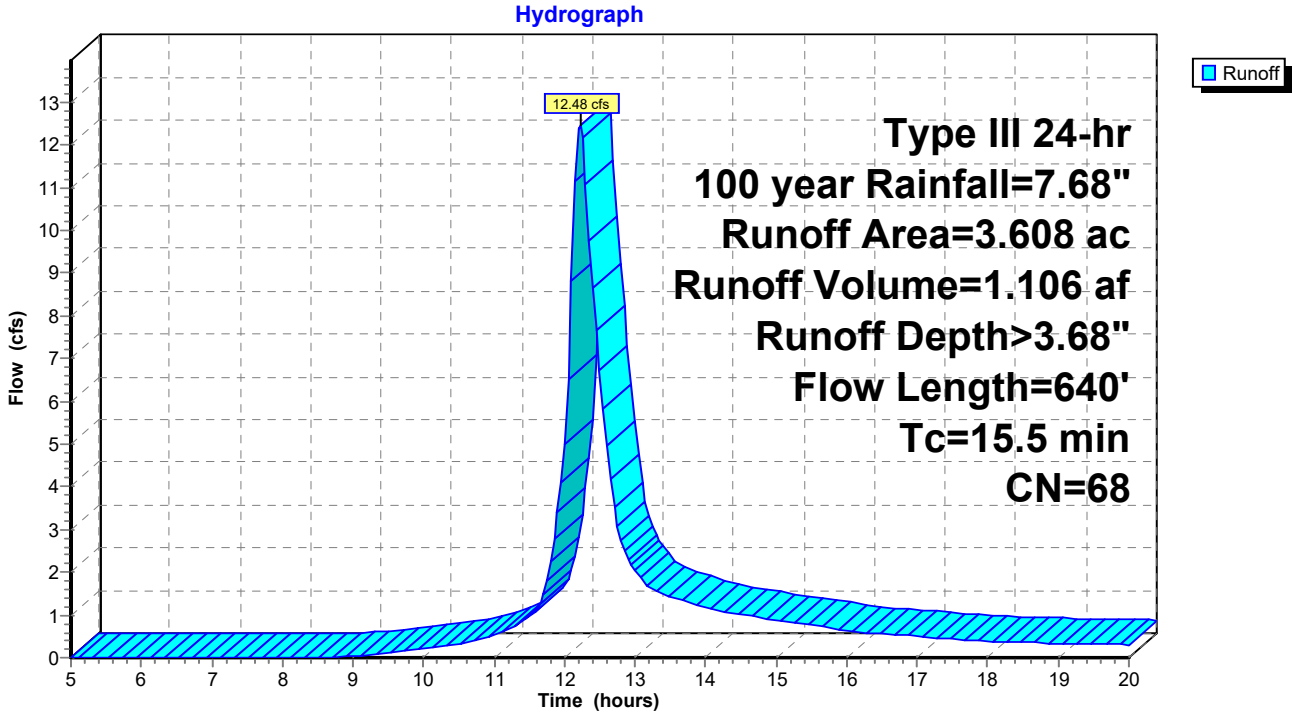
Runoff = 12.48 cfs @ 12.22 hrs, Volume= 1.106 af, Depth> 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100 year Rainfall=7.68"

Area (ac)	CN	Description
2.512	74	>75% Grass cover, Good, HSG C
0.924	48	Brush, Good, HSG B
0.172	96	Gravel surface, HSG C
3.608	68	Weighted Average
3.608		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	50	0.0360	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.42"
1.8	215	0.0850	2.04		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.4	375	0.0147	0.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.5	640	Total			

Subcatchment 9: Subcat 9



Summary for Pond 1P: (new Pond)

Inflow Area = 4.726 ac, 0.00% Impervious, Inflow Depth > 3.68" for 100 year event
Inflow = 16.62 cfs @ 12.21 hrs, Volume= 1.449 af
Outflow = 5.67 cfs @ 12.63 hrs, Volume= 0.875 af, Atten= 66%, Lag= 25.4 min
Primary = 5.67 cfs @ 12.63 hrs, Volume= 0.875 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 169.50' Surf.Area= 0.154 ac Storage= 0.255 af
Peak Elev= 172.95' @ 12.63 hrs Surf.Area= 0.259 ac Storage= 0.962 af (0.707 af above start)

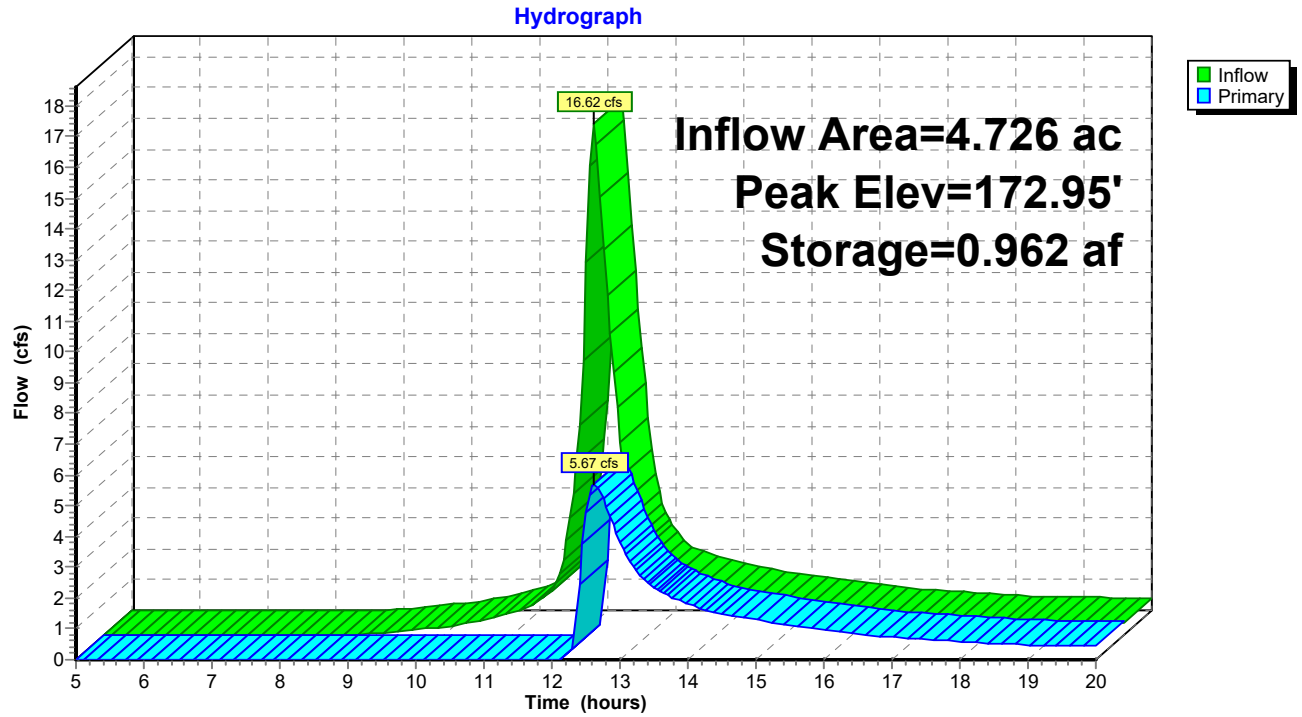
Plug-Flow detention time= 207.9 min calculated for 0.617 af (43% of inflow)
Center-of-Mass det. time= 74.5 min (875.8 - 801.3)

Volume	Invert	Avail.Storage	Storage Description
#1	167.50'	1.251 af	**31.00'W x 144.00'L x 6.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	172.30'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=5.65 cfs @ 12.63 hrs HW=172.95' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 5.65 cfs @ 2.16 fps)

Pond 1P: (new Pond)



Summary for Pond 2P: (new Pond)

Inflow Area = 1.477 ac, 0.00% Impervious, Inflow Depth > 2.74" for 100 year event
Inflow = 4.30 cfs @ 12.16 hrs, Volume= 0.337 af
Outflow = 2.23 cfs @ 12.42 hrs, Volume= 0.241 af, Atten= 48%, Lag= 15.6 min
Primary = 2.23 cfs @ 12.42 hrs, Volume= 0.241 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 168.00' Surf.Area= 0.051 ac Storage= 0.074 af
Peak Elev= 169.86' @ 12.42 hrs Surf.Area= 0.080 ac Storage= 0.196 af (0.121 af above start)

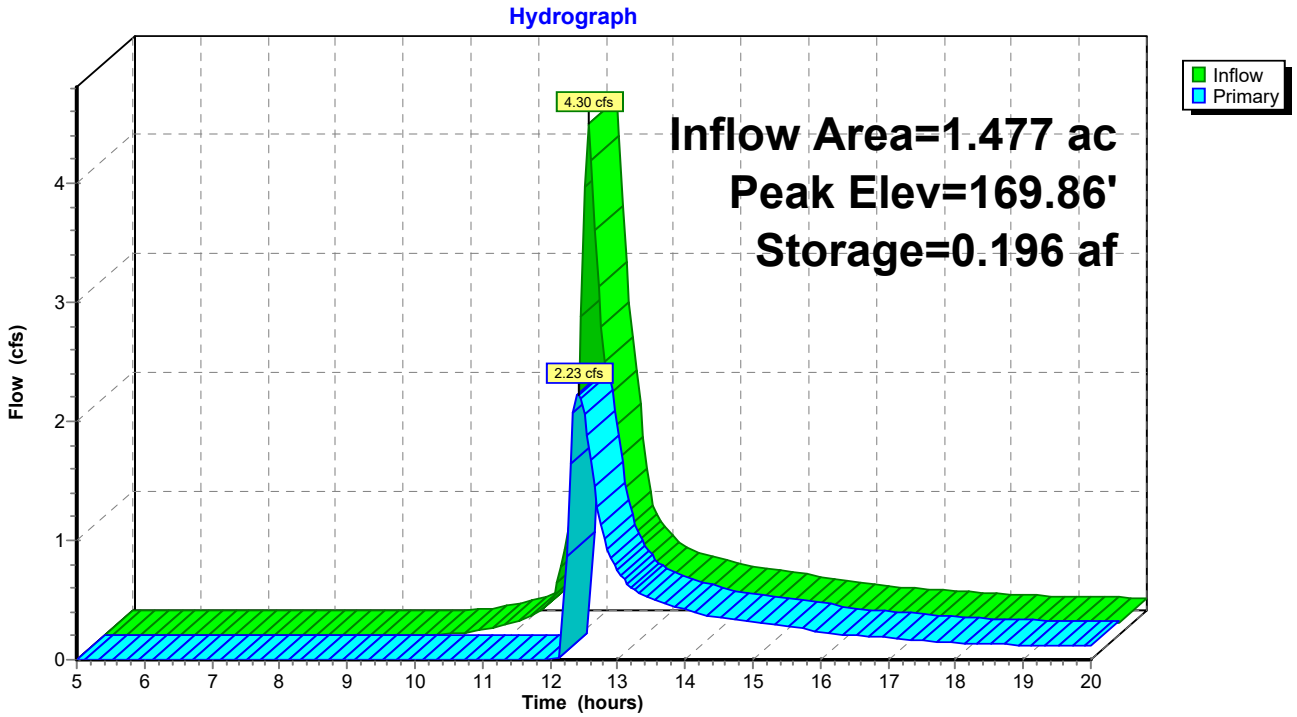
Plug-Flow detention time= 184.3 min calculated for 0.166 af (49% of inflow)
Center-of-Mass det. time= 47.1 min (860.2 - 813.2)

Volume	Invert	Avail.Storage	Storage Description
#1	166.00'	0.250 af	**17.00'W x 64.00'L x 4.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	169.50'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=2.20 cfs @ 12.42 hrs HW=169.86' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 2.20 cfs @ 1.53 fps)

Pond 2P: (new Pond)



Summary for Pond 3P: (new Pond)

Inflow Area = 3.240 ac, 0.00% Impervious, Inflow Depth > 3.68" for 100 year event
Inflow = 12.87 cfs @ 12.15 hrs, Volume= 0.995 af
Outflow = 4.41 cfs @ 12.52 hrs, Volume= 0.593 af, Atten= 66%, Lag= 22.4 min
Primary = 4.41 cfs @ 12.52 hrs, Volume= 0.593 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 167.00' Surf.Area= 0.067 ac Storage= 0.091 af
Peak Elev= 171.06' @ 12.52 hrs Surf.Area= 0.173 ac Storage= 0.569 af (0.478 af above start)

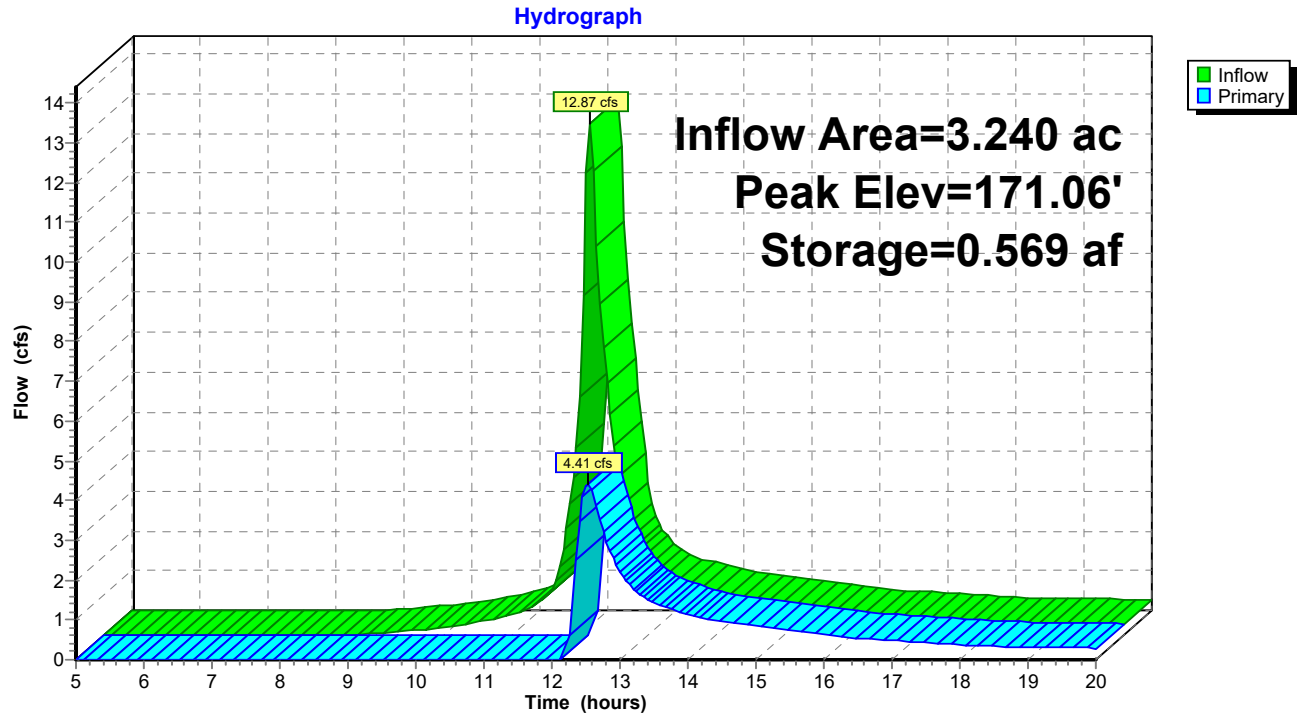
Plug-Flow detention time= 177.0 min calculated for 0.503 af (51% of inflow)
Center-of-Mass det. time= 72.3 min (870.1 - 797.8)

Volume	Invert	Avail.Storage	Storage Description
#1	165.00'	0.649 af	**8.00'W x 134.00'L x 6.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	170.50'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=4.37 cfs @ 12.52 hrs HW=171.05' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 4.37 cfs @ 1.98 fps)

Pond 3P: (new Pond)



Summary for Pond 4P: (new Pond)

Inflow Area = 2.043 ac, 0.00% Impervious, Inflow Depth > 3.57" for 100 year event
Inflow = 7.18 cfs @ 12.19 hrs, Volume= 0.608 af
Outflow = 2.60 cfs @ 12.59 hrs, Volume= 0.362 af, Atten= 64%, Lag= 23.9 min
Discarded = 0.21 cfs @ 12.59 hrs, Volume= 0.144 af
Primary = 2.38 cfs @ 12.59 hrs, Volume= 0.218 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 170.38' @ 12.59 hrs Surf.Area= 0.097 ac Storage= 0.282 af

Plug-Flow detention time= 144.4 min calculated for 0.361 af (59% of inflow)
Center-of-Mass det. time= 68.7 min (870.7 - 802.0)

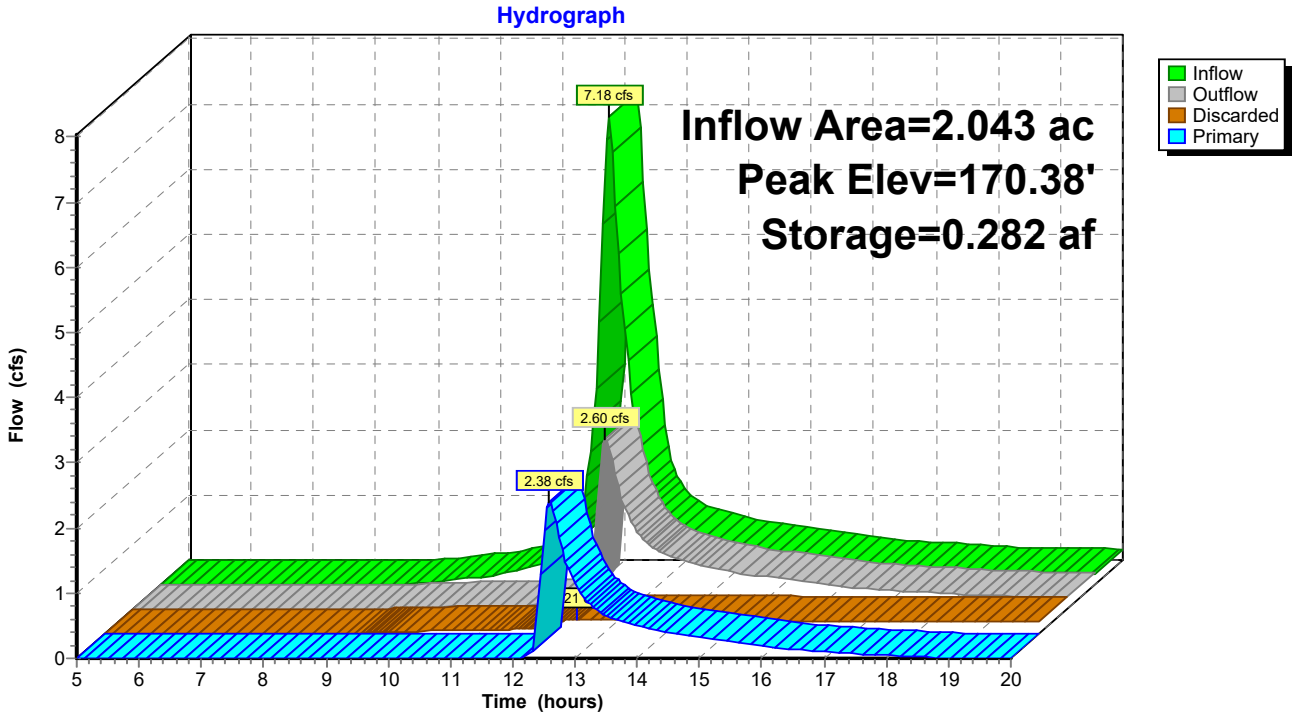
Volume	Invert	Avail.Storage	Storage Description
#1	165.00'	0.346 af	**11.00'W x 65.00'L x 6.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	170.00'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	165.00'	**2.200 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.21 cfs @ 12.59 hrs HW=170.38' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.21 cfs)

Primary OutFlow Max=2.36 cfs @ 12.59 hrs HW=170.38' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 2.36 cfs @ 1.57 fps)

Pond 4P: (new Pond)



Summary for Pond 5P: (new Pond)

Inflow Area = 1.710 ac, 0.00% Impervious, Inflow Depth > 3.05" for 100 year event
Inflow = 4.95 cfs @ 12.21 hrs, Volume= 0.434 af
Outflow = 1.68 cfs @ 12.65 hrs, Volume= 0.252 af, Atten= 66%, Lag= 26.4 min
Discarded = 0.13 cfs @ 12.65 hrs, Volume= 0.088 af
Primary = 1.55 cfs @ 12.65 hrs, Volume= 0.164 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 173.29' @ 12.65 hrs Surf.Area= 0.071 ac Storage= 0.201 af

Plug-Flow detention time= 149.2 min calculated for 0.251 af (58% of inflow)
Center-of-Mass det. time= 70.8 min (882.1 - 811.4)

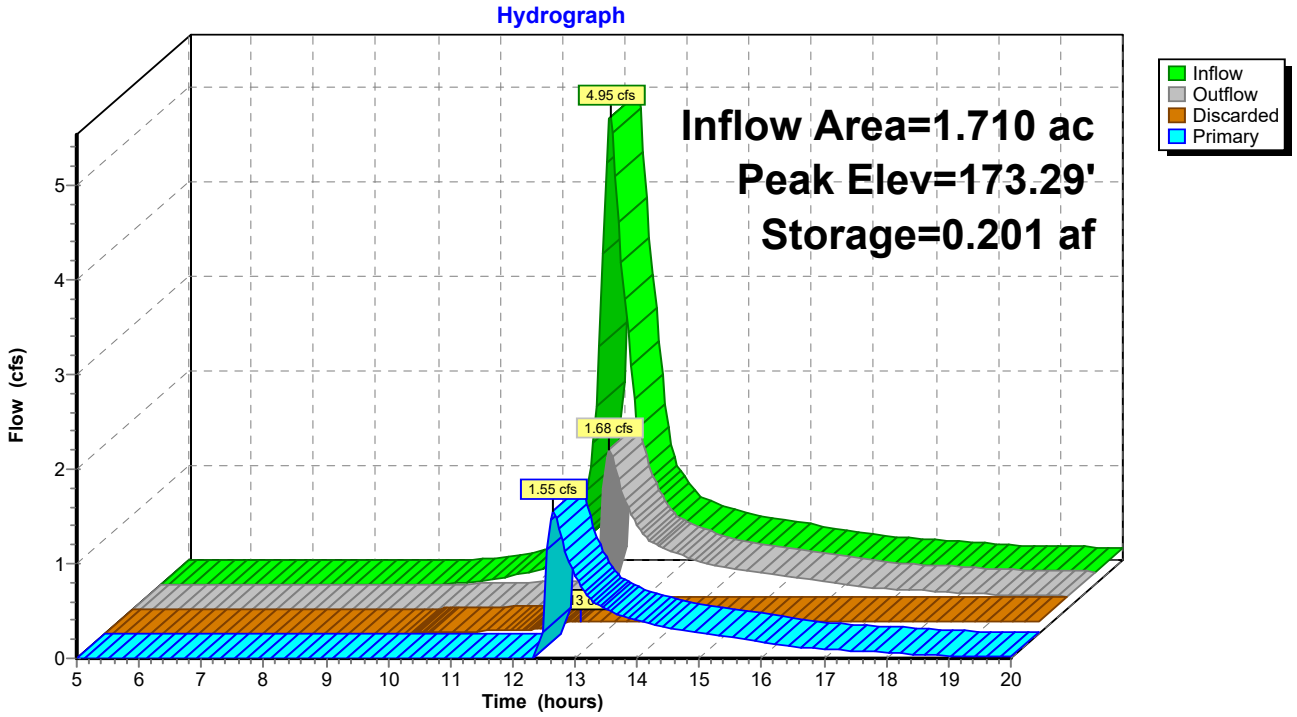
Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	0.256 af	**32.00'W x 17.00'L x 6.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	173.00'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	168.00'	**1.800 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 90.00' Phase-In= 0.01'

Discarded OutFlow Max=0.13 cfs @ 12.65 hrs HW=173.29' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.13 cfs)

Primary OutFlow Max=1.54 cfs @ 12.65 hrs HW=173.29' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 1.54 cfs @ 1.34 fps)

Pond 5P: (new Pond)



Summary for Pond 6P: (new Pond)

Inflow Area = 4.816 ac, 0.00% Impervious, Inflow Depth > 3.45" for 100 year event
Inflow = 13.08 cfs @ 12.34 hrs, Volume= 1.386 af
Outflow = 4.38 cfs @ 12.89 hrs, Volume= 0.793 af, Atten= 67%, Lag= 32.6 min
Discarded = 0.52 cfs @ 12.89 hrs, Volume= 0.353 af
Primary = 3.86 cfs @ 12.89 hrs, Volume= 0.440 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 180.90' @ 12.89 hrs Surf.Area= 0.192 ac Storage= 0.672 af

Plug-Flow detention time= 152.7 min calculated for 0.793 af (57% of inflow)
Center-of-Mass det. time= 75.2 min (887.1 - 811.9)

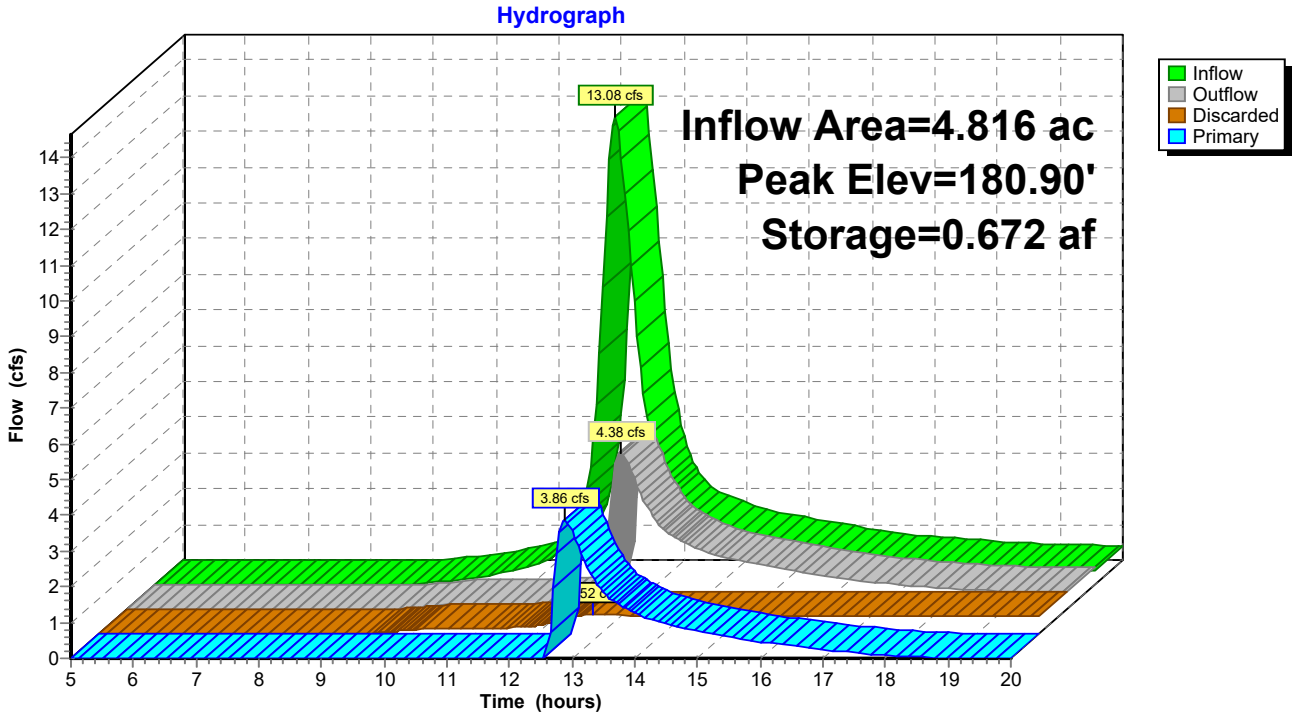
Volume	Invert	Avail.Storage	Storage Description
#1	175.00'	0.903 af	**15.00'W x 131.00'L x 7.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	180.50'	**6.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	175.00'	**2.600 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 90.00' Phase-In= 0.01'

Discarded OutFlow Max=0.52 cfs @ 12.89 hrs HW=180.89' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.52 cfs)

Primary OutFlow Max=3.84 cfs @ 12.89 hrs HW=180.89' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 3.84 cfs @ 1.62 fps)

Pond 6P: (new Pond)



Summary for Pond 7P: (new Pond)

Inflow Area = 3.573 ac, 0.00% Impervious, Inflow Depth > 3.26" for 100 year event
Inflow = 11.41 cfs @ 12.20 hrs, Volume= 0.969 af
Outflow = 4.33 cfs @ 12.58 hrs, Volume= 0.632 af, Atten= 62%, Lag= 23.2 min
Primary = 4.33 cfs @ 12.58 hrs, Volume= 0.632 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 169.00' Surf.Area= 0.151 ac Storage= 0.250 af
Peak Elev= 171.35' @ 12.58 hrs Surf.Area= 0.219 ac Storage= 0.683 af (0.433 af above start)

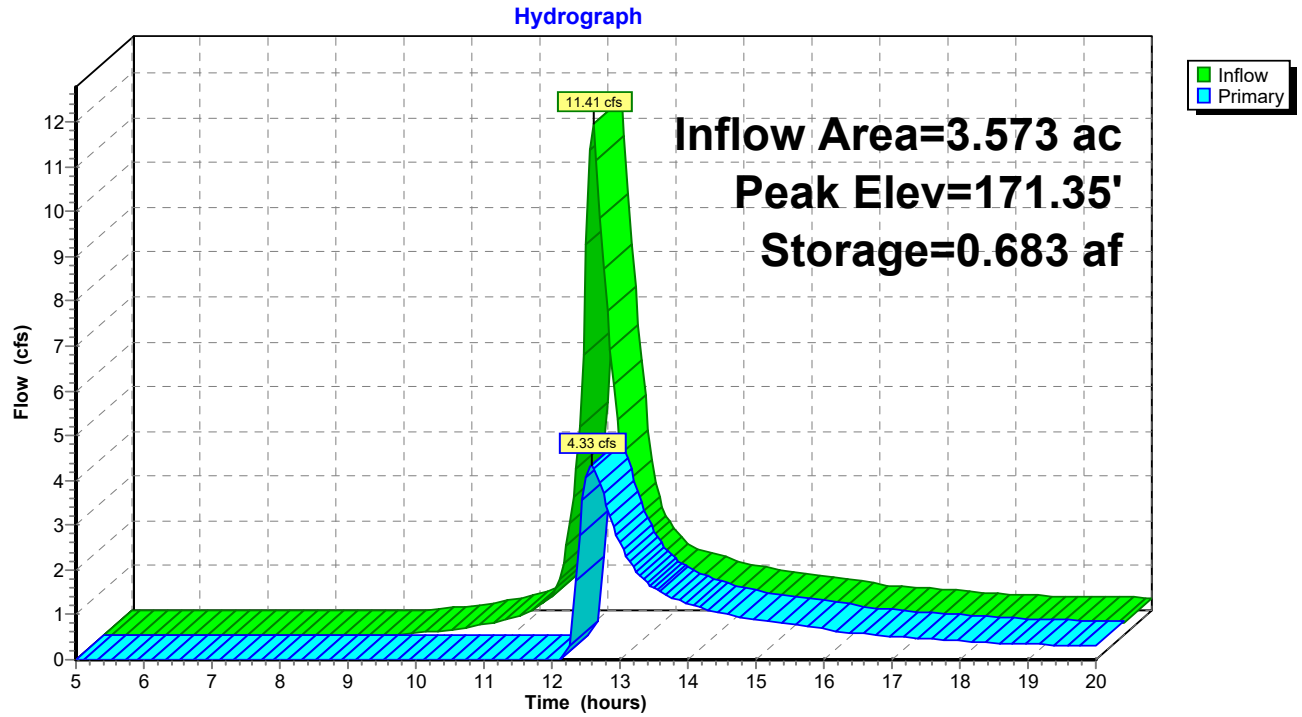
Plug-Flow detention time= 224.4 min calculated for 0.382 af (39% of inflow)
Center-of-Mass det. time= 64.9 min (871.9 - 807.1)

Volume	Invert	Avail.Storage	Storage Description
#1	167.00'	0.717 af	**31.00'W x 141.00'L x 4.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	170.80'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=4.31 cfs @ 12.58 hrs HW=171.35' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 4.31 cfs @ 1.97 fps)

Pond 7P: (new Pond)



Summary for Pond 8P: (new Pond)

Inflow Area = 1.332 ac, 0.00% Impervious, Inflow Depth > 2.92" for 100 year event
Inflow = 2.80 cfs @ 12.43 hrs, Volume= 0.325 af
Outflow = 1.77 cfs @ 12.76 hrs, Volume= 0.212 af, Atten= 37%, Lag= 19.9 min
Primary = 1.77 cfs @ 12.76 hrs, Volume= 0.212 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 165.50' Surf.Area= 0.021 ac Storage= 0.027 af
Peak Elev= 168.81' @ 12.76 hrs Surf.Area= 0.059 ac Storage= 0.156 af (0.129 af above start)

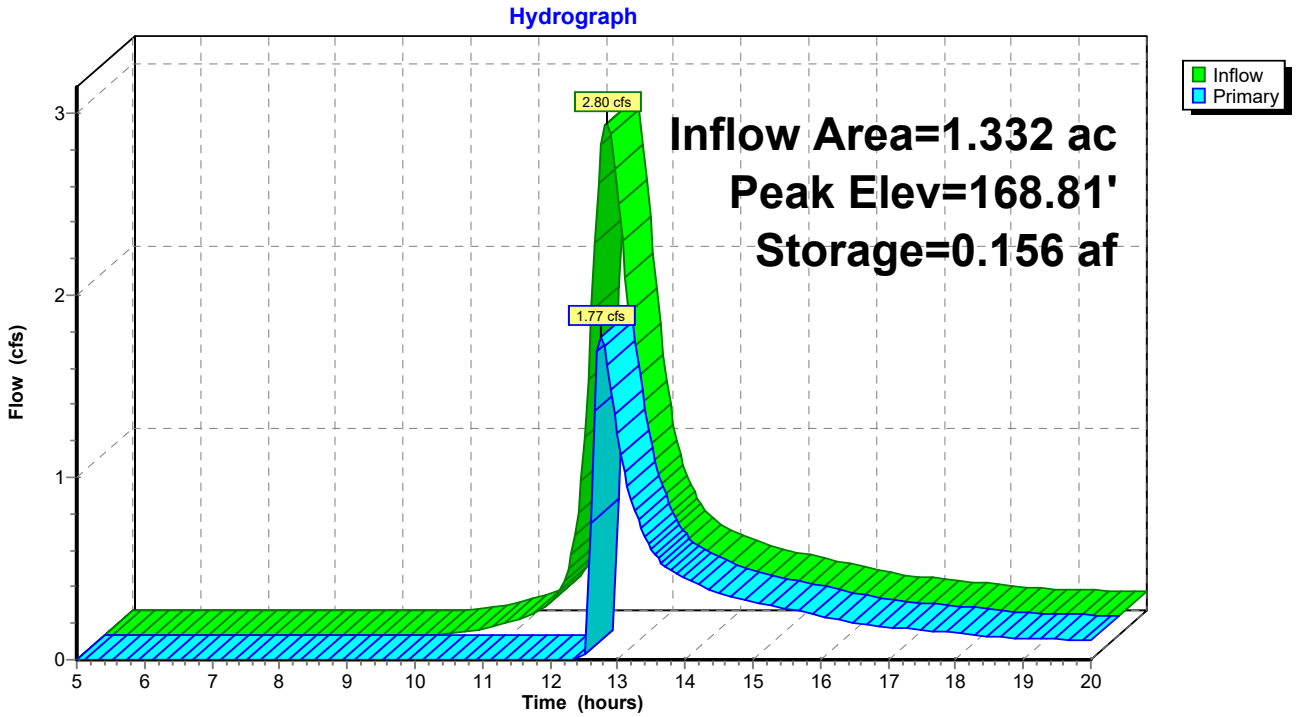
Plug-Flow detention time= 153.2 min calculated for 0.185 af (57% of inflow)
Center-of-Mass det. time= 56.2 min (880.3 - 824.1)

Volume	Invert	Avail.Storage	Storage Description
#1	163.50'	0.237 af	**10.00'W x 30.00'L x 6.50'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	168.50'	**4.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=1.75 cfs @ 12.76 hrs HW=168.81' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 1.75 cfs @ 1.41 fps)

Pond 8P: (new Pond)



Summary for Pond 9P: (new Pond)

Inflow Area = 3.608 ac, 0.00% Impervious, Inflow Depth > 3.68" for 100 year event
Inflow = 12.48 cfs @ 12.22 hrs, Volume= 1.106 af
Outflow = 4.30 cfs @ 12.65 hrs, Volume= 0.663 af, Atten= 66%, Lag= 25.8 min
Primary = 4.30 cfs @ 12.65 hrs, Volume= 0.663 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Starting Elev= 170.00' Surf.Area= 11,100 sf Storage= 19,450 cf
Peak Elev= 171.89' @ 12.65 hrs Surf.Area= 13,928 sf Storage= 43,043 cf (23,593 cf above start)

Plug-Flow detention time= 335.3 min calculated for 0.216 af (20% of inflow)
Center-of-Mass det. time= 75.2 min (877.0 - 801.8)

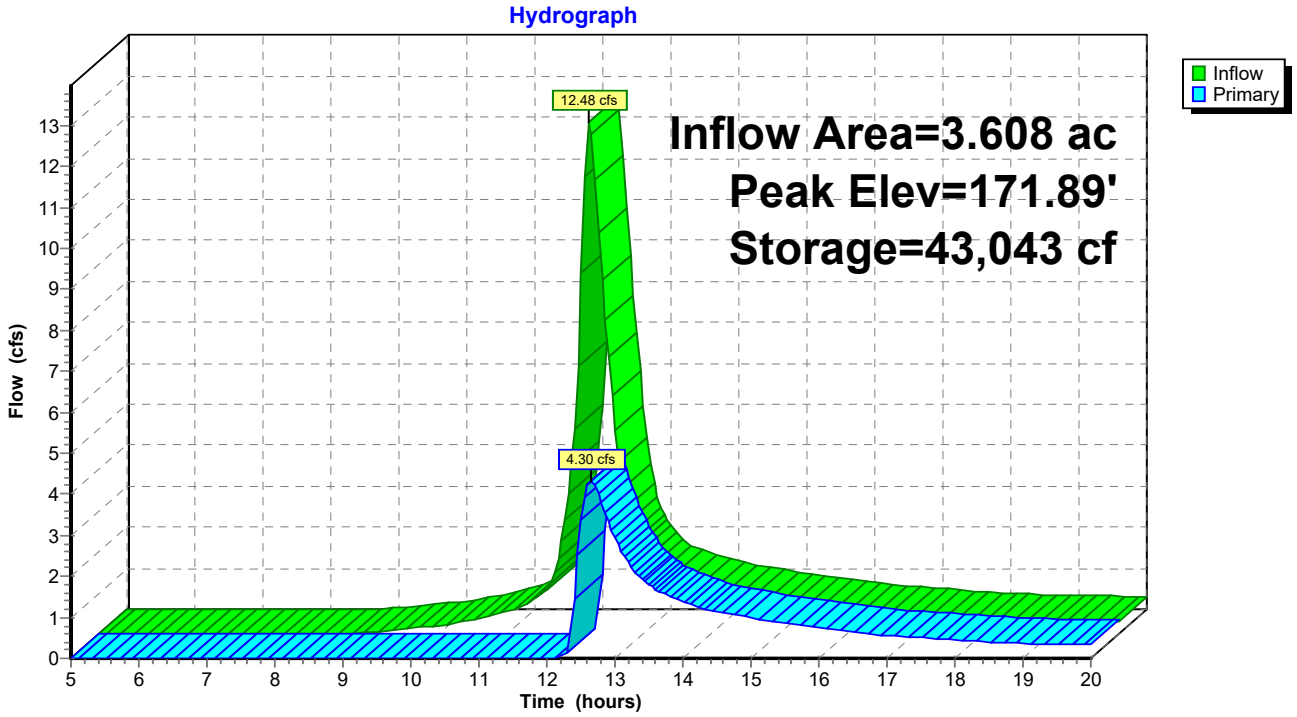
Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	44,650 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	8,400	0	0
169.00	9,700	9,050	9,050
170.00	11,100	10,400	19,450
171.00	12,600	11,850	31,300
172.00	14,100	13,350	44,650

Device	Routing	Invert	Outlet Devices
#1	Primary	171.50'	**7.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=4.30 cfs @ 12.65 hrs HW=171.89' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 4.30 cfs @ 1.59 fps)

Pond 9P: (new Pond)

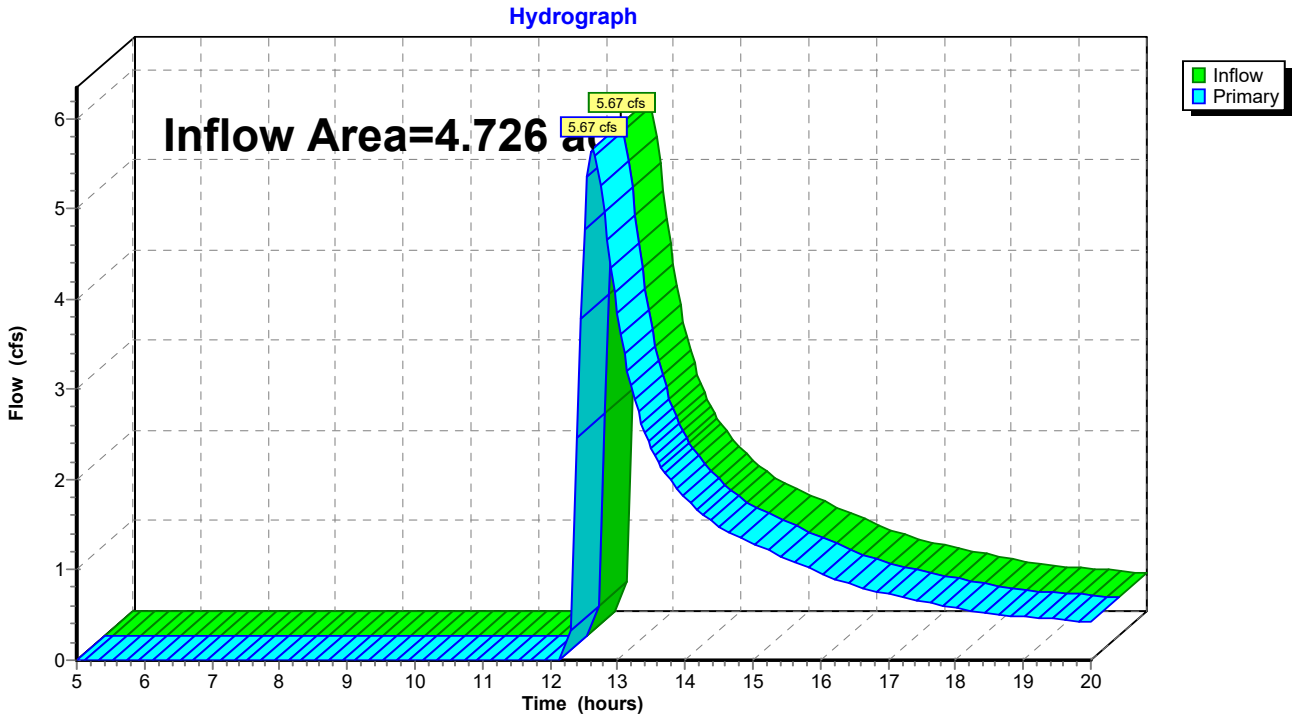


Summary for Link DP1: DP1

Inflow Area = 4.726 ac, 0.00% Impervious, Inflow Depth > 2.22" for 100 year event
Inflow = 5.67 cfs @ 12.63 hrs, Volume= 0.875 af
Primary = 5.67 cfs @ 12.63 hrs, Volume= 0.875 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP1: DP1

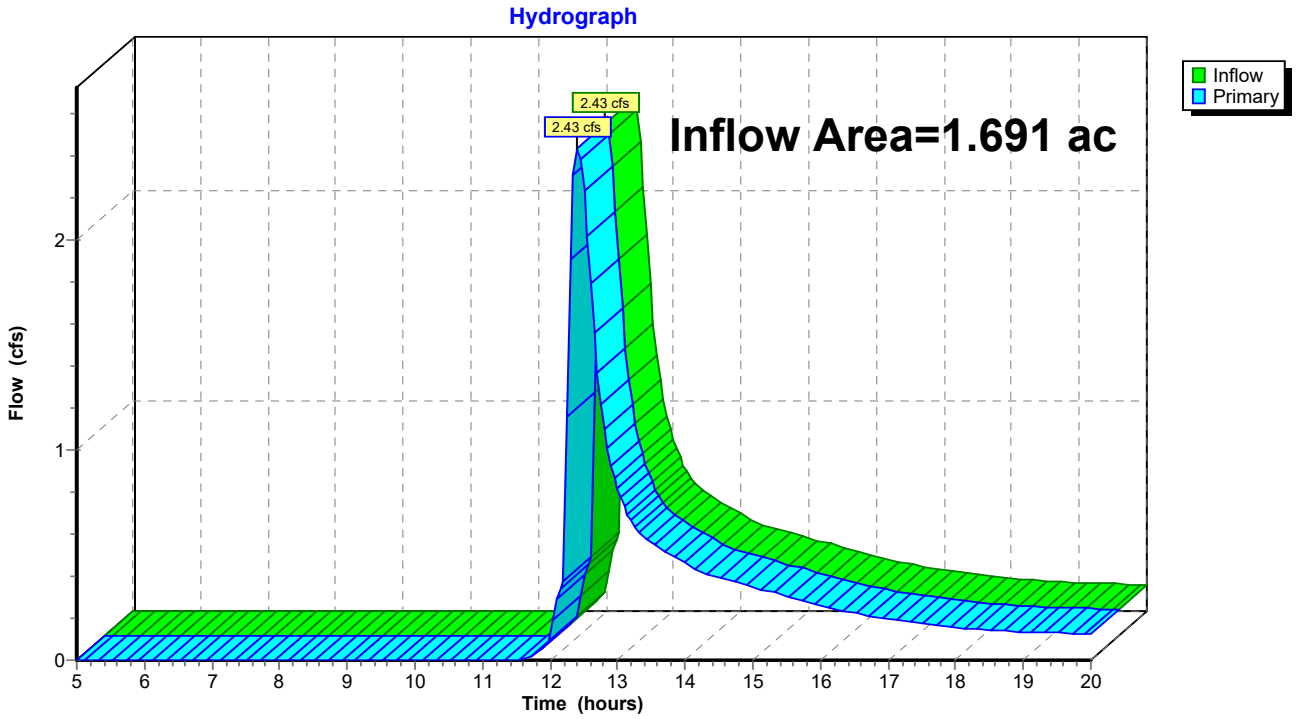


Summary for Link DP2: DP2

Inflow Area = 1.691 ac, 0.00% Impervious, Inflow Depth > 1.92" for 100 year event
Inflow = 2.43 cfs @ 12.41 hrs, Volume= 0.270 af
Primary = 2.43 cfs @ 12.41 hrs, Volume= 0.270 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP2: DP2

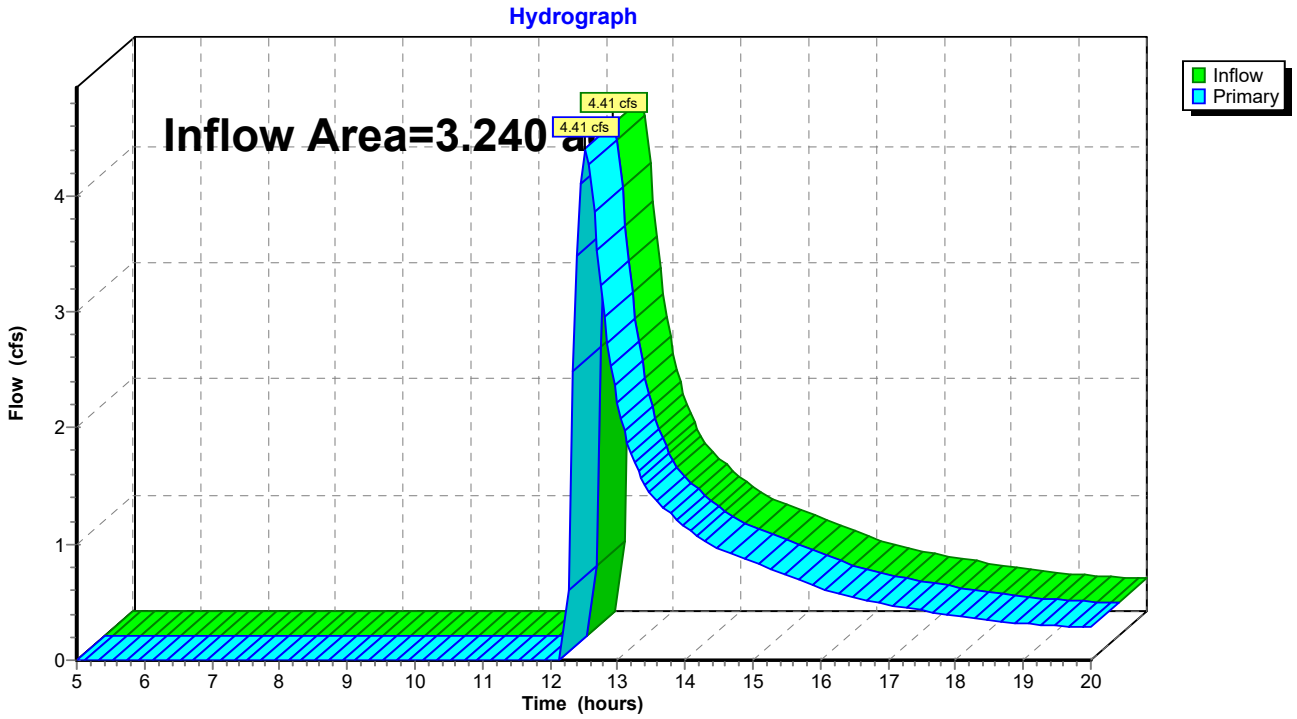


Summary for Link DP3: DP3

Inflow Area = 3.240 ac, 0.00% Impervious, Inflow Depth > 2.20" for 100 year event
Inflow = 4.41 cfs @ 12.52 hrs, Volume= 0.593 af
Primary = 4.41 cfs @ 12.52 hrs, Volume= 0.593 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP3: DP3

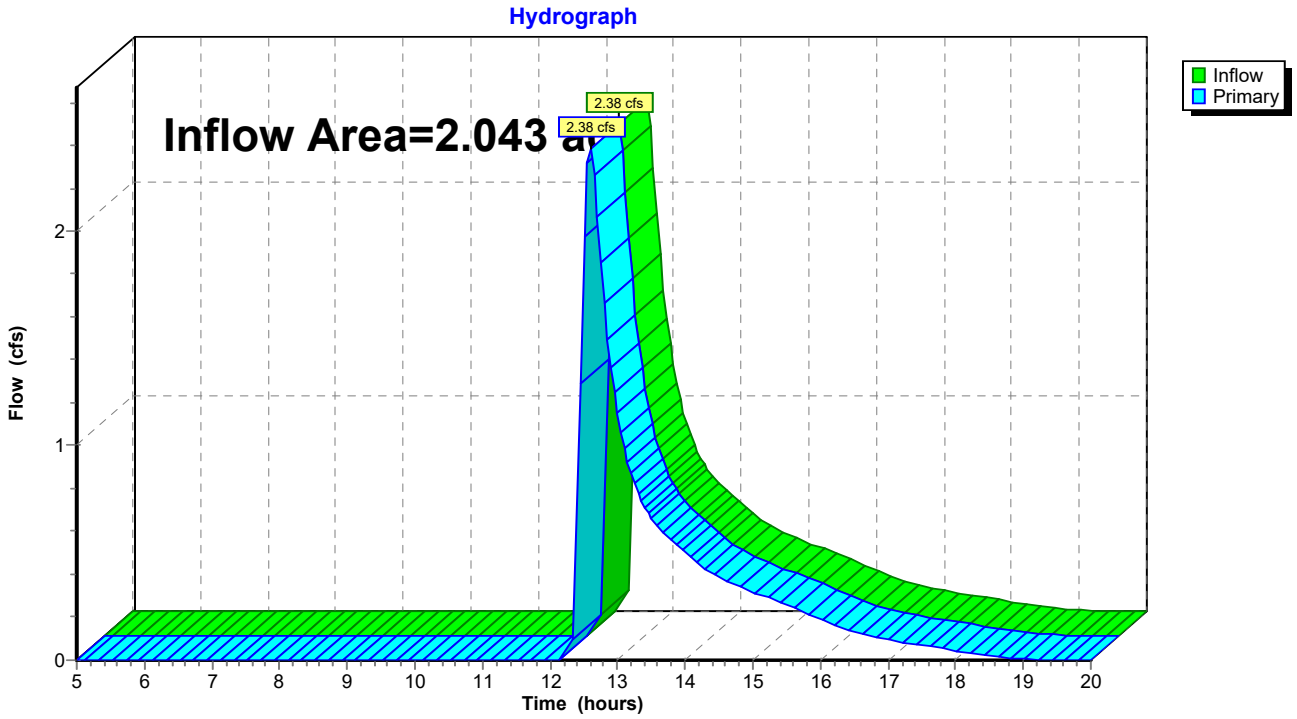


Summary for Link DP4: DP4

Inflow Area = 2.043 ac, 0.00% Impervious, Inflow Depth = 1.28" for 100 year event
Inflow = 2.38 cfs @ 12.59 hrs, Volume= 0.218 af
Primary = 2.38 cfs @ 12.59 hrs, Volume= 0.218 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP4: DP4

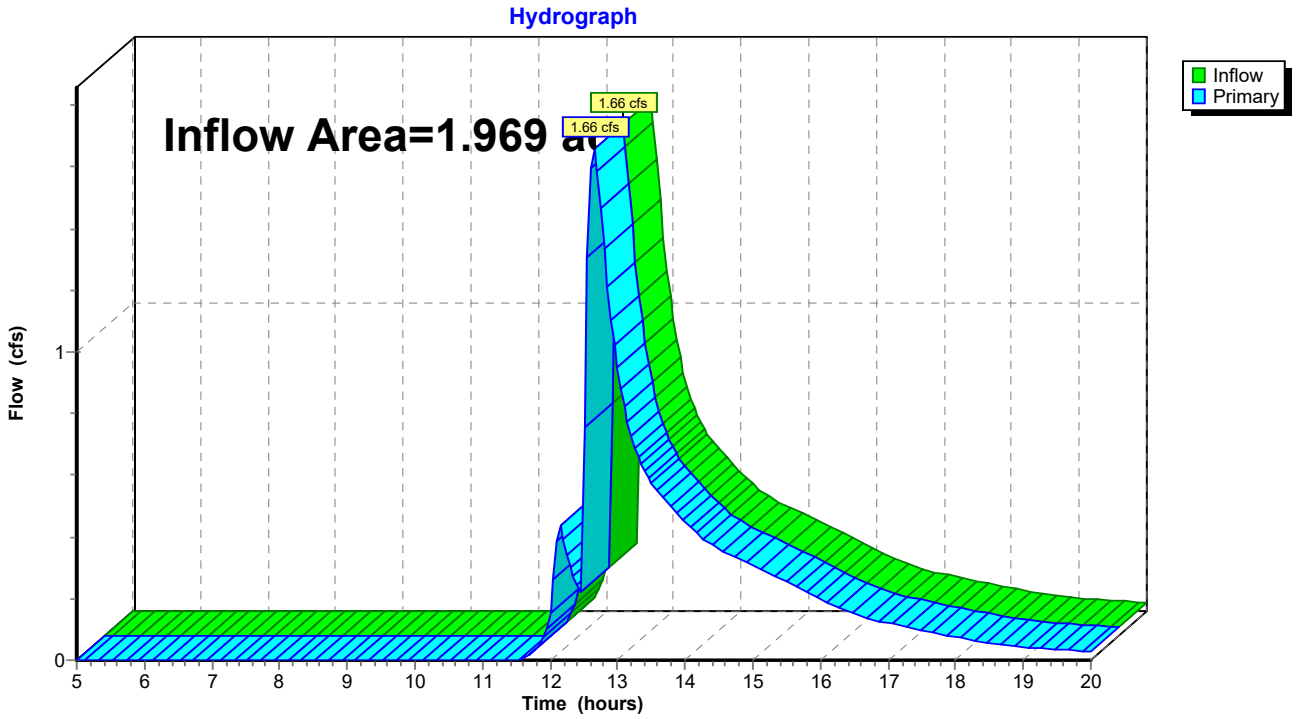


Summary for Link DP5: DP5

Inflow Area = 1.969 ac, 0.00% Impervious, Inflow Depth > 1.22" for 100 year event
Inflow = 1.66 cfs @ 12.65 hrs, Volume= 0.200 af
Primary = 1.66 cfs @ 12.65 hrs, Volume= 0.200 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP5: DP5

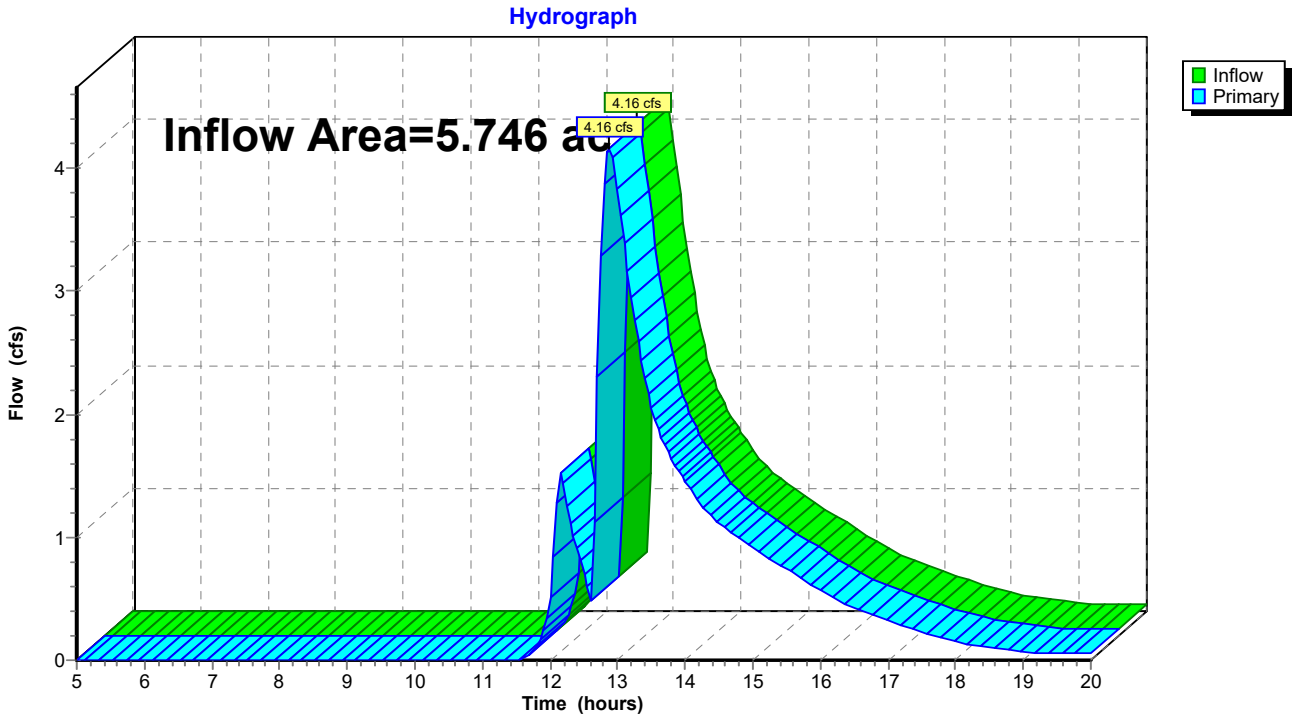


Summary for Link DP6: DP6

Inflow Area = 5.746 ac, 0.00% Impervious, Inflow Depth > 1.19" for 100 year event
Inflow = 4.16 cfs @ 12.88 hrs, Volume= 0.570 af
Primary = 4.16 cfs @ 12.88 hrs, Volume= 0.570 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP6: DP6

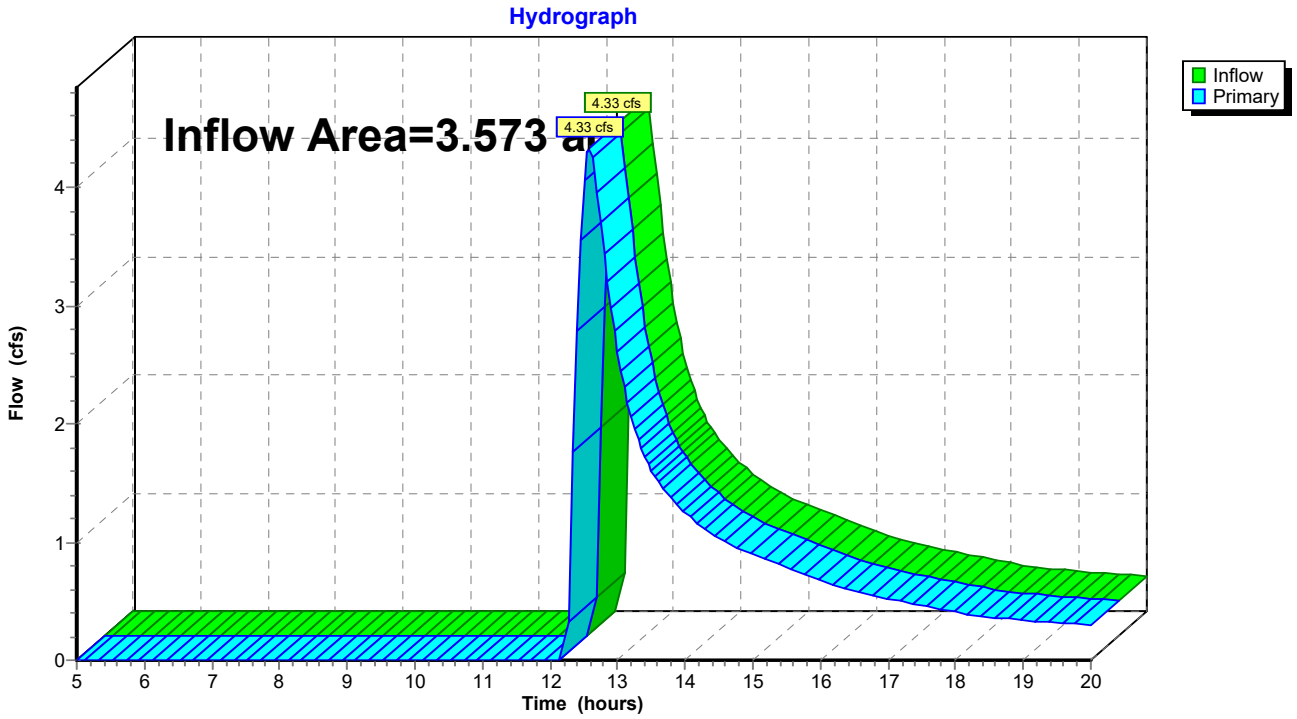


Summary for Link DP7: DP7

Inflow Area = 3.573 ac, 0.00% Impervious, Inflow Depth > 2.12" for 100 year event
Inflow = 4.33 cfs @ 12.58 hrs, Volume= 0.632 af
Primary = 4.33 cfs @ 12.58 hrs, Volume= 0.632 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP7: DP7

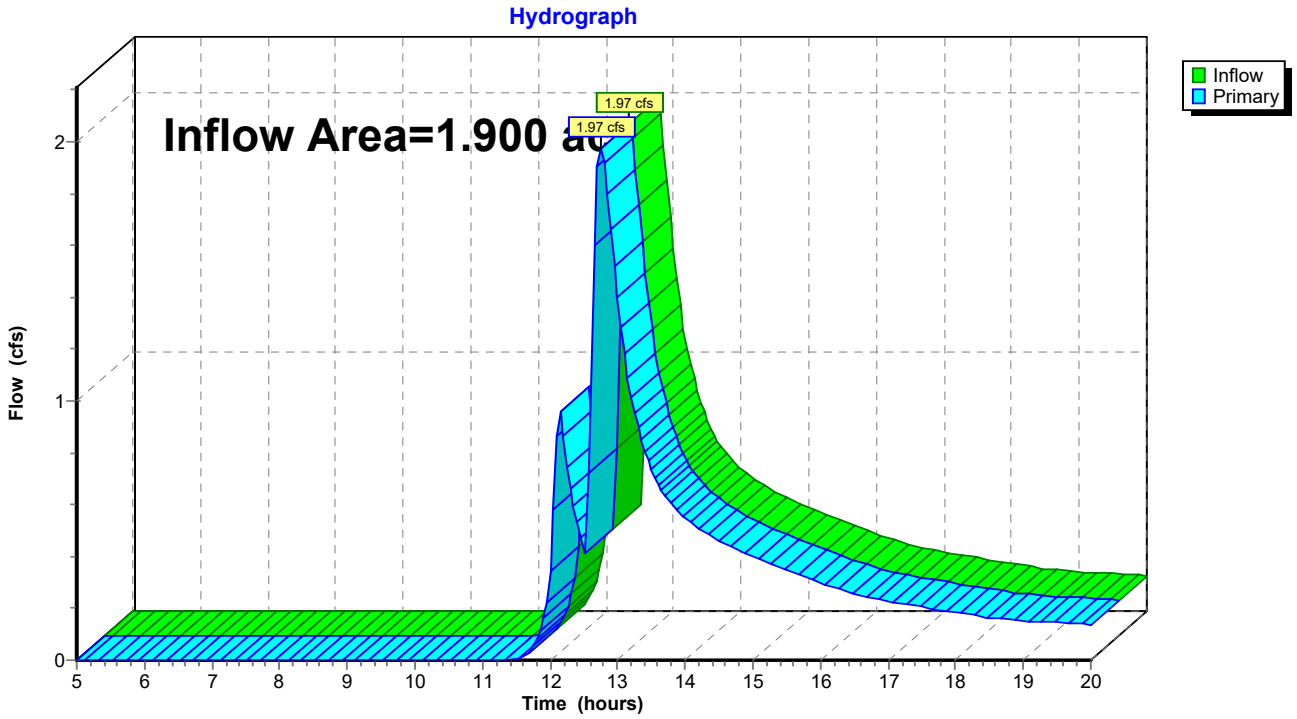


Summary for Link DP8: DP8

Inflow Area = 1.900 ac, 0.00% Impervious, Inflow Depth > 1.84" for 100 year event
Inflow = 1.97 cfs @ 12.75 hrs, Volume= 0.291 af
Primary = 1.97 cfs @ 12.75 hrs, Volume= 0.291 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP8: DP8



Summary for Link DP9: DP9

Inflow Area = 3.608 ac, 0.00% Impervious, Inflow Depth > 2.21" for 100 year event
Inflow = 4.30 cfs @ 12.65 hrs, Volume= 0.663 af
Primary = 4.30 cfs @ 12.65 hrs, Volume= 0.663 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link DP9: DP9