
STORMWATER REPORT

GCE Winchester Solar

Spencer Hill Road
Winchester, Connecticut

PREPARED FOR

Greenskies Clean Energy, LLC
127 Washington Ave
West Building, Lower Level
North Haven, CT 06473

PREPARED BY



100 Great Meadow Road
Suite 200
Wethersfield, Connecticut
860.807.4300

September 2023



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Project Summary

Project Description

The Petitioner is proposing to construct a ± 4 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 comprised on approximately ± 16 acres east of Spencer Hill Road, (ID 17-150-66 in Winchester, Connecticut (see Figure 1). The site is bounded by Spencer Hill Road to the west, by residential houses to the north, by woodland to the east, and by agricultural land to the south.

The project area under existing conditions is being actively farmed during the growing season and is planted over the winter to maintain soil composition. There are seven (7) delineated on-site wetland systems in proximity to the development area. Under existing conditions, runoff from the project area generally flows overland to these wetland systems before exiting the site.

According to available soil mapping¹, a variety of soils exist on the site representing mostly Hydrologic Soil Group C. See Appendix B for NRCS Web Soil Survey output and field-investigated test pits and infiltration testing data.

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 Winchester.

¹ <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

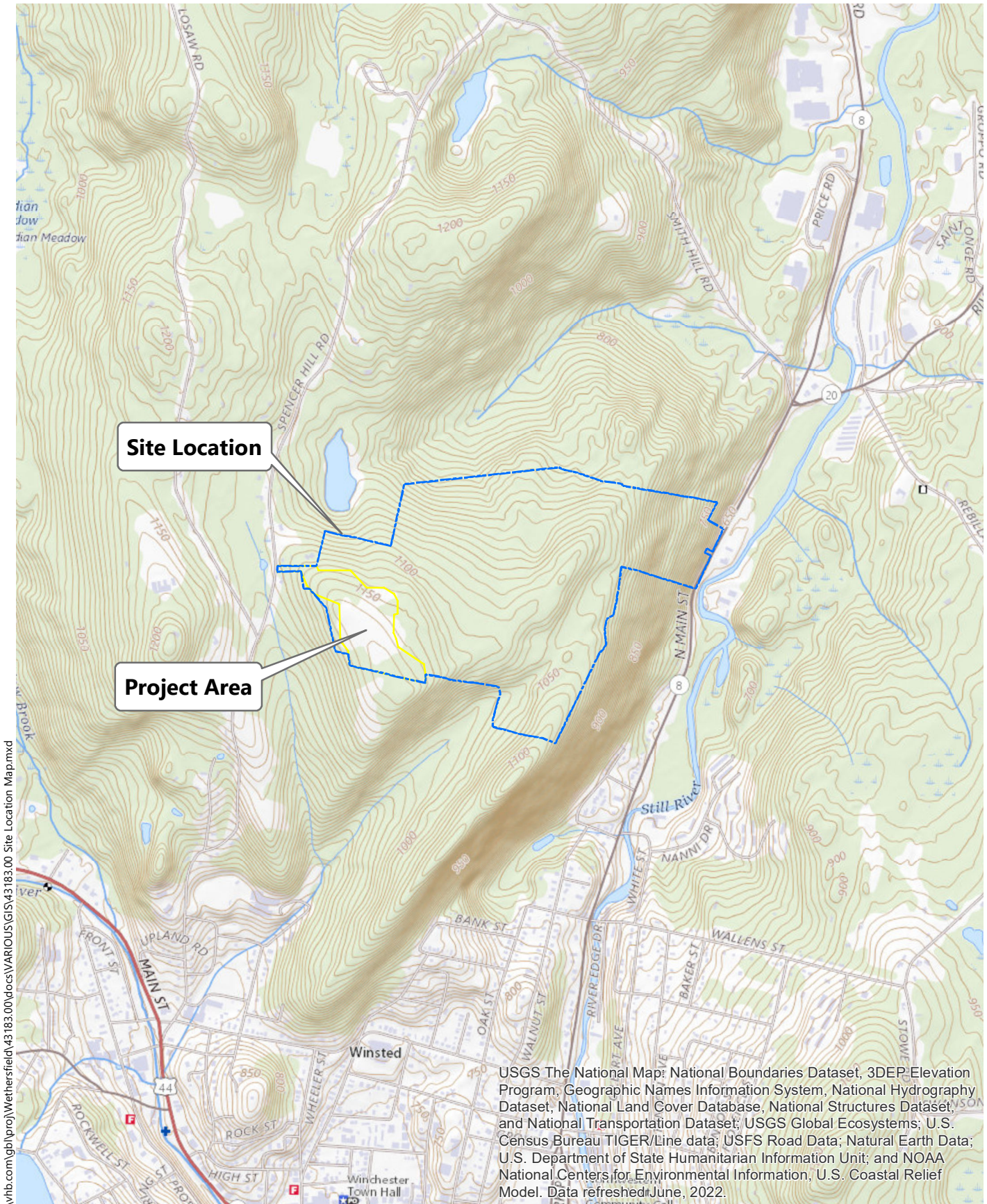


Methodology

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 December 31, 2020. 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



\\vhb.com\glb\proj\Wethersfield\43183.00\docs\VARIOUS\GIS\43183.00 Site Location Map.mxd



Site Location Map

**Winchester Solar
Spencer Hill Road
Winchester, Connecticut**

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 south-central portion of the development area. The majority of the Project area is comprised of actively-farmed fields ranging in slopes roughly between 5% and 12%. The majority of the development area discharges stormwater runoff to the north/northeast and a small portion discharges stormwater runoff to the west.

Hydrologic Information

For the existing conditions hydrologic analysis, the Site has been divided into six (6) subwatershed areas, which have generally been identified as areas at the Project limits where flow enters the wetland systems, and three (3) design points which are generally the discharge directions off the site from the development area. 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 are the areas of the development which drain to the north to an existing pond offsite, Design Point 2 are the areas of the development which drain to the northeast off the site, and Design Point 3 are the areas of the development which drain to the west off the site.

Drainage Area 1A - This ±1.9-acre area is located at the northwestern portion of the Project. Untreated stormwater in this area generally flows over farm fields to the north and across land contiguous to the Project prior to discharging offsite.

Drainage Area 1B - This ±1.8-acre area is located at the northern portion of the Project. Untreated stormwater in this area generally flows over farm fields to the north into a wetland system prior to discharging offsite.



Drainage Area 2A - This ±2.8-acre area is located at the northeastern portion of the Project. Untreated stormwater in this area generally flows over farm fields to the north into a wetland system prior to discharging offsite.

Drainage Area 2B - This ±2.7-acre area is located at the eastern portion of the Project. Untreated stormwater in this area generally flows over farm fields to the east into a wetland system prior to discharging offsite.

Drainage Area 2C - This ±0.8-acre area is located at the southeastern portion of the Project. Untreated stormwater in this area generally flows over farm fields to the east and across land contiguous to the Project prior to discharging offsite.

Drainage Area 3 - This ±3.2-acre area is located at the southwestern portion of the Project. Untreated stormwater in this area generally flows over farm fields to the west prior to discharging offsite.

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

Table 1 Existing Conditions Hydrologic Data

<i>Drainage Area</i>	<i>Discharge Location</i>	<i>Area (acres)</i>	<i>Curve Number</i>	<i>Time of Concentration (min)</i>
1A	North Portion of Parcel	1.9	86	6
1B	Onsite Wetland	1.8	86	6
2A	Onsite Wetland	2.8	86	7
2B	Onsite Wetland	2.7	86	6
2C	East Portion of Parcel	0.8	86	5
3	West Portion of Parcel	3.2	86	6



Figure 2: Existing Drainage Areas

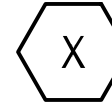


Legend

SYMBOLS



DESIGN POINT



DRAINAGE AREA DESIGNATION



PERMANENT STORMWATER BASIN

LINETYPES



DRAINAGE AREA BOUNDARY



HSG BOUNDARY



WETLAND BOUNDARY



TIME OF CONCENTRATION

SCS SOIL CLASSIFICATIONS

- 2 RIDGEBURY FINE SANDY LOAM, 0 TO 3 PERCENT SLOPES, HSG C
- 45B WOODBRIDGE FINE SANDY LOAM, 3 TO 8 PERCENT SLOPES, HSG C/D
- 47C WOODBRIDGE FINE SANDY LOAM, 3 TO 15 PERCENT SLOPES, EXTREMELY STONY HSG C/D
- 73C CHARLTON-CHATFIELD COMPLEX, 0 TO 15 PERCENT SLOPES, VERY ROCKY, HSG B
- 75C HOLLIS-CHATFIELD-ROCK OUTCROP COMPLEX, 3 TO 15 PERCENT SLOPES, HSG D
- 84B PAXTON AND MONTAUK FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES, HSG C
- 84C PAXTON AND MONTAUK FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES, HSG C
- 84D PAXTON AND MONTAUK FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES, HSG C
- 84D PAXTON AND MONTAUK FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES, VERY STONY, HSG C



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 six (6) drainage areas and three (3) 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 1A - This ±1.9-acre area is located at the northwestern portion of the Project. Stormwater in this area will generally flow under the solar panels towards the north. The introduction of permanent meadowy vegetation and grass will serve to improve water quality from the active farming under existing conditions.

Drainage Area 1B - This ±1.8-acre area is located at the northern portion of the Project. Stormwater in this area will generally flow under the solar panels towards a northern wetland system. The introduction of permanent meadowy vegetation and grass, as well as the introduction of a permanent stormwater basin, will serve to improve water quality from the active farming under existing conditions.

Drainage Area 2A - This ±2.8-acre area is located at the northeastern portion of the Project. Stormwater in this area will generally flow under the solar panels towards a northern wetland system. The introduction of permanent meadowy vegetation and grass, as well as the introduction of a permanent stormwater basin, will serve to improve water quality from the active farming under existing conditions.

Drainage Area 2B - This ±2.7-acre area is located at the eastern portion of the Project. Stormwater in this area will generally flow under the solar panels towards an eastern wetland system. The introduction of permanent meadowy vegetation and grass, as well as the introduction of a permanent stormwater basin, will serve to improve water quality from the active farming under existing conditions.

Drainage Area 2C - This ±0.8-acre area is located at the southeastern portion of the Project. Stormwater in this area will generally flow under the solar panels towards the east. The introduction of permanent meadowy vegetation and grass will serve to improve water quality from the active farming under existing conditions.

Drainage Area 3 - This ±3.2-acre area is located at the southwestern portion of the Project. Stormwater in this area will generally flow under the solar panels towards the east. The introduction of permanent meadowy vegetation and grass will serve to improve water quality from the active farming under existing conditions.



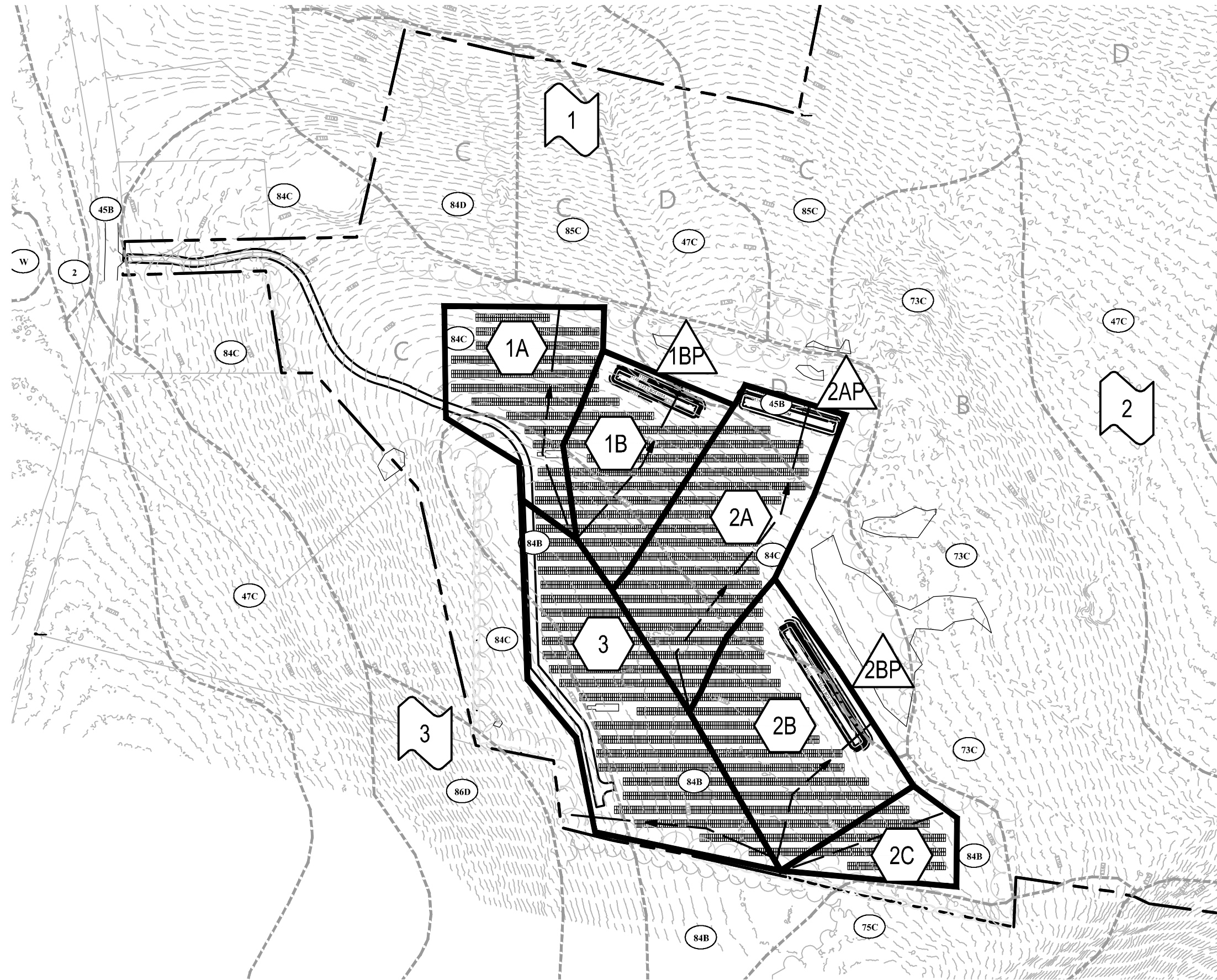
Table 2 summarizes the key hydrologic parameters for each drainage area used in the proposed conditions analysis. Only areas of the Site that are proposed to be disturbed by construction have been included in this drainage analysis, while portions of the Site unaffected by construction have been excluded.

Table 2 Proposed Conditions Hydrologic Data

<i>Drainage Area</i>	<i>Discharge Location</i>	<i>Area (acres)</i>	<i>Curve Number</i>	<i>Time of Concentration (min)</i>
1A	North Portion of Parcel	1.9	82	6
1B	Onsite Wetland	1.8	81	6
2A	Onsite Wetland	2.8	82	7
2B	Onsite Wetland	2.7	81	6
2C	East Portion of Parcel	0.8	81	5
3	West Portion of Parcel	3.2	82	6



Figure 3: Proposed Drainage Areas



Legend

SYMBOLS



DESIGN POINT



DRAINAGE AREA DESIGNATION



PERMANENT STORMWATER BASIN

LINETYPES



DRAINAGE AREA BOUNDARY



HSG BOUNDARY



WETLAND BOUNDARY



TIME OF CONCENTRATION

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- 84D PAXTON AND MONTAUK FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES, HSG C
- 84D PAXTON AND MONTAUK FINE SANDY LOAMS, 8 TO 15 PERCENT SLOPES, VERY STONY, HSG C



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 3.48, 6.53, 7.40, and 8.34 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.

Test pits were performed in the field to verify the existing soil horizons and infiltration tests were run in the location of the proposed permanent stormwater basins to confirm the infiltrative capabilities of the native soil.



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

Table 3 Peak Discharge Rates (cfs*)

<u>Design Point</u>	<u>2-year</u>	<u>25-year</u>	<u>50-year</u>	<u>100-year</u>
Design Point 1				
Existing	8.9	22.6	26.3	30.6
Proposed	3.9	19.8	23.6	27.9
Design Point 2				
Existing	14.9	37.8	44.1	51.3
Proposed	3.6	31.5	37.6	44.2
Design Point 3				
Existing	7.7	19.6	22.8	26.5
Proposed	6.5	18.3	21.6	25.3

* Expressed in cubic feet per second

Floodplain Information / Analysis

According to FEMA Flood Insurance Rate Map Community Panel Number 090132 0001 A dated July 17, 1978, 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 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

KEY TO MAP

500-Year Flood Boundary	—	ZONE B
100-Year Flood Boundary	—	ZONE A1
Zone Designations* With Date of Identification e.g., 12/27/74	—	ZONE A5
100-Year Flood Boundary	—	ZONE B
500-Year Flood Boundary	—	ZONE B
Base Flood Elevation Line With Elevation In Feet**	—	513
Base Flood Elevation In Feet Where Uniform Within Zone**		(EL 987)
Elevation Reference Mark		RM7 X
River Mile		M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

*EXPLANATION OF ZONE DESIGNATIONS

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.
 This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.
 For adjoining map panels, see separately printed Index To Map Panels.

INITIAL IDENTIFICATION
 AUGUST 2, 1974

CONVERSION TO REGULAR PROGRAM
 JULY 17, 1978

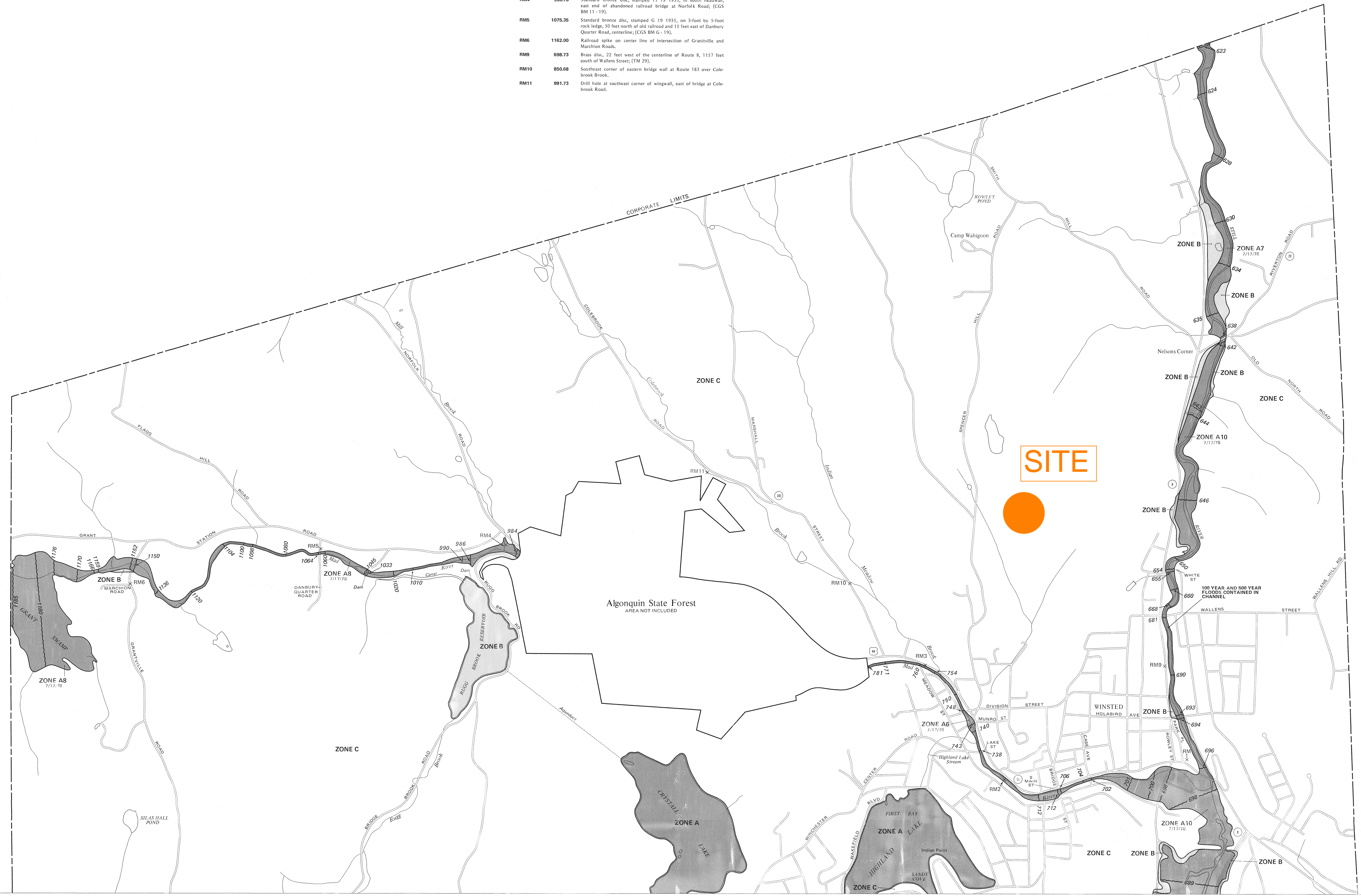
To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program, at (800) 638-6620, or (800) 424-8872.



APPROXIMATE SCALE
 1000 0 1000 FEET

ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT. NGVD)	DESCRIPTION OF LOCATION
RM1	713.43	Bronze tablet at North West Community College, South Main Street and Park Place. West side of main building on guard stone at north side of step; (CGS BM 892).
RM2	733.18	Chiseled square (□) on corner of concrete base for lamppost west side of Route 44 at pedestrian bridge.
RM3	763.23	Chiseled cross (+) on top of retaining wall, 28 feet east of northeast corner of Meadow Street Bridge at Mad River.
RM4	900.76	Standard bronze disc, stamped 11 19 1935, in south headwall, east end of abandoned railroad bridge at Norfolk Road; (CGS BM 11-19).
RM5	1075.35	Standard bronze disc, stamped G 19 1935, on 3-foot by 5-foot rock ledge, 50 feet north of old railroad and 15 feet east of Danbury Quarter Road, centerline; (CGS BM G-19).
RM6	1162.00	Railroad spike on center line of intersection of Granville and Marchion Roads.
RM9	698.73	Brass disc, 22 feet west of the centerline of Route 8, 1157 feet south of Wallens Street; (TM 29).
RM10	850.68	Southeast corner of eastern bridge wall at Route 183 over Colebrook Brook.
RM11	901.73	Drill hole at southeast corner of wingwall, east of bridge at Colebrook Road.



NATIONAL FLOOD INSURANCE PROGRAM

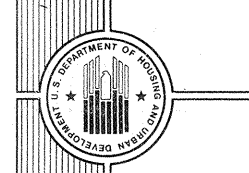
FLOOD INSURANCE RATE MAP

TOWN OF WINCHESTER, CONNECTICUT LITCHFIELD COUNTY

COMMUNITY-PANEL NUMBER 090132 0001 A

PAGE 1 OF 2 (SEE MAP INDEX FOR PAGES NOT PRINTED)

EFFECTIVE JULY 17, 1978



U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT FEDERAL INSURANCE ADMINISTRATION



NOAA Rainfall Depth Estimates



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	0.354 (0.272-0.457)	0.421 (0.323-0.543)	0.530 (0.405-0.687)	0.621 (0.472-0.810)	0.745 (0.549-1.01)	0.840 (0.607-1.17)	0.937 (0.657-1.35)	1.04 (0.699-1.55)	1.18 (0.766-1.83)	1.29 (0.819-2.04)
10-min	0.502 (0.385-0.647)	0.596 (0.457-0.770)	0.750 (0.573-0.972)	0.878 (0.669-1.15)	1.06 (0.778-1.44)	1.19 (0.860-1.66)	1.33 (0.931-1.91)	1.47 (0.989-2.19)	1.68 (1.08-2.59)	1.83 (1.16-2.90)
15-min	0.590 (0.453-0.761)	0.701 (0.538-0.906)	0.883 (0.675-1.15)	1.03 (0.787-1.35)	1.24 (0.915-1.69)	1.40 (1.01-1.95)	1.56 (1.10-2.25)	1.73 (1.16-2.58)	1.97 (1.28-3.05)	2.16 (1.37-3.41)
30-min	0.810 (0.622-1.05)	0.963 (0.739-1.24)	1.21 (0.928-1.57)	1.42 (1.08-1.85)	1.71 (1.26-2.32)	1.92 (1.39-2.68)	2.15 (1.51-3.10)	2.38 (1.60-3.55)	2.71 (1.76-4.19)	2.97 (1.88-4.69)
60-min	1.03 (0.791-1.33)	1.23 (0.940-1.58)	1.54 (1.18-2.00)	1.81 (1.38-2.36)	2.17 (1.60-2.96)	2.45 (1.77-3.41)	2.73 (1.92-3.94)	3.03 (2.04-4.52)	3.45 (2.23-5.33)	3.78 (2.39-5.97)
2-hr	1.34 (1.03-1.71)	1.58 (1.22-2.02)	1.97 (1.51-2.53)	2.29 (1.75-2.97)	2.73 (2.03-3.72)	3.07 (2.24-4.27)	3.42 (2.44-4.97)	3.84 (2.58-5.69)	4.45 (2.89-6.85)	4.96 (3.15-7.82)
3-hr	1.54 (1.19-1.96)	1.82 (1.41-2.32)	2.27 (1.76-2.92)	2.65 (2.04-3.42)	3.17 (2.37-4.31)	3.56 (2.61-4.96)	3.97 (2.86-5.80)	4.49 (3.03-6.64)	5.27 (3.43-8.11)	5.95 (3.78-9.34)
6-hr	1.92 (1.50-2.43)	2.31 (1.80-2.93)	2.94 (2.29-3.75)	3.47 (2.69-4.45)	4.20 (3.17-5.70)	4.73 (3.51-6.60)	5.32 (3.87-7.80)	6.07 (4.11-8.97)	7.28 (4.74-11.2)	8.34 (5.32-13.1)
12-hr	2.33 (1.83-2.94)	2.89 (2.27-3.64)	3.80 (2.98-4.82)	4.56 (3.55-5.81)	5.61 (4.26-7.59)	6.37 (4.76-8.87)	7.22 (5.29-10.6)	8.32 (5.65-12.2)	10.1 (6.61-15.5)	11.7 (7.49-18.2)
24-hr	2.72 (2.15-3.41)	3.46 (2.74-4.34)	4.68 (3.68-5.88)	5.68 (4.45-7.19)	7.07 (5.40-9.54)	8.07 (6.08-11.2)	9.20 (6.81-13.5)	10.7 (7.29-15.7)	13.2 (8.64-20.1)	15.4 (9.88-23.9)
2-day	3.10 (2.47-3.85)	3.99 (3.18-4.97)	5.45 (4.32-6.81)	6.67 (5.26-8.38)	8.34 (6.42-11.2)	9.54 (7.24-13.3)	10.9 (8.16-16.0)	12.8 (8.73-18.7)	15.9 (10.5-24.2)	18.8 (12.1-29.1)
3-day	3.40 (2.71-4.20)	4.38 (3.49-5.42)	5.98 (4.76-7.44)	7.31 (5.78-9.15)	9.14 (7.07-12.3)	10.5 (7.97-14.5)	12.0 (8.98-17.6)	14.0 (9.61-20.4)	17.5 (11.6-26.6)	20.7 (13.4-32.0)
4-day	3.66 (2.94-4.52)	4.71 (3.77-5.82)	6.42 (5.12-7.97)	7.84 (6.22-9.79)	9.79 (7.59-13.1)	11.2 (8.56-15.5)	12.8 (9.63-18.8)	15.0 (10.3-21.8)	18.8 (12.4-28.3)	22.2 (14.3-34.2)
7-day	4.40 (3.55-5.40)	5.58 (4.49-6.86)	7.51 (6.02-9.26)	9.11 (7.26-11.3)	11.3 (8.80-15.0)	12.9 (9.88-17.7)	14.7 (11.1-21.4)	17.2 (11.8-24.8)	21.2 (14.1-32.0)	24.9 (16.1-38.3)
10-day	5.14 (4.15-6.28)	6.38 (5.15-7.81)	8.41 (6.77-10.3)	10.1 (8.08-12.5)	12.4 (9.69-16.4)	14.1 (10.8-19.2)	16.0 (12.0-23.1)	18.5 (12.8-26.8)	22.7 (15.1-34.1)	26.5 (17.2-40.6)
20-day	7.44 (6.06-9.03)	8.73 (7.10-10.6)	10.8 (8.79-13.2)	12.6 (10.1-15.5)	15.0 (11.7-19.6)	16.8 (12.9-22.5)	18.7 (14.0-26.5)	21.2 (14.7-30.4)	25.2 (16.8-37.7)	28.8 (18.7-43.9)
30-day	9.35 (7.64-11.3)	10.7 (8.70-12.9)	12.8 (10.4-15.6)	14.6 (11.8-17.8)	17.0 (13.3-22.0)	18.8 (14.4-25.0)	20.8 (15.5-29.0)	23.2 (16.1-33.1)	26.8 (17.9-39.9)	29.9 (19.5-45.7)
45-day	11.7 (9.59-14.1)	13.0 (10.7-15.7)	15.2 (12.4-18.4)	17.1 (13.8-20.8)	19.6 (15.3-25.1)	21.5 (16.4-28.2)	23.5 (17.3-32.2)	25.7 (18.0-36.4)	28.8 (19.3-42.7)	31.3 (20.5-47.7)
60-day	13.6 (11.2-16.3)	15.0 (12.3-18.0)	17.3 (14.2-20.9)	19.2 (15.6-23.4)	21.8 (17.1-27.7)	23.8 (18.2-31.1)	25.9 (19.0-35.0)	27.9 (19.6-39.5)	30.6 (20.6-45.2)	32.6 (21.3-49.5)

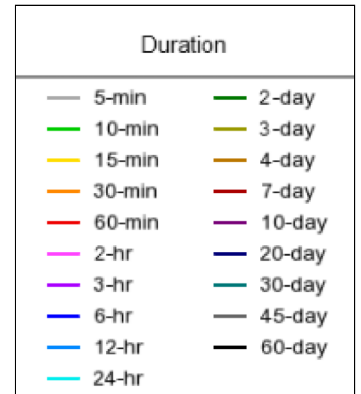
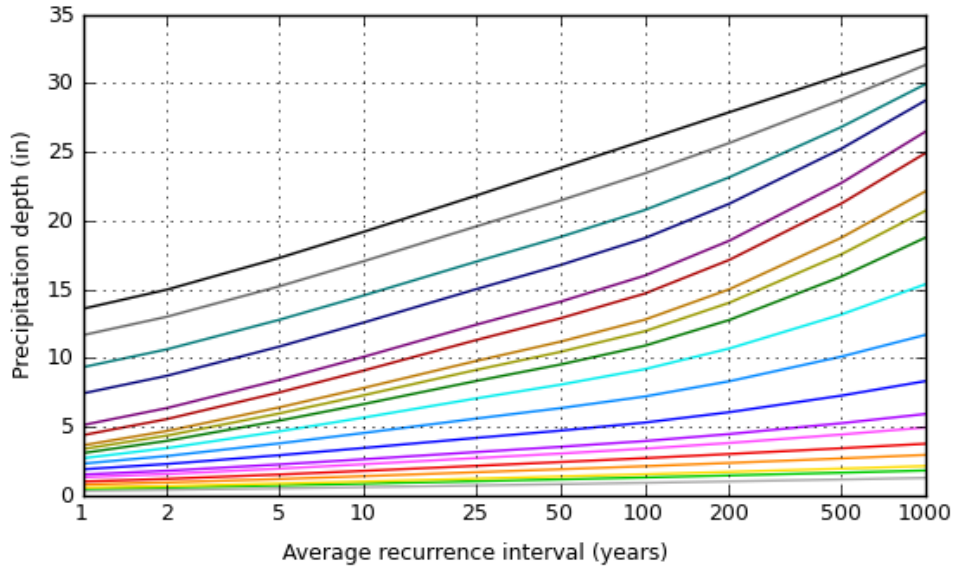
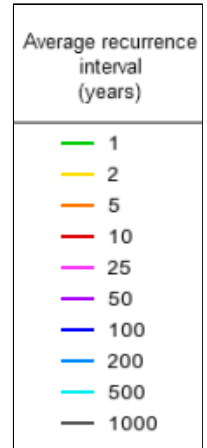
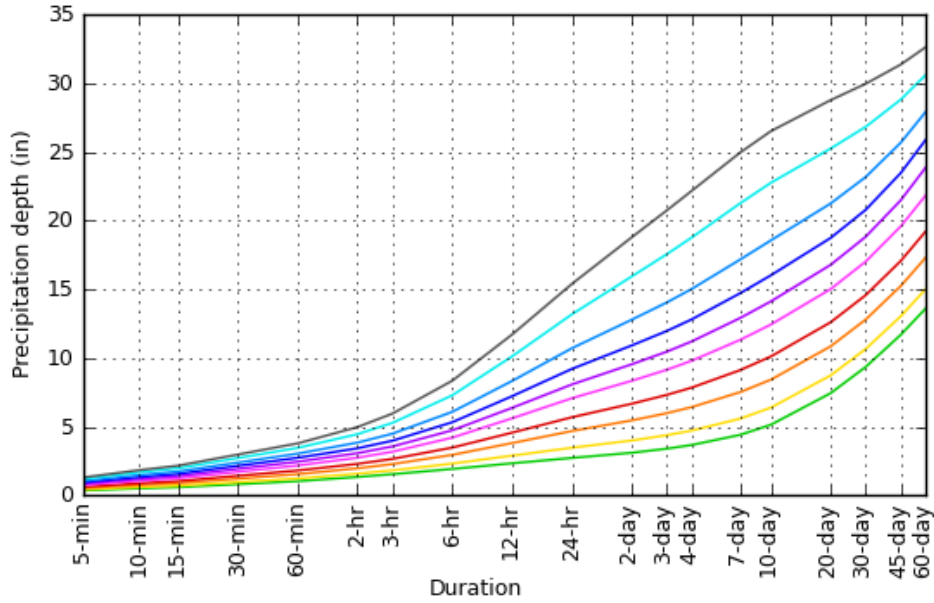
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average 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.

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PF graphical

PDS-based depth-duration-frequency (DDF) curves

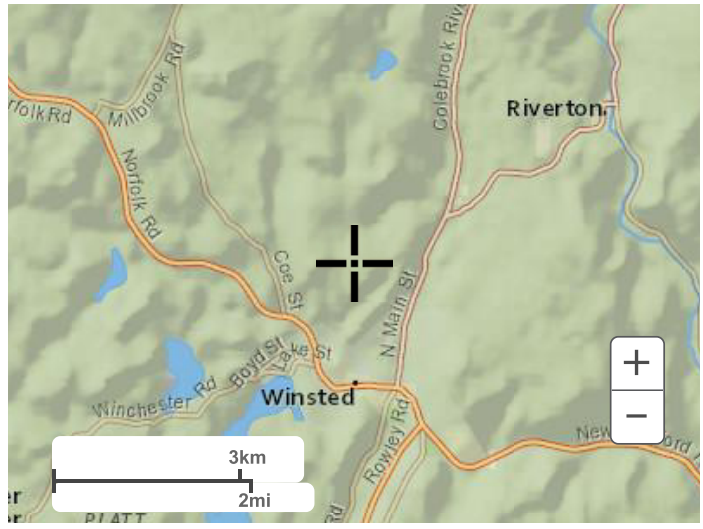
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Maps & aerials

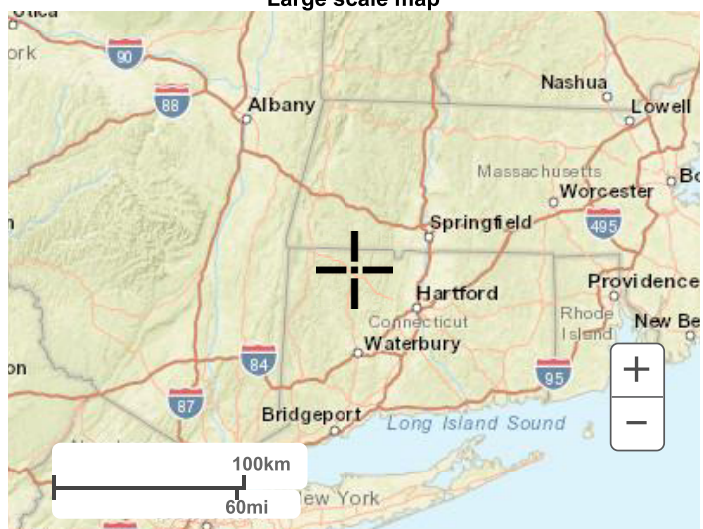
Small scale terrain



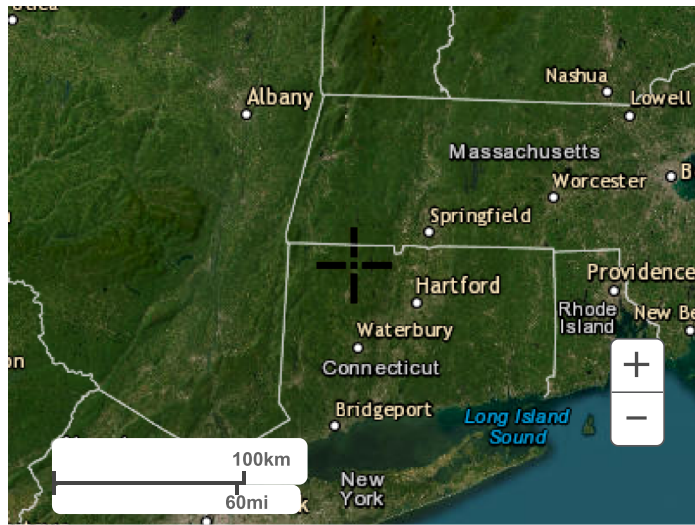
Large scale terrain



Large scale map



Large scale aerial



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[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

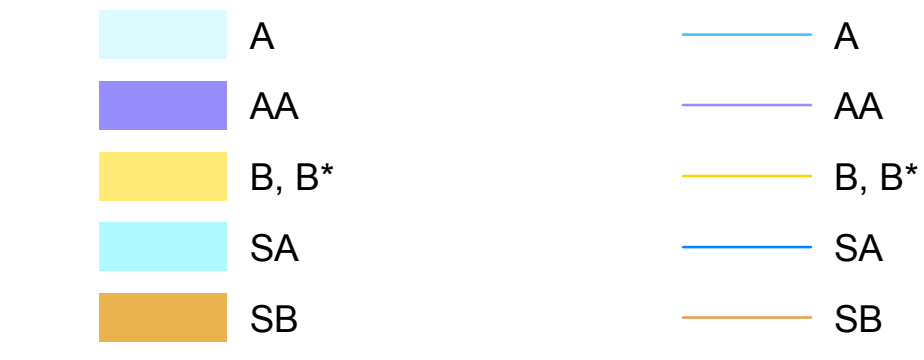
[Disclaimer](#)



CTDEEP Groundwater Classification Map

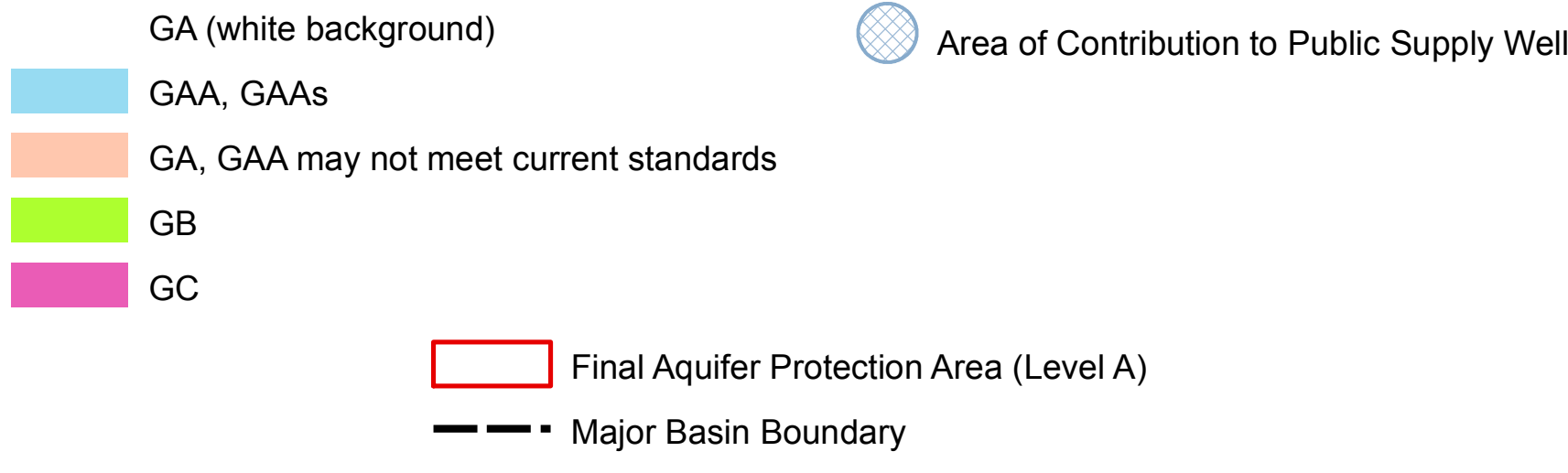
WATER QUALITY CLASSIFICATIONS WINCHESTER, CT

SURFACE WATER QUALITY CLASSES



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



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 440K 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-216 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.

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 covers found in 1:24,000-scale hydrography data available from CT DEEP. The hydrography data may not include all the waterbodies in Connecticut. The Ground Water Quality Classifications Poly data assigns ground water quality classifications, at 1:24,000 scale, to the remaining land areas in Connecticut.

AQUIFER PROTECTION AREA DATA - Aquifer Protection Areas shown on this map are from the Aquifer Protection Area digital dataset which contains polygon data intended to be used at 1:24,000 scale. The dataset contains regulated areas classified as Level A Aquifer Protection Area (Final) and Level B Aquifer Protection Area (Preliminary). The Level B areas are not shown on the WQC maps. The data was collected from 1991 to the present and is actively updated as Final area mapping replaces earlier Preliminary areas. The Aquifer Protection Areas are delineated by

the individual water companies owning the well fields and submitted to the CT DEEP for approval. Preliminary mapping provides a general estimate of the area contributing ground water to the well field. Final mapping is based on extensive, site-specific detailed modeling of the ground water flow system. CT DEEP may adjust Final area boundaries to be consistent with 1:24,000 scale topography and base map data where appropriate during the approval process.

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

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

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

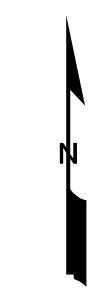
ADOPTED DATES

- Water Quality Standards
February 25, 2011
- Thames River, Pawcatuck River and Southeast Coastal Basins: December 1986
- Connecticut River and South Central Coastal Basins: February 1993
- Housatonic River, Hudson River and Southwest Coastal Basins: March 1999

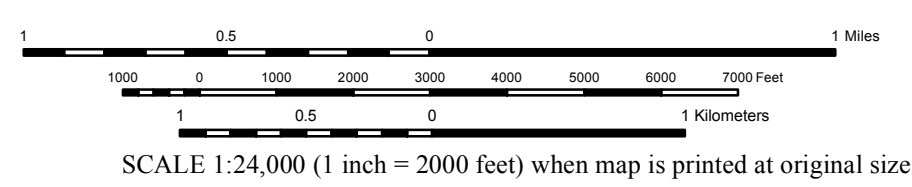
MAJOR BASINS

- Pawcatuck
- Southeast Coast
- Thames
- Connecticut
- South Central Coast
- Housatonic
- Southeast Coast
- Hudson

MAP LOCATION

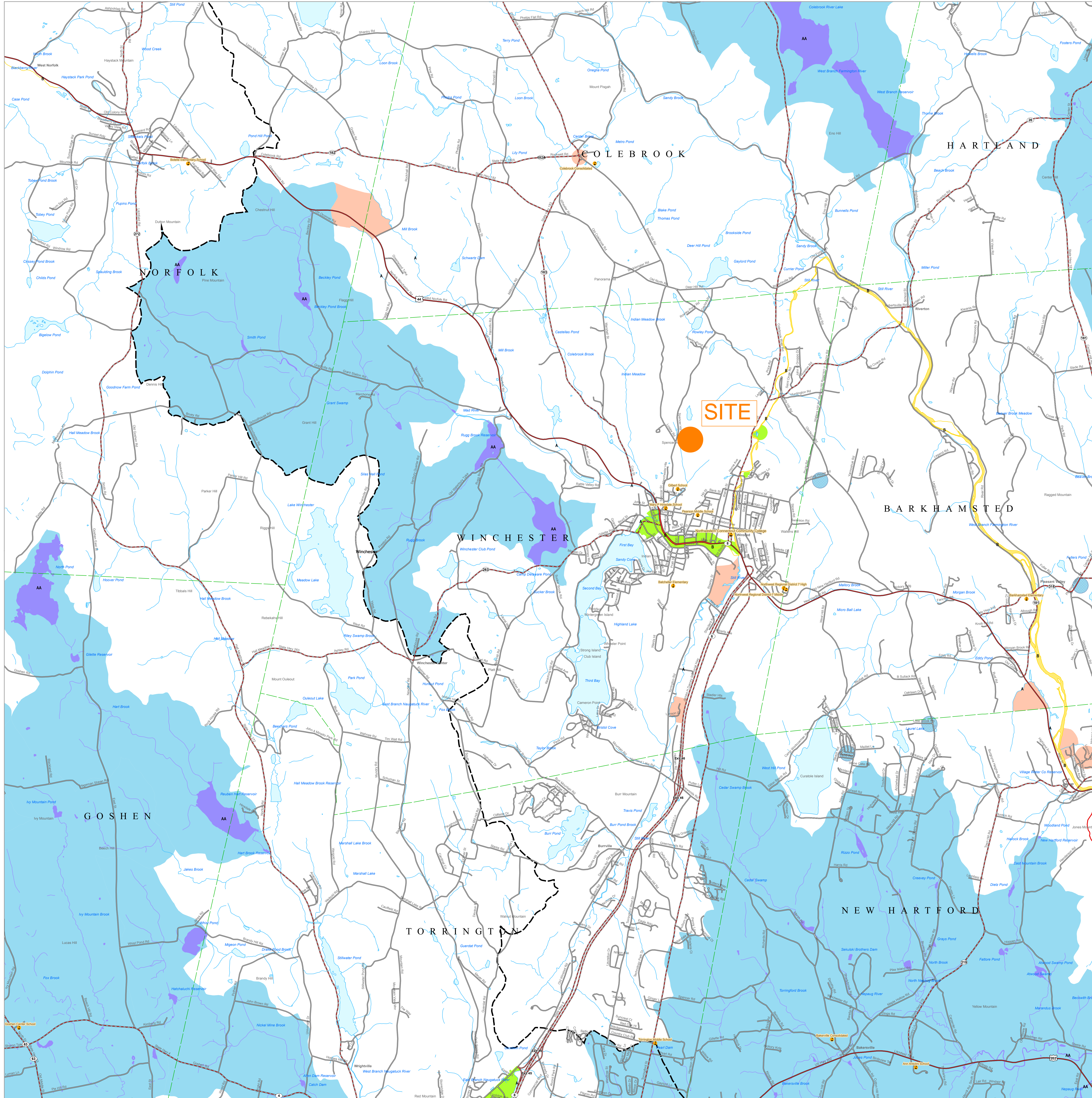


Date Plane Coordinate System of 1983, Zone 2026
Lambert Conformal Conic Projection
North American Datum of 1983



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

Map created by CT DEEP
October 2018
Map is not colorfast
Protect from light and moisture





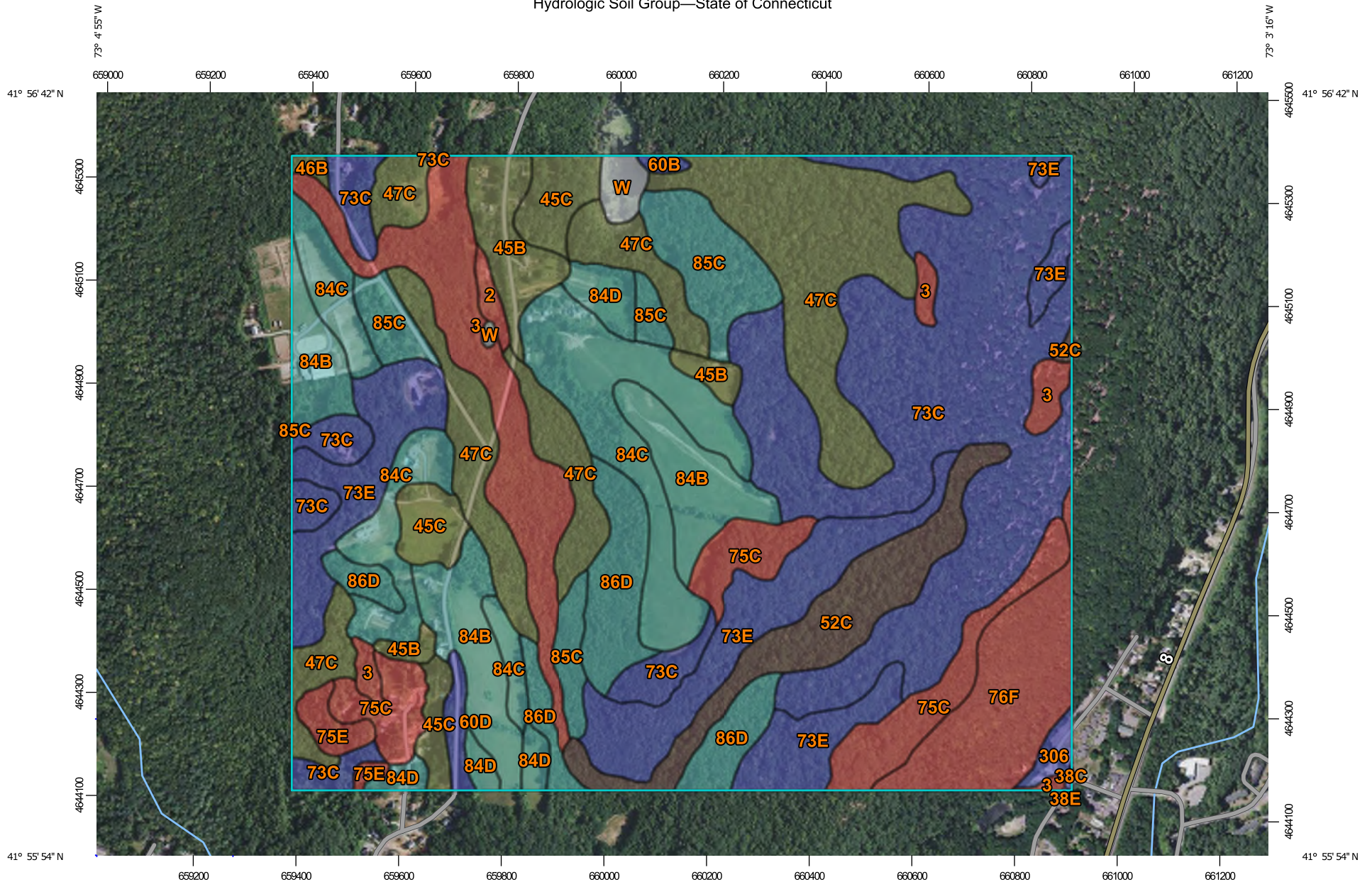
Appendix B:

NRCS Soil Survey Information Test Pit and Infiltration Testing Data

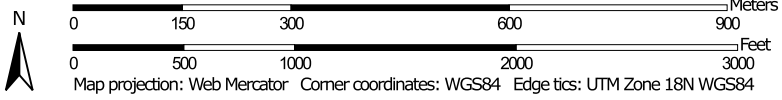


NRCS Soil Survey Information

Hydrologic Soil Group—State of Connecticut




Map Scale: 1:10,400 if printed on A landscape (11" x 8.5") sheet.



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.

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 12, 2020—Sep 15, 2020

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2	Ridgebury fine sandy loam, 0 to 3 percent slopes	D	1.5	0.3%
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	31.3	6.7%
38C	Hinckley loamy sand, 3 to 15 percent slopes	A	0.0	0.0%
38E	Hinckley loamy sand, 15 to 45 percent slopes	A	0.0	0.0%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	11.9	2.6%
45C	Woodbridge fine sandy loam, 8 to 15 percent slopes	C/D	13.0	2.8%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	C/D	0.7	0.2%
47C	Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony	C/D	67.7	14.6%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	B/D	19.6	4.2%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	0.7	0.2%
60D	Canton and Charlton soils, 15 to 25 percent slopes	B	2.3	0.5%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	100.6	21.7%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	45.0	9.7%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	D	22.0	4.7%



Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	D	3.4	0.7%
76F	Rock outcrop-Hollis complex, 45 to 60 percent slopes	D	20.5	4.4%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	C	28.4	6.1%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	C	42.1	9.1%
84D	Paxton and Montauk fine sandy loams, 15 to 25 percent slopes	C	7.6	1.6%
85C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, very stony	C	20.8	4.5%
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	C	20.6	4.4%
306	Udorthents-Urban land complex	B	2.0	0.4%
W	Water		2.9	0.6%
Totals for Area of Interest			464.3	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



Test Pit and Infiltration Testing Data



Appendix C:

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



Erosion and Sedimentation Control Checklist

GCE Winchester Solar – Winchester, CT – Spencer Hill 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 <input type="checkbox"/> yes <input type="checkbox"/> no (List Items)	Date of Cleaning/Repair	Performed by
Trash/Litter	Routinely pick up and remove litter from entire property as required.						
Stormwater Basin	Inspect bi-annually. Check stabilized riprap spillway, side slopes, and clean accumulated sediment if infiltration is impeded.						
Vegetated Areas	Inspect bi-annually. Replant bare areas upon identification.						

Stormwater Control Manager _____



Long Term Stormwater Operation and Maintenance Measures

GCE Winchester Solar – Winchester, CT – Spencer Hill 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 <input type="checkbox"/> yes <input type="checkbox"/> 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 _____



Project Information

Site

Project Name: GCE Winchester Solar

Address or Locus: Spencer Hill Road

City, State & Zip: Winchester, CT 06098

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
HydroCAD: Existing Conditions
HydroCAD: Proposed Conditions



Sediment Trap Sizing

Sediment Trap Sizing
GCE Winchester Solar
September 2023

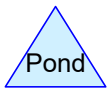
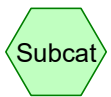
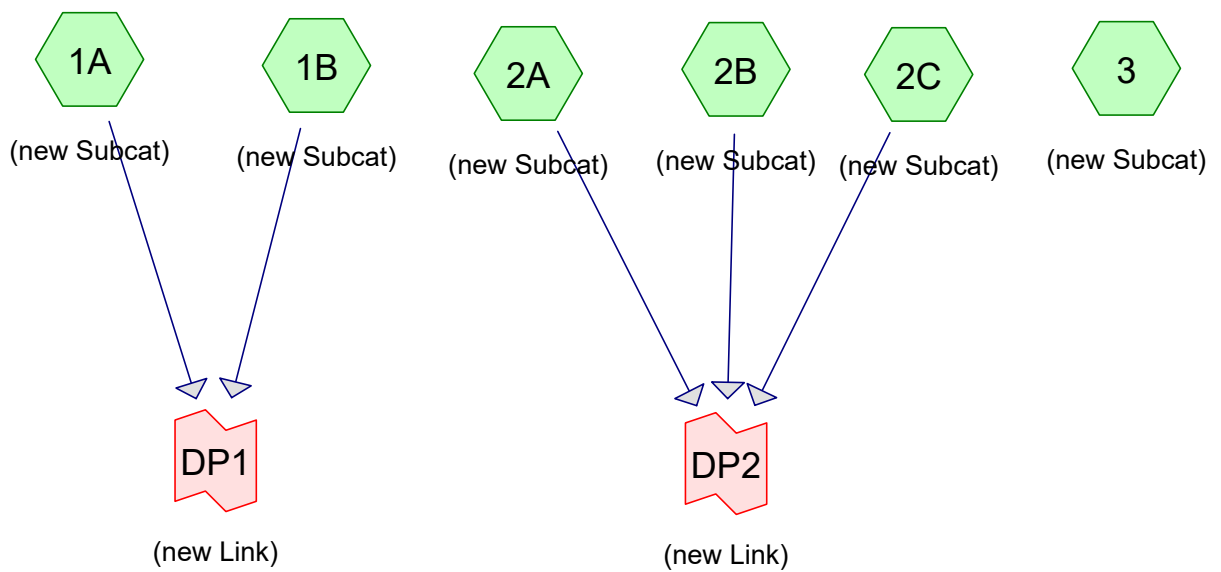
*(134 cy / acre)**

TST #	Tributary Acreage, ac	Volume Required Below Top of Spillway, cf	Volume Provided in Permanent Basin Below Top of Spillway, cf
1B	1.8	6,562	8,058
2A	2.8	10,224	10,323
2B	2.7	9,909	12,588

* Per 2002 Connecticut Guidelines for Soil Erosion and Sediment Control



HydroCAD Analysis: Existing Conditions



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	3.46	2
2	25-YEAR	Type III 24-hr		Default	24.00	1	7.07	2
3	50-YEAR	Type III 24-hr		Default	24.00	1	8.07	2
4	100-YEAR	Type III 24-hr		Default	24.00	1	9.20	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
12.847	86	<50% Grass cover, Poor, HSG C (1A, 1B, 2A, 2B, 2C, 3)
0.498	89	<50% Grass cover, Poor, HSG D (1B, 2A)
13.345	86	TOTAL AREA

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
12.847	HSG C	1A, 1B, 2A, 2B, 2C, 3
0.498	HSG D	1B, 2A
0.000	Other	
13.345		TOTAL AREA

43183.00EXHydroCAD

Prepared by VHB, Inc

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Page 5

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	12.847	0.498	0.000	13.345	<50% Grass cover, Poor	1A, 1B, 2A, 2B, 2C, 3
0.000	0.000	12.847	0.498	0.000	13.345	TOTAL AREA	

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: (new Subcat) Runoff Area=82,800 sf 0.00% Impervious Runoff Depth=2.06"
Flow Length=420' Slope=0.1000 '/' Tc=5.6 min CN=86 Runoff=4.54 cfs 0.327 af

Subcatchment1B: (new Subcat) Runoff Area=79,000 sf 0.00% Impervious Runoff Depth=2.06"
Flow Length=350' Slope=0.0800 '/' Tc=5.6 min CN=86 Runoff=4.33 cfs 0.312 af

Subcatchment2A: (new Subcat) Runoff Area=123,100 sf 0.00% Impervious Runoff Depth=2.06"
Flow Length=650' Slope=0.1000 '/' Tc=7.3 min CN=86 Runoff=6.45 cfs 0.486 af

Subcatchment2B: (new Subcat) Runoff Area=119,300 sf 0.00% Impervious Runoff Depth=2.06"
Flow Length=330' Slope=0.0800 '/' Tc=5.5 min CN=86 Runoff=6.55 cfs 0.471 af

Subcatchment2C: (new Subcat) Runoff Area=35,600 sf 0.00% Impervious Runoff Depth=2.06"
Flow Length=300' Slope=0.0900 '/' Tc=5.0 min CN=86 Runoff=1.97 cfs 0.140 af

Subcatchment3: (new Subcat) Runoff Area=141,500 sf 0.00% Impervious Runoff Depth=2.06"
Flow Length=400' Slope=0.0800 '/' Tc=6.0 min CN=86 Runoff=7.69 cfs 0.558 af

Link DP1: (new Link) Inflow=8.87 cfs 0.639 af
Primary=8.87 cfs 0.639 af

Link DP2: (new Link) Inflow=14.85 cfs 1.097 af
Primary=14.85 cfs 1.097 af

Total Runoff Area = 13.345 ac Runoff Volume = 2.294 af Average Runoff Depth = 2.06"
100.00% Pervious = 13.345 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1A: (new Subcat)

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

Runoff = 4.54 cfs @ 12.09 hrs, Volume= 0.327 af, Depth= 2.06"
 Routed to Link DP1 : (new Link)

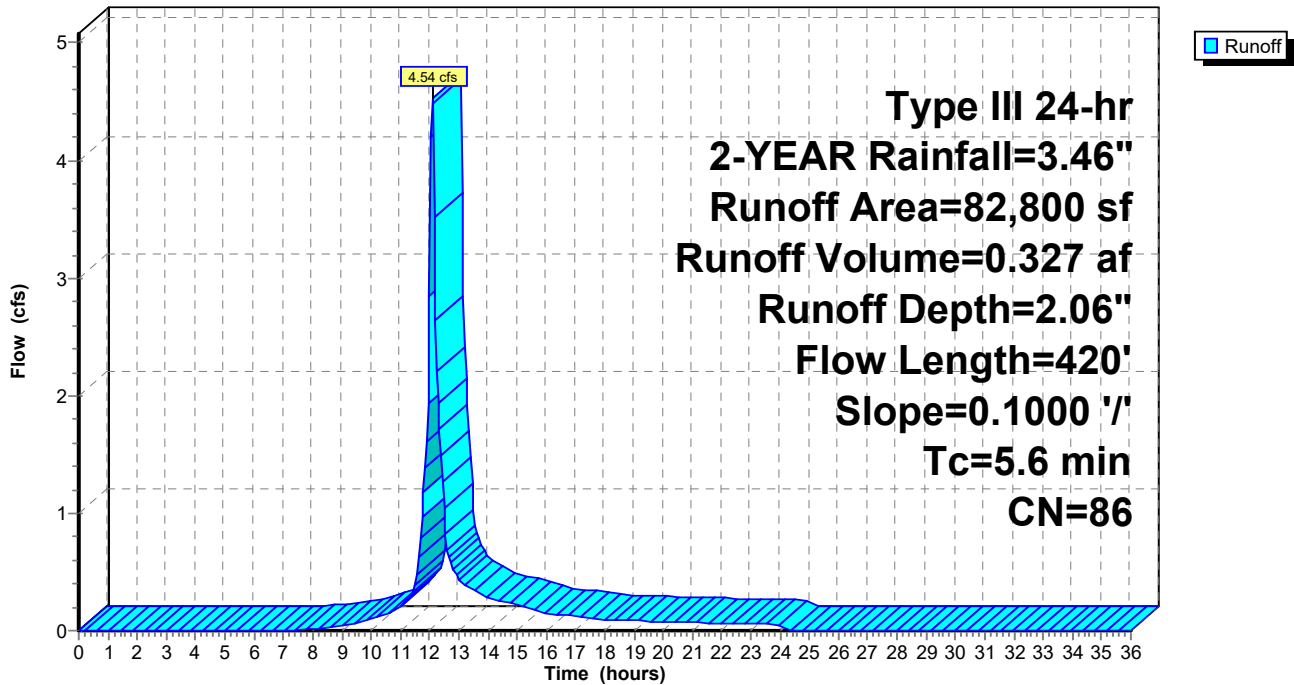
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YEAR Rainfall=3.46"

Area (sf)	CN	Description
82,800	86	<50% Grass cover, Poor, HSG C
82,800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.8	370	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	420	Total			

Subcatchment 1A: (new Subcat)

Hydrograph



Summary for Subcatchment 1B: (new Subcat)

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

Runoff = 4.33 cfs @ 12.09 hrs, Volume= 0.312 af, Depth= 2.06"
 Routed to Link DP1 : (new Link)

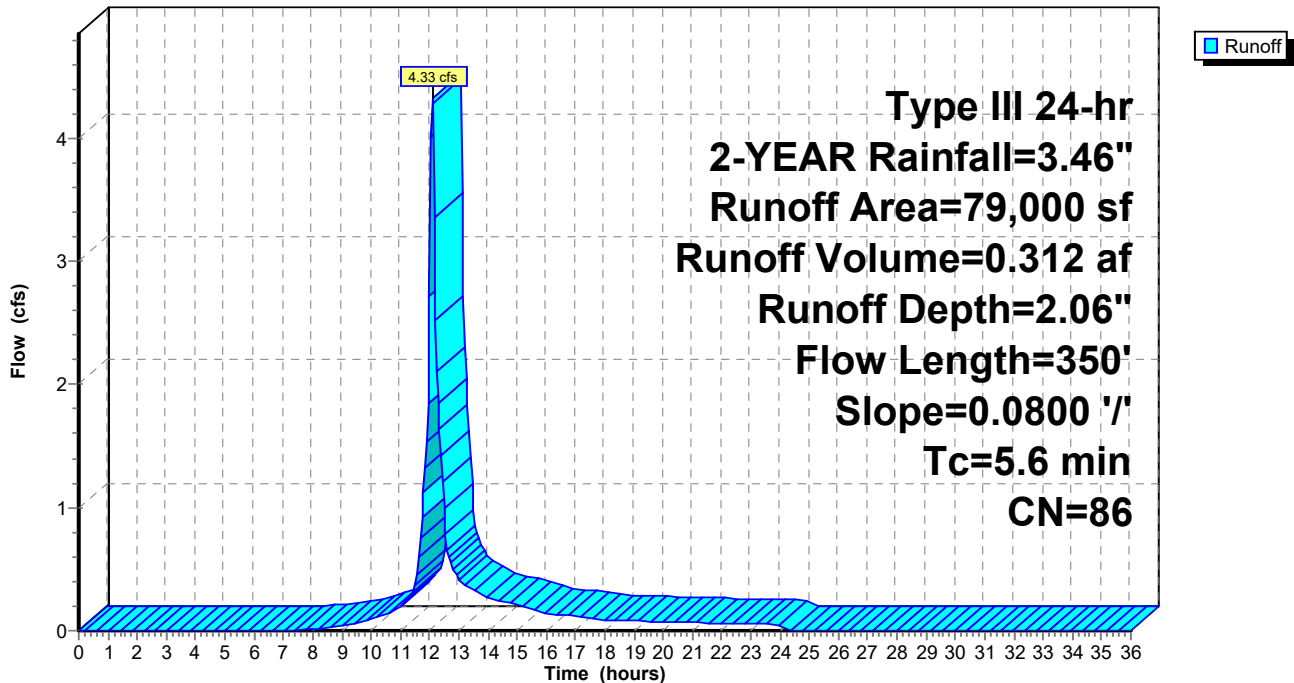
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YEAR Rainfall=3.46"

Area (sf)	CN	Description
76,900	86	<50% Grass cover, Poor, HSG C
2,100	89	<50% Grass cover, Poor, HSG D
79,000	86	Weighted Average
79,000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.5	300	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	350	Total			

Subcatchment 1B: (new Subcat)

Hydrograph



Summary for Subcatchment 2A: (new Subcat)

Runoff = 6.45 cfs @ 12.11 hrs, Volume= 0.486 af, Depth= 2.06"
 Routed to Link DP2 : (new Link)

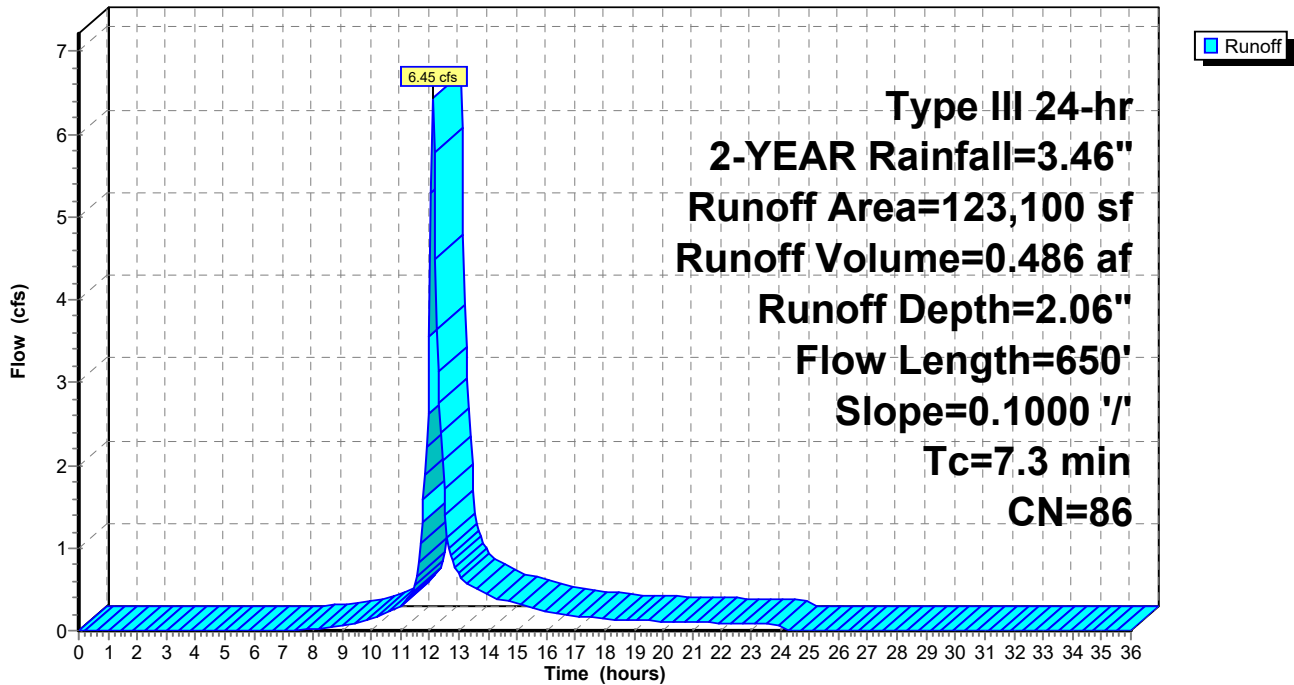
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YEAR Rainfall=3.46"

Area (sf)	CN	Description
103,500	86	<50% Grass cover, Poor, HSG C
19,600	89	<50% Grass cover, Poor, HSG D
123,100	86	Weighted Average
123,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
4.5	600	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.3	650	Total			

Subcatchment 2A: (new Subcat)

Hydrograph



Summary for Subcatchment 2B: (new Subcat)

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

Runoff = 6.55 cfs @ 12.08 hrs, Volume= 0.471 af, Depth= 2.06"
 Routed to Link DP2 : (new Link)

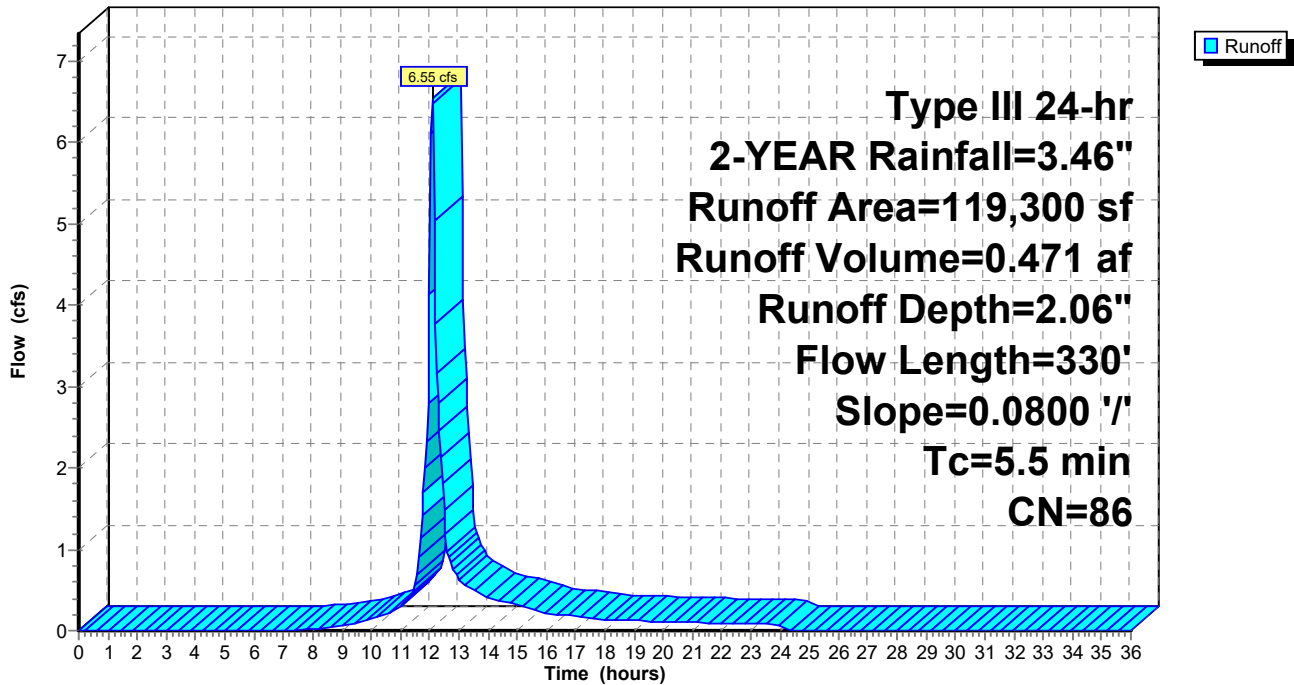
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YEAR Rainfall=3.46"

Area (sf)	CN	Description
119,300	86	<50% Grass cover, Poor, HSG C
119,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.4	280	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	330	Total			

Subcatchment 2B: (new Subcat)

Hydrograph



Summary for Subcatchment 2C: (new Subcat)

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

Runoff = 1.97 cfs @ 12.08 hrs, Volume= 0.140 af, Depth= 2.06"
 Routed to Link DP2 : (new Link)

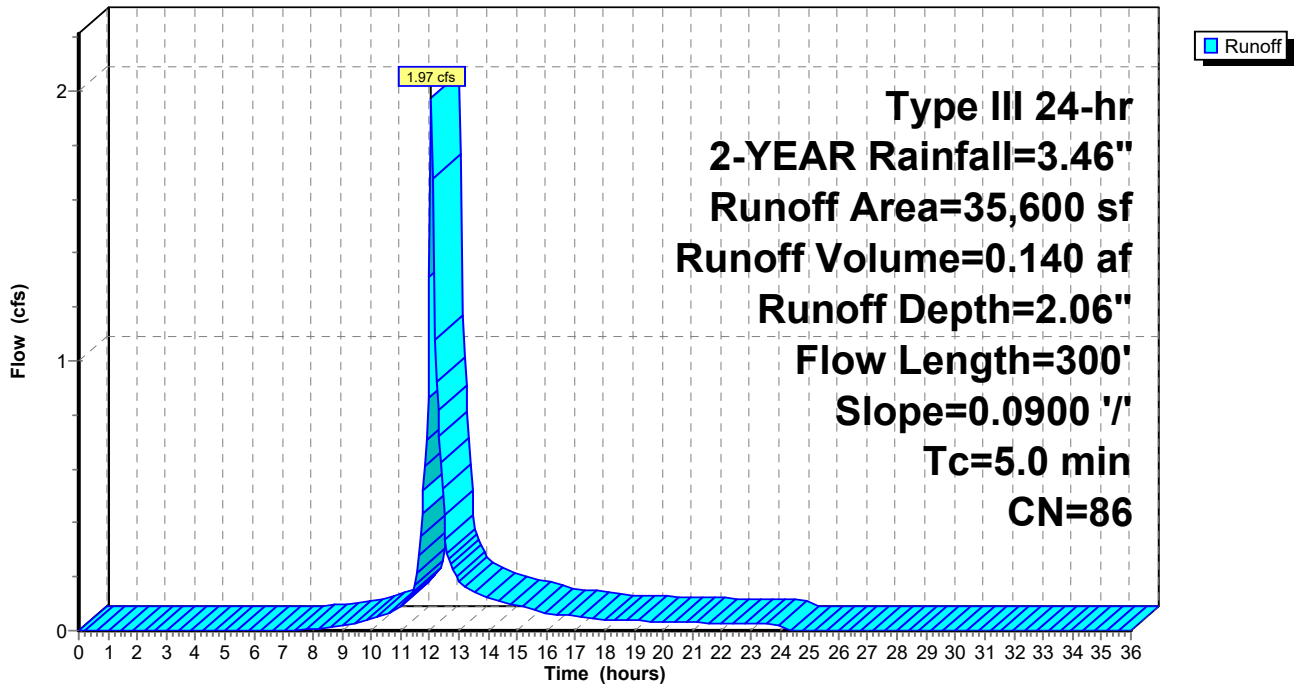
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YEAR Rainfall=3.46"

Area (sf)	CN	Description
35,600	86	<50% Grass cover, Poor, HSG C
35,600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	50	0.0900	0.28		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.0	250	0.0900	2.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.0	300	Total			

Subcatchment 2C: (new Subcat)

Hydrograph



Summary for Subcatchment 3: (new Subcat)

Runoff = 7.69 cfs @ 12.09 hrs, Volume= 0.558 af, Depth= 2.06"

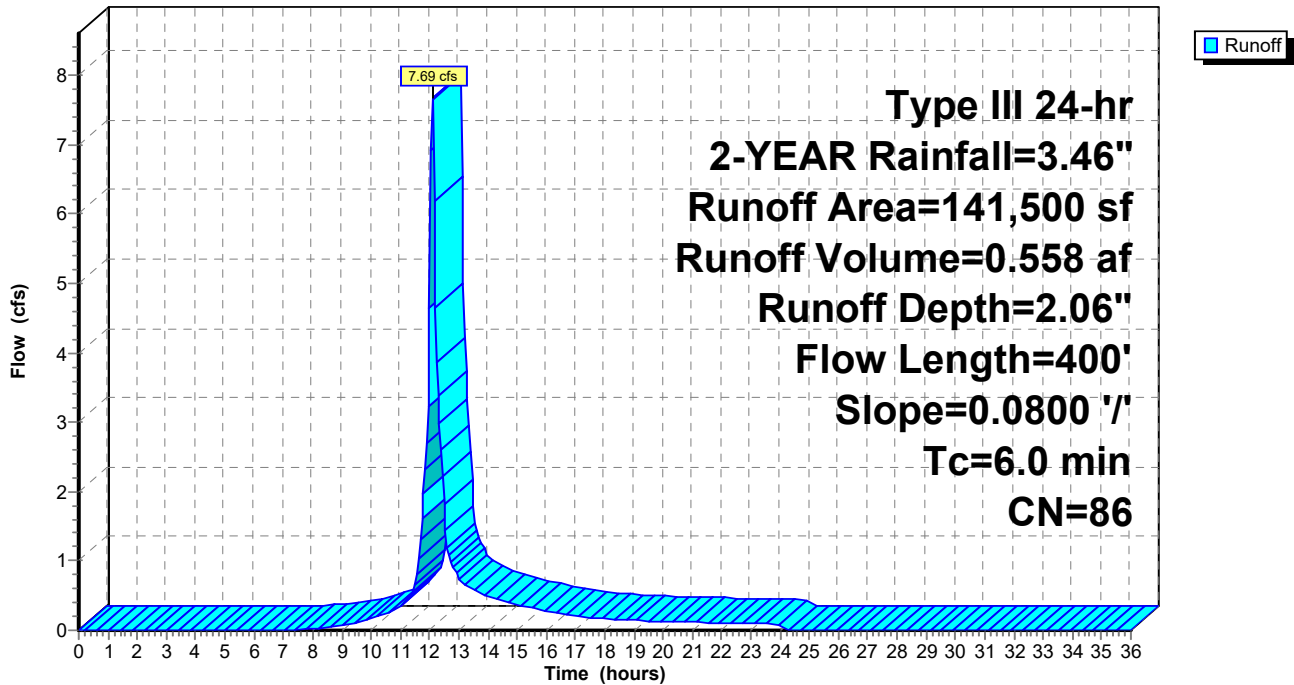
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YEAR Rainfall=3.46"

Area (sf)	CN	Description
141,500	86	<50% Grass cover, Poor, HSG C
141,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.9	350	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.0	400	Total			

Subcatchment 3: (new Subcat)

Hydrograph



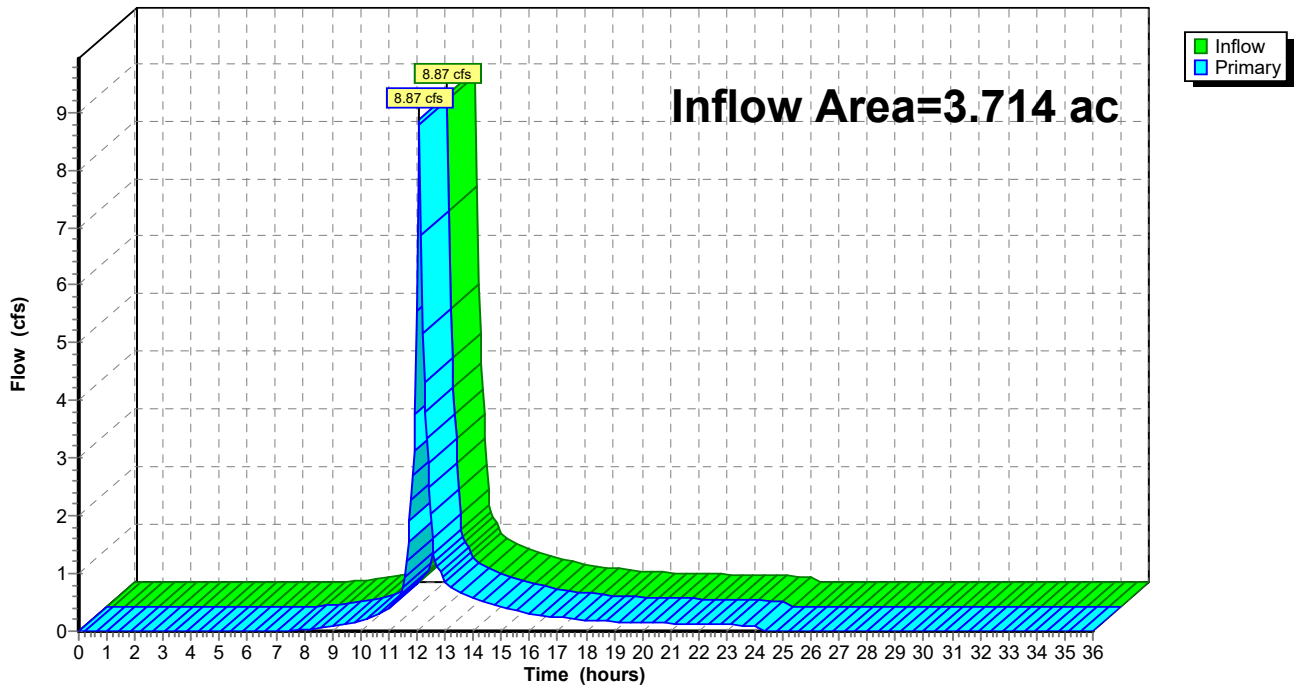
Summary for Link DP1: (new Link)

Inflow Area = 3.714 ac, 0.00% Impervious, Inflow Depth = 2.06" for 2-YEAR event
Inflow = 8.87 cfs @ 12.09 hrs, Volume= 0.639 af
Primary = 8.87 cfs @ 12.09 hrs, Volume= 0.639 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP1: (new Link)

Hydrograph



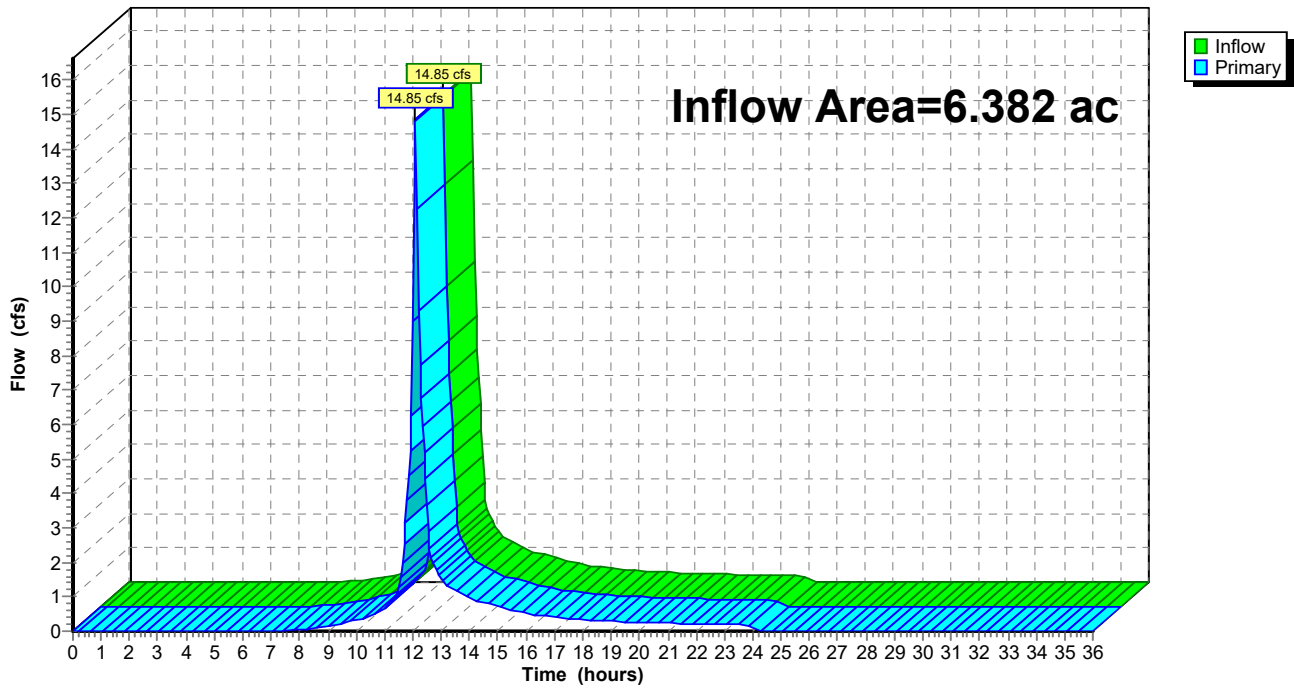
Summary for Link DP2: (new Link)

Inflow Area = 6.382 ac, 0.00% Impervious, Inflow Depth = 2.06" for 2-YEAR event
Inflow = 14.85 cfs @ 12.09 hrs, Volume= 1.097 af
Primary = 14.85 cfs @ 12.09 hrs, Volume= 1.097 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP2: (new Link)

Hydrograph



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: (new Subcat) Runoff Area=82,800 sf 0.00% Impervious Runoff Depth=5.43"
Flow Length=420' Slope=0.1000 '/' Tc=5.6 min CN=86 Runoff=11.54 cfs 0.861 af

Subcatchment1B: (new Subcat) Runoff Area=79,000 sf 0.00% Impervious Runoff Depth=5.43"
Flow Length=350' Slope=0.0800 '/' Tc=5.6 min CN=86 Runoff=11.01 cfs 0.821 af

Subcatchment2A: (new Subcat) Runoff Area=123,100 sf 0.00% Impervious Runoff Depth=5.43"
Flow Length=650' Slope=0.1000 '/' Tc=7.3 min CN=86 Runoff=16.44 cfs 1.279 af

Subcatchment2B: (new Subcat) Runoff Area=119,300 sf 0.00% Impervious Runoff Depth=5.43"
Flow Length=330' Slope=0.0800 '/' Tc=5.5 min CN=86 Runoff=16.66 cfs 1.240 af

Subcatchment2C: (new Subcat) Runoff Area=35,600 sf 0.00% Impervious Runoff Depth=5.43"
Flow Length=300' Slope=0.0900 '/' Tc=5.0 min CN=86 Runoff=5.06 cfs 0.370 af

Subcatchment3: (new Subcat) Runoff Area=141,500 sf 0.00% Impervious Runoff Depth=5.43"
Flow Length=400' Slope=0.0800 '/' Tc=6.0 min CN=86 Runoff=19.56 cfs 1.471 af

Link DP1: (new Link) Inflow=22.55 cfs 1.682 af
Primary=22.55 cfs 1.682 af

Link DP2: (new Link) Inflow=37.81 cfs 2.889 af
Primary=37.81 cfs 2.889 af

Total Runoff Area = 13.345 ac Runoff Volume = 6.042 af Average Runoff Depth = 5.43"
100.00% Pervious = 13.345 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1A: (new Subcat)

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

Runoff = 11.54 cfs @ 12.08 hrs, Volume= 0.861 af, Depth= 5.43"
 Routed to Link DP1 : (new Link)

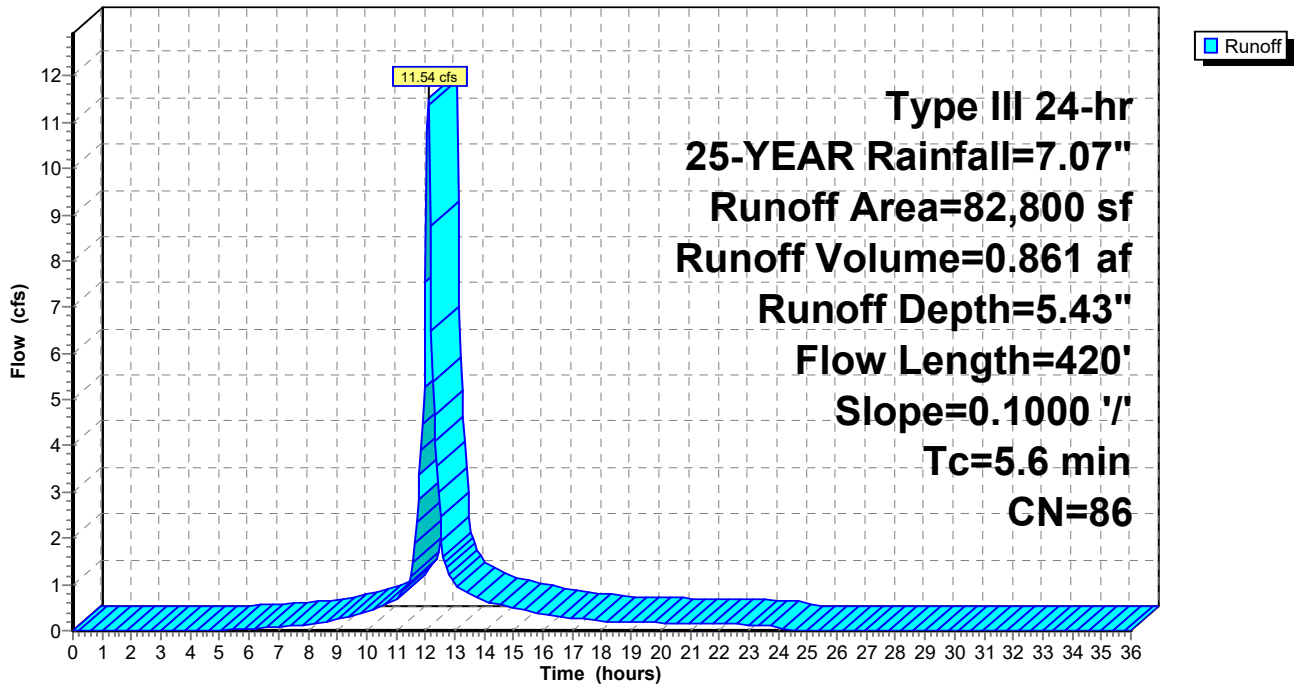
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YEAR Rainfall=7.07"

Area (sf)	CN	Description
82,800	86	<50% Grass cover, Poor, HSG C
82,800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.8	370	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	420	Total			

Subcatchment 1A: (new Subcat)

Hydrograph



Summary for Subcatchment 1B: (new Subcat)

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

Runoff = 11.01 cfs @ 12.08 hrs, Volume= 0.821 af, Depth= 5.43"
 Routed to Link DP1 : (new Link)

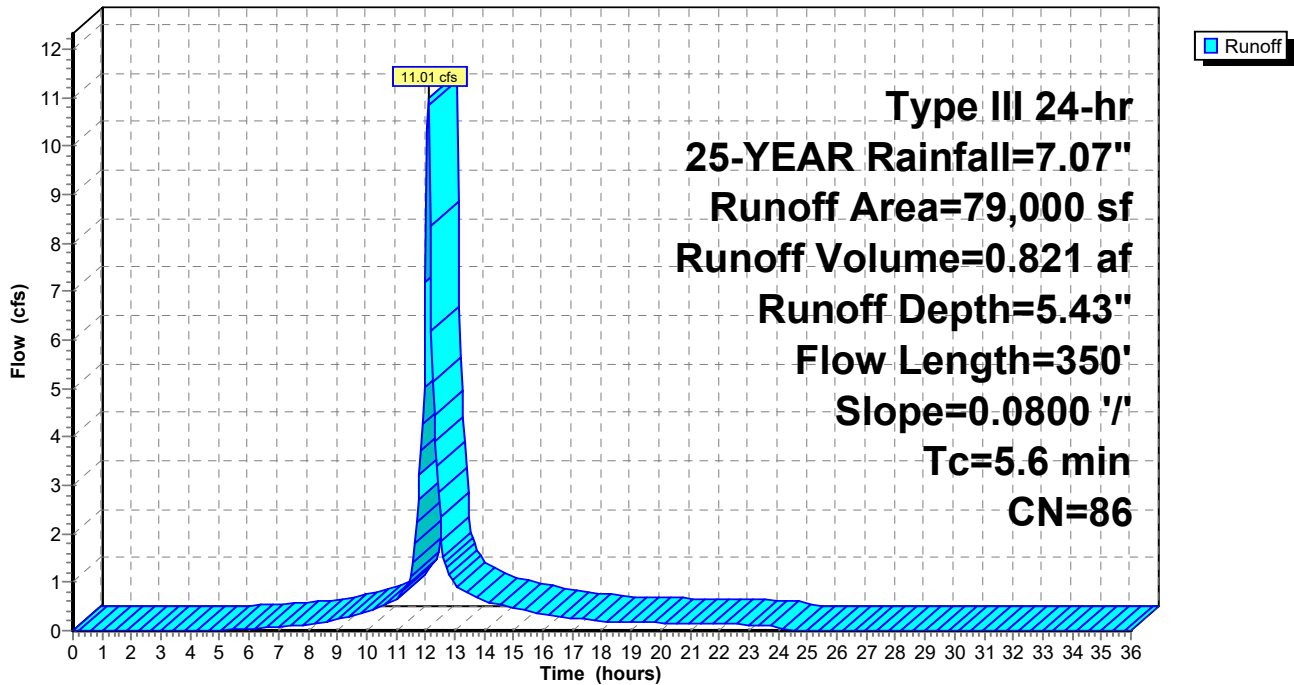
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YEAR Rainfall=7.07"

Area (sf)	CN	Description
76,900	86	<50% Grass cover, Poor, HSG C
2,100	89	<50% Grass cover, Poor, HSG D
79,000	86	Weighted Average
79,000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.5	300	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	350	Total			

Subcatchment 1B: (new Subcat)

Hydrograph



Summary for Subcatchment 2A: (new Subcat)

Runoff = 16.44 cfs @ 12.10 hrs, Volume= 1.279 af, Depth= 5.43"
 Routed to Link DP2 : (new Link)

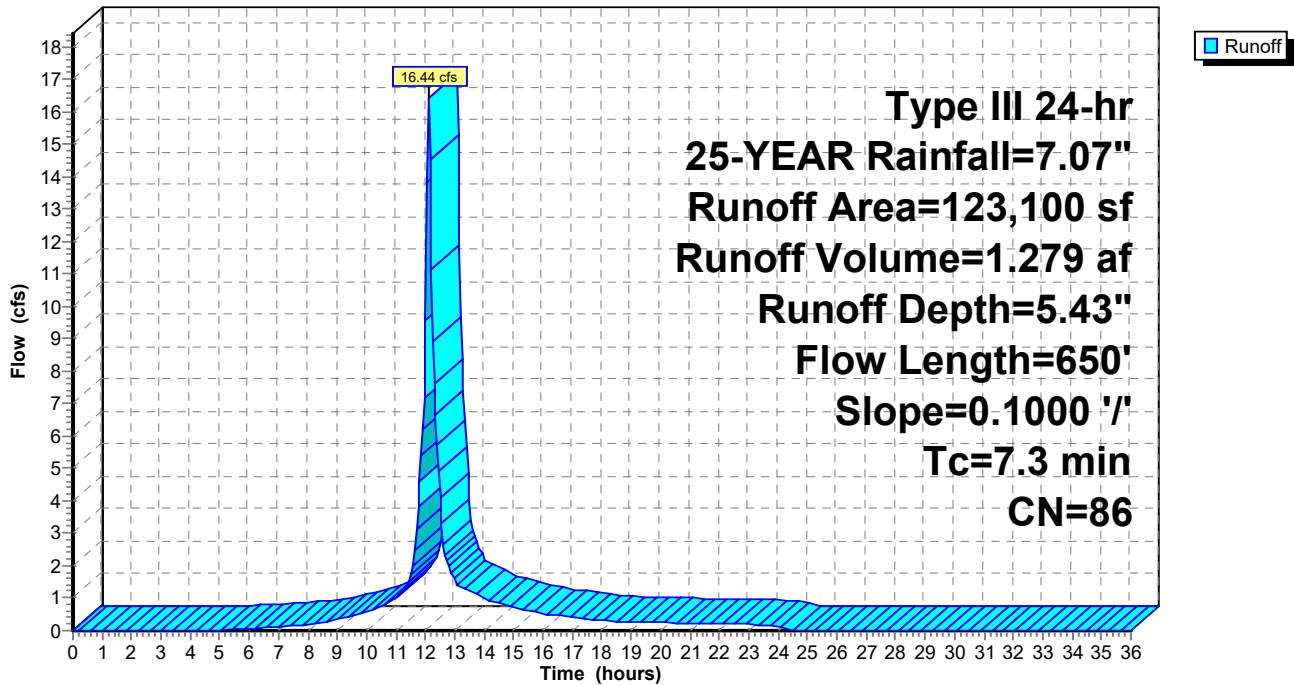
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YEAR Rainfall=7.07"

Area (sf)	CN	Description
103,500	86	<50% Grass cover, Poor, HSG C
19,600	89	<50% Grass cover, Poor, HSG D
123,100	86	Weighted Average
123,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
4.5	600	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.3	650	Total			

Subcatchment 2A: (new Subcat)

Hydrograph



Summary for Subcatchment 2B: (new Subcat)

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

Runoff = 16.66 cfs @ 12.08 hrs, Volume= 1.240 af, Depth= 5.43"
 Routed to Link DP2 : (new Link)

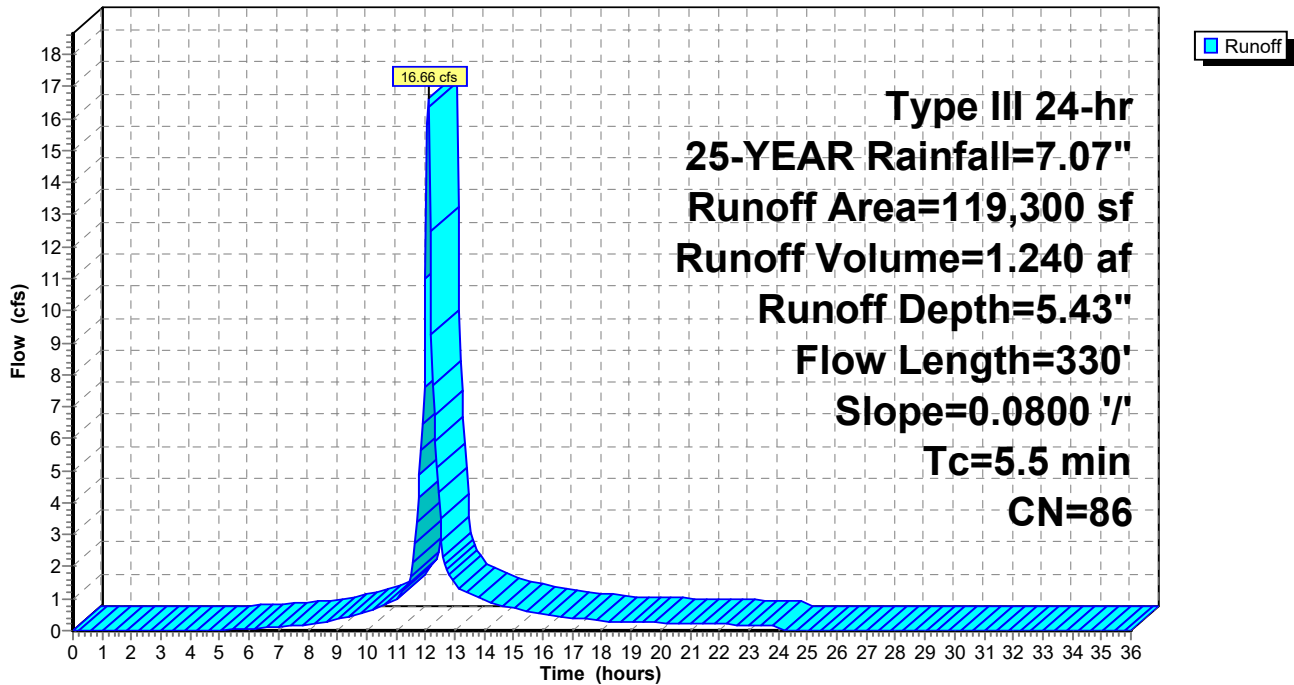
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YEAR Rainfall=7.07"

Area (sf)	CN	Description
119,300	86	<50% Grass cover, Poor, HSG C
119,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.4	280	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	330	Total			

Subcatchment 2B: (new Subcat)

Hydrograph



Summary for Subcatchment 2C: (new Subcat)

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

Runoff = 5.06 cfs @ 12.07 hrs, Volume= 0.370 af, Depth= 5.43"
 Routed to Link DP2 : (new Link)

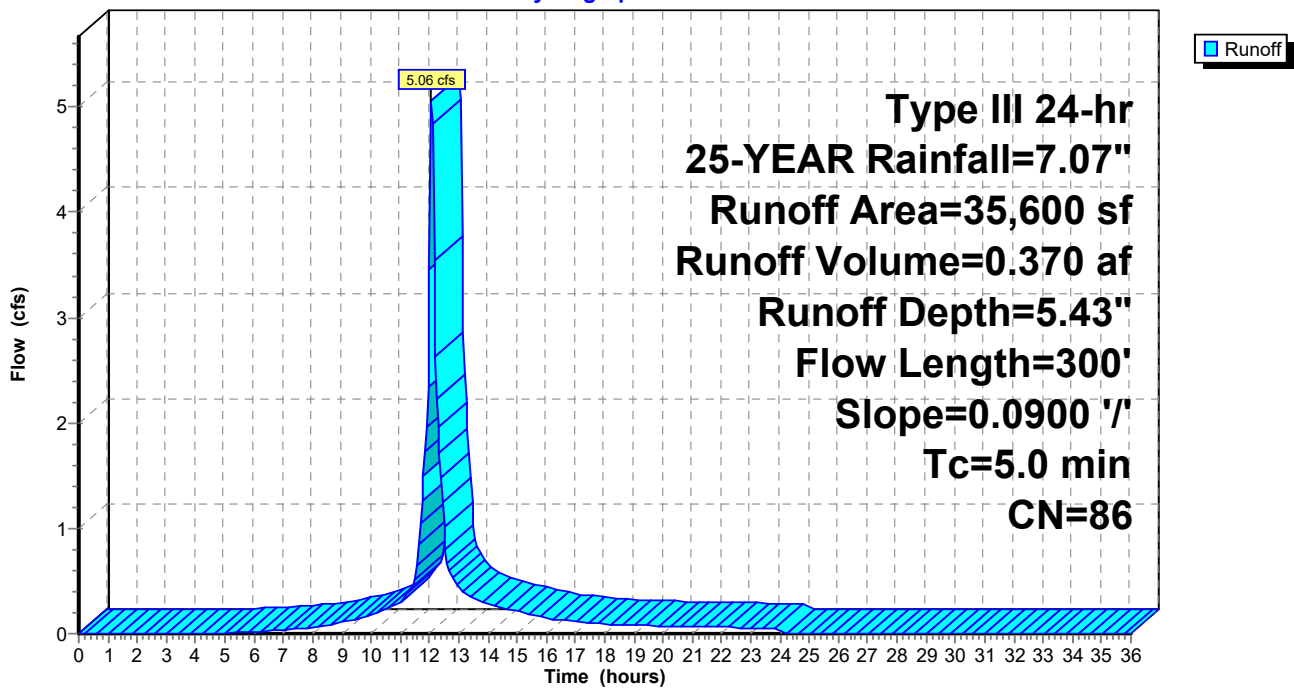
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YEAR Rainfall=7.07"

Area (sf)	CN	Description
35,600	86	<50% Grass cover, Poor, HSG C
35,600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	50	0.0900	0.28		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.0	250	0.0900	2.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.0	300	Total			

Subcatchment 2C: (new Subcat)

Hydrograph



Summary for Subcatchment 3: (new Subcat)

Runoff = 19.56 cfs @ 12.09 hrs, Volume= 1.471 af, Depth= 5.43"

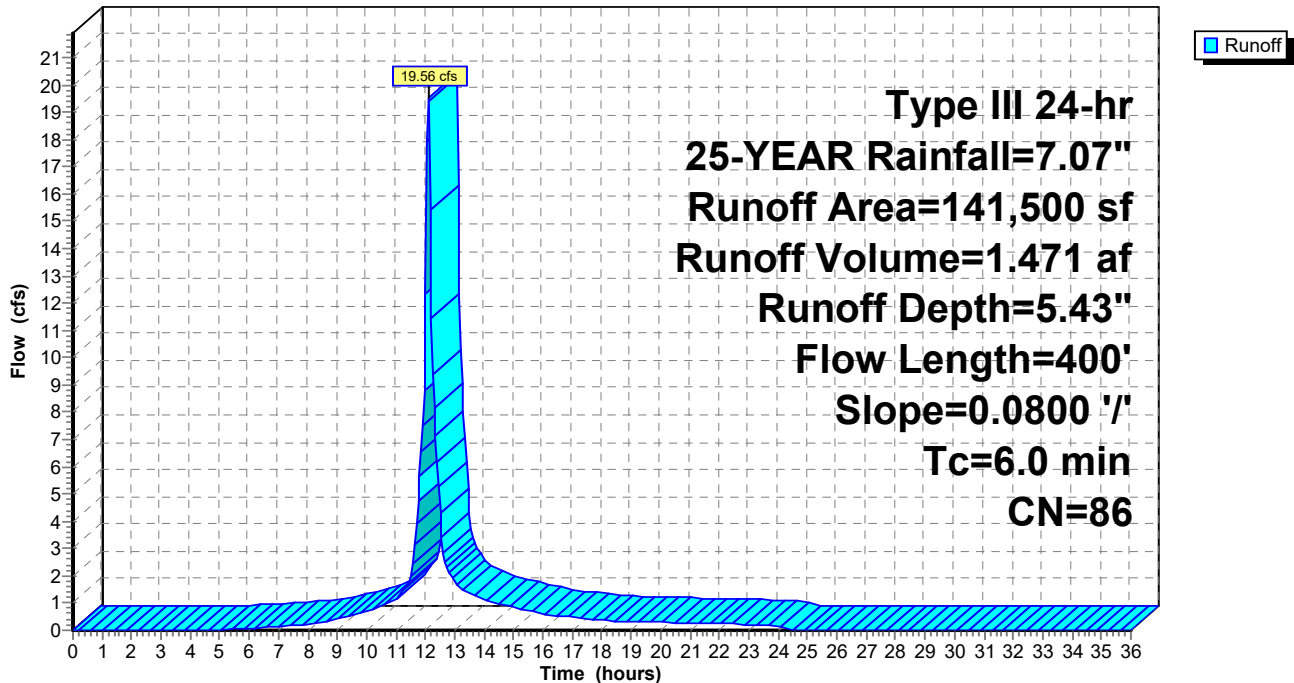
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YEAR Rainfall=7.07"

Area (sf)	CN	Description
141,500	86	<50% Grass cover, Poor, HSG C
141,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.9	350	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.0	400	Total			

Subcatchment 3: (new Subcat)

Hydrograph



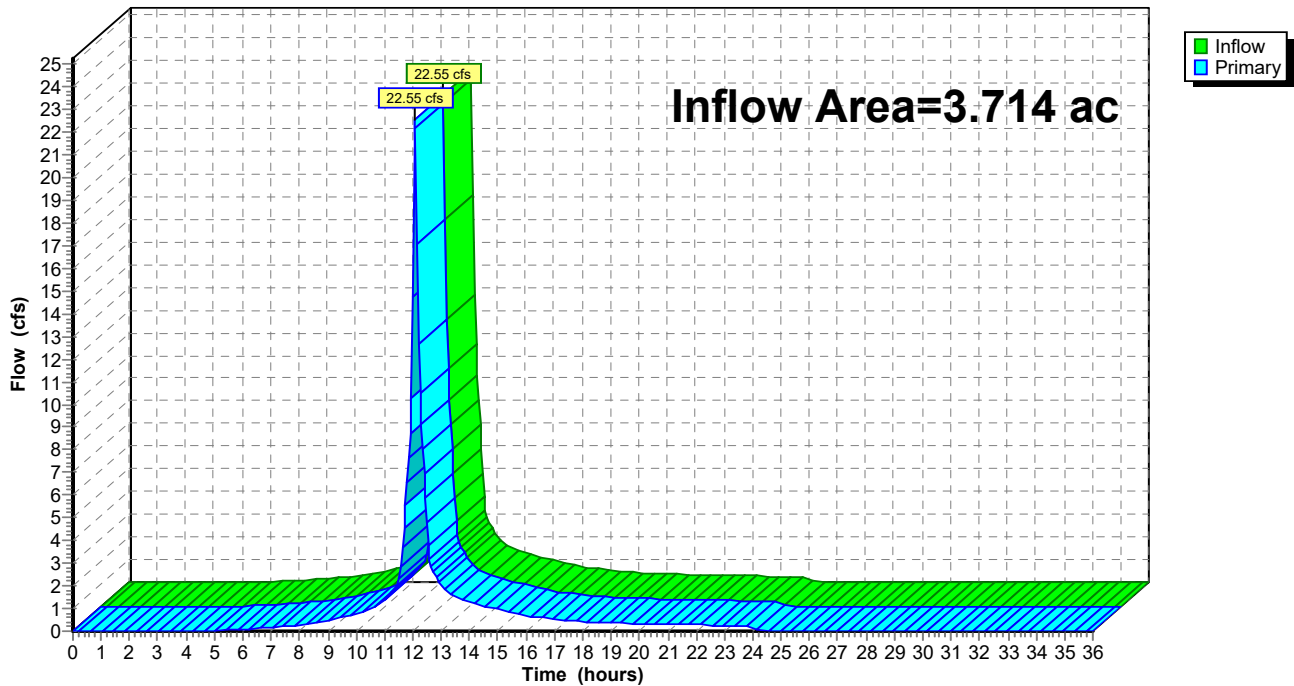
Summary for Link DP1: (new Link)

Inflow Area = 3.714 ac, 0.00% Impervious, Inflow Depth = 5.43" for 25-YEAR event
Inflow = 22.55 cfs @ 12.08 hrs, Volume= 1.682 af
Primary = 22.55 cfs @ 12.08 hrs, Volume= 1.682 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP1: (new Link)

Hydrograph



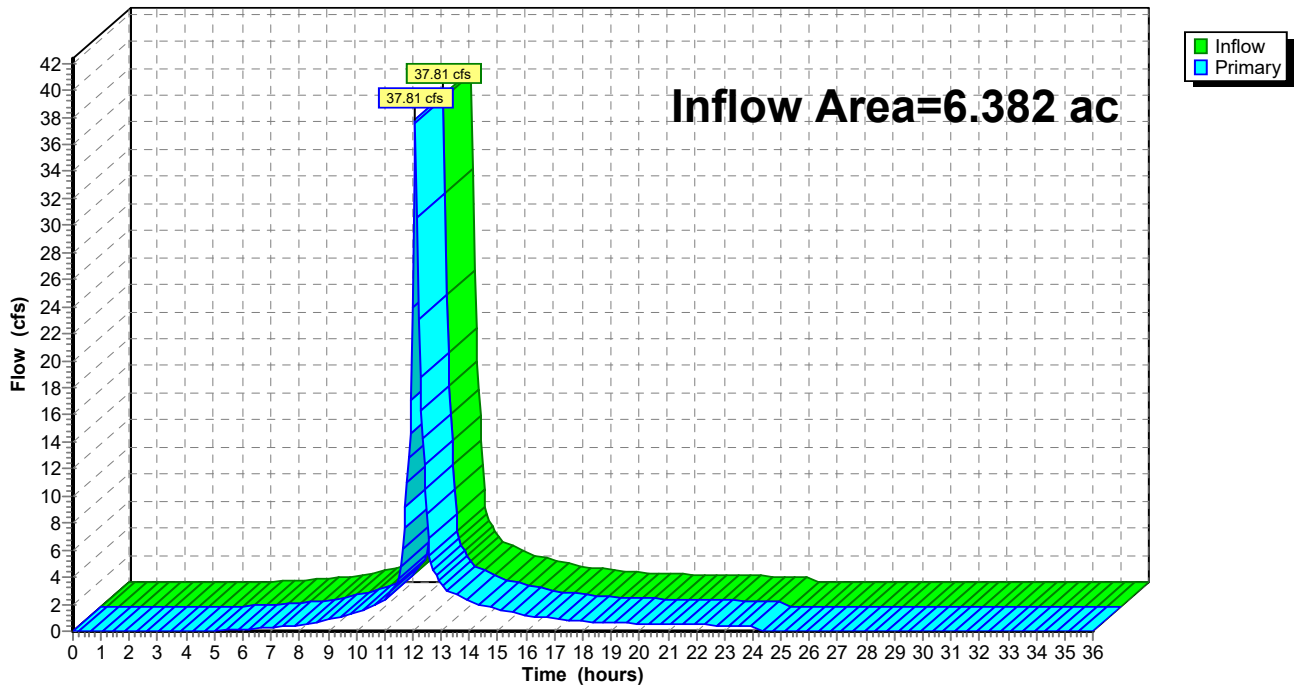
Summary for Link DP2: (new Link)

Inflow Area = 6.382 ac, 0.00% Impervious, Inflow Depth = 5.43" for 25-YEAR event
Inflow = 37.81 cfs @ 12.09 hrs, Volume= 2.889 af
Primary = 37.81 cfs @ 12.09 hrs, Volume= 2.889 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP2: (new Link)

Hydrograph



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: (new Subcat) Runoff Area=82,800 sf 0.00% Impervious Runoff Depth=6.40"
Flow Length=420' Slope=0.1000 '/' Tc=5.6 min CN=86 Runoff=13.47 cfs 1.014 af

Subcatchment1B: (new Subcat) Runoff Area=79,000 sf 0.00% Impervious Runoff Depth=6.40"
Flow Length=350' Slope=0.0800 '/' Tc=5.6 min CN=86 Runoff=12.85 cfs 0.967 af

Subcatchment2A: (new Subcat) Runoff Area=123,100 sf 0.00% Impervious Runoff Depth=6.40"
Flow Length=650' Slope=0.1000 '/' Tc=7.3 min CN=86 Runoff=19.20 cfs 1.507 af

Subcatchment2B: (new Subcat) Runoff Area=119,300 sf 0.00% Impervious Runoff Depth=6.40"
Flow Length=330' Slope=0.0800 '/' Tc=5.5 min CN=86 Runoff=19.45 cfs 1.461 af

Subcatchment2C: (new Subcat) Runoff Area=35,600 sf 0.00% Impervious Runoff Depth=6.40"
Flow Length=300' Slope=0.0900 '/' Tc=5.0 min CN=86 Runoff=5.91 cfs 0.436 af

Subcatchment3: (new Subcat) Runoff Area=141,500 sf 0.00% Impervious Runoff Depth=6.40"
Flow Length=400' Slope=0.0800 '/' Tc=6.0 min CN=86 Runoff=22.83 cfs 1.732 af

Link DP1: (new Link) Inflow=26.33 cfs 1.981 af
Primary=26.33 cfs 1.981 af

Link DP2: (new Link) Inflow=44.14 cfs 3.403 af
Primary=44.14 cfs 3.403 af

Total Runoff Area = 13.345 ac Runoff Volume = 7.116 af Average Runoff Depth = 6.40"
100.00% Pervious = 13.345 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1A: (new Subcat)

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

Runoff = 13.47 cfs @ 12.08 hrs, Volume= 1.014 af, Depth= 6.40"
 Routed to Link DP1 : (new Link)

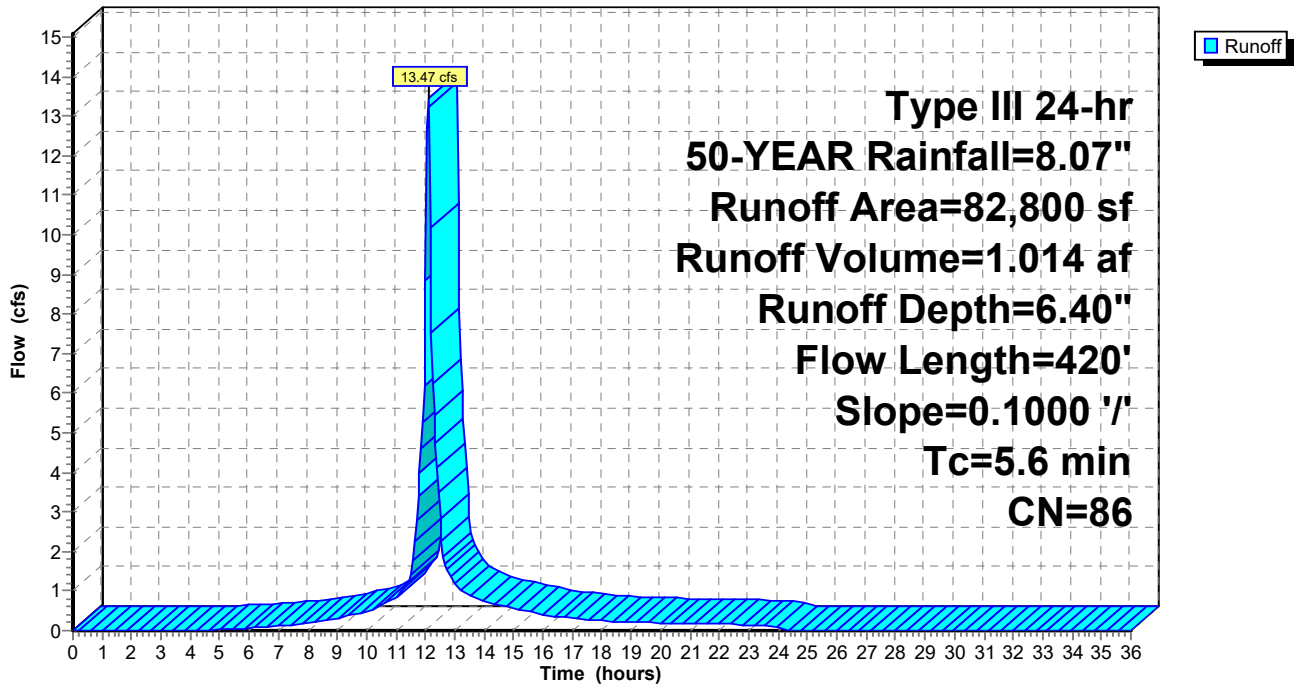
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, $dt= 0.05$ hrs
 Type III 24-hr 50-YEAR Rainfall=8.07"

Area (sf)	CN	Description
82,800	86	<50% Grass cover, Poor, HSG C
82,800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.8	370	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	420	Total			

Subcatchment 1A: (new Subcat)

Hydrograph



Summary for Subcatchment 1B: (new Subcat)

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

Runoff = 12.85 cfs @ 12.08 hrs, Volume= 0.967 af, Depth= 6.40"
 Routed to Link DP1 : (new Link)

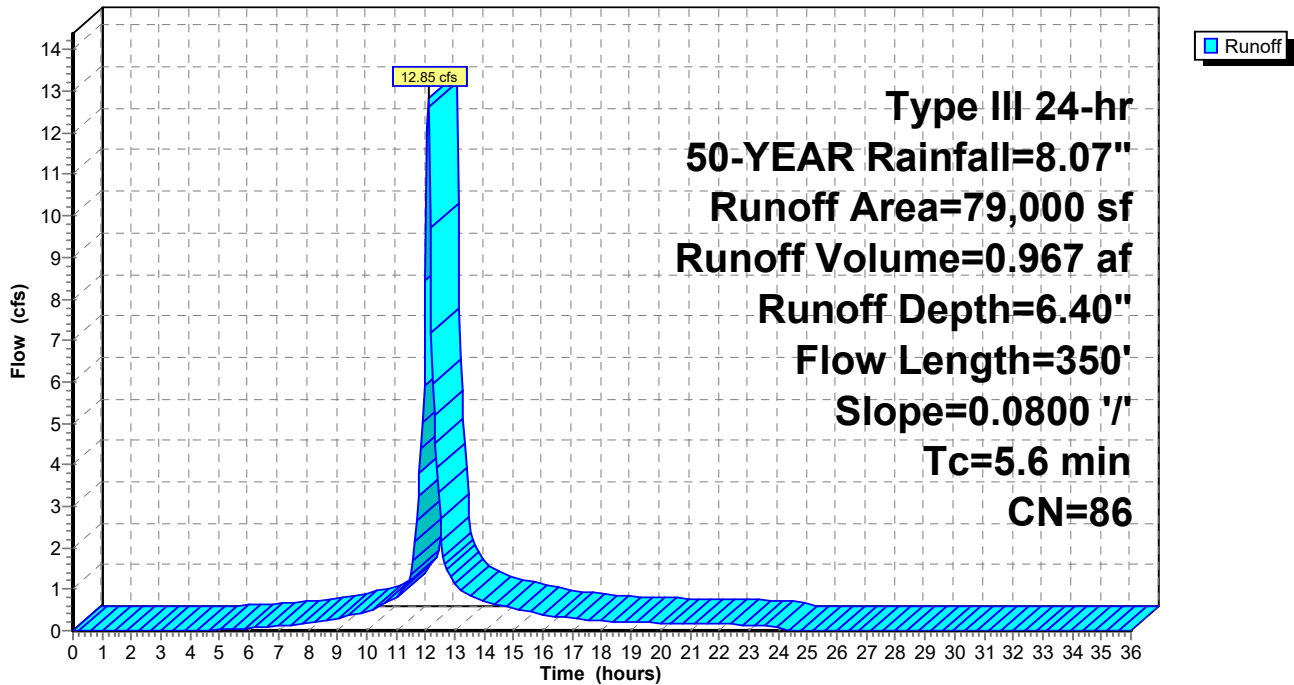
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YEAR Rainfall=8.07"

Area (sf)	CN	Description
76,900	86	<50% Grass cover, Poor, HSG C
2,100	89	<50% Grass cover, Poor, HSG D
79,000	86	Weighted Average
79,000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.5	300	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	350	Total			

Subcatchment 1B: (new Subcat)

Hydrograph



Summary for Subcatchment 2A: (new Subcat)

Runoff = 19.20 cfs @ 12.10 hrs, Volume= 1.507 af, Depth= 6.40"
 Routed to Link DP2 : (new Link)

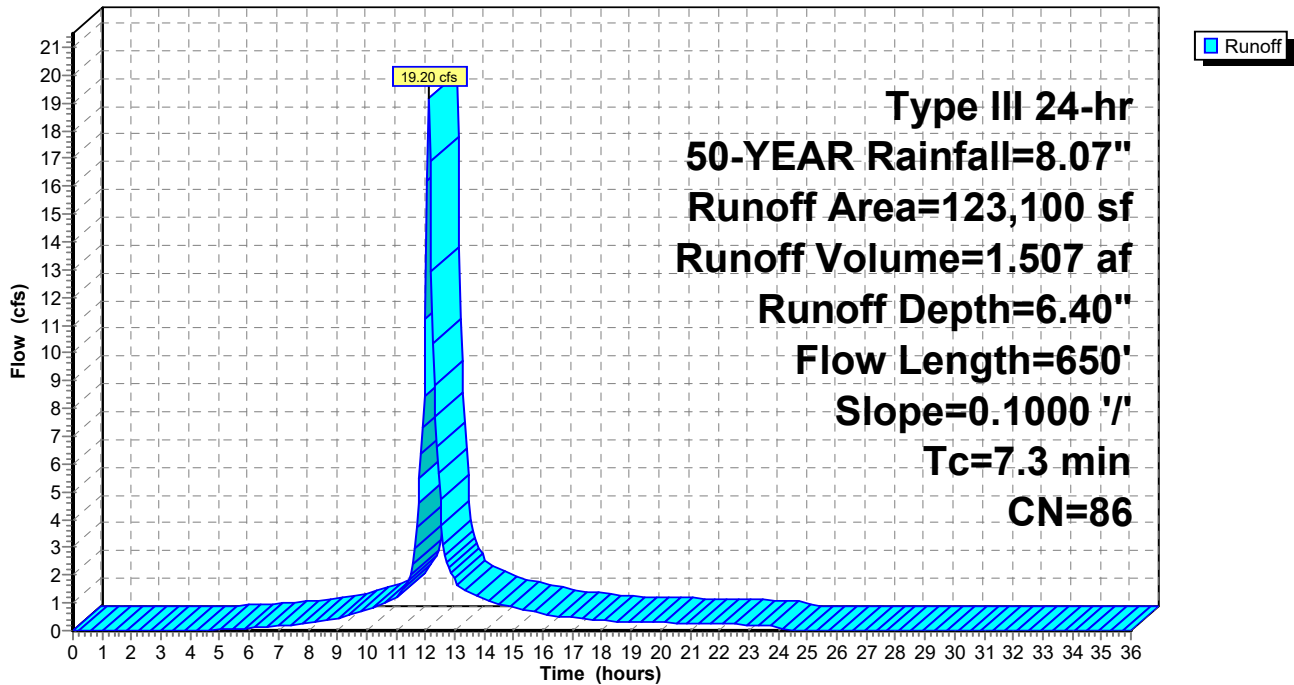
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YEAR Rainfall=8.07"

Area (sf)	CN	Description
103,500	86	<50% Grass cover, Poor, HSG C
19,600	89	<50% Grass cover, Poor, HSG D
123,100	86	Weighted Average
123,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
4.5	600	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.3	650	Total			

Subcatchment 2A: (new Subcat)

Hydrograph



Summary for Subcatchment 2B: (new Subcat)

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

Runoff = 19.45 cfs @ 12.08 hrs, Volume= 1.461 af, Depth= 6.40"
 Routed to Link DP2 : (new Link)

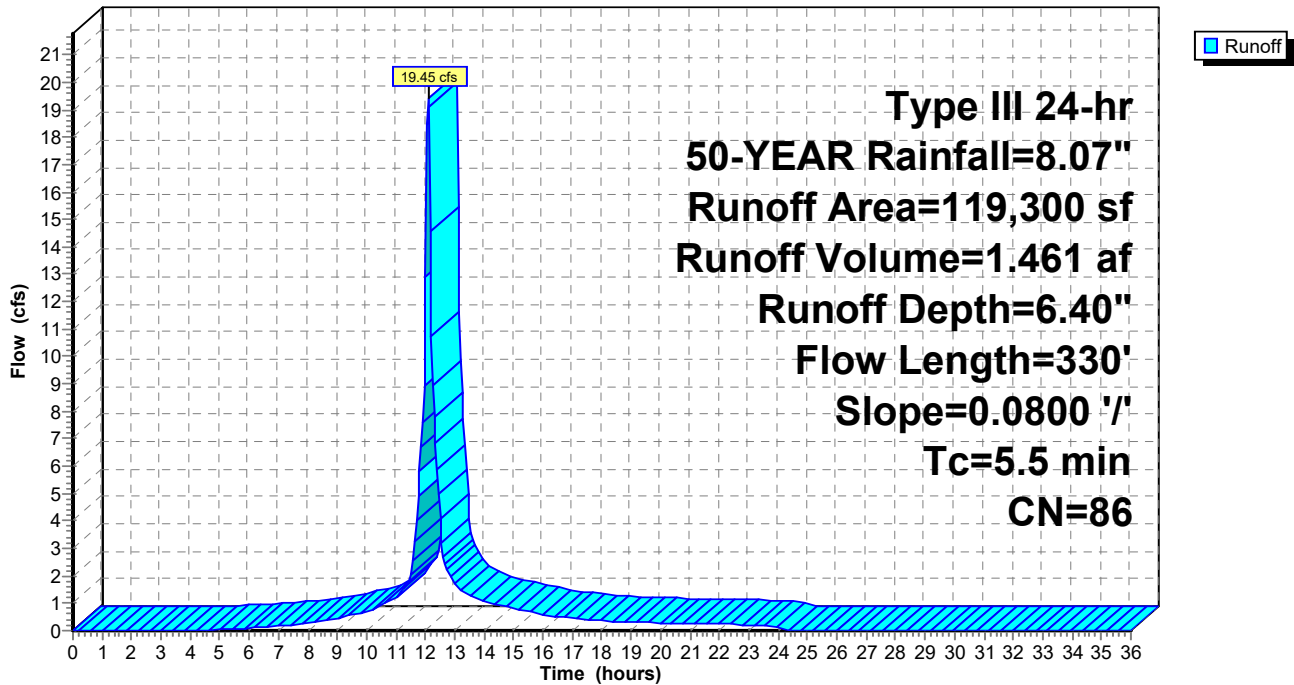
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YEAR Rainfall=8.07"

Area (sf)	CN	Description
119,300	86	<50% Grass cover, Poor, HSG C
119,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.4	280	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	330	Total			

Subcatchment 2B: (new Subcat)

Hydrograph



Summary for Subcatchment 2C: (new Subcat)

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

Runoff = 5.91 cfs @ 12.07 hrs, Volume= 0.436 af, Depth= 6.40"
 Routed to Link DP2 : (new Link)

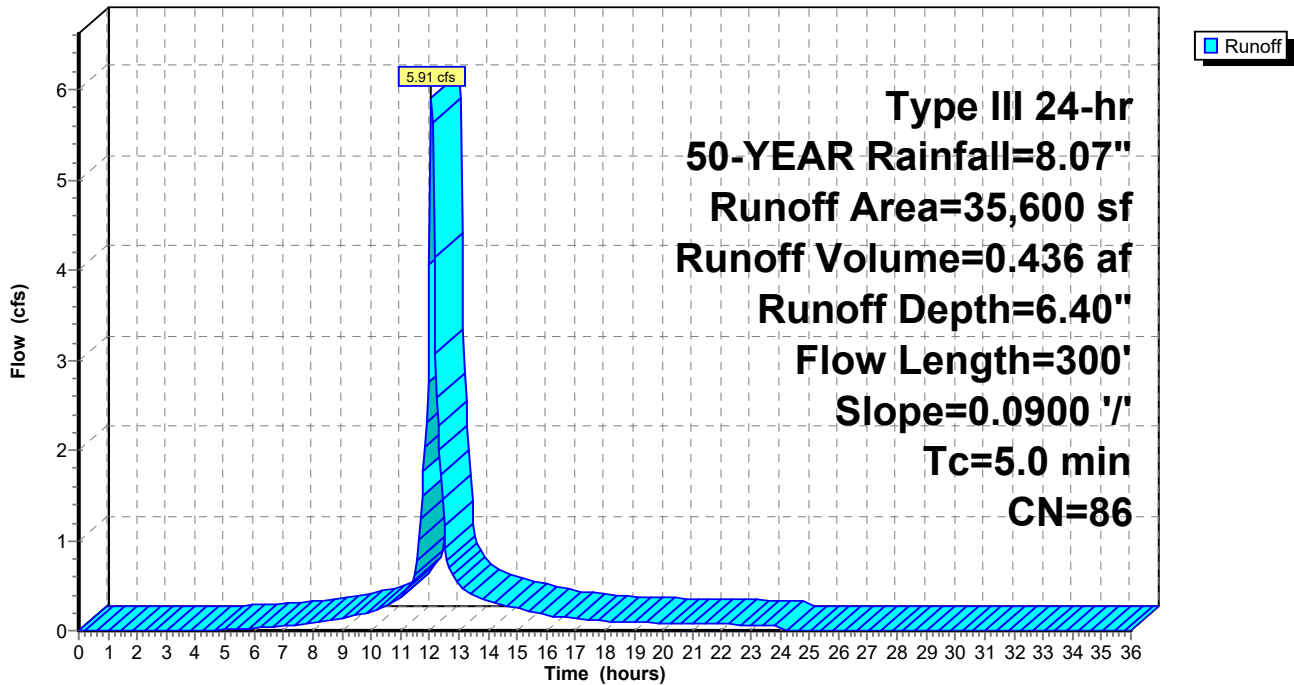
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YEAR Rainfall=8.07"

Area (sf)	CN	Description
35,600	86	<50% Grass cover, Poor, HSG C
35,600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	50	0.0900	0.28		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.0	250	0.0900	2.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.0	300	Total			

Subcatchment 2C: (new Subcat)

Hydrograph



Summary for Subcatchment 3: (new Subcat)

Runoff = 22.83 cfs @ 12.09 hrs, Volume= 1.732 af, Depth= 6.40"

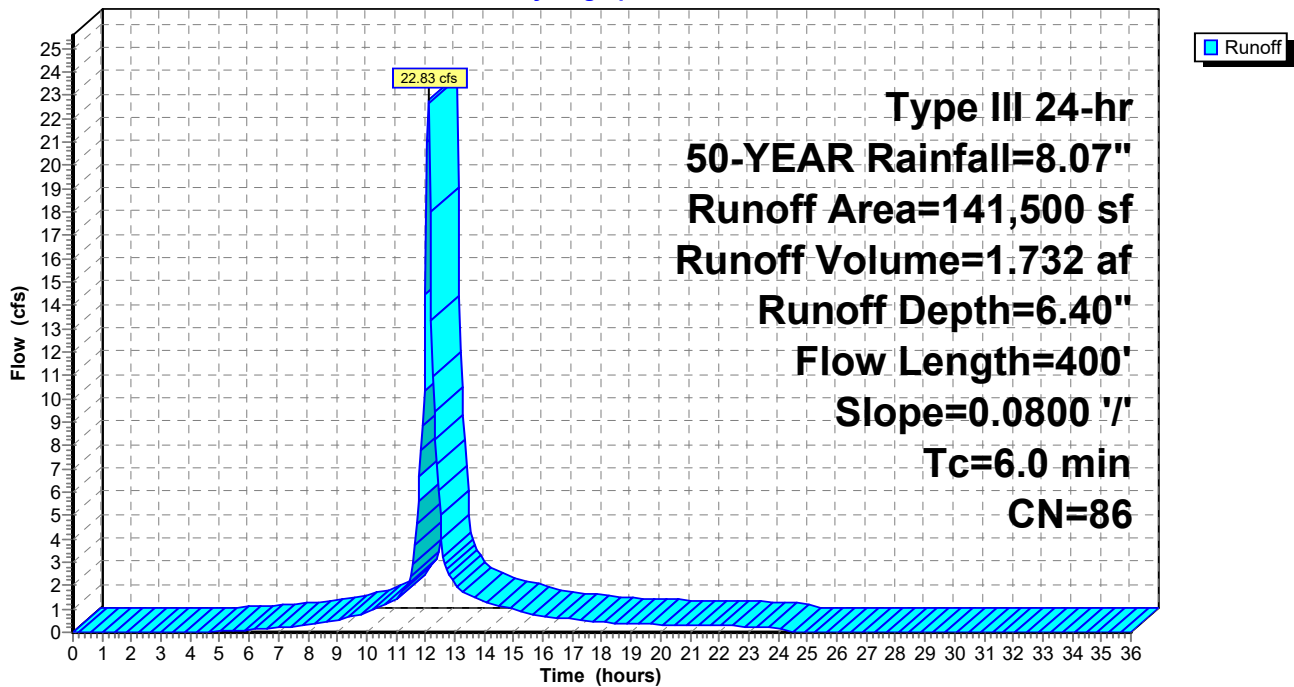
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YEAR Rainfall=8.07"

Area (sf)	CN	Description
141,500	86	<50% Grass cover, Poor, HSG C
141,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.9	350	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.0	400	Total			

Subcatchment 3: (new Subcat)

Hydrograph



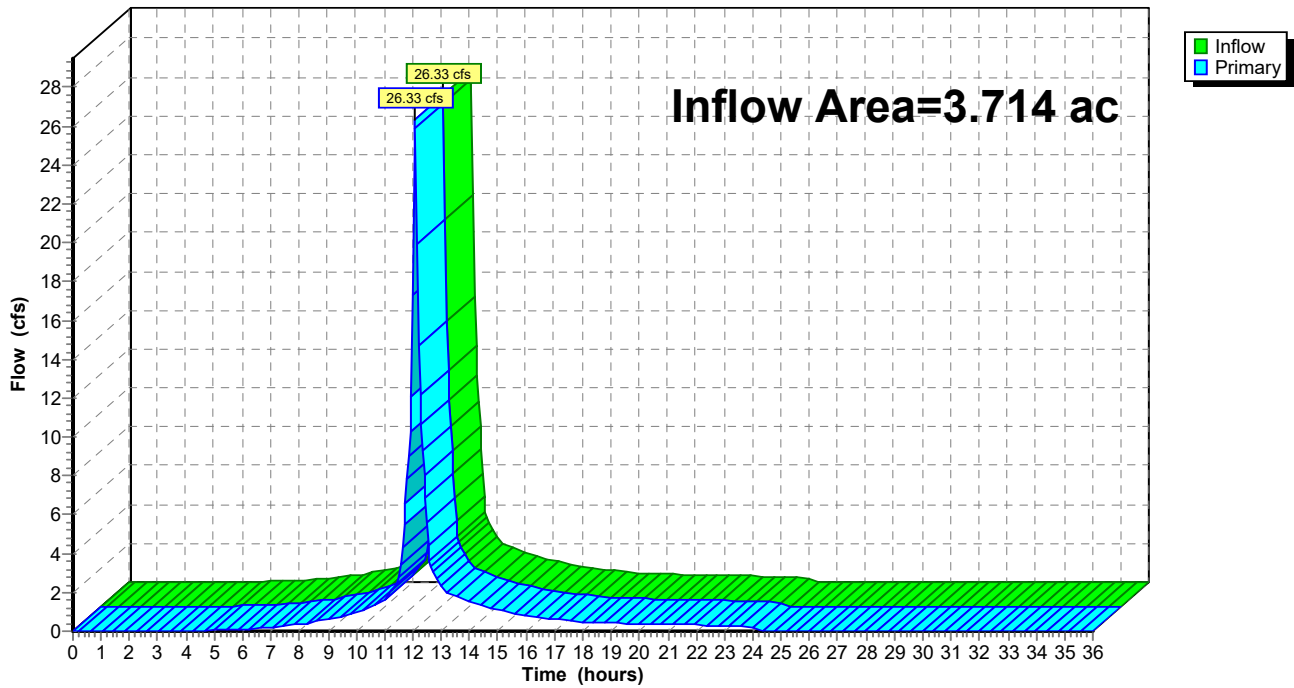
Summary for Link DP1: (new Link)

Inflow Area = 3.714 ac, 0.00% Impervious, Inflow Depth = 6.40" for 50-YEAR event
Inflow = 26.33 cfs @ 12.08 hrs, Volume= 1.981 af
Primary = 26.33 cfs @ 12.08 hrs, Volume= 1.981 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP1: (new Link)

Hydrograph



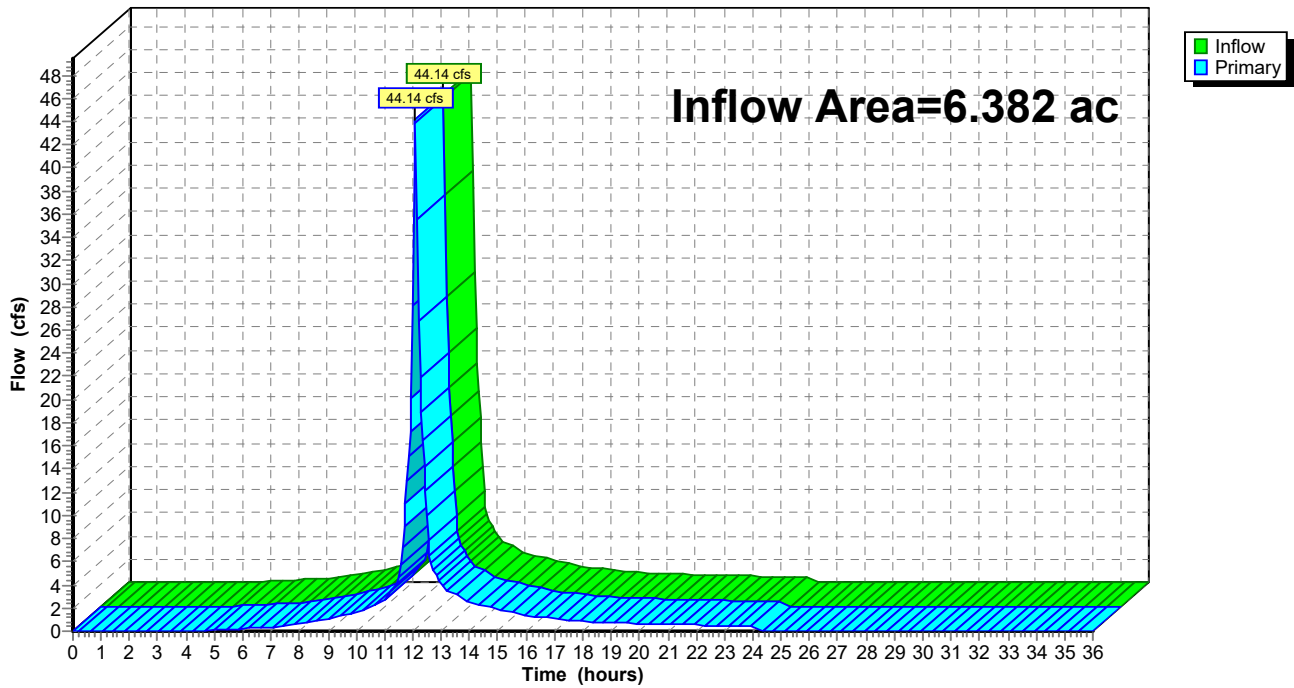
Summary for Link DP2: (new Link)

Inflow Area = 6.382 ac, 0.00% Impervious, Inflow Depth = 6.40" for 50-YEAR event
Inflow = 44.14 cfs @ 12.09 hrs, Volume= 3.403 af
Primary = 44.14 cfs @ 12.09 hrs, Volume= 3.403 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP2: (new Link)

Hydrograph



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: (new Subcat) Runoff Area=82,800 sf 0.00% Impervious Runoff Depth=7.50"
Flow Length=420' Slope=0.1000 '/' Tc=5.6 min CN=86 Runoff=15.65 cfs 1.188 af

Subcatchment1B: (new Subcat) Runoff Area=79,000 sf 0.00% Impervious Runoff Depth=7.50"
Flow Length=350' Slope=0.0800 '/' Tc=5.6 min CN=86 Runoff=14.93 cfs 1.133 af

Subcatchment2A: (new Subcat) Runoff Area=123,100 sf 0.00% Impervious Runoff Depth=7.50"
Flow Length=650' Slope=0.1000 '/' Tc=7.3 min CN=86 Runoff=22.30 cfs 1.766 af

Subcatchment2B: (new Subcat) Runoff Area=119,300 sf 0.00% Impervious Runoff Depth=7.50"
Flow Length=330' Slope=0.0800 '/' Tc=5.5 min CN=86 Runoff=22.59 cfs 1.711 af

Subcatchment2C: (new Subcat) Runoff Area=35,600 sf 0.00% Impervious Runoff Depth=7.50"
Flow Length=300' Slope=0.0900 '/' Tc=5.0 min CN=86 Runoff=6.87 cfs 0.511 af

Subcatchment3: (new Subcat) Runoff Area=141,500 sf 0.00% Impervious Runoff Depth=7.50"
Flow Length=400' Slope=0.0800 '/' Tc=6.0 min CN=86 Runoff=26.52 cfs 2.030 af

Link DP1: (new Link) Inflow=30.57 cfs 2.321 af
Primary=30.57 cfs 2.321 af

Link DP2: (new Link) Inflow=51.27 cfs 3.988 af
Primary=51.27 cfs 3.988 af

Total Runoff Area = 13.345 ac Runoff Volume = 8.339 af Average Runoff Depth = 7.50"
100.00% Pervious = 13.345 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1A: (new Subcat)

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

Runoff = 15.65 cfs @ 12.08 hrs, Volume= 1.188 af, Depth= 7.50"
 Routed to Link DP1 : (new Link)

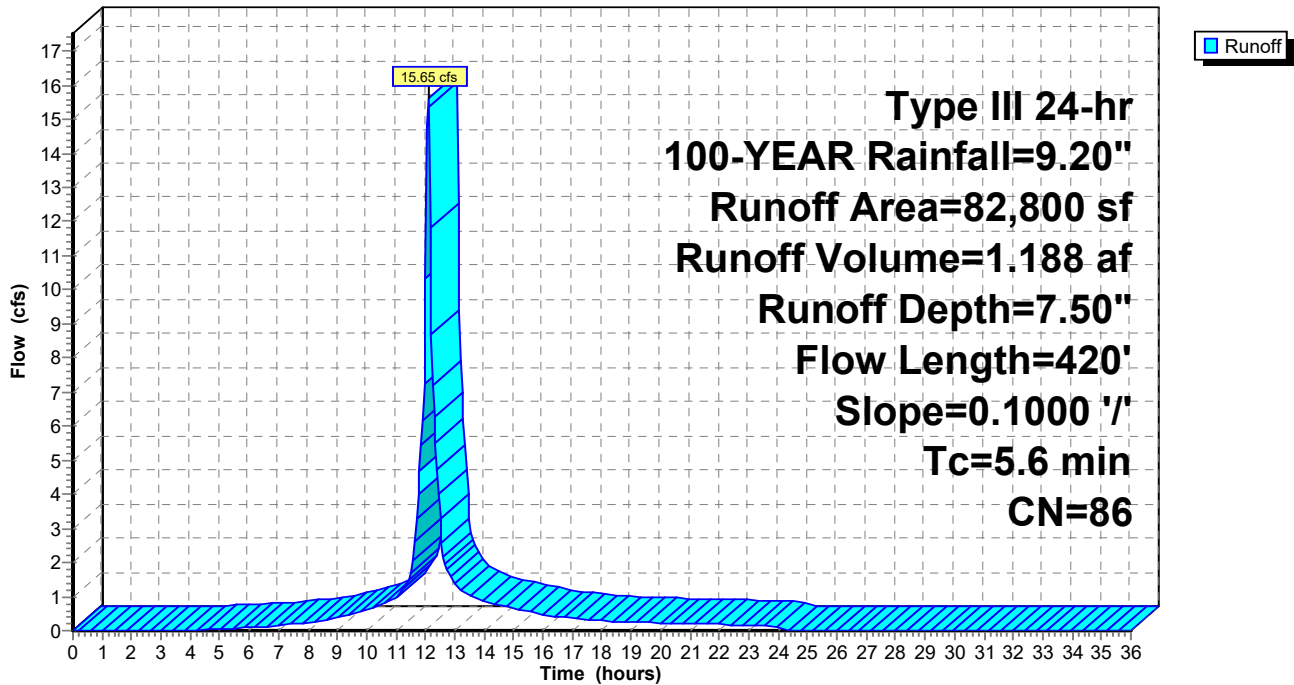
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YEAR Rainfall=9.20"

Area (sf)	CN	Description
82,800	86	<50% Grass cover, Poor, HSG C
82,800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.8	370	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	420	Total			

Subcatchment 1A: (new Subcat)

Hydrograph



Summary for Subcatchment 1B: (new Subcat)

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

Runoff = 14.93 cfs @ 12.08 hrs, Volume= 1.133 af, Depth= 7.50"
 Routed to Link DP1 : (new Link)

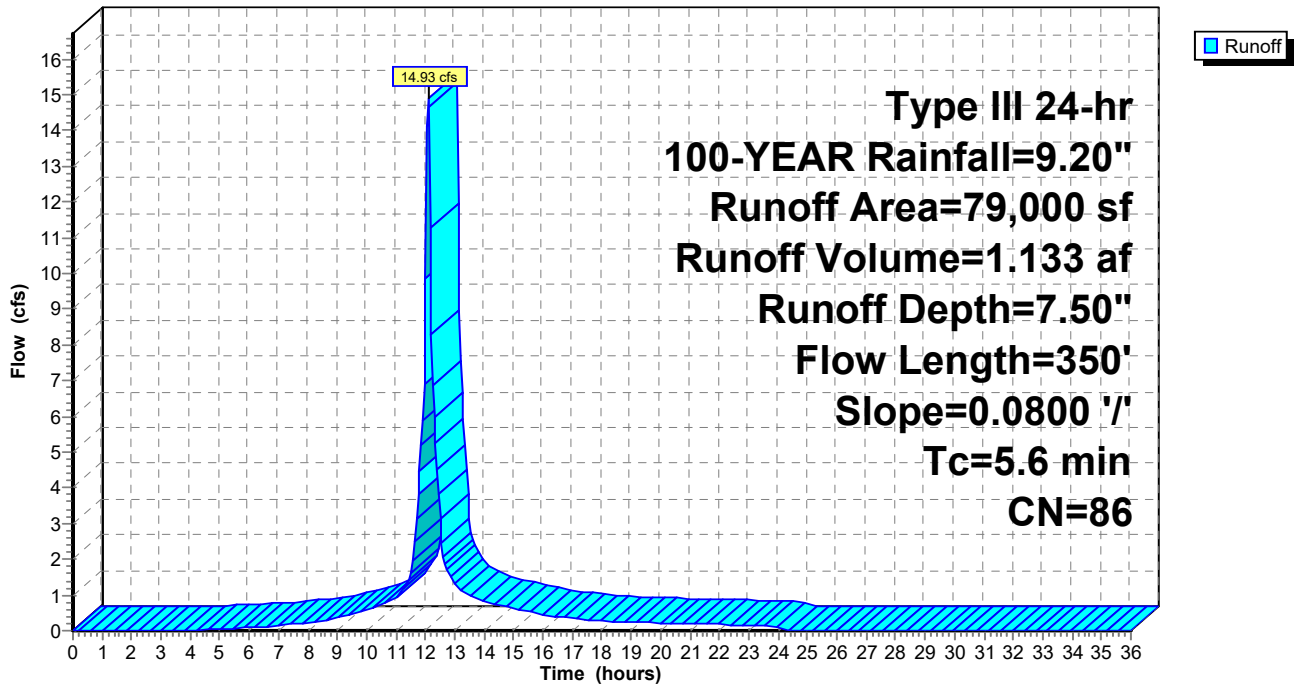
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YEAR Rainfall=9.20"

Area (sf)	CN	Description
76,900	86	<50% Grass cover, Poor, HSG C
2,100	89	<50% Grass cover, Poor, HSG D
79,000	86	Weighted Average
79,000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.5	300	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	350	Total			

Subcatchment 1B: (new Subcat)

Hydrograph



Summary for Subcatchment 2A: (new Subcat)

Runoff = 22.30 cfs @ 12.10 hrs, Volume= 1.766 af, Depth= 7.50"
 Routed to Link DP2 : (new Link)

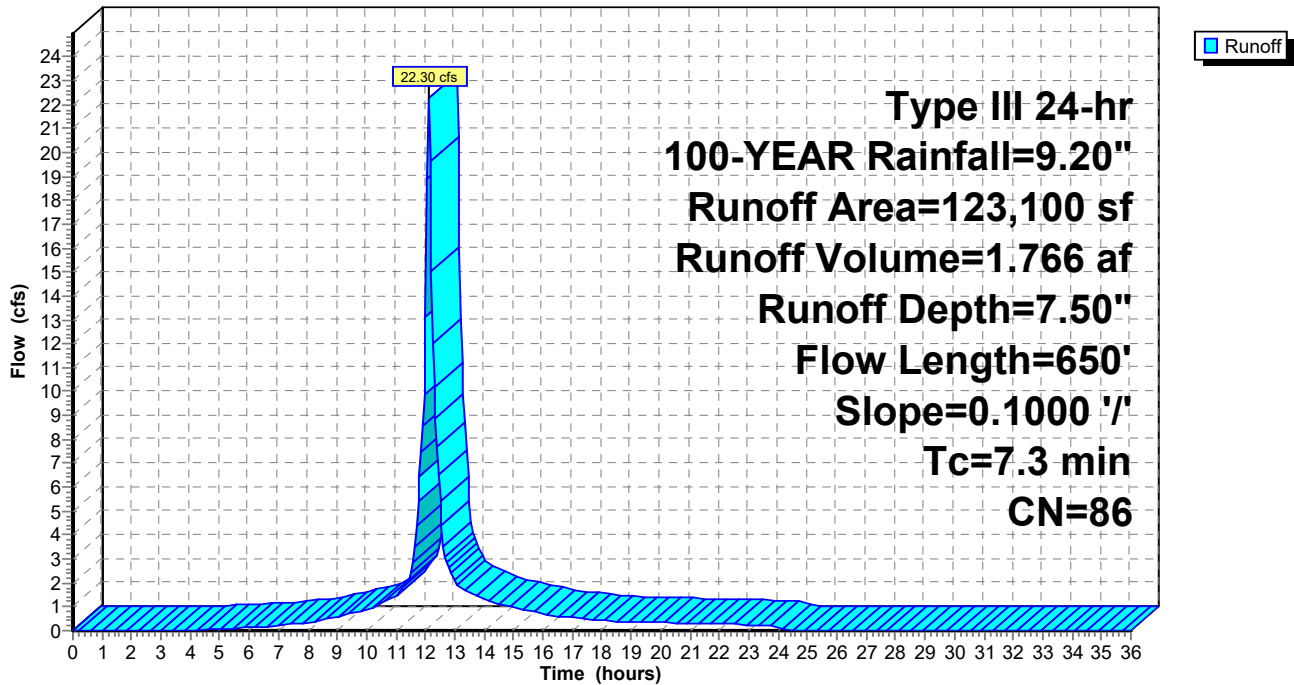
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YEAR Rainfall=9.20"

Area (sf)	CN	Description
103,500	86	<50% Grass cover, Poor, HSG C
19,600	89	<50% Grass cover, Poor, HSG D
123,100	86	Weighted Average
123,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
4.5	600	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.3	650	Total			

Subcatchment 2A: (new Subcat)

Hydrograph



Summary for Subcatchment 2B: (new Subcat)

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

Runoff = 22.59 cfs @ 12.08 hrs, Volume= 1.711 af, Depth= 7.50"
 Routed to Link DP2 : (new Link)

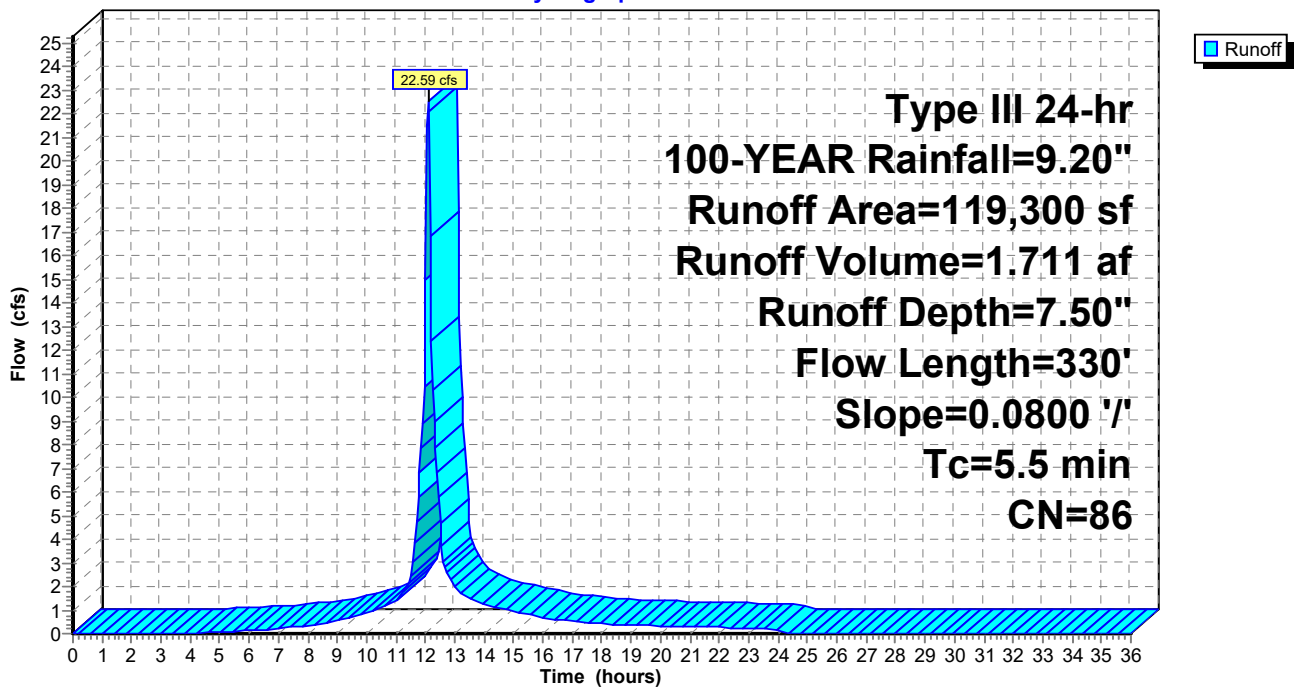
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, $dt= 0.05$ hrs
 Type III 24-hr 100-YEAR Rainfall=9.20"

Area (sf)	CN	Description
119,300	86	<50% Grass cover, Poor, HSG C
119,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.4	280	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	330	Total			

Subcatchment 2B: (new Subcat)

Hydrograph



Summary for Subcatchment 2C: (new Subcat)

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

Runoff = 6.87 cfs @ 12.07 hrs, Volume= 0.511 af, Depth= 7.50"
 Routed to Link DP2 : (new Link)

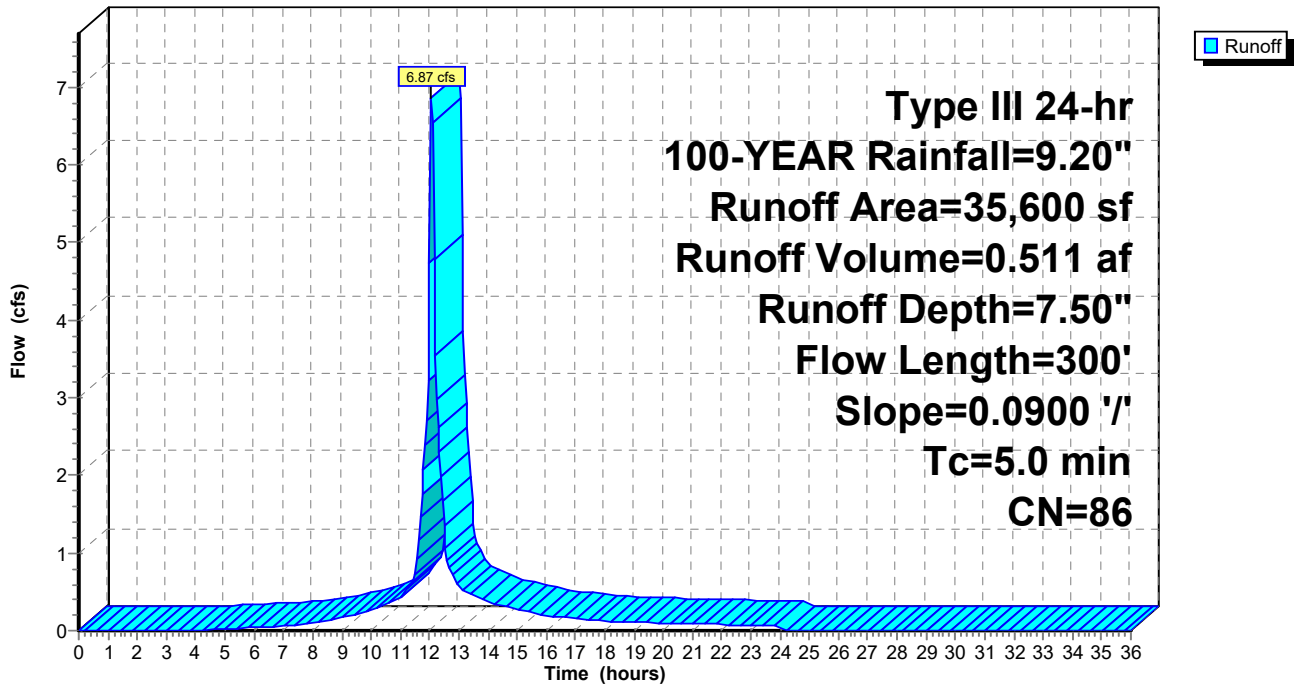
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YEAR Rainfall=9.20"

Area (sf)	CN	Description
35,600	86	<50% Grass cover, Poor, HSG C
35,600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	50	0.0900	0.28		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.0	250	0.0900	2.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.0	300	Total			

Subcatchment 2C: (new Subcat)

Hydrograph



Summary for Subcatchment 3: (new Subcat)

Runoff = 26.52 cfs @ 12.09 hrs, Volume= 2.030 af, Depth= 7.50"

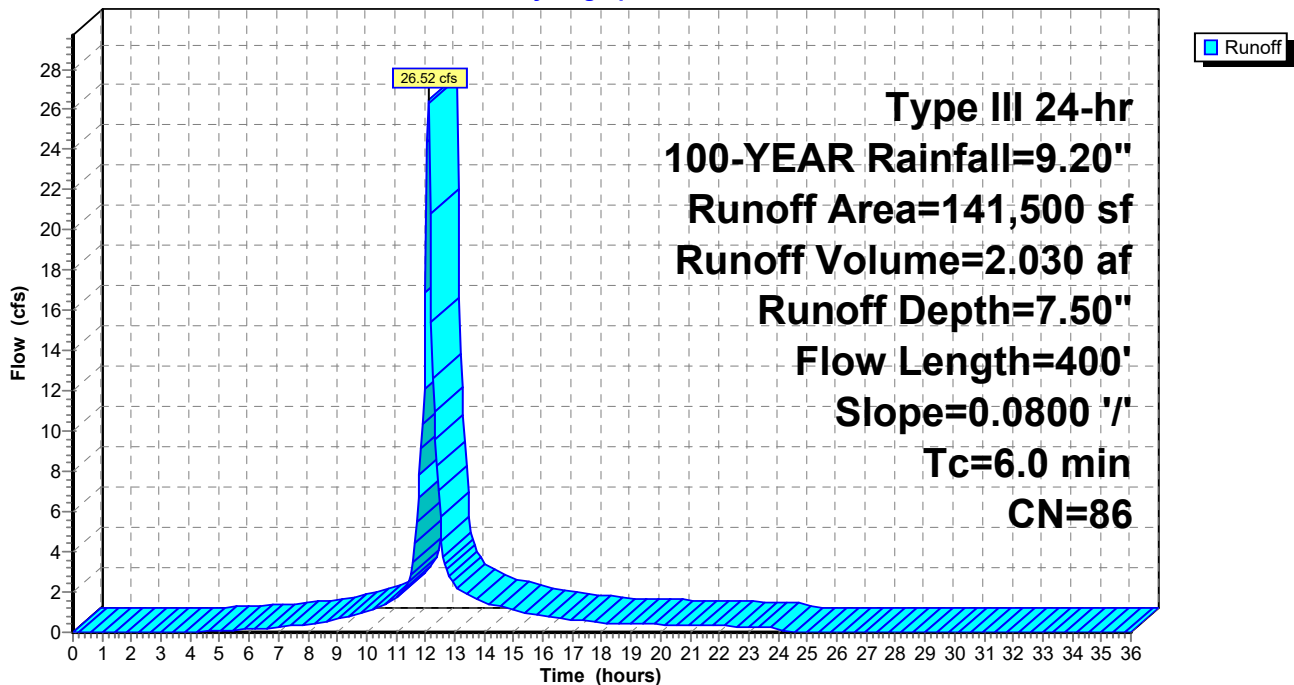
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YEAR Rainfall=9.20"

Area (sf)	CN	Description
141,500	86	<50% Grass cover, Poor, HSG C
141,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.9	350	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.0	400	Total			

Subcatchment 3: (new Subcat)

Hydrograph



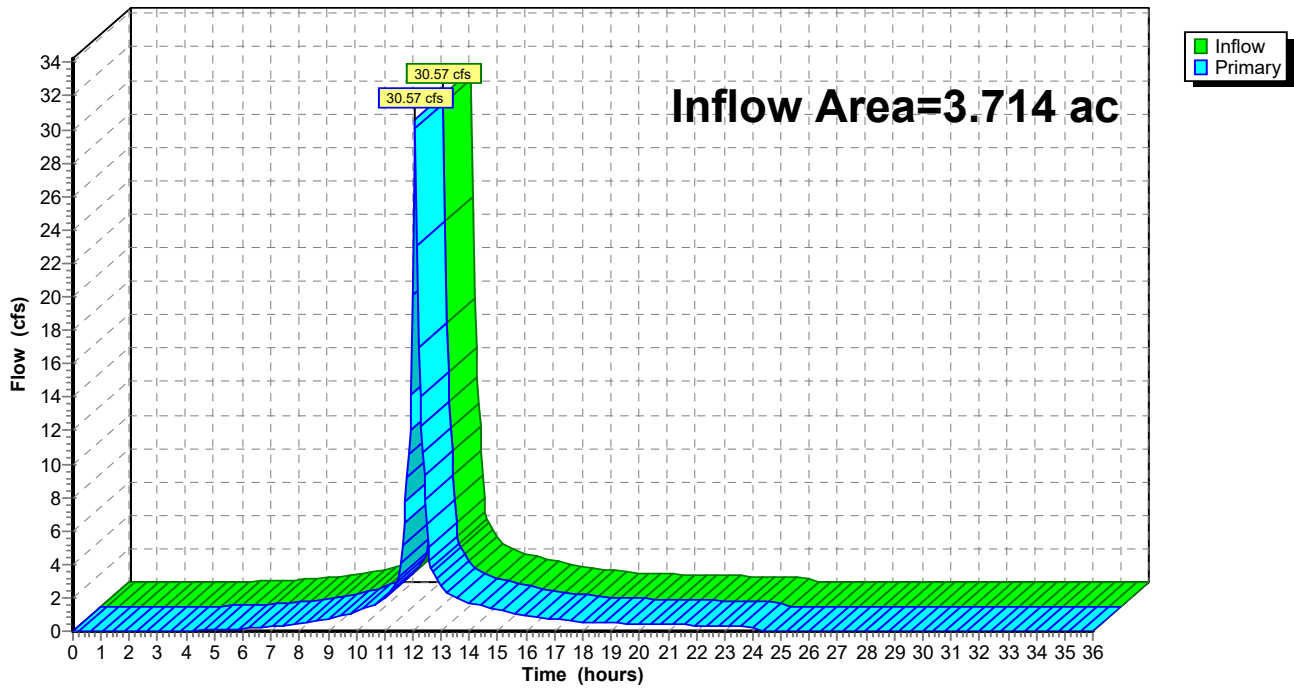
Summary for Link DP1: (new Link)

Inflow Area = 3.714 ac, 0.00% Impervious, Inflow Depth = 7.50" for 100-YEAR event
Inflow = 30.57 cfs @ 12.08 hrs, Volume= 2.321 af
Primary = 30.57 cfs @ 12.08 hrs, Volume= 2.321 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP1: (new Link)

Hydrograph



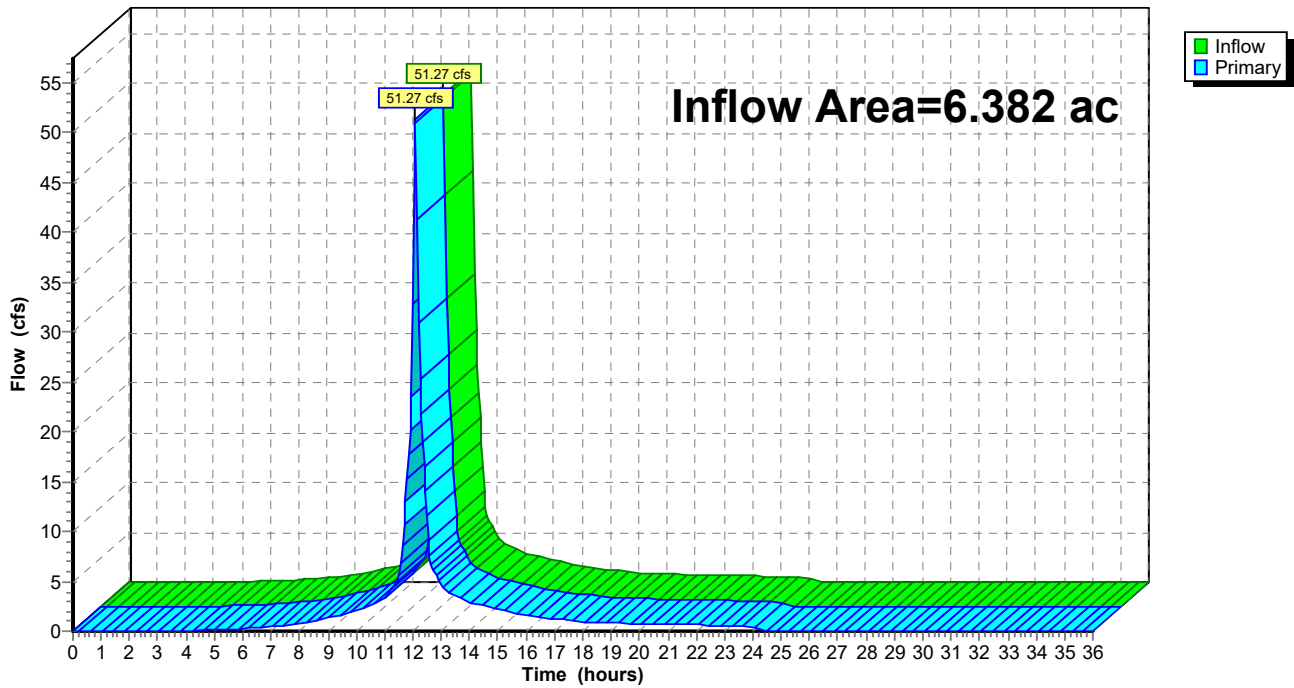
Summary for Link DP2: (new Link)

Inflow Area = 6.382 ac, 0.00% Impervious, Inflow Depth = 7.50" for 100-YEAR event
Inflow = 51.27 cfs @ 12.09 hrs, Volume= 3.988 af
Primary = 51.27 cfs @ 12.09 hrs, Volume= 3.988 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

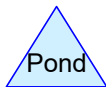
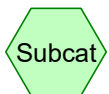
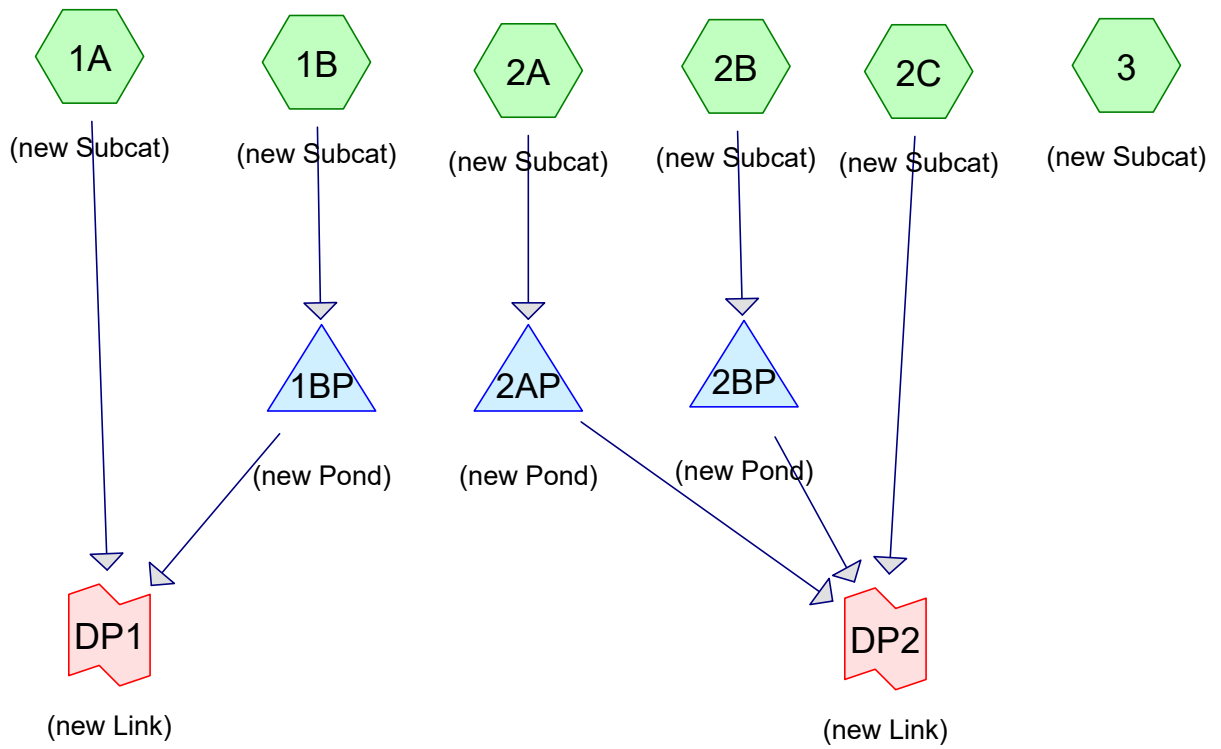
Link DP2: (new Link)

Hydrograph





HydroCAD Analysis: Proposed Conditions



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	3.46	2
2	25-YEAR	Type III 24-hr		Default	24.00	1	7.07	2
3	50-YEAR	Type III 24-hr		Default	24.00	1	8.07	2
4	100-YEAR	Type III 24-hr		Default	24.00	1	9.20	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
12.489	81	50-75% Grass cover, Fair, HSG C-D (1A, 1B, 2A, 2B, 2C, 3)
0.498	89	<50% Grass cover, Poor, HSG D (1B, 2A)
0.358	96	Gravel surface, HSG C-D (1A, 3)
13.345	82	TOTAL AREA

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
12.847	HSG C	1A, 1B, 2A, 2B, 2C, 3
0.498	HSG D	1B, 2A
0.000	Other	
13.345		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	12.489	0.000	0.000	12.489	50-75% Grass cover, Fair	1A, 1B, 2A, 2B, 2C, 3
0.000	0.000	0.000	0.498	0.000	0.498	<50% Grass cover, Poor	1B, 2A
0.000	0.000	0.358	0.000	0.000	0.358	Gravel surface	1A, 3
0.000	0.000	12.847	0.498	0.000	13.345	TOTAL AREA	

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: (new Subcat) Runoff Area=82,800 sf 0.00% Impervious Runoff Depth=1.75"
 Flow Length=420' Slope=0.1000 '/' Tc=5.6 min CN=82 Runoff=3.85 cfs 0.277 af

Subcatchment1B: (new Subcat) Runoff Area=79,000 sf 0.00% Impervious Runoff Depth=1.68"
 Flow Length=350' Slope=0.0800 '/' Tc=5.6 min CN=81 Runoff=3.52 cfs 0.253 af

Subcatchment2A: (new Subcat) Runoff Area=123,100 sf 0.00% Impervious Runoff Depth=1.75"
 Flow Length=650' Slope=0.1000 '/' Tc=7.3 min CN=82 Runoff=5.47 cfs 0.412 af

Subcatchment2B: (new Subcat) Runoff Area=119,300 sf 0.00% Impervious Runoff Depth=1.68"
 Flow Length=330' Slope=0.0800 '/' Tc=5.5 min CN=81 Runoff=5.32 cfs 0.383 af

Subcatchment2C: (new Subcat) Runoff Area=35,600 sf 0.00% Impervious Runoff Depth=1.68"
 Flow Length=300' Slope=0.0900 '/' Tc=5.0 min CN=81 Runoff=1.60 cfs 0.114 af

Subcatchment3: (new Subcat) Runoff Area=141,500 sf 0.00% Impervious Runoff Depth=1.75"
 Flow Length=400' Slope=0.0800 '/' Tc=6.0 min CN=82 Runoff=6.53 cfs 0.474 af

Pond 1BP: (new Pond) Peak Elev=1,149.10' Storage=0.100 af Inflow=3.52 cfs 0.253 af
 Discarded=0.13 cfs 0.193 af Primary=0.97 cfs 0.060 af Outflow=1.10 cfs 0.253 af

Pond 2AP: (new Pond) Peak Elev=1,145.18' Storage=0.140 af Inflow=5.47 cfs 0.412 af
 Discarded=0.17 cfs 0.266 af Primary=2.38 cfs 0.146 af Outflow=2.55 cfs 0.412 af

Pond 2BP: (new Pond) Peak Elev=1,169.11' Storage=0.159 af Inflow=5.32 cfs 0.383 af
 Discarded=0.20 cfs 0.300 af Primary=1.11 cfs 0.083 af Outflow=1.31 cfs 0.383 af

Link DP1: (new Link) Inflow=3.85 cfs 0.338 af
 Primary=3.85 cfs 0.338 af

Link DP2: (new Link) Inflow=3.56 cfs 0.343 af
 Primary=3.56 cfs 0.343 af

Total Runoff Area = 13.345 ac Runoff Volume = 1.913 af Average Runoff Depth = 1.72"
100.00% Pervious = 13.345 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1A: (new Subcat)

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

Runoff = 3.85 cfs @ 12.09 hrs, Volume= 0.277 af, Depth= 1.75"
 Routed to Link DP1 : (new Link)

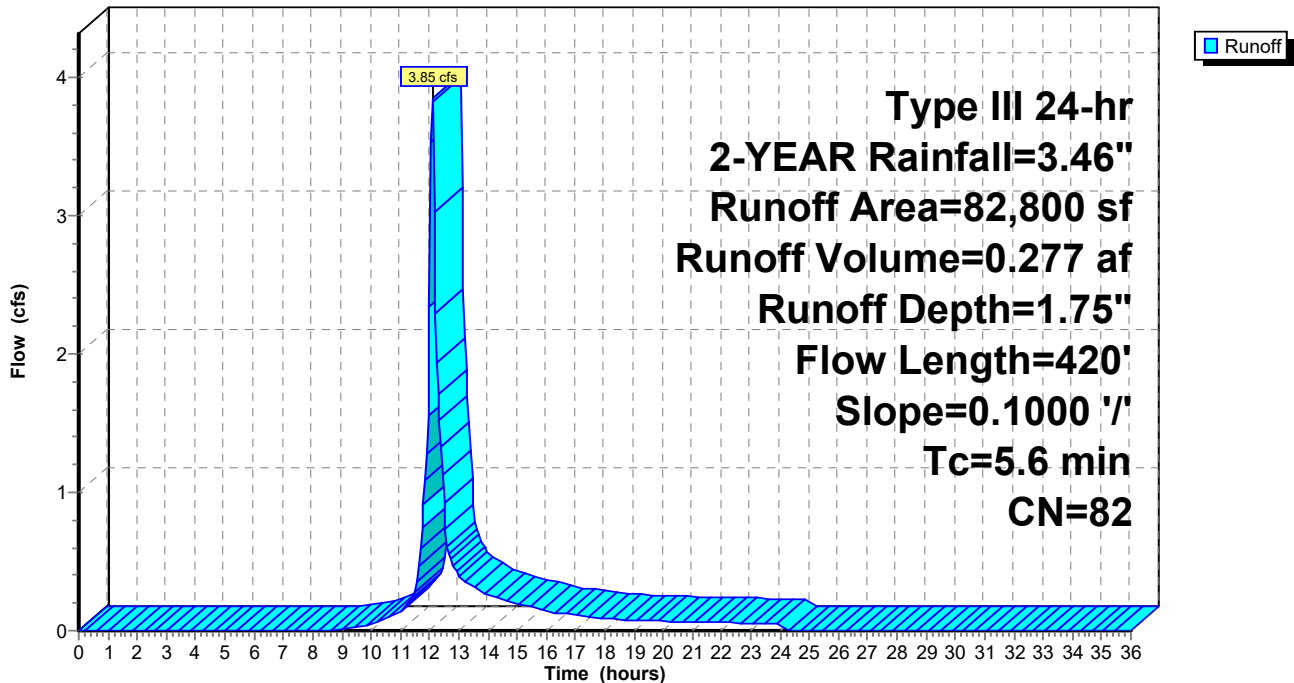
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YEAR Rainfall=3.46"

	Area (sf)	CN	Description
*	77,600	81	50-75% Grass cover, Fair, HSG C-D
*	5,200	96	Gravel surface, HSG C-D
	82,800	82	Weighted Average
	82,800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.8	370	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	420	Total			

Subcatchment 1A: (new Subcat)

Hydrograph



Summary for Subcatchment 1B: (new Subcat)

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

Runoff = 3.52 cfs @ 12.09 hrs, Volume= 0.253 af, Depth= 1.68"
 Routed to Pond 1BP : (new Pond)

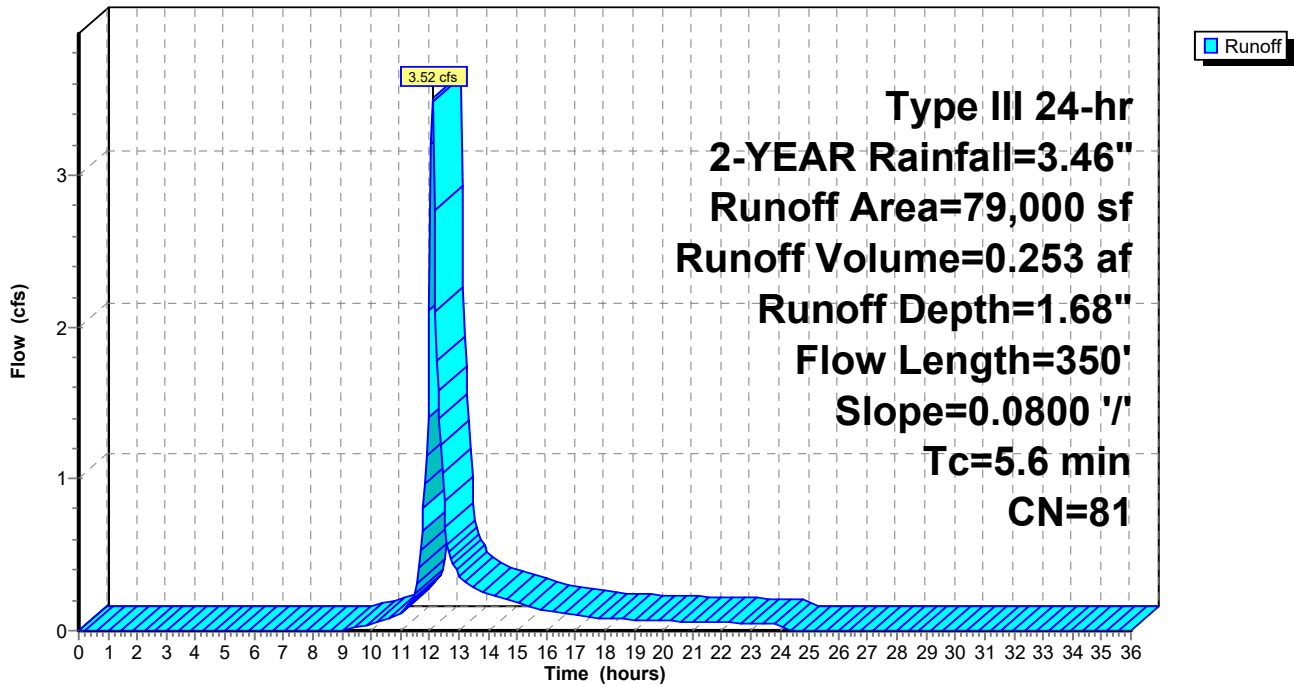
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YEAR Rainfall=3.46"

	Area (sf)	CN	Description
*	76,900	81	50-75% Grass cover, Fair, HSG C-D
	2,100	89	<50% Grass cover, Poor, HSG D
	79,000	81	Weighted Average
	79,000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.5	300	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	350	Total			

Subcatchment 1B: (new Subcat)

Hydrograph



Summary for Subcatchment 2A: (new Subcat)

Runoff = 5.47 cfs @ 12.11 hrs, Volume= 0.412 af, Depth= 1.75"
 Routed to Pond 2AP : (new Pond)

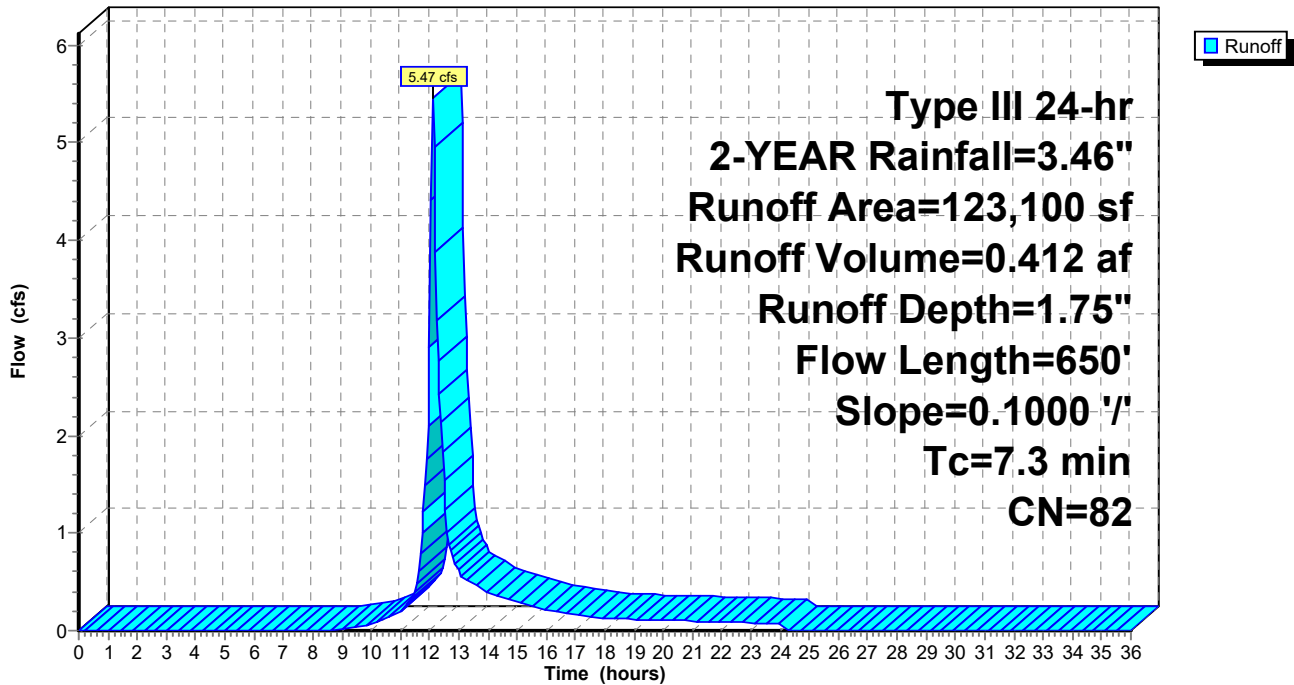
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YEAR Rainfall=3.46"

	Area (sf)	CN	Description
*	103,500	81	50-75% Grass cover, Fair, HSG C-D
	19,600	89	<50% Grass cover, Poor, HSG D
	123,100	82	Weighted Average
	123,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
4.5	600	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.3	650	Total			

Subcatchment 2A: (new Subcat)

Hydrograph



Summary for Subcatchment 2B: (new Subcat)

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

Runoff = 5.32 cfs @ 12.09 hrs, Volume= 0.383 af, Depth= 1.68"
 Routed to Pond 2BP : (new Pond)

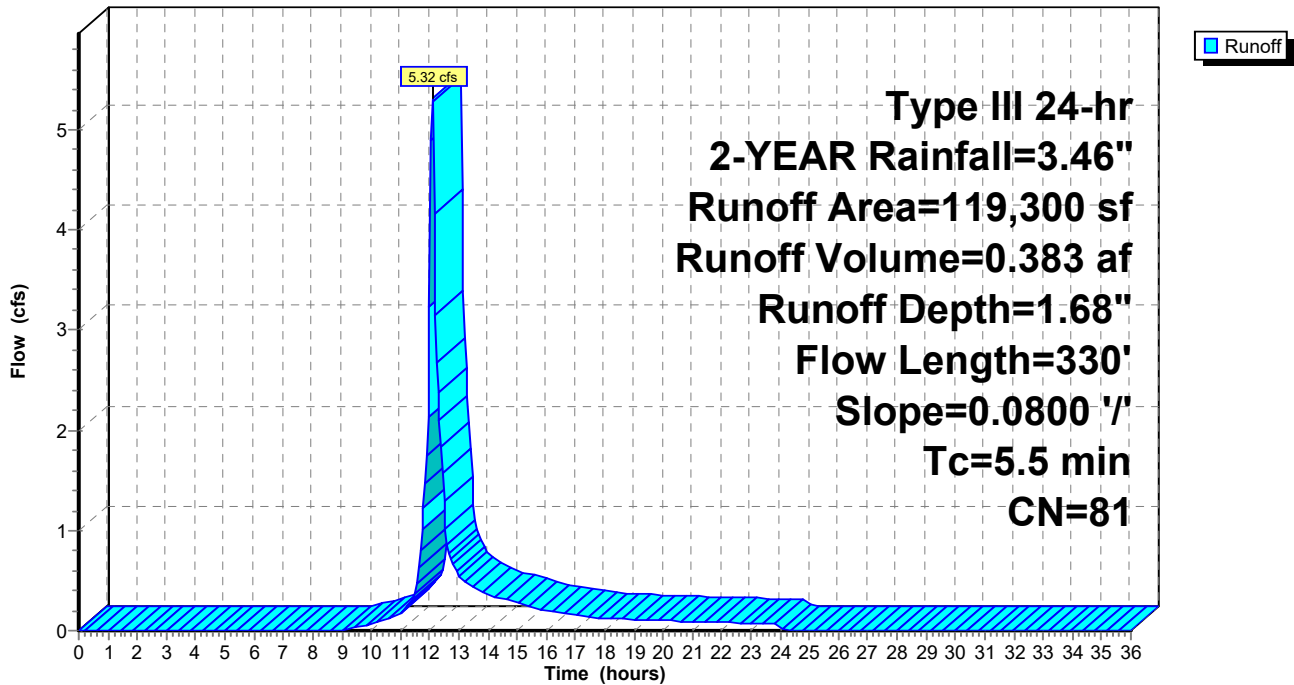
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YEAR Rainfall=3.46"

Area (sf)	CN	Description
* 119,300	81	50-75% Grass cover, Fair, HSG C-D
119,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.4	280	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	330	Total			

Subcatchment 2B: (new Subcat)

Hydrograph



Summary for Subcatchment 2C: (new Subcat)

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

Runoff = 1.60 cfs @ 12.08 hrs, Volume= 0.114 af, Depth= 1.68"
 Routed to Link DP2 : (new Link)

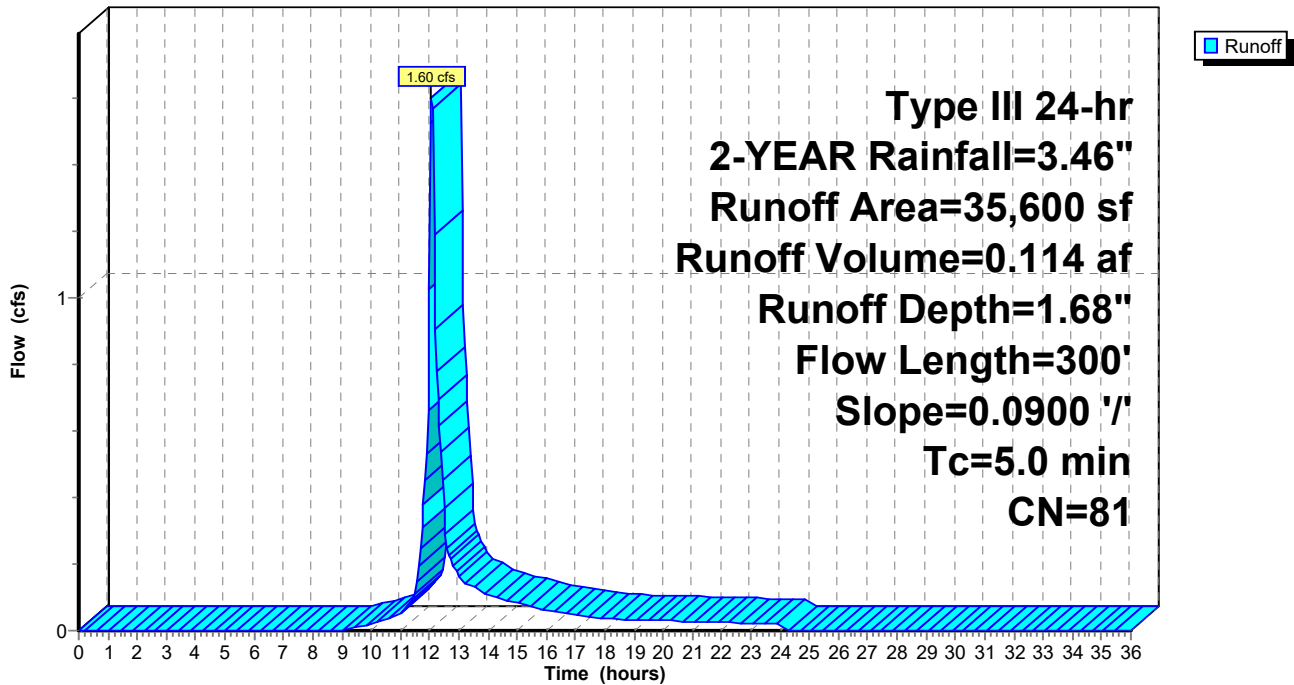
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YEAR Rainfall=3.46"

Area (sf)	CN	Description
* 35,600	81	50-75% Grass cover, Fair, HSG C-D
35,600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	50	0.0900	0.28		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.0	250	0.0900	2.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.0	300	Total			

Subcatchment 2C: (new Subcat)

Hydrograph



Summary for Subcatchment 3: (new Subcat)

Runoff = 6.53 cfs @ 12.09 hrs, Volume= 0.474 af, Depth= 1.75"

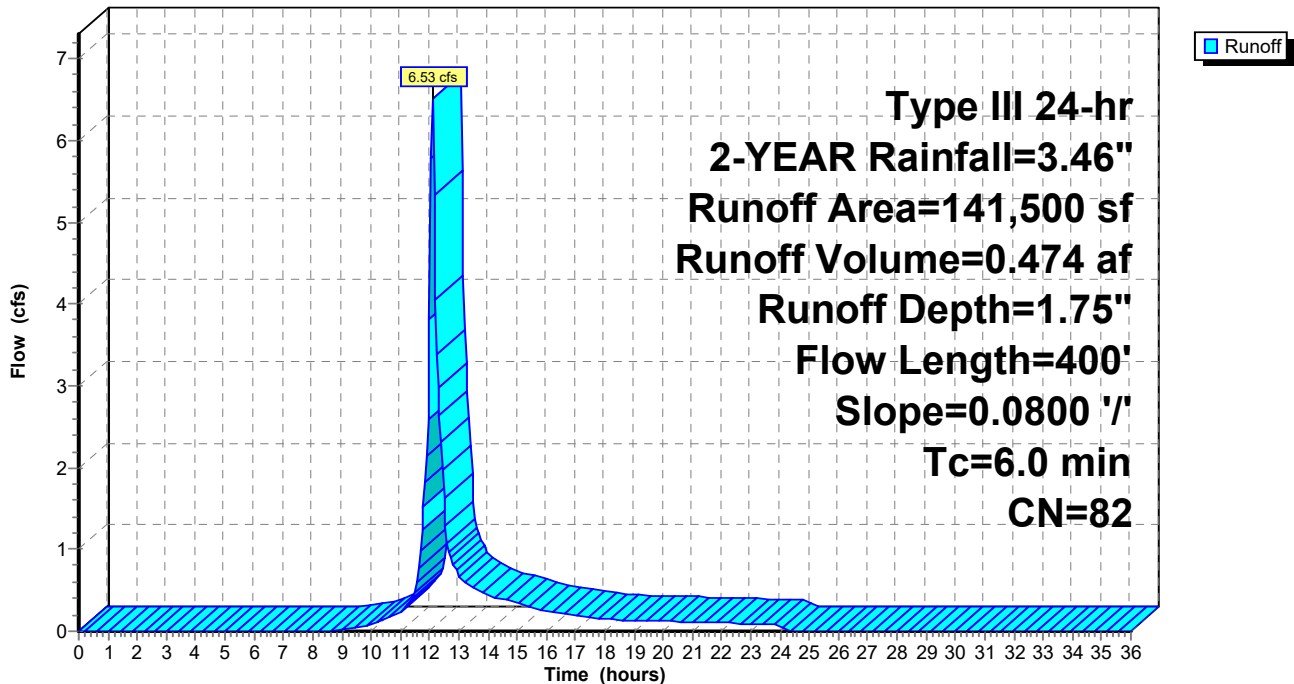
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-YEAR Rainfall=3.46"

	Area (sf)	CN	Description
*	131,100	81	50-75% Grass cover, Fair, HSG C-D
*	10,400	96	Gravel surface, HSG C-D
	141,500	82	Weighted Average
	141,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.9	350	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.0	400	Total			

Subcatchment 3: (new Subcat)

Hydrograph



Summary for Pond 1BP: (new Pond)

Inflow Area = 1.814 ac, 0.00% Impervious, Inflow Depth = 1.68" for 2-YEAR event
 Inflow = 3.52 cfs @ 12.09 hrs, Volume= 0.253 af
 Outflow = 1.10 cfs @ 12.44 hrs, Volume= 0.253 af, Atten= 69%, Lag= 21.2 min
 Discarded = 0.13 cfs @ 12.44 hrs, Volume= 0.193 af
 Primary = 0.97 cfs @ 12.44 hrs, Volume= 0.060 af
 Routed to Link DP1 : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,149.10' @ 12.44 hrs Surf.Area= 0.083 ac Storage= 0.100 af

Plug-Flow detention time= 300.9 min calculated for 0.253 af (100% of inflow)
 Center-of-Mass det. time= 301.3 min (1,136.6 - 835.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,147.50'	0.185 af	12.00'W x 157.00'L x 2.50'H Prismatic Z=3.0

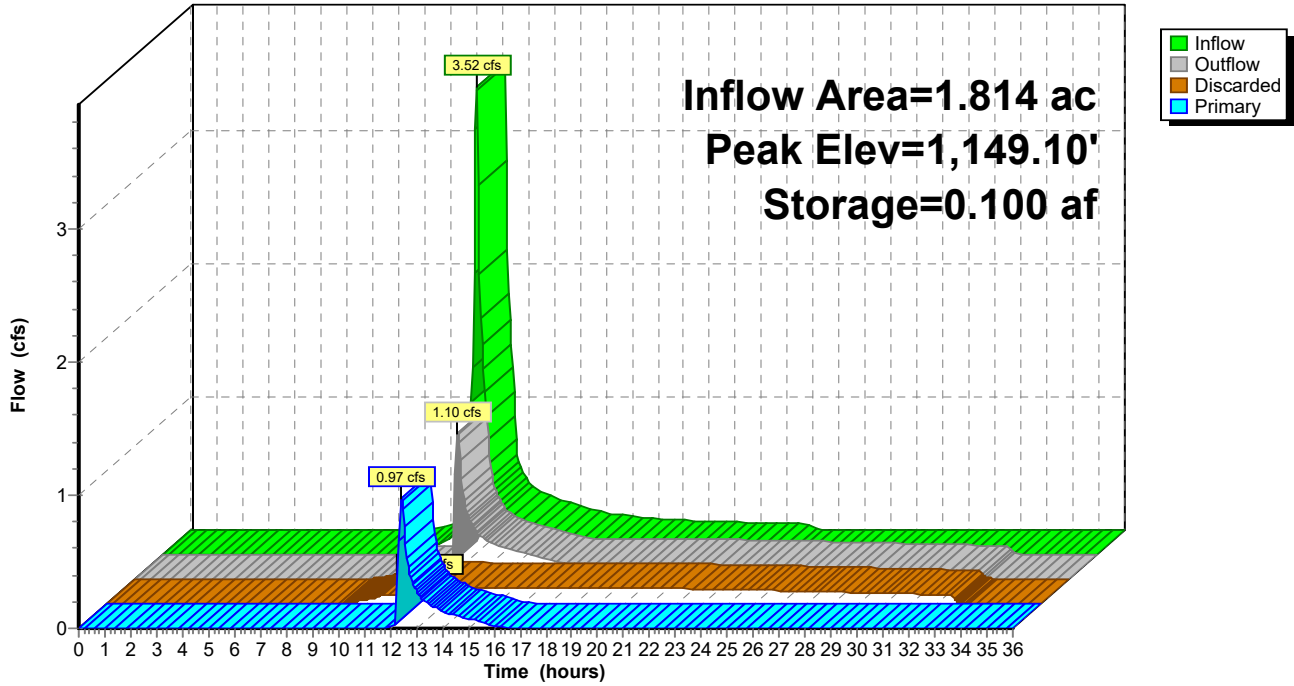
Device	Routing	Invert	Outlet Devices
#1	Primary	1,149.00'	12.0' long + 1.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	1,147.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1,100.00'

Discarded OutFlow Max=0.13 cfs @ 12.44 hrs HW=1,149.10' (Free Discharge)
 ↳2=Exfiltration (Controls 0.13 cfs)

Primary OutFlow Max=0.96 cfs @ 12.44 hrs HW=1,149.10' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 0.96 cfs @ 0.79 fps)

Pond 1BP: (new Pond)

Hydrograph



Summary for Pond 2AP: (new Pond)

Inflow Area = 2.826 ac, 0.00% Impervious, Inflow Depth = 1.75" for 2-YEAR event
 Inflow = 5.47 cfs @ 12.11 hrs, Volume= 0.412 af
 Outflow = 2.55 cfs @ 12.34 hrs, Volume= 0.412 af, Atten= 53%, Lag= 13.9 min
 Discarded = 0.17 cfs @ 12.34 hrs, Volume= 0.266 af
 Primary = 2.38 cfs @ 12.34 hrs, Volume= 0.146 af
 Routed to Link DP2 : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,145.18' @ 12.34 hrs Surf.Area= 0.107 ac Storage= 0.140 af

Plug-Flow detention time= 266.6 min calculated for 0.412 af (100% of inflow)
 Center-of-Mass det. time= 266.6 min (1,100.3 - 833.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,143.50'	0.237 af	15.00'W x 175.00'L x 2.50'H Prismatic Z=3.0

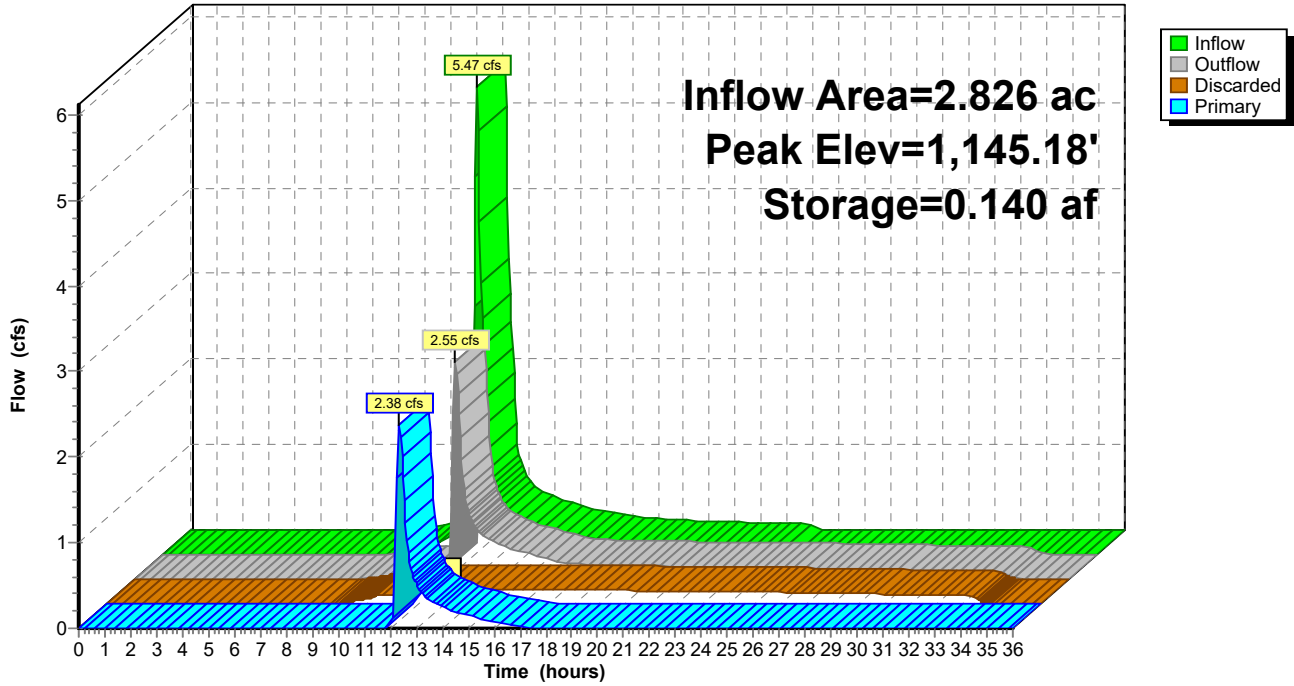
Device	Routing	Invert	Outlet Devices
#1	Primary	1,145.00'	12.0' long + 1.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	1,143.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1,100.00'

Discarded OutFlow Max=0.17 cfs @ 12.34 hrs HW=1,145.18' (Free Discharge)
 ↳2=Exfiltration (Controls 0.17 cfs)

Primary OutFlow Max=2.36 cfs @ 12.34 hrs HW=1,145.18' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir(Weir Controls 2.36 cfs @ 1.06 fps)

Pond 2AP: (new Pond)

Hydrograph



Summary for Pond 2BP: (new Pond)

Inflow Area = 2.739 ac, 0.00% Impervious, Inflow Depth = 1.68" for 2-YEAR event
 Inflow = 5.32 cfs @ 12.09 hrs, Volume= 0.383 af
 Outflow = 1.31 cfs @ 12.50 hrs, Volume= 0.383 af, Atten= 75%, Lag= 24.9 min
 Discarded = 0.20 cfs @ 12.50 hrs, Volume= 0.300 af
 Primary = 1.11 cfs @ 12.50 hrs, Volume= 0.083 af
 Routed to Link DP2 : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,169.11' @ 12.50 hrs Surf.Area= 0.129 ac Storage= 0.159 af

Plug-Flow detention time= 312.4 min calculated for 0.382 af (100% of inflow)
 Center-of-Mass det. time= 312.7 min (1,148.0 - 835.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,167.50'	0.289 af	12.00'W x 250.00'L x 2.50'H Prismatic Z=3.0

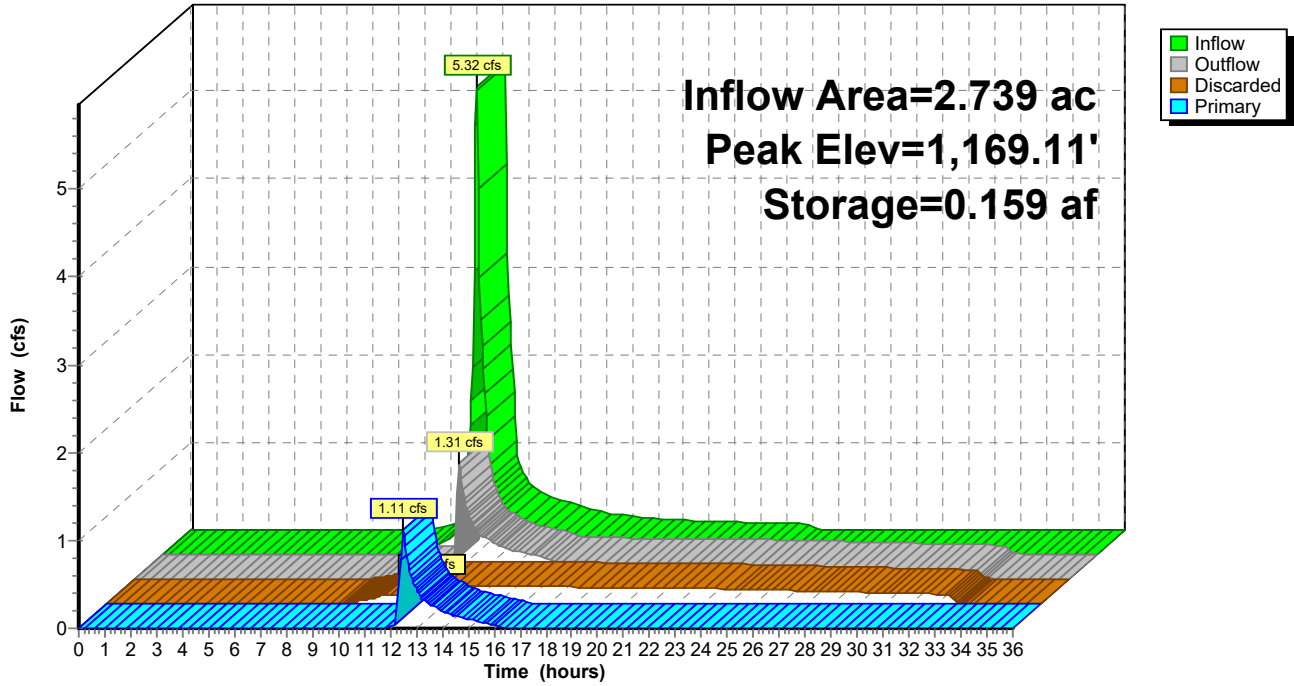
Device	Routing	Invert	Outlet Devices
#1	Primary	1,169.00'	12.0' long + 1.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	1,167.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1,100.00'

Discarded OutFlow Max=0.20 cfs @ 12.50 hrs HW=1,169.11' (Free Discharge)
 ↳2=Exfiltration (Controls 0.20 cfs)

Primary OutFlow Max=1.11 cfs @ 12.50 hrs HW=1,169.11' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir(Weir Controls 1.11 cfs @ 0.83 fps)

Pond 2BP: (new Pond)

Hydrograph



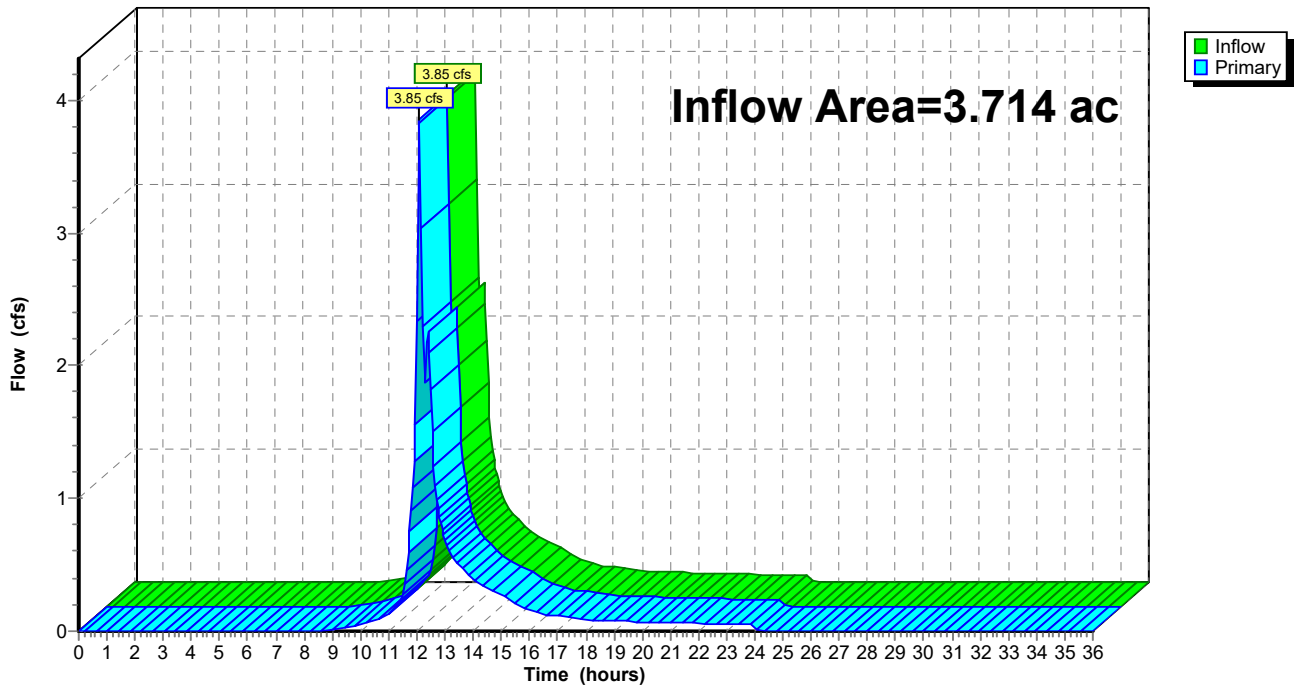
Summary for Link DP1: (new Link)

Inflow Area = 3.714 ac, 0.00% Impervious, Inflow Depth = 1.09" for 2-YEAR event
Inflow = 3.85 cfs @ 12.09 hrs, Volume= 0.338 af
Primary = 3.85 cfs @ 12.09 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP1: (new Link)

Hydrograph



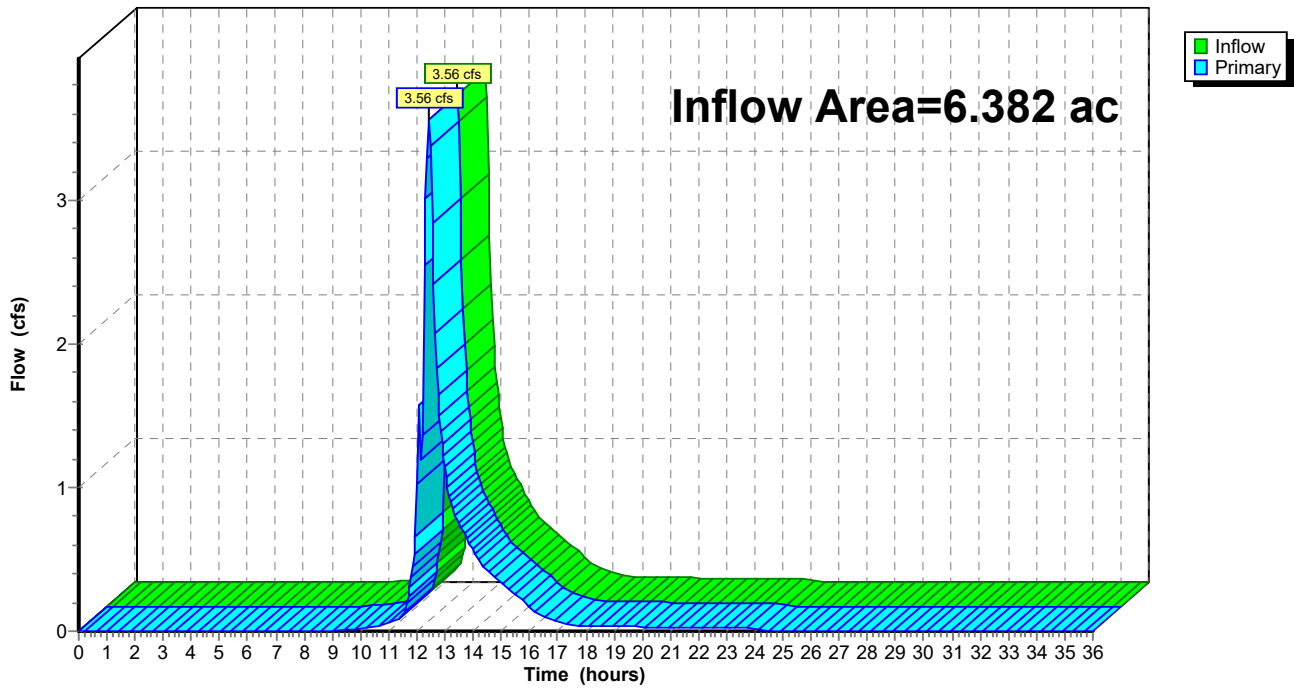
Summary for Link DP2: (new Link)

Inflow Area = 6.382 ac, 0.00% Impervious, Inflow Depth = 0.64" for 2-YEAR event
Inflow = 3.56 cfs @ 12.42 hrs, Volume= 0.343 af
Primary = 3.56 cfs @ 12.42 hrs, Volume= 0.343 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP2: (new Link)

Hydrograph



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: (new Subcat) Runoff Area=82,800 sf 0.00% Impervious Runoff Depth=4.98"
 Flow Length=420' Slope=0.1000 '/' Tc=5.6 min CN=82 Runoff=10.77 cfs 0.789 af

Subcatchment1B: (new Subcat) Runoff Area=79,000 sf 0.00% Impervious Runoff Depth=4.87"
 Flow Length=350' Slope=0.0800 '/' Tc=5.6 min CN=81 Runoff=10.08 cfs 0.736 af

Subcatchment2A: (new Subcat) Runoff Area=123,100 sf 0.00% Impervious Runoff Depth=4.98"
 Flow Length=650' Slope=0.1000 '/' Tc=7.3 min CN=82 Runoff=15.34 cfs 1.173 af

Subcatchment2B: (new Subcat) Runoff Area=119,300 sf 0.00% Impervious Runoff Depth=4.87"
 Flow Length=330' Slope=0.0800 '/' Tc=5.5 min CN=81 Runoff=15.26 cfs 1.112 af

Subcatchment2C: (new Subcat) Runoff Area=35,600 sf 0.00% Impervious Runoff Depth=4.87"
 Flow Length=300' Slope=0.0900 '/' Tc=5.0 min CN=81 Runoff=4.63 cfs 0.332 af

Subcatchment3: (new Subcat) Runoff Area=141,500 sf 0.00% Impervious Runoff Depth=4.98"
 Flow Length=400' Slope=0.0800 '/' Tc=6.0 min CN=82 Runoff=18.26 cfs 1.349 af

Pond 1BP: (new Pond) Peak Elev=1,149.44' Storage=0.130 af Inflow=10.08 cfs 0.736 af
 Discarded=0.14 cfs 0.249 af Primary=9.33 cfs 0.487 af Outflow=9.47 cfs 0.736 af

Pond 2AP: (new Pond) Peak Elev=1,145.56' Storage=0.183 af Inflow=15.34 cfs 1.173 af
 Discarded=0.18 cfs 0.329 af Primary=14.12 cfs 0.843 af Outflow=14.31 cfs 1.173 af

Pond 2BP: (new Pond) Peak Elev=1,169.55' Storage=0.220 af Inflow=15.26 cfs 1.112 af
 Discarded=0.23 cfs 0.388 af Primary=13.56 cfs 0.723 af Outflow=13.79 cfs 1.111 af

Link DP1: (new Link) Inflow=19.83 cfs 1.276 af
 Primary=19.83 cfs 1.276 af

Link DP2: (new Link) Inflow=31.46 cfs 1.898 af
 Primary=31.46 cfs 1.898 af

Total Runoff Area = 13.345 ac Runoff Volume = 5.490 af Average Runoff Depth = 4.94"
100.00% Pervious = 13.345 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1A: (new Subcat)

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

Runoff = 10.77 cfs @ 12.08 hrs, Volume= 0.789 af, Depth= 4.98"
 Routed to Link DP1 : (new Link)

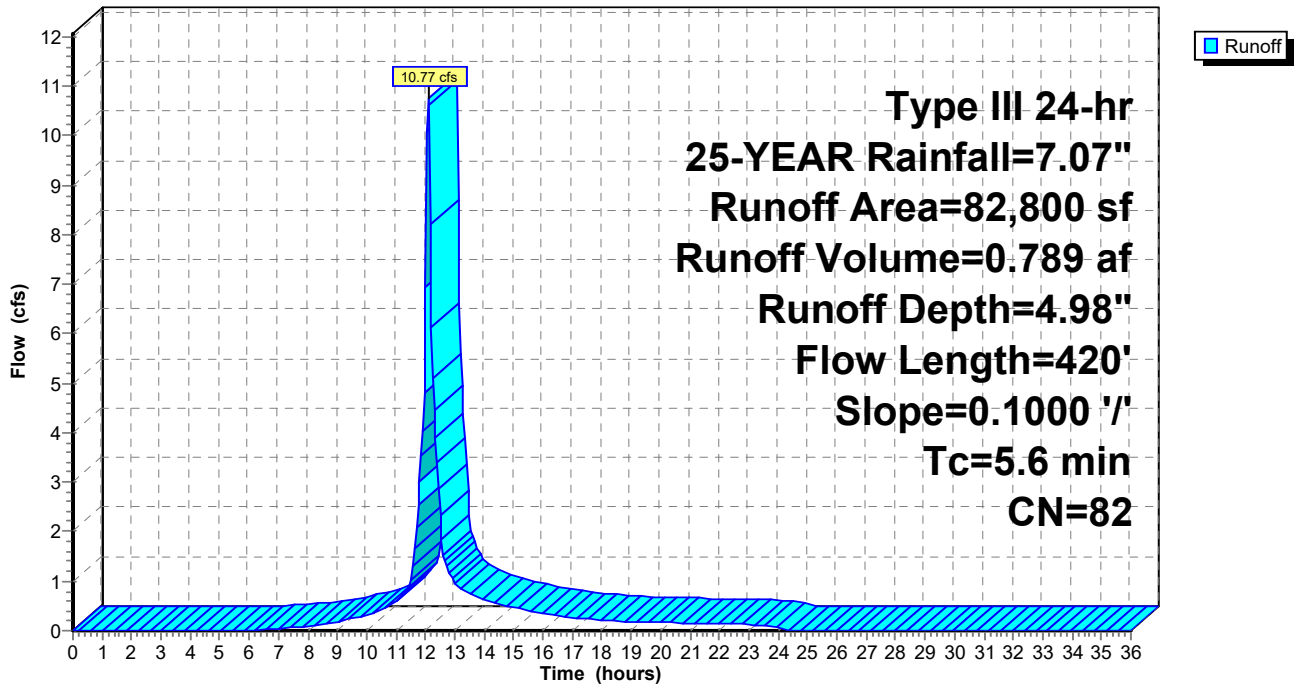
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YEAR Rainfall=7.07"

	Area (sf)	CN	Description
*	77,600	81	50-75% Grass cover, Fair, HSG C-D
*	5,200	96	Gravel surface, HSG C-D
	82,800	82	Weighted Average
	82,800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.8	370	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	420	Total			

Subcatchment 1A: (new Subcat)

Hydrograph



Summary for Subcatchment 1B: (new Subcat)

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

Runoff = 10.08 cfs @ 12.08 hrs, Volume= 0.736 af, Depth= 4.87"
 Routed to Pond 1BP : (new Pond)

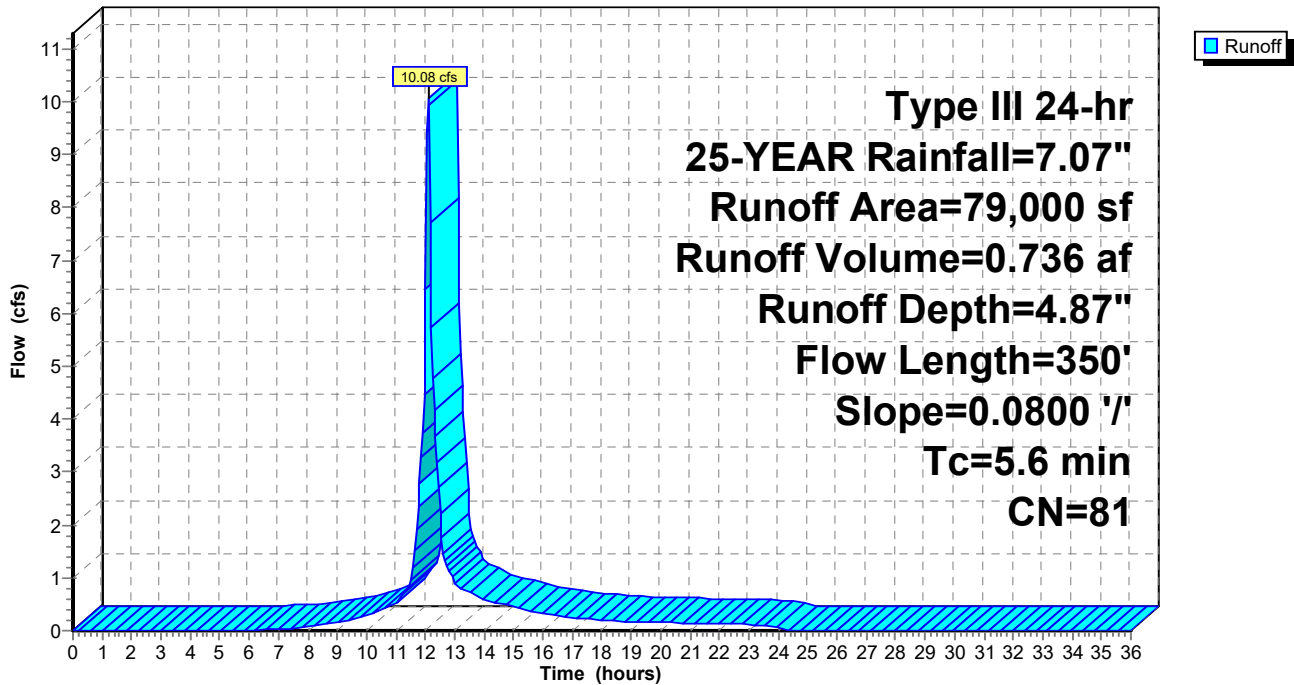
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YEAR Rainfall=7.07"

	Area (sf)	CN	Description
*	76,900	81	50-75% Grass cover, Fair, HSG C-D
	2,100	89	<50% Grass cover, Poor, HSG D
	79,000	81	Weighted Average
	79,000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.5	300	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	350	Total			

Subcatchment 1B: (new Subcat)

Hydrograph



Summary for Subcatchment 2A: (new Subcat)

Runoff = 15.34 cfs @ 12.10 hrs, Volume= 1.173 af, Depth= 4.98"
 Routed to Pond 2AP : (new Pond)

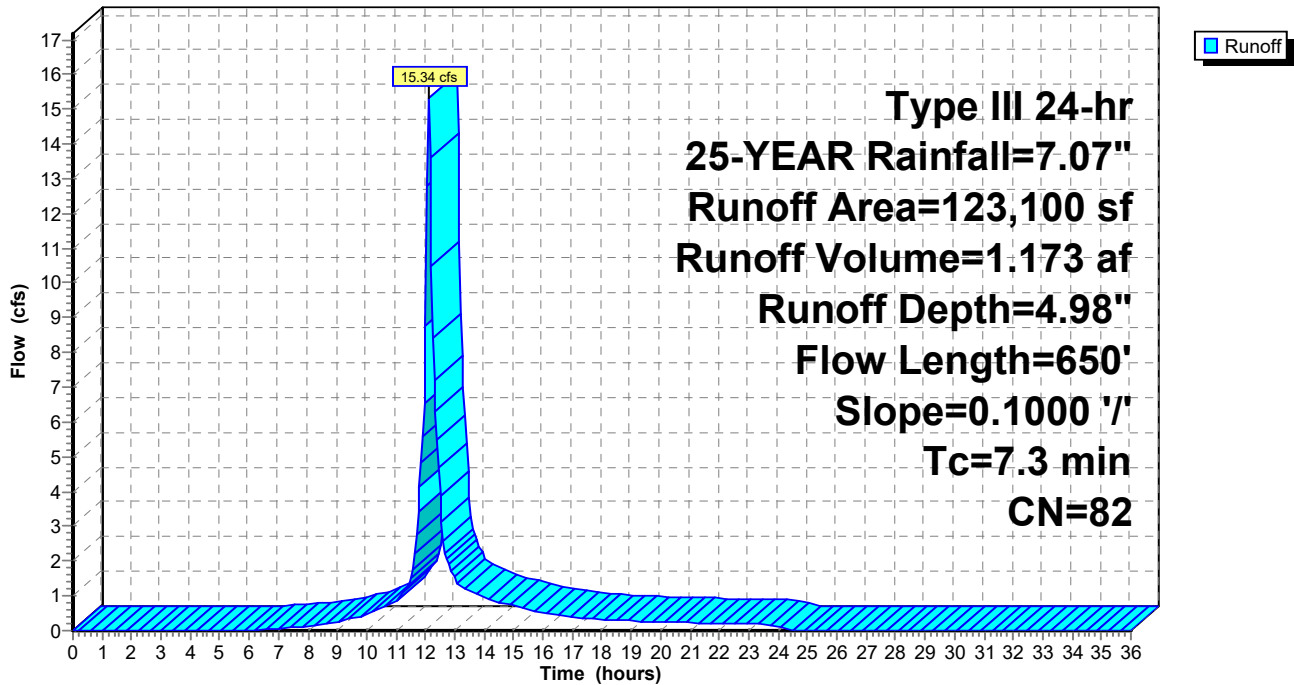
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YEAR Rainfall=7.07"

	Area (sf)	CN	Description
*	103,500	81	50-75% Grass cover, Fair, HSG C-D
	19,600	89	<50% Grass cover, Poor, HSG D
	123,100	82	Weighted Average
	123,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
4.5	600	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.3	650	Total			

Subcatchment 2A: (new Subcat)

Hydrograph



Summary for Subcatchment 2B: (new Subcat)

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

Runoff = 15.26 cfs @ 12.08 hrs, Volume= 1.112 af, Depth= 4.87"
 Routed to Pond 2BP : (new Pond)

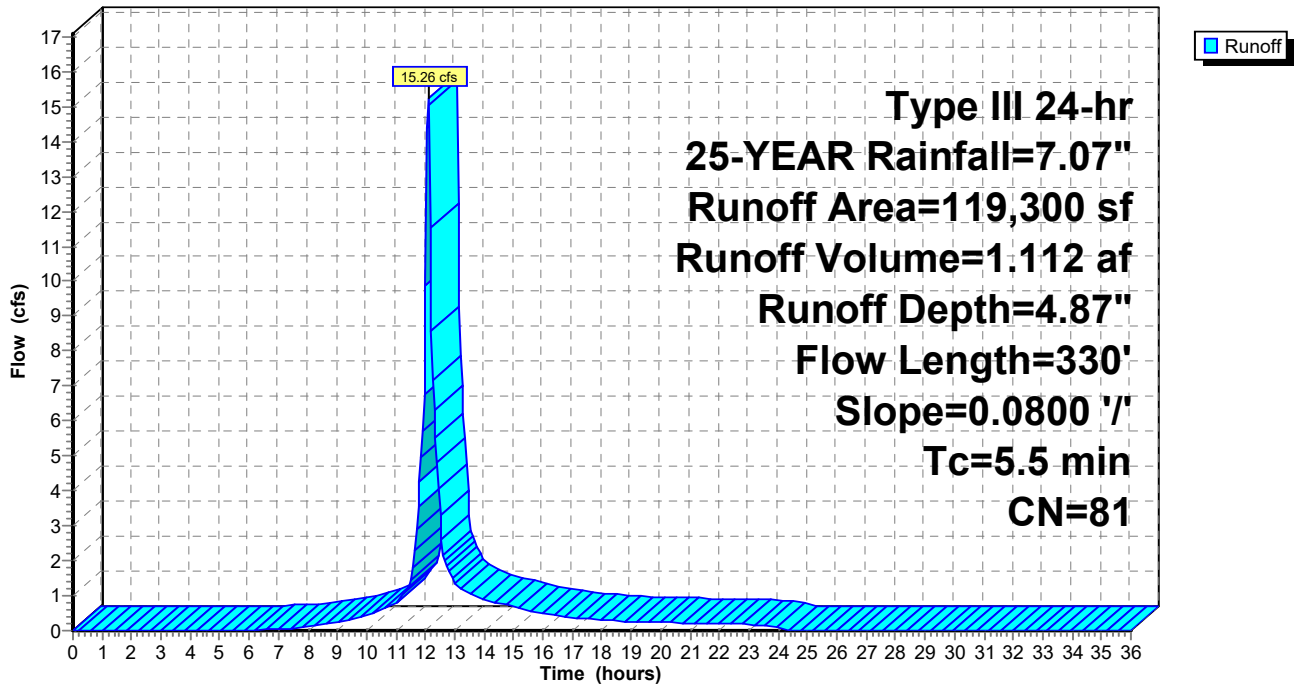
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YEAR Rainfall=7.07"

Area (sf)	CN	Description
* 119,300	81	50-75% Grass cover, Fair, HSG C-D
119,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.4	280	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	330	Total			

Subcatchment 2B: (new Subcat)

Hydrograph



Summary for Subcatchment 2C: (new Subcat)

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

Runoff = 4.63 cfs @ 12.07 hrs, Volume= 0.332 af, Depth= 4.87"
 Routed to Link DP2 : (new Link)

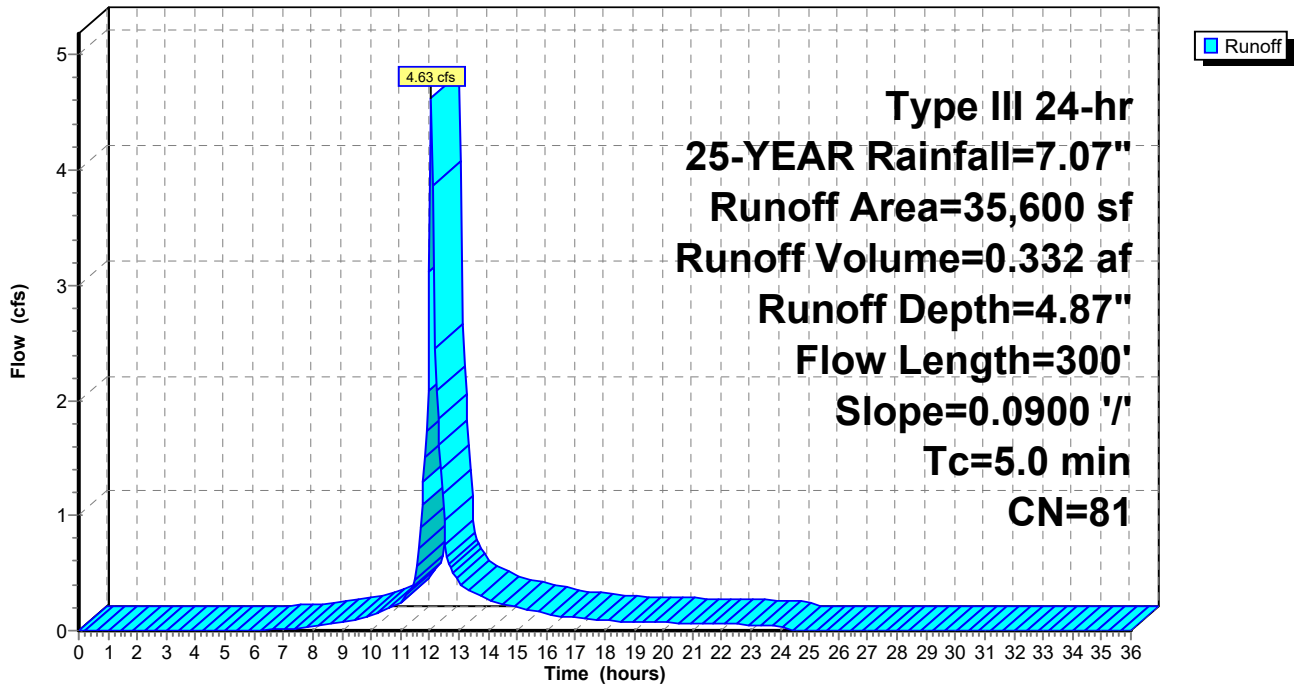
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-YEAR Rainfall=7.07"

Area (sf)	CN	Description
* 35,600	81	50-75% Grass cover, Fair, HSG C-D
35,600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	50	0.0900	0.28		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.0	250	0.0900	2.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.0	300	Total			

Subcatchment 2C: (new Subcat)

Hydrograph



Summary for Subcatchment 3: (new Subcat)

Runoff = 18.26 cfs @ 12.09 hrs, Volume= 1.349 af, Depth= 4.98"

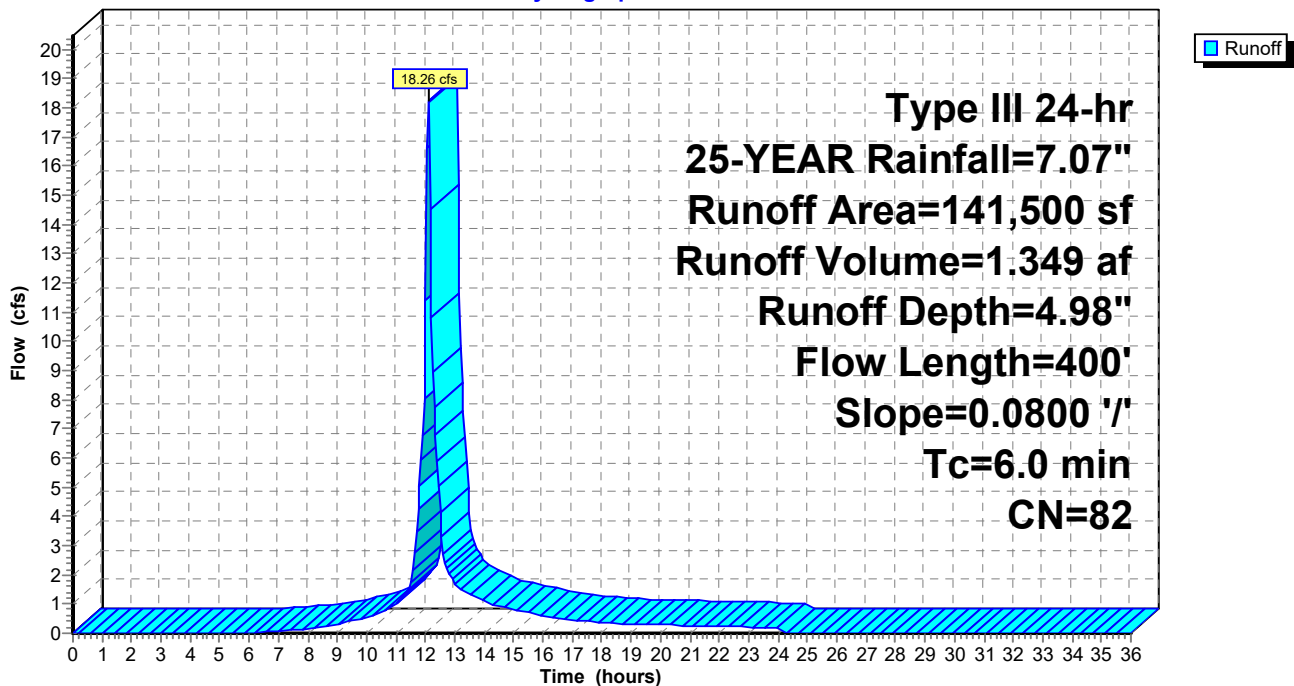
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.07"

	Area (sf)	CN	Description
*	131,100	81	50-75% Grass cover, Fair, HSG C-D
*	10,400	96	Gravel surface, HSG C-D
	141,500	82	Weighted Average
	141,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.9	350	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.0	400	Total			

Subcatchment 3: (new Subcat)

Hydrograph



Summary for Pond 1BP: (new Pond)

Inflow Area = 1.814 ac, 0.00% Impervious, Inflow Depth = 4.87" for 25-YEAR event
 Inflow = 10.08 cfs @ 12.08 hrs, Volume= 0.736 af
 Outflow = 9.47 cfs @ 12.12 hrs, Volume= 0.736 af, Atten= 6%, Lag= 1.9 min
 Discarded = 0.14 cfs @ 12.12 hrs, Volume= 0.249 af
 Primary = 9.33 cfs @ 12.12 hrs, Volume= 0.487 af
 Routed to Link DP1 : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,149.44' @ 12.12 hrs Surf.Area= 0.092 ac Storage= 0.130 af

Plug-Flow detention time= 141.9 min calculated for 0.736 af (100% of inflow)
 Center-of-Mass det. time= 141.8 min (946.5 - 804.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,147.50'	0.185 af	12.00'W x 157.00'L x 2.50'H Prismatic Z=3.0

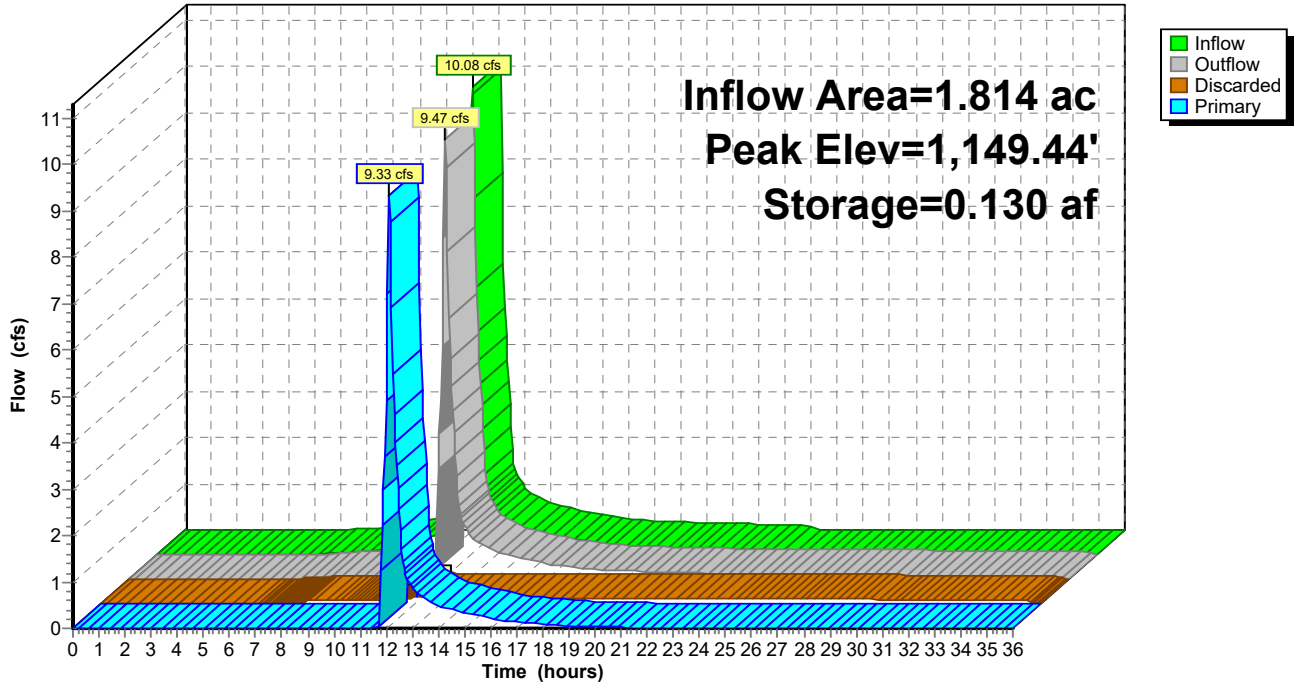
Device	Routing	Invert	Outlet Devices
#1	Primary	1,149.00'	12.0' long + 1.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	1,147.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1,100.00'

Discarded OutFlow Max=0.14 cfs @ 12.12 hrs HW=1,149.43' (Free Discharge)
 ↳2=Exfiltration (Controls 0.14 cfs)

Primary OutFlow Max=9.06 cfs @ 12.12 hrs HW=1,149.43' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 9.06 cfs @ 1.69 fps)

Pond 1BP: (new Pond)

Hydrograph



Summary for Pond 2AP: (new Pond)

Inflow Area = 2.826 ac, 0.00% Impervious, Inflow Depth = 4.98" for 25-YEAR event
 Inflow = 15.34 cfs @ 12.10 hrs, Volume= 1.173 af
 Outflow = 14.31 cfs @ 12.14 hrs, Volume= 1.173 af, Atten= 7%, Lag= 2.3 min
 Discarded = 0.18 cfs @ 12.14 hrs, Volume= 0.329 af
 Primary = 14.12 cfs @ 12.14 hrs, Volume= 0.843 af
 Routed to Link DP2 : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,145.56' @ 12.14 hrs Surf.Area= 0.118 ac Storage= 0.183 af

Plug-Flow detention time= 120.9 min calculated for 1.171 af (100% of inflow)
 Center-of-Mass det. time= 121.5 min (925.3 - 803.9)

Volume	Invert	Avail.Storage	Storage Description
#1	1,143.50'	0.237 af	15.00'W x 175.00'L x 2.50'H Prismatic Z=3.0

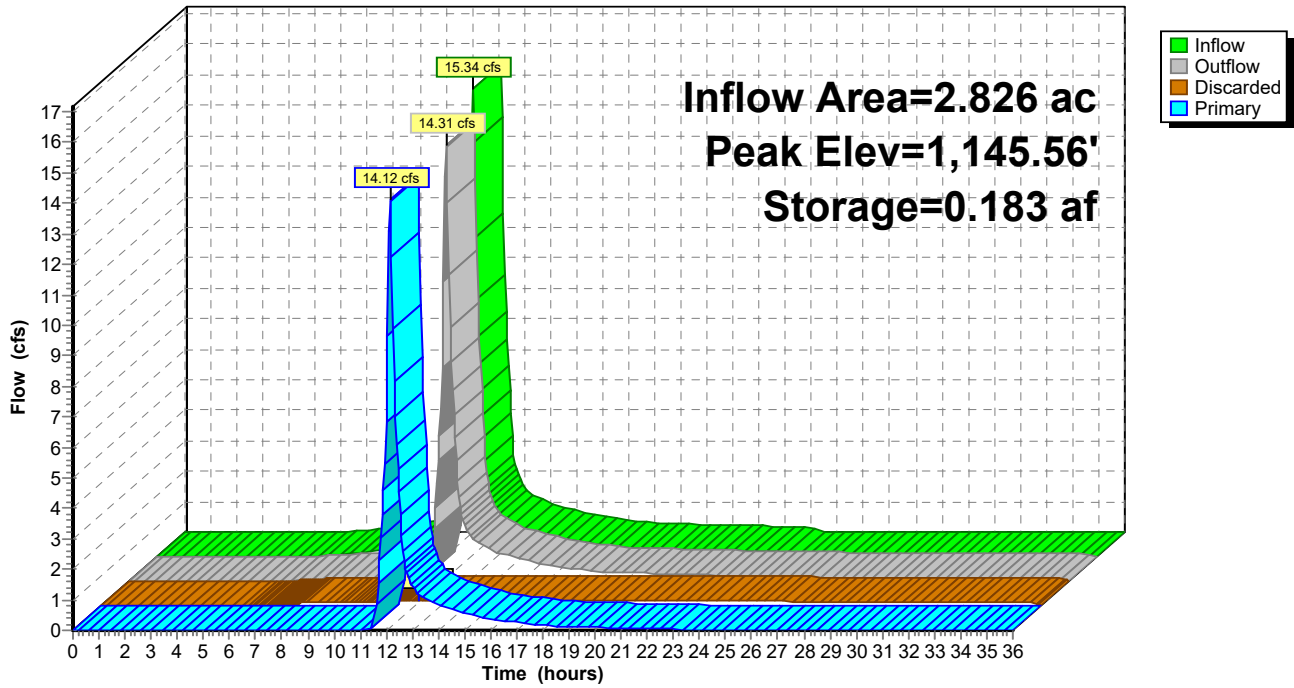
Device	Routing	Invert	Outlet Devices
#1	Primary	1,145.00'	12.0' long + 1.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	1,143.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1,100.00'

Discarded OutFlow Max=0.18 cfs @ 12.14 hrs HW=1,145.56' (Free Discharge)
 ↳2=Exfiltration (Controls 0.18 cfs)

Primary OutFlow Max=13.93 cfs @ 12.14 hrs HW=1,145.56' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir(Weir Controls 13.93 cfs @ 1.98 fps)

Pond 2AP: (new Pond)

Hydrograph



Summary for Pond 2BP: (new Pond)

Inflow Area = 2.739 ac, 0.00% Impervious, Inflow Depth = 4.87" for 25-YEAR event
 Inflow = 15.26 cfs @ 12.08 hrs, Volume= 1.112 af
 Outflow = 13.79 cfs @ 12.12 hrs, Volume= 1.111 af, Atten= 10%, Lag= 2.4 min
 Discarded = 0.23 cfs @ 12.12 hrs, Volume= 0.388 af
 Primary = 13.56 cfs @ 12.12 hrs, Volume= 0.723 af
 Routed to Link DP2 : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,169.55' @ 12.12 hrs Surf.Area= 0.146 ac Storage= 0.220 af

Plug-Flow detention time= 147.8 min calculated for 1.110 af (100% of inflow)
 Center-of-Mass det. time= 148.5 min (953.2 - 804.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,167.50'	0.289 af	12.00'W x 250.00'L x 2.50'H Prismatic Z=3.0

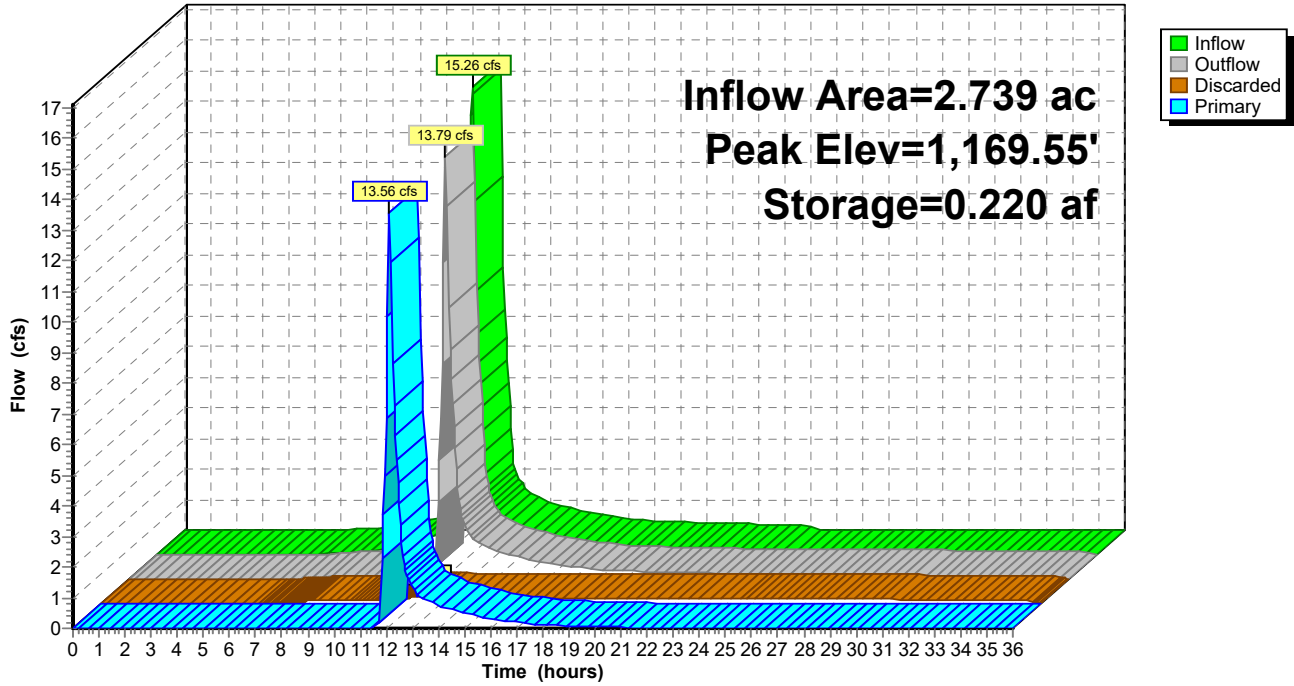
Device	Routing	Invert	Outlet Devices
#1	Primary	1,169.00'	12.0' long + 1.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	1,167.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1,100.00'

Discarded OutFlow Max=0.23 cfs @ 12.12 hrs HW=1,169.54' (Free Discharge)
 ↳2=Exfiltration (Controls 0.23 cfs)

Primary OutFlow Max=13.16 cfs @ 12.12 hrs HW=1,169.54' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 13.16 cfs @ 1.94 fps)

Pond 2BP: (new Pond)

Hydrograph



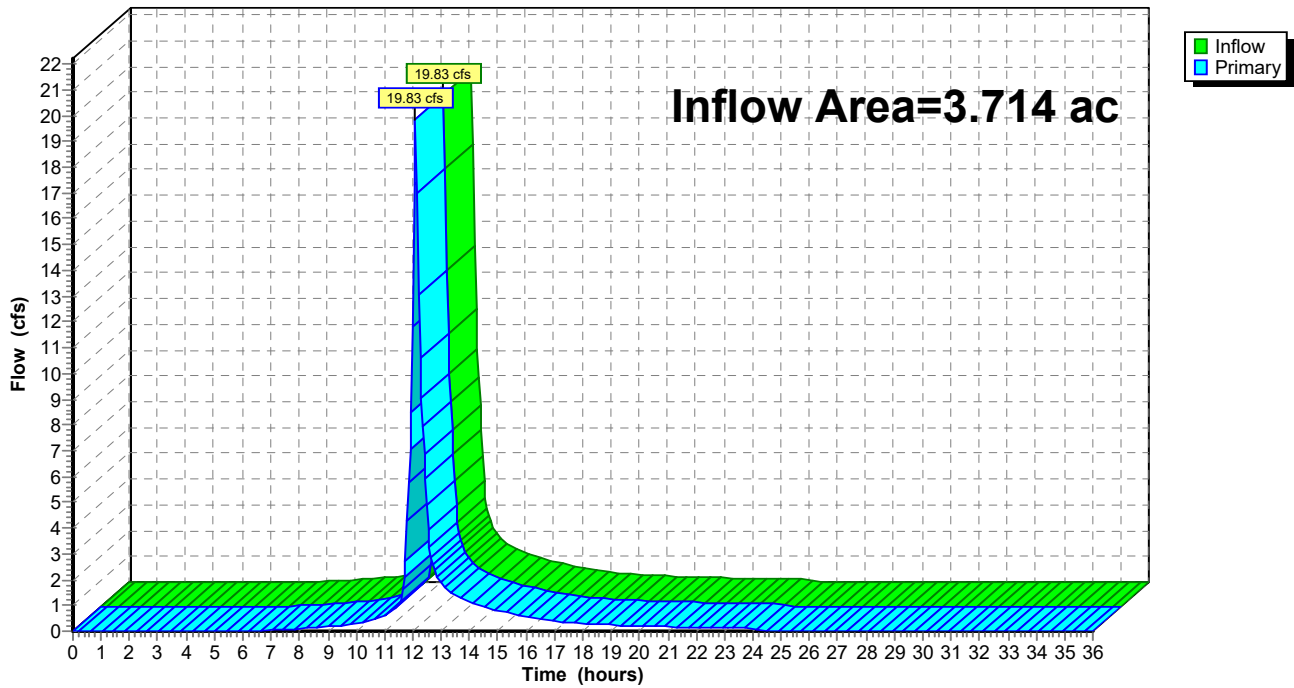
Summary for Link DP1: (new Link)

Inflow Area = 3.714 ac, 0.00% Impervious, Inflow Depth = 4.12" for 25-YEAR event
Inflow = 19.83 cfs @ 12.10 hrs, Volume= 1.276 af
Primary = 19.83 cfs @ 12.10 hrs, Volume= 1.276 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP1: (new Link)

Hydrograph



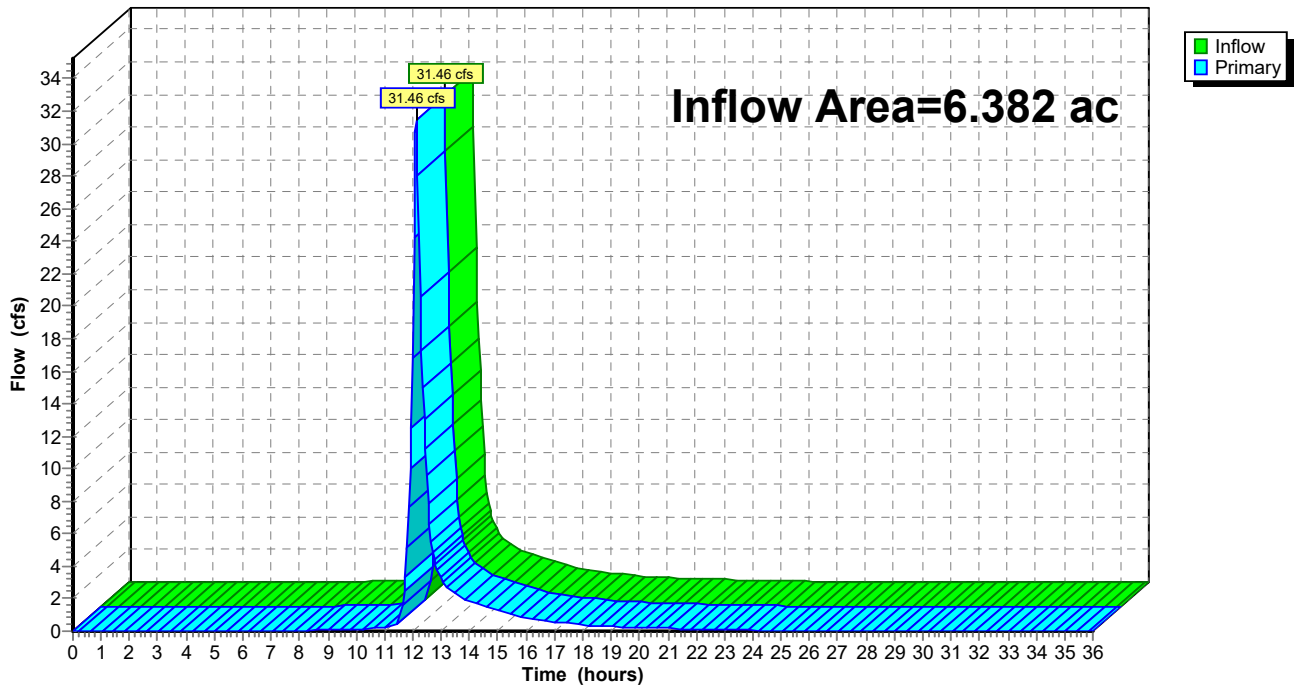
Summary for Link DP2: (new Link)

Inflow Area = 6.382 ac, 0.00% Impervious, Inflow Depth = 3.57" for 25-YEAR event
Inflow = 31.46 cfs @ 12.12 hrs, Volume= 1.898 af
Primary = 31.46 cfs @ 12.12 hrs, Volume= 1.898 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP2: (new Link)

Hydrograph



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: (new Subcat) Runoff Area=82,800 sf 0.00% Impervious Runoff Depth=5.93"
 Flow Length=420' Slope=0.1000 '/' Tc=5.6 min CN=82 Runoff=12.72 cfs 0.939 af

Subcatchment1B: (new Subcat) Runoff Area=79,000 sf 0.00% Impervious Runoff Depth=5.81"
 Flow Length=350' Slope=0.0800 '/' Tc=5.6 min CN=81 Runoff=11.94 cfs 0.878 af

Subcatchment2A: (new Subcat) Runoff Area=123,100 sf 0.00% Impervious Runoff Depth=5.93"
 Flow Length=650' Slope=0.1000 '/' Tc=7.3 min CN=82 Runoff=18.11 cfs 1.396 af

Subcatchment2B: (new Subcat) Runoff Area=119,300 sf 0.00% Impervious Runoff Depth=5.81"
 Flow Length=330' Slope=0.0800 '/' Tc=5.5 min CN=81 Runoff=18.07 cfs 1.326 af

Subcatchment2C: (new Subcat) Runoff Area=35,600 sf 0.00% Impervious Runoff Depth=5.81"
 Flow Length=300' Slope=0.0900 '/' Tc=5.0 min CN=81 Runoff=5.49 cfs 0.396 af

Subcatchment3: (new Subcat) Runoff Area=141,500 sf 0.00% Impervious Runoff Depth=5.93"
 Flow Length=400' Slope=0.0800 '/' Tc=6.0 min CN=82 Runoff=21.56 cfs 1.604 af

Pond 1BP: (new Pond) Peak Elev=1,149.49' Storage=0.134 af Inflow=11.94 cfs 0.878 af
 Discarded=0.14 cfs 0.256 af Primary=11.17 cfs 0.622 af Outflow=11.32 cfs 0.878 af

Pond 2AP: (new Pond) Peak Elev=1,145.63' Storage=0.190 af Inflow=18.11 cfs 1.396 af
 Discarded=0.19 cfs 0.337 af Primary=16.74 cfs 1.058 af Outflow=16.92 cfs 1.395 af

Pond 2BP: (new Pond) Peak Elev=1,169.62' Storage=0.229 af Inflow=18.07 cfs 1.326 af
 Discarded=0.23 cfs 0.399 af Primary=16.28 cfs 0.926 af Outflow=16.51 cfs 1.325 af

Link DP1: (new Link) Inflow=23.60 cfs 1.561 af
 Primary=23.60 cfs 1.561 af

Link DP2: (new Link) Inflow=37.60 cfs 2.380 af
 Primary=37.60 cfs 2.380 af

Total Runoff Area = 13.345 ac Runoff Volume = 6.538 af Average Runoff Depth = 5.88"
100.00% Pervious = 13.345 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1A: (new Subcat)

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

Runoff = 12.72 cfs @ 12.08 hrs, Volume= 0.939 af, Depth= 5.93"
 Routed to Link DP1 : (new Link)

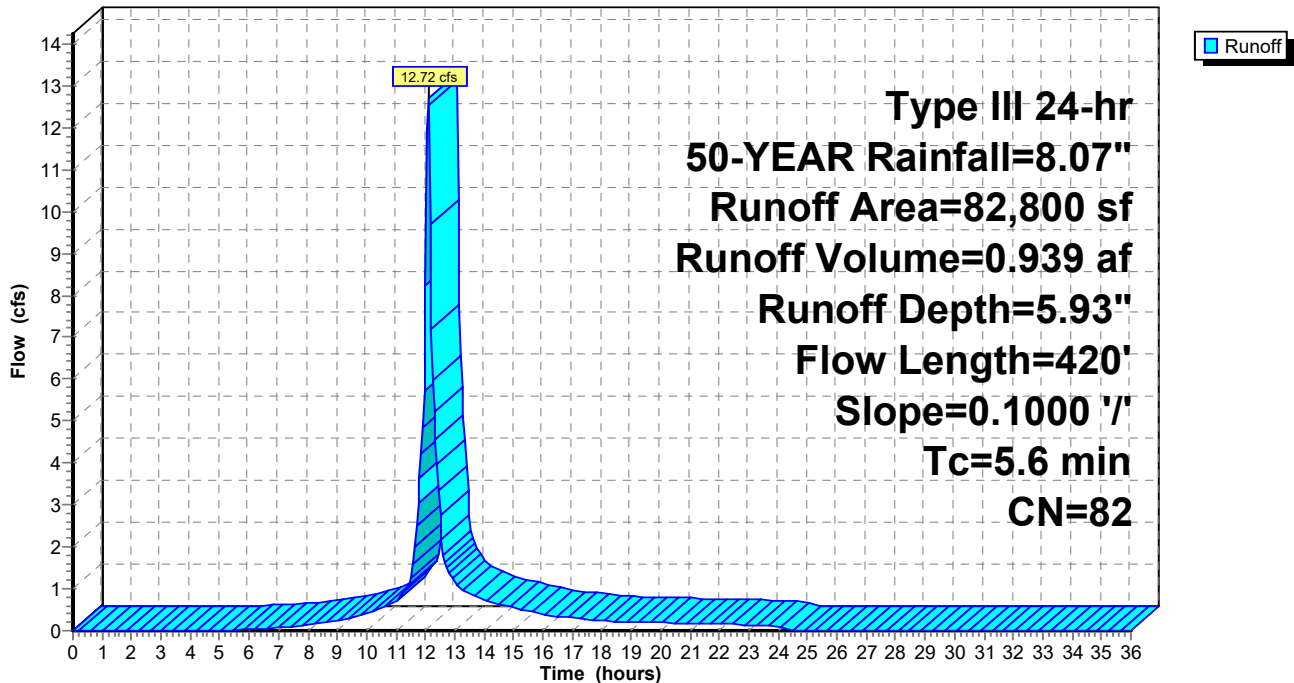
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YEAR Rainfall=8.07"

	Area (sf)	CN	Description
*	77,600	81	50-75% Grass cover, Fair, HSG C-D
*	5,200	96	Gravel surface, HSG C-D
	82,800	82	Weighted Average
	82,800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.8	370	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	420	Total			

Subcatchment 1A: (new Subcat)

Hydrograph



Summary for Subcatchment 1B: (new Subcat)

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

Runoff = 11.94 cfs @ 12.08 hrs, Volume= 0.878 af, Depth= 5.81"
 Routed to Pond 1BP : (new Pond)

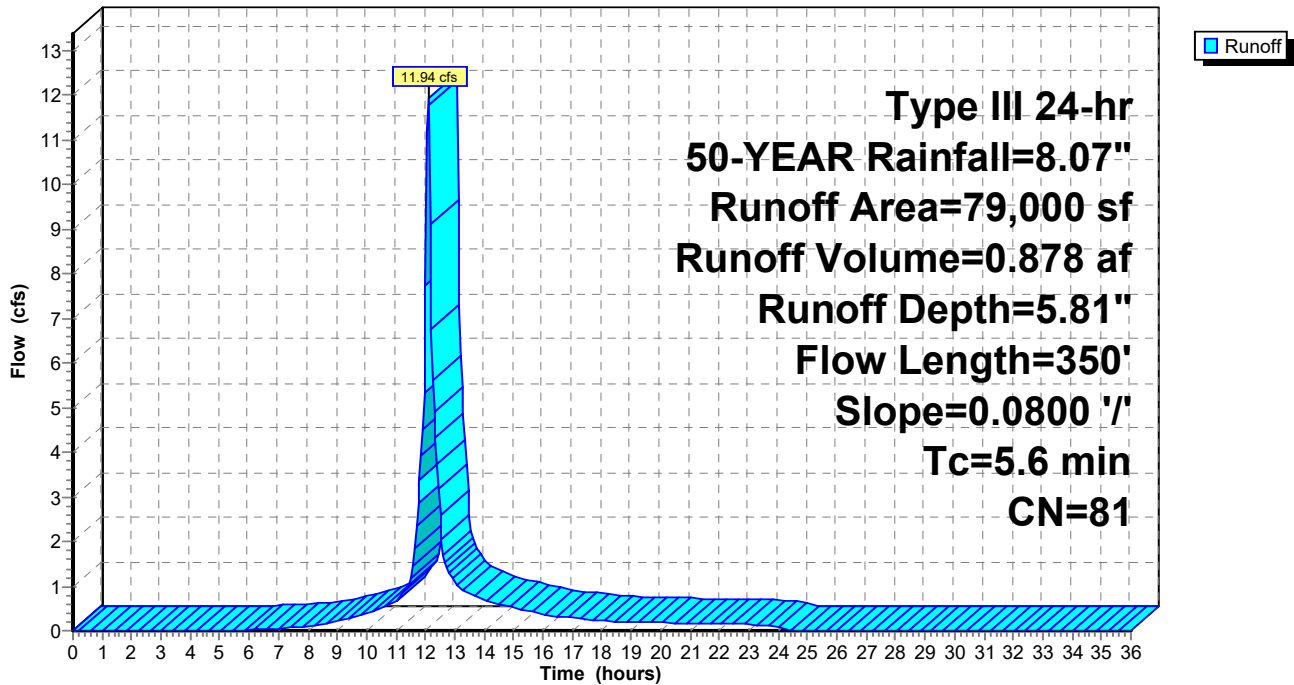
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YEAR Rainfall=8.07"

	Area (sf)	CN	Description
*	76,900	81	50-75% Grass cover, Fair, HSG C-D
	2,100	89	<50% Grass cover, Poor, HSG D
	79,000	81	Weighted Average
	79,000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.5	300	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	350	Total			

Subcatchment 1B: (new Subcat)

Hydrograph



Summary for Subcatchment 2A: (new Subcat)

Runoff = 18.11 cfs @ 12.10 hrs, Volume= 1.396 af, Depth= 5.93"
 Routed to Pond 2AP : (new Pond)

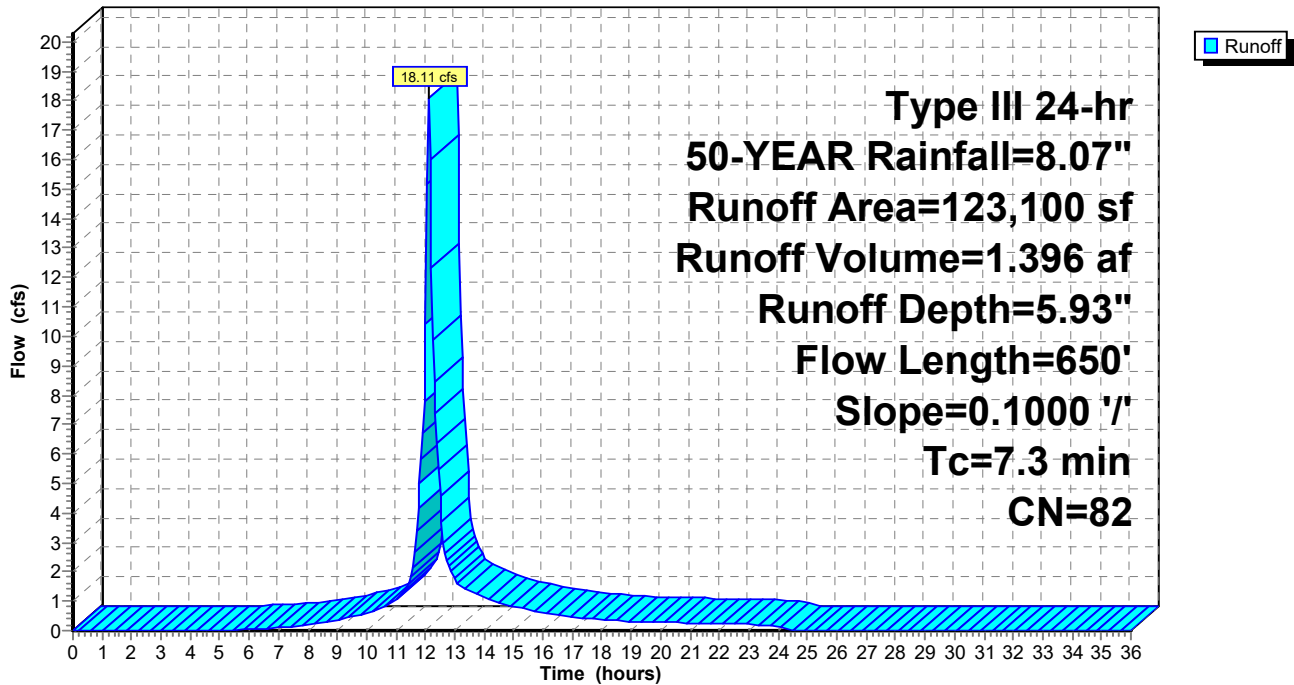
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YEAR Rainfall=8.07"

	Area (sf)	CN	Description
*	103,500	81	50-75% Grass cover, Fair, HSG C-D
	19,600	89	<50% Grass cover, Poor, HSG D
	123,100	82	Weighted Average
	123,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
4.5	600	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.3	650	Total			

Subcatchment 2A: (new Subcat)

Hydrograph



Summary for Subcatchment 2B: (new Subcat)

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

Runoff = 18.07 cfs @ 12.08 hrs, Volume= 1.326 af, Depth= 5.81"
 Routed to Pond 2BP : (new Pond)

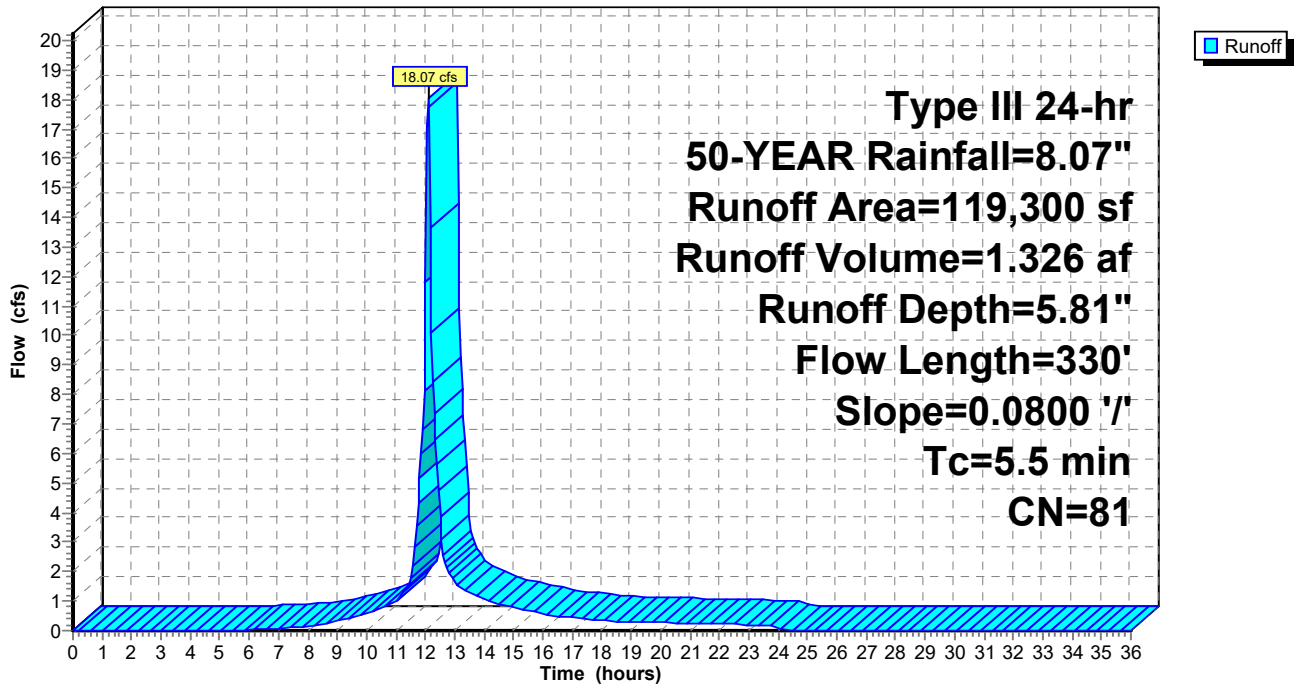
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, $dt= 0.05$ hrs
 Type III 24-hr 50-YEAR Rainfall=8.07"

Area (sf)	CN	Description
* 119,300	81	50-75% Grass cover, Fair, HSG C-D
119,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.4	280	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	330	Total			

Subcatchment 2B: (new Subcat)

Hydrograph



Summary for Subcatchment 2C: (new Subcat)

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

Runoff = 5.49 cfs @ 12.07 hrs, Volume= 0.396 af, Depth= 5.81"
 Routed to Link DP2 : (new Link)

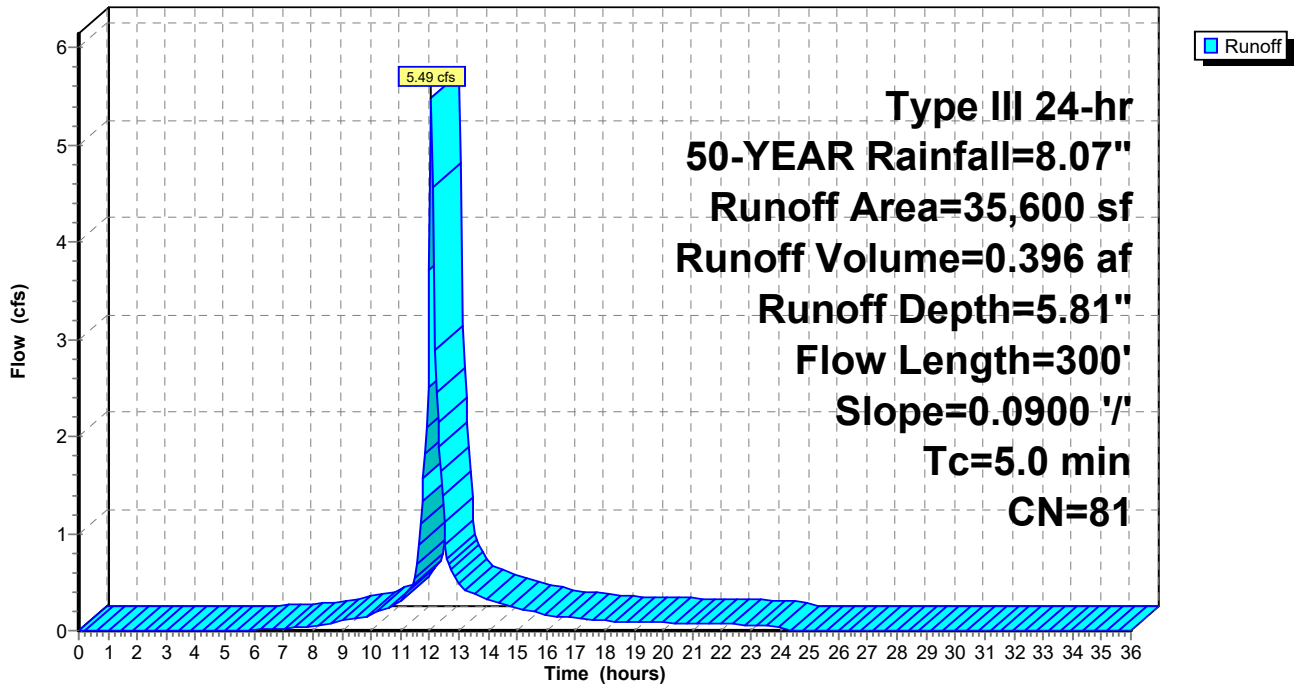
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YEAR Rainfall=8.07"

Area (sf)	CN	Description
* 35,600	81	50-75% Grass cover, Fair, HSG C-D
35,600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	50	0.0900	0.28		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.0	250	0.0900	2.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.0	300	Total			

Subcatchment 2C: (new Subcat)

Hydrograph



Summary for Subcatchment 3: (new Subcat)

Runoff = 21.56 cfs @ 12.09 hrs, Volume= 1.604 af, Depth= 5.93"

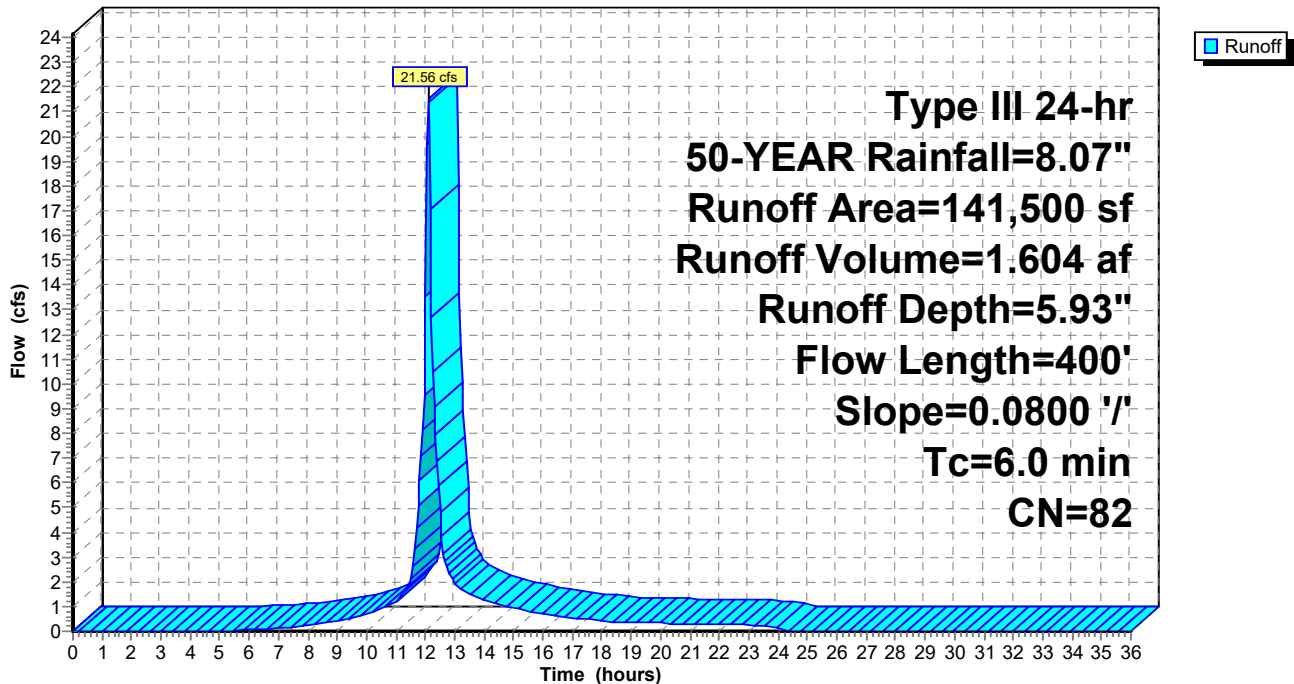
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-YEAR Rainfall=8.07"

	Area (sf)	CN	Description
*	131,100	81	50-75% Grass cover, Fair, HSG C-D
*	10,400	96	Gravel surface, HSG C-D
	141,500	82	Weighted Average
	141,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.9	350	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.0	400	Total			

Subcatchment 3: (new Subcat)

Hydrograph



Summary for Pond 1BP: (new Pond)

Inflow Area = 1.814 ac, 0.00% Impervious, Inflow Depth = 5.81" for 50-YEAR event
 Inflow = 11.94 cfs @ 12.08 hrs, Volume= 0.878 af
 Outflow = 11.32 cfs @ 12.11 hrs, Volume= 0.878 af, Atten= 5%, Lag= 1.8 min
 Discarded = 0.14 cfs @ 12.11 hrs, Volume= 0.256 af
 Primary = 11.17 cfs @ 12.11 hrs, Volume= 0.622 af
 Routed to Link DP1 : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,149.49' @ 12.11 hrs Surf.Area= 0.093 ac Storage= 0.134 af

Plug-Flow detention time= 122.2 min calculated for 0.876 af (100% of inflow)
 Center-of-Mass det. time= 122.8 min (922.7 - 799.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,147.50'	0.185 af	12.00'W x 157.00'L x 2.50'H Prismatic Z=3.0

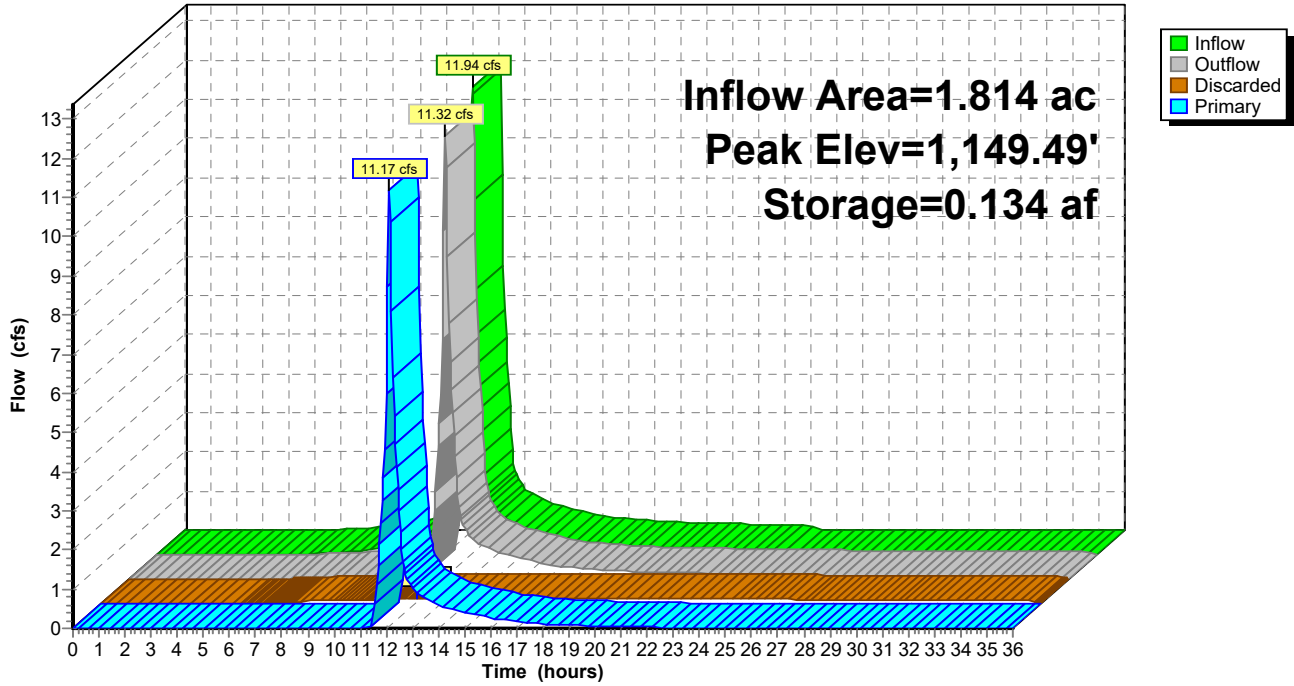
Device	Routing	Invert	Outlet Devices
#1	Primary	1,149.00'	12.0' long + 1.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	1,147.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1,100.00'

Discarded OutFlow Max=0.14 cfs @ 12.11 hrs HW=1,149.48' (Free Discharge)
 ↳2=Exfiltration (Controls 0.14 cfs)

Primary OutFlow Max=10.87 cfs @ 12.11 hrs HW=1,149.48' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir(Weir Controls 10.87 cfs @ 1.80 fps)

Pond 1BP: (new Pond)

Hydrograph



Summary for Pond 2AP: (new Pond)

Inflow Area = 2.826 ac, 0.00% Impervious, Inflow Depth = 5.93" for 50-YEAR event
 Inflow = 18.11 cfs @ 12.10 hrs, Volume= 1.396 af
 Outflow = 16.92 cfs @ 12.14 hrs, Volume= 1.395 af, Atten= 7%, Lag= 2.1 min
 Discarded = 0.19 cfs @ 12.14 hrs, Volume= 0.337 af
 Primary = 16.74 cfs @ 12.14 hrs, Volume= 1.058 af
 Routed to Link DP2 : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,145.63' @ 12.14 hrs Surf.Area= 0.120 ac Storage= 0.190 af

Plug-Flow detention time= 104.8 min calculated for 1.393 af (100% of inflow)
 Center-of-Mass det. time= 105.4 min (904.4 - 799.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,143.50'	0.237 af	15.00'W x 175.00'L x 2.50'H Prismatic Z=3.0

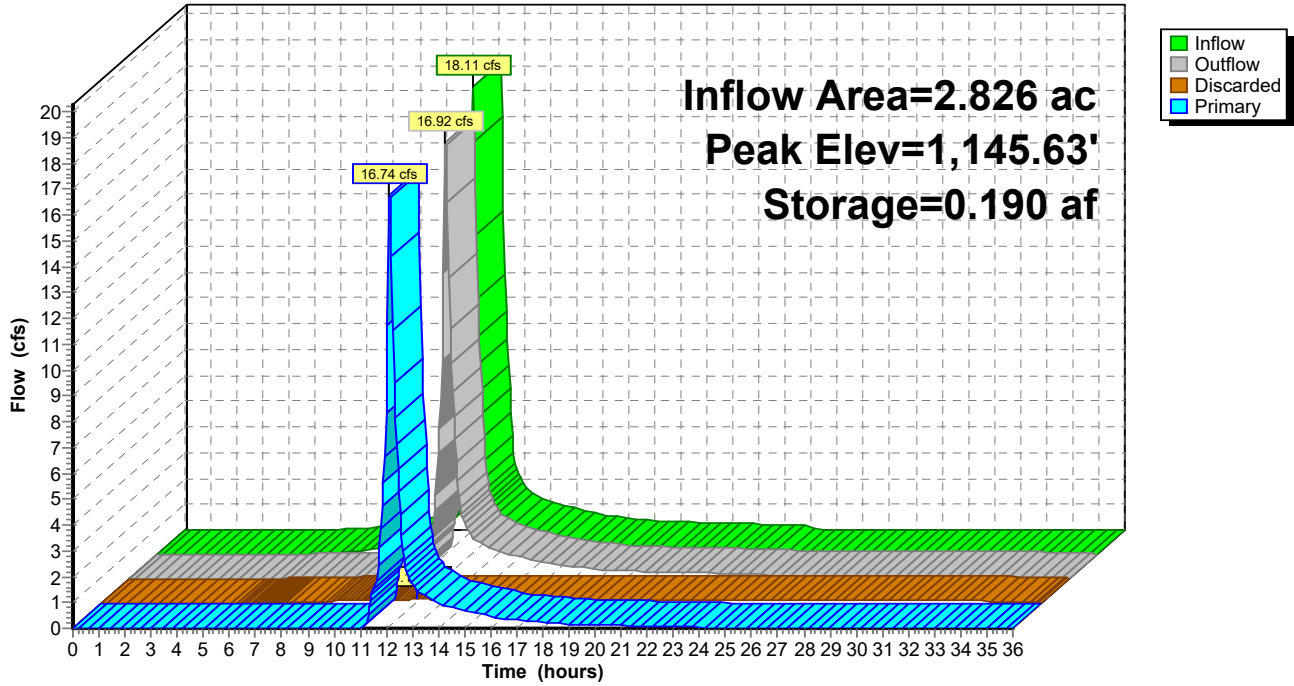
Device	Routing	Invert	Outlet Devices
#1	Primary	1,145.00'	12.0' long + 1.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	1,143.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1,100.00'

Discarded OutFlow Max=0.19 cfs @ 12.14 hrs HW=1,145.62' (Free Discharge)
 ↳2=Exfiltration (Controls 0.19 cfs)

Primary OutFlow Max=16.47 cfs @ 12.14 hrs HW=1,145.62' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir(Weir Controls 16.47 cfs @ 2.10 fps)

Pond 2AP: (new Pond)

Hydrograph



Summary for Pond 2BP: (new Pond)

Inflow Area = 2.739 ac, 0.00% Impervious, Inflow Depth = 5.81" for 50-YEAR event
 Inflow = 18.07 cfs @ 12.08 hrs, Volume= 1.326 af
 Outflow = 16.51 cfs @ 12.12 hrs, Volume= 1.325 af, Atten= 9%, Lag= 2.3 min
 Discarded = 0.23 cfs @ 12.12 hrs, Volume= 0.399 af
 Primary = 16.28 cfs @ 12.12 hrs, Volume= 0.926 af
 Routed to Link DP2 : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,169.62' @ 12.12 hrs Surf.Area= 0.149 ac Storage= 0.229 af

Plug-Flow detention time= 129.2 min calculated for 1.325 af (100% of inflow)
 Center-of-Mass det. time= 128.9 min (928.7 - 799.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,167.50'	0.289 af	12.00'W x 250.00'L x 2.50'H Prismatic Z=3.0

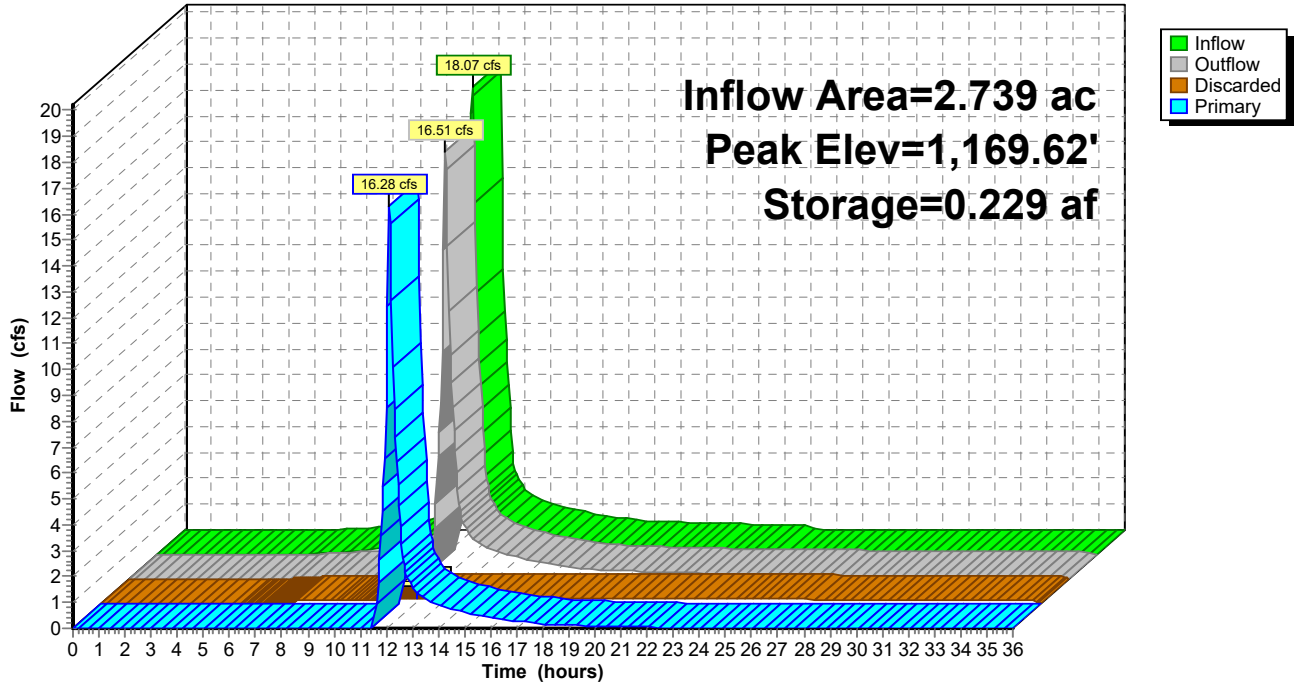
Device	Routing	Invert	Outlet Devices
#1	Primary	1,169.00'	12.0' long + 1.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	1,167.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1,100.00'

Discarded OutFlow Max=0.23 cfs @ 12.12 hrs HW=1,169.60' (Free Discharge)
 ↑2=Exfiltration (Controls 0.23 cfs)

Primary OutFlow Max=15.81 cfs @ 12.12 hrs HW=1,169.60' (Free Discharge)
 ↑1=Broad-Crested Rectangular Weir(Weir Controls 15.81 cfs @ 2.08 fps)

Pond 2BP: (new Pond)

Hydrograph



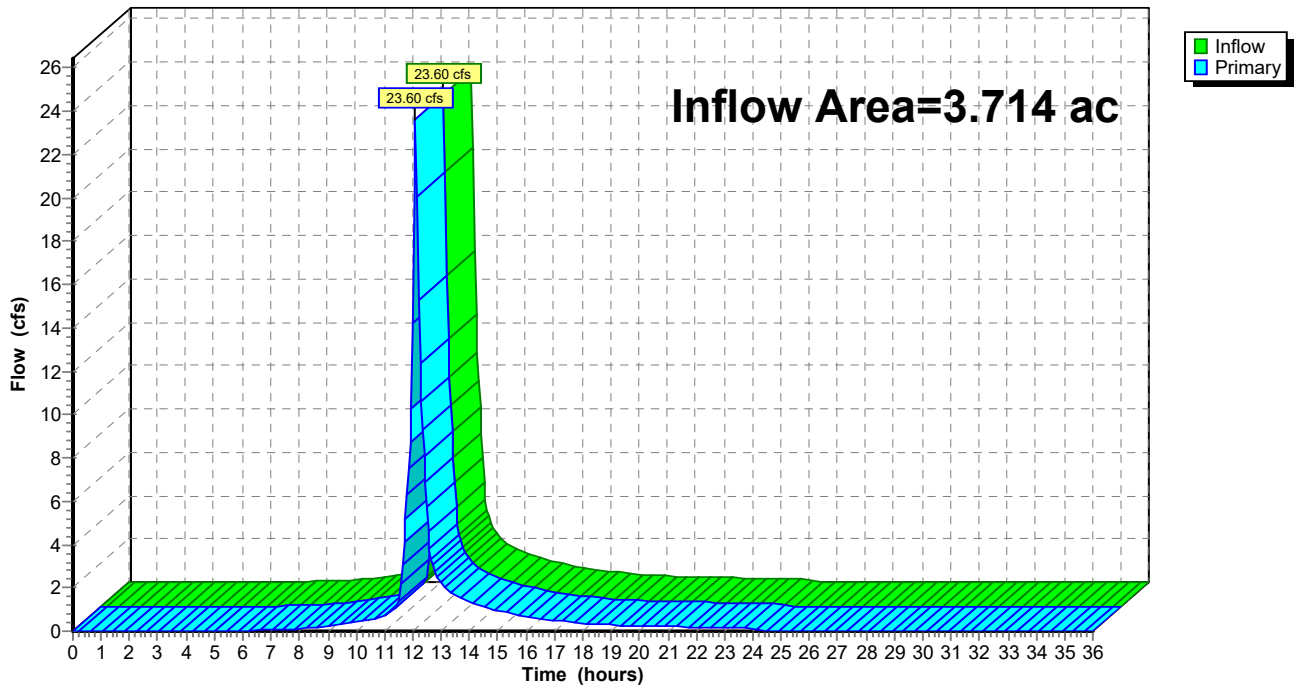
Summary for Link DP1: (new Link)

Inflow Area = 3.714 ac, 0.00% Impervious, Inflow Depth = 5.04" for 50-YEAR event
Inflow = 23.60 cfs @ 12.10 hrs, Volume= 1.561 af
Primary = 23.60 cfs @ 12.10 hrs, Volume= 1.561 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP1: (new Link)

Hydrograph



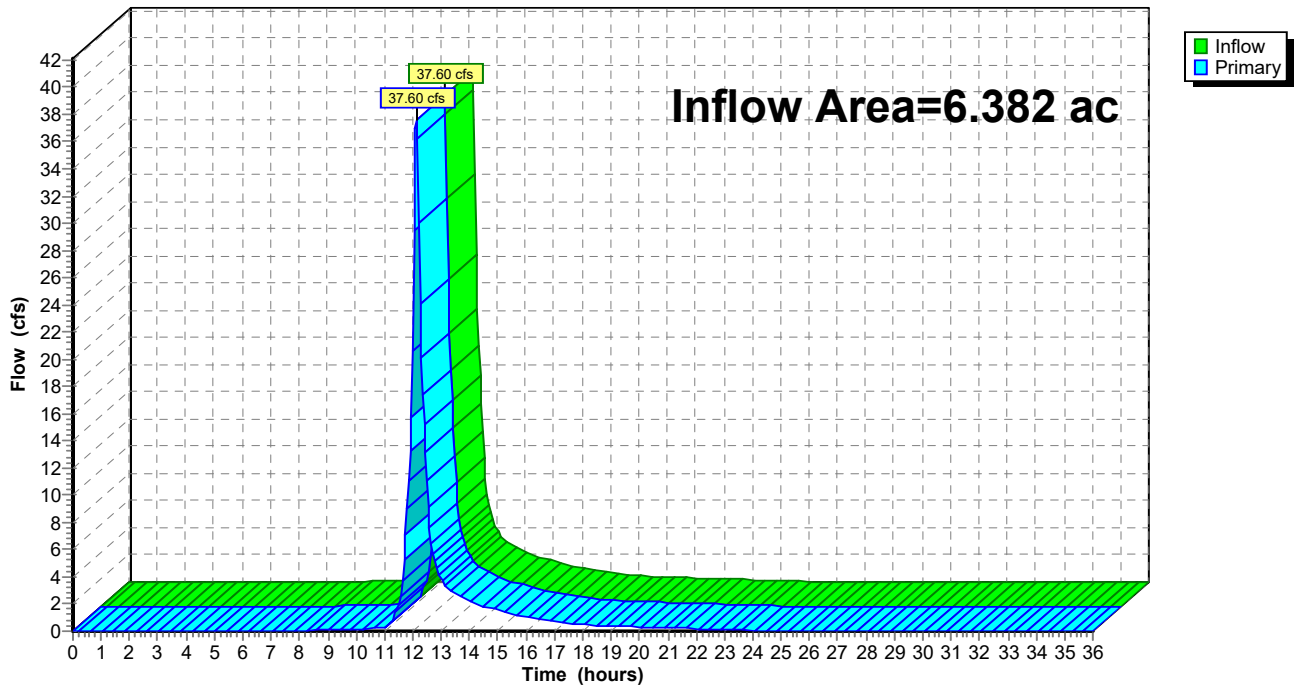
Summary for Link DP2: (new Link)

Inflow Area = 6.382 ac, 0.00% Impervious, Inflow Depth = 4.47" for 50-YEAR event
Inflow = 37.60 cfs @ 12.12 hrs, Volume= 2.380 af
Primary = 37.60 cfs @ 12.12 hrs, Volume= 2.380 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP2: (new Link)

Hydrograph



Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1A: (new Subcat) Runoff Area=82,800 sf 0.00% Impervious Runoff Depth=7.01"
 Flow Length=420' Slope=0.1000 '/' Tc=5.6 min CN=82 Runoff=14.91 cfs 1.110 af

Subcatchment1B: (new Subcat) Runoff Area=79,000 sf 0.00% Impervious Runoff Depth=6.88"
 Flow Length=350' Slope=0.0800 '/' Tc=5.6 min CN=81 Runoff=14.04 cfs 1.040 af

Subcatchment2A: (new Subcat) Runoff Area=123,100 sf 0.00% Impervious Runoff Depth=7.01"
 Flow Length=650' Slope=0.1000 '/' Tc=7.3 min CN=82 Runoff=21.25 cfs 1.650 af

Subcatchment2B: (new Subcat) Runoff Area=119,300 sf 0.00% Impervious Runoff Depth=6.88"
 Flow Length=330' Slope=0.0800 '/' Tc=5.5 min CN=81 Runoff=21.24 cfs 1.571 af

Subcatchment2C: (new Subcat) Runoff Area=35,600 sf 0.00% Impervious Runoff Depth=6.88"
 Flow Length=300' Slope=0.0900 '/' Tc=5.0 min CN=81 Runoff=6.45 cfs 0.469 af

Subcatchment3: (new Subcat) Runoff Area=141,500 sf 0.00% Impervious Runoff Depth=7.01"
 Flow Length=400' Slope=0.0800 '/' Tc=6.0 min CN=82 Runoff=25.28 cfs 1.896 af

Pond 1BP: (new Pond) Peak Elev=1,149.54' Storage=0.139 af Inflow=14.04 cfs 1.040 af
 Discarded=0.15 cfs 0.262 af Primary=13.25 cfs 0.778 af Outflow=13.39 cfs 1.040 af

Pond 2AP: (new Pond) Peak Elev=1,145.70' Storage=0.198 af Inflow=21.25 cfs 1.650 af
 Discarded=0.19 cfs 0.345 af Primary=19.69 cfs 1.304 af Outflow=19.88 cfs 1.649 af

Pond 2BP: (new Pond) Peak Elev=1,169.68' Storage=0.239 af Inflow=21.24 cfs 1.571 af
 Discarded=0.23 cfs 0.409 af Primary=19.16 cfs 1.161 af Outflow=19.40 cfs 1.570 af

Link DP1: (new Link) Inflow=27.85 cfs 1.888 af
 Primary=27.85 cfs 1.888 af

Link DP2: (new Link) Inflow=44.22 cfs 2.934 af
 Primary=44.22 cfs 2.934 af

Total Runoff Area = 13.345 ac Runoff Volume = 7.735 af Average Runoff Depth = 6.96"
100.00% Pervious = 13.345 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1A: (new Subcat)

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

Runoff = 14.91 cfs @ 12.08 hrs, Volume= 1.110 af, Depth= 7.01"
 Routed to Link DP1 : (new Link)

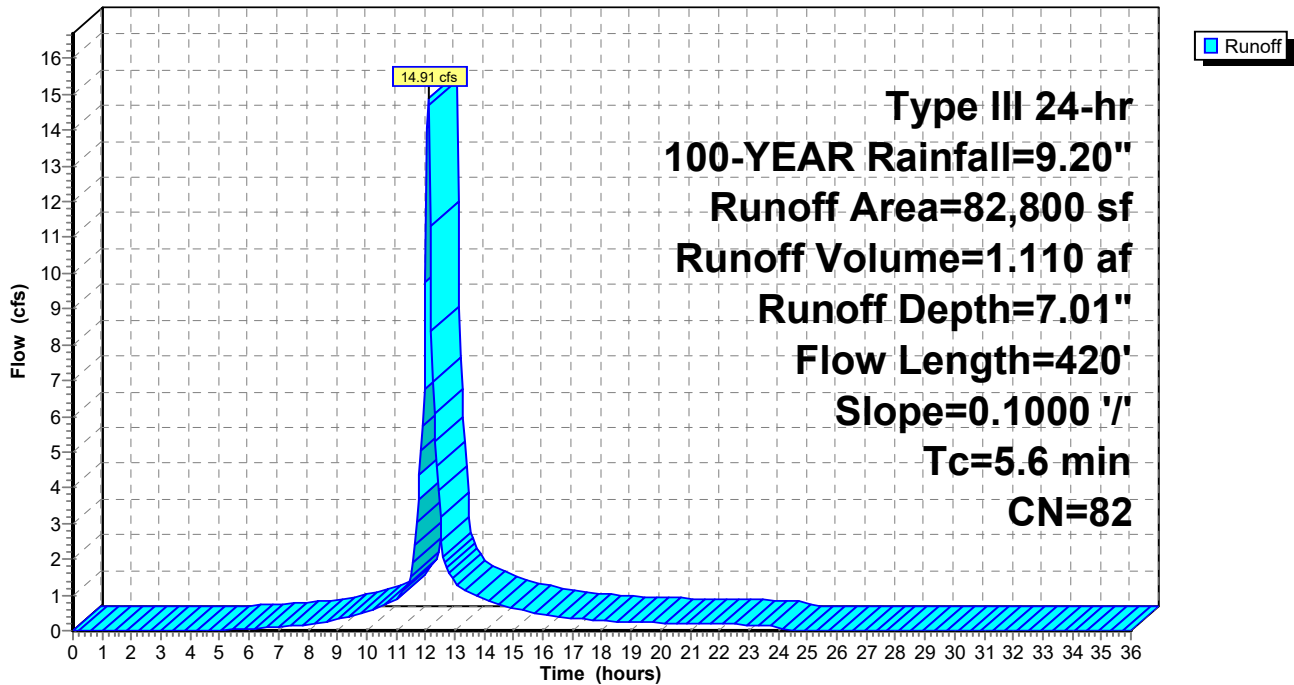
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YEAR Rainfall=9.20"

	Area (sf)	CN	Description
*	77,600	81	50-75% Grass cover, Fair, HSG C-D
*	5,200	96	Gravel surface, HSG C-D
	82,800	82	Weighted Average
	82,800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.8	370	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	420	Total			

Subcatchment 1A: (new Subcat)

Hydrograph



Summary for Subcatchment 1B: (new Subcat)

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

Runoff = 14.04 cfs @ 12.08 hrs, Volume= 1.040 af, Depth= 6.88"
 Routed to Pond 1BP : (new Pond)

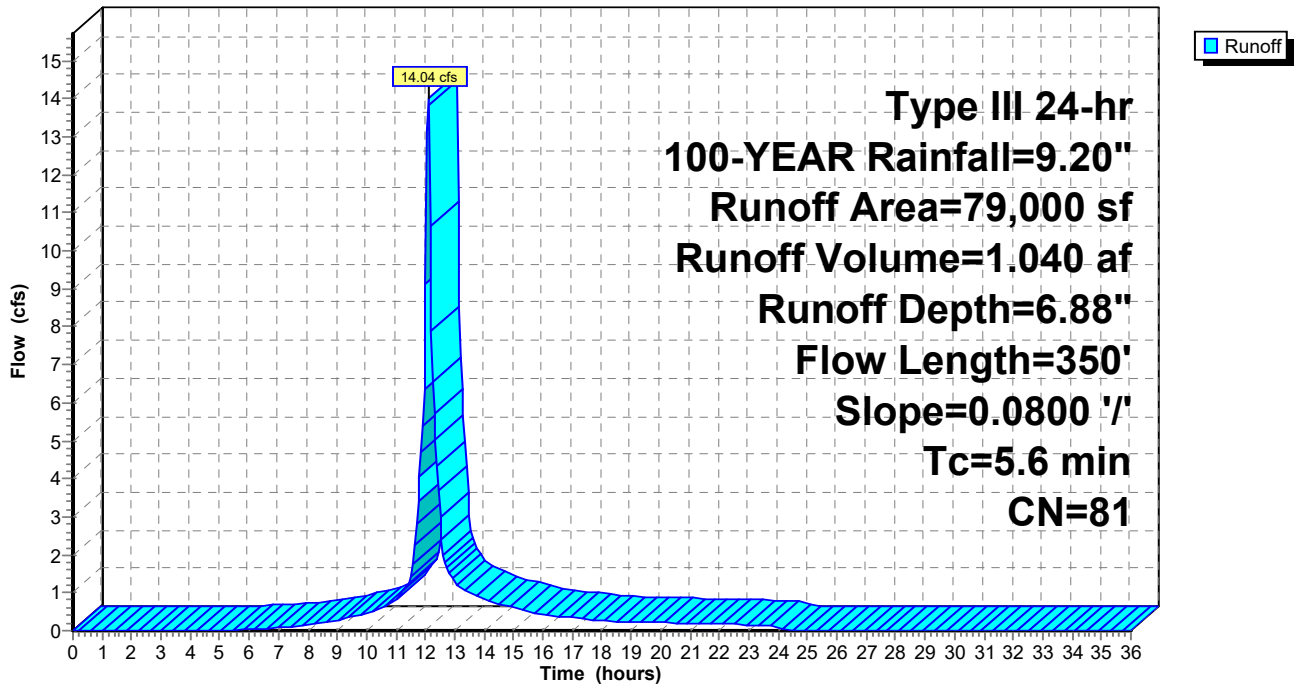
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YEAR Rainfall=9.20"

	Area (sf)	CN	Description
*	76,900	81	50-75% Grass cover, Fair, HSG C-D
	2,100	89	<50% Grass cover, Poor, HSG D
	79,000	81	Weighted Average
	79,000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.5	300	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.6	350	Total			

Subcatchment 1B: (new Subcat)

Hydrograph



Summary for Subcatchment 2A: (new Subcat)

Runoff = 21.25 cfs @ 12.10 hrs, Volume= 1.650 af, Depth= 7.01"
 Routed to Pond 2AP : (new Pond)

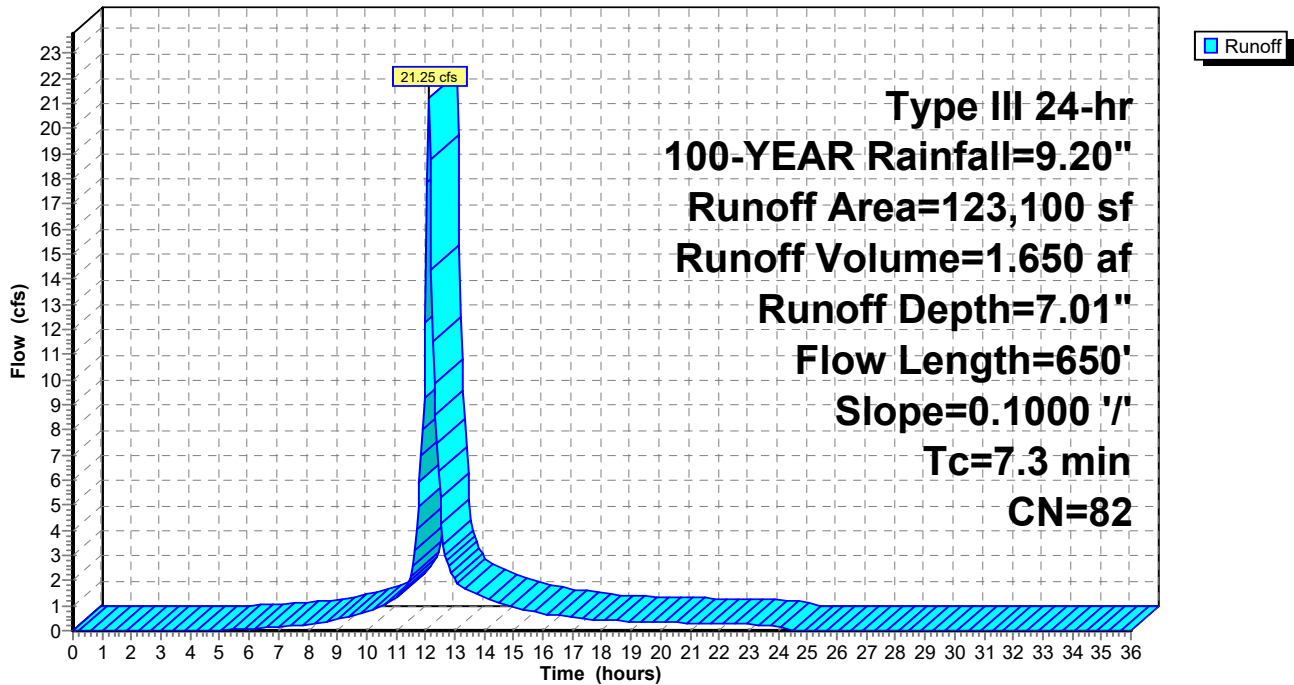
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YEAR Rainfall=9.20"

	Area (sf)	CN	Description
*	103,500	81	50-75% Grass cover, Fair, HSG C-D
	19,600	89	<50% Grass cover, Poor, HSG D
	123,100	82	Weighted Average
	123,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.8	50	0.1000	0.29		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
4.5	600	0.1000	2.21		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
7.3	650	Total			

Subcatchment 2A: (new Subcat)

Hydrograph



Summary for Subcatchment 2B: (new Subcat)

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

Runoff = 21.24 cfs @ 12.08 hrs, Volume= 1.571 af, Depth= 6.88"
 Routed to Pond 2BP : (new Pond)

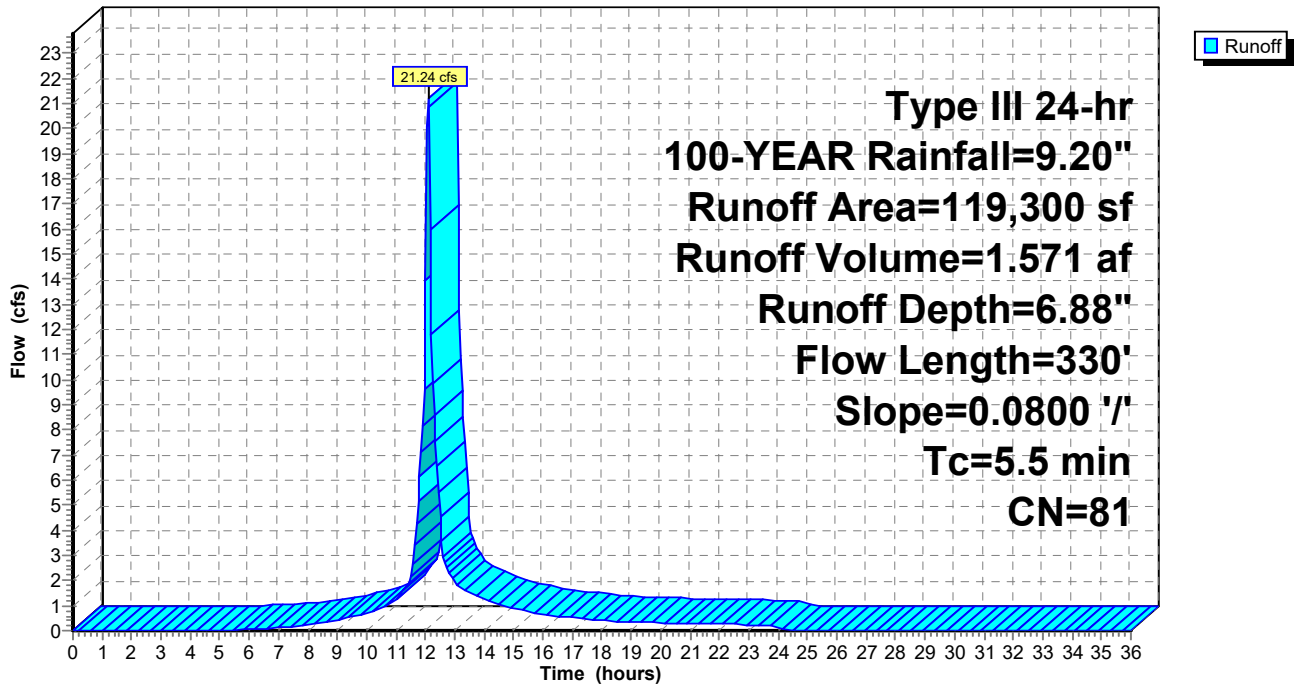
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YEAR Rainfall=9.20"

Area (sf)	CN	Description
* 119,300	81	50-75% Grass cover, Fair, HSG C-D
119,300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.4	280	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.5	330	Total			

Subcatchment 2B: (new Subcat)

Hydrograph



Summary for Subcatchment 2C: (new Subcat)

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

Runoff = 6.45 cfs @ 12.07 hrs, Volume= 0.469 af, Depth= 6.88"
 Routed to Link DP2 : (new Link)

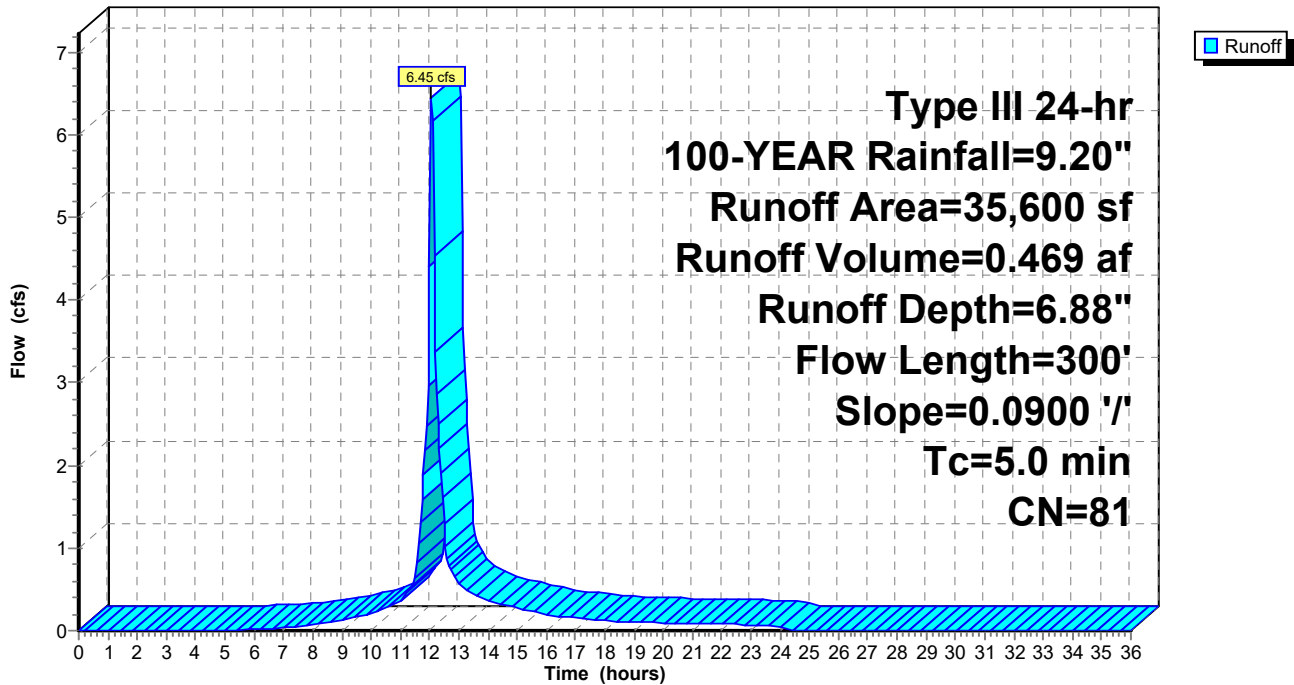
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YEAR Rainfall=9.20"

Area (sf)	CN	Description
* 35,600	81	50-75% Grass cover, Fair, HSG C-D
35,600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	50	0.0900	0.28		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.0	250	0.0900	2.10		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
5.0	300	Total			

Subcatchment 2C: (new Subcat)

Hydrograph



Summary for Subcatchment 3: (new Subcat)

Runoff = 25.28 cfs @ 12.09 hrs, Volume= 1.896 af, Depth= 7.01"

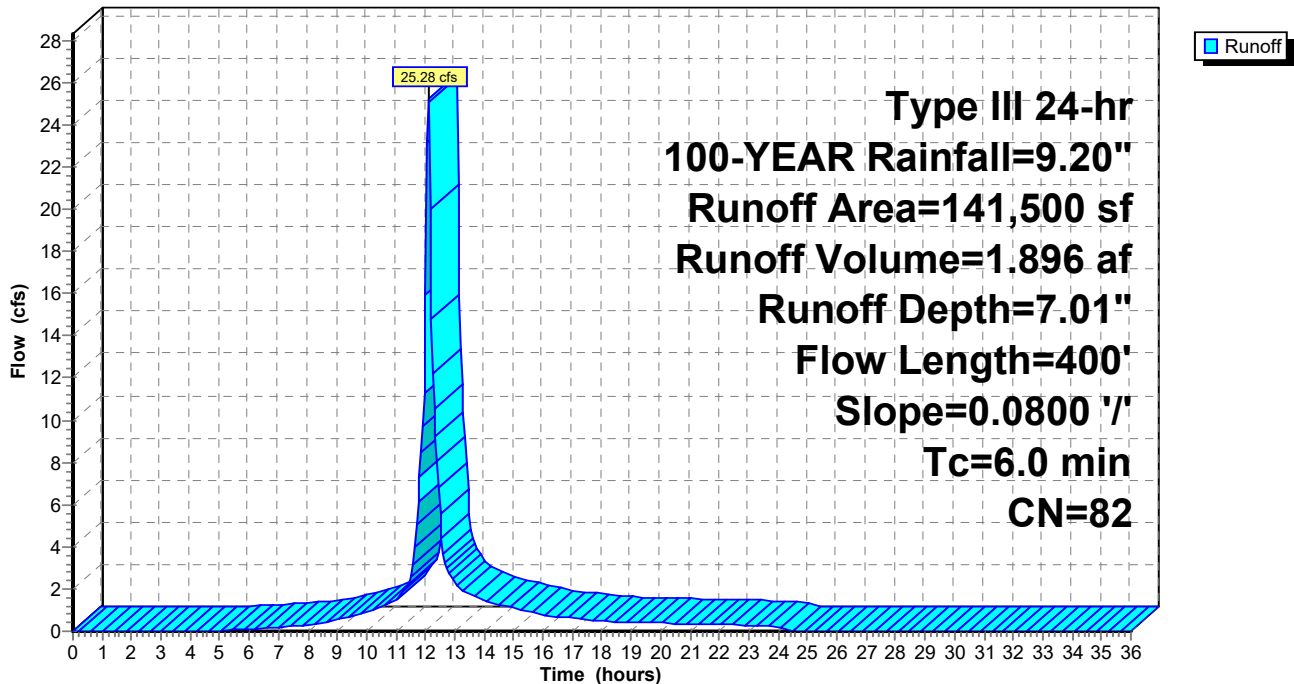
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-YEAR Rainfall=9.20"

	Area (sf)	CN	Description
*	131,100	81	50-75% Grass cover, Fair, HSG C-D
*	10,400	96	Gravel surface, HSG C-D
	141,500	82	Weighted Average
	141,500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	50	0.0800	0.27		Sheet Flow, Grass: Short n= 0.150 P2= 3.46"
2.9	350	0.0800	1.98		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
6.0	400	Total			

Subcatchment 3: (new Subcat)

Hydrograph



Summary for Pond 1BP: (new Pond)

Inflow Area = 1.814 ac, 0.00% Impervious, Inflow Depth = 6.88" for 100-YEAR event
 Inflow = 14.04 cfs @ 12.08 hrs, Volume= 1.040 af
 Outflow = 13.39 cfs @ 12.11 hrs, Volume= 1.040 af, Atten= 5%, Lag= 1.7 min
 Discarded = 0.15 cfs @ 12.11 hrs, Volume= 0.262 af
 Primary = 13.25 cfs @ 12.11 hrs, Volume= 0.778 af
 Routed to Link DP1 : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,149.54' @ 12.11 hrs Surf.Area= 0.094 ac Storage= 0.139 af

Plug-Flow detention time= 107.1 min calculated for 1.040 af (100% of inflow)
 Center-of-Mass det. time= 106.9 min (902.0 - 795.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,147.50'	0.185 af	12.00'W x 157.00'L x 2.50'H Prismatic Z=3.0

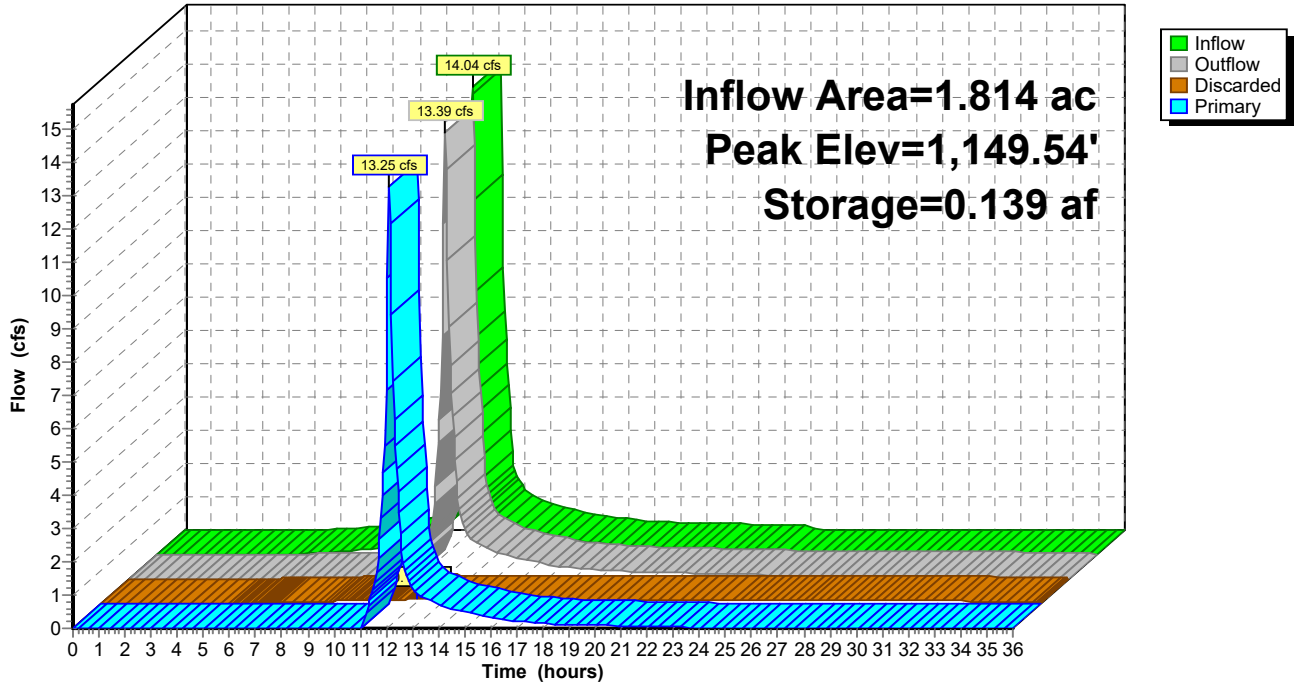
Device	Routing	Invert	Outlet Devices
#1	Primary	1,149.00'	12.0' long + 1.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	1,147.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1,100.00'

Discarded OutFlow Max=0.15 cfs @ 12.11 hrs HW=1,149.54' (Free Discharge)
 ↳2=Exfiltration (Controls 0.15 cfs)

Primary OutFlow Max=12.92 cfs @ 12.11 hrs HW=1,149.54' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 12.92 cfs @ 1.93 fps)

Pond 1BP: (new Pond)

Hydrograph



Summary for Pond 2AP: (new Pond)

Inflow Area = 2.826 ac, 0.00% Impervious, Inflow Depth = 7.01" for 100-YEAR event
 Inflow = 21.25 cfs @ 12.10 hrs, Volume= 1.650 af
 Outflow = 19.88 cfs @ 12.14 hrs, Volume= 1.649 af, Atten= 6%, Lag= 2.1 min
 Discarded = 0.19 cfs @ 12.14 hrs, Volume= 0.345 af
 Primary = 19.69 cfs @ 12.14 hrs, Volume= 1.304 af
 Routed to Link DP2 : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,145.70' @ 12.14 hrs Surf.Area= 0.122 ac Storage= 0.198 af

Plug-Flow detention time= 91.5 min calculated for 1.647 af (100% of inflow)
 Center-of-Mass det. time= 92.1 min (886.5 - 794.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,143.50'	0.237 af	15.00'W x 175.00'L x 2.50'H Prismatic Z=3.0

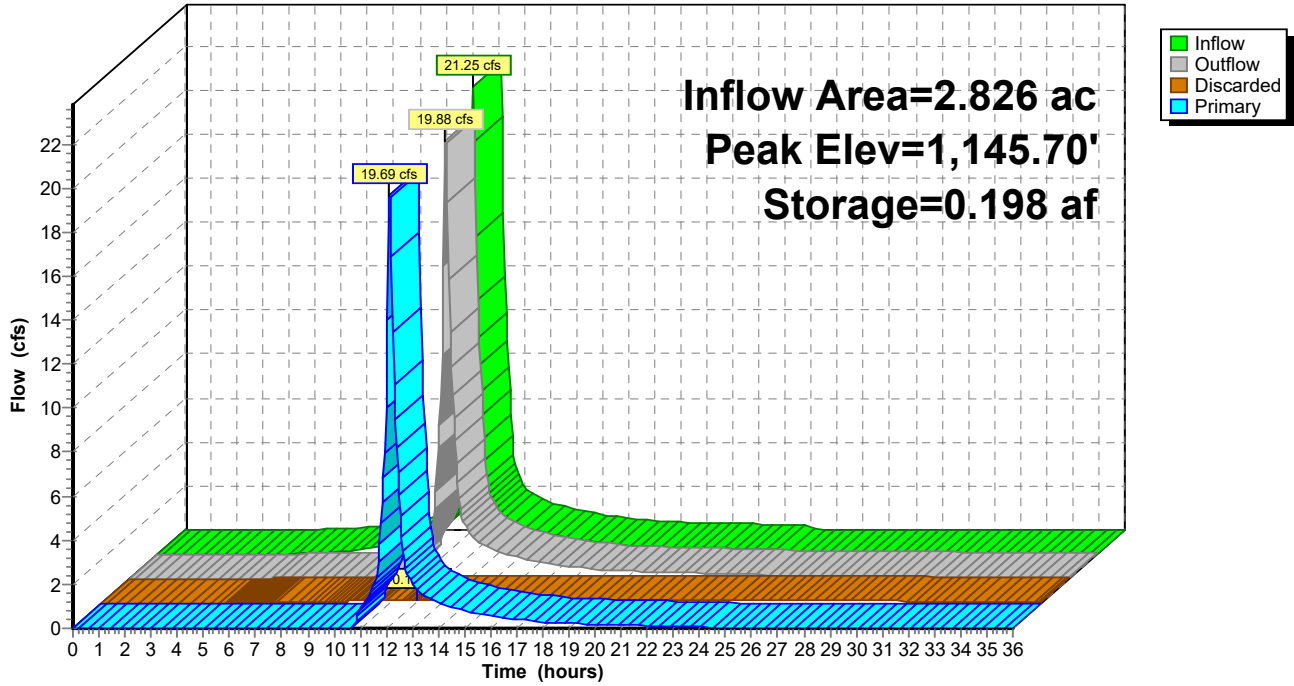
Device	Routing	Invert	Outlet Devices
#1	Primary	1,145.00'	12.0' long + 1.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	1,143.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1,100.00'

Discarded OutFlow Max=0.19 cfs @ 12.14 hrs HW=1,145.69' (Free Discharge)
 ↳2=Exfiltration (Controls 0.19 cfs)

Primary OutFlow Max=19.37 cfs @ 12.14 hrs HW=1,145.69' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir(Weir Controls 19.37 cfs @ 2.21 fps)

Pond 2AP: (new Pond)

Hydrograph



Summary for Pond 2BP: (new Pond)

Inflow Area = 2.739 ac, 0.00% Impervious, Inflow Depth = 6.88" for 100-YEAR event
 Inflow = 21.24 cfs @ 12.08 hrs, Volume= 1.571 af
 Outflow = 19.40 cfs @ 12.12 hrs, Volume= 1.570 af, Atten= 9%, Lag= 2.3 min
 Discarded = 0.23 cfs @ 12.12 hrs, Volume= 0.409 af
 Primary = 19.16 cfs @ 12.12 hrs, Volume= 1.161 af
 Routed to Link DP2 : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,169.68' @ 12.12 hrs Surf.Area= 0.152 ac Storage= 0.239 af

Plug-Flow detention time= 111.8 min calculated for 1.568 af (100% of inflow)
 Center-of-Mass det. time= 112.4 min (907.4 - 795.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,167.50'	0.289 af	12.00'W x 250.00'L x 2.50'H Prismatic Z=3.0

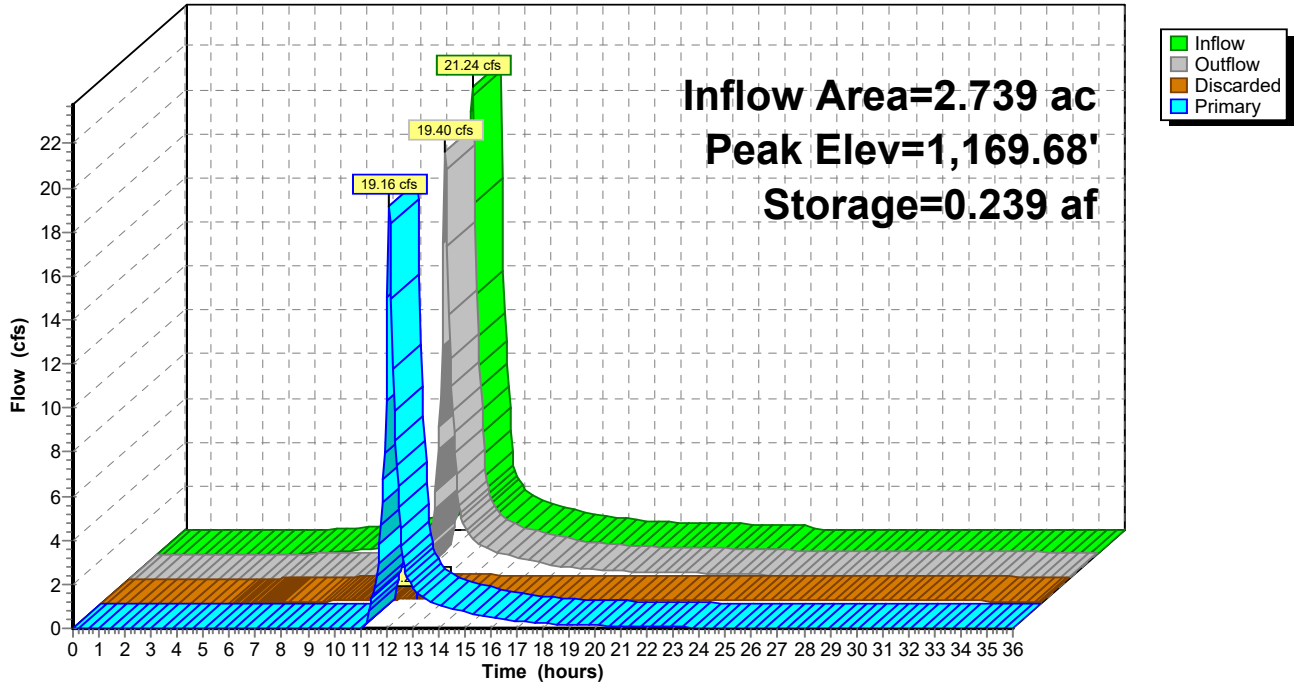
Device	Routing	Invert	Outlet Devices
#1	Primary	1,169.00'	12.0' long + 1.0 ' SideZ x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Discarded	1,167.50'	1.500 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 1,100.00'

Discarded OutFlow Max=0.23 cfs @ 12.12 hrs HW=1,169.67' (Free Discharge)
 ↳2=Exfiltration (Controls 0.23 cfs)

Primary OutFlow Max=18.65 cfs @ 12.12 hrs HW=1,169.67' (Free Discharge)
 ↳1=Broad-Crested Rectangular Weir (Weir Controls 18.65 cfs @ 2.19 fps)

Pond 2BP: (new Pond)

Hydrograph



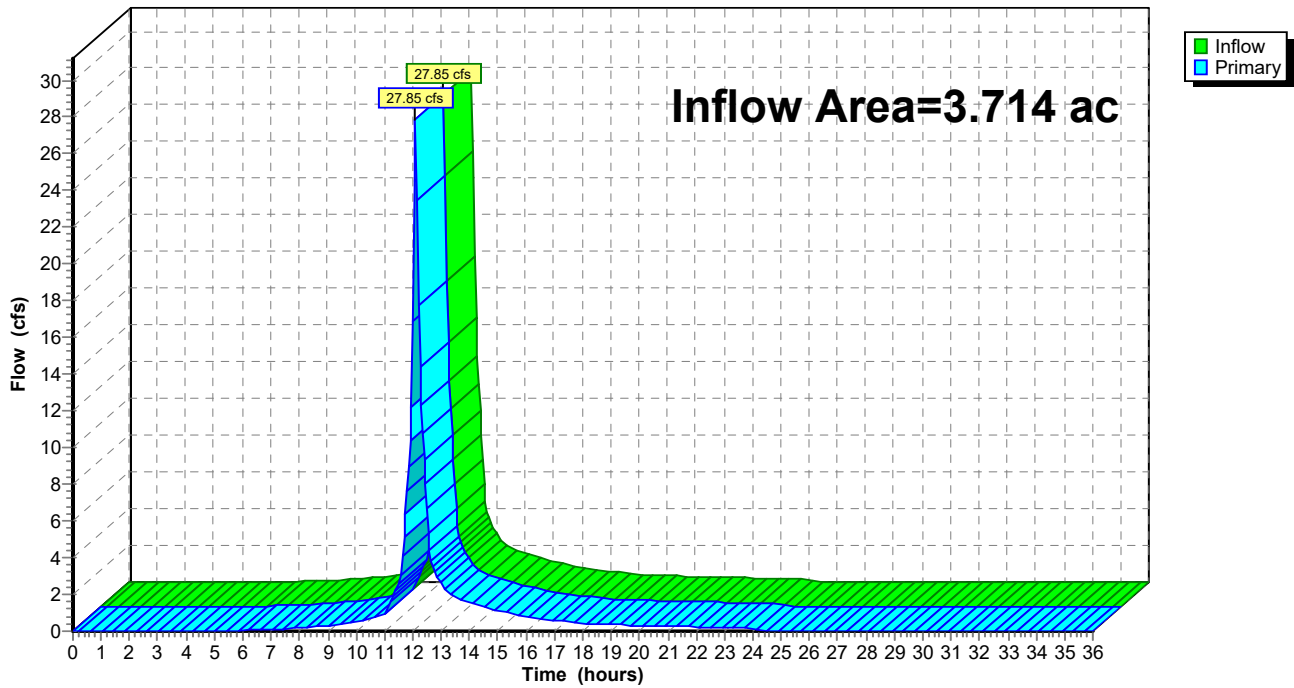
Summary for Link DP1: (new Link)

Inflow Area = 3.714 ac, 0.00% Impervious, Inflow Depth = 6.10" for 100-YEAR event
Inflow = 27.85 cfs @ 12.10 hrs, Volume= 1.888 af
Primary = 27.85 cfs @ 12.10 hrs, Volume= 1.888 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP1: (new Link)

Hydrograph



Summary for Link DP2: (new Link)

Inflow Area = 6.382 ac, 0.00% Impervious, Inflow Depth = 5.52" for 100-YEAR event
Inflow = 44.22 cfs @ 12.12 hrs, Volume= 2.934 af
Primary = 44.22 cfs @ 12.12 hrs, Volume= 2.934 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link DP2: (new Link)

Hydrograph

