GCE Durham Solar

141 Middlefield Road
Durham, Connecticut

PREPARED FOR

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PREPARED BY

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November 2023

Table of Contents

List of Figures

List of Tables

Appendices

1

Project Summary

Project Description

The Petitioner is proposing to construct a ±3 MW solar farm on undeveloped farmland 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 Project will be removed and the land will be restored in accordance with the decommissioning plan.

Site Description

The Project Site will be located on ±17 acres of approximately ±22 acres at Middlefield Rd in Durham, CT (M/B/L 15-11). The site is bounded by a tree farm to the northwest, woodland to the north, east and south, and Middlefield Rd to the west.

The project area under existing conditions is partially an open field and partially a sparsely wooded area. There is one delineated on-site wetland system and two intermittent watercourses in proximity to the development area. No work is being proposed within the wetland areas. The topography, under existing conditions, generally slopes to the south towards forested woodlands and nearby watercourses.

According to available soil mapping[1], a variety of soils exist on the site representing mostly Hydrologic Soil Group C. See Appendix B for NRCS Web Soil Survey output.

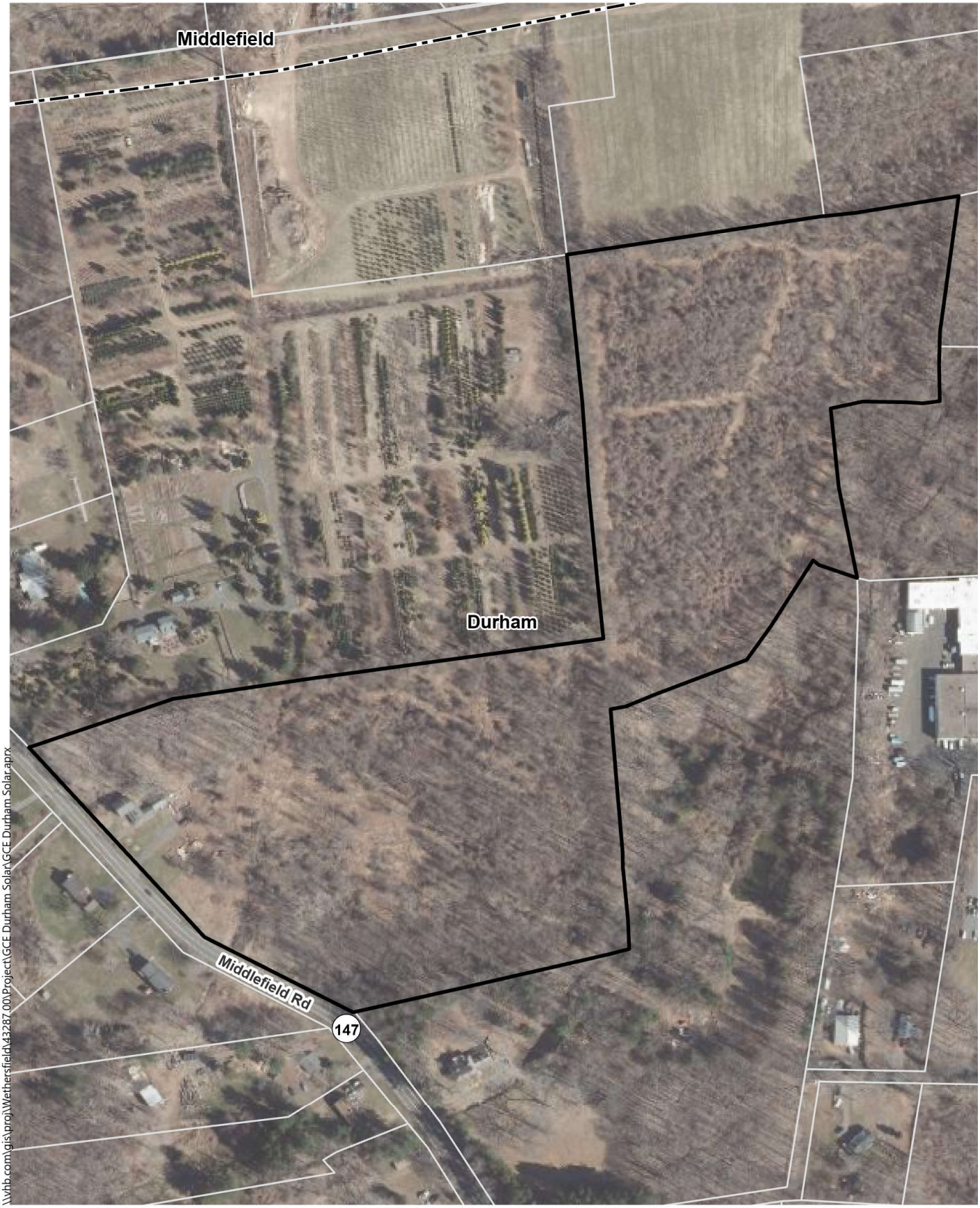
According to available CTDEEP Groundwater Classification maps, groundwater at the site is GA (see Appendix A). According to CTDEEP Aquifer Protection Area maps, no Aquifer Protection Areas exist within the Town of Durham.

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

Methodology

The Project was designed to incorporate measures provided in the Connecticut Stormwater Quality Manual (CTDEEP 2004) as well as the CTDEEP Stormwater General Permit effective November 25, 2022. The conclusion of this analysis is that the proposed improvements will not increase the post-development peak runoff rates in comparison to existing predevelopment rates at any of the critical design points analyzed and stormwater quality leaving the site will be improved from existing conditions.

Figure 1: Site Location Map



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0 150 300 600 Feet

Project Site

Parcel Boundary

Town Boundary

GCE Solar | Durham, Connecticut

Aerial Imagery Map

Source: VHB. CTDEEP, ESRI

2

Existing Drainage Conditions

Summary

Under existing conditions, runoff from the project area generally flows overland to the onsite wetland systems before exiting the site. The Site is generally at its highest elevation in the northernmost portion of the development area. The Project area is comprised of open field and tree clusters ranging in slopes roughly between 7% and 15%. The majority of the development area discharges stormwater runoff to the south.

Hydrologic Information

For the existing conditions hydrologic analysis, the Site has been divided into five (5) subwatershed areas, which have generally been identified as areas at the Project limits where flow enters the wetlands or stream systems, and two (2) design points which are generally the delineated intermitted streams outside of the development footprint. Table 1 provides a summary of the existing conditions hydrologic data. Figure 2 illustrates the existing drainage patterns on the Site. All portions of the Project area have been considered in the hydrologic analysis. Design Point 1 is the area of the development which drain to the southwest to an existing intermittent watercourse. Design Point 2 is the intermittent stream which drain to the east offsite to an existing watercourse that runs parallel to the east side of the site.

Drainage Area 1 - This ±5.7-acre area is located at the southwestern portion of the Project. Untreated stormwater in this area generally flows overland to the southwest into an intermittent watercourse prior to discharging offsite.

Drainage Area 2A - This ±1.0-acre area is located at the southeastern portion of the Project. Untreated stormwater in this area generally flows overland to the east into an intermittent watercourse prior to discharging offsite.

Drainage Area 2B - This ±5.2-acre area is located at the north-central portion of the Project. Untreated stormwater in this area generally flows overland to the southeast into the watercourse alongside the site prior to discharging offsite.

Drainage Area 2C - This ±1.4-acre area is located at the northeastern portion of the Project. Untreated stormwater in this area generally flows overland to the southeast to the same watercourse prior to discharging offsite.

Drainage Area 2D - This ±1.5-acre area is located at the northeastern portion of the Project. Untreated stormwater in this area generally flows to the same location as the aforementioned drainage areas 2A thru 2C before reaching design point 2.

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	Southwest Watercourse	5.7	68	11.5
2A	Eastern Watercourse	1.0	73	7.6
2B	Eastern Watercourse	5.2	75	9.6
2C	Eastern Watercourse	1.4	78	9.1
2D	Eastern Watercourse	1.5	77	4.8

Figure 2: Existing Drainage Areas

Legend

SYMBOLS

- X — **DESIGN POINT**
- X — **DRAINAGE AREA DESIGNATION**
- XP — **PERMANENT STORMWATER BASIN**

LINETYPES

- **DRAINAGE AREA BOUNDARY**
- **HSG BOUNDARY**
- **WETLAND BOUNDARY**
- **TIME OF CONCENTRATION**

0 100 200 400Feet

vhb

Existing Drainage Conditions
GCE Durham Solar
141 Middlefield Road
Durham, Connecticut

Figure 2

November 2023

3

Proposed Drainage Conditions

Summary

The Site has been designed to maintain existing topography and mimic existing drainage patterns to the maximum extents feasible. Across the majority of the proposed development 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 will be preserved to the maximum extents practicable and tree clearing is held to a minimum. As a result, the Project will have minimal impact to surrounding ecologically sensitive areas.

The only impervious surfaces proposed to be constructed are small concrete pads for utility equipment and a small amount of gravel access drive. Once operational, vehicular access to the Project will be limited to infrequent maintenance visits. The permanent stormwater basins and vegetated buffers held to the wetlands will provide adequate residence time and treatment capabilities for the de minimis amount of imperviousness of the project.

In accordance with CTDEEP Stormwater General Permit, it is not proposed to install solar panels within 100 feet of any onsite wetland systems, nor is it proposed to perform any land disturbance (i.e. tree clearing, grading, swales, stormwater basins, fences) within 50 feet of these systems.

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 utilizes the same five (5) drainage areas and two (2) design points from existing conditions. In accordance with CTDEEP Stormwater General Permit, a reduction in Hydrologic Soil Group of half a step has been considered in the proposed conditions hydrologic model for developed portions of the site. No

grading over a two-foot change is proposed that would require reducing HSG by a full step.

Drainage Area 1 - This ±5.7-acre area is located at the southwestern portion of the Project. Stormwater in this area will generally flow under the panels to the southwest. The introduction of permanent meadowy vegetation as well as the permanent stormwater basin 1 will serve improve water quality before it enters the watercourse at design point 1 and is discharged offsite.

Drainage Area 2A - This ±1.0-acre area is located at the southeastern portion of the Project. Stormwater in this area will generally flow under the panels to the east. This area contains a very small amount of development. The introduction of permanent meadowy vegetation will improve water quality before it enters an intermittent watercourse and subsequently design point 2 prior to discharging offsite.

Drainage Area 2B - This ±5.2-acre area is located at the north-central portion of the Project. Stormwater in this area will generally flow under the panels to the southeast. The introduction of permanent meadowy vegetation as well as the permanent stormwater basin 2B in this area will serve to improve water quality before it enters the watercourse alongside the site prior to discharging offsite.

Drainage Area 2C - This ±1.4-acre area is located at the northeastern portion of the Project. Stormwater in this area will generally flow under the panels to the southeast. The introduction of permanent meadowy vegetation as well as the permanent stormwater basin 2C in this area will serve to improve water quality before it enters the watercourse alongside the site prior to discharging offsite.

Drainage Area 2D - This ±1.5-acre area is located at the northeastern portion of the Project. Stormwater in this area will generally flow under the panels to the east. The introduction of permanent meadowy vegetation as well as the permanent stormwater basin 2D in this area will serve to improve water quality before it enters the watercourse alongside the site prior to discharging offsite.

Table 2 summarizes the key hydrologic parameters for each drainage area used in the proposed conditions analysis. Only 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	Southwest Watercourse	5.7	70	10.2
2A	Eastern Watercourse	1.0	68	6.4
2B	Eastern Watercourse	5.2	75	9.0
2C	Eastern Watercourse	1.4	77	7.1
2D	Eastern Watercourse	1.5	76	4.5

Figure 3: Proposed Drainage Areas

Legend

SYMBOLS

- X — **DESIGN POINT**
- X — **DRAINAGE AREA DESIGNATION**
- XP — **PERMANENT STORMWATER BASIN**

LINETYPES

- **DRAINAGE AREA BOUNDARY**
- **HSG BOUNDARY**
- **WETLAND BOUNDARY**
- **TIME OF CONCENTRATION**

0 100 200 400Feet

vhb

Proposed Drainage Conditions
GCE Durham Solar
141 Middlefield Road
Durham, Connecticut

Figure 3

November 2023

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 3.36, 6.34, 7.18, and 8.10 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 Stormwater General Permit, the proposed conditions for development areas have been modelled with a loss of one-half class of Hydrologic Soil Group 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 within all watersheds for all design storms by reducing curve numbers.

Table 3 presents a summary of the existing and proposed conditions peak discharge rates.

Table 3 Peak Discharge Rates (cfs*)

Design Point	2-year	25-year	50-year	100-year
Design Point 1				
Existing	3.9	15.4	19.3	23.5
Proposed	0.4	13.5	18.7	23.5
Design Point 2				
Existing	11.4	34.7	41.6	49.4
Proposed	3.2	31.8	38.6	46.1

* Expressed in cubic feet per second

Floodplain Information / Analysis

According to FEMA Flood Insurance Rate Map Community Panel Number 09007C0202G dated August 28, 2008, the site is not located within a Flood Hazard Area (see 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 site will have vehicular travel infrequently upon completion of construction, and the permanent stormwater basins and meadowy buffer areas will provide residence and treatment time.

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.

Appendix A:

FEMA Flood Insurance Rate Map

NOAA Rainfall Depth Estimates

CTDEEP Groundwater Classification Map

FEMA Flood Insurance Rate Map

National Flood Hazard Layer FIRMette

FEMA

72°41'38"W 41°29'43"N

72°41'1"W 41°29'16"N

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

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

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

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

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

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

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

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 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 11/27/2023 at 1:24 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.

NOAA Rainfall Depth Estimates

NOAA Atlas 14, Volume 10, Version 3
Location name: Durham, Connecticut, USA*
Latitude: 41.4907°, Longitude: -72.6862°
Elevation: 271 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	**0.333** (0.260-0.413)	**0.406** (0.317-0.504)	**0.525** (0.408-0.653)	**0.623** (0.482-0.781)	**0.759** (0.568-0.992)	**0.861** (0.632-1.15)	**0.968** (0.688-1.34)	**1.09** (0.732-1.54)	**1.26** (0.815-1.84)	**1.40** (0.883-2.09)
10-min	**0.472** (0.369-0.585)	**0.575** (0.449-0.714)	**0.743** (0.578-0.925)	**0.883** (0.683-1.10)	**1.08** (0.804-1.41)	**1.22** (0.894-1.63)	**1.37** (0.975-1.90)	**1.54** (1.04-2.18)	**1.78** (1.15-2.61)	**1.98** (1.25-2.96)
15-min	**0.556** (0.434-0.688)	**0.677** (0.528-0.839)	**0.875** (0.680-1.09)	**1.04** (0.803-1.30)	**1.26** (0.946-1.65)	**1.44** (1.05-1.92)	**1.61** (1.15-2.23)	**1.81** (1.22-2.57)	**2.10** (1.36-3.07)	**2.33** (1.47-3.48)
30-min	**0.764** (0.597-0.947)	**0.927** (0.723-1.15)	**1.19** (0.927-1.48)	**1.41** (1.09-1.77)	**1.72** (1.28-2.25)	**1.95** (1.43-2.60)	**2.19** (1.56-3.03)	**2.46** (1.66-3.48)	**2.84** (1.84-4.16)	**3.15** (2.00-4.72)
60-min	**0.973** (0.760-1.20)	**1.18** (0.918-1.46)	**1.51** (1.18-1.88)	**1.79** (1.38-2.24)	**2.17** (1.62-2.84)	**2.46** (1.80-3.28)	**2.76** (1.96-3.82)	**3.10** (2.09-4.39)	**3.58** (2.32-5.25)	**3.98** (2.52-5.95)
2-hr	**1.28** (1.01-1.58)	**1.54** (1.21-1.90)	**1.96** (1.54-2.42)	**2.31** (1.80-2.86)	**2.78** (2.10-3.62)	**3.14** (2.33-4.18)	**3.52** (2.54-4.87)	**3.97** (2.69-5.58)	**4.63** (3.01-6.74)	**5.19** (3.29-7.70)
3-hr	**1.50** (1.19-1.83)	**1.79** (1.42-2.19)	**2.27** (1.79-2.79)	**2.67** (2.09-3.30)	**3.21** (2.44-4.17)	**3.62** (2.70-4.80)	**4.06** (2.94-5.60)	**4.58** (3.11-6.42)	**5.37** (3.50-7.78)	**6.04** (3.84-8.93)
6-hr	**1.90** (1.52-2.31)	**2.28** (1.82-2.77)	**2.89** (2.30-3.52)	**3.40** (2.69-4.17)	**4.10** (3.14-5.27)	**4.61** (3.46-6.08)	**5.17** (3.78-7.10)	**5.85** (3.99-8.14)	**6.88** (4.50-9.90)	**7.76** (4.95-11.4)
12-hr	**2.34** (1.90-2.82)	**2.83** (2.28-3.41)	**3.62** (2.91-4.38)	**4.27** (3.42-5.20)	**5.17** (4.00-6.60)	**5.84** (4.42-7.63)	**6.56** (4.82-8.93)	**7.42** (5.09-10.2)	**8.74** (5.74-12.5)	**9.86** (6.31-14.4)
24-hr	**2.75** (2.25-3.29)	**3.36** (2.75-4.03)	**4.36** (3.55-5.24)	**5.20** (4.20-6.27)	**6.34** (4.95-8.05)	**7.18** (5.49-9.34)	**8.10** (6.01-11.0)	**9.23** (6.36-12.6)	**11.0** (7.23-15.6)	**12.5** (8.01-18.0)
2-day	**3.11** (2.57-3.68)	**3.86** (3.18-4.58)	**5.09** (4.19-6.07)	**6.12** (4.99-7.33)	**7.53** (5.94-9.52)	**8.56** (6.61-11.1)	**9.70** (7.28-13.2)	**11.2** (7.71-15.2)	**13.5** (8.90-19.0)	**15.5** (9.98-22.2)
3-day	**3.38** (2.81-3.99)	**4.21** (3.49-4.97)	**5.57** (4.60-6.60)	**6.70** (5.50-7.99)	**8.25** (6.54-10.4)	**9.38** (7.29-12.1)	**10.6** (8.04-14.4)	**12.3** (8.50-16.6)	**14.9** (9.85-20.8)	**17.2** (11.1-24.5)
4-day	**3.62** (3.03-4.26)	**4.51** (3.76-5.31)	**5.96** (4.95-7.04)	**7.16** (5.90-8.51)	**8.81** (7.02-11.1)	**10.0** (7.81-12.9)	**11.4** (8.60-15.3)	**13.1** (9.09-17.7)	**15.9** (10.5-22.2)	**18.3** (11.8-26.0)
7-day	**4.32** (3.64-5.05)	**5.31** (4.46-6.21)	**6.92** (5.80-8.13)	**8.26** (6.87-9.76)	**10.1** (8.10-12.6)	**11.5** (8.97-14.6)	**13.0** (9.83-17.3)	**14.8** (10.4-19.9)	**17.8** (11.9-24.7)	**20.4** (13.2-28.9)
10-day	**5.02** (4.25-5.84)	**6.06** (5.13-7.07)	**7.77** (6.54-9.09)	**9.19** (7.68-10.8)	**11.1** (8.95-13.8)	**12.6** (9.86-15.9)	**14.1** (10.7-18.7)	**16.1** (11.3-21.5)	**19.1** (12.7-26.4)	**21.7** (14.1-30.5)
20-day	**7.21** (6.17-8.32)	**8.33** (7.12-9.63)	**10.2** (8.65-11.8)	**11.7** (9.86-13.6)	**13.8** (11.1-16.8)	**15.4** (12.1-19.1)	**17.0** (12.9-22.0)	**18.9** (13.3-25.0)	**21.7** (14.5-29.6)	**23.9** (15.6-33.4)
30-day	**9.05** (7.79-10.4)	**10.2** (8.78-11.7)	**12.1** (10.4-14.0)	**13.7** (11.6-15.9)	**15.8** (12.9-19.1)	**17.5** (13.8-21.5)	**19.2** (14.5-24.4)	**21.0** (14.9-27.6)	**23.5** (15.8-31.9)	**25.4** (16.6-35.4)
45-day	**11.3** (9.82-13.0)	**12.5** (10.8-14.3)	**14.5** (12.5-16.6)	**16.1** (13.8-18.6)	**18.4** (15.0-22.0)	**20.1** (15.9-24.5)	**21.8** (16.4-27.4)	**23.5** (16.8-30.7)	**25.7** (17.4-34.8)	**27.3** (17.9-37.9)
60-day	**13.2** (11.5-15.1)	**14.5** (12.6-16.5)	**16.5** (14.3-18.9)	**18.2** (15.6-20.9)	**20.5** (16.7-24.4)	**22.3** (17.7-27.0)	**24.0** (18.1-30.0)	**25.6** (18.3-33.4)	**27.7** (18.8-37.3)	**29.1** (19.0-40.1)

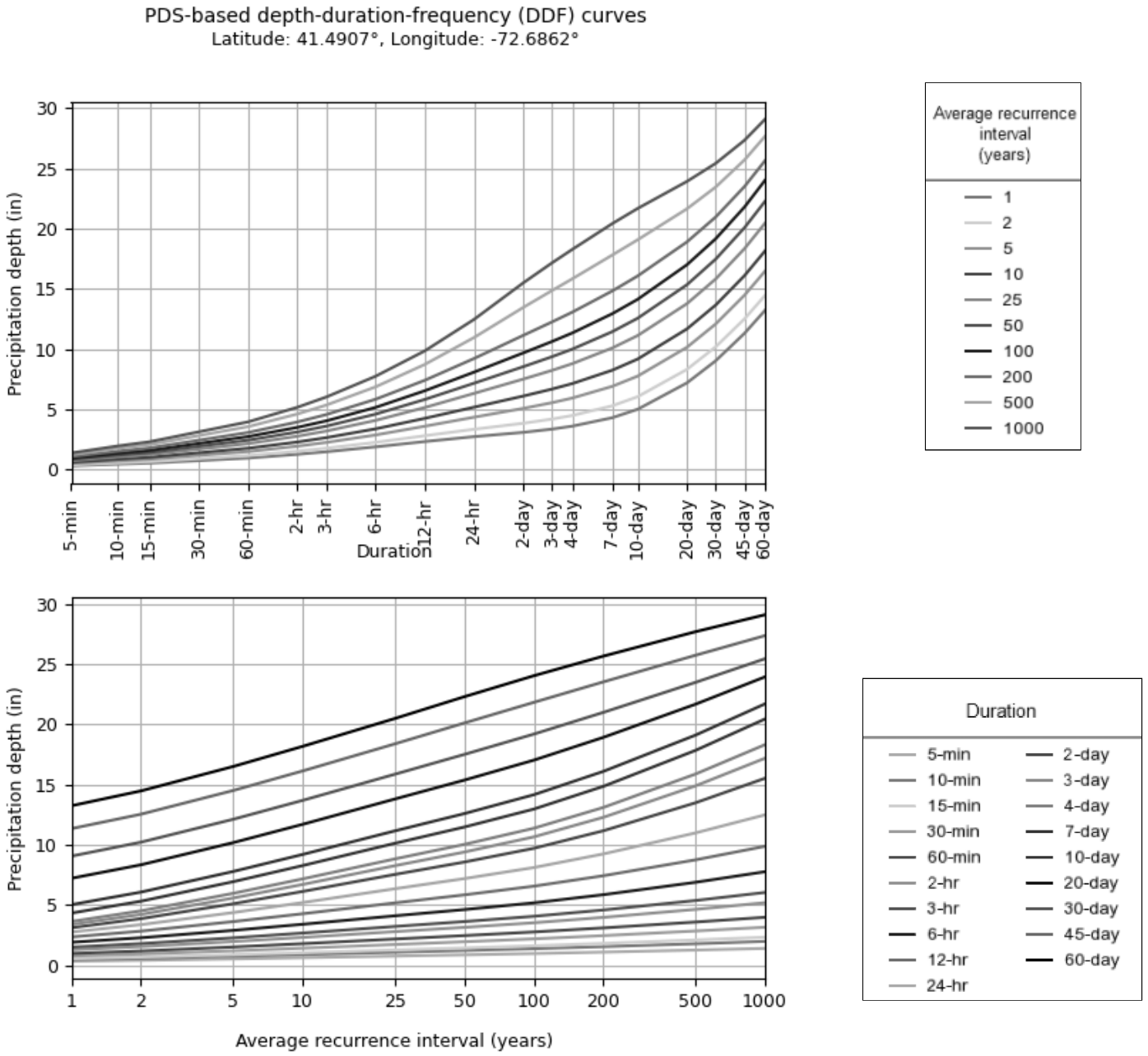
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

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



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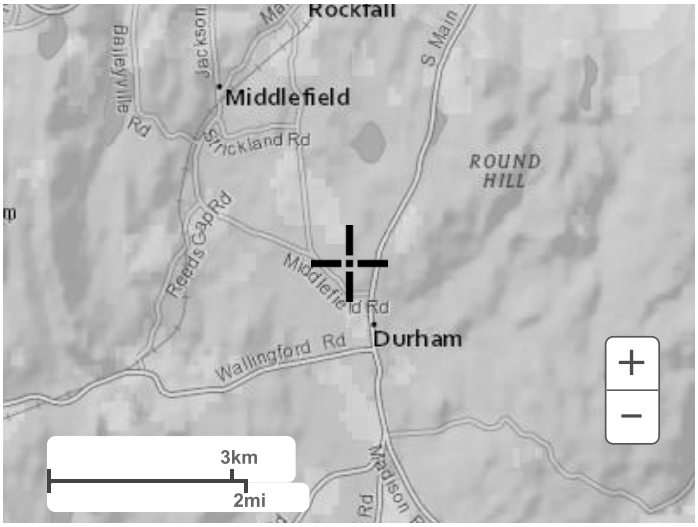
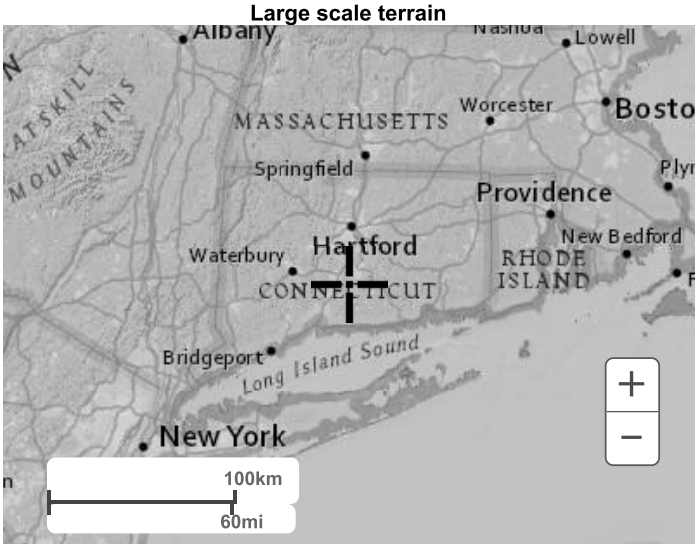
Back to Top

Maps & aerials

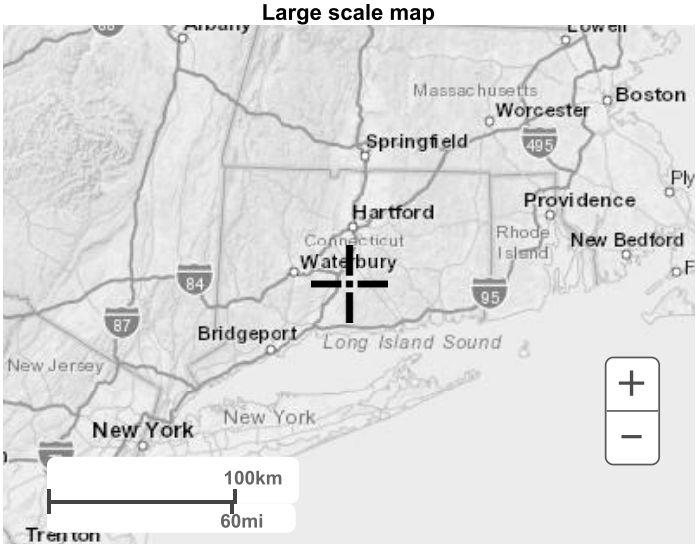
Small scale terrain



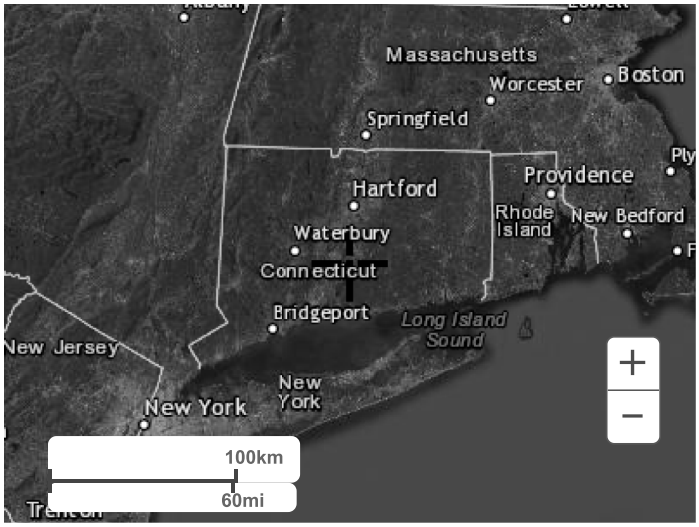
Large scale terrain



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

CTDEEP Groundwater Classification Map

WATER QUALITY CLASSIFICATIONS
DURHAM, 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

MAP LOCATION

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

1 0.5 0 1 Miles
1000 0 1000 2000 3000 4000 5000 6000 7000 Feet
1 0.5 0 1 Kilometers

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

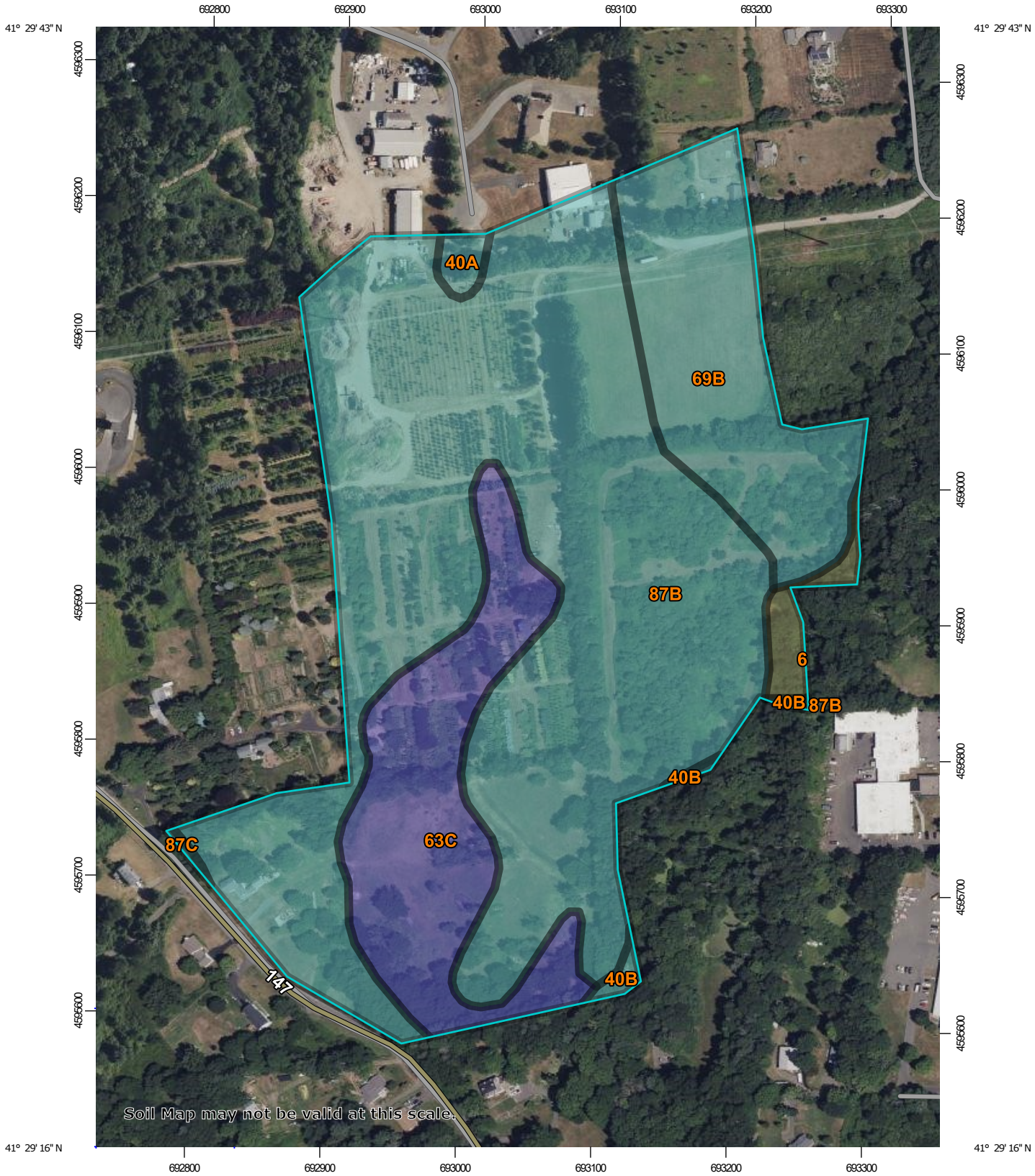
MERIDEN
MIDDLETOWN
MIDDLEFIELD
PORTLAND
EAST HAMPTON
DURHAM
HADDAM
WALLINGFORD
NORTH BRANFORD
GUILFORD
MADISON
KILLINGWORTH

Appendix B:

NRCS Soil Survey Information

NRCS Soil Survey Information

Hydrologic Soil Group—State of Connecticut
(NRCS AOI)



Map Scale: 1:4,020 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 150 300 600 900

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

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

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

Soil Rating Lines

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

Soil Rating Points

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

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: State of Connecticut
Survey Area Data: Version 22, Sep 12, 2022

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

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
6	Wilbraham and Menlo soils, 0 to 8 percent slopes, extremely stony	C/D	0.8	1.6%
40A	Ludlow silt loam, 0 to 3 percent slopes	C	0.4	0.7%
40B	Ludlow silt loam, 3 to 8 percent slopes	C	0.3	0.5%
63C	Cheshire fine sandy loam, 8 to 15 percent slopes	B	7.8	16.1%
69B	Yalesville fine sandy loam, 3 to 8 percent slopes	C	7.6	15.6%
87B	Wethersfield loam, 3 to 8 percent slopes	C	31.7	65.4%
87C	Wethersfield loam, 8 to 15 percent slopes	C	0.0	0.1%
Totals for Area of Interest			**48.5**	**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

Appendix C:

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

Erosion and Sedimentation Control Checklist

GCE Solar– Durham, CT – 141 Middlefield 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 & 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

GCE Solar– Durham, CT – 141 Middlefield 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.						

Stormwater Control Manager _____

Project Information

Site

Project Name:	GCE Durham Solar
Address or Locus:	141 Middlefield Road
City, State & Zip:	Durham, CT 06422

Developer

Client Name:	Greenskies Clean Energy, LLC
Client Address:	127 Washington Avenue, West Building, Lower Level
Client City, State & Zip:	North Haven, CT 06473
Client Telephone No.:	(860) 398-5408
Client Cell Phone:	(858) 349-2666
Client E-Mail:	jean-paul.lamarche@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:

Sediment Trap Sizing
Water Quality Computations
HydroCAD: Existing Conditions
HydroCAD: Proposed Conditions

Sediment Trap Sizing

Sediment Trap Sizing
GCE Durham Solar
November 2023

TST #	Tributary Disturbed Acreage, ac	*(134 cy / acre)** Volume Required Below Top of Spillway, cf	Volume Provided in Permanent Basin Below Top of Spillway, cf
1	4.6	16,643	22,259
2B	3.4	12,301	13,373
2C	1.5	5,427	6,882
2D	1.5	5,427	6,882

* Per 2002 Connecticut Guidelines for Soil Erosion and Sediment Control

Water Quality Computations

Water Quality Volume Calculations

Project: GCE Durham By: DRB Date: 11/10/23
Location: 141 Middlefield Road, Durham, CT Checked: SJK Date: 11/10/23

Basin Name	DP1	DP2			
Rainfall, P	1.0 in.	1.0 in.			a
Area, A	5.70 ac	9.10 ac			b
Impervious Cover Area	2.30 ac	3.50 ac			c
% Impervious, I	40 %	38 %			
Volumetric Runoff Coeff., R	0.413	0.396			d
Water Quality Volume, WQV	0.196 ac-ft	0.300 ac-ft			e
	8,549 cf	13,086 cf			

WQV Provided	0.288 ac-ft	0.303 ac-ft			f
	12,545 cf	13,199 cf			

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

[b] Area tributary to the stormwater management basin

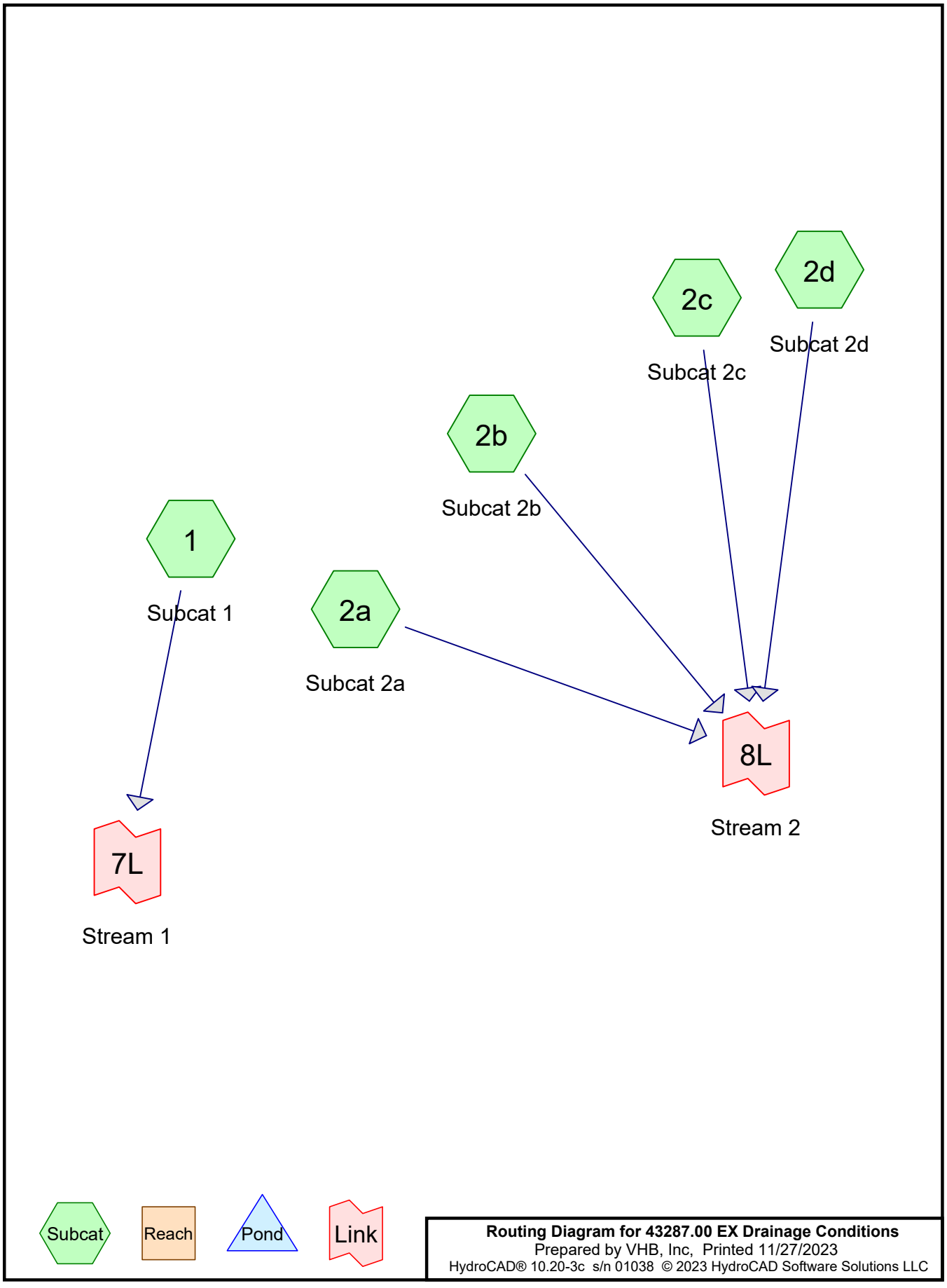
[c] Impervious cover area tributary to the stormwater management basin

[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] Storage volume below the crests of the basin spillways

HydroCAD Analysis: Existing Conditions



Routing Diagram for 43287.00 EX Drainage Conditions
Prepared by VHB, Inc, Printed 11/27/2023

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	Type III 24-hr		Default	24.00	1	3.36	2
2	10-year	Type III 24-hr		Default	24.00	1	5.20	2
3	25-year	Type III 24-hr		Default	24.00	1	6.34	2
4	50-year	Type III 24-hr		Default	24.00	1	7.18	2
5	100-year	Type III 24-hr		Default	24.00	1	8.10	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.726	61	>75% Grass cover, Good, HSG B (1, 2a)
5.482	74	>75% Grass cover, Good, HSG C (1, 2a, 2b, 2c, 2d)
0.000	80	>75% Grass cover, Good, HSG D (2c)
0.241	85	Gravel roads, HSG B (1)
2.126	89	Gravel roads, HSG C (1, 2a, 2b, 2c, 2d)
0.017	91	Gravel roads, HSG D (2c)
0.287	55	Woods, Good, HSG B (1)
3.896	70	Woods, Good, HSG C (1, 2a, 2b, 2c, 2d)
14.775	**73**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
3.254	HSG B	1, 2a
11.504	HSG C	1, 2a, 2b, 2c, 2d
0.017	HSG D	2c
0.000	Other	
14.775		**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	2.726	5.482	0.000	0.000	8.208	>75% Grass cover, Good	1, 2a, 2b, 2c, 2d
0.000	0.241	2.126	0.017	0.000	2.383	Gravel roads	1, 2a, 2b, 2c, 2d
0.000	0.287	3.896	0.000	0.000	4.183	Woods, Good	1, 2a, 2b, 2c, 2d
0.000	**3.254**	**11.504**	**0.017**	**0.000**	**14.775**	**TOTAL AREA**	

Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 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=5.576 ac 0.00% Impervious Runoff Depth=0.82"
Flow Length=900' Tc=11.5 min CN=68 Runoff=3.88 cfs 0.382 af

Subcatchment2a: Subcat 2a Runoff Area=1.013 ac 0.00% Impervious Runoff Depth=1.09"
Flow Length=455' Tc=7.6 min CN=73 Runoff=1.15 cfs 0.092 af

Subcatchment2b: Subcat 2b Runoff Area=5.245 ac 0.00% Impervious Runoff Depth=1.20"
Flow Length=860' Tc=9.6 min CN=75 Runoff=6.27 cfs 0.526 af

Subcatchment2c: Subcat 2c Runoff Area=1.422 ac 0.00% Impervious Runoff Depth=1.39"
Flow Length=560' Tc=9.1 min CN=78 Runoff=2.04 cfs 0.165 af

Subcatchment2d: Subcat 2d Runoff Area=1.519 ac 0.00% Impervious Runoff Depth=1.33"
Flow Length=400' Tc=5.0 min CN=77 Runoff=2.38 cfs 0.168 af

Link 7L: Stream 1 Inflow=3.88 cfs 0.382 af
Primary=3.88 cfs 0.382 af

Link 8L: Stream 2 Inflow=11.42 cfs 0.951 af
Primary=11.42 cfs 0.951 af

Total Runoff Area = 14.775 ac Runoff Volume = 1.332 af Average Runoff Depth = 1.08"
100.00% Pervious = 14.775 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

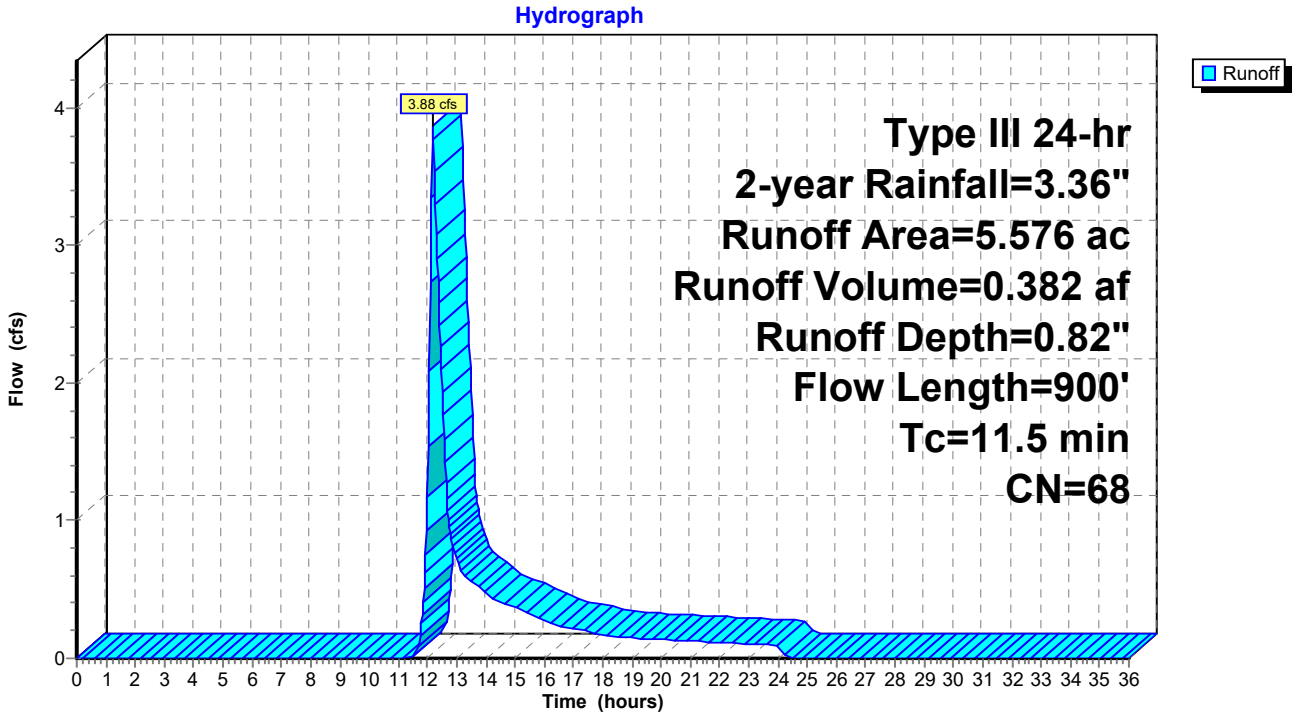
Runoff = 3.88 cfs @ 12.18 hrs, Volume= 0.382 af, Depth= 0.82"
Routed to Link 7L : Stream 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-year Rainfall=3.36"

Area (ac)	CN	Description
2.635	61	>75% Grass cover, Good, HSG B
2.137	74	>75% Grass cover, Good, HSG C
0.241	85	Gravel roads, HSG B
0.230	89	Gravel roads, HSG C
0.287	55	Woods, Good, HSG B
0.045	70	Woods, Good, HSG C
5.576	68	Weighted Average
5.576		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.0800	0.30		**Sheet Flow,** Range n= 0.130 P2= 3.36"
4.0	440	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	260	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.4	150	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.5	900	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2a: Subcat 2a

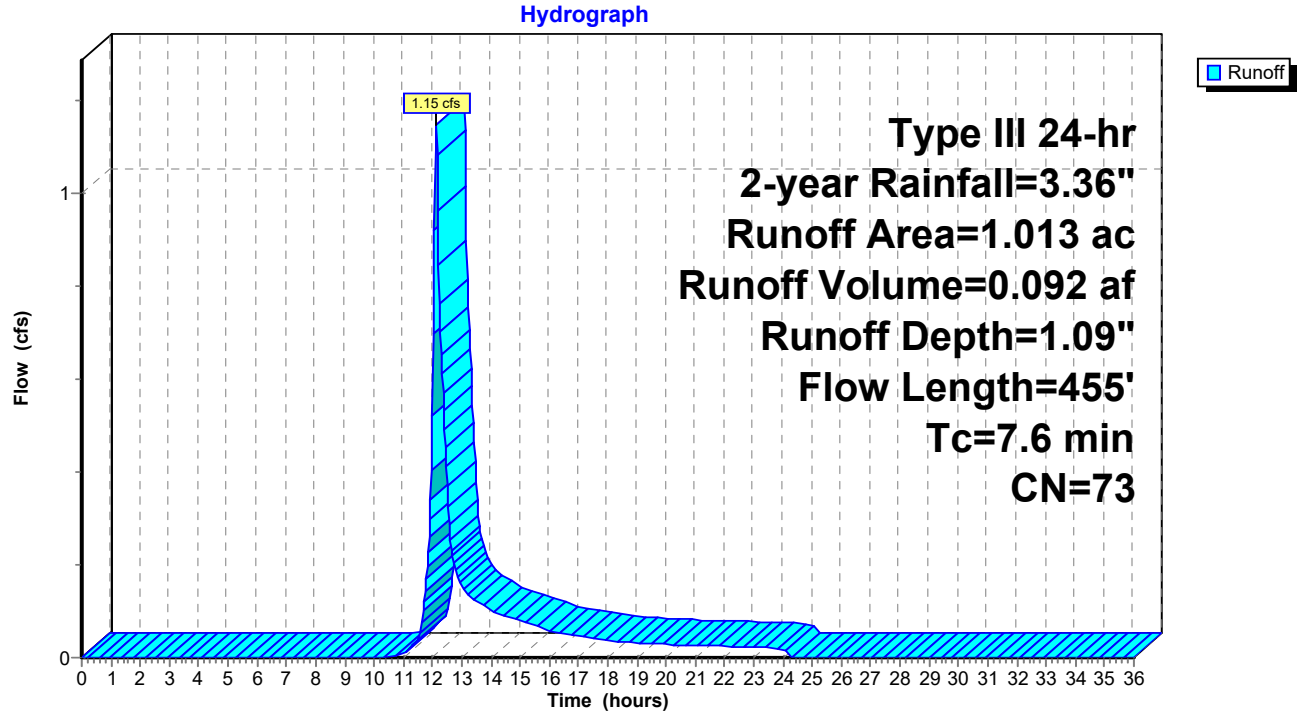
Runoff = 1.15 cfs @ 12.12 hrs, Volume= 0.092 af, Depth= 1.09"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-year Rainfall=3.36"

Area (ac)	CN	Description
0.091	61	>75% Grass cover, Good, HSG B
0.726	74	>75% Grass cover, Good, HSG C
0.068	89	Gravel roads, HSG C
0.128	70	Woods, Good, HSG C
1.013	73	Weighted Average
1.013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	65	0.0900	0.33		**Sheet Flow, 0-65** Range n= 0.130 P2= 3.36"
1.4	140	0.1100	1.66		**Shallow Concentrated Flow, 140** Woodland Kv= 5.0 fps
2.9	250	0.0800	1.41		**Shallow Concentrated Flow, 250** Woodland Kv= 5.0 fps
7.6	455	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 2b: Subcat 2b

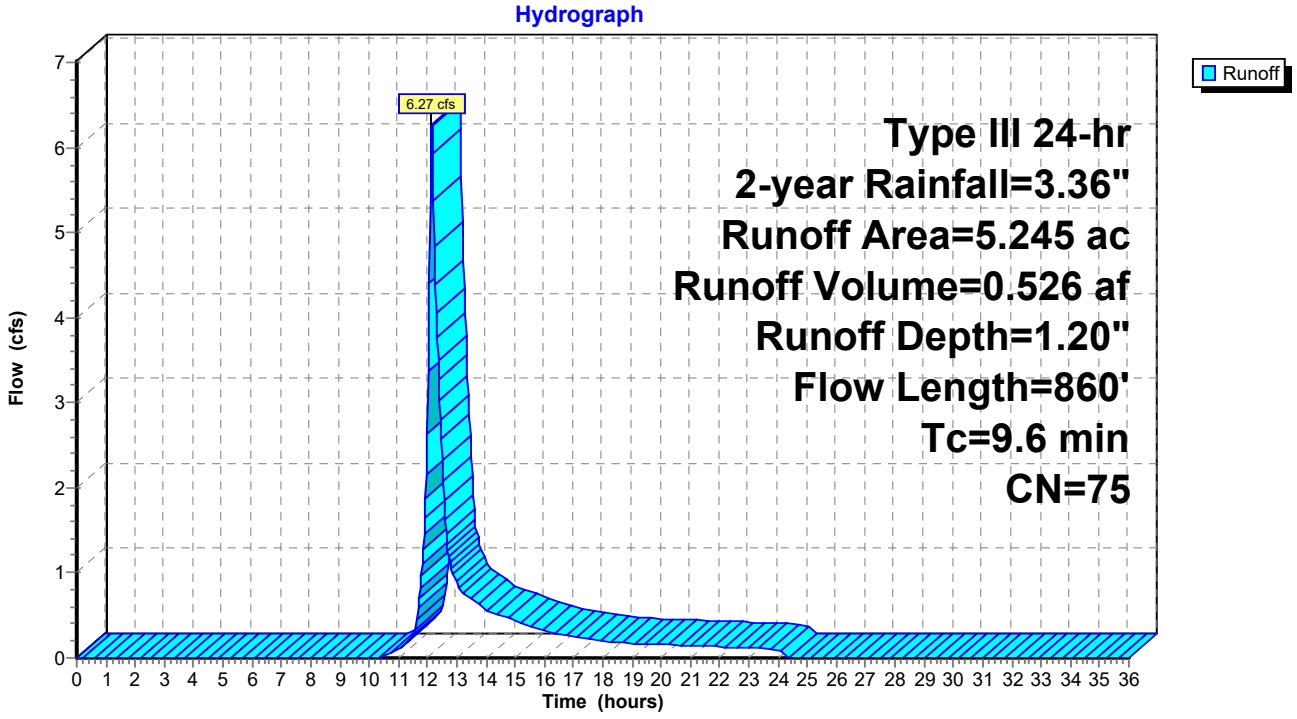
Runoff = 6.27 cfs @ 12.14 hrs, Volume= 0.526 af, Depth= 1.20"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-year Rainfall=3.36"

Area (ac)	CN	Description
1.858	74	>75% Grass cover, Good, HSG C
0.869	89	Gravel roads, HSG C
2.518	70	Woods, Good, HSG C
5.245	75	Weighted Average
5.245		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
2.1	170	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.8	640	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.6	860	Total			

Subcatchment 2b: Subcat 2b



Summary for Subcatchment 2c: Subcat 2c

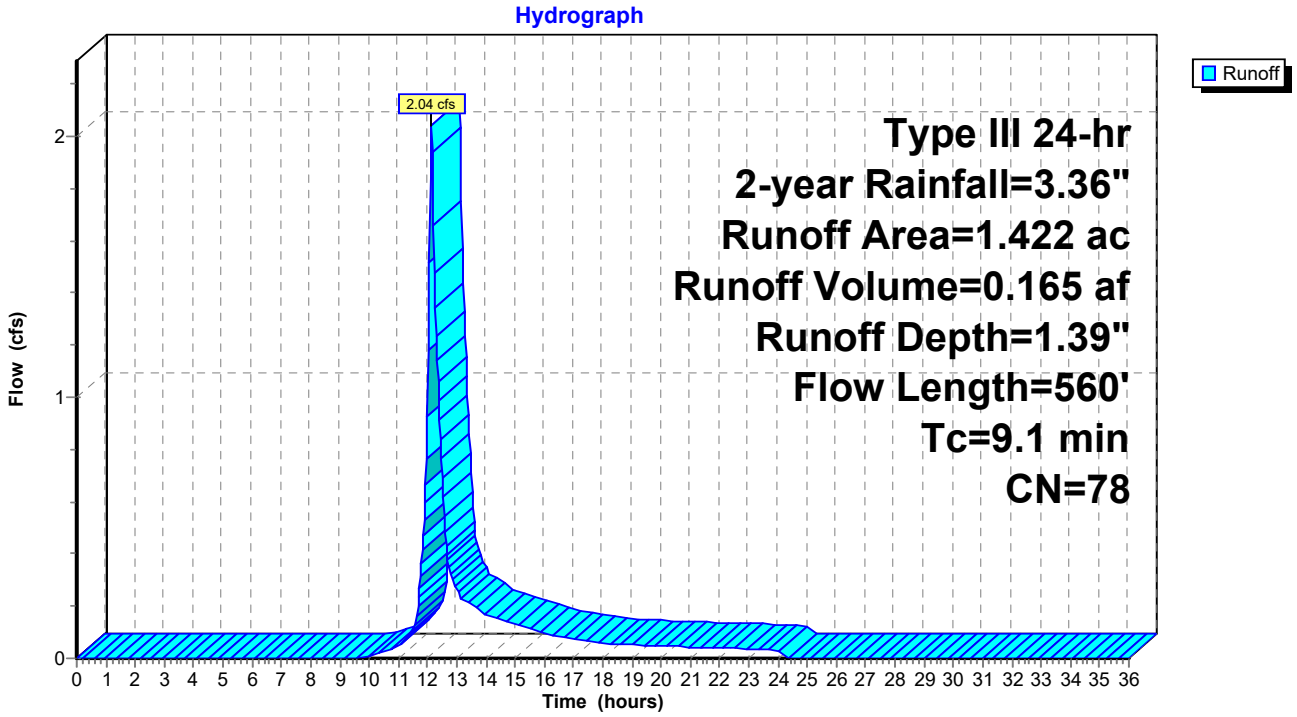
Runoff = 2.04 cfs @ 12.13 hrs, Volume= 0.165 af, Depth= 1.39"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-year Rainfall=3.36"

Area (ac)	CN	Description
0.446	74	>75% Grass cover, Good, HSG C
0.000	80	>75% Grass cover, Good, HSG D
0.476	89	Gravel roads, HSG C
0.017	91	Gravel roads, HSG D
0.483	70	Woods, Good, HSG C
1.422	78	Weighted Average
1.422		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	50	0.0300	0.43		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
3.4	270	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	60	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	50	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	50	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.1	560	Total			

Subcatchment 2c: Subcat 2c



Summary for Subcatchment 2d: Subcat 2d

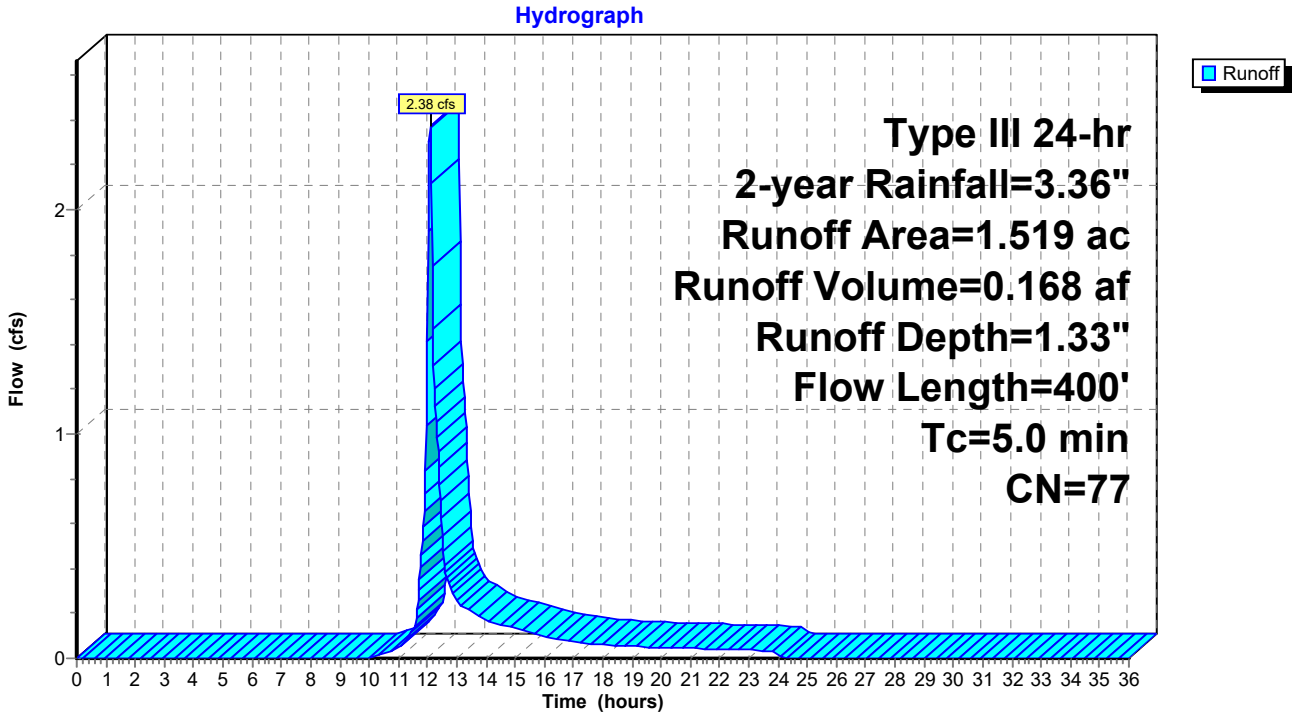
Runoff = 2.38 cfs @ 12.08 hrs, Volume= 0.168 af, Depth= 1.33"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-year Rainfall=3.36"

Area (ac)	CN	Description
0.314	74	>75% Grass cover, Good, HSG C
0.482	89	Gravel roads, HSG C
0.723	70	Woods, Good, HSG C
1.519	77	Weighted Average
1.519		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	35	0.0600	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	100	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.8	400	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2d: Subcat 2d

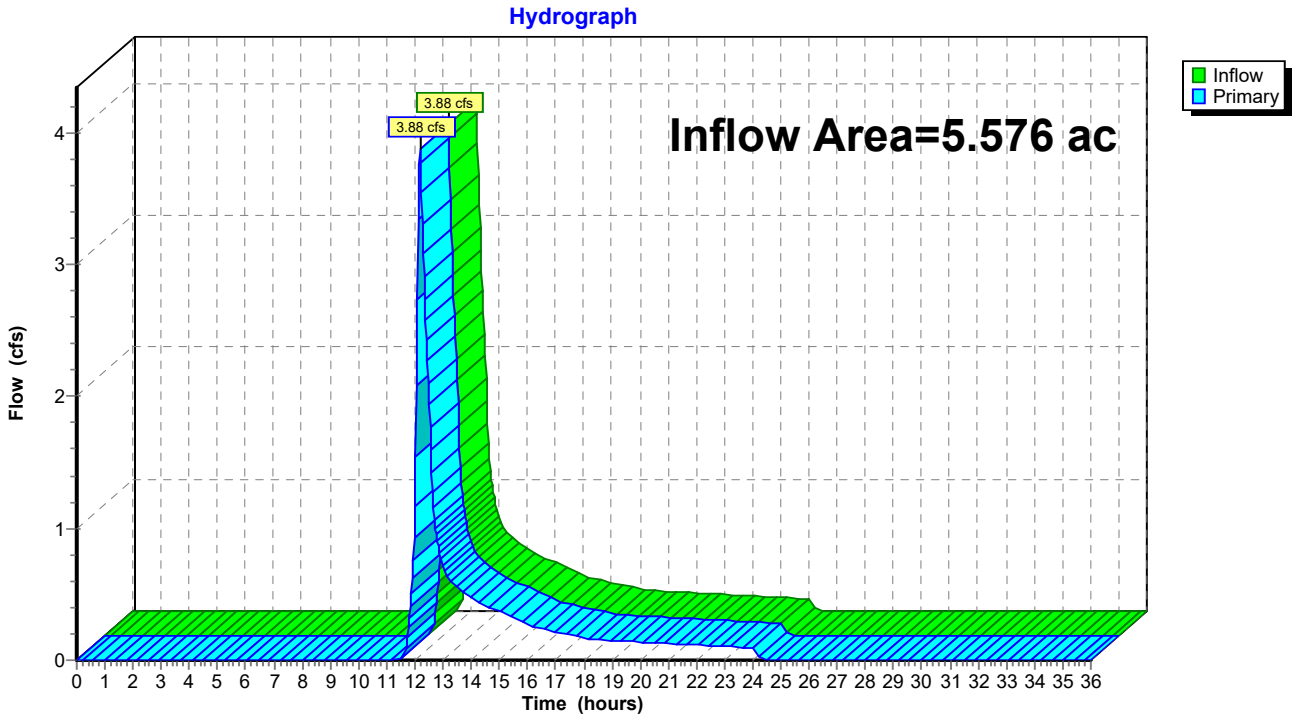


Summary for Link 7L: Stream 1

Inflow Area = 5.576 ac, 0.00% Impervious, Inflow Depth = 0.82" for 2-year event
Inflow = 3.88 cfs @ 12.18 hrs, Volume= 0.382 af
Primary = 3.88 cfs @ 12.18 hrs, Volume= 0.382 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 7L: Stream 1

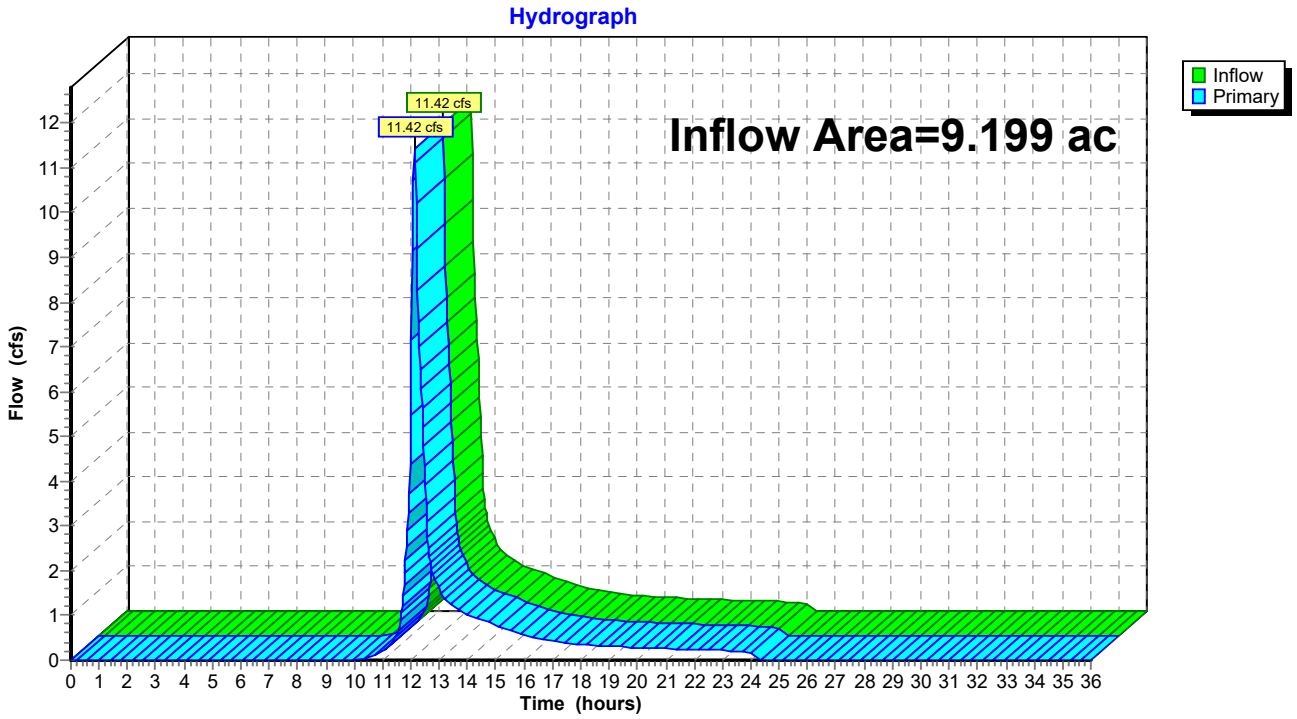


Summary for Link 8L: Stream 2

Inflow Area = 9.199 ac, 0.00% Impervious, Inflow Depth = 1.24" for 2-year event
Inflow = 11.42 cfs @ 12.13 hrs, Volume= 0.951 af
Primary = 11.42 cfs @ 12.13 hrs, Volume= 0.951 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 8L: Stream 2



Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 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=5.576 ac 0.00% Impervious Runoff Depth=2.02"
Flow Length=900' Tc=11.5 min CN=68 Runoff=10.68 cfs 0.940 af

Subcatchment2a: Subcat 2a Runoff Area=1.013 ac 0.00% Impervious Runoff Depth=2.44"
Flow Length=455' Tc=7.6 min CN=73 Runoff=2.71 cfs 0.206 af

Subcatchment2b: Subcat 2b Runoff Area=5.245 ac 0.00% Impervious Runoff Depth=2.61"
Flow Length=860' Tc=9.6 min CN=75 Runoff=14.11 cfs 1.142 af

Subcatchment2c: Subcat 2c Runoff Area=1.422 ac 0.00% Impervious Runoff Depth=2.88"
Flow Length=560' Tc=9.1 min CN=78 Runoff=4.31 cfs 0.342 af

Subcatchment2d: Subcat 2d Runoff Area=1.519 ac 0.00% Impervious Runoff Depth=2.79"
Flow Length=400' Tc=5.0 min CN=77 Runoff=5.10 cfs 0.353 af

Link 7L: Stream 1 Inflow=10.68 cfs 0.940 af
Primary=10.68 cfs 0.940 af

Link 8L: Stream 2 Inflow=25.37 cfs 2.042 af
Primary=25.37 cfs 2.042 af

Total Runoff Area = 14.775 ac Runoff Volume = 2.983 af Average Runoff Depth = 2.42"
100.00% Pervious = 14.775 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

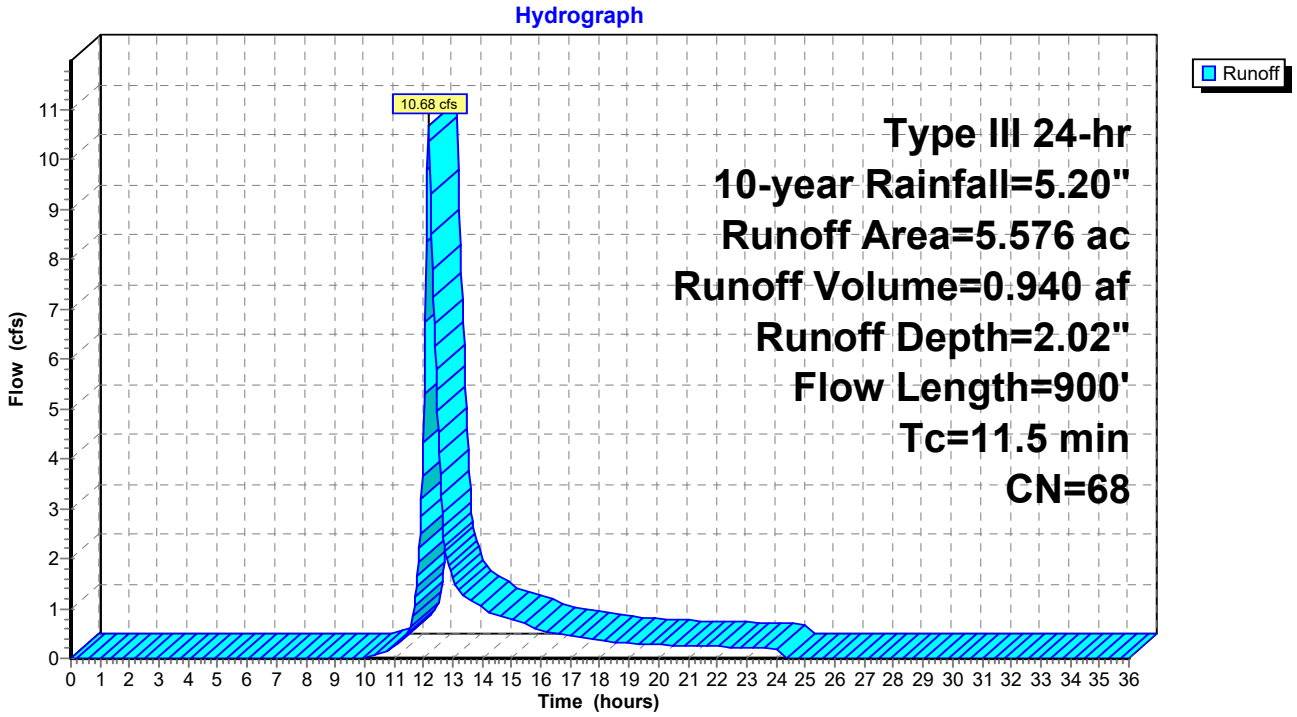
Runoff = 10.68 cfs @ 12.17 hrs, Volume= 0.940 af, Depth= 2.02"
Routed to Link 7L : Stream 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-year Rainfall=5.20"

Area (ac)	CN	Description
2.635	61	>75% Grass cover, Good, HSG B
2.137	74	>75% Grass cover, Good, HSG C
0.241	85	Gravel roads, HSG B
0.230	89	Gravel roads, HSG C
0.287	55	Woods, Good, HSG B
0.045	70	Woods, Good, HSG C
5.576	68	Weighted Average
5.576		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.0800	0.30		**Sheet Flow,** Range n= 0.130 P2= 3.36"
4.0	440	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	260	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.4	150	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.5	900	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2a: Subcat 2a

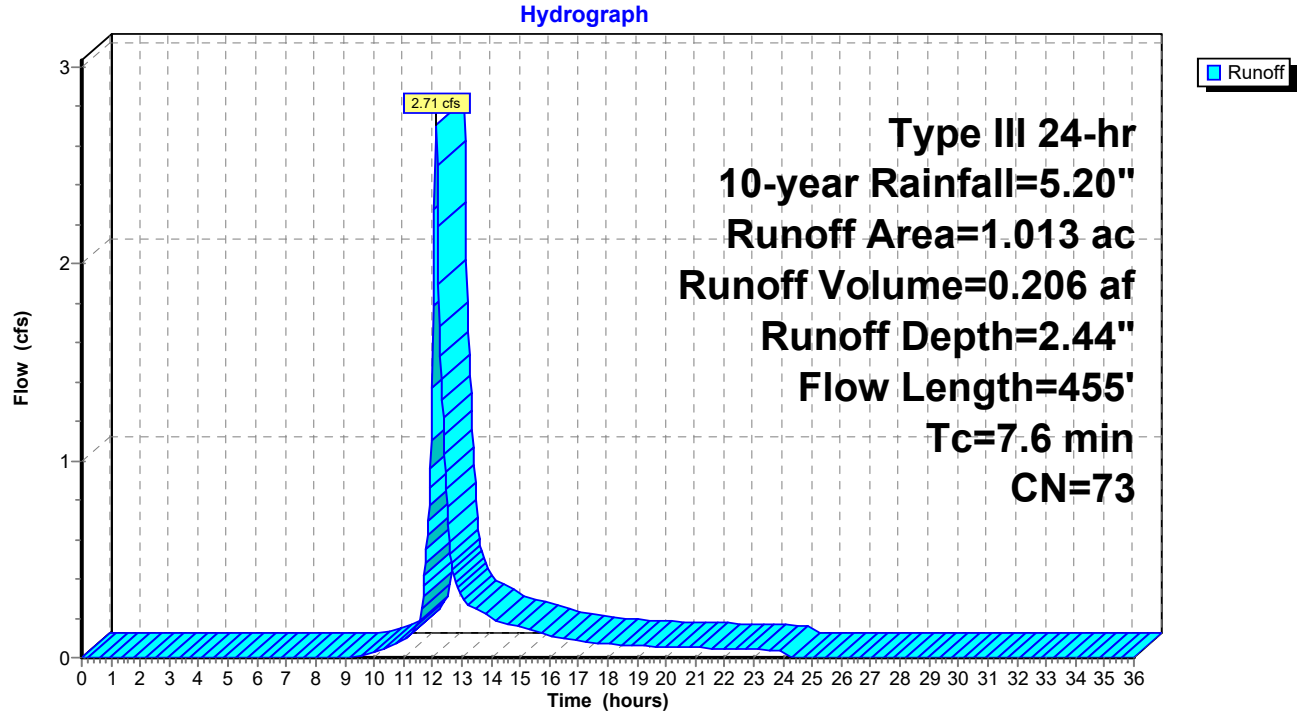
Runoff = 2.71 cfs @ 12.11 hrs, Volume= 0.206 af, Depth= 2.44"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-year Rainfall=5.20"

Area (ac)	CN	Description
0.091	61	>75% Grass cover, Good, HSG B
0.726	74	>75% Grass cover, Good, HSG C
0.068	89	Gravel roads, HSG C
0.128	70	Woods, Good, HSG C
1.013	73	Weighted Average
1.013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	65	0.0900	0.33		**Sheet Flow, 0-65** Range n= 0.130 P2= 3.36"
1.4	140	0.1100	1.66		**Shallow Concentrated Flow, 140** Woodland Kv= 5.0 fps
2.9	250	0.0800	1.41		**Shallow Concentrated Flow, 250** Woodland Kv= 5.0 fps
7.6	455	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 2b: Subcat 2b

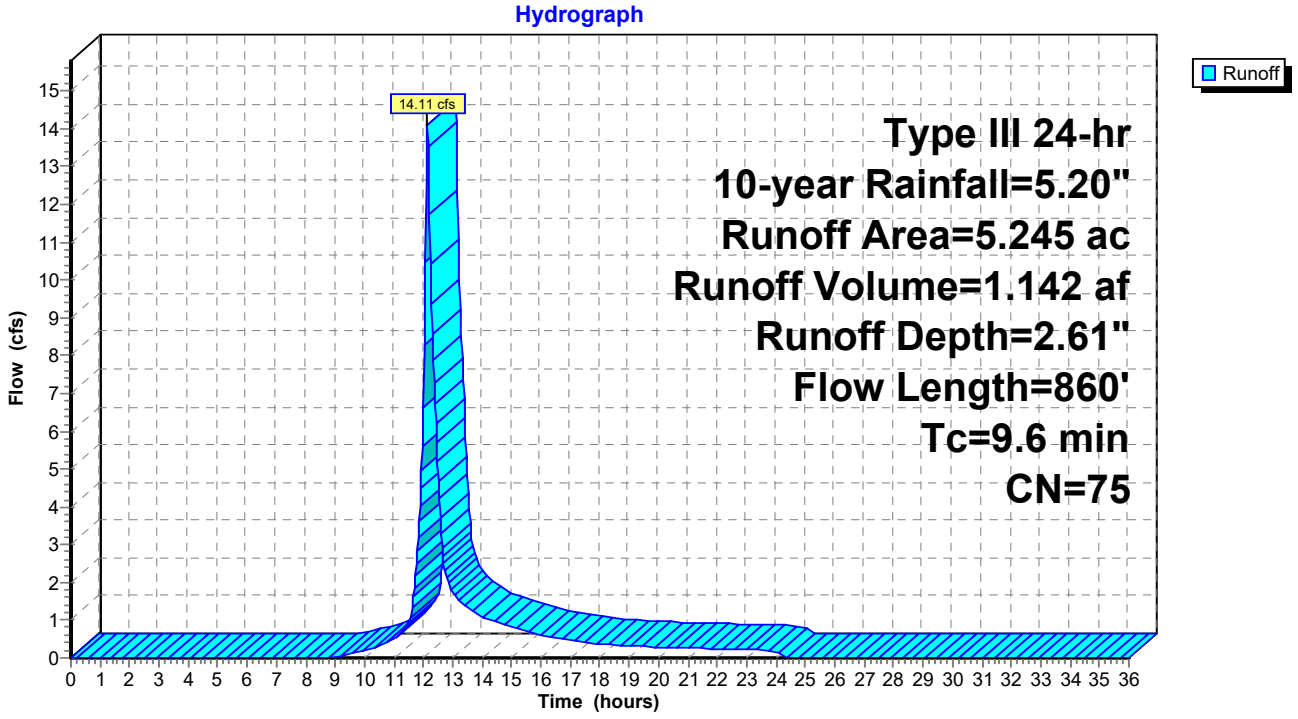
Runoff = 14.11 cfs @ 12.14 hrs, Volume= 1.142 af, Depth= 2.61"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-year Rainfall=5.20"

Area (ac)	CN	Description
1.858	74	>75% Grass cover, Good, HSG C
0.869	89	Gravel roads, HSG C
2.518	70	Woods, Good, HSG C
5.245	75	Weighted Average
5.245		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
2.1	170	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.8	640	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.6	860	Total			

Subcatchment 2b: Subcat 2b



Summary for Subcatchment 2c: Subcat 2c

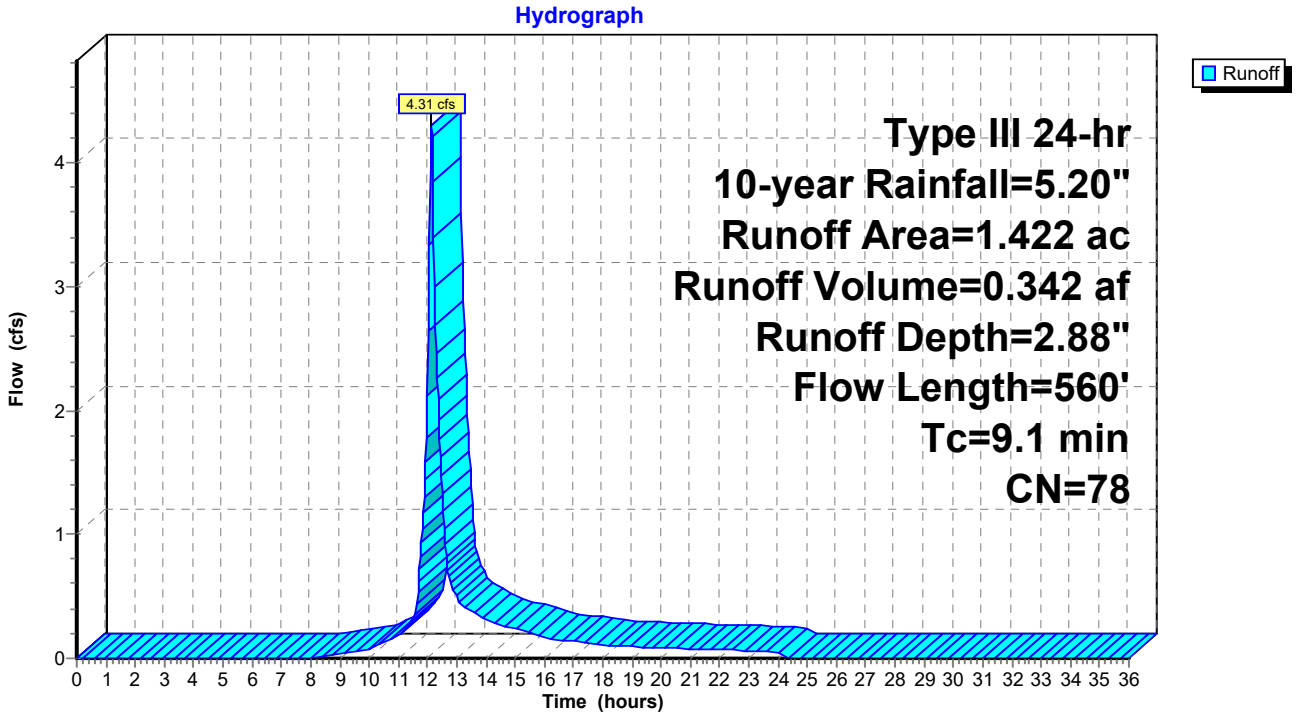
Runoff = 4.31 cfs @ 12.13 hrs, Volume= 0.342 af, Depth= 2.88"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-year Rainfall=5.20"

Area (ac)	CN	Description
0.446	74	>75% Grass cover, Good, HSG C
0.000	80	>75% Grass cover, Good, HSG D
0.476	89	Gravel roads, HSG C
0.017	91	Gravel roads, HSG D
0.483	70	Woods, Good, HSG C
1.422	78	Weighted Average
1.422		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	50	0.0300	0.43		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
3.4	270	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	60	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	50	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	50	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.1	560	Total			

Subcatchment 2c: Subcat 2c



Summary for Subcatchment 2d: Subcat 2d

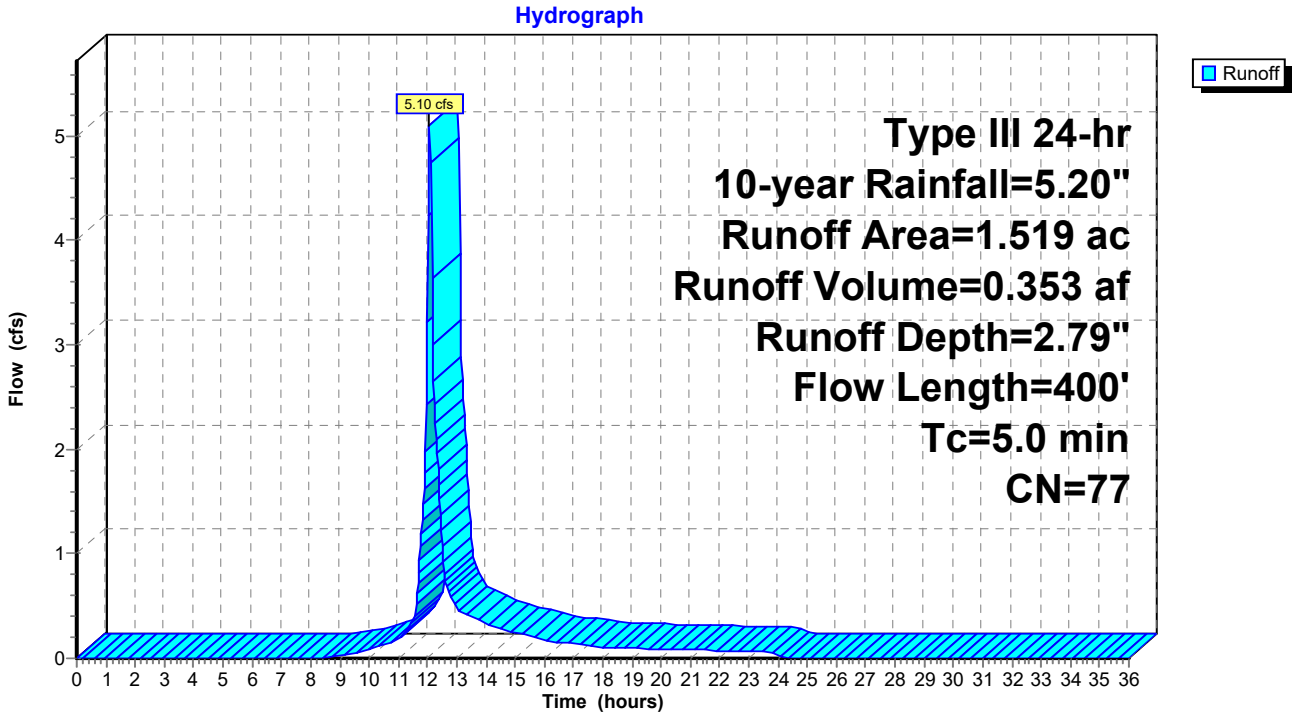
Runoff = 5.10 cfs @ 12.08 hrs, Volume= 0.353 af, Depth= 2.79"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-year Rainfall=5.20"

Area (ac)	CN	Description
0.314	74	>75% Grass cover, Good, HSG C
0.482	89	Gravel roads, HSG C
0.723	70	Woods, Good, HSG C
1.519	77	Weighted Average
1.519		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	35	0.0600	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	100	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.8	400	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2d: Subcat 2d

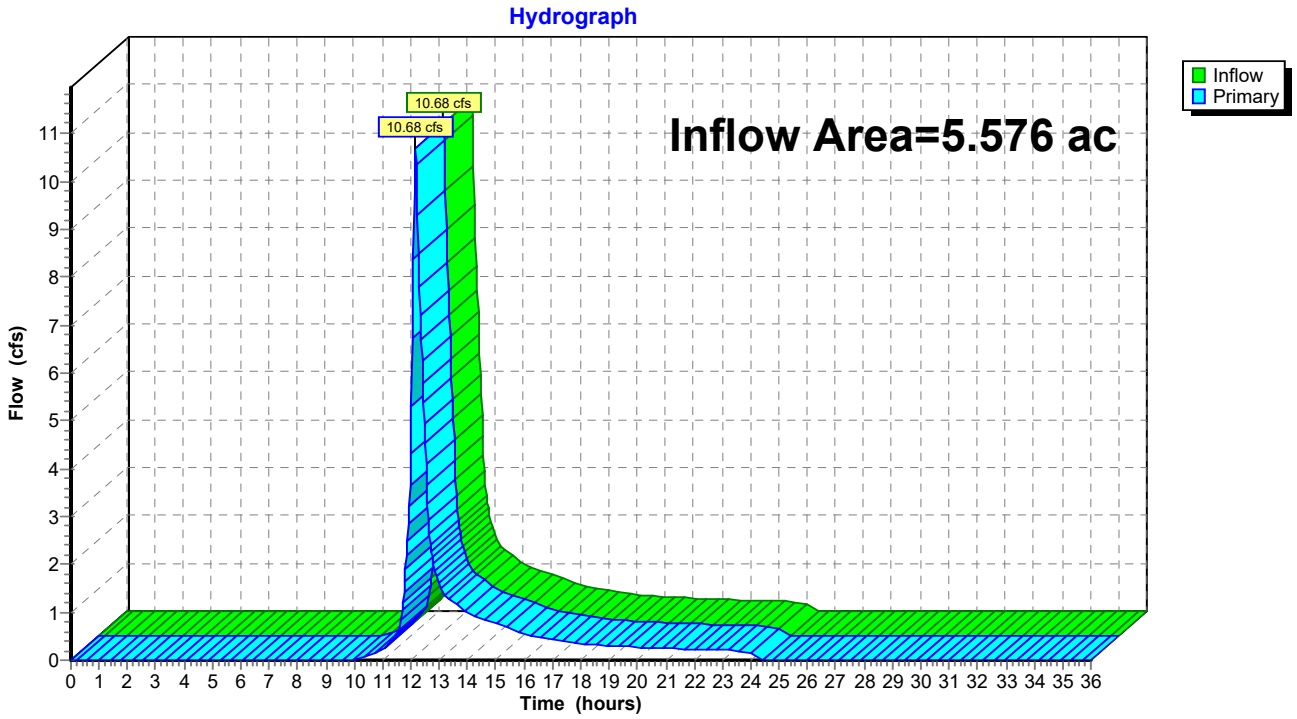


Summary for Link 7L: Stream 1

Inflow Area = 5.576 ac, 0.00% Impervious, Inflow Depth = 2.02" for 10-year event
Inflow = 10.68 cfs @ 12.17 hrs, Volume= 0.940 af
Primary = 10.68 cfs @ 12.17 hrs, Volume= 0.940 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 7L: Stream 1

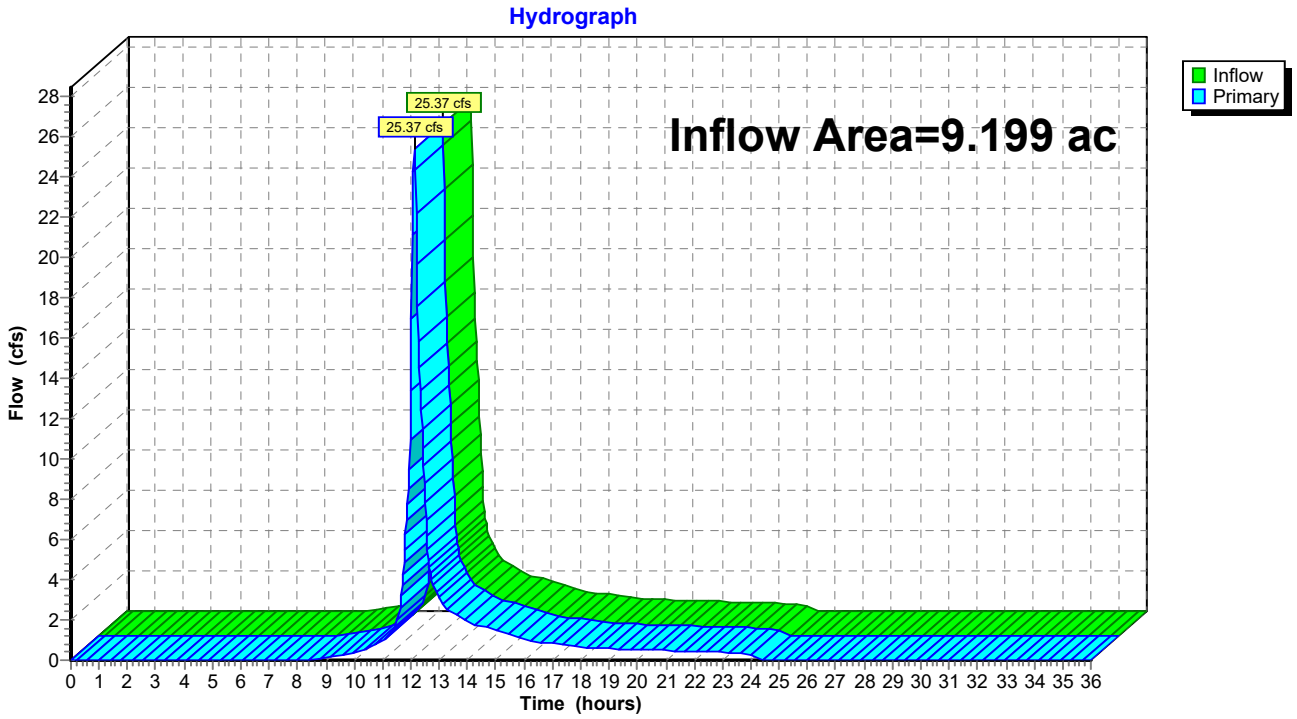


Summary for Link 8L: Stream 2

Inflow Area = 9.199 ac, 0.00% Impervious, Inflow Depth = 2.66" for 10-year event
Inflow = 25.37 cfs @ 12.12 hrs, Volume= 2.042 af
Primary = 25.37 cfs @ 12.12 hrs, Volume= 2.042 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 8L: Stream 2



Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 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=5.576 ac 0.00% Impervious Runoff Depth=2.88"
Flow Length=900' Tc=11.5 min CN=68 Runoff=15.54 cfs 1.340 af

Subcatchment2a: Subcat 2a Runoff Area=1.013 ac 0.00% Impervious Runoff Depth=3.37"
Flow Length=455' Tc=7.6 min CN=73 Runoff=3.77 cfs 0.285 af

Subcatchment2b: Subcat 2b Runoff Area=5.245 ac 0.00% Impervious Runoff Depth=3.57"
Flow Length=860' Tc=9.6 min CN=75 Runoff=19.35 cfs 1.562 af

Subcatchment2c: Subcat 2c Runoff Area=1.422 ac 0.00% Impervious Runoff Depth=3.88"
Flow Length=560' Tc=9.1 min CN=78 Runoff=5.79 cfs 0.460 af

Subcatchment2d: Subcat 2d Runoff Area=1.519 ac 0.00% Impervious Runoff Depth=3.78"
Flow Length=400' Tc=5.0 min CN=77 Runoff=6.92 cfs 0.478 af

Link 7L: Stream 1 Inflow=15.54 cfs 1.340 af
Primary=15.54 cfs 1.340 af

Link 8L: Stream 2 Inflow=34.65 cfs 2.785 af
Primary=34.65 cfs 2.785 af

Total Runoff Area = 14.775 ac Runoff Volume = 4.125 af Average Runoff Depth = 3.35"
100.00% Pervious = 14.775 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

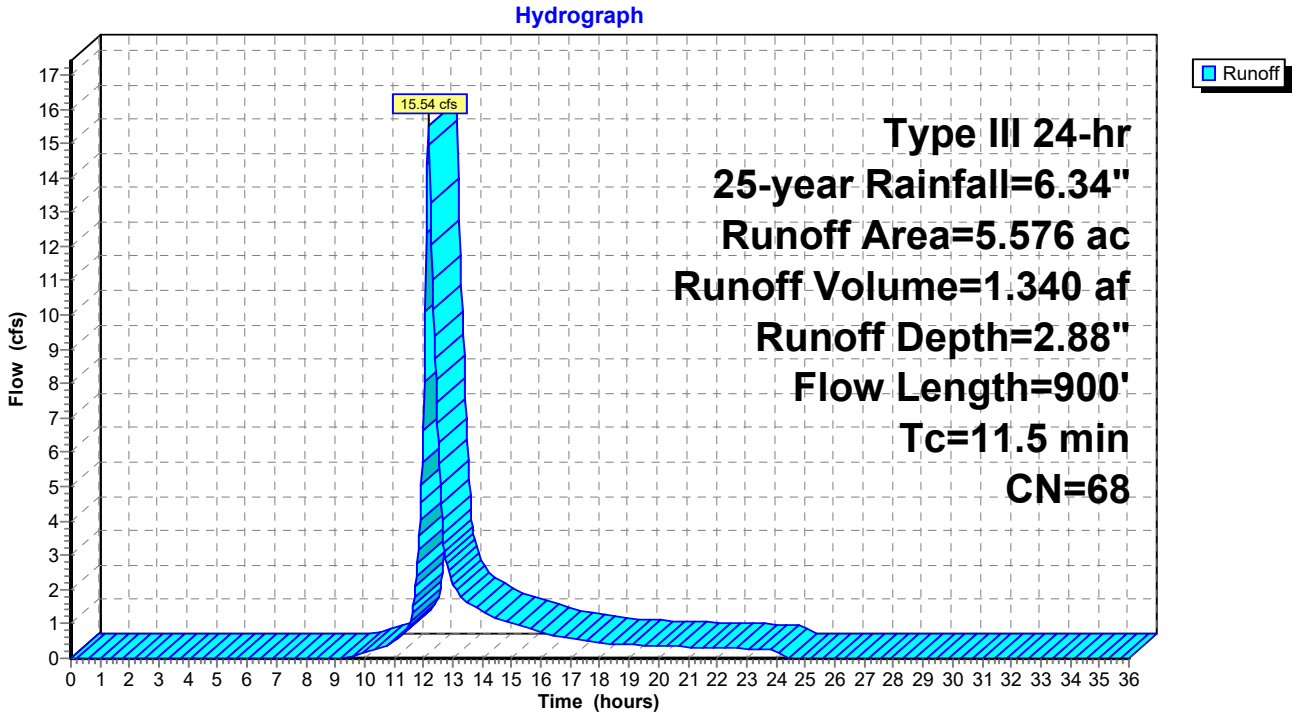
Runoff = 15.54 cfs @ 12.16 hrs, Volume= 1.340 af, Depth= 2.88"
Routed to Link 7L : Stream 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-year Rainfall=6.34"

Area (ac)	CN	Description
2.635	61	>75% Grass cover, Good, HSG B
2.137	74	>75% Grass cover, Good, HSG C
0.241	85	Gravel roads, HSG B
0.230	89	Gravel roads, HSG C
0.287	55	Woods, Good, HSG B
0.045	70	Woods, Good, HSG C
5.576	68	Weighted Average
5.576		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.0800	0.30		**Sheet Flow,** Range n= 0.130 P2= 3.36"
4.0	440	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	260	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.4	150	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.5	900	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2a: Subcat 2a

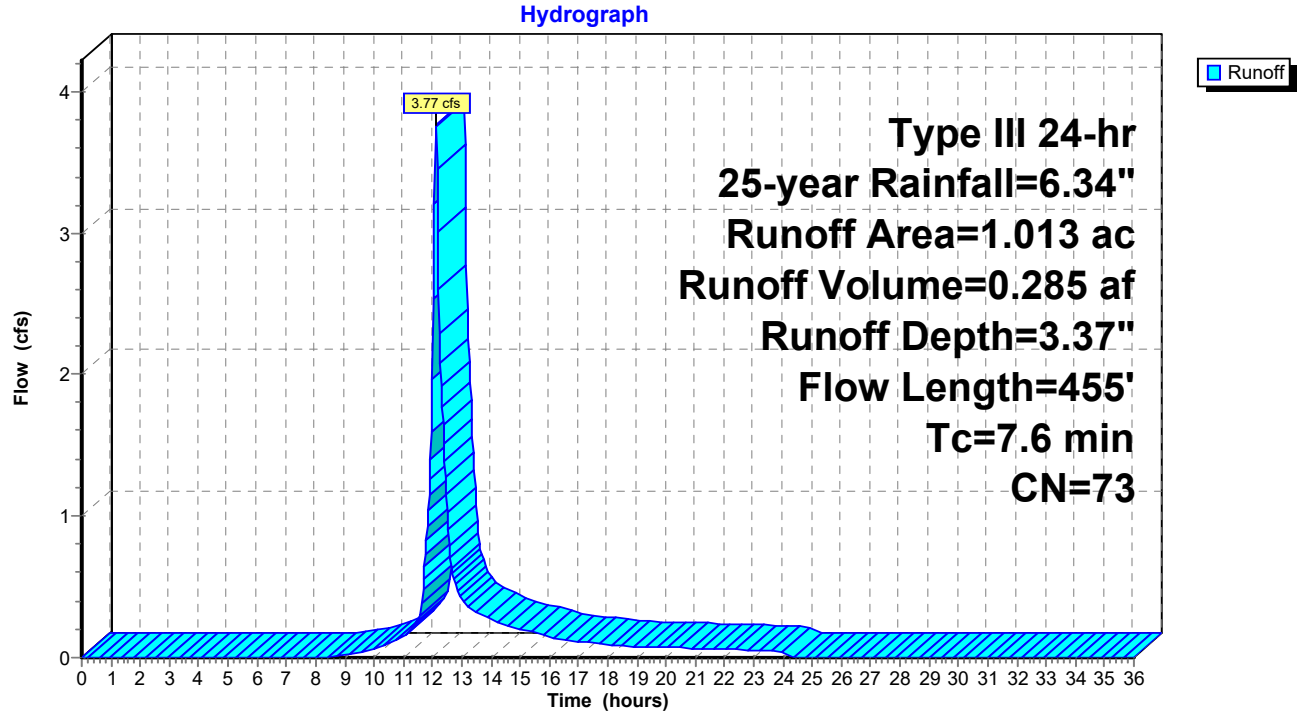
Runoff = 3.77 cfs @ 12.11 hrs, Volume= 0.285 af, Depth= 3.37"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-year Rainfall=6.34"

Area (ac)	CN	Description
0.091	61	>75% Grass cover, Good, HSG B
0.726	74	>75% Grass cover, Good, HSG C
0.068	89	Gravel roads, HSG C
0.128	70	Woods, Good, HSG C
1.013	73	Weighted Average
1.013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	65	0.0900	0.33		**Sheet Flow, 0-65** Range n= 0.130 P2= 3.36"
1.4	140	0.1100	1.66		**Shallow Concentrated Flow, 140** Woodland Kv= 5.0 fps
2.9	250	0.0800	1.41		**Shallow Concentrated Flow, 250** Woodland Kv= 5.0 fps
7.6	455	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 2b: Subcat 2b

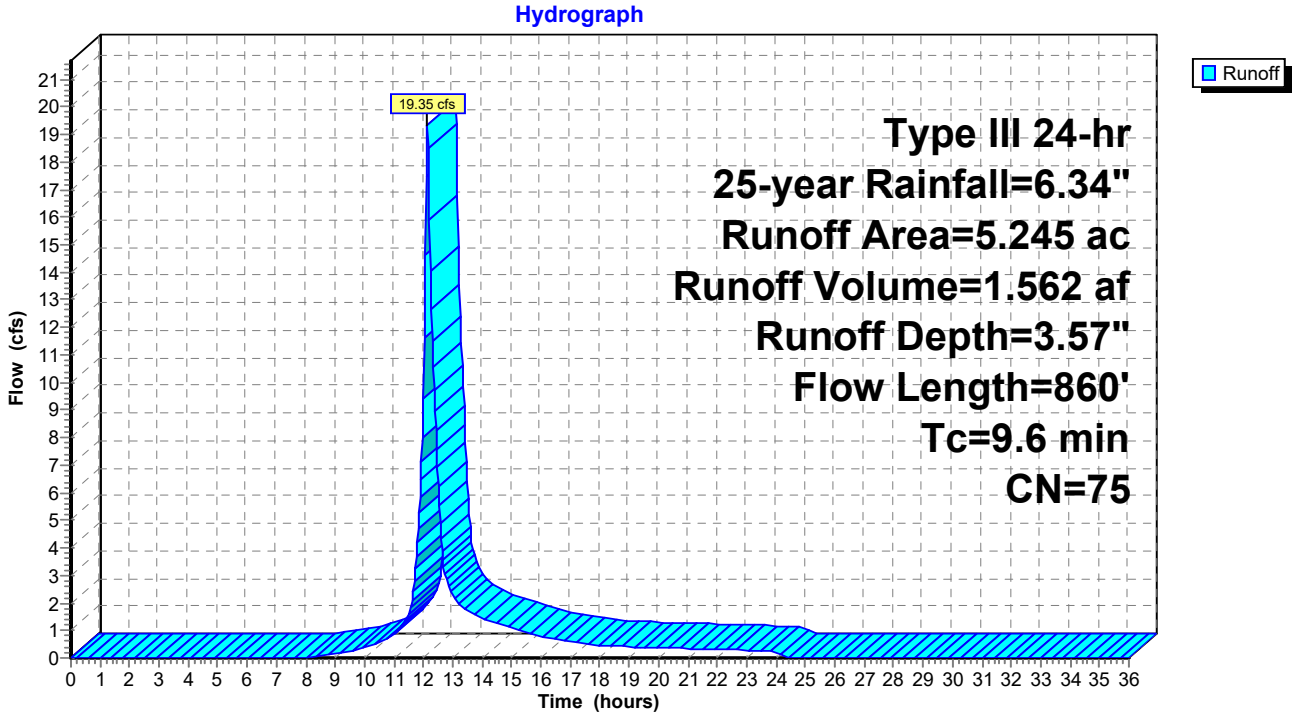
Runoff = 19.35 cfs @ 12.14 hrs, Volume= 1.562 af, Depth= 3.57"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-year Rainfall=6.34"

Area (ac)	CN	Description
1.858	74	>75% Grass cover, Good, HSG C
0.869	89	Gravel roads, HSG C
2.518	70	Woods, Good, HSG C
5.245	75	Weighted Average
5.245		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
2.1	170	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.8	640	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.6	860	Total			

Subcatchment 2b: Subcat 2b



Summary for Subcatchment 2c: Subcat 2c

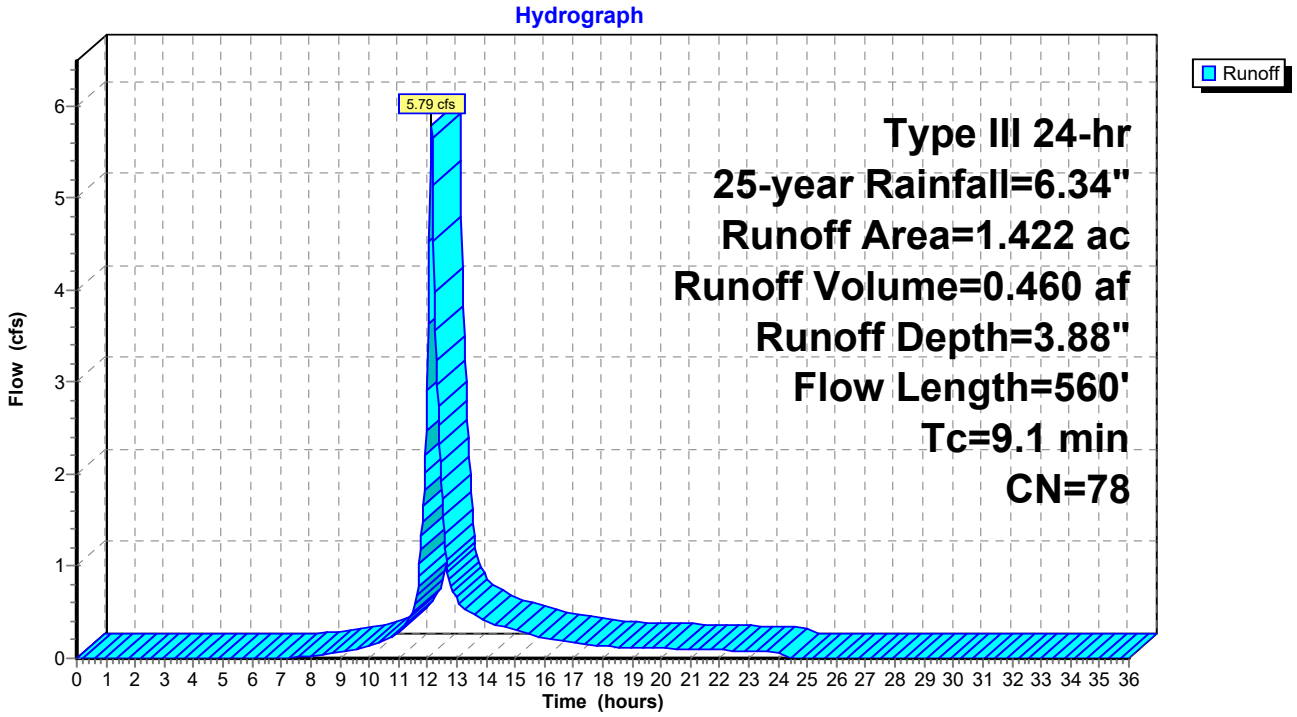
Runoff = 5.79 cfs @ 12.13 hrs, Volume= 0.460 af, Depth= 3.88"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-year Rainfall=6.34"

Area (ac)	CN	Description
0.446	74	>75% Grass cover, Good, HSG C
0.000	80	>75% Grass cover, Good, HSG D
0.476	89	Gravel roads, HSG C
0.017	91	Gravel roads, HSG D
0.483	70	Woods, Good, HSG C
1.422	78	Weighted Average
1.422		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	50	0.0300	0.43		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
3.4	270	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	60	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	50	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	50	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.1	560	Total			

Subcatchment 2c: Subcat 2c



Summary for Subcatchment 2d: Subcat 2d

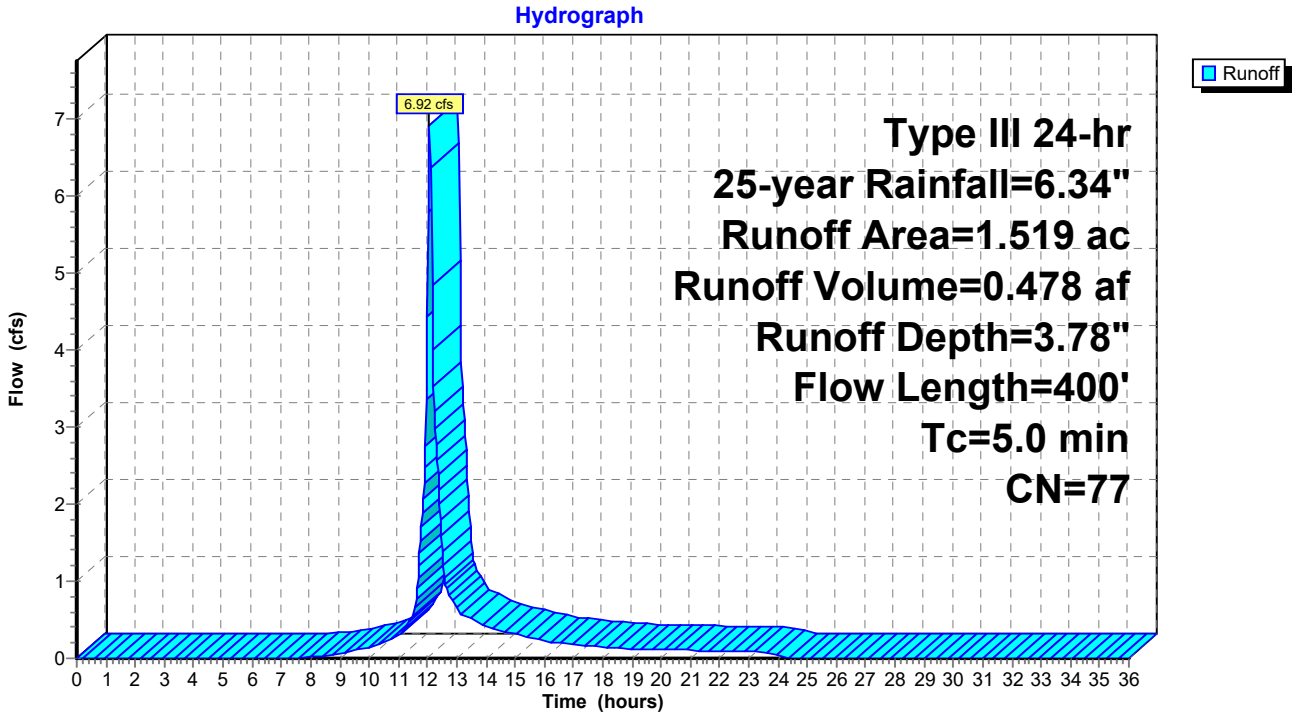
Runoff = 6.92 cfs @ 12.07 hrs, Volume= 0.478 af, Depth= 3.78"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-year Rainfall=6.34"

Area (ac)	CN	Description
0.314	74	>75% Grass cover, Good, HSG C
0.482	89	Gravel roads, HSG C
0.723	70	Woods, Good, HSG C
1.519	77	Weighted Average
1.519		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	35	0.0600	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	100	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.8	400	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2d: Subcat 2d

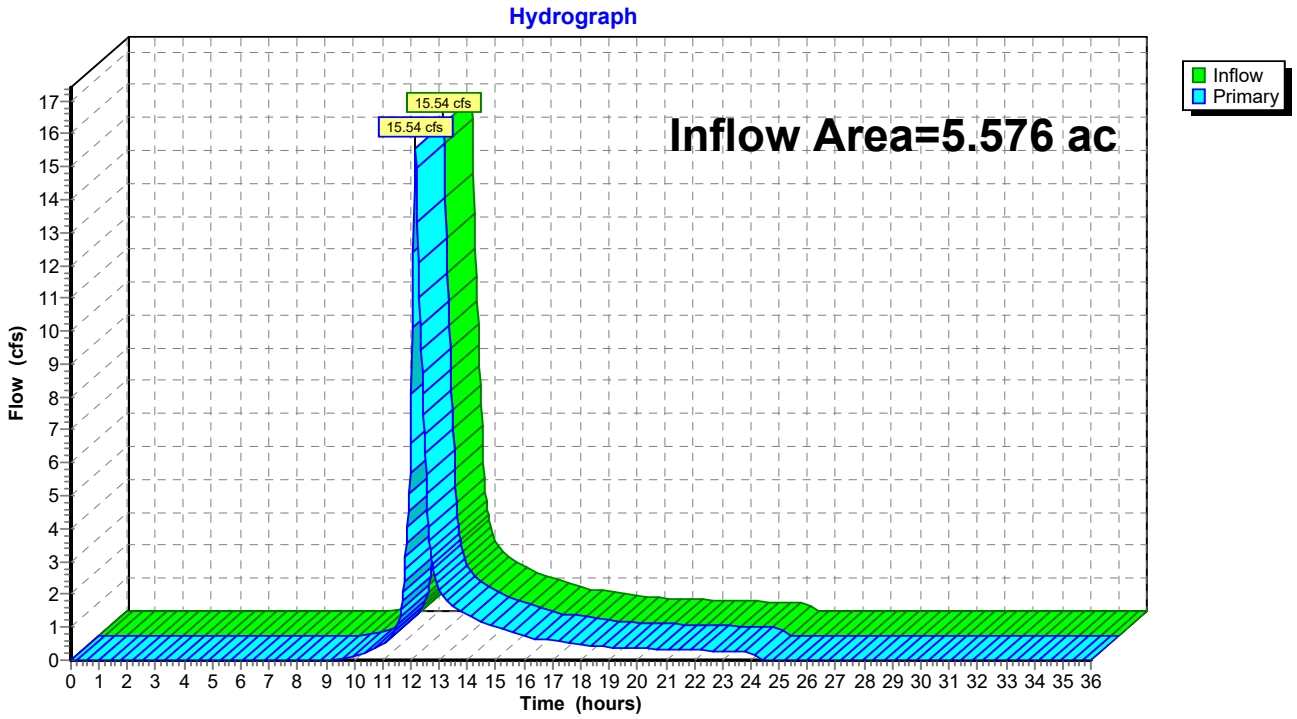


Summary for Link 7L: Stream 1

Inflow Area = 5.576 ac, 0.00% Impervious, Inflow Depth = 2.88" for 25-year event
Inflow = 15.54 cfs @ 12.16 hrs, Volume= 1.340 af
Primary = 15.54 cfs @ 12.16 hrs, Volume= 1.340 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 7L: Stream 1

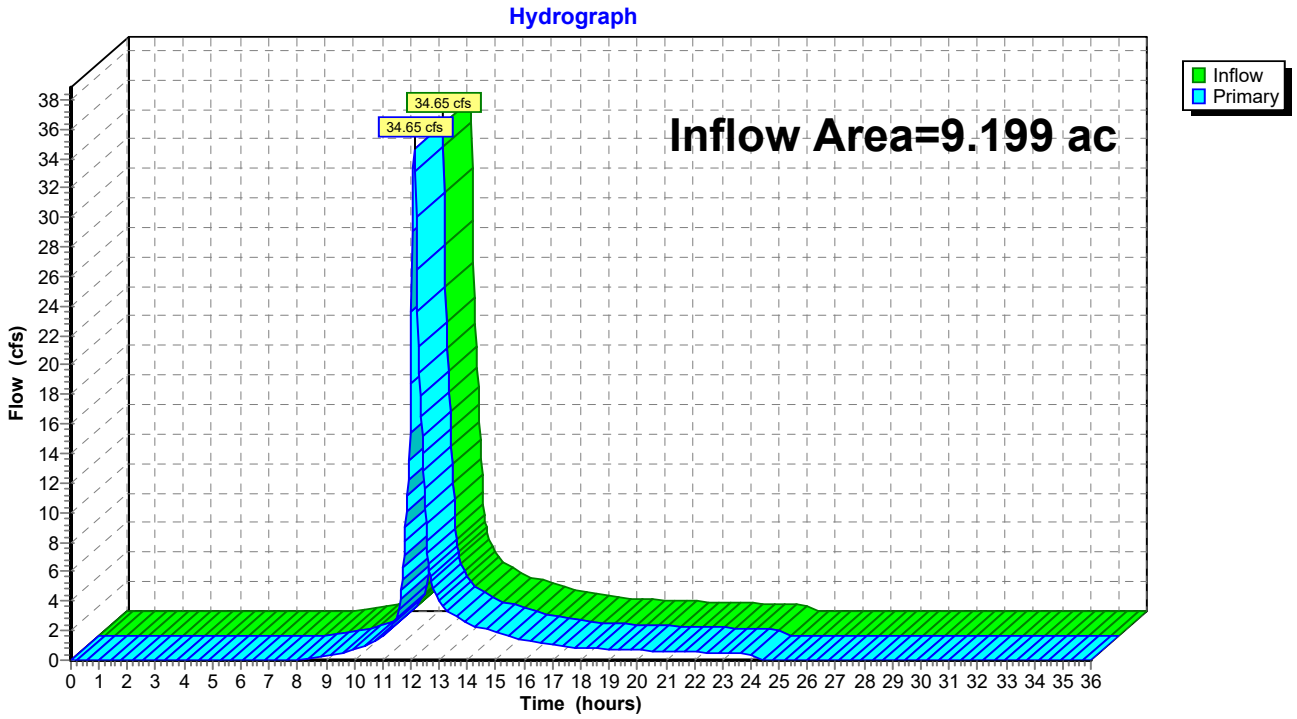


Summary for Link 8L: Stream 2

Inflow Area = 9.199 ac, 0.00% Impervious, Inflow Depth = 3.63" for 25-year event
Inflow = 34.65 cfs @ 12.12 hrs, Volume= 2.785 af
Primary = 34.65 cfs @ 12.12 hrs, Volume= 2.785 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 8L: Stream 2



Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 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=5.576 ac 0.00% Impervious Runoff Depth=3.56"
Flow Length=900' Tc=11.5 min CN=68 Runoff=19.28 cfs 1.653 af

Subcatchment2a: Subcat 2a Runoff Area=1.013 ac 0.00% Impervious Runoff Depth=4.09"
Flow Length=455' Tc=7.6 min CN=73 Runoff=4.57 cfs 0.345 af

Subcatchment2b: Subcat 2b Runoff Area=5.245 ac 0.00% Impervious Runoff Depth=4.31"
Flow Length=860' Tc=9.6 min CN=75 Runoff=23.35 cfs 1.883 af

Subcatchment2c: Subcat 2c Runoff Area=1.422 ac 0.00% Impervious Runoff Depth=4.64"
Flow Length=560' Tc=9.1 min CN=78 Runoff=6.90 cfs 0.550 af

Subcatchment2d: Subcat 2d Runoff Area=1.519 ac 0.00% Impervious Runoff Depth=4.53"
Flow Length=400' Tc=5.0 min CN=77 Runoff=8.27 cfs 0.573 af

Link 7L: Stream 1 Inflow=19.28 cfs 1.653 af
Primary=19.28 cfs 1.653 af

Link 8L: Stream 2 Inflow=41.63 cfs 3.351 af
Primary=41.63 cfs 3.351 af

Total Runoff Area = 14.775 ac Runoff Volume = 5.004 af Average Runoff Depth = 4.06"
100.00% Pervious = 14.775 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

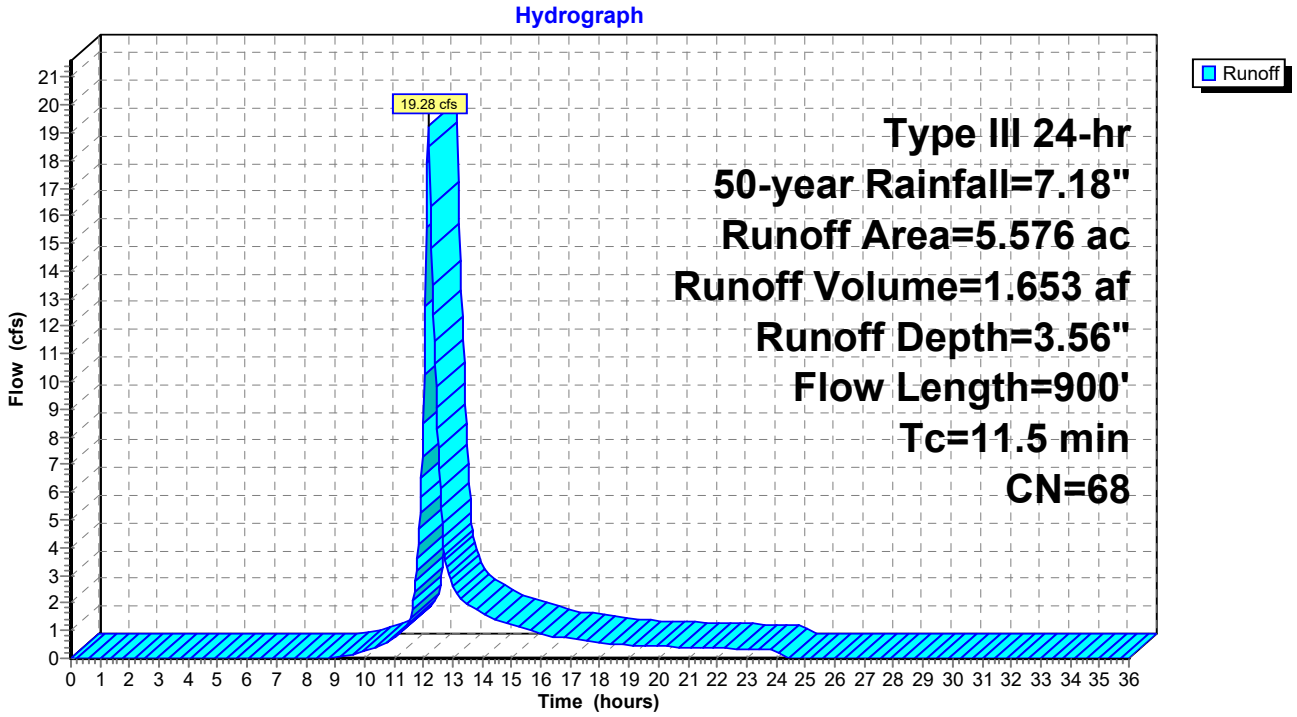
Runoff = 19.28 cfs @ 12.16 hrs, Volume= 1.653 af, Depth= 3.56"
Routed to Link 7L : Stream 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 50-year Rainfall=7.18"

Area (ac)	CN	Description
2.635	61	>75% Grass cover, Good, HSG B
2.137	74	>75% Grass cover, Good, HSG C
0.241	85	Gravel roads, HSG B
0.230	89	Gravel roads, HSG C
0.287	55	Woods, Good, HSG B
0.045	70	Woods, Good, HSG C
5.576	68	Weighted Average
5.576		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.0800	0.30		**Sheet Flow,** Range n= 0.130 P2= 3.36"
4.0	440	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	260	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.4	150	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.5	900	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2a: Subcat 2a

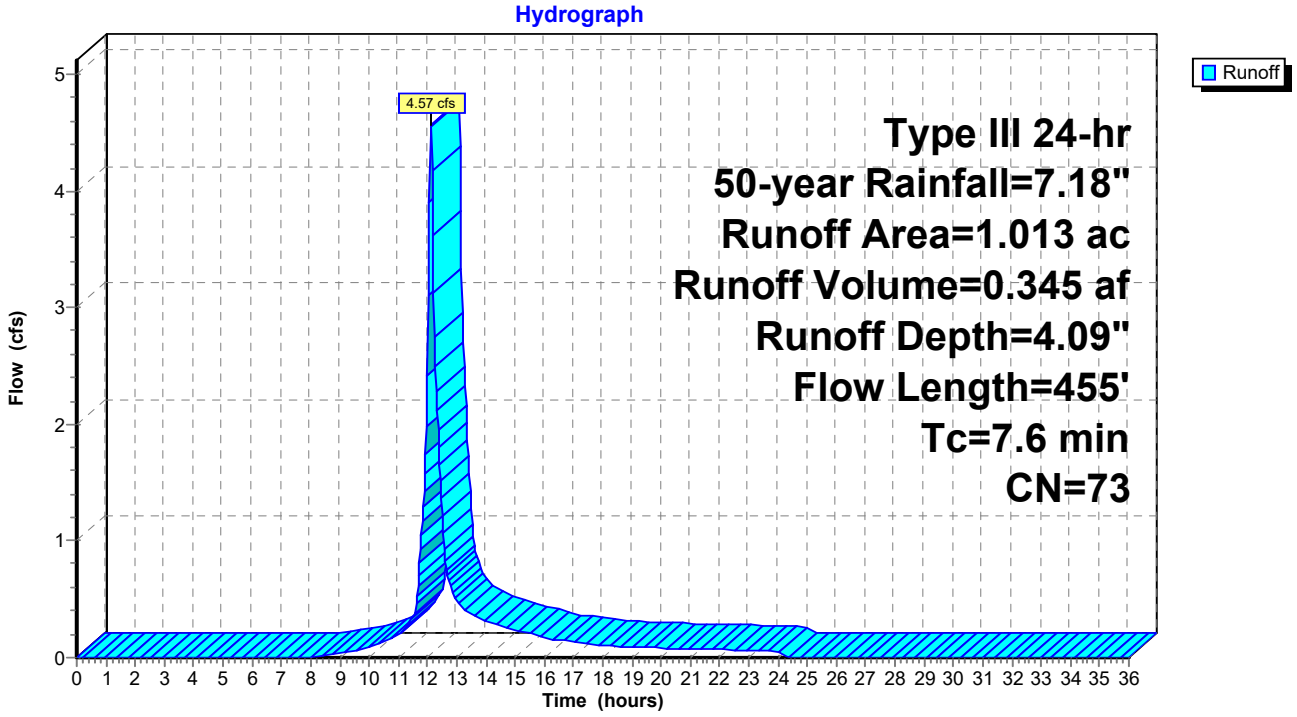
Runoff = 4.57 cfs @ 12.11 hrs, Volume= 0.345 af, Depth= 4.09"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 50-year Rainfall=7.18"

Area (ac)	CN	Description
0.091	61	>75% Grass cover, Good, HSG B
0.726	74	>75% Grass cover, Good, HSG C
0.068	89	Gravel roads, HSG C
0.128	70	Woods, Good, HSG C
1.013	73	Weighted Average
1.013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	65	0.0900	0.33		**Sheet Flow, 0-65** Range n= 0.130 P2= 3.36"
1.4	140	0.1100	1.66		**Shallow Concentrated Flow, 140** Woodland Kv= 5.0 fps
2.9	250	0.0800	1.41		**Shallow Concentrated Flow, 250** Woodland Kv= 5.0 fps
7.6	455	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 2b: Subcat 2b

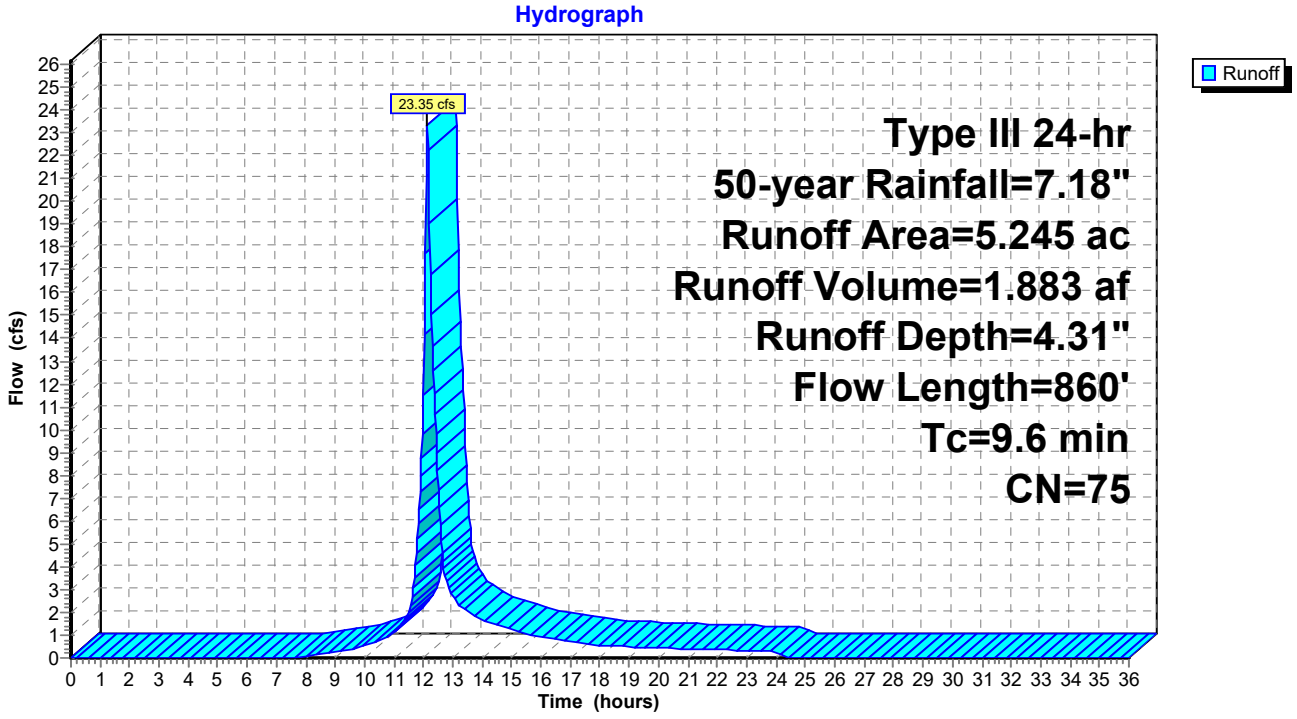
Runoff = 23.35 cfs @ 12.13 hrs, Volume= 1.883 af, Depth= 4.31"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 50-year Rainfall=7.18"

Area (ac)	CN	Description
1.858	74	>75% Grass cover, Good, HSG C
0.869	89	Gravel roads, HSG C
2.518	70	Woods, Good, HSG C
5.245	75	Weighted Average
5.245		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
2.1	170	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.8	640	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.6	860	Total			

Subcatchment 2b: Subcat 2b



Summary for Subcatchment 2c: Subcat 2c

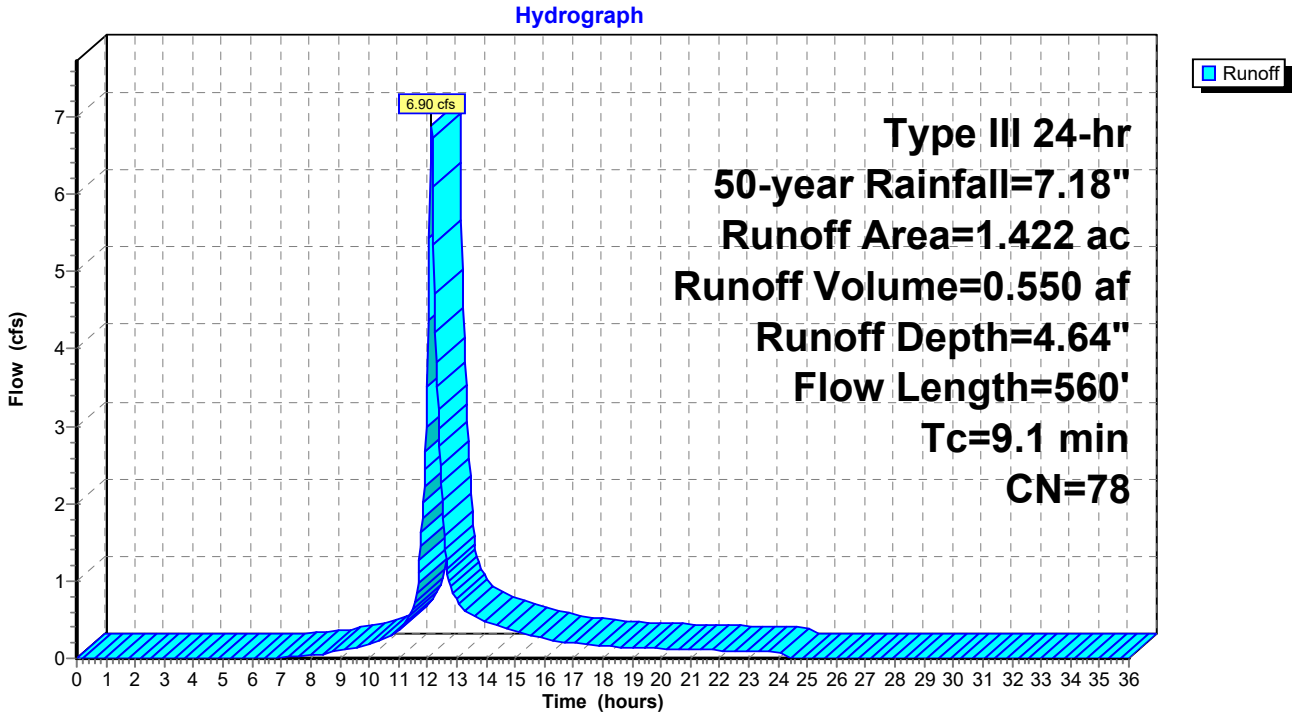
Runoff = 6.90 cfs @ 12.13 hrs, Volume= 0.550 af, Depth= 4.64"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 50-year Rainfall=7.18"

Area (ac)	CN	Description
0.446	74	>75% Grass cover, Good, HSG C
0.000	80	>75% Grass cover, Good, HSG D
0.476	89	Gravel roads, HSG C
0.017	91	Gravel roads, HSG D
0.483	70	Woods, Good, HSG C
1.422	78	Weighted Average
1.422		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	50	0.0300	0.43		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
3.4	270	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	60	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	50	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	50	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.1	560	Total			

Subcatchment 2c: Subcat 2c



Summary for Subcatchment 2d: Subcat 2d

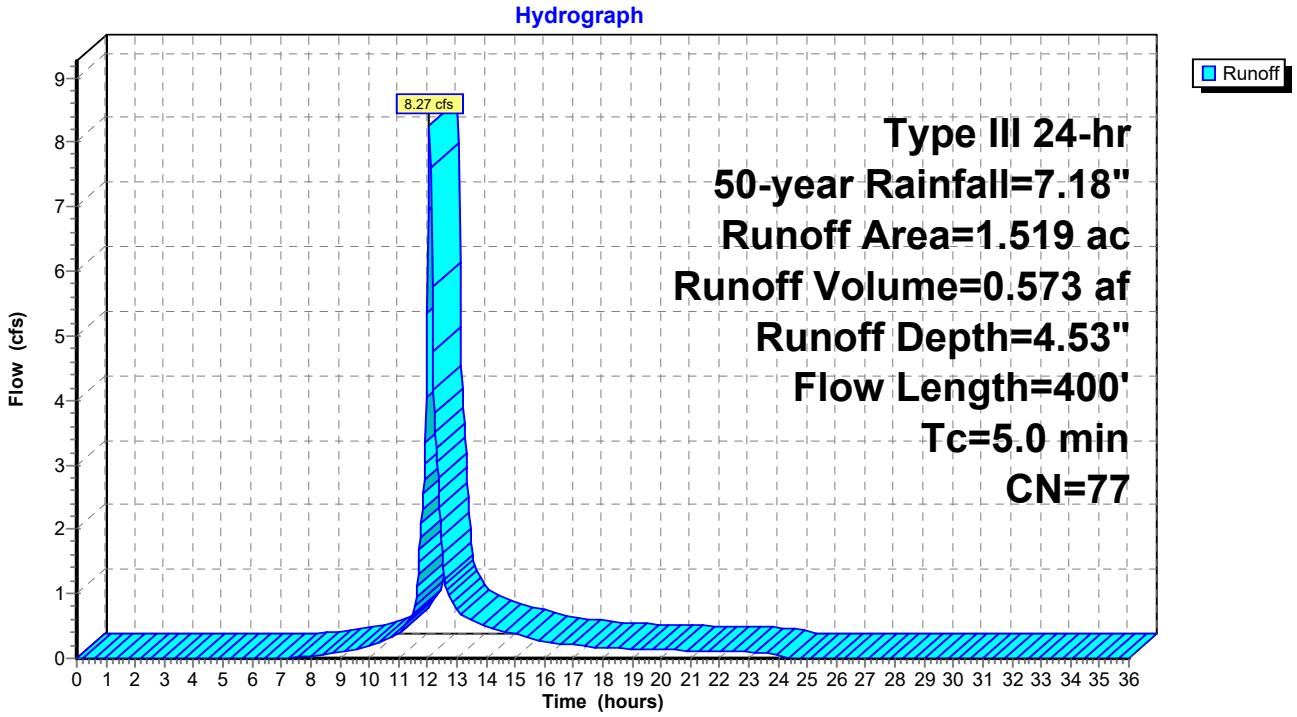
Runoff = 8.27 cfs @ 12.07 hrs, Volume= 0.573 af, Depth= 4.53"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 50-year Rainfall=7.18"

Area (ac)	CN	Description
0.314	74	>75% Grass cover, Good, HSG C
0.482	89	Gravel roads, HSG C
0.723	70	Woods, Good, HSG C
1.519	77	Weighted Average
1.519		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	35	0.0600	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	100	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.8	400	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2d: Subcat 2d

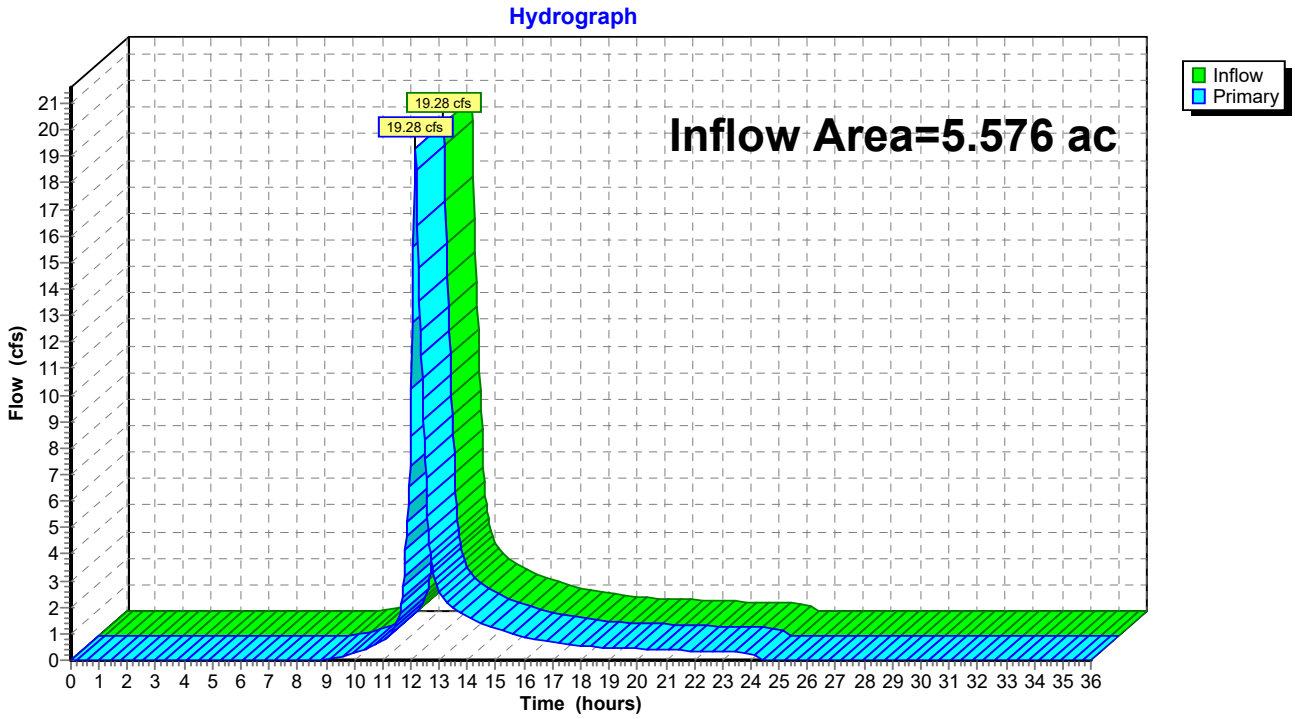


Summary for Link 7L: Stream 1

Inflow Area = 5.576 ac, 0.00% Impervious, Inflow Depth = 3.56" for 50-year event
Inflow = 19.28 cfs @ 12.16 hrs, Volume= 1.653 af
Primary = 19.28 cfs @ 12.16 hrs, Volume= 1.653 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 7L: Stream 1

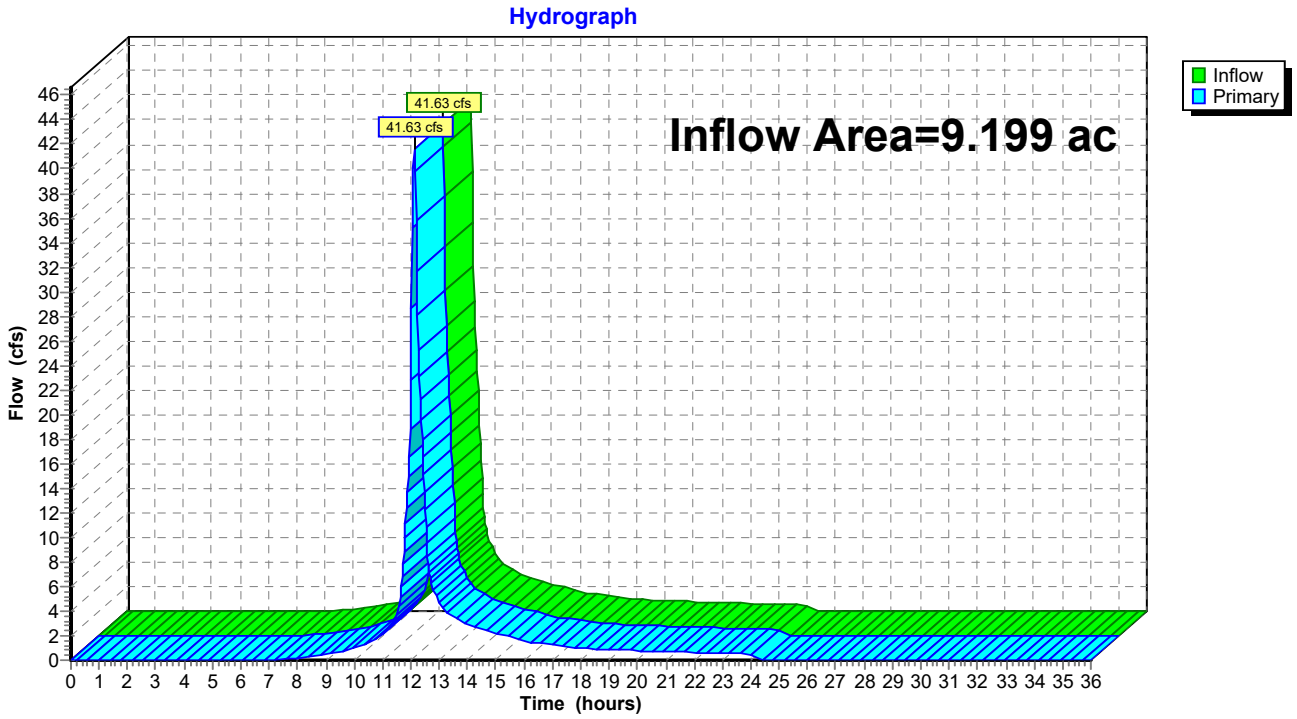


Summary for Link 8L: Stream 2

Inflow Area = 9.199 ac, 0.00% Impervious, Inflow Depth = 4.37" for 50-year event
Inflow = 41.63 cfs @ 12.12 hrs, Volume= 3.351 af
Primary = 41.63 cfs @ 12.12 hrs, Volume= 3.351 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 8L: Stream 2



Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 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=5.576 ac 0.00% Impervious Runoff Depth=4.32"
Flow Length=900' Tc=11.5 min CN=68 Runoff=23.49 cfs 2.007 af

Subcatchment2a: Subcat 2a Runoff Area=1.013 ac 0.00% Impervious Runoff Depth=4.90"
Flow Length=455' Tc=7.6 min CN=73 Runoff=5.46 cfs 0.414 af

Subcatchment2b: Subcat 2b Runoff Area=5.245 ac 0.00% Impervious Runoff Depth=5.13"
Flow Length=860' Tc=9.6 min CN=75 Runoff=27.74 cfs 2.243 af

Subcatchment2c: Subcat 2c Runoff Area=1.422 ac 0.00% Impervious Runoff Depth=5.48"
Flow Length=560' Tc=9.1 min CN=78 Runoff=8.12 cfs 0.650 af

Subcatchment2d: Subcat 2d Runoff Area=1.519 ac 0.00% Impervious Runoff Depth=5.37"
Flow Length=400' Tc=5.0 min CN=77 Runoff=9.76 cfs 0.679 af

Link 7L: Stream 1 Inflow=23.49 cfs 2.007 af
Primary=23.49 cfs 2.007 af

Link 8L: Stream 2 Inflow=49.37 cfs 3.986 af
Primary=49.37 cfs 3.986 af

Total Runoff Area = 14.775 ac Runoff Volume = 5.993 af Average Runoff Depth = 4.87"
100.00% Pervious = 14.775 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

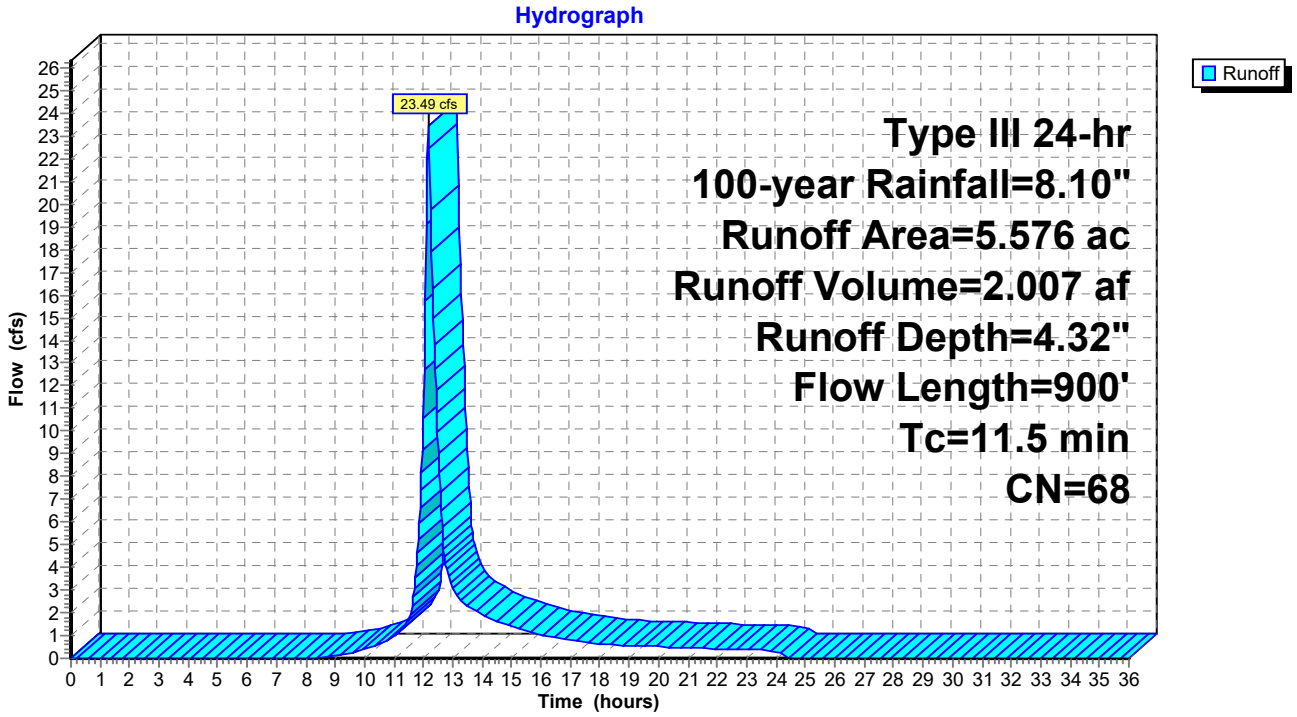
Runoff = 23.49 cfs @ 12.16 hrs, Volume= 2.007 af, Depth= 4.32"
Routed to Link 7L : Stream 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-year Rainfall=8.10"

Area (ac)	CN	Description
2.635	61	>75% Grass cover, Good, HSG B
2.137	74	>75% Grass cover, Good, HSG C
0.241	85	Gravel roads, HSG B
0.230	89	Gravel roads, HSG C
0.287	55	Woods, Good, HSG B
0.045	70	Woods, Good, HSG C
5.576	68	Weighted Average
5.576		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.0800	0.30		**Sheet Flow,** Range n= 0.130 P2= 3.36"
4.0	440	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.3	260	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.4	150	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.5	900	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2a: Subcat 2a

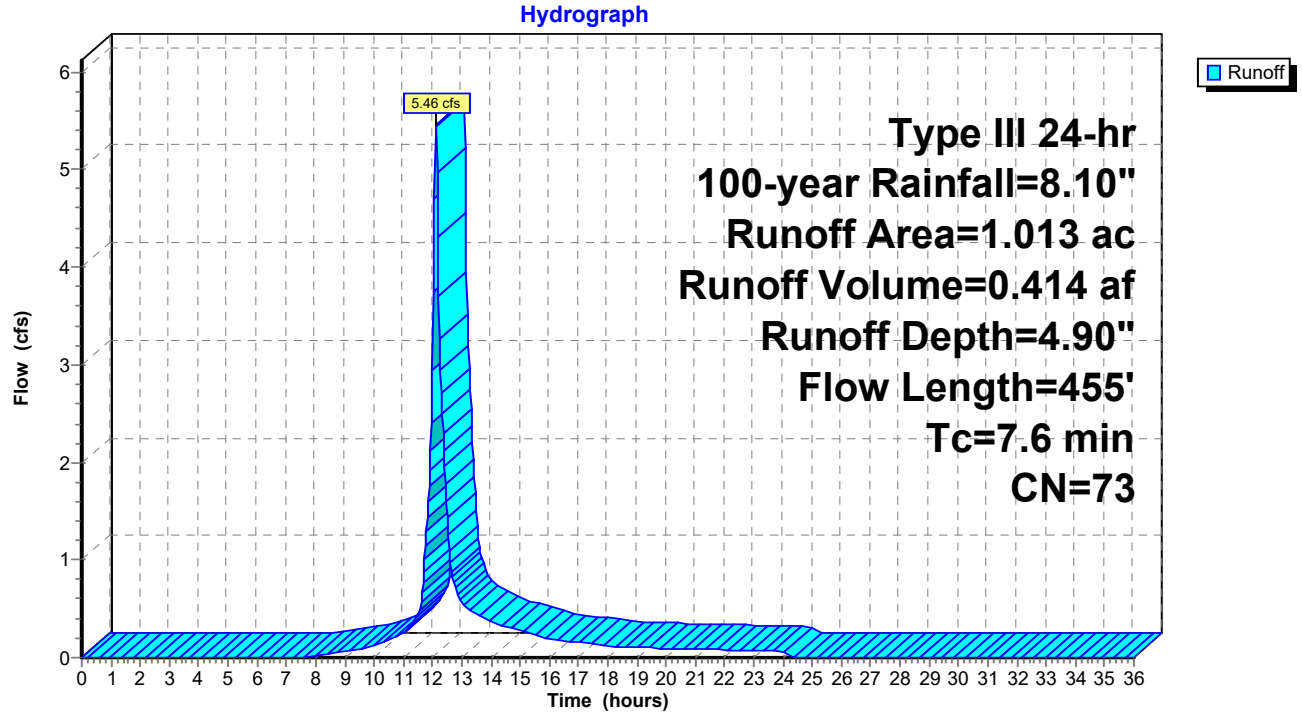
Runoff = 5.46 cfs @ 12.11 hrs, Volume= 0.414 af, Depth= 4.90"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-year Rainfall=8.10"

Area (ac)	CN	Description
0.091	61	>75% Grass cover, Good, HSG B
0.726	74	>75% Grass cover, Good, HSG C
0.068	89	Gravel roads, HSG C
0.128	70	Woods, Good, HSG C
1.013	73	Weighted Average
1.013		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	65	0.0900	0.33		**Sheet Flow, 0-65** Range n= 0.130 P2= 3.36"
1.4	140	0.1100	1.66		**Shallow Concentrated Flow, 140** Woodland Kv= 5.0 fps
2.9	250	0.0800	1.41		**Shallow Concentrated Flow, 250** Woodland Kv= 5.0 fps
7.6	455	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 2b: Subcat 2b

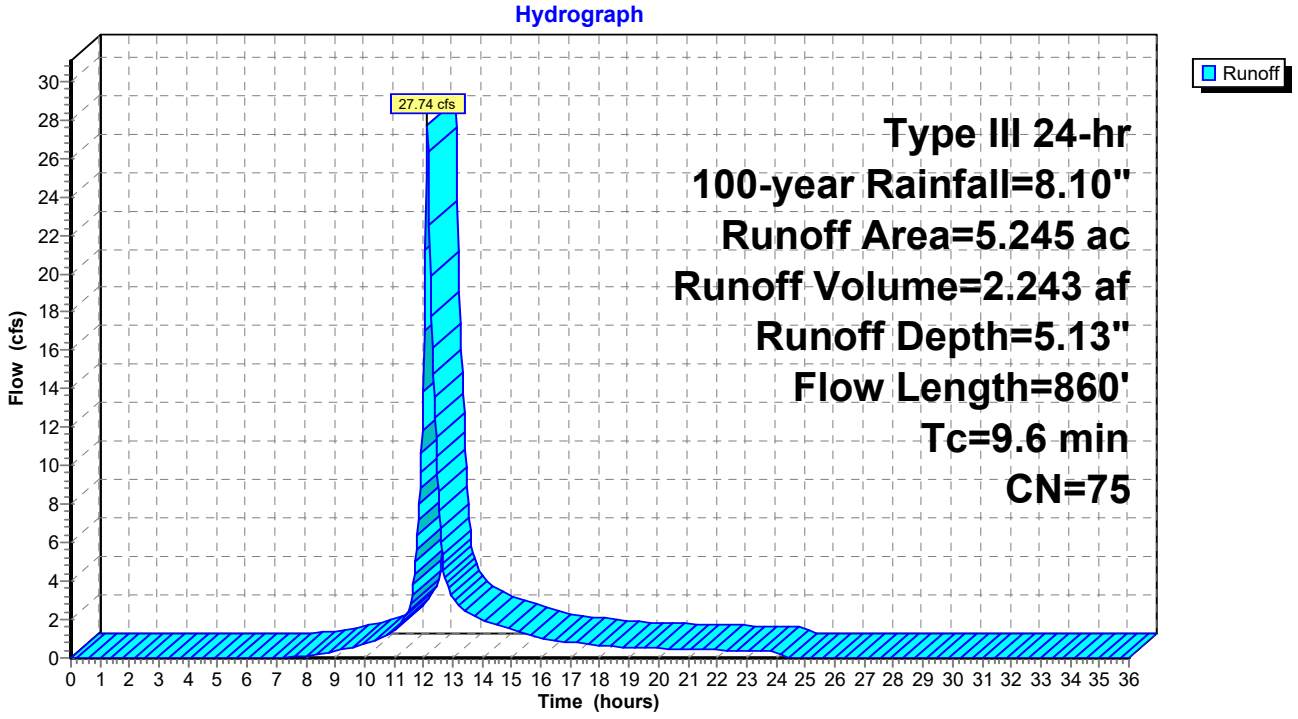
Runoff = 27.74 cfs @ 12.13 hrs, Volume= 2.243 af, Depth= 5.13"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-year Rainfall=8.10"

Area (ac)	CN	Description
1.858	74	>75% Grass cover, Good, HSG C
0.869	89	Gravel roads, HSG C
2.518	70	Woods, Good, HSG C
5.245	75	Weighted Average
5.245		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
2.1	170	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.8	640	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.6	860	Total			

Subcatchment 2b: Subcat 2b



Summary for Subcatchment 2c: Subcat 2c

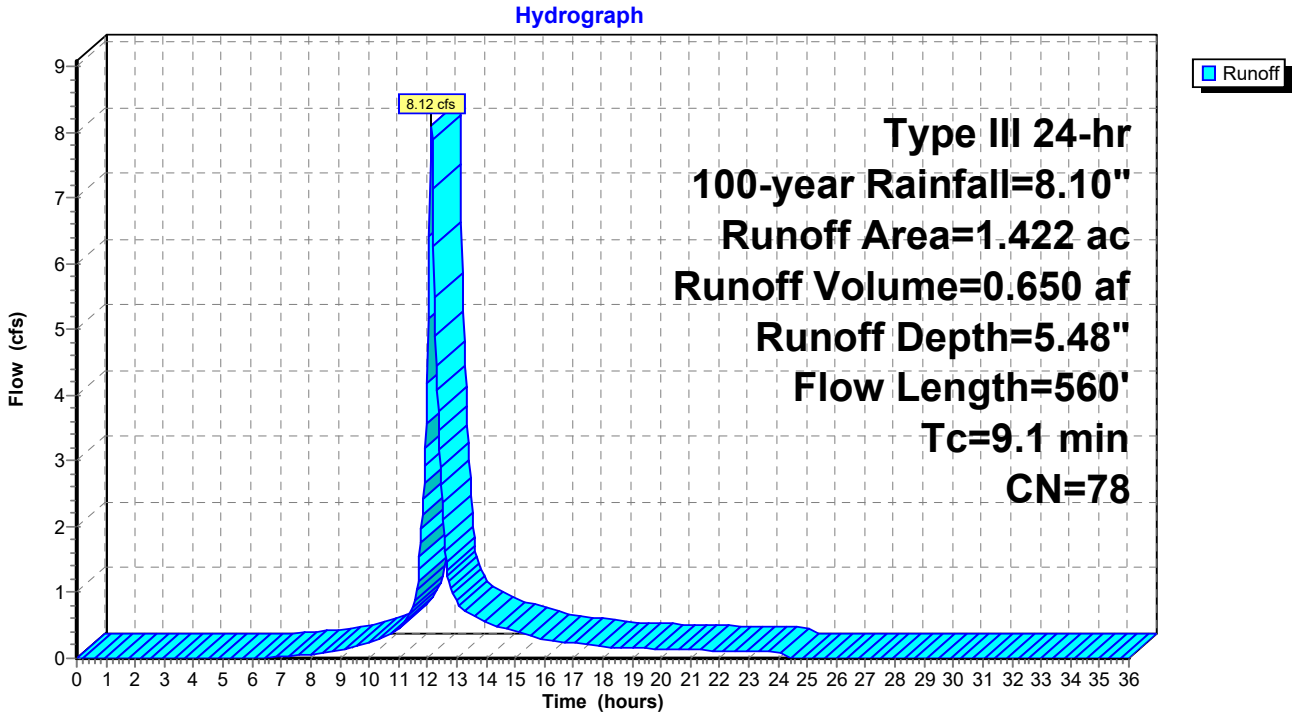
Runoff = 8.12 cfs @ 12.13 hrs, Volume= 0.650 af, Depth= 5.48"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-year Rainfall=8.10"

Area (ac)	CN	Description
0.446	74	>75% Grass cover, Good, HSG C
0.000	80	>75% Grass cover, Good, HSG D
0.476	89	Gravel roads, HSG C
0.017	91	Gravel roads, HSG D
0.483	70	Woods, Good, HSG C
1.422	78	Weighted Average
1.422		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	50	0.0300	0.43		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
3.4	270	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	60	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	50	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	50	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.1	560	Total			

Subcatchment 2c: Subcat 2c



Summary for Subcatchment 2d: Subcat 2d

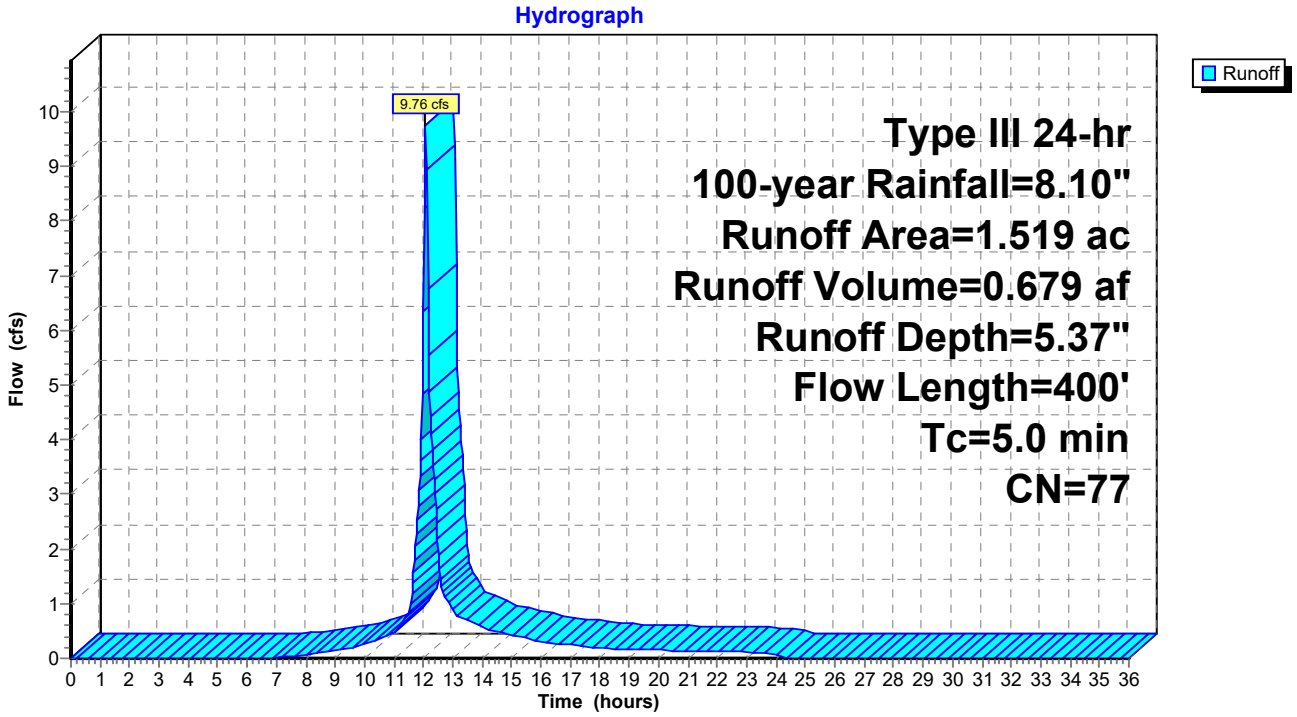
Runoff = 9.76 cfs @ 12.07 hrs, Volume= 0.679 af, Depth= 5.37"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-year Rainfall=8.10"

Area (ac)	CN	Description
0.314	74	>75% Grass cover, Good, HSG C
0.482	89	Gravel roads, HSG C
0.723	70	Woods, Good, HSG C
1.519	77	Weighted Average
1.519		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	35	0.0600	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.2	100	0.0800	1.41		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.8	400	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2d: Subcat 2d

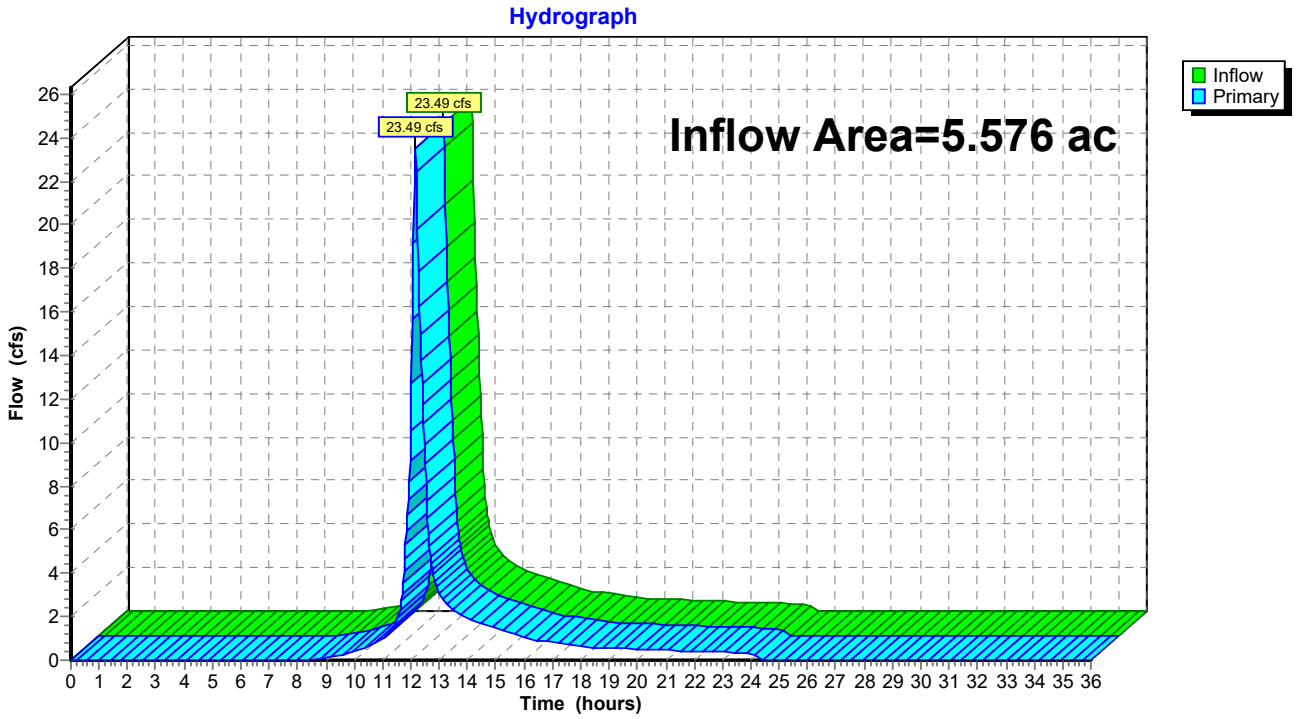


Summary for Link 7L: Stream 1

Inflow Area = 5.576 ac, 0.00% Impervious, Inflow Depth = 4.32" for 100-year event
Inflow = 23.49 cfs @ 12.16 hrs, Volume= 2.007 af
Primary = 23.49 cfs @ 12.16 hrs, Volume= 2.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 7L: Stream 1

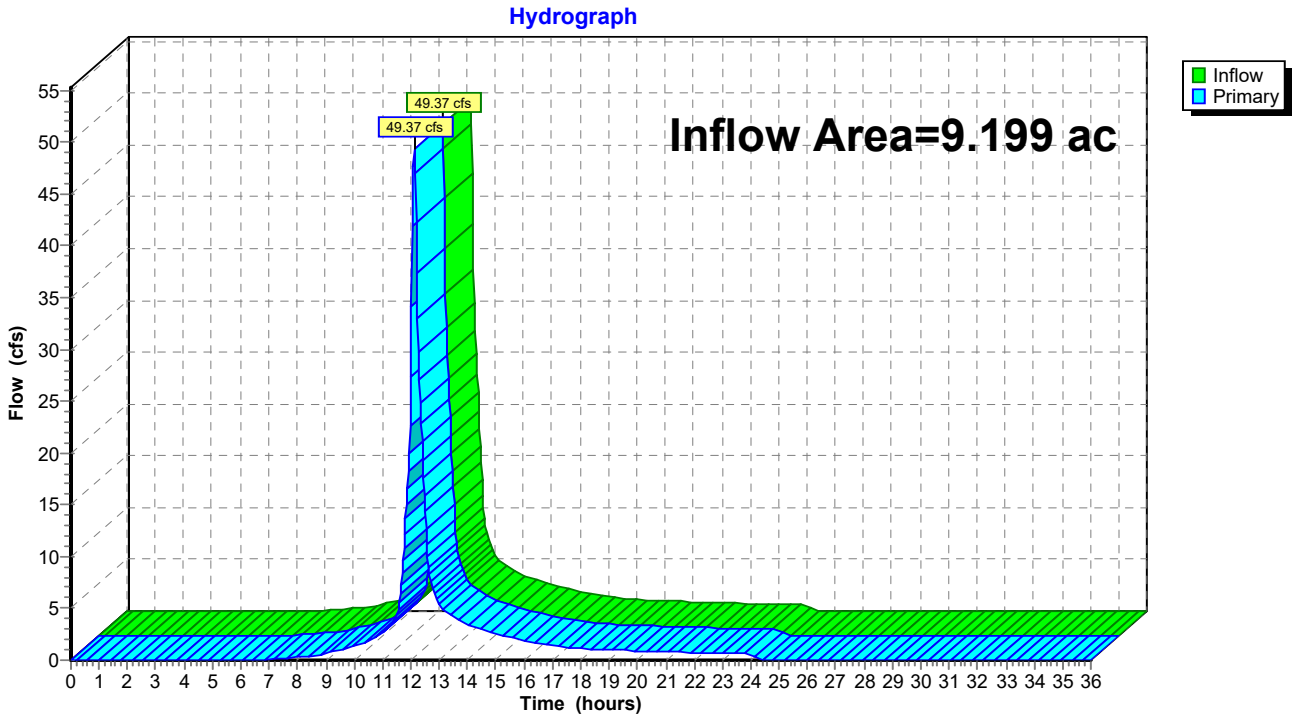


Summary for Link 8L: Stream 2

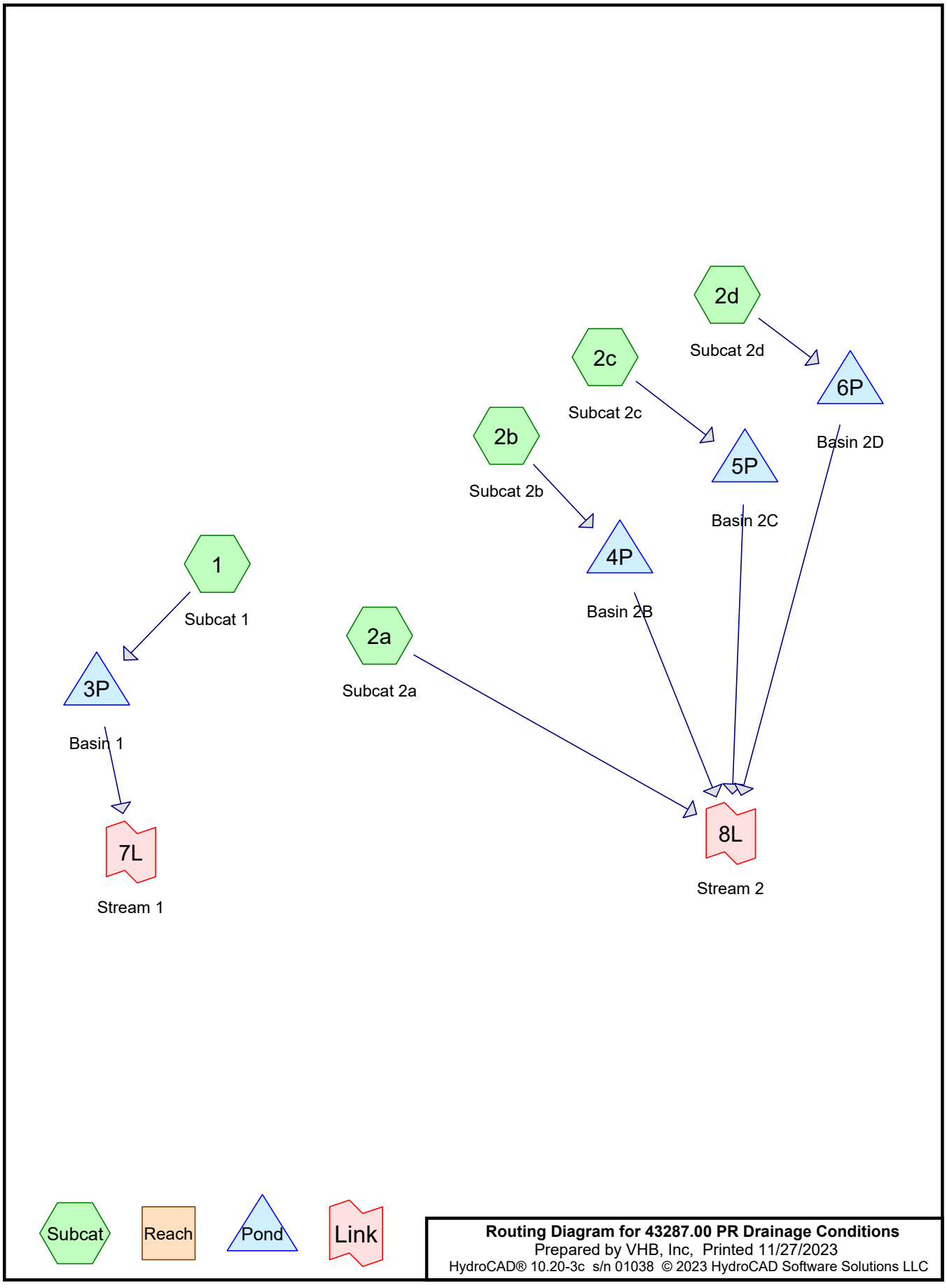
Inflow Area = 9.199 ac, 0.00% Impervious, Inflow Depth = 5.20" for 100-year event
Inflow = 49.37 cfs @ 12.12 hrs, Volume= 3.986 af
Primary = 49.37 cfs @ 12.12 hrs, Volume= 3.986 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 8L: Stream 2



HydroCAD Analysis: Proposed Conditions



Routing Diagram for 43287.00 PR Drainage Conditions
Prepared by VHB, Inc, Printed 11/27/2023

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	Type III 24-hr		Default	24.00	1	3.36	2
2	10-year	Type III 24-hr		Default	24.00	1	5.20	2
3	25-year	Type III 24-hr		Default	24.00	1	6.34	2
4	50-year	Type III 24-hr		Default	24.00	1	7.18	2
5	100-year	Type III 24-hr		Default	24.00	1	8.10	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.069	61	>75% Grass cover, Good, HSG B (2a)
2.830	67	>75% Grass cover, Good, HSG B-C (1)
0.215	74	>75% Grass cover, Good, HSG C (2a)
8.390	77	>75% Grass cover, Good, HSG C-D (1, 2b, 2c, 2d)
0.015	80	>75% Grass cover, Good, HSG D (2c)
0.160	48	Brush, Good, HSG B (1, 2a)
1.660	65	Brush, Good, HSG C (1, 2a, 2b)
0.065	85	Gravel roads, HSG B (1)
0.311	89	Gravel roads, HSG C (1, 2a, 2b)
0.346	55	Woods, Good, HSG B (1)
0.833	70	Woods, Good, HSG C (1, 2a, 2b, 2c, 2d)
0.002	77	Woods, Good, HSG D (2c)
14.895	**73**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
3.470	HSG B	1, 2a
11.409	HSG C	1, 2a, 2b, 2c, 2d
0.017	HSG D	2c
0.000	Other	
14.895		**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	2.899	8.605	0.015	0.000	11.519	>75% Grass cover, Good	1, 2a, 2b, 2c, 2d
0.000	0.160	1.660	0.000	0.000	1.820	Brush, Good	1, 2a, 2b
0.000	0.065	0.311	0.000	0.000	0.376	Gravel roads	1, 2a, 2b
0.000	0.346	0.833	0.002	0.000	1.181	Woods, Good	1, 2a, 2b, 2c, 2d
0.000	**3.470**	**11.409**	**0.017**	**0.000**	**14.895**	**TOTAL AREA**	

Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 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=5.738 ac 0.00% Impervious Runoff Depth=0.92"
Flow Length=910' Tc=10.2 min CN=70 Runoff=4.86 cfs 0.441 af

Subcatchment2a: Subcat 2a Runoff Area=0.998 ac 0.00% Impervious Runoff Depth=0.77"
Flow Length=455' Tc=6.4 min CN=67 Runoff=0.76 cfs 0.064 af

Subcatchment2b: Subcat 2b Runoff Area=5.218 ac 0.00% Impervious Runoff Depth=1.20"
Flow Length=860' Tc=9.0 min CN=75 Runoff=6.37 cfs 0.523 af

Subcatchment2c: Subcat 2c Runoff Area=1.422 ac 0.00% Impervious Runoff Depth=1.33"
Flow Length=560' Tc=7.1 min CN=77 Runoff=2.07 cfs 0.157 af

Subcatchment2d: Subcat 2d Runoff Area=1.519 ac 0.00% Impervious Runoff Depth=1.26"
Flow Length=400' Tc=5.0 min CN=76 Runoff=2.25 cfs 0.160 af

Pond 3P: Basin 1 Peak Elev=195.58' Storage=0.299 af Inflow=4.86 cfs 0.441 af
Outflow=0.36 cfs 0.154 af

Pond 4P: Basin 2B Peak Elev=262.83' Storage=0.182 af Inflow=6.37 cfs 0.523 af
Outflow=2.85 cfs 0.371 af

Pond 5P: Basin 2C Peak Elev=286.57' Storage=0.079 af Inflow=2.07 cfs 0.157 af
Outflow=0.29 cfs 0.082 af

Pond 6P: Basin 2D Peak Elev=293.57' Storage=0.079 af Inflow=2.25 cfs 0.160 af
Outflow=0.30 cfs 0.085 af

Link 7L: Stream 1 Inflow=0.36 cfs 0.154 af
Primary=0.36 cfs 0.154 af

Link 8L: Stream 2 Inflow=3.18 cfs 0.602 af
Primary=3.18 cfs 0.602 af

Total Runoff Area = 14.895 ac Runoff Volume = 1.346 af Average Runoff Depth = 1.08"
100.00% Pervious = 14.895 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

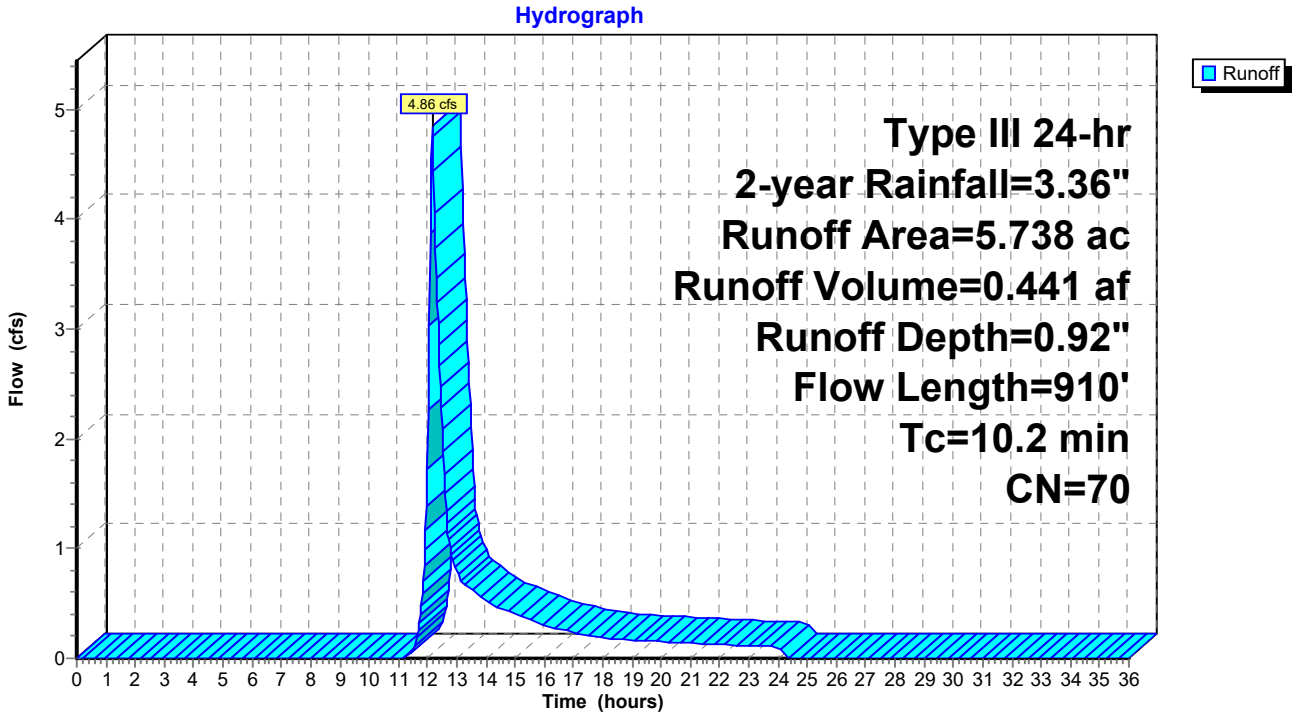
Runoff = 4.86 cfs @ 12.16 hrs, Volume= 0.441 af, Depth= 0.92"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-year Rainfall=3.36"

	Area (ac)	CN	Description
*	2.830	67	>75% Grass cover, Good, HSG B-C
*	1.818	77	>75% Grass cover, Good, HSG C-D
	0.138	48	Brush, Good, HSG B
	0.133	65	Brush, Good, HSG C
	0.065	85	Gravel roads, HSG B
	0.076	89	Gravel roads, HSG C
	0.346	55	Woods, Good, HSG B
	0.332	70	Woods, Good, HSG C
	5.738	70	Weighted Average
	5.738		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.0800	0.30		**Sheet Flow,** Range n= 0.130 P2= 3.36"
4.0	440	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	260	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	160	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.2	910	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2a: Subcat 2a

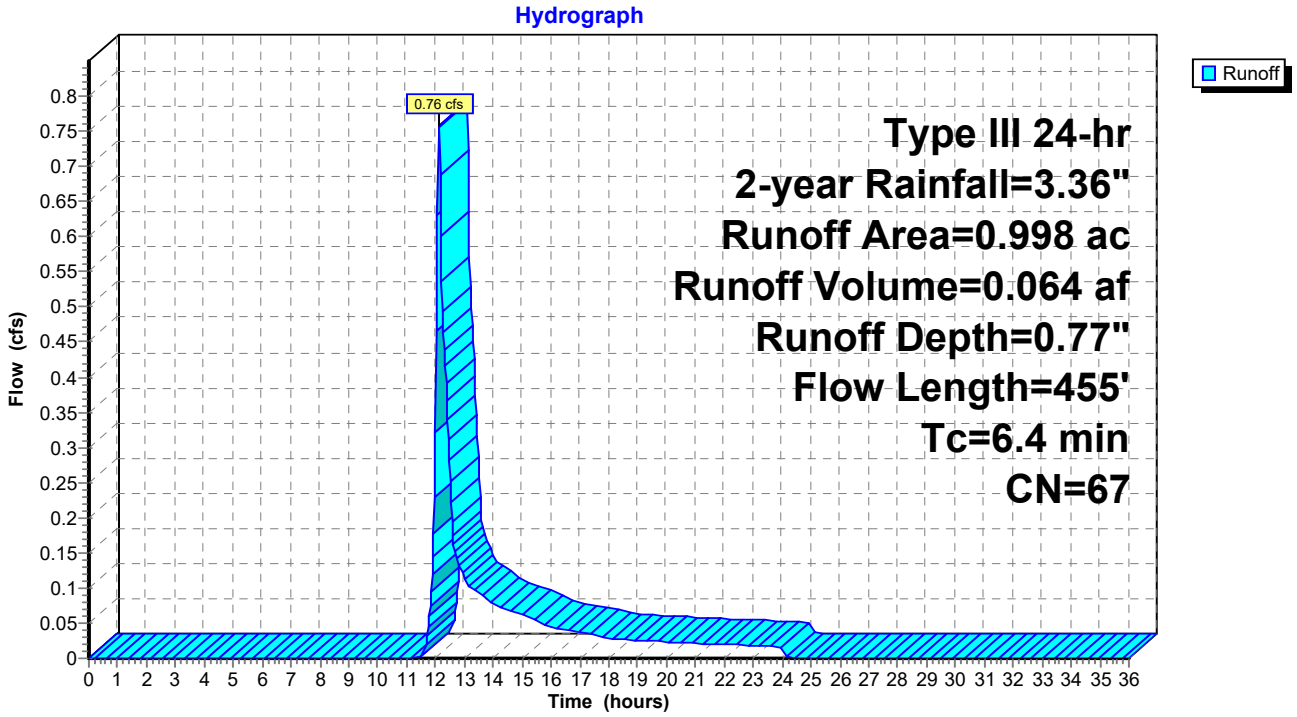
Runoff = 0.76 cfs @ 12.11 hrs, Volume= 0.064 af, Depth= 0.77"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-year Rainfall=3.36"

Area (ac)	CN	Description
0.069	61	>75% Grass cover, Good, HSG B
0.215	74	>75% Grass cover, Good, HSG C
0.022	48	Brush, Good, HSG B
0.642	65	Brush, Good, HSG C
0.009	89	Gravel roads, HSG C
0.042	70	Woods, Good, HSG C
0.998	67	Weighted Average
0.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	65	0.0900	0.33		**Sheet Flow,** Range n= 0.130 P2= 3.36"
1.0	140	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.4	455	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 2b: Subcat 2b

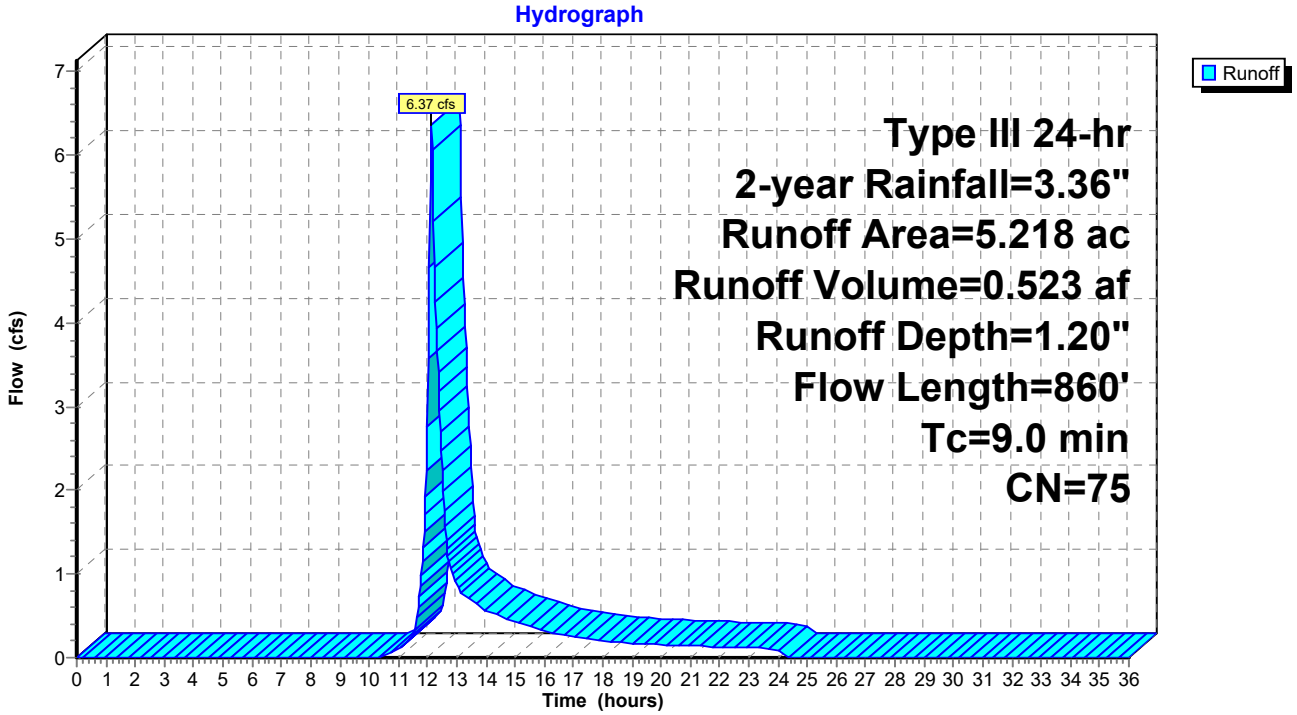
Runoff = 6.37 cfs @ 12.13 hrs, Volume= 0.523 af, Depth= 1.20"
Routed to Pond 4P : Basin 2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-year Rainfall=3.36"

	Area (ac)	CN	Description
*	3.870	77	>75% Grass cover, Good, HSG C-D
	0.885	65	Brush, Good, HSG C
	0.226	89	Gravel roads, HSG C
	0.237	70	Woods, Good, HSG C
	5.218	75	Weighted Average
	5.218		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
7.3	810	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.0	860	Total			

Subcatchment 2b: Subcat 2b



Summary for Subcatchment 2c: Subcat 2c

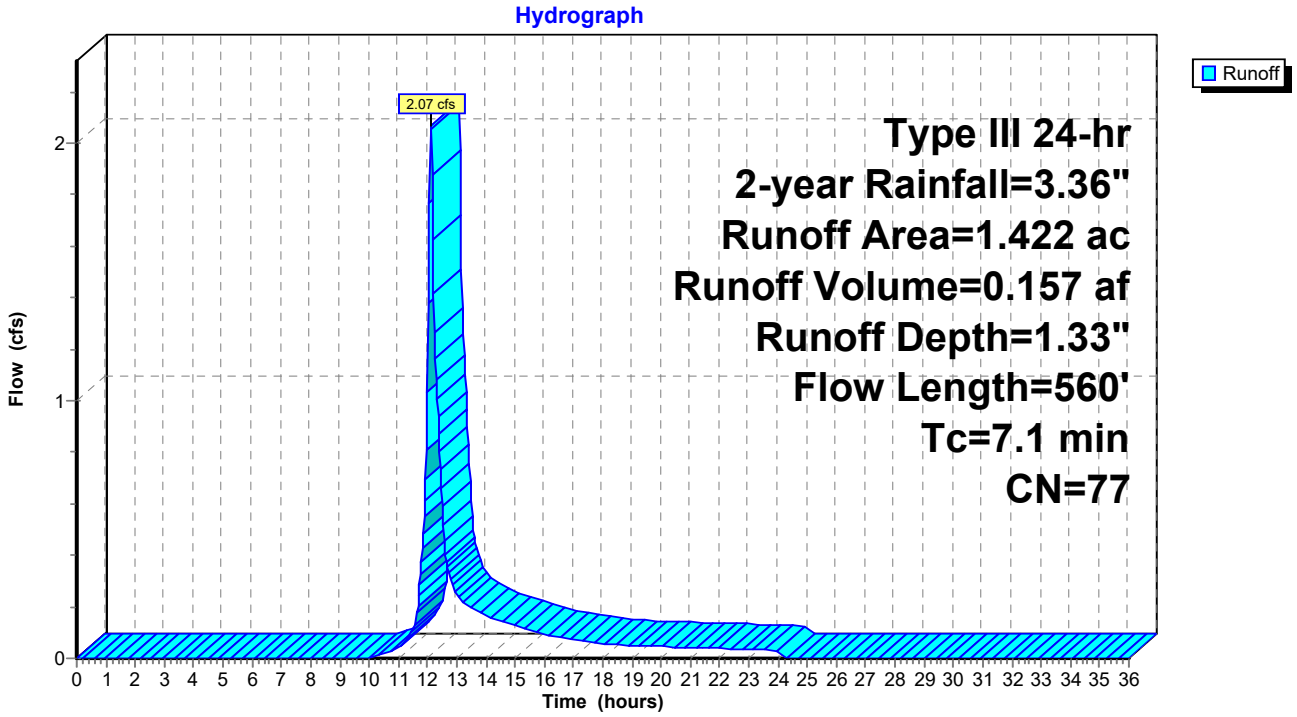
Runoff = 2.07 cfs @ 12.11 hrs, Volume= 0.157 af, Depth= 1.33"
Routed to Pond 5P : Basin 2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-year Rainfall=3.36"

	Area (ac)	CN	Description
*	1.397	77	>75% Grass cover, Good, HSG C-D
	0.015	80	>75% Grass cover, Good, HSG D
	0.008	70	Woods, Good, HSG C
	0.002	77	Woods, Good, HSG D
	1.422	77	Weighted Average
	1.422		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	50	0.0300	0.43		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
2.4	270	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	60	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	50	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.1	560	Total			

Subcatchment 2c: Subcat 2c



Summary for Subcatchment 2d: Subcat 2d

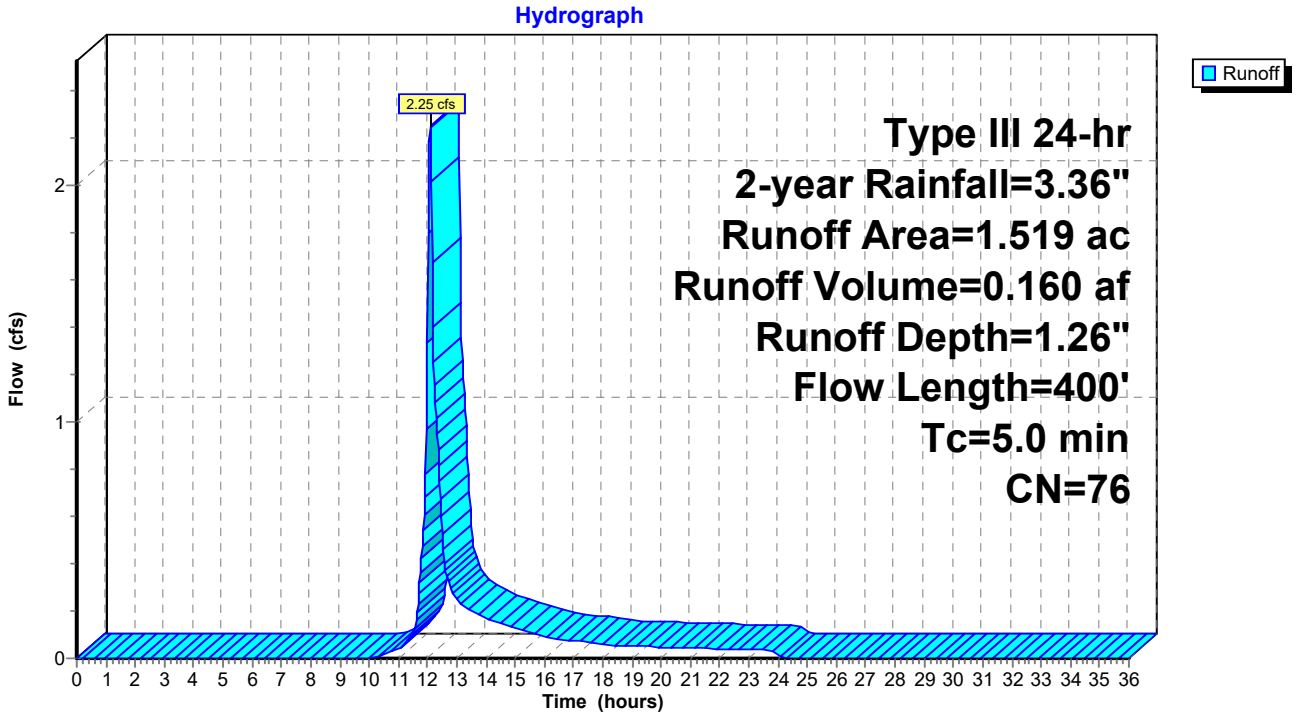
Runoff = 2.25 cfs @ 12.08 hrs, Volume= 0.160 af, Depth= 1.26"
Routed to Pond 6P : Basin 2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-year Rainfall=3.36"

	Area (ac)	CN	Description
*	1.305	77	>75% Grass cover, Good, HSG C-D
	0.214	70	Woods, Good, HSG C
	1.519	76	Weighted Average
	1.519		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	35	0.0600	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	200	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	400	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2d: Subcat 2d



Summary for Pond 3P: Basin 1

Inflow Area = 5.738 ac, 0.00% Impervious, Inflow Depth = 0.92" for 2-year event
Inflow = 4.86 cfs @ 12.16 hrs, Volume= 0.441 af
Outflow = 0.36 cfs @ 15.43 hrs, Volume= 0.154 af, Atten= 93%, Lag= 196.4 min
Primary = 0.36 cfs @ 15.43 hrs, Volume= 0.154 af
Routed to Link 7L : Stream 1

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 195.58' @ 15.43 hrs Surf.Area= 0.130 ac Storage= 0.299 af

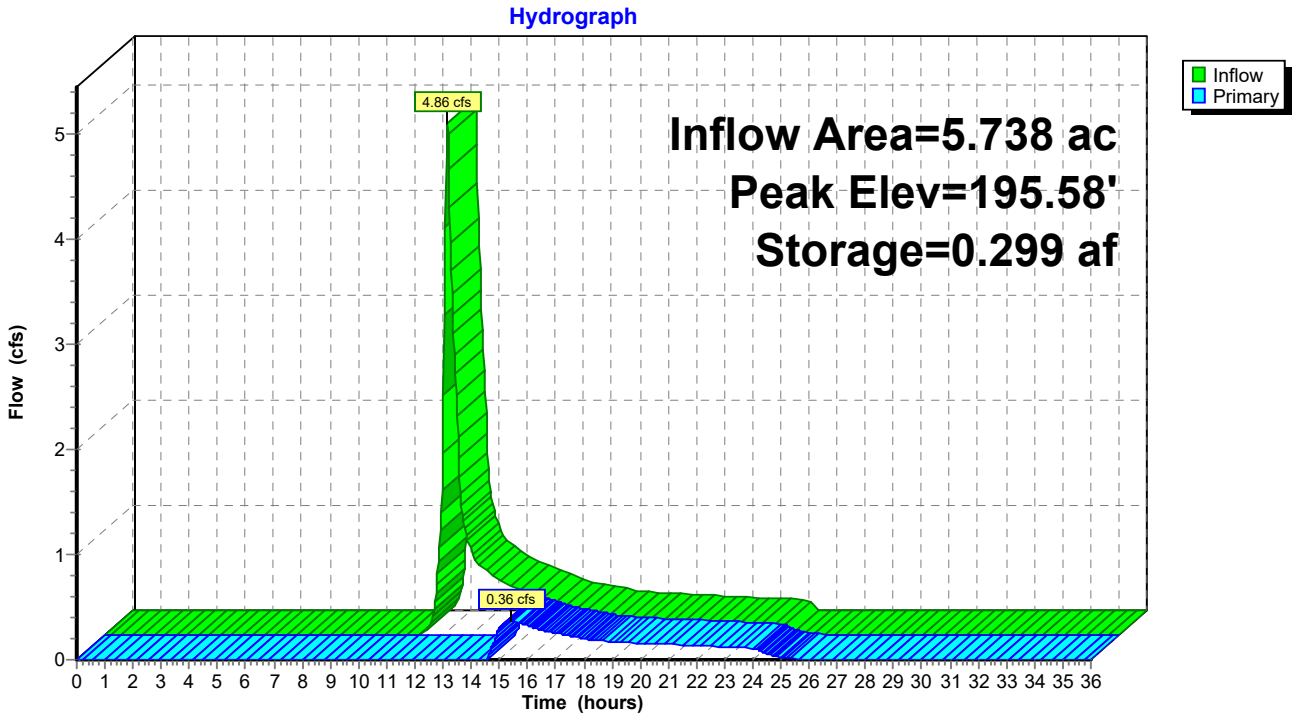
Plug-Flow detention time= 388.7 min calculated for 0.153 af (35% of inflow)
Center-of-Mass det. time= 242.9 min (1,118.9 - 876.0)

Volume	Invert	Avail.Storage	Storage Description
#1	192.00'	0.511 af	**12.00'W x 147.00'L x 5.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	195.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.35 cfs @ 15.43 hrs HW=195.58' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.35 cfs @ 0.68 fps)

Pond 3P: Basin 1



Summary for Pond 4P: Basin 2B

Inflow Area = 5.218 ac, 0.00% Impervious, Inflow Depth = 1.20" for 2-year event
Inflow = 6.37 cfs @ 12.13 hrs, Volume= 0.523 af
Outflow = 2.85 cfs @ 12.43 hrs, Volume= 0.371 af, Atten= 55%, Lag= 17.9 min
Primary = 2.85 cfs @ 12.43 hrs, Volume= 0.371 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 262.83' @ 12.43 hrs Surf.Area= 0.093 ac Storage= 0.182 af

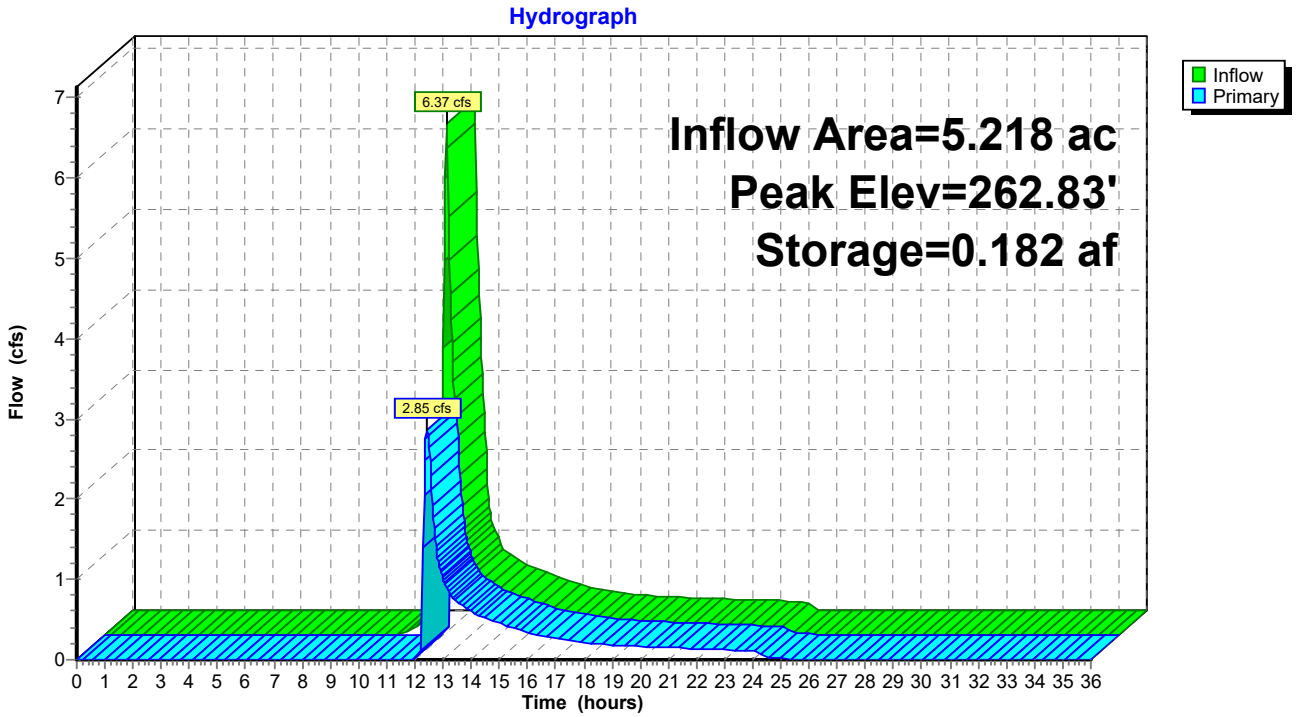
Plug-Flow detention time= 172.6 min calculated for 0.371 af (71% of inflow)
Center-of-Mass det. time= 71.0 min (929.7 - 858.7)

Volume	Invert	Avail.Storage	Storage Description
#1	260.00'	0.307 af	**15.00'W x 110.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	262.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=2.83 cfs @ 12.43 hrs HW=262.83' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 2.83 cfs @ 1.38 fps)

Pond 4P: Basin 2B



Summary for Pond 5P: Basin 2C

Inflow Area = 1.422 ac, 0.00% Impervious, Inflow Depth = 1.33" for 2-year event
Inflow = 2.07 cfs @ 12.11 hrs, Volume= 0.157 af
Outflow = 0.29 cfs @ 12.84 hrs, Volume= 0.082 af, Atten= 86%, Lag= 43.9 min
Primary = 0.29 cfs @ 12.84 hrs, Volume= 0.082 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 286.57' @ 12.84 hrs Surf.Area= 0.046 ac Storage= 0.079 af

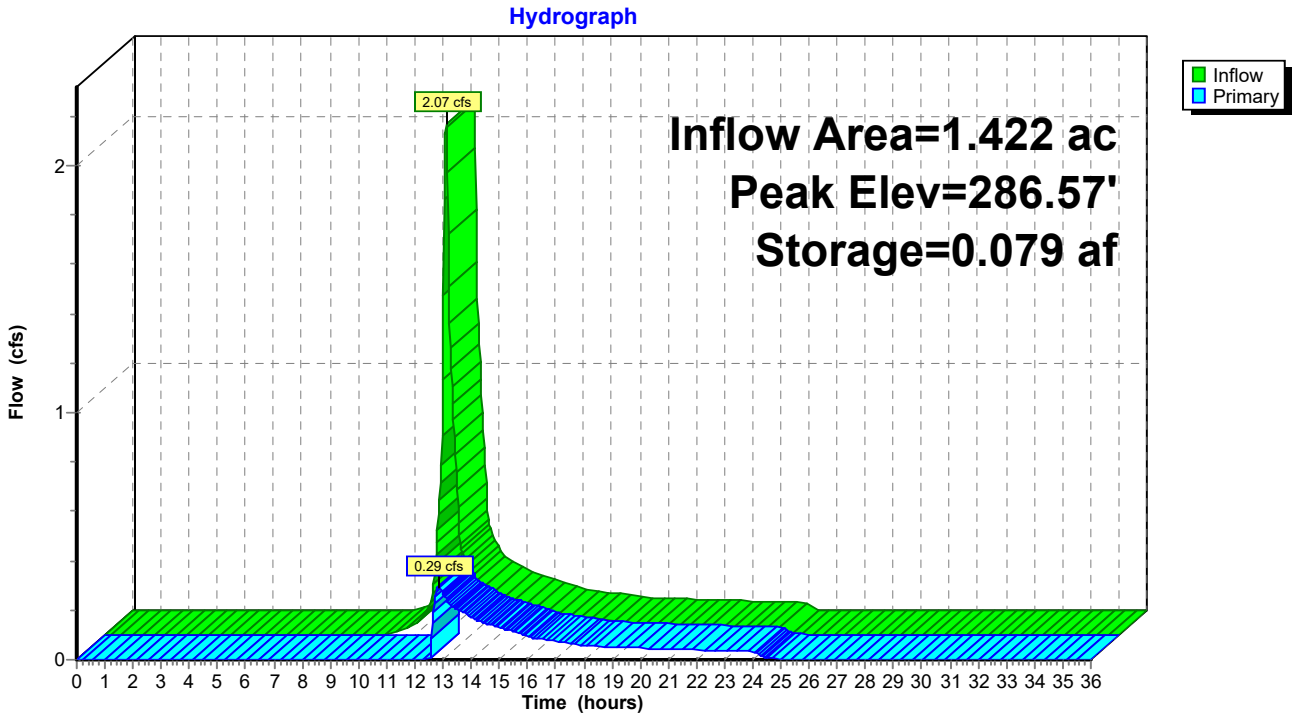
Plug-Flow detention time= 251.4 min calculated for 0.082 af (52% of inflow)
Center-of-Mass det. time= 127.8 min (978.5 - 850.7)

Volume	Invert	Avail.Storage	Storage Description
#1	284.00'	0.158 af	**15.00'W x 50.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.28 cfs @ 12.84 hrs HW=286.57' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.28 cfs @ 0.63 fps)

Pond 5P: Basin 2C



Summary for Pond 6P: Basin 2D

Inflow Area = 1.519 ac, 0.00% Impervious, Inflow Depth = 1.26" for 2-year event
Inflow = 2.25 cfs @ 12.08 hrs, Volume= 0.160 af
Outflow = 0.30 cfs @ 12.82 hrs, Volume= 0.085 af, Atten= 87%, Lag= 44.2 min
Primary = 0.30 cfs @ 12.82 hrs, Volume= 0.085 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 293.57' @ 12.82 hrs Surf.Area= 0.046 ac Storage= 0.079 af

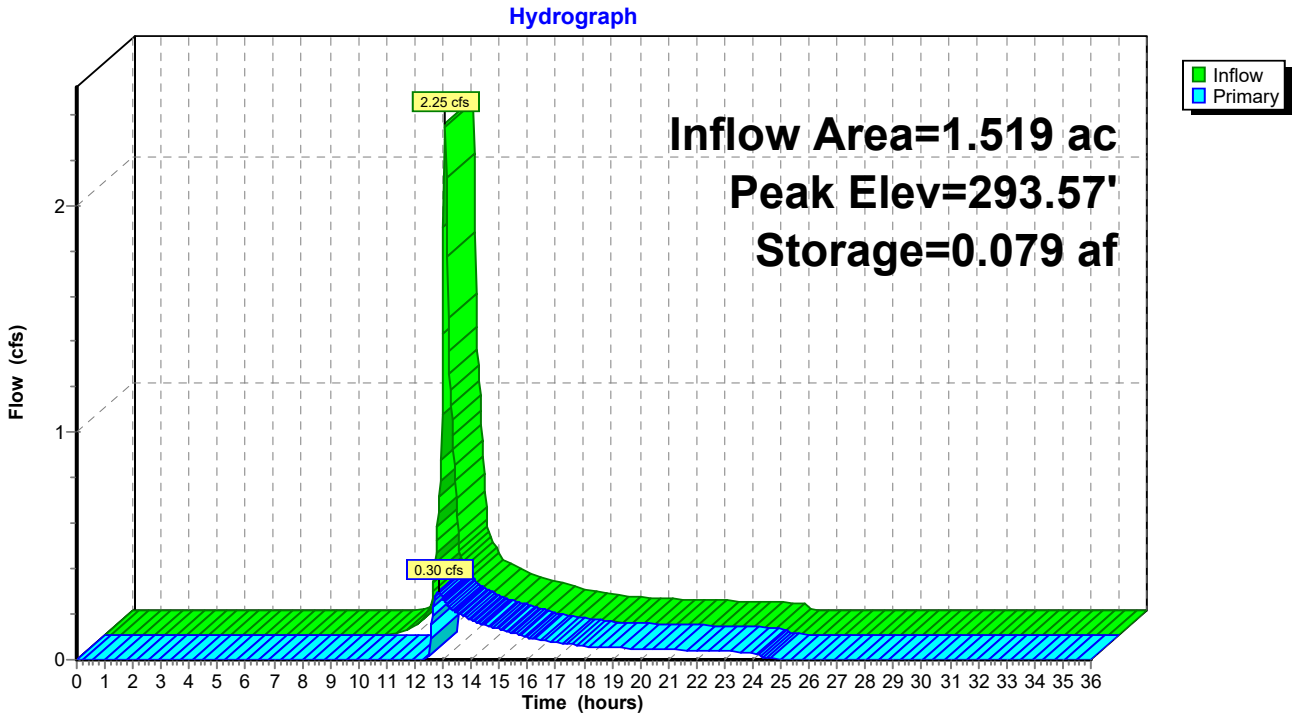
Plug-Flow detention time= 250.0 min calculated for 0.085 af (53% of inflow)
Center-of-Mass det. time= 125.6 min (977.5 - 851.8)

Volume	Invert	Avail.Storage	Storage Description
#1	291.00'	0.158 af	**15.00'W x 50.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	293.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.29 cfs @ 12.82 hrs HW=293.57' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.29 cfs @ 0.64 fps)

Pond 6P: Basin 2D

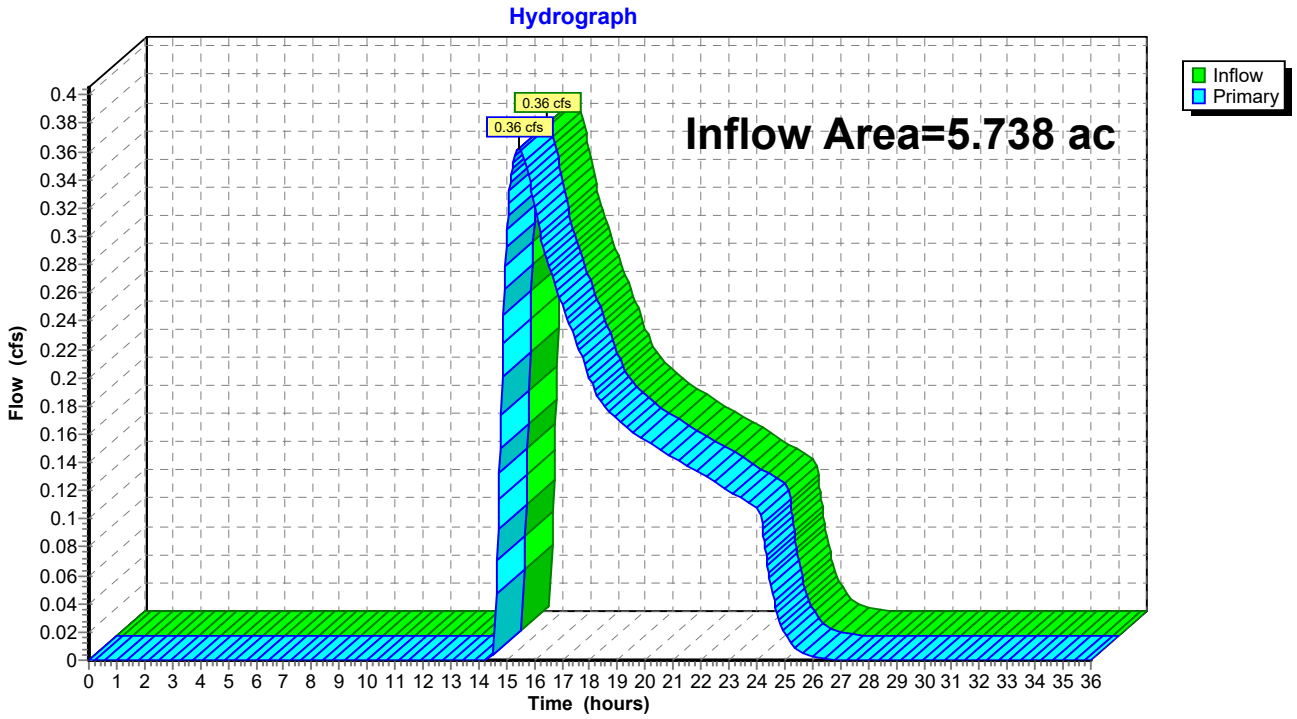


Summary for Link 7L: Stream 1

Inflow Area = 5.738 ac, 0.00% Impervious, Inflow Depth = 0.32" for 2-year event
Inflow = 0.36 cfs @ 15.43 hrs, Volume= 0.154 af
Primary = 0.36 cfs @ 15.43 hrs, Volume= 0.154 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 7L: Stream 1

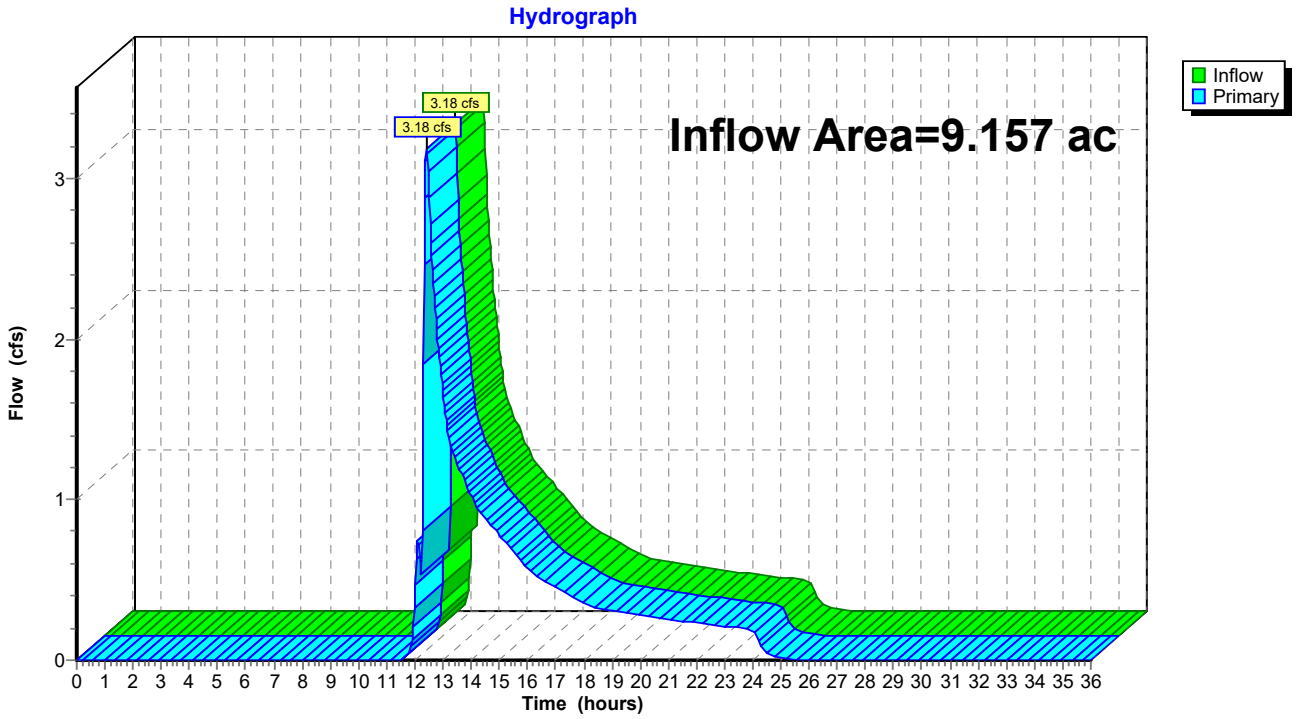


Summary for Link 8L: Stream 2

Inflow Area = 9.157 ac, 0.00% Impervious, Inflow Depth = 0.79" for 2-year event
Inflow = 3.18 cfs @ 12.43 hrs, Volume= 0.602 af
Primary = 3.18 cfs @ 12.43 hrs, Volume= 0.602 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 8L: Stream 2



Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 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=5.738 ac 0.00% Impervious Runoff Depth=2.19"
Flow Length=910' Tc=10.2 min CN=70 Runoff=12.51 cfs 1.045 af

Subcatchment2a: Subcat 2a Runoff Area=0.998 ac 0.00% Impervious Runoff Depth=1.94"
Flow Length=455' Tc=6.4 min CN=67 Runoff=2.17 cfs 0.162 af

Subcatchment2b: Subcat 2b Runoff Area=5.218 ac 0.00% Impervious Runoff Depth=2.61"
Flow Length=860' Tc=9.0 min CN=75 Runoff=14.34 cfs 1.136 af

Subcatchment2c: Subcat 2c Runoff Area=1.422 ac 0.00% Impervious Runoff Depth=2.79"
Flow Length=560' Tc=7.1 min CN=77 Runoff=4.46 cfs 0.331 af

Subcatchment2d: Subcat 2d Runoff Area=1.519 ac 0.00% Impervious Runoff Depth=2.70"
Flow Length=400' Tc=5.0 min CN=76 Runoff=4.94 cfs 0.342 af

Pond 3P: Basin 1 Peak Elev=196.03' Storage=0.359 af Inflow=12.51 cfs 1.045 af
Outflow=6.50 cfs 0.757 af

Pond 4P: Basin 2B Peak Elev=263.31' Storage=0.229 af Inflow=14.34 cfs 1.136 af
Outflow=12.90 cfs 0.983 af

Pond 5P: Basin 2C Peak Elev=286.89' Storage=0.094 af Inflow=4.46 cfs 0.331 af
Outflow=3.76 cfs 0.255 af

Pond 6P: Basin 2D Peak Elev=293.91' Storage=0.095 af Inflow=4.94 cfs 0.342 af
Outflow=4.14 cfs 0.267 af

Link 7L: Stream 1 Inflow=6.50 cfs 0.757 af
Primary=6.50 cfs 0.757 af

Link 8L: Stream 2 Inflow=22.12 cfs 1.667 af
Primary=22.12 cfs 1.667 af

Total Runoff Area = 14.895 ac Runoff Volume = 3.016 af Average Runoff Depth = 2.43"
100.00% Pervious = 14.895 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

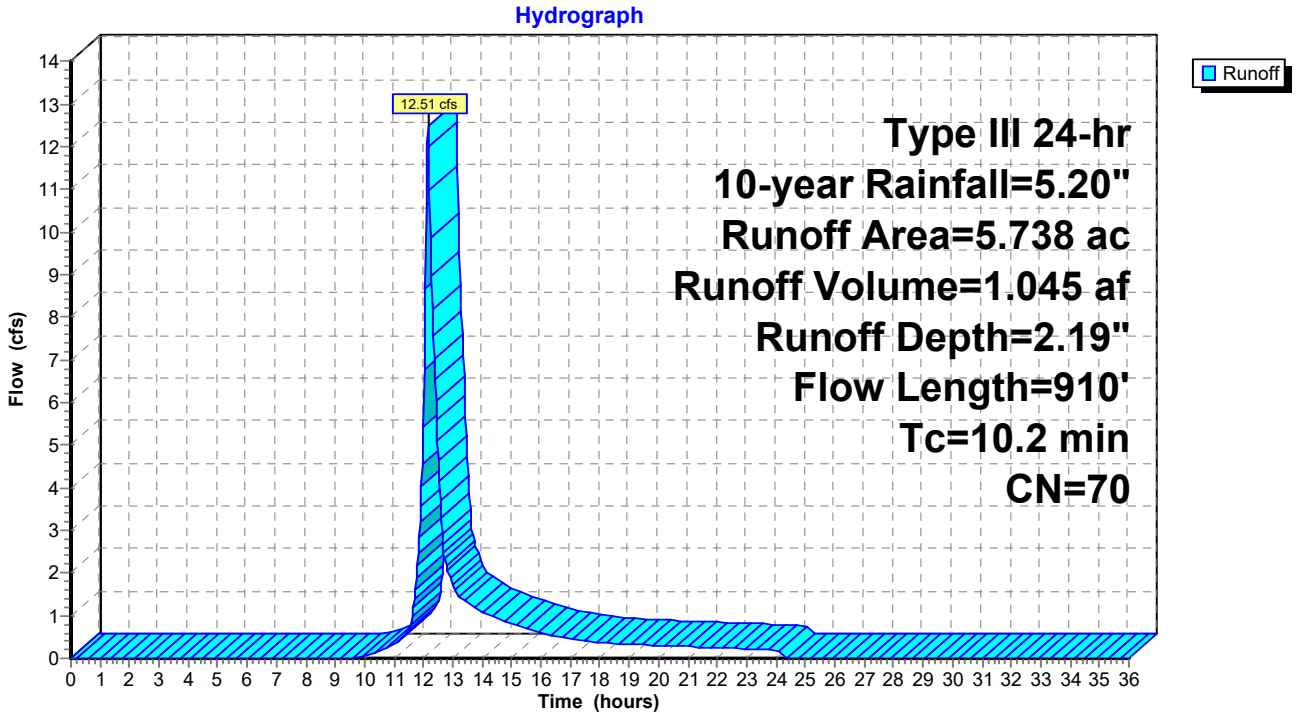
Runoff = 12.51 cfs @ 12.15 hrs, Volume= 1.045 af, Depth= 2.19"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-year Rainfall=5.20"

	Area (ac)	CN	Description
*	2.830	67	>75% Grass cover, Good, HSG B-C
*	1.818	77	>75% Grass cover, Good, HSG C-D
	0.138	48	Brush, Good, HSG B
	0.133	65	Brush, Good, HSG C
	0.065	85	Gravel roads, HSG B
	0.076	89	Gravel roads, HSG C
	0.346	55	Woods, Good, HSG B
	0.332	70	Woods, Good, HSG C
	5.738	70	Weighted Average
	5.738		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.0800	0.30		**Sheet Flow,** Range n= 0.130 P2= 3.36"
4.0	440	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	260	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	160	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.2	910	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2a: Subcat 2a

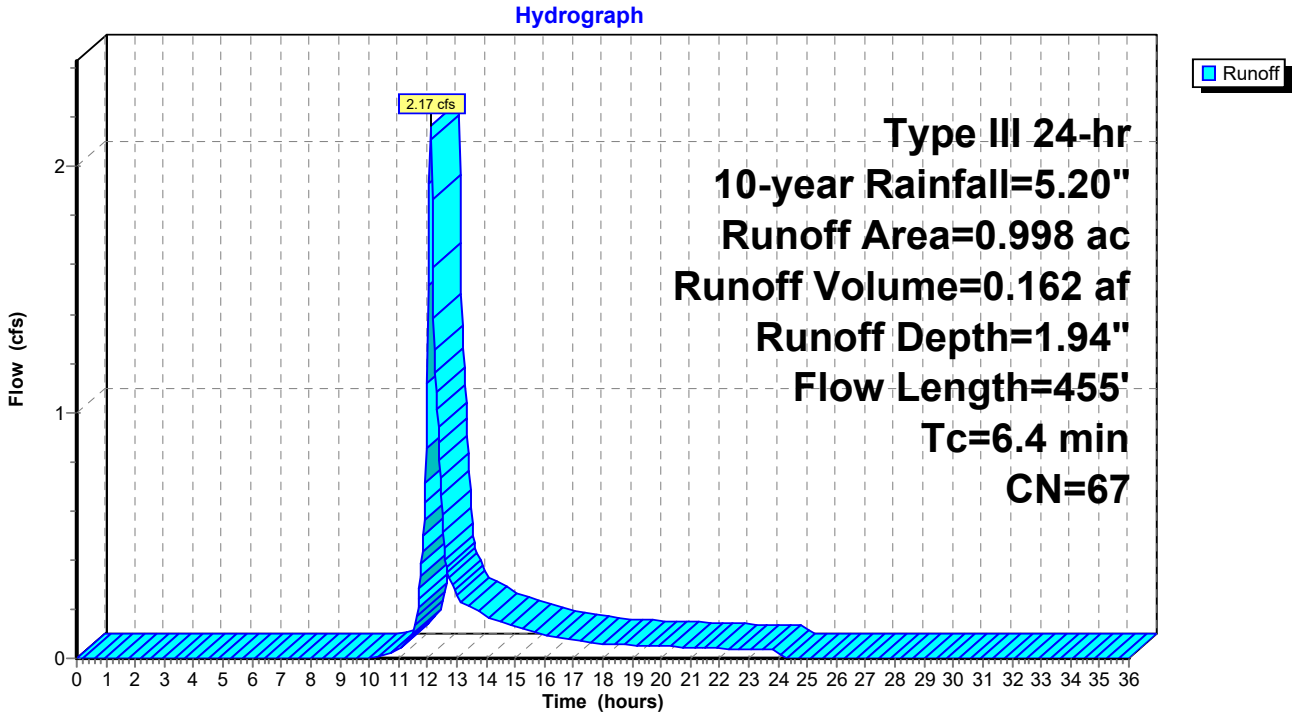
Runoff = 2.17 cfs @ 12.10 hrs, Volume= 0.162 af, Depth= 1.94"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-year Rainfall=5.20"

Area (ac)	CN	Description
0.069	61	>75% Grass cover, Good, HSG B
0.215	74	>75% Grass cover, Good, HSG C
0.022	48	Brush, Good, HSG B
0.642	65	Brush, Good, HSG C
0.009	89	Gravel roads, HSG C
0.042	70	Woods, Good, HSG C
0.998	67	Weighted Average
0.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	65	0.0900	0.33		**Sheet Flow,** Range n= 0.130 P2= 3.36"
1.0	140	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.4	455	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 2b: Subcat 2b

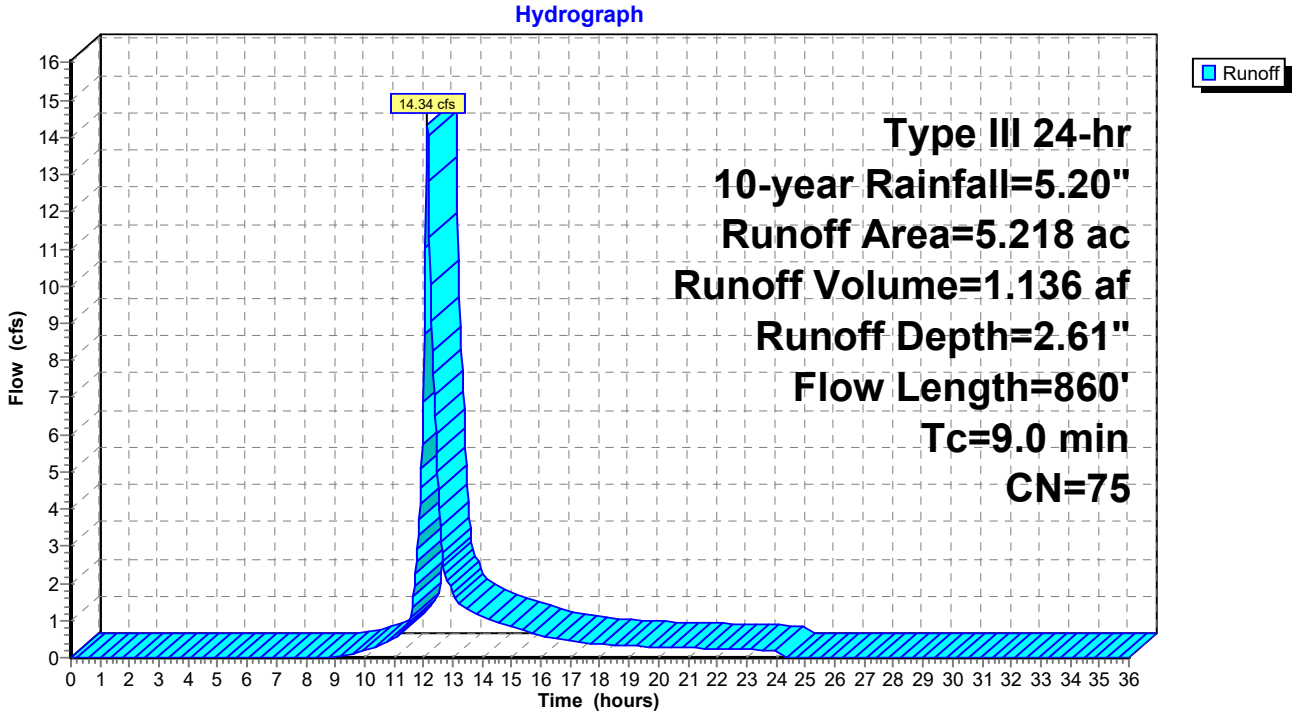
Runoff = 14.34 cfs @ 12.13 hrs, Volume= 1.136 af, Depth= 2.61"
Routed to Pond 4P : Basin 2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-year Rainfall=5.20"

	Area (ac)	CN	Description
*	3.870	77	>75% Grass cover, Good, HSG C-D
	0.885	65	Brush, Good, HSG C
	0.226	89	Gravel roads, HSG C
	0.237	70	Woods, Good, HSG C
	5.218	75	Weighted Average
	5.218		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
7.3	810	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.0	860	Total			

Subcatchment 2b: Subcat 2b



Summary for Subcatchment 2c: Subcat 2c

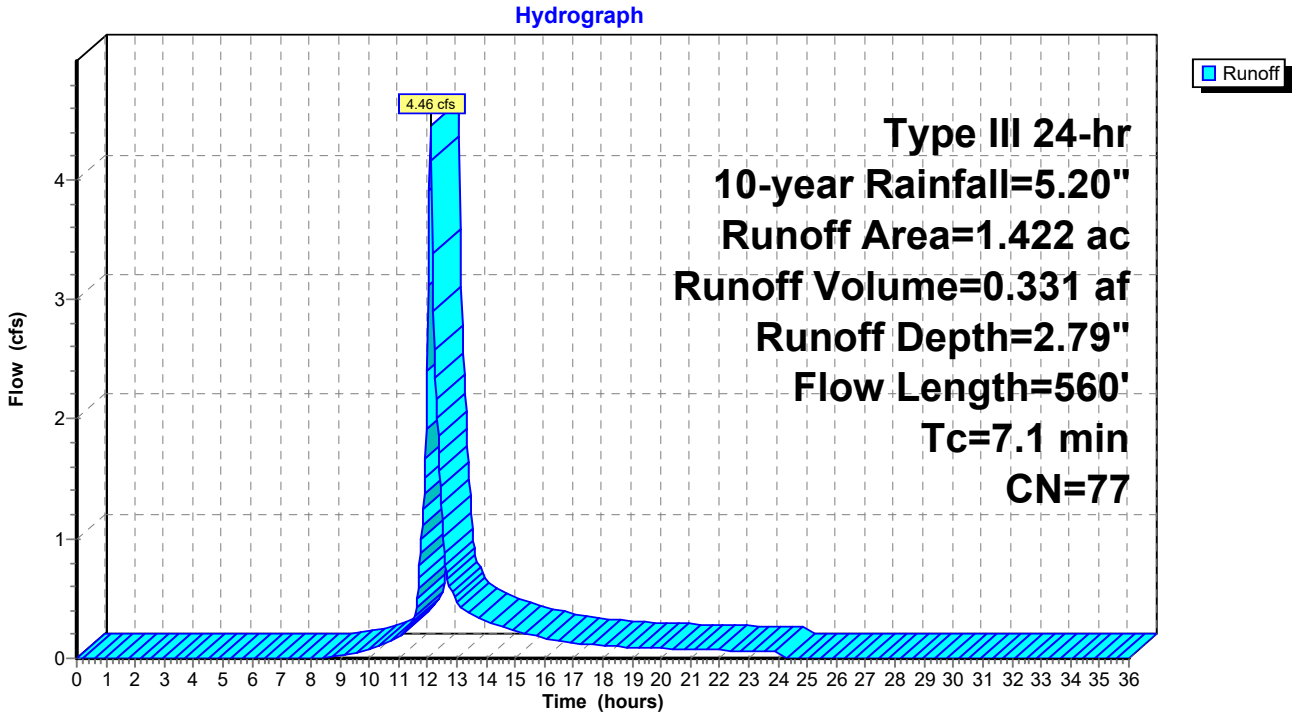
Runoff = 4.46 cfs @ 12.10 hrs, Volume= 0.331 af, Depth= 2.79"
Routed to Pond 5P : Basin 2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-year Rainfall=5.20"

	Area (ac)	CN	Description
*	1.397	77	>75% Grass cover, Good, HSG C-D
	0.015	80	>75% Grass cover, Good, HSG D
	0.008	70	Woods, Good, HSG C
	0.002	77	Woods, Good, HSG D
	1.422	77	Weighted Average
	1.422		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	50	0.0300	0.43		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
2.4	270	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	60	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	50	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.1	560	Total			

Subcatchment 2c: Subcat 2c



Summary for Subcatchment 2d: Subcat 2d

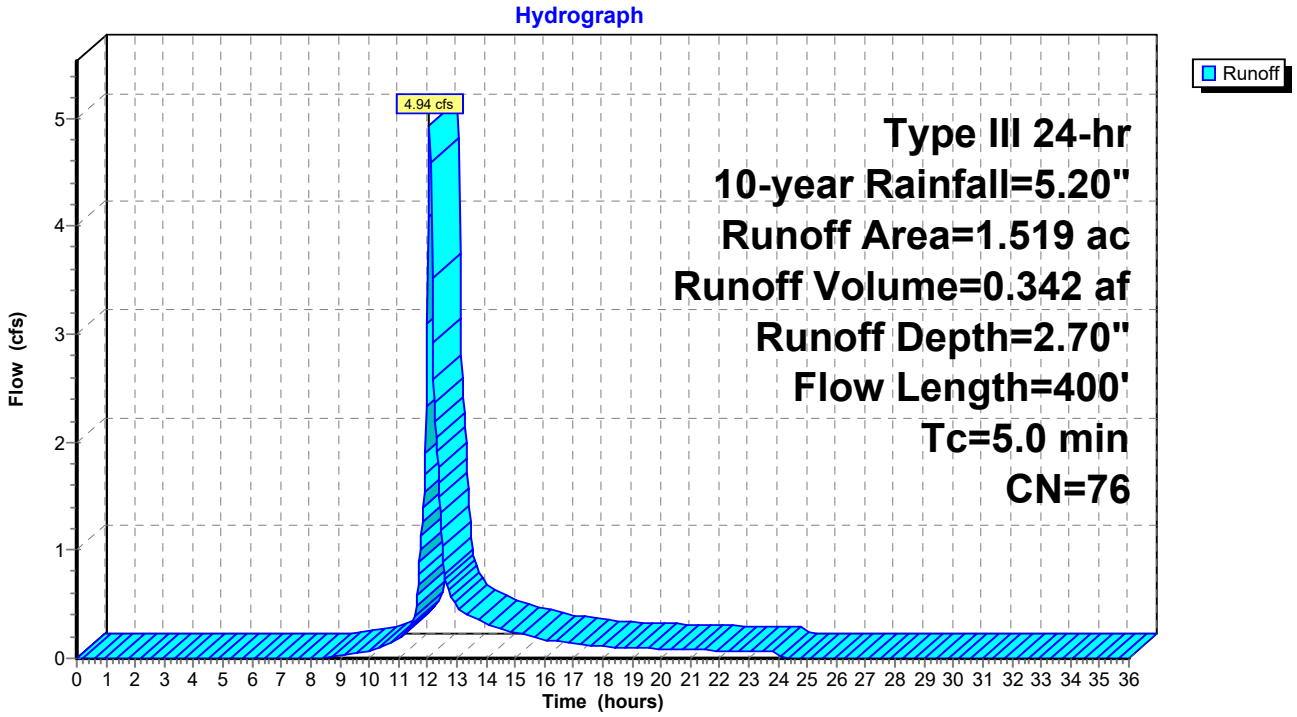
Runoff = 4.94 cfs @ 12.08 hrs, Volume= 0.342 af, Depth= 2.70"
Routed to Pond 6P : Basin 2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-year Rainfall=5.20"

	Area (ac)	CN	Description
*	1.305	77	>75% Grass cover, Good, HSG C-D
	0.214	70	Woods, Good, HSG C
	1.519	76	Weighted Average
	1.519		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	35	0.0600	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	200	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	400	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2d: Subcat 2d



Summary for Pond 3P: Basin 1

Inflow Area = 5.738 ac, 0.00% Impervious, Inflow Depth = 2.19" for 10-year event
Inflow = 12.51 cfs @ 12.15 hrs, Volume= 1.045 af
Outflow = 6.50 cfs @ 12.39 hrs, Volume= 0.757 af, Atten= 48%, Lag= 14.8 min
Primary = 6.50 cfs @ 12.39 hrs, Volume= 0.757 af
Routed to Link 7L : Stream 1

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 196.03' @ 12.39 hrs Surf.Area= 0.142 ac Storage= 0.359 af

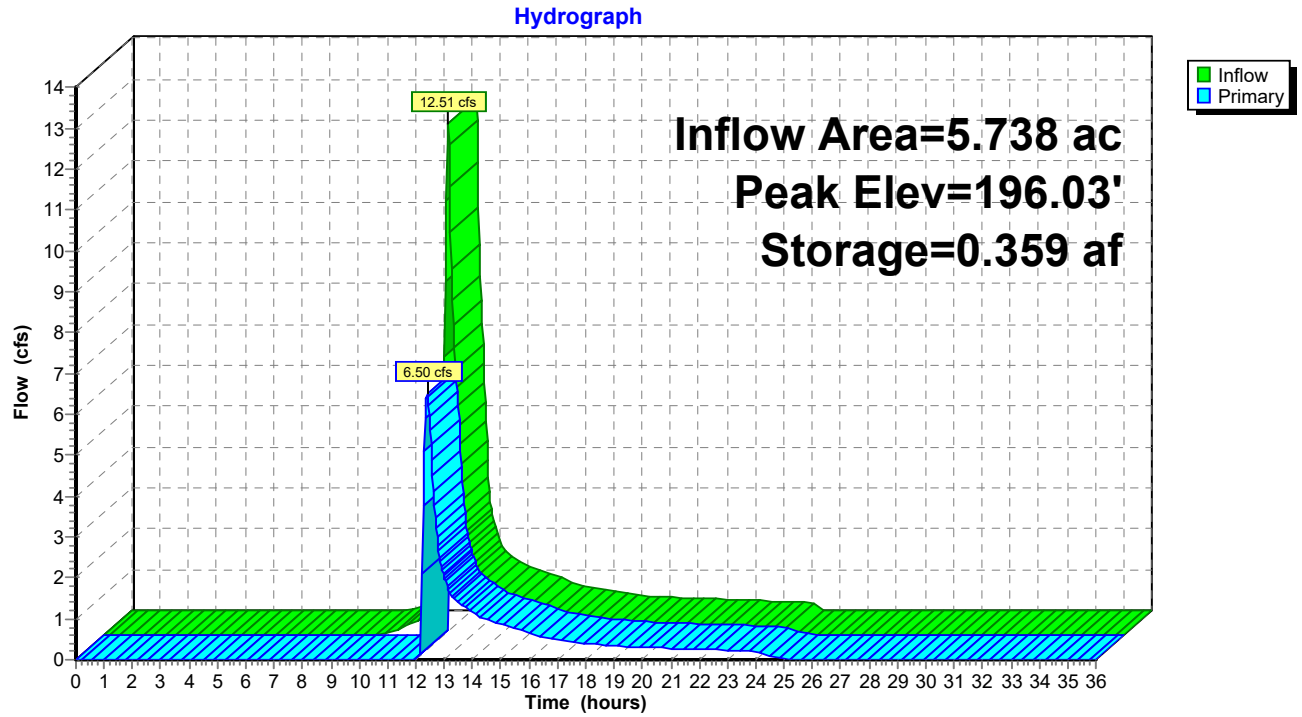
Plug-Flow detention time= 163.6 min calculated for 0.757 af (72% of inflow)
Center-of-Mass det. time= 67.3 min (916.7 - 849.5)

Volume	Invert	Avail.Storage	Storage Description
#1	192.00'	0.511 af	**12.00'W x 147.00'L x 5.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	195.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=6.47 cfs @ 12.39 hrs HW=196.03' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 6.47 cfs @ 1.88 fps)

Pond 3P: Basin 1



Summary for Pond 4P: Basin 2B

Inflow Area = 5.218 ac, 0.00% Impervious, Inflow Depth = 2.61" for 10-year event
Inflow = 14.34 cfs @ 12.13 hrs, Volume= 1.136 af
Outflow = 12.90 cfs @ 12.18 hrs, Volume= 0.983 af, Atten= 10%, Lag= 3.1 min
Primary = 12.90 cfs @ 12.18 hrs, Volume= 0.983 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 263.31' @ 12.18 hrs Surf.Area= 0.104 ac Storage= 0.229 af

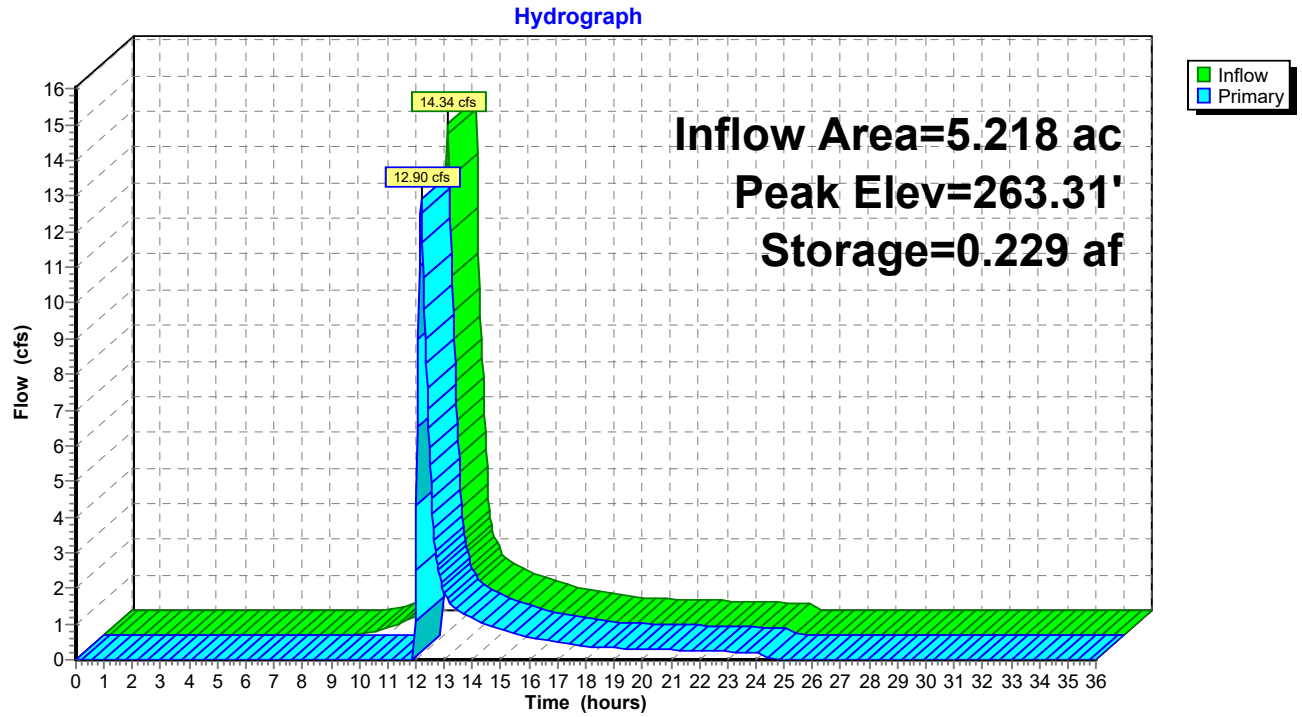
Plug-Flow detention time= 93.7 min calculated for 0.982 af (86% of inflow)
Center-of-Mass det. time= 33.4 min (869.2 - 835.8)

Volume	Invert	Avail.Storage	Storage Description
#1	260.00'	0.307 af	**15.00'W x 110.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	262.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=12.88 cfs @ 12.18 hrs HW=263.31' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 12.88 cfs @ 2.35 fps)

Pond 4P: Basin 2B



Summary for Pond 5P: Basin 2C

Inflow Area = 1.422 ac, 0.00% Impervious, Inflow Depth = 2.79" for 10-year event
Inflow = 4.46 cfs @ 12.10 hrs, Volume= 0.331 af
Outflow = 3.76 cfs @ 12.16 hrs, Volume= 0.255 af, Atten= 16%, Lag= 3.6 min
Primary = 3.76 cfs @ 12.16 hrs, Volume= 0.255 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 286.89' @ 12.16 hrs Surf.Area= 0.050 ac Storage= 0.094 af

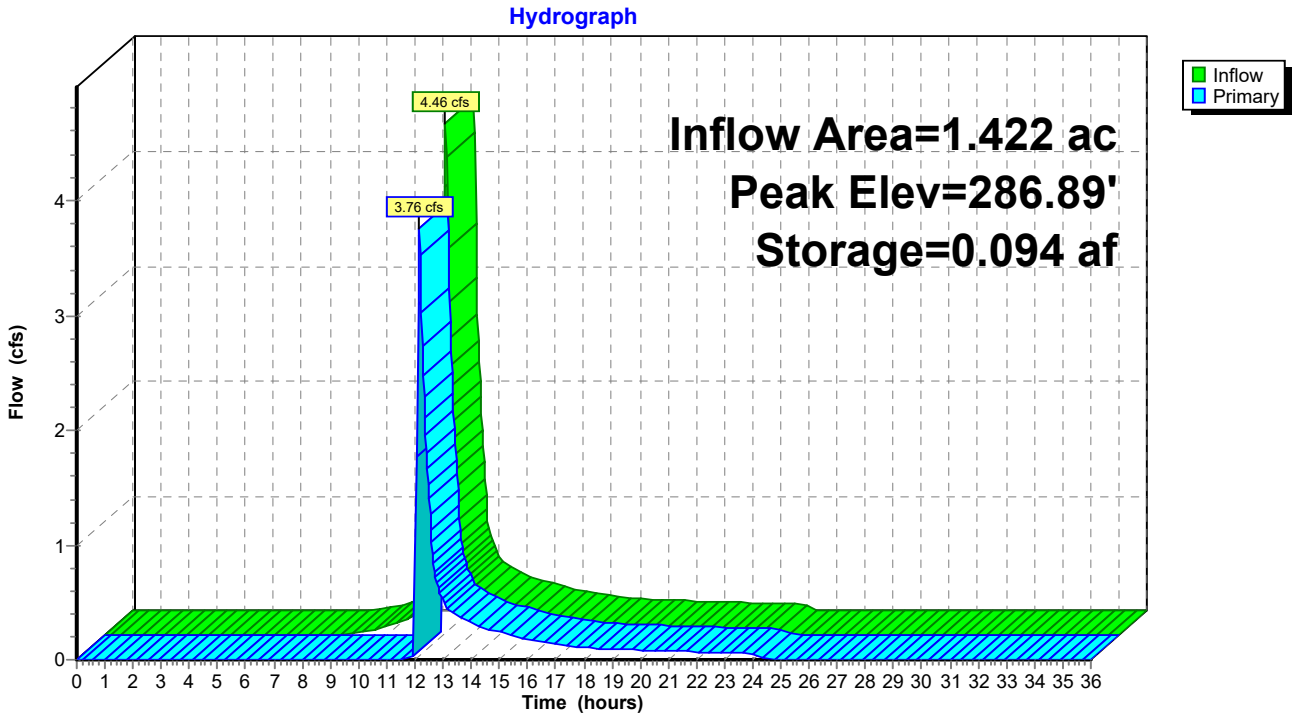
Plug-Flow detention time= 132.2 min calculated for 0.255 af (77% of inflow)
Center-of-Mass det. time= 48.7 min (877.6 - 828.9)

Volume	Invert	Avail.Storage	Storage Description
#1	284.00'	0.158 af	**15.00'W x 50.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=3.68 cfs @ 12.16 hrs HW=286.88' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 3.68 cfs @ 1.52 fps)

Pond 5P: Basin 2C



Summary for Pond 6P: Basin 2D

Inflow Area = 1.519 ac, 0.00% Impervious, Inflow Depth = 2.70" for 10-year event
Inflow = 4.94 cfs @ 12.08 hrs, Volume= 0.342 af
Outflow = 4.14 cfs @ 12.13 hrs, Volume= 0.267 af, Atten= 16%, Lag= 3.3 min
Primary = 4.14 cfs @ 12.13 hrs, Volume= 0.267 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 293.91' @ 12.13 hrs Surf.Area= 0.050 ac Storage= 0.095 af

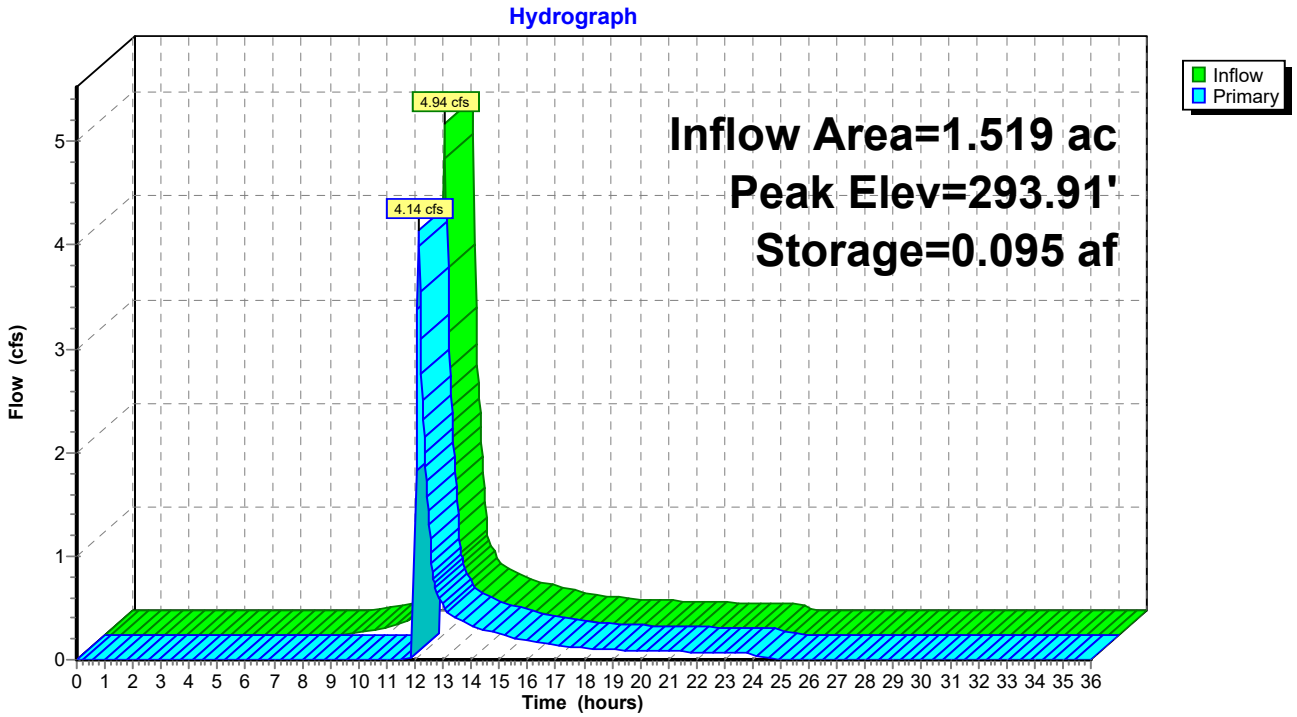
Plug-Flow detention time= 129.8 min calculated for 0.267 af (78% of inflow)
Center-of-Mass det. time= 46.9 min (876.5 - 829.6)

Volume	Invert	Avail.Storage	Storage Description
#1	291.00'	0.158 af	**15.00'W x 50.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	293.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=4.04 cfs @ 12.13 hrs HW=293.90' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 4.04 cfs @ 1.57 fps)

Pond 6P: Basin 2D

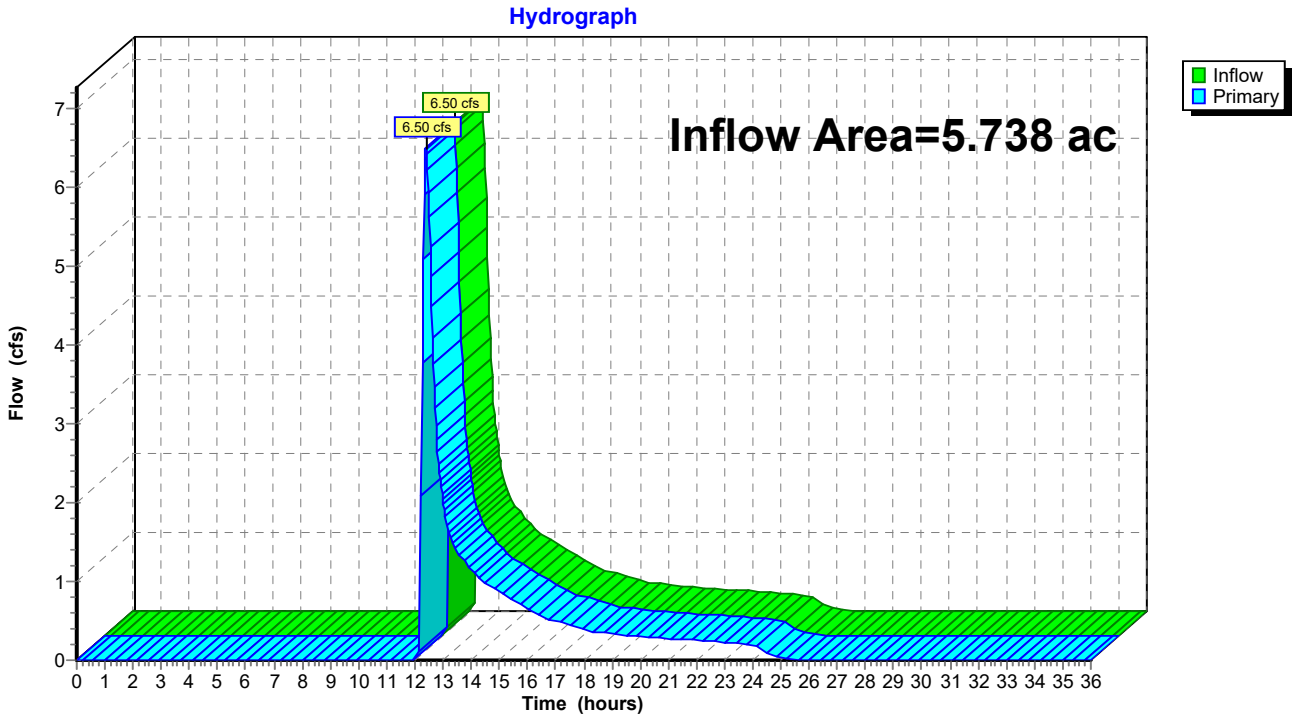


Summary for Link 7L: Stream 1

Inflow Area = 5.738 ac, 0.00% Impervious, Inflow Depth = 1.58" for 10-year event
Inflow = 6.50 cfs @ 12.39 hrs, Volume= 0.757 af
Primary = 6.50 cfs @ 12.39 hrs, Volume= 0.757 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 7L: Stream 1

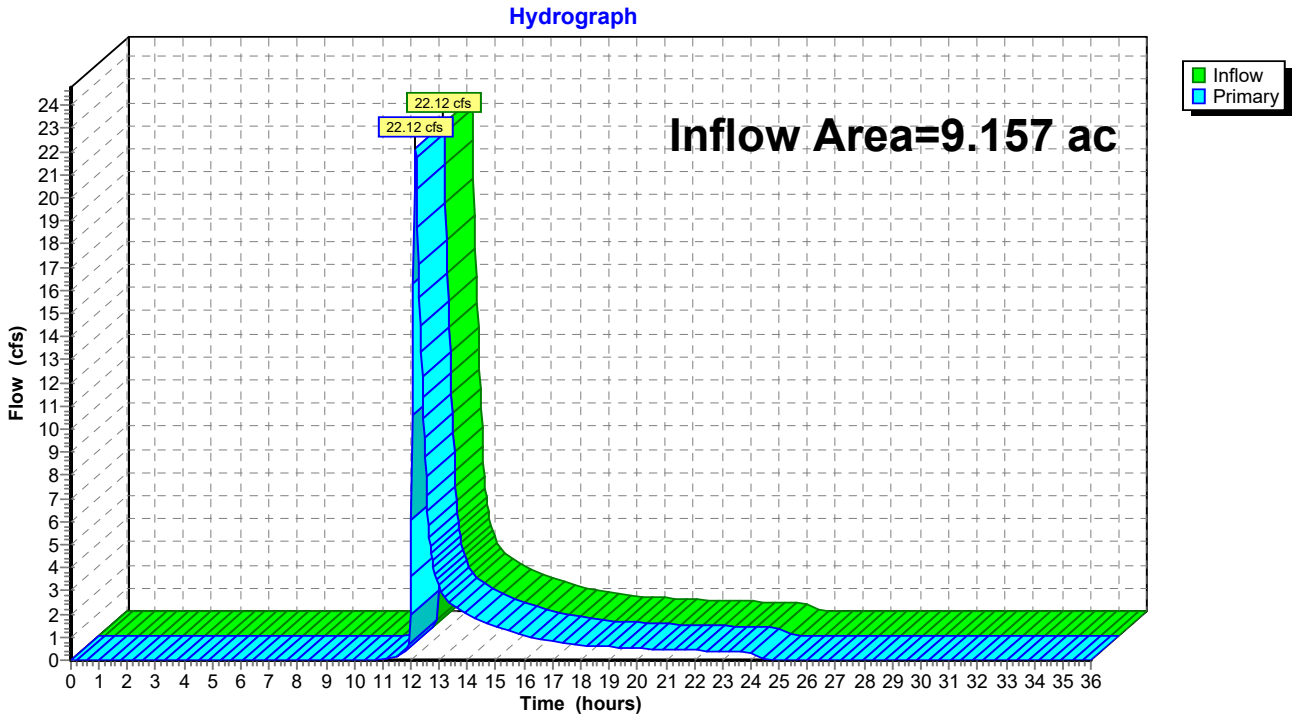


Summary for Link 8L: Stream 2

Inflow Area = 9.157 ac, 0.00% Impervious, Inflow Depth = 2.18" for 10-year event
Inflow = 22.12 cfs @ 12.16 hrs, Volume= 1.667 af
Primary = 22.12 cfs @ 12.16 hrs, Volume= 1.667 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 8L: Stream 2



Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 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=5.738 ac 0.00% Impervious Runoff Depth=3.08"
Flow Length=910' Tc=10.2 min CN=70 Runoff=17.83 cfs 1.472 af

Subcatchment2a: Subcat 2a Runoff Area=0.998 ac 0.00% Impervious Runoff Depth=2.79"
Flow Length=455' Tc=6.4 min CN=67 Runoff=3.17 cfs 0.232 af

Subcatchment2b: Subcat 2b Runoff Area=5.218 ac 0.00% Impervious Runoff Depth=3.57"
Flow Length=860' Tc=9.0 min CN=75 Runoff=19.67 cfs 1.554 af

Subcatchment2c: Subcat 2c Runoff Area=1.422 ac 0.00% Impervious Runoff Depth=3.78"
Flow Length=560' Tc=7.1 min CN=77 Runoff=6.03 cfs 0.448 af

Subcatchment2d: Subcat 2d Runoff Area=1.519 ac 0.00% Impervious Runoff Depth=3.68"
Flow Length=400' Tc=5.0 min CN=76 Runoff=6.72 cfs 0.465 af

Pond 3P: Basin 1 Peak Elev=196.33' Storage=0.403 af Inflow=17.83 cfs 1.472 af
Outflow=13.45 cfs 1.184 af

Pond 4P: Basin 2B Peak Elev=263.50' Storage=0.249 af Inflow=19.67 cfs 1.554 af
Outflow=18.09 cfs 1.401 af

Pond 5P: Basin 2C Peak Elev=286.99' Storage=0.099 af Inflow=6.03 cfs 0.448 af
Outflow=5.69 cfs 0.372 af

Pond 6P: Basin 2D Peak Elev=294.02' Storage=0.100 af Inflow=6.72 cfs 0.465 af
Outflow=6.28 cfs 0.390 af

Link 7L: Stream 1 Inflow=13.45 cfs 1.184 af
Primary=13.45 cfs 1.184 af

Link 8L: Stream 2 Inflow=31.73 cfs 2.395 af
Primary=31.73 cfs 2.395 af

Total Runoff Area = 14.895 ac Runoff Volume = 4.170 af Average Runoff Depth = 3.36"
100.00% Pervious = 14.895 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

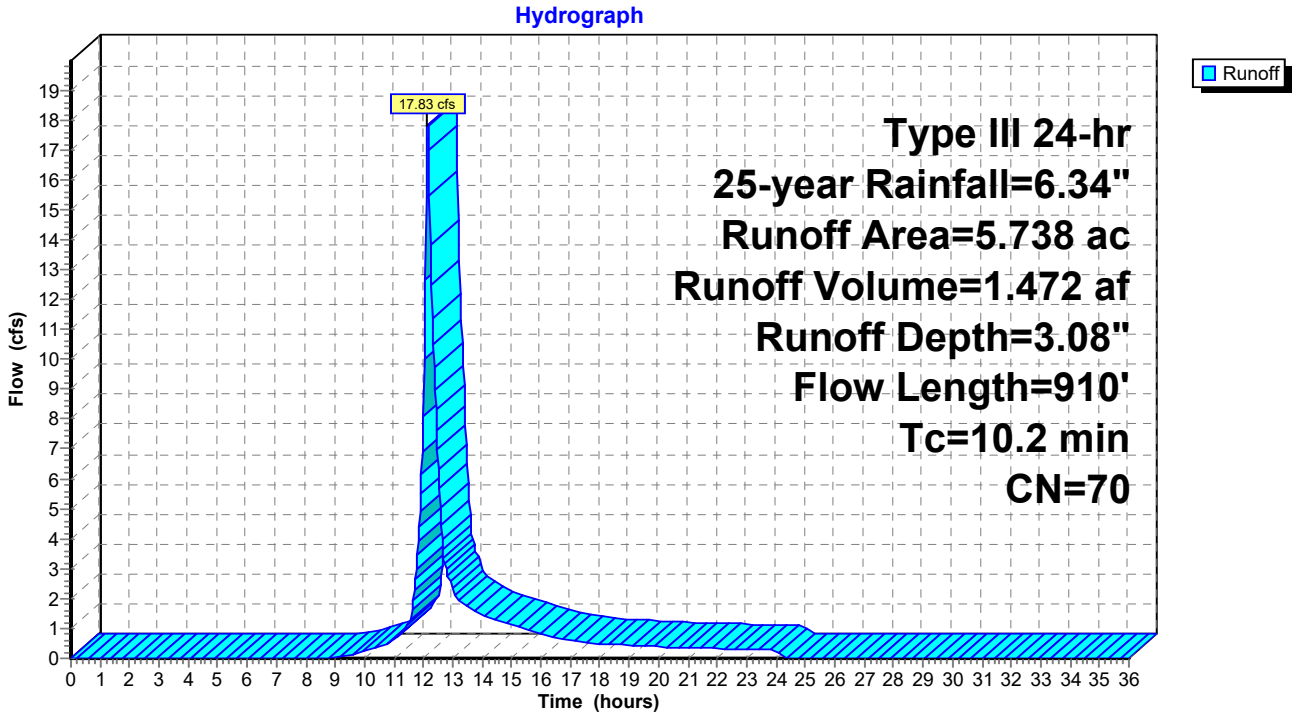
Runoff = 17.83 cfs @ 12.15 hrs, Volume= 1.472 af, Depth= 3.08"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-year Rainfall=6.34"

	Area (ac)	CN	Description
*	2.830	67	>75% Grass cover, Good, HSG B-C
*	1.818	77	>75% Grass cover, Good, HSG C-D
	0.138	48	Brush, Good, HSG B
	0.133	65	Brush, Good, HSG C
	0.065	85	Gravel roads, HSG B
	0.076	89	Gravel roads, HSG C
	0.346	55	Woods, Good, HSG B
	0.332	70	Woods, Good, HSG C
	5.738	70	Weighted Average
	5.738		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.0800	0.30		**Sheet Flow,** Range n= 0.130 P2= 3.36"
4.0	440	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	260	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	160	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.2	910	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2a: Subcat 2a

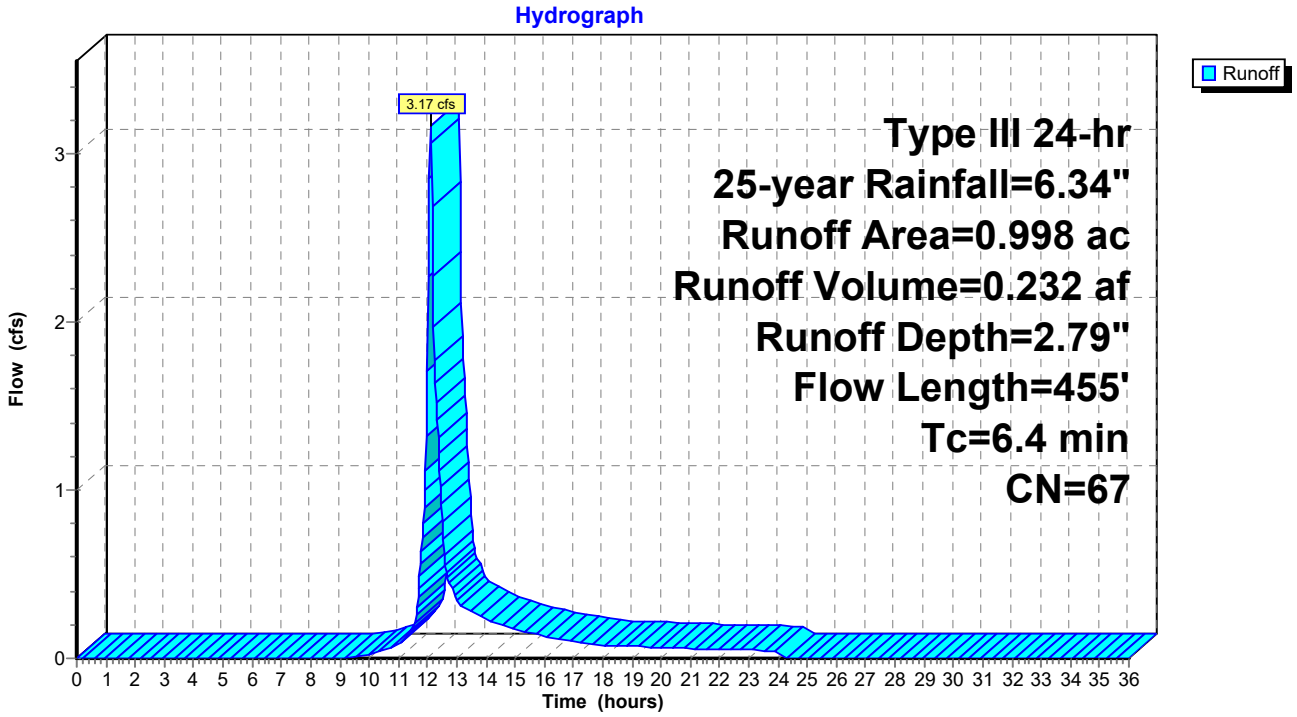
Runoff = 3.17 cfs @ 12.10 hrs, Volume= 0.232 af, Depth= 2.79"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-year Rainfall=6.34"

Area (ac)	CN	Description
0.069	61	>75% Grass cover, Good, HSG B
0.215	74	>75% Grass cover, Good, HSG C
0.022	48	Brush, Good, HSG B
0.642	65	Brush, Good, HSG C
0.009	89	Gravel roads, HSG C
0.042	70	Woods, Good, HSG C
0.998	67	Weighted Average
0.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	65	0.0900	0.33		**Sheet Flow,** Range n= 0.130 P2= 3.36"
1.0	140	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.4	455	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 2b: Subcat 2b

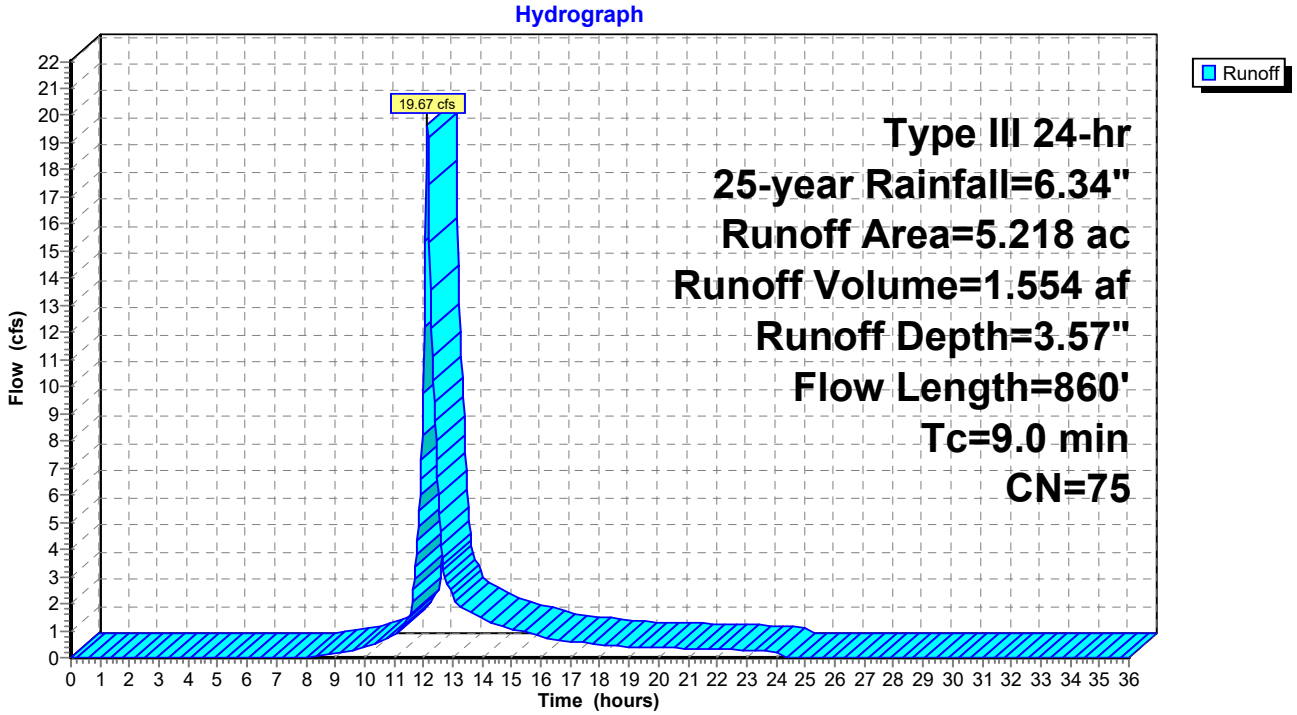
Runoff = 19.67 cfs @ 12.13 hrs, Volume= 1.554 af, Depth= 3.57"
Routed to Pond 4P : Basin 2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-year Rainfall=6.34"

	Area (ac)	CN	Description
*	3.870	77	>75% Grass cover, Good, HSG C-D
	0.885	65	Brush, Good, HSG C
	0.226	89	Gravel roads, HSG C
	0.237	70	Woods, Good, HSG C
	5.218	75	Weighted Average
	5.218		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
7.3	810	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.0	860	Total			

Subcatchment 2b: Subcat 2b



Summary for Subcatchment 2c: Subcat 2c

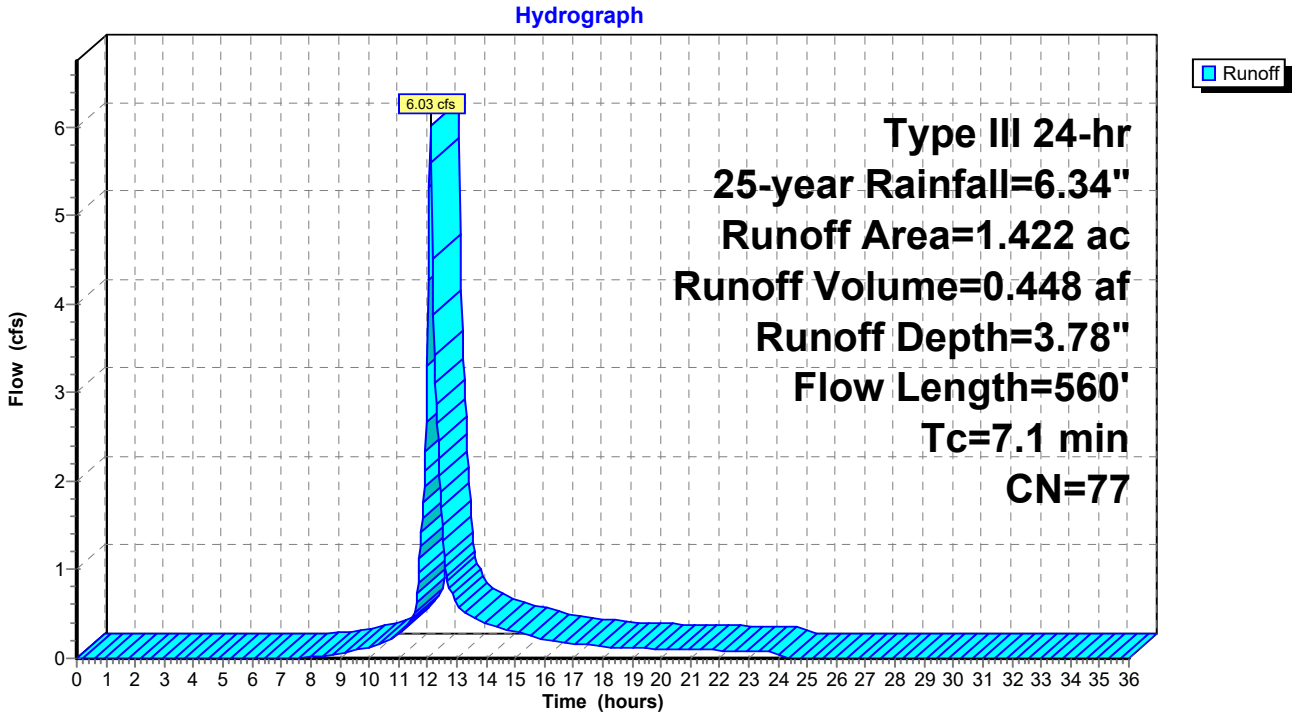
Runoff = 6.03 cfs @ 12.10 hrs, Volume= 0.448 af, Depth= 3.78"
Routed to Pond 5P : Basin 2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-year Rainfall=6.34"

	Area (ac)	CN	Description
*	1.397	77	>75% Grass cover, Good, HSG C-D
	0.015	80	>75% Grass cover, Good, HSG D
	0.008	70	Woods, Good, HSG C
	0.002	77	Woods, Good, HSG D
	1.422	77	Weighted Average
	1.422		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	50	0.0300	0.43		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
2.4	270	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	60	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	50	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.1	560	Total			

Subcatchment 2c: Subcat 2c



Summary for Subcatchment 2d: Subcat 2d

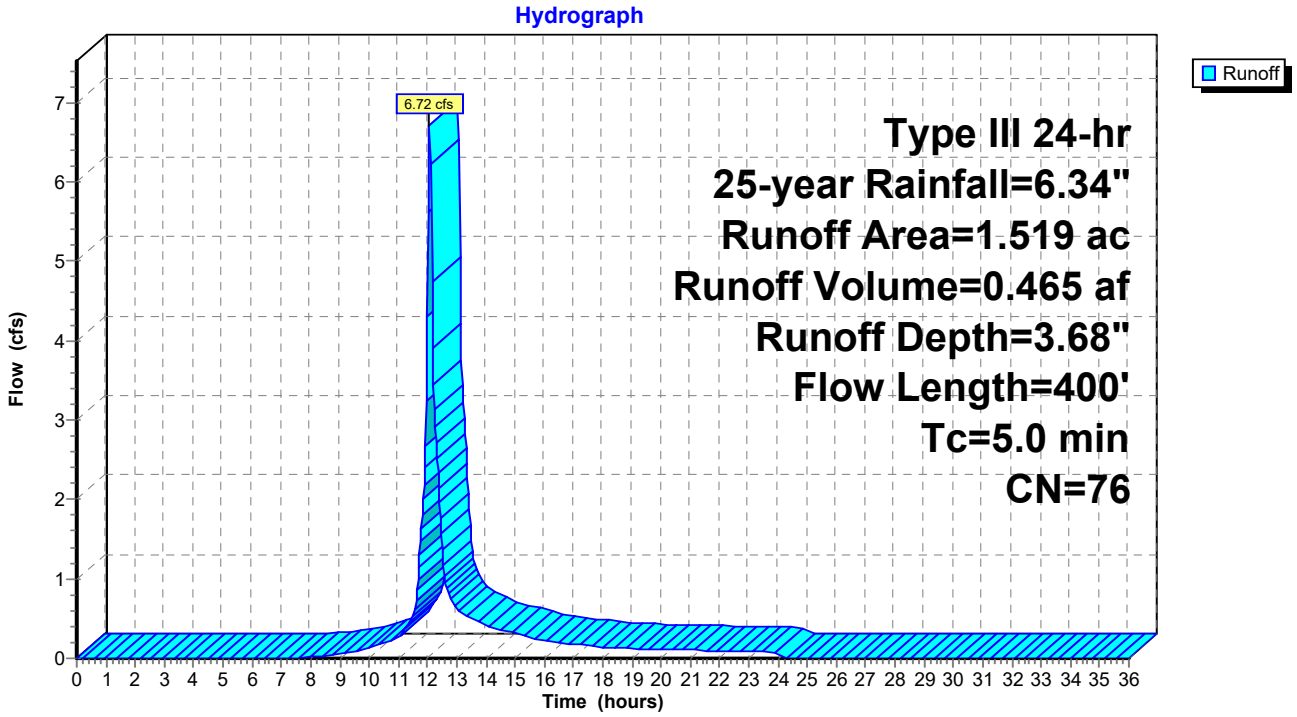
Runoff = 6.72 cfs @ 12.08 hrs, Volume= 0.465 af, Depth= 3.68"
Routed to Pond 6P : Basin 2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-year Rainfall=6.34"

	Area (ac)	CN	Description
*	1.305	77	>75% Grass cover, Good, HSG C-D
	0.214	70	Woods, Good, HSG C
	1.519	76	Weighted Average
	1.519		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	35	0.0600	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	200	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	400	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2d: Subcat 2d



Summary for Pond 3P: Basin 1

Inflow Area = 5.738 ac, 0.00% Impervious, Inflow Depth = 3.08" for 25-year event
Inflow = 17.83 cfs @ 12.15 hrs, Volume= 1.472 af
Outflow = 13.45 cfs @ 12.25 hrs, Volume= 1.184 af, Atten= 25%, Lag= 6.3 min
Primary = 13.45 cfs @ 12.25 hrs, Volume= 1.184 af
Routed to Link 7L : Stream 1

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 196.33' @ 12.25 hrs Surf.Area= 0.151 ac Storage= 0.403 af

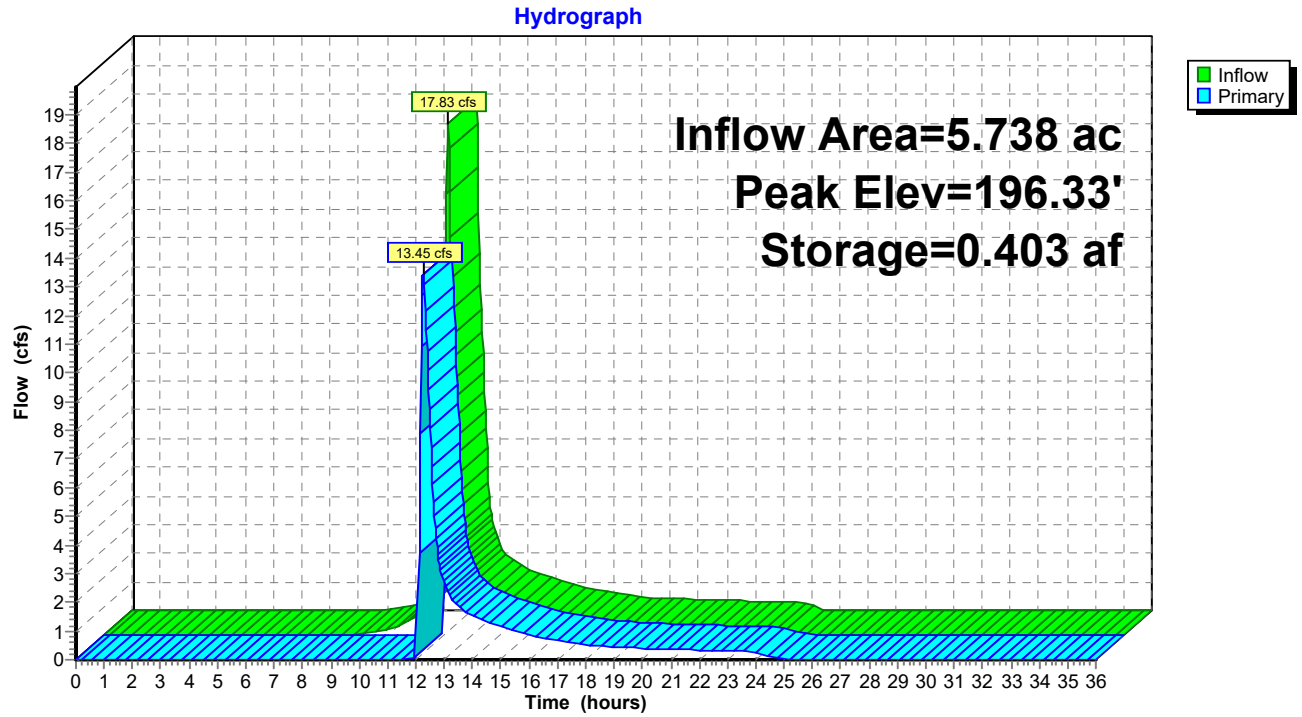
Plug-Flow detention time= 125.6 min calculated for 1.184 af (80% of inflow)
Center-of-Mass det. time= 47.7 min (887.1 - 839.4)

Volume	Invert	Avail.Storage	Storage Description
#1	192.00'	0.511 af	**12.00'W x 147.00'L x 5.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	195.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=13.35 cfs @ 12.25 hrs HW=196.32' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 13.35 cfs @ 2.37 fps)

Pond 3P: Basin 1



Summary for Pond 4P: Basin 2B

Inflow Area = 5.218 ac, 0.00% Impervious, Inflow Depth = 3.57" for 25-year event
Inflow = 19.67 cfs @ 12.13 hrs, Volume= 1.554 af
Outflow = 18.09 cfs @ 12.17 hrs, Volume= 1.401 af, Atten= 8%, Lag= 2.6 min
Primary = 18.09 cfs @ 12.17 hrs, Volume= 1.401 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 263.50' @ 12.17 hrs Surf.Area= 0.108 ac Storage= 0.249 af

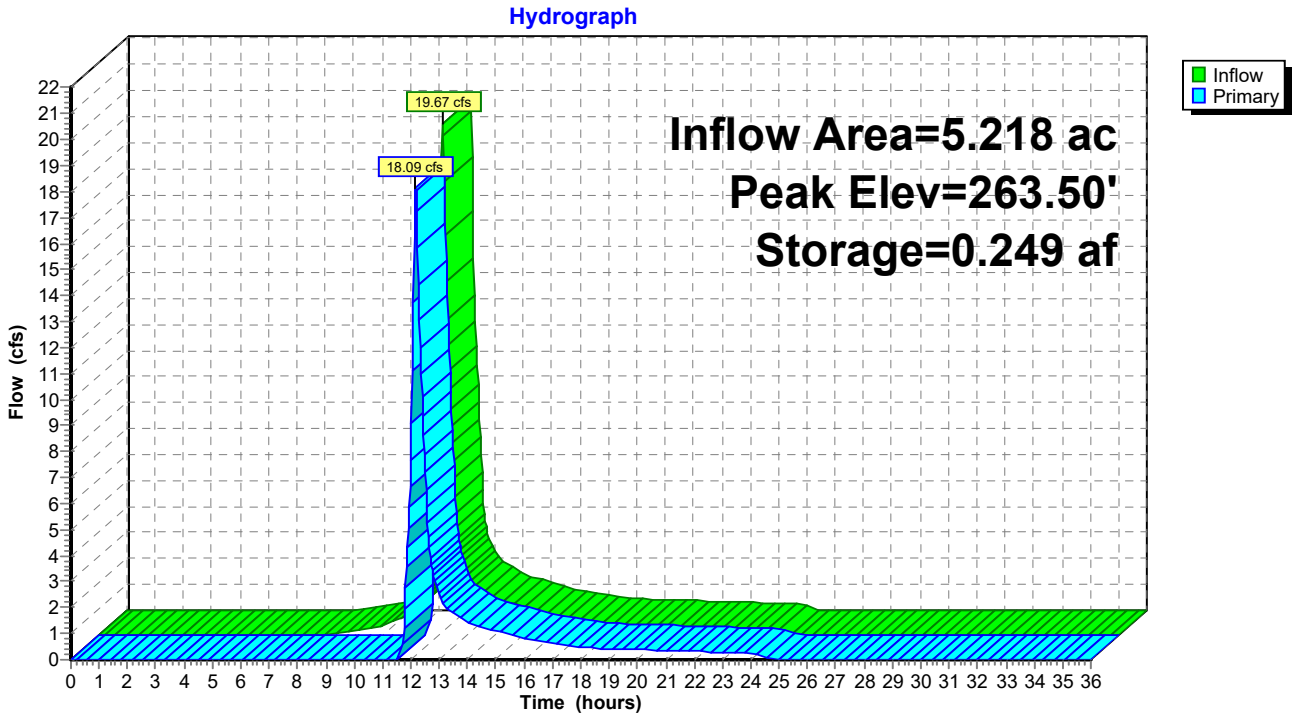
Plug-Flow detention time= 75.9 min calculated for 1.401 af (90% of inflow)
Center-of-Mass det. time= 27.7 min (854.5 - 826.8)

Volume	Invert	Avail.Storage	Storage Description
#1	260.00'	0.307 af	**15.00'W x 110.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	262.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=17.99 cfs @ 12.17 hrs HW=263.49' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 17.99 cfs @ 2.59 fps)

Pond 4P: Basin 2B



Summary for Pond 5P: Basin 2C

Inflow Area = 1.422 ac, 0.00% Impervious, Inflow Depth = 3.78" for 25-year event
Inflow = 6.03 cfs @ 12.10 hrs, Volume= 0.448 af
Outflow = 5.69 cfs @ 12.13 hrs, Volume= 0.372 af, Atten= 6%, Lag= 1.9 min
Primary = 5.69 cfs @ 12.13 hrs, Volume= 0.372 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 286.99' @ 12.13 hrs Surf.Area= 0.051 ac Storage= 0.099 af

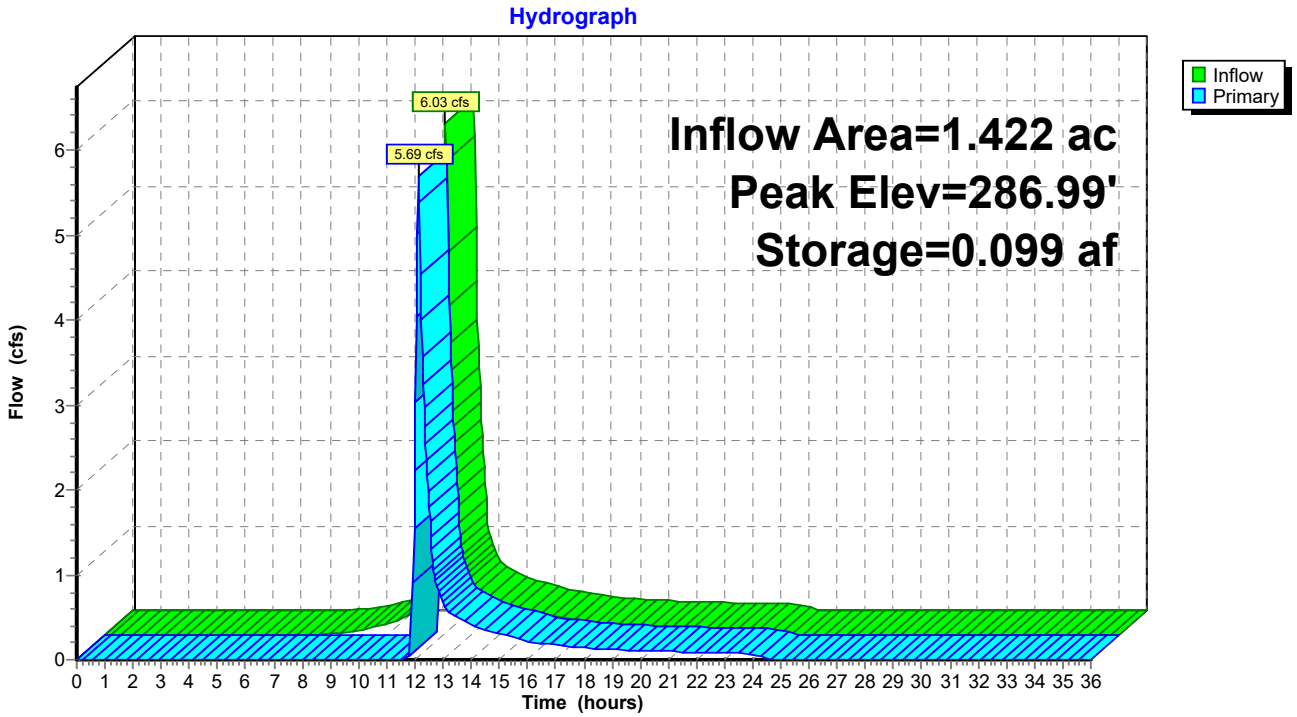
Plug-Flow detention time= 107.4 min calculated for 0.372 af (83% of inflow)
Center-of-Mass det. time= 38.3 min (858.5 - 820.3)

Volume	Invert	Avail.Storage	Storage Description
#1	284.00'	0.158 af	**15.00'W x 50.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=5.61 cfs @ 12.13 hrs HW=286.99' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 5.61 cfs @ 1.78 fps)

Pond 5P: Basin 2C



Summary for Pond 6P: Basin 2D

Inflow Area = 1.519 ac, 0.00% Impervious, Inflow Depth = 3.68" for 25-year event
Inflow = 6.72 cfs @ 12.08 hrs, Volume= 0.465 af
Outflow = 6.28 cfs @ 12.11 hrs, Volume= 0.390 af, Atten= 7%, Lag= 1.8 min
Primary = 6.28 cfs @ 12.11 hrs, Volume= 0.390 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 294.02' @ 12.11 hrs Surf.Area= 0.052 ac Storage= 0.100 af

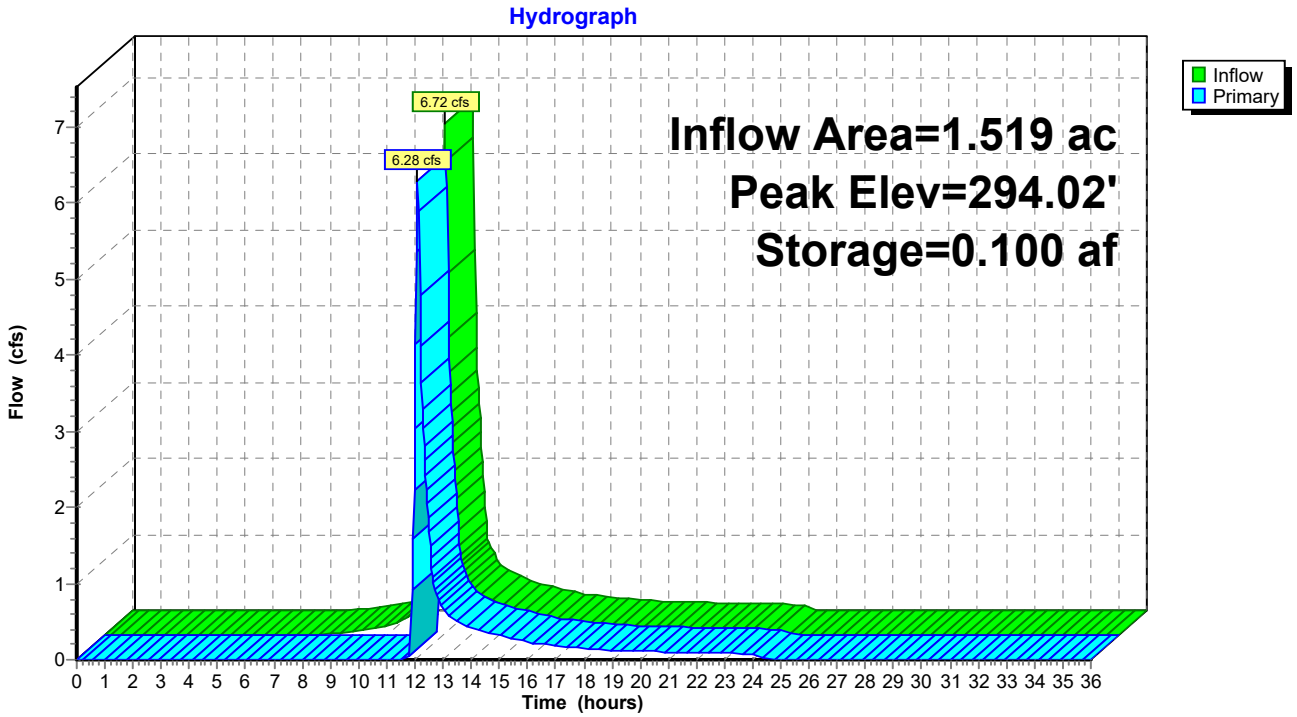
Plug-Flow detention time= 104.3 min calculated for 0.390 af (84% of inflow)
Center-of-Mass det. time= 36.7 min (857.4 - 820.7)

Volume	Invert	Avail.Storage	Storage Description
#1	291.00'	0.158 af	**15.00'W x 50.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	293.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=6.19 cfs @ 12.11 hrs HW=294.01' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 6.19 cfs @ 1.85 fps)

Pond 6P: Basin 2D

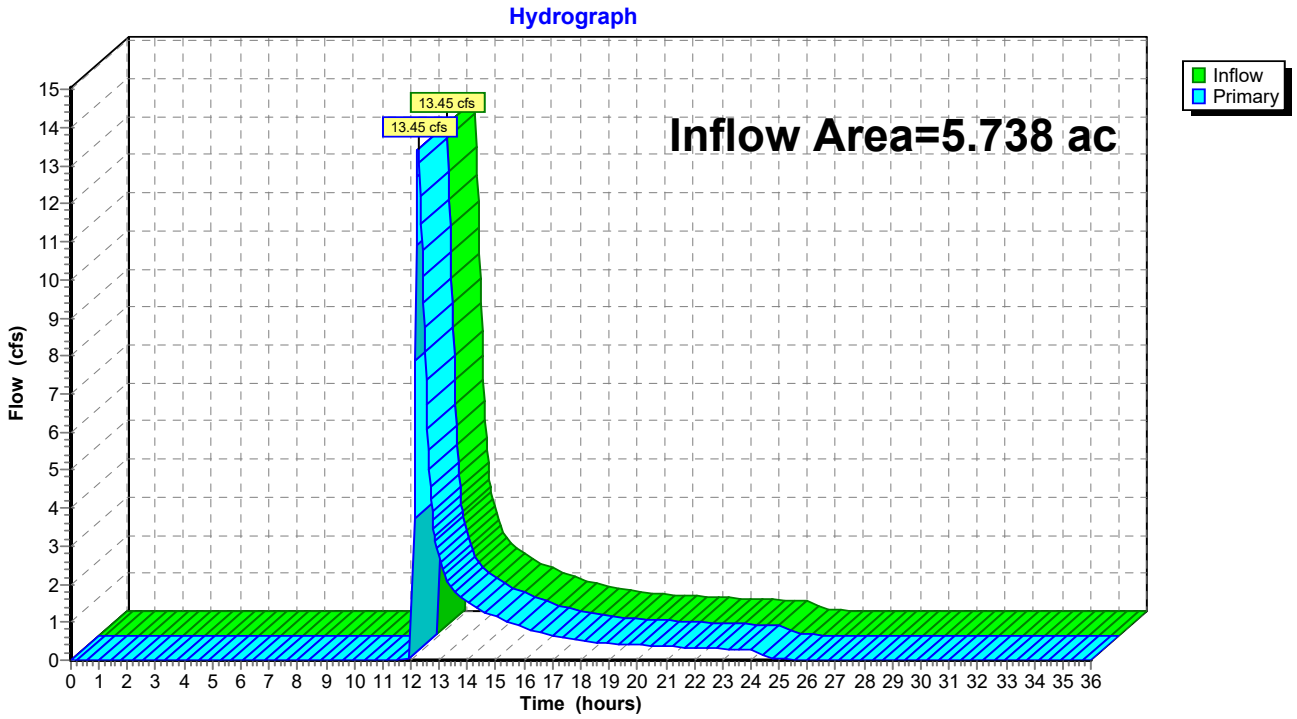


Summary for Link 7L: Stream 1

Inflow Area = 5.738 ac, 0.00% Impervious, Inflow Depth = 2.48" for 25-year event
Inflow = 13.45 cfs @ 12.25 hrs, Volume= 1.184 af
Primary = 13.45 cfs @ 12.25 hrs, Volume= 1.184 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 7L: Stream 1

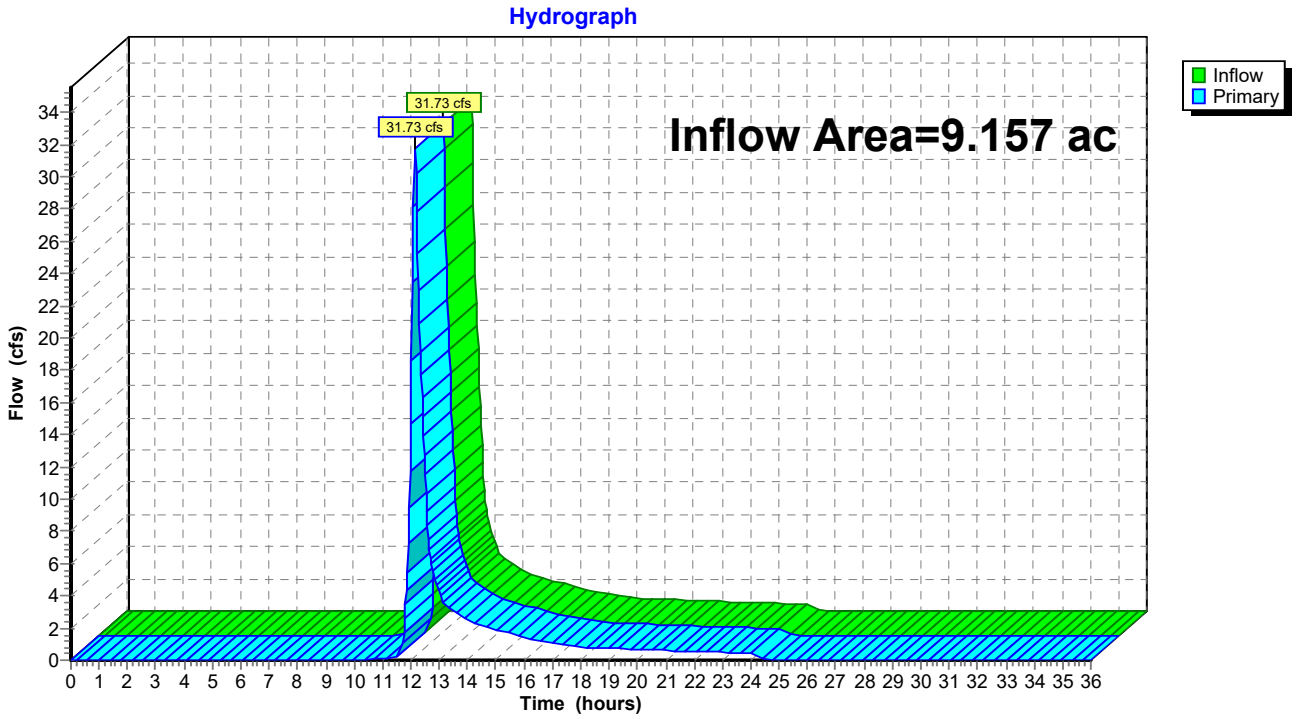


Summary for Link 8L: Stream 2

Inflow Area = 9.157 ac, 0.00% Impervious, Inflow Depth = 3.14" for 25-year event
Inflow = 31.73 cfs @ 12.14 hrs, Volume= 2.395 af
Primary = 31.73 cfs @ 12.14 hrs, Volume= 2.395 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 8L: Stream 2



Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 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=5.738 ac 0.00% Impervious Runoff Depth=3.77"
Flow Length=910' Tc=10.2 min CN=70 Runoff=21.91 cfs 1.802 af

Subcatchment2a: Subcat 2a Runoff Area=0.998 ac 0.00% Impervious Runoff Depth=3.45"
Flow Length=455' Tc=6.4 min CN=67 Runoff=3.95 cfs 0.287 af

Subcatchment2b: Subcat 2b Runoff Area=5.218 ac 0.00% Impervious Runoff Depth=4.31"
Flow Length=860' Tc=9.0 min CN=75 Runoff=23.69 cfs 1.873 af

Subcatchment2c: Subcat 2c Runoff Area=1.422 ac 0.00% Impervious Runoff Depth=4.53"
Flow Length=560' Tc=7.1 min CN=77 Runoff=7.20 cfs 0.537 af

Subcatchment2d: Subcat 2d Runoff Area=1.519 ac 0.00% Impervious Runoff Depth=4.42"
Flow Length=400' Tc=5.0 min CN=76 Runoff=8.08 cfs 0.559 af

Pond 3P: Basin 1 Peak Elev=196.51' Storage=0.431 af Inflow=21.91 cfs 1.802 af
Outflow=18.66 cfs 1.514 af

Pond 4P: Basin 2B Peak Elev=263.62' Storage=0.263 af Inflow=23.69 cfs 1.873 af
Outflow=21.90 cfs 1.721 af

Pond 5P: Basin 2C Peak Elev=287.05' Storage=0.102 af Inflow=7.20 cfs 0.537 af
Outflow=6.86 cfs 0.461 af

Pond 6P: Basin 2D Peak Elev=294.08' Storage=0.103 af Inflow=8.08 cfs 0.559 af
Outflow=7.63 cfs 0.484 af

Link 7L: Stream 1 Inflow=18.66 cfs 1.514 af
Primary=18.66 cfs 1.514 af

Link 8L: Stream 2 Inflow=38.45 cfs 2.953 af
Primary=38.45 cfs 2.953 af

Total Runoff Area = 14.895 ac Runoff Volume = 5.058 af Average Runoff Depth = 4.08"
100.00% Pervious = 14.895 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

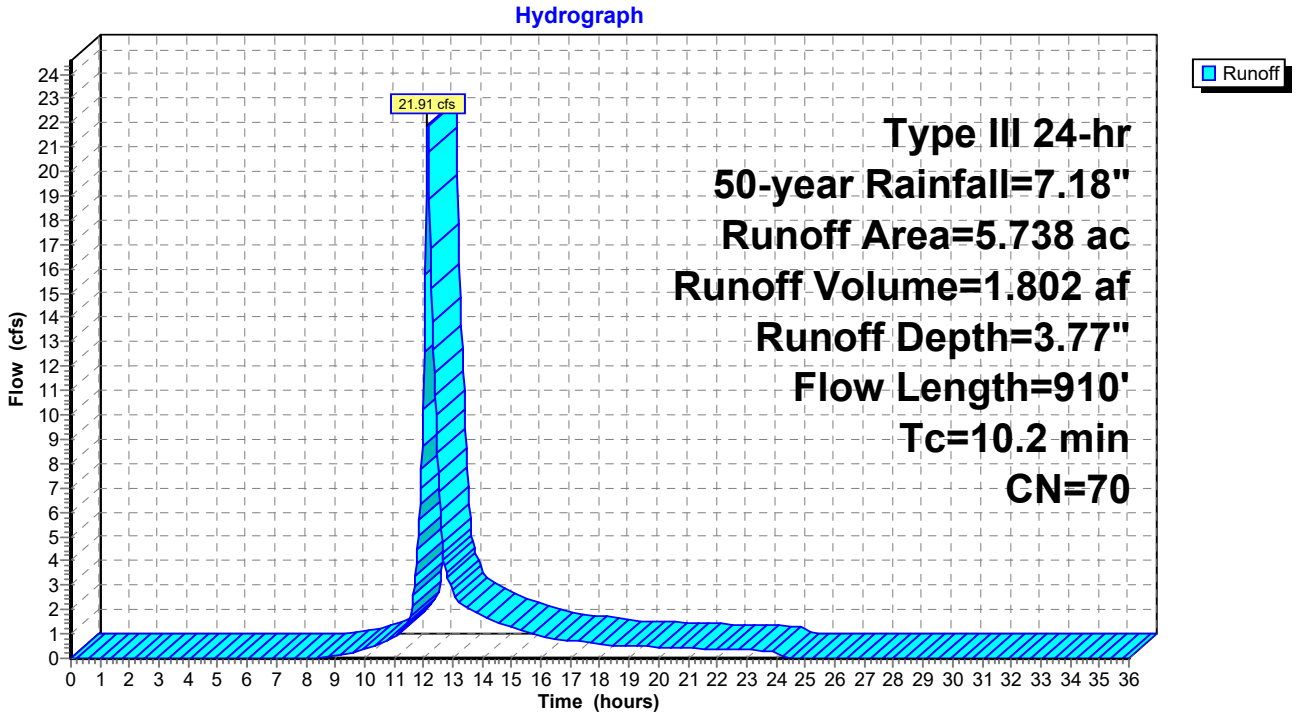
Runoff = 21.91 cfs @ 12.15 hrs, Volume= 1.802 af, Depth= 3.77"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 50-year Rainfall=7.18"

	Area (ac)	CN	Description
*	2.830	67	>75% Grass cover, Good, HSG B-C
*	1.818	77	>75% Grass cover, Good, HSG C-D
	0.138	48	Brush, Good, HSG B
	0.133	65	Brush, Good, HSG C
	0.065	85	Gravel roads, HSG B
	0.076	89	Gravel roads, HSG C
	0.346	55	Woods, Good, HSG B
	0.332	70	Woods, Good, HSG C
	5.738	70	Weighted Average
	5.738		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.0800	0.30		**Sheet Flow,** Range n= 0.130 P2= 3.36"
4.0	440	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	260	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	160	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.2	910	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2a: Subcat 2a

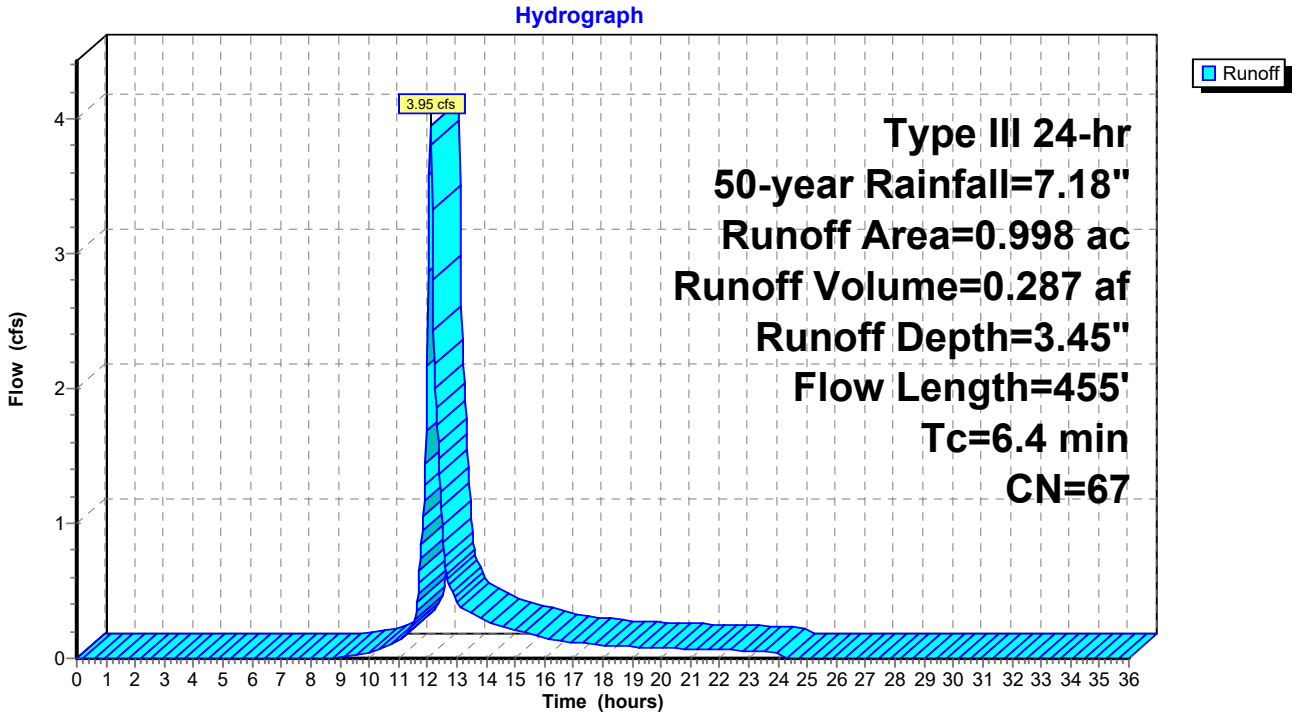
Runoff = 3.95 cfs @ 12.10 hrs, Volume= 0.287 af, Depth= 3.45"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 50-year Rainfall=7.18"

Area (ac)	CN	Description
0.069	61	>75% Grass cover, Good, HSG B
0.215	74	>75% Grass cover, Good, HSG C
0.022	48	Brush, Good, HSG B
0.642	65	Brush, Good, HSG C
0.009	89	Gravel roads, HSG C
0.042	70	Woods, Good, HSG C
0.998	67	Weighted Average
0.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	65	0.0900	0.33		**Sheet Flow,** Range n= 0.130 P2= 3.36"
1.0	140	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.4	455	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 2b: Subcat 2b

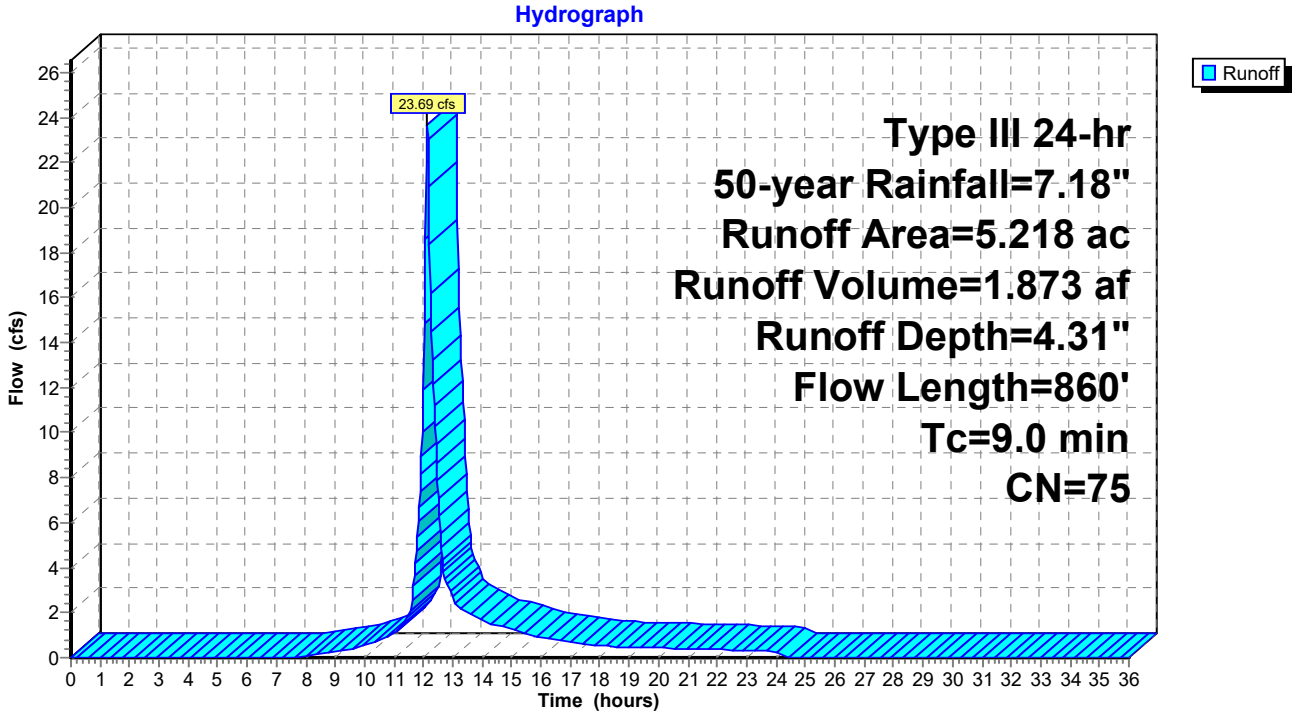
Runoff = 23.69 cfs @ 12.13 hrs, Volume= 1.873 af, Depth= 4.31"
Routed to Pond 4P : Basin 2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 50-year Rainfall=7.18"

	Area (ac)	CN	Description
*	3.870	77	>75% Grass cover, Good, HSG C-D
	0.885	65	Brush, Good, HSG C
	0.226	89	Gravel roads, HSG C
	0.237	70	Woods, Good, HSG C
	5.218	75	Weighted Average
	5.218		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
7.3	810	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.0	860	Total			

Subcatchment 2b: Subcat 2b



Summary for Subcatchment 2c: Subcat 2c

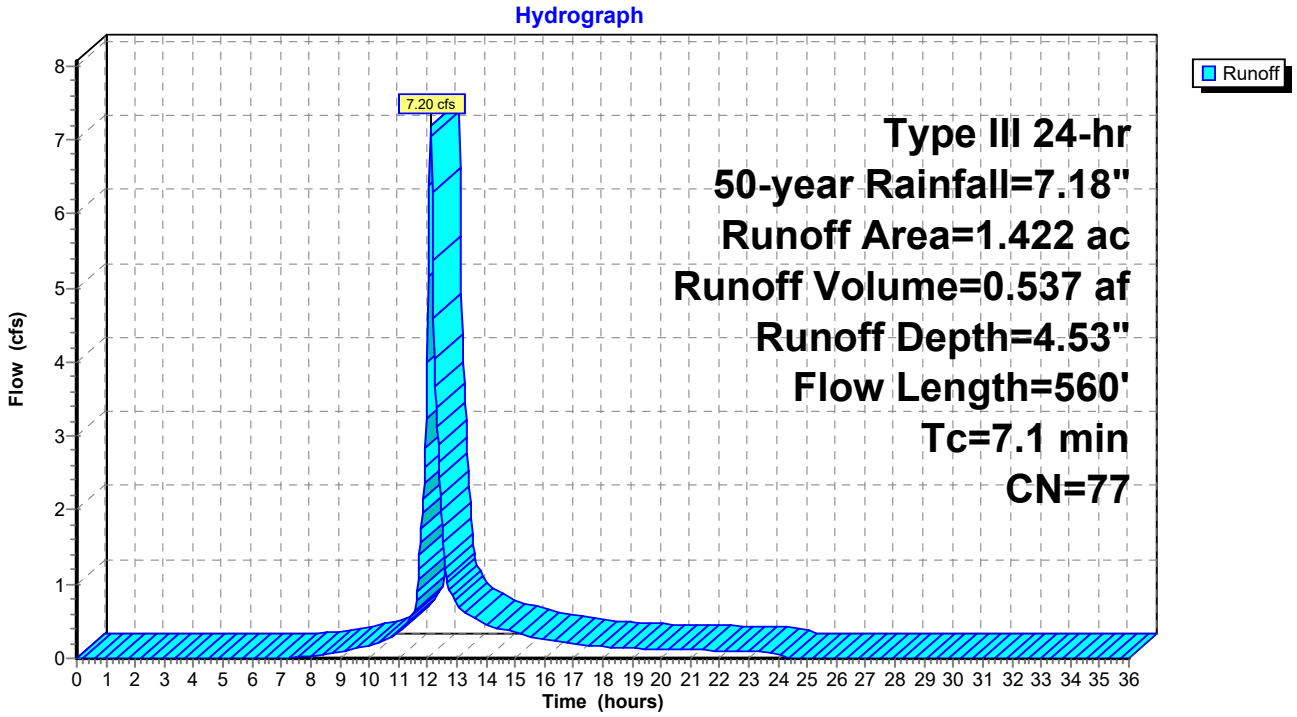
Runoff = 7.20 cfs @ 12.10 hrs, Volume= 0.537 af, Depth= 4.53"
Routed to Pond 5P : Basin 2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 50-year Rainfall=7.18"

	Area (ac)	CN	Description
*	1.397	77	>75% Grass cover, Good, HSG C-D
	0.015	80	>75% Grass cover, Good, HSG D
	0.008	70	Woods, Good, HSG C
	0.002	77	Woods, Good, HSG D
	1.422	77	Weighted Average
	1.422		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	50	0.0300	0.43		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
2.4	270	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	60	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	50	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.1	560	Total			

Subcatchment 2c: Subcat 2c



Summary for Subcatchment 2d: Subcat 2d

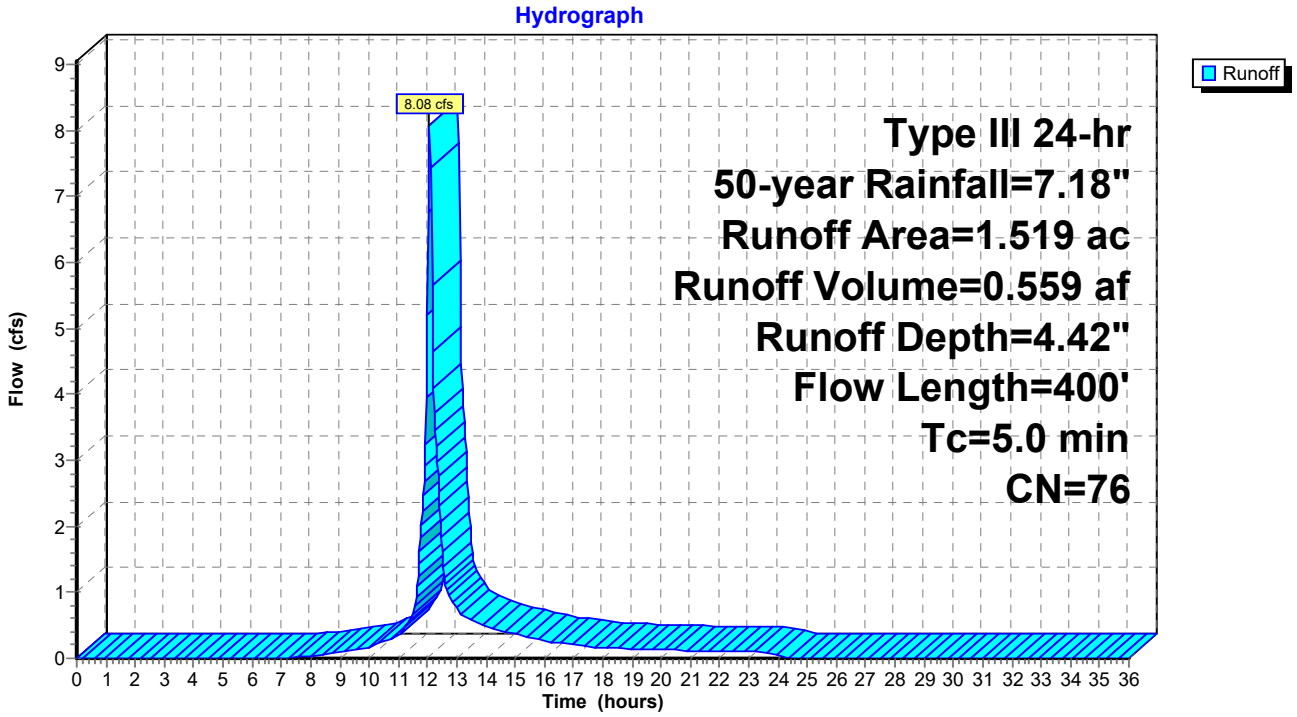
Runoff = 8.08 cfs @ 12.07 hrs, Volume= 0.559 af, Depth= 4.42"
Routed to Pond 6P : Basin 2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 50-year Rainfall=7.18"

	Area (ac)	CN	Description
*	1.305	77	>75% Grass cover, Good, HSG C-D
	0.214	70	Woods, Good, HSG C
	1.519	76	Weighted Average
	1.519		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	35	0.0600	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	200	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	400	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2d: Subcat 2d



Summary for Pond 3P: Basin 1

Inflow Area = 5.738 ac, 0.00% Impervious, Inflow Depth = 3.77" for 50-year event
Inflow = 21.91 cfs @ 12.15 hrs, Volume= 1.802 af
Outflow = 18.66 cfs @ 12.22 hrs, Volume= 1.514 af, Atten= 15%, Lag= 4.3 min
Primary = 18.66 cfs @ 12.22 hrs, Volume= 1.514 af
Routed to Link 7L : Stream 1

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 196.51' @ 12.22 hrs Surf.Area= 0.156 ac Storage= 0.431 af

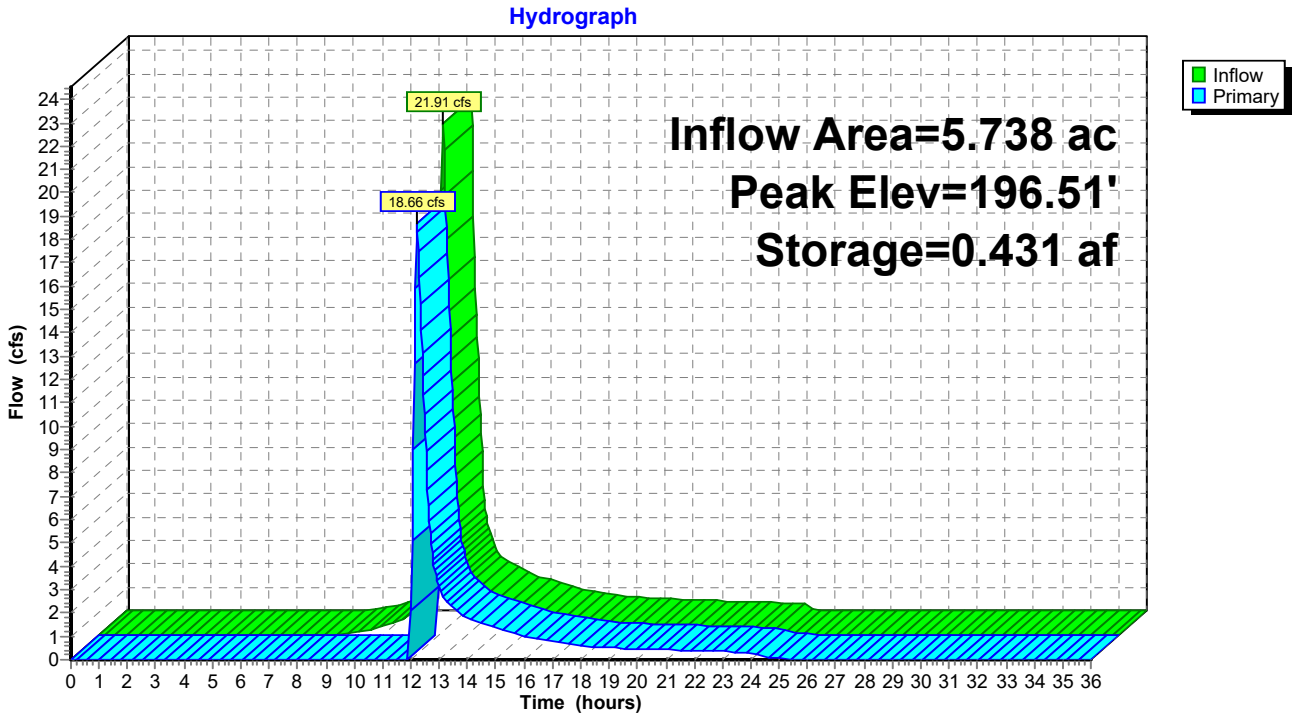
Plug-Flow detention time= 108.7 min calculated for 1.514 af (84% of inflow)
Center-of-Mass det. time= 40.6 min (874.1 - 833.6)

Volume	Invert	Avail.Storage	Storage Description
#1	192.00'	0.511 af	**12.00'W x 147.00'L x 5.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	195.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=18.57 cfs @ 12.22 hrs HW=196.51' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 18.57 cfs @ 2.62 fps)

Pond 3P: Basin 1



Summary for Pond 4P: Basin 2B

Inflow Area = 5.218 ac, 0.00% Impervious, Inflow Depth = 4.31" for 50-year event
Inflow = 23.69 cfs @ 12.13 hrs, Volume= 1.873 af
Outflow = 21.90 cfs @ 12.17 hrs, Volume= 1.721 af, Atten= 8%, Lag= 2.5 min
Primary = 21.90 cfs @ 12.17 hrs, Volume= 1.721 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 263.62' @ 12.17 hrs Surf.Area= 0.111 ac Storage= 0.263 af

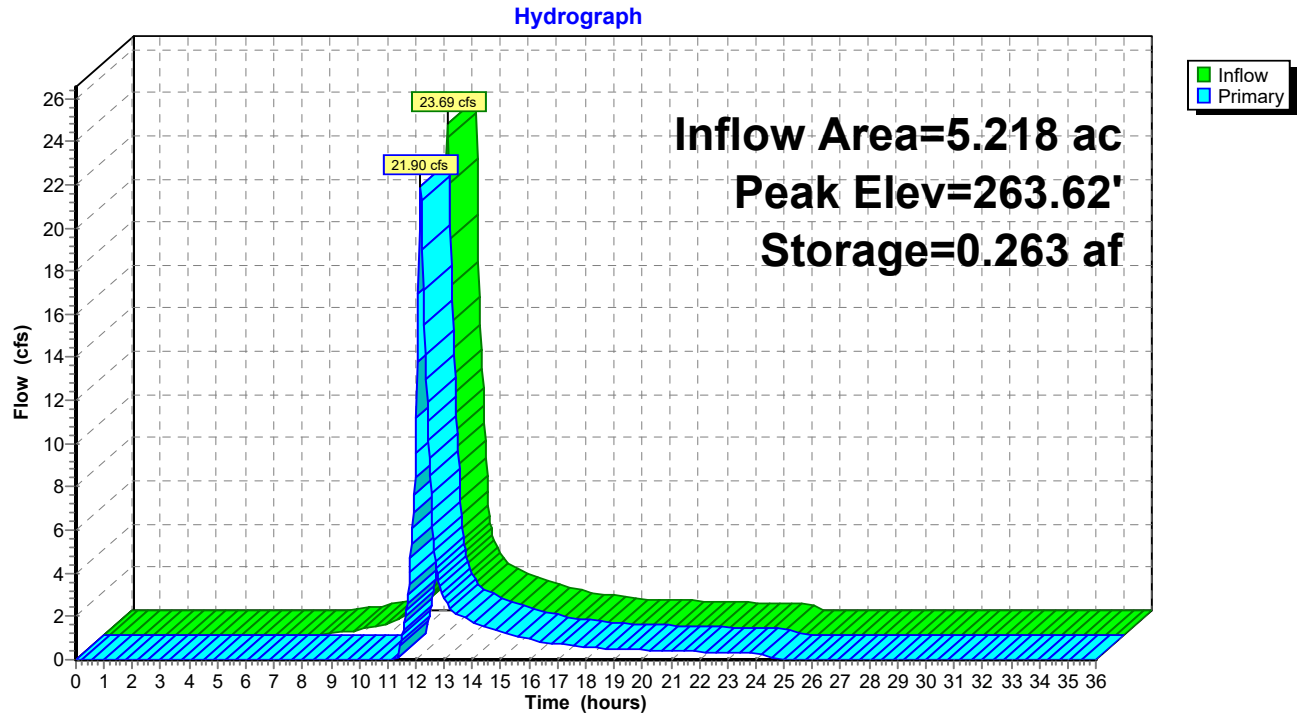
Plug-Flow detention time= 67.0 min calculated for 1.721 af (92% of inflow)
Center-of-Mass det. time= 25.4 min (846.8 - 821.4)

Volume	Invert	Avail.Storage	Storage Description
#1	260.00'	0.307 af	**15.00'W x 110.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	262.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=21.74 cfs @ 12.17 hrs HW=263.62' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 21.74 cfs @ 2.73 fps)

Pond 4P: Basin 2B



Summary for Pond 5P: Basin 2C

Inflow Area = 1.422 ac, 0.00% Impervious, Inflow Depth = 4.53" for 50-year event
Inflow = 7.20 cfs @ 12.10 hrs, Volume= 0.537 af
Outflow = 6.86 cfs @ 12.13 hrs, Volume= 0.461 af, Atten= 5%, Lag= 1.8 min
Primary = 6.86 cfs @ 12.13 hrs, Volume= 0.461 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 287.05' @ 12.13 hrs Surf.Area= 0.052 ac Storage= 0.102 af

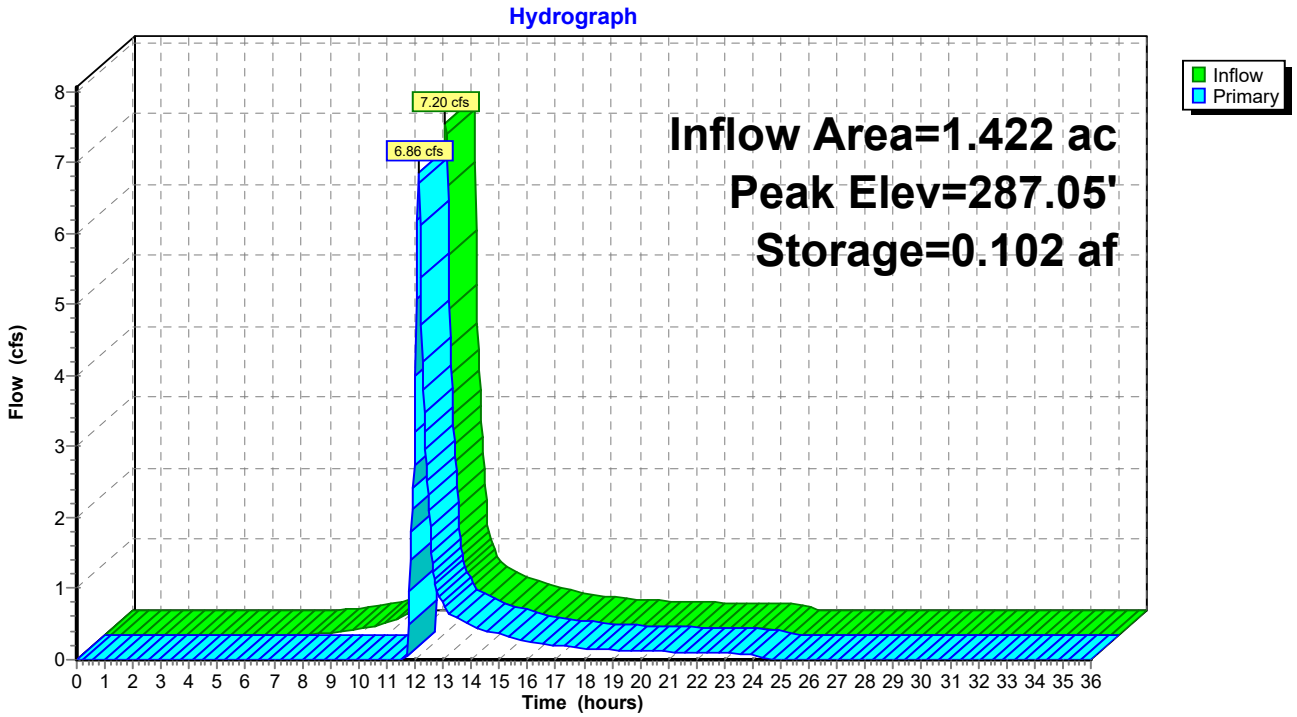
Plug-Flow detention time= 95.6 min calculated for 0.461 af (86% of inflow)
Center-of-Mass det. time= 34.3 min (849.4 - 815.1)

Volume	Invert	Avail.Storage	Storage Description
#1	284.00'	0.158 af	**15.00'W x 50.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=6.77 cfs @ 12.13 hrs HW=287.04' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 6.77 cfs @ 1.91 fps)

Pond 5P: Basin 2C



Summary for Pond 6P: Basin 2D

Inflow Area = 1.519 ac, 0.00% Impervious, Inflow Depth = 4.42" for 50-year event
Inflow = 8.08 cfs @ 12.07 hrs, Volume= 0.559 af
Outflow = 7.63 cfs @ 12.10 hrs, Volume= 0.484 af, Atten= 6%, Lag= 1.7 min
Primary = 7.63 cfs @ 12.10 hrs, Volume= 0.484 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 294.08' @ 12.10 hrs Surf.Area= 0.053 ac Storage= 0.103 af

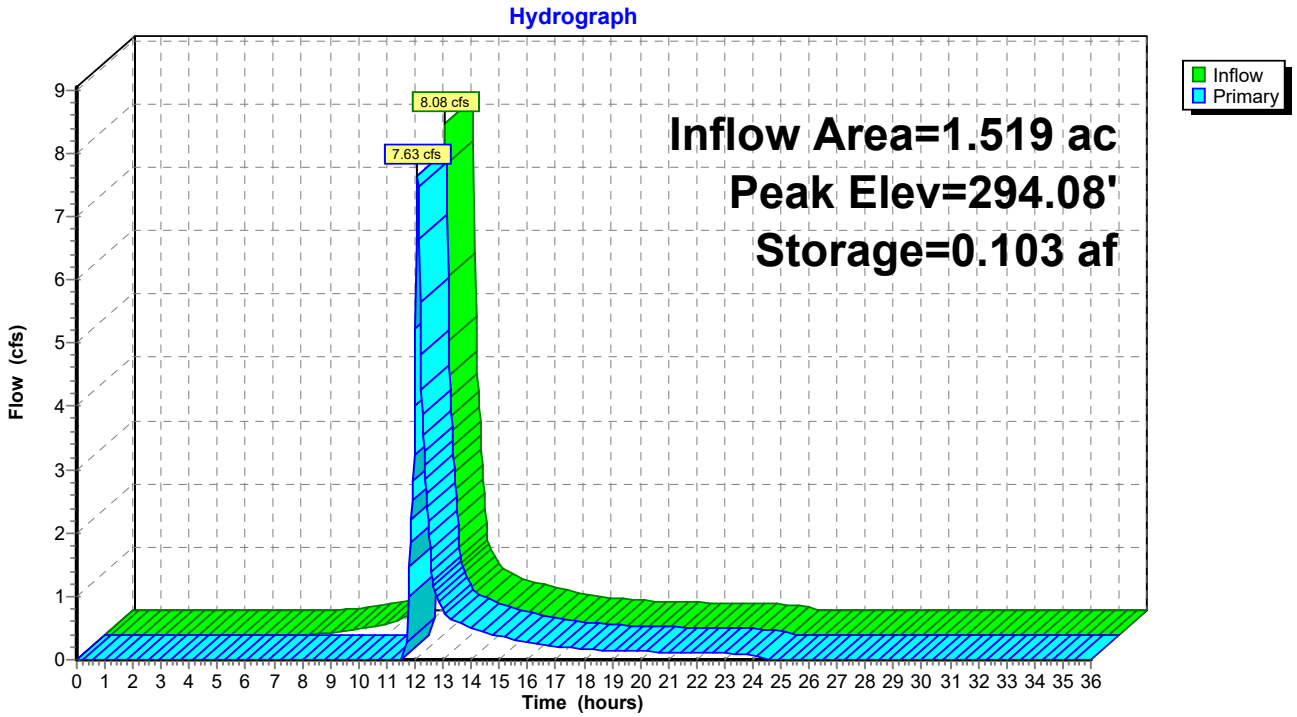
Plug-Flow detention time= 92.5 min calculated for 0.484 af (86% of inflow)
Center-of-Mass det. time= 32.8 min (848.2 - 815.4)

Volume	Invert	Avail.Storage	Storage Description
#1	291.00'	0.158 af	**15.00'W x 50.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	293.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=7.51 cfs @ 12.10 hrs HW=294.07' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 7.51 cfs @ 1.99 fps)

Pond 6P: Basin 2D

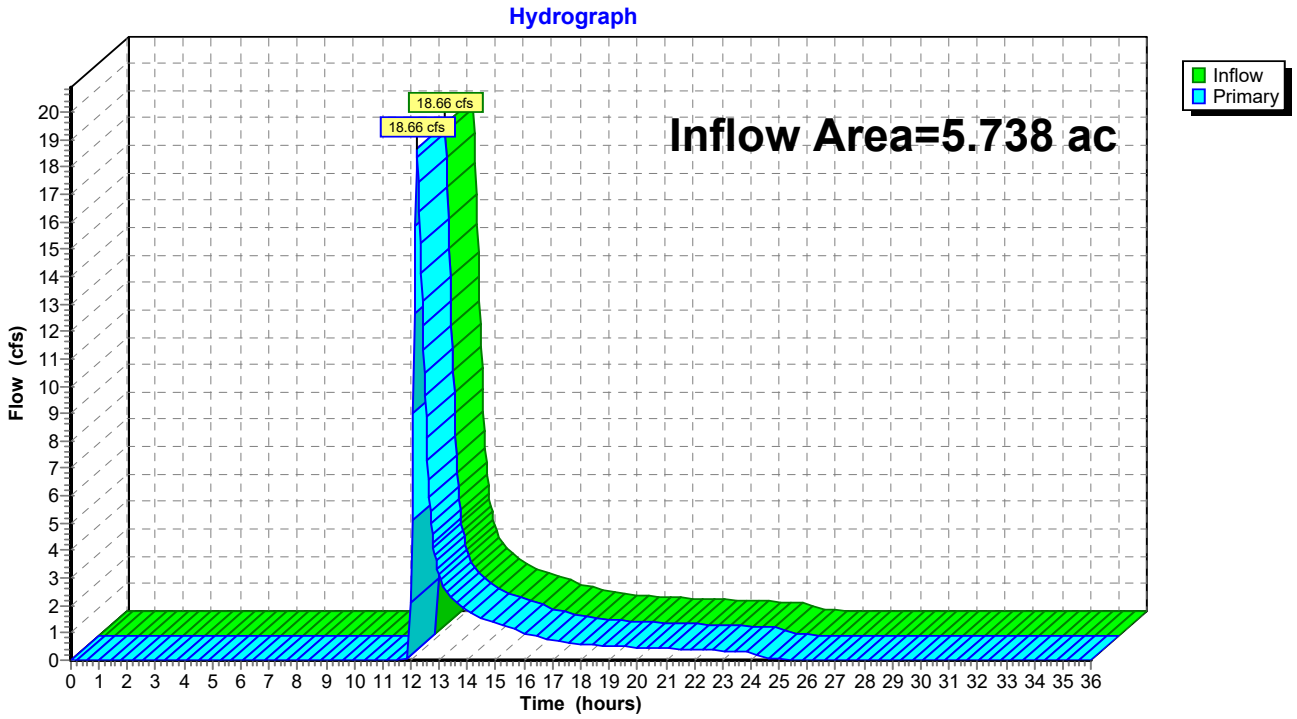


Summary for Link 7L: Stream 1

Inflow Area = 5.738 ac, 0.00% Impervious, Inflow Depth = 3.17" for 50-year event
Inflow = 18.66 cfs @ 12.22 hrs, Volume= 1.514 af
Primary = 18.66 cfs @ 12.22 hrs, Volume= 1.514 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 7L: Stream 1

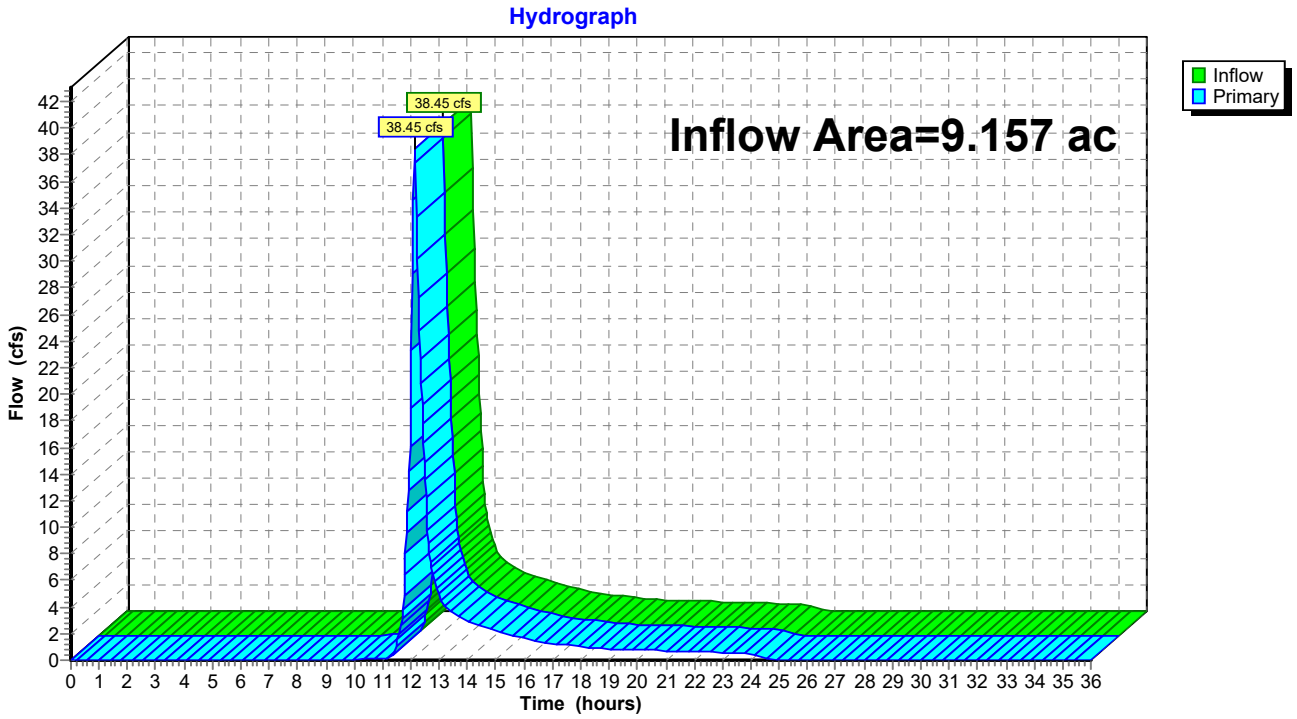


Summary for Link 8L: Stream 2

Inflow Area = 9.157 ac, 0.00% Impervious, Inflow Depth = 3.87" for 50-year event
Inflow = 38.45 cfs @ 12.14 hrs, Volume= 2.953 af
Primary = 38.45 cfs @ 12.14 hrs, Volume= 2.953 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 8L: Stream 2



Time span=0.00-36.00 hrs, dt=0.03 hrs, 1201 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=5.738 ac 0.00% Impervious Runoff Depth=4.55"
Flow Length=910' Tc=10.2 min CN=70 Runoff=26.48 cfs 2.176 af

Subcatchment2a: Subcat 2a Runoff Area=0.998 ac 0.00% Impervious Runoff Depth=4.20"
Flow Length=455' Tc=6.4 min CN=67 Runoff=4.83 cfs 0.350 af

Subcatchment2b: Subcat 2b Runoff Area=5.218 ac 0.00% Impervious Runoff Depth=5.13"
Flow Length=860' Tc=9.0 min CN=75 Runoff=28.14 cfs 2.232 af

Subcatchment2c: Subcat 2c Runoff Area=1.422 ac 0.00% Impervious Runoff Depth=5.37"
Flow Length=560' Tc=7.1 min CN=77 Runoff=8.50 cfs 0.636 af

Subcatchment2d: Subcat 2d Runoff Area=1.519 ac 0.00% Impervious Runoff Depth=5.25"
Flow Length=400' Tc=5.0 min CN=76 Runoff=9.56 cfs 0.664 af

Pond 3P: Basin 1 Peak Elev=196.67' Storage=0.456 af Inflow=26.48 cfs 2.176 af
Outflow=23.47 cfs 1.888 af

Pond 4P: Basin 2B Peak Elev=263.75' Storage=0.278 af Inflow=28.14 cfs 2.232 af
Outflow=26.15 cfs 2.079 af

Pond 5P: Basin 2C Peak Elev=287.10' Storage=0.105 af Inflow=8.50 cfs 0.636 af
Outflow=8.12 cfs 0.561 af

Pond 6P: Basin 2D Peak Elev=294.14' Storage=0.107 af Inflow=9.56 cfs 0.664 af
Outflow=9.03 cfs 0.589 af

Link 7L: Stream 1 Inflow=23.47 cfs 1.888 af
Primary=23.47 cfs 1.888 af

Link 8L: Stream 2 Inflow=45.98 cfs 3.578 af
Primary=45.98 cfs 3.578 af

Total Runoff Area = 14.895 ac Runoff Volume = 6.058 af Average Runoff Depth = 4.88"
100.00% Pervious = 14.895 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1: Subcat 1

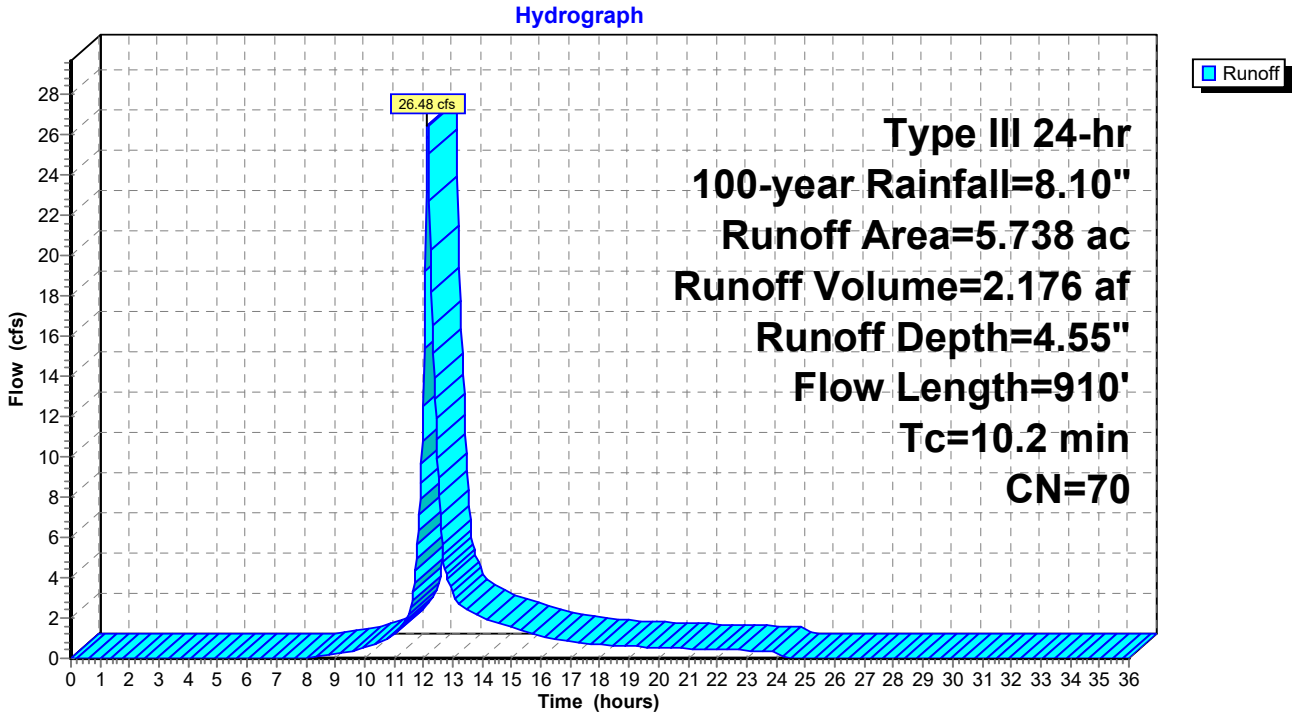
Runoff = 26.48 cfs @ 12.14 hrs, Volume= 2.176 af, Depth= 4.55"
Routed to Pond 3P : Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-year Rainfall=8.10"

	Area (ac)	CN	Description
*	2.830	67	>75% Grass cover, Good, HSG B-C
*	1.818	77	>75% Grass cover, Good, HSG C-D
	0.138	48	Brush, Good, HSG B
	0.133	65	Brush, Good, HSG C
	0.065	85	Gravel roads, HSG B
	0.076	89	Gravel roads, HSG C
	0.346	55	Woods, Good, HSG B
	0.332	70	Woods, Good, HSG C
	5.738	70	Weighted Average
	5.738		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.0800	0.30		**Sheet Flow,** Range n= 0.130 P2= 3.36"
4.0	440	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	260	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	160	0.1300	2.52		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.2	910	Total			

Subcatchment 1: Subcat 1



Summary for Subcatchment 2a: Subcat 2a

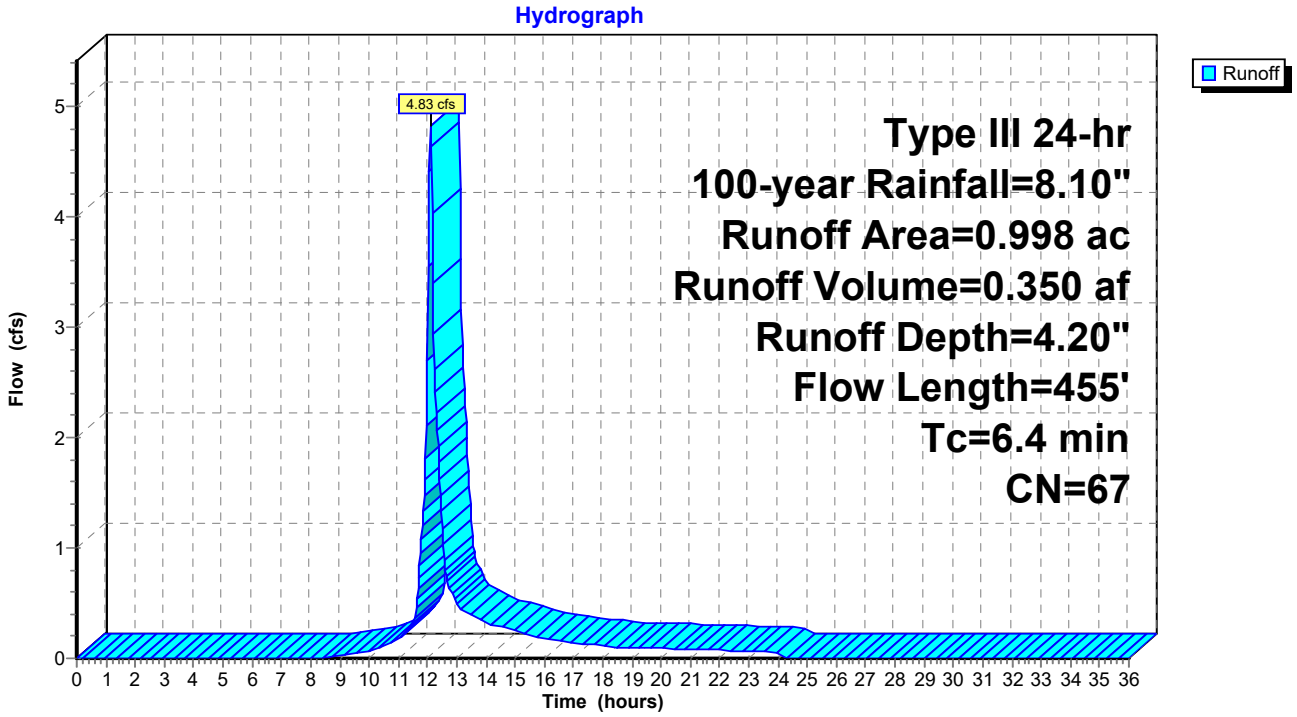
Runoff = 4.83 cfs @ 12.10 hrs, Volume= 0.350 af, Depth= 4.20"
Routed to Link 8L : Stream 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-year Rainfall=8.10"

Area (ac)	CN	Description
0.069	61	>75% Grass cover, Good, HSG B
0.215	74	>75% Grass cover, Good, HSG C
0.022	48	Brush, Good, HSG B
0.642	65	Brush, Good, HSG C
0.009	89	Gravel roads, HSG C
0.042	70	Woods, Good, HSG C
0.998	67	Weighted Average
0.998		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	65	0.0900	0.33		**Sheet Flow,** Range n= 0.130 P2= 3.36"
1.0	140	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	250	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
6.4	455	Total			

Subcatchment 2a: Subcat 2a



Summary for Subcatchment 2b: Subcat 2b

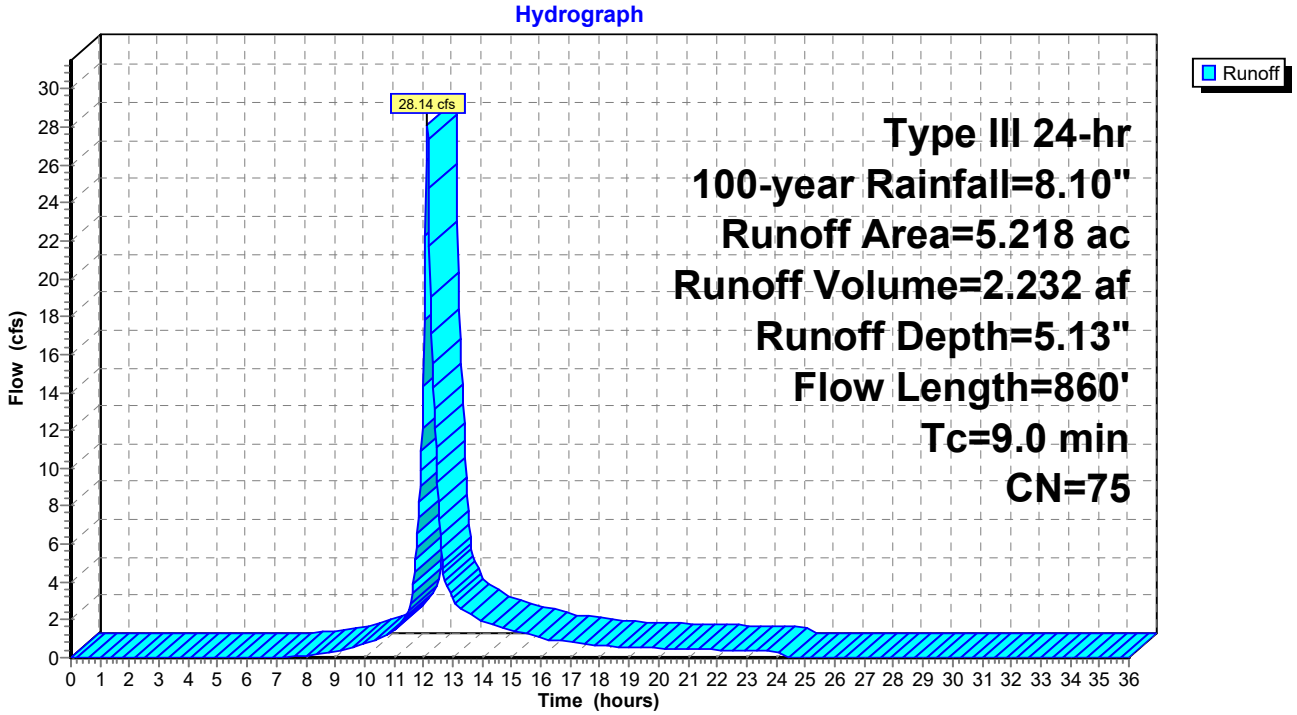
Runoff = 28.14 cfs @ 12.13 hrs, Volume= 2.232 af, Depth= 5.13"
Routed to Pond 4P : Basin 2B

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-year Rainfall=8.10"

	Area (ac)	CN	Description
*	3.870	77	>75% Grass cover, Good, HSG C-D
	0.885	65	Brush, Good, HSG C
	0.226	89	Gravel roads, HSG C
	0.237	70	Woods, Good, HSG C
	5.218	75	Weighted Average
	5.218		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	50	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
7.3	810	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.0	860	Total			

Subcatchment 2b: Subcat 2b



Summary for Subcatchment 2c: Subcat 2c

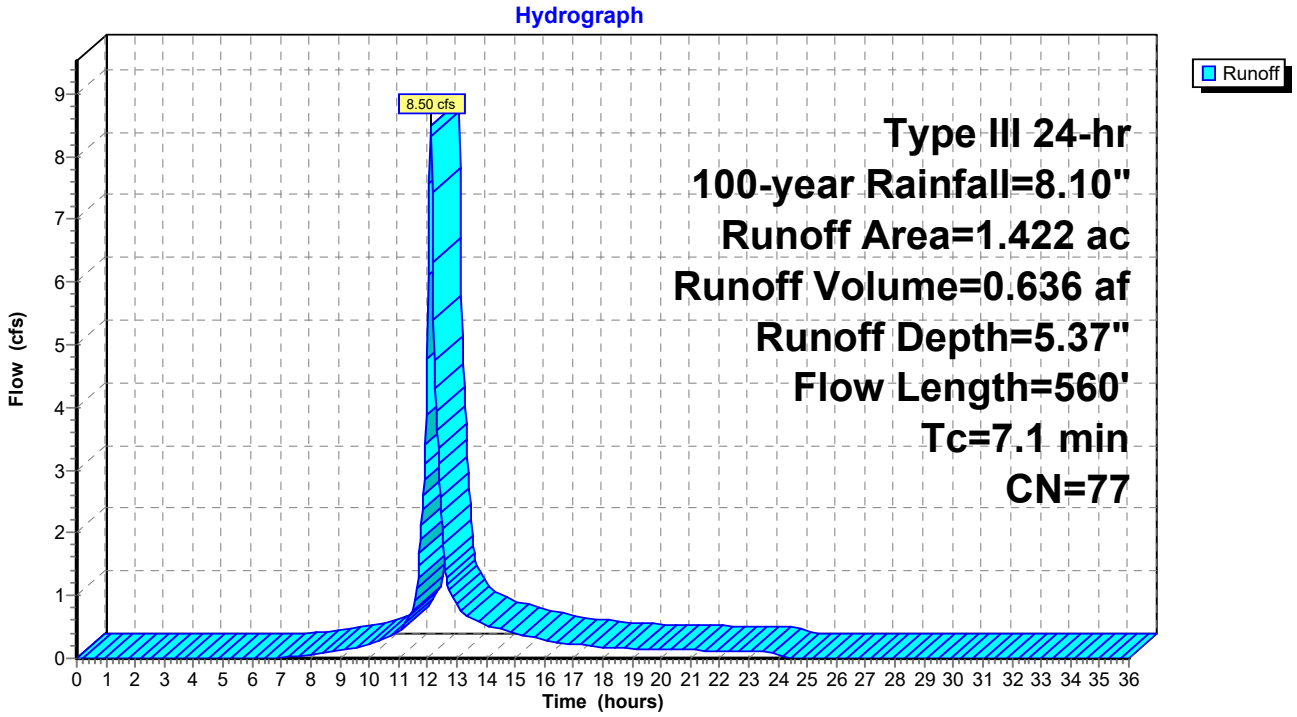
Runoff = 8.50 cfs @ 12.10 hrs, Volume= 0.636 af, Depth= 5.37"
Routed to Pond 5P : Basin 2C

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-year Rainfall=8.10"

	Area (ac)	CN	Description
*	1.397	77	>75% Grass cover, Good, HSG C-D
	0.015	80	>75% Grass cover, Good, HSG D
	0.008	70	Woods, Good, HSG C
	0.002	77	Woods, Good, HSG D
	1.422	77	Weighted Average
	1.422		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.9	50	0.0300	0.43		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
2.4	270	0.0700	1.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	60	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	50	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.1	560	Total			

Subcatchment 2c: Subcat 2c



Summary for Subcatchment 2d: Subcat 2d

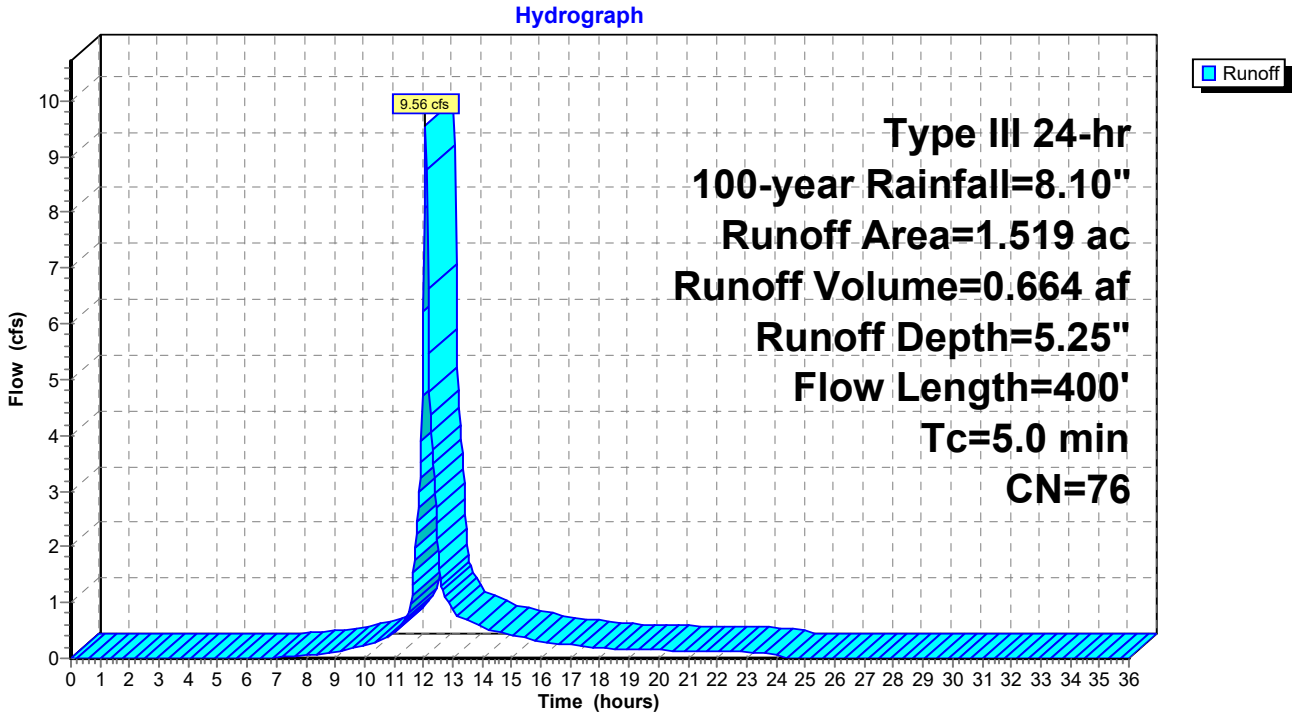
Runoff = 9.56 cfs @ 12.07 hrs, Volume= 0.664 af, Depth= 5.25"
Routed to Pond 6P : Basin 2D

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-year Rainfall=8.10"

	Area (ac)	CN	Description
*	1.305	77	>75% Grass cover, Good, HSG C-D
	0.214	70	Woods, Good, HSG C
	1.519	76	Weighted Average
	1.519		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	35	0.0600	0.53		**Sheet Flow,** Fallow n= 0.050 P2= 3.36"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	40	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	200	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	75	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	400	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 2d: Subcat 2d



Summary for Pond 3P: Basin 1

Inflow Area = 5.738 ac, 0.00% Impervious, Inflow Depth = 4.55" for 100-year event
Inflow = 26.48 cfs @ 12.14 hrs, Volume= 2.176 af
Outflow = 23.47 cfs @ 12.20 hrs, Volume= 1.888 af, Atten= 11%, Lag= 3.5 min
Primary = 23.47 cfs @ 12.20 hrs, Volume= 1.888 af
Routed to Link 7L : Stream 1

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 196.67' @ 12.20 hrs Surf.Area= 0.161 ac Storage= 0.456 af

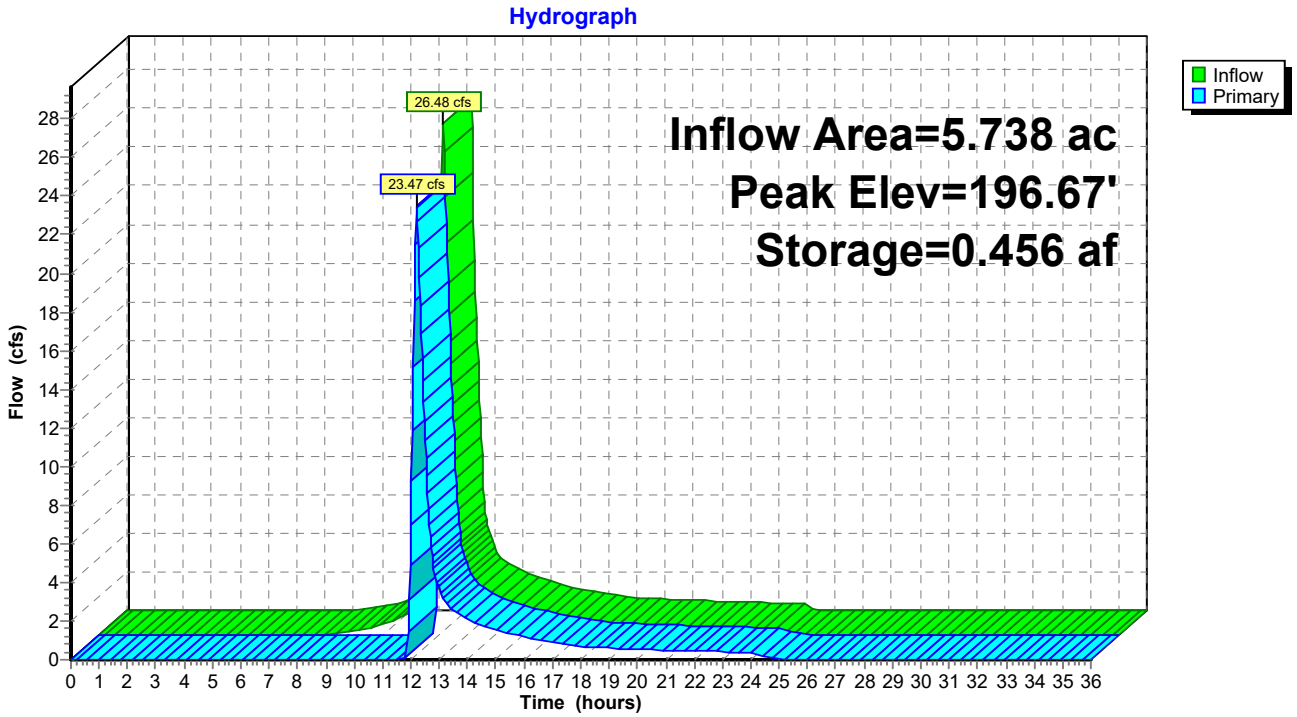
Plug-Flow detention time= 95.6 min calculated for 1.888 af (87% of inflow)
Center-of-Mass det. time= 35.8 min (864.0 - 828.2)

Volume	Invert	Avail.Storage	Storage Description
#1	192.00'	0.511 af	**12.00'W x 147.00'L x 5.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	195.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=23.37 cfs @ 12.20 hrs HW=196.67' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 23.37 cfs @ 2.79 fps)

Pond 3P: Basin 1



Summary for Pond 4P: Basin 2B

Inflow Area = 5.218 ac, 0.00% Impervious, Inflow Depth = 5.13" for 100-year event
Inflow = 28.14 cfs @ 12.13 hrs, Volume= 2.232 af
Outflow = 26.15 cfs @ 12.17 hrs, Volume= 2.079 af, Atten= 7%, Lag= 2.4 min
Primary = 26.15 cfs @ 12.17 hrs, Volume= 2.079 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 263.75' @ 12.17 hrs Surf.Area= 0.114 ac Storage= 0.278 af

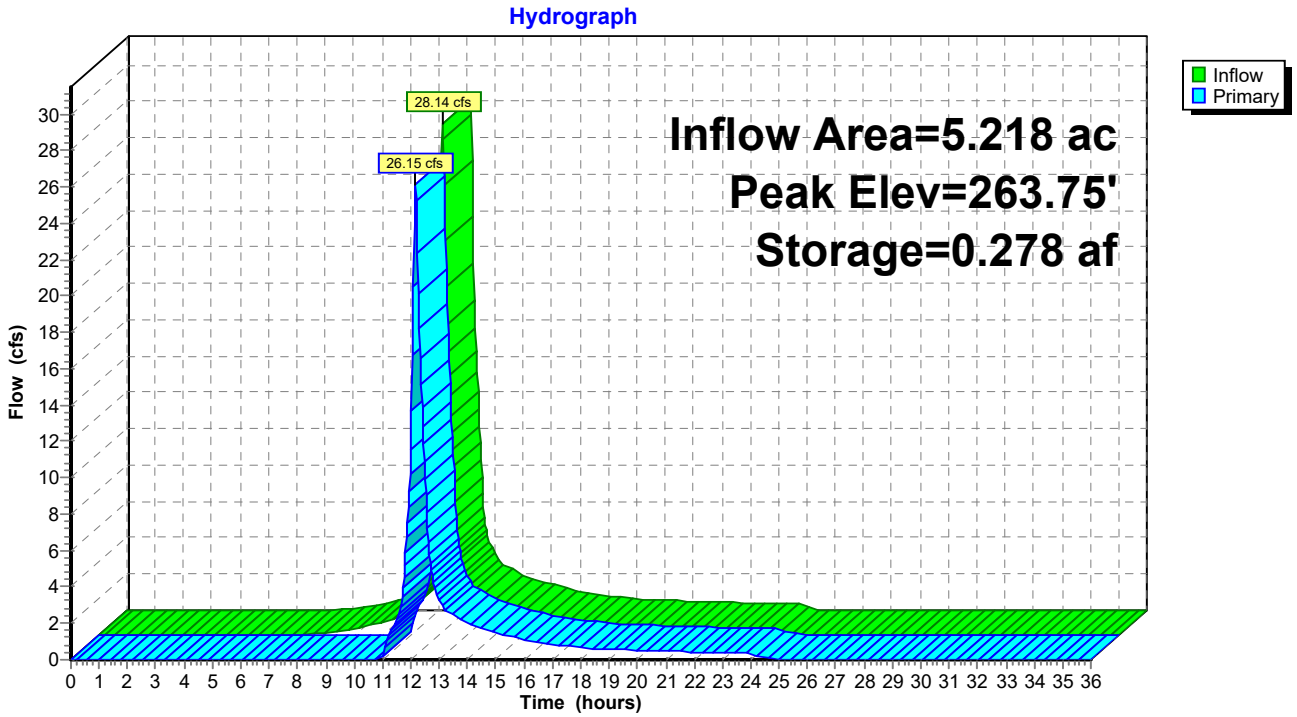
Plug-Flow detention time= 59.7 min calculated for 2.079 af (93% of inflow)
Center-of-Mass det. time= 23.5 min (839.9 - 816.4)

Volume	Invert	Avail.Storage	Storage Description
#1	260.00'	0.307 af	**15.00'W x 110.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	262.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=25.95 cfs @ 12.17 hrs HW=263.75' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 25.95 cfs @ 2.87 fps)

Pond 4P: Basin 2B



Summary for Pond 5P: Basin 2C

Inflow Area = 1.422 ac, 0.00% Impervious, Inflow Depth = 5.37" for 100-year event
Inflow = 8.50 cfs @ 12.10 hrs, Volume= 0.636 af
Outflow = 8.12 cfs @ 12.13 hrs, Volume= 0.561 af, Atten= 4%, Lag= 1.7 min
Primary = 8.12 cfs @ 12.13 hrs, Volume= 0.561 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 287.10' @ 12.13 hrs Surf.Area= 0.053 ac Storage= 0.105 af

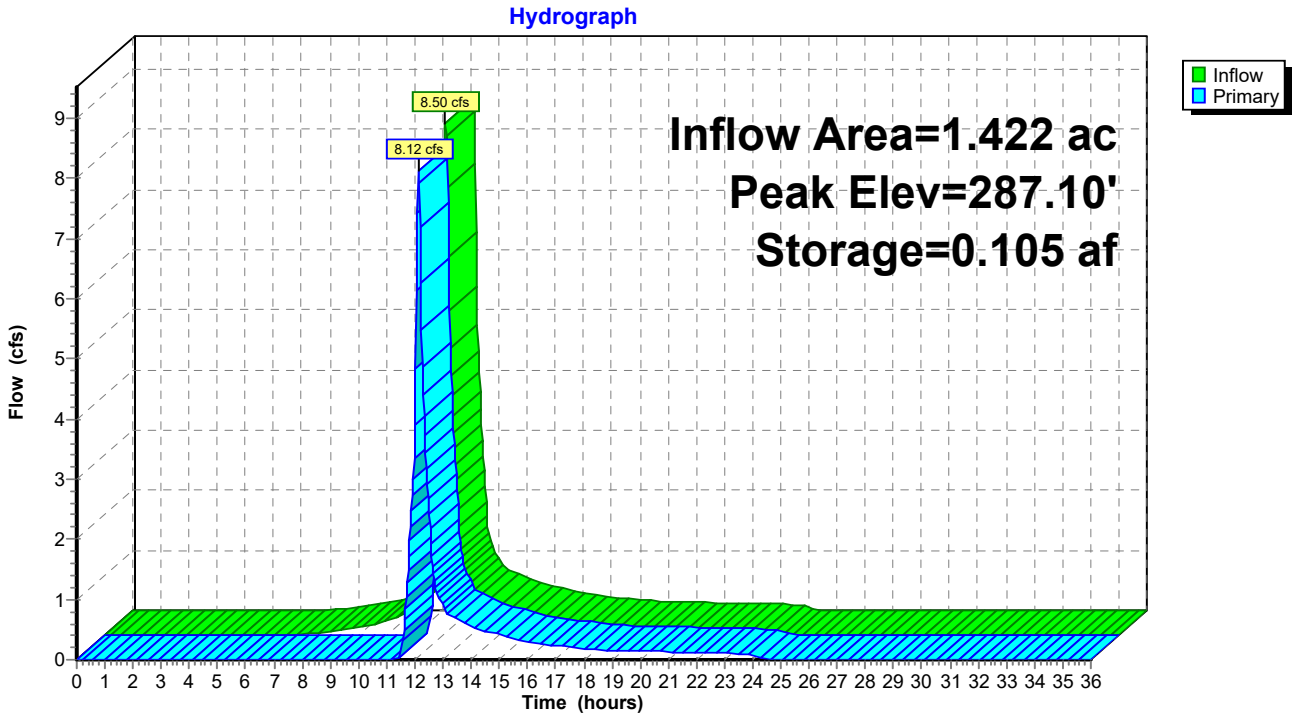
Plug-Flow detention time= 86.0 min calculated for 0.560 af (88% of inflow)
Center-of-Mass det. time= 31.5 min (841.8 - 810.3)

Volume	Invert	Avail.Storage	Storage Description
#1	284.00'	0.158 af	**15.00'W x 50.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	286.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.06 cfs @ 12.13 hrs HW=287.10' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 8.06 cfs @ 2.05 fps)

Pond 5P: Basin 2C



Summary for Pond 6P: Basin 2D

Inflow Area = 1.519 ac, 0.00% Impervious, Inflow Depth = 5.25" for 100-year event
Inflow = 9.56 cfs @ 12.07 hrs, Volume= 0.664 af
Outflow = 9.03 cfs @ 12.10 hrs, Volume= 0.589 af, Atten= 6%, Lag= 1.7 min
Primary = 9.03 cfs @ 12.10 hrs, Volume= 0.589 af
Routed to Link 8L : Stream 2

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs
Peak Elev= 294.14' @ 12.10 hrs Surf.Area= 0.054 ac Storage= 0.107 af

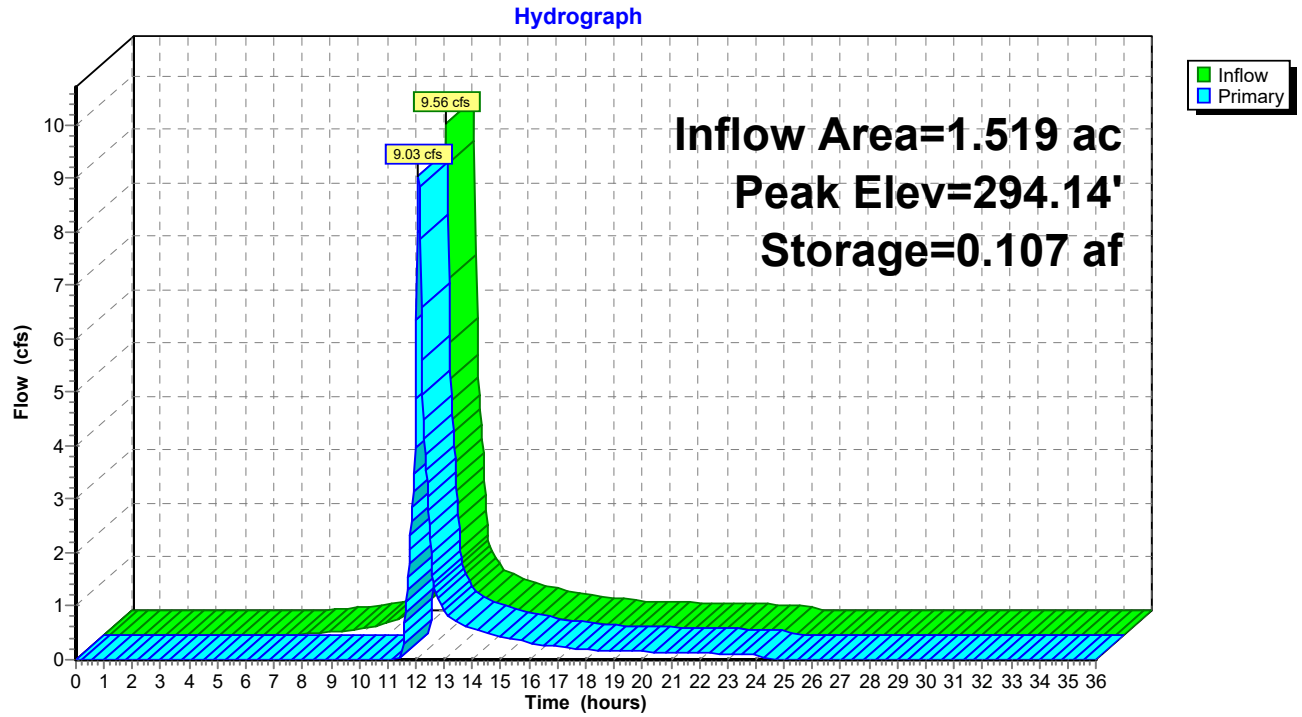
Plug-Flow detention time= 82.9 min calculated for 0.589 af (89% of inflow)
Center-of-Mass det. time= 30.1 min (840.6 - 810.5)

Volume	Invert	Avail.Storage	Storage Description
#1	291.00'	0.158 af	**15.00'W x 50.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	293.50'	**6.0' long + 1.0 '/' SideZ x 5.0' 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 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=8.90 cfs @ 12.10 hrs HW=294.14' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 8.90 cfs @ 2.11 fps)

Pond 6P: Basin 2D

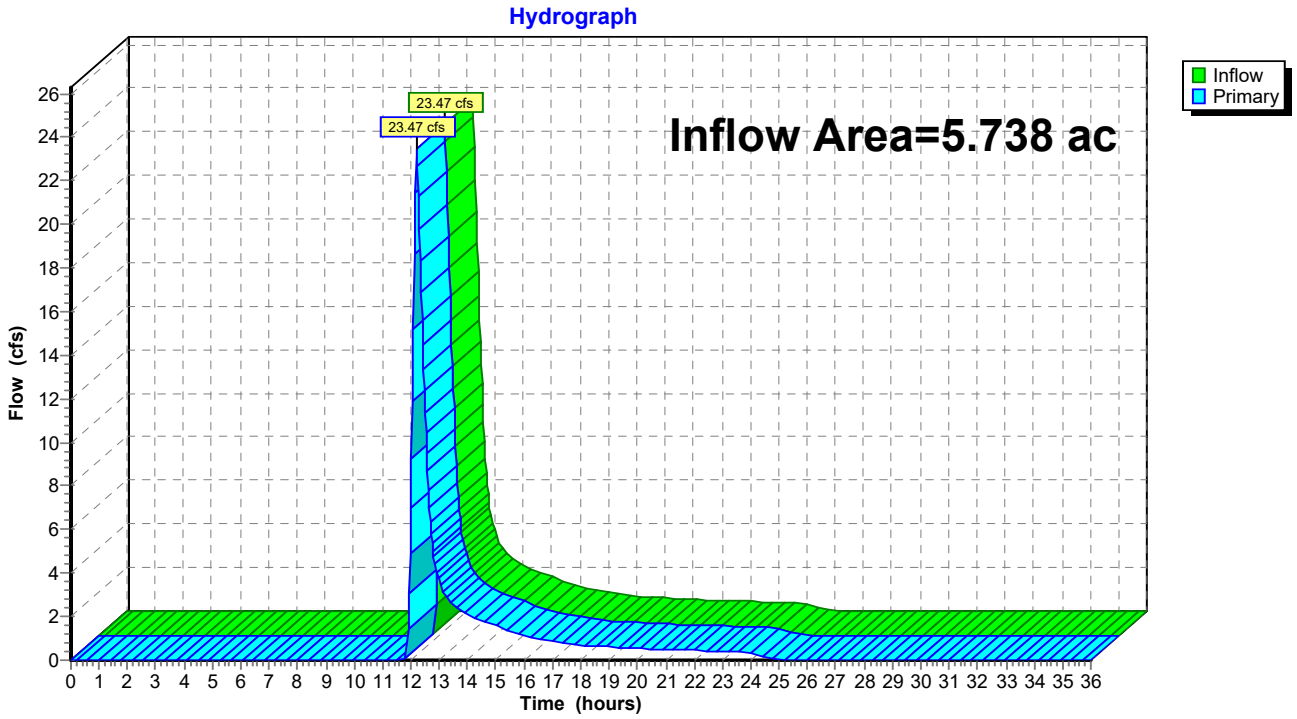


Summary for Link 7L: Stream 1

Inflow Area = 5.738 ac, 0.00% Impervious, Inflow Depth = 3.95" for 100-year event
Inflow = 23.47 cfs @ 12.20 hrs, Volume= 1.888 af
Primary = 23.47 cfs @ 12.20 hrs, Volume= 1.888 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 7L: Stream 1



Summary for Link 8L: Stream 2

Inflow Area = 9.157 ac, 0.00% Impervious, Inflow Depth = 4.69" for 100-year event
Inflow = 45.98 cfs @ 12.14 hrs, Volume= 3.578 af
Primary = 45.98 cfs @ 12.14 hrs, Volume= 3.578 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.03 hrs

Link 8L: Stream 2