Harper
Houf Peterson
Righellis Inc.

Mahonia Crossing

5205 BattleCreek Rd
Salem, OR 97306

Stormwater Management Memo

August 2022

Prepared For:

Community Development Partners
126 NE Alberta St, Suite 202
Portland, OR 97211

HHPR Project # SEA-146

Prepared By:

Harper Houf Peterson Righellis Inc.
530 Center Street NE, Suite 240
Salem, OR 97301
P: 503-365-1131

Beau Braman, PE
Spencer Martin, PE

REGISTERED PROFESSIONAL ENGINEER
77,944

OREGON
JAN. 3, 2011
BEAU J. BRAMAN

EXPIRES: 12/31/2023

HHPR

ENGINEERS ◆ PLANNERS
LANDSCAPE ARCHITECTS ◆ SURVEYORS

Table of Contents

Tables

Appendices

Project Overview and Description

The purpose of this report is to define the site stormwater management for second phase of the multifamily development project located at 5205 Battle Creek Rd SE in Salem, Oregon. Phase 1 (Case File: SPR-ADJ-DAP-DR22-24), also referred to as Woodscape Green North Subdivision, consists of one 7.72 acre lot with several apartment buildings and community space. Phase 1 also includes public improvements along approximately 1,900 lineal feet of Battle Creek Rd SE and extensions of Salal St SE and Teal Dr SE. Phase 2, also referred to as Mahonia Crossing, consists of eight apartment buildings across two lots which are 2.82 and 1.84 acres in area. Refer to Basin Map in Appendix A for additional details. This report is meant to be read in conjunction with the stormwater report prepared for Phase 1 by Westech Engineering, dated July 2022.

Proposed stormwater management design for Phase 2 includes runoff collection, pipe conveyance, a private vegetated treatment/detention rain garden, and the reconstruction of a public detention basin.

Existing Site Conditions

The existing site is predominately covered in grass with mature trees throughout. The site gradually slopes to the north. A drainage area of 44.73 acres of residential development to the south and west currently outfalls to a drainage channel that runs through the site which will be removed in Phase 1. A city-maintained detention pond serving the adjacent development exists on-site along the west boundary just north of Teal Dr SE.

Proposed Site Conditions

The proposed site constructs eight apartment buildings, four parking lots, two stormwater facilities, pedestrian walkways, site utilities and landscaping. Site stormwater management was accomplished by meeting the City of Salem stormwater requirements outlined below in Table 1.

Table 1: City of Salem Stormwater Requirements

Design Requirement	City of Salem Criteria
Water Quality Treatment Area	All new and replaced impervious area within the project limits
Water Quality Design Storm	1.38 inches per 24-hour period.
Flow Control	The peak runoff rate of the post-development conditions are restricted to less than or equal to pre-development conditions for one half of the two-year, the 10-year, the 25-year, and the 100-year 24-hour storm event.
Infiltration	If on-site testing demonstrates the infiltration rate is 0.5 inch/hour or greater, the stormwater facility shall be designed as an infiltration facility. If the measured infiltration rate is less than 0.5 inches/hour, the treatment facility shall be designed as a partial infiltration facility.
Conveyance	Convey the 10-year, 24 hour, storm event (Local Storm Drains < 50 acres)
Downstream Capacity	¼ mile downstream or to a distance where the project site contributes less than 15 percent of upstream area; If downstream capacity issues have been identified

Methodology

A geotechnical investigation was completed by Central Geotechnical Services, LLC., dated May 13, 2022. A technical memorandum, dated June 13, 2022, amends the geotechnical investigation with supplemental infiltration testing. Excerpts from the geotechnical engineering report is included in Appendix B. The full report is available upon request. The following is a summary design infiltration rates:

- Design Infiltration Rate (depths < 5 feet bgs) = 1.5 inches per hour
    - Use a factor of safety of 2 for design = 0.75 inches per hour
- Design Infiltration Rate (depths > 5 feet bgs) = 0.0 inches per hour

Nearby well logs indicate groundwater levels between 37 and 41 feet below ground surface (See Appendix B). The drain rock depths for the proposed stormwater facilities range from 3 to 12 feet below existing ground surface, conforming to the COS Design Standards requirements of 3 feet of separation from groundwater.

The Natural Resource Conservation Service (NRCS) Web Soil Survey describes the soils on-site as Nekia silty clay loam and Salkum silty clay loam. These soils have a Hydrologic Soil Grouping classification ranging from B to C. 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. Analysis for Phase 2 will assume half of all area to be Hydrologic Soil Group B and the other half Group C. See Appendix B for Soil Survey Map.

TR-55 Methodology was used when calculating curve numbers and time of concentrations. Per City of Salem Administrative Rules, Appendix 004D, Table 4D-6, curve numbers used are:

- 58 (Pre-development Type B)
- 72 (Pre-development Type C)
- 61 (Good Condition Open Space Type B)
- 74 (Good Condition Open Space Type C)
- 98 (Impervious)

Time of Concentrations were calculated using City of Salem Administrative Rules, Appendix 004D, section 4D.4. Time of concentrations are divided into three segments: sheet flow, shallow concentrated flow and pipe flow. Developed time of concentrations for Phase 2 basins are summarized in Table 2. See Basin Map in Appendix A for flow paths. See hydrograph summaries in Appendix C for calculations.

24-hour rainfall depths were obtained from Table 4D-3 of the City of Salem Administrative Rules (See Appendix B for rainfall depth values).

Analysis

Storm runoff modeling was completed using the Santa Barbara 24-hour Urban Unit Hydrograph method. HydroCAD stormwater modeling software was be used to analyze the storm events.

Phase 2 is separated by the north and south lots, labeled as Basins 1D and 1E, respectively. General basin characteristics of developed conditions are listed in Table 2 below. See Appendix A for Basin Map.

Table 2 – Post-Development Catchment Areas

Catchment ID	Source	Impervious Area (ac)	Pervious Area (ac)	CN[1]	T_c (min)
Basin 1D	Paved/Roof/ Landscape	1.384	0.920	82	24.7
Basin 1E	Paved/Roof/ Landscape	1.436	0.920	83	7.4
Total*		**2.820**	**1.840**		

[1]Area-weighted curve number (CN).

Per Phase 1 storm report, there are two stormwater facilities to be constructed as part of Phase 2:

1) A treatment and detention rain garden (referred to as Mahonia North Rain Garden) will be constructed in the northeast corner of Basin 1D. The Mahonia North Rain Garden provides water quality treatment for Basin 1D and provides detention for Basin 1D and off-site upstream basins.
2) An existing City-owned dry detention basin (referred to as Teal Pond) located in the southwest corner of Basin 1D will be reconstructed as a rain garden. The purpose of this is to enlarge the footprint of the pond and add drain rock storage to increase the overall detention capacity of the facility. The Teal Pond is then routed to the Mahonia North Rain Garden for additional detention. The Teal Pond does not provide water quality treatment, per City requirements, but will be planted with wetland plants.

Water Quality

Per Phase 1 storm report, water quality treatment for Basin 1E has been provided with Phase 1's facilities. Phase 2 is responsible for treating runoff from Basin 1D only. Water quality requirements were met by infiltrating the water quality storm event of 1.38 inches for Basin 1D within the Mahonia North Rain Garden through the water quality media. No water quality treatment will be provided in the reconstructed Teal rain garden, as the existing facility does not currently provide any treatment for its upstream basin.

City of Salem Public Works Design Standards gives the following design parameters for rain gardens:

- Side slopes = 3:1 maximum
- Overflow freeboard = 1 foot minimum
- Maximum Treatment Depth = 18 inches
- Drain rock depth = 1-4 feet
- Drain rock void space = 40%
- Water quality soil infiltration rate = 2.0 inches per hour
- Separation from groundwater table = 3 feet
- Infiltration time:
    - All water must drain from the surface within 24 hours after the storm event (Time includes the 24-hour storm event; design requirements allow infiltration up to 48 hours (24 hours beyond the 24-hour storm event))
    - All water must drain from the storage reservoir within 30 hours after the storm event (Time includes the 24-hour storm event, design requirements allow infiltration up to 54 hours (30 hours beyond the 24-hour storm event))

A summary of the rain garden water quality design is provided in Table 3 and Table 4 below:

Table 3 – Rain Garden Sizing Summary

Facility ID	Facility Elevations (ft)		Facility Surface Area (sf)		Drain Rock Surface Area (sf)	Depth of Drain Rock (in)
	Top	Bottom	Top	Bottom		
Mahonia North Rain Garden	377.00	371.20	4,207	849	1,908	48
Teal Rain Garden	387.25	385.00	7,412	4,895	5,982	48

Table 4 – Rain Garden Water Quality Design

Facility ID	Facility Bottom Elevation (ft)	Max. Treatment Elevation (ft)	Water Quality Event Elevation	Time to Drain Surface[2] (hr)	Time to Drain Storage[2] (hr)
Mahonia North Rain Garden	371.20	372.70	372.69	33.0	33.0
Teal Rain Garden[1]	-	-	-	-	-

[1]Teal Rain Garden does not provide water quality treatment

[2]Time includes 24-hr storm event

Flow Control

Flow rates are restricted to less than or equal to pre-development conditions for one half of the 2-year, 10-year, 25-year, and 100-year event.

Flow control requirements were met by detaining stormwater runoff in the rain garden with the use of a flow control manhole. Orifices in the flow control manhole restrict the flow out of the pond to that of the required rate. Post-development flows were restricted to pre-development rates for one half of the 2-year, 10-year, 25-year, and 100-year storms.

The overall design release rates and rain garden flow control device design are summarized in Table 5 and Table 6 below. See Hydrographs in Appendix C for additional information.

Table 5 – Flow Control Design Results

	Design Storm (cfs)			
	½ 2-year	10-year	25-year	100-year
Total Developed Release	3.68	6.50	8.94	17.27
Allowable Release	3.82	6.50	8.95	17.29

Table 6 – Rain Garden Flow Control Device Design

	Mahonia North Rain Garden	Teal Rain Garden
1/2 2-yr Orf. (in)	3.00	2.00
1/2 2-yr Orf. Elevation	365.40	382.75
10-yr Orf. (in)	1.25	-
10-yr Orf. Elevation	367.40	-
25-yr Orf. (in)	5.00	6.00
25-yr Orf. Elevation	375.11	385.10
100-yr Orf. (in)	5.00	12.00
100-yr Orf Elevation	375.43	386.00
Top of Pond 100-yr Event Elevation	375.95	386.24
Available Freeboard (ft)	1.05	1.00

Conveyance

Stormwater conveyance pipes were designed to convey the 10-year storm event using the Rational Method. See Appendix D for Conveyance information. Rational Method input used:

- Manning's "n" Value = 0.013
- Cy = 1.0 (Table 4D-2)
- C = 0.9 and 0.17 (Table 4D-1 – Impervious Area and Lawns 0% to 2% slopes)
- i = 2.1 (Figure 4D-1 – 10-yr, 5 min duration)

Downstream Analysis

There are no known identified downstream deficiencies for this project.

Private Stormwater Facilities Agreement

A private stormwater facilities agreement will be recorded in Marion County prior to the Final Stormwater Management Report.

Operations and Maintenance Plan

See Appendix E for Operations and Maintenance Plan.

Appendix A – Maps and Plans

PHASE 2 BASIN MAP

MAHONIA CROSSING

SALEM, OREGON

SEE PHASE 1 STORM REPORT FOR ADDITIONAL ON-SITE AND OFF-SITE BASIN MAPS

BASIN 1D
1.384 AC IMP
1.436 AC PER

BASIN 1E
0.920 AC IMP
0.920 AC PER

DEVELOPED FLOW PATH - BASIN 1D
SHEET: L = 300' S = 3.3%
SHALLOW: L = 53' S = 1.0%
PIPE: L = 47' S = 9.6%

DEVELOPED FLOW PATH - BASIN 1E
SHEET: L = 97' S = 7.3%
PIPE: L = 212' S = 2.3%

BATTLE CREEK ROAD SE
BATTLE CREEK RD
EASTLAKE DR SE
FOXHAVEN DR SE
SALAL ST SE
TEAL DR SE
GAS
GAS SD
W
WTR
SD

0 50 100 200
SCALE: 1" = 100'

Harper Houf Peterson Righellis Inc.
ENGINEERS★PLANNERS
LANDSCAPE ARCHITECTS★SURVEYORS
205 SE Spokane Street, Suite 200, Portland, OR 97202
phone: 503.221.1131 www.hhpr.com fax: 503.221.1171

DESIGNED:	SSM	CHECKED:	BJB
DRAWN:	HHPR	DATE:	-----

REVISIONS

NO.	DESCRIPTION	DATE

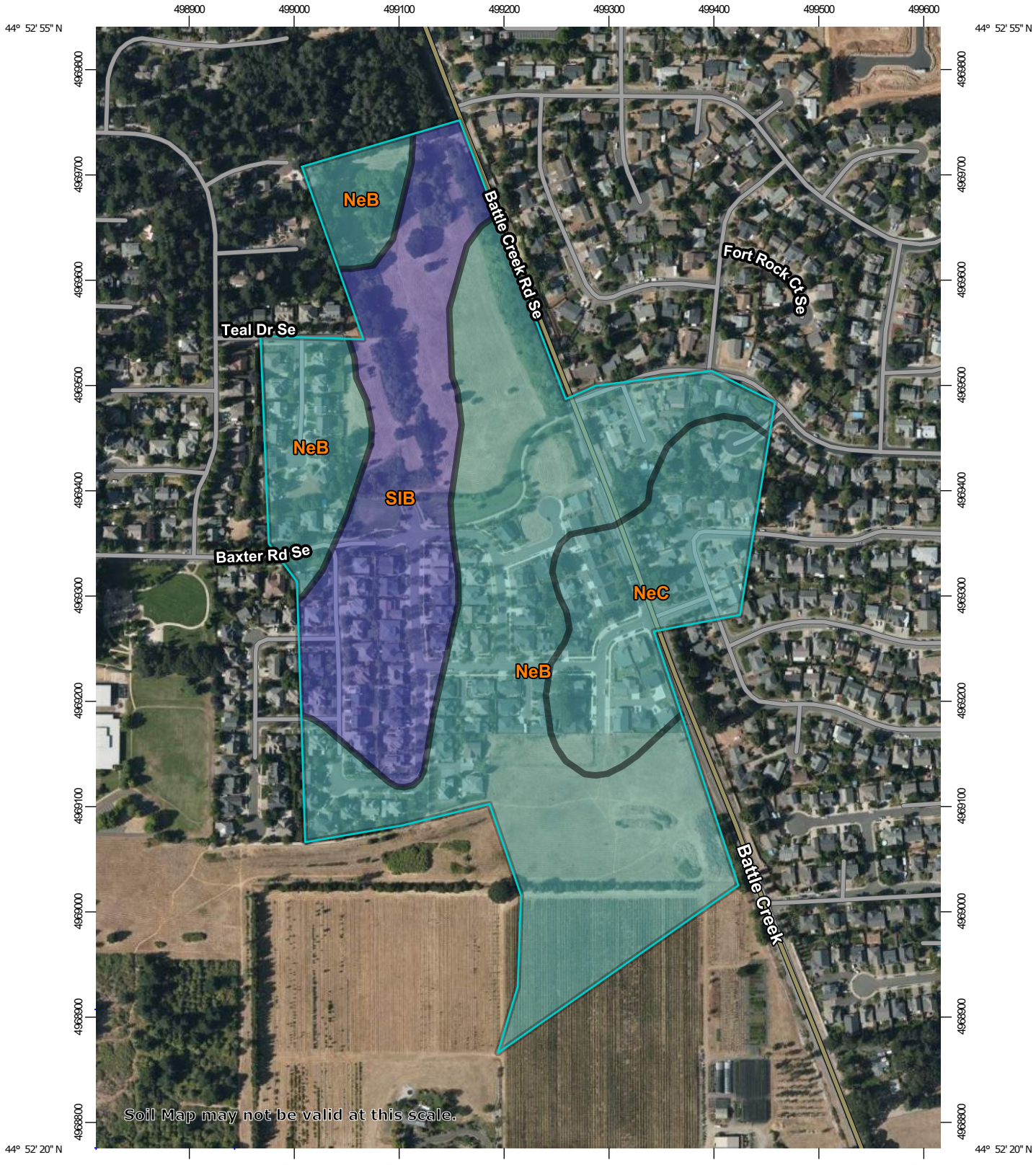
SHEET NO.

JOB NO. SEA-146

P:\04-Salem\SEA /Scott Edwards Architecture\SEA-146 (CDP Salem Gateway Phase 2)\SEA1146-DOCS\Reports\StormwaterDWGs\ Phase 2 Basin Map.dwg

Appendix B – Methodology

Hydrologic Soil Group—Marion County Area, Oregon
(CDP & Offsite Drainage)



Map Scale: 1:5,190 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N 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 1:20,000.

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

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

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

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

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

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

Soil Survey Area: Marion County Area, Oregon
Survey Area Data: Version 19, Oct 27, 2021

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

Date(s) aerial images were photographed: Aug 1, 2018—Aug 31, 2018

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
NeB	Nekia silty clay loam, 2 to 7 percent slopes	C	35.8	58.6%
NeC	Nekia silty clay loam, 7 to 12 percent slopes	C	10.0	16.4%
SlB	Salkum silty clay loam, basin, 0 to 6 percent slopes	B	15.2	24.9%
Totals for Area of Interest			**61.1**	**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.

CENTRAL
GEOTECHNICAL SERVICES, LLC

10240 SW Nimbus Avenue
Suite L6
Portland, Oregon 97223
503.616.9419
www.centralgeotech.com

Supplemental Testing

On June 9, 2022, CGS Soil Technician, Adrian Cadena performed infiltration tests at the requested depths and locations in general accordance with the Open Pit Methodology described in the City of Salem Department of Public Works Administrative Rules Chapter 109 Division 004 Appendix C Infiltration Testing, dated January 2014. The excavations were made by Western States Soil Conservation using a Hitachi 135 tracked excavator. The Open Pit Falling Head procedure measures combined vertical and lateral water flow as an infiltration drawdown rate, which is not equivalent to the coefficient of permeability.

The test procedure consisted of adding water to the test pits and monitoring the water level from a fixed reference point over time. Measurements were made with a standard steel tape measure to the nearest 1/16 of an inch. The infiltration test pits were allowed to pre-saturate for 4 hours prior to beginning the final test measurements. The approximate test locations are shown in Figure 1, below.

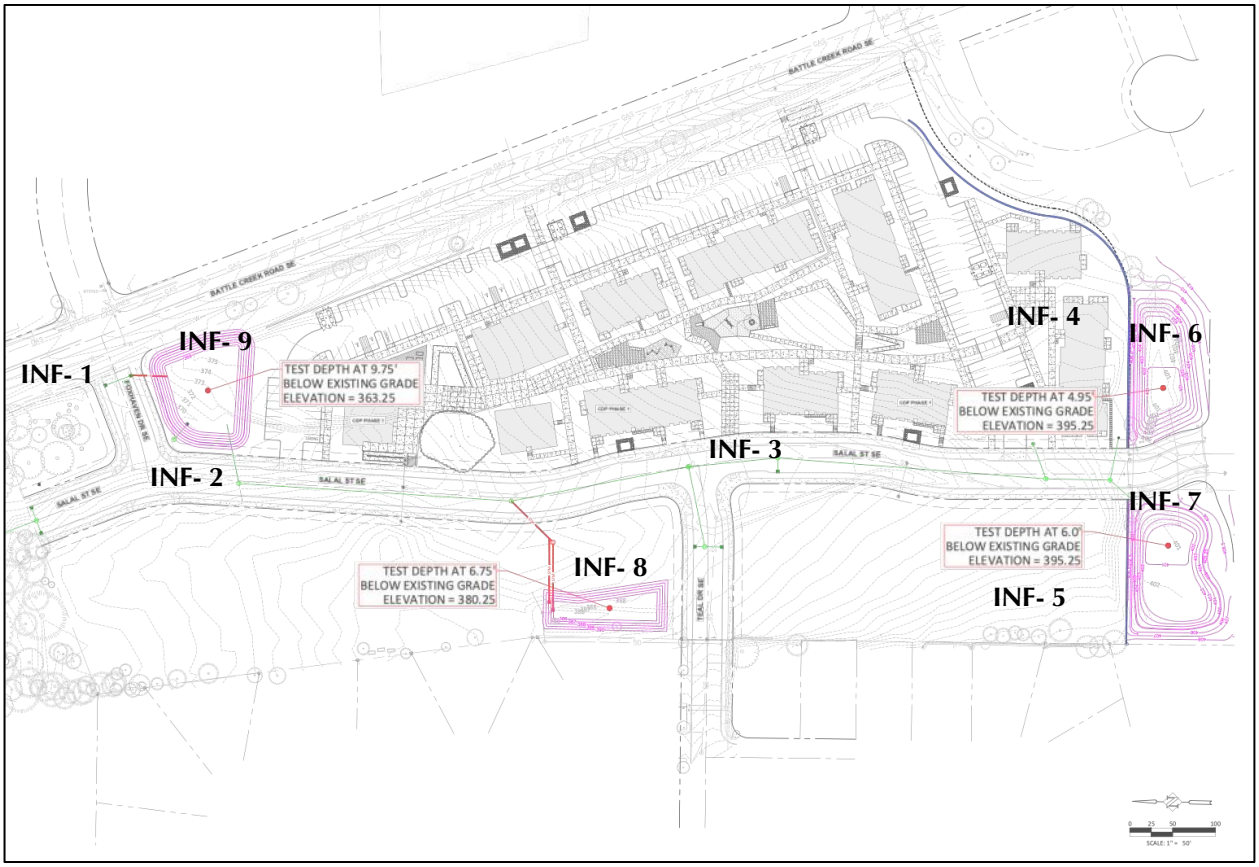


Figure 1: **Infiltration Testing Map with proposed stormwater basins*, undated, prepared by HHPR. Previous infiltration tests (INF-1 through INF-6) have been added for reference. All locations are approximate.***

Based on the test results, the recorded infiltration drawdown rates at the requested depths were highly variable across the site, ranging from negligible to 11 inches per hour. This variability appears to reflect

CENTRAL
GEOTECHNICAL SERVICES, LLC

10240 SW Nimbus Avenue
Suite L6
Portland, Oregon 97223
503.616.9419
www.centralgeotech.com

the discontinuous nature of fracture permeability in the underlying basalt formation. The measured infiltration drawdown rates are summarized In Table-1, below.

Table 1 - Infiltration Test Parameters and Summary of Test Results

Test Number	Soil Type	Test Depth (feet)	Pressure Head (inches)	Infiltration Drawdown Rate (inches/hour)
INF-1	Clayey SILT	2.0	6	2.75
INF-2	Clayey SILT	2.0	6	2.0
INF-3	Clayey SILT	2.0	6	1.5
INF-4	Fractured BASALT	3.0	12	3.9[1]
INF-5	Fractured BASALT	5.0	6	8.0[1]
INF-6	Fractured BASALT	7.0	12	2.3[1]
INF-7	Fractured BASALT	5.0	12	11.0[1]
INF-8	Fractured BASALT	6.75	12	Negligible[1]
INF-9	Fractured BASALT	8.0[2]	12	0.1[1]

[1]Measured rate reflects fractured basalt permeability, measured rates not appropriate for long term sustainable design.
[2]INF-9 was completed at 8 feet bgs due to practical refusal on basalt using a Hitatchi 135 Excavator (30,000 lbs).

Conclusions and Recommendations

As indicated in section 3.13 *Storm Water Infiltration Facilities* of our revised Geotechnical Report dated May 13, 2022, for shallow infiltration systems, we recommend a design infiltration drawdown rate of 1.5 inches per hour. A minimum factor of safety of 2 should be applied to this recommended rate. It should be understood that infiltration drawdown rates reflect a component of lateral flow and are not equivalent to hydraulic conductivity. All systems should include overflow outlets that discharge overflow to a suitable dispersal area. All infiltration systems should be field tested prior to completion.

In our opinion, the higher measured rates in fractured basalt observed in the field will quickly decrease over time, due to clogging by silt and clay, and should not be relied upon for long term infiltration beyond our recommended rate. An appropriate factor of safety should be applied to the recommended rate by the system designer to protect against siltation, soil variations and potential overflow. Infiltration rates

MI 31.....

11709

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date of well completion.

RECEIVED
AUG 30 1965
STATE ENGINEER
SALEM, OREGON

WELL DRILLED AUGUST 1949

WATER WELL REPORT
STATE OF OREGON
(Please type or print)

State Well No. 8/3W-11 R1

State Permit No.

(1) OWNER:
Name SCHOOL DISTRICT NO. 24J
Address 1309 FERRY STREET
SALEM, OREGON

(2) LOCATION OF WELL:
County MARION Driller's well number
SE ¼ SE ¼ Section 11 T. 8S R. 3W W.M.
Bearing and distance from section or subdivision corner
Pringle School
Rt. 4, Box 142
Salem, Oregon

(3) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☒

(5) TYPE OF WELL:
Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:
Threaded ☐ Welded ☒
8 " Diam. from 0 ft. to 45 ft. Gage .280
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS:
Perforated? ☐ Yes ☒ No
Type of perforator used
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS:
Well screen installed? ☐ Yes ☒ No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:
12" hole drilled to 45' pressured with
Well seal—Material used in seal cement to surface
Depth of seal 45 ft. Was a packer used? no
Diameter of well bore to bottom of seal 12 in.
Were any loose strata cemented off? ☐ Yes ☒ No Depth
Was a drive shoe used? ☒ Yes ☐ No
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.
Did any strata contain unusuable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off

(10) WATER LEVELS:
Static level 40 ft. below land surface Date 9/5/49
Artesian pressure lbs. per square inch Date

(11) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? SD 24J
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
Bailer test 25 gal./min. with 45 ft. drawdown after 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG:
Diameter of well below casing 8
Depth drilled 105 ft. Depth of completed well 105 ft.

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Clay-surface	0	3
Clay-red	3	35
Lava-Basalt	35	105
Aquifers 52' 10Gpm		
61' 4Gpm		
78/97' 11Gpm		
Pump installed and pumped		
at 25GPM open flow.		

Work started App. 8/25/49 Completed 9/5/49 19
Date well drilling machine moved off of well 9/5/49 19

(13) PUMP:
Manufacturer's Name Pacific
Type: Jet H.P. 3

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME DUFFIELD BROS
(Person, firm or corporation) (Type or print)
Address 4123 BLUFF AVE S E, SALEM, ORE.

Drilling Machine Operator's License No. 46

[Signed] Leonard Duffield
(Water Well Contractor)

Contractor's License No. 15 Date Aug. 19, 1965

(USE ADDITIONAL SHEETS IF NECESSARY)

JAN 11 1990

STATE OF OREGON M 1 24 1838 WATER RESOURCES DEPT.
SALEM, OREGON

8S/3W/14ab

WATER WELL REPORT
(as required by ORS 537.765)

(START CARD) # W 16518

(1) OWNER:
Well Number:
Name Manford E. Turner
Address 1931 Barns Ave. SE
City Salem State Ore. Zip

(2) TYPE OF WORK:
☑ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD
☐ Rotary Air ☑ Rotary Mud ☐ Cable
☐ Other

(4) PROPOSED USE:
☑ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes ☐ No ☑ Depth of Completed Well 99 ft.
Explosives used Yes ☐ No ☑ Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10"	0	39	Cement	0	39	12+Bentonite
6"	39	99				

How was seal placed: Method ☐ A ☐ B ☑ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	0+1	39	.250	☑	☐	☑	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	4"	2'	99		☐	☑	☑	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method Saw Cut
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
80	98	1/8"	38	6"	long	☐	☑
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☑ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
24 gpm		98	1 hr.

Temperature of water 54 Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Marion Latitude ' " Longitude ' "
Township 8S N or S, Range 3W E or W, WM.
Section 14 B ¼ A ¼
Tax Lot 01000 Lot Block Subdivision
Street Address of Well (or nearest address) Same as Owner

(10) STATIC WATER LEVEL:
41' ft. below land surface. Date 1-4-90
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found

From	To	Estimated Flow Rate	SWL
60	80	10	
80	98	14	

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
Clay & Boulders	0	8	
Weathered out Rock	8		
with some boulders		30	
Rock partly weathered	30		
graduating to hard		34	
Rock Hard	34	44	
Rock partly broken	44	65	
Rock (Basalt)	65	99	

ROBINSON DRILLING
WELLS & PUMPS
4520 Dallas-Salem Hwy.
Salem, Ore. 97304
371-1844

Date started 12-21-89 Completed 1-4-90

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number
Signed Date

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 13
Signed George K Robinson Date 1-5-89

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 3/88

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

MARI 17275

MAY 21 1991

WATER RESOURCES DEPT
SALEM, OREGON

8S/3W/14 aa

(START CARD) # 22894

(1) OWNER:

Well Number

Name Bernard Hunt.

Address 1245 Cottage N.E

City Salem. State Or. Zip

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☒ Depth of Completed Well 165 ft.

Explosives used Yes ☐ No ☒ Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
16	0	25	Cement	0	25	8
8	25	53	Cement	25	53	8
4	53	165				

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E

☐ Other

Backfill placed from ft. to ft. Material

Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	4	0	52	250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method

☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
8		162	1 hr.

Temperature of water 51° Depth Artesian Flow Found

Was a water analysis done? ☐ Yes By whom

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other

Depth of strata:

(9) LOCATION OF WELL by legal description:

County Marion. Latitude Longitude

Township 8S N or S. Range 3W E or W. WM.

Section 14 N.E ¼ N.E ¼

Tax Lot 81350-732 Lot Block Subdivision

Street Address of Well (or nearest address) 1831 Burns Rd. S.E Salem, Or.

(10) STATIC WATER LEVEL:

37 ft. below land surface. Date March 22, 1991

Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 124

From	To	Estimated Flow Rate	SWL
124	153	8 G.P.M	37

(12) WELL LOG:

Ground elevation

Material	From	To	SWL
Soil	0	3	
Boulders + Clay	3	18	
Clay + Gravel	18	45	
Rock Black	45	80	
Rock Black + Brown	80	97	
Rock Black Very Hard.	97	124	
Rock Grey	124	145	
Rock Black	145	165	37

Date started March 22, 1991 Completed March 22, 1991

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number

Signed Date

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 75

Signed William Gray Date March 27, 1991

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 3/88

Cover Description		CN For Hydrologic Soil Group			
		A	B	C	D
Urban Areas	**Source: NRCS TR55 Table 2-2a (1986)**				
	% Impervious				
Open Space					
Poor condition (grass cover <50%		68	79	86	89
Fair condition (grass cover 50% to 70%)		49	69	79	84
Good condition (grass cover >75%) **Amended Soils**		39	61	74	80
City of Salem Pre-development		35	58	72	79
Impervious Areas					
Paved parking lots, roofs, driveways (excluding right-of-way)		98	98	98	98
Streets and roads					
Paved: curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved: open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way) **Un-amended Soils**		72	82	87	89
Urban districts					
Commercial and Business	85	89	92	94	92
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acres or less (town houses)	65	77	85	90	92
¼ acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
½ acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Agricultural Lands	**Source: NRCS TR55 Table 2-2c (1986)**				
	Hydrologic Condition				
Pasture, grassland, or range- combined forage for grazing					
<50% ground cover or heavily grazed with no mulch	Poor	68	79	86	89
50 to 75% ground cover and not heavily grazed	Fair	49	69	79	84
>75% ground cover and lightly or only occasionally grazed	Good	39	61	74	80
Meadow- continuous grass, protected from grazing and generally mowed for hay		30	58	71	78
Brush- weed/ grass mixture with brush as the major element					

(2). Total 24-hour rainfall amount.

(3). Basin area characteristics.

(4). Curve Number (CN).

(5). Time of Concentration.

(c) Rainfall Distribution

The rainfall distribution to use within the City is the design storm for a 24-hour duration based on the standard NRCS Type 1A rainfall distribution. This distribution is contained in Table 4D-5.

(d) Rainfall Depth

Table 4D-3 contains the 24-hour rainfall totals that shall be used in determining the runoff hydrograph for various sized storm events.

24-Hour Rainfall Depths for Salem, OR						
Recurrence Interval, Years	2	5	10	25	50	100
24-Hour Depths, Inches	2.2	2.7	3.2	3.6	4.1	4.4

Table 4D-3. Salem Rainfall Amount Based on the Storm Size.

(e) Basin Area Characteristics

For the highest degree of accuracy in hydrograph analysis, proper selection of homogeneous basin areas is needed. Significant differences in land use within a given basin must be addressed by dividing the basin area into sub-basins with similar land use and/or runoff characteristics. Hydrographs should be computed for each sub-basin area and superimposed to form the total runoff hydrograph for the basin.

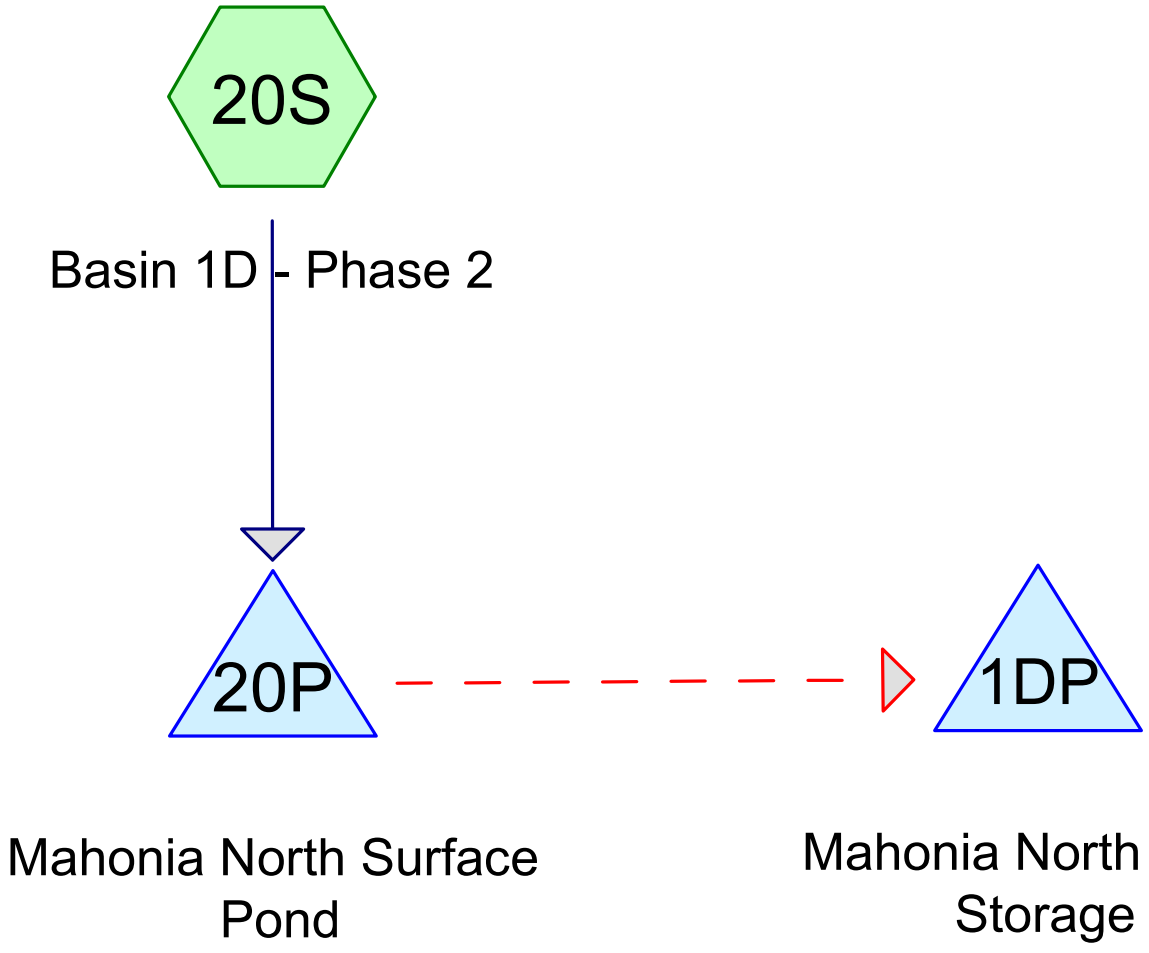
All pervious and impervious areas within a given basin or sub-basin shall be analyzed separately. By analyzing pervious and impervious areas separately, the cumulative errors associated with averaging these areas are avoided, resulting in a more accurate runoff hydrograph.

(f) Runoff Curve Numbers

Runoff curve numbers were developed by the Natural Resources Conservation Service after studying the runoff characteristics of various types of land. Curve numbers (CN) were developed to consolidate diverse characteristics such as soil type, land usage, and vegetation into a single variable for computing runoff. Runoff CNs to be used in the hydrograph methods are included in Table 4D-6 at the end of this appendix.

Appendix C – Analysis

Mahonia North Rain Garden WQ



Subcat Reach Pond Link

Routing Diagram for WQ
Prepared by HHPR, Printed 7/29/2022

Time span=0.50-120.00 hrs, dt=0.05 hrs, 2391 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 20S: Basin 1D - Phase 2 Runoff Area=2.850 ac 48.42% Impervious Runoff Depth=0.58"
Tc=10.0 min CN=68/98 Runoff=0.39 cfs 0.138 af

Pond 1DP: Mahonia North Rock Storage Peak Elev=365.53' Storage=39 cf Inflow=0.07 cfs 0.138 af
Outflow=0.07 cfs 0.138 af

Pond 20P: Mahonia North Surface Pond Peak Elev=372.69' Storage=1,744 cf Inflow=0.39 cfs 0.138 af
Outflow=0.07 cfs 0.138 af

Total Runoff Area = 2.850 ac Runoff Volume = 0.138 af Average Runoff Depth = 0.58"
51.58% Pervious = 1.470 ac 48.42% Impervious = 1.380 ac

Summary for Subcatchment 20S: Basin 1D - Phase 2

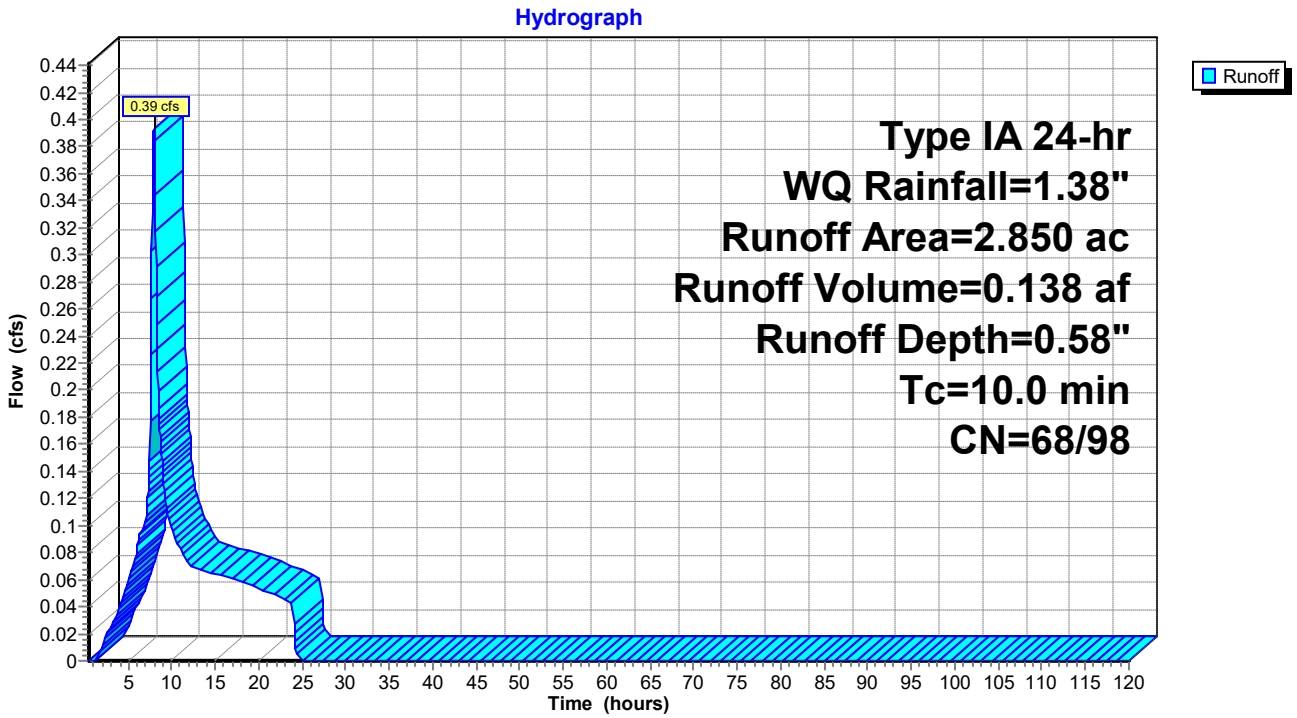
Runoff = 0.39 cfs @ 7.98 hrs, Volume= 0.138 af, Depth= 0.58"
Routed to Pond 20P : Mahonia North Surface Pond

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr WQ Rainfall=1.38"

	Area (ac)	CN	Description
*	1.380	98	Paved/Roof, HSG C
	0.735	61	>75% Grass cover, Good, HSG B
	0.735	74	>75% Grass cover, Good, HSG C
	2.850	82	Weighted Average
	1.470		51.58% Pervious Area
	1.380		48.42% Impervious Area

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

Subcatchment 20S: Basin 1D - Phase 2



Summary for Pond 1DP: Mahonia North Rock Storage

[44] Hint: Outlet device #1 is below defined storage
[92] Warning: Device #3 is above defined storage
[92] Warning: Device #4 is above defined storage

Inflow	=	0.07 cfs @	11.91 hrs,	Volume=	0.138 af
Outflow	=	0.07 cfs @	12.11 hrs,	Volume=	0.138 af, Atten= 0%, Lag= 12.0 min
Primary	=	0.07 cfs @	12.11 hrs,	Volume=	0.138 af

Routed to nonexistent node 3L

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 365.53' @ 12.11 hrs Surf.Area= 1,280 sf Storage= 39 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 9.3 min (1,032.0 - 1,022.7)

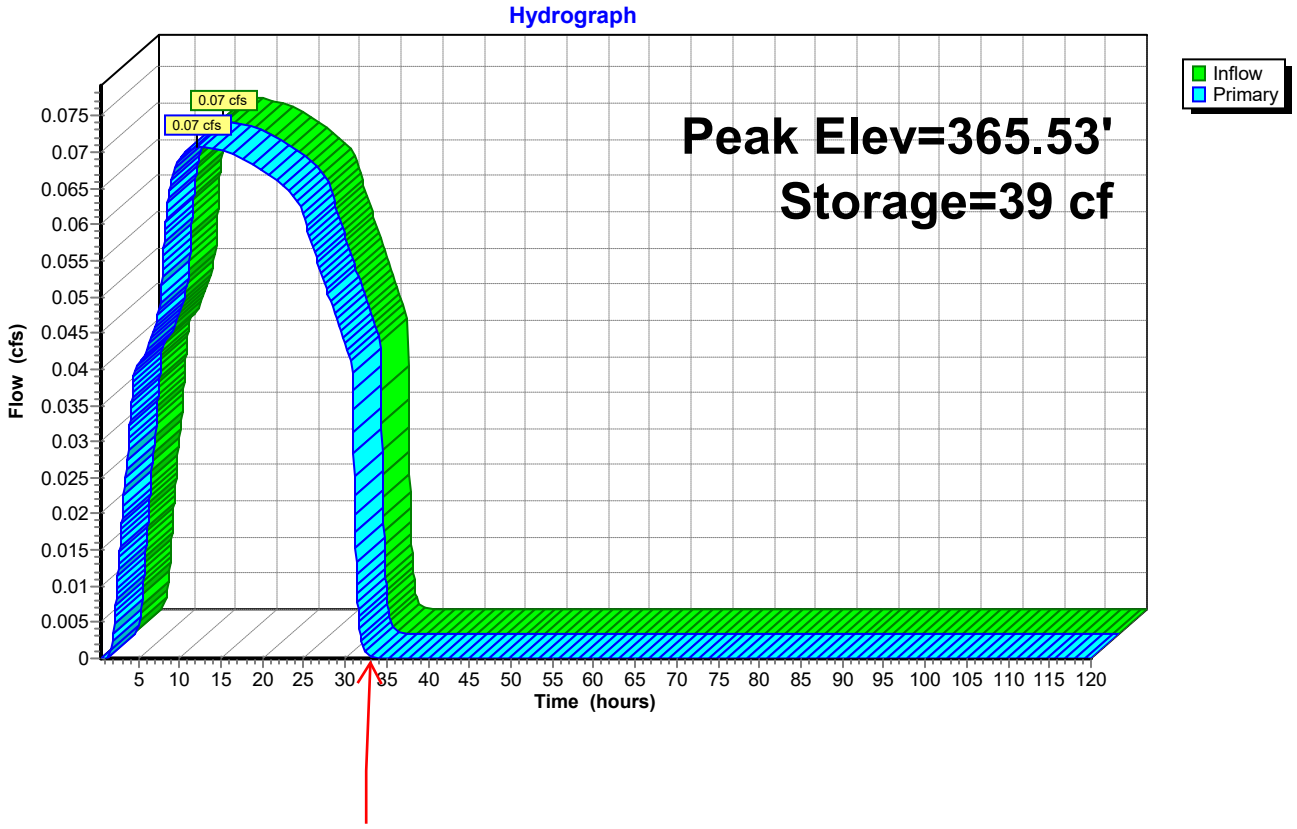
Volume	Invert	Avail.Storage	Storage Description
#1	365.45'	2,048 cf	**Detention Basin (Prismatic)** Listed below (Recalc) 5,120 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
365.45	1,280	0	0
369.45	1,280	5,120	5,120

Device	Routing	Invert	Outlet Devices
#1	Primary	365.40'	**3.0" Horiz. 1/2 2-yr Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	367.40'	**1.2" Vert. 10-yr Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	375.11'	**5.0" Horiz. 25-yr Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	375.43'	**5.0" Horiz. O/F** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.08 cfs @ 12.11 hrs HW=365.53' (Free Discharge)
- **1=1/2 2-yr Orifice** (Orifice Controls 0.08 cfs @ 1.72 fps)
- **2=10-yr Orifice** (Controls 0.00 cfs)
- **3=25-yr Orifice** (Controls 0.00 cfs)
- **4=O/F** (Controls 0.00 cfs)

Pond 1DP: Mahonia North Rock Storage



Storage Reservoir Drained at 33 hours
(9 hours after storm event)

Summary for Pond 20P: Mahonia North Surface Pond

Inflow Area = 2.850 ac, 48.42% Impervious, Inflow Depth = 0.58" for WQ event
Inflow = 0.39 cfs @ 7.98 hrs, Volume= 0.138 af
Outflow = 0.07 cfs @ 11.91 hrs, Volume= 0.138 af, Atten= 82%, Lag= 235.6 min
Secondary = 0.07 cfs @ 11.91 hrs, Volume= 0.138 af
Routed to Pond 1DP : Mahonia North Rock Storage

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 372.69' @ 11.91 hrs Surf.Area= 1,503 sf Storage= 1,744 cf
1.49' WQ depth
Plug-Flow detention time= 304.8 min calculated for 0.138 af (100% of inflow)
Center-of-Mass det. time= 304.7 min (1,022.7 - 718.0)

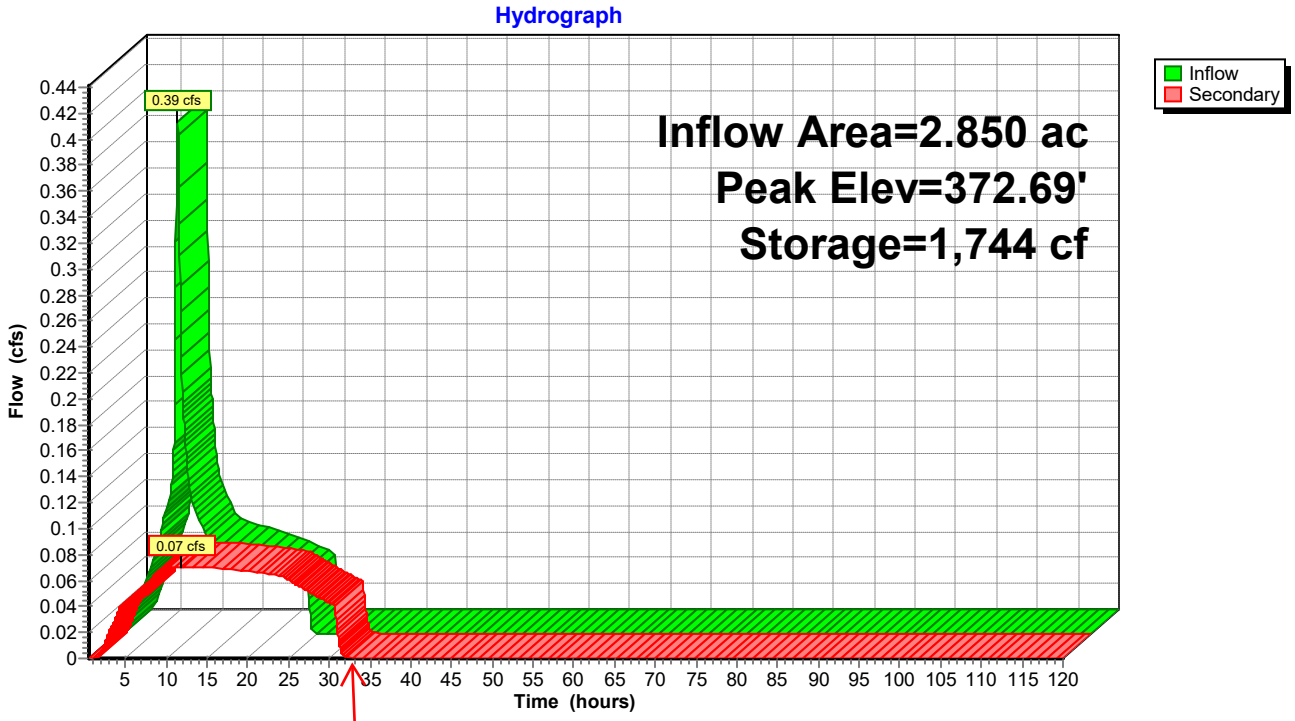
Volume	Invert	Avail.Storage	Storage Description
#1	371.20'	13,549 cf	**Detention Basin (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
371.20	849	0	0	849
372.20	1,280	1,057	1,057	1,295
377.00	4,207	12,492	13,549	4,345

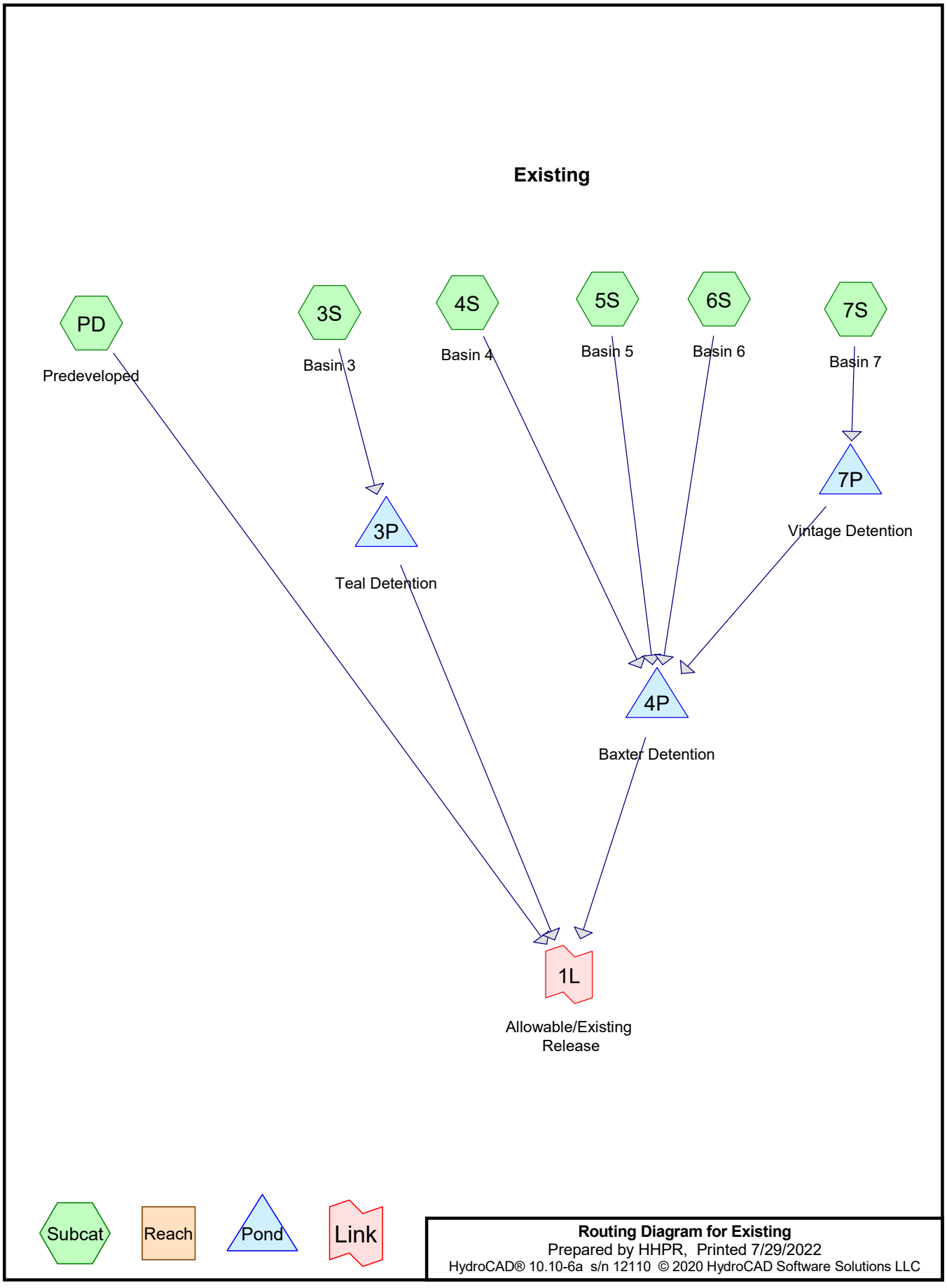
Device	Routing	Invert	Outlet Devices
#1	Secondary	371.20'	**2.000 in/hr Exfiltration over Wetted area**

Secondary OutFlow Max=0.07 cfs @ 11.91 hrs HW=372.69' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.07 cfs)

Pond 20P: Mahonia North Surface Pond



Surface Drained at 33 hours
(9 hours after storm event)



Routing Diagram for Existing
Prepared by HHPR, Printed 7/29/2022

Time span=0.50-120.00 hrs, dt=0.05 hrs, 2391 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 3S: Basin 3 Runoff Area=4.450 ac 72.63% Impervious Runoff Depth=0.66"
Flow Length=690' Slope=0.0200 '/' Tc=13.3 min CN=75/98 Runoff=0.67 cfs 0.244 af

Subcatchment 4S: Basin 4 Runoff Area=25.660 ac 72.99% Impervious Runoff Depth=0.65"
Flow Length=1,290' Slope=0.0400 '/' Tc=11.5 min CN=72/98 Runoff=4.01 cfs 1.400 af

Subcatchment 5S: Basin 5 Runoff Area=10.790 ac 0.00% Impervious Runoff Depth=0.02"
Flow Length=1,100' Slope=0.0300 '/' Tc=57.5 min CN=72/0 Runoff=0.03 cfs 0.022 af

Subcatchment 6S: Basin 6 Runoff Area=1.840 ac 86.68% Impervious Runoff Depth=0.78"
Flow Length=500' Slope=0.0400 '/' Tc=10.1 min CN=75/98 Runoff=0.35 cfs 0.119 af

Subcatchment 7S: Basin 7 Runoff Area=1.990 ac 75.38% Impervious Runoff Depth=0.68"
Flow Length=460' Tc=13.1 min CN=75/98 Runoff=0.31 cfs 0.113 af

Subcatchment PD: Predeveloped Runoff Area=16.200 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=1,300' Tc=55.8 min CN=65/0 Runoff=0.00 cfs 0.000 af

Pond 3P: Teal Detention Peak Elev=385.51' Storage=0 cf Inflow=0.67 cfs 0.244 af
Outflow=0.67 cfs 0.244 af

Pond 4P: Baxter Detention Peak Elev=401.42' Storage=2,315 cf Inflow=4.67 cfs 1.655 af
Outflow=3.20 cfs 1.655 af

Pond 7P: Vintage Detention Peak Elev=432.05' Storage=3 cf Inflow=0.31 cfs 0.113 af
Outflow=0.31 cfs 0.113 af

Link 1L: Allowable/Existing Release Inflow=3.82 cfs 1.899 af
Primary=3.82 cfs 1.899 af

Total Runoff Area = 60.930 ac Runoff Volume = 1.899 af Average Runoff Depth = 0.37"
58.88% Pervious = 35.873 ac 41.12% Impervious = 25.057 ac

Summary for Subcatchment 3S: Basin 3

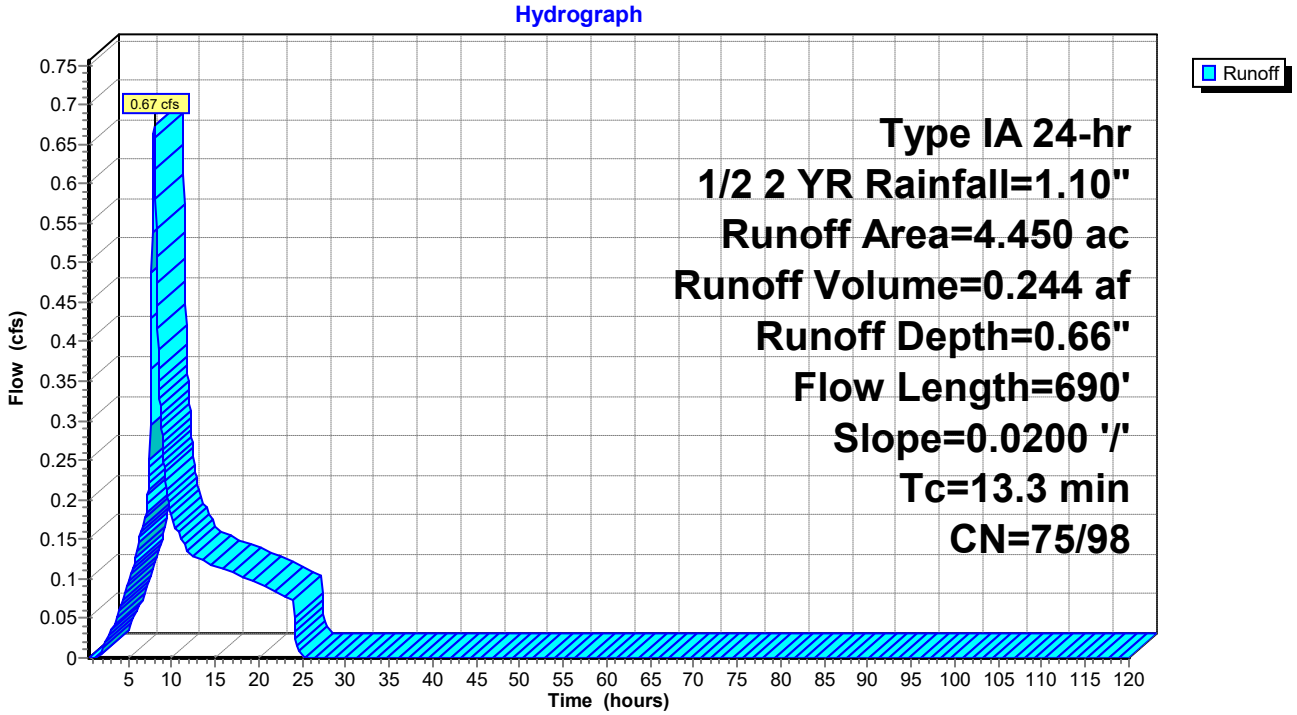
Runoff = 0.67 cfs @ 7.99 hrs, Volume= 0.244 af, Depth= 0.66"
Routed to Pond 3P : Teal Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	0.970	98	Paved roads w/curbs & sewers, HSG C
	3.480	90	1/8 acre lots, 65% imp, HSG C
	4.450	92	Weighted Average
	1.218		27.37% Pervious Area
	3.232		72.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
1.5	590	0.0200	6.42	5.04	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.3	690	Total			

Subcatchment 3S: Basin 3



Summary for Subcatchment 4S: Basin 4

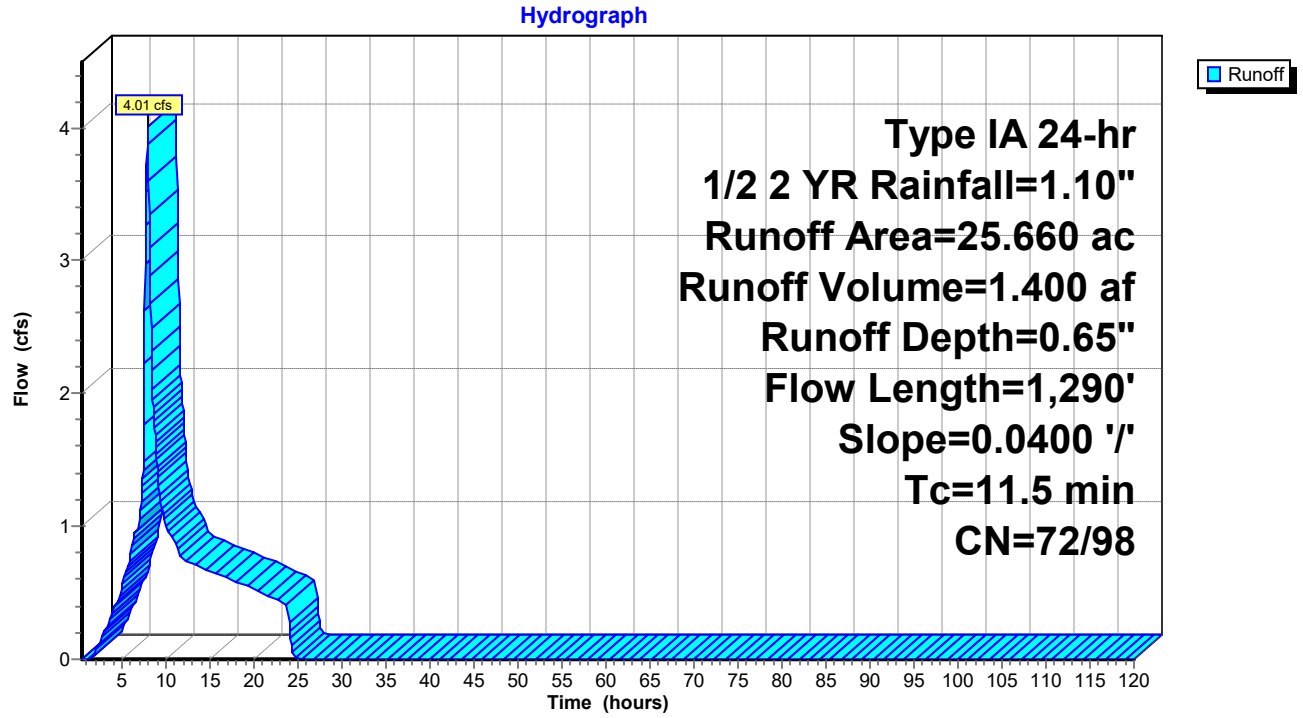
Runoff = 4.01 cfs @ 7.99 hrs, Volume= 1.400 af, Depth= 0.65"
Routed to Pond 4P : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	5.860	98	Paved roads w/curbs & sewers, HSG C
	4.950	85	1/8 acre lots, 65% imp, HSG B
	14.850	90	1/8 acre lots, 65% imp, HSG C
	25.660	91	Weighted Average
	6.930		27.01% Pervious Area
	18.730		72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	1,160	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
11.5	1,290	Total			

Subcatchment 4S: Basin 4



Summary for Subcatchment 5S: Basin 5

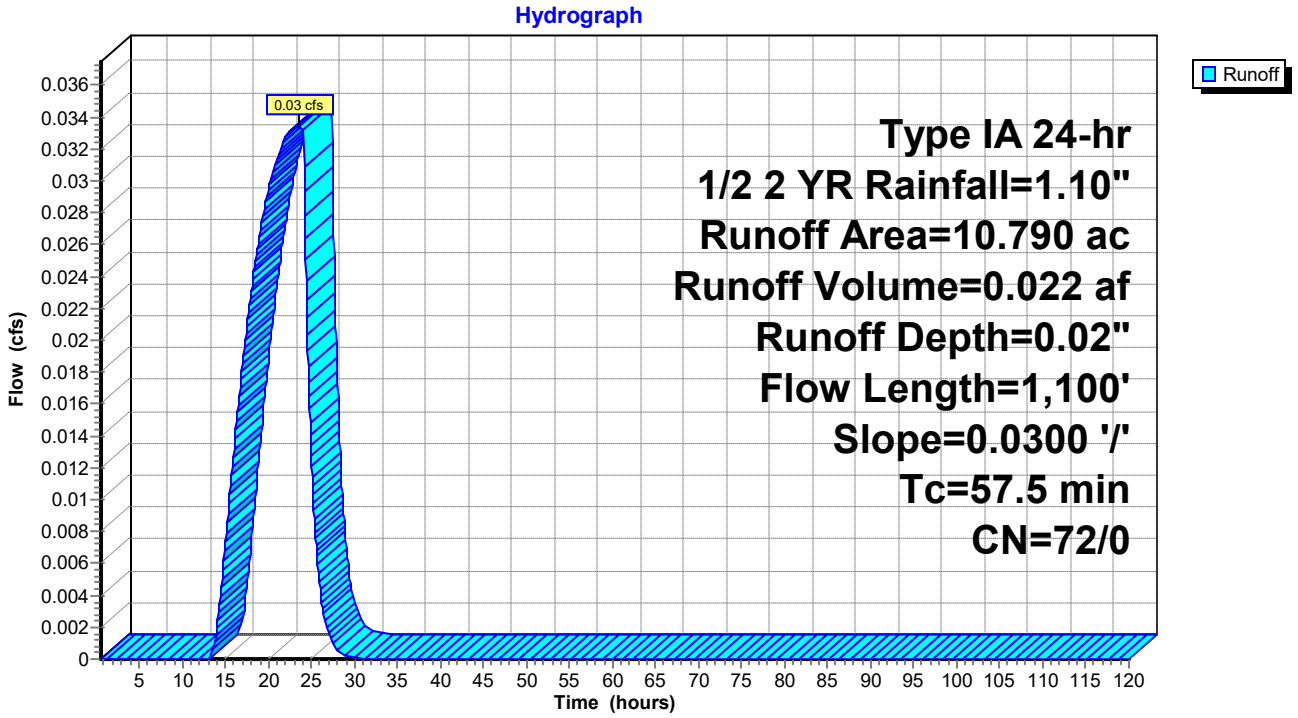
Runoff = 0.03 cfs @ 23.52 hrs, Volume= 0.022 af, Depth= 0.02"
Routed to Pond 4P : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

Area (ac)	CN	Description
10.790	72	Woods/grass comb., Good, HSG C
10.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	300	0.0300	0.12		**Sheet Flow, Pre Developed** n= 0.300 P2= 2.20"
15.4	800	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
57.5	1,100	Total			

Subcatchment 5S: Basin 5



Summary for Subcatchment 6S: Basin 6

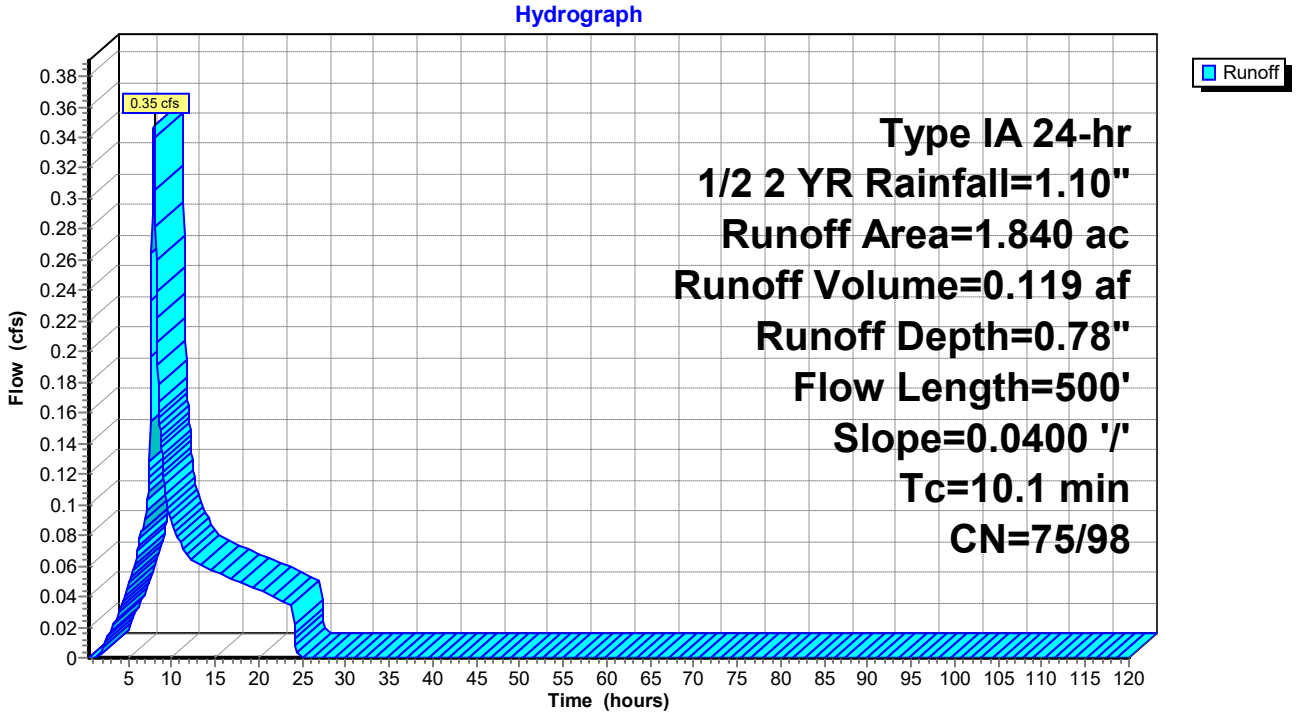
Runoff = 0.35 cfs @ 7.98 hrs, Volume= 0.119 af, Depth= 0.78"
Routed to Pond 4P : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	1.140	98	Paved roads w/curbs & sewers, HSG C
	0.700	90	1/8 acre lots, 65% imp, HSG C
	1.840	95	Weighted Average
	0.245		13.32% Pervious Area
	1.595		86.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	370	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
10.1	500	Total			

Subcatchment 6S: Basin 6



Summary for Subcatchment 7S: Basin 7

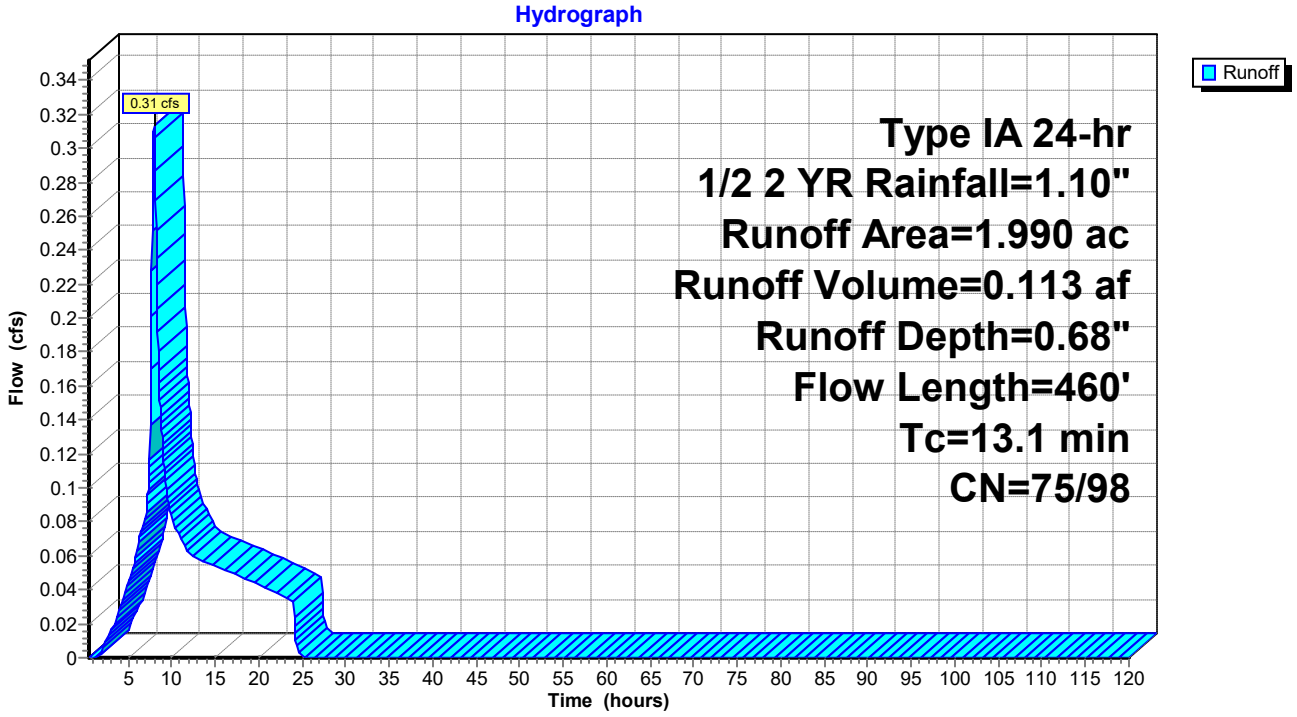
Runoff = 0.31 cfs @ 7.99 hrs, Volume= 0.113 af, Depth= 0.68"
Routed to Pond 7P : Vintage Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	0.590	98	Paved roads w/curbs & sewers, HSG C
	1.400	90	1/8 acre lots, 65% imp, HSG C
	1.990	92	Weighted Average
	0.490		24.62% Pervious Area
	1.500		75.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	320	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.1	460	Total			

Subcatchment 7S: Basin 7



Summary for Subcatchment PD: Predeveloped

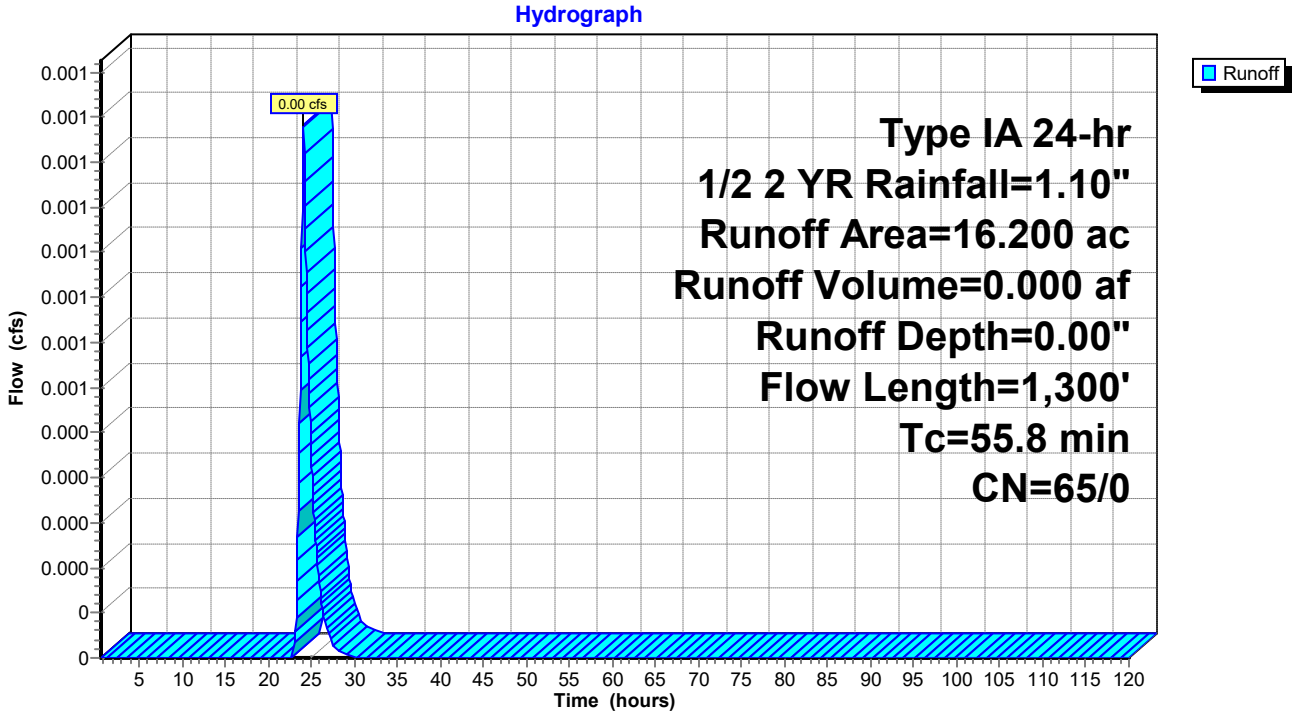
Runoff = 0.00 cfs @ 24.03 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 1L : Allowable/Existing Release

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

Area (ac)	CN	Description
8.100	58	Woods/grass comb., Good, HSG B
8.100	72	Woods/grass comb., Good, HSG C
16.200	65	Weighted Average
16.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.5	300	0.0400	0.13		**Sheet Flow, Pre Developed** n= 0.300 P2= 2.20"
8.9	600	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.4	400	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
55.8	1,300	Total			

Subcatchment PD: Predeveloped



Summary for Pond 3P: Teal Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 4.450 ac, 72.63% Impervious, Inflow Depth = 0.66" for 1/2 2 YR event
Inflow = 0.67 cfs @ 7.99 hrs, Volume= 0.244 af
Outflow = 0.67 cfs @ 7.99 hrs, Volume= 0.244 af, Atten= 0%, Lag= 0.0 min
Primary = 0.67 cfs @ 7.99 hrs, Volume= 0.244 af
Routed to Link 1L : Allowable/Existing Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 385.51' @ 7.99 hrs Surf.Area= 22 sf Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 0.244 af (100% of inflow)
Center-of-Mass det. time= 0.0 min (725.4 - 725.4)

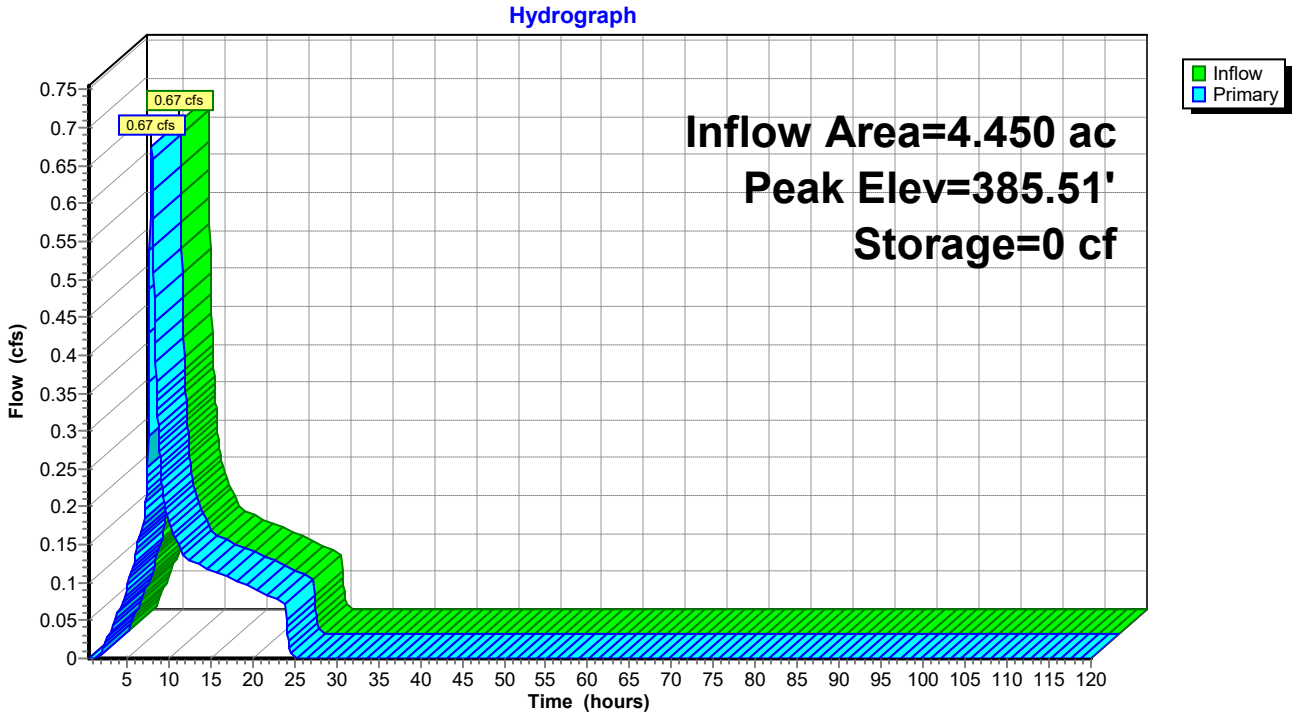
Volume	Invert	Avail.Storage	Storage Description
#1	385.50'	5,183 cf	**Pond (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
385.50	0	0	0
386.00	790	198	198
387.00	2,630	1,710	1,908
388.00	3,920	3,275	5,183

Device	Routing	Invert	Outlet Devices
#1	Primary	383.75'	**5.9" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	386.95'	**2.0' long x 0.5' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.21 cfs @ 7.99 hrs HW=385.51' (Free Discharge)
1=Orifice (Orifice Controls 1.21 cfs @ 6.39 fps)
2=Overflow (Controls 0.00 cfs)

Pond 3P: Teal Detention



Summary for Pond 4P: Baxter Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 40.280 ac, 54.18% Impervious, Inflow Depth = 0.49" for 1/2 2 YR event
Inflow = 4.67 cfs @ 7.99 hrs, Volume= 1.655 af
Outflow = 3.20 cfs @ 8.28 hrs, Volume= 1.655 af, Atten= 31%, Lag= 17.8 min
Primary = 3.20 cfs @ 8.28 hrs, Volume= 1.655 af
Routed to Link 1L : Allowable/Existing Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 401.42' @ 8.28 hrs Surf.Area= 7,008 sf Storage= 2,315 cf

Plug-Flow detention time= 2.5 min calculated for 1.654 af (100% of inflow)
Center-of-Mass det. time= 2.5 min (729.6 - 727.1)

Volume	Invert	Avail.Storage	Storage Description
#1	401.00'	46,475 cf	**West Pond (Prismatic)** Listed below (Recalc)
#2	401.00'	29,850 cf	**East Pond (Prismatic)** Listed below (Recalc)
		76,325 cf	Total Available Storage

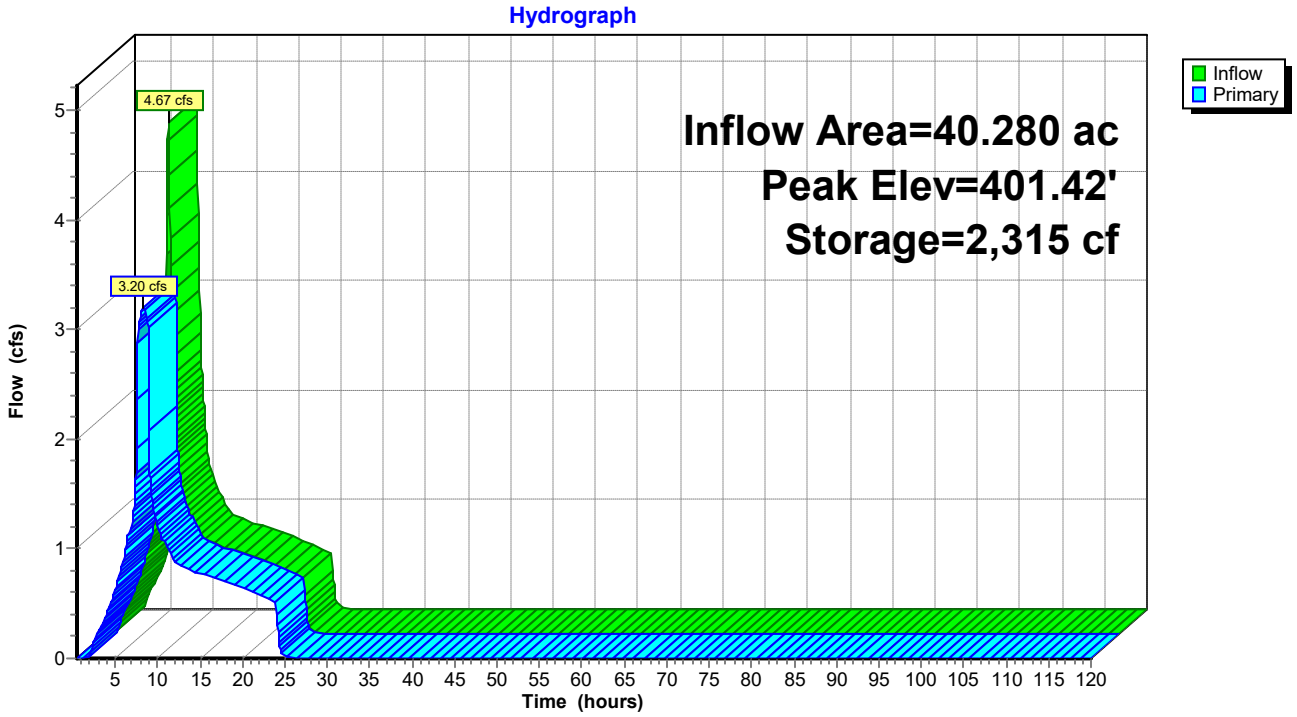
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	2,250	0	0
402.00	7,140	4,695	4,695
403.00	8,720	7,930	12,625
404.00	10,340	9,530	22,155
405.00	12,000	11,170	33,325
406.00	14,300	13,150	46,475

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	1,820	0	0
402.00	3,960	2,890	2,890
403.00	5,190	4,575	7,465
404.00	6,560	5,875	13,340
405.00	8,160	7,360	20,700
406.00	10,140	9,150	29,850

Device	Routing	Invert	Outlet Devices
#1	Primary	398.29'	**8.3" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	405.00'	**24.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads
#3	Primary	405.02'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=3.20 cfs @ 8.28 hrs HW=401.42' (Free Discharge)
- **1=Orifice** (Orifice Controls 3.20 cfs @ 8.51 fps)
- **2=O/F Riser** (Controls 0.00 cfs)
- **3=Overflow CB** (Controls 0.00 cfs)

Pond 4P: Baxter Detention



Summary for Pond 7P: Vintage Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 1.990 ac, 75.38% Impervious, Inflow Depth = 0.68" for 1/2 2 YR event
Inflow = 0.31 cfs @ 7.99 hrs, Volume= 0.113 af
Outflow = 0.31 cfs @ 8.05 hrs, Volume= 0.113 af, Atten= 2%, Lag= 3.4 min
Primary = 0.31 cfs @ 8.05 hrs, Volume= 0.113 af
Routed to Pond 4P : Baxter Detention

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 432.05' @ 8.03 hrs Surf.Area= 111 sf Storage= 3 cf

Plug-Flow detention time= 0.3 min calculated for 0.113 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (724.2 - 724.1)

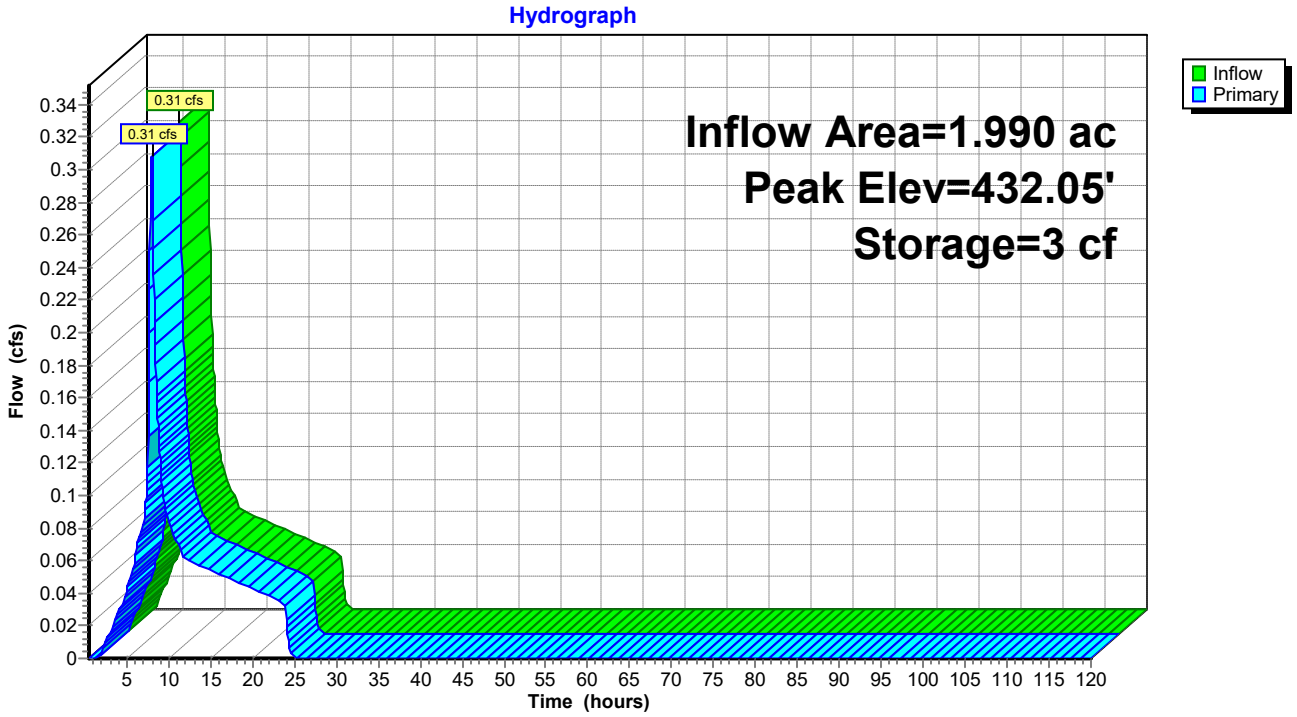
Volume	Invert	Avail.Storage	Storage Description
#1	432.00'	8,940 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
432.00	0	0	0
432.50	1,160	290	290
434.00	2,320	2,610	2,900
436.00	3,720	6,040	8,940

Device	Routing	Invert	Outlet Devices
#1	Primary	431.31'	**3.7" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	435.00'	**2.0' long x 0.5' breadth Overflow CB**
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.31 cfs @ 8.05 hrs HW=432.05' (Free Discharge)
1=Orifice (Orifice Controls 0.31 cfs @ 4.13 fps)
2=Overflow CB (Controls 0.00 cfs)

Pond 7P: Vintage Detention

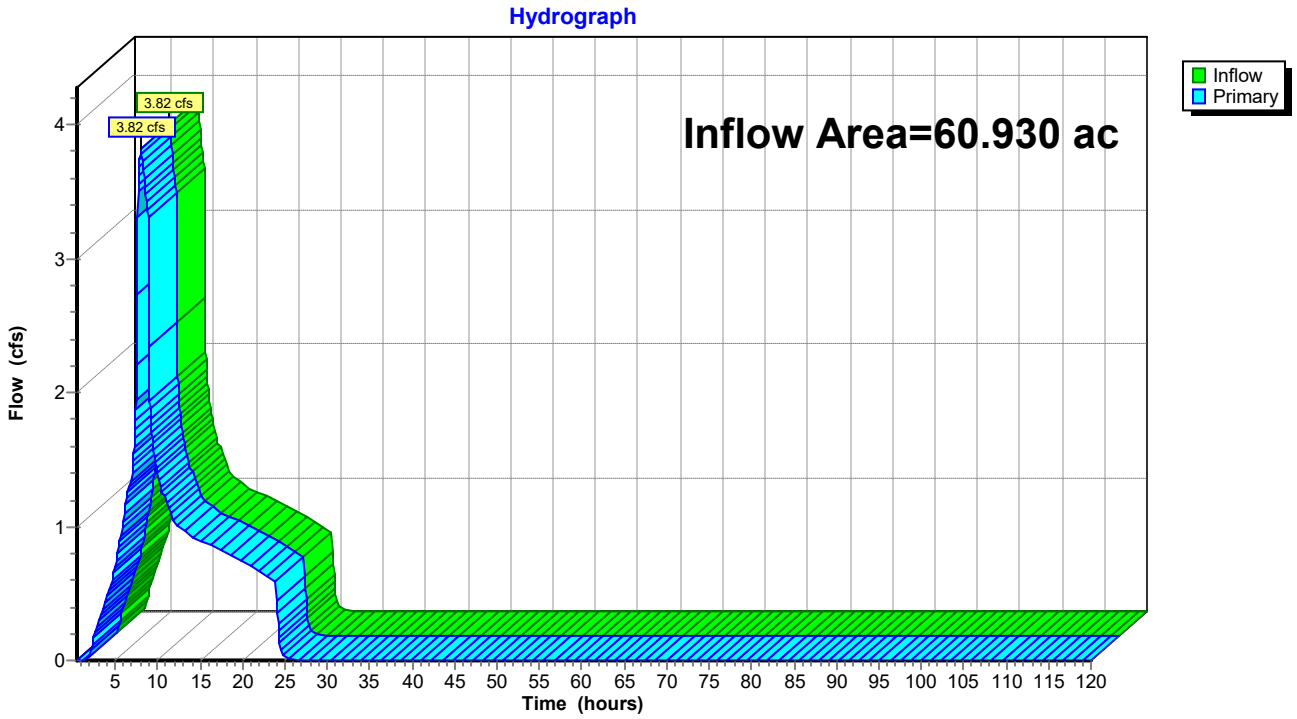


Summary for Link 1L: Allowable/Existing Release

Inflow Area = 60.930 ac, 41.12% Impervious, Inflow Depth = 0.37" for 1/2 2 YR event
Inflow = 3.82 cfs @ 8.03 hrs, Volume= 1.899 af
Primary = 3.82 cfs @ 8.03 hrs, Volume= 1.899 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 1L: Allowable/Existing Release



Time span=0.50-120.00 hrs, dt=0.05 hrs, 2391 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 3S: Basin 3 Runoff Area=4.450 ac 72.63% Impervious Runoff Depth=2.45"
Flow Length=690' Slope=0.0200 '/' Tc=13.3 min CN=75/98 Runoff=2.41 cfs 0.910 af

Subcatchment 4S: Basin 4 Runoff Area=25.660 ac 72.99% Impervious Runoff Depth=2.42"
Flow Length=1,290' Slope=0.0400 '/' Tc=11.5 min CN=72/98 Runoff=13.99 cfs 5.169 af

Subcatchment 5S: Basin 5 Runoff Area=10.790 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=1,100' Slope=0.0300 '/' Tc=57.5 min CN=72/0 Runoff=0.83 cfs 0.836 af

Subcatchment 6S: Basin 6 Runoff Area=1.840 ac 86.68% Impervious Runoff Depth=2.72"
Flow Length=500' Slope=0.0400 '/' Tc=10.1 min CN=75/98 Runoff=1.18 cfs 0.417 af

Subcatchment 7S: Basin 7 Runoff Area=1.990 ac 75.38% Impervious Runoff Depth=2.51"
Flow Length=460' Tc=13.1 min CN=75/98 Runoff=1.11 cfs 0.416 af

Subcatchment PD: Predeveloped Runoff Area=16.200 ac 0.00% Impervious Runoff Depth=0.60"
Flow Length=1,300' Tc=55.8 min CN=65/0 Runoff=0.62 cfs 0.811 af

Pond 3P: Teal Detention Peak Elev=386.81' Storage=1,438 cf Inflow=2.41 cfs 0.910 af
Outflow=1.60 cfs 0.919 af

Pond 4P: Baxter Detention Peak Elev=404.72' Storage=48,477 cf Inflow=16.23 cfs 6.836 af
Outflow=4.59 cfs 6.836 af

Pond 7P: Vintage Detention Peak Elev=433.33' Storage=1,522 cf Inflow=1.11 cfs 0.416 af
Outflow=0.51 cfs 0.415 af

Link 1L: Allowable/Existing Release Inflow=6.50 cfs 8.566 af
Primary=6.50 cfs 8.566 af

Total Runoff Area = 60.930 ac Runoff Volume = 8.558 af Average Runoff Depth = 1.69"
58.88% Pervious = 35.873 ac 41.12% Impervious = 25.057 ac

Summary for Subcatchment 3S: Basin 3

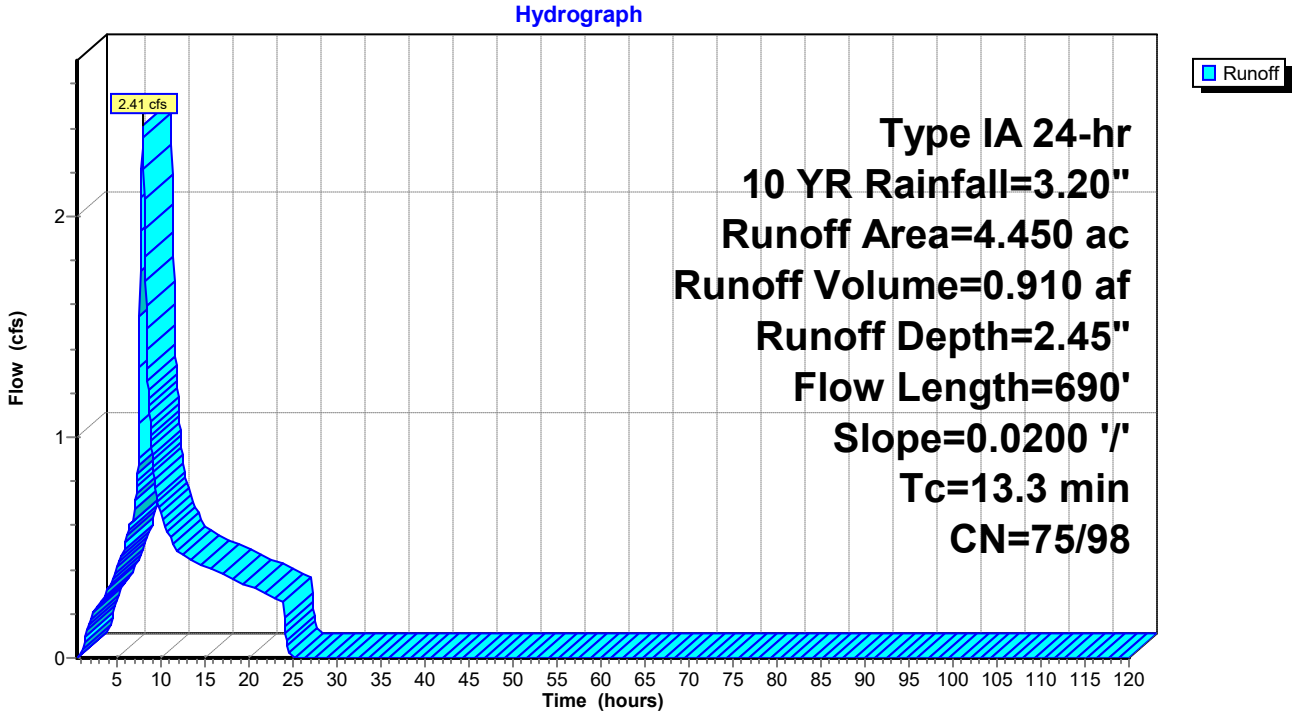
Runoff = 2.41 cfs @ 7.99 hrs, Volume= 0.910 af, Depth= 2.45"
Routed to Pond 3P : Teal Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	0.970	98	Paved roads w/curbs & sewers, HSG C
	3.480	90	1/8 acre lots, 65% imp, HSG C
	4.450	92	Weighted Average
	1.218		27.37% Pervious Area
	3.232		72.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
1.5	590	0.0200	6.42	5.04	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.3	690	Total			

Subcatchment 3S: Basin 3



Summary for Subcatchment 4S: Basin 4

[47] Hint: Peak is 196% of capacity of segment #3

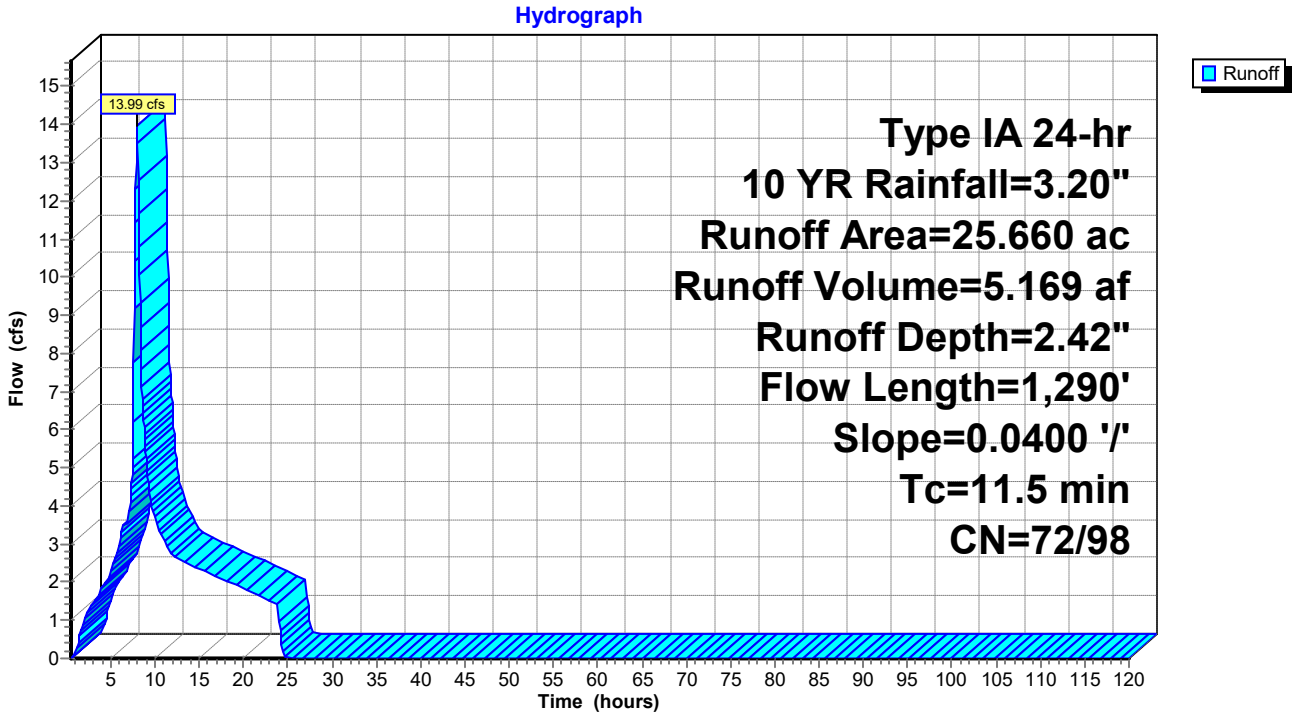
Runoff = 13.99 cfs @ 7.99 hrs, Volume= 5.169 af, Depth= 2.42"
Routed to Pond 4P : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	5.860	98	Paved roads w/curbs & sewers, HSG C
	4.950	85	1/8 acre lots, 65% imp, HSG B
	14.850	90	1/8 acre lots, 65% imp, HSG C
	25.660	91	Weighted Average
	6.930		27.01% Pervious Area
	18.730		72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	1,160	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
11.5	1,290	Total			

Subcatchment 4S: Basin 4



Summary for Subcatchment 5S: Basin 5

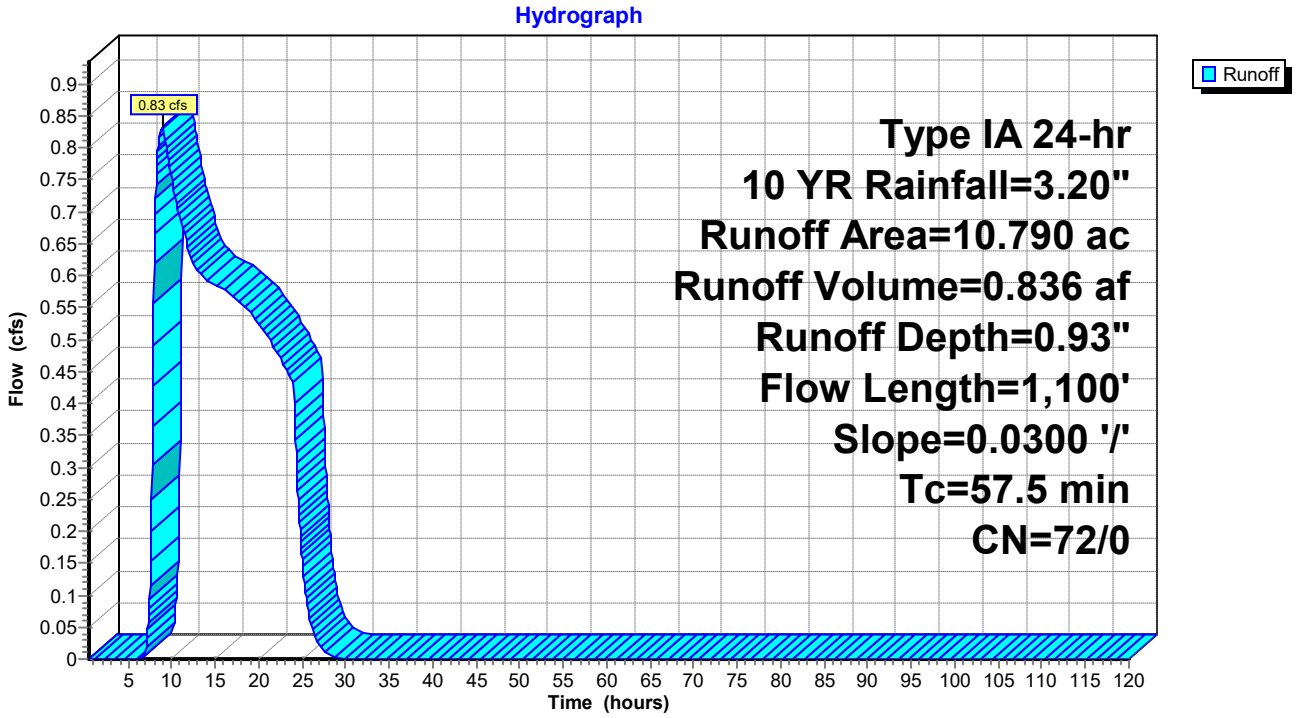
Runoff = 0.83 cfs @ 8.92 hrs, Volume= 0.836 af, Depth= 0.93"
Routed to Pond 4P : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

Area (ac)	CN	Description
10.790	72	Woods/grass comb., Good, HSG C
10.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	300	0.0300	0.12		**Sheet Flow, Pre Developed** n= 0.300 P2= 2.20"
15.4	800	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
57.5	1,100	Total			

Subcatchment 5S: Basin 5



Summary for Subcatchment 6S: Basin 6

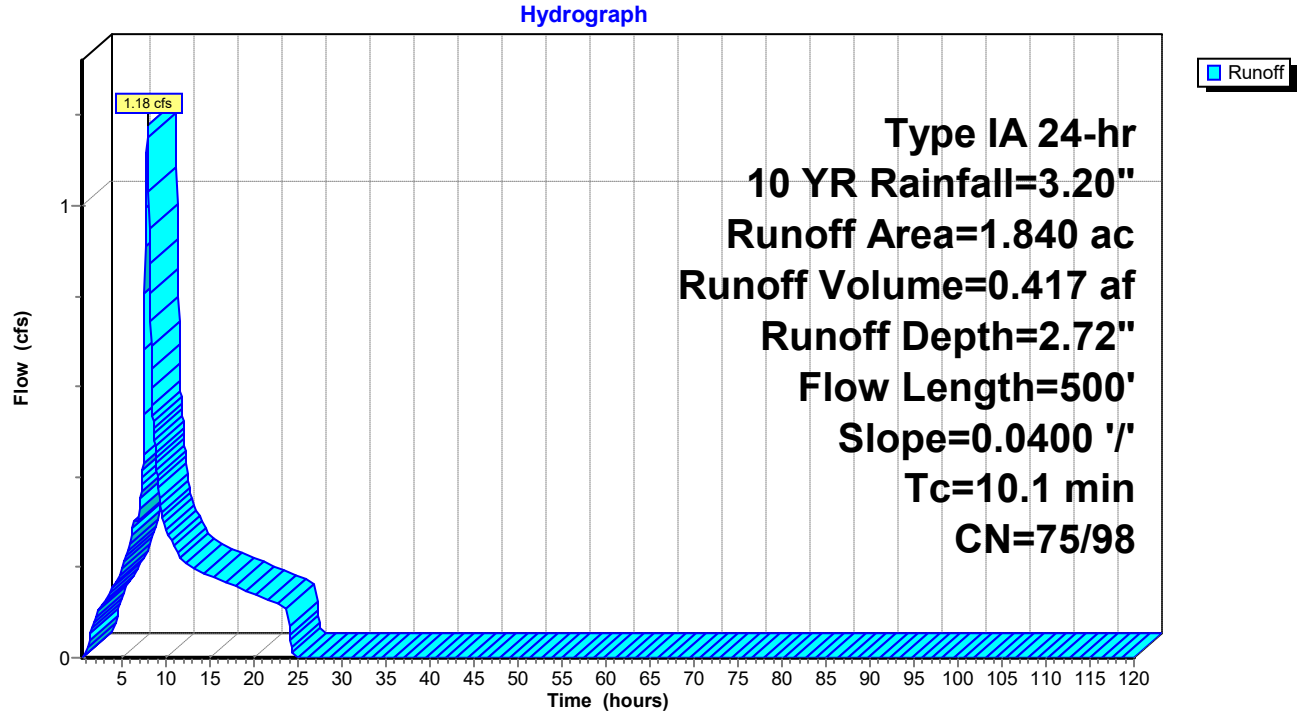
Runoff = 1.18 cfs @ 7.98 hrs, Volume= 0.417 af, Depth= 2.72"
Routed to Pond 4P : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	1.140	98	Paved roads w/curbs & sewers, HSG C
	0.700	90	1/8 acre lots, 65% imp, HSG C
	1.840	95	Weighted Average
	0.245		13.32% Pervious Area
	1.595		86.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	370	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
10.1	500	Total			

Subcatchment 6S: Basin 6



Summary for Subcatchment 7S: Basin 7

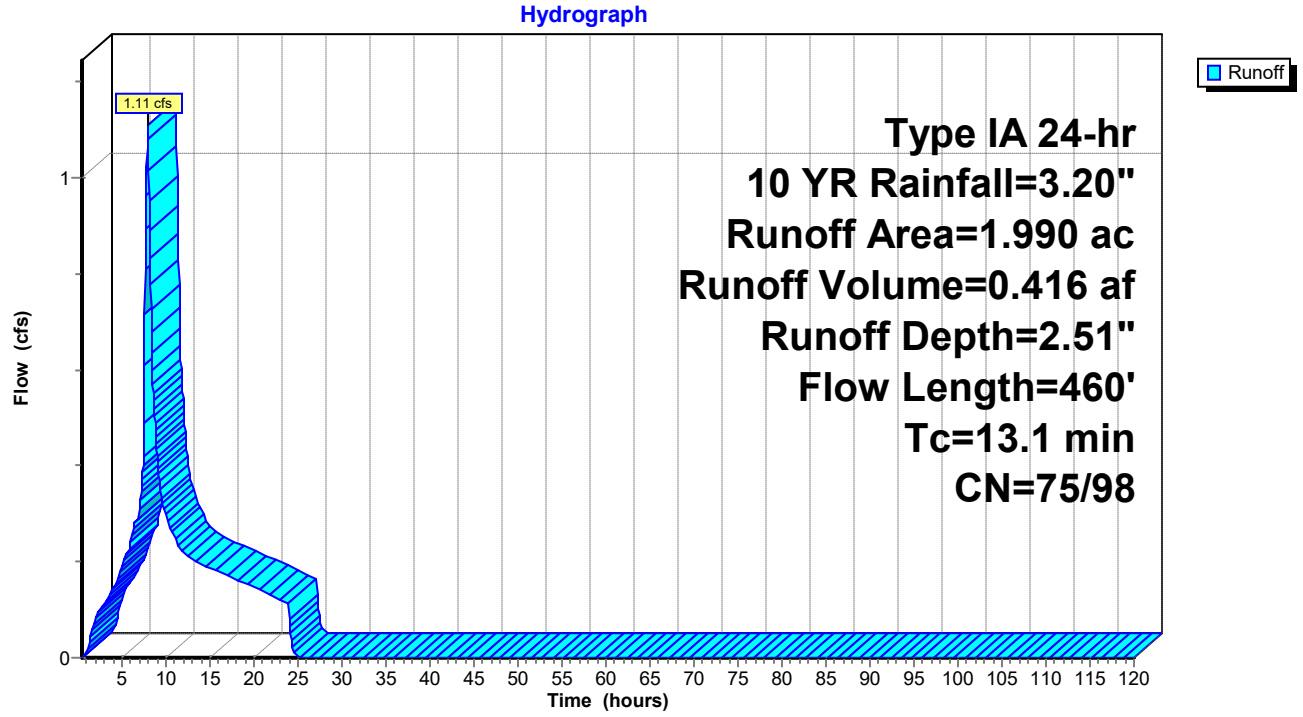
Runoff = 1.11 cfs @ 7.99 hrs, Volume= 0.416 af, Depth= 2.51"
Routed to Pond 7P : Vintage Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	0.590	98	Paved roads w/curbs & sewers, HSG C
	1.400	90	1/8 acre lots, 65% imp, HSG C
	1.990	92	Weighted Average
	0.490		24.62% Pervious Area
	1.500		75.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	320	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.1	460	Total			

Subcatchment 7S: Basin 7



Summary for Subcatchment PD: Predeveloped

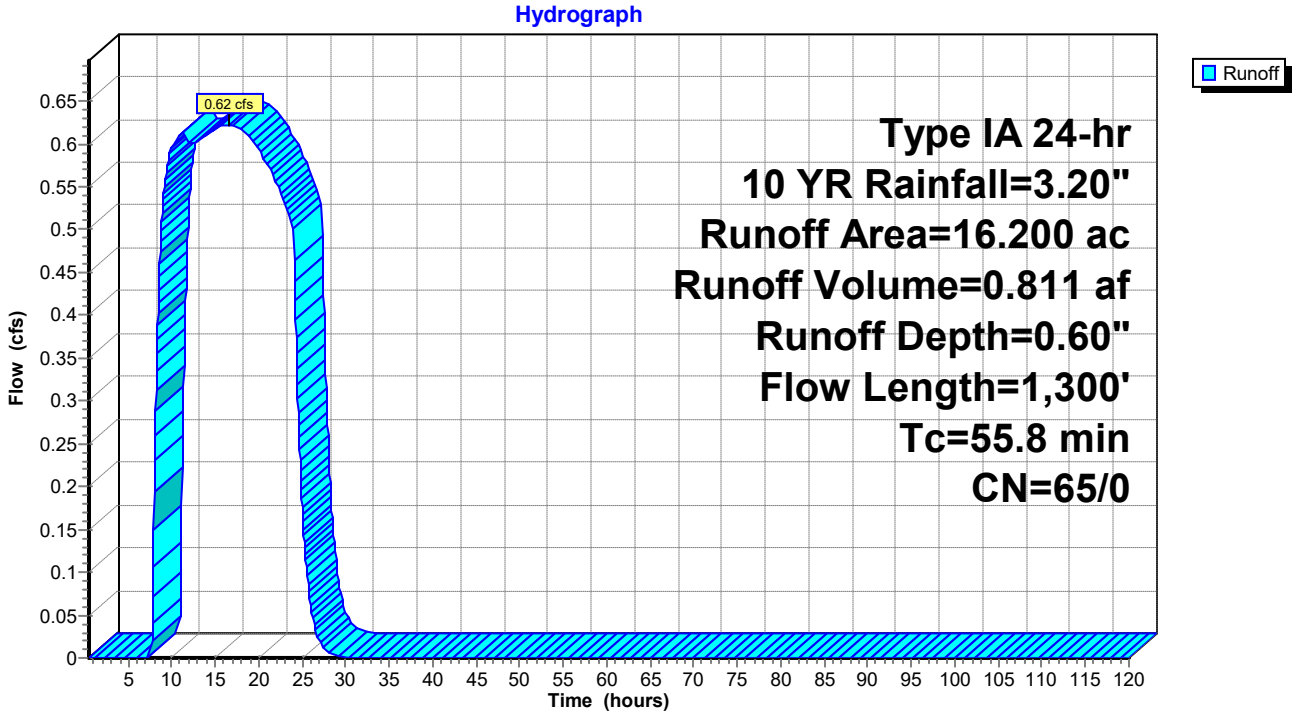
Runoff = 0.62 cfs @ 16.55 hrs, Volume= 0.811 af, Depth= 0.60"
Routed to Link 1L : Allowable/Existing Release

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

Area (ac)	CN	Description
8.100	58	Woods/grass comb., Good, HSG B
8.100	72	Woods/grass comb., Good, HSG C
16.200	65	Weighted Average
16.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.5	300	0.0400	0.13		**Sheet Flow, Pre Developed** n= 0.300 P2= 2.20"
8.9	600	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.4	400	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
55.8	1,300	Total			

Subcatchment PD: Predeveloped



Summary for Pond 3P: Teal Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 4.450 ac, 72.63% Impervious, Inflow Depth = 2.45" for 10 YR event
Inflow = 2.41 cfs @ 7.99 hrs, Volume= 0.910 af
Outflow = 1.60 cfs @ 8.35 hrs, Volume= 0.919 af, Atten= 34%, Lag= 21.2 min
Primary = 1.60 cfs @ 8.35 hrs, Volume= 0.919 af
Routed to Link 1L : Allowable/Existing Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 386.81' @ 8.35 hrs Surf.Area= 2,278 sf Storage= 1,438 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.5 min (699.5 - 698.0)

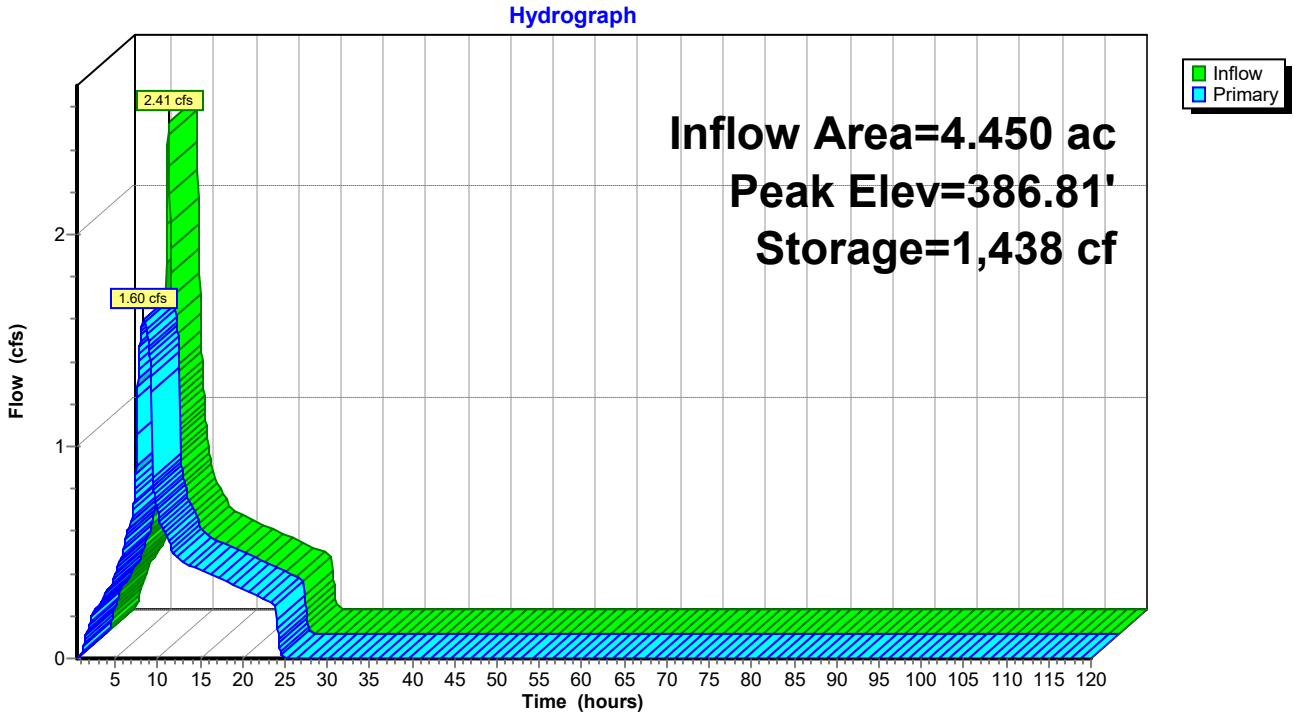
Volume	Invert	Avail.Storage	Storage Description
#1	385.50'	5,183 cf	**Pond (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
385.50	0	0	0
386.00	790	198	198
387.00	2,630	1,710	1,908
388.00	3,920	3,275	5,183

Device	Routing	Invert	Outlet Devices
#1	Primary	383.75'	**5.9" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	386.95'	**2.0' long x 0.5' breadth Overflow**
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.60 cfs @ 8.35 hrs HW=386.81' (Free Discharge)
└**1=Orifice** (Orifice Controls 1.60 cfs @ 8.42 fps)
└**2=Overflow** (Controls 0.00 cfs)

Pond 3P: Teal Detention



Summary for Pond 4P: Baxter Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 40.280 ac, 54.18% Impervious, Inflow Depth = 2.04" for 10 YR event
Inflow = 16.23 cfs @ 7.99 hrs, Volume= 6.836 af
Outflow = 4.59 cfs @ 10.84 hrs, Volume= 6.836 af, Atten= 72%, Lag= 170.8 min
Primary = 4.59 cfs @ 10.84 hrs, Volume= 6.836 af
Routed to Link 1L : Allowable/Existing Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 404.72' @ 10.84 hrs Surf.Area= 19,242 sf Storage= 48,477 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 97.0 min (820.9 - 723.9)

Volume	Invert	Avail.Storage	Storage Description
#1	401.00'	46,475 cf	**West Pond (Prismatic)** Listed below (Recalc)
#2	401.00'	29,850 cf	**East Pond (Prismatic)** Listed below (Recalc)
		76,325 cf	Total Available Storage

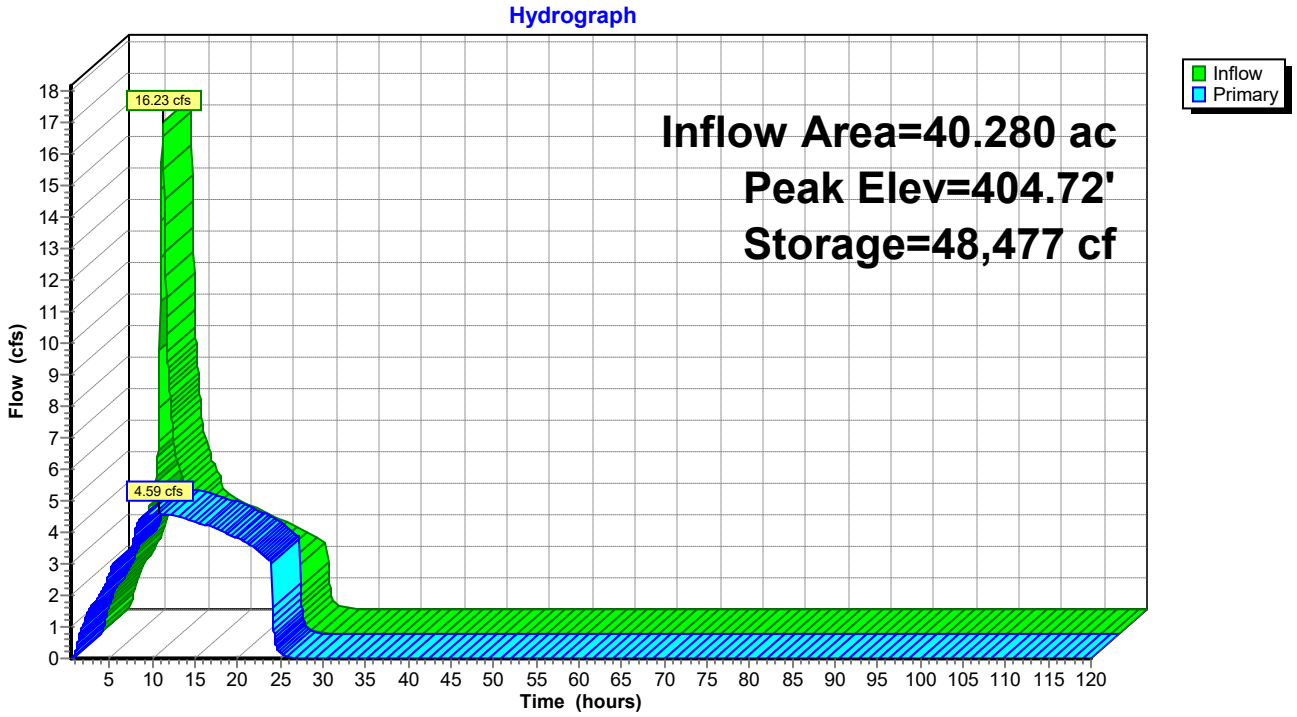
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	2,250	0	0
402.00	7,140	4,695	4,695
403.00	8,720	7,930	12,625
404.00	10,340	9,530	22,155
405.00	12,000	11,170	33,325
406.00	14,300	13,150	46,475

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	1,820	0	0
402.00	3,960	2,890	2,890
403.00	5,190	4,575	7,465
404.00	6,560	5,875	13,340
405.00	8,160	7,360	20,700
406.00	10,140	9,150	29,850

Device	Routing	Invert	Outlet Devices
#1	Primary	398.29'	**8.3" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	405.00'	**24.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads
#3	Primary	405.02'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.59 cfs @ 10.84 hrs HW=404.72' (Free Discharge)
- **1=Orifice** (Orifice Controls 4.59 cfs @ 12.21 fps)
- **2=O/F Riser** (Controls 0.00 cfs)
- **3=Overflow CB** (Controls 0.00 cfs)

Pond 4P: Baxter Detention



Summary for Pond 7P: Vintage Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 1.990 ac, 75.38% Impervious, Inflow Depth = 2.51" for 10 YR event
Inflow = 1.11 cfs @ 7.99 hrs, Volume= 0.416 af
Outflow = 0.51 cfs @ 8.73 hrs, Volume= 0.415 af, Atten= 54%, Lag= 43.9 min
Primary = 0.51 cfs @ 8.73 hrs, Volume= 0.415 af
Routed to Pond 4P : Baxter Detention

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 433.33' @ 8.73 hrs Surf.Area= 1,803 sf Storage= 1,522 cf

Plug-Flow detention time= 13.1 min calculated for 0.415 af (100% of inflow)
Center-of-Mass det. time= 12.0 min (707.0 - 695.0)

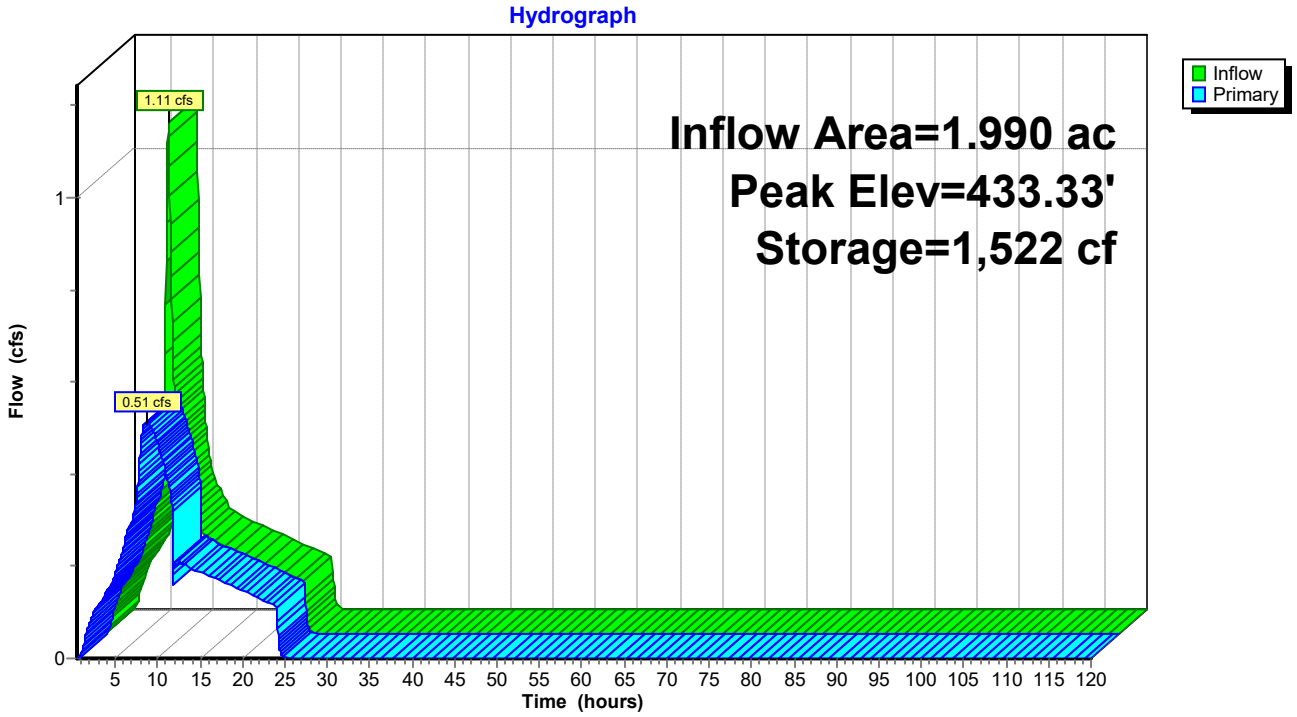
Volume	Invert	Avail.Storage	Storage Description
#1	432.00'	8,940 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
432.00	0	0	0
432.50	1,160	290	290
434.00	2,320	2,610	2,900
436.00	3,720	6,040	8,940

Device	Routing	Invert	Outlet Devices
#1	Primary	431.31'	**3.7" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	435.00'	**2.0' long x 0.5' breadth Overflow CB**
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.51 cfs @ 8.73 hrs HW=433.33' (Free Discharge)
1=Orifice (Orifice Controls 0.51 cfs @ 6.85 fps)
2=Overflow CB (Controls 0.00 cfs)

Pond 7P: Vintage Detention

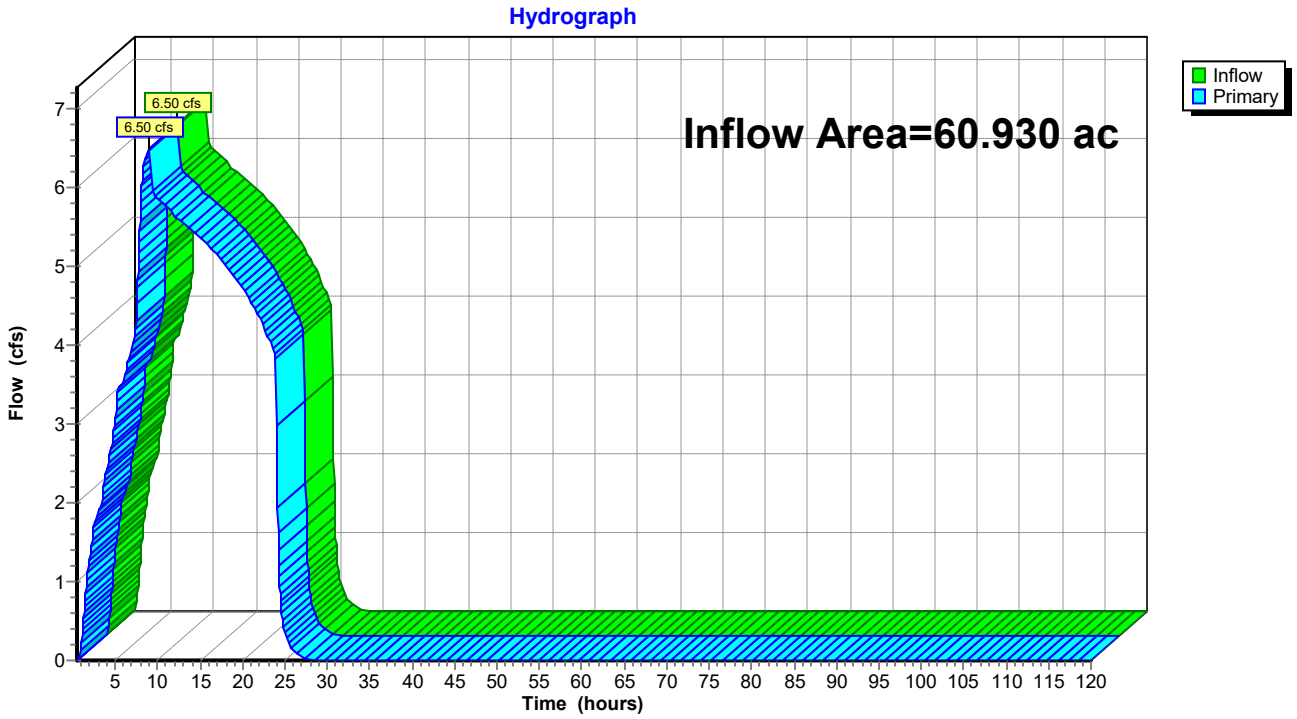


Summary for Link 1L: Allowable/Existing Release

Inflow Area = 60.930 ac, 41.12% Impervious, Inflow Depth = 1.69" for 10 YR event
Inflow = 6.50 cfs @ 8.97 hrs, Volume= 8.566 af
Primary = 6.50 cfs @ 8.97 hrs, Volume= 8.566 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 1L: Allowable/Existing Release



Time span=0.50-120.00 hrs, dt=0.05 hrs, 2391 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 3S: Basin 3 Runoff Area=4.450 ac 72.63% Impervious Runoff Depth=2.82"
Flow Length=690' Slope=0.0200 '/' Tc=13.3 min CN=75/98 Runoff=2.78 cfs 1.046 af

Subcatchment 4S: Basin 4 Runoff Area=25.660 ac 72.99% Impervious Runoff Depth=2.78"
Flow Length=1,290' Slope=0.0400 '/' Tc=11.5 min CN=72/98 Runoff=16.10 cfs 5.939 af

Subcatchment 5S: Basin 5 Runoff Area=10.790 ac 0.00% Impervious Runoff Depth=1.19"
Flow Length=1,100' Slope=0.0300 '/' Tc=57.5 min CN=72/0 Runoff=1.17 cfs 1.067 af

Subcatchment 6S: Basin 6 Runoff Area=1.840 ac 86.68% Impervious Runoff Depth=3.10"
Flow Length=500' Slope=0.0400 '/' Tc=10.1 min CN=75/98 Runoff=1.34 cfs 0.475 af

Subcatchment 7S: Basin 7 Runoff Area=1.990 ac 75.38% Impervious Runoff Depth=2.88"
Flow Length=460' Tc=13.1 min CN=75/98 Runoff=1.27 cfs 0.477 af

Subcatchment PD: Predeveloped Runoff Area=16.200 ac 0.00% Impervious Runoff Depth=0.81"
Flow Length=1,300' Tc=55.8 min CN=65/0 Runoff=0.89 cfs 1.087 af

Pond 3P: Teal Detention Peak Elev=387.05' Storage=2,047 cf Inflow=2.78 cfs 1.046 af
Outflow=1.84 cfs 1.067 af

Pond 4P: Baxter Detention Peak Elev=405.18' Storage=57,638 cf Inflow=18.85 cfs 7.959 af
Outflow=6.62 cfs 7.960 af

Pond 7P: Vintage Detention Peak Elev=433.59' Storage=2,014 cf Inflow=1.27 cfs 0.477 af
Outflow=0.54 cfs 0.477 af

Link 1L: Allowable/Existing Release Inflow=8.95 cfs 10.113 af
Primary=8.95 cfs 10.113 af

Total Runoff Area = 60.930 ac Runoff Volume = 10.092 af Average Runoff Depth = 1.99"
58.88% Pervious = 35.873 ac 41.12% Impervious = 25.057 ac

Summary for Subcatchment 3S: Basin 3

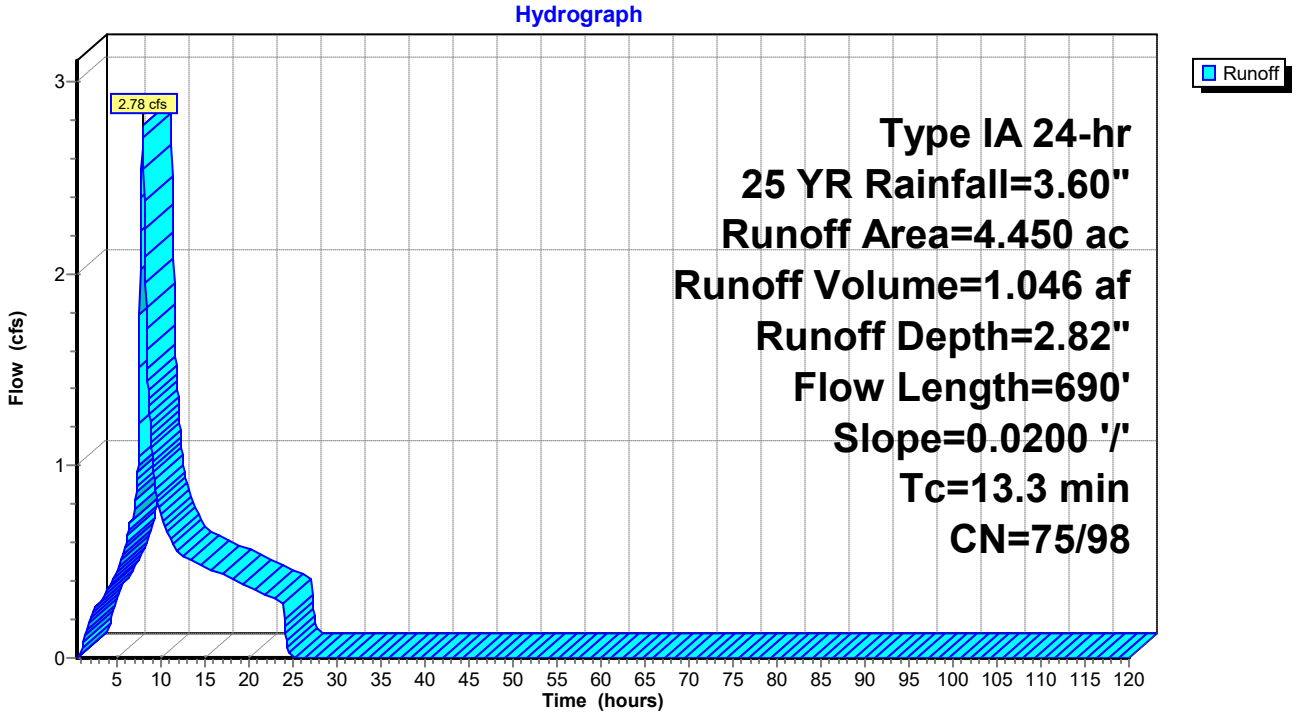
Runoff = 2.78 cfs @ 7.99 hrs, Volume= 1.046 af, Depth= 2.82"
Routed to Pond 3P : Teal Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	0.970	98	Paved roads w/curbs & sewers, HSG C
	3.480	90	1/8 acre lots, 65% imp, HSG C
	4.450	92	Weighted Average
	1.218		27.37% Pervious Area
	3.232		72.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
1.5	590	0.0200	6.42	5.04	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.3	690	Total			

Subcatchment 3S: Basin 3



Summary for Subcatchment 4S: Basin 4

[47] Hint: Peak is 226% of capacity of segment #3

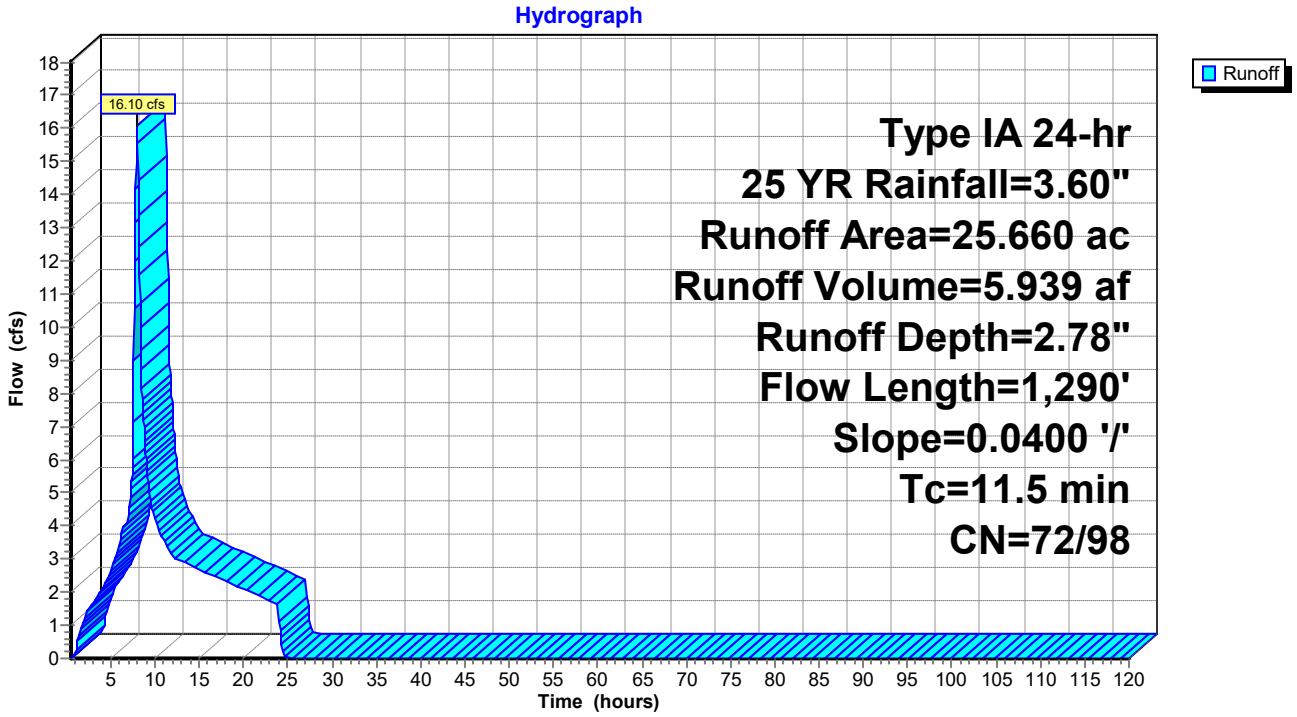
Runoff = 16.10 cfs @ 7.99 hrs, Volume= 5.939 af, Depth= 2.78"
Routed to Pond 4P : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	5.860	98	Paved roads w/curbs & sewers, HSG C
	4.950	85	1/8 acre lots, 65% imp, HSG B
	14.850	90	1/8 acre lots, 65% imp, HSG C
	25.660	91	Weighted Average
	6.930		27.01% Pervious Area
	18.730		72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	1,160	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
11.5	1,290	Total			

Subcatchment 4S: Basin 4



Summary for Subcatchment 5S: Basin 5

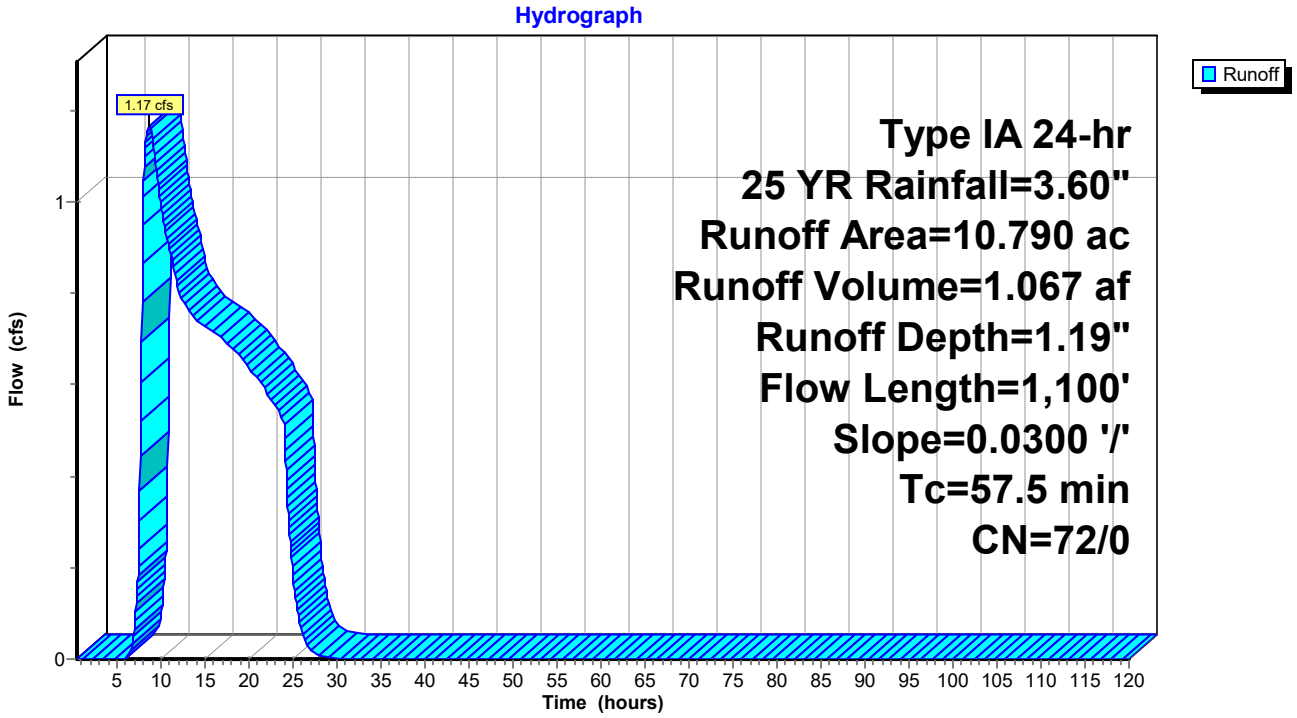
Runoff = 1.17 cfs @ 8.78 hrs, Volume= 1.067 af, Depth= 1.19"
Routed to Pond 4P : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

Area (ac)	CN	Description
10.790	72	Woods/grass comb., Good, HSG C
10.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	300	0.0300	0.12		**Sheet Flow, Pre Developed** n= 0.300 P2= 2.20"
15.4	800	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
57.5	1,100	Total			

Subcatchment 5S: Basin 5



Summary for Subcatchment 6S: Basin 6

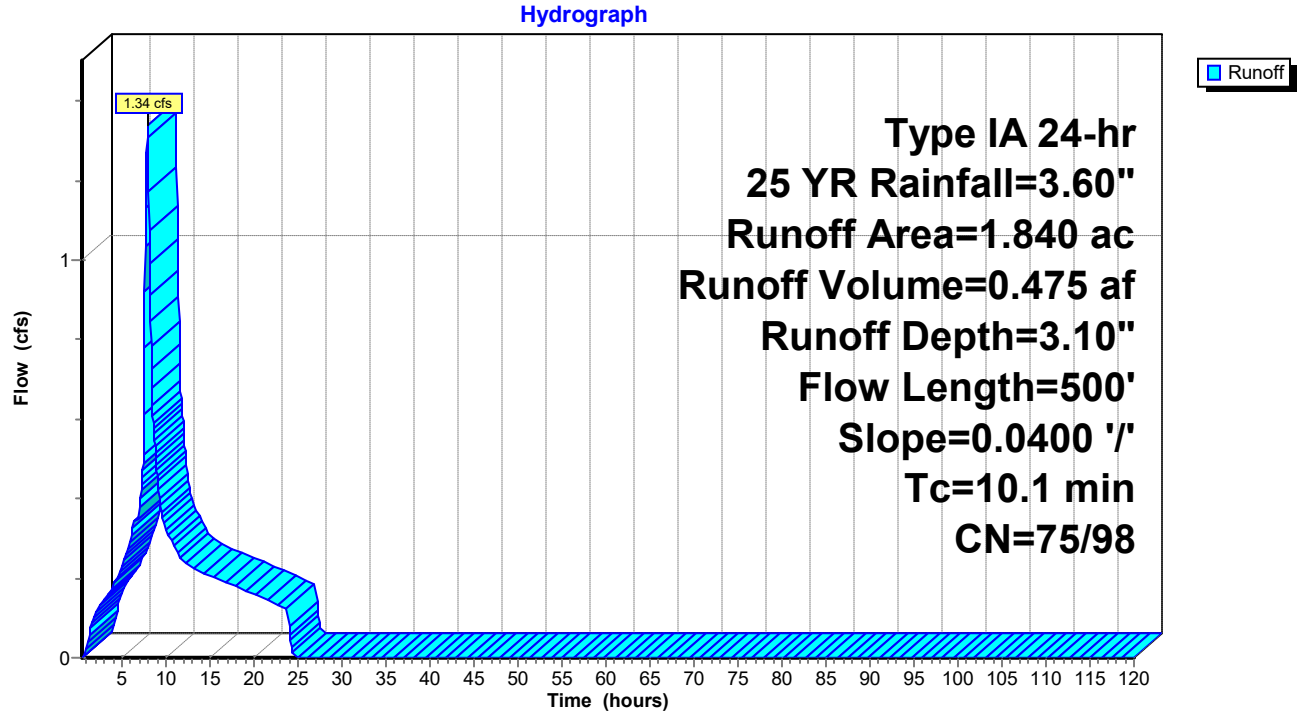
Runoff = 1.34 cfs @ 7.98 hrs, Volume= 0.475 af, Depth= 3.10"
Routed to Pond 4P : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	1.140	98	Paved roads w/curbs & sewers, HSG C
	0.700	90	1/8 acre lots, 65% imp, HSG C
	1.840	95	Weighted Average
	0.245		13.32% Pervious Area
	1.595		86.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	370	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
10.1	500	Total			

Subcatchment 6S: Basin 6



Summary for Subcatchment 7S: Basin 7

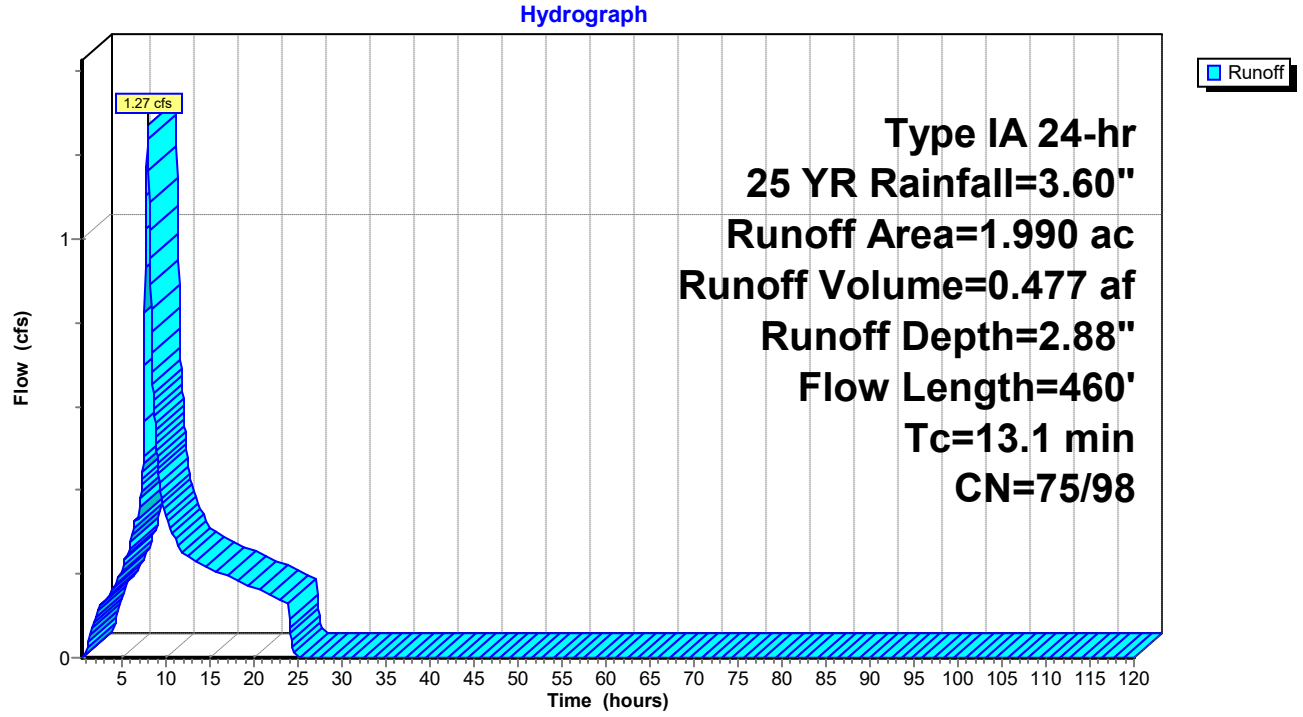
Runoff = 1.27 cfs @ 7.99 hrs, Volume= 0.477 af, Depth= 2.88"
Routed to Pond 7P : Vintage Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	0.590	98	Paved roads w/curbs & sewers, HSG C
	1.400	90	1/8 acre lots, 65% imp, HSG C
	1.990	92	Weighted Average
	0.490		24.62% Pervious Area
	1.500		75.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	320	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.1	460	Total			

Subcatchment 7S: Basin 7



Summary for Subcatchment PD: Predeveloped

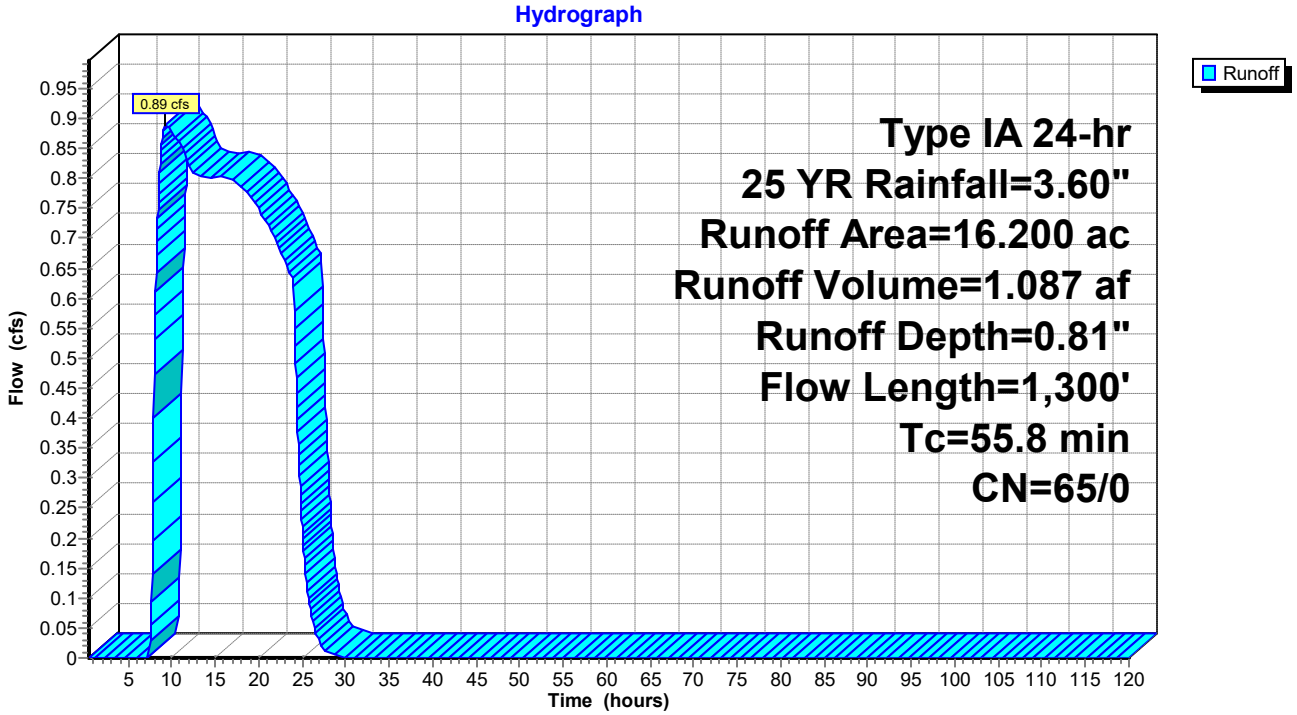
Runoff = 0.89 cfs @ 9.27 hrs, Volume= 1.087 af, Depth= 0.81"
Routed to Link 1L : Allowable/Existing Release

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

Area (ac)	CN	Description
8.100	58	Woods/grass comb., Good, HSG B
8.100	72	Woods/grass comb., Good, HSG C
16.200	65	Weighted Average
16.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.5	300	0.0400	0.13		**Sheet Flow, Pre Developed** n= 0.300 P2= 2.20"
8.9	600	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.4	400	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
55.8	1,300	Total			

Subcatchment PD: Predeveloped



Summary for Pond 3P: Teal Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 4.450 ac, 72.63% Impervious, Inflow Depth = 2.82" for 25 YR event
Inflow = 2.78 cfs @ 7.99 hrs, Volume= 1.046 af
Outflow = 1.84 cfs @ 8.35 hrs, Volume= 1.067 af, Atten= 34%, Lag= 21.1 min
Primary = 1.84 cfs @ 8.35 hrs, Volume= 1.067 af
Routed to Link 1L : Allowable/Existing Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 387.05' @ 8.35 hrs Surf.Area= 2,697 sf Storage= 2,047 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 2.5 min (697.9 - 695.4)

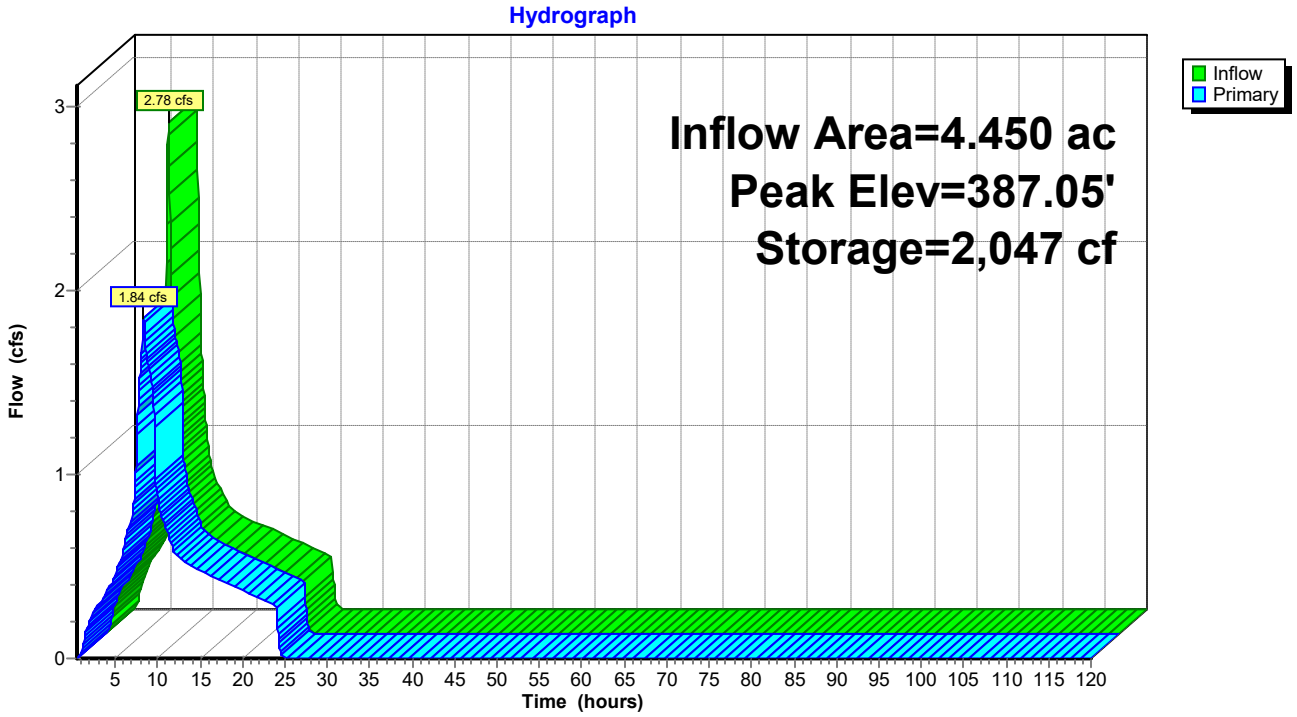
Volume	Invert	Avail.Storage	Storage Description
#1	385.50'	5,183 cf	**Pond (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
385.50	0	0	0
386.00	790	198	198
387.00	2,630	1,710	1,908
388.00	3,920	3,275	5,183

Device	Routing	Invert	Outlet Devices
#1	Primary	383.75'	**5.9" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	386.95'	**2.0' long x 0.5' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.84 cfs @ 8.35 hrs HW=387.05' (Free Discharge)
└**1=Orifice** (Orifice Controls 1.66 cfs @ 8.75 fps)
└**2=Overflow** (Weir Controls 0.18 cfs @ 0.89 fps)

Pond 3P: Teal Detention



Summary for Pond 4P: Baxter Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 40.280 ac, 54.18% Impervious, Inflow Depth = 2.37" for 25 YR event
Inflow = 18.85 cfs @ 7.99 hrs, Volume= 7.959 af
Outflow = 6.62 cfs @ 9.49 hrs, Volume= 7.960 af, Atten= 65%, Lag= 89.6 min
Primary = 6.62 cfs @ 9.49 hrs, Volume= 7.960 af
Routed to Link 1L : Allowable/Existing Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 405.18' @ 9.49 hrs Surf.Area= 20,913 sf Storage= 57,638 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 120.0 min (842.6 - 722.7)

Volume	Invert	Avail.Storage	Storage Description
#1	401.00'	46,475 cf	**West Pond (Prismatic)** Listed below (Recalc)
#2	401.00'	29,850 cf	**East Pond (Prismatic)** Listed below (Recalc)
		76,325 cf	Total Available Storage

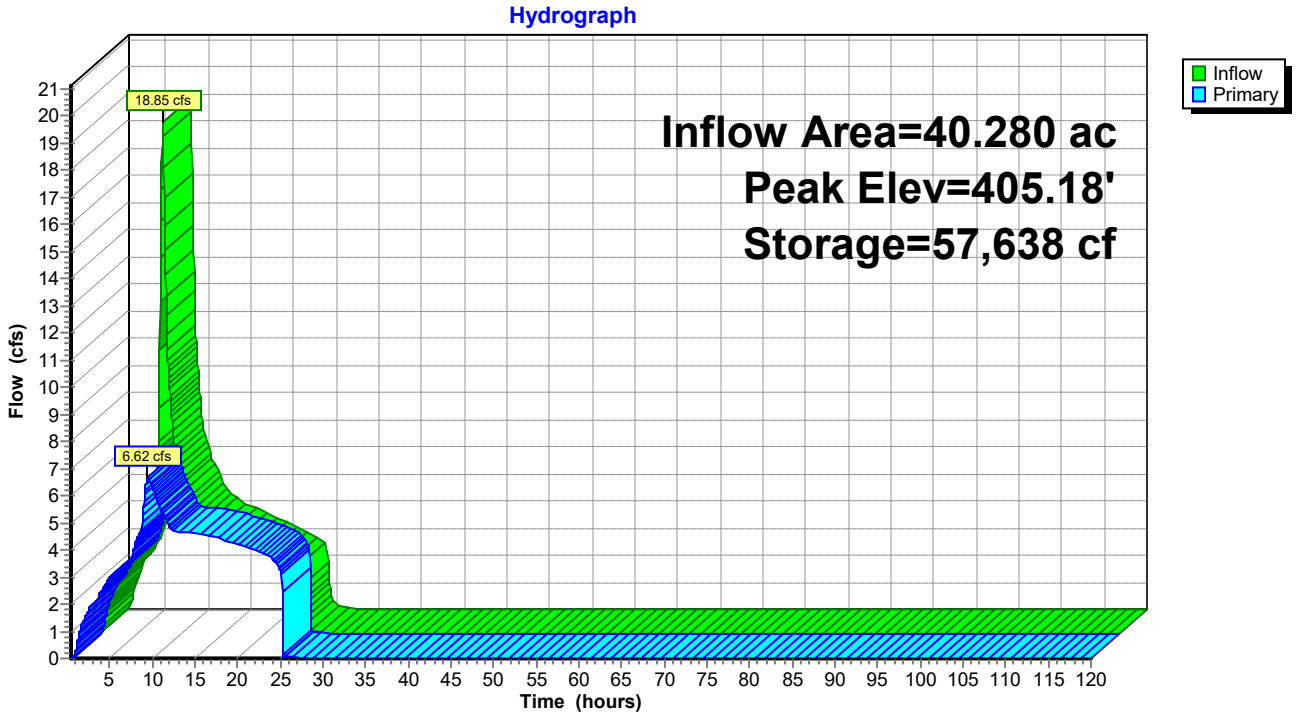
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	2,250	0	0
402.00	7,140	4,695	4,695
403.00	8,720	7,930	12,625
404.00	10,340	9,530	22,155
405.00	12,000	11,170	33,325
406.00	14,300	13,150	46,475

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	1,820	0	0
402.00	3,960	2,890	2,890
403.00	5,190	4,575	7,465
404.00	6,560	5,875	13,340
405.00	8,160	7,360	20,700
406.00	10,140	9,150	29,850

Device	Routing	Invert	Outlet Devices
#1	Primary	398.29'	**8.3" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	405.00'	**24.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads
#3	Primary	405.02'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=6.61 cfs @ 9.49 hrs HW=405.18' (Free Discharge)
- **1=Orifice** (Orifice Controls 4.75 cfs @ 12.63 fps)
- **2=O/F Riser** (Weir Controls 1.51 cfs @ 1.37 fps)
- **3=Overflow CB** (Weir Controls 0.34 cfs @ 1.11 fps)

Pond 4P: Baxter Detention



Summary for Pond 7P: Vintage Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 1.990 ac, 75.38% Impervious, Inflow Depth = 2.88" for 25 YR event
Inflow = 1.27 cfs @ 7.99 hrs, Volume= 0.477 af
Outflow = 0.54 cfs @ 8.85 hrs, Volume= 0.477 af, Atten= 57%, Lag= 51.4 min
Primary = 0.54 cfs @ 8.85 hrs, Volume= 0.477 af
Routed to Pond 4P : Baxter Detention

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 433.59' @ 8.85 hrs Surf.Area= 2,003 sf Storage= 2,014 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 16.8 min (709.2 - 692.4)

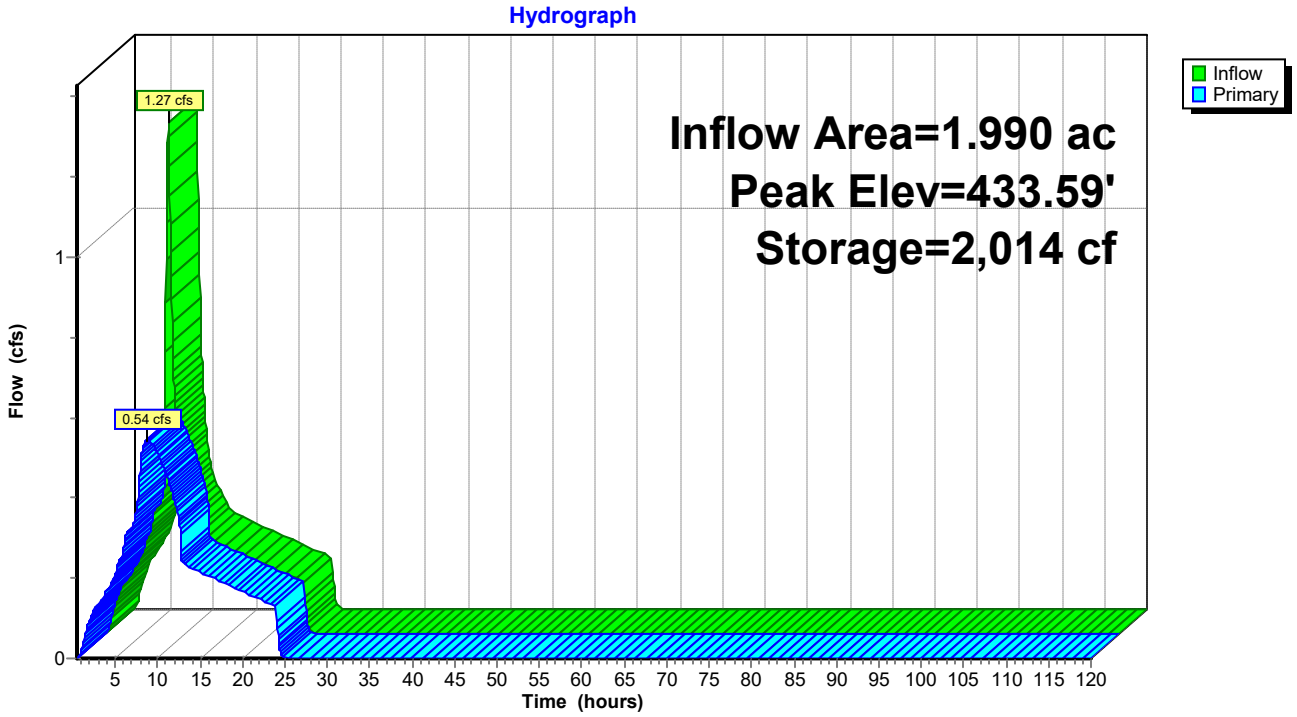
Volume	Invert	Avail.Storage	Storage Description
#1	432.00'	8,940 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
432.00	0	0	0
432.50	1,160	290	290
434.00	2,320	2,610	2,900
436.00	3,720	6,040	8,940

Device	Routing	Invert	Outlet Devices
#1	Primary	431.31'	**3.7" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	435.00'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.54 cfs @ 8.85 hrs HW=433.59' (Free Discharge)
└**1=Orifice** (Orifice Controls 0.54 cfs @ 7.27 fps)
└**2=Overflow CB** (Controls 0.00 cfs)

Pond 7P: Vintage Detention

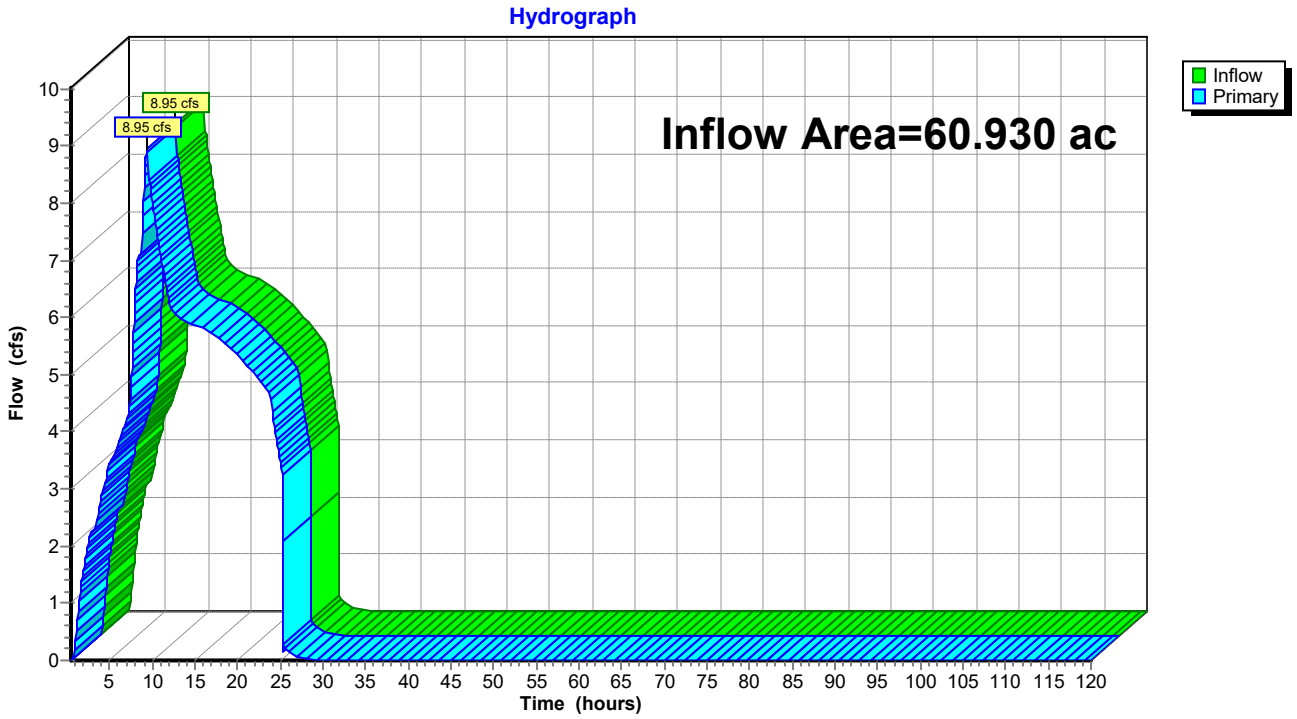


Summary for Link 1L: Allowable/Existing Release

Inflow Area = 60.930 ac, 41.12% Impervious, Inflow Depth = 1.99" for 25 YR event
Inflow = 8.95 cfs @ 9.42 hrs, Volume= 10.113 af
Primary = 8.95 cfs @ 9.42 hrs, Volume= 10.113 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 1L: Allowable/Existing Release



Time span=0.50-120.00 hrs, dt=0.05 hrs, 2391 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 3S: Basin 3 Runoff Area=4.450 ac 72.63% Impervious Runoff Depth>3.56"
Flow Length=690' Slope=0.0200 '/' Tc=13.3 min CN=75/98 Runoff=3.52 cfs 1.322 af

Subcatchment 4S: Basin 4 Runoff Area=25.660 ac 72.99% Impervious Runoff Depth>3.51"
Flow Length=1,290' Slope=0.0400 '/' Tc=11.5 min CN=72/98 Runoff=20.40 cfs 7.508 af

Subcatchment 5S: Basin 5 Runoff Area=10.790 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=1,100' Slope=0.0300 '/' Tc=57.5 min CN=72/0 Runoff=1.95 cfs 1.571 af

Subcatchment 6S: Basin 6 Runoff Area=1.840 ac 86.68% Impervious Runoff Depth>3.87"
Flow Length=500' Slope=0.0400 '/' Tc=10.1 min CN=75/98 Runoff=1.67 cfs 0.594 af

Subcatchment 7S: Basin 7 Runoff Area=1.990 ac 75.38% Impervious Runoff Depth>3.62"
Flow Length=460' Tc=13.1 min CN=75/98 Runoff=1.61 cfs 0.601 af

Subcatchment PD: Predeveloped Runoff Area=16.200 ac 0.00% Impervious Runoff Depth=1.27"
Flow Length=1,300' Tc=55.8 min CN=65/0 Runoff=1.72 cfs 1.712 af

Pond 3P: Teal Detention Peak Elev=387.27' Storage=2,669 cf Inflow=3.52 cfs 1.322 af
Outflow=2.76 cfs 1.357 af

Pond 4P: Baxter Detention Peak Elev=405.47' Storage=64,048 cf Inflow=24.29 cfs 10.274 af
Outflow=13.36 cfs 10.275 af

Pond 7P: Vintage Detention Peak Elev=434.12' Storage=3,192 cf Inflow=1.61 cfs 0.601 af
Outflow=0.60 cfs 0.601 af

Link 1L: Allowable/Existing Release Inflow=17.29 cfs 13.344 af
Primary=17.29 cfs 13.344 af

Total Runoff Area = 60.930 ac Runoff Volume = 13.308 af Average Runoff Depth = 2.62"
58.88% Pervious = 35.873 ac 41.12% Impervious = 25.057 ac

Summary for Subcatchment 3S: Basin 3

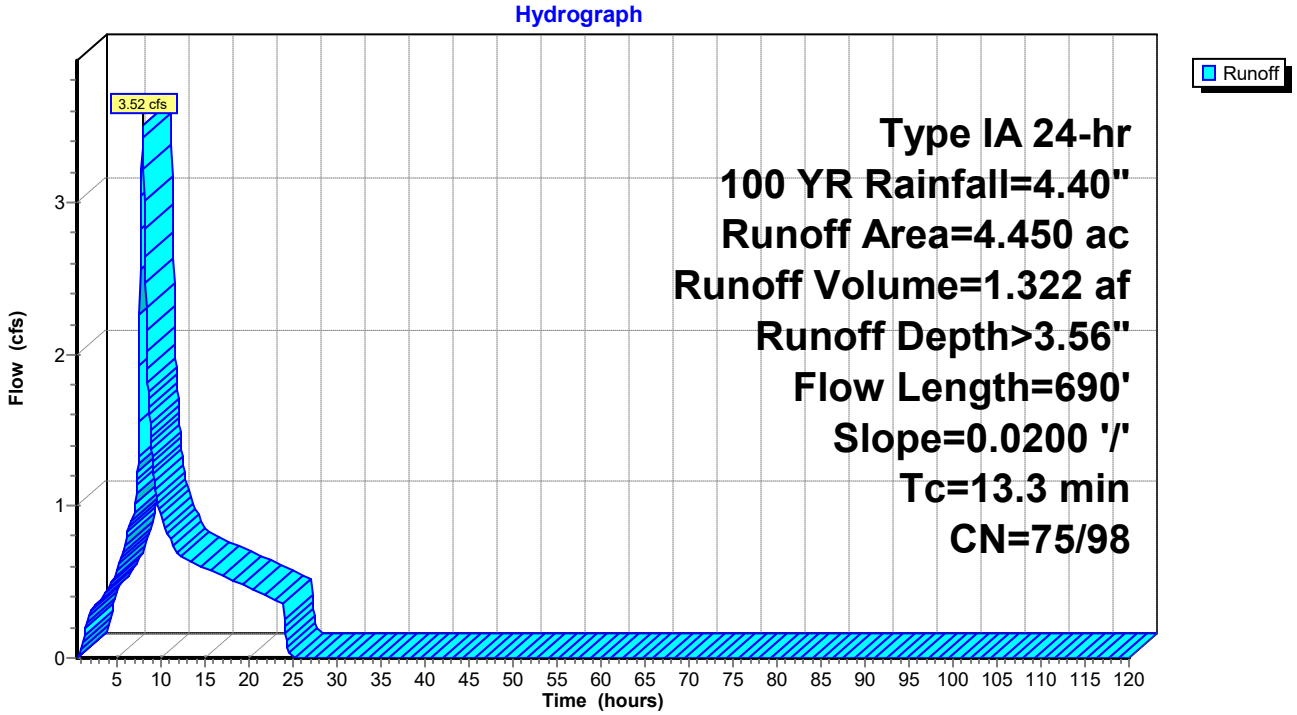
Runoff = 3.52 cfs @ 7.99 hrs, Volume= 1.322 af, Depth> 3.56"
Routed to Pond 3P : Teal Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	0.970	98	Paved roads w/curbs & sewers, HSG C
	3.480	90	1/8 acre lots, 65% imp, HSG C
	4.450	92	Weighted Average
	1.218		27.37% Pervious Area
	3.232		72.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
1.5	590	0.0200	6.42	5.04	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.3	690	Total			

Subcatchment 3S: Basin 3



Summary for Subcatchment 4S: Basin 4

[47] Hint: Peak is 286% of capacity of segment #3

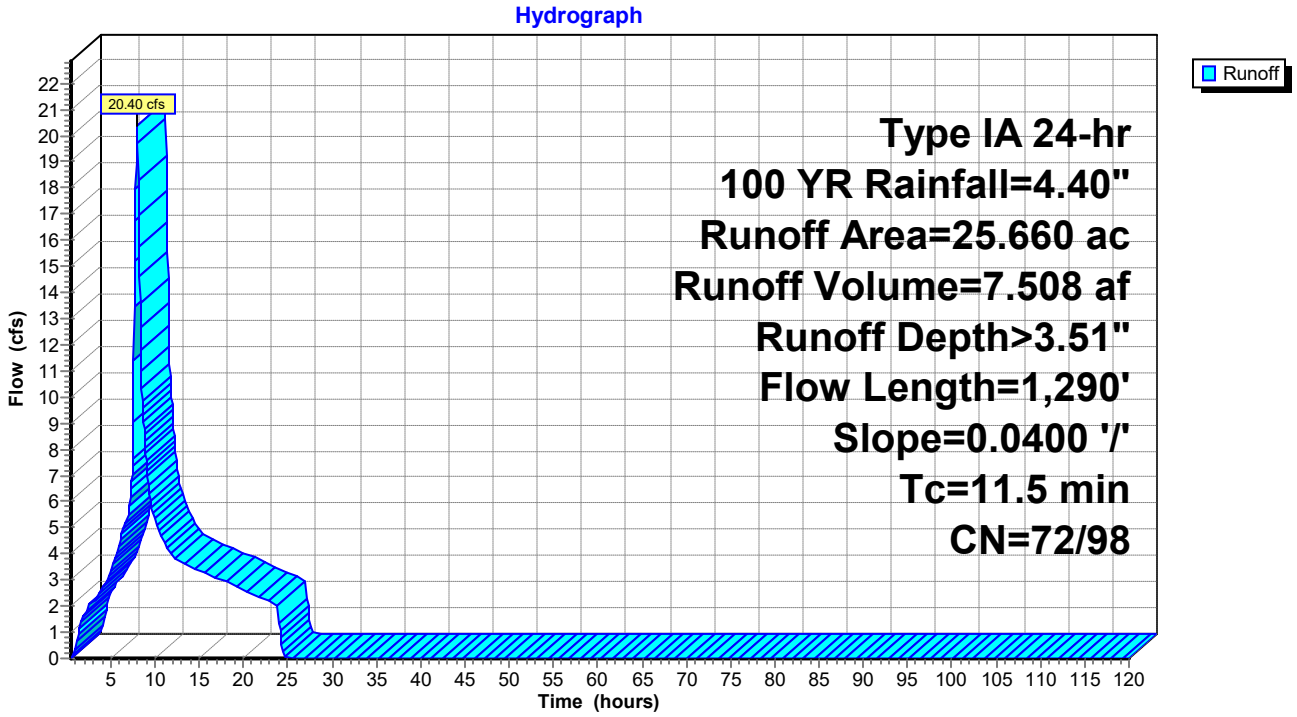
Runoff = 20.40 cfs @ 7.99 hrs, Volume= 7.508 af, Depth> 3.51"
Routed to Pond 4P : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	5.860	98	Paved roads w/curbs & sewers, HSG C
	4.950	85	1/8 acre lots, 65% imp, HSG B
	14.850	90	1/8 acre lots, 65% imp, HSG C
	25.660	91	Weighted Average
	6.930		27.01% Pervious Area
	18.730		72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	1,160	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
11.5	1,290	Total			

Subcatchment 4S: Basin 4



Summary for Subcatchment 5S: Basin 5

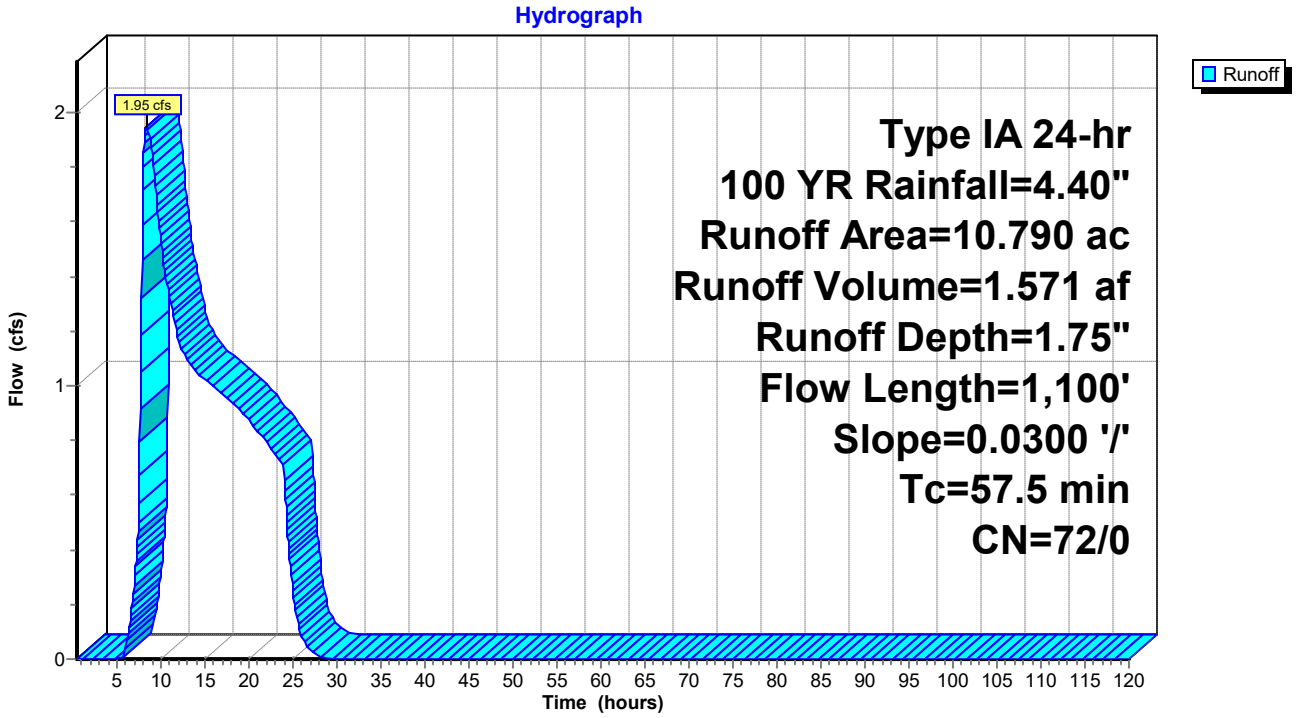
Runoff = 1.95 cfs @ 8.37 hrs, Volume= 1.571 af, Depth= 1.75"
Routed to Pond 4P : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

Area (ac)	CN	Description
10.790	72	Woods/grass comb., Good, HSG C
10.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	300	0.0300	0.12		**Sheet Flow, Pre Developed** n= 0.300 P2= 2.20"
15.4	800	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
57.5	1,100	Total			

Subcatchment 5S: Basin 5



Summary for Subcatchment 6S: Basin 6

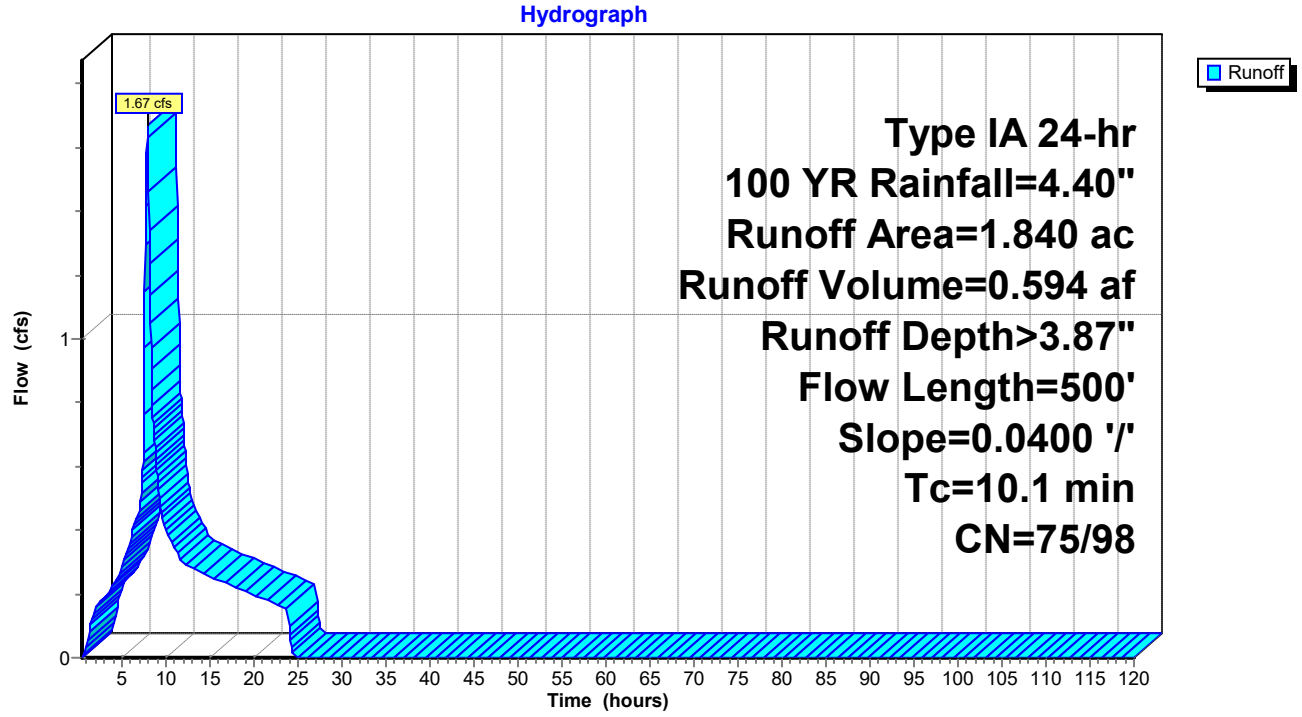
Runoff = 1.67 cfs @ 7.98 hrs, Volume= 0.594 af, Depth> 3.87"
Routed to Pond 4P : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	1.140	98	Paved roads w/curbs & sewers, HSG C
	0.700	90	1/8 acre lots, 65% imp, HSG C
	1.840	95	Weighted Average
	0.245		13.32% Pervious Area
	1.595		86.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	370	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
10.1	500	Total			

Subcatchment 6S: Basin 6



Summary for Subcatchment 7S: Basin 7

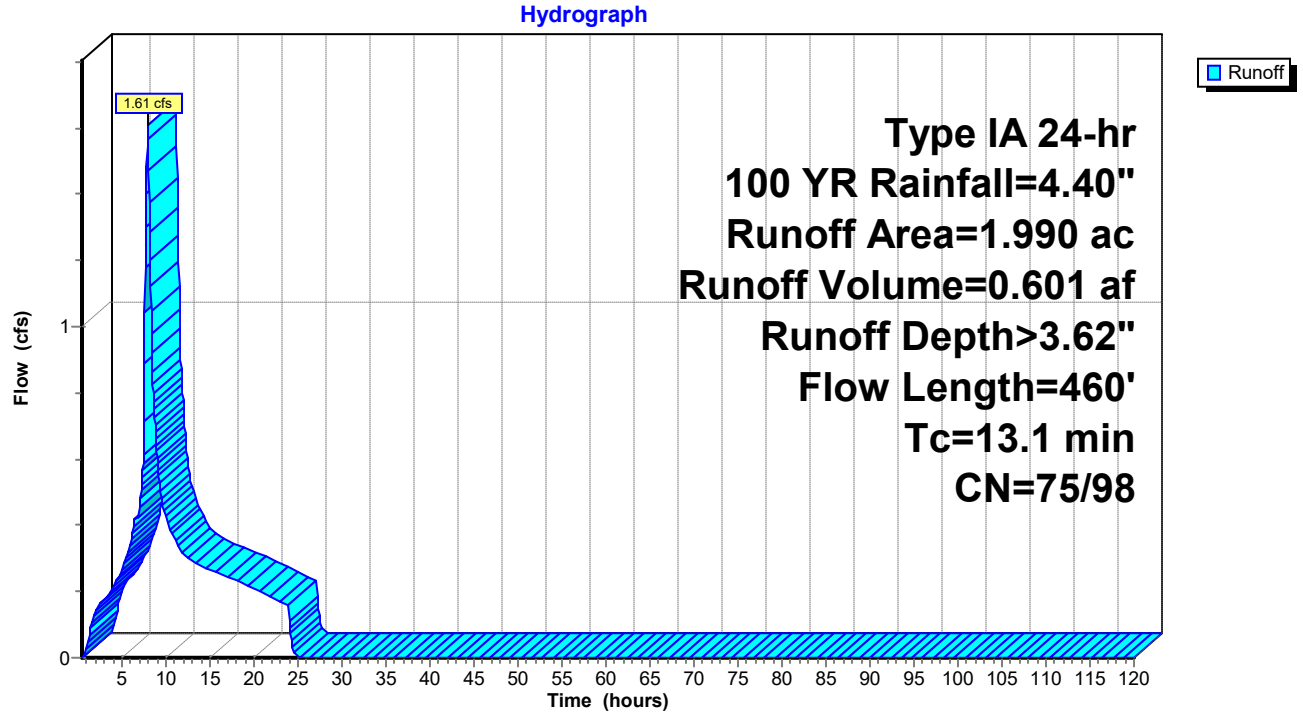
Runoff = 1.61 cfs @ 7.99 hrs, Volume= 0.601 af, Depth> 3.62"
Routed to Pond 7P : Vintage Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	0.590	98	Paved roads w/curbs & sewers, HSG C
	1.400	90	1/8 acre lots, 65% imp, HSG C
	1.990	92	Weighted Average
	0.490		24.62% Pervious Area
	1.500		75.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	320	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.1	460	Total			

Subcatchment 7S: Basin 7



Summary for Subcatchment PD: Predeveloped

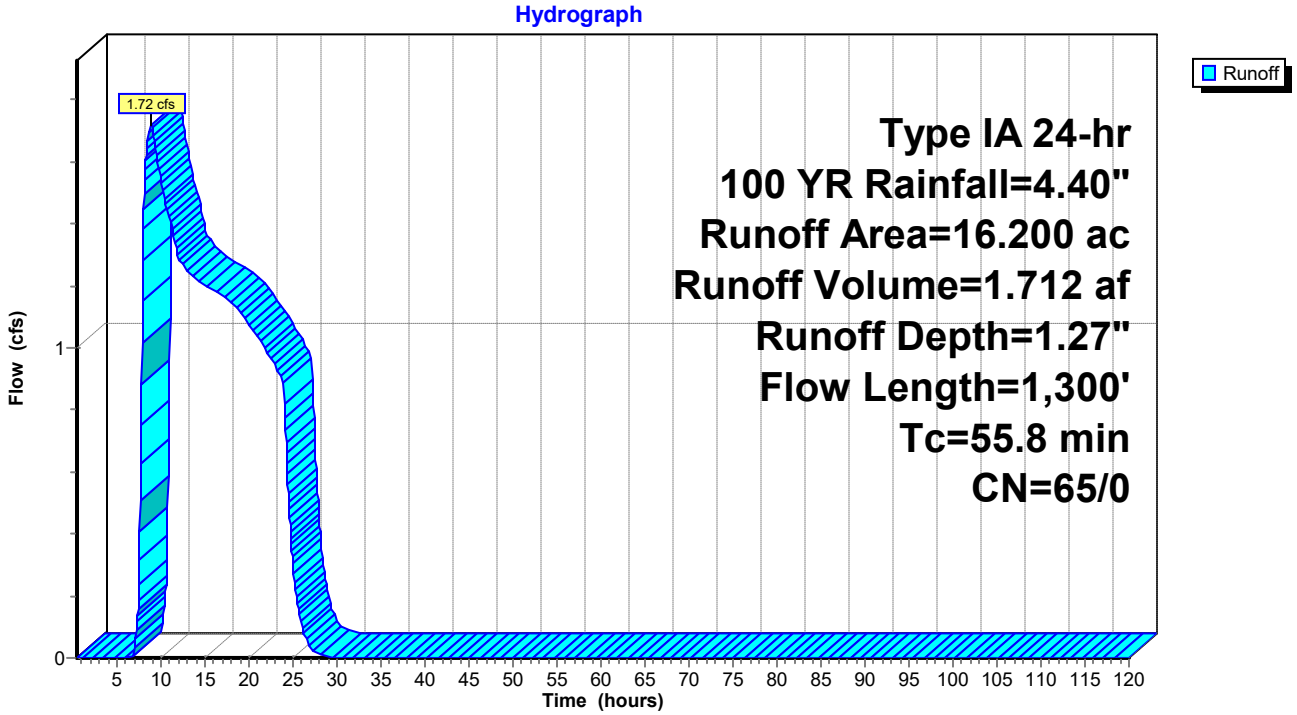
Runoff = 1.72 cfs @ 8.91 hrs, Volume= 1.712 af, Depth= 1.27"
Routed to Link 1L : Allowable/Existing Release

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

Area (ac)	CN	Description
8.100	58	Woods/grass comb., Good, HSG B
8.100	72	Woods/grass comb., Good, HSG C
16.200	65	Weighted Average
16.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.5	300	0.0400	0.13		**Sheet Flow, Pre Developed** n= 0.300 P2= 2.20"
8.9	600	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
9.4	400	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
55.8	1,300	Total			

Subcatchment PD: Predeveloped



Summary for Pond 3P: Teal Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 4.450 ac, 72.63% Impervious, Inflow Depth > 3.56" for 100 YR event
Inflow = 3.52 cfs @ 7.99 hrs, Volume= 1.322 af
Outflow = 2.76 cfs @ 8.22 hrs, Volume= 1.357 af, Atten= 21%, Lag= 13.6 min
Primary = 2.76 cfs @ 8.22 hrs, Volume= 1.357 af
Routed to Link 1L : Allowable/Existing Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 387.27' @ 8.22 hrs Surf.Area= 2,980 sf Storage= 2,669 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 3.9 min (695.0 - 691.1)

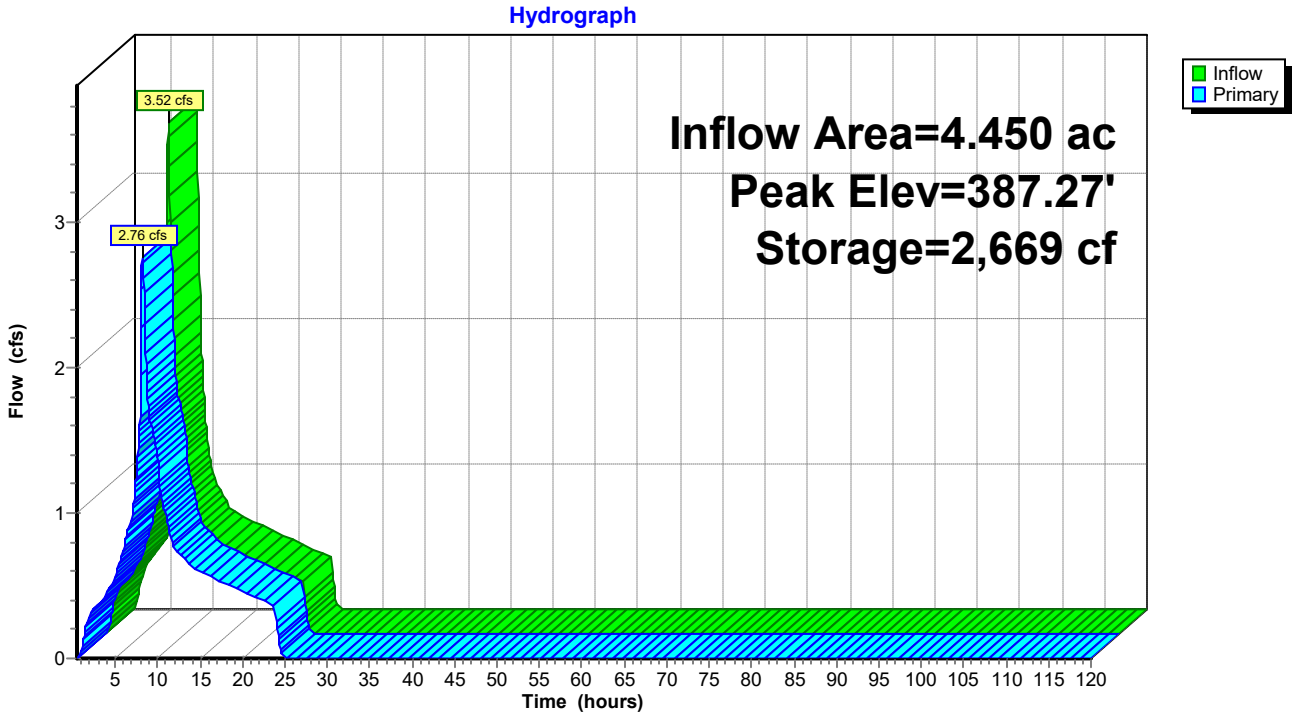
Volume	Invert	Avail.Storage	Storage Description
#1	385.50'	5,183 cf	**Pond (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
385.50	0	0	0
386.00	790	198	198
387.00	2,630	1,710	1,908
388.00	3,920	3,275	5,183

Device	Routing	Invert	Outlet Devices
#1	Primary	383.75'	**5.9" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	386.95'	**2.0' long x 0.5' breadth Overflow** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=2.75 cfs @ 8.22 hrs HW=387.27' (Free Discharge)
└**1=Orifice** (Orifice Controls 1.72 cfs @ 9.03 fps)
└**2=Overflow** (Weir Controls 1.04 cfs @ 1.62 fps)

Pond 3P: Teal Detention



Summary for Pond 4P: Baxter Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 40.280 ac, 54.18% Impervious, Inflow Depth > 3.06" for 100 YR event
Inflow = 24.29 cfs @ 7.99 hrs, Volume= 10.274 af
Outflow = 13.36 cfs @ 8.53 hrs, Volume= 10.275 af, Atten= 45%, Lag= 32.3 min
Primary = 13.36 cfs @ 8.53 hrs, Volume= 10.275 af
Routed to Link 1L : Allowable/Existing Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 405.47' @ 8.53 hrs Surf.Area= 22,186 sf Storage= 64,048 cf

Plug-Flow detention time= 125.3 min calculated for 10.271 af (100% of inflow)
Center-of-Mass det. time= 125.4 min (845.7 - 720.3)

Volume	Invert	Avail.Storage	Storage Description
#1	401.00'	46,475 cf	**West Pond (Prismatic)** Listed below (Recalc)
#2	401.00'	29,850 cf	**East Pond (Prismatic)** Listed below (Recalc)
		76,325 cf	Total Available Storage

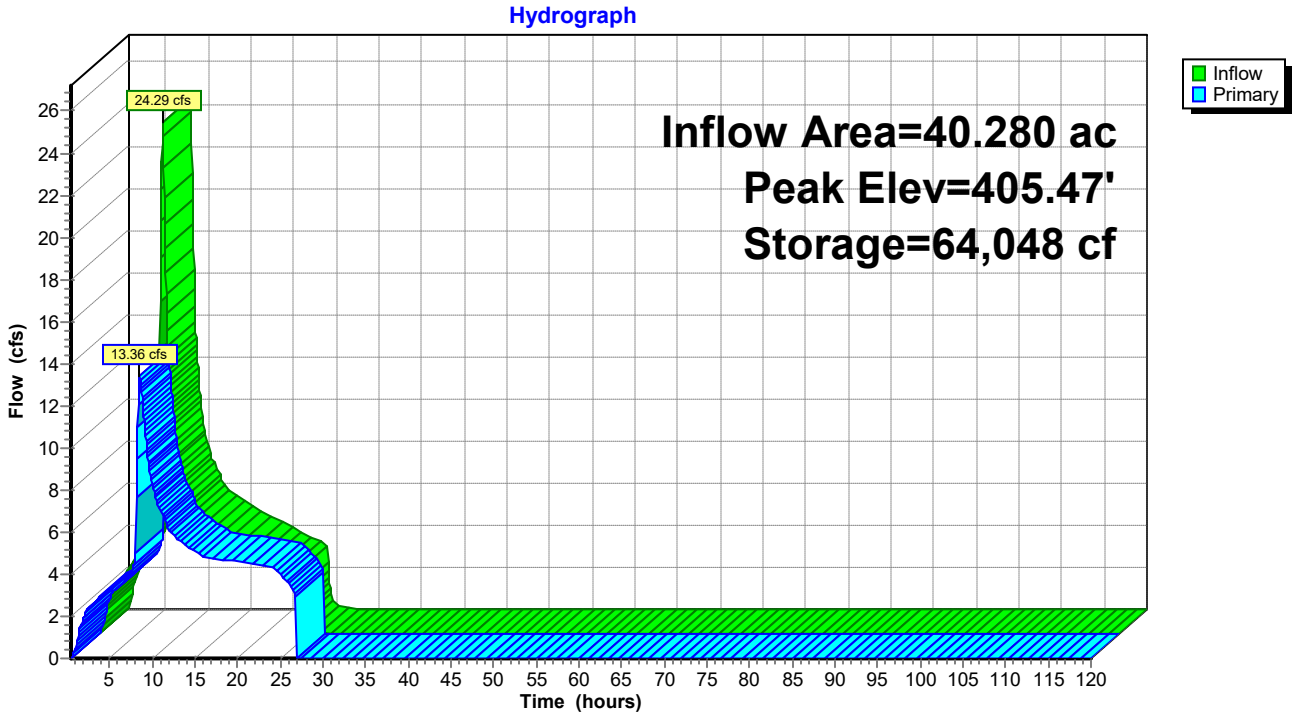
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	2,250	0	0
402.00	7,140	4,695	4,695
403.00	8,720	7,930	12,625
404.00	10,340	9,530	22,155
405.00	12,000	11,170	33,325
406.00	14,300	13,150	46,475

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	1,820	0	0
402.00	3,960	2,890	2,890
403.00	5,190	4,575	7,465
404.00	6,560	5,875	13,340
405.00	8,160	7,360	20,700
406.00	10,140	9,150	29,850

Device	Routing	Invert	Outlet Devices
#1	Primary	398.29'	**8.3" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	405.00'	**24.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads
#3	Primary	405.02'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=13.34 cfs @ 8.53 hrs HW=405.47' (Free Discharge)
- **1=Orifice** (Orifice Controls 4.85 cfs @ 12.90 fps)
- **2=O/F Riser** (Weir Controls 6.68 cfs @ 2.25 fps)
- **3=Overflow CB** (Weir Controls 1.81 cfs @ 1.99 fps)

Pond 4P: Baxter Detention



Summary for Pond 7P: Vintage Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 1.990 ac, 75.38% Impervious, Inflow Depth > 3.62" for 100 YR event
Inflow = 1.61 cfs @ 7.99 hrs, Volume= 0.601 af
Outflow = 0.60 cfs @ 9.05 hrs, Volume= 0.601 af, Atten= 63%, Lag= 63.5 min
Primary = 0.60 cfs @ 9.05 hrs, Volume= 0.601 af
Routed to Pond 4P : Baxter Detention

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 434.12' @ 9.05 hrs Surf.Area= 2,407 sf Storage= 3,192 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 29.3 min (717.4 - 688.1)

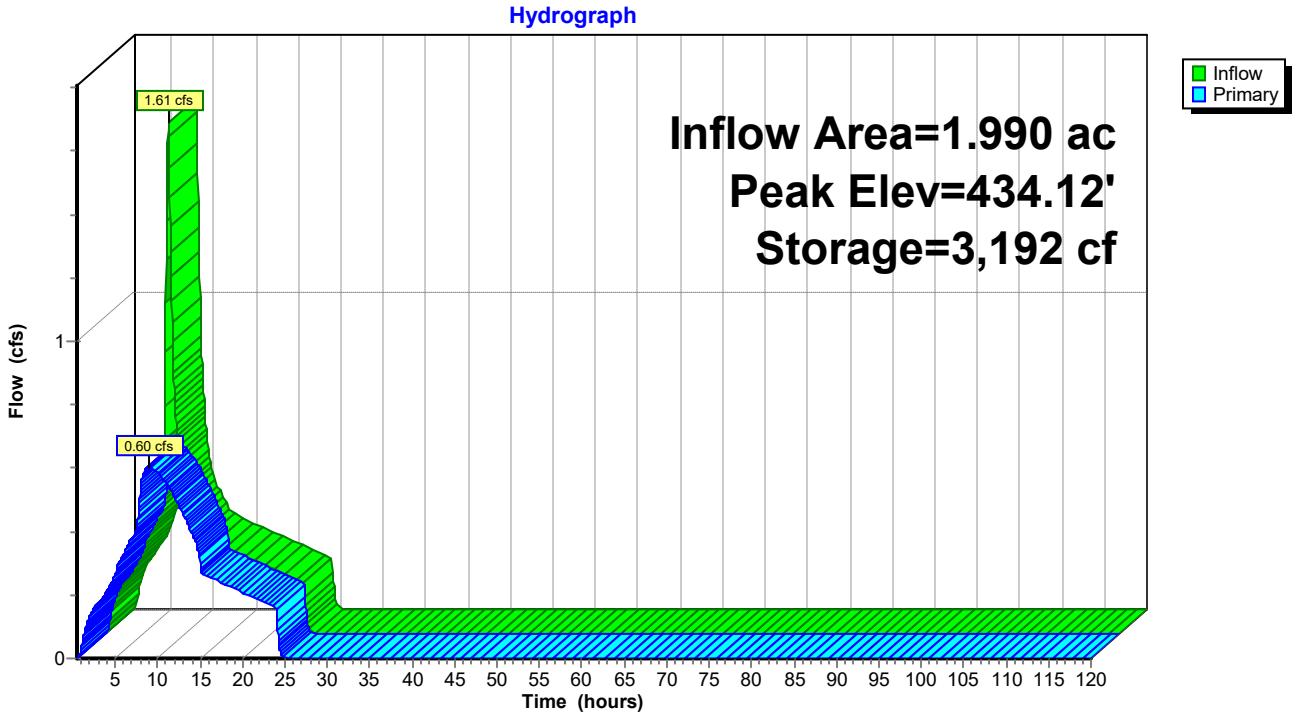
Volume	Invert	Avail.Storage	Storage Description
#1	432.00'	8,940 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
432.00	0	0	0
432.50	1,160	290	290
434.00	2,320	2,610	2,900
436.00	3,720	6,040	8,940

Device	Routing	Invert	Outlet Devices
#1	Primary	431.31'	**3.7" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	435.00'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.60 cfs @ 9.05 hrs HW=434.12' (Free Discharge)
1=Orifice (Orifice Controls 0.60 cfs @ 8.08 fps)
2=Overflow CB (Controls 0.00 cfs)

Pond 7P: Vintage Detention

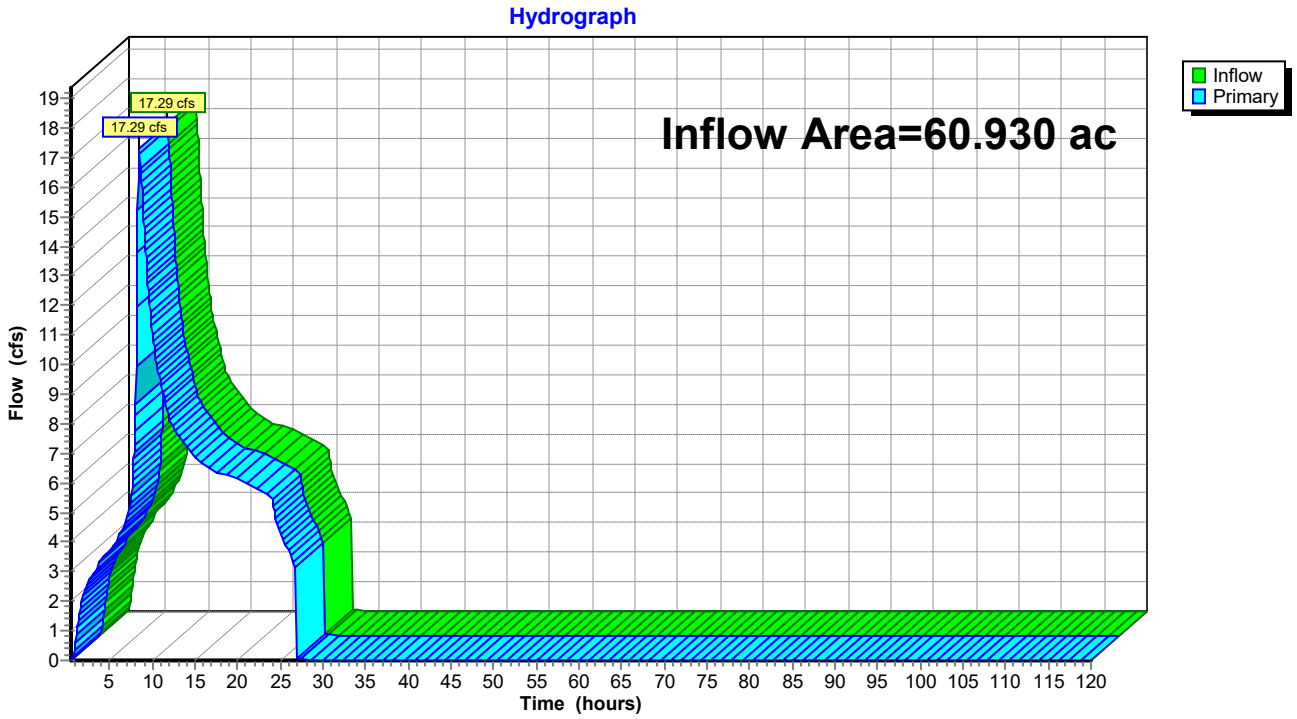


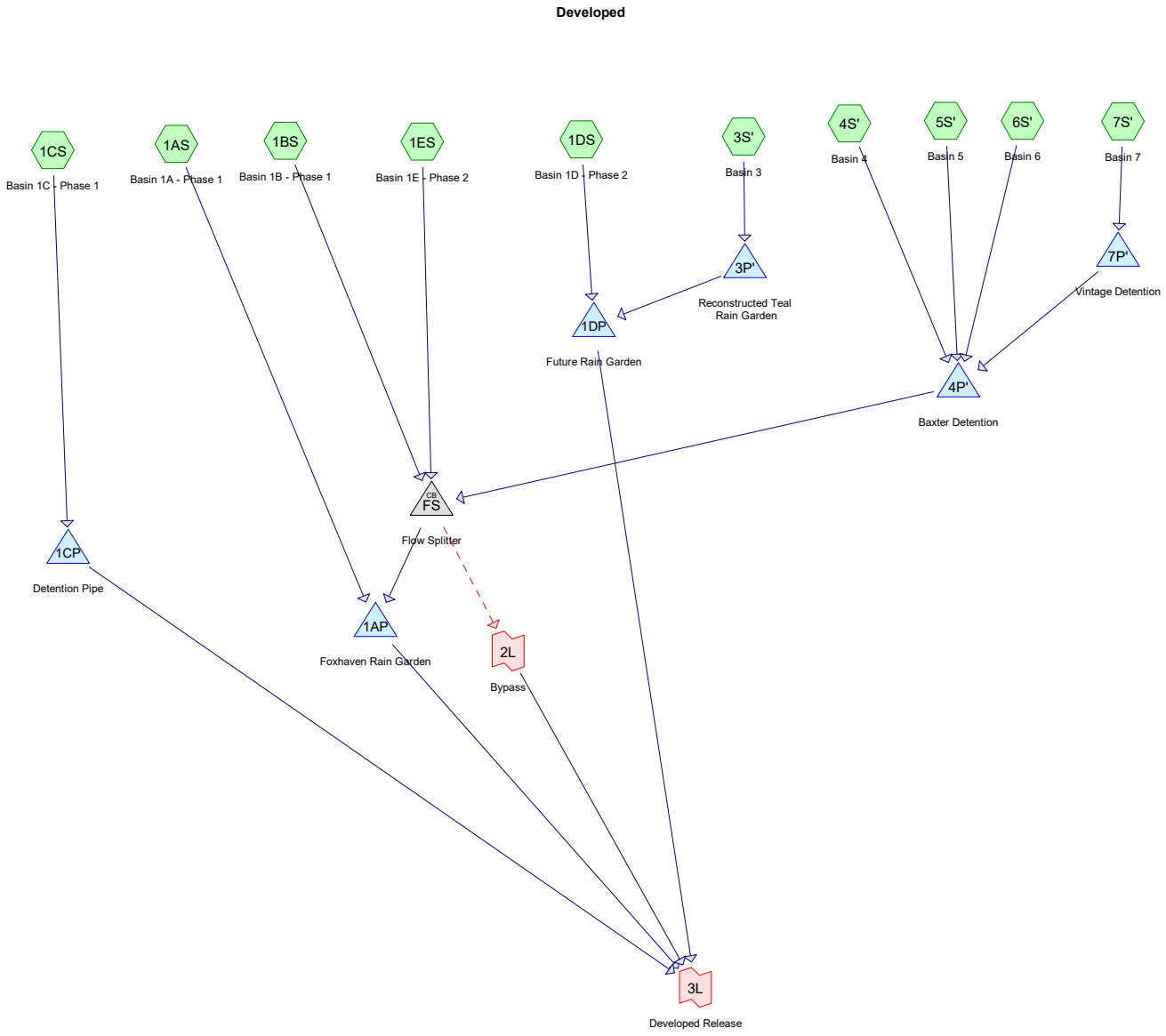
Summary for Link 1L: Allowable/Existing Release

Inflow Area = 60.930 ac, 41.12% Impervious, Inflow Depth > 2.63" for 100 YR event
Inflow = 17.29 cfs @ 8.50 hrs, Volume= 13.344 af
Primary = 17.29 cfs @ 8.50 hrs, Volume= 13.344 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 1L: Allowable/Existing Release





Subcat Reach Pond Link

Routing Diagram for Developed
Prepared by HHPR, Printed 7/29/2022

Time span=0.50-120.00 hrs, dt=0.05 hrs, 2391 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1AS: Basin 1A - Phase 1 Runoff Area=5.220 ac 73.75% Impervious Runoff Depth=0.66"
Flow Length=900' Tc=9.8 min CN=68/98 Runoff=0.84 cfs 0.286 af

Subcatchment 1BS: Basin 1B - Phase 1 Runoff Area=5.350 ac 65.61% Impervious Runoff Depth=0.58"
Flow Length=1,020' Tc=9.6 min CN=68/98 Runoff=0.77 cfs 0.261 af

Subcatchment 1CS: Basin 1C - Phase 1 Runoff Area=0.920 ac 89.13% Impervious Runoff Depth=0.79"
Tc=5.0 min CN=68/98 Runoff=0.19 cfs 0.061 af

Subcatchment 1DS: Basin 1D - Phase 2 Runoff Area=2.850 ac 48.42% Impervious Runoff Depth=0.43"
Flow Length=400' Tc=24.7 min CN=68/98 Runoff=0.24 cfs 0.103 af

Subcatchment 1ES: Basin 1E - Phase 2 Runoff Area=1.860 ac 49.46% Impervious Runoff Depth=0.44"
Flow Length=309' Tc=7.4 min CN=68/98 Runoff=0.21 cfs 0.068 af

Subcatchment 3S': Basin 3 Runoff Area=4.450 ac 72.63% Impervious Runoff Depth=0.66"
Flow Length=690' Slope=0.0200 '/' Tc=13.3 min CN=75/98 Runoff=0.67 cfs 0.244 af

Subcatchment 4S': Basin 4 Runoff Area=25.660 ac 72.99% Impervious Runoff Depth=0.65"
Flow Length=1,290' Slope=0.0400 '/' Tc=11.5 min CN=72/98 Runoff=4.01 cfs 1.400 af

Subcatchment 5S': Basin 5 Runoff Area=10.790 ac 0.00% Impervious Runoff Depth=0.02"
Flow Length=1,100' Slope=0.0300 '/' Tc=57.5 min CN=72/0 Runoff=0.03 cfs 0.022 af

Subcatchment 6S': Basin 6 Runoff Area=1.840 ac 86.68% Impervious Runoff Depth=0.78"
Flow Length=500' Slope=0.0400 '/' Tc=10.1 min CN=75/98 Runoff=0.35 cfs 0.119 af

Subcatchment 7S': Basin 7 Runoff Area=1.990 ac 75.38% Impervious Runoff Depth=0.68"
Flow Length=460' Tc=13.1 min CN=75/98 Runoff=0.31 cfs 0.113 af

Pond 1AP: Foxhaven Rain Garden Peak Elev=369.54' Storage=11,761 cf Inflow=3.05 cfs 1.851 af
Discarded=0.02 cfs 0.061 af Primary=1.60 cfs 1.790 af Outflow=1.62 cfs 1.851 af

Pond 1CP: Detention Pipe Peak Elev=365.76' Storage=0.009 af Inflow=0.19 cfs 0.061 af
Outflow=0.06 cfs 0.061 af

Pond 1DP: Future Rain Garden Peak Elev=366.34' Storage=455 cf Inflow=0.32 cfs 0.190 af
Outflow=0.23 cfs 0.190 af

Pond 3P': Reconstructed Teal Rain Garden Peak Elev=383.50' Storage=1,791 cf Inflow=0.67 cfs 0.244 af
Discarded=0.10 cfs 0.157 af Primary=0.09 cfs 0.087 af Outflow=0.20 cfs 0.244 af

Pond 4P': Baxter Detention Peak Elev=401.42' Storage=2,316 cf Inflow=4.67 cfs 1.655 af
Outflow=3.20 cfs 1.655 af

Pond 7P': Vintage Detention Peak Elev=432.05' Storage=3 cf Inflow=0.31 cfs 0.113 af
Outflow=0.31 cfs 0.113 af

Pond FS: Flow Splitter Peak Elev=370.09' Inflow=4.11 cfs 1.984 af
Primary=2.20 cfs 1.565 af Secondary=1.91 cfs 0.418 af Outflow=4.11 cfs 1.984 af

Link 2L: Bypass Inflow=1.91 cfs 0.418 af
Primary=1.91 cfs 0.418 af

Link 3L: Developed Release Inflow=3.66 cfs 2.459 af
Primary=3.66 cfs 2.459 af

Total Runoff Area = 60.930 ac Runoff Volume = 2.677 af Average Runoff Depth = 0.53"
41.68% Pervious = 25.393 ac 58.32% Impervious = 35.537 ac

Summary for Subcatchment 1AS: Basin 1A - Phase 1

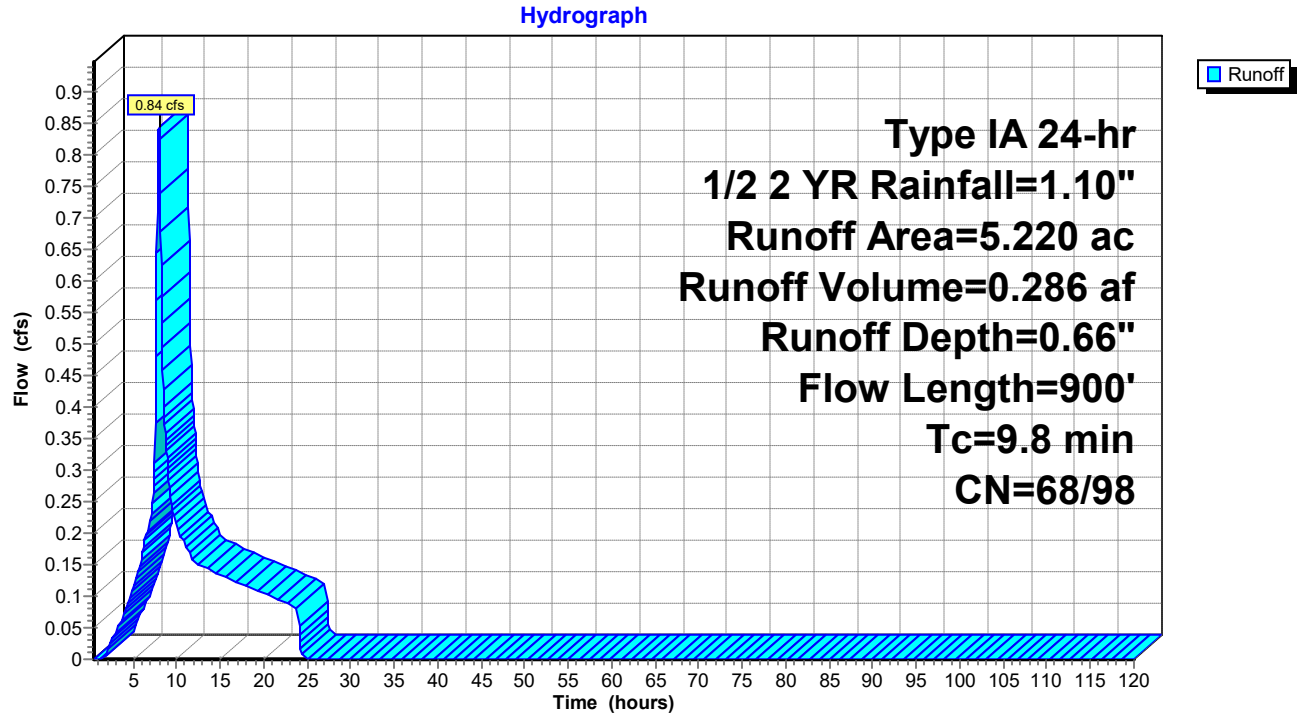
Runoff = 0.84 cfs @ 7.98 hrs, Volume= 0.286 af, Depth= 0.66"
Routed to Pond 1AP : Foxhaven Rain Garden

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	3.850	98	Paved/Roof, HSG C
	0.685	61	>75% Grass cover, Good, HSG B
	0.685	74	>75% Grass cover, Good, HSG C
	5.220	90	Weighted Average
	1.370		26.25% Pervious Area
	3.850		73.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	100	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.5	160	0.0700	5.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	640	0.0500	10.14	7.97	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
9.8	900	Total			

Subcatchment 1AS: Basin 1A - Phase 1



Summary for Subcatchment 1BS: Basin 1B - Phase 1

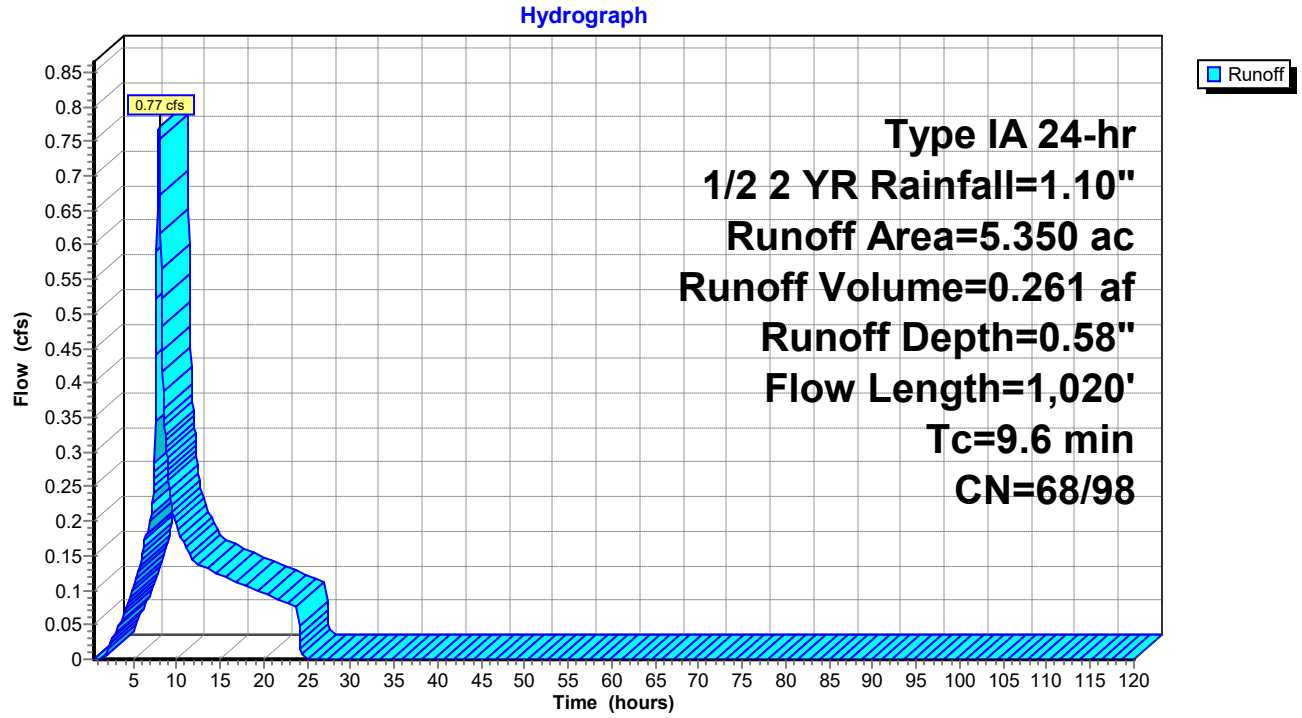
Runoff = 0.77 cfs @ 7.98 hrs, Volume= 0.261 af, Depth= 0.58"
Routed to Pond FS : Flow Splitter

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	3.510	98	Paved/Roof, HSG C
	0.920	61	>75% Grass cover, Good, HSG B
	0.920	74	>75% Grass cover, Good, HSG C
	5.350	88	Weighted Average
	1.840		34.39% Pervious Area
	3.510		65.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	60	0.0300	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
1.8	150	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	810	0.0300	12.47	39.18	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
9.6	1,020	Total			

Subcatchment 1BS: Basin 1B - Phase 1



Summary for Subcatchment 1CS: Basin 1C - Phase 1

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

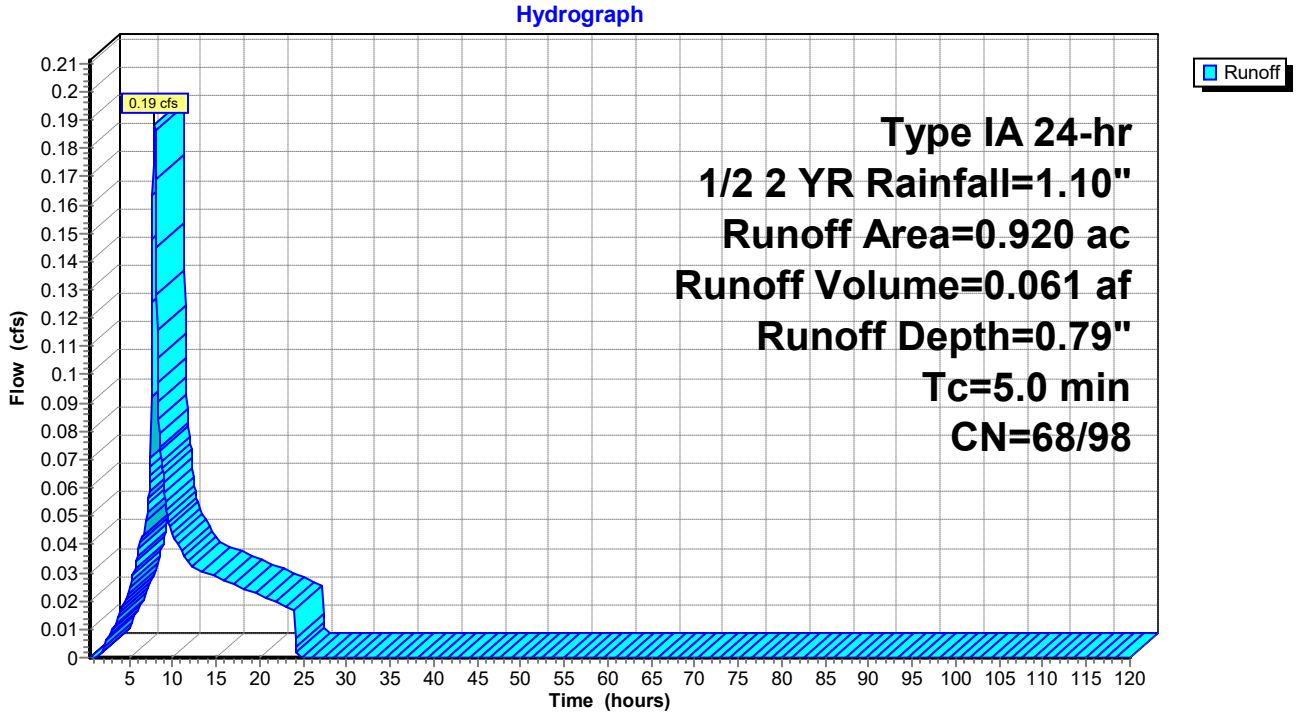
Runoff = 0.19 cfs @ 7.92 hrs, Volume= 0.061 af, Depth= 0.79"
Routed to Pond 1CP : Detention Pipe

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	0.820	98	Paved/Roof, HSG C
	0.050	61	>75% Grass cover, Good, HSG B
	0.050	74	>75% Grass cover, Good, HSG C
	0.920	95	Weighted Average
	0.100		10.87% Pervious Area
	0.820		89.13% Impervious Area

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

Subcatchment 1CS: Basin 1C - Phase 1



Summary for Subcatchment 1DS: Basin 1D - Phase 2

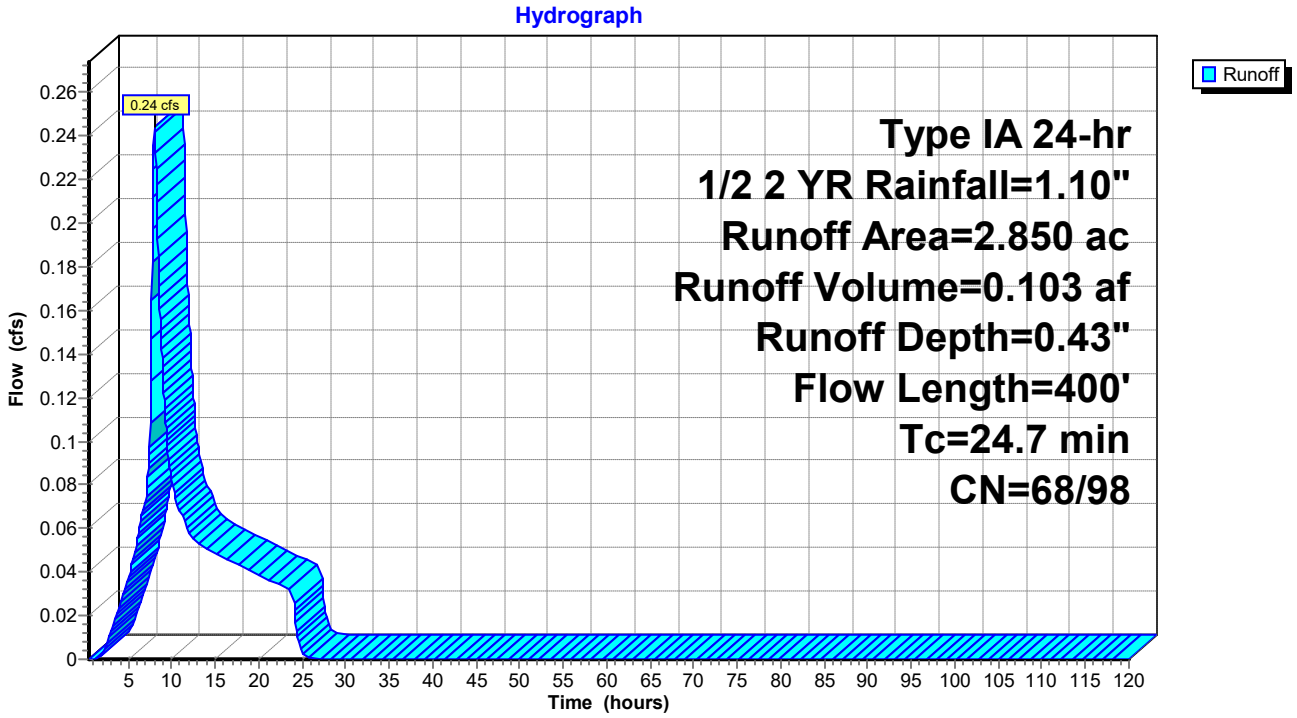
Runoff = 0.24 cfs @ 8.03 hrs, Volume= 0.103 af, Depth= 0.43"
Routed to Pond 1DP : Future Rain Garden

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	1.380	98	Paved/Roof, HSG C
	0.735	61	>75% Grass cover, Good, HSG B
	0.735	74	>75% Grass cover, Good, HSG C
	2.850	82	Weighted Average
	1.470		51.58% Pervious Area
	1.380		48.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.3	300	0.0330	0.21		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.20"
1.3	53	0.0100	0.70		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
0.1	47	0.0960	14.06	11.04	**Pipe Channel, Pipe Flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
24.7	400	Total			

Subcatchment 1DS: Basin 1D - Phase 2



Summary for Subcatchment 1ES: Basin 1E - Phase 2

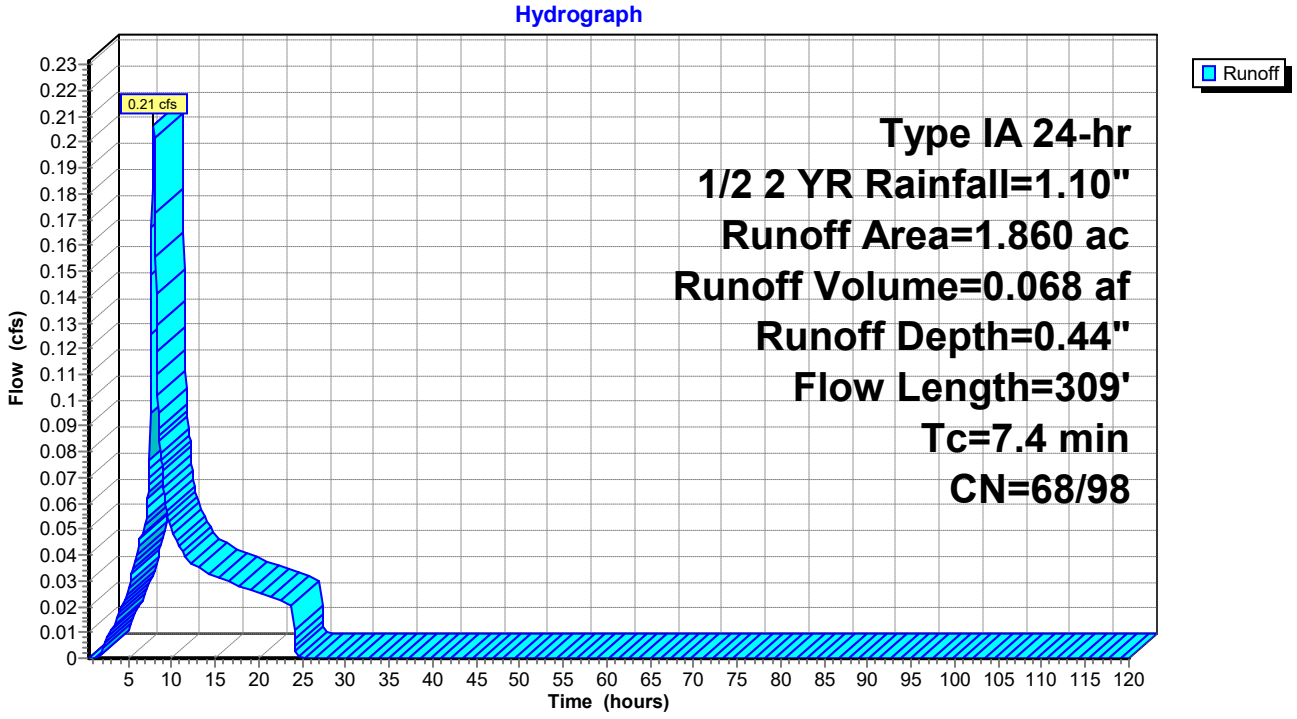
Runoff = 0.21 cfs @ 7.96 hrs, Volume= 0.068 af, Depth= 0.44"
Routed to Pond FS : Flow Splitter

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	0.920	98	Paved/Roof, HSG C
	0.470	61	>75% Grass cover, Good, HSG B
	0.470	74	>75% Grass cover, Good, HSG C
	1.860	83	Weighted Average
	0.940		50.54% Pervious Area
	0.920		49.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	97	0.0730	0.24		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.20"
0.5	212	0.0230	6.88	5.40	**Pipe Channel, Pipe Flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
7.4	309	Total			

Subcatchment 1ES: Basin 1E - Phase 2



Summary for Subcatchment 3S': Basin 3

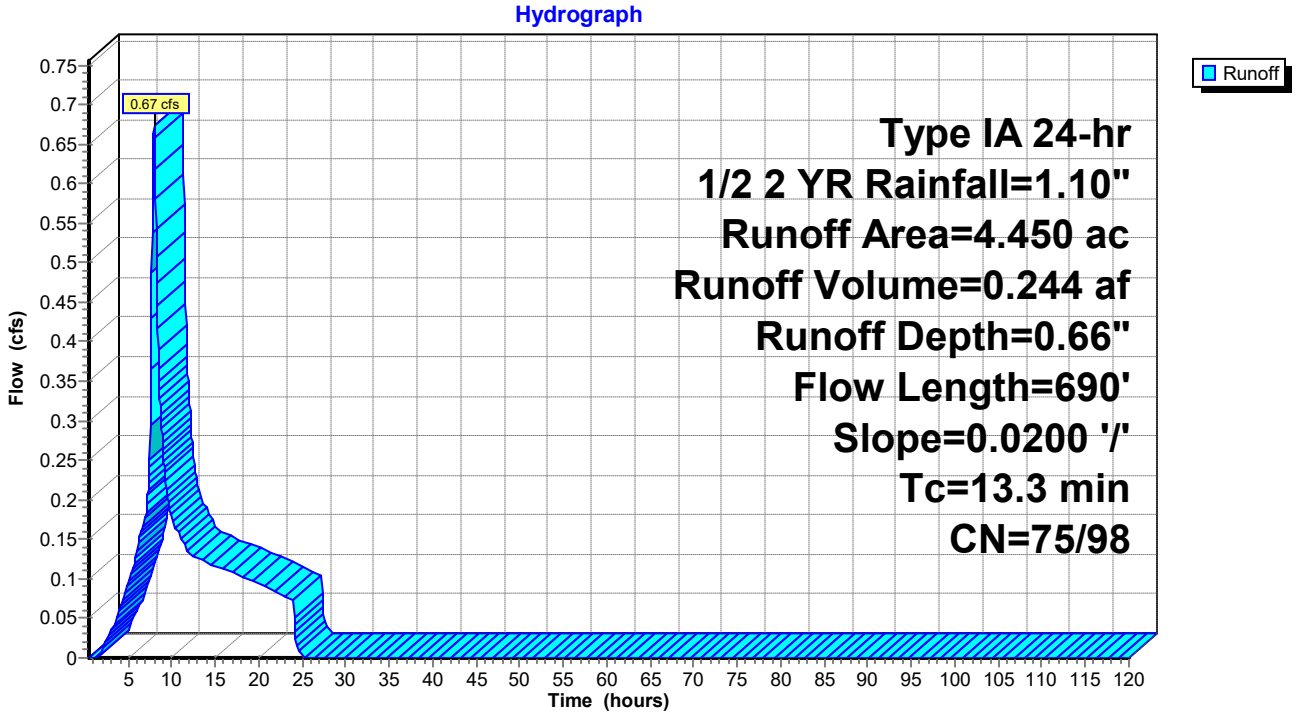
Runoff = 0.67 cfs @ 7.99 hrs, Volume= 0.244 af, Depth= 0.66"
Routed to Pond 3P' : Reconstructed Teal Rain Garden

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	0.970	98	Paved roads w/curbs & sewers, HSG C
	3.480	90	1/8 acre lots, 65% imp, HSG C
	4.450	92	Weighted Average
	1.218		27.37% Pervious Area
	3.232		72.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
1.5	590	0.0200	6.42	5.04	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.3	690	Total			

Subcatchment 3S': Basin 3



Summary for Subcatchment 4S': Basin 4

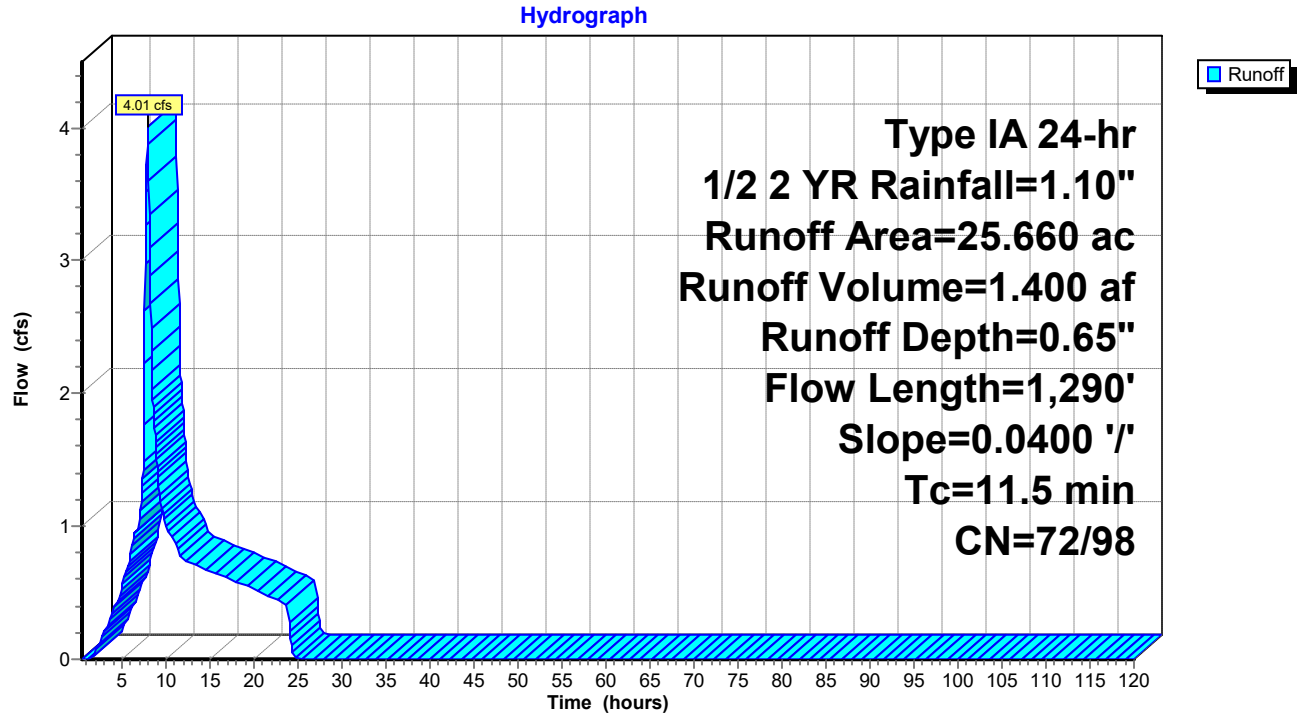
Runoff = 4.01 cfs @ 7.99 hrs, Volume= 1.400 af, Depth= 0.65"
Routed to Pond 4P' : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	5.860	98	Paved roads w/curbs & sewers, HSG C
	4.950	85	1/8 acre lots, 65% imp, HSG B
	14.850	90	1/8 acre lots, 65% imp, HSG C
	25.660	91	Weighted Average
	6.930		27.01% Pervious Area
	18.730		72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	1,160	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
11.5	1,290	Total			

Subcatchment 4S': Basin 4



Summary for Subcatchment 5S': Basin 5

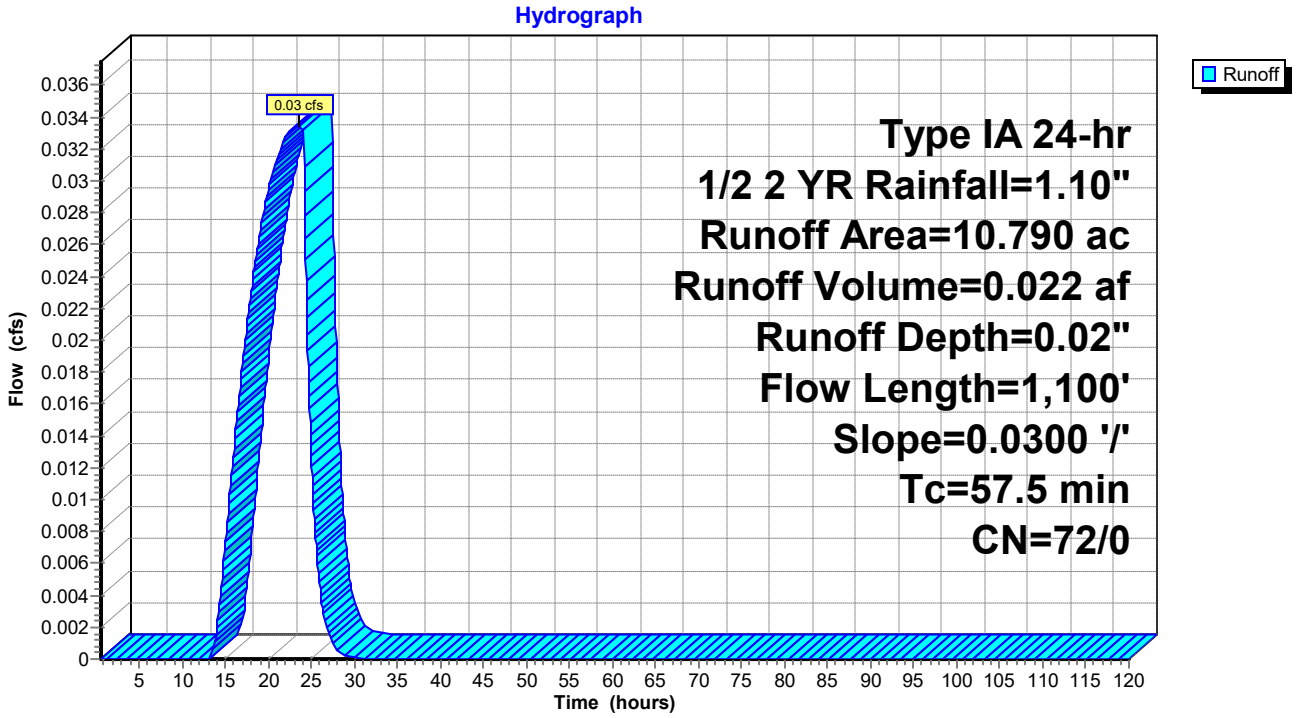
Runoff = 0.03 cfs @ 23.52 hrs, Volume= 0.022 af, Depth= 0.02"
Routed to Pond 4P' : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

Area (ac)	CN	Description
10.790	72	Woods/grass comb., Good, HSG C
10.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	300	0.0300	0.12		**Sheet Flow, Pre Developed** n= 0.300 P2= 2.20"
15.4	800	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
57.5	1,100	Total			

Subcatchment 5S': Basin 5



Summary for Subcatchment 6S': Basin 6

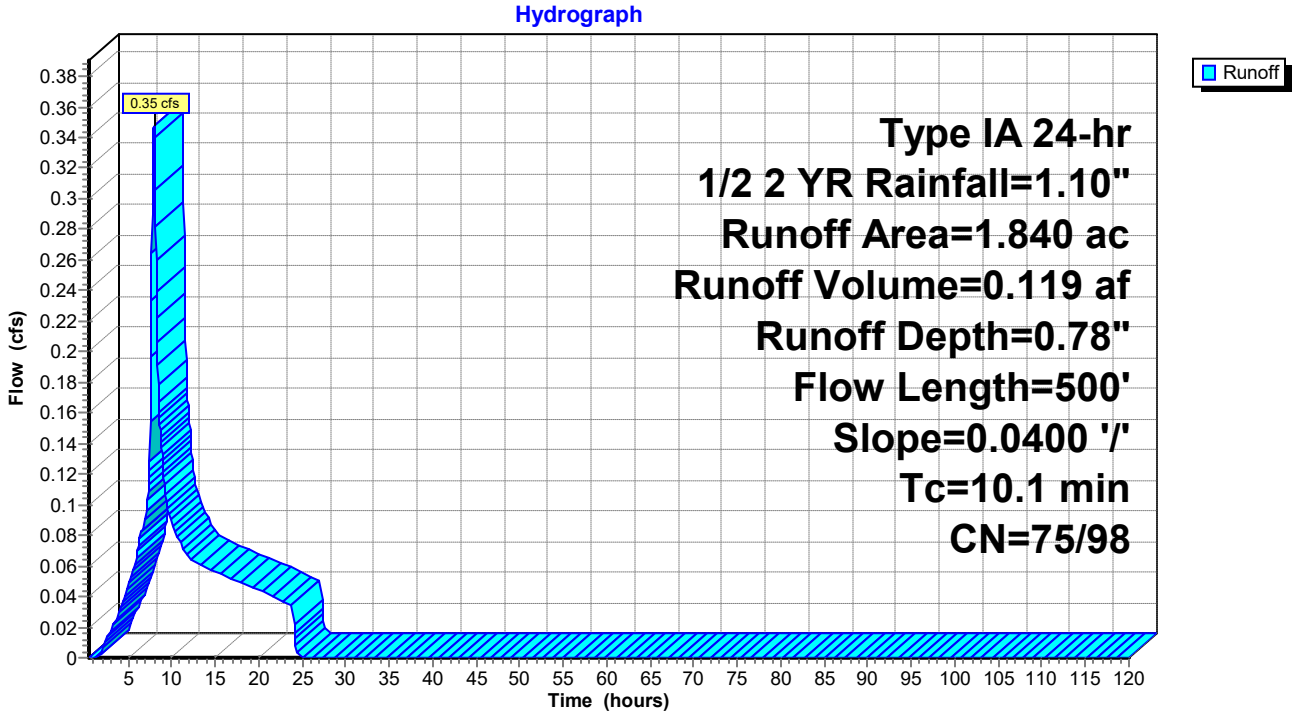
Runoff = 0.35 cfs @ 7.98 hrs, Volume= 0.119 af, Depth= 0.78"
Routed to Pond 4P' : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	1.140	98	Paved roads w/curbs & sewers, HSG C
	0.700	90	1/8 acre lots, 65% imp, HSG C
	1.840	95	Weighted Average
	0.245		13.32% Pervious Area
	1.595		86.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	370	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
10.1	500	Total			

Subcatchment 6S': Basin 6



Summary for Subcatchment 7S': Basin 7

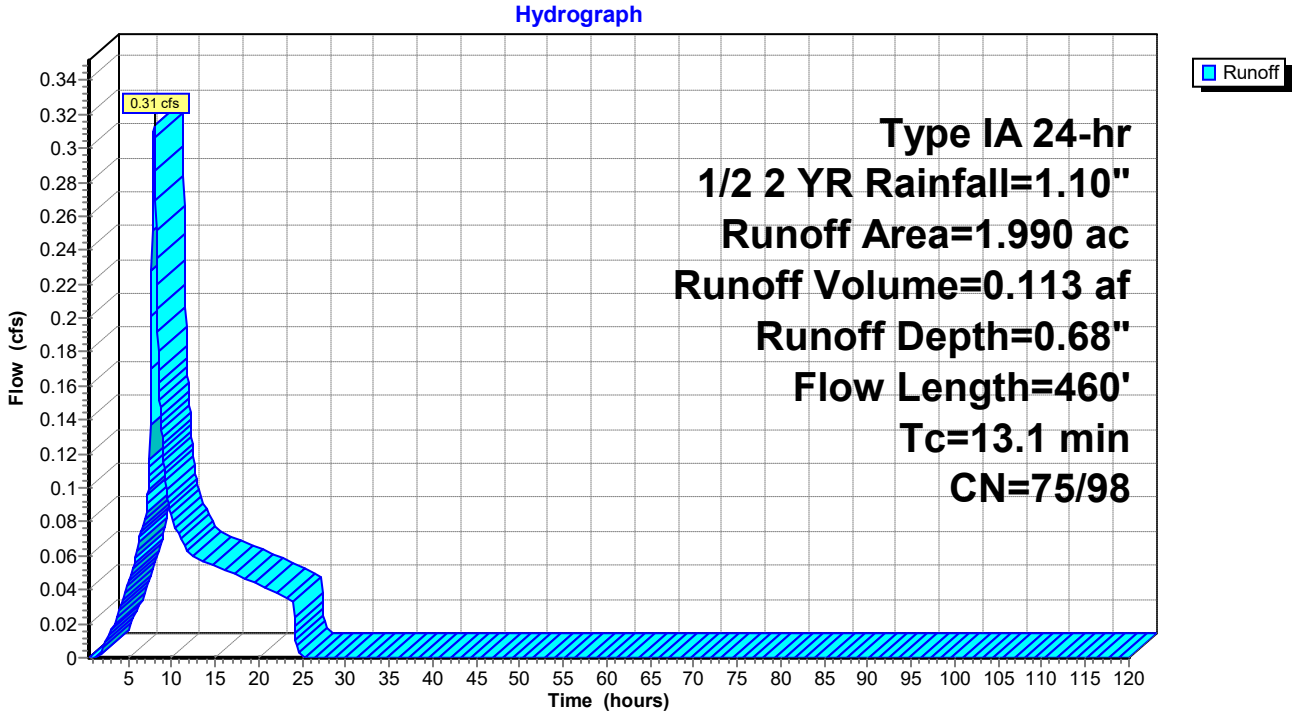
Runoff = 0.31 cfs @ 7.99 hrs, Volume= 0.113 af, Depth= 0.68"
Routed to Pond 7P' : Vintage Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 1/2 2 YR Rainfall=1.10"

	Area (ac)	CN	Description
*	0.590	98	Paved roads w/curbs & sewers, HSG C
	1.400	90	1/8 acre lots, 65% imp, HSG C
	1.990	92	Weighted Average
	0.490		24.62% Pervious Area
	1.500		75.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	320	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.1	460	Total			

Subcatchment 7S': Basin 7



Summary for Pond 1AP: Foxhaven Rain Garden

[79] Warning: Submerged Pond FS Primary device # 1 by 0.04'

Inflow Area = 52.710 ac, 57.11% Impervious, Inflow Depth = 0.42" for 1/2 2 YR event
Inflow = 3.05 cfs @ 7.99 hrs, Volume= 1.851 af
Outflow = 1.62 cfs @ 9.07 hrs, Volume= 1.851 af, Atten= 47%, Lag= 65.2 min
Discarded = 0.02 cfs @ 2.60 hrs, Volume= 0.061 af
Primary = 1.60 cfs @ 9.07 hrs, Volume= 1.790 af
Routed to Link 3L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 369.54' @ 9.07 hrs Surf.Area= 7,630 sf Storage= 11,761 cf

Plug-Flow detention time= 103.0 min calculated for 1.850 af (100% of inflow)
Center-of-Mass det. time= 103.5 min (860.1 - 756.6)

Volume	Invert	Avail.Storage	Storage Description
#1	365.25'	64,461 cf	**Detention Basin (Prismatic)** Listed below (Recalc)

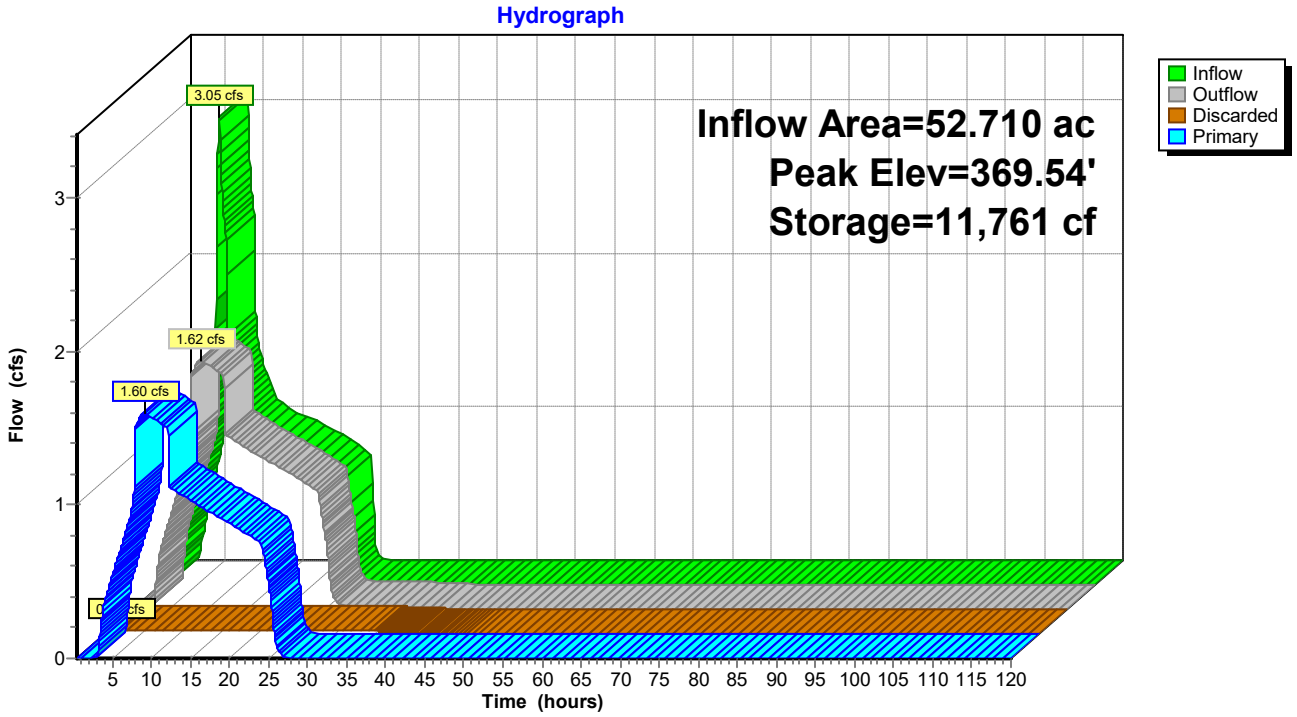
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
365.25	8,560	0.0	0	0
367.50	8,560	40.0	7,704	7,704
369.00	7,360	0.1	12	7,716
370.00	7,860	100.0	7,610	15,326
371.00	8,390	100.0	8,125	23,451
372.00	8,560	100.0	8,475	31,926
373.00	10,330	100.0	9,445	41,371
374.00	11,530	100.0	10,930	52,301
375.00	12,790	100.0	12,160	64,461

Device	Routing	Invert	Outlet Devices
#1	Discarded	365.25'	**0.100 in/hr Exfiltration over Horizontal area**
#2	Primary	365.50'	**5.5" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	372.00'	**5.5" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	373.10'	**2.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#5	Primary	374.00'	**6.0' long x 0.50' rise O/F Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.02 cfs @ 2.60 hrs HW=365.35' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=1.60 cfs @ 9.07 hrs HW=369.54' (Free Discharge)
├**2=Orifice** (Orifice Controls 1.60 cfs @ 9.68 fps)
├**3=Orifice** (Controls 0.00 cfs)
├**4=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)
└**5=O/F Weir** (Controls 0.00 cfs)

Pond 1AP: Foxhaven Rain Garden



Summary for Pond 1CP: Detention Pipe

Inflow Area = 0.920 ac, 89.13% Impervious, Inflow Depth = 0.79" for 1/2 2 YR event
Inflow = 0.19 cfs @ 7.92 hrs, Volume= 0.061 af
Outflow = 0.06 cfs @ 8.96 hrs, Volume= 0.061 af, Atten= 67%, Lag= 62.8 min
Primary = 0.06 cfs @ 8.96 hrs, Volume= 0.061 af
Routed to Link 3L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 365.76' @ 8.96 hrs Surf.Area= 0.017 ac Storage= 0.009 af

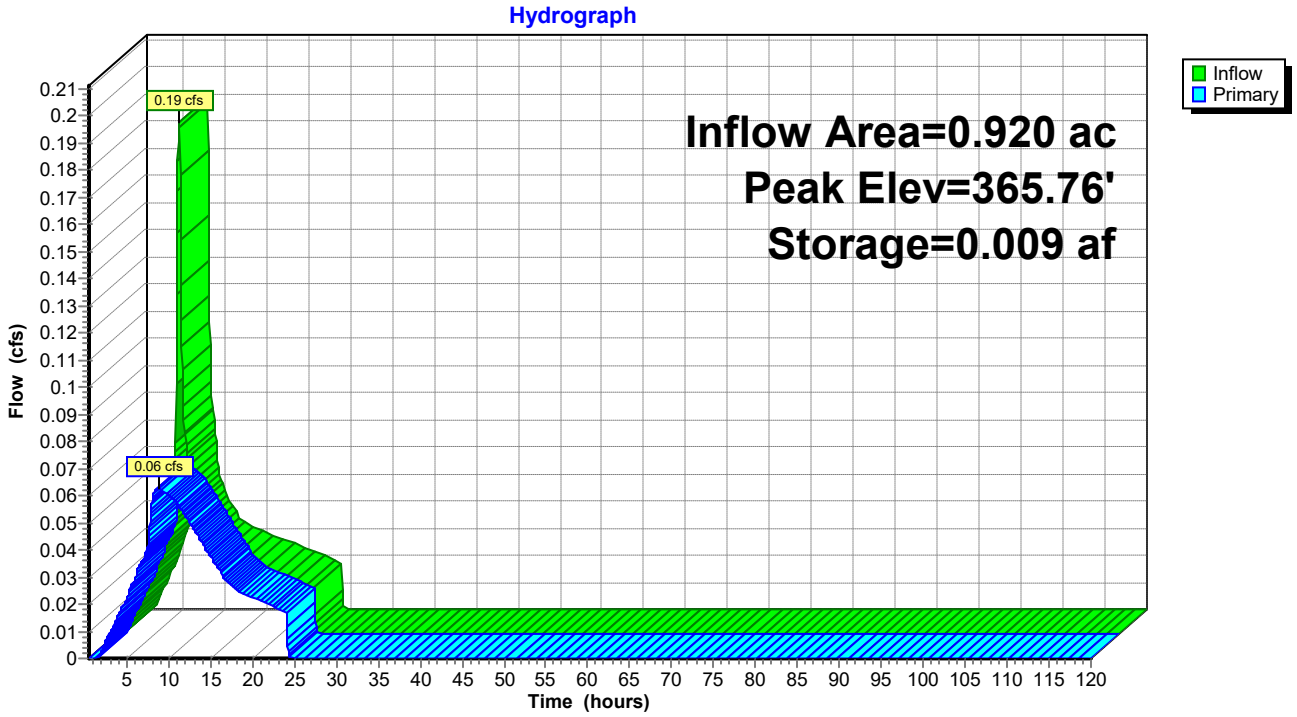
Plug-Flow detention time= 44.7 min calculated for 0.061 af (100% of inflow)
Center-of-Mass det. time= 44.7 min (753.7 - 709.1)

Volume	Invert	Avail.Storage	Storage Description
#1	364.90'	0.046 af	**36.0" Round 36" Pipe Storage** L= 285.0' S= 0.0010 '/'
#2	366.15'	0.020 af	**24.0" Round 24" Pipe Storage** L= 278.0' S= 0.0010 '/'
#3	364.90'	0.004 af	**5.00'D x 8.00'H Vertical Cone/Cylinder**
		0.070 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	364.90'	**1.6" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	367.90'	**6.0" W x 4.0" H Vert. Weir Cut** C= 0.600 Limited to weir flow at low heads
#3	Primary	368.20'	**12.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.06 cfs @ 8.96 hrs HW=365.76' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.06 cfs @ 4.47 fps)
- **2=Weir Cut** (Controls 0.00 cfs)
- **3=O/F Riser** (Controls 0.00 cfs)

Pond 1CP: Detention Pipe



Summary for Pond 1DP: Future Rain Garden

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 7.300 ac, 63.18% Impervious, Inflow Depth = 0.31" for 1/2 2 YR event
Inflow = 0.32 cfs @ 8.05 hrs, Volume= 0.190 af
Outflow = 0.23 cfs @ 8.92 hrs, Volume= 0.190 af, Atten= 28%, Lag= 51.8 min
Primary = 0.23 cfs @ 8.92 hrs, Volume= 0.190 af
Routed to Link 3L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 366.34' @ 8.92 hrs Surf.Area= 1,280 sf Storage= 455 cf

Plug-Flow detention time= 18.9 min calculated for 0.190 af (100% of inflow)
Center-of-Mass det. time= 18.8 min (770.5 - 751.7)

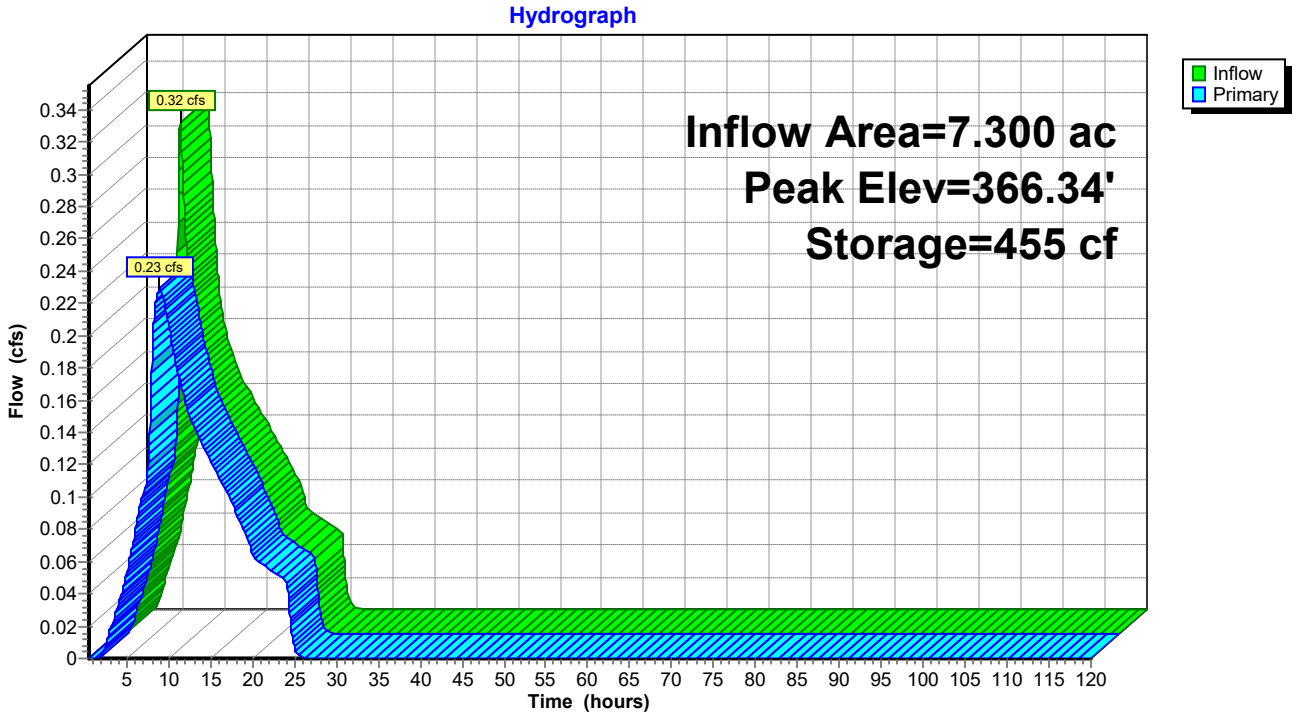
Volume	Invert	Avail.Storage	Storage Description
#1	365.45'	16,283 cf	**Detention Basin (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
365.45	1,280	0.0	0	0
369.45	1,280	40.0	2,048	2,048
371.20	849	0.1	2	2,050
372.20	1,280	100.0	1,065	3,114
377.00	4,207	100.0	13,169	16,283

Device	Routing	Invert	Outlet Devices
#1	Primary	365.40'	**3.0" Horiz. 1/2 2-yr Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	367.40'	**1.2" Vert. 10-yr Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	375.11'	**5.0" Horiz. 25-yr Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	375.43'	**5.0" Horiz. O/F** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.23 cfs @ 8.92 hrs HW=366.34' (Free Discharge)
- **1=1/2 2-yr Orifice** (Orifice Controls 0.23 cfs @ 4.66 fps)
- **2=10-yr Orifice** (Controls 0.00 cfs)
- **3=25-yr Orifice** (Controls 0.00 cfs)
- **4=O/F** (Controls 0.00 cfs)

Pond 1DP: Future Rain Garden



Summary for Pond 3P': Reconstructed Teal Rain Garden

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 4.450 ac, 72.63% Impervious, Inflow Depth = 0.66" for 1/2 2 YR event
Inflow = 0.67 cfs @ 7.99 hrs, Volume= 0.244 af
Outflow = 0.20 cfs @ 9.57 hrs, Volume= 0.244 af, Atten= 71%, Lag= 94.7 min
Discarded = 0.10 cfs @ 6.25 hrs, Volume= 0.157 af
Primary = 0.09 cfs @ 9.57 hrs, Volume= 0.087 af
Routed to Pond 1DP : Future Rain Garden

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 383.50' @ 9.57 hrs Surf.Area= 5,956 sf Storage= 1,791 cf

Plug-Flow detention time= 74.5 min calculated for 0.244 af (100% of inflow)
Center-of-Mass det. time= 74.5 min (799.9 - 725.4)

Volume	Invert	Avail.Storage	Storage Description
#1	382.75'	13,836 cf	**Pond (Prismatic)** Listed below (Recalc)

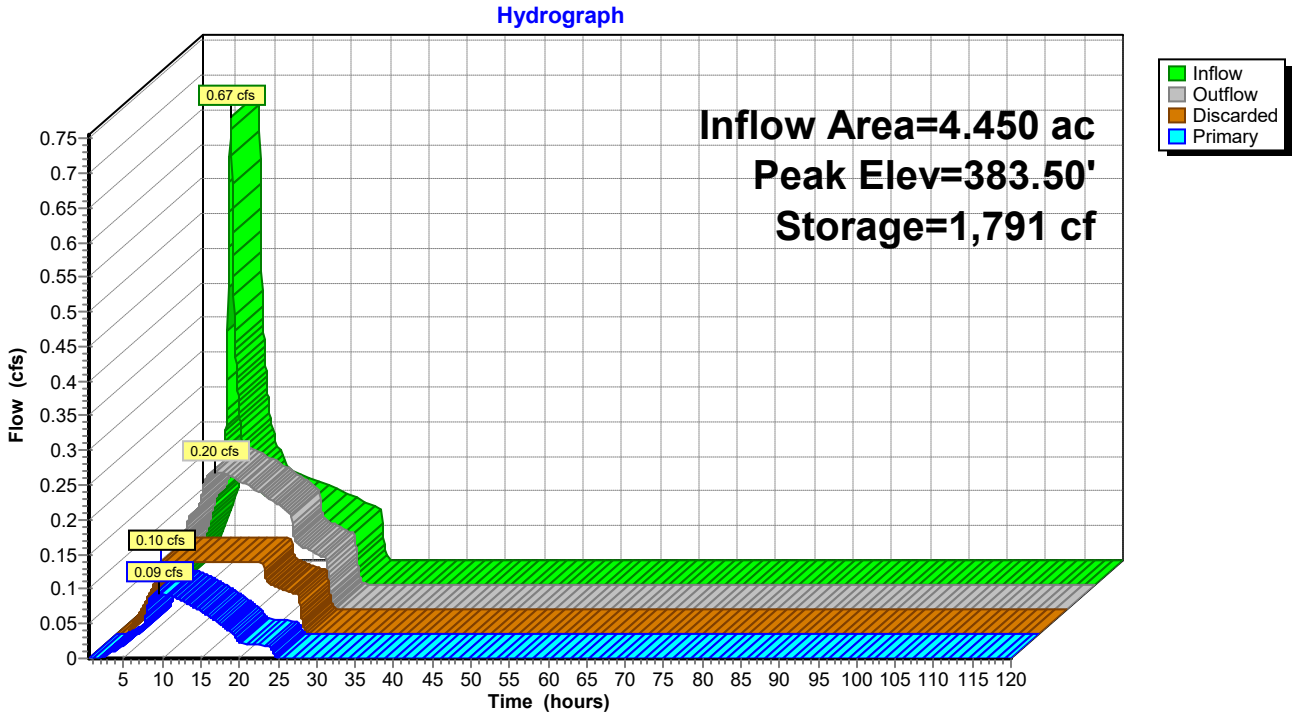
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
382.75	5,956	0.0	0	0
384.00	5,956	40.0	2,978	2,978
385.00	4,303	0.1	5	2,983
387.00	6,550	100.0	10,853	13,836

Device	Routing	Invert	Outlet Devices
#1	Discarded	382.75'	**0.750 in/hr Exfiltration over Horizontal area**
#2	Primary	382.70'	**2.0" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	385.10'	**6.0" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	386.00'	**12.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.10 cfs @ 6.25 hrs HW=382.79' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=0.09 cfs @ 9.57 hrs HW=383.50' (Free Discharge)
├**2=Orifice** (Orifice Controls 0.09 cfs @ 4.31 fps)
├**3=Orifice** (Controls 0.00 cfs)
└**4=O/F Riser** (Controls 0.00 cfs)

Pond 3P': Reconstructed Teal Rain Garden



Summary for Pond 4P': Baxter Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 40.280 ac, 54.18% Impervious, Inflow Depth = 0.49" for 1/2 2 YR event
Inflow = 4.67 cfs @ 7.99 hrs, Volume= 1.655 af
Outflow = 3.20 cfs @ 8.28 hrs, Volume= 1.655 af, Atten= 31%, Lag= 17.8 min
Primary = 3.20 cfs @ 8.28 hrs, Volume= 1.655 af
Routed to Pond FS : Flow Splitter

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 401.42' @ 8.28 hrs Surf.Area= 7,010 sf Storage= 2,316 cf

Plug-Flow detention time= 2.5 min calculated for 1.654 af (100% of inflow)
Center-of-Mass det. time= 2.5 min (729.6 - 727.1)

Volume	Invert	Avail.Storage	Storage Description
#1	401.00'	46,475 cf	**West Pond (Prismatic)** Listed below (Recalc)
#2	401.00'	29,850 cf	**East Pond (Prismatic)** Listed below (Recalc)
		76,325 cf	Total Available Storage

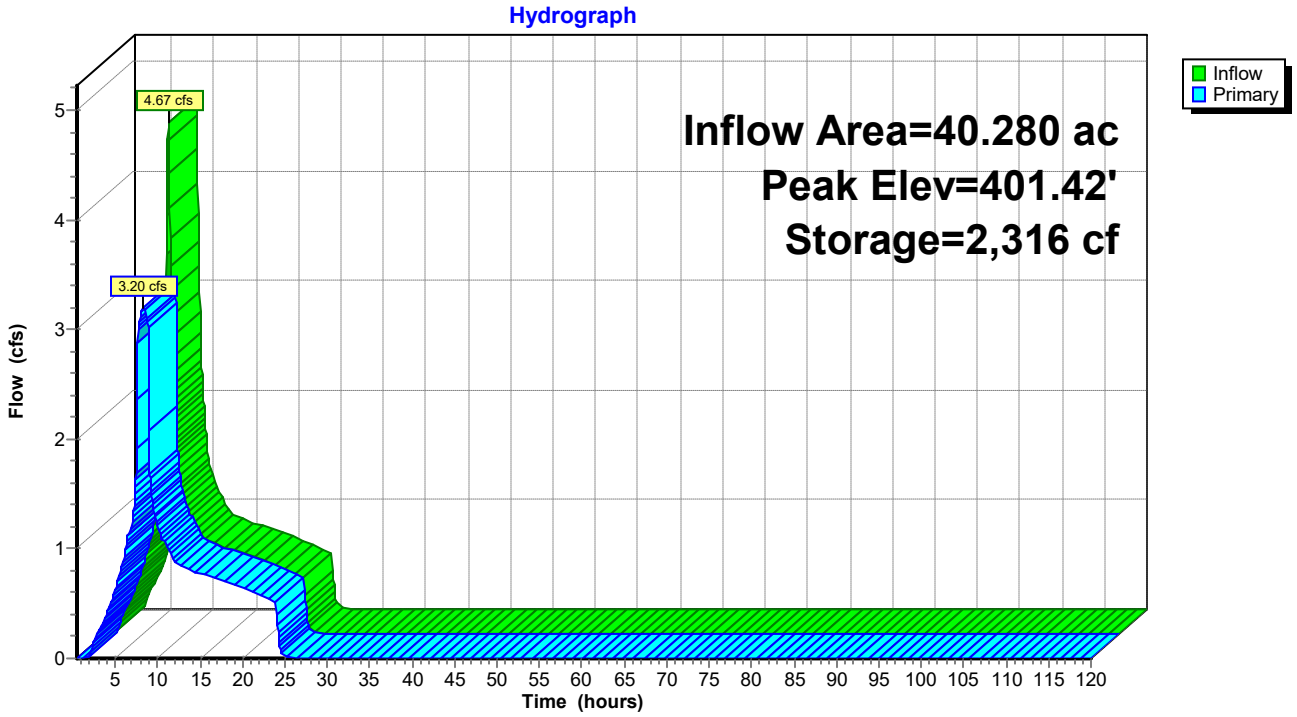
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	2,250	0	0
402.00	7,140	4,695	4,695
403.00	8,720	7,930	12,625
404.00	10,340	9,530	22,155
405.00	12,000	11,170	33,325
406.00	14,300	13,150	46,475

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	1,820	0	0
402.00	3,960	2,890	2,890
403.00	5,190	4,575	7,465
404.00	6,560	5,875	13,340
405.00	8,160	7,360	20,700
406.00	10,140	9,150	29,850

Device	Routing	Invert	Outlet Devices
#1	Primary	398.29'	**8.3" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	405.00'	**24.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads
#3	Primary	405.02'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=3.20 cfs @ 8.28 hrs HW=401.42' (Free Discharge)
- **1=Orifice** (Orifice Controls 3.20 cfs @ 8.52 fps)
- **2=O/F Riser** (Controls 0.00 cfs)
- **3=Overflow CB** (Controls 0.00 cfs)

Pond 4P': Baxter Detention



Summary for Pond 7P': Vintage Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 1.990 ac, 75.38% Impervious, Inflow Depth = 0.68" for 1/2 2 YR event
Inflow = 0.31 cfs @ 7.99 hrs, Volume= 0.113 af
Outflow = 0.31 cfs @ 8.05 hrs, Volume= 0.113 af, Atten= 2%, Lag= 3.4 min
Primary = 0.31 cfs @ 8.05 hrs, Volume= 0.113 af
Routed to Pond 4P' : Baxter Detention

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 432.05' @ 8.03 hrs Surf.Area= 111 sf Storage= 3 cf

Plug-Flow detention time= 0.1 min calculated for 0.113 af (100% of inflow)
Center-of-Mass det. time= 0.1 min (724.2 - 724.1)

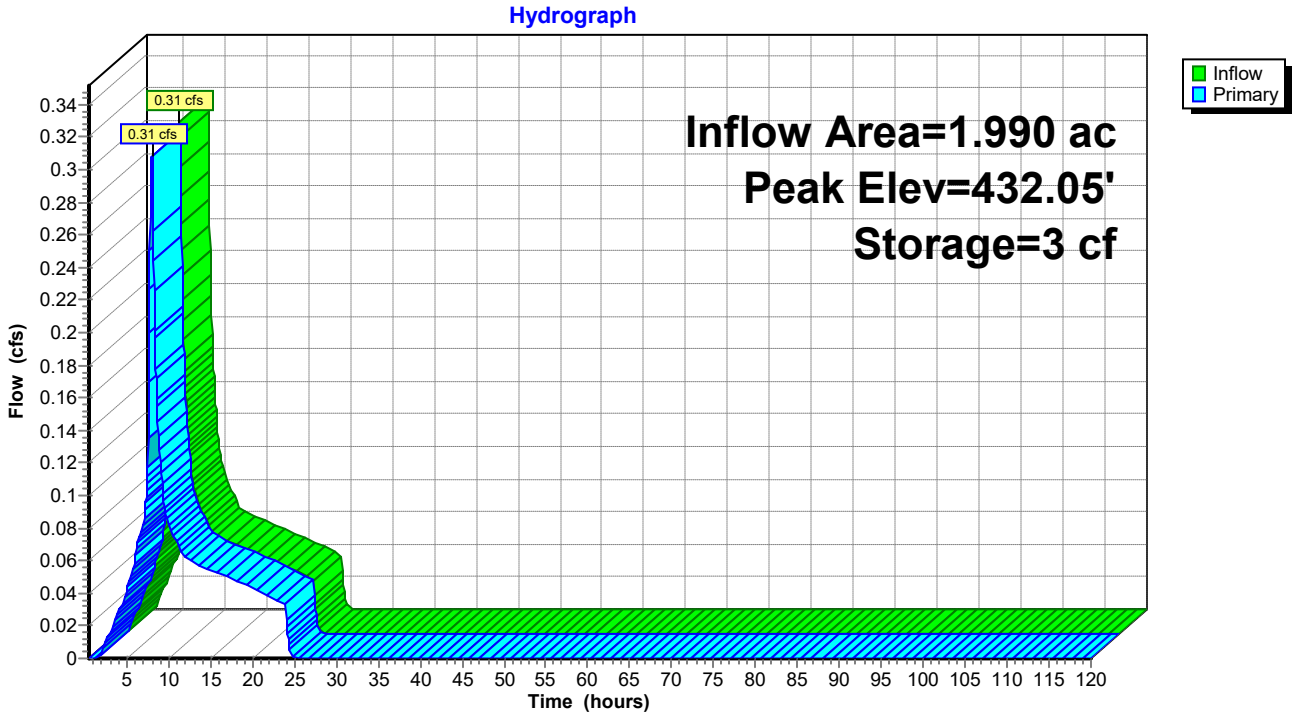
Volume	Invert	Avail.Storage	Storage Description
#1	432.00'	8,940 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
432.00	0	0	0
432.50	1,160	290	290
434.00	2,320	2,610	2,900
436.00	3,720	6,040	8,940

Device	Routing	Invert	Outlet Devices
#1	Primary	431.31'	**3.7" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	435.00'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.31 cfs @ 8.05 hrs HW=432.05' (Free Discharge)
1=Orifice (Orifice Controls 0.31 cfs @ 4.13 fps)
2=Overflow CB (Controls 0.00 cfs)

Pond 7P': Vintage Detention



Summary for Pond FS: Flow Splitter

[57] Hint: Peaked at 370.09' (Flood elevation advised)

Inflow Area = 47.490 ac, 55.29% Impervious, Inflow Depth = 0.50" for 1/2 2 YR event
Inflow = 4.11 cfs @ 8.00 hrs, Volume= 1.984 af
Outflow = 4.11 cfs @ 8.00 hrs, Volume= 1.984 af, Atten= 0%, Lag= 0.0 min
Primary = 2.20 cfs @ 8.00 hrs, Volume= 1.565 af
Routed to Pond 1AP : Foxhaven Rain Garden
Secondary = 1.91 cfs @ 8.00 hrs, Volume= 0.418 af
Routed to Link 2L : Bypass

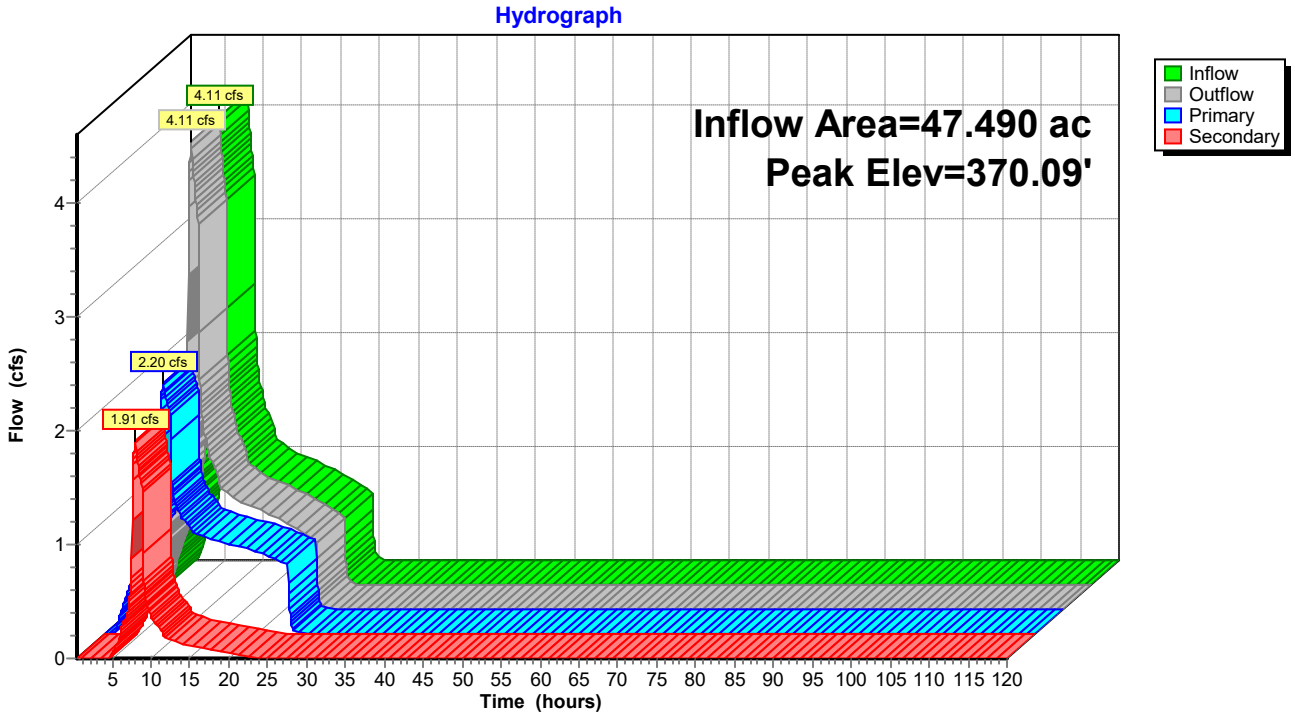
Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 370.09' @ 8.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	369.50'	**1.5' long x 0.60' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#2	Secondary	369.75'	**3.0' long x 1.20' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#3	Primary	370.10'	**3.0' long x 0.70' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=2.20 cfs @ 8.00 hrs HW=370.09' (Free Discharge)
└**1=Sharp-Crested Vee/Trap Weir** (Weir Controls 2.20 cfs @ 2.51 fps)
└**3=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=1.91 cfs @ 8.00 hrs HW=370.09' (Free Discharge)
└**2=Sharp-Crested Vee/Trap Weir** (Weir Controls 1.91 cfs @ 1.90 fps)

Pond FS: Flow Splitter

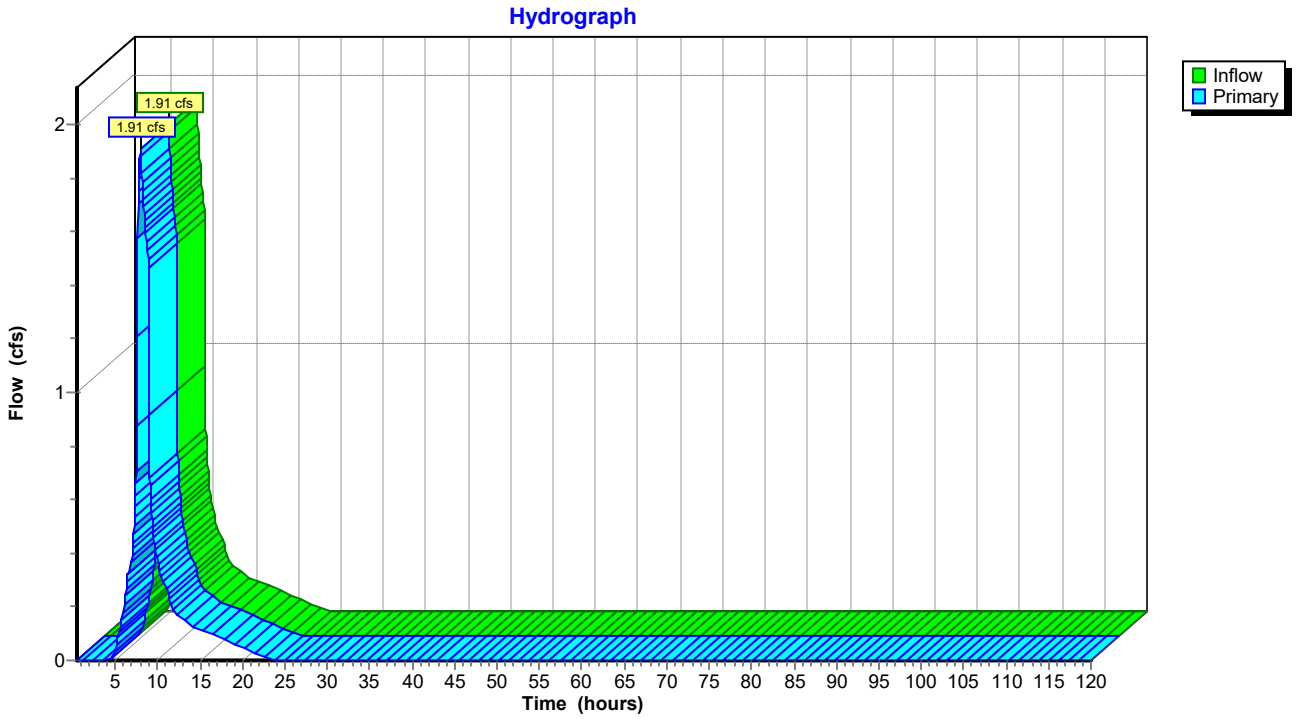


Summary for Link 2L: Bypass

Inflow = 1.91 cfs @ 8.00 hrs, Volume= 0.418 af
Primary = 1.91 cfs @ 8.00 hrs, Volume= 0.418 af, Atten= 0%, Lag= 0.0 min
Routed to Link 3L : Developed Release

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 2L: Bypass

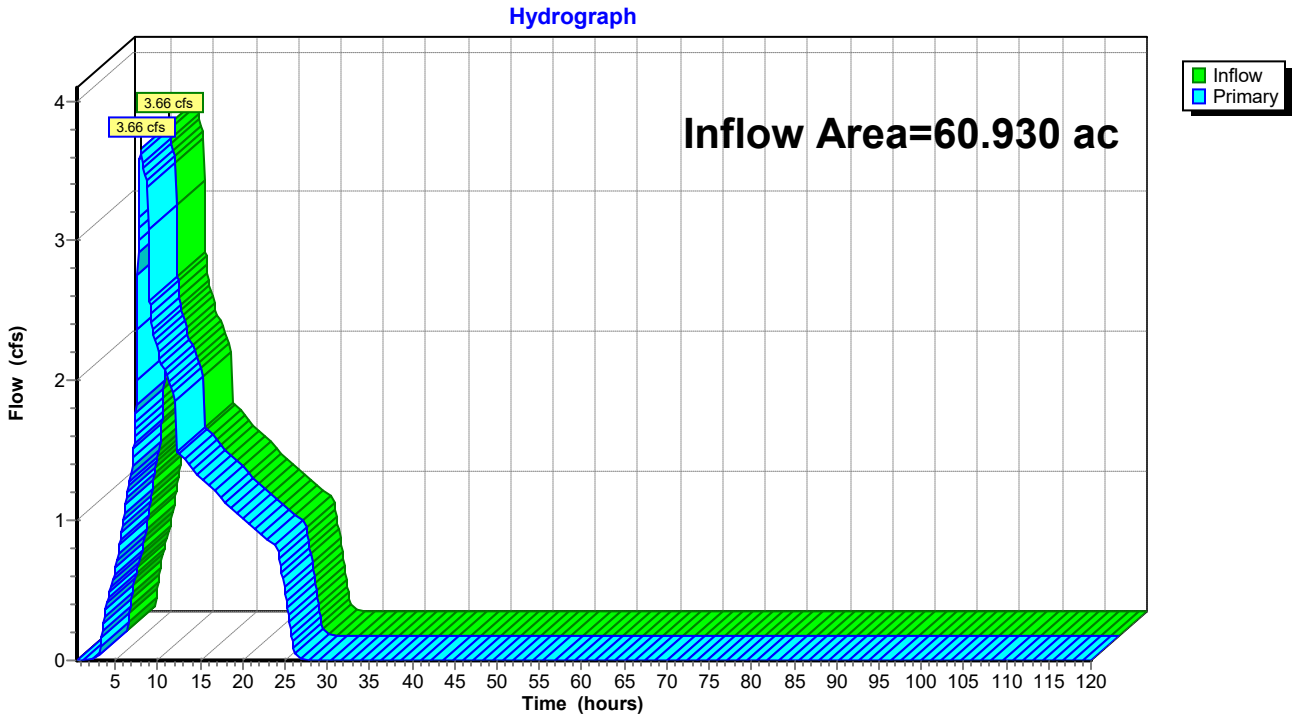


Summary for Link 3L: Developed Release

Inflow Area = 60.930 ac, 58.32% Impervious, Inflow Depth = 0.48" for 1/2 2 YR event
Inflow = 3.66 cfs @ 8.03 hrs, Volume= 2.459 af
Primary = 3.66 cfs @ 8.03 hrs, Volume= 2.459 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 3L: Developed Release



Time span=0.50-120.00 hrs, dt=0.05 hrs, 2391 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1AS: Basin 1A - Phase 1 Runoff Area=5.220 ac 73.75% Impervious Runoff Depth=2.38"
Flow Length=900' Tc=9.8 min CN=68/98 Runoff=2.85 cfs 1.036 af

Subcatchment 1BS: Basin 1B - Phase 1 Runoff Area=5.350 ac 65.61% Impervious Runoff Depth=2.20"
Flow Length=1,020' Tc=9.6 min CN=68/98 Runoff=2.65 cfs 0.980 af

Subcatchment 1CS: Basin 1C - Phase 1 Runoff Area=0.920 ac 89.13% Impervious Runoff Depth=2.72"
Tc=5.0 min CN=68/98 Runoff=0.62 cfs 0.209 af

Subcatchment 1DS: Basin 1D - Phase 2 Runoff Area=2.850 ac 48.42% Impervious Runoff Depth=1.81"
Flow Length=400' Tc=24.7 min CN=68/98 Runoff=0.88 cfs 0.431 af

Subcatchment 1ES: Basin 1E - Phase 2 Runoff Area=1.860 ac 49.46% Impervious Runoff Depth=1.84"
Flow Length=309' Tc=7.4 min CN=68/98 Runoff=0.75 cfs 0.285 af

Subcatchment 3S': Basin 3 Runoff Area=4.450 ac 72.63% Impervious Runoff Depth=2.45"
Flow Length=690' Slope=0.0200 '/' Tc=13.3 min CN=75/98 Runoff=2.41 cfs 0.910 af

Subcatchment 4S': Basin 4 Runoff Area=25.660 ac 72.99% Impervious Runoff Depth=2.42"
Flow Length=1,290' Slope=0.0400 '/' Tc=11.5 min CN=72/98 Runoff=13.99 cfs 5.169 af

Subcatchment 5S': Basin 5 Runoff Area=10.790 ac 0.00% Impervious Runoff Depth=0.93"
Flow Length=1,100' Slope=0.0300 '/' Tc=57.5 min CN=72/0 Runoff=0.83 cfs 0.836 af

Subcatchment 6S': Basin 6 Runoff Area=1.840 ac 86.68% Impervious Runoff Depth=2.72"
Flow Length=500' Slope=0.0400 '/' Tc=10.1 min CN=75/98 Runoff=1.18 cfs 0.417 af

Subcatchment 7S': Basin 7 Runoff Area=1.990 ac 75.38% Impervious Runoff Depth=2.51"
Flow Length=460' Tc=13.1 min CN=75/98 Runoff=1.11 cfs 0.416 af

Pond 1AP: Foxhaven Rain Garden Peak Elev=373.10' Storage=42,417 cf Inflow=6.53 cfs 5.379 af
Discarded=0.02 cfs 0.076 af Primary=3.02 cfs 5.303 af Outflow=3.05 cfs 5.379 af

Pond 1CP: Detention Pipe Peak Elev=367.82' Storage=0.062 af Inflow=0.62 cfs 0.209 af
Outflow=0.11 cfs 0.209 af

Pond 1DP: Future Rain Garden Peak Elev=375.11' Storage=9,432 cf Inflow=1.81 cfs 1.104 af
Outflow=0.84 cfs 1.104 af

Pond 3P': Reconstructed Teal Rain Garden Peak Elev=385.92' Storage=7,409 cf Inflow=2.41 cfs 0.910 af
Discarded=0.10 cfs 0.238 af Primary=1.04 cfs 0.673 af Outflow=1.15 cfs 0.910 af

Pond 4P': Baxter Detention Peak Elev=404.72' Storage=48,477 cf Inflow=16.23 cfs 6.837 af
Outflow=4.59 cfs 6.837 af

Pond 7P': Vintage Detention Peak Elev=433.33' Storage=1,522 cf Inflow=1.11 cfs 0.416 af
Outflow=0.51 cfs 0.416 af

Pond FS: Flow Splitter Peak Elev=370.27' Inflow=7.38 cfs 8.102 af
Primary=3.68 cfs 4.343 af Secondary=3.70 cfs 3.759 af Outflow=7.38 cfs 8.102 af

Link 2L: Bypass Inflow=3.70 cfs 3.759 af
Primary=3.70 cfs 3.759 af

Link 3L: Developed Release Inflow=6.50 cfs 10.375 af
Primary=6.50 cfs 10.375 af

Total Runoff Area = 60.930 ac Runoff Volume = 10.688 af Average Runoff Depth = 2.10"
41.68% Pervious = 25.393 ac 58.32% Impervious = 35.537 ac

Summary for Subcatchment 1AS: Basin 1A - Phase 1

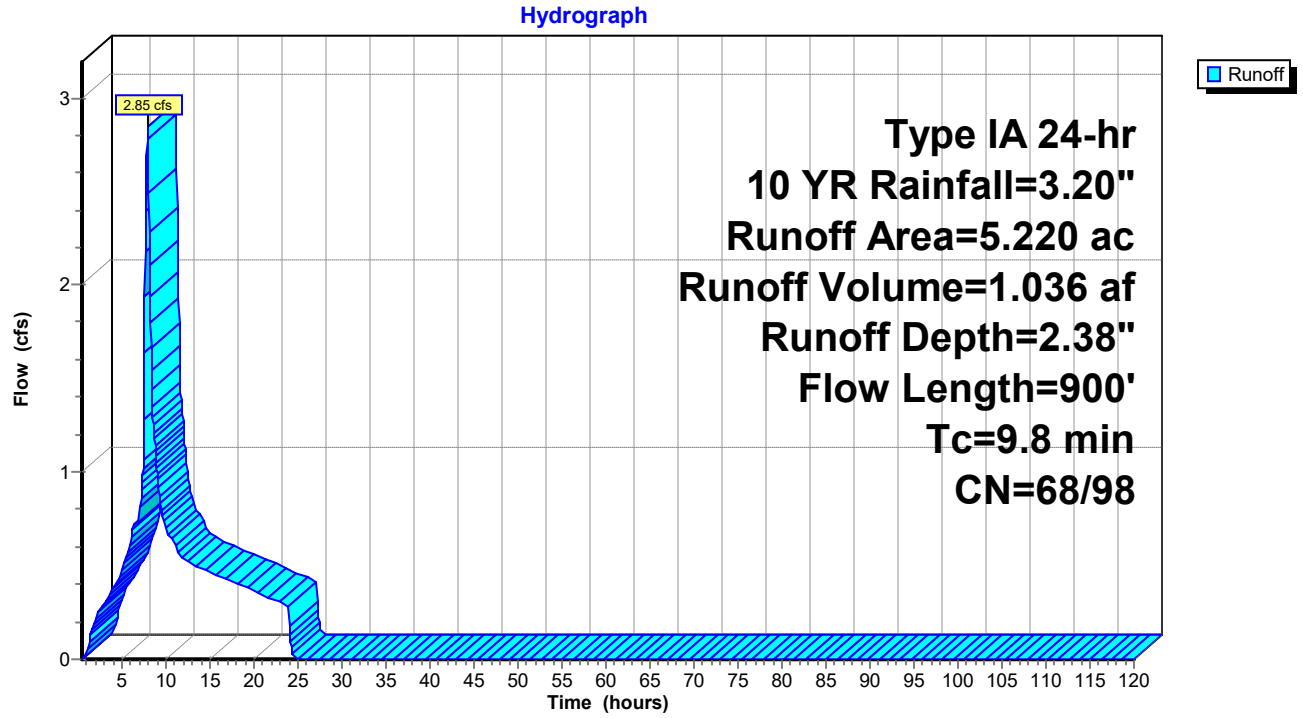
Runoff = 2.85 cfs @ 7.98 hrs, Volume= 1.036 af, Depth= 2.38"
Routed to Pond 1AP : Foxhaven Rain Garden

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	3.850	98	Paved/Roof, HSG C
	0.685	61	>75% Grass cover, Good, HSG B
	0.685	74	>75% Grass cover, Good, HSG C
	5.220	90	Weighted Average
	1.370		26.25% Pervious Area
	3.850		73.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	100	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.5	160	0.0700	5.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	640	0.0500	10.14	7.97	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
9.8	900	Total			

Subcatchment 1AS: Basin 1A - Phase 1



Summary for Subcatchment 1BS: Basin 1B - Phase 1

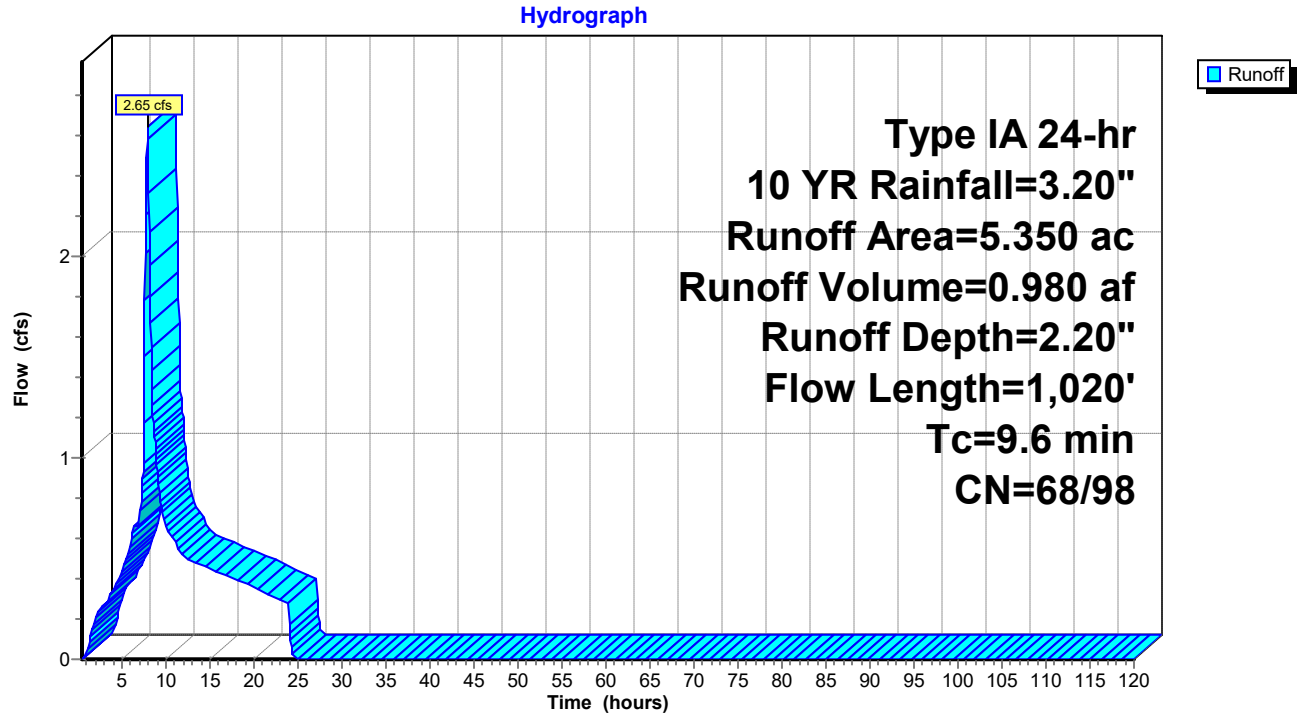
Runoff = 2.65 cfs @ 7.98 hrs, Volume= 0.980 af, Depth= 2.20"
Routed to Pond FS : Flow Splitter

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	3.510	98	Paved/Roof, HSG C
	0.920	61	>75% Grass cover, Good, HSG B
	0.920	74	>75% Grass cover, Good, HSG C
	5.350	88	Weighted Average
	1.840		34.39% Pervious Area
	3.510		65.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	60	0.0300	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
1.8	150	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	810	0.0300	12.47	39.18	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
9.6	1,020	Total			

Subcatchment 1BS: Basin 1B - Phase 1



Summary for Subcatchment 1CS: Basin 1C - Phase 1

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

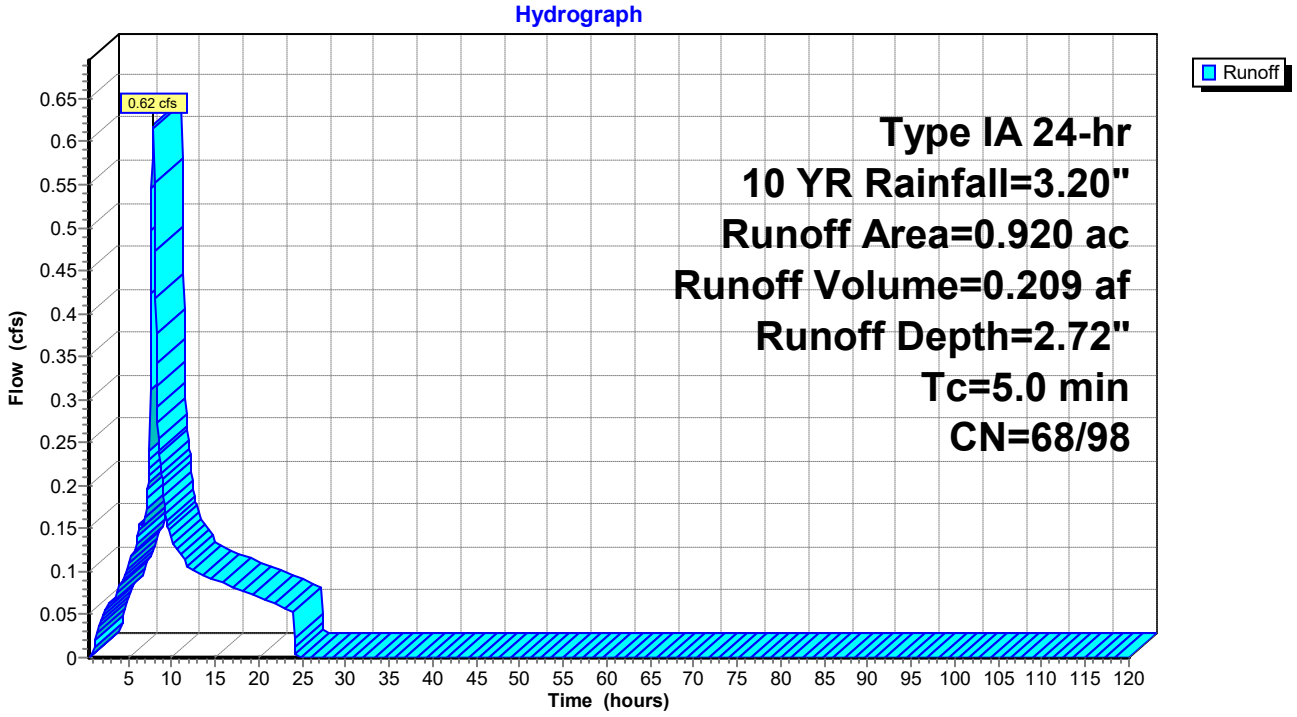
Runoff = 0.62 cfs @ 7.90 hrs, Volume= 0.209 af, Depth= 2.72"
Routed to Pond 1CP : Detention Pipe

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	0.820	98	Paved/Roof, HSG C
	0.050	61	>75% Grass cover, Good, HSG B
	0.050	74	>75% Grass cover, Good, HSG C
	0.920	95	Weighted Average
	0.100		10.87% Pervious Area
	0.820		89.13% Impervious Area

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

Subcatchment 1CS: Basin 1C - Phase 1



Summary for Subcatchment 1DS: Basin 1D - Phase 2

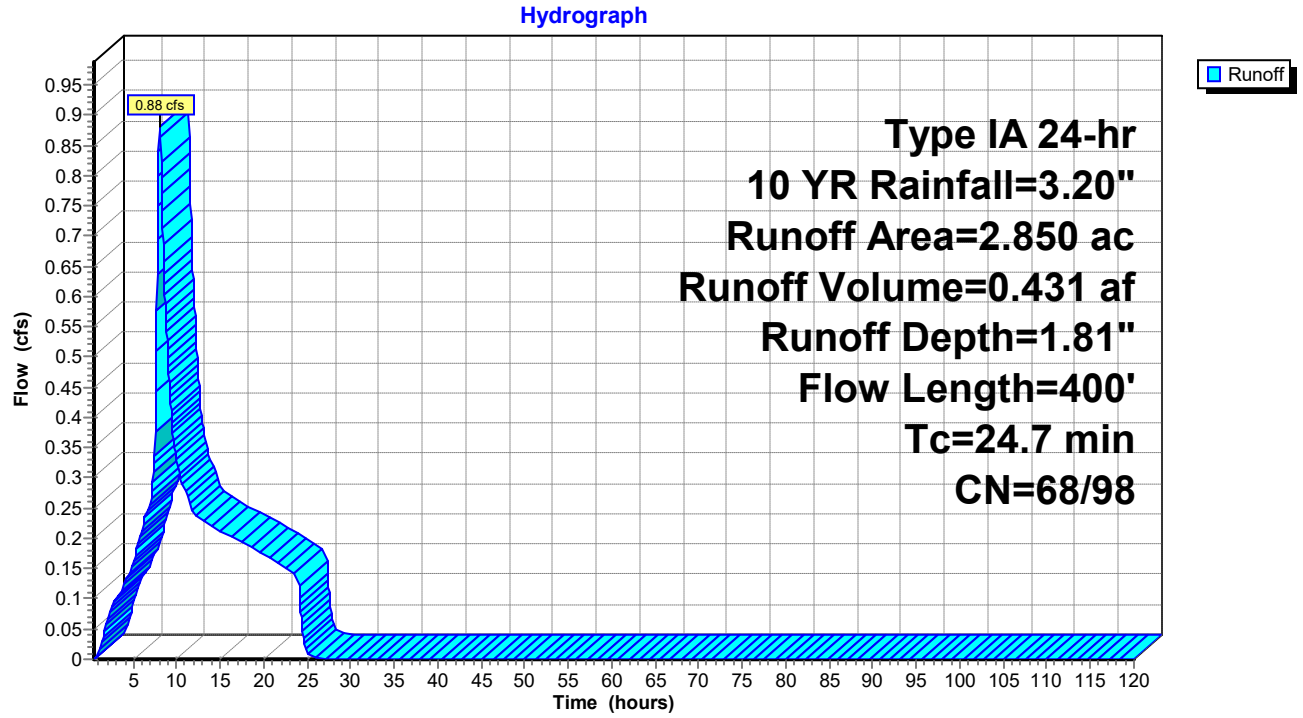
Runoff = 0.88 cfs @ 8.04 hrs, Volume= 0.431 af, Depth= 1.81"
Routed to Pond 1DP : Future Rain Garden

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	1.380	98	Paved/Roof, HSG C
	0.735	61	>75% Grass cover, Good, HSG B
	0.735	74	>75% Grass cover, Good, HSG C
	2.850	82	Weighted Average
	1.470		51.58% Pervious Area
	1.380		48.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.3	300	0.0330	0.21		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.20"
1.3	53	0.0100	0.70		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
0.1	47	0.0960	14.06	11.04	**Pipe Channel, Pipe Flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
24.7	400	Total			

Subcatchment 1DS: Basin 1D - Phase 2



Summary for Subcatchment 1ES: Basin 1E - Phase 2

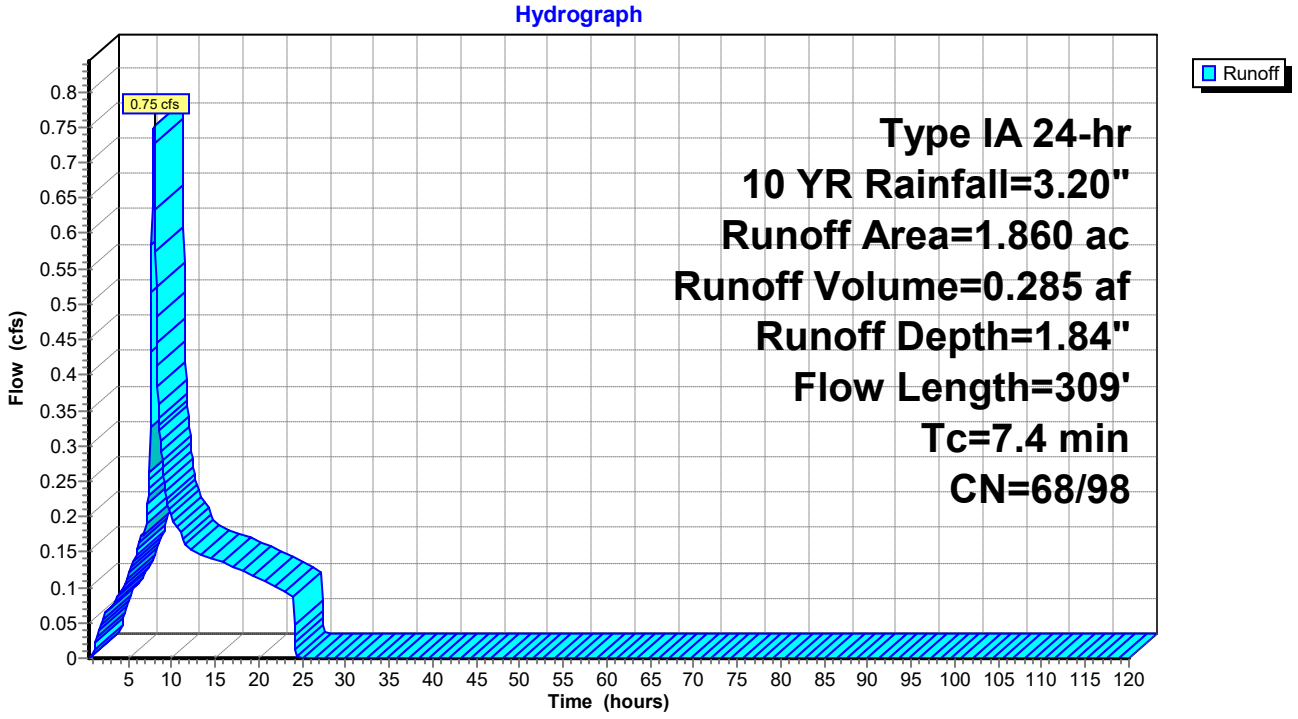
Runoff = 0.75 cfs @ 7.98 hrs, Volume= 0.285 af, Depth= 1.84"
Routed to Pond FS : Flow Splitter

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	0.920	98	Paved/Roof, HSG C
	0.470	61	>75% Grass cover, Good, HSG B
	0.470	74	>75% Grass cover, Good, HSG C
	1.860	83	Weighted Average
	0.940		50.54% Pervious Area
	0.920		49.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	97	0.0730	0.24		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.20"
0.5	212	0.0230	6.88	5.40	**Pipe Channel, Pipe Flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
7.4	309	Total			

Subcatchment 1ES: Basin 1E - Phase 2



Summary for Subcatchment 3S': Basin 3

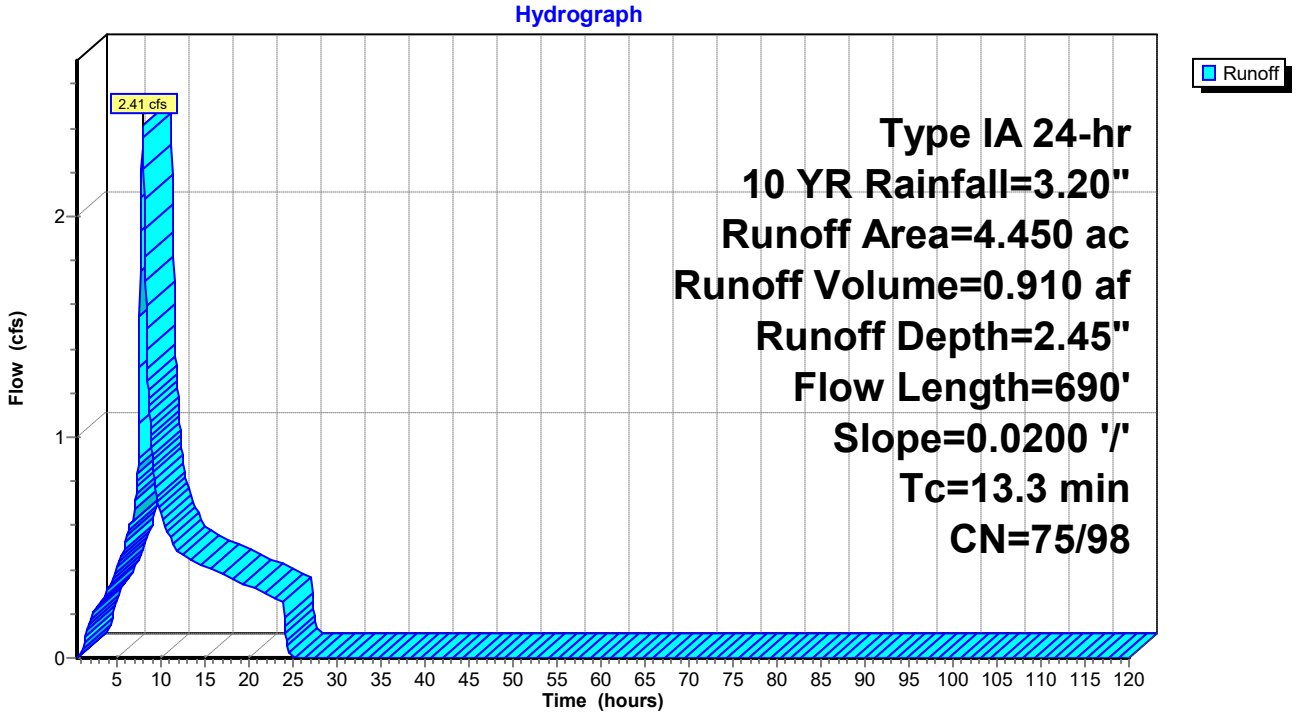
Runoff = 2.41 cfs @ 7.99 hrs, Volume= 0.910 af, Depth= 2.45"
Routed to Pond 3P' : Reconstructed Teal Rain Garden

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	0.970	98	Paved roads w/curbs & sewers, HSG C
	3.480	90	1/8 acre lots, 65% imp, HSG C
	4.450	92	Weighted Average
	1.218		27.37% Pervious Area
	3.232		72.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
1.5	590	0.0200	6.42	5.04	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.3	690	Total			

Subcatchment 3S': Basin 3



Summary for Subcatchment 4S': Basin 4

[47] Hint: Peak is 196% of capacity of segment #3

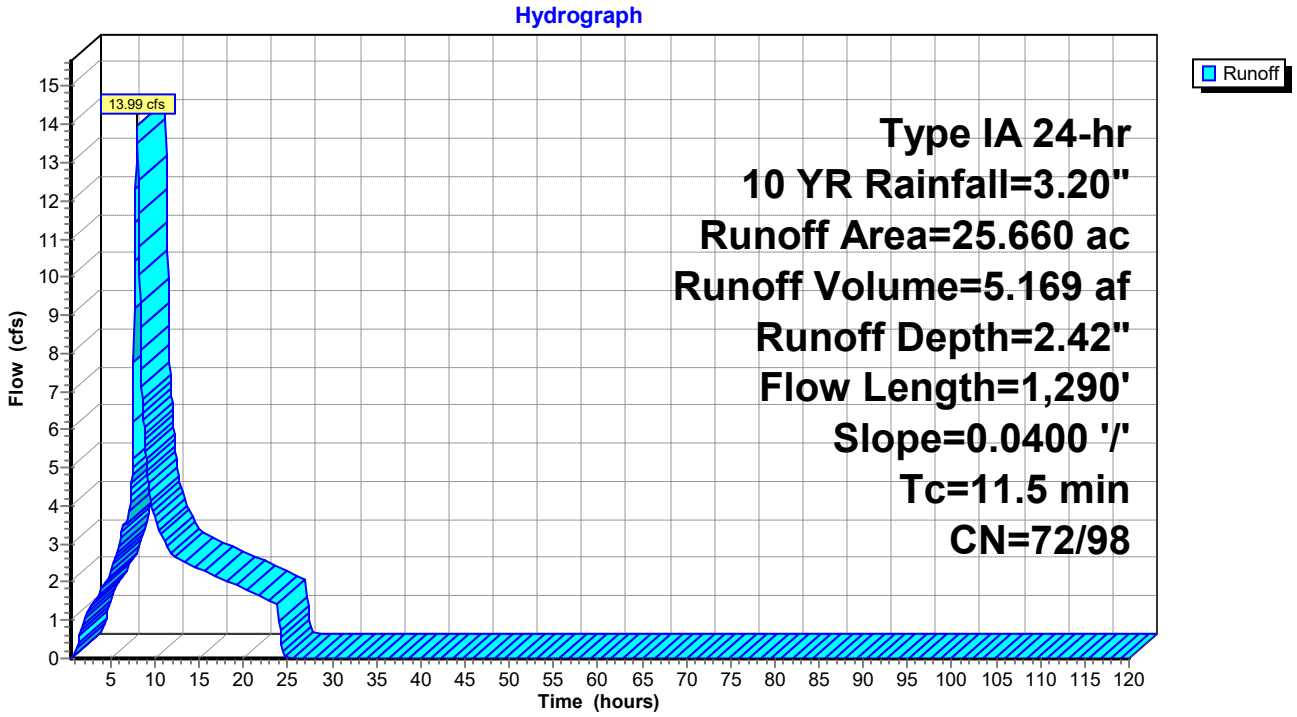
Runoff = 13.99 cfs @ 7.99 hrs, Volume= 5.169 af, Depth= 2.42"
Routed to Pond 4P' : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	5.860	98	Paved roads w/curbs & sewers, HSG C
	4.950	85	1/8 acre lots, 65% imp, HSG B
	14.850	90	1/8 acre lots, 65% imp, HSG C
	25.660	91	Weighted Average
	6.930		27.01% Pervious Area
	18.730		72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	1,160	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
11.5	1,290	Total			

Subcatchment 4S': Basin 4



Summary for Subcatchment 5S': Basin 5

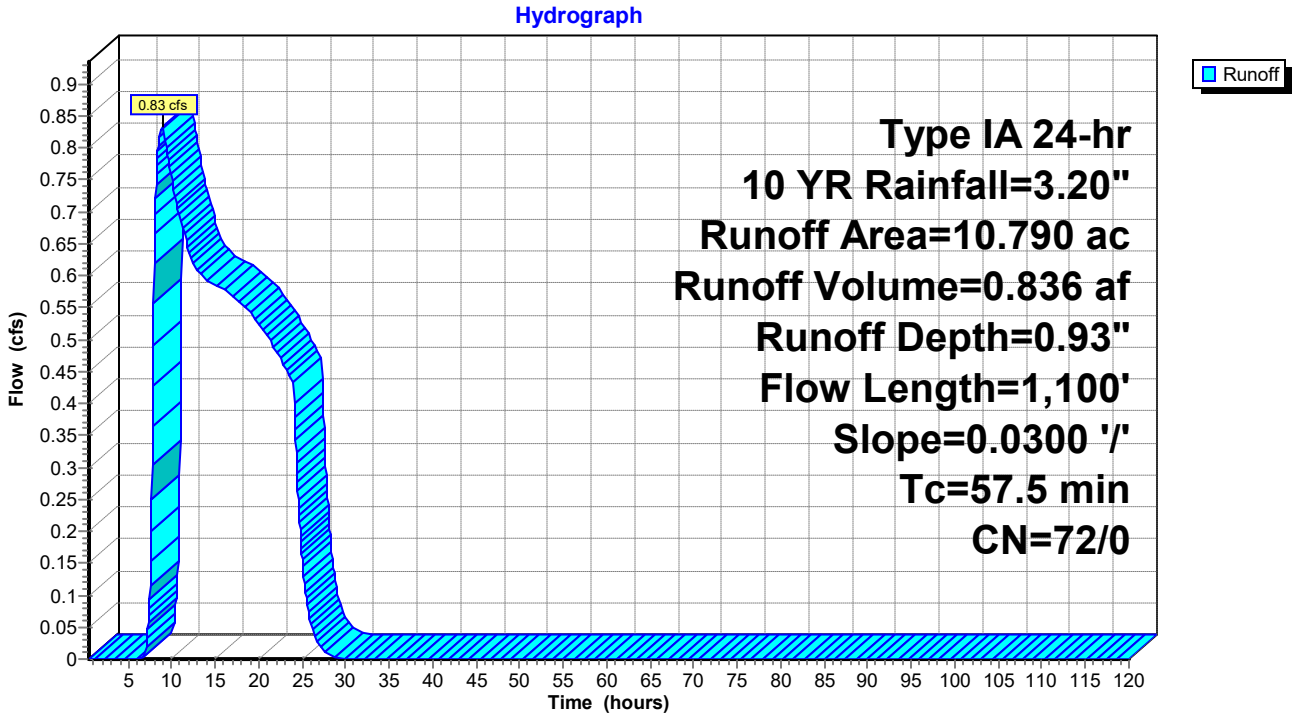
Runoff = 0.83 cfs @ 8.92 hrs, Volume= 0.836 af, Depth= 0.93"
Routed to Pond 4P' : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

Area (ac)	CN	Description
10.790	72	Woods/grass comb., Good, HSG C
10.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	300	0.0300	0.12		**Sheet Flow, Pre Developed** n= 0.300 P2= 2.20"
15.4	800	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
57.5	1,100	Total			

Subcatchment 5S': Basin 5



Summary for Subcatchment 6S': Basin 6

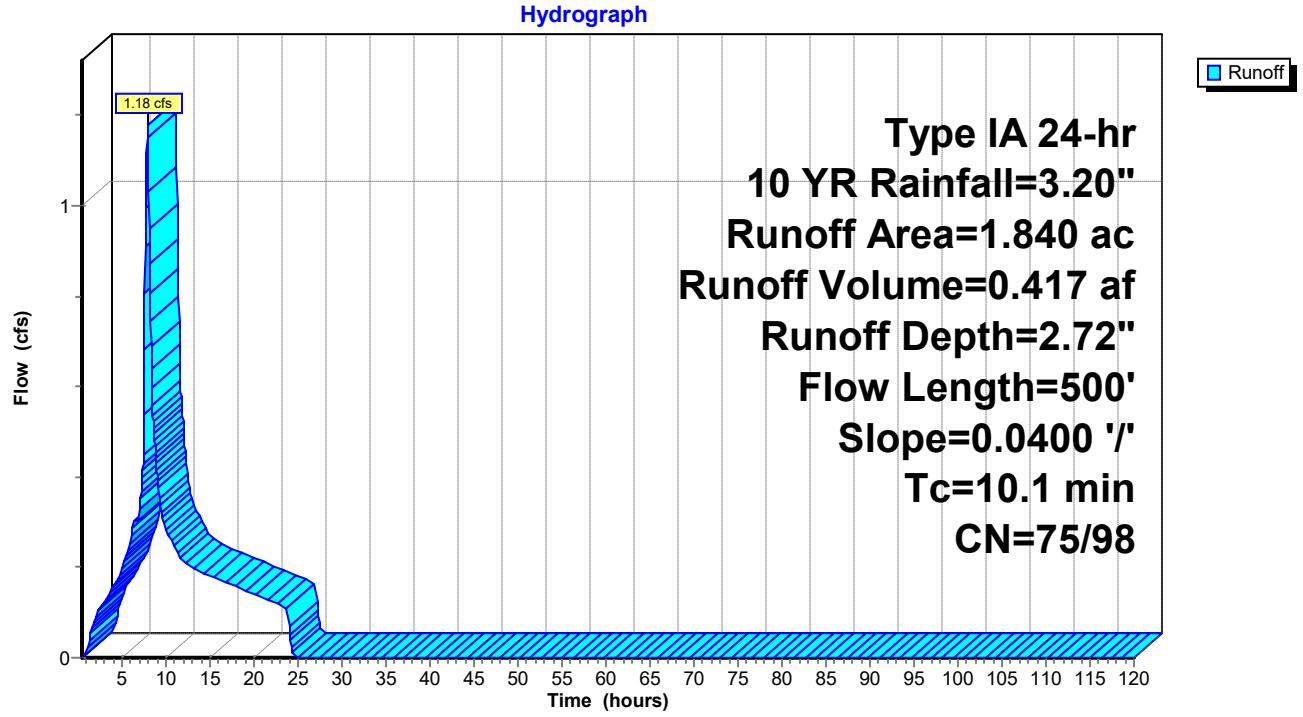
Runoff = 1.18 cfs @ 7.98 hrs, Volume= 0.417 af, Depth= 2.72"
Routed to Pond 4P' : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	1.140	98	Paved roads w/curbs & sewers, HSG C
	0.700	90	1/8 acre lots, 65% imp, HSG C
	1.840	95	Weighted Average
	0.245		13.32% Pervious Area
	1.595		86.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	370	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
10.1	500	Total			

Subcatchment 6S': Basin 6



Summary for Subcatchment 7S': Basin 7

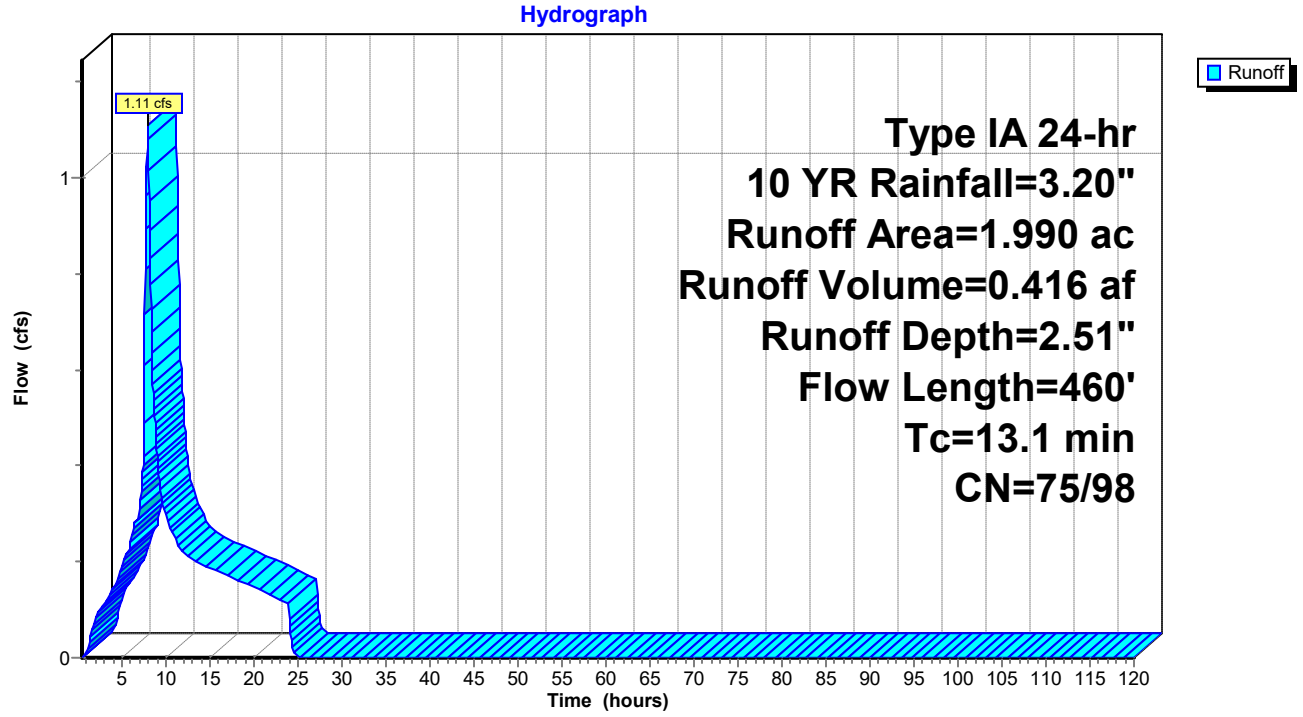
Runoff = 1.11 cfs @ 7.99 hrs, Volume= 0.416 af, Depth= 2.51"
Routed to Pond 7P' : Vintage Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 10 YR Rainfall=3.20"

	Area (ac)	CN	Description
*	0.590	98	Paved roads w/curbs & sewers, HSG C
	1.400	90	1/8 acre lots, 65% imp, HSG C
	1.990	92	Weighted Average
	0.490		24.62% Pervious Area
	1.500		75.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	320	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.1	460	Total			

Subcatchment 7S': Basin 7



Summary for Pond 1AP: Foxhaven Rain Garden

[81] Warning: Exceeded Pond FS by 2.96' @ 14.80 hrs

Inflow Area = 52.710 ac, 57.11% Impervious, Inflow Depth = 1.22" for 10 YR event
Inflow = 6.53 cfs @ 7.99 hrs, Volume= 5.379 af
Outflow = 3.05 cfs @ 14.48 hrs, Volume= 5.379 af, Atten= 53%, Lag= 389.3 min
Discarded = 0.02 cfs @ 14.48 hrs, Volume= 0.076 af
Primary = 3.02 cfs @ 14.48 hrs, Volume= 5.303 af
Routed to Link 3L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 373.10' @ 14.48 hrs Surf.Area= 10,451 sf Storage= 42,417 cf

Plug-Flow detention time= 207.8 min calculated for 5.377 af (100% of inflow)
Center-of-Mass det. time= 208.3 min (984.8 - 776.5)

Volume	Invert	Avail.Storage	Storage Description
#1	365.25'	64,461 cf	**Detention Basin (Prismatic)** Listed below (Recalc)

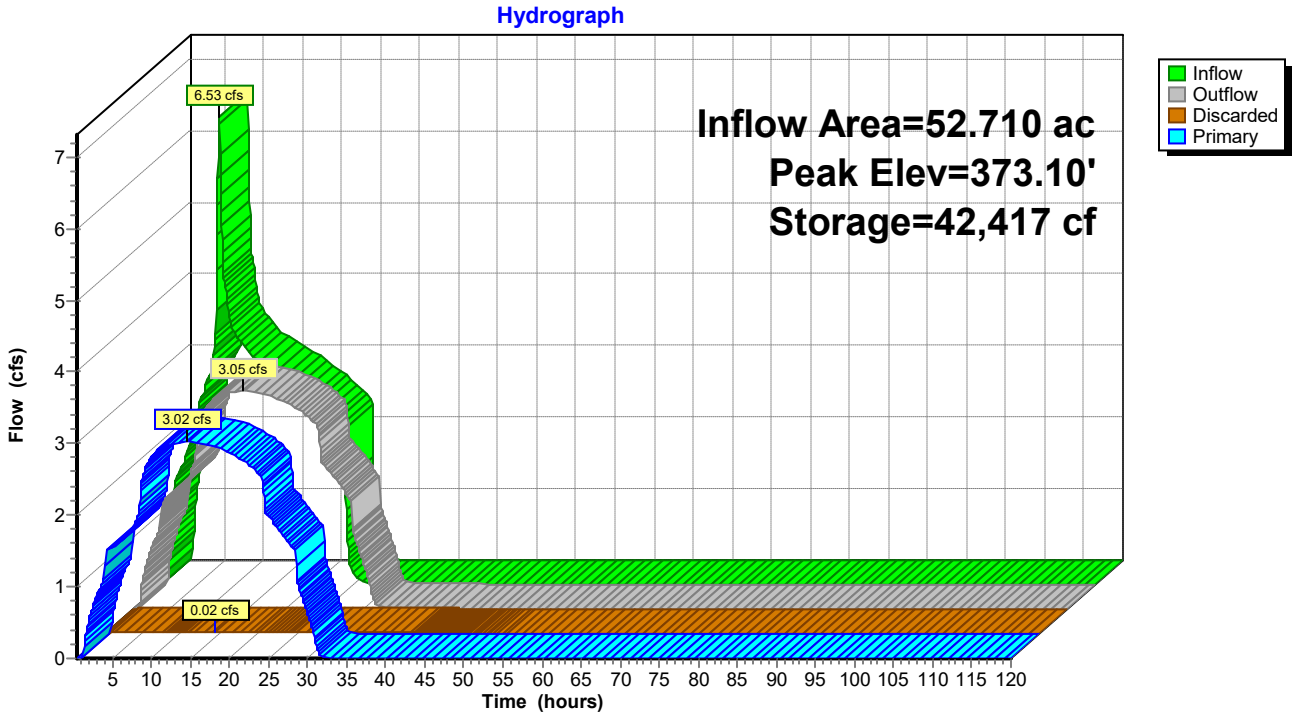
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
365.25	8,560	0.0	0	0
367.50	8,560	40.0	7,704	7,704
369.00	7,360	0.1	12	7,716
370.00	7,860	100.0	7,610	15,326
371.00	8,390	100.0	8,125	23,451
372.00	8,560	100.0	8,475	31,926
373.00	10,330	100.0	9,445	41,371
374.00	11,530	100.0	10,930	52,301
375.00	12,790	100.0	12,160	64,461

Device	Routing	Invert	Outlet Devices
#1	Discarded	365.25'	**0.100 in/hr Exfiltration over Horizontal area**
#2	Primary	365.50'	**5.5" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	372.00'	**5.5" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	373.10'	**2.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#5	Primary	374.00'	**6.0' long x 0.50' rise O/F Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.02 cfs @ 14.48 hrs HW=373.10' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=3.02 cfs @ 14.48 hrs HW=373.10' (Free Discharge)
├**2=Orifice** (Orifice Controls 2.19 cfs @ 13.27 fps)
├**3=Orifice** (Orifice Controls 0.83 cfs @ 5.05 fps)
├**4=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.00 cfs @ 0.09 fps)
└**5=O/F Weir** (Controls 0.00 cfs)

Pond 1AP: Foxhaven Rain Garden



Summary for Pond 1CP: Detention Pipe

Inflow Area = 0.920 ac, 89.13% Impervious, Inflow Depth = 2.72" for 10 YR event
Inflow = 0.62 cfs @ 7.90 hrs, Volume= 0.209 af
Outflow = 0.11 cfs @ 11.36 hrs, Volume= 0.209 af, Atten= 81%, Lag= 207.1 min
Primary = 0.11 cfs @ 11.36 hrs, Volume= 0.209 af
Routed to Link 3L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 367.82' @ 11.36 hrs Surf.Area= 0.021 ac Storage= 0.062 af

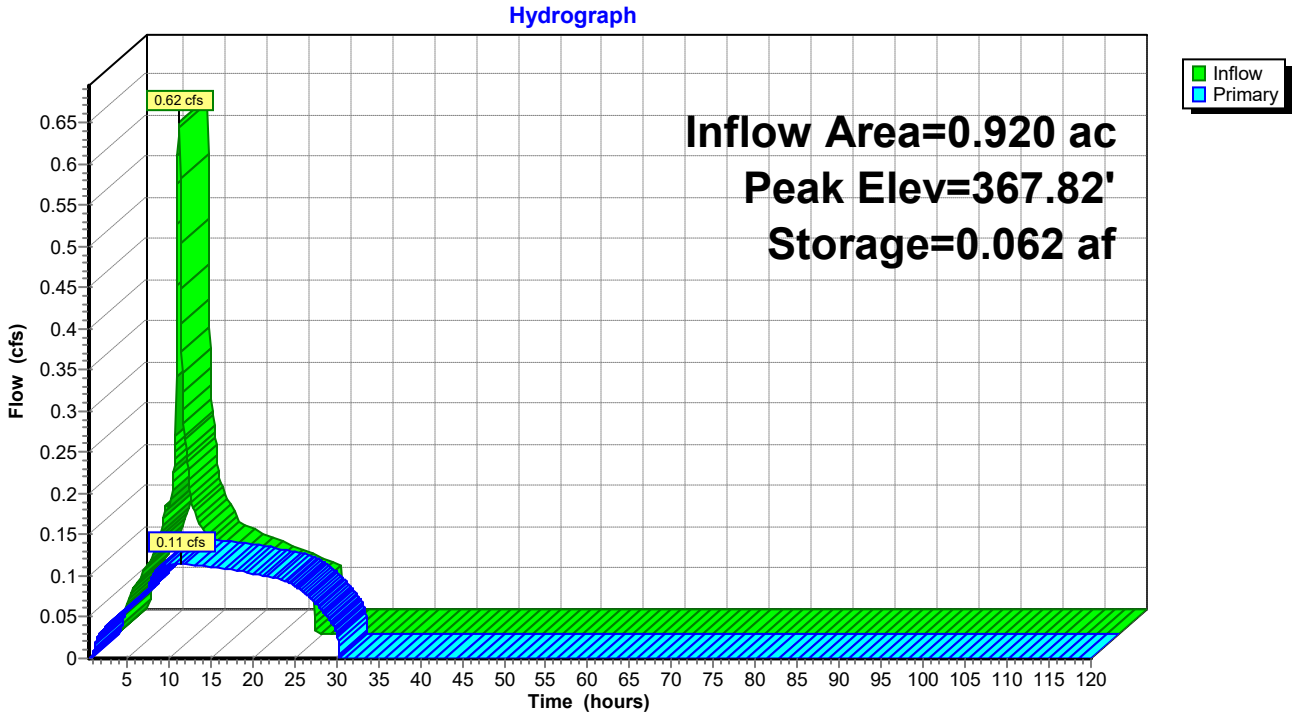
Plug-Flow detention time= 286.2 min calculated for 0.209 af (100% of inflow)
Center-of-Mass det. time= 286.2 min (959.8 - 673.6)

Volume	Invert	Avail.Storage	Storage Description
#1	364.90'	0.046 af	**36.0" Round 36" Pipe Storage** L= 285.0' S= 0.0010 '/'
#2	366.15'	0.020 af	**24.0" Round 24" Pipe Storage** L= 278.0' S= 0.0010 '/'
#3	364.90'	0.004 af	**5.00'D x 8.00'H Vertical Cone/Cylinder**
		0.070 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	364.90'	**1.6" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	367.90'	**6.0" W x 4.0" H Vert. Weir Cut** C= 0.600 Limited to weir flow at low heads
#3	Primary	368.20'	**12.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.11 cfs @ 11.36 hrs HW=367.82' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.11 cfs @ 8.23 fps)
- **2=Weir Cut** (Controls 0.00 cfs)
- **3=O/F Riser** (Controls 0.00 cfs)

Pond 1CP: Detention Pipe



Summary for Pond 1DP: Future Rain Garden

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 7.300 ac, 63.18% Impervious, Inflow Depth = 1.81" for 10 YR event
Inflow = 1.81 cfs @ 8.15 hrs, Volume= 1.104 af
Outflow = 0.84 cfs @ 11.75 hrs, Volume= 1.104 af, Atten= 53%, Lag= 216.1 min
Primary = 0.84 cfs @ 11.75 hrs, Volume= 1.104 af
Routed to Link 3L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 375.11' @ 11.75 hrs Surf.Area= 3,057 sf Storage= 9,432 cf

Plug-Flow detention time= 109.5 min calculated for 1.104 af (100% of inflow)
Center-of-Mass det. time= 109.7 min (885.1 - 775.4)

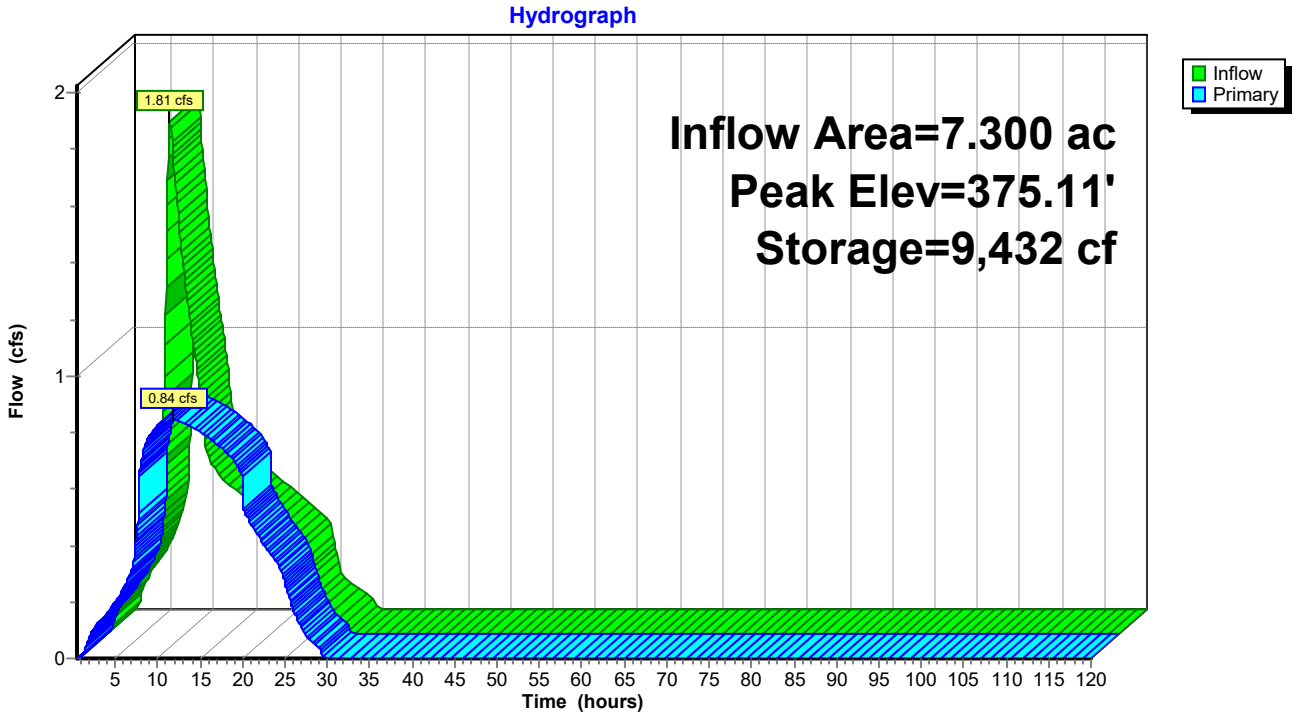
Volume	Invert	Avail.Storage	Storage Description
#1	365.45'	16,283 cf	**Detention Basin (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
365.45	1,280	0.0	0	0
369.45	1,280	40.0	2,048	2,048
371.20	849	0.1	2	2,050
372.20	1,280	100.0	1,065	3,114
377.00	4,207	100.0	13,169	16,283

Device	Routing	Invert	Outlet Devices
#1	Primary	365.40'	**3.0" Horiz. 1/2 2-yr Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	367.40'	**1.2" Vert. 10-yr Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	375.11'	**5.0" Horiz. 25-yr Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	375.43'	**5.0" Horiz. O/F** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.84 cfs @ 11.75 hrs HW=375.11' (Free Discharge)
- **1=1/2 2-yr Orifice** (Orifice Controls 0.74 cfs @ 15.01 fps)
- **2=10-yr Orifice** (Orifice Controls 0.10 cfs @ 13.33 fps)
- **3=25-yr Orifice** (Weir Controls 0.00 cfs @ 0.20 fps)
- **4=O/F** (Controls 0.00 cfs)

Pond 1DP: Future Rain Garden



Summary for Pond 3P': Reconstructed Teal Rain Garden

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 4.450 ac, 72.63% Impervious, Inflow Depth = 2.45" for 10 YR event
Inflow = 2.41 cfs @ 7.99 hrs, Volume= 0.910 af
Outflow = 1.15 cfs @ 8.69 hrs, Volume= 0.910 af, Atten= 52%, Lag= 41.8 min
Discarded = 0.10 cfs @ 1.95 hrs, Volume= 0.238 af
Primary = 1.04 cfs @ 8.69 hrs, Volume= 0.673 af
Routed to Pond 1DP : Future Rain Garden

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 385.92' @ 8.69 hrs Surf.Area= 5,335 sf Storage= 7,409 cf

Plug-Flow detention time= 133.8 min calculated for 0.910 af (100% of inflow)
Center-of-Mass det. time= 133.8 min (831.8 - 698.0)

Volume	Invert	Avail.Storage	Storage Description
#1	382.75'	13,836 cf	**Pond (Prismatic)** Listed below (Recalc)

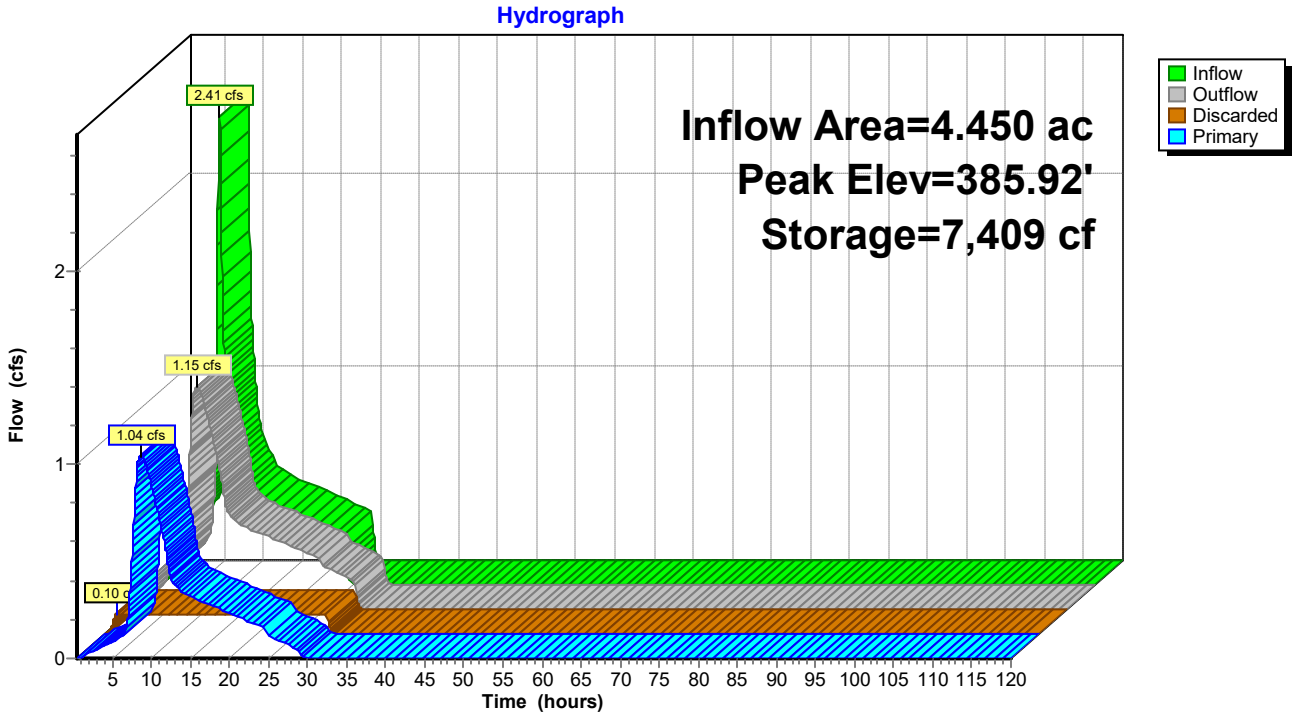
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
382.75	5,956	0.0	0	0
384.00	5,956	40.0	2,978	2,978
385.00	4,303	0.1	5	2,983
387.00	6,550	100.0	10,853	13,836

Device	Routing	Invert	Outlet Devices
#1	Discarded	382.75'	**0.750 in/hr Exfiltration over Horizontal area**
#2	Primary	382.70'	**2.0" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	385.10'	**6.0" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	386.00'	**12.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.10 cfs @ 1.95 hrs HW=382.79' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=1.04 cfs @ 8.69 hrs HW=385.92' (Free Discharge)
├**2=Orifice** (Orifice Controls 0.19 cfs @ 8.64 fps)
├**3=Orifice** (Orifice Controls 0.86 cfs @ 4.36 fps)
└**4=O/F Riser** (Controls 0.00 cfs)

Pond 3P': Reconstructed Teal Rain Garden



Summary for Pond 4P': Baxter Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 40.280 ac, 54.18% Impervious, Inflow Depth = 2.04" for 10 YR event
Inflow = 16.23 cfs @ 7.99 hrs, Volume= 6.837 af
Outflow = 4.59 cfs @ 10.84 hrs, Volume= 6.837 af, Atten= 72%, Lag= 170.8 min
Primary = 4.59 cfs @ 10.84 hrs, Volume= 6.837 af
Routed to Pond FS : Flow Splitter

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 404.72' @ 10.84 hrs Surf.Area= 19,242 sf Storage= 48,477 cf

Plug-Flow detention time= 97.1 min calculated for 6.837 af (100% of inflow)
Center-of-Mass det. time= 97.1 min (820.9 - 723.9)

Volume	Invert	Avail.Storage	Storage Description
#1	401.00'	46,475 cf	**West Pond (Prismatic)** Listed below (Recalc)
#2	401.00'	29,850 cf	**East Pond (Prismatic)** Listed below (Recalc)
		76,325 cf	Total Available Storage

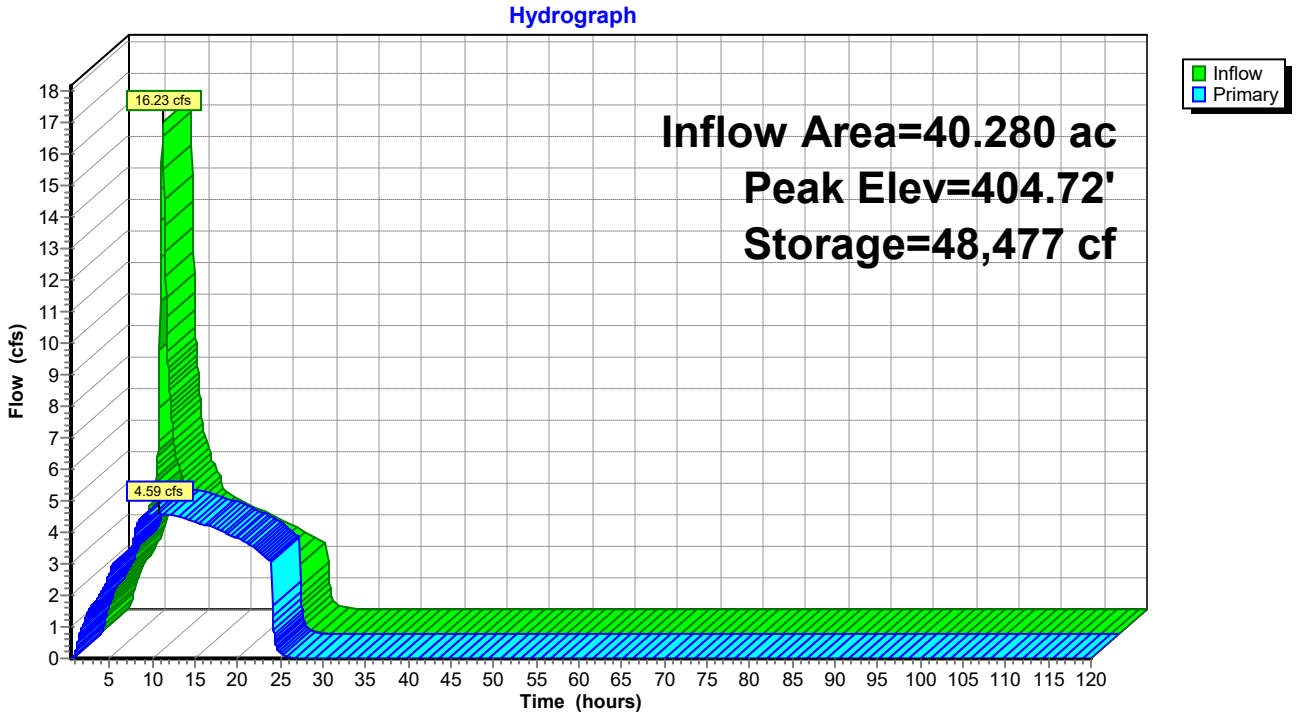
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	2,250	0	0
402.00	7,140	4,695	4,695
403.00	8,720	7,930	12,625
404.00	10,340	9,530	22,155
405.00	12,000	11,170	33,325
406.00	14,300	13,150	46,475

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	1,820	0	0
402.00	3,960	2,890	2,890
403.00	5,190	4,575	7,465
404.00	6,560	5,875	13,340
405.00	8,160	7,360	20,700
406.00	10,140	9,150	29,850

Device	Routing	Invert	Outlet Devices
#1	Primary	398.29'	**8.3" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	405.00'	**24.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads
#3	Primary	405.02'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.59 cfs @ 10.84 hrs HW=404.72' (Free Discharge)
- **1=Orifice** (Orifice Controls 4.59 cfs @ 12.21 fps)
- **2=O/F Riser** (Controls 0.00 cfs)
- **3=Overflow CB** (Controls 0.00 cfs)

Pond 4P': Baxter Detention



Summary for Pond 7P': Vintage Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 1.990 ac, 75.38% Impervious, Inflow Depth = 2.51" for 10 YR event
Inflow = 1.11 cfs @ 7.99 hrs, Volume= 0.416 af
Outflow = 0.51 cfs @ 8.73 hrs, Volume= 0.416 af, Atten= 54%, Lag= 43.9 min
Primary = 0.51 cfs @ 8.73 hrs, Volume= 0.416 af
Routed to Pond 4P' : Baxter Detention

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 433.33' @ 8.73 hrs Surf.Area= 1,803 sf Storage= 1,522 cf

Plug-Flow detention time= 12.0 min calculated for 0.415 af (100% of inflow)
Center-of-Mass det. time= 12.0 min (707.0 - 695.0)

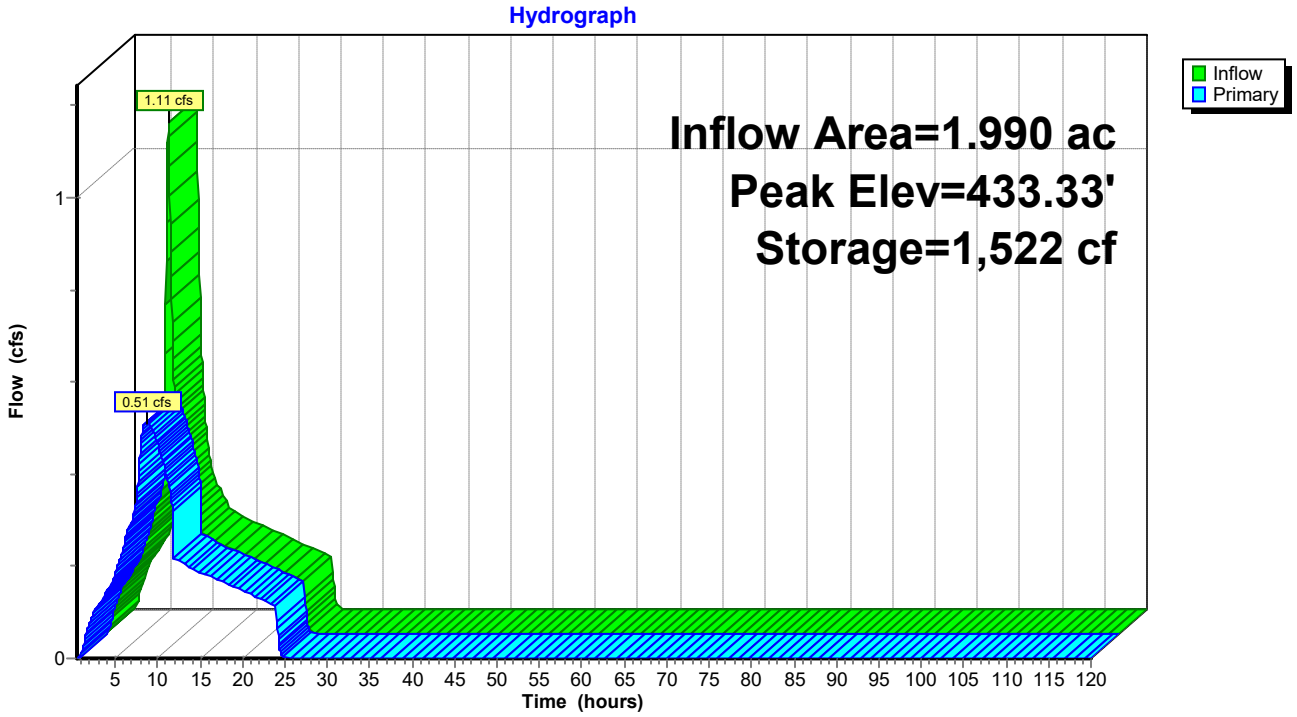
Volume	Invert	Avail.Storage	Storage Description
#1	432.00'	8,940 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
432.00	0	0	0
432.50	1,160	290	290
434.00	2,320	2,610	2,900
436.00	3,720	6,040	8,940

Device	Routing	Invert	Outlet Devices
#1	Primary	431.31'	**3.7" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	435.00'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.51 cfs @ 8.73 hrs HW=433.33' (Free Discharge)
└**1=Orifice** (Orifice Controls 0.51 cfs @ 6.85 fps)
└**2=Overflow CB** (Controls 0.00 cfs)

Pond 7P': Vintage Detention



Summary for Pond FS: Flow Splitter

[57] Hint: Peaked at 370.27' (Flood elevation advised)

Inflow Area = 47.490 ac, 55.29% Impervious, Inflow Depth = 2.05" for 10 YR event
Inflow = 7.38 cfs @ 8.00 hrs, Volume= 8.102 af
Outflow = 7.38 cfs @ 8.00 hrs, Volume= 8.102 af, Atten= 0%, Lag= 0.0 min
Primary = 3.68 cfs @ 8.00 hrs, Volume= 4.343 af
Routed to Pond 1AP : Foxhaven Rain Garden
Secondary = 3.70 cfs @ 8.00 hrs, Volume= 3.759 af
Routed to Link 2L : Bypass

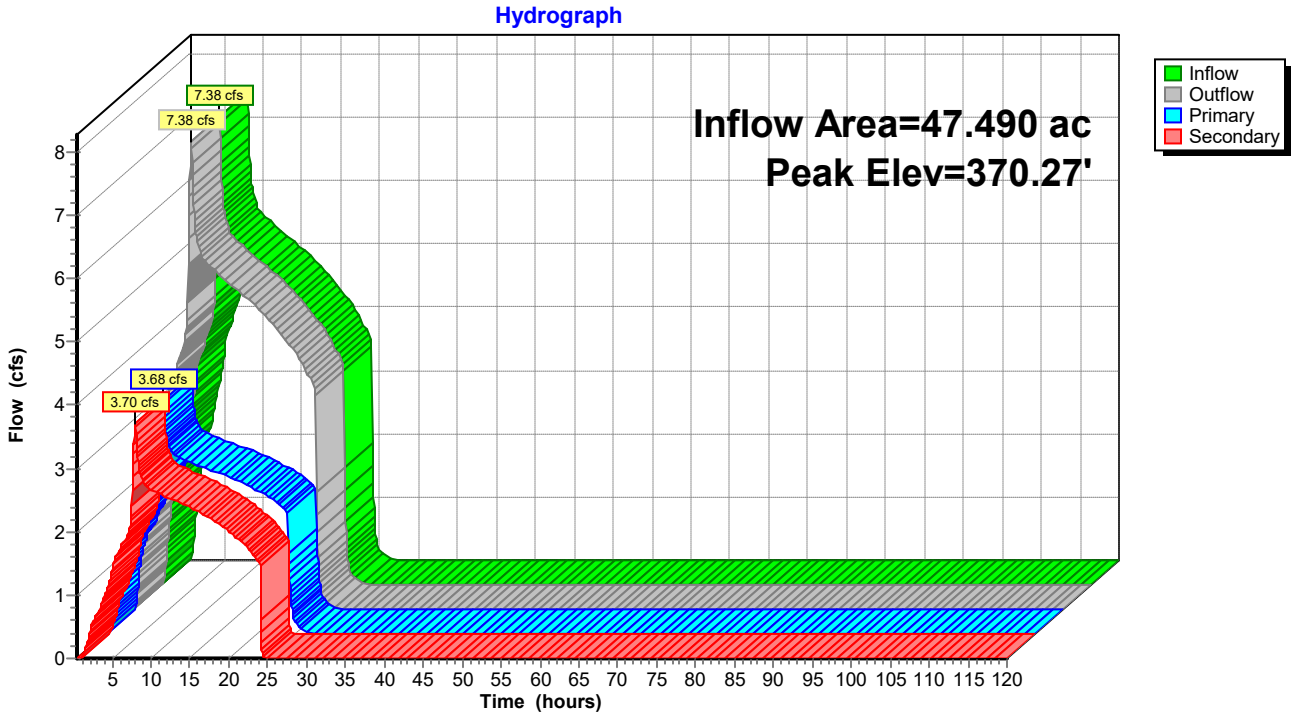
Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 370.27' @ 8.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	369.50'	**1.5' long x 0.60' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#2	Secondary	369.75'	**3.0' long x 1.20' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#3	Primary	370.10'	**3.0' long x 0.70' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=3.68 cfs @ 8.00 hrs HW=370.27' (Free Discharge)
1=Sharp-Crested Vee/Trap Weir (Orifice Controls 2.98 cfs @ 3.31 fps)
3=Sharp-Crested Vee/Trap Weir (Weir Controls 0.70 cfs @ 1.36 fps)

Secondary OutFlow Max=3.70 cfs @ 8.00 hrs HW=370.27' (Free Discharge)
2=Sharp-Crested Vee/Trap Weir (Weir Controls 3.70 cfs @ 2.37 fps)

Pond FS: Flow Splitter

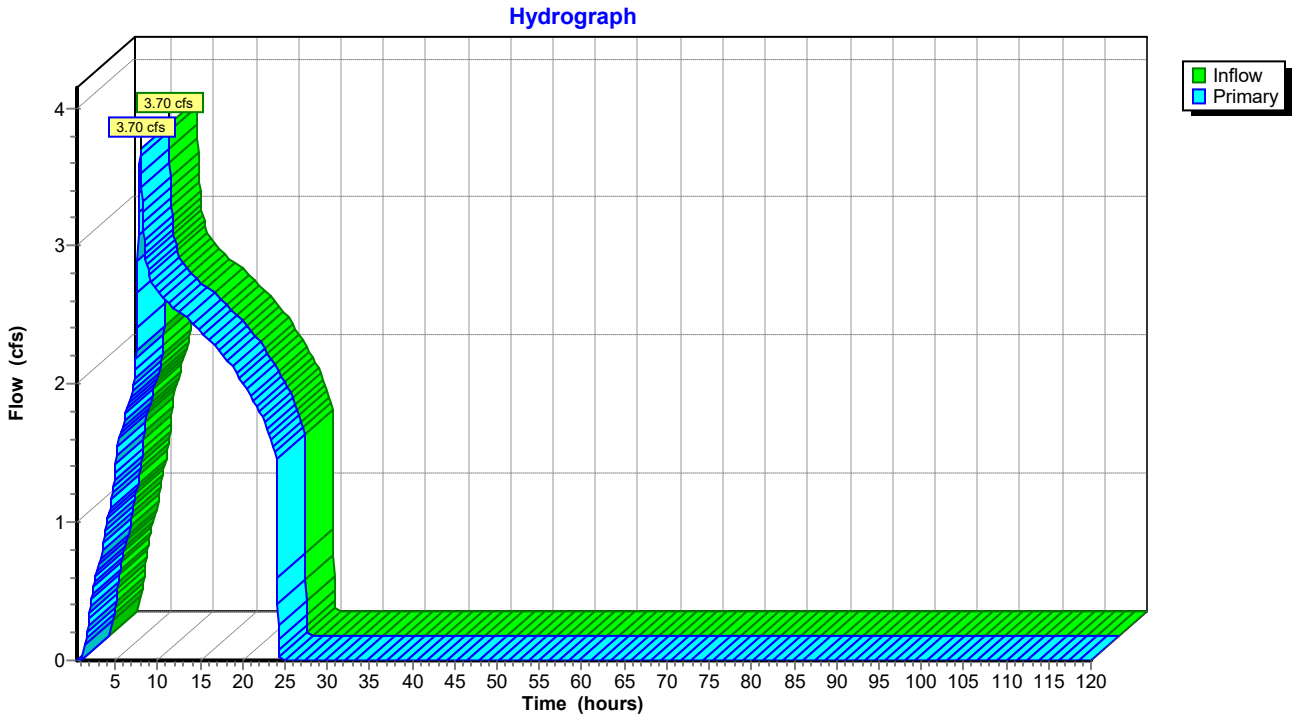


Summary for Link 2L: Bypass

Inflow = 3.70 cfs @ 8.00 hrs, Volume= 3.759 af
Primary = 3.70 cfs @ 8.00 hrs, Volume= 3.759 af, Atten= 0%, Lag= 0.0 min
Routed to Link 3L : Developed Release

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 2L: Bypass

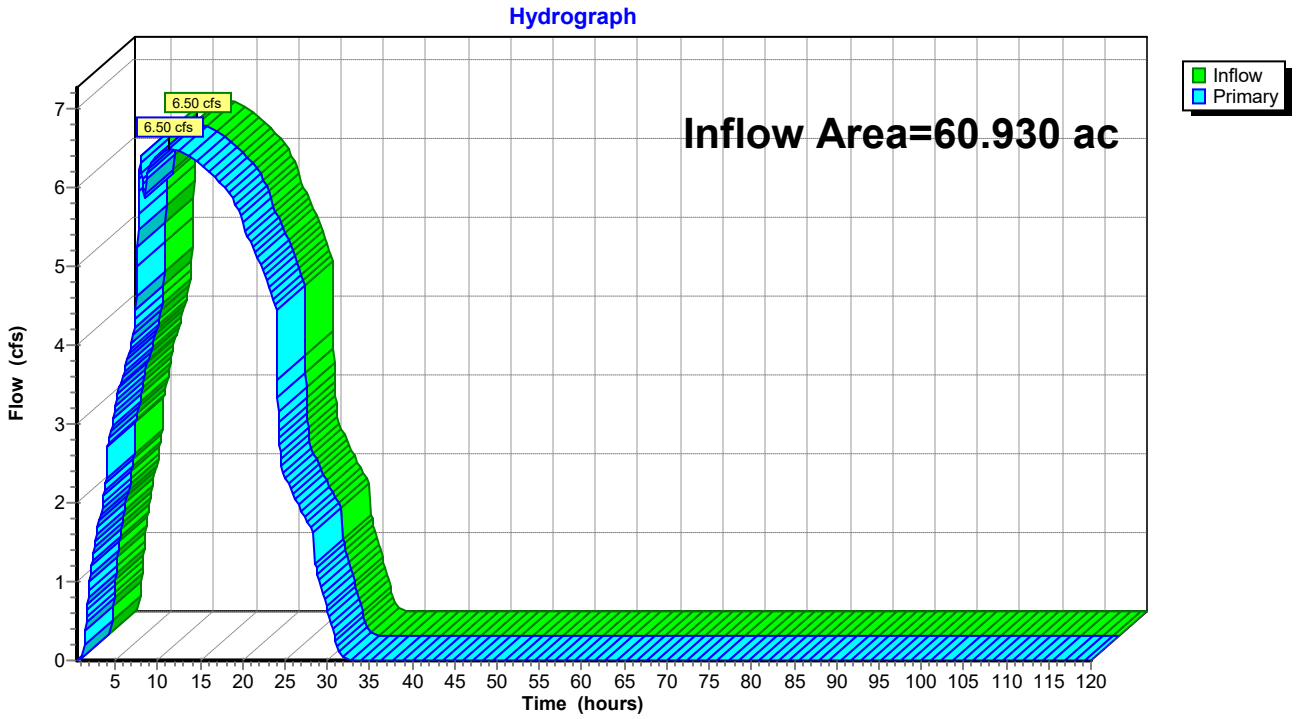


Summary for Link 3L: Developed Release

Inflow Area = 60.930 ac, 58.32% Impervious, Inflow Depth = 2.04" for 10 YR event
Inflow = 6.50 cfs @ 11.27 hrs, Volume= 10.375 af
Primary = 6.50 cfs @ 11.27 hrs, Volume= 10.375 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 3L: Developed Release



Time span=0.50-120.00 hrs, dt=0.05 hrs, 2391 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1AS: Basin 1A - Phase 1 Runoff Area=5.220 ac 73.75% Impervious Runoff Depth=2.73"
Flow Length=900' Tc=9.8 min CN=68/98 Runoff=3.28 cfs 1.190 af

Subcatchment 1BS: Basin 1B - Phase 1 Runoff Area=5.350 ac 65.61% Impervious Runoff Depth=2.54"
Flow Length=1,020' Tc=9.6 min CN=68/98 Runoff=3.07 cfs 1.132 af

Subcatchment 1CS: Basin 1C - Phase 1 Runoff Area=0.920 ac 89.13% Impervious Runoff Depth=3.10"
Tc=5.0 min CN=68/98 Runoff=0.71 cfs 0.238 af

Subcatchment 1DS: Basin 1D - Phase 2 Runoff Area=2.850 ac 48.42% Impervious Runoff Depth=2.13"
Flow Length=400' Tc=24.7 min CN=68/98 Runoff=1.05 cfs 0.505 af

Subcatchment 1ES: Basin 1E - Phase 2 Runoff Area=1.860 ac 49.46% Impervious Runoff Depth=2.15"
Flow Length=309' Tc=7.4 min CN=68/98 Runoff=0.89 cfs 0.333 af

Subcatchment 3S': Basin 3 Runoff Area=4.450 ac 72.63% Impervious Runoff Depth=2.82"
Flow Length=690' Slope=0.0200 '/' Tc=13.3 min CN=75/98 Runoff=2.78 cfs 1.046 af

Subcatchment 4S': Basin 4 Runoff Area=25.660 ac 72.99% Impervious Runoff Depth=2.78"
Flow Length=1,290' Slope=0.0400 '/' Tc=11.5 min CN=72/98 Runoff=16.10 cfs 5.939 af

Subcatchment 5S': Basin 5 Runoff Area=10.790 ac 0.00% Impervious Runoff Depth=1.19"
Flow Length=1,100' Slope=0.0300 '/' Tc=57.5 min CN=72/0 Runoff=1.17 cfs 1.067 af

Subcatchment 6S': Basin 6 Runoff Area=1.840 ac 86.68% Impervious Runoff Depth=3.10"
Flow Length=500' Slope=0.0400 '/' Tc=10.1 min CN=75/98 Runoff=1.34 cfs 0.475 af

Subcatchment 7S': Basin 7 Runoff Area=1.990 ac 75.38% Impervious Runoff Depth=2.88"
Flow Length=460' Tc=13.1 min CN=75/98 Runoff=1.27 cfs 0.477 af

Pond 1AP: Foxhaven Rain Garden Peak Elev=373.37' Storage=45,296 cf Inflow=7.31 cfs 6.142 af
Discarded=0.02 cfs 0.079 af Primary=4.10 cfs 6.062 af Outflow=4.12 cfs 6.142 af

Pond 1CP: Detention Pipe Peak Elev=368.05' Storage=0.066 af Inflow=0.71 cfs 0.238 af
Outflow=0.22 cfs 0.238 af

Pond 1DP: Future Rain Garden Peak Elev=375.43' Storage=10,420 cf Inflow=2.14 cfs 1.311 af
Outflow=1.22 cfs 1.311 af

Pond 3P': Reconstructed Teal Rain Garden Peak Elev=386.08' Storage=8,264 cf Inflow=2.78 cfs 1.046 af
Discarded=0.10 cfs 0.240 af Primary=1.35 cfs 0.806 af Outflow=1.45 cfs 1.046 af

Pond 4P': Baxter Detention Peak Elev=405.18' Storage=57,638 cf Inflow=18.85 cfs 7.959 af
Outflow=6.62 cfs 7.959 af

Pond 7P': Vintage Detention Peak Elev=433.59' Storage=2,014 cf Inflow=1.27 cfs 0.477 af
Outflow=0.54 cfs 0.477 af

Pond FS: Flow Splitter Peak Elev=370.31' Inflow=8.14 cfs 9.424 af
Primary=4.04 cfs 4.953 af Secondary=4.10 cfs 4.471 af Outflow=8.14 cfs 9.424 af

Link 2L: Bypass Inflow=4.10 cfs 4.471 af
Primary=4.10 cfs 4.471 af

Link 3L: Developed Release Inflow=8.94 cfs 12.083 af
Primary=8.94 cfs 12.083 af

Total Runoff Area = 60.930 ac Runoff Volume = 12.402 af Average Runoff Depth = 2.44"
41.68% Pervious = 25.393 ac 58.32% Impervious = 35.537 ac

Summary for Subcatchment 1AS: Basin 1A - Phase 1

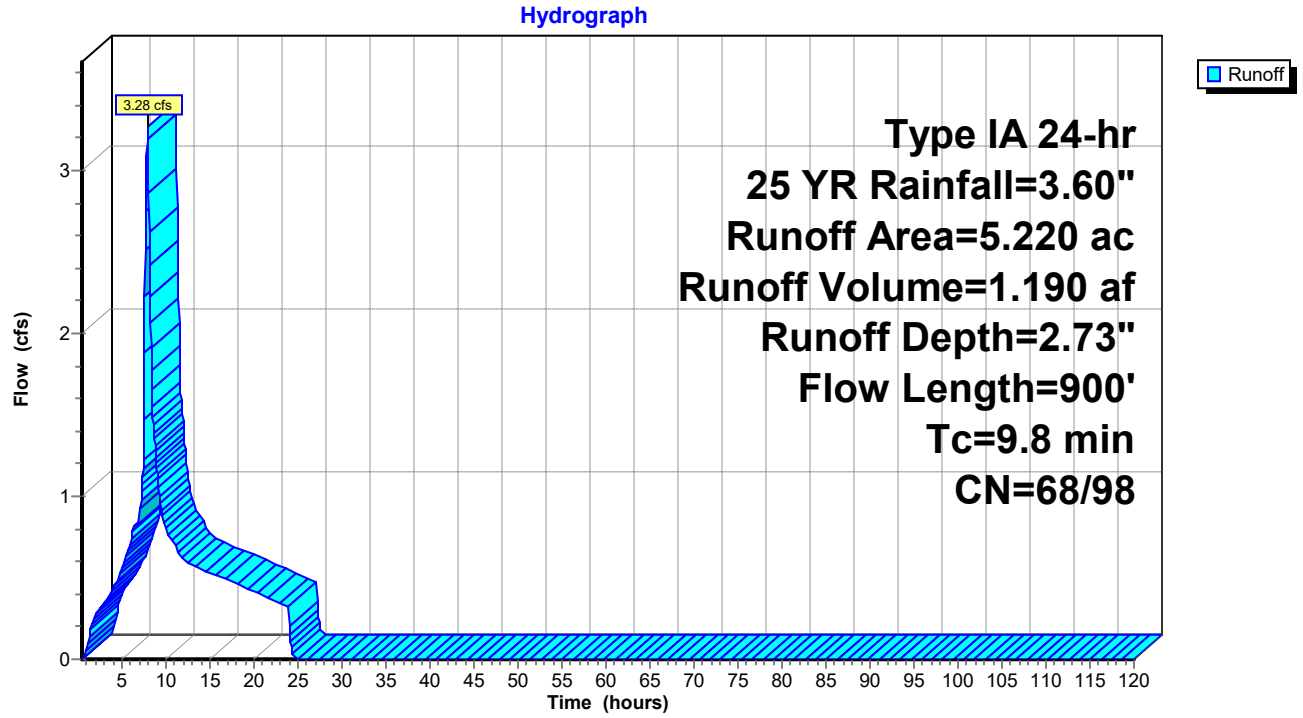
Runoff = 3.28 cfs @ 7.98 hrs, Volume= 1.190 af, Depth= 2.73"
Routed to Pond 1AP : Foxhaven Rain Garden

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	3.850	98	Paved/Roof, HSG C
	0.685	61	>75% Grass cover, Good, HSG B
	0.685	74	>75% Grass cover, Good, HSG C
	5.220	90	Weighted Average
	1.370		26.25% Pervious Area
	3.850		73.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	100	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.5	160	0.0700	5.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	640	0.0500	10.14	7.97	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
9.8	900	Total			

Subcatchment 1AS: Basin 1A - Phase 1



Summary for Subcatchment 1BS: Basin 1B - Phase 1

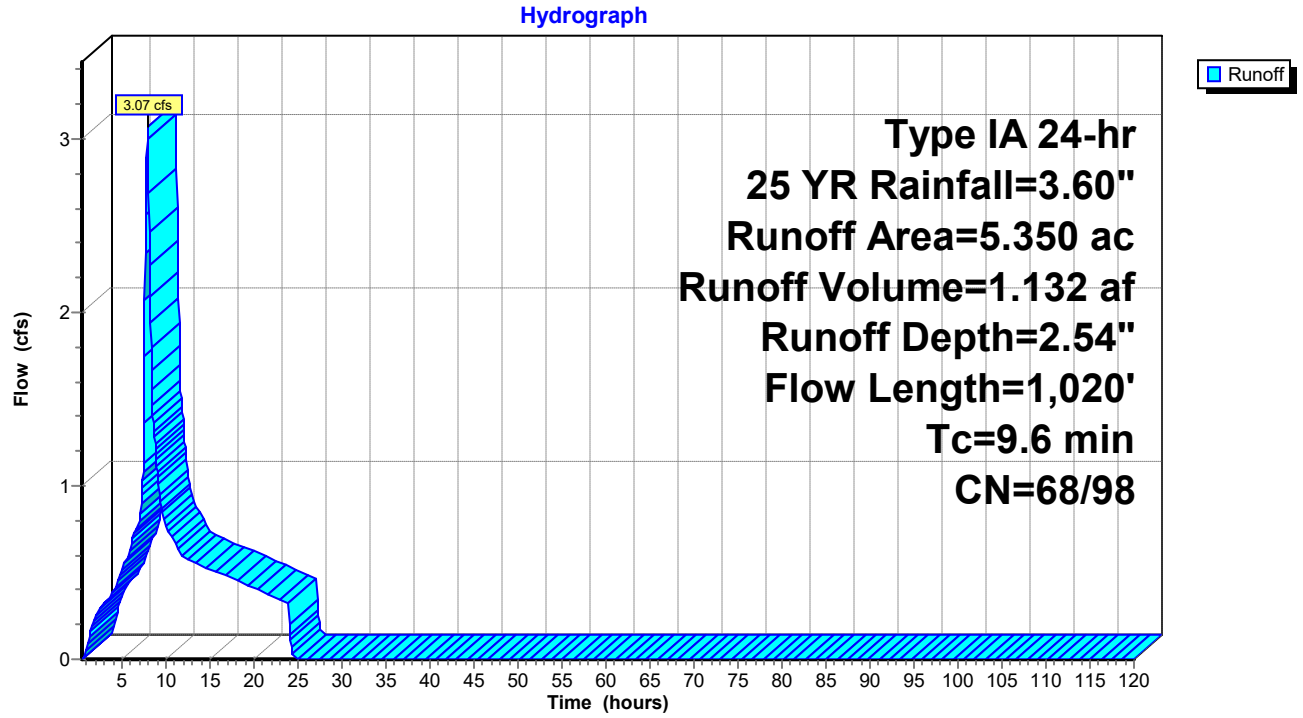
Runoff = 3.07 cfs @ 7.98 hrs, Volume= 1.132 af, Depth= 2.54"
Routed to Pond FS : Flow Splitter

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	3.510	98	Paved/Roof, HSG C
	0.920	61	>75% Grass cover, Good, HSG B
	0.920	74	>75% Grass cover, Good, HSG C
	5.350	88	Weighted Average
	1.840		34.39% Pervious Area
	3.510		65.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	60	0.0300	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
1.8	150	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	810	0.0300	12.47	39.18	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
9.6	1,020	Total			

Subcatchment 1BS: Basin 1B - Phase 1



Summary for Subcatchment 1CS: Basin 1C - Phase 1

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

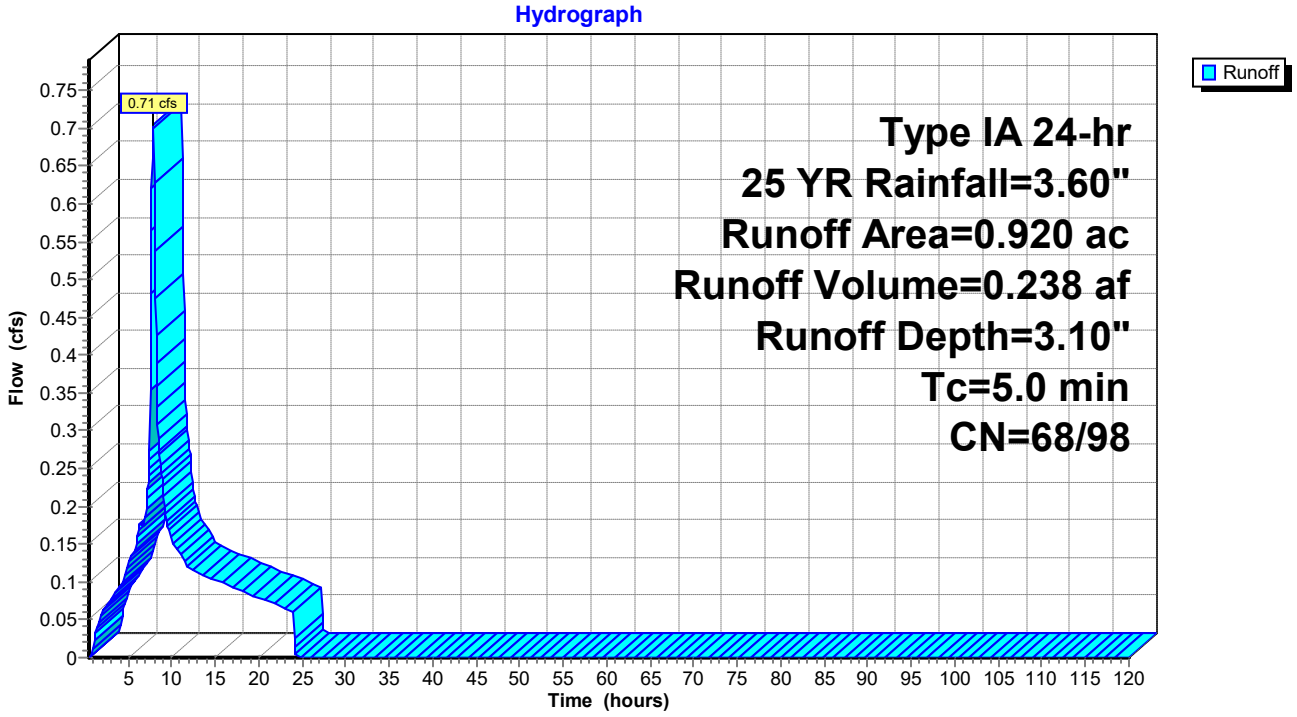
Runoff = 0.71 cfs @ 7.90 hrs, Volume= 0.238 af, Depth= 3.10"
Routed to Pond 1CP : Detention Pipe

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	0.820	98	Paved/Roof, HSG C
	0.050	61	>75% Grass cover, Good, HSG B
	0.050	74	>75% Grass cover, Good, HSG C
	0.920	95	Weighted Average
	0.100		10.87% Pervious Area
	0.820		89.13% Impervious Area

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

Subcatchment 1CS: Basin 1C - Phase 1



Summary for Subcatchment 1DS: Basin 1D - Phase 2

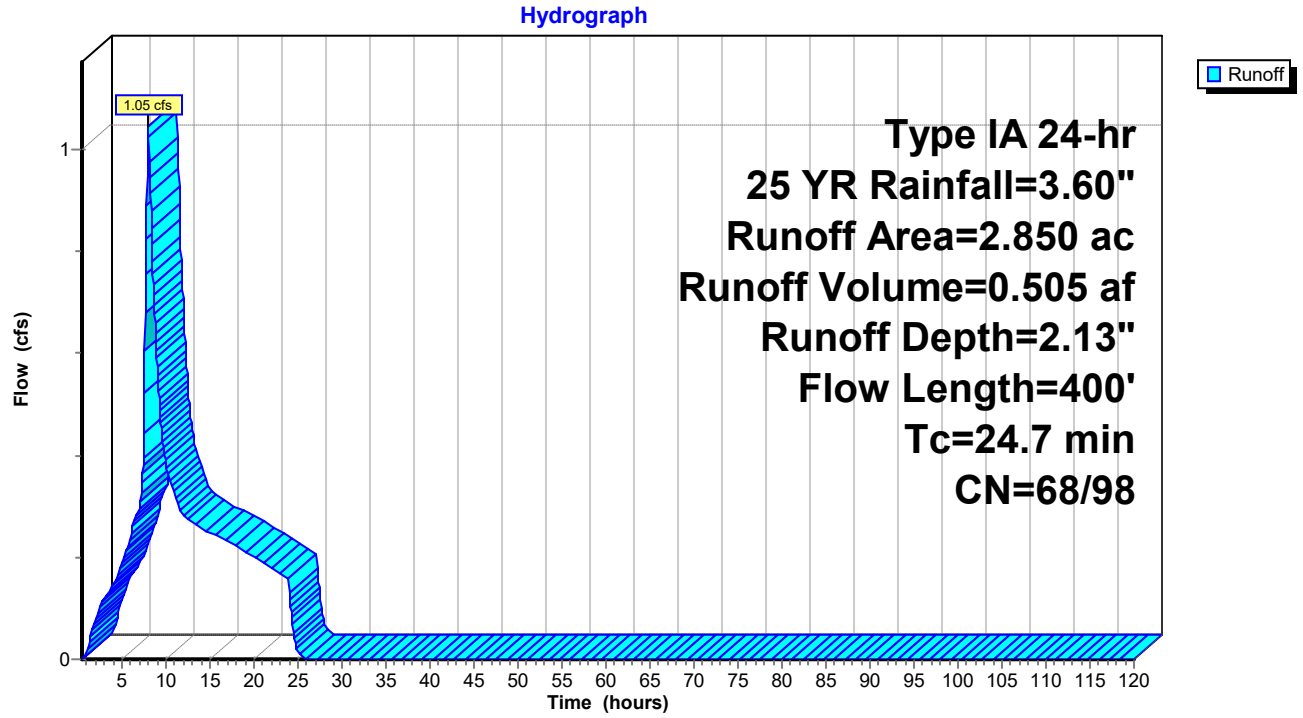
Runoff = 1.05 cfs @ 8.04 hrs, Volume= 0.505 af, Depth= 2.13"
Routed to Pond 1DP : Future Rain Garden

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	1.380	98	Paved/Roof, HSG C
	0.735	61	>75% Grass cover, Good, HSG B
	0.735	74	>75% Grass cover, Good, HSG C
	2.850	82	Weighted Average
	1.470		51.58% Pervious Area
	1.380		48.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.3	300	0.0330	0.21		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.20"
1.3	53	0.0100	0.70		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
0.1	47	0.0960	14.06	11.04	**Pipe Channel, Pipe Flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
24.7	400	Total			

Subcatchment 1DS: Basin 1D - Phase 2



Summary for Subcatchment 1ES: Basin 1E - Phase 2

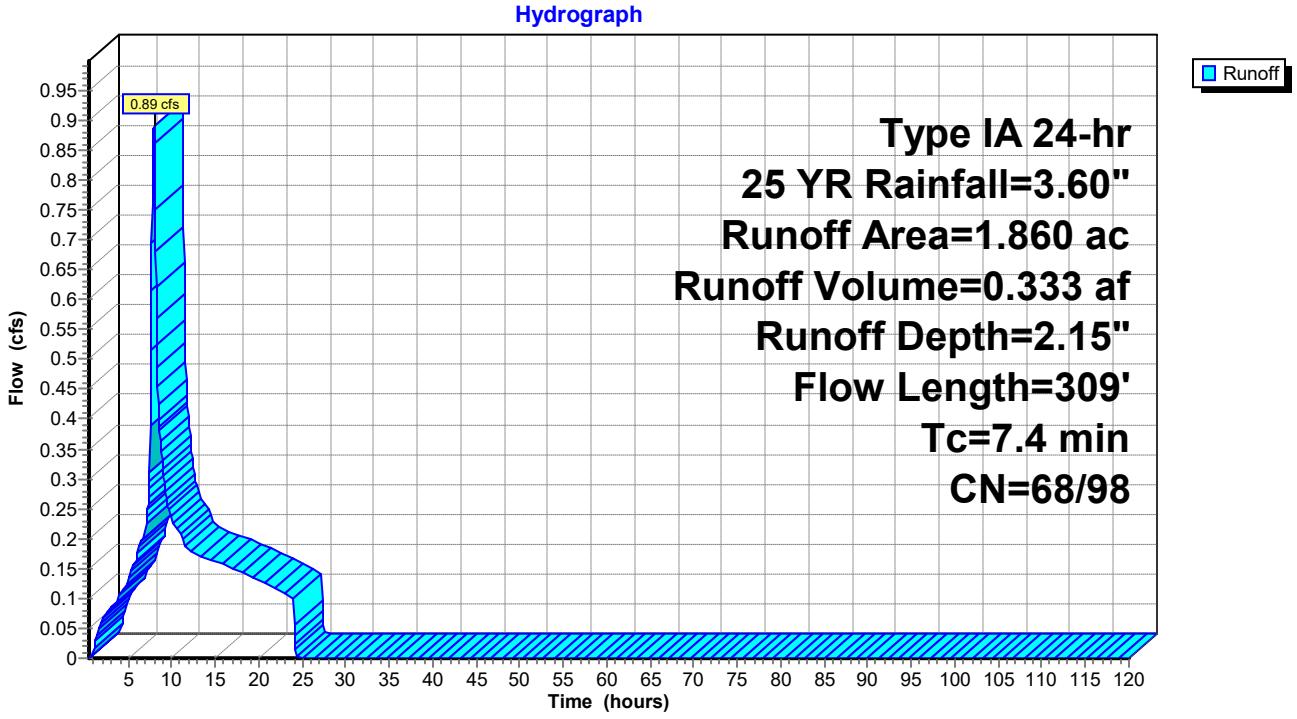
Runoff = 0.89 cfs @ 7.98 hrs, Volume= 0.333 af, Depth= 2.15"
Routed to Pond FS : Flow Splitter

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	0.920	98	Paved/Roof, HSG C
	0.470	61	>75% Grass cover, Good, HSG B
	0.470	74	>75% Grass cover, Good, HSG C
	1.860	83	Weighted Average
	0.940		50.54% Pervious Area
	0.920		49.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	97	0.0730	0.24		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.20"
0.5	212	0.0230	6.88	5.40	**Pipe Channel, Pipe Flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
7.4	309	Total			

Subcatchment 1ES: Basin 1E - Phase 2



Summary for Subcatchment 3S': Basin 3

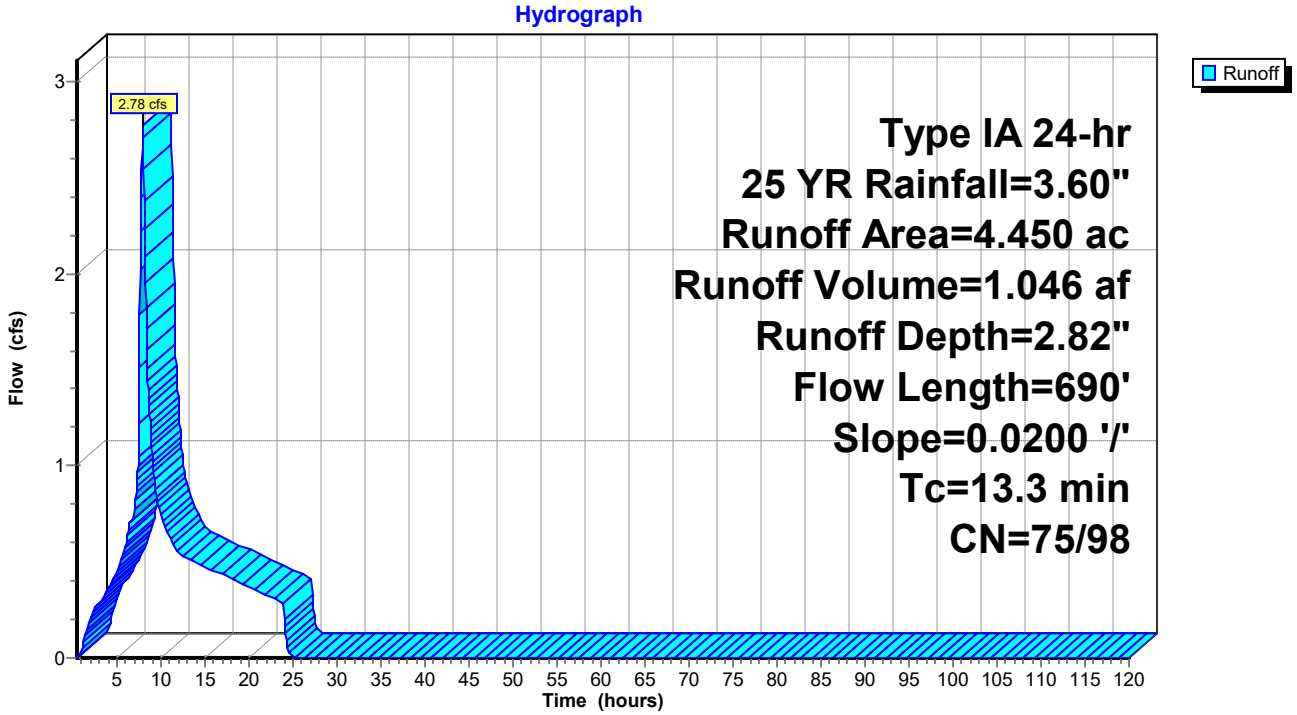
Runoff = 2.78 cfs @ 7.99 hrs, Volume= 1.046 af, Depth= 2.82"
Routed to Pond 3P' : Reconstructed Teal Rain Garden

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	0.970	98	Paved roads w/curbs & sewers, HSG C
	3.480	90	1/8 acre lots, 65% imp, HSG C
	4.450	92	Weighted Average
	1.218		27.37% Pervious Area
	3.232		72.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
1.5	590	0.0200	6.42	5.04	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.3	690	Total			

Subcatchment 3S': Basin 3



Summary for Subcatchment 4S': Basin 4

[47] Hint: Peak is 226% of capacity of segment #3

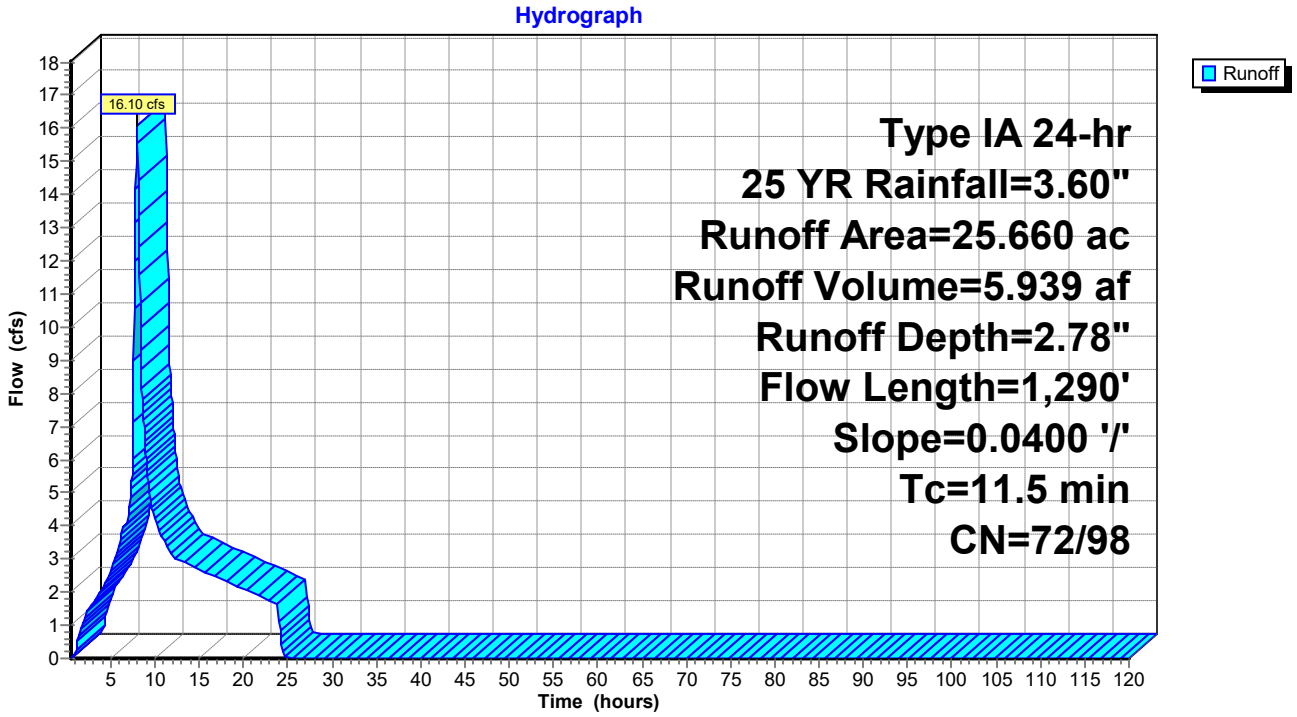
Runoff = 16.10 cfs @ 7.99 hrs, Volume= 5.939 af, Depth= 2.78"
Routed to Pond 4P' : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	5.860	98	Paved roads w/curbs & sewers, HSG C
	4.950	85	1/8 acre lots, 65% imp, HSG B
	14.850	90	1/8 acre lots, 65% imp, HSG C
	25.660	91	Weighted Average
	6.930		27.01% Pervious Area
	18.730		72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	1,160	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
11.5	1,290	Total			

Subcatchment 4S': Basin 4



Summary for Subcatchment 5S': Basin 5

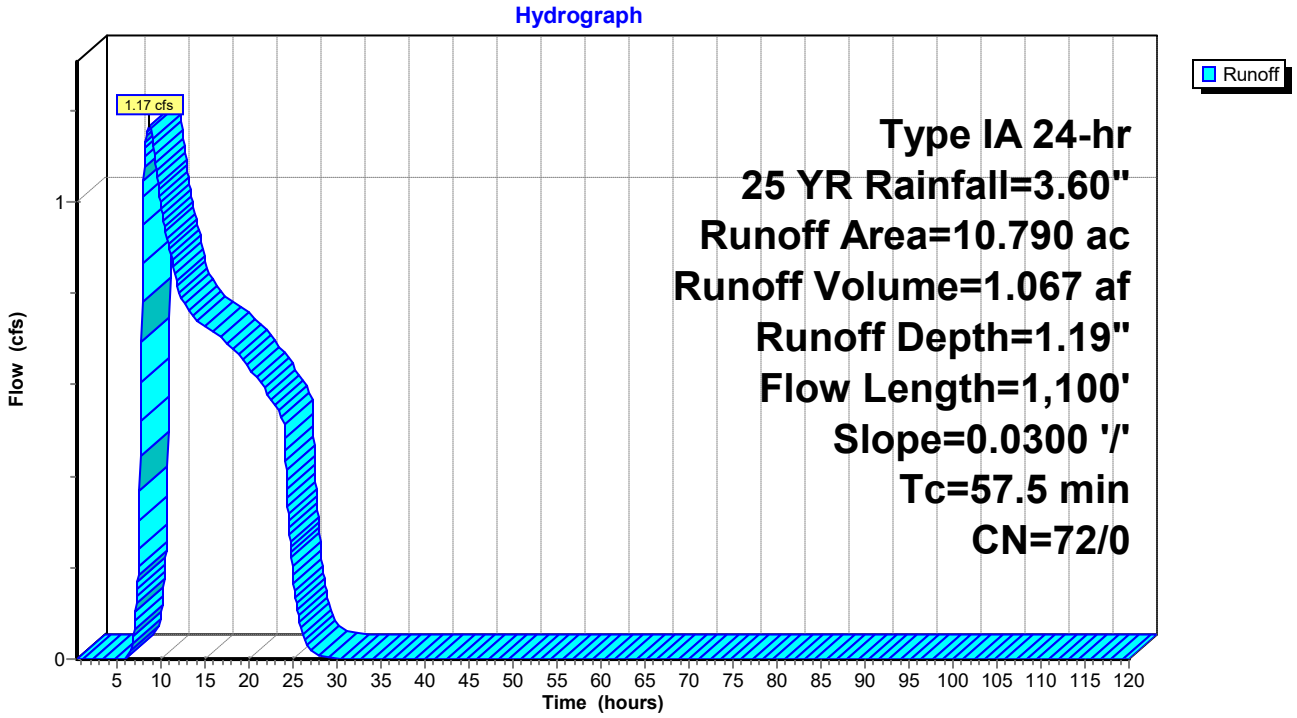
Runoff = 1.17 cfs @ 8.78 hrs, Volume= 1.067 af, Depth= 1.19"
Routed to Pond 4P' : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

Area (ac)	CN	Description
10.790	72	Woods/grass comb., Good, HSG C
10.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	300	0.0300	0.12		**Sheet Flow, Pre Developed** n= 0.300 P2= 2.20"
15.4	800	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
57.5	1,100	Total			

Subcatchment 5S': Basin 5



Summary for Subcatchment 6S': Basin 6

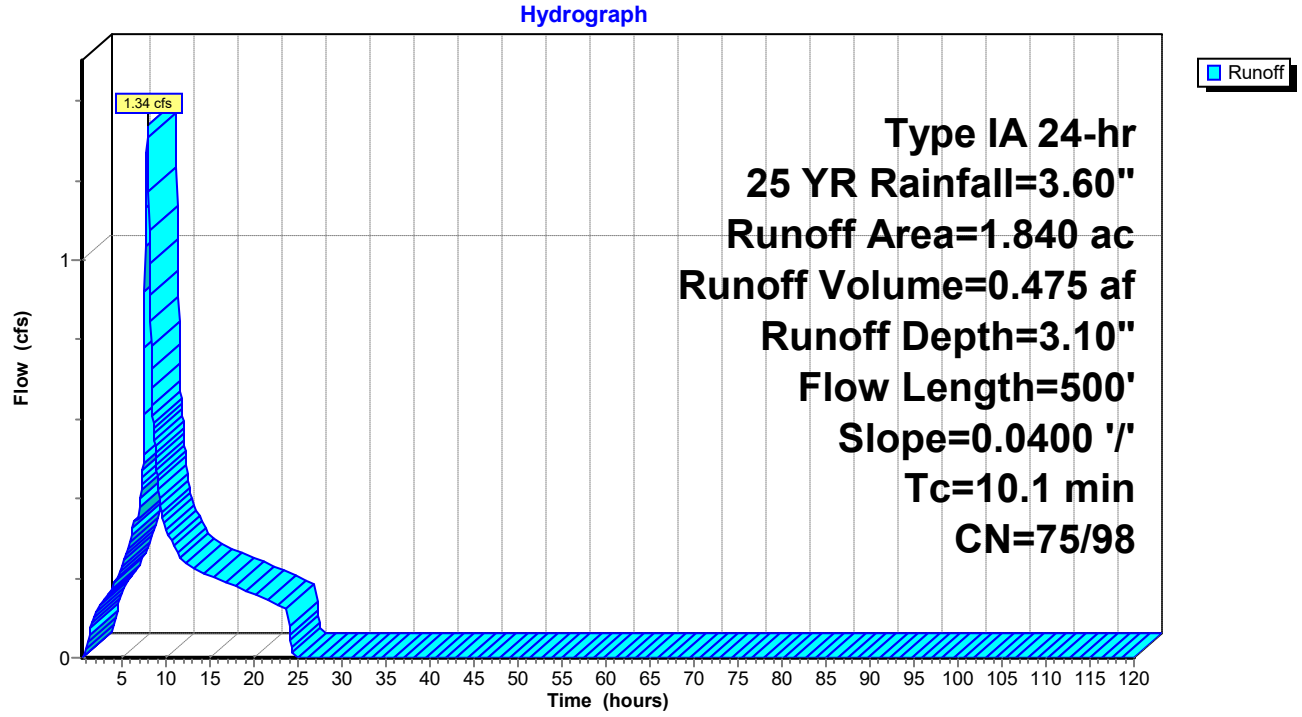
Runoff = 1.34 cfs @ 7.98 hrs, Volume= 0.475 af, Depth= 3.10"
Routed to Pond 4P' : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	1.140	98	Paved roads w/curbs & sewers, HSG C
	0.700	90	1/8 acre lots, 65% imp, HSG C
	1.840	95	Weighted Average
	0.245		13.32% Pervious Area
	1.595		86.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	370	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
10.1	500	Total			

Subcatchment 6S': Basin 6



Summary for Subcatchment 7S': Basin 7

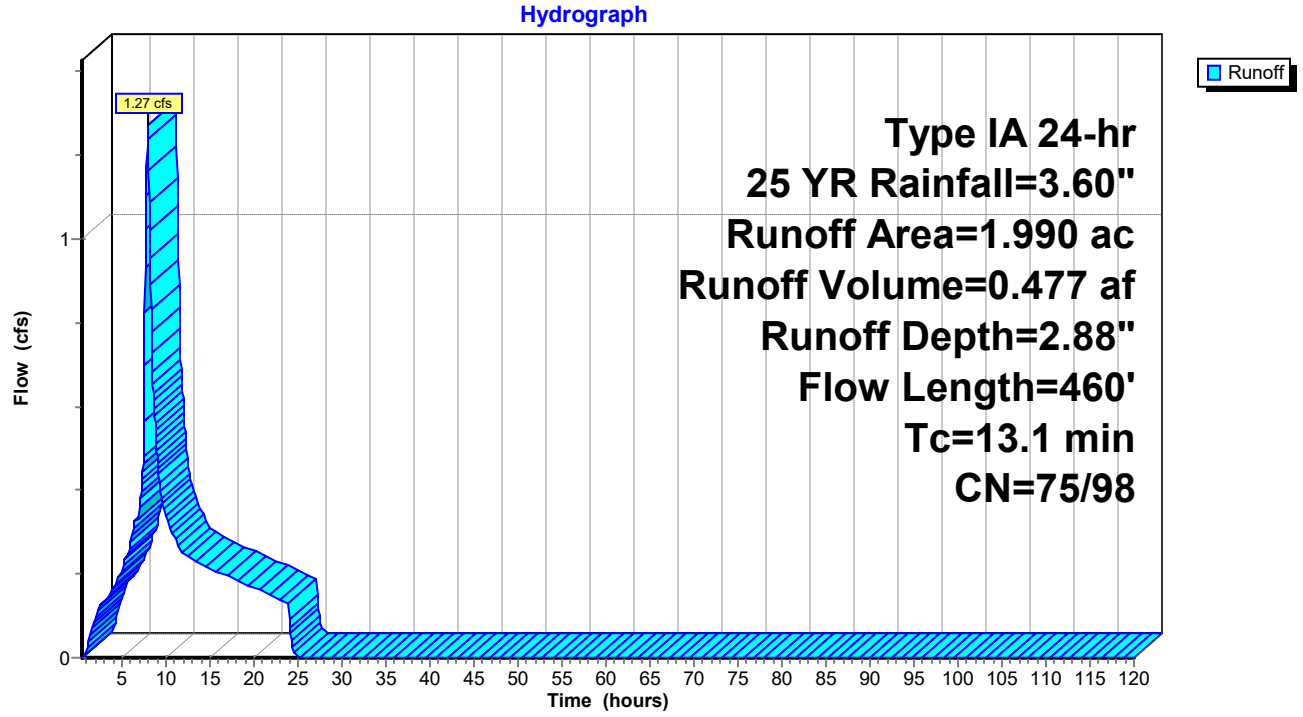
Runoff = 1.27 cfs @ 7.99 hrs, Volume= 0.477 af, Depth= 2.88"
Routed to Pond 7P' : Vintage Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 25 YR Rainfall=3.60"

	Area (ac)	CN	Description
*	0.590	98	Paved roads w/curbs & sewers, HSG C
	1.400	90	1/8 acre lots, 65% imp, HSG C
	1.990	92	Weighted Average
	0.490		24.62% Pervious Area
	1.500		75.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	320	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.1	460	Total			

Subcatchment 7S': Basin 7



Summary for Pond 1AP: Foxhaven Rain Garden

[81] Warning: Exceeded Pond FS by 3.14' @ 11.00 hrs

Inflow Area = 52.710 ac, 57.11% Impervious, Inflow Depth > 1.40" for 25 YR event
Inflow = 7.31 cfs @ 7.99 hrs, Volume= 6.142 af
Outflow = 4.12 cfs @ 10.57 hrs, Volume= 6.142 af, Atten= 44%, Lag= 155.0 min
Discarded = 0.02 cfs @ 10.57 hrs, Volume= 0.079 af
Primary = 4.10 cfs @ 10.57 hrs, Volume= 6.062 af
Routed to Link 3L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 373.37' @ 10.57 hrs Surf.Area= 10,776 sf Storage= 45,296 cf

Plug-Flow detention time= 204.2 min calculated for 6.142 af (100% of inflow)
Center-of-Mass det. time= 203.3 min (993.5 - 790.1)

Volume	Invert	Avail.Storage	Storage Description
#1	365.25'	64,461 cf	**Detention Basin (Prismatic)** Listed below (Recalc)

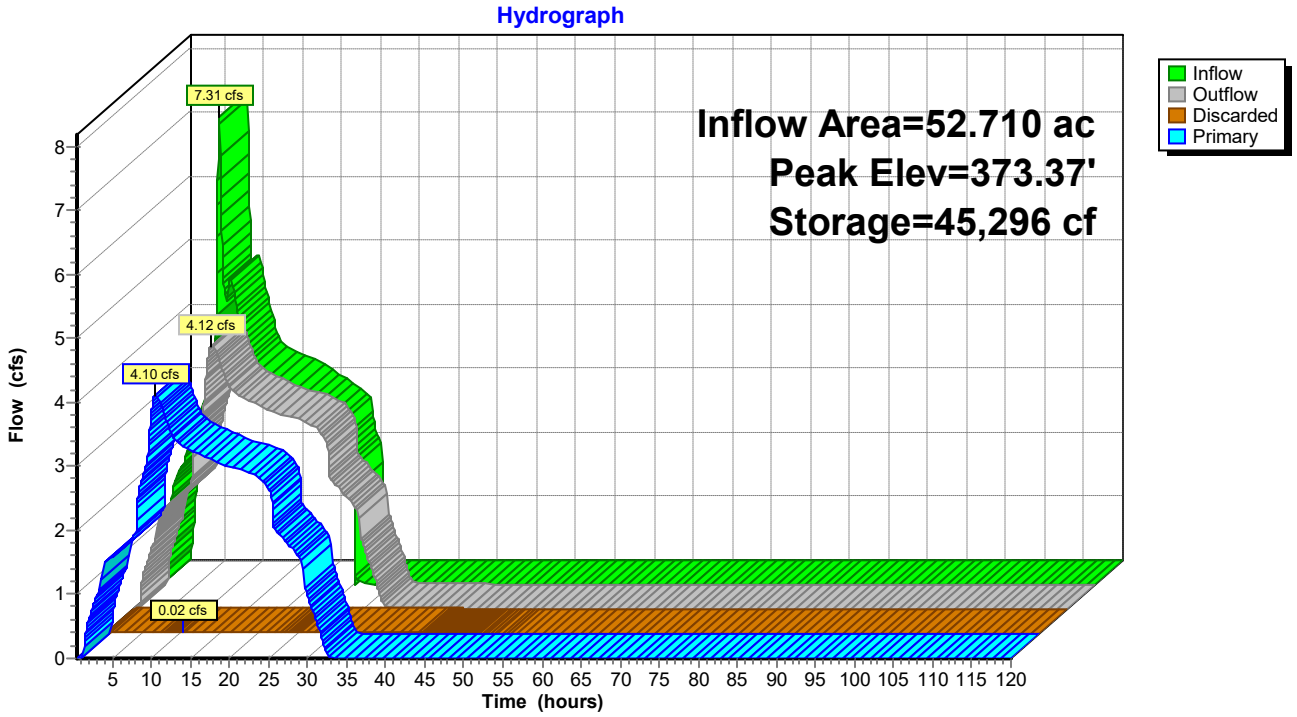
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
365.25	8,560	0.0	0	0
367.50	8,560	40.0	7,704	7,704
369.00	7,360	0.1	12	7,716
370.00	7,860	100.0	7,610	15,326
371.00	8,390	100.0	8,125	23,451
372.00	8,560	100.0	8,475	31,926
373.00	10,330	100.0	9,445	41,371
374.00	11,530	100.0	10,930	52,301
375.00	12,790	100.0	12,160	64,461

Device	Routing	Invert	Outlet Devices
#1	Discarded	365.25'	**0.100 in/hr Exfiltration over Horizontal area**
#2	Primary	365.50'	**5.5" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	372.00'	**5.5" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	373.10'	**2.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#5	Primary	374.00'	**6.0' long x 0.50' rise O/F Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.02 cfs @ 10.57 hrs HW=373.37' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=4.09 cfs @ 10.57 hrs HW=373.37' (Free Discharge)
├**2=Orifice** (Orifice Controls 2.23 cfs @ 13.51 fps)
├**3=Orifice** (Orifice Controls 0.93 cfs @ 5.64 fps)
├**4=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.93 cfs @ 1.71 fps)
└**5=O/F Weir** (Controls 0.00 cfs)

Pond 1AP: Foxhaven Rain Garden



Summary for Pond 1CP: Detention Pipe

Inflow Area = 0.920 ac, 89.13% Impervious, Inflow Depth = 3.10" for 25 YR event
Inflow = 0.71 cfs @ 7.90 hrs, Volume= 0.238 af
Outflow = 0.22 cfs @ 9.04 hrs, Volume= 0.238 af, Atten= 69%, Lag= 68.1 min
Primary = 0.22 cfs @ 9.04 hrs, Volume= 0.238 af
Routed to Link 3L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 368.05' @ 9.04 hrs Surf.Area= 0.011 ac Storage= 0.066 af

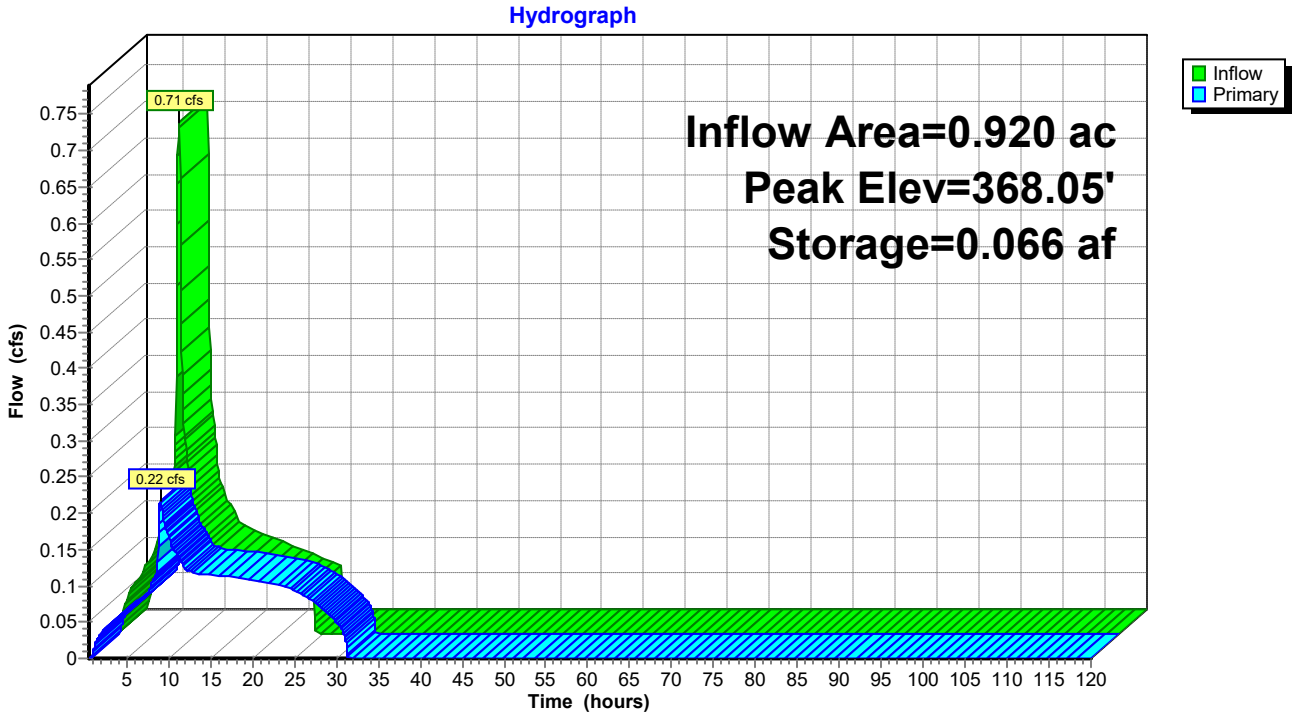
Plug-Flow detention time= 288.5 min calculated for 0.238 af (100% of inflow)
Center-of-Mass det. time= 288.5 min (959.5 - 670.9)

Volume	Invert	Avail.Storage	Storage Description
#1	364.90'	0.046 af	**36.0" Round 36" Pipe Storage** L= 285.0' S= 0.0010 '/'
#2	366.15'	0.020 af	**24.0" Round 24" Pipe Storage** L= 278.0' S= 0.0010 '/'
#3	364.90'	0.004 af	**5.00'D x 8.00'H Vertical Cone/Cylinder**
		0.070 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	364.90'	**1.6" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	367.90'	**6.0" W x 4.0" H Vert. Weir Cut** C= 0.600 Limited to weir flow at low heads
#3	Primary	368.20'	**12.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.22 cfs @ 9.04 hrs HW=368.05' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.12 cfs @ 8.55 fps)
- **2=Weir Cut** (Orifice Controls 0.10 cfs @ 1.26 fps)
- **3=O/F Riser** (Controls 0.00 cfs)

Pond 1CP: Detention Pipe



Summary for Pond 1DP: Future Rain Garden

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 7.300 ac, 63.18% Impervious, Inflow Depth = 2.15" for 25 YR event
Inflow = 2.14 cfs @ 8.44 hrs, Volume= 1.311 af
Outflow = 1.22 cfs @ 10.72 hrs, Volume= 1.311 af, Atten= 43%, Lag= 136.9 min
Primary = 1.22 cfs @ 10.72 hrs, Volume= 1.311 af
Routed to Link 3L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 375.43' @ 10.72 hrs Surf.Area= 3,248 sf Storage= 10,420 cf

Plug-Flow detention time= 118.1 min calculated for 1.310 af (100% of inflow)
Center-of-Mass det. time= 118.2 min (888.6 - 770.4)

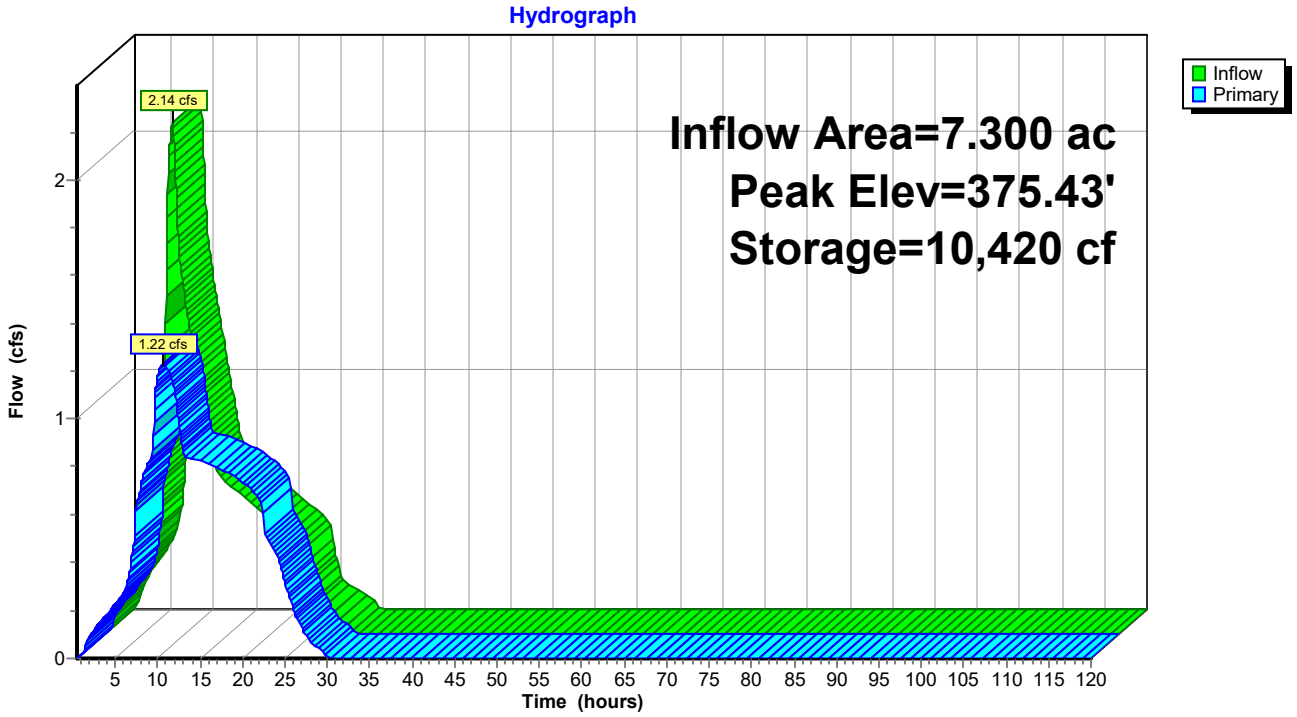
Volume	Invert	Avail.Storage	Storage Description
#1	365.45'	16,283 cf	**Detention Basin (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
365.45	1,280	0.0	0	0
369.45	1,280	40.0	2,048	2,048
371.20	849	0.1	2	2,050
372.20	1,280	100.0	1,065	3,114
377.00	4,207	100.0	13,169	16,283

Device	Routing	Invert	Outlet Devices
#1	Primary	365.40'	**3.0" Horiz. 1/2 2-yr Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	367.40'	**1.2" Vert. 10-yr Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	375.11'	**5.0" Horiz. 25-yr Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	375.43'	**5.0" Horiz. O/F** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.22 cfs @ 10.72 hrs HW=375.43' (Free Discharge)
- **1=1/2 2-yr Orifice** (Orifice Controls 0.75 cfs @ 15.25 fps)
- **2=10-yr Orifice** (Orifice Controls 0.11 cfs @ 13.60 fps)
- **3=25-yr Orifice** (Orifice Controls 0.37 cfs @ 2.71 fps)
- **4=O/F** (Controls 0.00 cfs)

Pond 1DP: Future Rain Garden



Summary for Pond 3P': Reconstructed Teal Rain Garden

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 4.450 ac, 72.63% Impervious, Inflow Depth = 2.82" for 25 YR event
Inflow = 2.78 cfs @ 7.99 hrs, Volume= 1.046 af
Outflow = 1.45 cfs @ 8.55 hrs, Volume= 1.046 af, Atten= 48%, Lag= 33.1 min
Discarded = 0.10 cfs @ 1.75 hrs, Volume= 0.240 af
Primary = 1.35 cfs @ 8.55 hrs, Volume= 0.806 af
Routed to Pond 1DP : Future Rain Garden

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 386.08' @ 8.55 hrs Surf.Area= 5,512 sf Storage= 8,264 cf

Plug-Flow detention time= 126.4 min calculated for 1.046 af (100% of inflow)
Center-of-Mass det. time= 126.4 min (821.8 - 695.4)

Volume	Invert	Avail.Storage	Storage Description
#1	382.75'	13,836 cf	**Pond (Prismatic)** Listed below (Recalc)

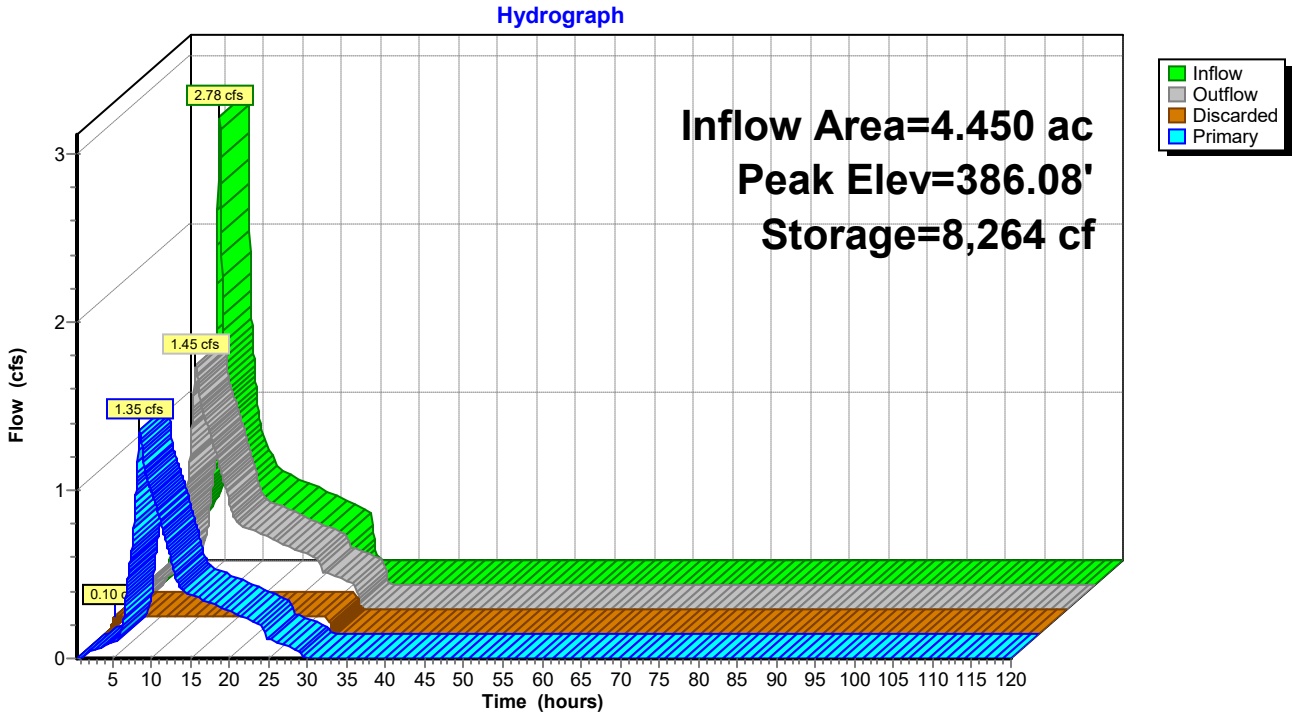
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
382.75	5,956	0.0	0	0
384.00	5,956	40.0	2,978	2,978
385.00	4,303	0.1	5	2,983
387.00	6,550	100.0	10,853	13,836

Device	Routing	Invert	Outlet Devices
#1	Discarded	382.75'	**0.750 in/hr Exfiltration over Horizontal area**
#2	Primary	382.70'	**2.0" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	385.10'	**6.0" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	386.00'	**12.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.10 cfs @ 1.75 hrs HW=382.79' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=1.34 cfs @ 8.55 hrs HW=386.08' (Free Discharge)
├**2=Orifice** (Orifice Controls 0.19 cfs @ 8.85 fps)
├**3=Orifice** (Orifice Controls 0.93 cfs @ 4.76 fps)
└**4=O/F Riser** (Weir Controls 0.22 cfs @ 0.90 fps)

Pond 3P': Reconstructed Teal Rain Garden



Summary for Pond 4P': Baxter Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 40.280 ac, 54.18% Impervious, Inflow Depth = 2.37" for 25 YR event
Inflow = 18.85 cfs @ 7.99 hrs, Volume= 7.959 af
Outflow = 6.62 cfs @ 9.49 hrs, Volume= 7.959 af, Atten= 65%, Lag= 89.6 min
Primary = 6.62 cfs @ 9.49 hrs, Volume= 7.959 af
Routed to Pond FS : Flow Splitter

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 405.18' @ 9.49 hrs Surf.Area= 20,913 sf Storage= 57,638 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 119.9 min (842.6 - 722.7)

Volume	Invert	Avail.Storage	Storage Description
#1	401.00'	46,475 cf	**West Pond (Prismatic)** Listed below (Recalc)
#2	401.00'	29,850 cf	**East Pond (Prismatic)** Listed below (Recalc)
		76,325 cf	Total Available Storage

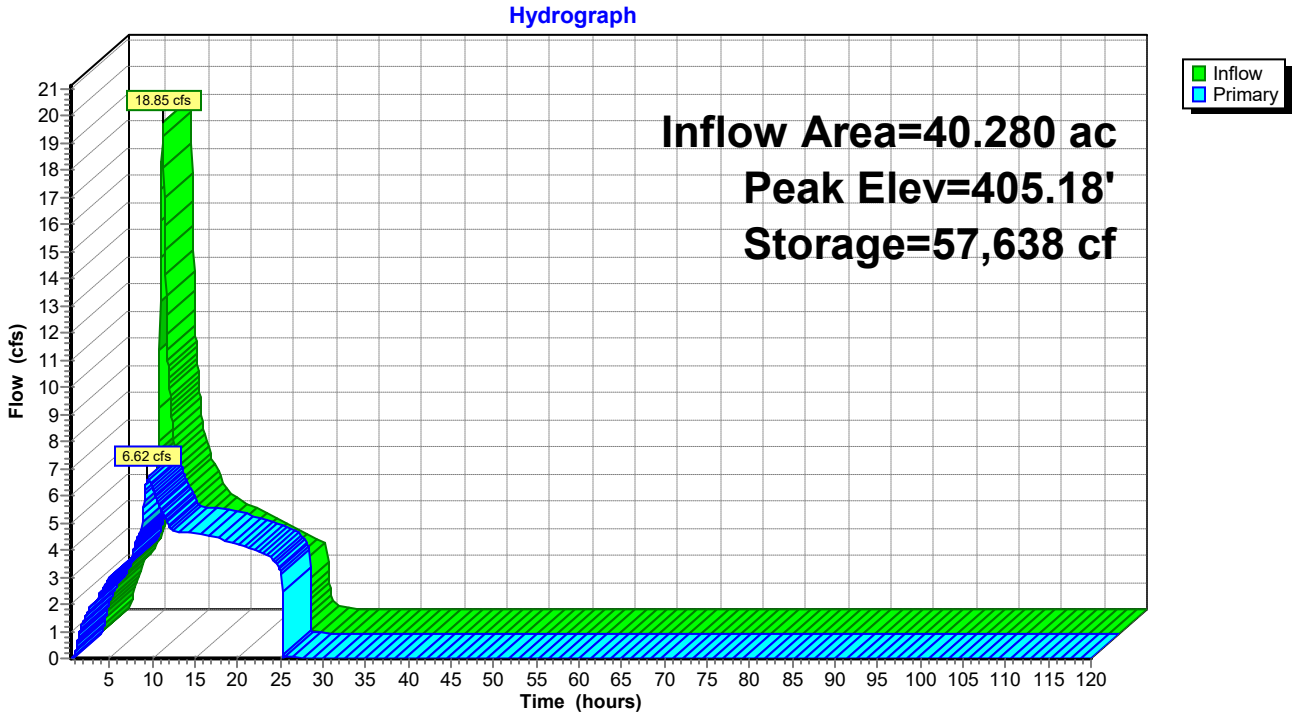
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	2,250	0	0
402.00	7,140	4,695	4,695
403.00	8,720	7,930	12,625
404.00	10,340	9,530	22,155
405.00	12,000	11,170	33,325
406.00	14,300	13,150	46,475

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	1,820	0	0
402.00	3,960	2,890	2,890
403.00	5,190	4,575	7,465
404.00	6,560	5,875	13,340
405.00	8,160	7,360	20,700
406.00	10,140	9,150	29,850

Device	Routing	Invert	Outlet Devices
#1	Primary	398.29'	**8.3" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	405.00'	**24.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads
#3	Primary	405.02'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=6.61 cfs @ 9.49 hrs HW=405.18' (Free Discharge)
- **1=Orifice** (Orifice Controls 4.75 cfs @ 12.63 fps)
- **2=O/F Riser** (Weir Controls 1.51 cfs @ 1.37 fps)
- **3=Overflow CB** (Weir Controls 0.34 cfs @ 1.11 fps)

Pond 4P': Baxter Detention



Summary for Pond 7P': Vintage Detention

[44] Hint: Outlet device #1 is below defined storage
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=12)

Inflow Area = 1.990 ac, 75.38% Impervious, Inflow Depth = 2.88" for 25 YR event
Inflow = 1.27 cfs @ 7.99 hrs, Volume= 0.477 af
Outflow = 0.54 cfs @ 8.85 hrs, Volume= 0.477 af, Atten= 57%, Lag= 51.4 min
Primary = 0.54 cfs @ 8.85 hrs, Volume= 0.477 af
Routed to Pond 4P' : Baxter Detention

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 433.59' @ 8.85 hrs Surf.Area= 2,003 sf Storage= 2,014 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 16.7 min (709.1 - 692.4)

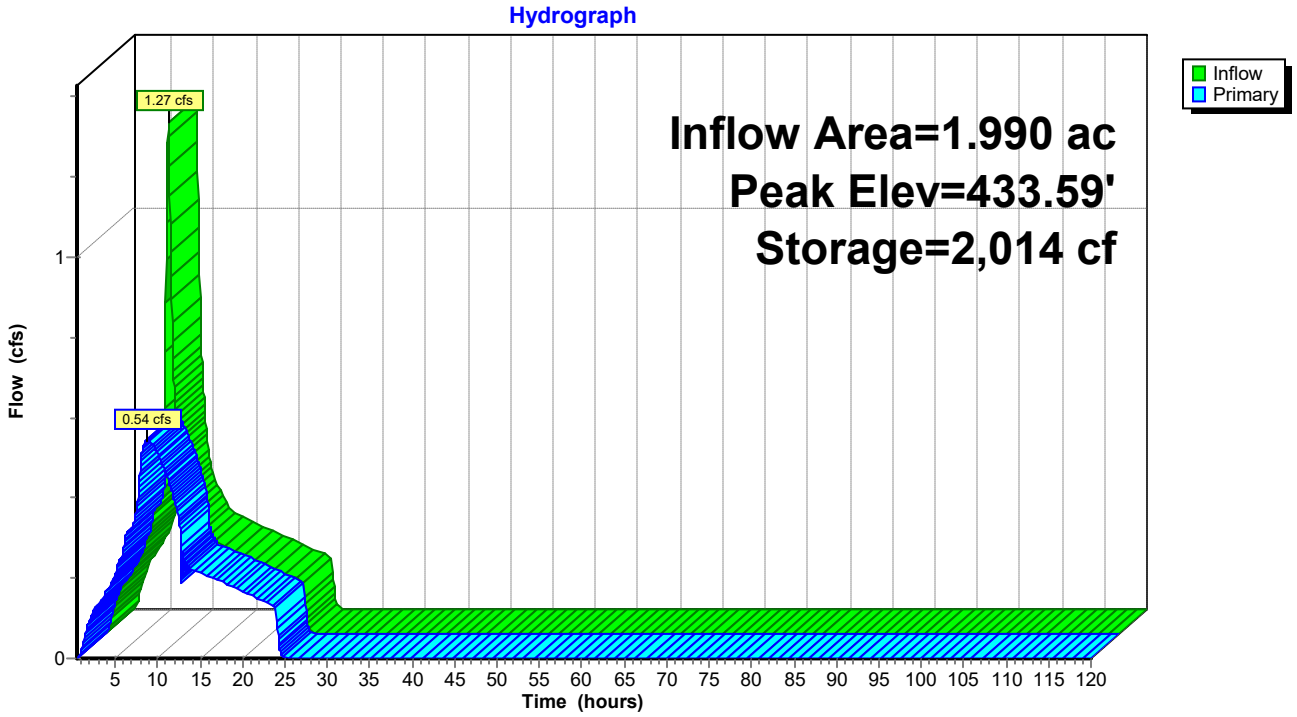
Volume	Invert	Avail.Storage	Storage Description
#1	432.00'	8,940 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
432.00	0	0	0
432.50	1,160	290	290
434.00	2,320	2,610	2,900
436.00	3,720	6,040	8,940

Device	Routing	Invert	Outlet Devices
#1	Primary	431.31'	**3.7" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	435.00'	**2.0' long x 0.5' breadth Overflow CB**
			Head (feet) 0.20 0.40 0.60 0.80 1.00
			Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.54 cfs @ 8.85 hrs HW=433.59' (Free Discharge)
└**1=Orifice** (Orifice Controls 0.54 cfs @ 7.27 fps)
└**2=Overflow CB** (Controls 0.00 cfs)

Pond 7P': Vintage Detention



Summary for Pond FS: Flow Splitter

[57] Hint: Peaked at 370.31' (Flood elevation advised)

Inflow Area = 47.490 ac, 55.29% Impervious, Inflow Depth = 2.38" for 25 YR event
Inflow = 8.14 cfs @ 8.00 hrs, Volume= 9.424 af
Outflow = 8.14 cfs @ 8.00 hrs, Volume= 9.424 af, Atten= 0%, Lag= 0.0 min
Primary = 4.04 cfs @ 8.00 hrs, Volume= 4.953 af
Routed to Pond 1AP : Foxhaven Rain Garden
Secondary = 4.10 cfs @ 8.00 hrs, Volume= 4.471 af
Routed to Link 2L : Bypass

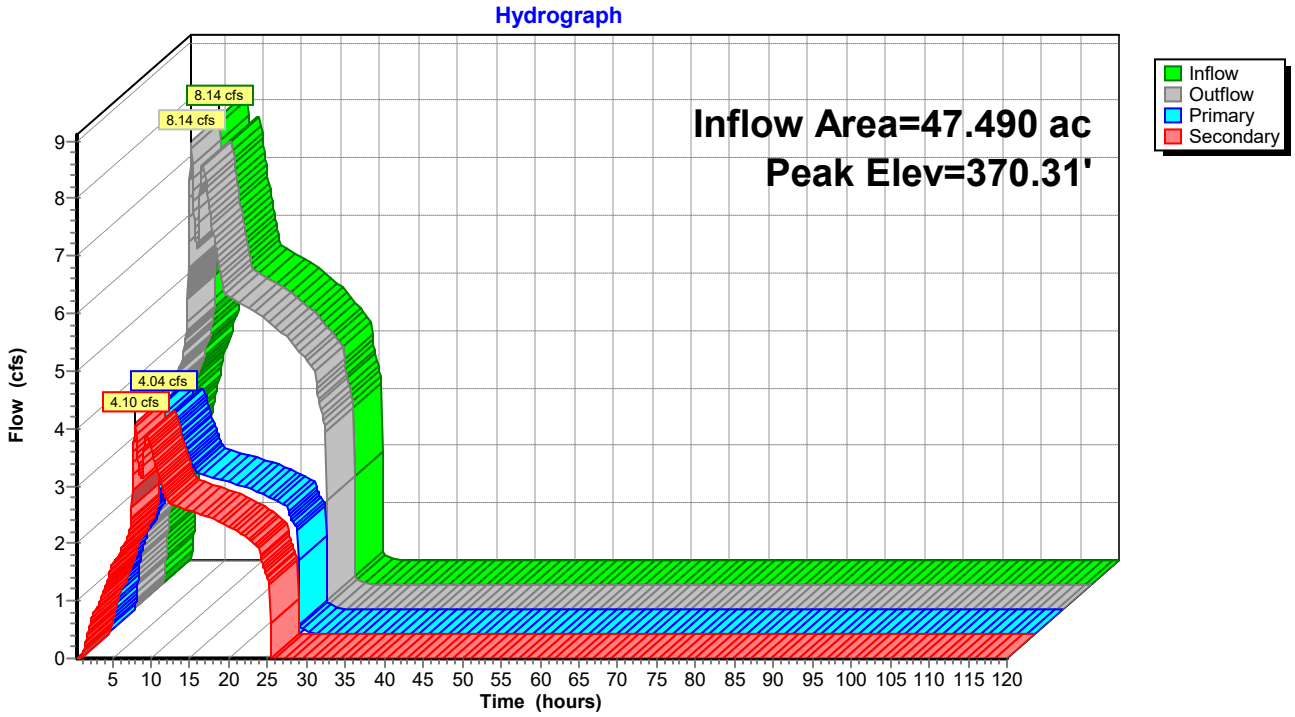
Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 370.31' @ 8.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	369.50'	**1.5' long x 0.60' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#2	Secondary	369.75'	**3.0' long x 1.20' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#3	Primary	370.10'	**3.0' long x 0.70' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=4.03 cfs @ 8.00 hrs HW=370.31' (Free Discharge)
└**1=Sharp-Crested Vee/Trap Weir** (Orifice Controls 3.10 cfs @ 3.45 fps)
└**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.93 cfs @ 1.49 fps)

Secondary OutFlow Max=4.09 cfs @ 8.00 hrs HW=370.31' (Free Discharge)
└**2=Sharp-Crested Vee/Trap Weir** (Weir Controls 4.09 cfs @ 2.45 fps)

Pond FS: Flow Splitter

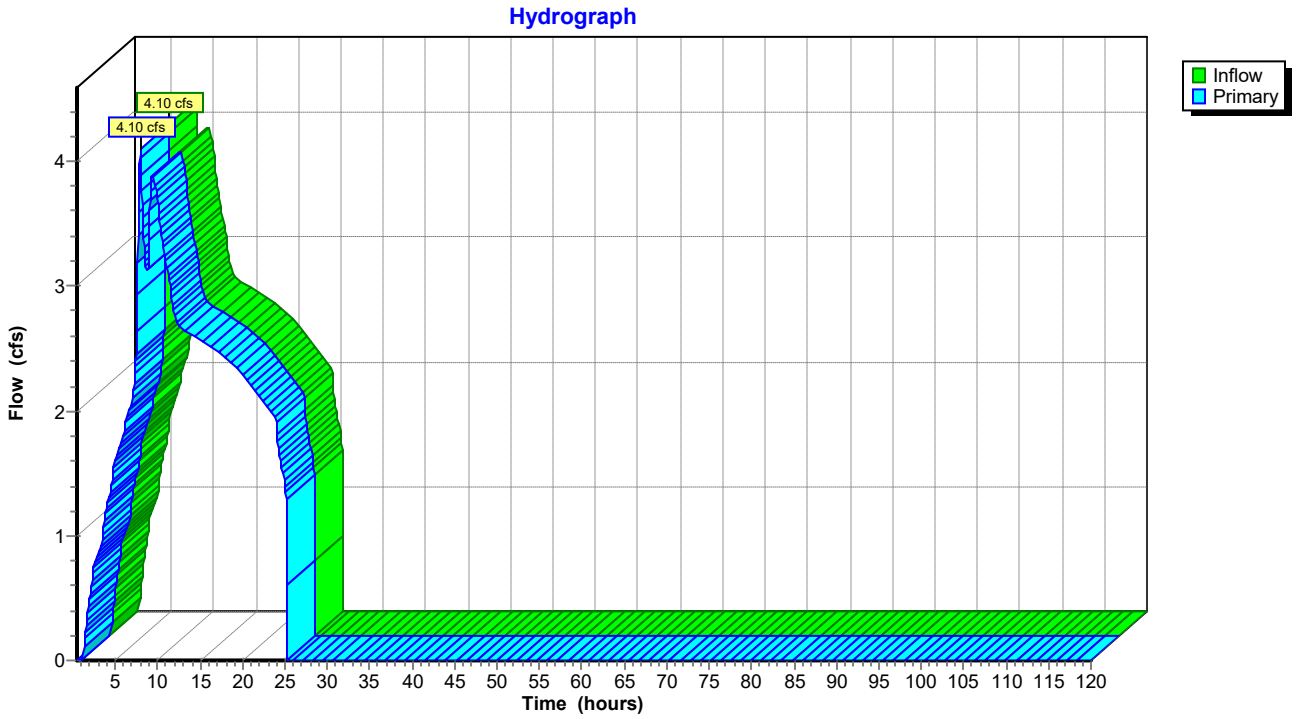


Summary for Link 2L: Bypass

Inflow = 4.10 cfs @ 8.00 hrs, Volume= 4.471 af
Primary = 4.10 cfs @ 8.00 hrs, Volume= 4.471 af, Atten= 0%, Lag= 0.0 min
Routed to Link 3L : Developed Release

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 2L: Bypass

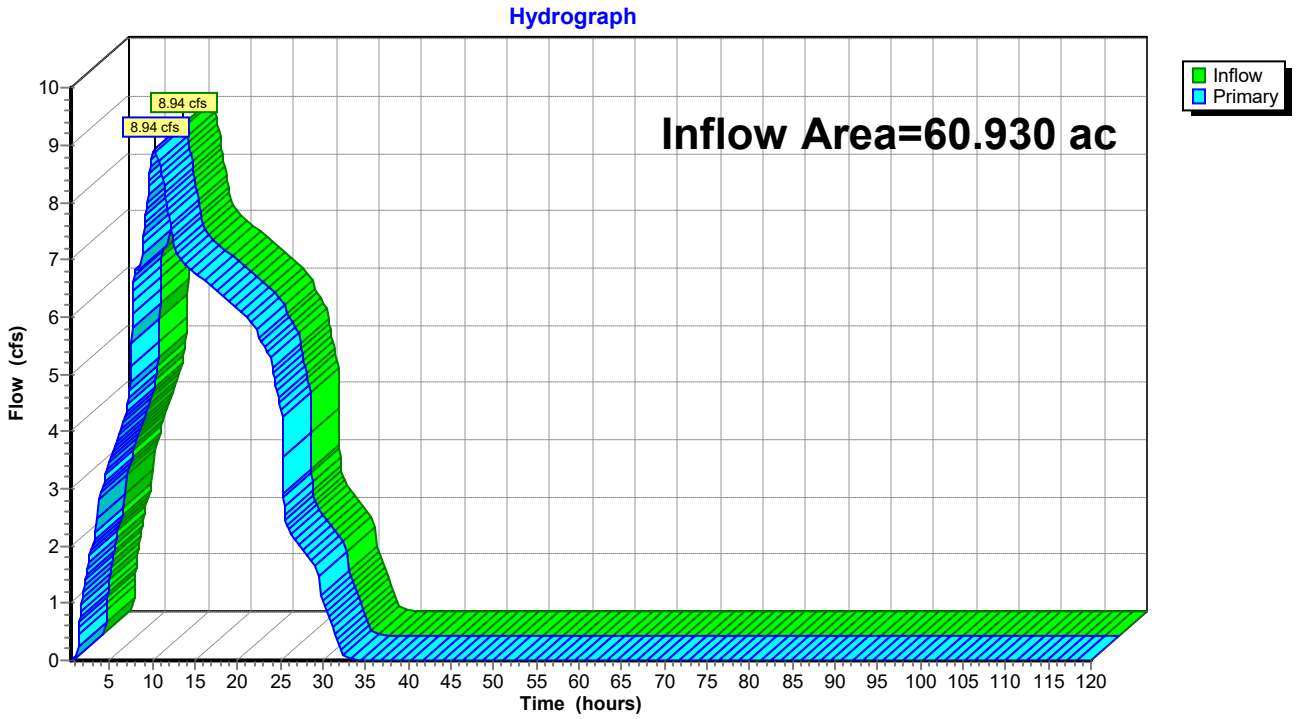


Summary for Link 3L: Developed Release

Inflow Area = 60.930 ac, 58.32% Impervious, Inflow Depth = 2.38" for 25 YR event
Inflow = 8.94 cfs @ 10.23 hrs, Volume= 12.083 af
Primary = 8.94 cfs @ 10.23 hrs, Volume= 12.083 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 3L: Developed Release



Time span=0.50-120.00 hrs, dt=0.05 hrs, 2391 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind method - Pond routing by Stor-Ind method

Subcatchment 1AS: Basin 1A - Phase 1 Runoff Area=5.220 ac 73.75% Impervious Runoff Depth>3.46"
Flow Length=900' Tc=9.8 min CN=68/98 Runoff=4.15 cfs 1.503 af

Subcatchment 1BS: Basin 1B - Phase 1 Runoff Area=5.350 ac 65.61% Impervious Runoff Depth>3.24"
Flow Length=1,020' Tc=9.6 min CN=68/98 Runoff=3.95 cfs 1.443 af

Subcatchment 1CS: Basin 1C - Phase 1 Runoff Area=0.920 ac 89.13% Impervious Runoff Depth>3.87"
Tc=5.0 min CN=68/98 Runoff=0.88 cfs 0.297 af

Subcatchment 1DS: Basin 1D - Phase 2 Runoff Area=2.850 ac 48.42% Impervious Runoff Depth>2.77"
Flow Length=400' Tc=24.7 min CN=68/98 Runoff=1.39 cfs 0.658 af

Subcatchment 1ES: Basin 1E - Phase 2 Runoff Area=1.860 ac 49.46% Impervious Runoff Depth>2.80"
Flow Length=309' Tc=7.4 min CN=68/98 Runoff=1.18 cfs 0.434 af

Subcatchment 3S': Basin 3 Runoff Area=4.450 ac 72.63% Impervious Runoff Depth>3.56"
Flow Length=690' Slope=0.0200 '/' Tc=13.3 min CN=75/98 Runoff=3.52 cfs 1.322 af

Subcatchment 4S': Basin 4 Runoff Area=25.660 ac 72.99% Impervious Runoff Depth>3.51"
Flow Length=1,290' Slope=0.0400 '/' Tc=11.5 min CN=72/98 Runoff=20.40 cfs 7.508 af

Subcatchment 5S': Basin 5 Runoff Area=10.790 ac 0.00% Impervious Runoff Depth=1.75"
Flow Length=1,100' Slope=0.0300 '/' Tc=57.5 min CN=72/0 Runoff=1.95 cfs 1.571 af

Subcatchment 6S': Basin 6 Runoff Area=1.840 ac 86.68% Impervious Runoff Depth>3.87"
Flow Length=500' Slope=0.0400 '/' Tc=10.1 min CN=75/98 Runoff=1.67 cfs 0.594 af

Subcatchment 7S': Basin 7 Runoff Area=1.990 ac 75.38% Impervious Runoff Depth>3.62"
Flow Length=460' Tc=13.1 min CN=75/98 Runoff=1.61 cfs 0.601 af

Pond 1AP: Foxhaven Rain Garden Peak Elev=373.88' Storage=50,981 cf Inflow=9.84 cfs 7.757 af
Discarded=0.03 cfs 0.083 af Primary=7.95 cfs 7.673 af Outflow=7.98 cfs 7.757 af

Pond 1CP: Detention Pipe Peak Elev=368.31' Storage=0.068 af Inflow=0.88 cfs 0.297 af
Outflow=0.81 cfs 0.297 af

Pond 1DP: Future Rain Garden Peak Elev=375.95' Storage=12,198 cf Inflow=3.61 cfs 1.737 af
Outflow=1.95 cfs 1.737 af

Pond 3P': Reconstructed Teal Rain Garden Peak Elev=386.24' Storage=9,154 cf Inflow=3.52 cfs 1.322 af
Discarded=0.10 cfs 0.243 af Primary=2.38 cfs 1.079 af Outflow=2.48 cfs 1.322 af

Pond 4P': Baxter Detention Peak Elev=405.47' Storage=64,048 cf Inflow=24.29 cfs 10.274 af
Outflow=13.36 cfs 10.275 af

Pond 7P': Vintage Detention Peak Elev=434.12' Storage=3,193 cf Inflow=1.61 cfs 0.601 af
Outflow=0.60 cfs 0.601 af

Pond FS: Flow Splitter Peak Elev=370.62' Inflow=15.75 cfs 12.152 af
Primary=7.72 cfs 6.253 af Secondary=8.03 cfs 5.899 af Outflow=15.75 cfs 12.152 af

Link 2L: Bypass Inflow=8.03 cfs 5.899 af
Primary=8.03 cfs 5.899 af

Link 3L: Developed Release Inflow=17.21 cfs 15.606 af
Primary=17.21 cfs 15.606 af

Total Runoff Area = 60.930 ac Runoff Volume = 15.931 af Average Runoff Depth = 3.14"
41.68% Pervious = 25.393 ac 58.32% Impervious = 35.537 ac

Summary for Subcatchment 1AS: Basin 1A - Phase 1

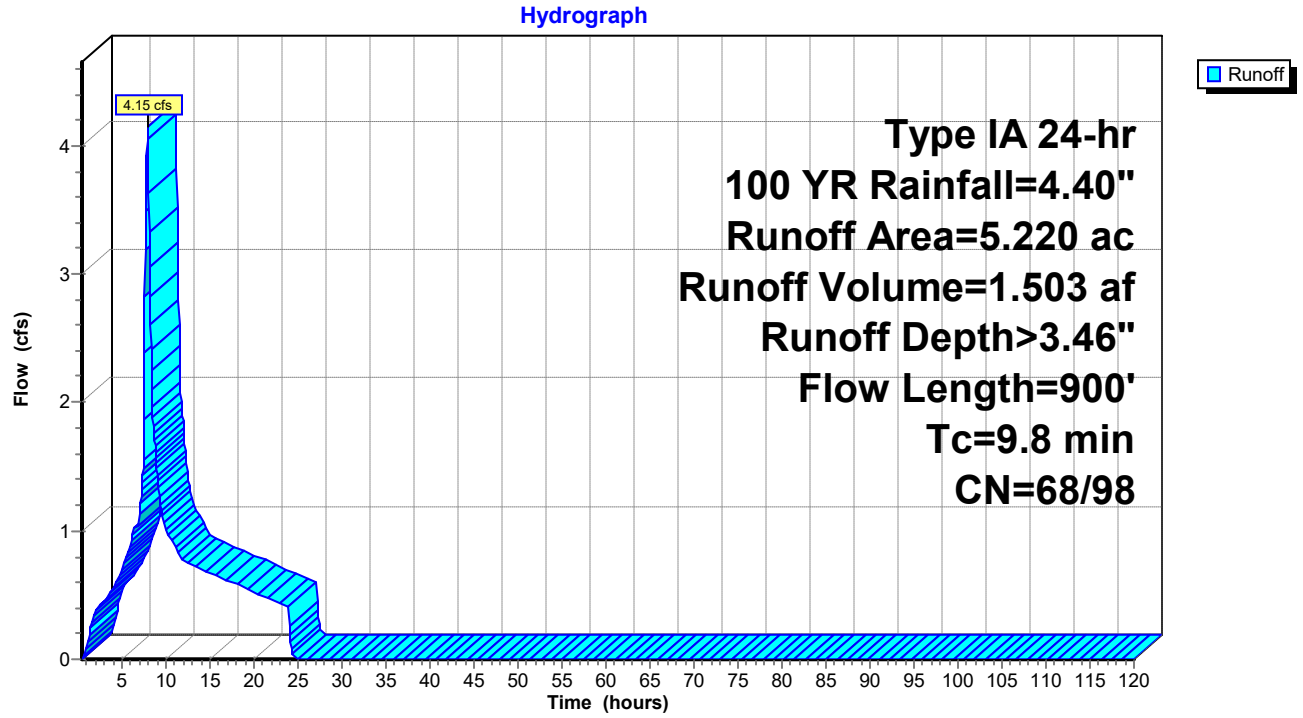
Runoff = 4.15 cfs @ 7.98 hrs, Volume= 1.503 af, Depth> 3.46"
Routed to Pond 1AP : Foxhaven Rain Garden

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	3.850	98	Paved/Roof, HSG C
	0.685	61	>75% Grass cover, Good, HSG B
	0.685	74	>75% Grass cover, Good, HSG C
	5.220	90	Weighted Average
	1.370		26.25% Pervious Area
	3.850		73.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.2	100	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.5	160	0.0700	5.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	640	0.0500	10.14	7.97	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
9.8	900	Total			

Subcatchment 1AS: Basin 1A - Phase 1



Summary for Subcatchment 1BS: Basin 1B - Phase 1

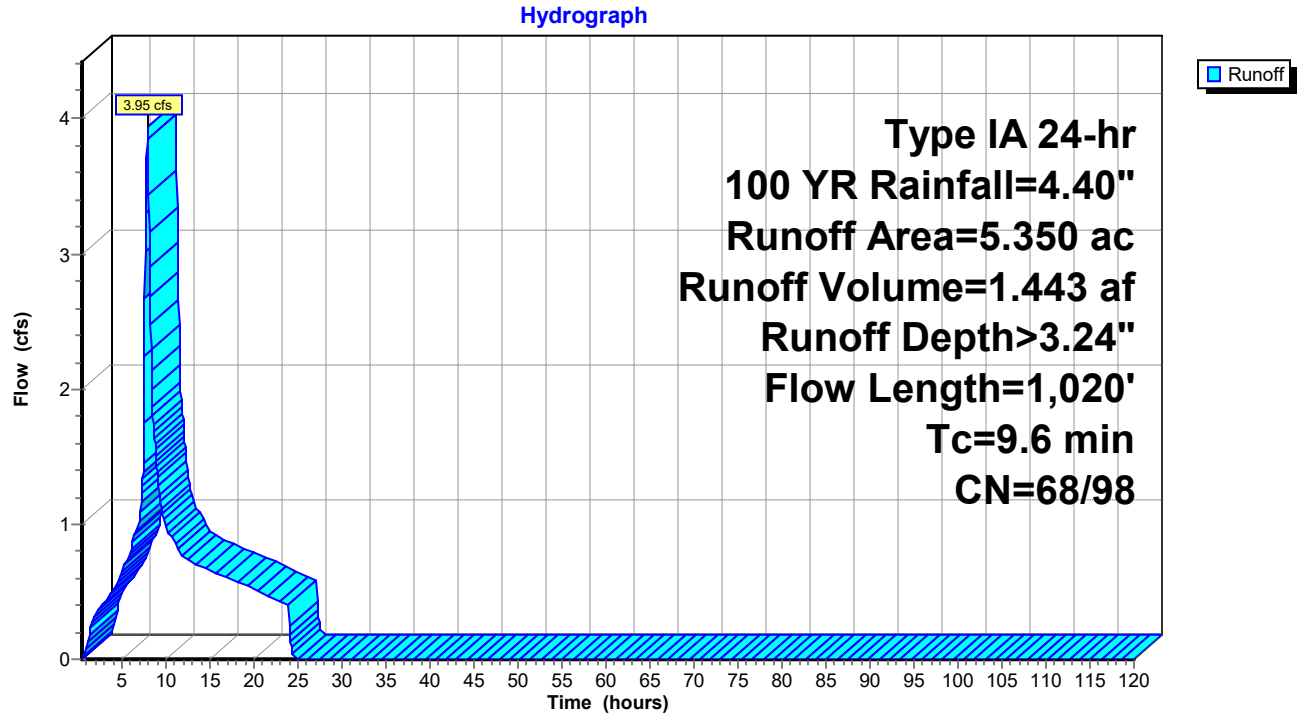
Runoff = 3.95 cfs @ 7.98 hrs, Volume= 1.443 af, Depth> 3.24"
Routed to Pond FS : Flow Splitter

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	3.510	98	Paved/Roof, HSG C
	0.920	61	>75% Grass cover, Good, HSG B
	0.920	74	>75% Grass cover, Good, HSG C
	5.350	88	Weighted Average
	1.840		34.39% Pervious Area
	3.510		65.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	60	0.0300	0.15		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
1.8	150	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.1	810	0.0300	12.47	39.18	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.013
9.6	1,020	Total			

Subcatchment 1BS: Basin 1B - Phase 1



Summary for Subcatchment 1CS: Basin 1C - Phase 1

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

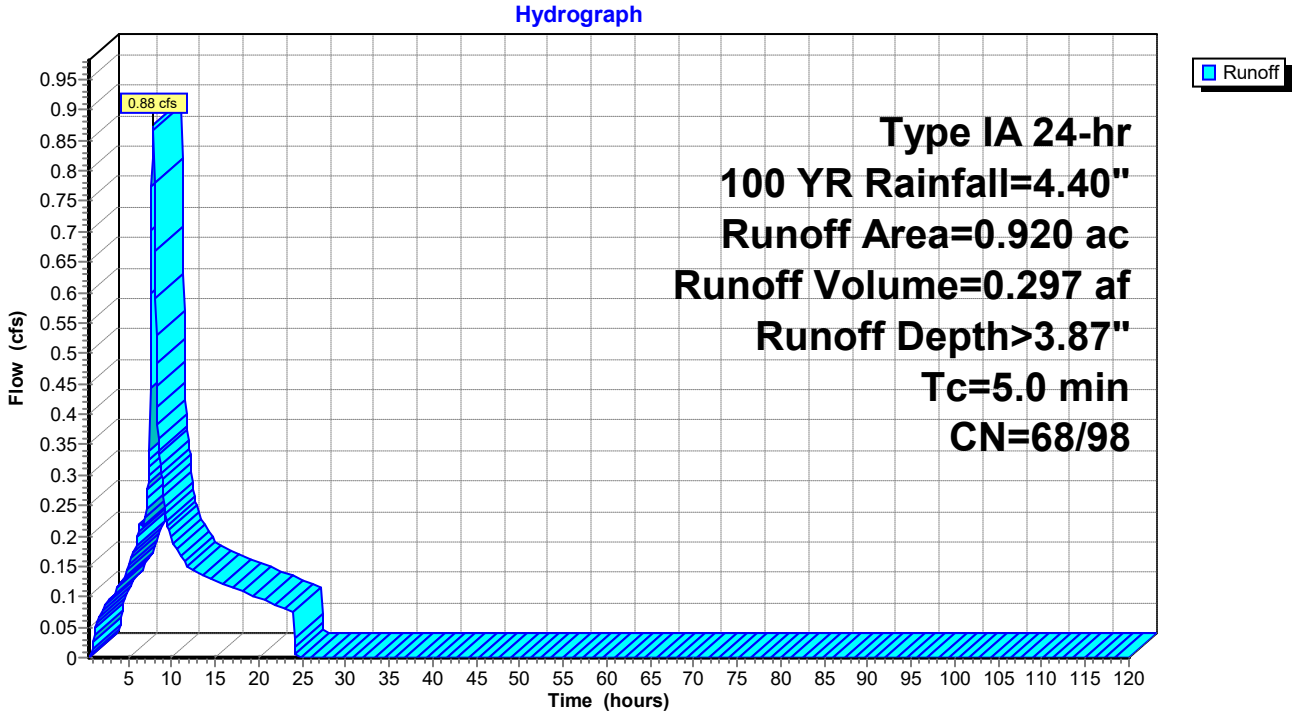
Runoff = 0.88 cfs @ 7.90 hrs, Volume= 0.297 af, Depth> 3.87"
Routed to Pond 1CP : Detention Pipe

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	0.820	98	Paved/Roof, HSG C
	0.050	61	>75% Grass cover, Good, HSG B
	0.050	74	>75% Grass cover, Good, HSG C
	0.920	95	Weighted Average
	0.100		10.87% Pervious Area
	0.820		89.13% Impervious Area

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

Subcatchment 1CS: Basin 1C - Phase 1



Summary for Subcatchment 1DS: Basin 1D - Phase 2

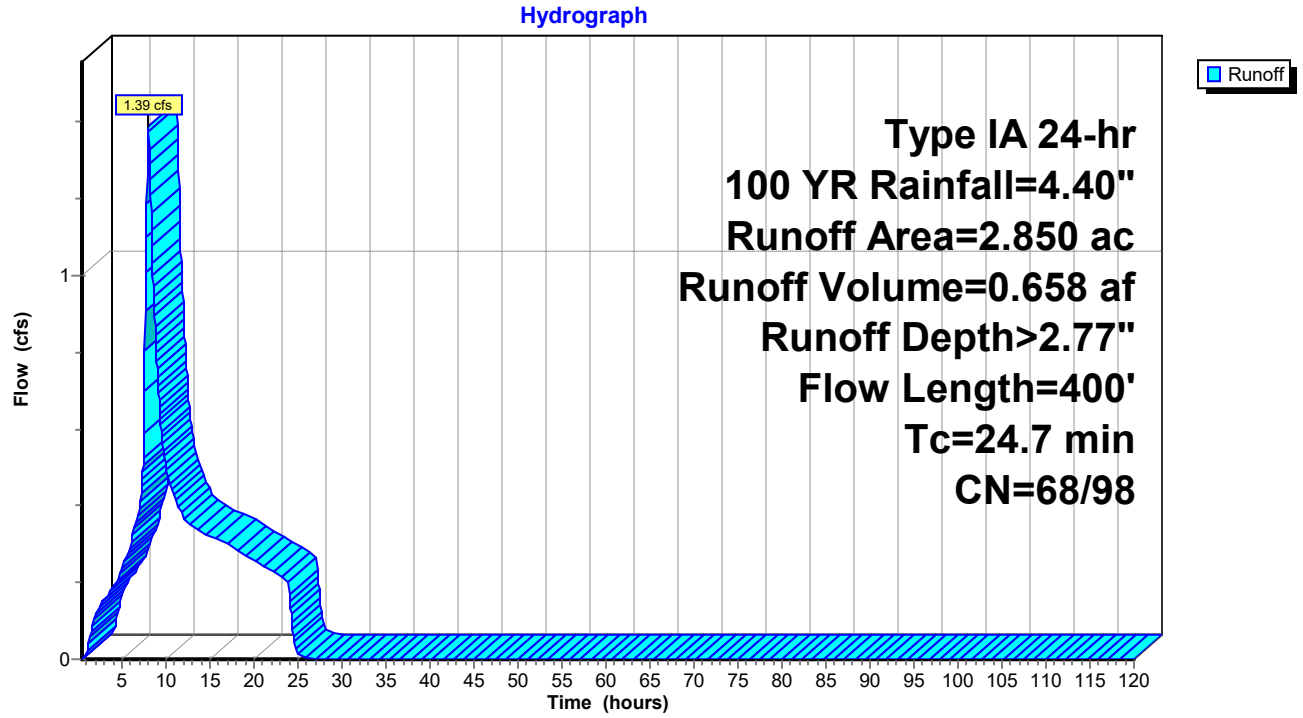
Runoff = 1.39 cfs @ 8.04 hrs, Volume= 0.658 af, Depth> 2.77"
Routed to Pond 1DP : Future Rain Garden

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	1.380	98	Paved/Roof, HSG C
	0.735	61	>75% Grass cover, Good, HSG B
	0.735	74	>75% Grass cover, Good, HSG C
	2.850	82	Weighted Average
	1.470		51.58% Pervious Area
	1.380		48.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.3	300	0.0330	0.21		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.20"
1.3	53	0.0100	0.70		**Shallow Concentrated Flow, Shallow Concentrated Flow** Short Grass Pasture Kv= 7.0 fps
0.1	47	0.0960	14.06	11.04	**Pipe Channel, Pipe Flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
24.7	400	Total			

Subcatchment 1DS: Basin 1D - Phase 2



Summary for Subcatchment 1ES: Basin 1E - Phase 2

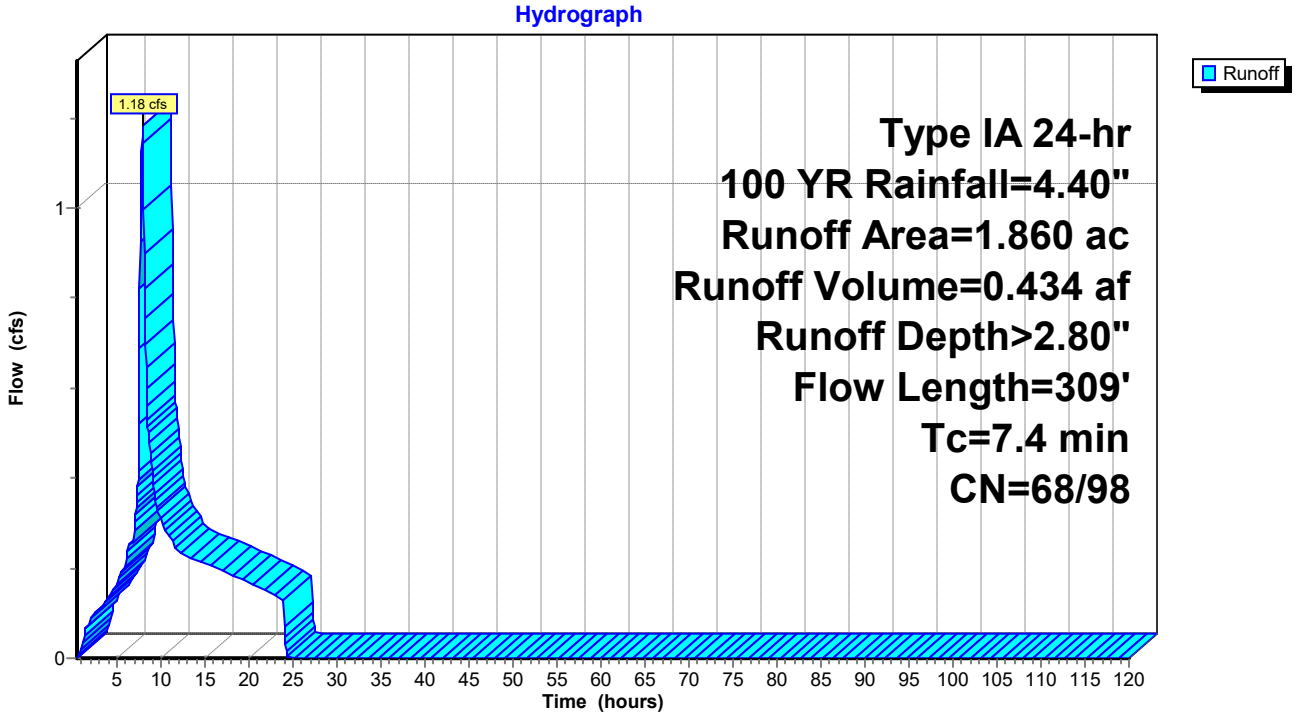
Runoff = 1.18 cfs @ 7.98 hrs, Volume= 0.434 af, Depth> 2.80"
Routed to Pond FS : Flow Splitter

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	0.920	98	Paved/Roof, HSG C
	0.470	61	>75% Grass cover, Good, HSG B
	0.470	74	>75% Grass cover, Good, HSG C
	1.860	83	Weighted Average
	0.940		50.54% Pervious Area
	0.920		49.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	97	0.0730	0.24		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.20"
0.5	212	0.0230	6.88	5.40	**Pipe Channel, Pipe Flow** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
7.4	309	Total			

Subcatchment 1ES: Basin 1E - Phase 2



Summary for Subcatchment 3S': Basin 3

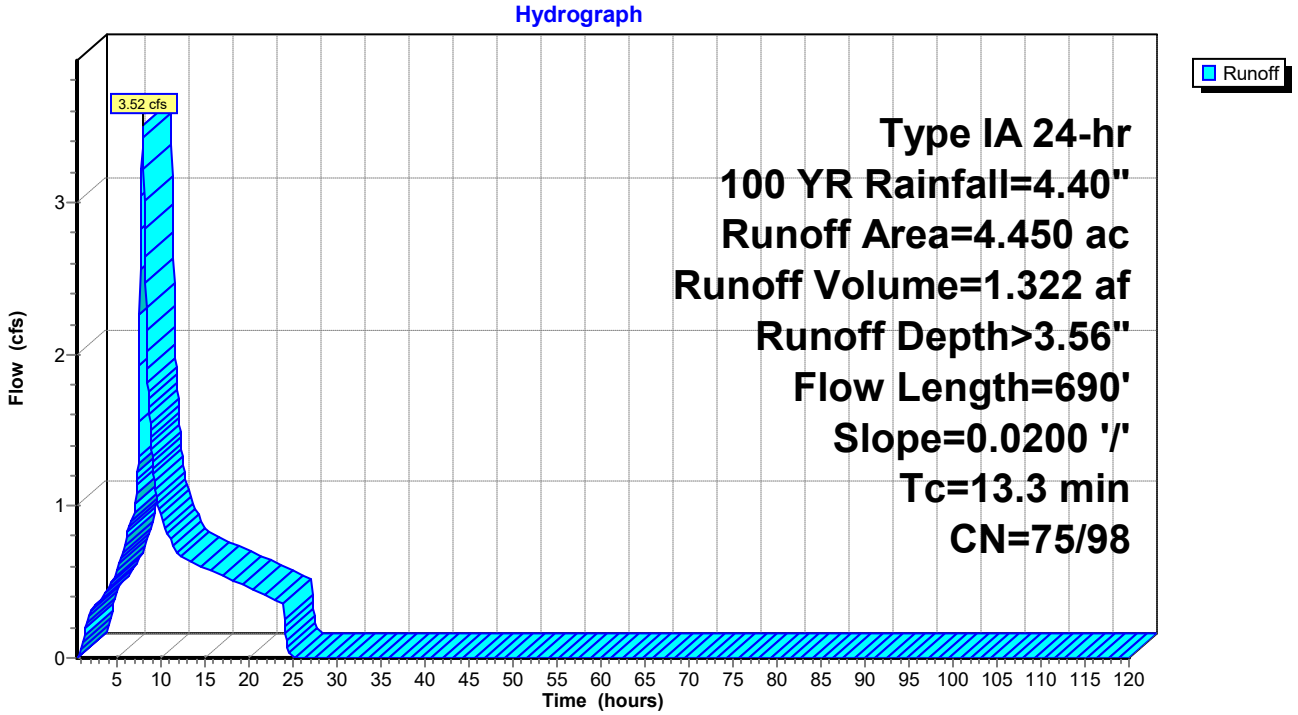
Runoff = 3.52 cfs @ 7.99 hrs, Volume= 1.322 af, Depth> 3.56"
Routed to Pond 3P' : Reconstructed Teal Rain Garden

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	0.970	98	Paved roads w/curbs & sewers, HSG C
	3.480	90	1/8 acre lots, 65% imp, HSG C
	4.450	92	Weighted Average
	1.218		27.37% Pervious Area
	3.232		72.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
1.5	590	0.0200	6.42	5.04	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.3	690	Total			

Subcatchment 3S': Basin 3



Summary for Subcatchment 4S': Basin 4

[47] Hint: Peak is 286% of capacity of segment #3

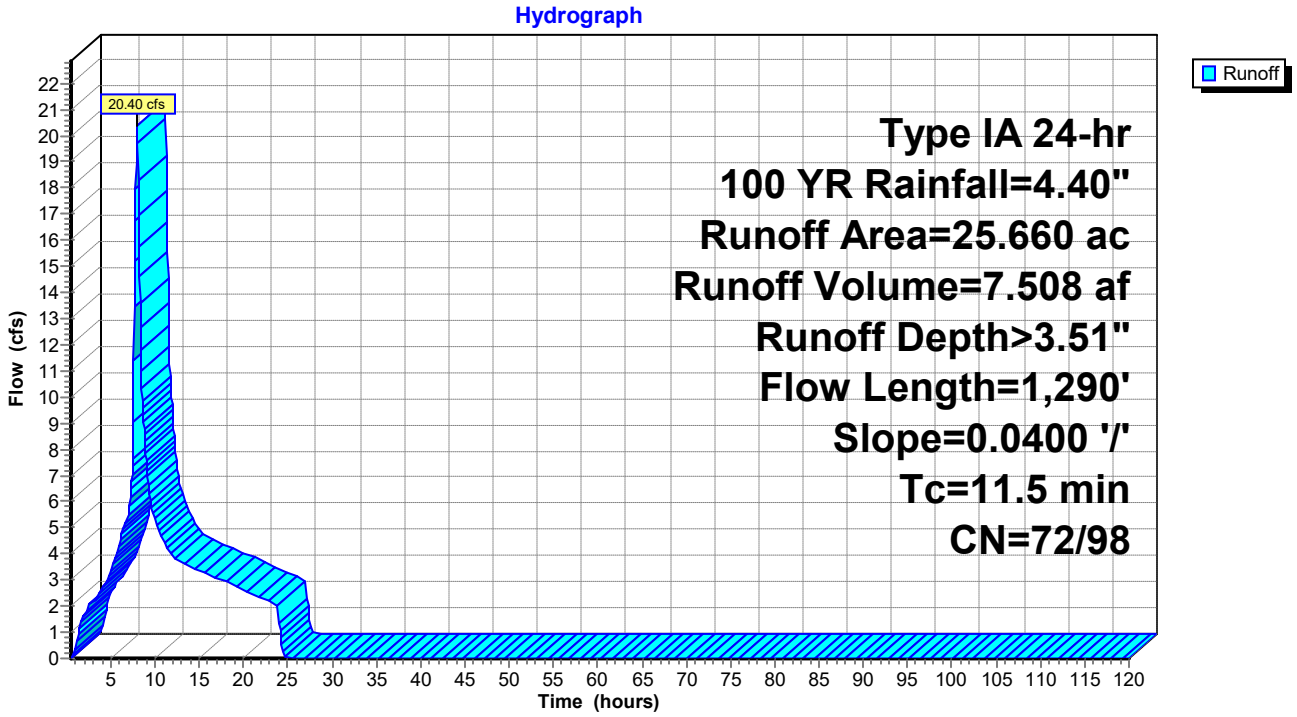
Runoff = 20.40 cfs @ 7.99 hrs, Volume= 7.508 af, Depth> 3.51"
Routed to Pond 4P' : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	5.860	98	Paved roads w/curbs & sewers, HSG C
	4.950	85	1/8 acre lots, 65% imp, HSG B
	14.850	90	1/8 acre lots, 65% imp, HSG C
	25.660	91	Weighted Average
	6.930		27.01% Pervious Area
	18.730		72.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.1	1,160	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
11.5	1,290	Total			

Subcatchment 4S': Basin 4



Summary for Subcatchment 5S': Basin 5

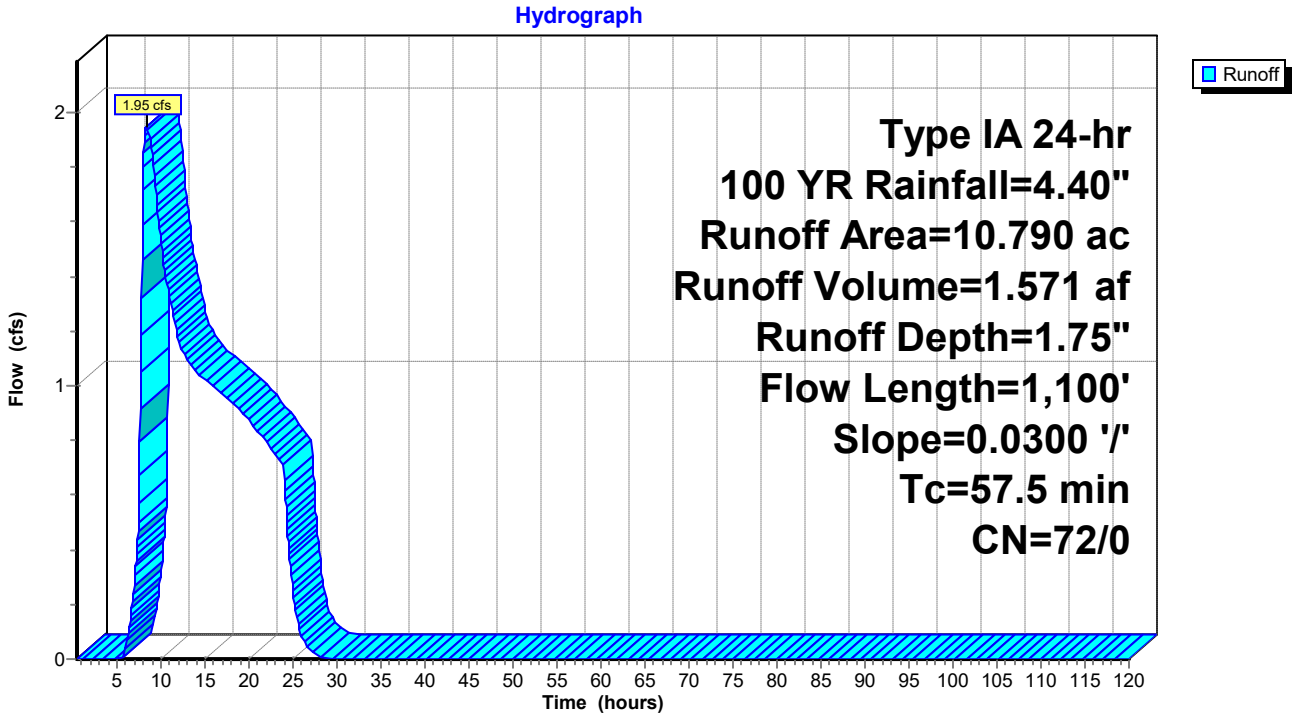
Runoff = 1.95 cfs @ 8.37 hrs, Volume= 1.571 af, Depth= 1.75"
Routed to Pond 4P' : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

Area (ac)	CN	Description
10.790	72	Woods/grass comb., Good, HSG C
10.790		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	300	0.0300	0.12		**Sheet Flow, Pre Developed** n= 0.300 P2= 2.20"
15.4	800	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
57.5	1,100	Total			

Subcatchment 5S': Basin 5



Summary for Subcatchment 6S': Basin 6

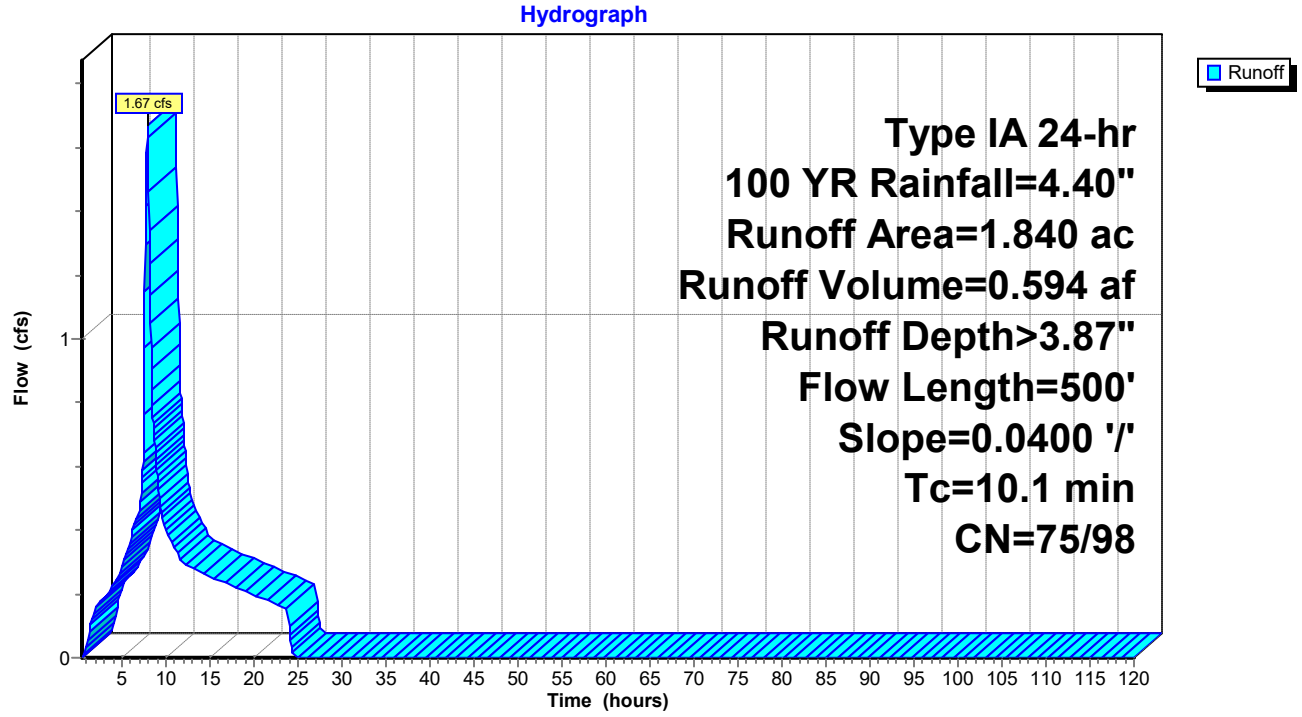
Runoff = 1.67 cfs @ 7.98 hrs, Volume= 0.594 af, Depth> 3.87"
Routed to Pond 4P' : Baxter Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	1.140	98	Paved roads w/curbs & sewers, HSG C
	0.700	90	1/8 acre lots, 65% imp, HSG C
	1.840	95	Weighted Average
	0.245		13.32% Pervious Area
	1.595		86.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.0400	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.4	30	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.7	370	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
10.1	500	Total			

Subcatchment 6S': Basin 6



Summary for Subcatchment 7S': Basin 7

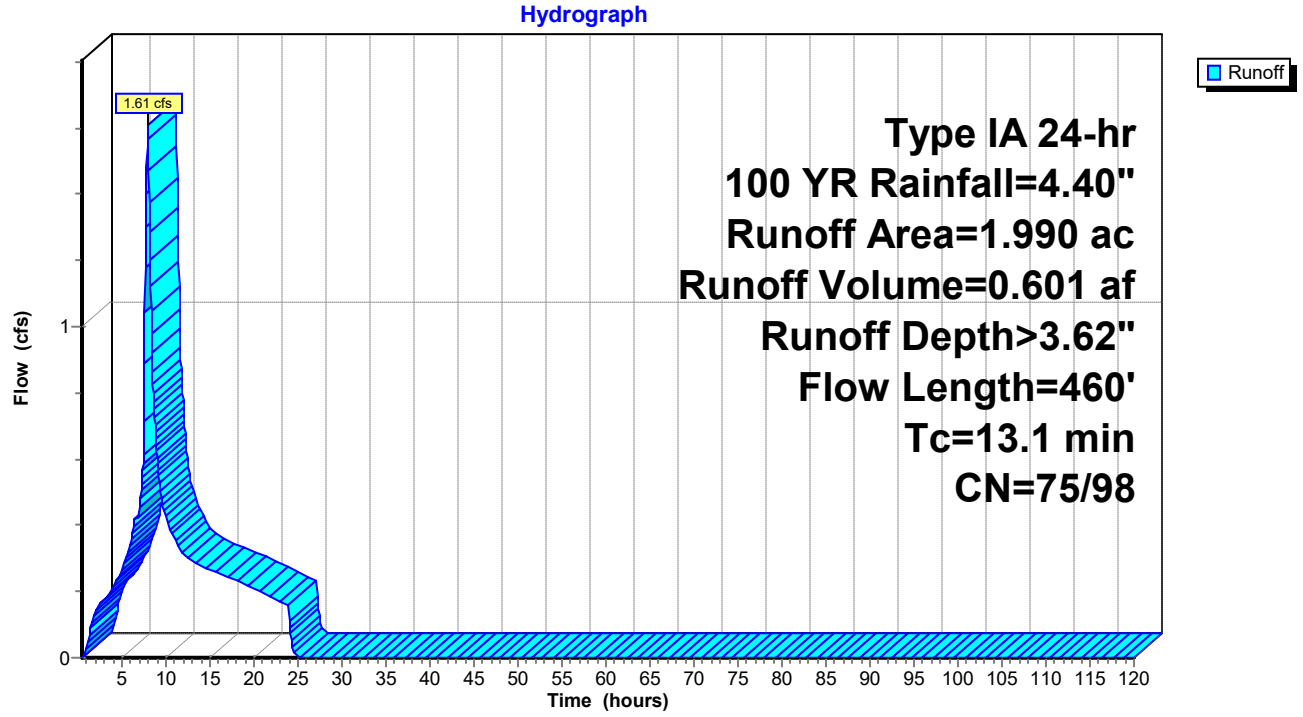
Runoff = 1.61 cfs @ 7.99 hrs, Volume= 0.601 af, Depth> 3.62"
Routed to Pond 7P' : Vintage Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Type IA 24-hr 100 YR Rainfall=4.40"

	Area (ac)	CN	Description
*	0.590	98	Paved roads w/curbs & sewers, HSG C
	1.400	90	1/8 acre lots, 65% imp, HSG C
	1.990	92	Weighted Average
	0.490		24.62% Pervious Area
	1.500		75.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	100	0.0200	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.20"
0.7	40	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	320	0.0400	9.07	7.13	**Pipe Channel,** 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013
13.1	460	Total			

Subcatchment 7S': Basin 7



Summary for Pond 1AP: Foxhaven Rain Garden

[81] Warning: Exceeded Pond FS by 3.38' @ 9.35 hrs

Inflow Area = 52.710 ac, 57.11% Impervious, Inflow Depth > 1.77" for 100 YR event
Inflow = 9.84 cfs @ 8.41 hrs, Volume= 7.757 af
Outflow = 7.98 cfs @ 9.05 hrs, Volume= 7.757 af, Atten= 19%, Lag= 38.4 min
Discarded = 0.03 cfs @ 9.05 hrs, Volume= 0.083 af
Primary = 7.95 cfs @ 9.05 hrs, Volume= 7.673 af
Routed to Link 3L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 373.88' @ 9.05 hrs Surf.Area= 11,392 sf Storage= 50,981 cf

Plug-Flow detention time= 182.3 min calculated for 7.754 af (100% of inflow)
Center-of-Mass det. time= 182.8 min (977.6 - 794.8)

Volume	Invert	Avail.Storage	Storage Description
#1	365.25'	64,461 cf	**Detention Basin (Prismatic)** Listed below (Recalc)

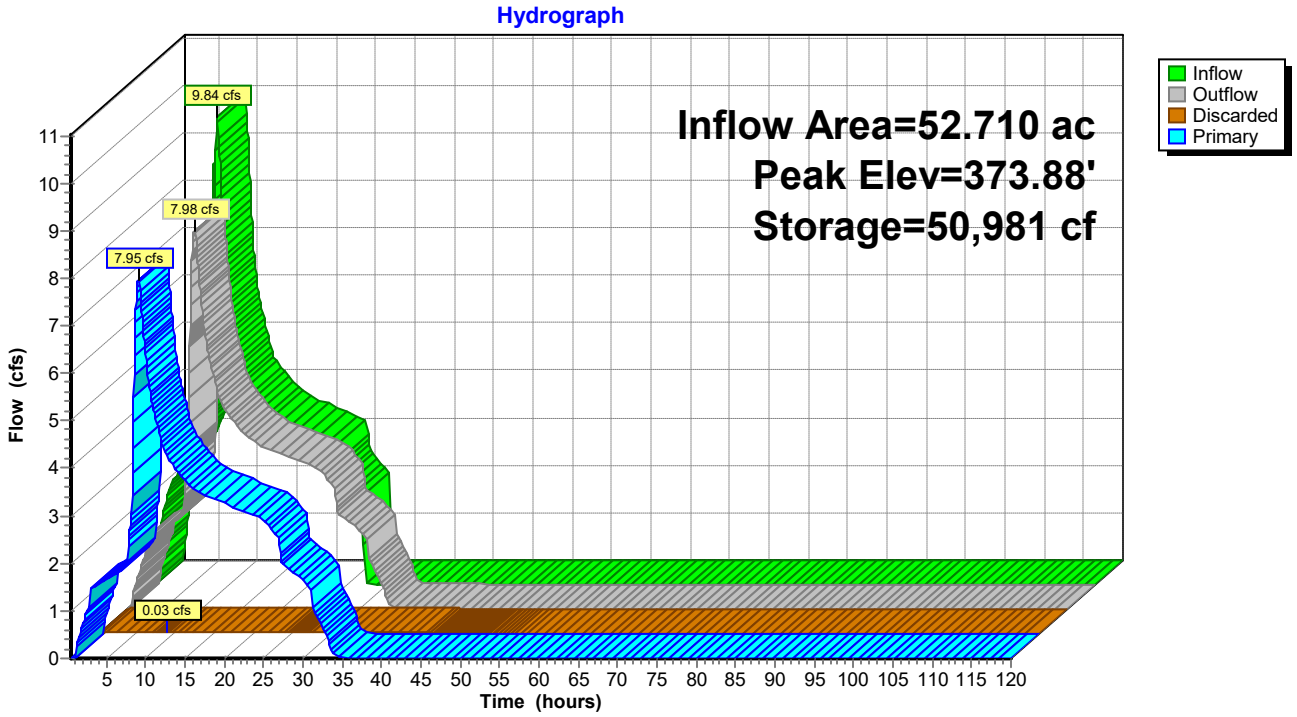
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
365.25	8,560	0.0	0	0
367.50	8,560	40.0	7,704	7,704
369.00	7,360	0.1	12	7,716
370.00	7,860	100.0	7,610	15,326
371.00	8,390	100.0	8,125	23,451
372.00	8,560	100.0	8,475	31,926
373.00	10,330	100.0	9,445	41,371
374.00	11,530	100.0	10,930	52,301
375.00	12,790	100.0	12,160	64,461

Device	Routing	Invert	Outlet Devices
#1	Discarded	365.25'	**0.100 in/hr Exfiltration over Horizontal area**
#2	Primary	365.50'	**5.5" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	372.00'	**5.5" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	373.10'	**2.0' long x 1.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#5	Primary	374.00'	**6.0' long x 0.50' rise O/F Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.03 cfs @ 9.05 hrs HW=373.88' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=7.95 cfs @ 9.05 hrs HW=373.88' (Free Discharge)
├**2=Orifice** (Orifice Controls 2.30 cfs @ 13.94 fps)
├**3=Orifice** (Orifice Controls 1.09 cfs @ 6.61 fps)
├**4=Sharp-Crested Vee/Trap Weir** (Weir Controls 4.55 cfs @ 2.90 fps)
└**5=O/F Weir** (Controls 0.00 cfs)

Pond 1AP: Foxhaven Rain Garden



Summary for Pond 1CP: Detention Pipe

Inflow Area = 0.920 ac, 89.13% Impervious, Inflow Depth > 3.87" for 100 YR event
Inflow = 0.88 cfs @ 7.90 hrs, Volume= 0.297 af
Outflow = 0.81 cfs @ 8.07 hrs, Volume= 0.297 af, Atten= 8%, Lag= 10.0 min
Primary = 0.81 cfs @ 8.07 hrs, Volume= 0.297 af
Routed to Link 3L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 368.31' @ 8.07 hrs Surf.Area= 0.002 ac Storage= 0.068 af

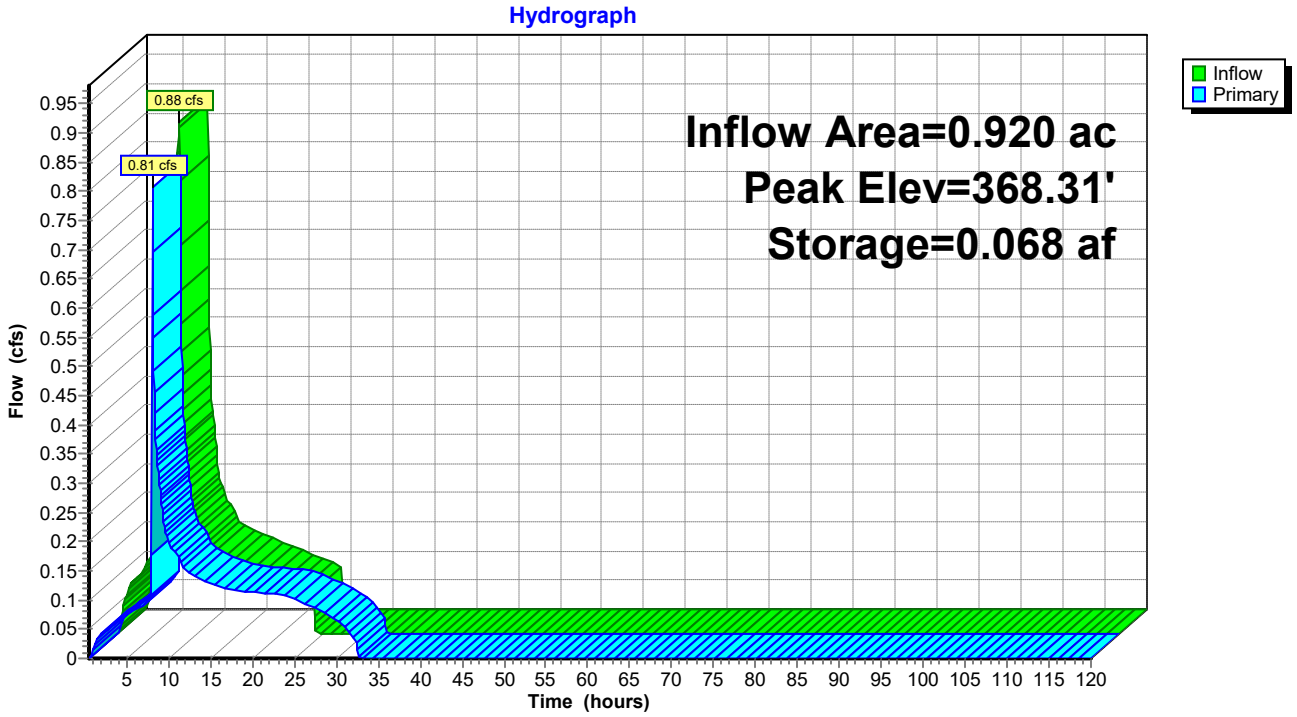
Plug-Flow detention time= 266.3 min calculated for 0.297 af (100% of inflow)
Center-of-Mass det. time= 266.4 min (933.3 - 666.9)

Volume	Invert	Avail.Storage	Storage Description
#1	364.90'	0.046 af	**36.0" Round 36" Pipe Storage** L= 285.0' S= 0.0010 '/'
#2	366.15'	0.020 af	**24.0" Round 24" Pipe Storage** L= 278.0' S= 0.0010 '/'
#3	364.90'	0.004 af	**5.00'D x 8.00'H Vertical Cone/Cylinder**
		0.070 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	364.90'	**1.6" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	367.90'	**6.0" W x 4.0" H Vert. Weir Cut** C= 0.600 Limited to weir flow at low heads
#3	Primary	368.20'	**12.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.72 cfs @ 8.07 hrs HW=368.28' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.12 cfs @ 8.85 fps)
- **2=Weir Cut** (Orifice Controls 0.36 cfs @ 2.17 fps)
- **3=O/F Riser** (Weir Controls 0.24 cfs @ 0.93 fps)

Pond 1CP: Detention Pipe



Summary for Pond 1DP: Future Rain Garden

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 7.300 ac, 63.18% Impervious, Inflow Depth > 2.86" for 100 YR event
Inflow = 3.61 cfs @ 8.26 hrs, Volume= 1.737 af
Outflow = 1.95 cfs @ 9.29 hrs, Volume= 1.737 af, Atten= 46%, Lag= 62.1 min
Primary = 1.95 cfs @ 9.29 hrs, Volume= 1.737 af
Routed to Link 3L : Developed Release

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 375.95' @ 9.29 hrs Surf.Area= 3,566 sf Storage= 12,198 cf

Plug-Flow detention time= 124.6 min calculated for 1.737 af (100% of inflow)
Center-of-Mass det. time= 124.5 min (884.9 - 760.4)

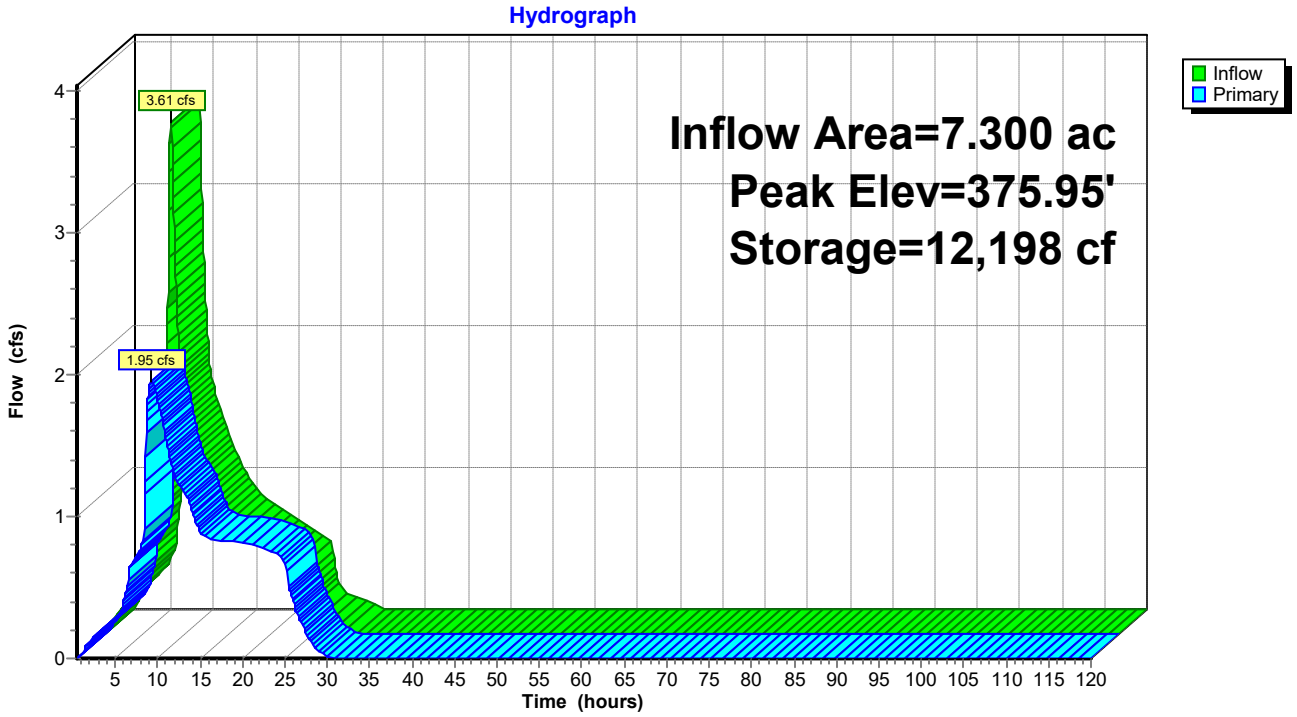
Volume	Invert	Avail.Storage	Storage Description
#1	365.45'	16,283 cf	**Detention Basin (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
365.45	1,280	0.0	0	0
369.45	1,280	40.0	2,048	2,048
371.20	849	0.1	2	2,050
372.20	1,280	100.0	1,065	3,114
377.00	4,207	100.0	13,169	16,283

Device	Routing	Invert	Outlet Devices
#1	Primary	365.40'	**3.0" Horiz. 1/2 2-yr Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	367.40'	**1.2" Vert. 10-yr Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	375.11'	**5.0" Horiz. 25-yr Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	375.43'	**5.0" Horiz. O/F** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.95 cfs @ 9.29 hrs HW=375.95' (Free Discharge)
- **1=1/2 2-yr Orifice** (Orifice Controls 0.77 cfs @ 15.64 fps)
- **2=10-yr Orifice** (Orifice Controls 0.11 cfs @ 14.04 fps)
- **3=25-yr Orifice** (Orifice Controls 0.60 cfs @ 4.41 fps)
- **4=O/F** (Orifice Controls 0.47 cfs @ 3.47 fps)

Pond 1DP: Future Rain Garden



Summary for Pond 3P': Reconstructed Teal Rain Garden

[44] Hint: Outlet device #2 is below defined storage

Inflow Area = 4.450 ac, 72.63% Impervious, Inflow Depth > 3.56" for 100 YR event
Inflow = 3.52 cfs @ 7.99 hrs, Volume= 1.322 af
Outflow = 2.48 cfs @ 8.30 hrs, Volume= 1.322 af, Atten= 30%, Lag= 18.5 min
Discarded = 0.10 cfs @ 1.45 hrs, Volume= 0.243 af
Primary = 2.38 cfs @ 8.30 hrs, Volume= 1.079 af
Routed to Pond 1DP : Future Rain Garden

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 386.24' @ 8.30 hrs Surf.Area= 5,691 sf Storage= 9,154 cf

Plug-Flow detention time= 112.2 min calculated for 1.321 af (100% of inflow)
Center-of-Mass det. time= 112.2 min (803.4 - 691.1)

Volume	Invert	Avail.Storage	Storage Description
#1	382.75'	13,836 cf	**Pond (Prismatic)** Listed below (Recalc)

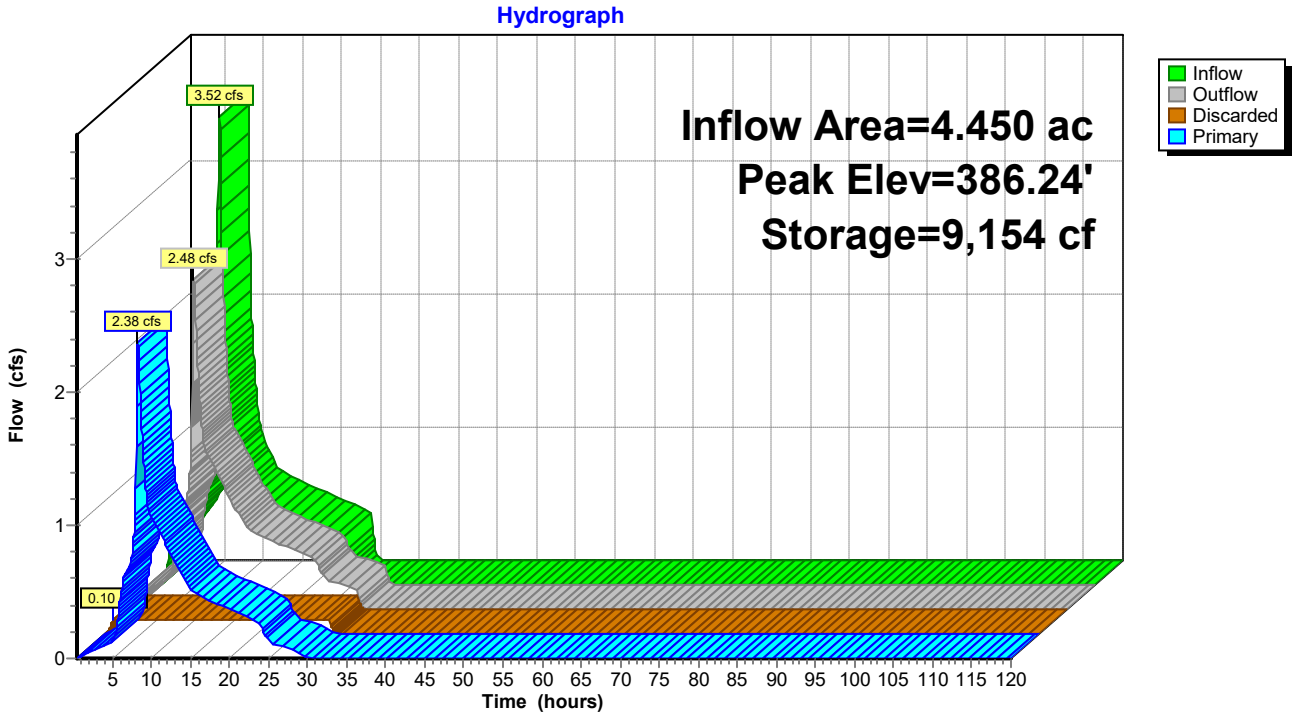
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
382.75	5,956	0.0	0	0
384.00	5,956	40.0	2,978	2,978
385.00	4,303	0.1	5	2,983
387.00	6,550	100.0	10,853	13,836

Device	Routing	Invert	Outlet Devices
#1	Discarded	382.75'	**0.750 in/hr Exfiltration over Horizontal area**
#2	Primary	382.70'	**2.0" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Primary	385.10'	**6.0" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Primary	386.00'	**12.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.10 cfs @ 1.45 hrs HW=382.79' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=2.37 cfs @ 8.30 hrs HW=386.23' (Free Discharge)
├**2=Orifice** (Orifice Controls 0.20 cfs @ 9.05 fps)
├**3=Orifice** (Orifice Controls 1.01 cfs @ 5.13 fps)
└**4=O/F Riser** (Weir Controls 1.17 cfs @ 1.58 fps)

Pond 3P': Reconstructed Teal Rain Garden



Summary for Pond 4P': Baxter Detention

[44] Hint: Outlet device #1 is below defined storage

Inflow Area = 40.280 ac, 54.18% Impervious, Inflow Depth > 3.06" for 100 YR event
Inflow = 24.29 cfs @ 7.99 hrs, Volume= 10.274 af
Outflow = 13.36 cfs @ 8.53 hrs, Volume= 10.275 af, Atten= 45%, Lag= 32.3 min
Primary = 13.36 cfs @ 8.53 hrs, Volume= 10.275 af
Routed to Pond FS : Flow Splitter

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 405.47' @ 8.53 hrs Surf.Area= 22,186 sf Storage= 64,048 cf

Plug-Flow detention time= 125.3 min calculated for 10.271 af (100% of inflow)
Center-of-Mass det. time= 125.4 min (845.7 - 720.3)

Volume	Invert	Avail.Storage	Storage Description
#1	401.00'	46,475 cf	**West Pond (Prismatic)** Listed below (Recalc)
#2	401.00'	29,850 cf	**East Pond (Prismatic)** Listed below (Recalc)
		76,325 cf	Total Available Storage

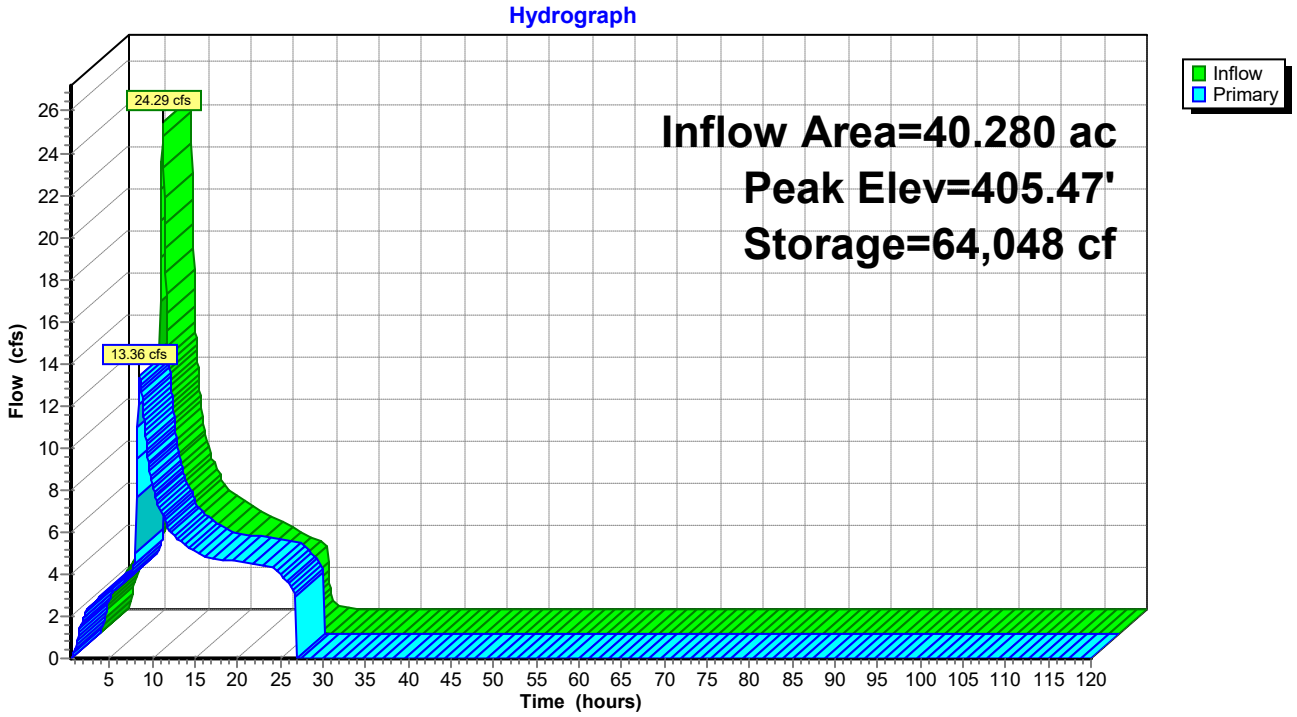
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	2,250	0	0
402.00	7,140	4,695	4,695
403.00	8,720	7,930	12,625
404.00	10,340	9,530	22,155
405.00	12,000	11,170	33,325
406.00	14,300	13,150	46,475

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
401.00	1,820	0	0
402.00	3,960	2,890	2,890
403.00	5,190	4,575	7,465
404.00	6,560	5,875	13,340
405.00	8,160	7,360	20,700
406.00	10,140	9,150	29,850

Device	Routing	Invert	Outlet Devices
#1	Primary	398.29'	**8.3" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	405.00'	**24.0" Horiz. O/F Riser** C= 0.600 Limited to weir flow at low heads
#3	Primary	405.02'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=13.34 cfs @ 8.53 hrs HW=405.47' (Free Discharge)
- **1=Orifice** (Orifice Controls 4.85 cfs @ 12.90 fps)
- **2=O/F Riser** (Weir Controls 6.68 cfs @ 2.25 fps)
- **3=Overflow CB** (Weir Controls 1.81 cfs @ 1.99 fps)

Pond 4P': Baxter Detention



Summary for Pond 7P': Vintage Detention

[44] Hint: Outlet device #1 is below defined storage
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=9)

Inflow Area = 1.990 ac, 75.38% Impervious, Inflow Depth > 3.62" for 100 YR event
Inflow = 1.61 cfs @ 7.99 hrs, Volume= 0.601 af
Outflow = 0.60 cfs @ 9.05 hrs, Volume= 0.601 af, Atten= 63%, Lag= 63.6 min
Primary = 0.60 cfs @ 9.05 hrs, Volume= 0.601 af
Routed to Pond 4P' : Baxter Detention

Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 434.12' @ 9.05 hrs Surf.Area= 2,407 sf Storage= 3,193 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 29.2 min (717.3 - 688.1)

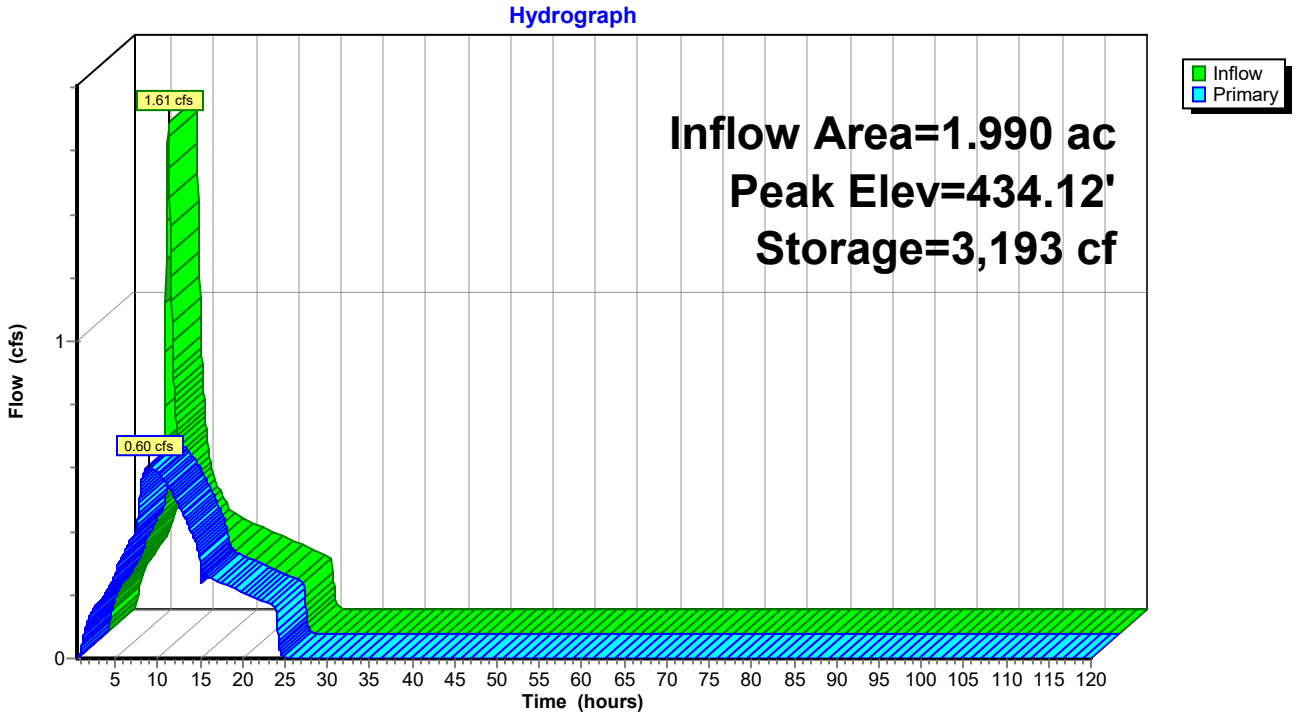
Volume	Invert	Avail.Storage	Storage Description
#1	432.00'	8,940 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
432.00	0	0	0
432.50	1,160	290	290
434.00	2,320	2,610	2,900
436.00	3,720	6,040	8,940

Device	Routing	Invert	Outlet Devices
#1	Primary	431.31'	**3.7" Horiz. Orifice** C= 0.600 Limited to weir flow at low heads
#2	Primary	435.00'	**2.0' long x 0.5' breadth Overflow CB** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.60 cfs @ 9.05 hrs HW=434.12' (Free Discharge)
└**1=Orifice** (Orifice Controls 0.60 cfs @ 8.08 fps)
└**2=Overflow CB** (Controls 0.00 cfs)

Pond 7P': Vintage Detention



Summary for Pond FS: Flow Splitter

[57] Hint: Peaked at 370.62' (Flood elevation advised)

Inflow Area = 47.490 ac, 55.29% Impervious, Inflow Depth > 3.07" for 100 YR event
Inflow = 15.75 cfs @ 8.48 hrs, Volume= 12.152 af
Outflow = 15.75 cfs @ 8.48 hrs, Volume= 12.152 af, Atten= 0%, Lag= 0.0 min
Primary = 7.72 cfs @ 8.48 hrs, Volume= 6.253 af
Routed to Pond 1AP : Foxhaven Rain Garden
Secondary = 8.03 cfs @ 8.48 hrs, Volume= 5.899 af
Routed to Link 2L : Bypass

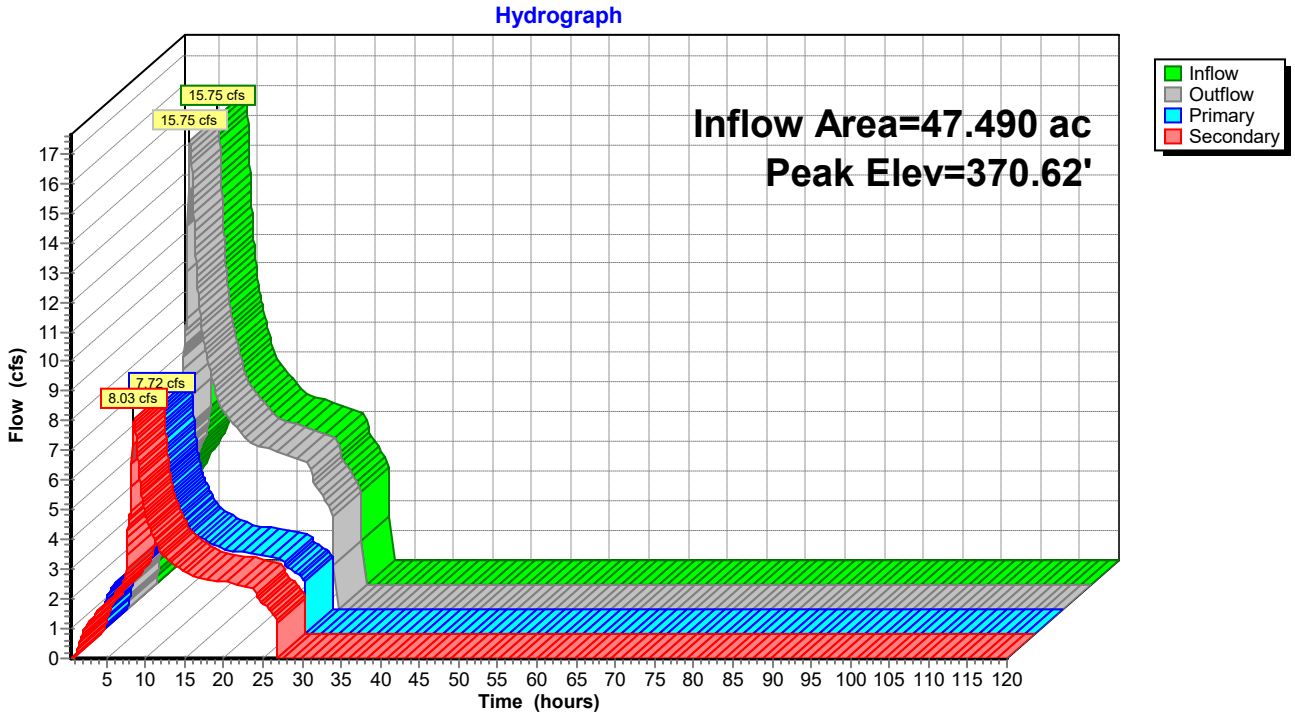
Routing by Stor-Ind method, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs
Peak Elev= 370.62' @ 8.48 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	369.50'	**1.5' long x 0.60' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#2	Secondary	369.75'	**3.0' long x 1.20' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)
#3	Primary	370.10'	**3.0' long x 0.70' rise Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=7.71 cfs @ 8.48 hrs HW=370.62' (Free Discharge)
1=Sharp-Crested Vee/Trap Weir (Orifice Controls 3.99 cfs @ 4.43 fps)
3=Sharp-Crested Vee/Trap Weir (Weir Controls 3.72 cfs @ 2.37 fps)

Secondary OutFlow Max=8.02 cfs @ 8.48 hrs HW=370.62' (Free Discharge)
2=Sharp-Crested Vee/Trap Weir (Weir Controls 8.02 cfs @ 3.06 fps)

Pond FS: Flow Splitter

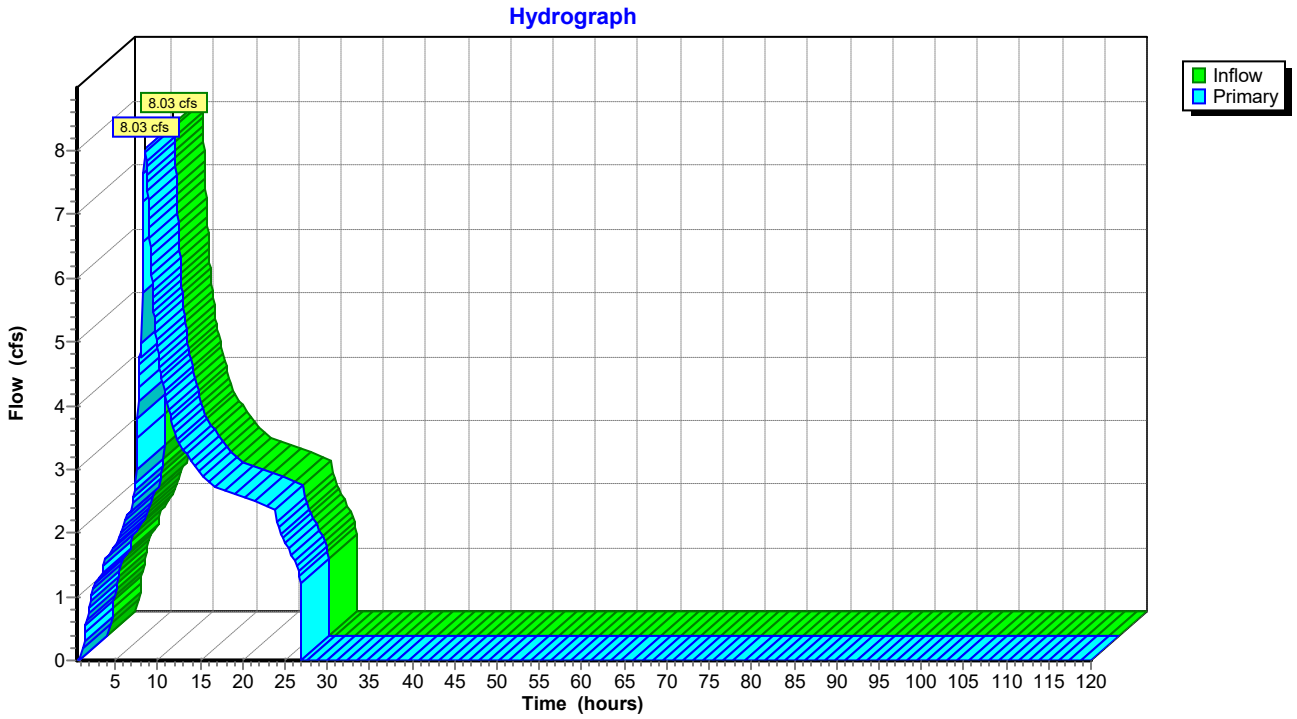


Summary for Link 2L: Bypass

Inflow = 8.03 cfs @ 8.48 hrs, Volume= 5.899 af
Primary = 8.03 cfs @ 8.48 hrs, Volume= 5.899 af, Atten= 0%, Lag= 0.0 min
Routed to Link 3L : Developed Release

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 2L: Bypass

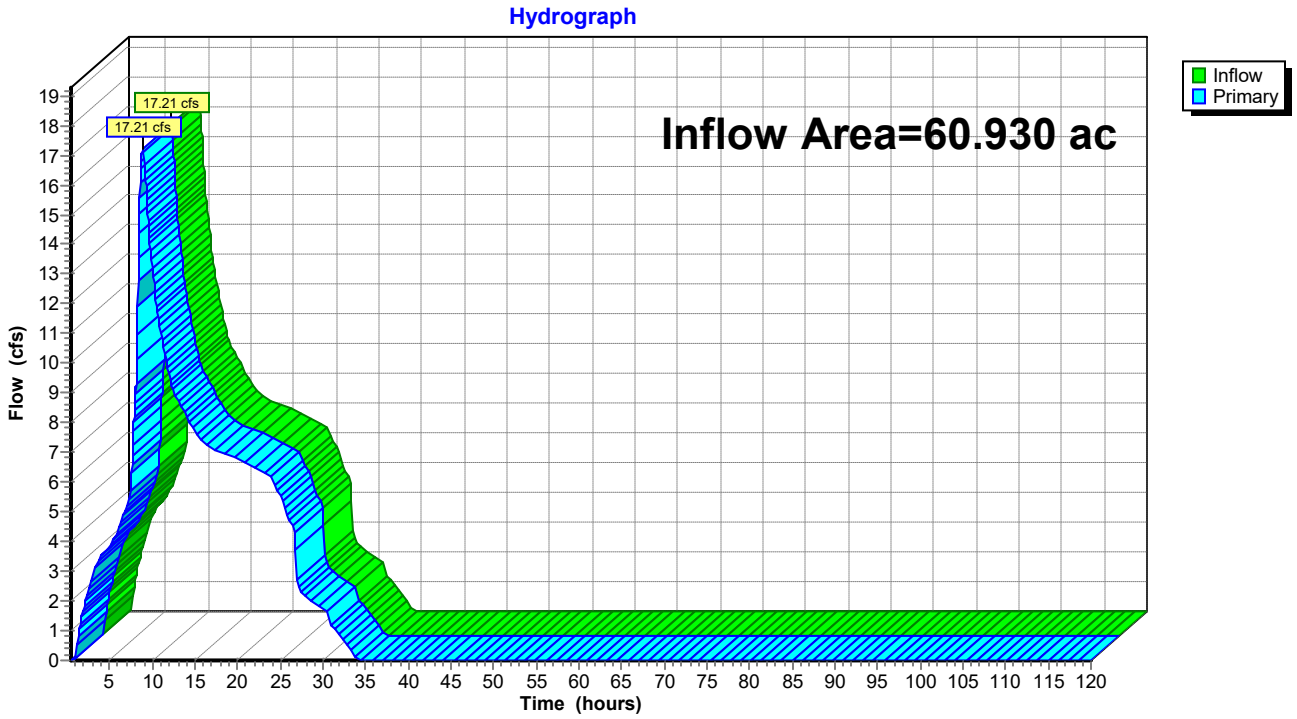


Summary for Link 3L: Developed Release

Inflow Area = 60.930 ac, 58.32% Impervious, Inflow Depth > 3.07" for 100 YR event
Inflow = 17.21 cfs @ 8.88 hrs, Volume= 15.606 af
Primary = 17.21 cfs @ 8.88 hrs, Volume= 15.606 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.50-120.00 hrs, dt= 0.05 hrs

Link 3L: Developed Release



Appendix D – Conveyance

Appendix E – Operations and Maintenance Manual