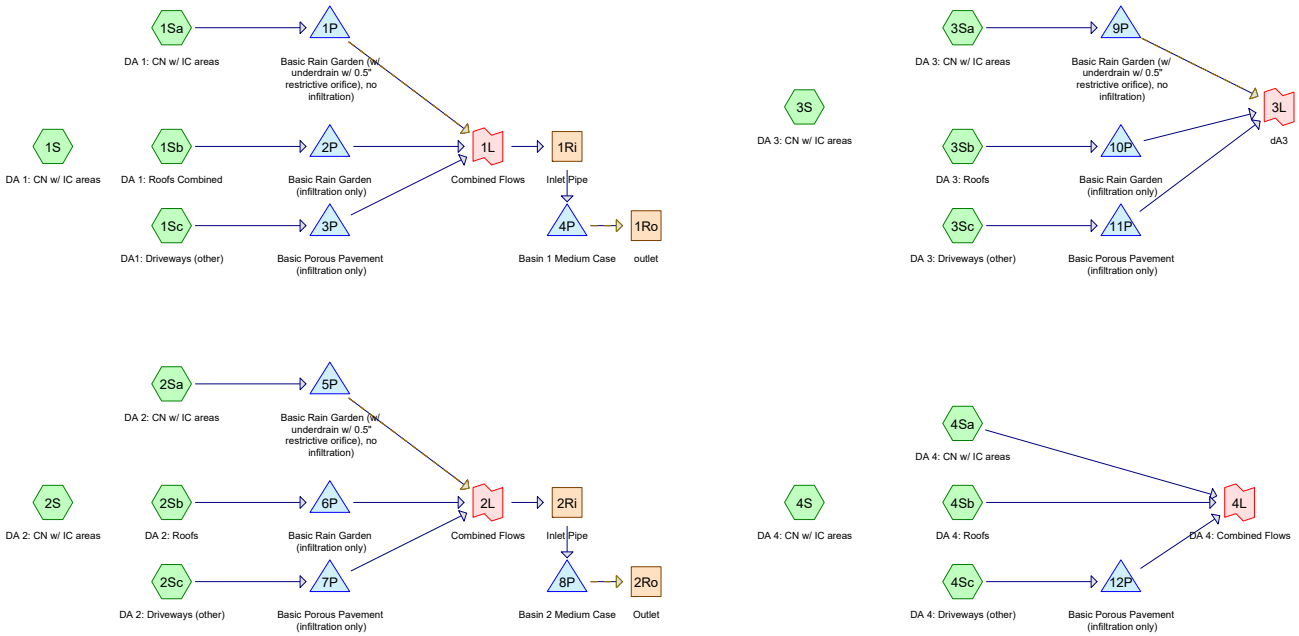


Subcat Reach Pond Link

Routing Diagram for 20240629_PartridgeFarmRd_HCAD_BASINS

Prepared by Rutgers Cooperative Extension Water Resources Program, Printed 6/29/2024

Project Notes

Rainfall events imported from "NRCS-Rain.txt" for 6600 NJ Atlantic-C
Rainfall events imported from "NRCS-Rain.txt" for 7614 PA Chester-C
Rainfall events imported from "NRCS-Rain.txt" for 6613 NJ Morris-D
Rainfall events imported from "NRCS-Rain.txt" for 6620 NJ Warren-C
Rainfall events imported from "NRCS-Rain.txt" for 6617 NJ Somerset-C
Rainfall events imported from "NRCS-Rain.txt" for 6638 NJ_Cur Somerset-C
Rainfall events imported from "NRCS-Rain.txt" for 6659 NJ_2100 Somerset-C

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year _Current	NOAA 24-hr	C	Default	24.00	1	3.34	2
2	2-Year _2100	NOAA 24-hr	C	Default	24.00	1	3.97	2
3	10-Year _Current	NOAA 24-hr	C	Default	24.00	1	5.16	2
4	10-Year _2100	NOAA 24-hr	C	Default	24.00	1	6.21	2
5	100-Year _Current	NOAA 24-hr	C	Default	24.00	1	8.95	2
6	100-Year _2100	NOAA 24-hr	C	Default	24.00	1	12.15	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
318,193	98	(1Sb, 1Sc, 2Sb, 2Sc, 3Sb, 3Sc, 4Sb, 4Sc)
9,860	79	50-75% Grass cover, Fair, HSG C (3S, 3Sa)
3,296,358	74	>75% Grass cover, Good, HSG C (1S, 1Sa, 2S, 2Sa, 3S, 3Sa, 4S, 4Sa)
2	65	Brush, Good, HSG C (2S, 2Sa)
593,279	98	Impervious (1S, 1Sa, 2S, 2Sa, 3S, 3Sa, 4S)
787,424	73	Woods, Fair, HSG C (1S, 1Sa, 2S, 2Sa, 3S, 3Sa, 4S, 4Sa)
129,742	70	Woods, Good, HSG C (1S, 1Sa, 3S, 3Sa)
13,246	72	Woods/grass comb., Good, HSG C (2S, 2Sa, 4S, 4Sa)
5,148,104	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
4,236,632	HSG C	1S, 1Sa, 2S, 2Sa, 3S, 3Sa, 4S, 4Sa
0	HSG D	
911,472	Other	1S, 1Sa, 1Sb, 1Sc, 2S, 2Sa, 2Sb, 2Sc, 3S, 3Sa, 3Sb, 3Sc, 4S, 4Sb, 4Sc
5,148,104		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Su Nu
0	0	0	0	318,193	318,193		
0	0	9,860	0	0	9,860	50-75% Grass cover, Fair	
0	0	3,296,358	0	0	3,296,358	>75% Grass cover, Good	
0	0	2	0	0	2	Brush, Good	
0	0	0	0	593,279	593,279	Impervious	
0	0	787,424	0	0	787,424	Woods, Fair	
0	0	129,742	0	0	129,742	Woods, Good	
0	0	13,246	0	0	13,246	Woods/grass comb., Good	
0	**0**	**4,236,632**	**0**	**911,472**	**5,148,104**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	1Ri	75.00	74.00	100.0	0.0100	0.013	0.0	48.0	0.0
2	1Ro	70.75	66.00	925.0	0.0051	0.013	0.0	30.0	0.0
3	2Ri	70.00	69.00	100.0	0.0100	0.013	0.0	48.0	0.0
4	2Ro	65.75	63.50	190.0	0.0118	0.013	0.0	42.0	0.0
5	1P	94.17	94.12	10.0	0.0050	0.020	0.0	6.0	0.0
6	1P	94.33	94.17	32.0	0.0050	0.020	0.0	6.0	0.0
7	5P	94.17	94.12	10.0	0.0050	0.020	0.0	6.0	0.0
8	5P	94.33	94.17	32.0	0.0050	0.020	0.0	6.0	0.0
9	9P	94.17	94.12	10.0	0.0050	0.020	0.0	6.0	0.0
10	9P	94.33	94.17	32.0	0.0050	0.020	0.0	6.0	0.0

Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA 1: CN w/ IC areas Runoff Area=549,495 sf 18.28% Impervious Runoff Depth=1.49"
Tc=19.8 min CN=74/98 Runoff=14.85 cfs 68,325 cf

Subcatchment 1Sa: DA 1: CN w/ IC areas Runoff Area=492,891 sf 8.90% Impervious Runoff Depth=1.31"
Tc=19.8 min CN=74/98 Runoff=11.82 cfs 53,669 cf

Subcatchment 1Sb: DA 1: Roofs Runoff Area=21,359 sf 100.00% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=0/98 Runoff=1.68 cfs 5,530 cf

Subcatchment 1Sc: DA1: Driveways Runoff Area=35,245 sf 100.00% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=0/98 Runoff=2.77 cfs 9,125 cf

Subcatchment 2S: DA 2: CN w/ IC areas Runoff Area=908,125 sf 25.71% Impervious Runoff Depth=1.64"
Tc=21.8 min CN=74/98 Runoff=25.56 cfs 124,024 cf

Subcatchment 2Sa: DA 2: CN w/ IC areas Runoff Area=759,404 sf 11.16% Impervious Runoff Depth=1.35"
Tc=21.8 min CN=74/98 Runoff=17.87 cfs 85,518 cf

Subcatchment 2Sb: DA 2: Roofs Runoff Area=53,997 sf 100.00% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=0/98 Runoff=4.25 cfs 13,981 cf

Subcatchment 2Sc: DA 2: Driveways Runoff Area=94,724 sf 100.00% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=0/98 Runoff=7.45 cfs 24,526 cf

Subcatchment 3S: DA 3: CN w/ IC areas Runoff Area=947,660 sf 12.29% Impervious Runoff Depth=1.37"
Tc=27.9 min CN=74/98 Runoff=20.05 cfs 108,488 cf

Subcatchment 3Sa: DA 3: CN w/ IC areas Runoff Area=840,092 sf 1.06% Impervious Runoff Depth=1.15"
Tc=27.9 min CN=74/98 Runoff=15.16 cfs 80,637 cf

Subcatchment 3Sb: DA 3: Roofs Runoff Area=22,074 sf 100.00% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=0/98 Runoff=1.74 cfs 5,715 cf

Subcatchment 3Sc: DA 3: Driveways Runoff Area=85,494 sf 100.00% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=0/98 Runoff=6.73 cfs 22,136 cf

Subcatchment 4S: DA 4: CN w/ IC areas Runoff Area=168,772 sf 3.14% Impervious Runoff Depth=1.19"
Tc=24.4 min CN=74/98 Runoff=3.37 cfs 16,777 cf

Subcatchment 4Sa: DA 4: CN w/ IC areas Runoff Area=163,472 sf 0.00% Impervious Runoff Depth=1.13"
Tc=24.4 min CN=74/0 Runoff=3.11 cfs 15,405 cf

Subcatchment 4Sb: DA 4: Roofs Runoff Area=695 sf 100.00% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=0/98 Runoff=0.05 cfs 180 cf

Subcatchment 4Sc: DA 4: Driveways Runoff Area=4,605 sf 100.00% Impervious Runoff Depth=3.11"
Tc=6.0 min CN=0/98 Runoff=0.36 cfs 1,192 cf

Reach 1Ri: Inlet Pipe Avg. Flow Depth=0.62' Max Vel=6.04 fps Inflow=7.54 cfs 52,607 cf
48.0" Round Pipe n=0.013 L=100.0' S=0.0100 '/' Capacity=143.64 cfs Outflow=7.52 cfs 52,607 cf

Reach 1Ro: outlet Avg. Flow Depth=0.42' Max Vel=3.33 fps Inflow=1.83 cfs 45,416 cf
30.0" Round Pipe n=0.013 L=925.0' S=0.0051 '/' Capacity=29.39 cfs Outflow=1.83 cfs 45,405 cf

Reach 2Ri: Inlet Pipe Avg. Flow Depth=0.77' Max Vel=6.89 fps Inflow=11.77 cfs 84,357 cf
48.0" Round Pipe n=0.013 L=100.0' S=0.0100 '/' Capacity=143.64 cfs Outflow=11.72 cfs 84,355 cf

Reach 2Ro: Outlet Avg. Flow Depth=0.63' Max Vel=6.60 fps Inflow=7.84 cfs 79,538 cf
42.0" Round Pipe n=0.013 L=190.0' S=0.0118 '/' Capacity=109.48 cfs Outflow=7.83 cfs 79,538 cf

Pond 1P: Basic Rain Garden (w/ underdrain Peak Elev=96.79' Storage=7,858 cf Inflow=11.82 cfs 53,669 cf
Primary=7.54 cfs 52,607 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=7.54 cfs 52,607 cf

Pond 2P: Basic Rain Garden (infiltration only) Peak Elev=99.87' Storage=3,114 cf Inflow=1.68 cfs 5,530 cf
Discarded=0.05 cfs 5,530 cf Primary=0.00 cfs 0 cf Outflow=0.05 cfs 5,530 cf

Pond 3P: Basic Porous Pavement (infiltration Peak Elev=99.46' Storage=2,574 cf Inflow=2.77 cfs 9,125 cf
Discarded=0.41 cfs 9,127 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 9,127 cf

Pond 4P: Basin 1 Medium Case Peak Elev=74.99' Storage=26,760 cf Inflow=7.52 cfs 52,607 cf
Primary=1.83 cfs 45,416 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=1.83 cfs 45,416 cf

Pond 5P: Basic Rain Garden (w/ Peak Elev=98.85' Storage=13,081 cf Inflow=17.87 cfs 85,518 cf
Primary=11.77 cfs 84,357 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=11.77 cfs 84,357 cf

Pond 6P: Basic Rain Garden (infiltration Peak Elev=99.88' Storage=7,894 cf Inflow=4.25 cfs 13,981 cf
Discarded=0.14 cfs 13,981 cf Primary=0.00 cfs 0 cf Outflow=0.14 cfs 13,981 cf

Pond 7P: Basic Porous Pavement Peak Elev=99.46' Storage=6,919 cf Inflow=7.45 cfs 24,526 cf
Discarded=1.10 cfs 24,526 cf Primary=0.00 cfs 0 cf Outflow=1.10 cfs 24,526 cf

Pond 8P: Basin 2 Medium Case Peak Elev=70.20' Storage=24,451 cf Inflow=11.72 cfs 84,355 cf
Primary=7.84 cfs 79,538 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=7.84 cfs 79,538 cf

Pond 9P: Basic Rain Garden (w/ Peak Elev=100.69' Storage=3,104 cf Inflow=15.16 cfs 80,637 cf
Primary=2.83 cfs 53,566 cf Secondary=9.01 cfs 22,976 cf Tertiary=3.32 cfs 3,882 cf Outflow=15.15 cfs 80,425 cf

Pond 10P: Basic Rain Garden (infiltration Peak Elev=99.99' Storage=3,323 cf Inflow=1.74 cfs 5,715 cf
Discarded=0.05 cfs 5,715 cf Primary=0.00 cfs 0 cf Outflow=0.05 cfs 5,715 cf

Pond 11P: Basic Porous Pavement Peak Elev=99.46' Storage=6,245 cf Inflow=6.73 cfs 22,136 cf
Discarded=0.99 cfs 22,136 cf Primary=0.00 cfs 0 cf Outflow=0.99 cfs 22,136 cf

Pond 12P: Basic Porous Pavement (infiltration Peak Elev=99.46' Storage=343 cf Inflow=0.36 cfs 1,192 cf
Discarded=0.05 cfs 1,192 cf Primary=0.00 cfs 0 cf Outflow=0.05 cfs 1,192 cf

Link 1L: Combined Flows Inflow=7.54 cfs 52,607 cf
Primary=7.54 cfs 52,607 cf

Link 2L: Combined Flows Inflow=11.77 cfs 84,357 cf
Primary=11.77 cfs 84,357 cf

Link 3L: dA3

Inflow=15.15 cfs 80,425 cf
Primary=15.15 cfs 80,425 cf

Link 4L: DA 4: Combined Flows

Inflow=3.13 cfs 15,584 cf
Primary=3.13 cfs 15,584 cf

Total Runoff Area = 5,148,104 sf Runoff Volume = 635,227 cf Average Runoff Depth = 1.48"
82.29% Pervious = 4,236,632 sf 17.71% Impervious = 911,472 sf

Summary for Subcatchment 1S: DA 1: CN w/ IC areas

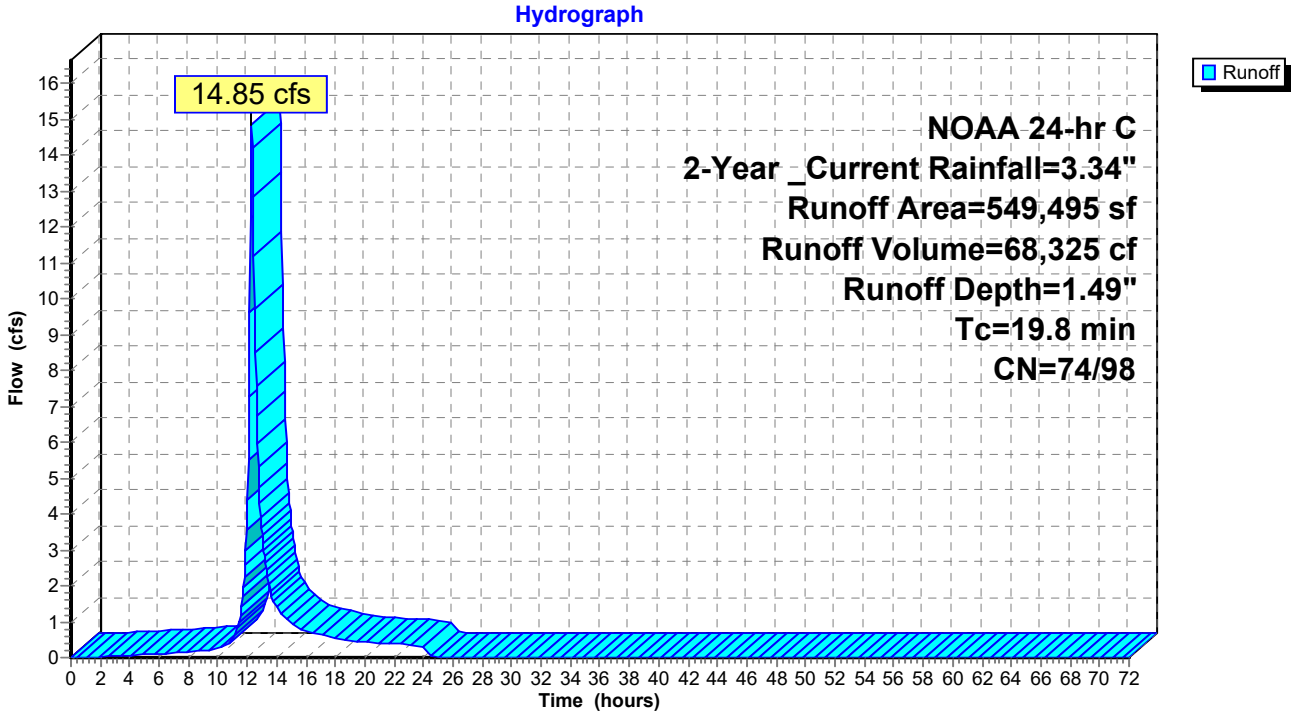
Runoff = 14.85 cfs @ 12.30 hrs, Volume= 68,325 cf, Depth= 1.49"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	100,459	98	Impervious
	317,162	74	>75% Grass cover, Good, HSG C
	131,575	73	Woods, Fair, HSG C
	299	70	Woods, Good, HSG C
	549,495	78	Weighted Average
	449,036	74	81.72% Pervious Area
	100,459	98	18.28% Impervious Area

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

Subcatchment 1S: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sa: DA 1: CN w/ IC areas

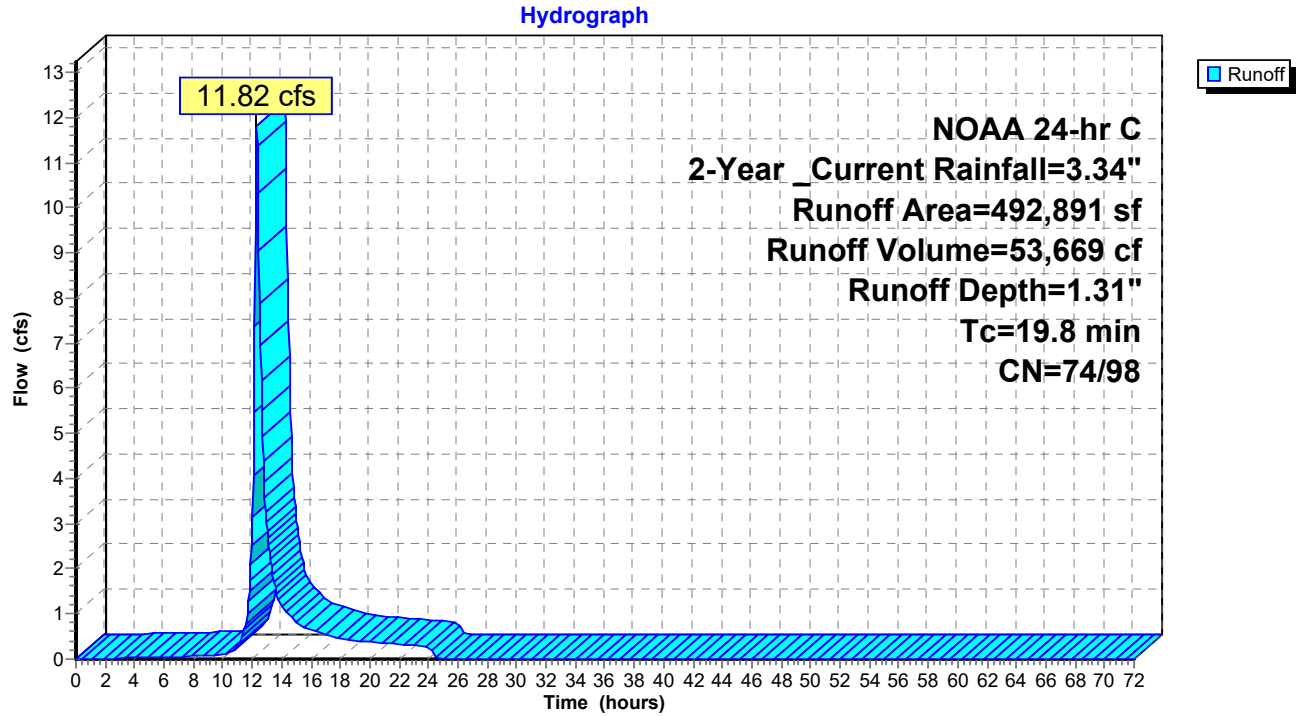
Runoff = 11.82 cfs @ 12.30 hrs, Volume= 53,669 cf, Depth= 1.31"
Routed to Pond 1P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	43,855	98	Impervious
	317,162	74	>75% Grass cover, Good, HSG C
	131,575	73	Woods, Fair, HSG C
	299	70	Woods, Good, HSG C
	492,891	76	Weighted Average
	449,036	74	91.10% Pervious Area
	43,855	98	8.90% Impervious Area

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

Subcatchment 1Sa: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sb: DA 1: Roofs Combined

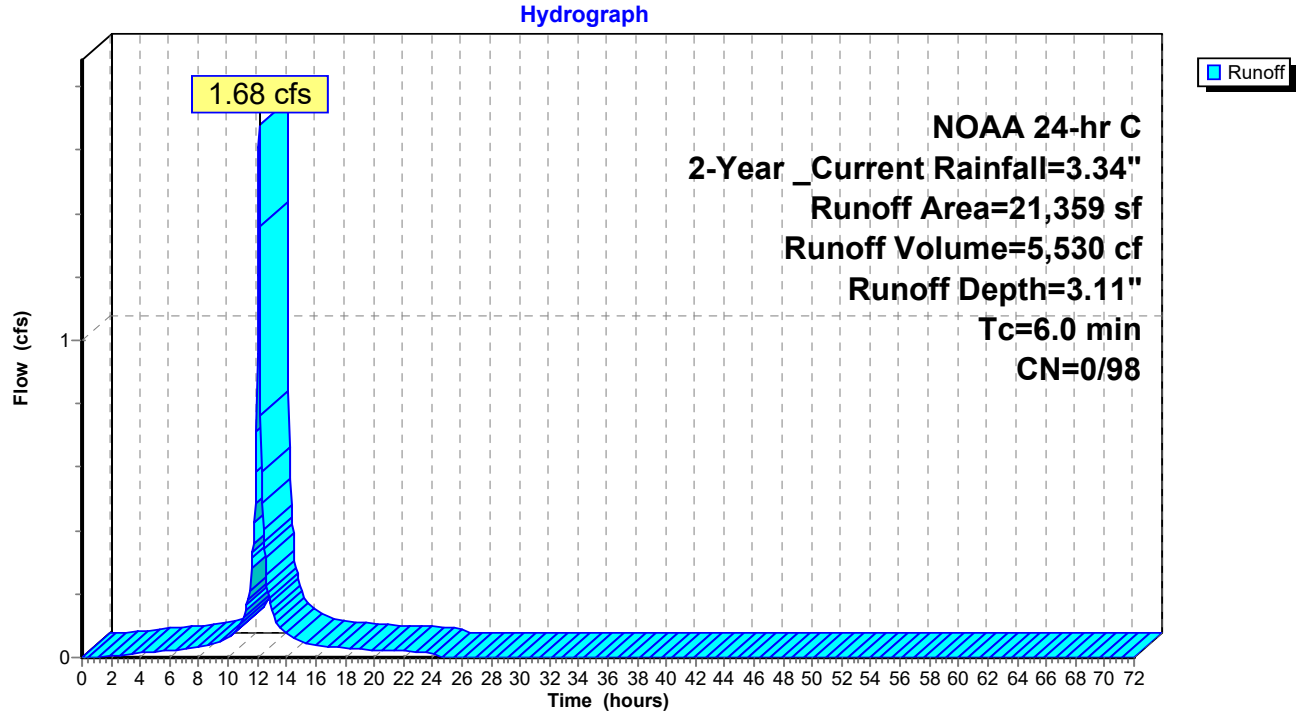
Runoff = 1.68 cfs @ 12.13 hrs, Volume= 5,530 cf, Depth= 3.11"
Routed to Pond 2P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	21,359	98	
	21,359	98	100.00% Impervious Area

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

Subcatchment 1Sb: DA 1: Roofs Combined



Summary for Subcatchment 1Sc: DA1: Driveways (other)

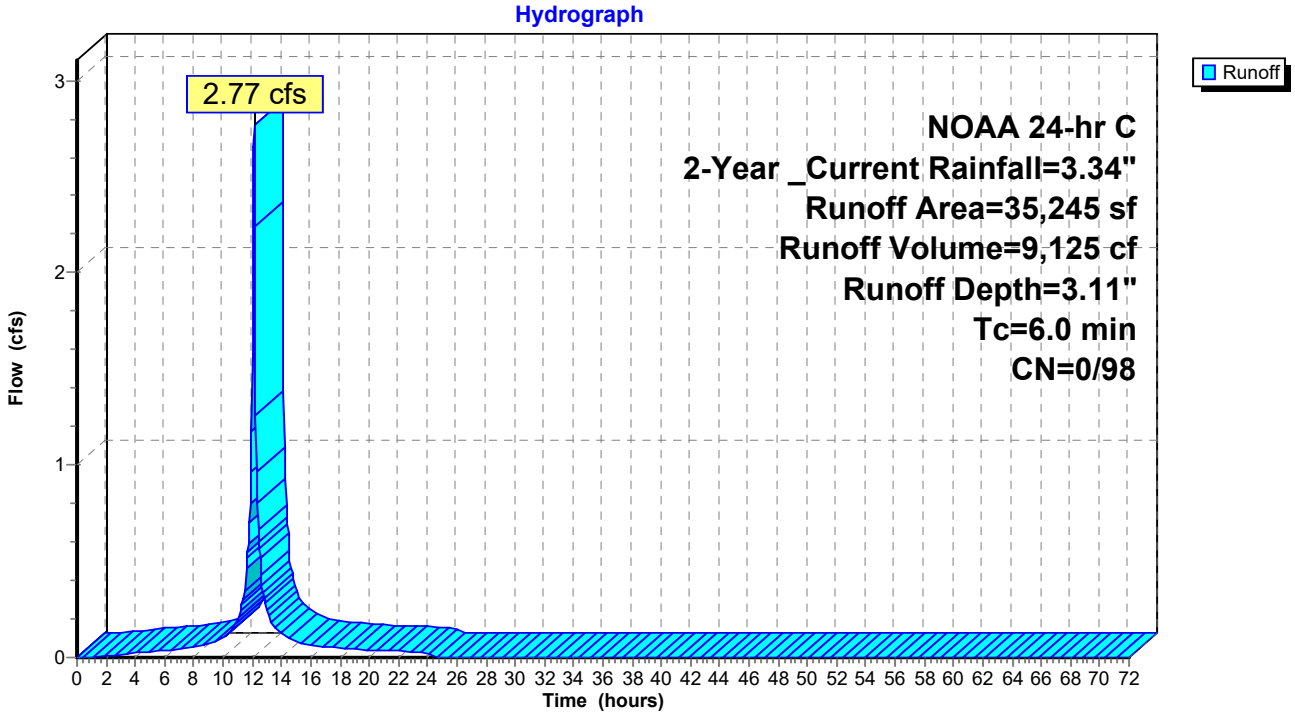
Runoff = 2.77 cfs @ 12.13 hrs, Volume= 9,125 cf, Depth= 3.11"
Routed to Pond 3P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	35,245	98	
	35,245	98	100.00% Impervious Area

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

Subcatchment 1Sc: DA1: Driveways (other)



Summary for Subcatchment 2S: DA 2: CN w/ IC areas

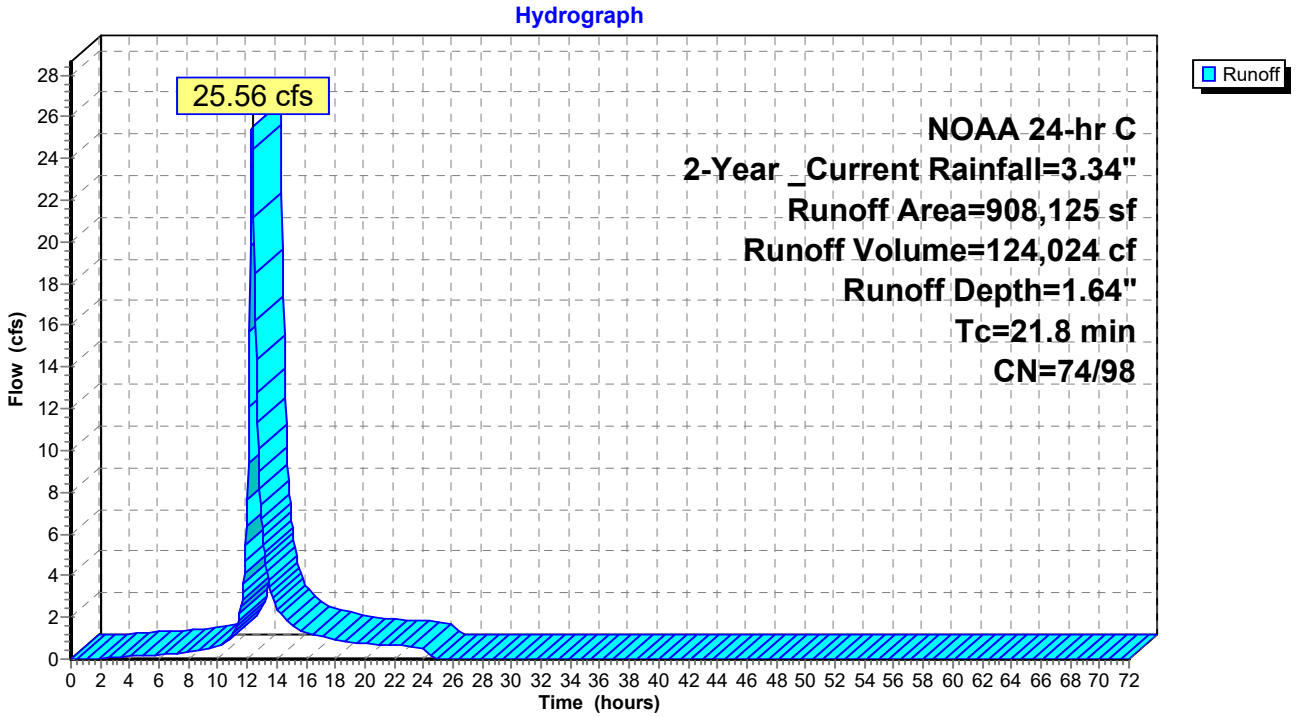
Runoff = 25.56 cfs @ 12.32 hrs, Volume= 124,024 cf, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	233,471	98	Impervious
	1	65	Brush, Good, HSG C
	620,871	74	>75% Grass cover, Good, HSG C
	1,845	72	Woods/grass comb., Good, HSG C
	51,937	73	Woods, Fair, HSG C
	908,125	80	Weighted Average
	674,654	74	74.29% Pervious Area
	233,471	98	25.71% Impervious Area

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

Subcatchment 2S: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sa: DA 2: CN w/ IC areas

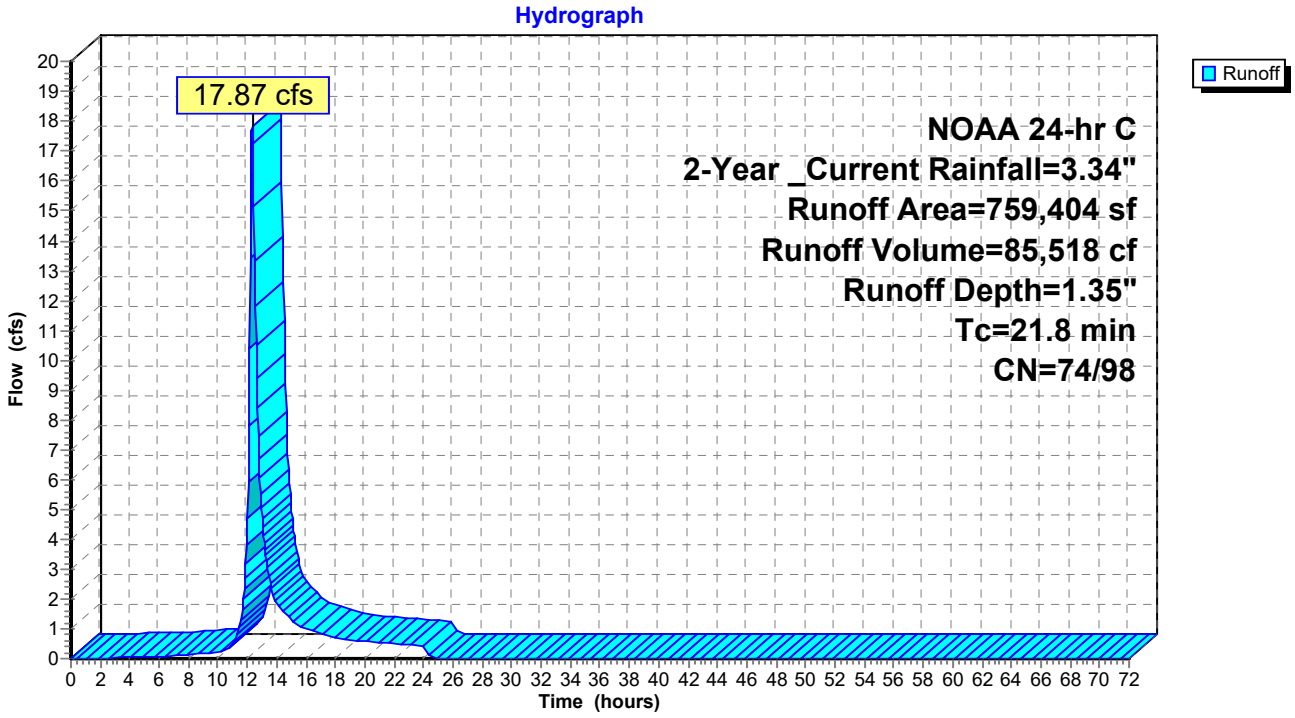
Runoff = 17.87 cfs @ 12.33 hrs, Volume= 85,518 cf, Depth= 1.35"
Routed to Pond 5P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	84,750	98	Impervious
	1	65	Brush, Good, HSG C
	620,871	74	>75% Grass cover, Good, HSG C
	1,845	72	Woods/grass comb., Good, HSG C
	51,937	73	Woods, Fair, HSG C
	759,404	77	Weighted Average
	674,654	74	88.84% Pervious Area
	84,750	98	11.16% Impervious Area

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

Subcatchment 2Sa: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sb: DA 2: Roofs

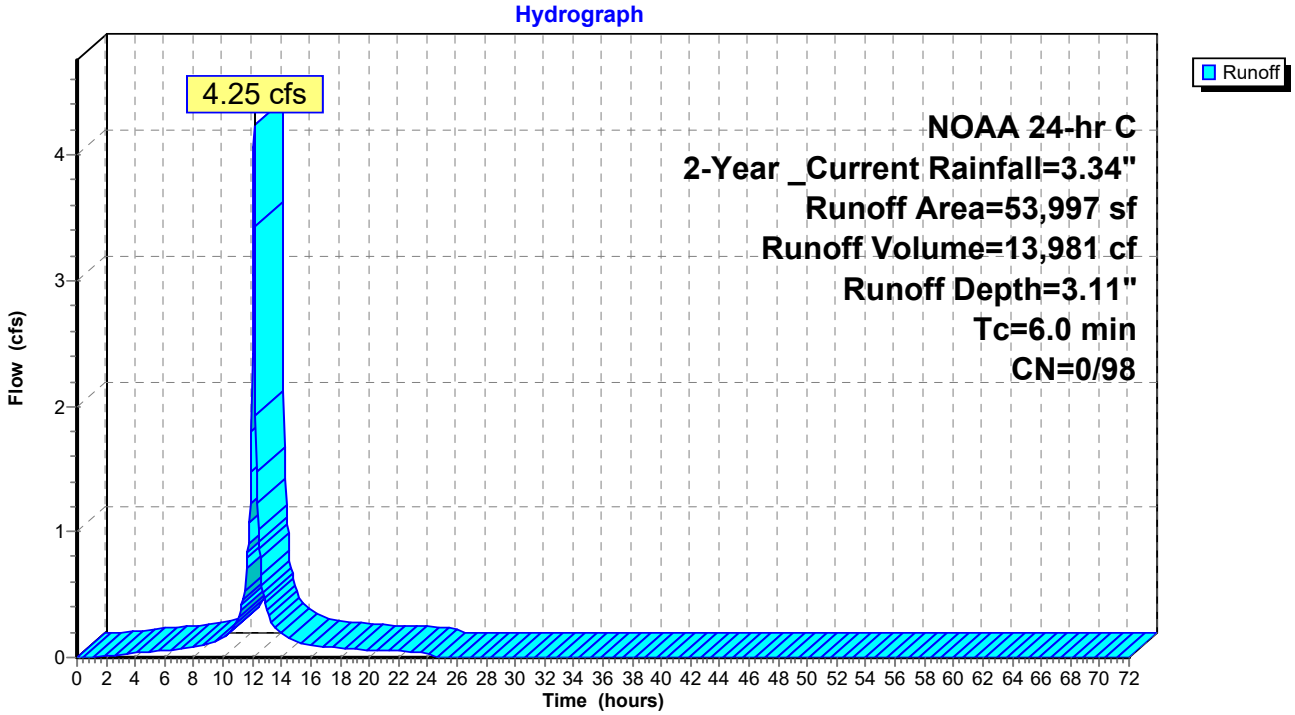
Runoff = 4.25 cfs @ 12.13 hrs, Volume= 13,981 cf, Depth= 3.11"
Routed to Pond 6P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	53,997	98	
	53,997	98	100.00% Impervious Area

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

Subcatchment 2Sb: DA 2: Roofs



Summary for Subcatchment 2Sc: DA 2: Driveways (other)

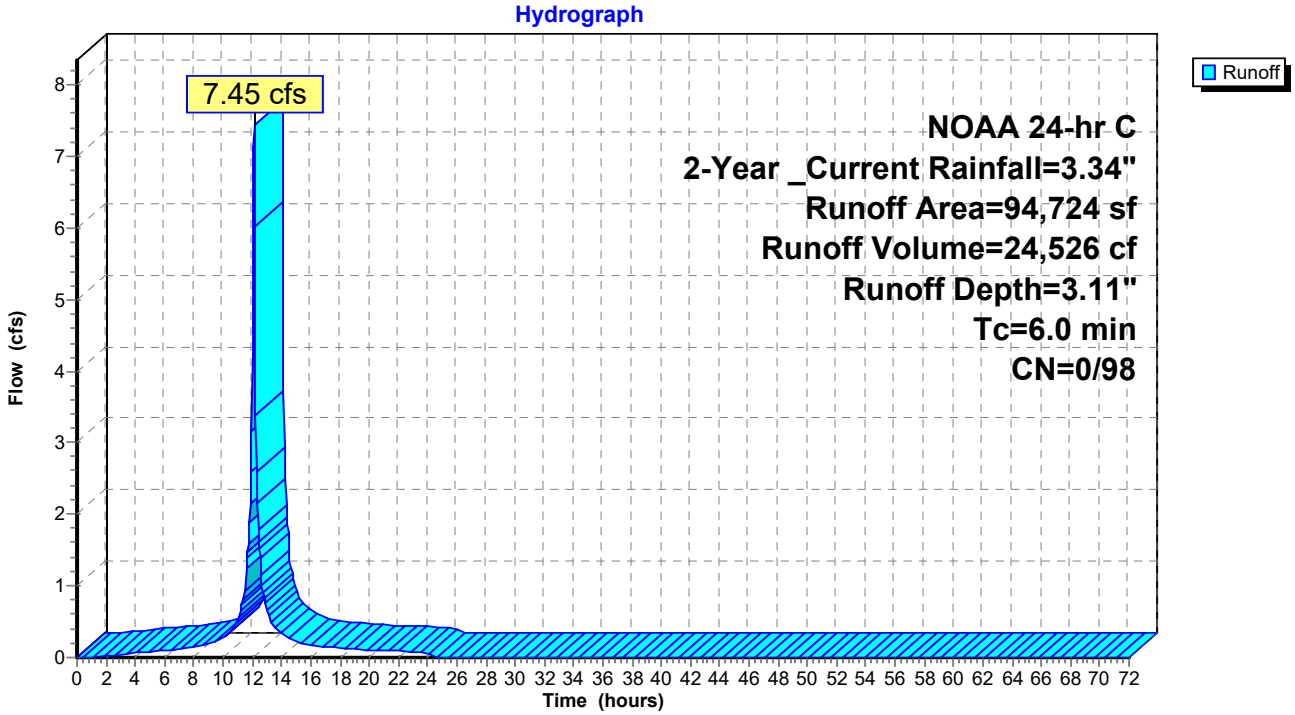
Runoff = 7.45 cfs @ 12.13 hrs, Volume= 24,526 cf, Depth= 3.11"
Routed to Pond 7P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	94,724	98	
	94,724	98	100.00% Impervious Area

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

Subcatchment 2Sc: DA 2: Driveways (other)



Summary for Subcatchment 3S: DA 3: CN w/ IC areas

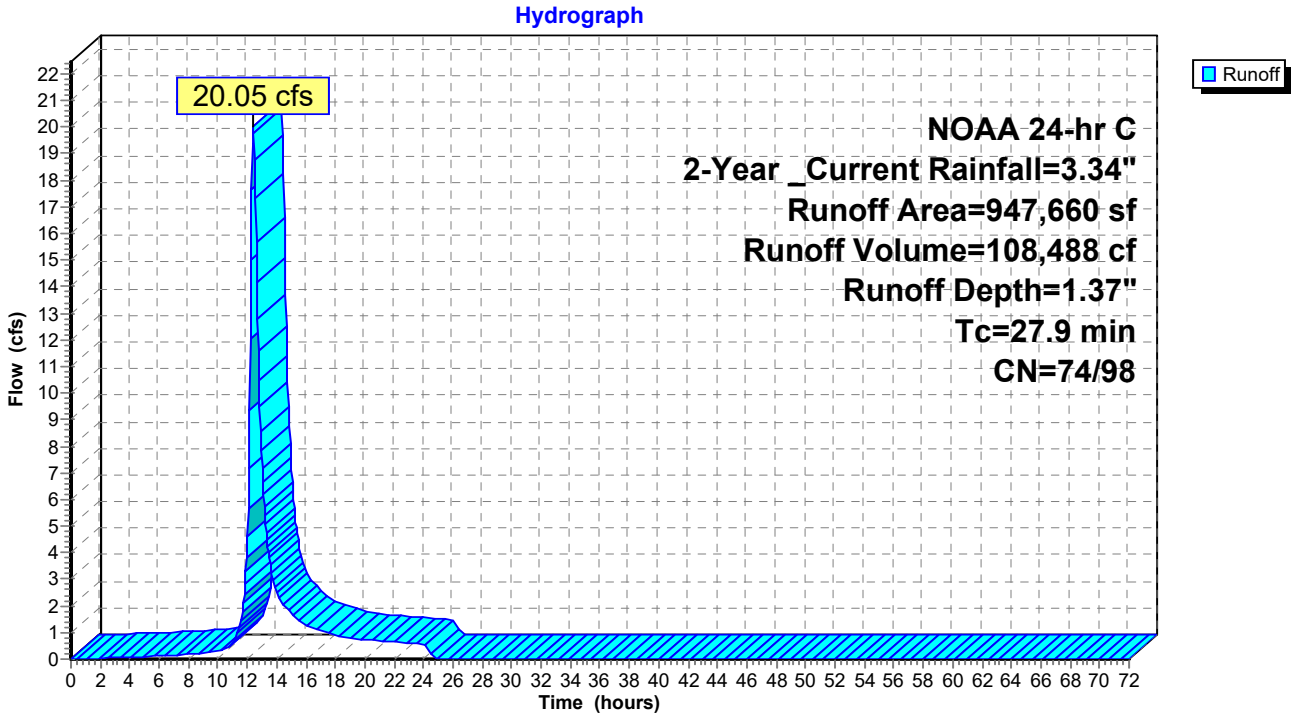
Runoff = 20.05 cfs @ 12.41 hrs, Volume= 108,488 cf, Depth= 1.37"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	116,506	98	Impervious
	4,930	79	50-75% Grass cover, Fair, HSG C
	592,347	74	>75% Grass cover, Good, HSG C
	169,305	73	Woods, Fair, HSG C
	64,572	70	Woods, Good, HSG C
	947,660	77	Weighted Average
	831,154	74	87.71% Pervious Area
	116,506	98	12.29% Impervious Area

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

Subcatchment 3S: DA 3: CN w/ IC areas



Summary for Subcatchment 3Sa: DA 3: CN w/ IC areas

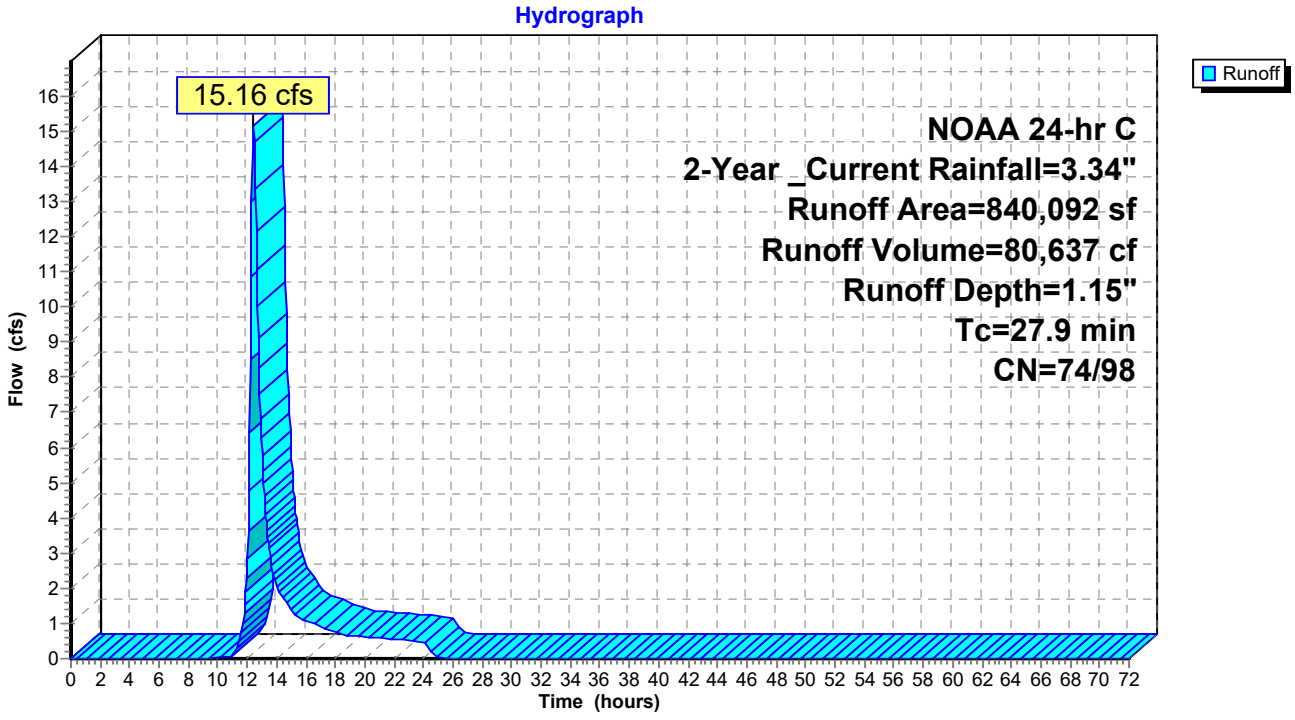
Runoff = 15.16 cfs @ 12.42 hrs, Volume= 80,637 cf, Depth= 1.15"
Routed to Pond 9P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	8,938	98	Impervious
	4,930	79	50-75% Grass cover, Fair, HSG C
	592,347	74	>75% Grass cover, Good, HSG C
	169,305	73	Woods, Fair, HSG C
	64,572	70	Woods, Good, HSG C
	840,092	74	Weighted Average
	831,154	74	98.94% Pervious Area
	8,938	98	1.06% Impervious Area

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

Subcatchment 3Sa: DA 3: CN w/ IC areas



Summary for Subcatchment 3Sb: DA 3: Roofs

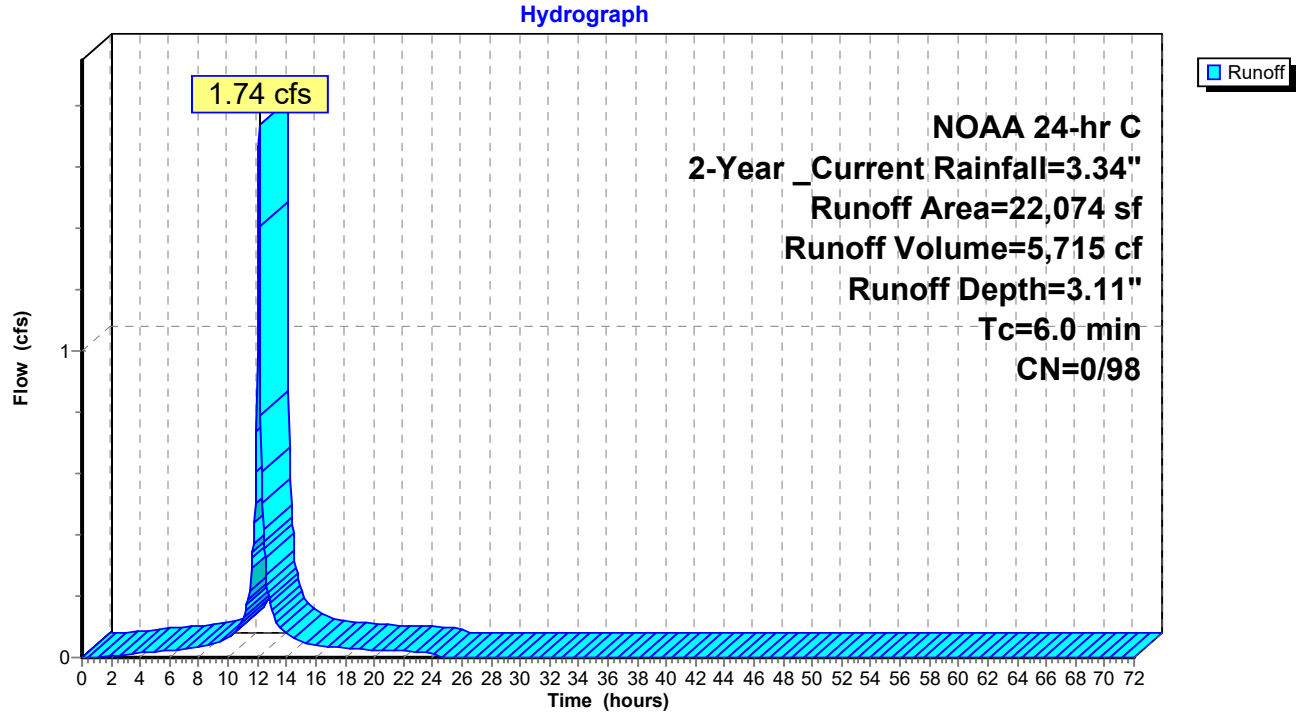
Runoff = 1.74 cfs @ 12.13 hrs, Volume= 5,715 cf, Depth= 3.11"
Routed to Pond 10P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	22,074	98	
	22,074	98	100.00% Impervious Area

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

Subcatchment 3Sb: DA 3: Roofs



Summary for Subcatchment 3Sc: DA 3: Driveways (other)

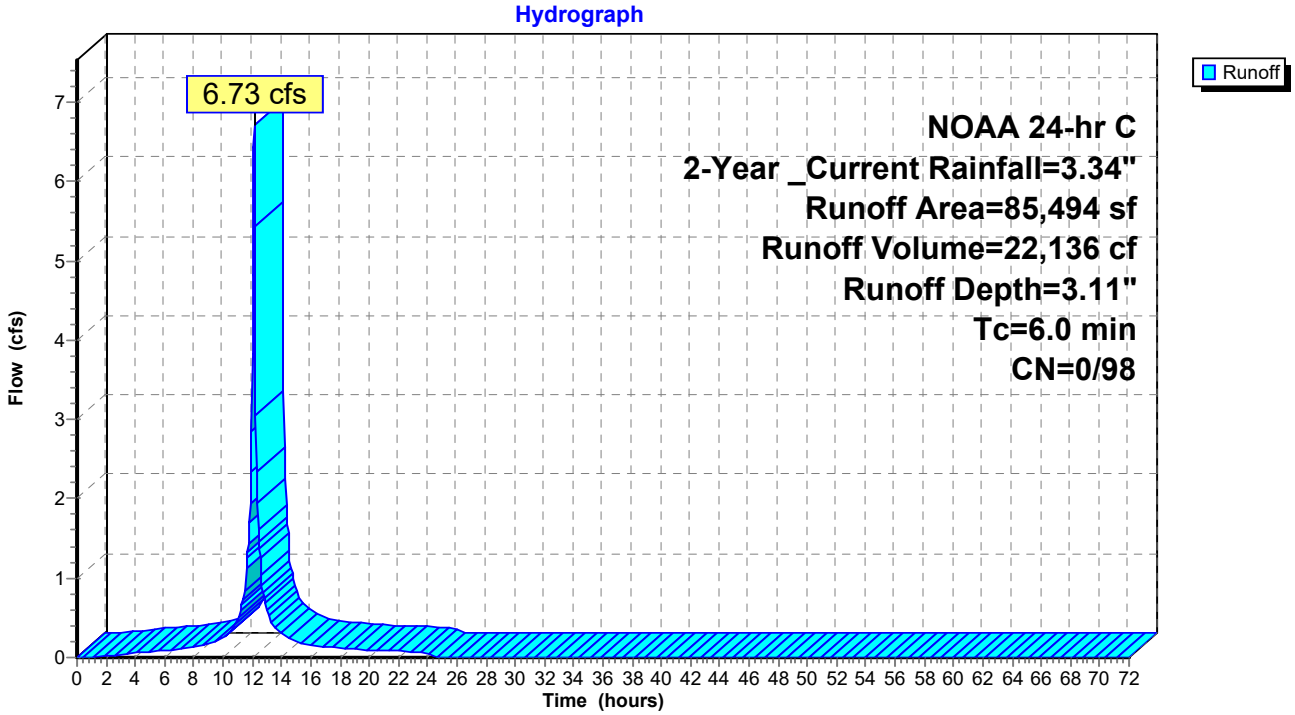
Runoff = 6.73 cfs @ 12.13 hrs, Volume= 22,136 cf, Depth= 3.11"
Routed to Pond 11P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	85,494	98	
	85,494	98	100.00% Impervious Area

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

Subcatchment 3Sc: DA 3: Driveways (other)



Summary for Subcatchment 4S: DA 4: CN w/ IC areas

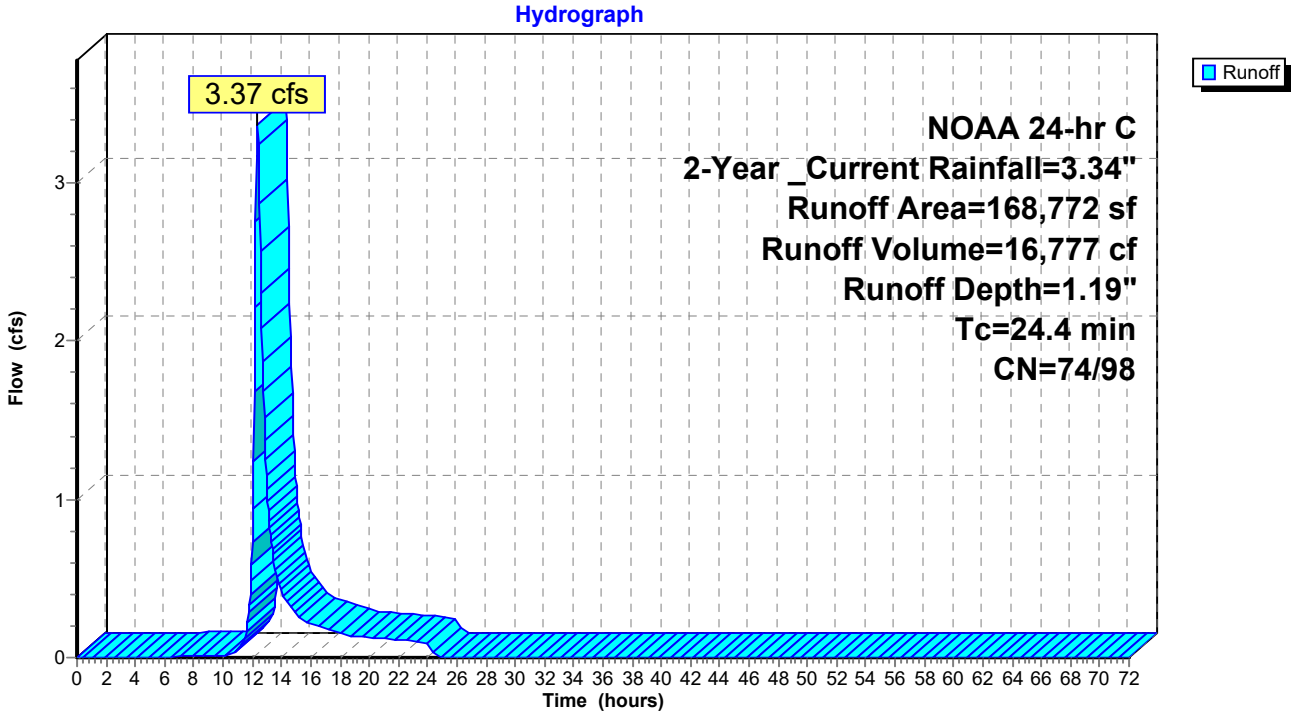
Runoff = 3.37 cfs @ 12.37 hrs, Volume= 16,777 cf, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	5,300	98	Impervious
	117,799	74	>75% Grass cover, Good, HSG C
	4,778	72	Woods/grass comb., Good, HSG C
	40,895	73	Woods, Fair, HSG C
	168,772	74	Weighted Average
	163,472	74	96.86% Pervious Area
	5,300	98	3.14% Impervious Area

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

Subcatchment 4S: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sa: DA 4: CN w/ IC areas

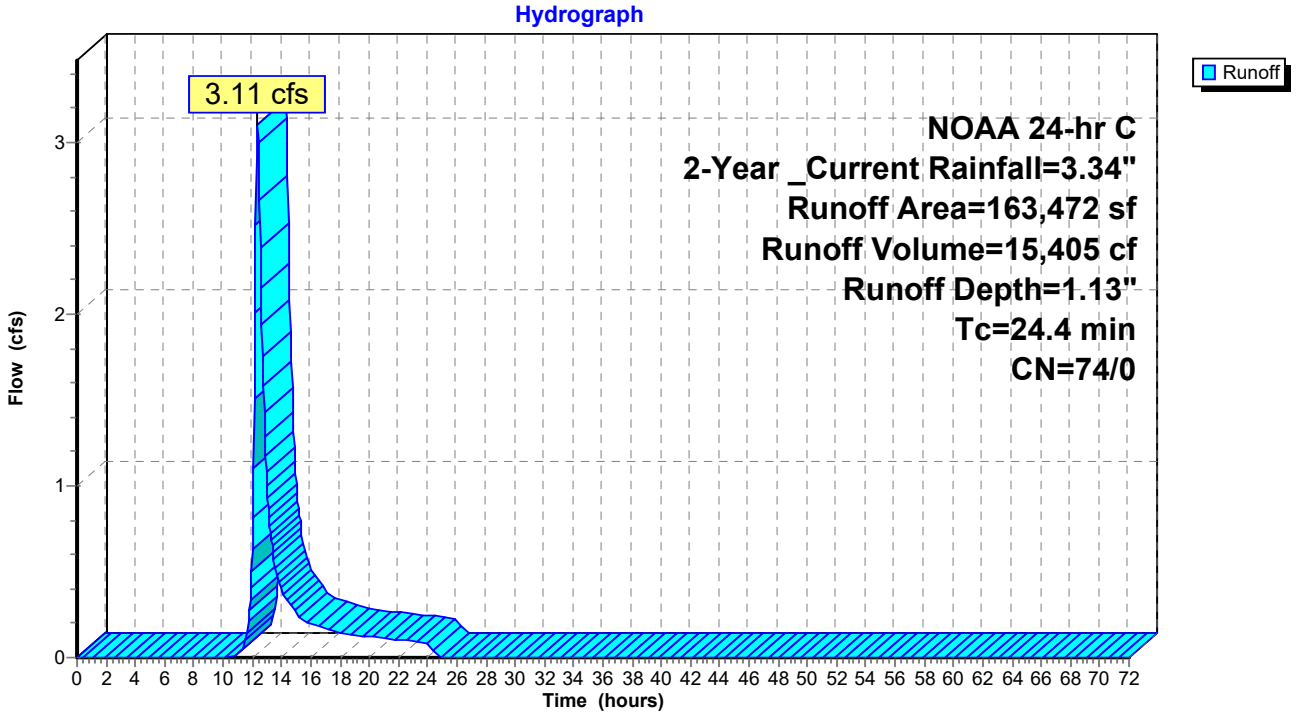
Runoff = 3.11 cfs @ 12.37 hrs, Volume= 15,405 cf, Depth= 1.13"
Routed to Link 4L : DA 4: Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	0	98	Impervious
	117,799	74	>75% Grass cover, Good, HSG C
	4,778	72	Woods/grass comb., Good, HSG C
	40,895	73	Woods, Fair, HSG C
	163,472	74	Weighted Average
	163,472	74	100.00% Pervious Area

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

Subcatchment 4Sa: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sb: DA 4: Roofs

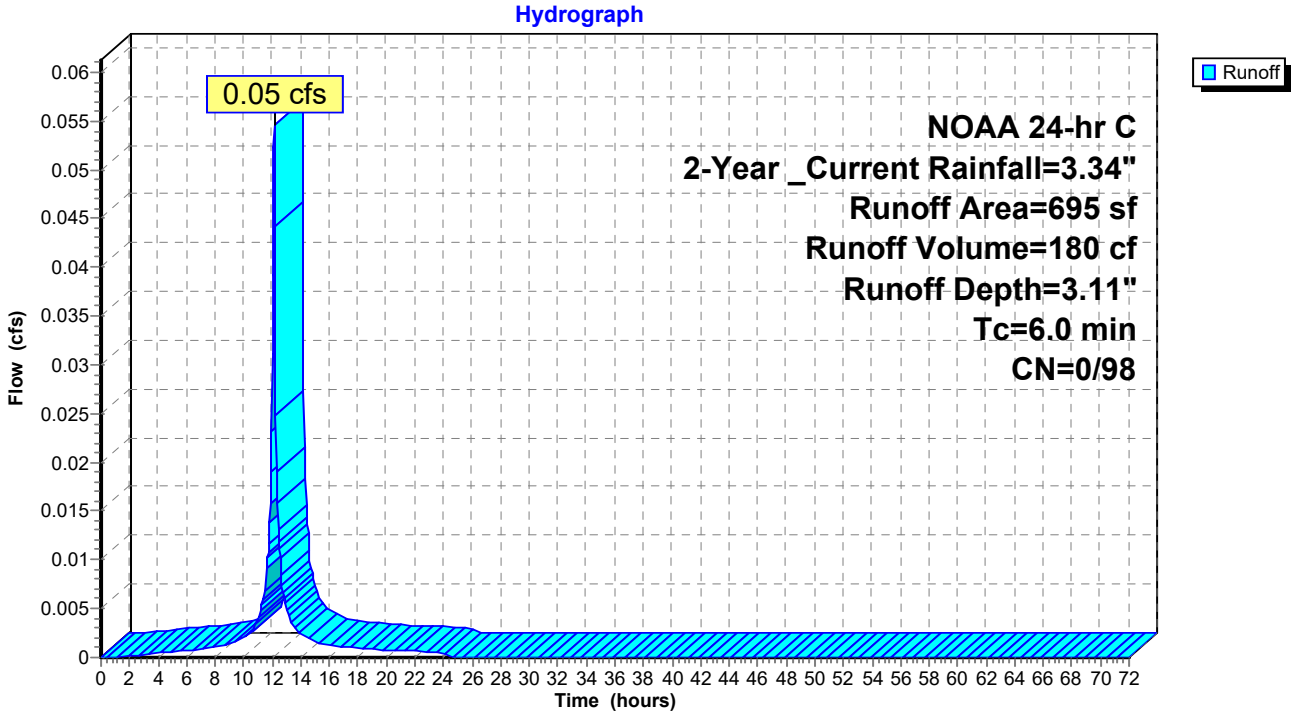
Runoff = 0.05 cfs @ 12.13 hrs, Volume= 180 cf, Depth= 3.11"
Routed to Link 4L : DA 4: Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	695	98	
	695	98	100.00% Impervious Area

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

Subcatchment 4Sb: DA 4: Roofs



Summary for Subcatchment 4Sc: DA 4: Driveways (other)

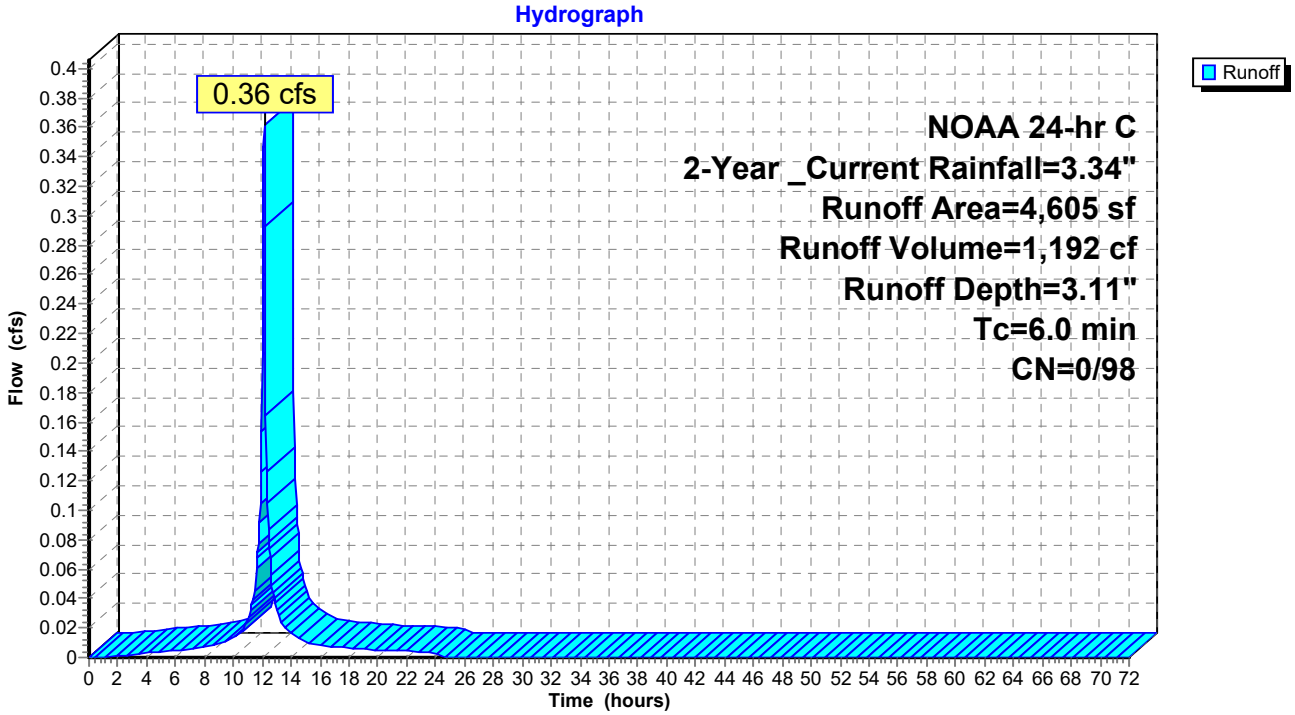
Runoff = 0.36 cfs @ 12.13 hrs, Volume= 1,192 cf, Depth= 3.11"
Routed to Pond 12P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _Current Rainfall=3.34"

	Area (sf)	CN	Description
*	4,605	98	
	4,605	98	100.00% Impervious Area

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

Subcatchment 4Sc: DA 4: Driveways (other)



Summary for Reach 1Ri: Inlet Pipe

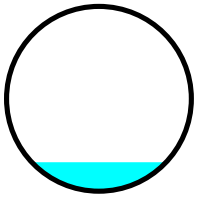
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 1.15" for 2-Year _Current event
Inflow = 7.54 cfs @ 12.52 hrs, Volume= 52,607 cf
Outflow = 7.52 cfs @ 12.53 hrs, Volume= 52,607 cf, Atten= 0%, Lag= 0.5 min
Routed to Pond 4P : Basin 1 Medium Case

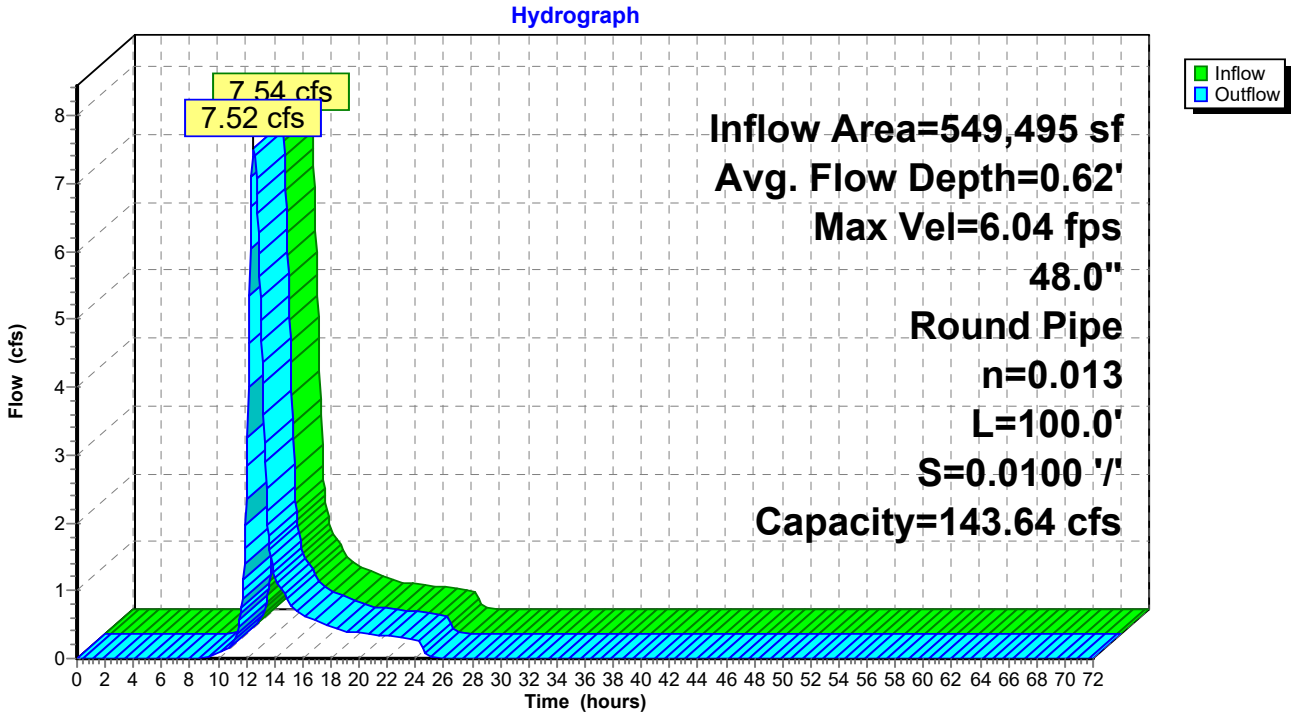
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 6.04 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.38 fps, Avg. Travel Time= 0.7 min

Peak Storage= 125 cf @ 12.52 hrs
Average Depth at Peak Storage= 0.62' , Surface Width= 2.90'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 143.64 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 75.00', Outlet Invert= 74.00'



Reach 1Ri: Inlet Pipe



Summary for Reach 1Ro: outlet

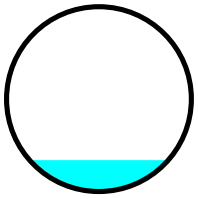
[52] Hint: Inlet/Outlet conditions not evaluated

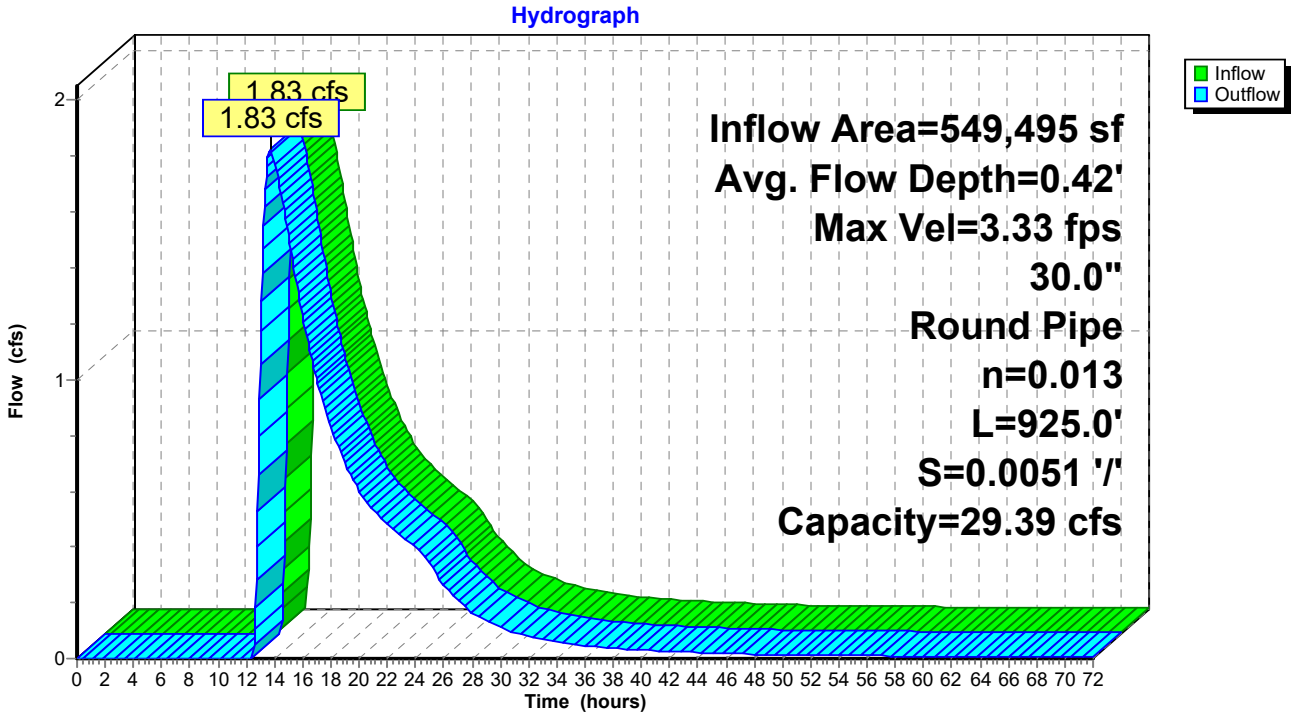
Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth > 0.99" for 2-Year _Current event
Inflow = 1.83 cfs @ 13.54 hrs, Volume= 45,416 cf
Outflow = 1.83 cfs @ 13.69 hrs, Volume= 45,405 cf, Atten= 0%, Lag= 8.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.33 fps, Min. Travel Time= 4.6 min
Avg. Velocity = 1.27 fps, Avg. Travel Time= 12.1 min

Peak Storage= 508 cf @ 13.61 hrs
Average Depth at Peak Storage= 0.42' , Surface Width= 1.87'
Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 29.39 cfs

30.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 925.0' Slope= 0.0051 '/'
Inlet Invert= 70.75', Outlet Invert= 66.00'





Summary for Reach 2Ri: Inlet Pipe

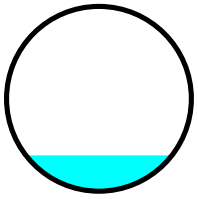
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 1.11" for 2-Year _Current event
Inflow = 11.77 cfs @ 12.56 hrs, Volume= 84,357 cf
Outflow = 11.72 cfs @ 12.56 hrs, Volume= 84,355 cf, Atten= 0%, Lag= 0.3 min
Routed to Pond 8P : Basin 2 Medium Case

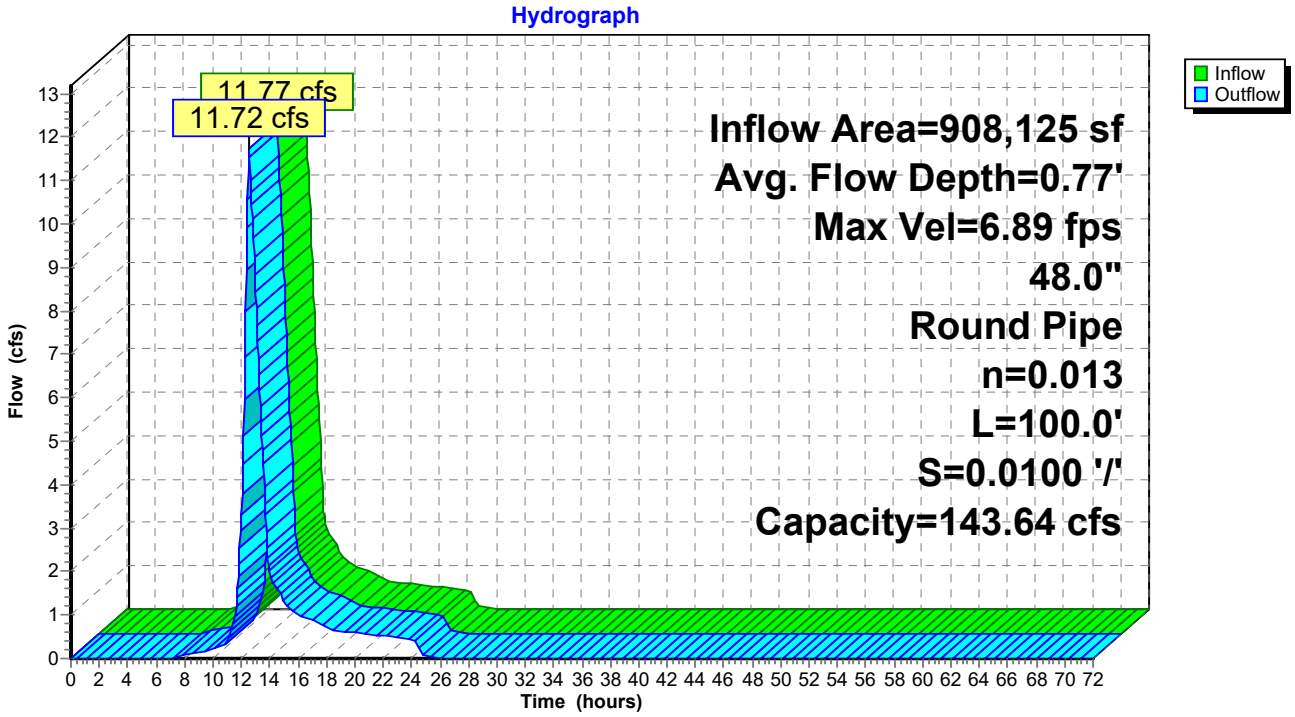
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 6.89 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.68 fps, Avg. Travel Time= 0.6 min

Peak Storage= 170 cf @ 12.56 hrs
Average Depth at Peak Storage= 0.77' , Surface Width= 3.16'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 143.64 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 70.00', Outlet Invert= 69.00'



Reach 2Ri: Inlet Pipe



Summary for Reach 2Ro: Outlet

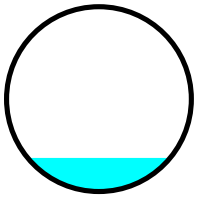
[52] Hint: Inlet/Outlet conditions not evaluated

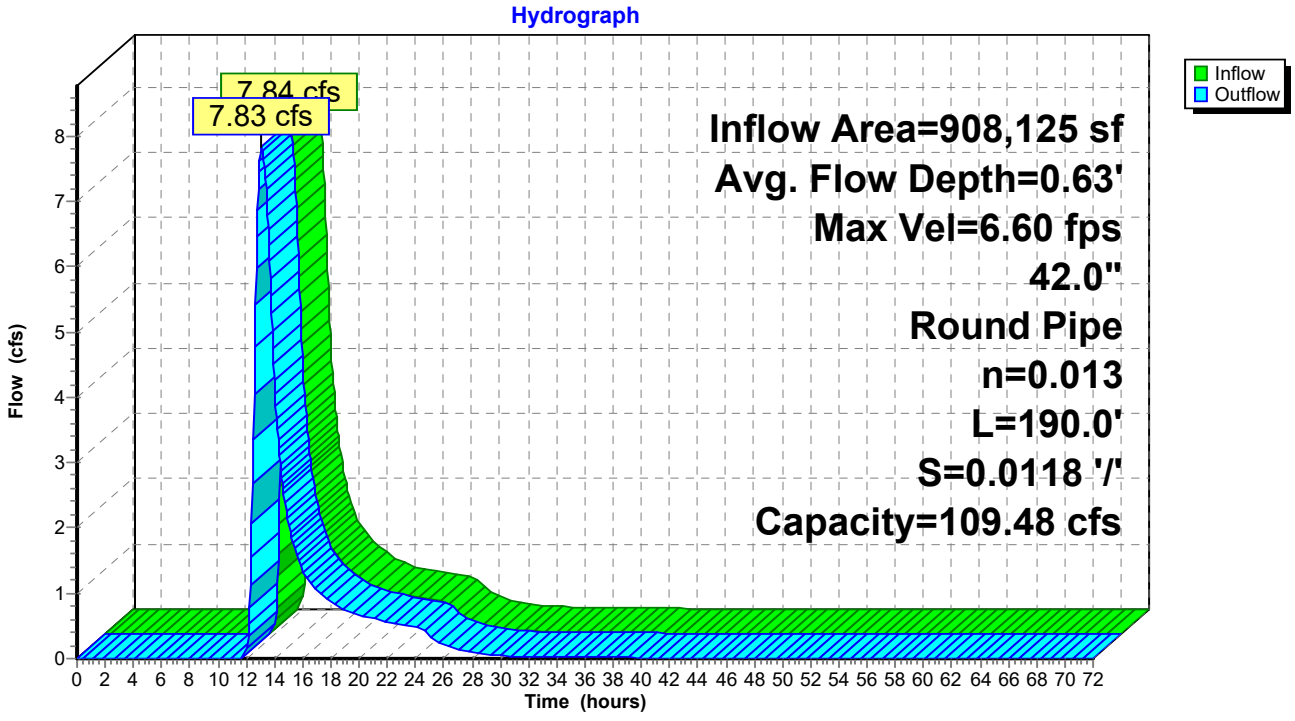
Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 1.05" for 2-Year _Current event
Inflow = 7.84 cfs @ 13.08 hrs, Volume= 79,538 cf
Outflow = 7.83 cfs @ 13.09 hrs, Volume= 79,538 cf, Atten= 0%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 6.60 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.69 fps, Avg. Travel Time= 1.9 min

Peak Storage= 226 cf @ 13.08 hrs
Average Depth at Peak Storage= 0.63' , Surface Width= 2.70'
Bank-Full Depth= 3.50' Flow Area= 9.6 sf, Capacity= 109.48 cfs

42.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 190.0' Slope= 0.0118 '/'
Inlet Invert= 65.75', Outlet Invert= 63.50'





Summary for Pond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 492,891 sf, 8.90% Impervious, Inflow Depth = 1.31" for 2-Year _Current event
Inflow = 11.82 cfs @ 12.30 hrs, Volume= 53,669 cf
Outflow = 7.54 cfs @ 12.52 hrs, Volume= 52,607 cf, Atten= 36%, Lag= 13.0 min
Primary = 7.54 cfs @ 12.52 hrs, Volume= 52,607 cf
Routed to Link 1L : Combined Flows
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : Combined Flows
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 96.79' @ 12.52 hrs Surf.Area= 4,550 sf Storage= 7,858 cf

Plug-Flow detention time= 32.4 min calculated for 52,570 cf (98% of inflow)
Center-of-Mass det. time= 21.0 min (874.3 - 853.3)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,737 cf	x 9.00 = 15,635 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.75	175	100.0	217	497	363

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 9.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 9.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 9.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 9.00** 2 End Contraction(s)

Primary OutFlow Max=7.53 cfs @ 12.52 hrs HW=96.78' (Free Discharge)
└─**1=Culvert** (Passes 7.53 cfs of 11.35 cfs potential flow)
└─**2=6" HDPE Underdrain** (Barrel Controls 7.53 cfs @ 4.26 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge)
└─**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

ond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

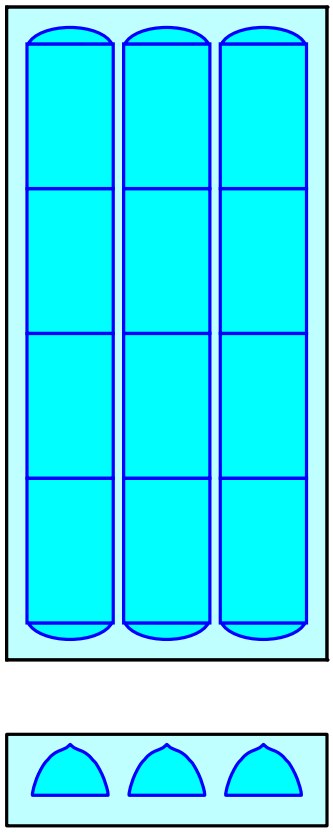
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

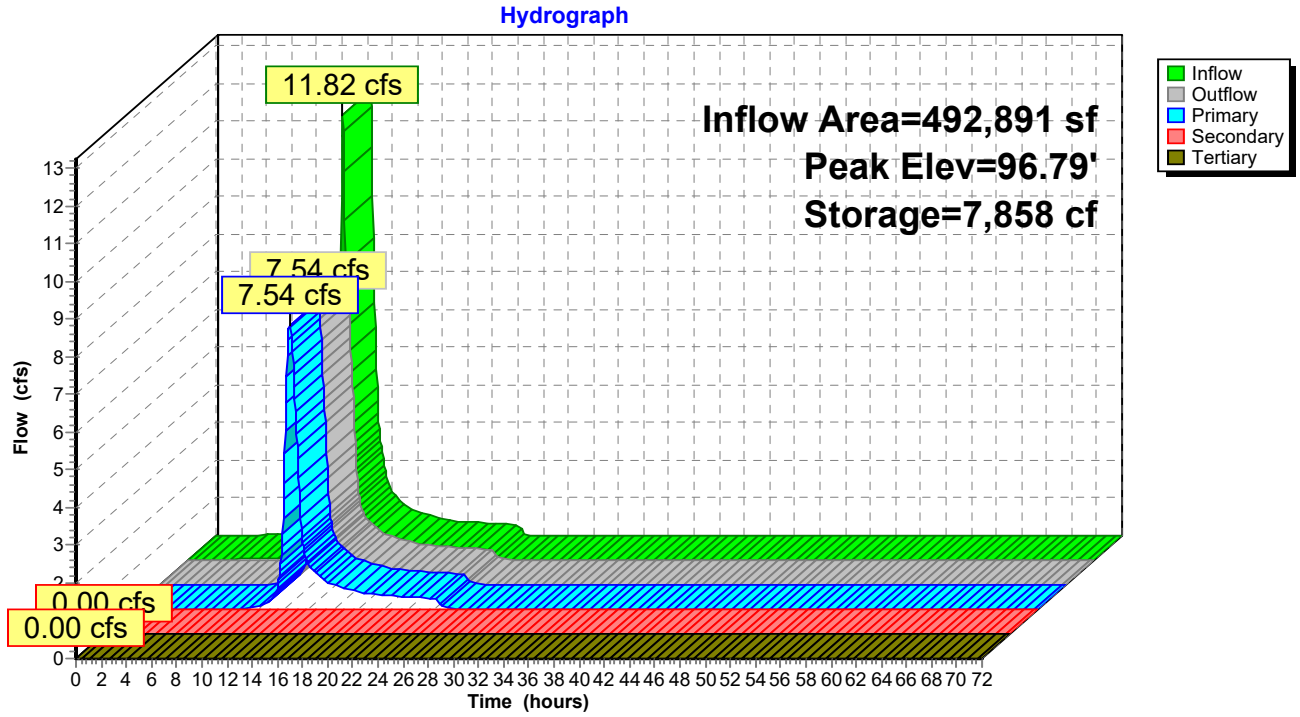
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 2P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 21,359 sf,100.00% Impervious, Inflow Depth = 3.11" for 2-Year _Current event
Inflow = 1.68 cfs @ 12.13 hrs, Volume= 5,530 cf
Outflow = 0.05 cfs @ 14.82 hrs, Volume= 5,530 cf, Atten= 97%, Lag= 161.8 min
Discarded = 0.05 cfs @ 14.82 hrs, Volume= 5,530 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 99.87' @ 14.82 hrs Surf.Area= 4,667 sf Storage= 3,114 cf

Plug-Flow detention time= 551.7 min calculated for 5,526 cf (100% of inflow)
Center-of-Mass det. time= 552.0 min (1,308.6 - 756.6)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)** Listed below (Recalc)
		622 cf	x 10.00 = 6,220 cf Total Available Storage

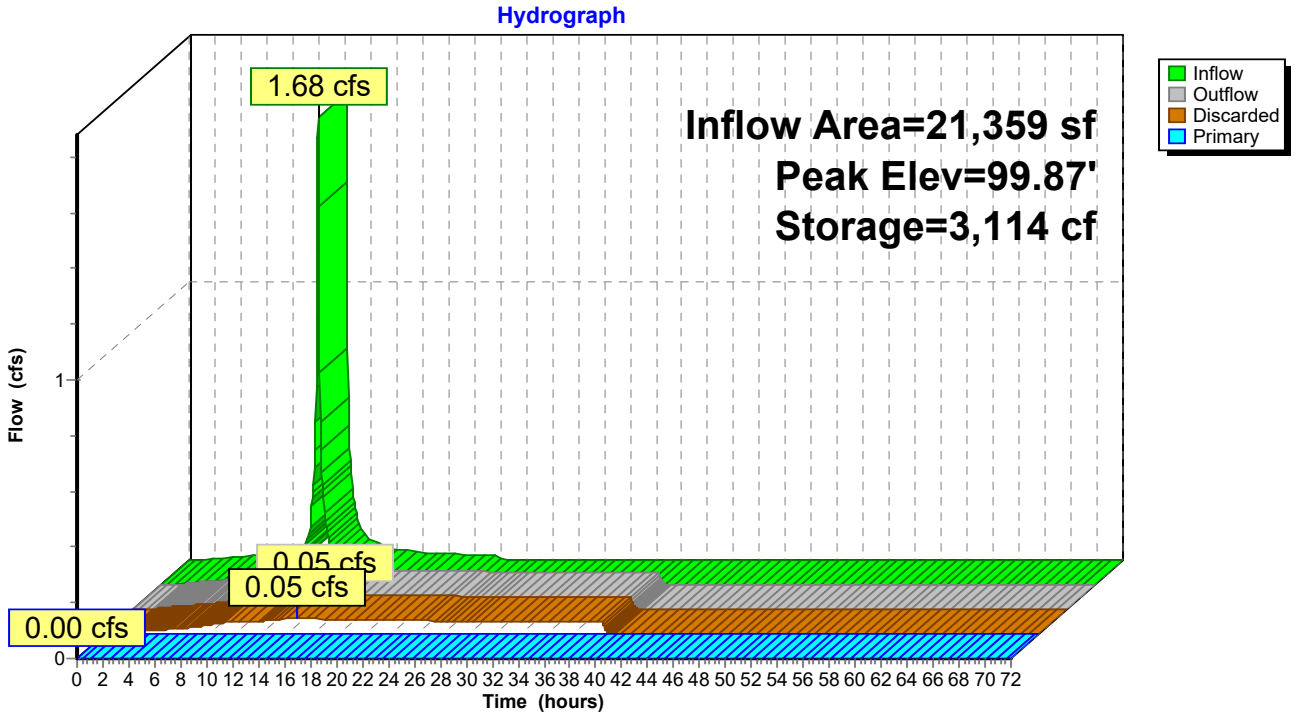
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 10.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.05 cfs @ 14.82 hrs HW=99.87' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=98.25' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Basic Rain Garden (infiltration only)



Summary for Pond 3P: Basic Porous Pavement (infiltration only)

Inflow Area = 35,245 sf,100.00% Impervious, Inflow Depth = 3.11" for 2-Year _Current event
Inflow = 2.77 cfs @ 12.13 hrs, Volume= 9,125 cf
Outflow = 0.41 cfs @ 11.65 hrs, Volume= 9,127 cf, Atten= 85%, Lag= 0.0 min
Discarded = 0.41 cfs @ 11.65 hrs, Volume= 9,127 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 99.46' @ 12.62 hrs Surf.Area= 35,245 sf Storage= 2,574 cf

Plug-Flow detention time= 38.3 min calculated for 9,121 cf (100% of inflow)
Center-of-Mass det. time= 38.4 min (795.1 - 756.6)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	16,001 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

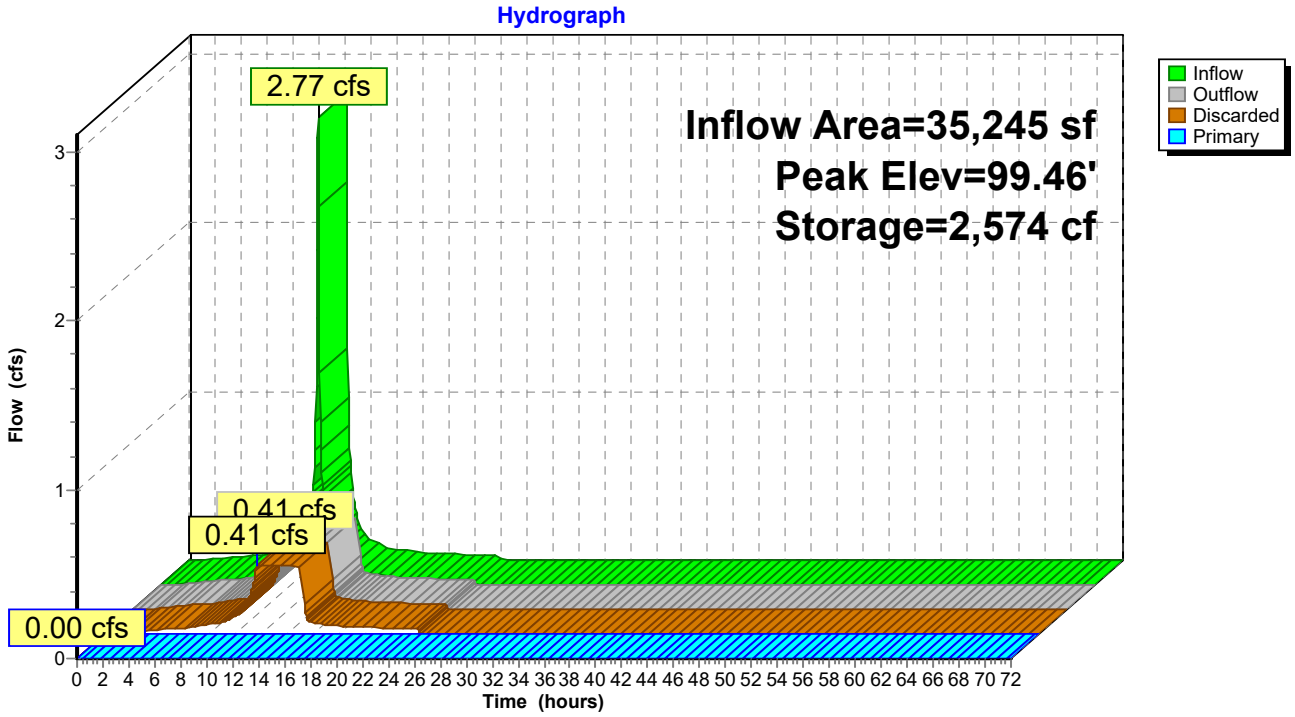
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	35,245	0.0	0	0
99.75	35,245	35.0	6,168	6,168
99.83	35,245	15.0	423	6,591
100.01	35,245	15.0	952	7,542
100.25	35,245	100.0	8,459	16,001

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.41 cfs @ 11.65 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Controls 0.00 cfs)

Pond 3P: Basic Porous Pavement (infiltration only)



Summary for Pond 4P: Basin 1 Medium Case

[62] Hint: Exceeded Reach 1Ri OUTLET depth by 0.71' @ 14.00 hrs

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 1.15" for 2-Year _Current event
Inflow = 7.52 cfs @ 12.53 hrs, Volume= 52,607 cf
Outflow = 1.83 cfs @ 13.54 hrs, Volume= 45,416 cf, Atten= 76%, Lag= 60.8 min
Primary = 1.83 cfs @ 13.54 hrs, Volume= 45,416 cf
Routed to Reach 1Ro : outlet
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 1Ro : outlet
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 1Ro : outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 74.99' @ 13.54 hrs Surf.Area= 28,370 sf Storage= 26,760 cf

Plug-Flow detention time= 367.5 min calculated for 45,384 cf (86% of inflow)
Center-of-Mass det. time= 303.7 min (1,178.7 - 875.0)

Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	162,840 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
74.00	25,611	0	0
79.00	39,525	162,840	162,840

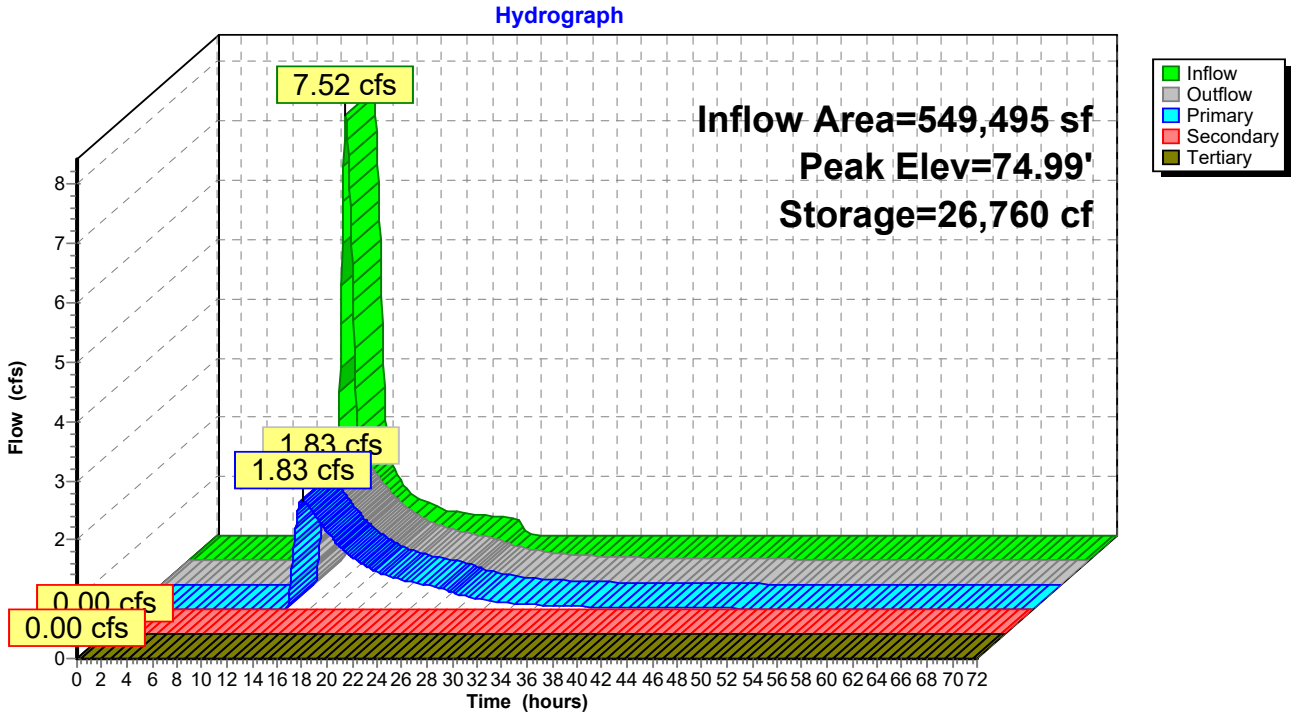
Device	Routing	Invert	Outlet Devices
#1	Primary	74.25'	**12.0" Vert. Low Flow Orifice** C= 0.600 Limited to weir flow at low heads
#2	Secondary	76.25'	**18.0" W x 12.0" H Vert. 2-YR Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	78.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.83 cfs @ 13.54 hrs HW=74.99' (Free Discharge)
1=Low Flow Orifice (Orifice Controls 1.83 cfs @ 2.93 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=74.00' (Free Discharge)
2=2-YR Orifice (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=74.00' (Free Discharge)
3=Orifice/Grate (Controls 0.00 cfs)

Pond 4P: Basin 1 Medium Case



Summary for Pond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 759,404 sf, 11.16% Impervious, Inflow Depth = 1.35" for 2-Year _Current event
Inflow = 17.87 cfs @ 12.33 hrs, Volume= 85,518 cf
Outflow = 11.77 cfs @ 12.56 hrs, Volume= 84,357 cf, Atten= 34%, Lag= 13.6 min
Primary = 11.77 cfs @ 12.56 hrs, Volume= 84,357 cf
Routed to Link 2L : Combined Flows
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 2L : Combined Flows
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 98.85' @ 12.56 hrs Surf.Area= 6,805 sf Storage= 13,081 cf

Plug-Flow detention time= 28.2 min calculated for 84,357 cf (99% of inflow)
Center-of-Mass det. time= 19.9 min (870.3 - 850.3)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	365 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,606 cf	x 10.00 = 16,060 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.00	175	100.0	86	365	327

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 10.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 10.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 10.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 10.00** 2 End Contraction(s)

Primary OutFlow Max=11.74 cfs @ 12.56 hrs HW=98.83' (Free Discharge)
└─**1=Culvert** (Passes 11.74 cfs of 17.60 cfs potential flow)
└─**2=6" HDPE Underdrain** (Barrel Controls 11.74 cfs @ 5.98 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge)
└─**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge)
└─**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

ond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

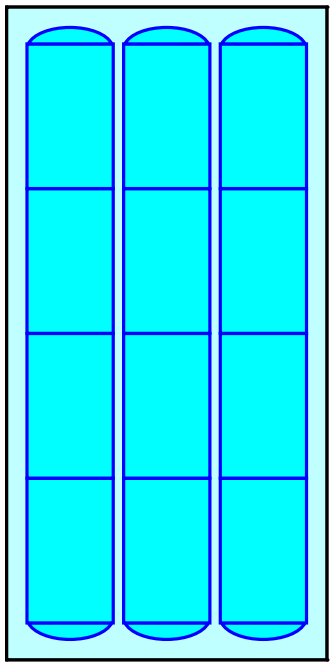
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

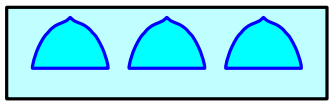
12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

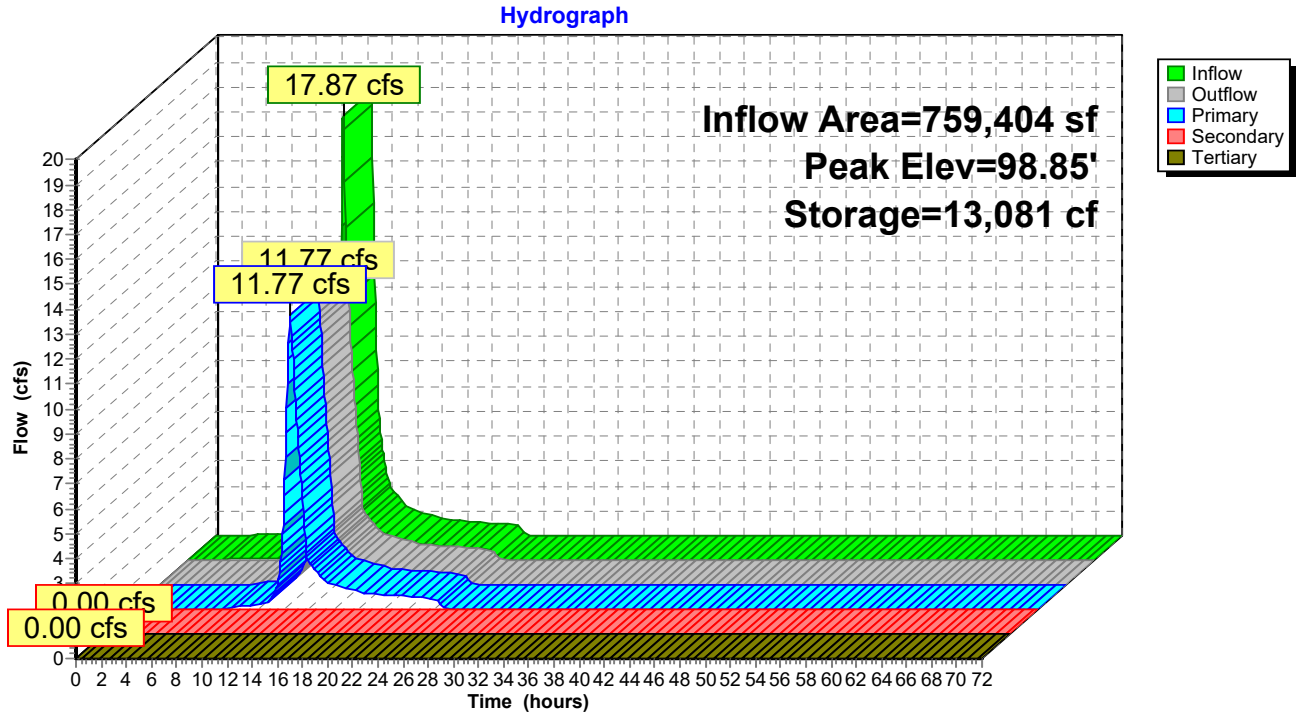
Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone





Pond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 6P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 53,997 sf,100.00% Impervious, Inflow Depth = 3.11" for 2-Year _Current event
Inflow = 4.25 cfs @ 12.13 hrs, Volume= 13,981 cf
Outflow = 0.14 cfs @ 14.84 hrs, Volume= 13,981 cf, Atten= 97%, Lag= 162.6 min
Discarded = 0.14 cfs @ 14.84 hrs, Volume= 13,981 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 99.88' @ 14.84 hrs Surf.Area= 11,728 sf Storage= 7,894 cf

Plug-Flow detention time= 557.5 min calculated for 13,971 cf (100% of inflow)
Center-of-Mass det. time= 557.8 min (1,314.4 - 756.6)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)** Listed below (Recalc)
		622 cf	x 25.00 = 15,550 cf Total Available Storage

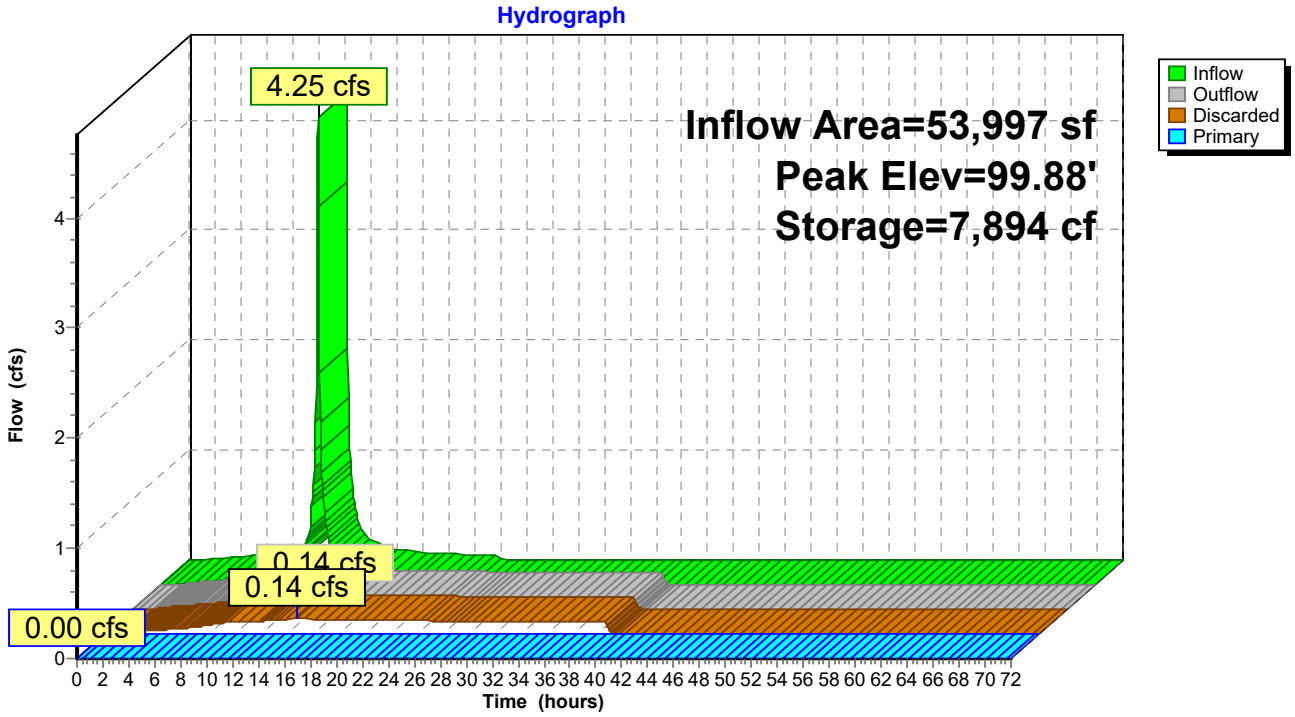
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 25.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.14 cfs @ 14.84 hrs HW=99.88' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=98.25' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 6P: Basic Rain Garden (infiltration only)



Summary for Pond 7P: Basic Porous Pavement (infiltration only)

Inflow Area = 94,724 sf,100.00% Impervious, Inflow Depth = 3.11" for 2-Year _Current event
Inflow = 7.45 cfs @ 12.13 hrs, Volume= 24,526 cf
Outflow = 1.10 cfs @ 11.65 hrs, Volume= 24,526 cf, Atten= 85%, Lag= 0.0 min
Discarded = 1.10 cfs @ 11.65 hrs, Volume= 24,526 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 99.46' @ 12.62 hrs Surf.Area= 94,724 sf Storage= 6,919 cf

Plug-Flow detention time= 38.4 min calculated for 24,509 cf (100% of inflow)
Center-of-Mass det. time= 38.4 min (795.1 - 756.6)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	43,005 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

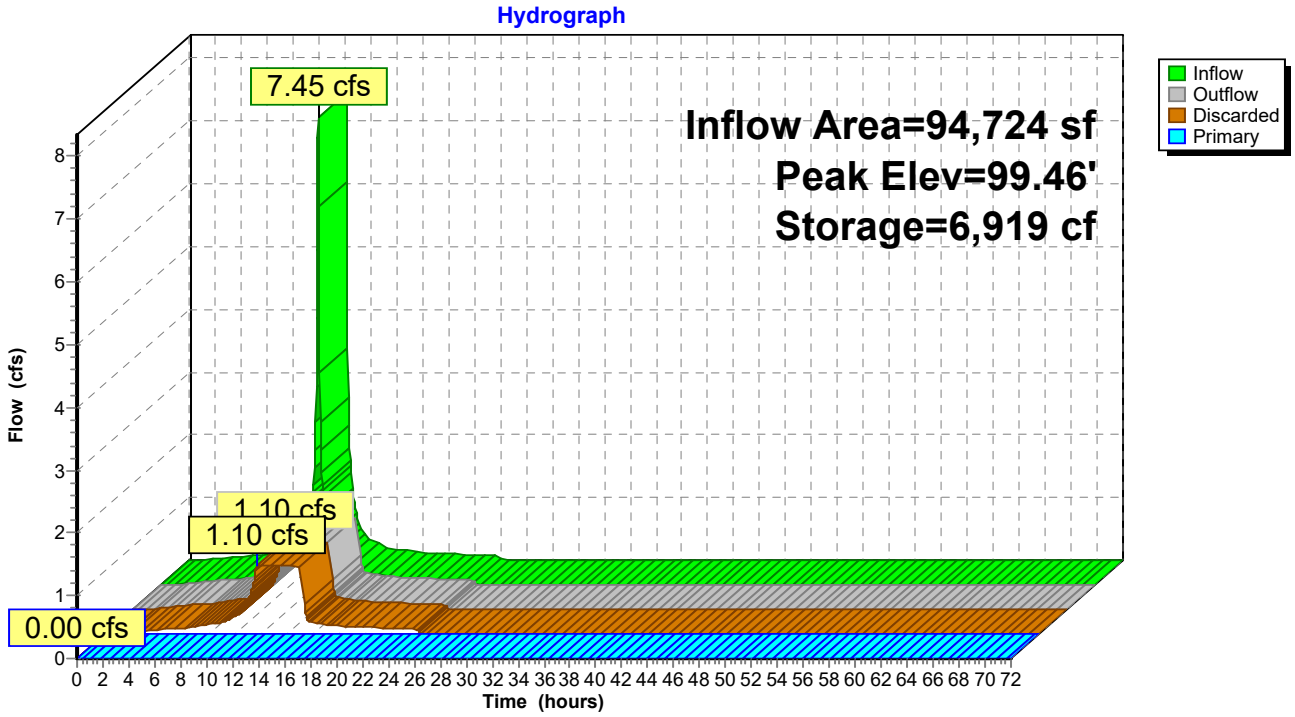
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	94,724	0.0	0	0
99.75	94,724	35.0	16,577	16,577
99.83	94,724	15.0	1,137	17,713
100.01	94,724	15.0	2,558	20,271
100.25	94,724	100.0	22,734	43,005

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=1.10 cfs @ 11.65 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 1.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Controls 0.00 cfs)

Pond 7P: Basic Porous Pavement (infiltration only)



Summary for Pond 8P: Basin 2 Medium Case

[62] Hint: Exceeded Reach 2Ri OUTLET depth by 0.63' @ 13.65 hrs

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 1.11" for 2-Year _Current event
Inflow = 11.72 cfs @ 12.56 hrs, Volume= 84,355 cf
Outflow = 7.84 cfs @ 13.08 hrs, Volume= 79,538 cf, Atten= 33%, Lag= 31.0 min
Primary = 7.84 cfs @ 13.08 hrs, Volume= 79,538 cf
Routed to Reach 2Ro : Outlet
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 2Ro : Outlet
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 2Ro : Outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 70.20' @ 13.08 hrs Surf.Area= 21,850 sf Storage= 24,451 cf

Plug-Flow detention time= 131.7 min calculated for 79,538 cf (94% of inflow)
Center-of-Mass det. time= 100.2 min (971.1 - 870.9)

Volume	Invert	Avail.Storage	Storage Description
#1	69.00'	125,280 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.00	18,889	0	0
74.00	31,223	125,280	125,280

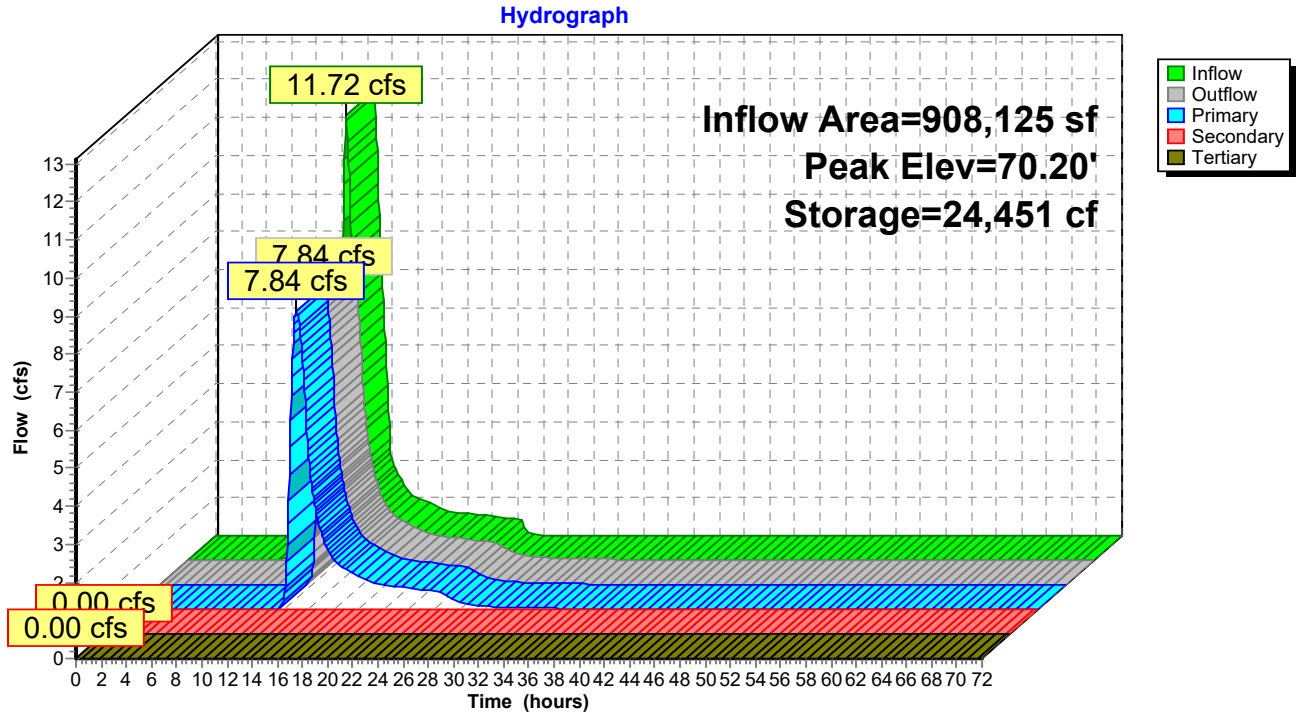
Device	Routing	Invert	Outlet Devices
#1	Primary	69.25'	**18.0" Vert. Low Flow Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Secondary	71.25'	**24.0" W x 18.0" H Vert. 2-YR Orifice X 3.00** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	73.75'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.83 cfs @ 13.08 hrs HW=70.20' (Free Discharge)
↑—**1=Low Flow Orifice** (Orifice Controls 7.83 cfs @ 3.32 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.00' (Free Discharge)
↑—**2=2-YR Orifice** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.00' (Free Discharge)
↑—**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 8P: Basin 2 Medium Case



Summary for Pond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 840,092 sf, 1.06% Impervious, Inflow Depth = 1.15" for 2-Year _Current event
Inflow = 15.16 cfs @ 12.42 hrs, Volume= 80,637 cf
Outflow = 15.15 cfs @ 12.42 hrs, Volume= 80,425 cf, Atten= 0%, Lag= 0.1 min
Primary = 2.83 cfs @ 12.42 hrs, Volume= 53,566 cf
Routed to Link 3L : dA3
Secondary = 9.01 cfs @ 12.42 hrs, Volume= 22,976 cf
Routed to Link 3L : dA3
Tertiary = 3.32 cfs @ 12.42 hrs, Volume= 3,882 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.69' @ 12.42 hrs Surf.Area= 1,361 sf Storage= 3,104 cf

Plug-Flow detention time= 11.3 min calculated for 80,425 cf (100% of inflow)
Center-of-Mass det. time= 9.5 min (889.8 - 880.2)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,737 cf	x 2.00 = 3,475 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.75	175	100.0	217	497	363

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 2.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 2.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 2.00** 2 End Contraction(s)

Primary OutFlow Max=2.83 cfs @ 12.42 hrs HW=100.69' (Free Discharge)
↑—**1=Culvert** (Passes 2.83 cfs of 4.23 cfs potential flow)
↑—**2=6" HDPE Underdrain** (Barrel Controls 2.83 cfs @ 7.19 fps)

Secondary OutFlow Max=8.96 cfs @ 12.42 hrs HW=100.69' (Free Discharge)
↑—**3=Broad-Crested Rectangular Weir** (Weir Controls 8.96 cfs @ 2.16 fps)

Tertiary OutFlow Max=3.23 cfs @ 12.42 hrs HW=100.69' (Free Discharge)
↑—**4=Sharp-Crested Rectangular Weir** (Weir Controls 3.23 cfs @ 1.43 fps)

ond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

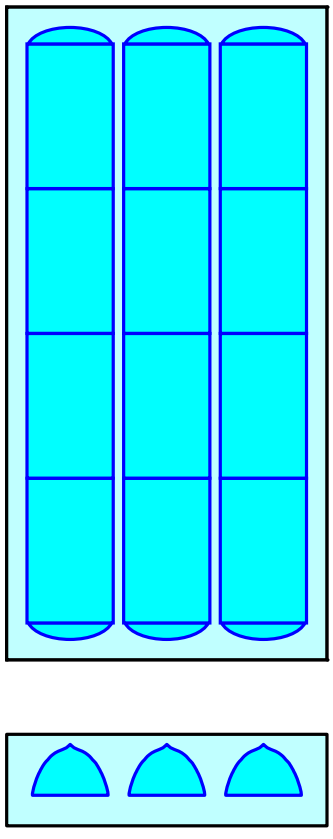
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

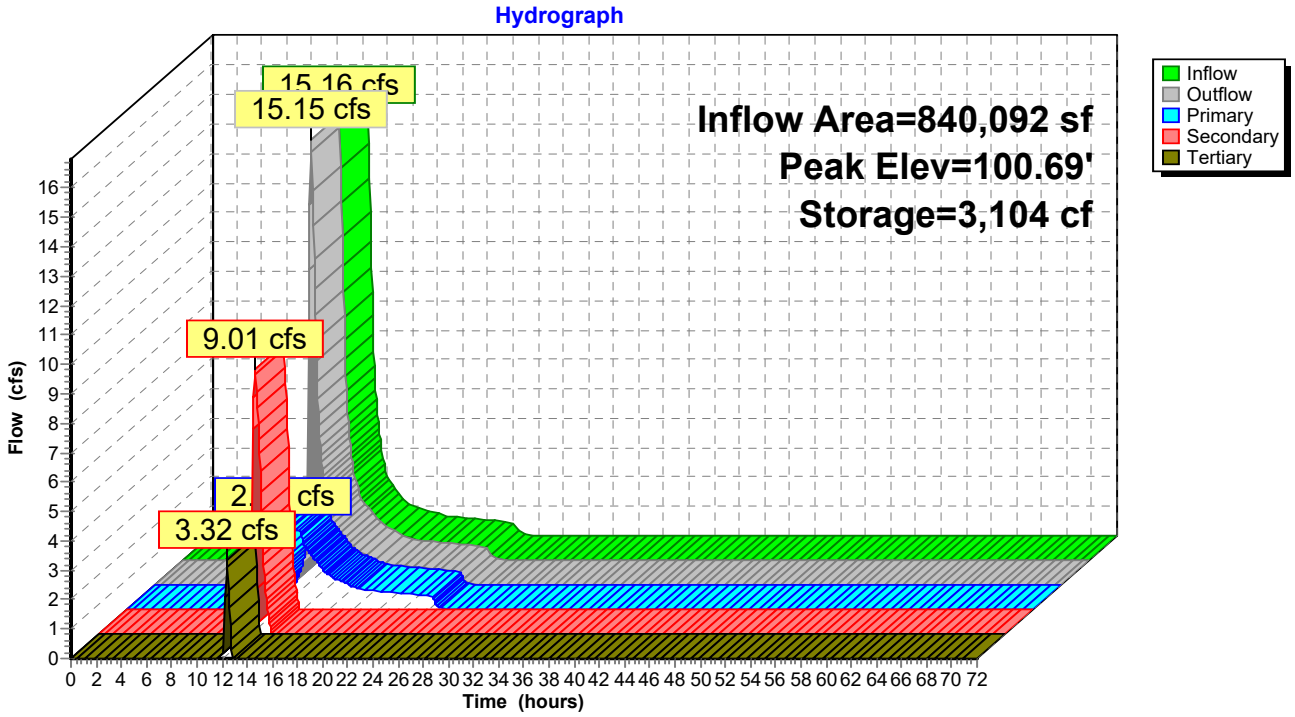
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 10P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 22,074 sf,100.00% Impervious, Inflow Depth = 3.11" for 2-Year _Current event
Inflow = 1.74 cfs @ 12.13 hrs, Volume= 5,715 cf
Outflow = 0.05 cfs @ 14.97 hrs, Volume= 5,715 cf, Atten= 97%, Lag= 170.8 min
Discarded = 0.05 cfs @ 14.97 hrs, Volume= 5,715 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 99.99' @ 14.97 hrs Surf.Area= 4,486 sf Storage= 3,323 cf

Plug-Flow detention time= 626.3 min calculated for 5,711 cf (100% of inflow)
Center-of-Mass det. time= 626.7 min (1,383.3 - 756.6)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 9.00 = 5,598 cf Total Available Storage

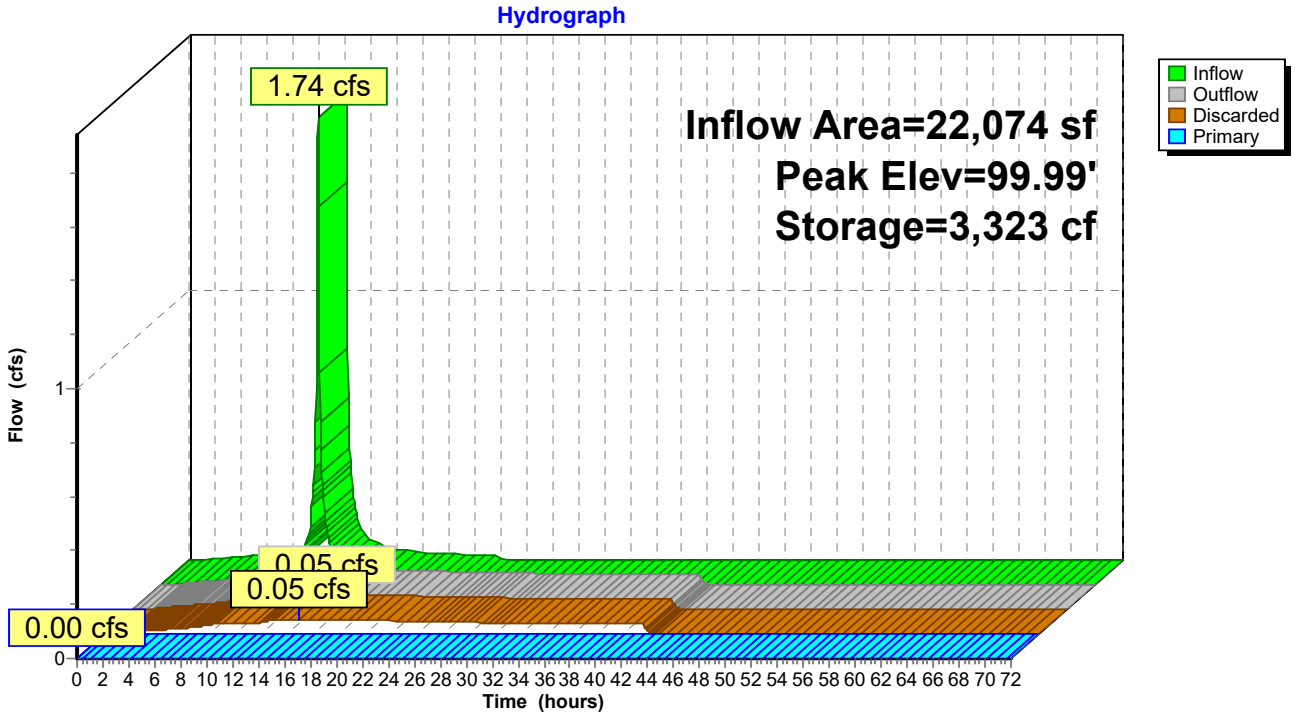
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 9.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.05 cfs @ 14.97 hrs HW=99.99' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=98.25' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 10P: Basic Rain Garden (infiltration only)



Summary for Pond 11P: Basic Porous Pavement (infiltration only)

Inflow Area = 85,494 sf,100.00% Impervious, Inflow Depth = 3.11" for 2-Year _Current event
Inflow = 6.73 cfs @ 12.13 hrs, Volume= 22,136 cf
Outflow = 0.99 cfs @ 11.65 hrs, Volume= 22,136 cf, Atten= 85%, Lag= 0.0 min
Discarded = 0.99 cfs @ 11.65 hrs, Volume= 22,136 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 99.46' @ 12.62 hrs Surf.Area= 85,494 sf Storage= 6,245 cf

Plug-Flow detention time= 38.4 min calculated for 22,120 cf (100% of inflow)
Center-of-Mass det. time= 38.4 min (795.1 - 756.6)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	38,814 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

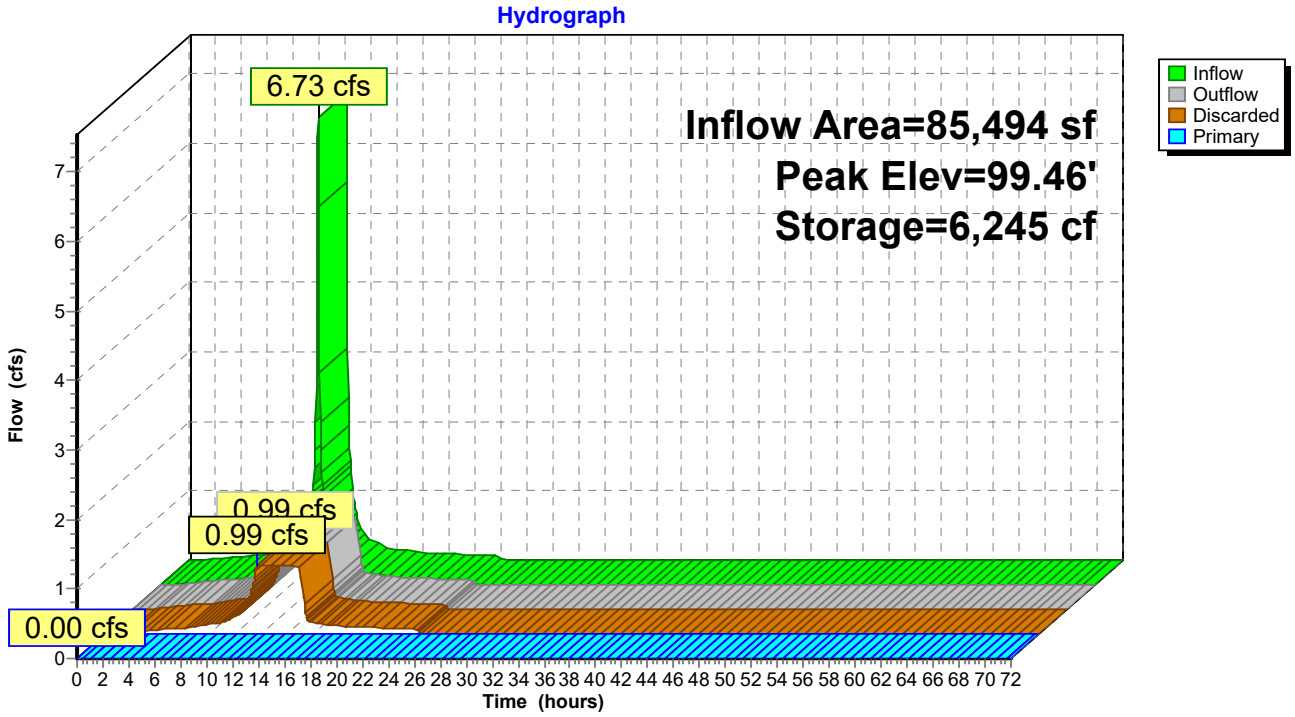
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	85,494	0.0	0	0
99.75	85,494	35.0	14,961	14,961
99.83	85,494	15.0	1,026	15,987
100.01	85,494	15.0	2,308	18,296
100.25	85,494	100.0	20,519	38,814

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.99 cfs @ 11.65 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.99 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Controls 0.00 cfs)

Pond 11P: Basic Porous Pavement (infiltration only)



Summary for Pond 12P: Basic Porous Pavement (infiltration only)

Inflow Area = 4,605 sf,100.00% Impervious, Inflow Depth = 3.11" for 2-Year _Current event
Inflow = 0.36 cfs @ 12.13 hrs, Volume= 1,192 cf
Outflow = 0.05 cfs @ 11.70 hrs, Volume= 1,192 cf, Atten= 85%, Lag= 0.0 min
Discarded = 0.05 cfs @ 11.70 hrs, Volume= 1,192 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 4L : DA 4: Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 99.46' @ 12.62 hrs Surf.Area= 4,605 sf Storage= 343 cf

Plug-Flow detention time= 40.7 min calculated for 1,192 cf (100% of inflow)
Center-of-Mass det. time= 40.7 min (797.3 - 756.6)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	4,393 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

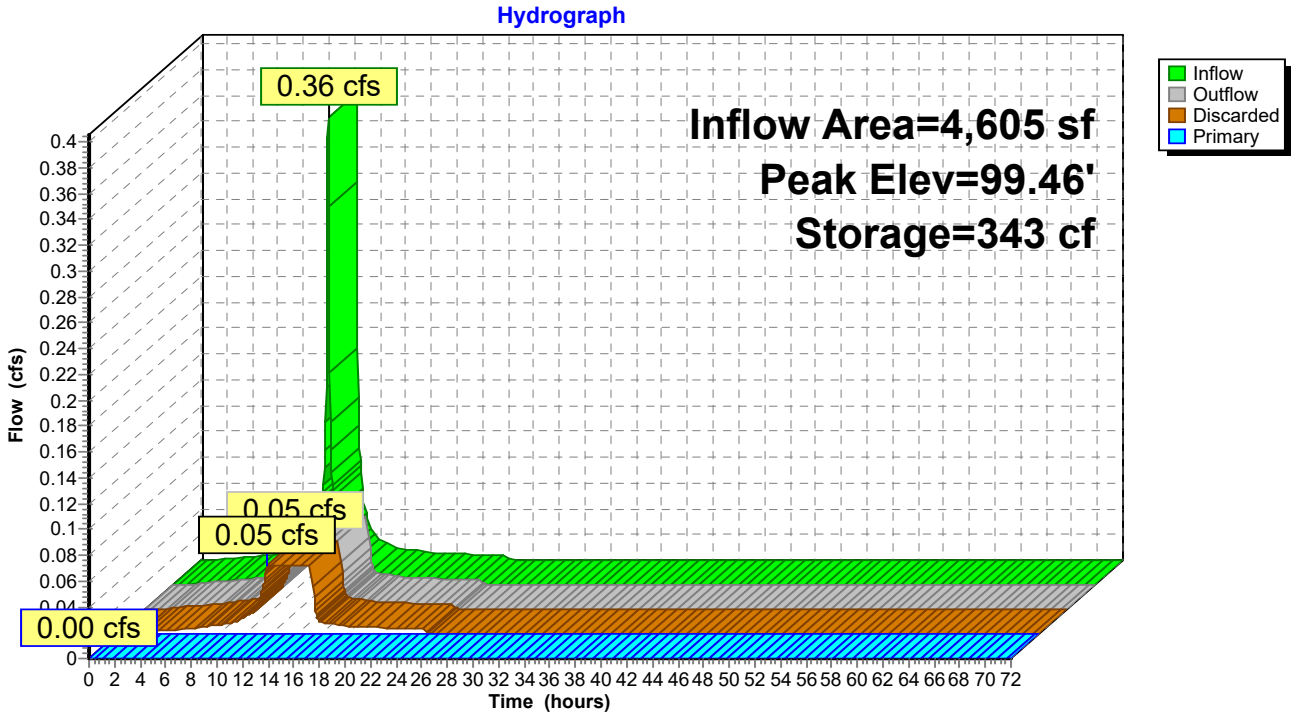
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	4,605	0.0	0	0
99.75	4,605	35.0	806	806
99.83	4,605	15.0	55	861
100.01	4,605	15.0	124	985
100.25	4,605	100.0	1,105	2,091
100.75	4,605	100.0	2,303	4,393

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.05 cfs @ 11.70 hrs HW=99.27' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
2=Edge of Porous Asphalt (Controls 0.00 cfs)

Pond 12P: Basic Porous Pavement (infiltration only)

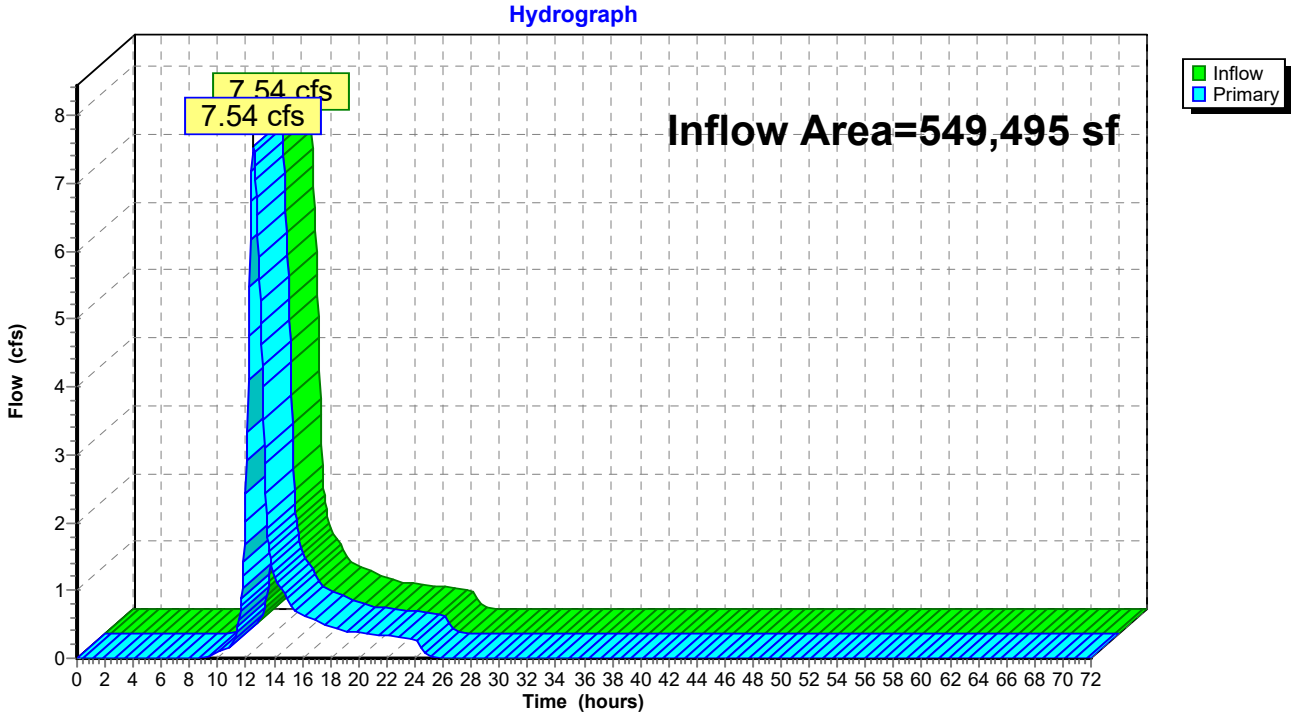


Summary for Link 1L: Combined Flows

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 1.15" for 2-Year _Current event
Inflow = 7.54 cfs @ 12.52 hrs, Volume= 52,607 cf
Primary = 7.54 cfs @ 12.52 hrs, Volume= 52,607 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 1Ri : Inlet Pipe

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1L: Combined Flows

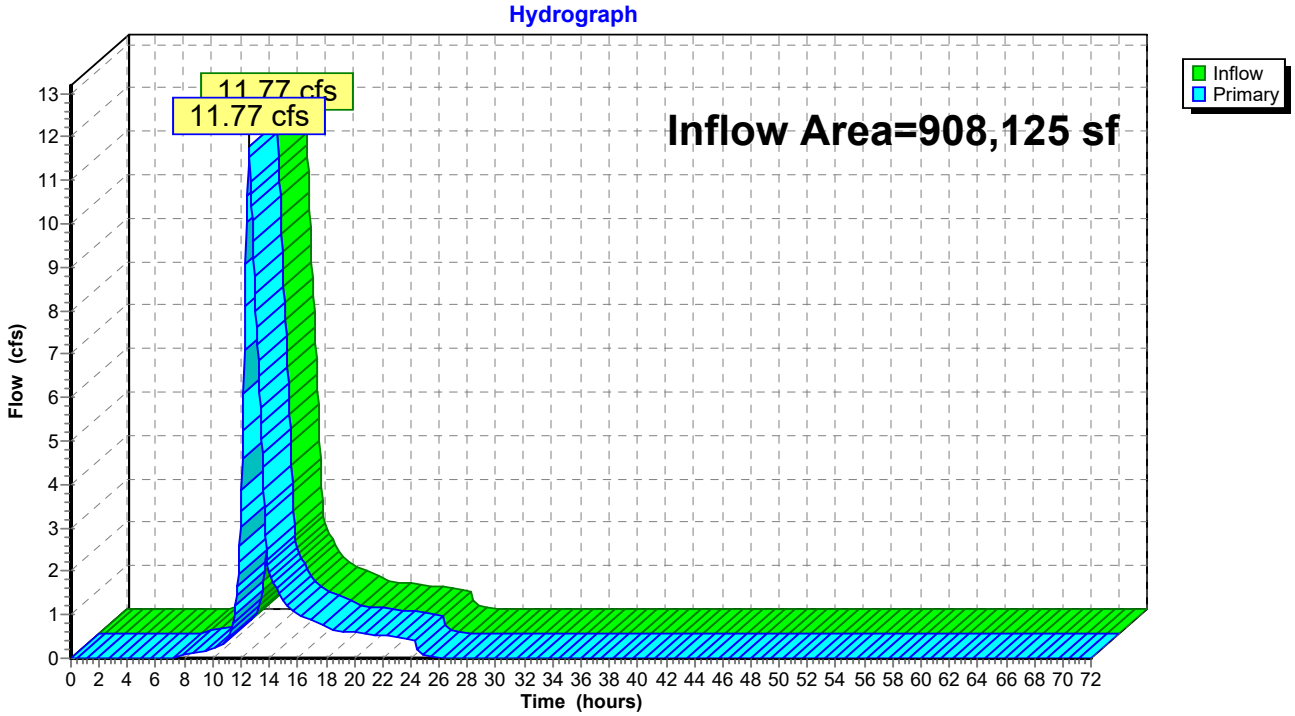


Summary for Link 2L: Combined Flows

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 1.11" for 2-Year _Current event
Inflow = 11.77 cfs @ 12.56 hrs, Volume= 84,357 cf
Primary = 11.77 cfs @ 12.56 hrs, Volume= 84,357 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 2Ri : Inlet Pipe

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 2L: Combined Flows

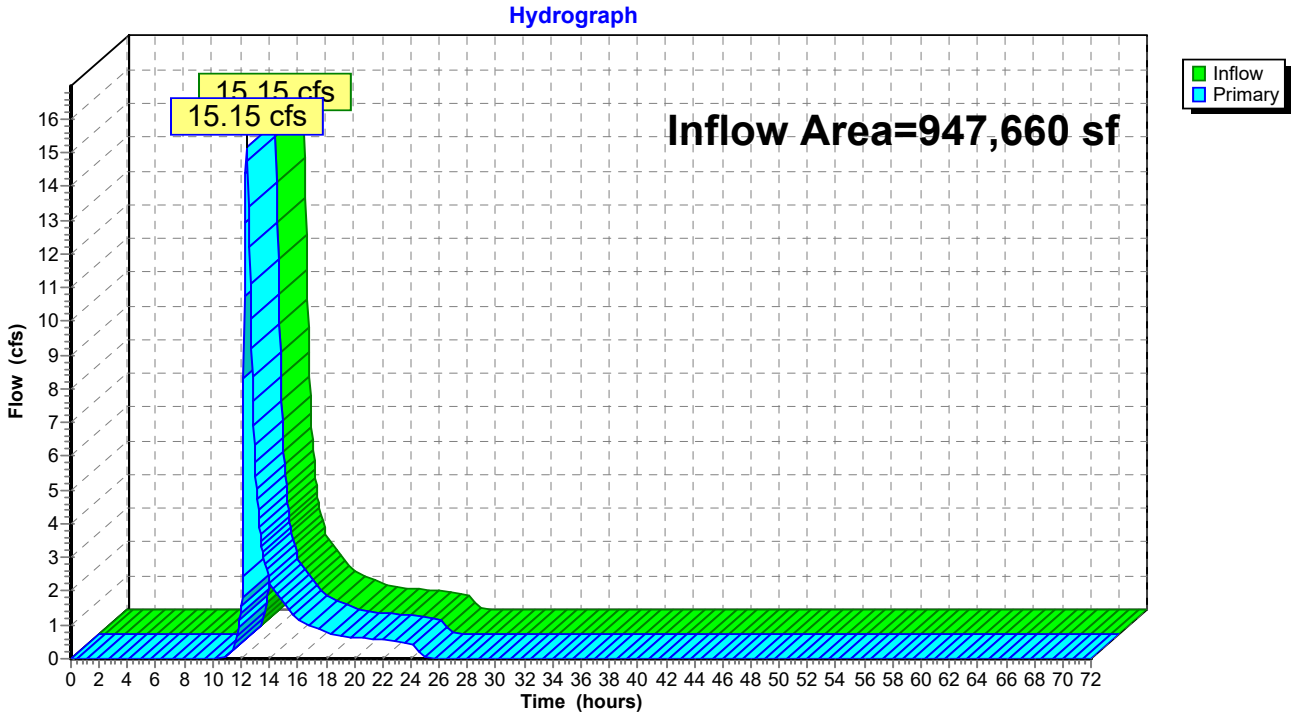


Summary for Link 3L: dA3

Inflow Area = 947,660 sf, 12.29% Impervious, Inflow Depth = 1.02" for 2-Year _Current event
Inflow = 15.15 cfs @ 12.42 hrs, Volume= 80,425 cf
Primary = 15.15 cfs @ 12.42 hrs, Volume= 80,425 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 3L: dA3

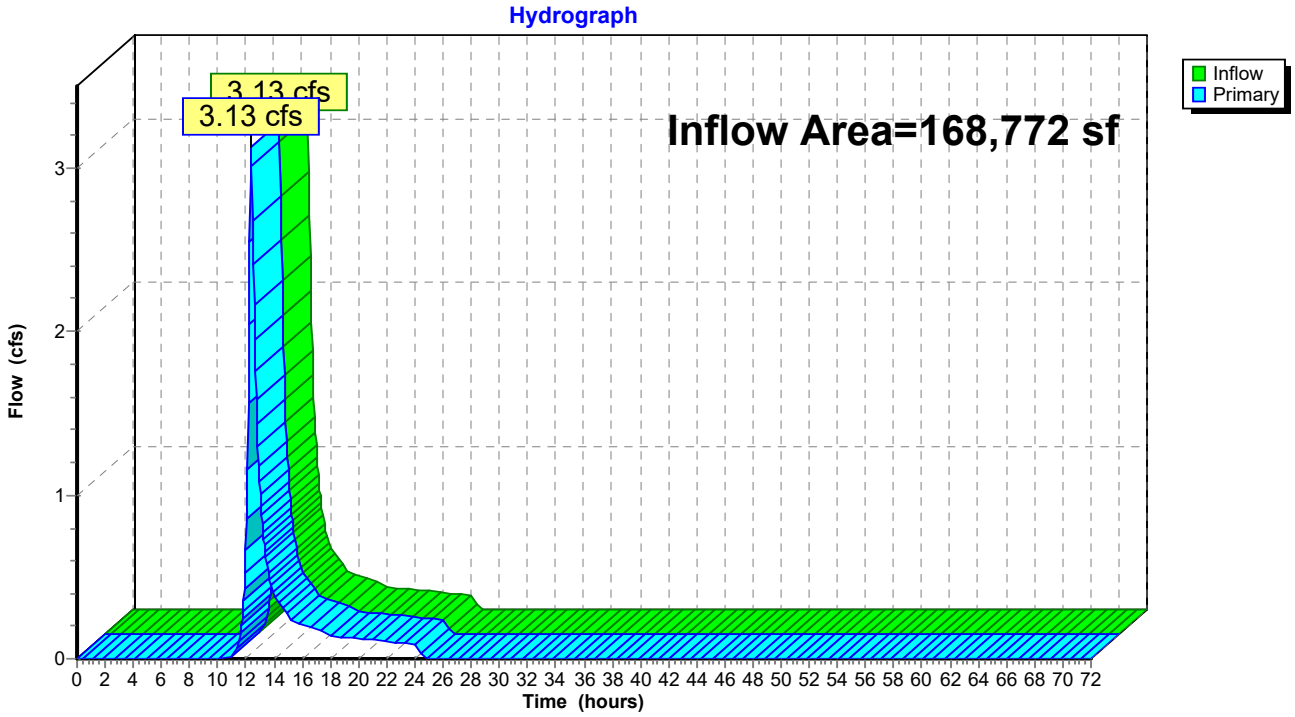


Summary for Link 4L: DA 4: Combined Flows

Inflow Area = 168,772 sf, 3.14% Impervious, Inflow Depth = 1.11" for 2-Year _Current event
Inflow = 3.13 cfs @ 12.37 hrs, Volume= 15,584 cf
Primary = 3.13 cfs @ 12.37 hrs, Volume= 15,584 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: DA 4: Combined Flows



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA 1: CN w/ IC areas Runoff Area=549,495 sf 18.28% Impervious Runoff Depth=1.97"
Tc=19.8 min CN=74/98 Runoff=19.93 cfs 90,180 cf

Subcatchment 1Sa: DA 1: CN w/ IC areas Runoff Area=492,891 sf 8.90% Impervious Runoff Depth=1.77"
Tc=19.8 min CN=74/98 Runoff=16.30 cfs 72,561 cf

Subcatchment 1Sb: DA 1: Roofs Runoff Area=21,359 sf 100.00% Impervious Runoff Depth=3.74"
Tc=6.0 min CN=0/98 Runoff=2.00 cfs 6,648 cf

Subcatchment 1Sc: DA1: Driveways Runoff Area=35,245 sf 100.00% Impervious Runoff Depth=3.74"
Tc=6.0 min CN=0/98 Runoff=3.31 cfs 10,971 cf

Subcatchment 2S: DA 2: CN w/ IC areas Runoff Area=908,125 sf 25.71% Impervious Runoff Depth=2.13"
Tc=21.8 min CN=74/98 Runoff=33.68 cfs 161,182 cf

Subcatchment 2Sa: DA 2: CN w/ IC areas Runoff Area=759,404 sf 11.16% Impervious Runoff Depth=1.82"
Tc=21.8 min CN=74/98 Runoff=24.54 cfs 114,890 cf

Subcatchment 2Sb: DA 2: Roofs Runoff Area=53,997 sf 100.00% Impervious Runoff Depth=3.74"
Tc=6.0 min CN=0/98 Runoff=5.07 cfs 16,807 cf

Subcatchment 2Sc: DA 2: Driveways Runoff Area=94,724 sf 100.00% Impervious Runoff Depth=3.74"
Tc=6.0 min CN=0/98 Runoff=8.89 cfs 29,484 cf

Subcatchment 3S: DA 3: CN w/ IC areas Runoff Area=947,660 sf 12.29% Impervious Runoff Depth=1.84"
Tc=27.9 min CN=74/98 Runoff=27.39 cfs 145,307 cf

Subcatchment 3Sa: DA 3: CN w/ IC areas Runoff Area=840,092 sf 1.06% Impervious Runoff Depth=1.60"
Tc=27.9 min CN=74/98 Runoff=21.53 cfs 111,825 cf

Subcatchment 3Sb: DA 3: Roofs Runoff Area=22,074 sf 100.00% Impervious Runoff Depth=3.74"
Tc=6.0 min CN=0/98 Runoff=2.07 cfs 6,871 cf

Subcatchment 3Sc: DA 3: Driveways Runoff Area=85,494 sf 100.00% Impervious Runoff Depth=3.74"
Tc=6.0 min CN=0/98 Runoff=8.02 cfs 26,611 cf

Subcatchment 4S: DA 4: CN w/ IC areas Runoff Area=168,772 sf 3.14% Impervious Runoff Depth=1.64"
Tc=24.4 min CN=74/98 Runoff=4.74 cfs 23,096 cf

Subcatchment 4Sa: DA 4: CN w/ IC areas Runoff Area=163,472 sf 0.00% Impervious Runoff Depth=1.57"
Tc=24.4 min CN=74/0 Runoff=4.44 cfs 21,447 cf

Subcatchment 4Sb: DA 4: Roofs Runoff Area=695 sf 100.00% Impervious Runoff Depth=3.74"
Tc=6.0 min CN=0/98 Runoff=0.07 cfs 216 cf

Subcatchment 4Sc: DA 4: Driveways Runoff Area=4,605 sf 100.00% Impervious Runoff Depth=3.74"
Tc=6.0 min CN=0/98 Runoff=0.43 cfs 1,433 cf

Reach 1Ri: Inlet Pipe Avg. Flow Depth=0.72' Max Vel=6.60 fps Inflow=10.19 cfs 71,656 cf
48.0" Round Pipe n=0.013 L=100.0' S=0.0100 '/' Capacity=143.64 cfs Outflow=10.14 cfs 71,657 cf

Reach 1Ro: outlet Avg. Flow Depth=0.52' Max Vel=3.78 fps Inflow=2.81 cfs 64,451 cf
30.0" Round Pipe n=0.013 L=925.0' S=0.0051 '/' Capacity=29.39 cfs Outflow=2.81 cfs 64,440 cf

Reach 2Ri: Inlet Pipe Avg. Flow Depth=1.09' Max Vel=8.36 fps Inflow=23.63 cfs 113,731 cf
48.0" Round Pipe n=0.013 L=100.0' S=0.0100 '/' Capacity=143.64 cfs Outflow=22.89 cfs 113,745 cf

Reach 2Ro: Outlet Avg. Flow Depth=0.75' Max Vel=7.28 fps Inflow=10.98 cfs 108,930 cf
42.0" Round Pipe n=0.013 L=190.0' S=0.0118 '/' Capacity=109.48 cfs Outflow=10.97 cfs 108,930 cf

Pond 1P: Basic Rain Garden (w/ Peak Elev=98.54' Storage=11,599 cf Inflow=16.30 cfs 72,561 cf
Primary=10.19 cfs 71,498 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=10.19 cfs 71,498 cf

Pond 2P: Basic Rain Garden (infiltration Peak Elev=100.01' Storage=3,758 cf Inflow=2.00 cfs 6,648 cf
Discarded=0.06 cfs 6,490 cf Primary=0.04 cfs 159 cf Outflow=0.10 cfs 6,648 cf

Pond 3P: Basic Porous Pavement Peak Elev=99.52' Storage=3,370 cf Inflow=3.31 cfs 10,971 cf
Discarded=0.41 cfs 10,970 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 10,970 cf

Pond 4P: Basin 1 Medium Case Peak Elev=75.30' Storage=35,765 cf Inflow=10.14 cfs 71,657 cf
Primary=2.81 cfs 64,451 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=2.81 cfs 64,451 cf

Pond 5P: Basic Rain Garden (w/ Peak Elev=100.25' Storage=14,742 cf Inflow=24.54 cfs 114,890 cf
Primary=13.60 cfs 108,461 cf Secondary=10.01 cfs 4,734 cf Tertiary=0.00 cfs 0 cf Outflow=23.63 cfs 113,195 cf

Pond 6P: Basic Rain Garden (infiltration Peak Elev=100.01' Storage=9,417 cf Inflow=5.07 cfs 16,807 cf
Discarded=0.14 cfs 16,271 cf Primary=0.14 cfs 537 cf Outflow=0.29 cfs 16,808 cf

Pond 7P: Basic Porous Pavement Peak Elev=99.52' Storage=9,057 cf Inflow=8.89 cfs 29,484 cf
Discarded=1.10 cfs 29,484 cf Primary=0.00 cfs 0 cf Outflow=1.10 cfs 29,484 cf

Pond 8P: Basin 2 Medium Case Peak Elev=70.43' Storage=29,460 cf Inflow=22.89 cfs 113,745 cf
Primary=10.98 cfs 108,930 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=10.98 cfs 108,930 cf

Pond 9P: Basic Rain Garden (w/ Peak Elev=100.82' Storage=3,149 cf Inflow=21.53 cfs 111,825 cf
Primary=2.86 cfs 65,822 cf Secondary=11.62 cfs 35,218 cf Tertiary=7.05 cfs 10,505 cf Outflow=21.53 cfs 111,546 cf

Pond 10P: Basic Rain Garden (infiltration Peak Elev=100.03' Storage=3,482 cf Inflow=2.07 cfs 6,871 cf
Discarded=0.05 cfs 6,043 cf Primary=0.23 cfs 828 cf Outflow=0.28 cfs 6,870 cf

Pond 11P: Basic Porous Pavement Peak Elev=99.52' Storage=8,175 cf Inflow=8.02 cfs 26,611 cf
Discarded=0.99 cfs 26,611 cf Primary=0.00 cfs 0 cf Outflow=0.99 cfs 26,611 cf

Pond 12P: Basic Porous Pavement (infiltration Peak Elev=99.53' Storage=447 cf Inflow=0.43 cfs 1,433 cf
Discarded=0.05 cfs 1,433 cf Primary=0.00 cfs 0 cf Outflow=0.05 cfs 1,433 cf

Link 1L: Combined Flows Inflow=10.19 cfs 71,656 cf
Primary=10.19 cfs 71,656 cf

Link 2L: Combined Flows Inflow=23.63 cfs 113,731 cf
Primary=23.63 cfs 113,731 cf

Link 3L: dA3 Inflow=21.53 cfs 112,374 cf
Primary=21.53 cfs 112,374 cf

Link 4L: DA 4: Combined Flows Inflow=4.45 cfs 21,663 cf
Primary=4.45 cfs 21,663 cf

Total Runoff Area = 5,148,104 sf Runoff Volume = 839,531 cf Average Runoff Depth = 1.96"
82.29% Pervious = 4,236,632 sf 17.71% Impervious = 911,472 sf

Summary for Subcatchment 1S: DA 1: CN w/ IC areas

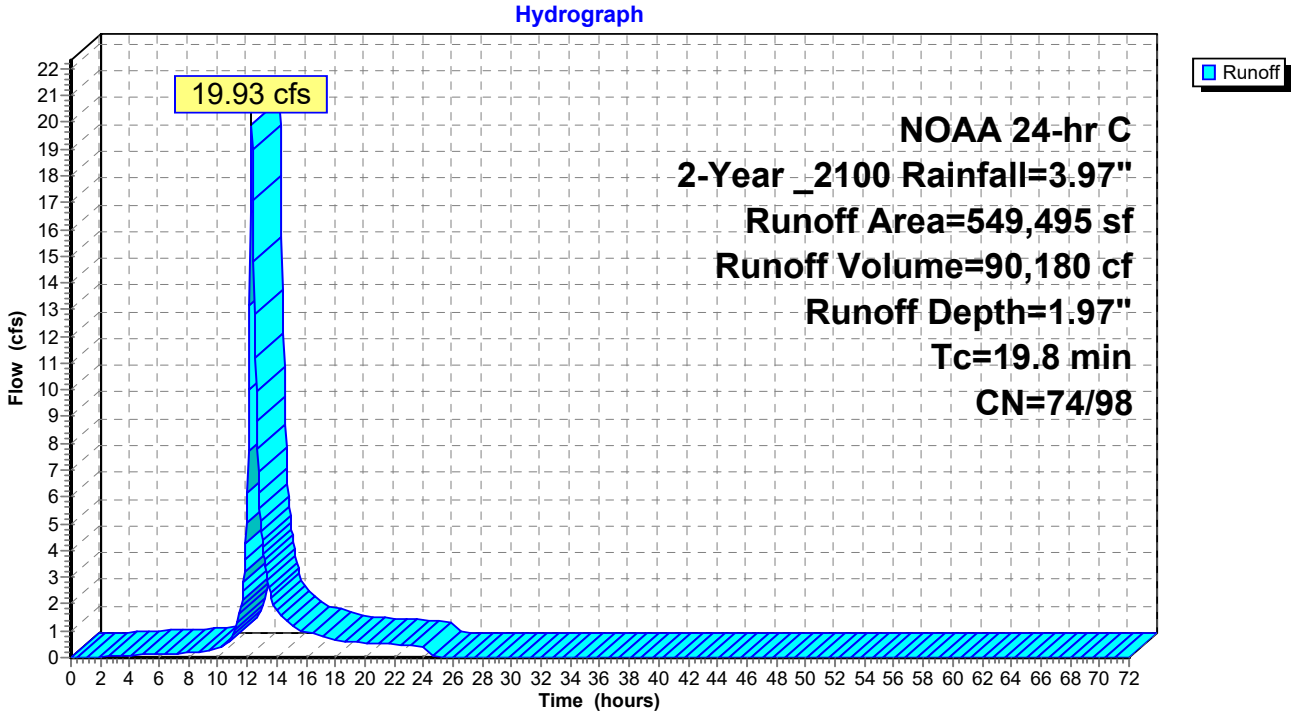
Runoff = 19.93 cfs @ 12.30 hrs, Volume= 90,180 cf, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	100,459	98	Impervious
	317,162	74	>75% Grass cover, Good, HSG C
	131,575	73	Woods, Fair, HSG C
	299	70	Woods, Good, HSG C
	549,495	78	Weighted Average
	449,036	74	81.72% Pervious Area
	100,459	98	18.28% Impervious Area

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

Subcatchment 1S: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sa: DA 1: CN w/ IC areas

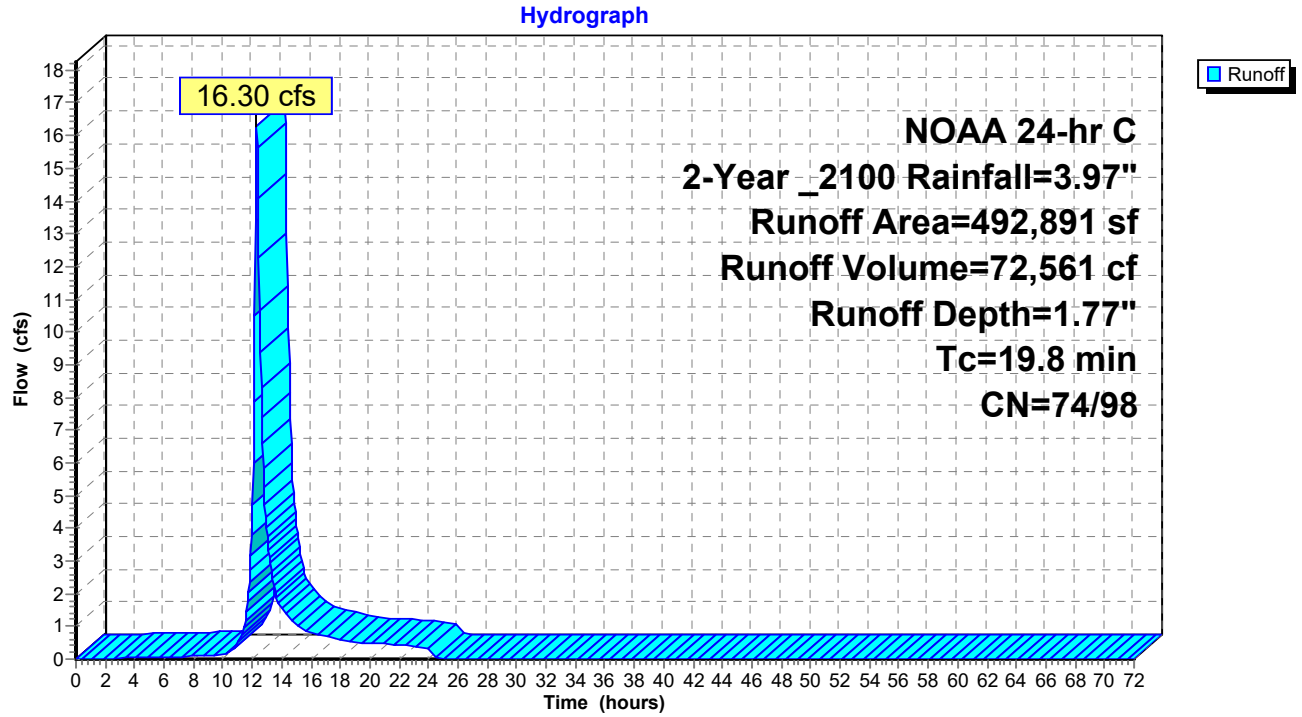
Runoff = 16.30 cfs @ 12.30 hrs, Volume= 72,561 cf, Depth= 1.77"
Routed to Pond 1P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	43,855	98	Impervious
	317,162	74	>75% Grass cover, Good, HSG C
	131,575	73	Woods, Fair, HSG C
	299	70	Woods, Good, HSG C
	492,891	76	Weighted Average
	449,036	74	91.10% Pervious Area
	43,855	98	8.90% Impervious Area

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

Subcatchment 1Sa: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sb: DA 1: Roofs Combined

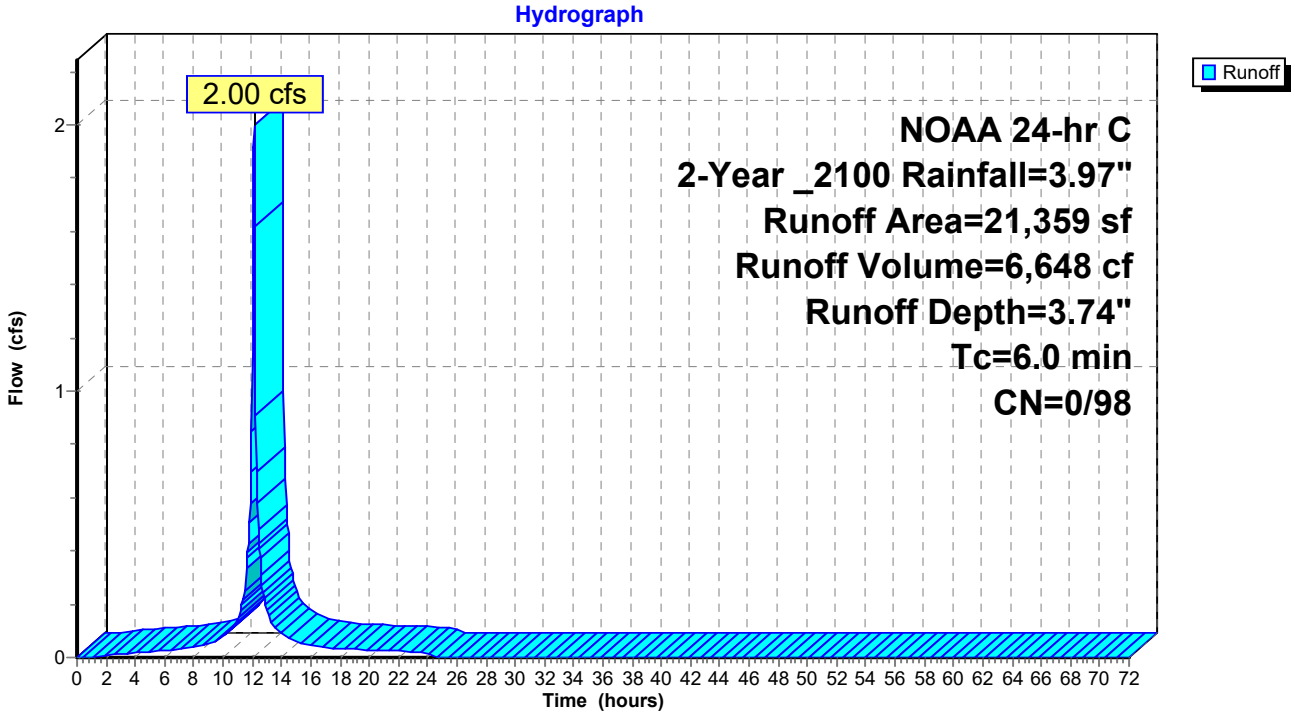
Runoff = 2.00 cfs @ 12.13 hrs, Volume= 6,648 cf, Depth= 3.74"
Routed to Pond 2P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	21,359	98	
	21,359	98	100.00% Impervious Area

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

Subcatchment 1Sb: DA 1: Roofs Combined



Summary for Subcatchment 1Sc: DA1: Driveways (other)

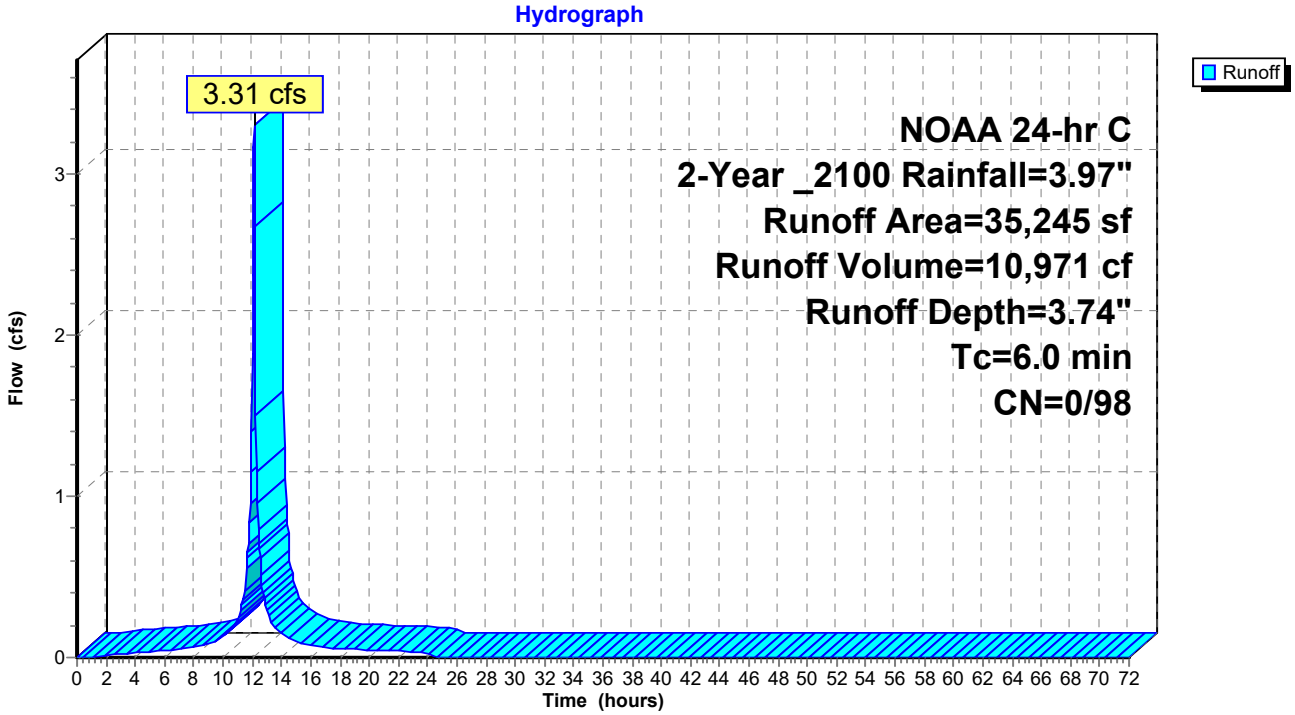
Runoff = 3.31 cfs @ 12.13 hrs, Volume= 10,971 cf, Depth= 3.74"
Routed to Pond 3P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	35,245	98	
	35,245	98	100.00% Impervious Area

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

Subcatchment 1Sc: DA1: Driveways (other)



Summary for Subcatchment 2S: DA 2: CN w/ IC areas

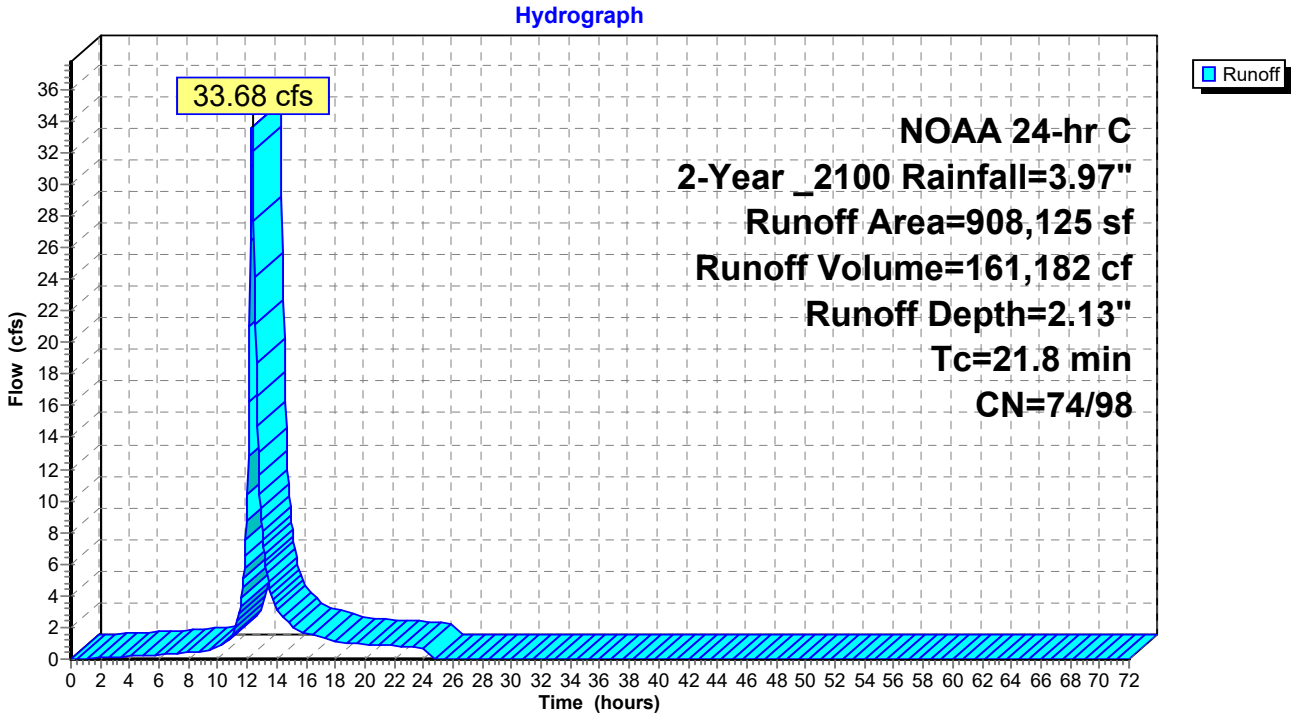
Runoff = 33.68 cfs @ 12.32 hrs, Volume= 161,182 cf, Depth= 2.13"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	233,471	98	Impervious
	1	65	Brush, Good, HSG C
	620,871	74	>75% Grass cover, Good, HSG C
	1,845	72	Woods/grass comb., Good, HSG C
	51,937	73	Woods, Fair, HSG C
	908,125	80	Weighted Average
	674,654	74	74.29% Pervious Area
	233,471	98	25.71% Impervious Area

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

Subcatchment 2S: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sa: DA 2: CN w/ IC areas

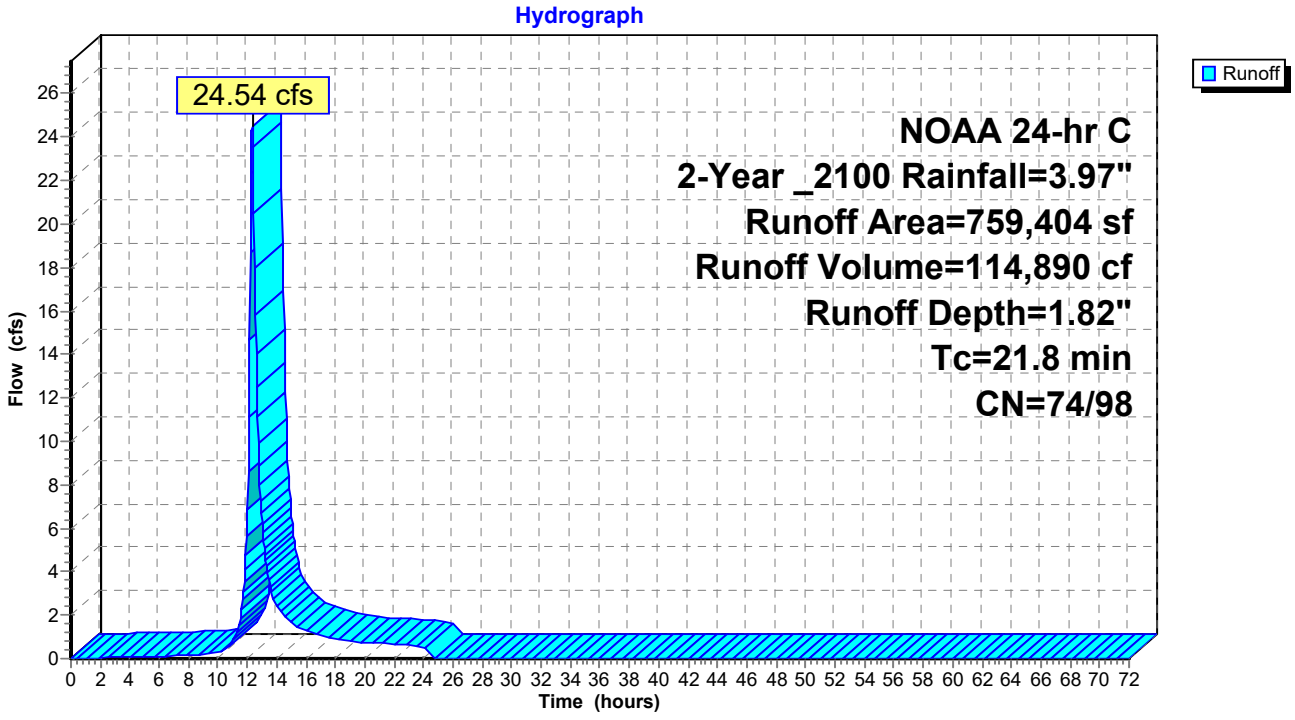
Runoff = 24.54 cfs @ 12.32 hrs, Volume= 114,890 cf, Depth= 1.82"
Routed to Pond 5P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	84,750	98	Impervious
	1	65	Brush, Good, HSG C
	620,871	74	>75% Grass cover, Good, HSG C
	1,845	72	Woods/grass comb., Good, HSG C
	51,937	73	Woods, Fair, HSG C
	759,404	77	Weighted Average
	674,654	74	88.84% Pervious Area
	84,750	98	11.16% Impervious Area

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

Subcatchment 2Sa: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sb: DA 2: Roofs

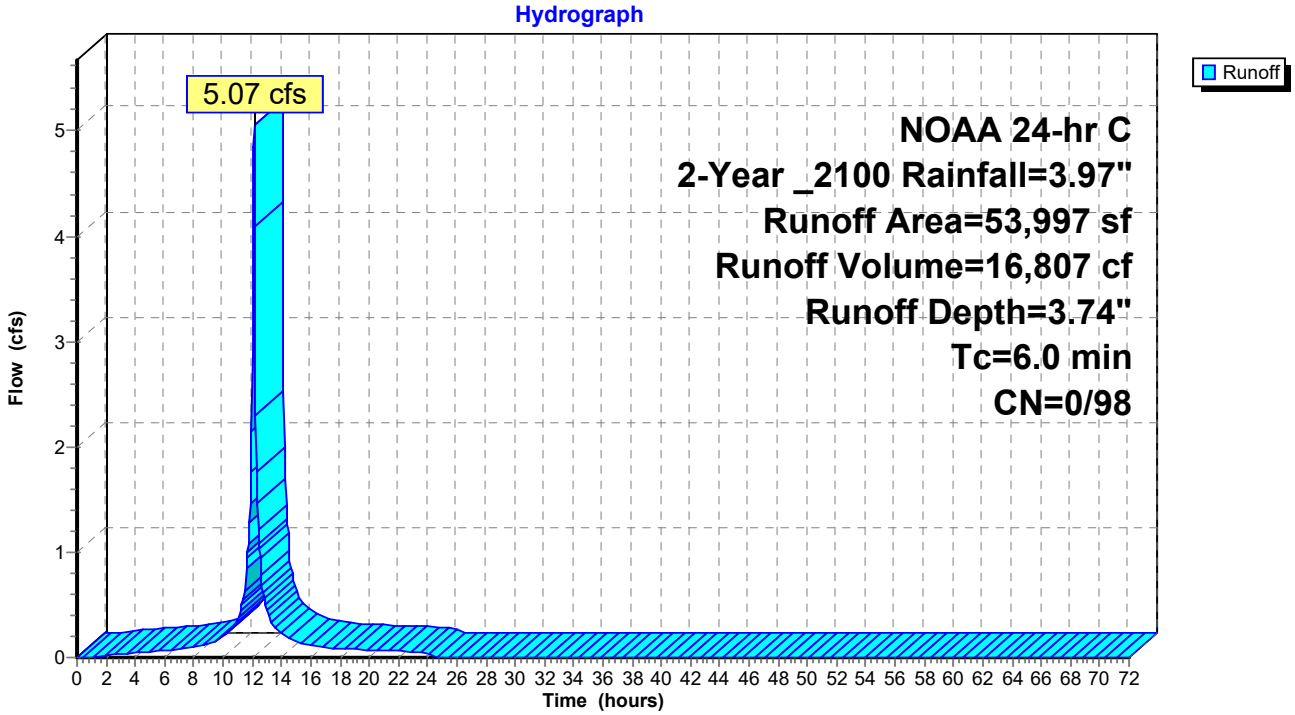
Runoff = 5.07 cfs @ 12.13 hrs, Volume= 16,807 cf, Depth= 3.74"
Routed to Pond 6P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	53,997	98	
	53,997	98	100.00% Impervious Area

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

Subcatchment 2Sb: DA 2: Roofs



Summary for Subcatchment 2Sc: DA 2: Driveways (other)

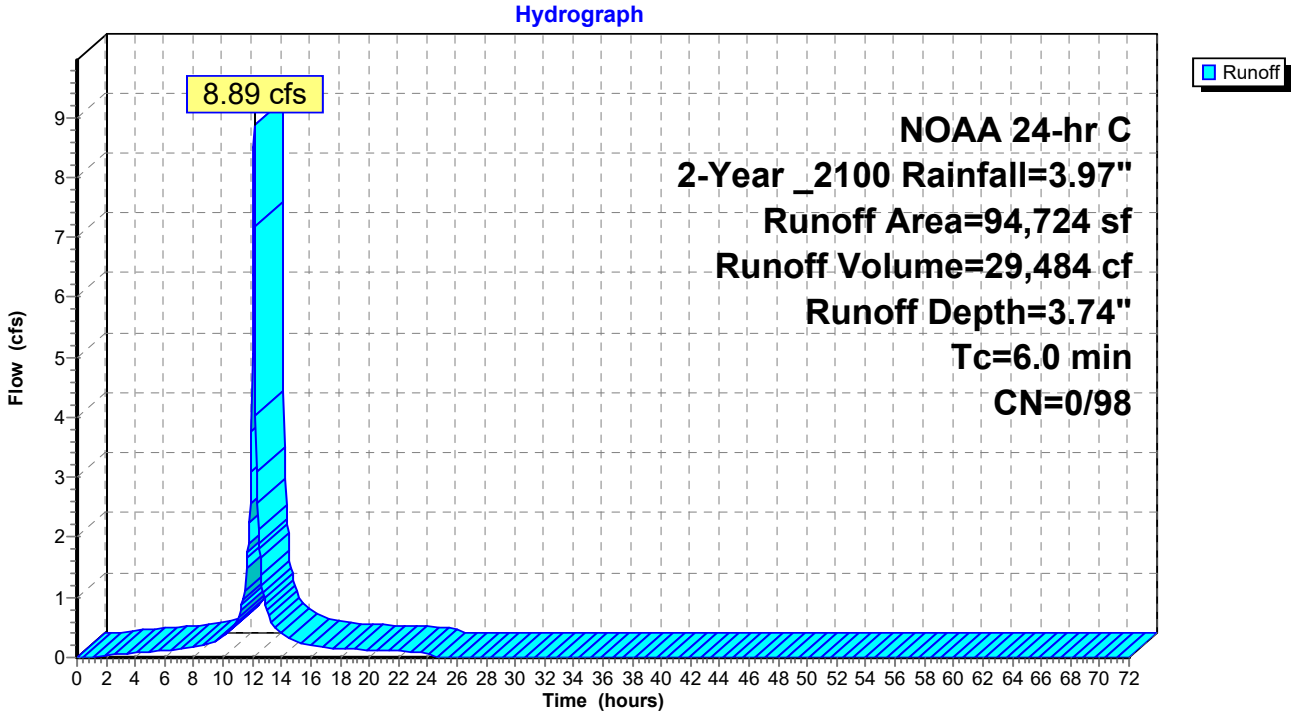
Runoff = 8.89 cfs @ 12.13 hrs, Volume= 29,484 cf, Depth= 3.74"
Routed to Pond 7P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	94,724	98	
	94,724	98	100.00% Impervious Area

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

Subcatchment 2Sc: DA 2: Driveways (other)



Summary for Subcatchment 3S: DA 3: CN w/ IC areas

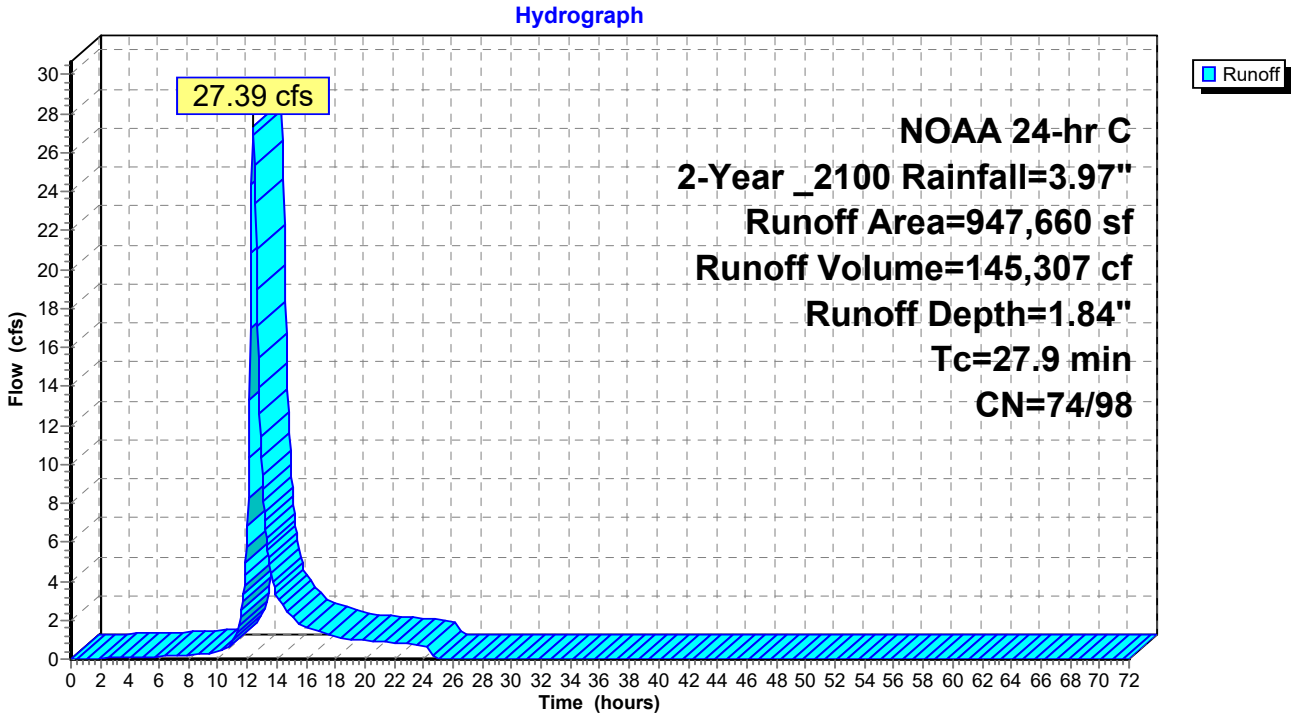
Runoff = 27.39 cfs @ 12.41 hrs, Volume= 145,307 cf, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	116,506	98	Impervious
	4,930	79	50-75% Grass cover, Fair, HSG C
	592,347	74	>75% Grass cover, Good, HSG C
	169,305	73	Woods, Fair, HSG C
	64,572	70	Woods, Good, HSG C
	947,660	77	Weighted Average
	831,154	74	87.71% Pervious Area
	116,506	98	12.29% Impervious Area

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

Subcatchment 3S: DA 3: CN w/ IC areas



Summary for Subcatchment 3Sa: DA 3: CN w/ IC areas

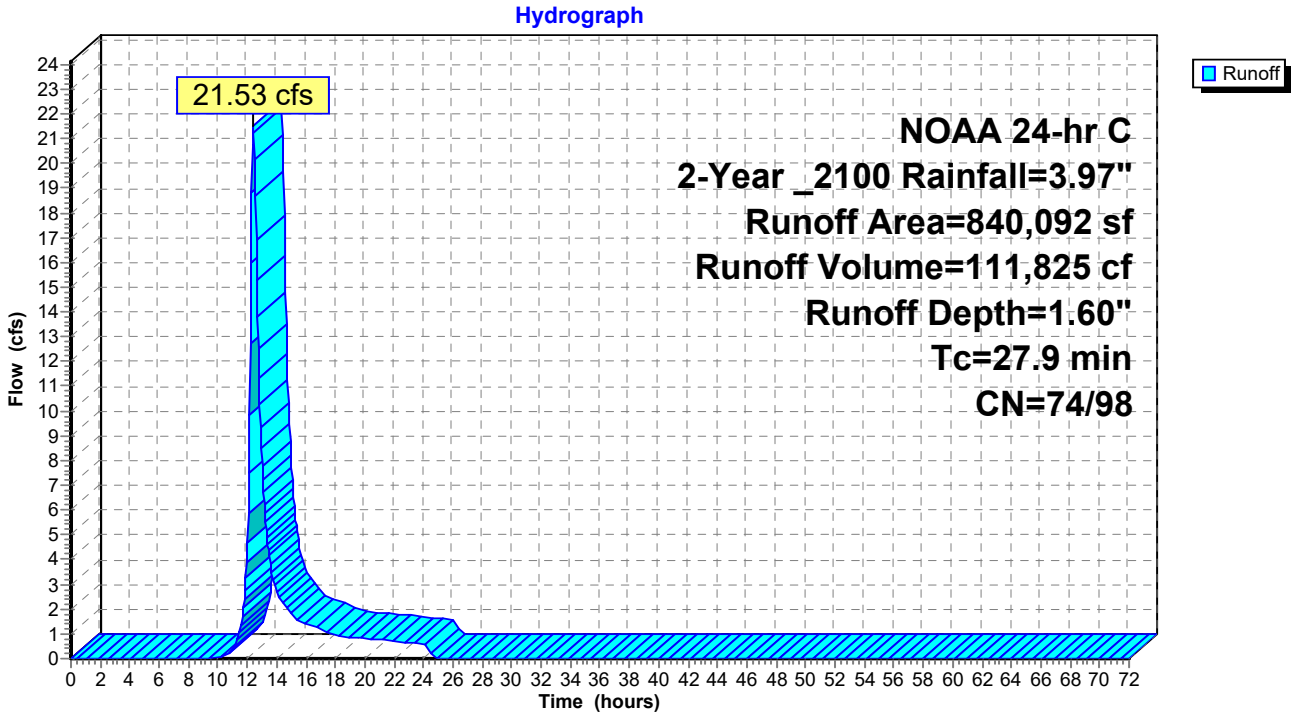
Runoff = 21.53 cfs @ 12.41 hrs, Volume= 111,825 cf, Depth= 1.60"
Routed to Pond 9P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	8,938	98	Impervious
	4,930	79	50-75% Grass cover, Fair, HSG C
	592,347	74	>75% Grass cover, Good, HSG C
	169,305	73	Woods, Fair, HSG C
	64,572	70	Woods, Good, HSG C
	840,092	74	Weighted Average
	831,154	74	98.94% Pervious Area
	8,938	98	1.06% Impervious Area

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

Subcatchment 3Sa: DA 3: CN w/ IC areas



Summary for Subcatchment 3Sb: DA 3: Roofs

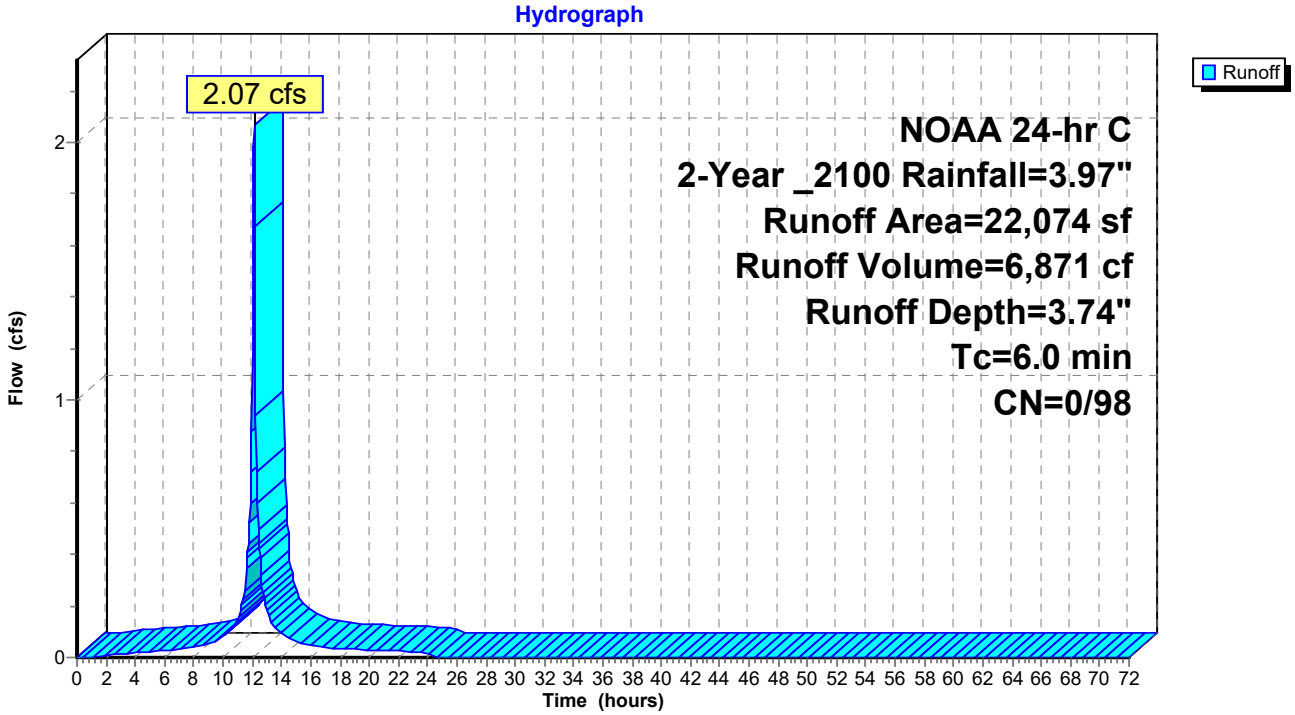
Runoff = 2.07 cfs @ 12.13 hrs, Volume= 6,871 cf, Depth= 3.74"
Routed to Pond 10P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	22,074	98	
	22,074	98	100.00% Impervious Area

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

Subcatchment 3Sb: DA 3: Roofs



Summary for Subcatchment 3Sc: DA 3: Driveways (other)

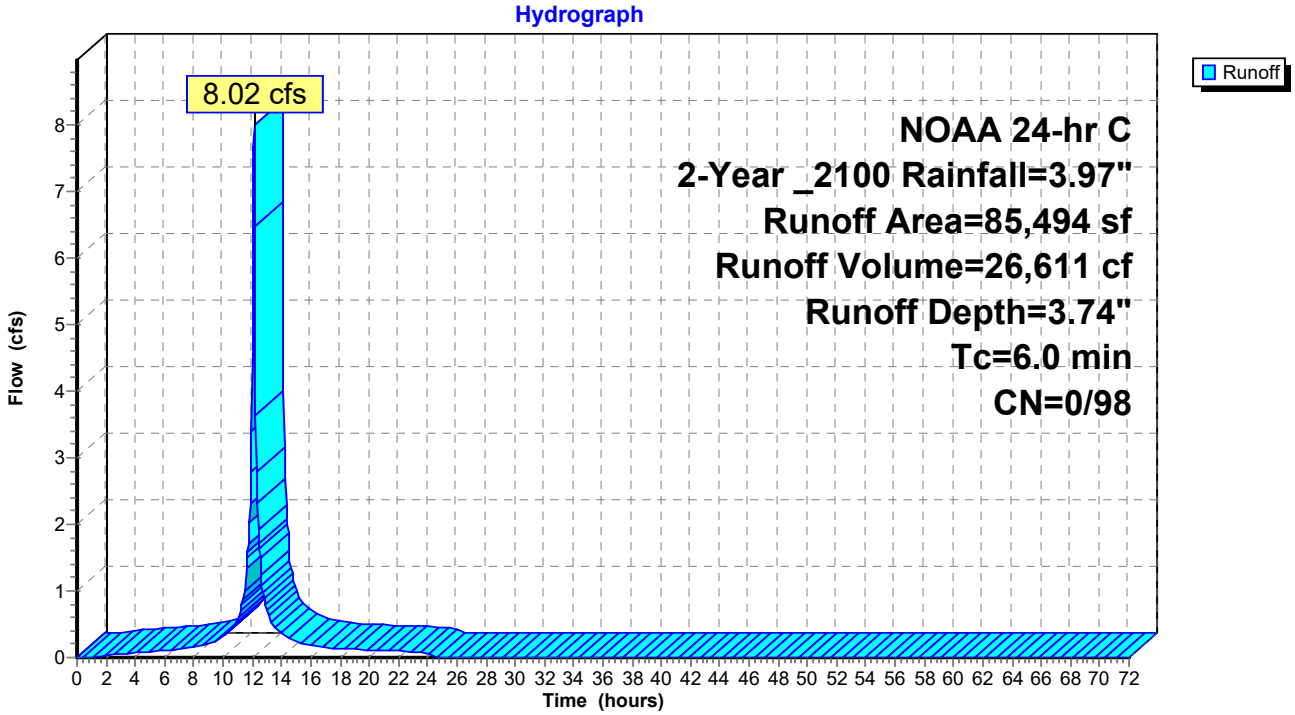
Runoff = 8.02 cfs @ 12.13 hrs, Volume= 26,611 cf, Depth= 3.74"
Routed to Pond 11P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	85,494	98	
	85,494	98	100.00% Impervious Area

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

Subcatchment 3Sc: DA 3: Driveways (other)



Summary for Subcatchment 4S: DA 4: CN w/ IC areas

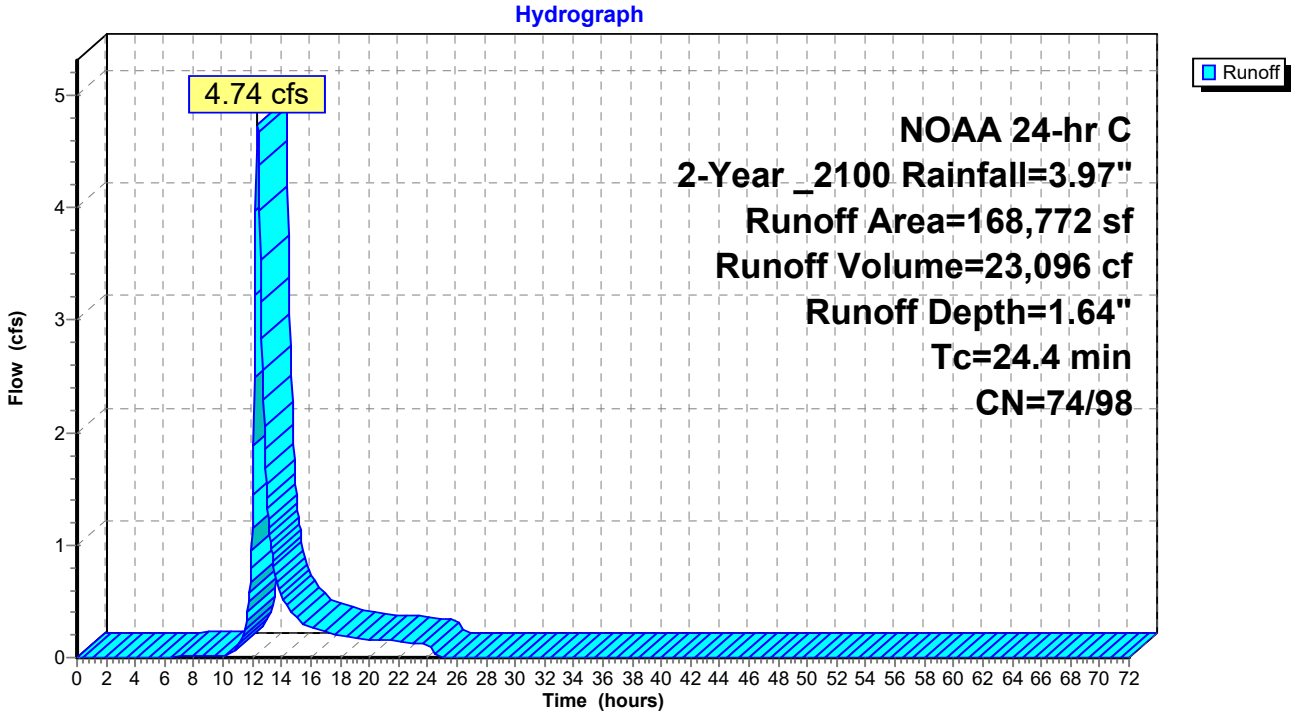
Runoff = 4.74 cfs @ 12.36 hrs, Volume= 23,096 cf, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	5,300	98	Impervious
	117,799	74	>75% Grass cover, Good, HSG C
	4,778	72	Woods/grass comb., Good, HSG C
	40,895	73	Woods, Fair, HSG C
	168,772	74	Weighted Average
	163,472	74	96.86% Pervious Area
	5,300	98	3.14% Impervious Area

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

Subcatchment 4S: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sa: DA 4: CN w/ IC areas

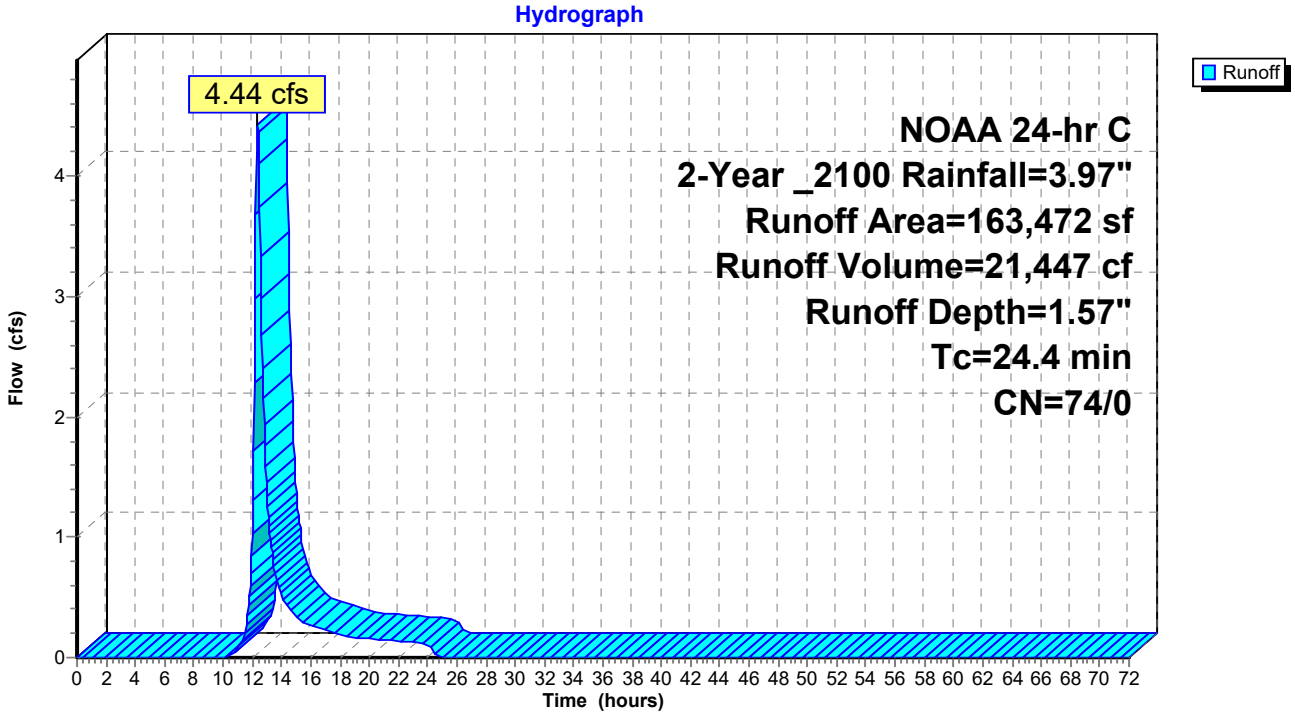
Runoff = 4.44 cfs @ 12.37 hrs, Volume= 21,447 cf, Depth= 1.57"
Routed to Link 4L : DA 4: Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	0	98	Impervious
	117,799	74	>75% Grass cover, Good, HSG C
	4,778	72	Woods/grass comb., Good, HSG C
	40,895	73	Woods, Fair, HSG C
	163,472	74	Weighted Average
	163,472	74	100.00% Pervious Area

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

Subcatchment 4Sa: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sb: DA 4: Roofs

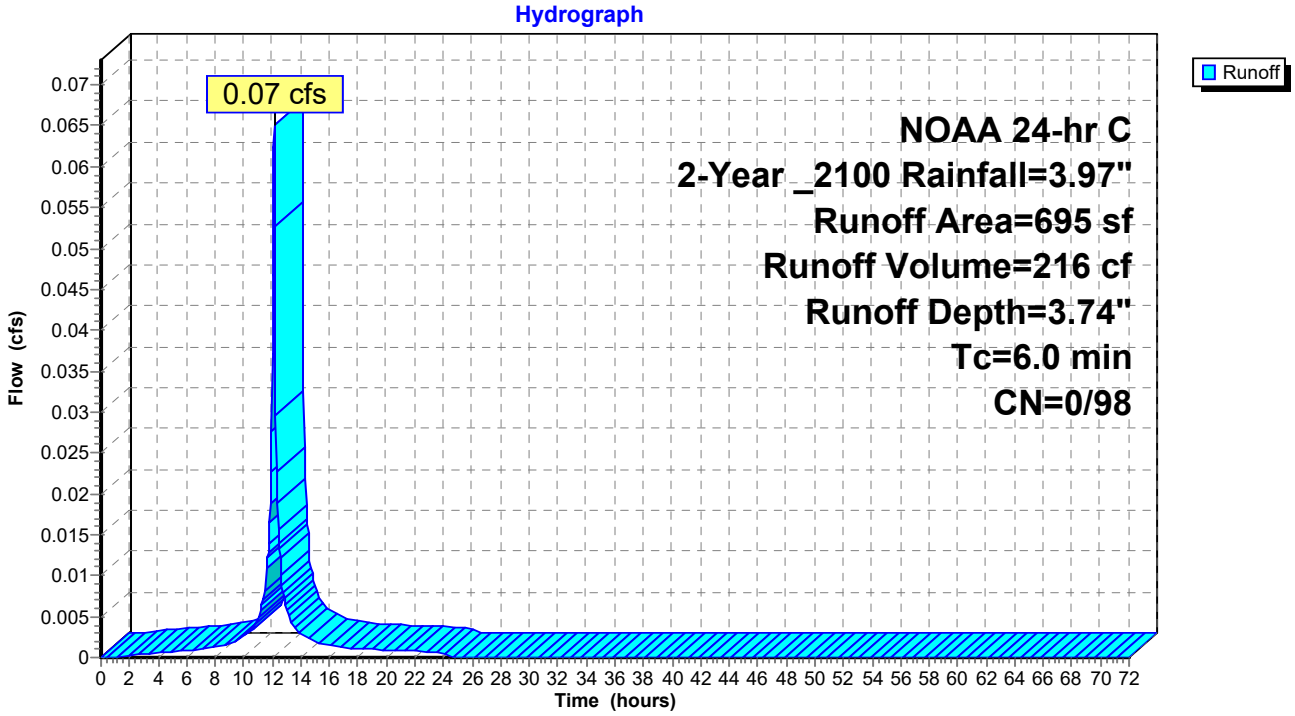
Runoff = 0.07 cfs @ 12.13 hrs, Volume= 216 cf, Depth= 3.74"
Routed to Link 4L : DA 4: Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	695	98	
	695	98	100.00% Impervious Area

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

Subcatchment 4Sb: DA 4: Roofs



Summary for Subcatchment 4Sc: DA 4: Driveways (other)

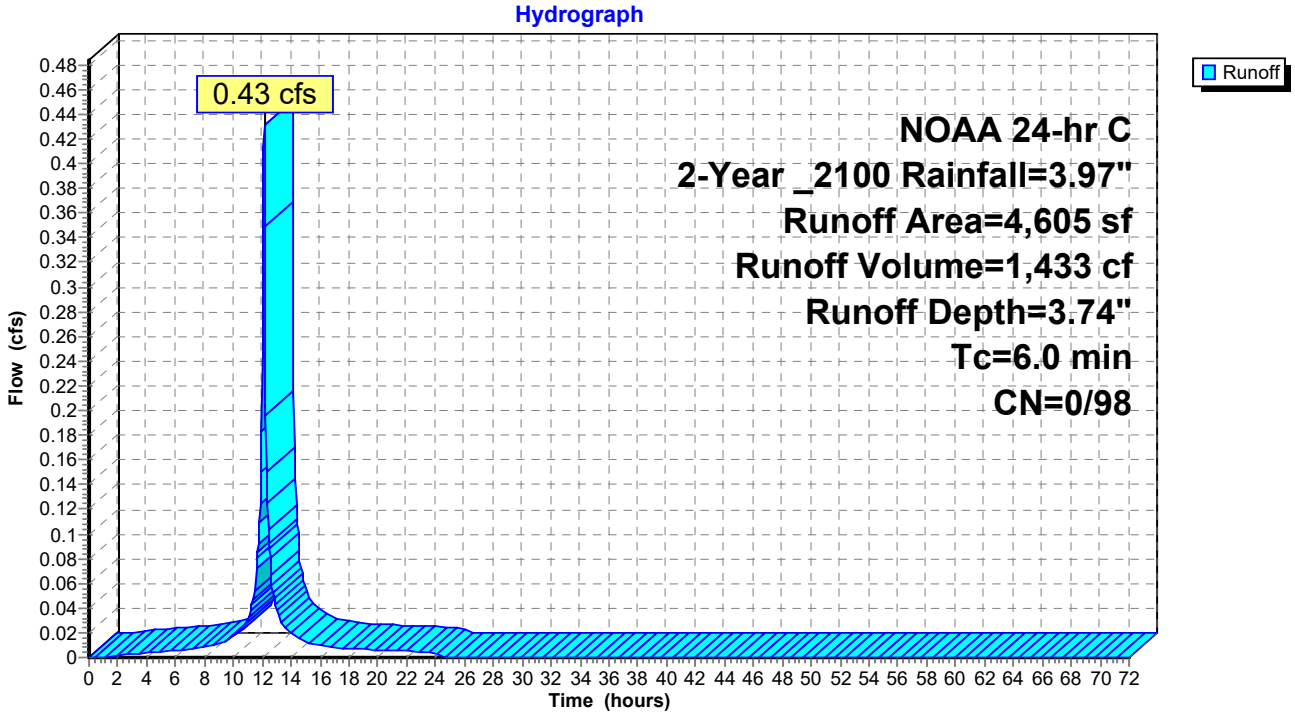
Runoff = 0.43 cfs @ 12.13 hrs, Volume= 1,433 cf, Depth= 3.74"
Routed to Pond 12P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 2-Year _2100 Rainfall=3.97"

	Area (sf)	CN	Description
*	4,605	98	
	4,605	98	100.00% Impervious Area

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

Subcatchment 4Sc: DA 4: Driveways (other)



Summary for Reach 1Ri: Inlet Pipe

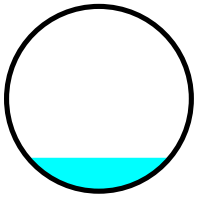
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 1.56" for 2-Year _2100 event
Inflow = 10.19 cfs @ 12.52 hrs, Volume= 71,656 cf
Outflow = 10.14 cfs @ 12.52 hrs, Volume= 71,657 cf, Atten= 0%, Lag= 0.4 min
Routed to Pond 4P : Basin 1 Medium Case

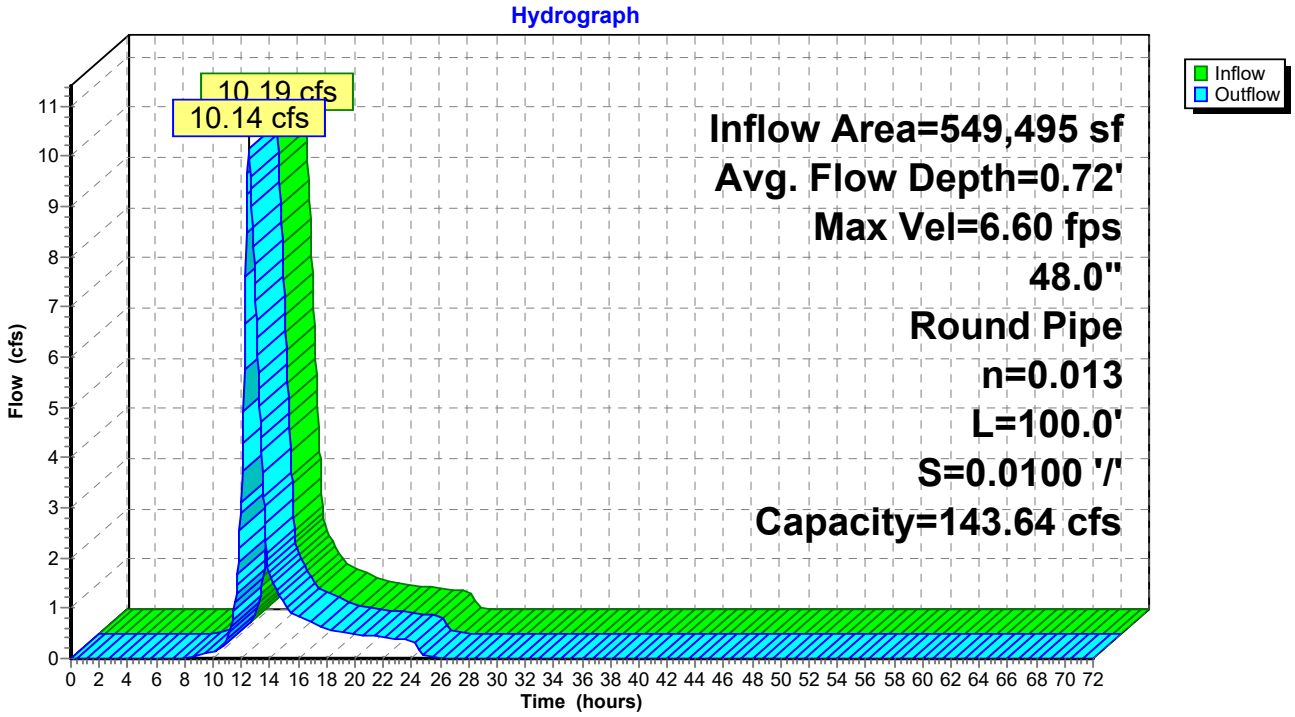
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 6.60 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.54 fps, Avg. Travel Time= 0.7 min

Peak Storage= 154 cf @ 12.52 hrs
Average Depth at Peak Storage= 0.72' , Surface Width= 3.07'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 143.64 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 75.00', Outlet Invert= 74.00'



Reach 1Ri: Inlet Pipe



Summary for Reach 1Ro: outlet

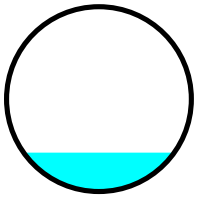
[52] Hint: Inlet/Outlet conditions not evaluated

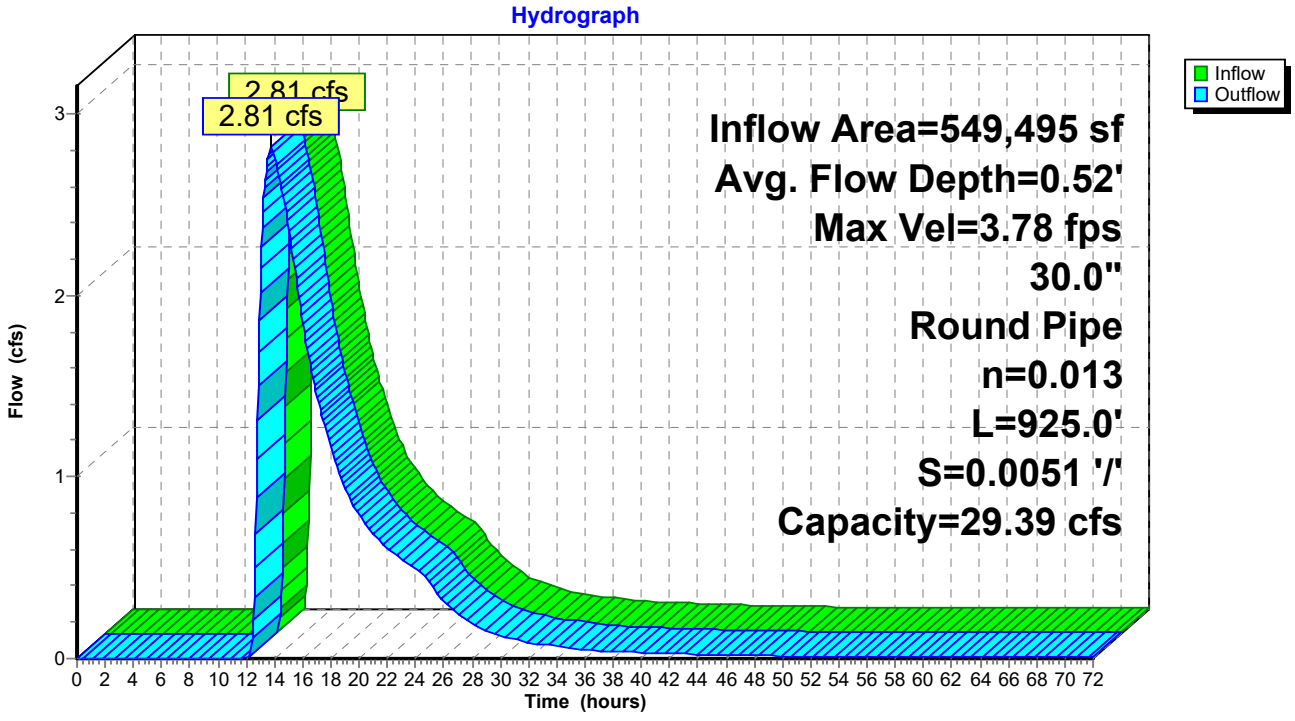
Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth > 1.41" for 2-Year _2100 event
Inflow = 2.81 cfs @ 13.63 hrs, Volume= 64,451 cf
Outflow = 2.81 cfs @ 13.75 hrs, Volume= 64,440 cf, Atten= 0%, Lag= 6.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.78 fps, Min. Travel Time= 4.1 min
Avg. Velocity = 1.35 fps, Avg. Travel Time= 11.4 min

Peak Storage= 688 cf @ 13.68 hrs
Average Depth at Peak Storage= 0.52' , Surface Width= 2.03'
Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 29.39 cfs

30.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 925.0' Slope= 0.0051 '/'
Inlet Invert= 70.75', Outlet Invert= 66.00'





Summary for Reach 2Ri: Inlet Pipe

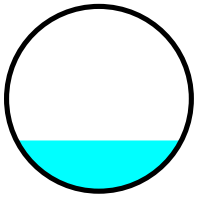
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 1.50" for 2-Year _2100 event
Inflow = 23.63 cfs @ 12.42 hrs, Volume= 113,731 cf
Outflow = 22.89 cfs @ 12.42 hrs, Volume= 113,745 cf, Atten= 3%, Lag= 0.2 min
Routed to Pond 8P : Basin 2 Medium Case

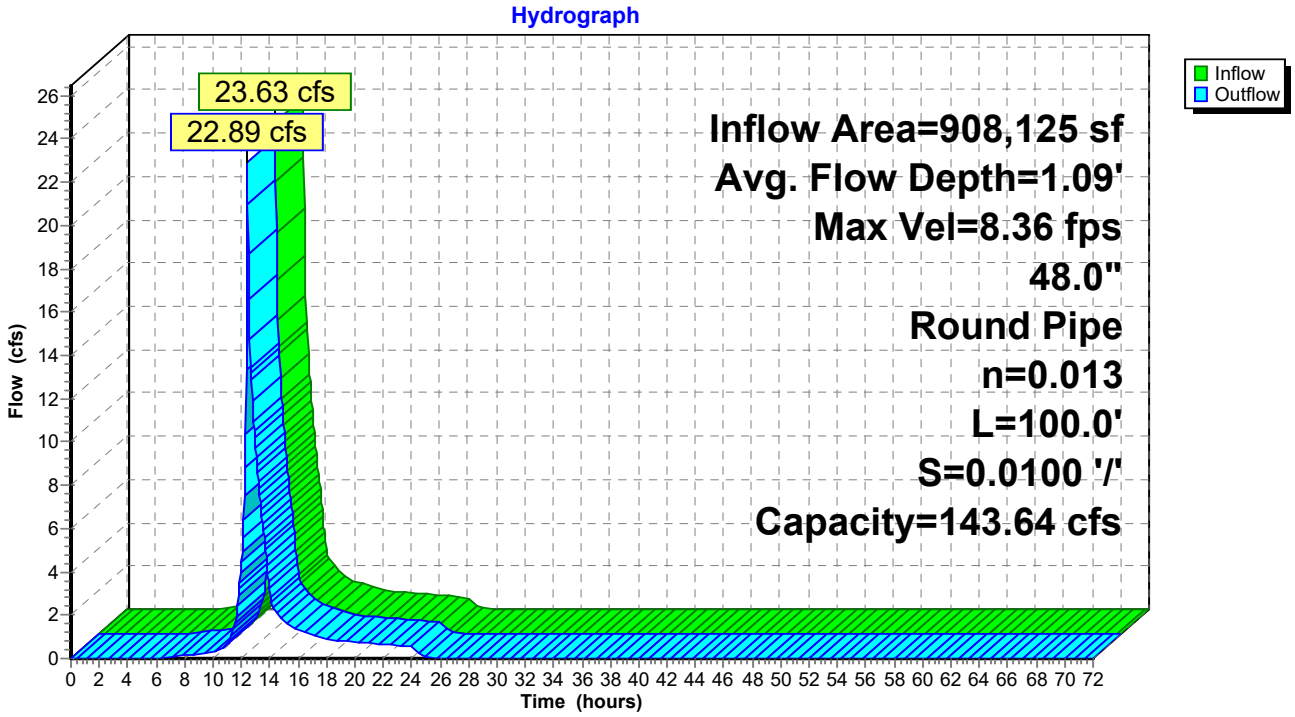
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 8.36 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.86 fps, Avg. Travel Time= 0.6 min

Peak Storage= 278 cf @ 12.42 hrs
Average Depth at Peak Storage= 1.09' , Surface Width= 3.57'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 143.64 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 70.00', Outlet Invert= 69.00'



Reach 2Ri: Inlet Pipe



Summary for Reach 2Ro: Outlet

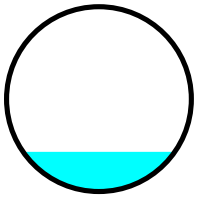
[52] Hint: Inlet/Outlet conditions not evaluated

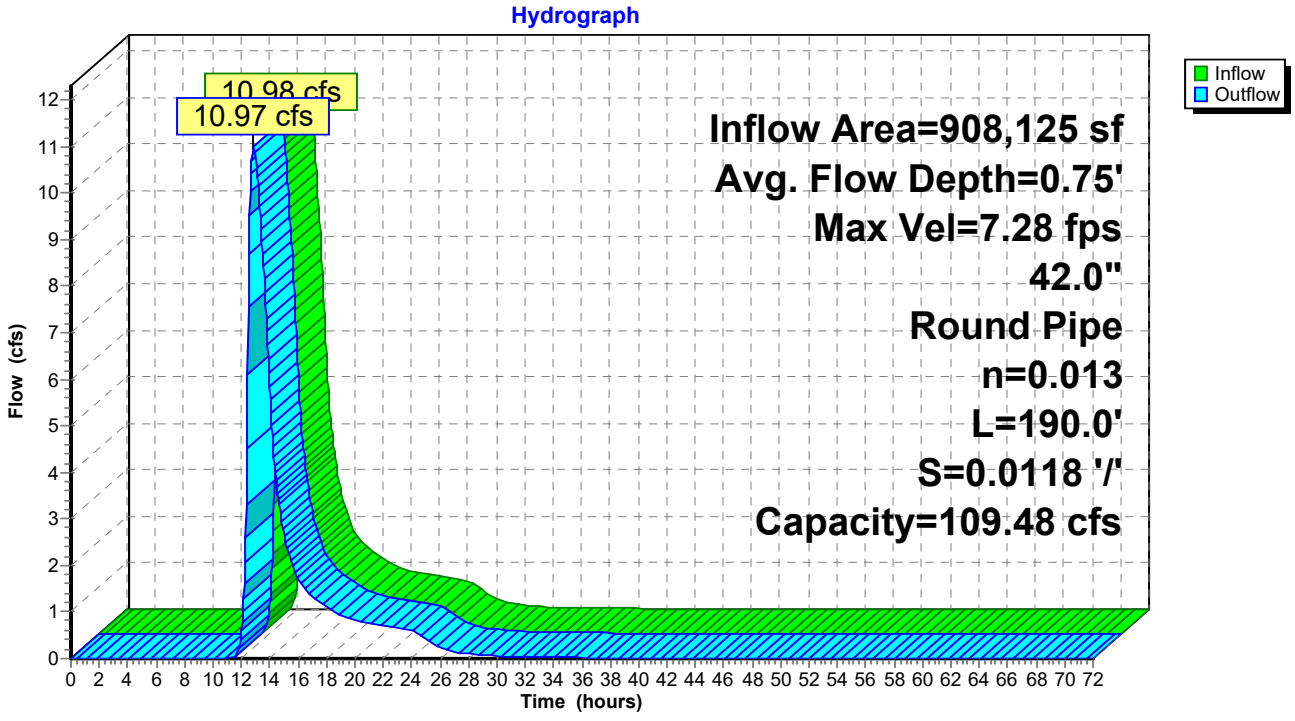
Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 1.44" for 2-Year _2100 event
Inflow = 10.98 cfs @ 12.86 hrs, Volume= 108,930 cf
Outflow = 10.97 cfs @ 12.87 hrs, Volume= 108,930 cf, Atten= 0%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 7.28 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.78 fps, Avg. Travel Time= 1.8 min

Peak Storage= 286 cf @ 12.86 hrs
Average Depth at Peak Storage= 0.75' , Surface Width= 2.87'
Bank-Full Depth= 3.50' Flow Area= 9.6 sf, Capacity= 109.48 cfs

42.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 190.0' Slope= 0.0118 '/'
Inlet Invert= 65.75', Outlet Invert= 63.50'





Summary for Pond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 492,891 sf, 8.90% Impervious, Inflow Depth = 1.77" for 2-Year _2100 event
Inflow = 16.30 cfs @ 12.30 hrs, Volume= 72,561 cf
Outflow = 10.19 cfs @ 12.52 hrs, Volume= 71,498 cf, Atten= 38%, Lag= 13.1 min
Primary = 10.19 cfs @ 12.52 hrs, Volume= 71,498 cf
Routed to Link 1L : Combined Flows
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : Combined Flows
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 98.54' @ 12.52 hrs Surf.Area= 6,125 sf Storage= 11,599 cf

Plug-Flow detention time= 28.4 min calculated for 71,448 cf (98% of inflow)
Center-of-Mass det. time= 19.9 min (866.8 - 846.9)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,737 cf	x 9.00 = 15,635 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.75	175	100.0	217	497	363

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 9.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 9.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 9.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 9.00** 2 End Contraction(s)

Primary OutFlow Max=10.13 cfs @ 12.52 hrs HW=98.49' (Free Discharge)
└**1=Culvert** (Passes 10.13 cfs of 15.20 cfs potential flow)
└**2=6" HDPE Underdrain** (Barrel Controls 10.13 cfs @ 5.73 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge)
└**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

ond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

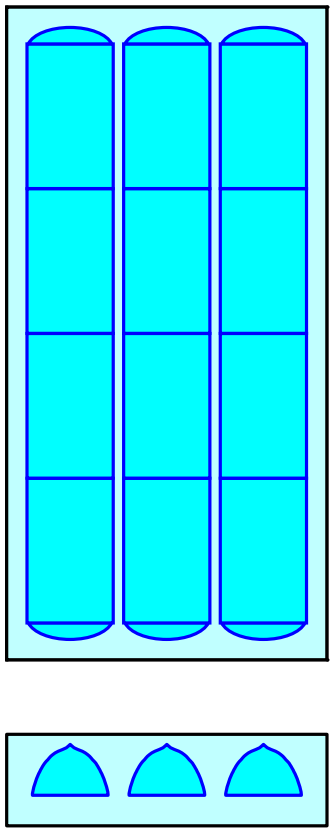
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

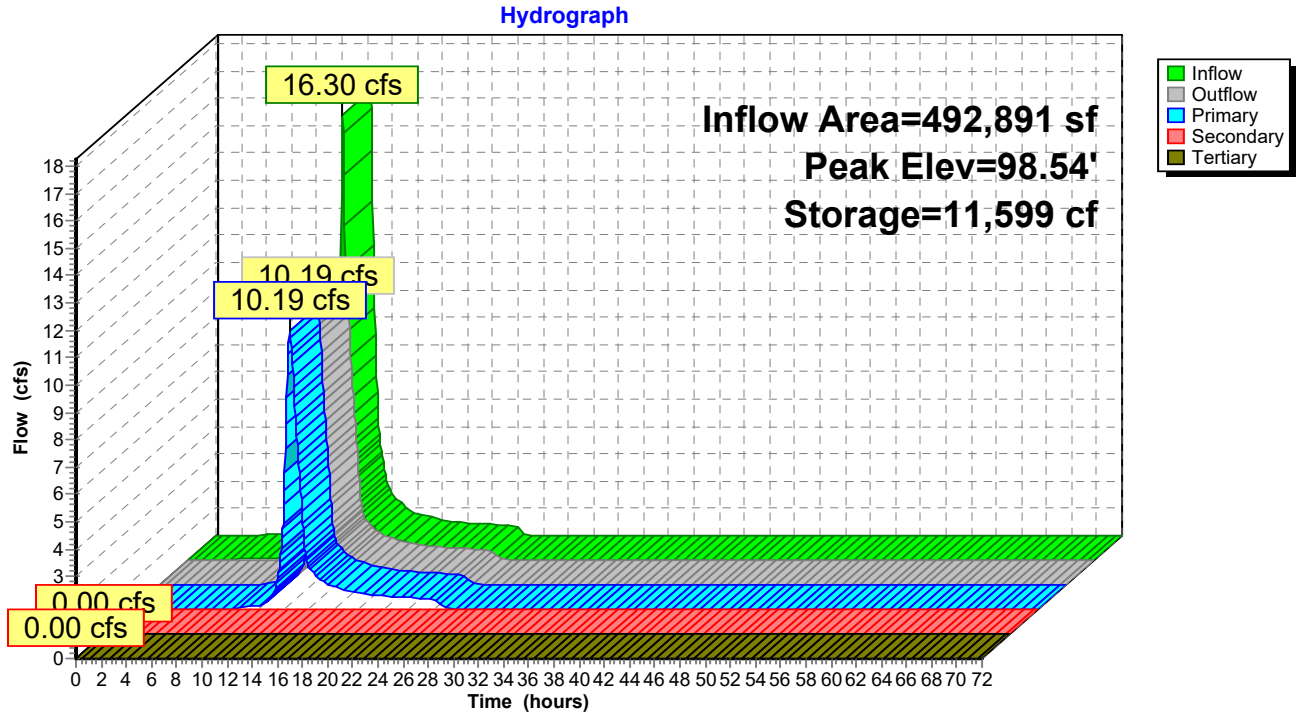
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 2P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 21,359 sf,100.00% Impervious, Inflow Depth = 3.74" for 2-Year _2100 event
Inflow = 2.00 cfs @ 12.13 hrs, Volume= 6,648 cf
Outflow = 0.10 cfs @ 13.70 hrs, Volume= 6,648 cf, Atten= 95%, Lag= 94.4 min
Discarded = 0.06 cfs @ 13.35 hrs, Volume= 6,490 cf
Primary = 0.04 cfs @ 13.70 hrs, Volume= 159 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 100.01' @ 13.70 hrs Surf.Area= 5,000 sf Storage= 3,758 cf

Plug-Flow detention time= 615.2 min calculated for 6,644 cf (100% of inflow)
Center-of-Mass det. time= 615.6 min (1,368.7 - 753.1)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 10.00 = 6,220 cf Total Available Storage

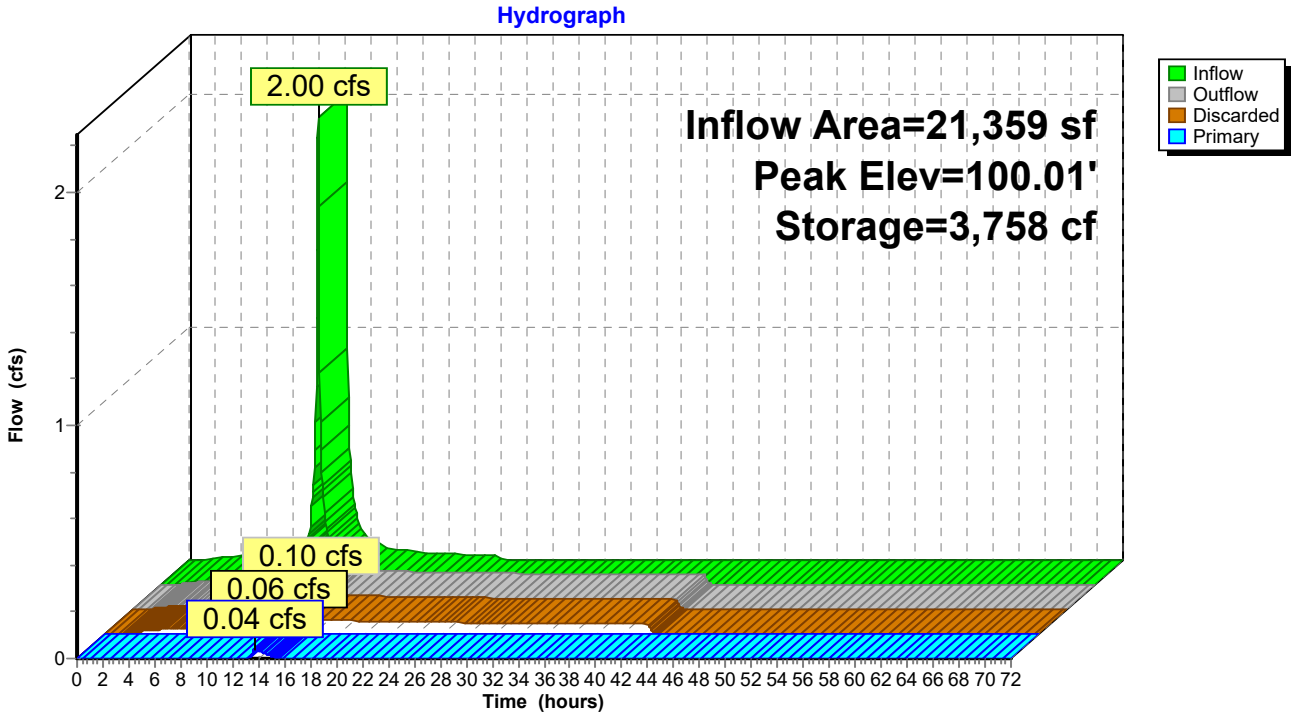
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 10.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.06 cfs @ 13.35 hrs HW=100.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.03 cfs @ 13.70 hrs HW=100.01' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.21 fps)

Pond 2P: Basic Rain Garden (infiltration only)



Summary for Pond 3P: Basic Porous Pavement (infiltration only)

Inflow Area = 35,245 sf,100.00% Impervious, Inflow Depth = 3.74" for 2-Year _2100 event
Inflow = 3.31 cfs @ 12.13 hrs, Volume= 10,971 cf
Outflow = 0.41 cfs @ 11.60 hrs, Volume= 10,970 cf, Atten= 88%, Lag= 0.0 min
Discarded = 0.41 cfs @ 11.60 hrs, Volume= 10,970 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 99.52' @ 12.71 hrs Surf.Area= 35,245 sf Storage= 3,370 cf

Plug-Flow detention time= 52.0 min calculated for 10,962 cf (100% of inflow)
Center-of-Mass det. time= 51.9 min (805.0 - 753.1)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	16,001 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

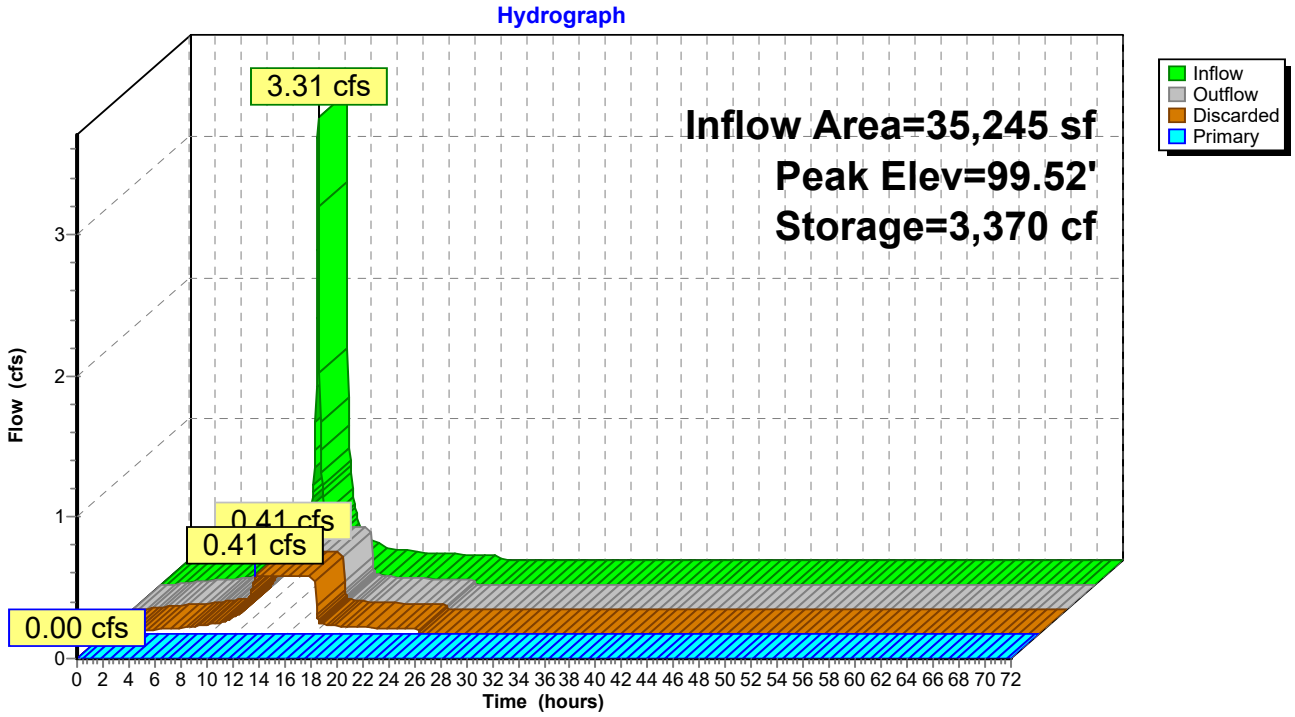
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	35,245	0.0	0	0
99.75	35,245	35.0	6,168	6,168
99.83	35,245	15.0	423	6,591
100.01	35,245	15.0	952	7,542
100.25	35,245	100.0	8,459	16,001

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.41 cfs @ 11.60 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Controls 0.00 cfs)

Pond 3P: Basic Porous Pavement (infiltration only)



Summary for Pond 4P: Basin 1 Medium Case

[62] Hint: Exceeded Reach 1Ri OUTLET depth by 0.97' @ 13.90 hrs

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 1.56" for 2-Year _2100 event
Inflow = 10.14 cfs @ 12.52 hrs, Volume= 71,657 cf
Outflow = 2.81 cfs @ 13.63 hrs, Volume= 64,451 cf, Atten= 72%, Lag= 66.5 min
Primary = 2.81 cfs @ 13.63 hrs, Volume= 64,451 cf
Routed to Reach 1Ro : outlet
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 1Ro : outlet
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 1Ro : outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 75.30' @ 13.63 hrs Surf.Area= 29,240 sf Storage= 35,765 cf

Plug-Flow detention time= 308.7 min calculated for 64,406 cf (90% of inflow)
Center-of-Mass det. time= 259.5 min (1,126.9 - 867.4)

Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	162,840 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
74.00	25,611	0	0
79.00	39,525	162,840	162,840

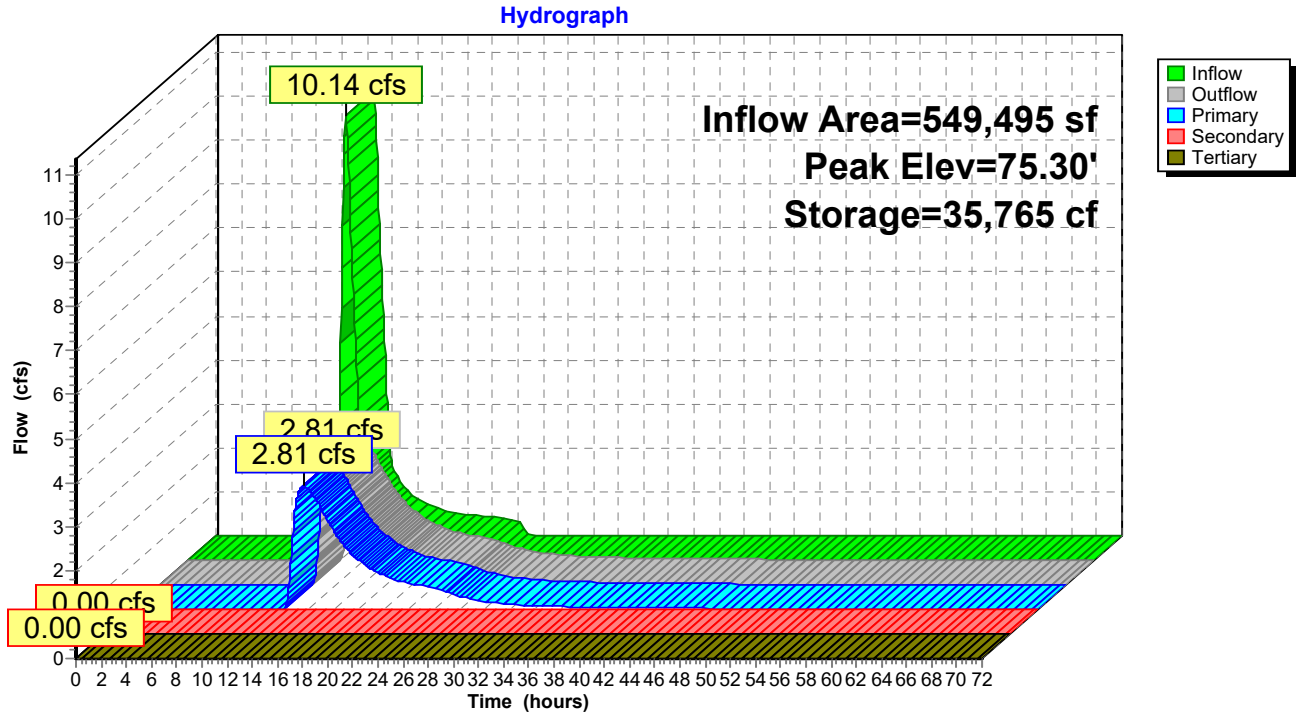
Device	Routing	Invert	Outlet Devices
#1	Primary	74.25'	**12.0" Vert. Low Flow Orifice** C= 0.600 Limited to weir flow at low heads
#2	Secondary	76.25'	**18.0" W x 12.0" H Vert. 2-YR Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	78.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.81 cfs @ 13.63 hrs HW=75.30' (Free Discharge)
1=Low Flow Orifice (Orifice Controls 2.81 cfs @ 3.58 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=74.00' (Free Discharge)
2=2-YR Orifice (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=74.00' (Free Discharge)
3=Orifice/Grate (Controls 0.00 cfs)

Pond 4P: Basin 1 Medium Case



Summary for Pond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 759,404 sf, 11.16% Impervious, Inflow Depth = 1.82" for 2-Year _2100 event
Inflow = 24.54 cfs @ 12.32 hrs, Volume= 114,890 cf
Outflow = 23.63 cfs @ 12.42 hrs, Volume= 113,195 cf, Atten= 4%, Lag= 5.5 min
Primary = 13.60 cfs @ 12.40 hrs, Volume= 108,461 cf
Routed to Link 2L : Combined Flows
Secondary = 10.01 cfs @ 12.42 hrs, Volume= 4,734 cf
Routed to Link 2L : Combined Flows
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.25' @ 12.40 hrs Surf.Area= 6,805 sf Storage= 14,742 cf

Plug-Flow detention time= 27.3 min calculated for 113,195 cf (99% of inflow)
Center-of-Mass det. time= 18.2 min (862.8 - 844.6)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	365 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,606 cf	x 10.00 = 16,060 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.00	175	100.0	86	365	327

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 10.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 10.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 10.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 10.00** 2 End Contraction(s)

Primary OutFlow Max=13.60 cfs @ 12.40 hrs HW=100.25' (Free Discharge)
└**1=Culvert** (Passes 13.60 cfs of 20.35 cfs potential flow)
└**2=6" HDPE Underdrain** (Barrel Controls 13.60 cfs @ 6.92 fps)

Secondary OutFlow Max=8.72 cfs @ 12.42 hrs HW=100.24' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 8.72 cfs @ 1.24 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge)
└**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

ond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

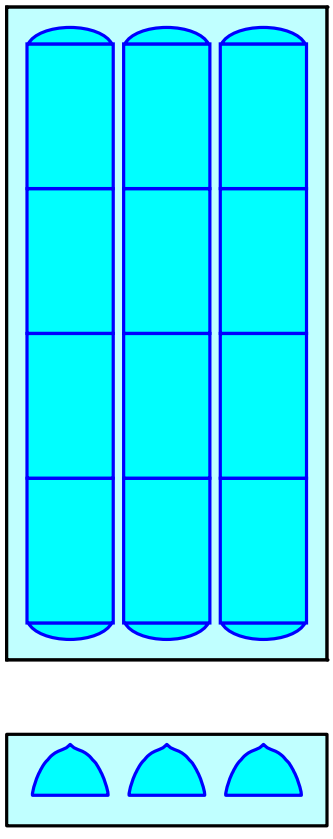
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

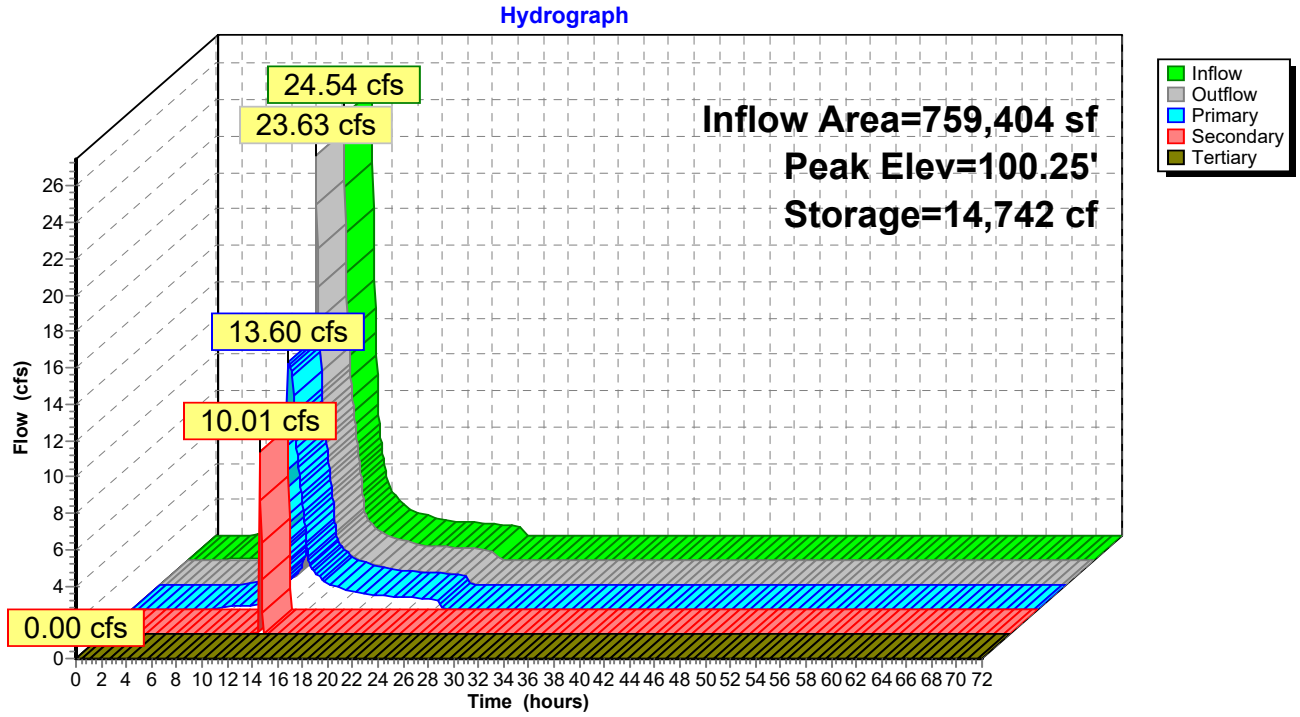
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 6P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 53,997 sf,100.00% Impervious, Inflow Depth = 3.74" for 2-Year _2100 event
Inflow = 5.07 cfs @ 12.13 hrs, Volume= 16,807 cf
Outflow = 0.29 cfs @ 13.51 hrs, Volume= 16,808 cf, Atten= 94%, Lag= 83.2 min
Discarded = 0.14 cfs @ 13.20 hrs, Volume= 16,271 cf
Primary = 0.14 cfs @ 13.51 hrs, Volume= 537 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 100.01' @ 13.51 hrs Surf.Area= 12,500 sf Storage= 9,417 cf

Plug-Flow detention time= 611.1 min calculated for 16,796 cf (100% of inflow)
Center-of-Mass det. time= 611.4 min (1,364.5 - 753.1)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 25.00 = 15,550 cf Total Available Storage

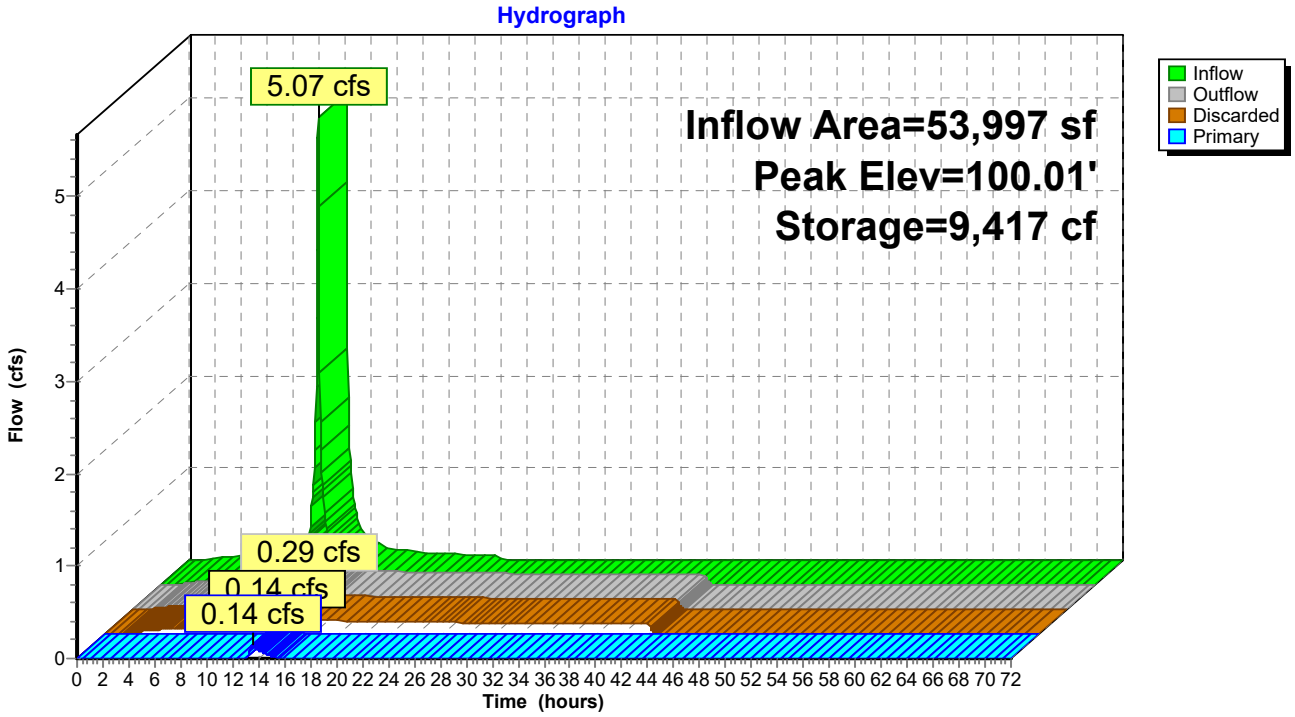
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 25.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.14 cfs @ 13.20 hrs HW=100.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.11 cfs @ 13.51 hrs HW=100.01' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.11 cfs @ 0.24 fps)

Pond 6P: Basic Rain Garden (infiltration only)



Summary for Pond 7P: Basic Porous Pavement (infiltration only)

Inflow Area = 94,724 sf,100.00% Impervious, Inflow Depth = 3.74" for 2-Year _2100 event
Inflow = 8.89 cfs @ 12.13 hrs, Volume= 29,484 cf
Outflow = 1.10 cfs @ 11.60 hrs, Volume= 29,484 cf, Atten= 88%, Lag= 0.0 min
Discarded = 1.10 cfs @ 11.60 hrs, Volume= 29,484 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 99.52' @ 12.71 hrs Surf.Area= 94,724 sf Storage= 9,057 cf

Plug-Flow detention time= 52.0 min calculated for 29,464 cf (100% of inflow)
Center-of-Mass det. time= 52.0 min (805.0 - 753.1)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	43,005 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

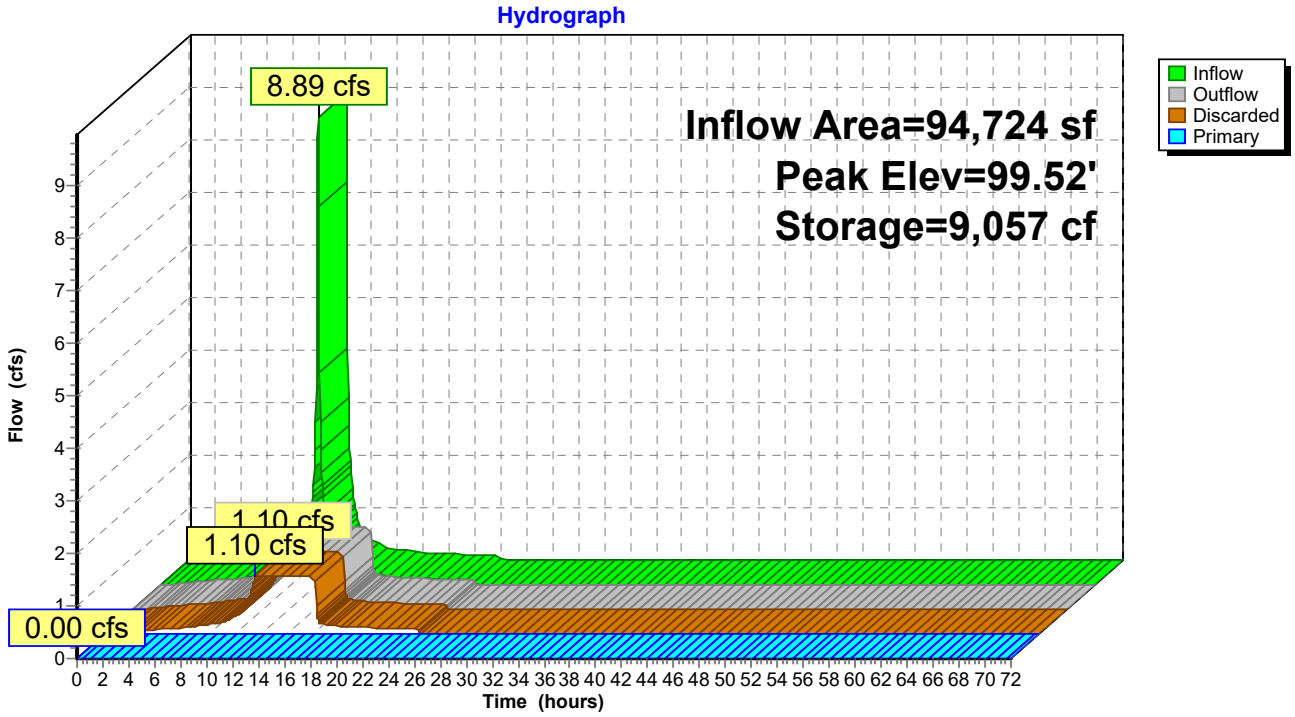
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	94,724	0.0	0	0
99.75	94,724	35.0	16,577	16,577
99.83	94,724	15.0	1,137	17,713
100.01	94,724	15.0	2,558	20,271
100.25	94,724	100.0	22,734	43,005

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=1.10 cfs @ 11.60 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 1.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Controls 0.00 cfs)

Pond 7P: Basic Porous Pavement (infiltration only)



Summary for Pond 8P: Basin 2 Medium Case

[62] Hint: Exceeded Reach 2Ri OUTLET depth by 0.72' @ 13.15 hrs

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 1.50" for 2-Year _2100 event
Inflow = 22.89 cfs @ 12.42 hrs, Volume= 113,745 cf
Outflow = 10.98 cfs @ 12.86 hrs, Volume= 108,930 cf, Atten= 52%, Lag= 26.3 min
Primary = 10.98 cfs @ 12.86 hrs, Volume= 108,930 cf
Routed to Reach 2Ro : Outlet
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 2Ro : Outlet
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 2Ro : Outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 70.43' @ 12.86 hrs Surf.Area= 22,408 sf Storage= 29,460 cf

Plug-Flow detention time= 109.4 min calculated for 108,930 cf (96% of inflow)
Center-of-Mass det. time= 85.4 min (948.6 - 863.3)

Volume	Invert	Avail.Storage	Storage Description
#1	69.00'	125,280 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.00	18,889	0	0
74.00	31,223	125,280	125,280

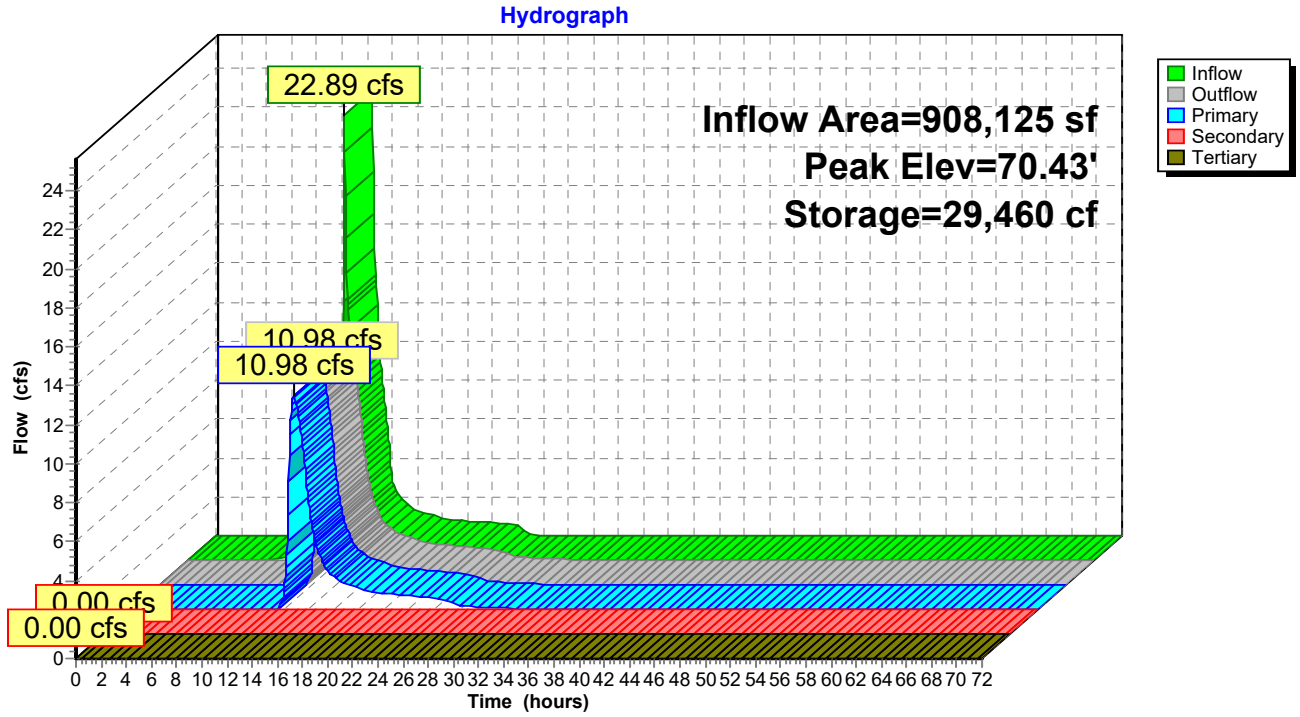
Device	Routing	Invert	Outlet Devices
#1	Primary	69.25'	**18.0" Vert. Low Flow Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Secondary	71.25'	**24.0" W x 18.0" H Vert. 2-YR Orifice X 3.00** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	73.75'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=10.98 cfs @ 12.86 hrs HW=70.43' (Free Discharge)
1=Low Flow Orifice (Orifice Controls 10.98 cfs @ 3.69 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.00' (Free Discharge)
2=2-YR Orifice (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.00' (Free Discharge)
3=Orifice/Grate (Controls 0.00 cfs)

Pond 8P: Basin 2 Medium Case



Summary for Pond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 840,092 sf, 1.06% Impervious, Inflow Depth = 1.60" for 2-Year _2100 event
Inflow = 21.53 cfs @ 12.41 hrs, Volume= 111,825 cf
Outflow = 21.53 cfs @ 12.41 hrs, Volume= 111,546 cf, Atten= 0%, Lag= 0.1 min
Primary = 2.86 cfs @ 12.41 hrs, Volume= 65,822 cf
Routed to Link 3L : dA3
Secondary = 11.62 cfs @ 12.41 hrs, Volume= 35,218 cf
Routed to Link 3L : dA3
Tertiary = 7.05 cfs @ 12.41 hrs, Volume= 10,505 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.82' @ 12.41 hrs Surf.Area= 1,361 sf Storage= 3,149 cf

Plug-Flow detention time= 10.1 min calculated for 111,469 cf (100% of inflow)
Center-of-Mass det. time= 8.8 min (879.4 - 870.7)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,737 cf	x 2.00 = 3,475 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.75	175	100.0	217	497	363

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 2.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 2.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 2.00** 2 End Contraction(s)

Primary OutFlow Max=2.85 cfs @ 12.41 hrs HW=100.82' (Free Discharge)
↑—**1=Culvert** (Passes 2.85 cfs of 4.27 cfs potential flow)
↑—**2=6" HDPE Underdrain** (Barrel Controls 2.85 cfs @ 7.27 fps)

Secondary OutFlow Max=11.56 cfs @ 12.41 hrs HW=100.82' (Free Discharge)
↑—**3=Broad-Crested Rectangular Weir** (Weir Controls 11.56 cfs @ 2.36 fps)

Tertiary OutFlow Max=6.95 cfs @ 12.41 hrs HW=100.82' (Free Discharge)
↑—**4=Sharp-Crested Rectangular Weir** (Weir Controls 6.95 cfs @ 1.84 fps)

ond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

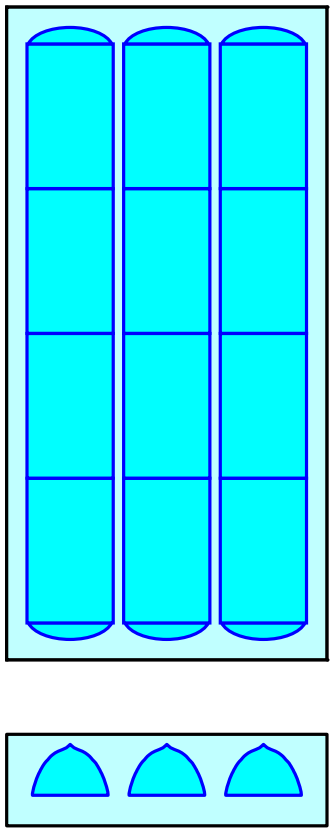
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

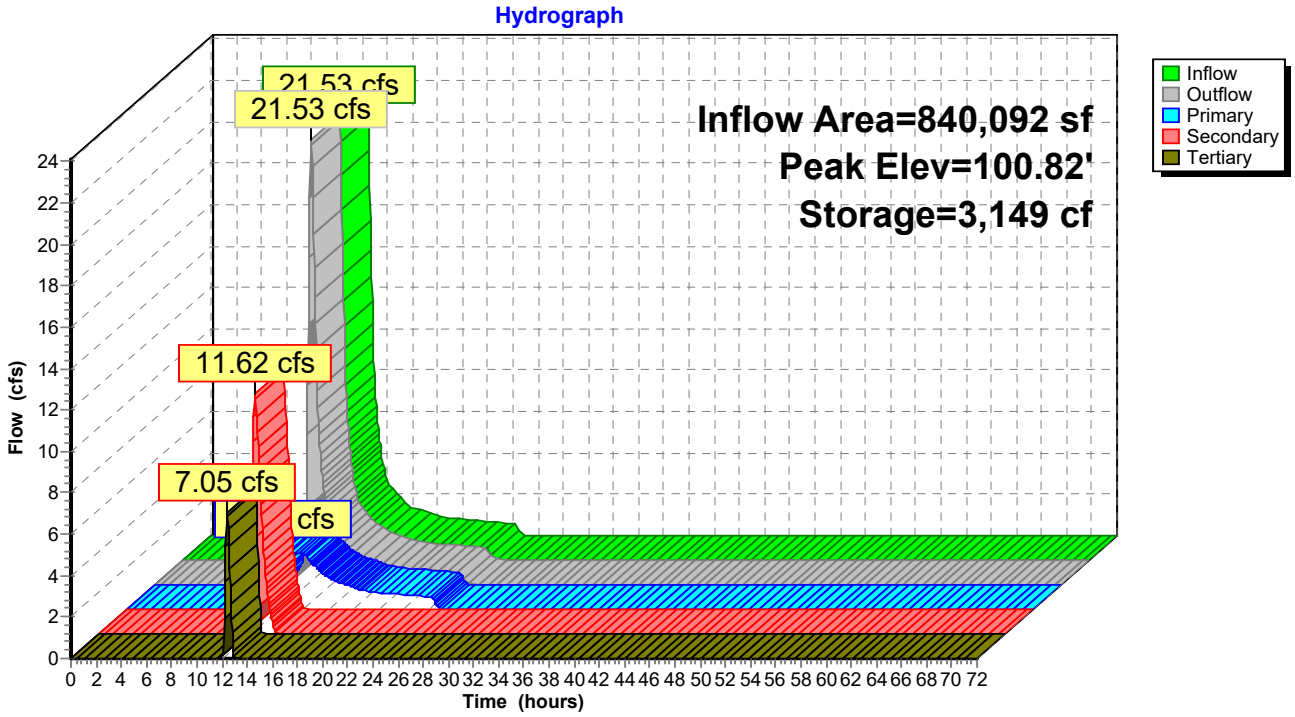
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 10P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 22,074 sf,100.00% Impervious, Inflow Depth = 3.74" for 2-Year _2100 event
Inflow = 2.07 cfs @ 12.13 hrs, Volume= 6,871 cf
Outflow = 0.28 cfs @ 12.66 hrs, Volume= 6,870 cf, Atten= 86%, Lag= 31.9 min
Discarded = 0.05 cfs @ 12.45 hrs, Volume= 6,043 cf
Primary = 0.23 cfs @ 12.66 hrs, Volume= 828 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 100.03' @ 12.66 hrs Surf.Area= 4,500 sf Storage= 3,482 cf

Plug-Flow detention time= 563.6 min calculated for 6,866 cf (100% of inflow)
Center-of-Mass det. time= 563.9 min (1,317.0 - 753.1)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 9.00 = 5,598 cf Total Available Storage

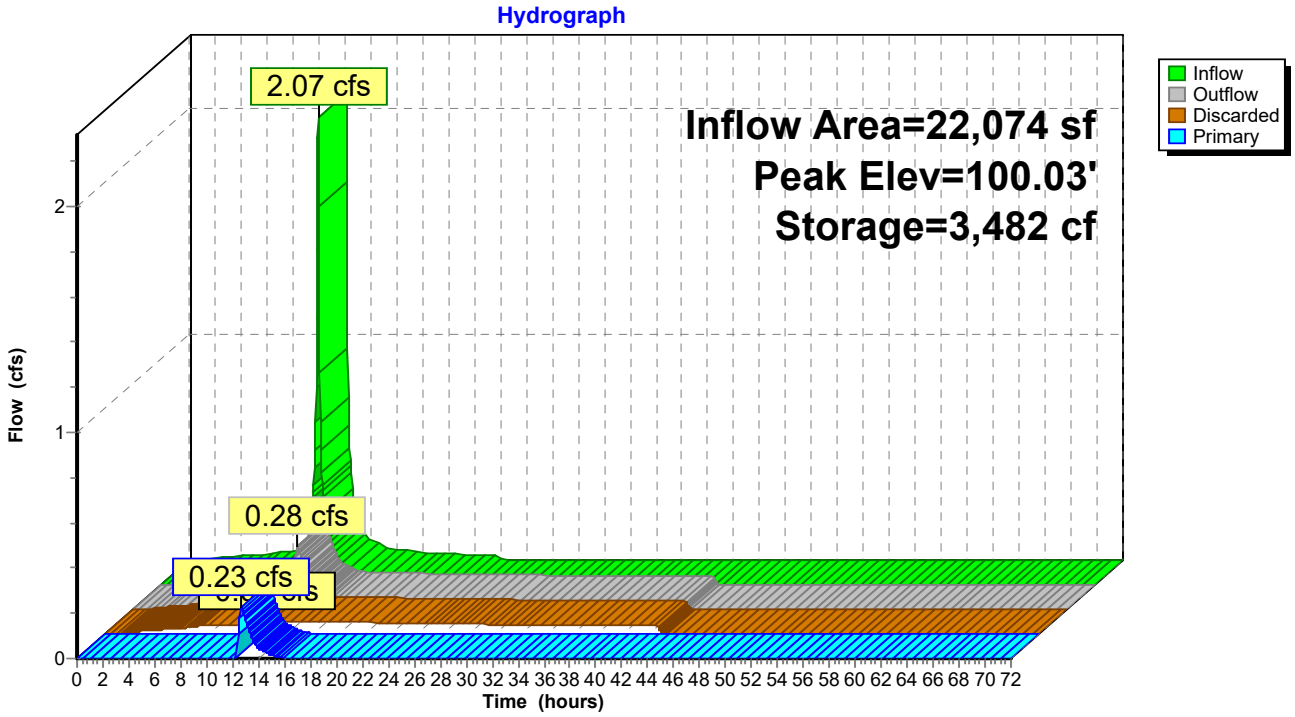
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 9.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.05 cfs @ 12.45 hrs HW=100.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.22 cfs @ 12.66 hrs HW=100.03' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.22 cfs @ 0.42 fps)

Pond 10P: Basic Rain Garden (infiltration only)



Summary for Pond 11P: Basic Porous Pavement (infiltration only)

Inflow Area = 85,494 sf,100.00% Impervious, Inflow Depth = 3.74" for 2-Year _2100 event
Inflow = 8.02 cfs @ 12.13 hrs, Volume= 26,611 cf
Outflow = 0.99 cfs @ 11.60 hrs, Volume= 26,611 cf, Atten= 88%, Lag= 0.0 min
Discarded = 0.99 cfs @ 11.60 hrs, Volume= 26,611 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 99.52' @ 12.71 hrs Surf.Area= 85,494 sf Storage= 8,175 cf

Plug-Flow detention time= 52.0 min calculated for 26,593 cf (100% of inflow)
Center-of-Mass det. time= 52.0 min (805.0 - 753.1)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	38,814 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

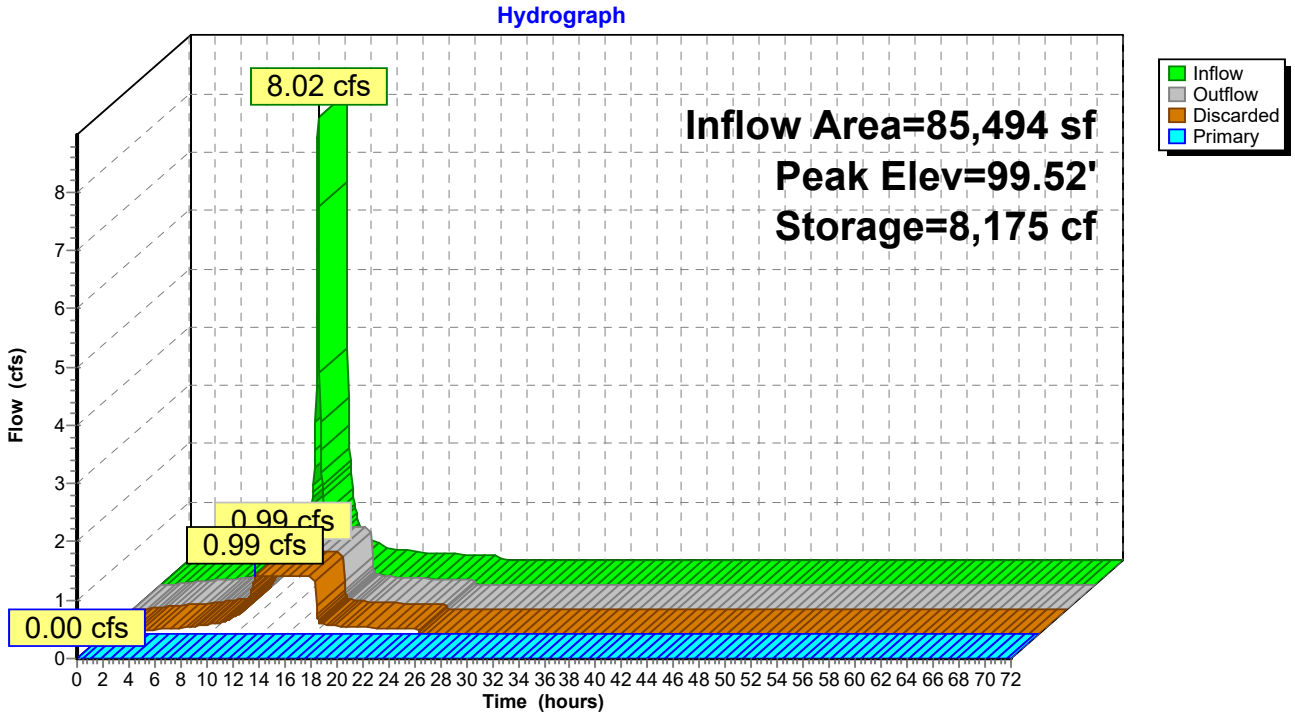
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	85,494	0.0	0	0
99.75	85,494	35.0	14,961	14,961
99.83	85,494	15.0	1,026	15,987
100.01	85,494	15.0	2,308	18,296
100.25	85,494	100.0	20,519	38,814

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.99 cfs @ 11.60 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.99 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Controls 0.00 cfs)

Pond 11P: Basic Porous Pavement (infiltration only)



Summary for Pond 12P: Basic Porous Pavement (infiltration only)

Inflow Area = 4,605 sf,100.00% Impervious, Inflow Depth = 3.74" for 2-Year _2100 event
Inflow = 0.43 cfs @ 12.13 hrs, Volume= 1,433 cf
Outflow = 0.05 cfs @ 11.60 hrs, Volume= 1,433 cf, Atten= 88%, Lag= 0.0 min
Discarded = 0.05 cfs @ 11.60 hrs, Volume= 1,433 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 4L : DA 4: Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 99.53' @ 12.71 hrs Surf.Area= 4,605 sf Storage= 447 cf

Plug-Flow detention time= 54.3 min calculated for 1,432 cf (100% of inflow)
Center-of-Mass det. time= 54.3 min (807.4 - 753.1)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	4,393 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

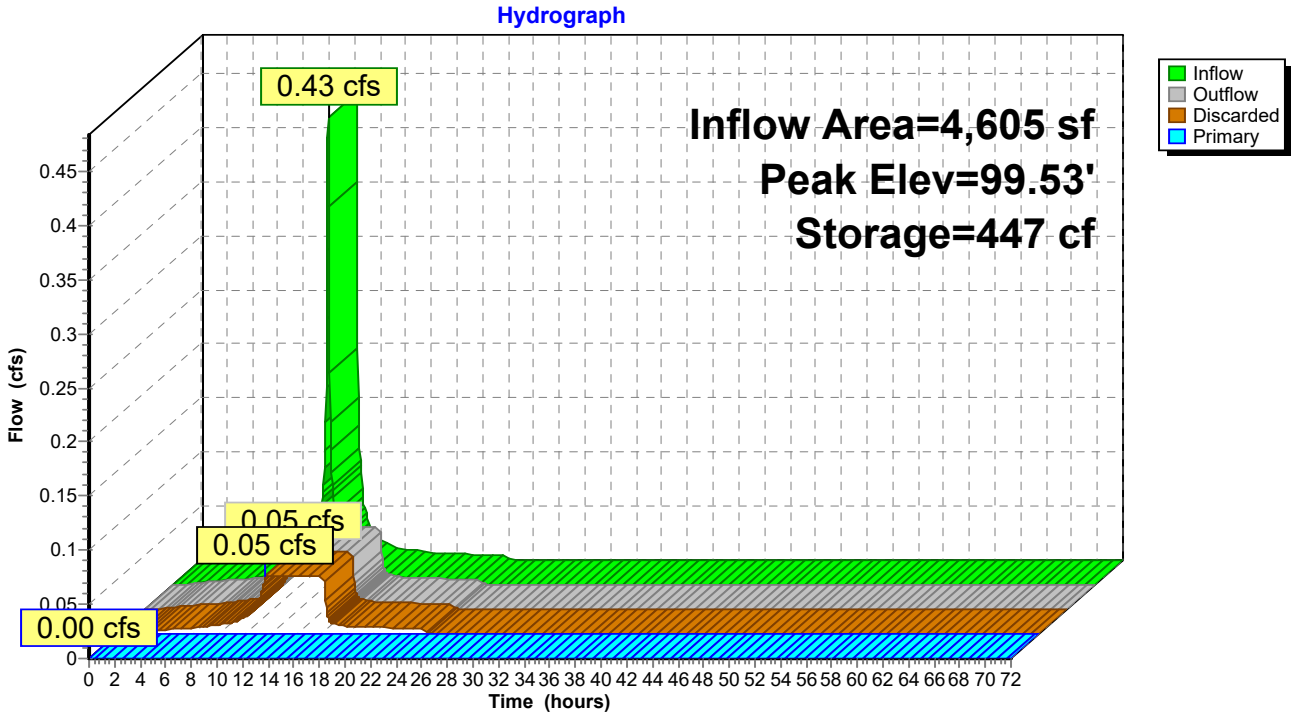
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	4,605	0.0	0	0
99.75	4,605	35.0	806	806
99.83	4,605	15.0	55	861
100.01	4,605	15.0	124	985
100.25	4,605	100.0	1,105	2,091
100.75	4,605	100.0	2,303	4,393

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.05 cfs @ 11.60 hrs HW=99.27' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
2=Edge of Porous Asphalt (Controls 0.00 cfs)

Pond 12P: Basic Porous Pavement (infiltration only)

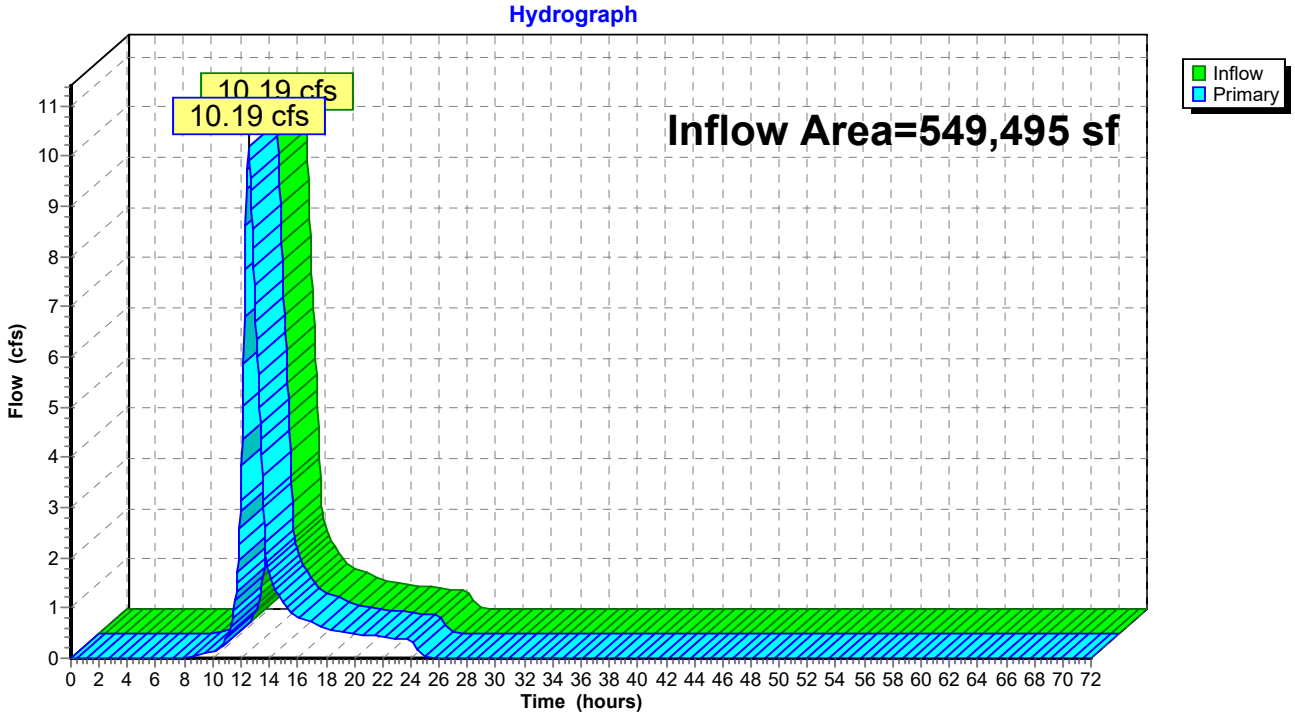


Summary for Link 1L: Combined Flows

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 1.56" for 2-Year _2100 event
Inflow = 10.19 cfs @ 12.52 hrs, Volume= 71,656 cf
Primary = 10.19 cfs @ 12.52 hrs, Volume= 71,656 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 1Ri : Inlet Pipe

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1L: Combined Flows

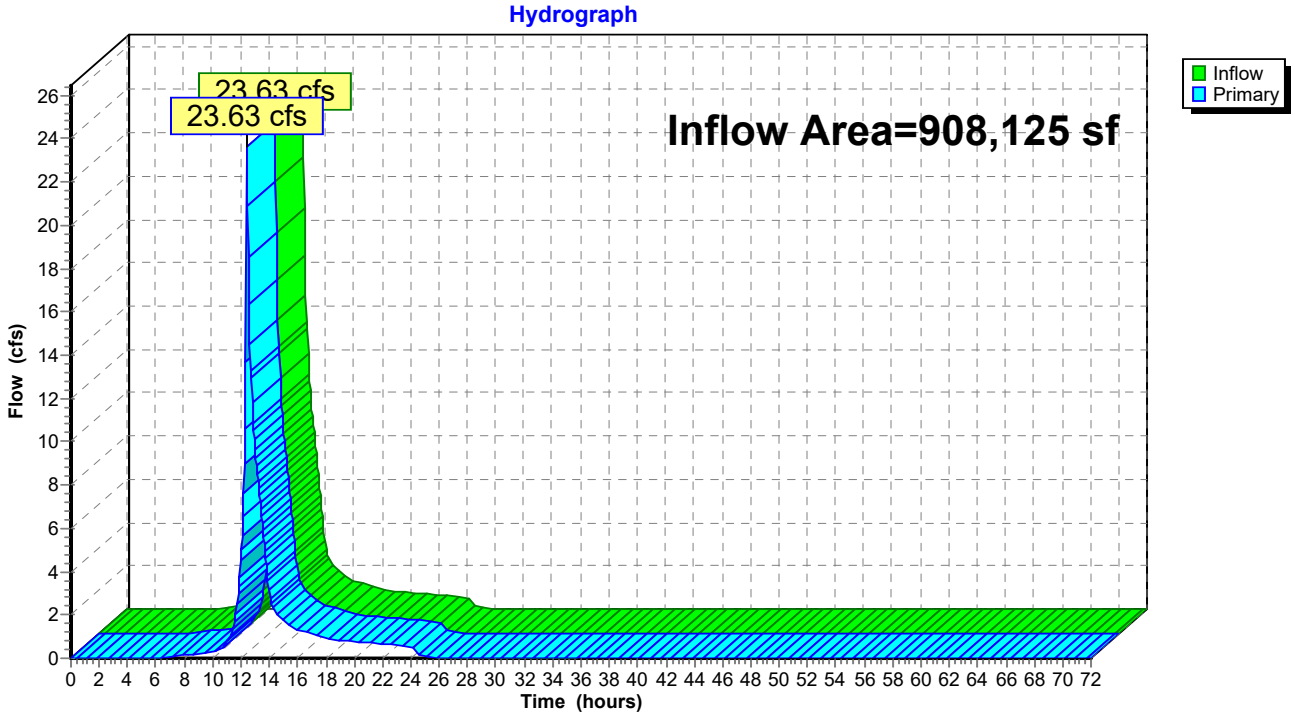


Summary for Link 2L: Combined Flows

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 1.50" for 2-Year _2100 event
Inflow = 23.63 cfs @ 12.42 hrs, Volume= 113,731 cf
Primary = 23.63 cfs @ 12.42 hrs, Volume= 113,731 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 2Ri : Inlet Pipe

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 2L: Combined Flows

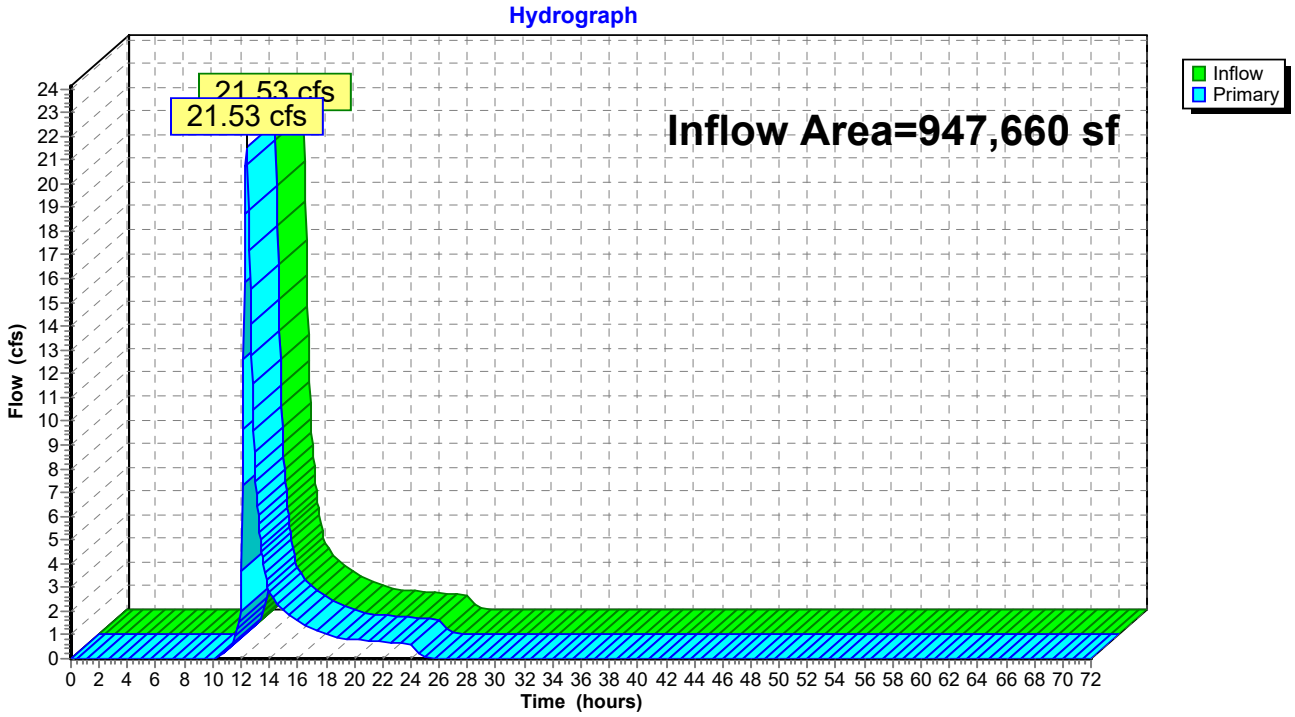


Summary for Link 3L: dA3

Inflow Area = 947,660 sf, 12.29% Impervious, Inflow Depth = 1.42" for 2-Year _2100 event
Inflow = 21.53 cfs @ 12.41 hrs, Volume= 112,374 cf
Primary = 21.53 cfs @ 12.41 hrs, Volume= 112,374 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 3L: dA3

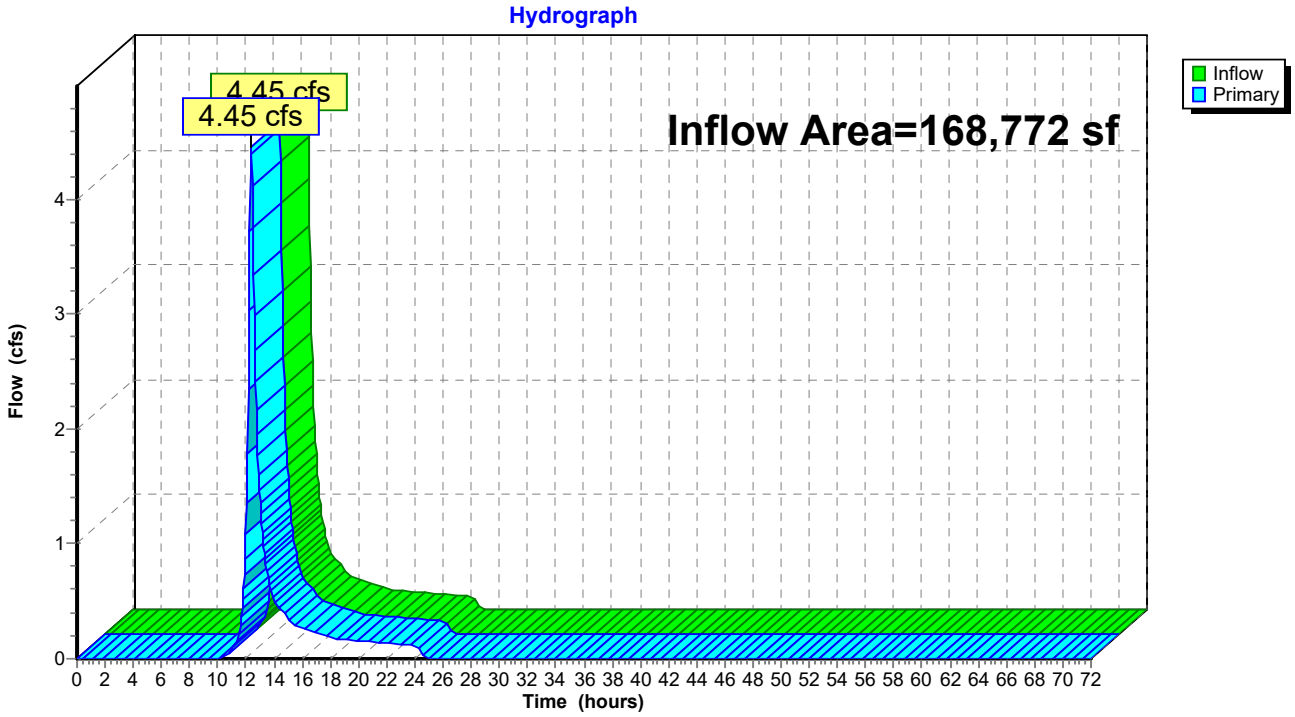


Summary for Link 4L: DA 4: Combined Flows

Inflow Area = 168,772 sf, 3.14% Impervious, Inflow Depth = 1.54" for 2-Year _2100 event
Inflow = 4.45 cfs @ 12.36 hrs, Volume= 21,663 cf
Primary = 4.45 cfs @ 12.36 hrs, Volume= 21,663 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: DA 4: Combined Flows



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA 1: CN w/ IC areas Runoff Area=549,495 sf 18.28% Impervious Runoff Depth=2.94"
Tc=19.8 min CN=74/98 Runoff=30.13 cfs 134,482 cf

Subcatchment 1Sa: DA 1: CN w/ IC areas Runoff Area=492,891 sf 8.90% Impervious Runoff Depth=2.71"
Tc=19.8 min CN=74/98 Runoff=25.39 cfs 111,261 cf

Subcatchment 1Sb: DA 1: Roofs Runoff Area=21,359 sf 100.00% Impervious Runoff Depth=4.92"
Tc=6.0 min CN=0/98 Runoff=2.61 cfs 8,762 cf

Subcatchment 1Sc: DA1: Driveways Runoff Area=35,245 sf 100.00% Impervious Runoff Depth=4.92"
Tc=6.0 min CN=0/98 Runoff=4.31 cfs 14,459 cf

Subcatchment 2S: DA 2: CN w/ IC areas Runoff Area=908,125 sf 25.71% Impervious Runoff Depth=3.12"
Tc=21.8 min CN=74/98 Runoff=49.89 cfs 235,913 cf

Subcatchment 2Sa: DA 2: CN w/ IC areas Runoff Area=759,404 sf 11.16% Impervious Runoff Depth=2.76"
Tc=21.8 min CN=74/98 Runoff=37.96 cfs 174,901 cf

Subcatchment 2Sb: DA 2: Roofs Runoff Area=53,997 sf 100.00% Impervious Runoff Depth=4.92"
Tc=6.0 min CN=0/98 Runoff=6.61 cfs 22,152 cf

Subcatchment 2Sc: DA 2: Driveways Runoff Area=94,724 sf 100.00% Impervious Runoff Depth=4.92"
Tc=6.0 min CN=0/98 Runoff=11.59 cfs 38,860 cf

Subcatchment 3S: DA 3: CN w/ IC areas Runoff Area=947,660 sf 12.29% Impervious Runoff Depth=2.79"
Tc=27.9 min CN=74/98 Runoff=42.24 cfs 220,436 cf

Subcatchment 3Sa: DA 3: CN w/ IC areas Runoff Area=840,092 sf 1.06% Impervious Runoff Depth=2.52"
Tc=27.9 min CN=74/98 Runoff=34.58 cfs 176,307 cf

Subcatchment 3Sb: DA 3: Roofs Runoff Area=22,074 sf 100.00% Impervious Runoff Depth=4.92"
Tc=6.0 min CN=0/98 Runoff=2.70 cfs 9,056 cf

Subcatchment 3Sc: DA 3: Driveways Runoff Area=85,494 sf 100.00% Impervious Runoff Depth=4.92"
Tc=6.0 min CN=0/98 Runoff=10.46 cfs 35,073 cf

Subcatchment 4S: DA 4: CN w/ IC areas Runoff Area=168,772 sf 3.14% Impervious Runoff Depth=2.57"
Tc=24.4 min CN=74/98 Runoff=7.55 cfs 36,129 cf

Subcatchment 4Sa: DA 4: CN w/ IC areas Runoff Area=163,472 sf 0.00% Impervious Runoff Depth=2.49"
Tc=24.4 min CN=74/0 Runoff=7.15 cfs 33,955 cf

Subcatchment 4Sb: DA 4: Roofs Runoff Area=695 sf 100.00% Impervious Runoff Depth=4.92"
Tc=6.0 min CN=0/98 Runoff=0.09 cfs 285 cf

Subcatchment 4Sc: DA 4: Driveways Runoff Area=4,605 sf 100.00% Impervious Runoff Depth=4.92"
Tc=6.0 min CN=0/98 Runoff=0.56 cfs 1,889 cf

Reach 1Ri: Inlet Pipe Avg. Flow Depth=1.18' Max Vel=8.56 fps Inflow=26.98 cfs 112,517 cf
48.0" Round Pipe n=0.013 L=100.0' S=0.0100 '/' Capacity=143.64 cfs Outflow=24.82 cfs 112,548 cf

Reach 1Ro: outlet Avg. Flow Depth=0.64' Max Vel=4.24 fps Inflow=4.18 cfs 105,320 cf
30.0" Round Pipe n=0.013 L=925.0' S=0.0051 '/' Capacity=29.39 cfs Outflow=4.18 cfs 105,310 cf

Reach 2Ri: Inlet Pipe Avg. Flow Depth=1.43' Max Vel=9.72 fps Inflow=39.36 cfs 178,678 cf
48.0" Round Pipe n=0.013 L=100.0' S=0.0100 '/' Capacity=143.64 cfs Outflow=39.08 cfs 178,732 cf

Reach 2Ro: Outlet Avg. Flow Depth=0.97' Max Vel=8.44 fps Inflow=18.30 cfs 173,915 cf
42.0" Round Pipe n=0.013 L=190.0' S=0.0118 '/' Capacity=109.48 cfs Outflow=18.29 cfs 173,916 cf

Pond 1P: Basic Rain Garden (w/ Peak Elev=100.32' Storage=13,376 cf Inflow=25.39 cfs 111,261 cf
Primary=12.31 cfs 101,846 cf Secondary=13.77 cfs 8,882 cf Tertiary=0.00 cfs 0 cf Outflow=26.39 cfs 110,728 cf

Pond 2P: Basic Rain Garden (infiltration Peak Elev=100.06' Storage=3,995 cf Inflow=2.61 cfs 8,762 cf
Discarded=0.06 cfs 6,974 cf Primary=0.64 cfs 1,789 cf Outflow=0.69 cfs 8,762 cf

Pond 3P: Basic Porous Pavement Peak Elev=99.66' Storage=5,023 cf Inflow=4.31 cfs 14,459 cf
Discarded=0.41 cfs 14,457 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 14,457 cf

Pond 4P: Basin 1 Medium Case Peak Elev=75.97' Storage=55,987 cf Inflow=24.82 cfs 112,548 cf
Primary=4.18 cfs 105,320 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=4.18 cfs 105,320 cf

Pond 5P: Basic Rain Garden (w/ Peak Elev=100.45' Storage=15,102 cf Inflow=37.96 cfs 174,901 cf
Primary=13.84 cfs 146,643 cf Secondary=23.87 cfs 27,360 cf Tertiary=0.00 cfs 0 cf Outflow=37.71 cfs 174,003 cf

Pond 6P: Basic Rain Garden (infiltration Peak Elev=100.06' Storage=10,023 cf Inflow=6.61 cfs 22,152 cf
Discarded=0.14 cfs 17,477 cf Primary=1.72 cfs 4,674 cf Outflow=1.86 cfs 22,152 cf

Pond 7P: Basic Porous Pavement Peak Elev=99.66' Storage=13,500 cf Inflow=11.59 cfs 38,860 cf
Discarded=1.10 cfs 38,860 cf Primary=0.00 cfs 0 cf Outflow=1.10 cfs 38,860 cf

Pond 8P: Basin 2 Medium Case Peak Elev=71.16' Storage=46,483 cf Inflow=39.08 cfs 178,732 cf
Primary=18.30 cfs 173,915 cf Secondary=0.00 cfs 0 cf Tertiary=0.00 cfs 0 cf Outflow=18.30 cfs 173,915 cf

Pond 9P: Basic Rain Garden (w/ Peak Elev=101.03' Storage=3,223 cf Inflow=34.58 cfs 176,307 cf
Primary=2.90 cfs 87,061 cf Secondary=16.75 cfs 61,255 cf Tertiary=14.92 cfs 27,754 cf Outflow=34.57 cfs 176,070 cf

Pond 10P: Basic Rain Garden (infiltration Peak Elev=100.09' Storage=3,766 cf Inflow=2.70 cfs 9,056 cf
Discarded=0.05 cfs 6,469 cf Primary=1.25 cfs 2,582 cf Outflow=1.30 cfs 9,051 cf

Pond 11P: Basic Porous Pavement Peak Elev=99.66' Storage=12,184 cf Inflow=10.46 cfs 35,073 cf
Discarded=0.99 cfs 35,073 cf Primary=0.00 cfs 0 cf Outflow=0.99 cfs 35,073 cf

Pond 12P: Basic Porous Pavement (infiltration Peak Elev=99.66' Storage=664 cf Inflow=0.56 cfs 1,889 cf
Discarded=0.05 cfs 1,889 cf Primary=0.00 cfs 0 cf Outflow=0.05 cfs 1,889 cf

Link 1L: Combined Flows Inflow=26.98 cfs 112,517 cf
Primary=26.98 cfs 112,517 cf

Link 2L: Combined Flows Inflow=39.36 cfs 178,678 cf
Primary=39.36 cfs 178,678 cf

Link 3L: dA3

Inflow=35.36 cfs 178,652 cf
Primary=35.36 cfs 178,652 cf

Link 4L: DA 4: Combined Flows

Inflow=7.17 cfs 34,240 cf
Primary=7.17 cfs 34,240 cf

Total Runoff Area = 5,148,104 sf Runoff Volume = 1,253,921 cf Average Runoff Depth = 2.92"
82.29% Pervious = 4,236,632 sf 17.71% Impervious = 911,472 sf

Summary for Subcatchment 1S: DA 1: CN w/ IC areas

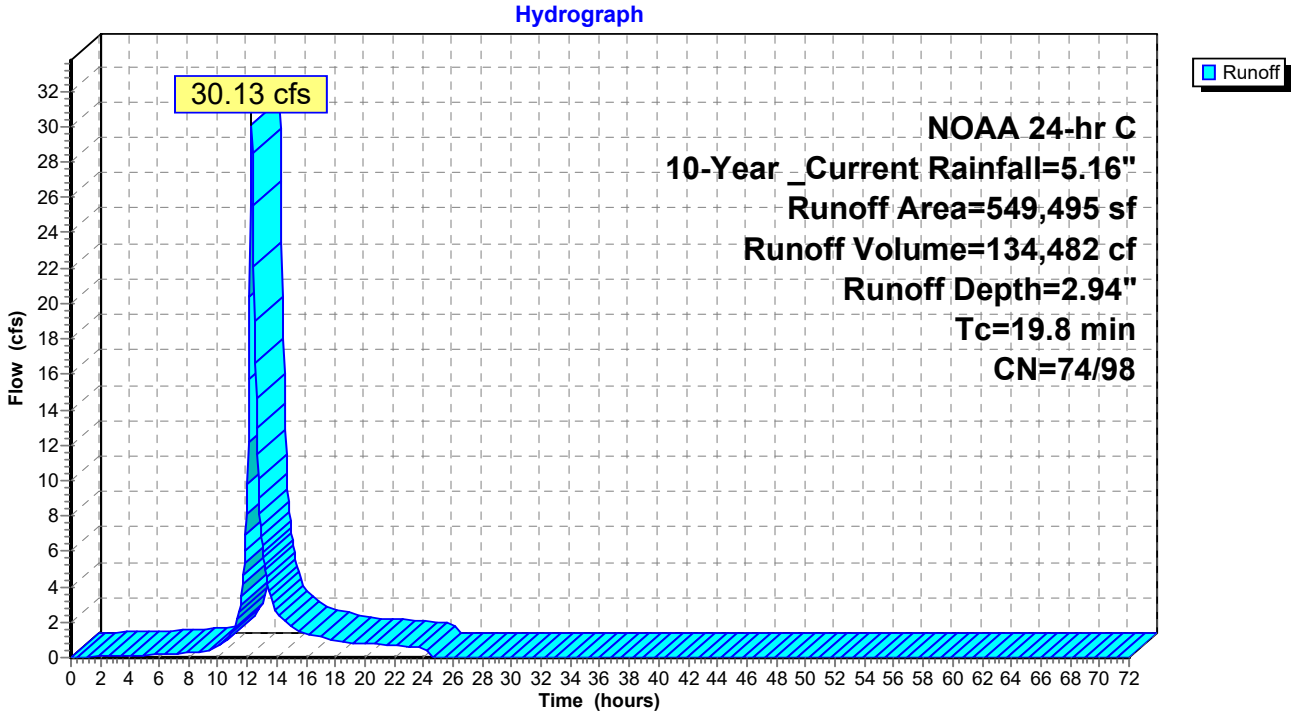
Runoff = 30.13 cfs @ 12.29 hrs, Volume= 134,482 cf, Depth= 2.94"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	100,459	98	Impervious
	317,162	74	>75% Grass cover, Good, HSG C
	131,575	73	Woods, Fair, HSG C
	299	70	Woods, Good, HSG C
	549,495	78	Weighted Average
	449,036	74	81.72% Pervious Area
	100,459	98	18.28% Impervious Area

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

Subcatchment 1S: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sa: DA 1: CN w/ IC areas

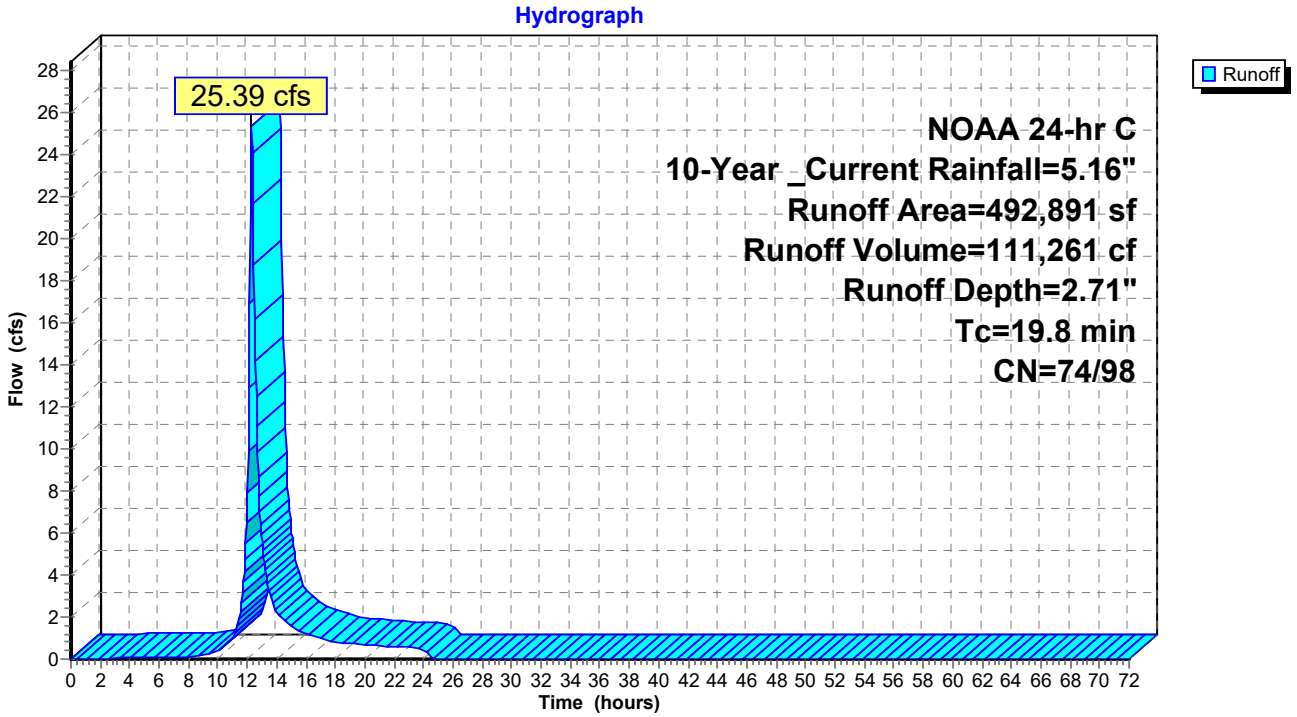
Runoff = 25.39 cfs @ 12.30 hrs, Volume= 111,261 cf, Depth= 2.71"
Routed to Pond 1P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	43,855	98	Impervious
	317,162	74	>75% Grass cover, Good, HSG C
	131,575	73	Woods, Fair, HSG C
	299	70	Woods, Good, HSG C
	492,891	76	Weighted Average
	449,036	74	91.10% Pervious Area
	43,855	98	8.90% Impervious Area

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

Subcatchment 1Sa: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sb: DA 1: Roofs Combined

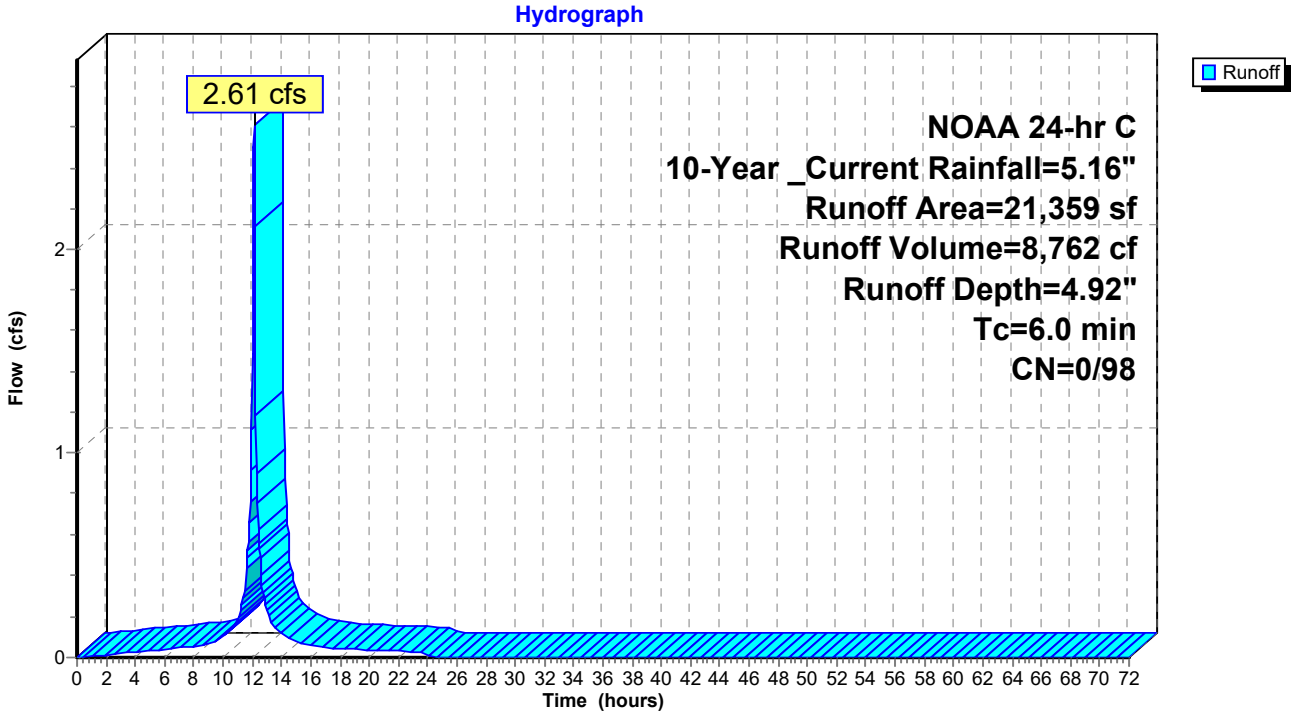
Runoff = 2.61 cfs @ 12.13 hrs, Volume= 8,762 cf, Depth= 4.92"
Routed to Pond 2P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	21,359	98	
	21,359	98	100.00% Impervious Area

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

Subcatchment 1Sb: DA 1: Roofs Combined



Summary for Subcatchment 1Sc: DA1: Driveways (other)

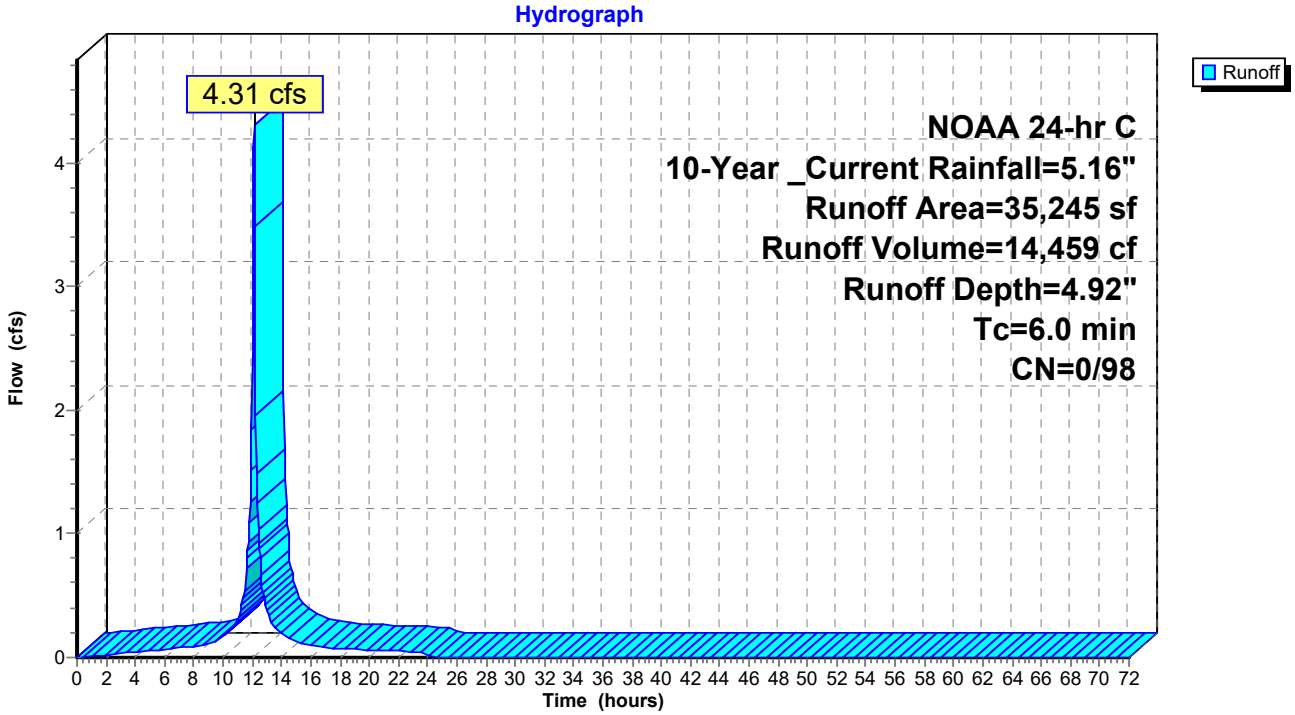
Runoff = 4.31 cfs @ 12.13 hrs, Volume= 14,459 cf, Depth= 4.92"
Routed to Pond 3P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	35,245	98	
	35,245	98	100.00% Impervious Area

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

Subcatchment 1Sc: DA1: Driveways (other)



Summary for Subcatchment 2S: DA 2: CN w/ IC areas

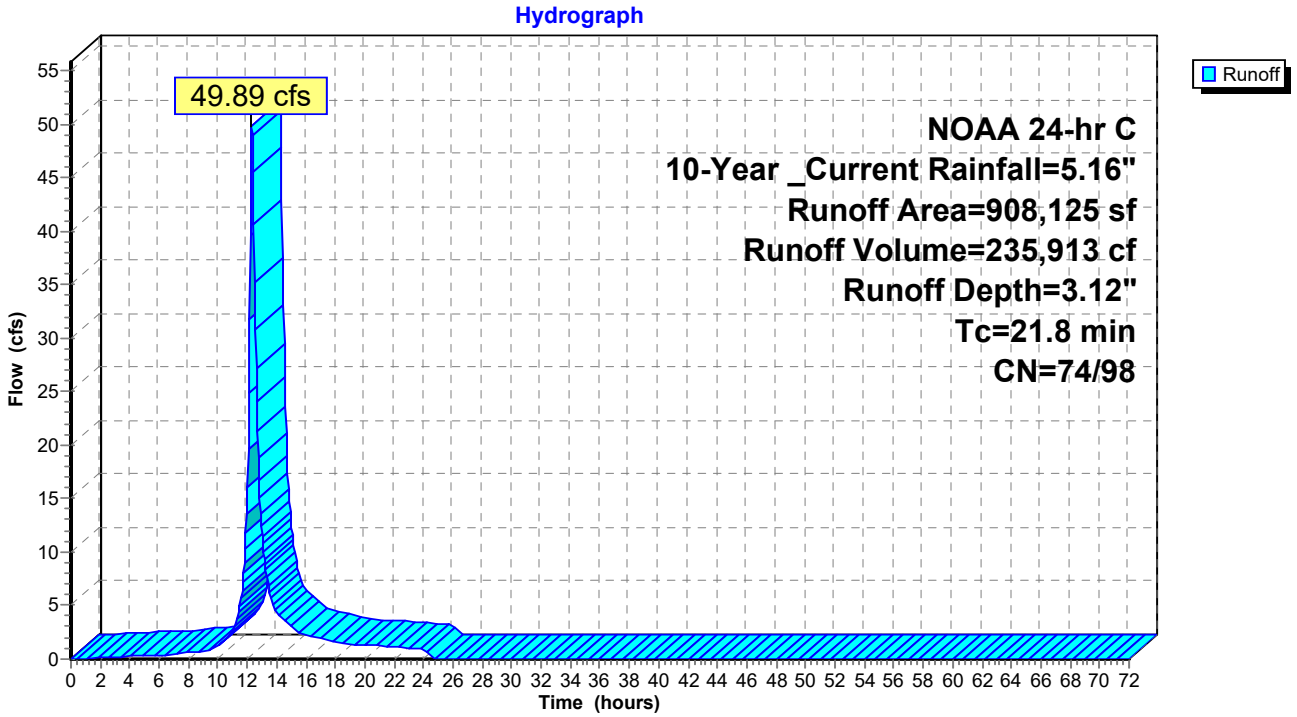
Runoff = 49.89 cfs @ 12.32 hrs, Volume= 235,913 cf, Depth= 3.12"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	233,471	98	Impervious
	1	65	Brush, Good, HSG C
	620,871	74	>75% Grass cover, Good, HSG C
	1,845	72	Woods/grass comb., Good, HSG C
	51,937	73	Woods, Fair, HSG C
	908,125	80	Weighted Average
	674,654	74	74.29% Pervious Area
	233,471	98	25.71% Impervious Area

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

Subcatchment 2S: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sa: DA 2: CN w/ IC areas

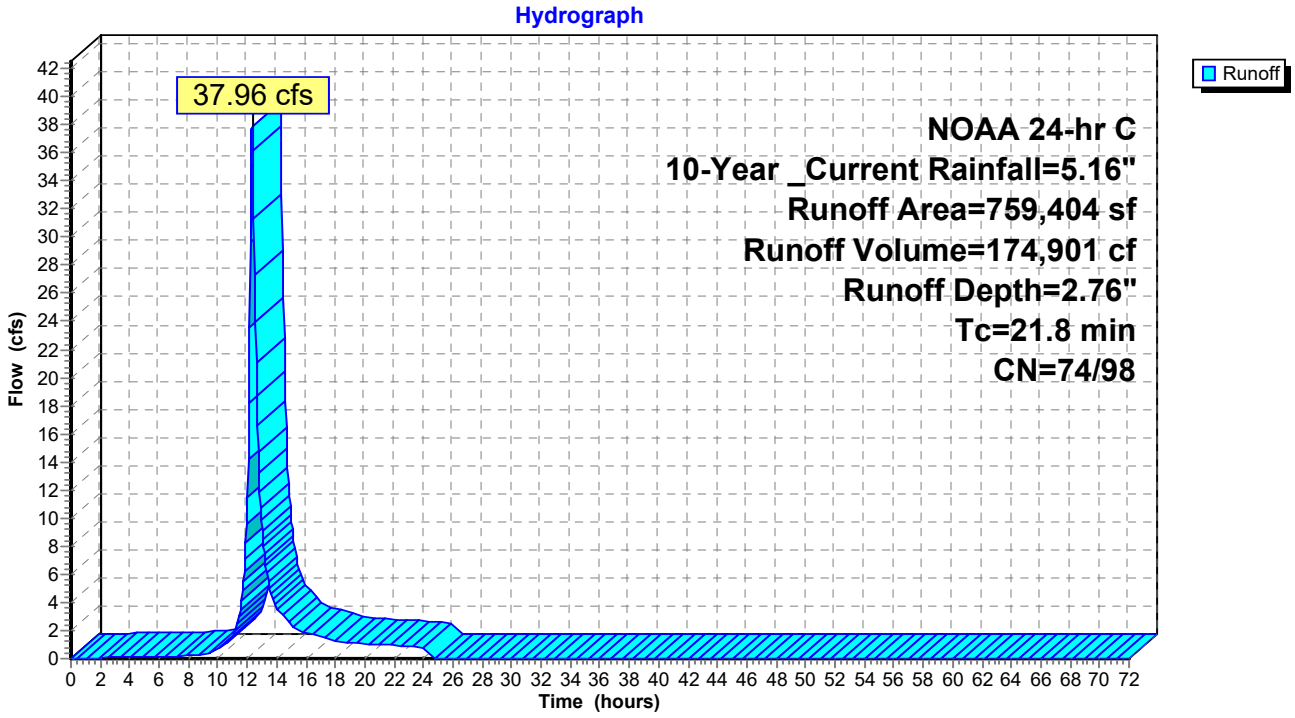
Runoff = 37.96 cfs @ 12.32 hrs, Volume= 174,901 cf, Depth= 2.76"
Routed to Pond 5P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	84,750	98	Impervious
	1	65	Brush, Good, HSG C
	620,871	74	>75% Grass cover, Good, HSG C
	1,845	72	Woods/grass comb., Good, HSG C
	51,937	73	Woods, Fair, HSG C
	759,404	77	Weighted Average
	674,654	74	88.84% Pervious Area
	84,750	98	11.16% Impervious Area

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

Subcatchment 2Sa: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sb: DA 2: Roofs

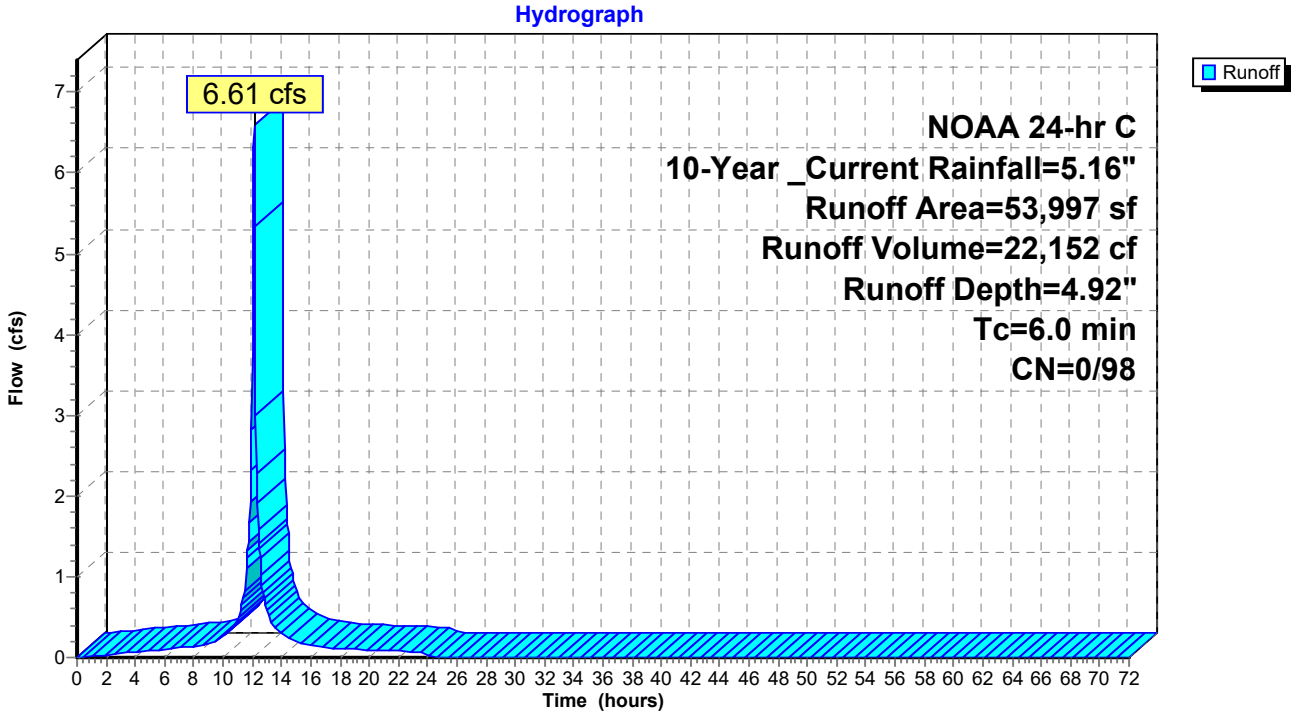
Runoff = 6.61 cfs @ 12.13 hrs, Volume= 22,152 cf, Depth= 4.92"
Routed to Pond 6P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	53,997	98	
	53,997	98	100.00% Impervious Area

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

Subcatchment 2Sb: DA 2: Roofs



Summary for Subcatchment 2Sc: DA 2: Driveways (other)

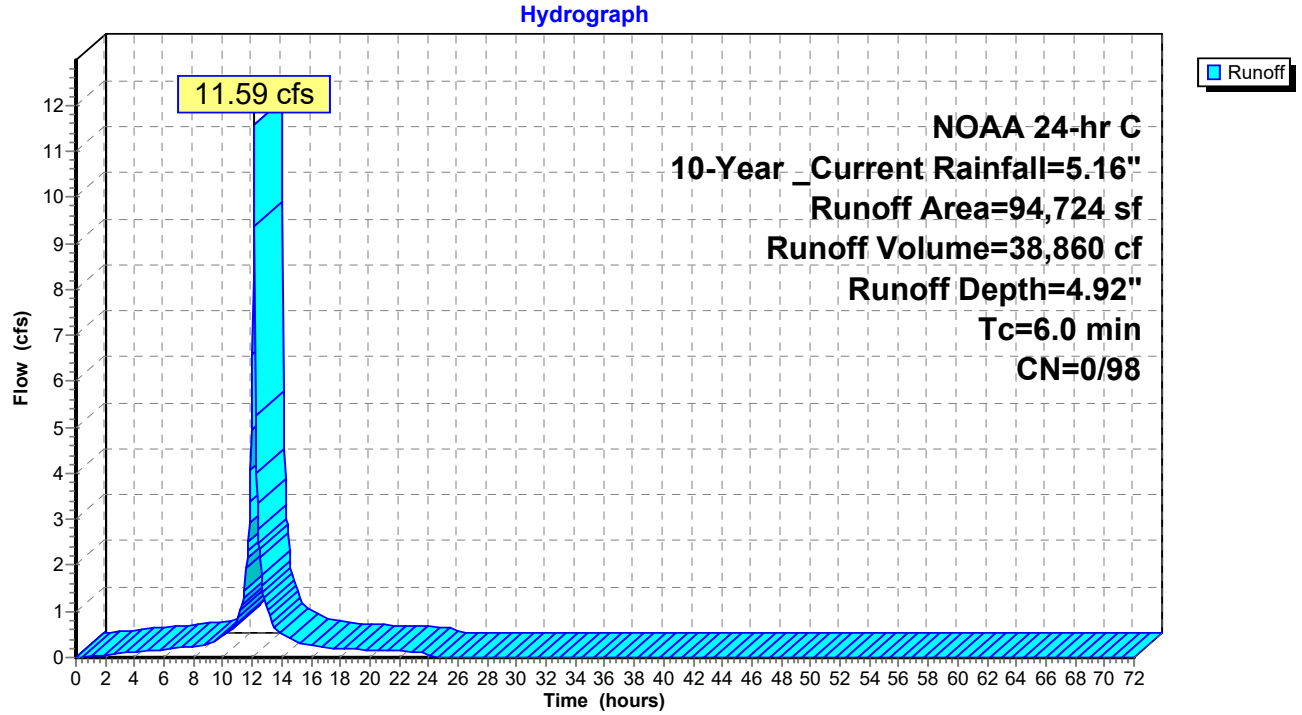
Runoff = 11.59 cfs @ 12.13 hrs, Volume= 38,860 cf, Depth= 4.92"
Routed to Pond 7P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	94,724	98	
	94,724	98	100.00% Impervious Area

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

Subcatchment 2Sc: DA 2: Driveways (other)



Summary for Subcatchment 3S: DA 3: CN w/ IC areas

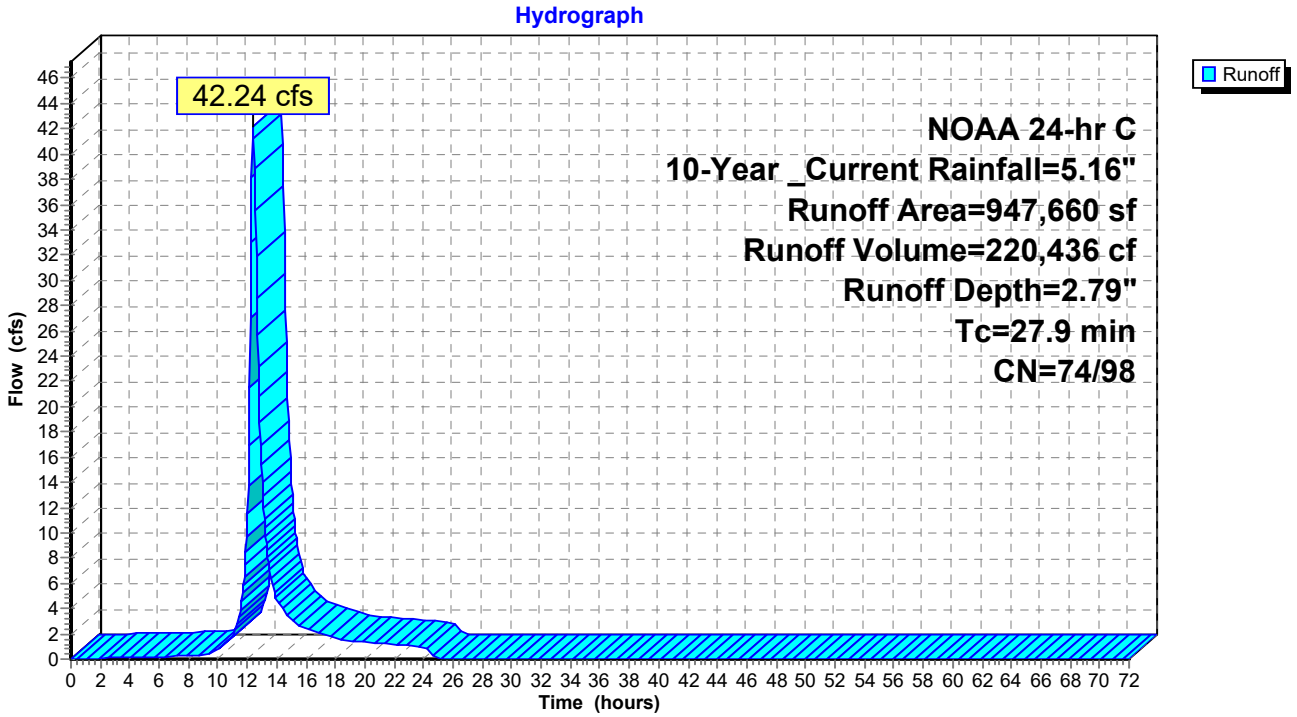
Runoff = 42.24 cfs @ 12.40 hrs, Volume= 220,436 cf, Depth= 2.79"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	116,506	98	Impervious
	4,930	79	50-75% Grass cover, Fair, HSG C
	592,347	74	>75% Grass cover, Good, HSG C
	169,305	73	Woods, Fair, HSG C
	64,572	70	Woods, Good, HSG C
	947,660	77	Weighted Average
	831,154	74	87.71% Pervious Area
	116,506	98	12.29% Impervious Area

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

Subcatchment 3S: DA 3: CN w/ IC areas



Summary for Subcatchment 3Sa: DA 3: CN w/ IC areas

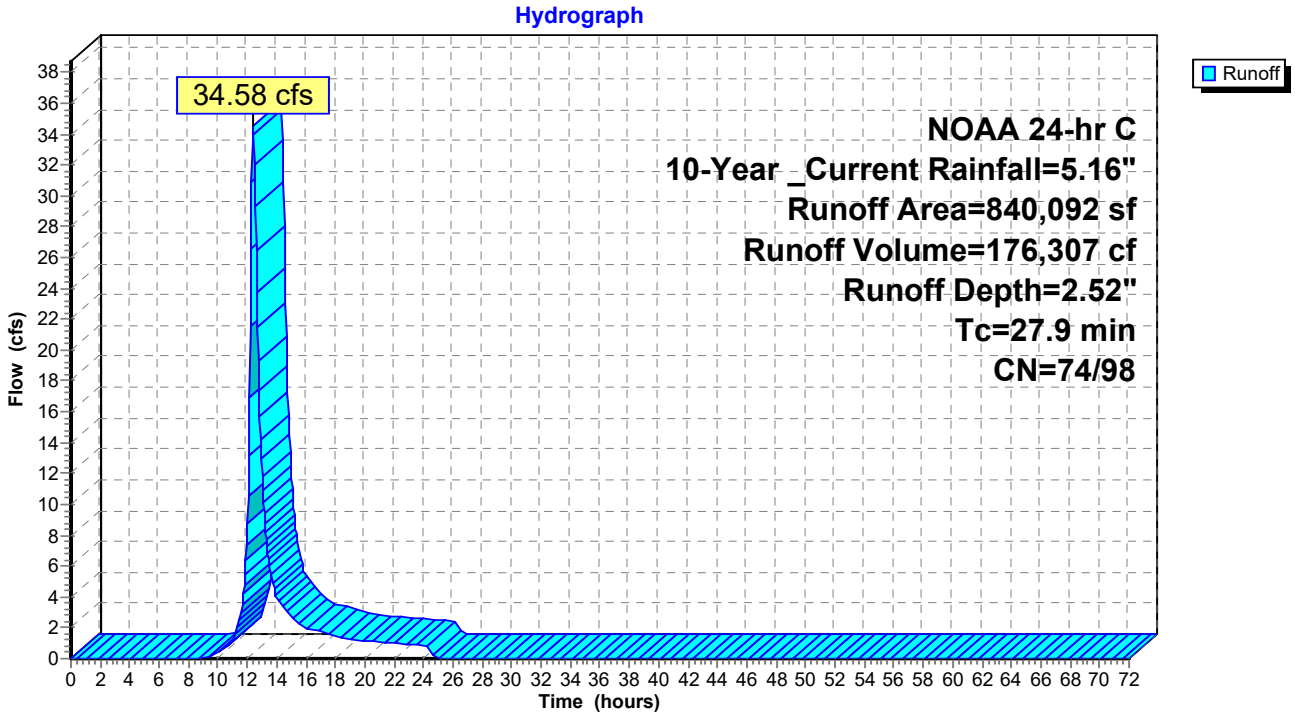
Runoff = 34.58 cfs @ 12.40 hrs, Volume= 176,307 cf, Depth= 2.52"
Routed to Pond 9P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	8,938	98	Impervious
	4,930	79	50-75% Grass cover, Fair, HSG C
	592,347	74	>75% Grass cover, Good, HSG C
	169,305	73	Woods, Fair, HSG C
	64,572	70	Woods, Good, HSG C
	840,092	74	Weighted Average
	831,154	74	98.94% Pervious Area
	8,938	98	1.06% Impervious Area

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

Subcatchment 3Sa: DA 3: CN w/ IC areas



Summary for Subcatchment 3Sb: DA 3: Roofs

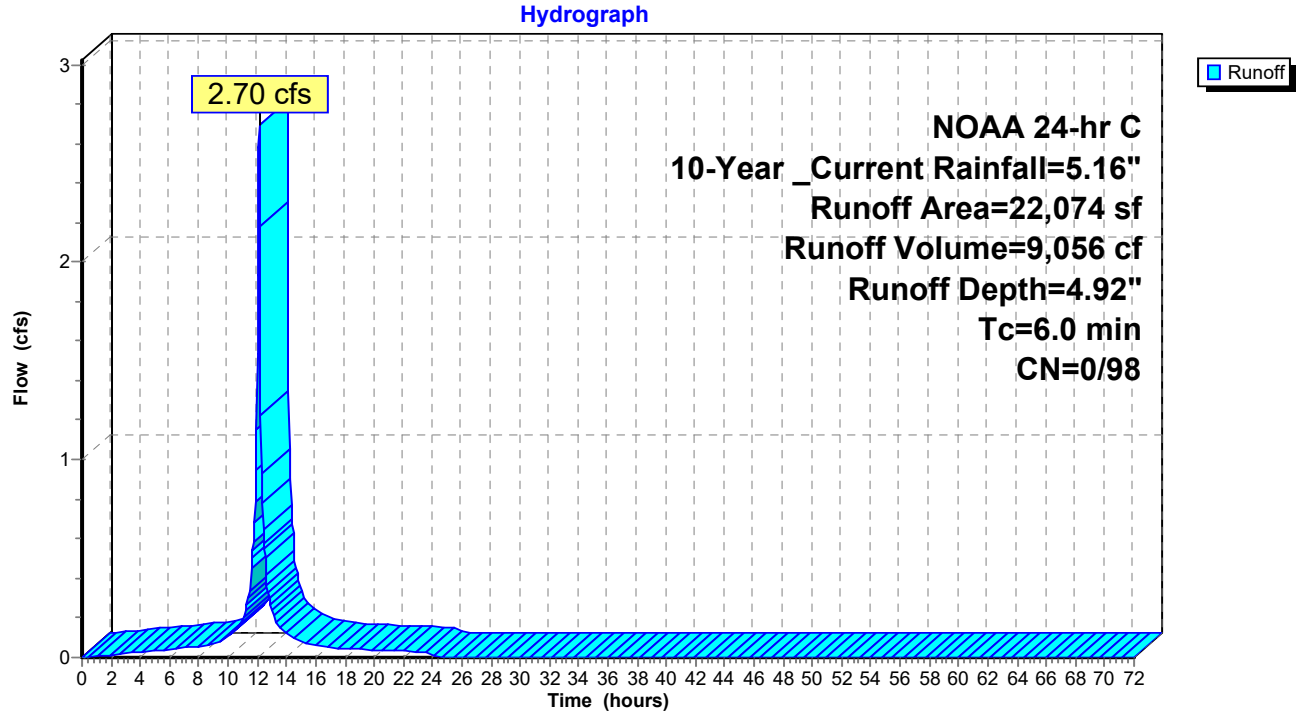
Runoff = 2.70 cfs @ 12.13 hrs, Volume= 9,056 cf, Depth= 4.92"
Routed to Pond 10P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	22,074	98	
	22,074	98	100.00% Impervious Area

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

Subcatchment 3Sb: DA 3: Roofs



Summary for Subcatchment 3Sc: DA 3: Driveways (other)

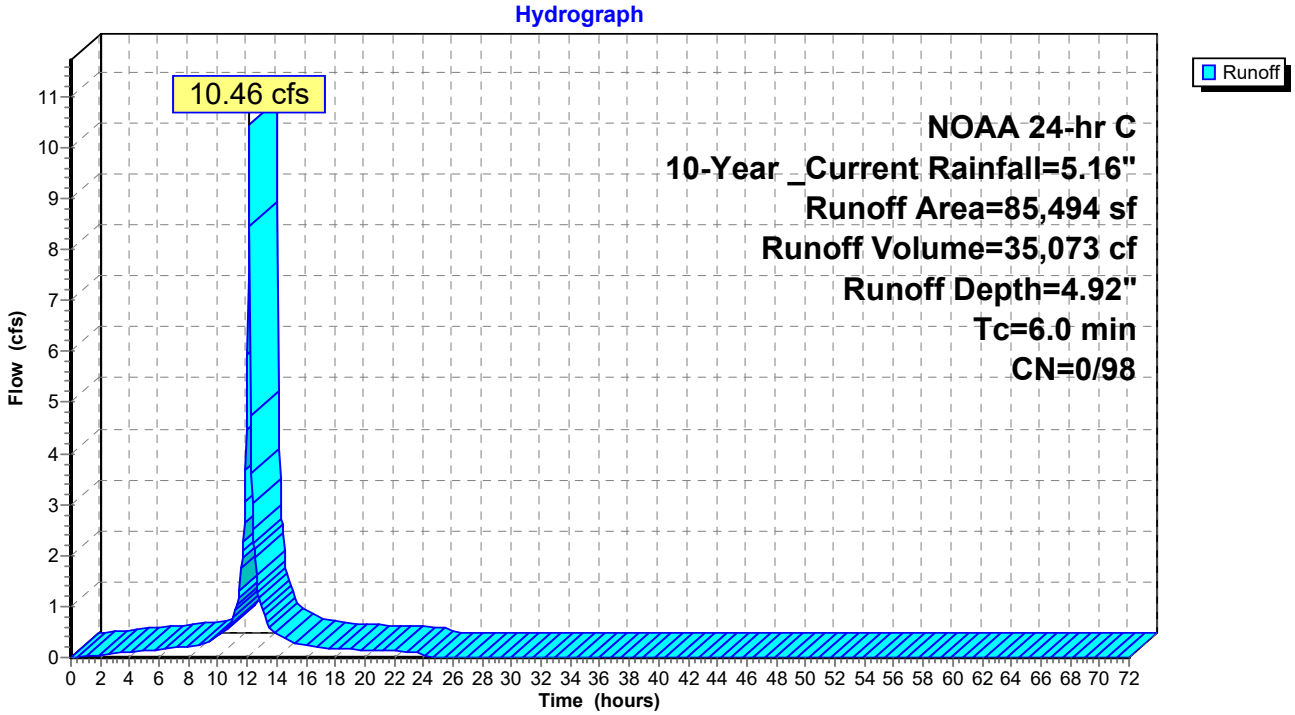
Runoff = 10.46 cfs @ 12.13 hrs, Volume= 35,073 cf, Depth= 4.92"
Routed to Pond 11P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	85,494	98	
	85,494	98	100.00% Impervious Area

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

Subcatchment 3Sc: DA 3: Driveways (other)



Summary for Subcatchment 4S: DA 4: CN w/ IC areas

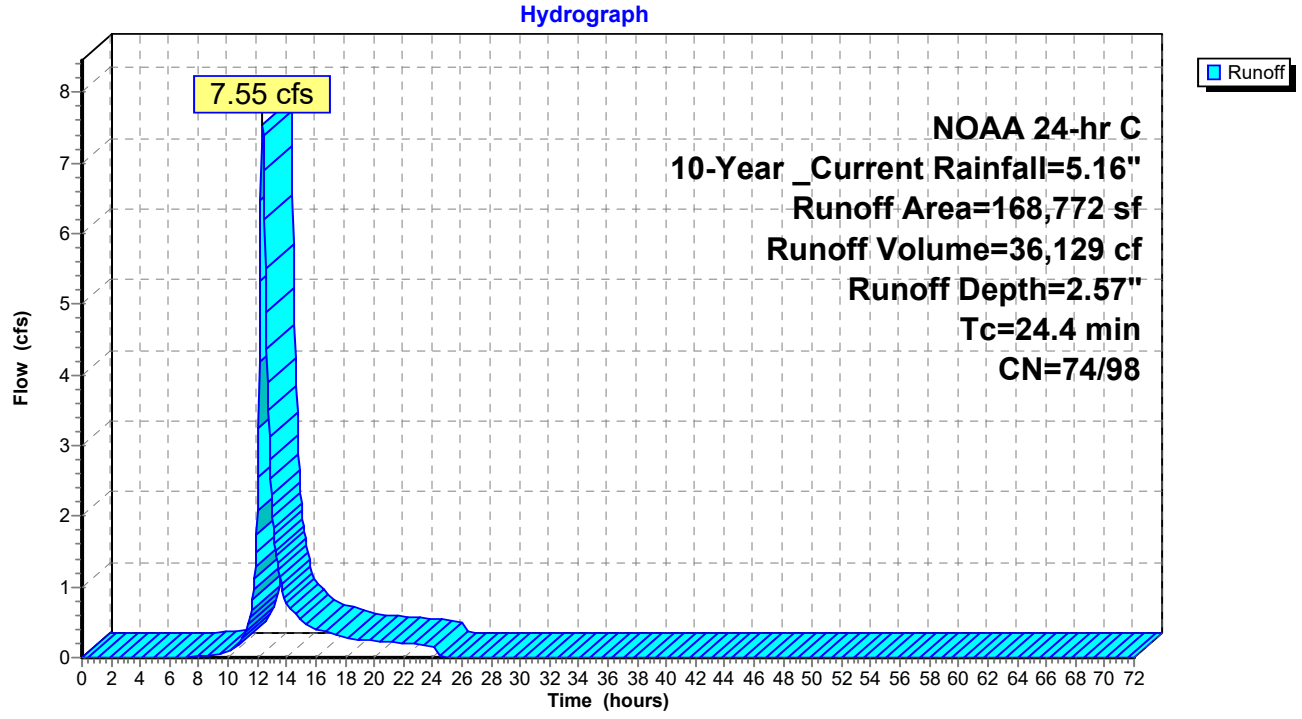
Runoff = 7.55 cfs @ 12.36 hrs, Volume= 36,129 cf, Depth= 2.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	5,300	98	Impervious
	117,799	74	>75% Grass cover, Good, HSG C
	4,778	72	Woods/grass comb., Good, HSG C
	40,895	73	Woods, Fair, HSG C
	168,772	74	Weighted Average
	163,472	74	96.86% Pervious Area
	5,300	98	3.14% Impervious Area

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

Subcatchment 4S: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sa: DA 4: CN w/ IC areas

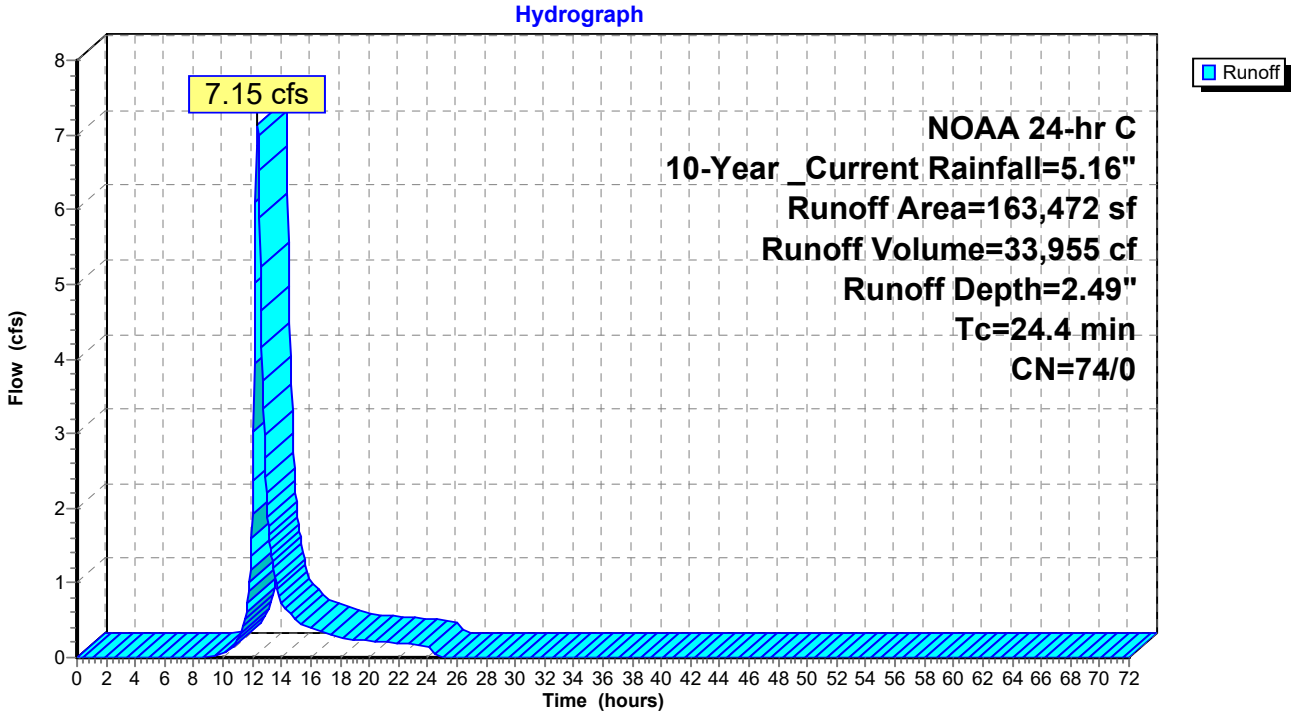
Runoff = 7.15 cfs @ 12.36 hrs, Volume= 33,955 cf, Depth= 2.49"
Routed to Link 4L : DA 4: Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	0	98	Impervious
	117,799	74	>75% Grass cover, Good, HSG C
	4,778	72	Woods/grass comb., Good, HSG C
	40,895	73	Woods, Fair, HSG C
	163,472	74	Weighted Average
	163,472	74	100.00% Pervious Area

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

Subcatchment 4Sa: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sb: DA 4: Roofs

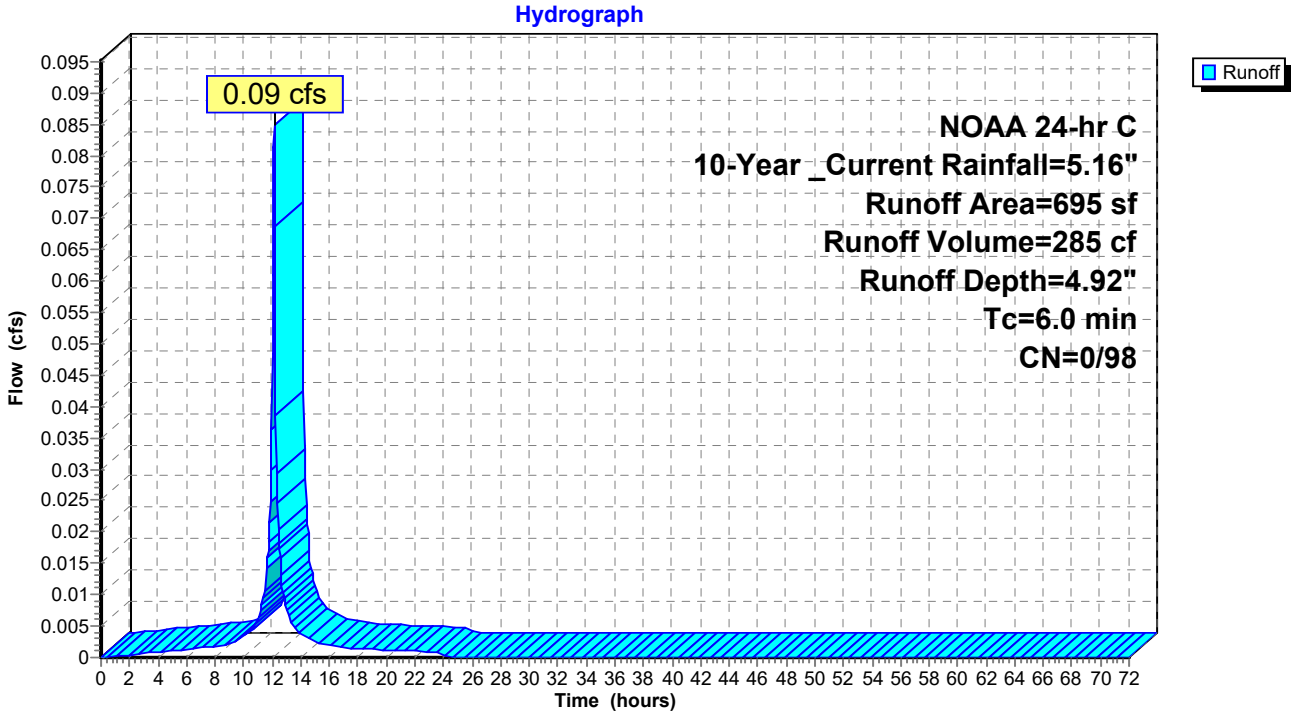
Runoff = 0.09 cfs @ 12.13 hrs, Volume= 285 cf, Depth= 4.92"
Routed to Link 4L : DA 4: Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	695	98	
	695	98	100.00% Impervious Area

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

Subcatchment 4Sb: DA 4: Roofs



Summary for Subcatchment 4Sc: DA 4: Driveways (other)

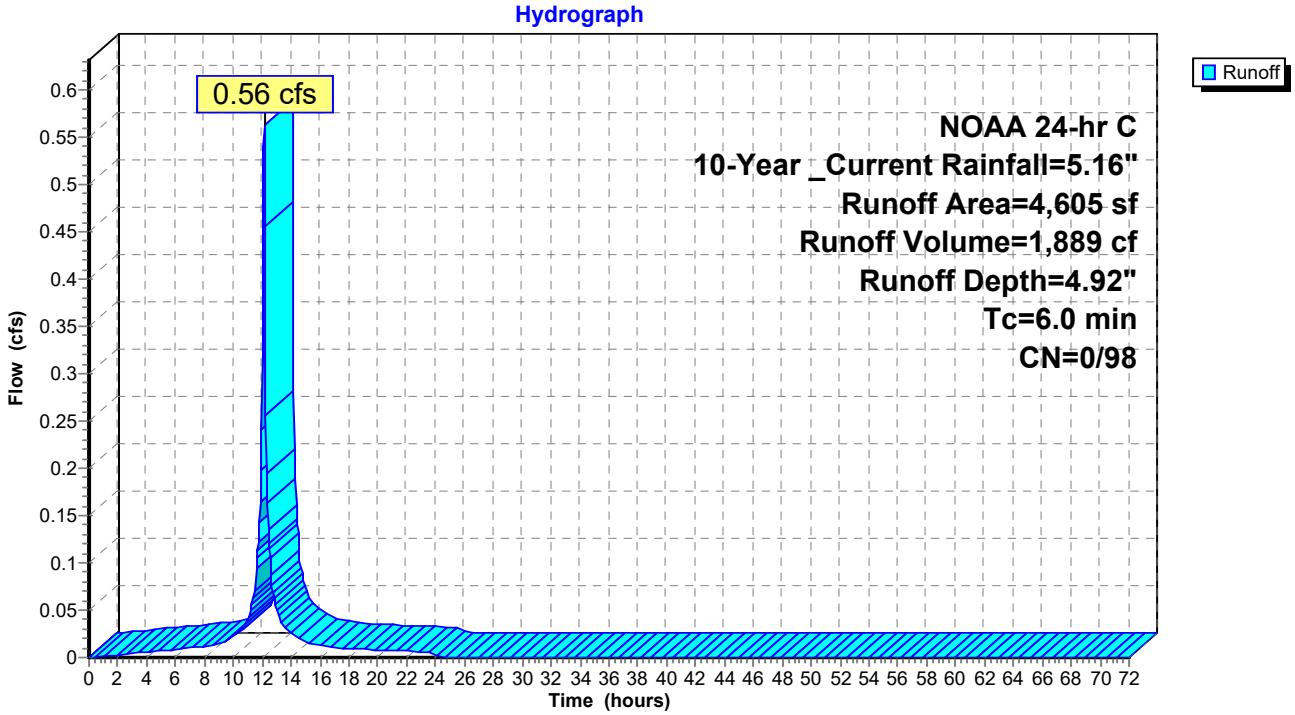
Runoff = 0.56 cfs @ 12.13 hrs, Volume= 1,889 cf, Depth= 4.92"
Routed to Pond 12P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _Current Rainfall=5.16"

	Area (sf)	CN	Description
*	4,605	98	
	4,605	98	100.00% Impervious Area

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

Subcatchment 4Sc: DA 4: Driveways (other)



Summary for Reach 1Ri: Inlet Pipe

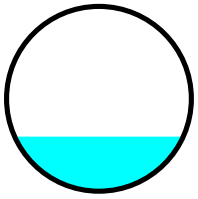
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 2.46" for 10-Year _Current event
Inflow = 26.98 cfs @ 12.32 hrs, Volume= 112,517 cf
Outflow = 24.82 cfs @ 12.34 hrs, Volume= 112,548 cf, Atten= 8%, Lag= 1.0 min
Routed to Pond 4P : Basin 1 Medium Case

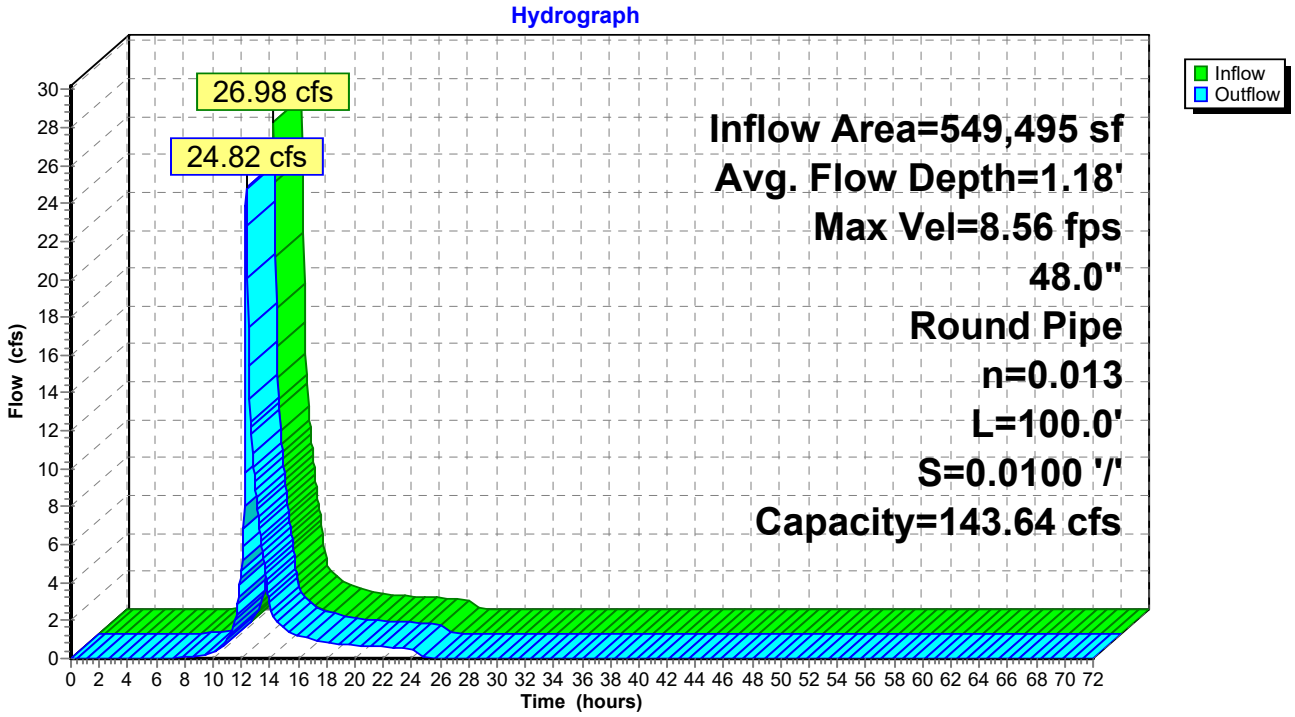
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 8.56 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.79 fps, Avg. Travel Time= 0.6 min

Peak Storage= 307 cf @ 12.32 hrs
Average Depth at Peak Storage= 1.18' , Surface Width= 3.65'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 143.64 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 75.00', Outlet Invert= 74.00'



Reach 1Ri: Inlet Pipe



Summary for Reach 1Ro: outlet

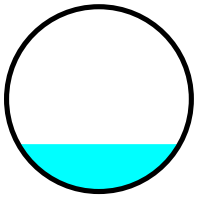
[52] Hint: Inlet/Outlet conditions not evaluated

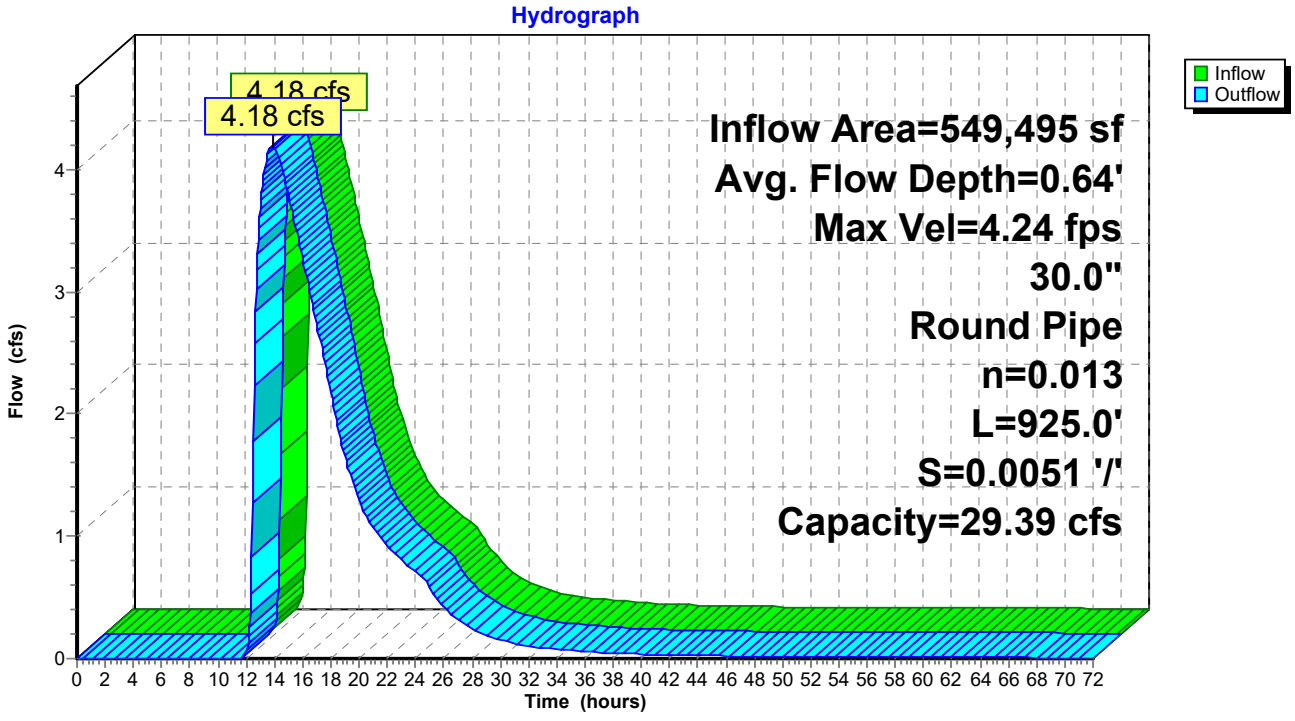
Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth > 2.30" for 10-Year _Current event
Inflow = 4.18 cfs @ 13.75 hrs, Volume= 105,320 cf
Outflow = 4.18 cfs @ 13.85 hrs, Volume= 105,310 cf, Atten= 0%, Lag= 6.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.24 fps, Min. Travel Time= 3.6 min
Avg. Velocity = 1.48 fps, Avg. Travel Time= 10.4 min

Peak Storage= 912 cf @ 13.79 hrs
Average Depth at Peak Storage= 0.64' , Surface Width= 2.18'
Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 29.39 cfs

30.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 925.0' Slope= 0.0051 '/'
Inlet Invert= 70.75', Outlet Invert= 66.00'





Summary for Reach 2Ri: Inlet Pipe

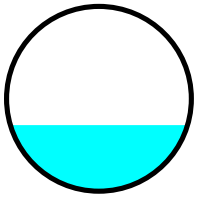
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 2.36" for 10-Year _Current event
Inflow = 39.36 cfs @ 12.33 hrs, Volume= 178,678 cf
Outflow = 39.08 cfs @ 12.34 hrs, Volume= 178,732 cf, Atten= 1%, Lag= 0.4 min
Routed to Pond 8P : Basin 2 Medium Case

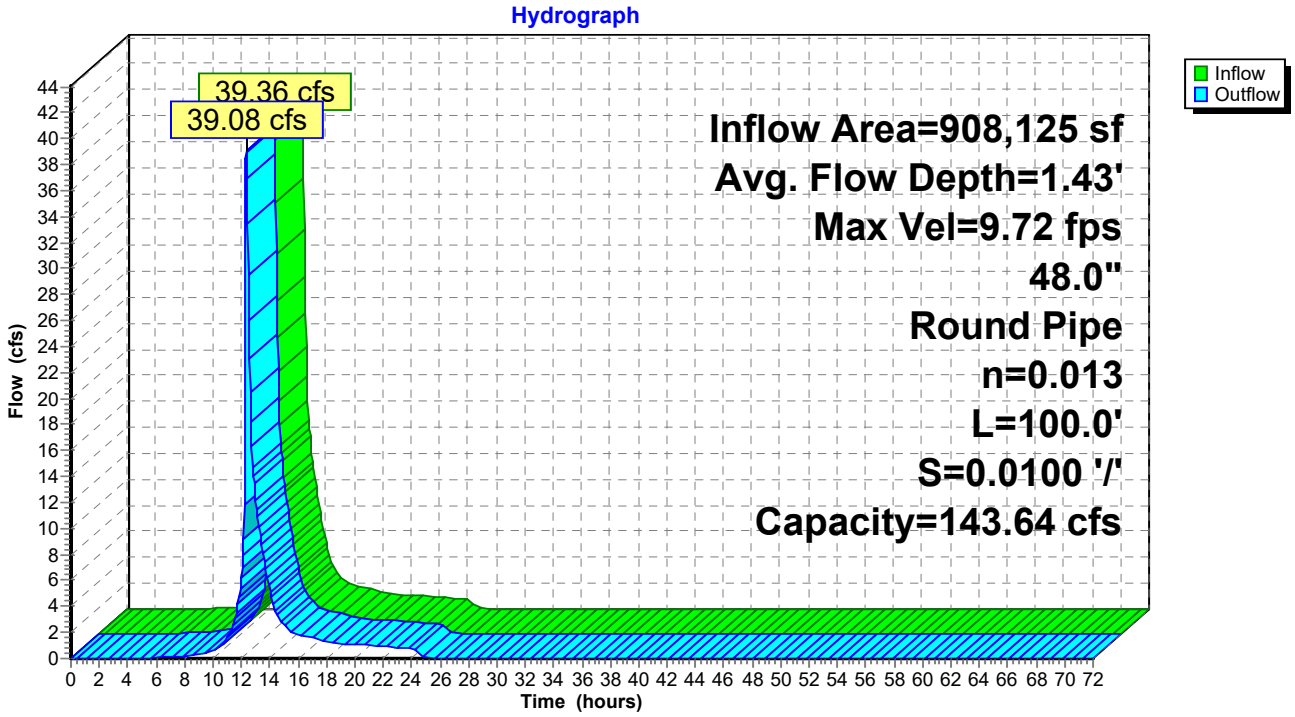
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 9.72 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.14 fps, Avg. Travel Time= 0.5 min

Peak Storage= 402 cf @ 12.33 hrs
Average Depth at Peak Storage= 1.43' , Surface Width= 3.83'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 143.64 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 70.00', Outlet Invert= 69.00'



Reach 2Ri: Inlet Pipe



Summary for Reach 2Ro: Outlet

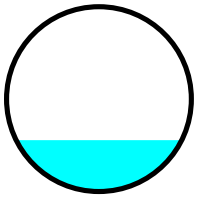
[52] Hint: Inlet/Outlet conditions not evaluated

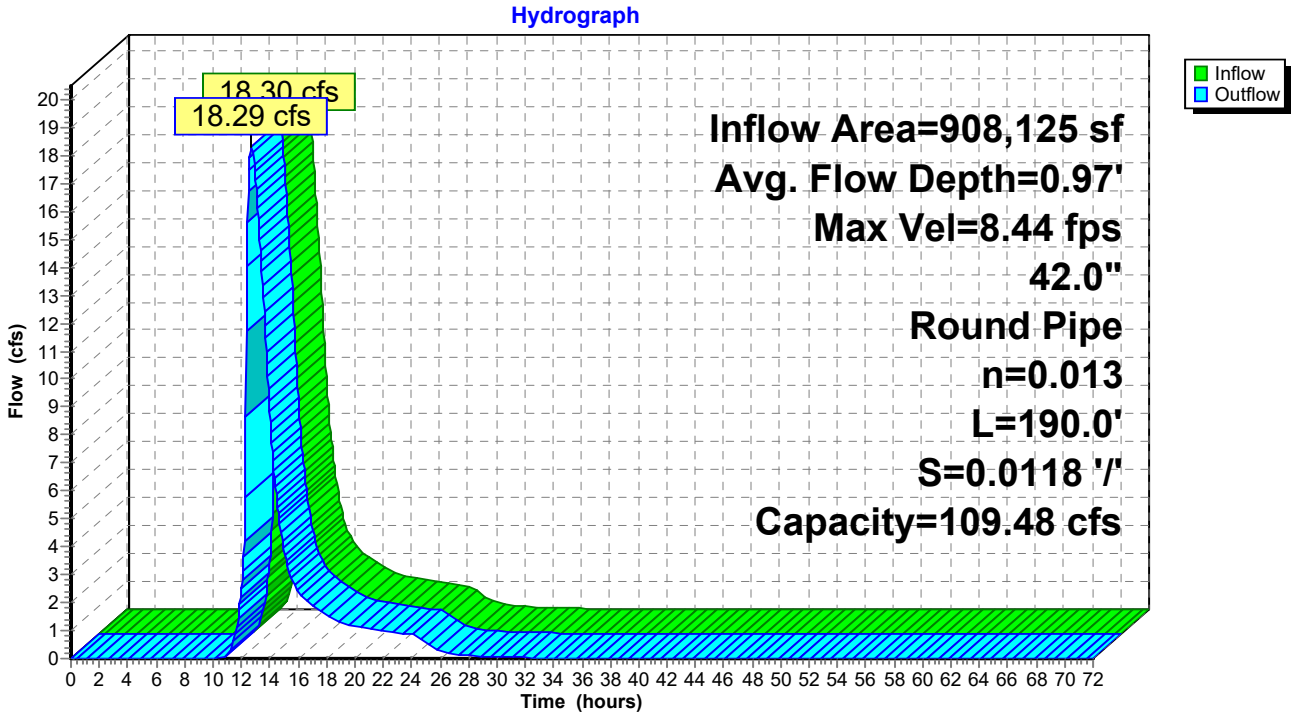
Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 2.30" for 10-Year _Current event
Inflow = 18.30 cfs @ 12.70 hrs, Volume= 173,915 cf
Outflow = 18.29 cfs @ 12.71 hrs, Volume= 173,916 cf, Atten= 0%, Lag= 0.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 8.44 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.92 fps, Avg. Travel Time= 1.7 min

Peak Storage= 412 cf @ 12.71 hrs
Average Depth at Peak Storage= 0.97' , Surface Width= 3.13'
Bank-Full Depth= 3.50' Flow Area= 9.6 sf, Capacity= 109.48 cfs

42.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 190.0' Slope= 0.0118 '/'
Inlet Invert= 65.75', Outlet Invert= 63.50'





Summary for Pond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 492,891 sf, 8.90% Impervious, Inflow Depth = 2.71" for 10-Year _Current event
Inflow = 25.39 cfs @ 12.30 hrs, Volume= 111,261 cf
Outflow = 26.39 cfs @ 12.32 hrs, Volume= 110,728 cf, Atten= 0%, Lag= 1.7 min
Primary = 12.31 cfs @ 12.30 hrs, Volume= 101,846 cf
Routed to Link 1L : Combined Flows
Secondary = 13.77 cfs @ 12.32 hrs, Volume= 8,882 cf
Routed to Link 1L : Combined Flows
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.32' @ 12.30 hrs Surf.Area= 6,125 sf Storage= 13,376 cf

Plug-Flow detention time= 18.9 min calculated for 110,651 cf (99% of inflow)
Center-of-Mass det. time= 16.1 min (853.4 - 837.3)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,737 cf	x 9.00 = 15,635 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.75	175	100.0	217	497	363

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 9.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 9.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 9.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50

Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 9.00** 2 End Contraction(s)

Primary OutFlow Max=12.31 cfs @ 12.30 hrs HW=100.32' (Free Discharge)
└**1=Culvert** (Passes 12.31 cfs of 18.43 cfs potential flow)
└**2=6" HDPE Underdrain** (Barrel Controls 12.31 cfs @ 6.97 fps)

Secondary OutFlow Max=12.18 cfs @ 12.32 hrs HW=100.31' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 12.18 cfs @ 1.44 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge)
└**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

ond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

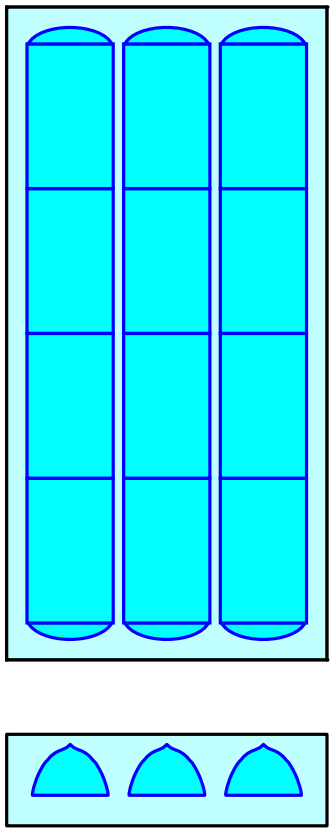
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

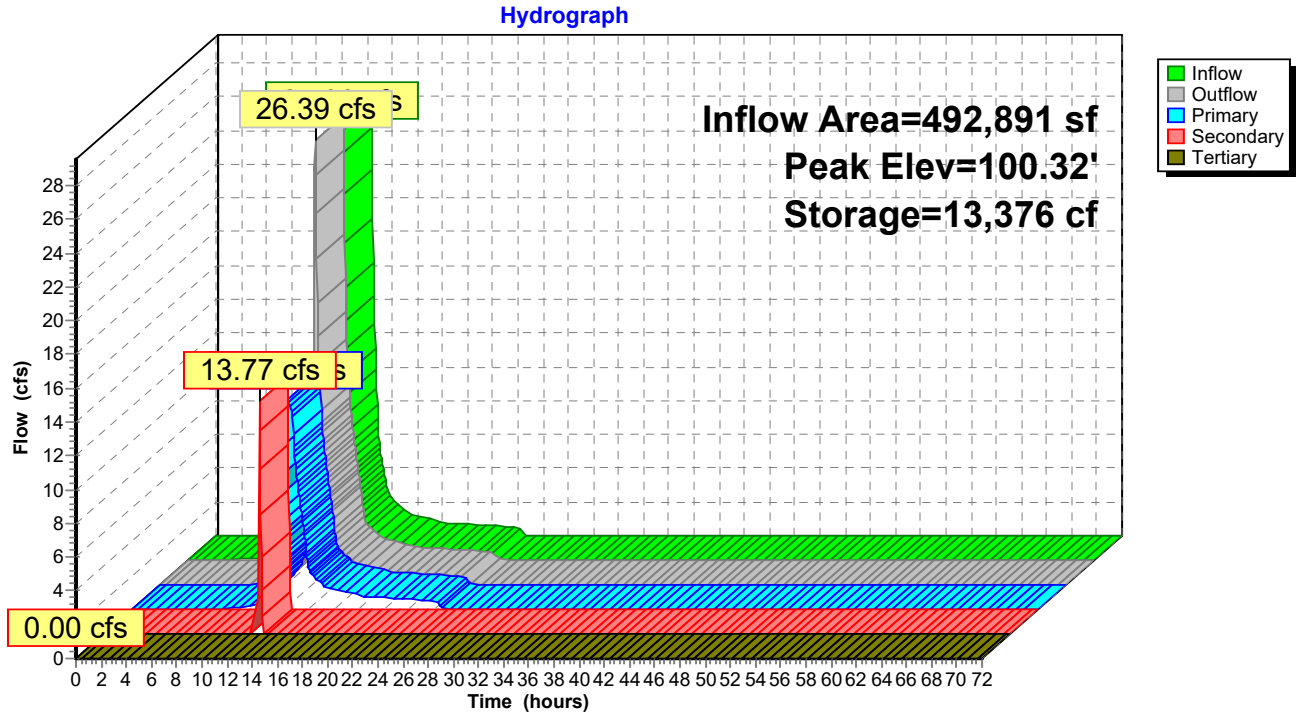
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 2P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 21,359 sf,100.00% Impervious, Inflow Depth = 4.92" for 10-Year _Current event
Inflow = 2.61 cfs @ 12.13 hrs, Volume= 8,762 cf
Outflow = 0.69 cfs @ 12.38 hrs, Volume= 8,762 cf, Atten= 73%, Lag= 15.1 min
Discarded = 0.06 cfs @ 12.25 hrs, Volume= 6,974 cf
Primary = 0.64 cfs @ 12.38 hrs, Volume= 1,789 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 100.06' @ 12.38 hrs Surf.Area= 5,000 sf Storage= 3,995 cf

Plug-Flow detention time= 512.7 min calculated for 8,756 cf (100% of inflow)
Center-of-Mass det. time= 513.2 min (1,261.5 - 748.3)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 10.00 = 6,220 cf Total Available Storage

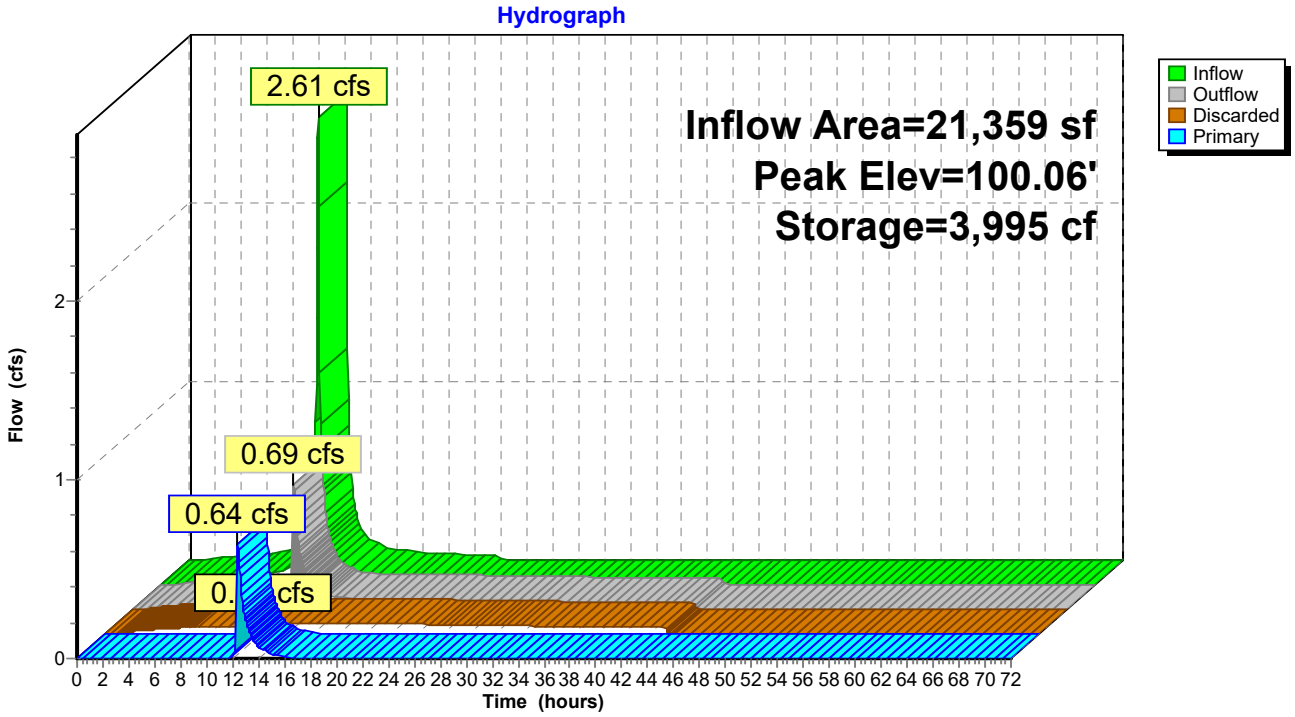
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 10.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.06 cfs @ 12.25 hrs HW=100.02' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.62 cfs @ 12.38 hrs HW=100.05' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.62 cfs @ 0.57 fps)

Pond 2P: Basic Rain Garden (infiltration only)



Summary for Pond 3P: Basic Porous Pavement (infiltration only)

Inflow Area = 35,245 sf,100.00% Impervious, Inflow Depth = 4.92" for 10-Year _Current event
Inflow = 4.31 cfs @ 12.13 hrs, Volume= 14,459 cf
Outflow = 0.41 cfs @ 11.35 hrs, Volume= 14,457 cf, Atten= 91%, Lag= 0.0 min
Discarded = 0.41 cfs @ 11.35 hrs, Volume= 14,457 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 99.66' @ 12.98 hrs Surf.Area= 35,245 sf Storage= 5,023 cf

Plug-Flow detention time= 82.0 min calculated for 14,447 cf (100% of inflow)
Center-of-Mass det. time= 81.8 min (830.1 - 748.3)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	16,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

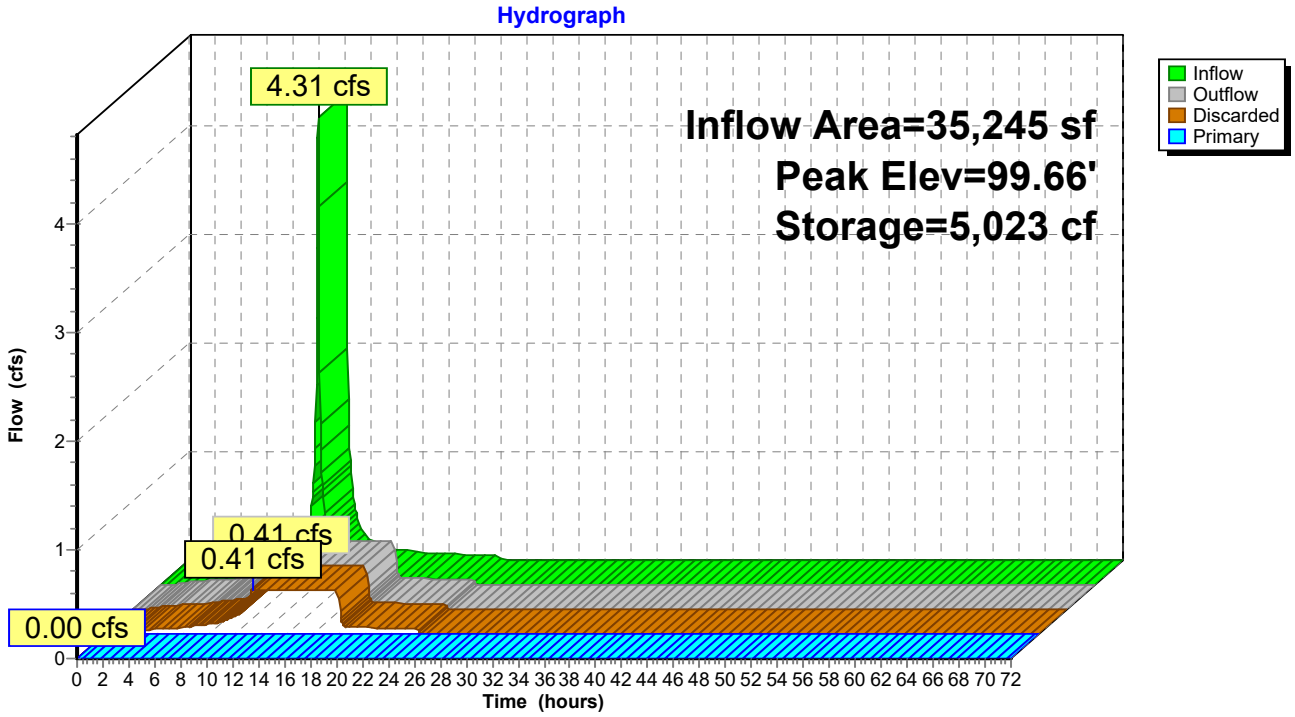
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	35,245	0.0	0	0
99.75	35,245	35.0	6,168	6,168
99.83	35,245	15.0	423	6,591
100.01	35,245	15.0	952	7,542
100.25	35,245	100.0	8,459	16,001

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.41 cfs @ 11.35 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Controls 0.00 cfs)

Pond 3P: Basic Porous Pavement (infiltration only)



Summary for Pond 4P: Basin 1 Medium Case

[63] Warning: Exceeded Reach 1Ri INLET depth by 0.58' @ 14.10 hrs

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 2.46" for 10-Year _Current event
Inflow = 24.82 cfs @ 12.34 hrs, Volume= 112,548 cf
Outflow = 4.18 cfs @ 13.75 hrs, Volume= 105,320 cf, Atten= 83%, Lag= 84.5 min
Primary = 4.18 cfs @ 13.75 hrs, Volume= 105,320 cf
Routed to Reach 1Ro : outlet
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 1Ro : outlet
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 1Ro : outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 75.97' @ 13.75 hrs Surf.Area= 31,105 sf Storage= 55,987 cf

Plug-Flow detention time= 265.1 min calculated for 105,320 cf (94% of inflow)
Center-of-Mass det. time= 230.1 min (1,083.0 - 852.8)

Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	162,840 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
74.00	25,611	0	0
79.00	39,525	162,840	162,840

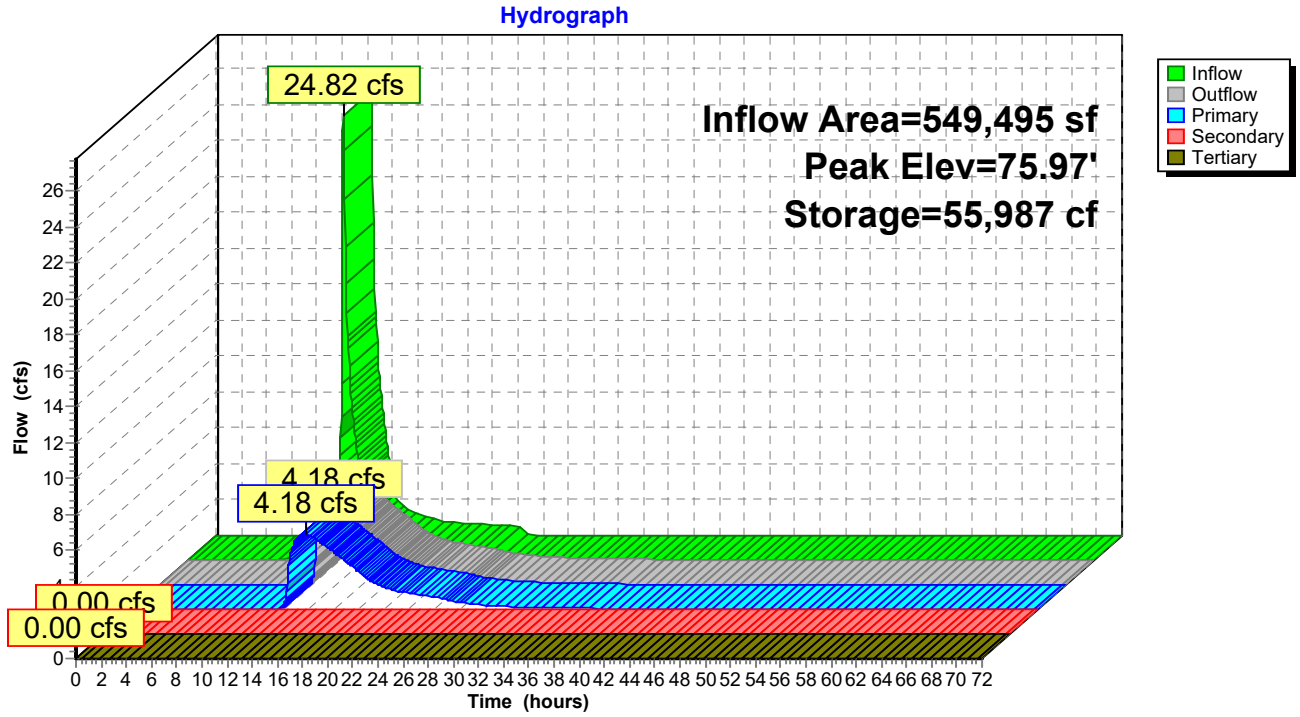
Device	Routing	Invert	Outlet Devices
#1	Primary	74.25'	**12.0" Vert. Low Flow Orifice** C= 0.600 Limited to weir flow at low heads
#2	Secondary	76.25'	**18.0" W x 12.0" H Vert. 2-YR Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	78.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.18 cfs @ 13.75 hrs HW=75.97' (Free Discharge)
1=Low Flow Orifice (Orifice Controls 4.18 cfs @ 5.33 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=74.00' (Free Discharge)
2=2-YR Orifice (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=74.00' (Free Discharge)
3=Orifice/Grate (Controls 0.00 cfs)

Pond 4P: Basin 1 Medium Case



Summary for Pond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 759,404 sf, 11.16% Impervious, Inflow Depth = 2.76" for 10-Year _Current event
Inflow = 37.96 cfs @ 12.32 hrs, Volume= 174,901 cf
Outflow = 37.71 cfs @ 12.33 hrs, Volume= 174,003 cf, Atten= 1%, Lag= 0.4 min
Primary = 13.84 cfs @ 12.33 hrs, Volume= 146,643 cf
Routed to Link 2L : Combined Flows
Secondary = 23.87 cfs @ 12.33 hrs, Volume= 27,360 cf
Routed to Link 2L : Combined Flows
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.45' @ 12.33 hrs Surf.Area= 6,805 sf Storage= 15,102 cf

Plug-Flow detention time= 17.6 min calculated for 174,003 cf (99% of inflow)
Center-of-Mass det. time= 14.2 min (850.0 - 835.8)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	365 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,606 cf	x 10.00 = 16,060 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.00	175	100.0	86	365	327

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 10.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 10.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 10.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 10.00** 2 End Contraction(s)

Primary OutFlow Max=13.84 cfs @ 12.33 hrs HW=100.45' (Free Discharge)
↑—**1=Culvert** (Passes 13.84 cfs of 20.72 cfs potential flow)
↑—**2=6" HDPE Underdrain** (Barrel Controls 13.84 cfs @ 7.05 fps)

Secondary OutFlow Max=23.53 cfs @ 12.33 hrs HW=100.45' (Free Discharge)
↑—**3=Broad-Crested Rectangular Weir** (Weir Controls 23.53 cfs @ 1.75 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge)
↑—**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

ond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

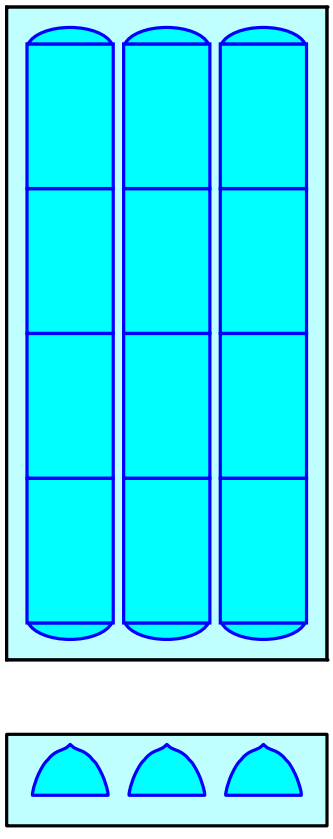
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

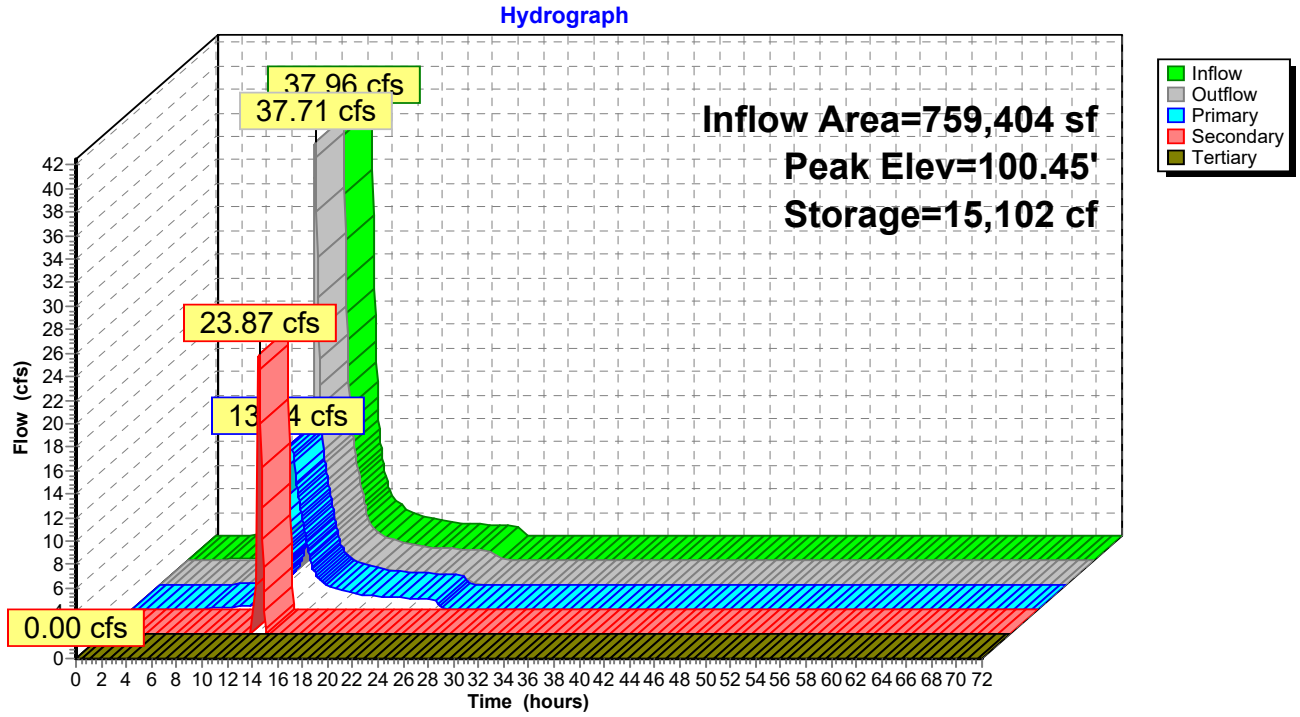
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 6P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 53,997 sf,100.00% Impervious, Inflow Depth = 4.92" for 10-Year _Current event
Inflow = 6.61 cfs @ 12.13 hrs, Volume= 22,152 cf
Outflow = 1.86 cfs @ 12.37 hrs, Volume= 22,152 cf, Atten= 72%, Lag= 14.3 min
Discarded = 0.14 cfs @ 12.25 hrs, Volume= 17,477 cf
Primary = 1.72 cfs @ 12.37 hrs, Volume= 4,674 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 100.06' @ 12.37 hrs Surf.Area= 12,500 sf Storage= 10,023 cf

Plug-Flow detention time= 508.9 min calculated for 22,136 cf (100% of inflow)
Center-of-Mass det. time= 509.3 min (1,257.6 - 748.3)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 25.00 = 15,550 cf Total Available Storage

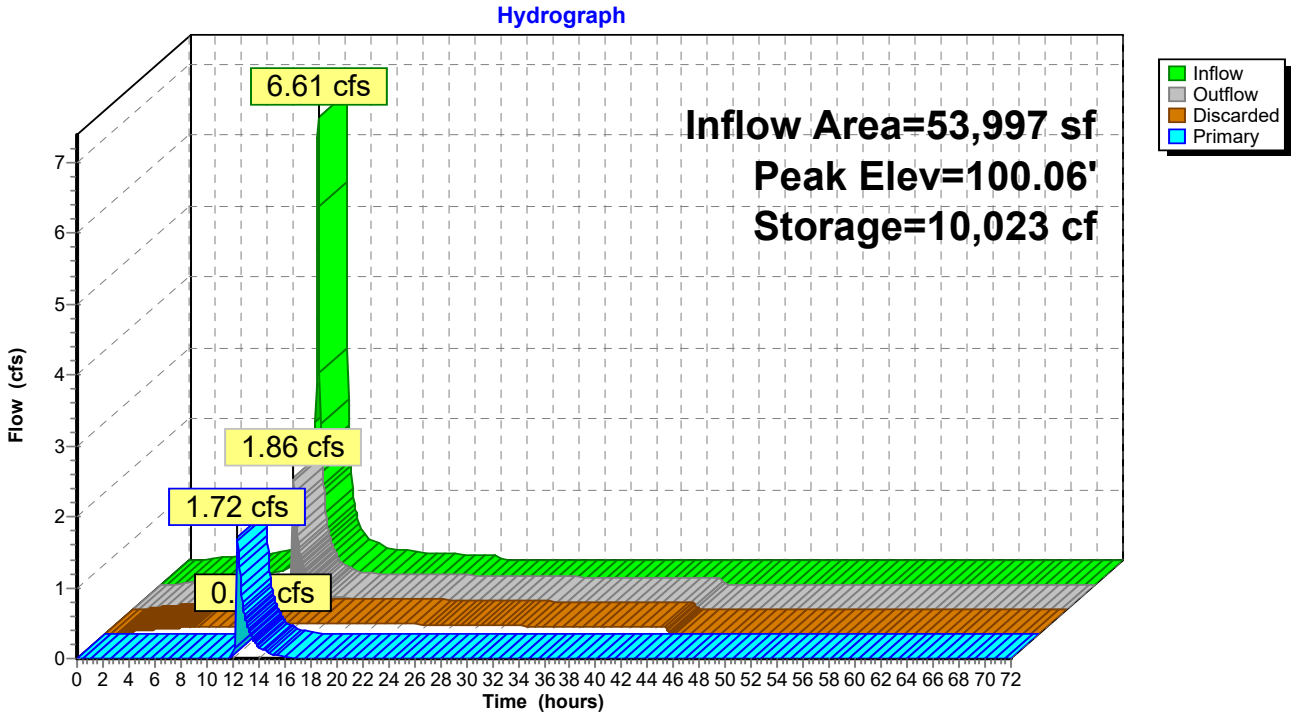
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 25.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.14 cfs @ 12.25 hrs HW=100.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=1.67 cfs @ 12.37 hrs HW=100.06' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 1.67 cfs @ 0.58 fps)

Pond 6P: Basic Rain Garden (infiltration only)



Summary for Pond 7P: Basic Porous Pavement (infiltration only)

Inflow Area = 94,724 sf,100.00% Impervious, Inflow Depth = 4.92" for 10-Year _Current event
Inflow = 11.59 cfs @ 12.13 hrs, Volume= 38,860 cf
Outflow = 1.10 cfs @ 11.35 hrs, Volume= 38,860 cf, Atten= 91%, Lag= 0.0 min
Discarded = 1.10 cfs @ 11.35 hrs, Volume= 38,860 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 99.66' @ 12.98 hrs Surf.Area= 94,724 sf Storage= 13,500 cf

Plug-Flow detention time= 81.9 min calculated for 38,860 cf (100% of inflow)
Center-of-Mass det. time= 81.9 min (830.2 - 748.3)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	43,005 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

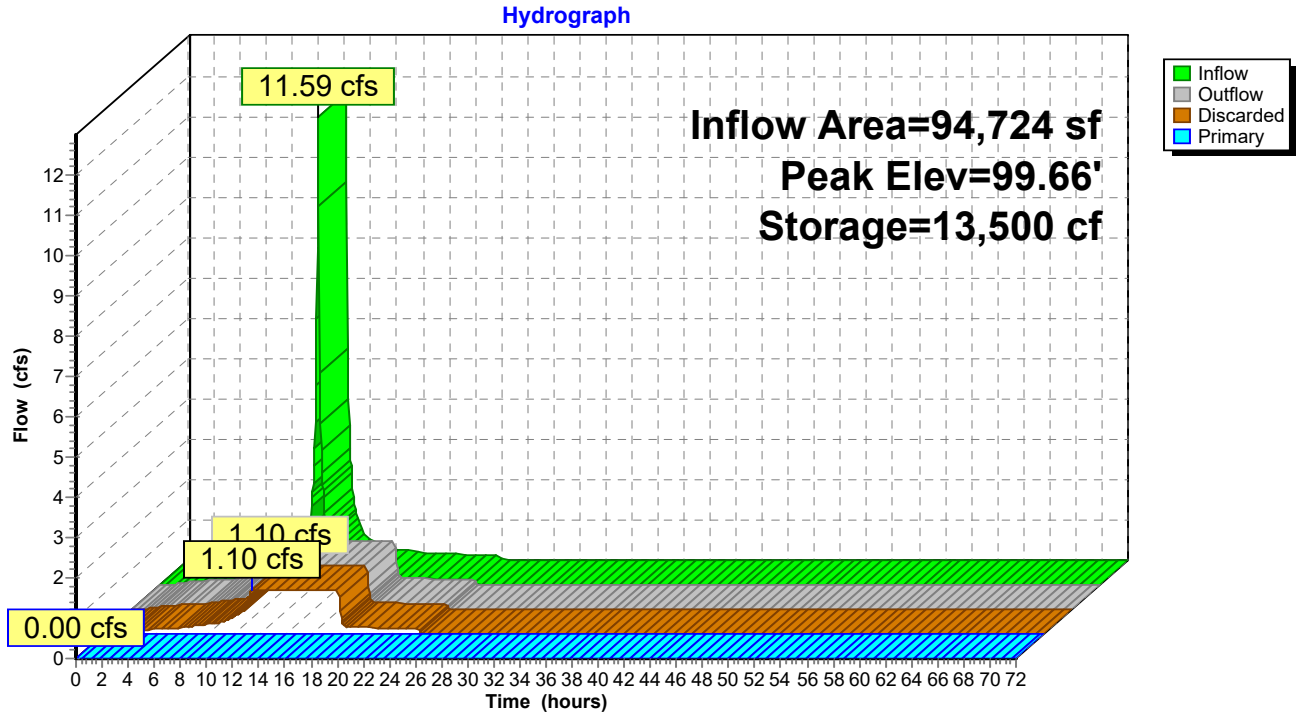
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	94,724	0.0	0	0
99.75	94,724	35.0	16,577	16,577
99.83	94,724	15.0	1,137	17,713
100.01	94,724	15.0	2,558	20,271
100.25	94,724	100.0	22,734	43,005

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=1.10 cfs @ 11.35 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 1.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Controls 0.00 cfs)

Pond 7P: Basic Porous Pavement (infiltration only)



Summary for Pond 8P: Basin 2 Medium Case

[63] Warning: Exceeded Reach 2Ri INLET depth by 0.27' @ 12.80 hrs

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 2.36" for 10-Year _Current event
Inflow = 39.08 cfs @ 12.34 hrs, Volume= 178,732 cf
Outflow = 18.30 cfs @ 12.70 hrs, Volume= 173,915 cf, Atten= 53%, Lag= 21.8 min
Primary = 18.30 cfs @ 12.70 hrs, Volume= 173,915 cf
Routed to Reach 2Ro : Outlet
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 2Ro : Outlet
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 2Ro : Outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 71.16' @ 12.70 hrs Surf.Area= 24,210 sf Storage= 46,483 cf

Plug-Flow detention time= 84.4 min calculated for 173,794 cf (97% of inflow)
Center-of-Mass det. time= 69.9 min (918.6 - 848.7)

Volume	Invert	Avail.Storage	Storage Description
#1	69.00'	125,280 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.00	18,889	0	0
74.00	31,223	125,280	125,280

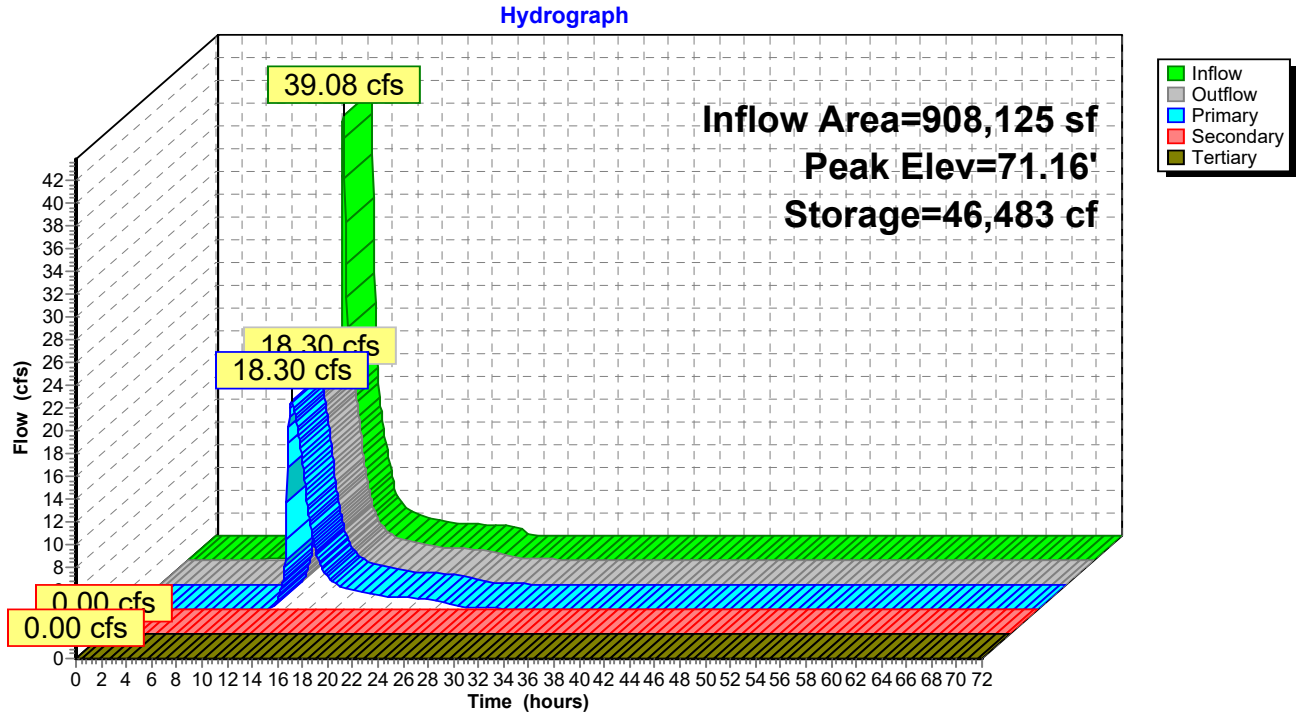
Device	Routing	Invert	Outlet Devices
#1	Primary	69.25'	**18.0" Vert. Low Flow Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Secondary	71.25'	**24.0" W x 18.0" H Vert. 2-YR Orifice X 3.00** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	73.75'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=18.30 cfs @ 12.70 hrs HW=71.16' (Free Discharge)
└**1=Low Flow Orifice** (Orifice Controls 18.30 cfs @ 5.18 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.00' (Free Discharge)
└**2=2-YR Orifice** (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.00' (Free Discharge)
└**3=Orifice/Grate** (Controls 0.00 cfs)

Pond 8P: Basin 2 Medium Case



Summary for Pond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 840,092 sf, 1.06% Impervious, Inflow Depth = 2.52" for 10-Year _Current event
Inflow = 34.58 cfs @ 12.40 hrs, Volume= 176,307 cf
Outflow = 34.57 cfs @ 12.41 hrs, Volume= 176,070 cf, Atten= 0%, Lag= 0.1 min
Primary = 2.90 cfs @ 12.41 hrs, Volume= 87,061 cf
Routed to Link 3L : dA3
Secondary = 16.75 cfs @ 12.41 hrs, Volume= 61,255 cf
Routed to Link 3L : dA3
Tertiary = 14.92 cfs @ 12.41 hrs, Volume= 27,754 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 101.03' @ 12.41 hrs Surf.Area= 1,361 sf Storage= 3,223 cf

Plug-Flow detention time= 8.5 min calculated for 175,948 cf (100% of inflow)
Center-of-Mass det. time= 7.8 min (865.4 - 857.7)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,737 cf	x 2.00 = 3,475 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.75	175	100.0	217	497	363

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 2.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 2.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 2.00** 2 End Contraction(s)

Primary OutFlow Max=2.90 cfs @ 12.41 hrs HW=101.03' (Free Discharge)
↑—**1=Culvert** (Passes 2.90 cfs of 4.34 cfs potential flow)
↑—**2=6" HDPE Underdrain** (Barrel Controls 2.90 cfs @ 7.39 fps)

Secondary OutFlow Max=16.72 cfs @ 12.41 hrs HW=101.03' (Free Discharge)
↑—**3=Broad-Crested Rectangular Weir** (Weir Controls 16.72 cfs @ 2.71 fps)

Tertiary OutFlow Max=14.87 cfs @ 12.41 hrs HW=101.03' (Free Discharge)
↑—**4=Sharp-Crested Rectangular Weir** (Weir Controls 14.87 cfs @ 2.38 fps)

ond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

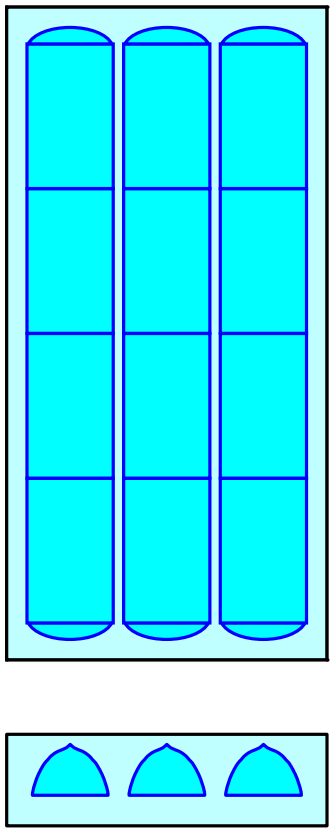
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

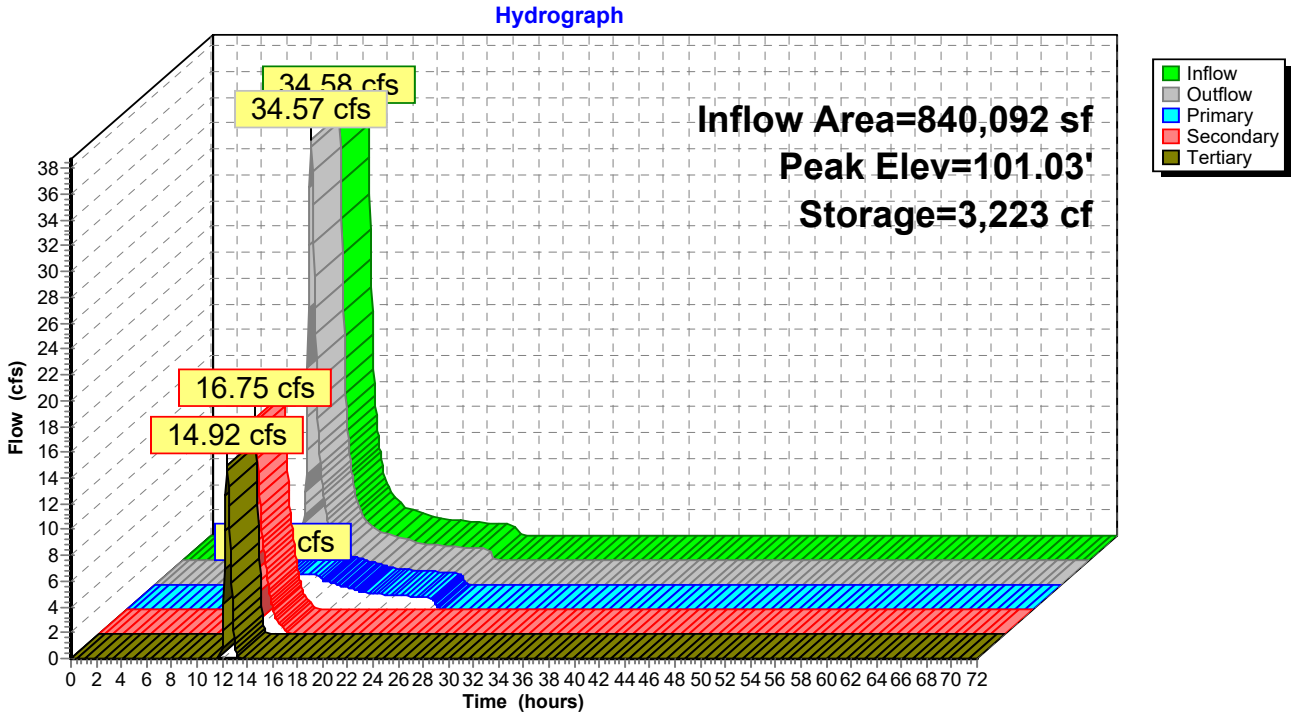
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 10P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 22,074 sf,100.00% Impervious, Inflow Depth = 4.92" for 10-Year _Current event
Inflow = 2.70 cfs @ 12.13 hrs, Volume= 9,056 cf
Outflow = 1.30 cfs @ 12.26 hrs, Volume= 9,051 cf, Atten= 52%, Lag= 7.8 min
Discarded = 0.05 cfs @ 12.15 hrs, Volume= 6,469 cf
Primary = 1.25 cfs @ 12.26 hrs, Volume= 2,582 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 100.09' @ 12.26 hrs Surf.Area= 4,500 sf Storage= 3,766 cf

Plug-Flow detention time= 467.5 min calculated for 9,045 cf (100% of inflow)
Center-of-Mass det. time= 467.7 min (1,216.0 - 748.3)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 9.00 = 5,598 cf Total Available Storage

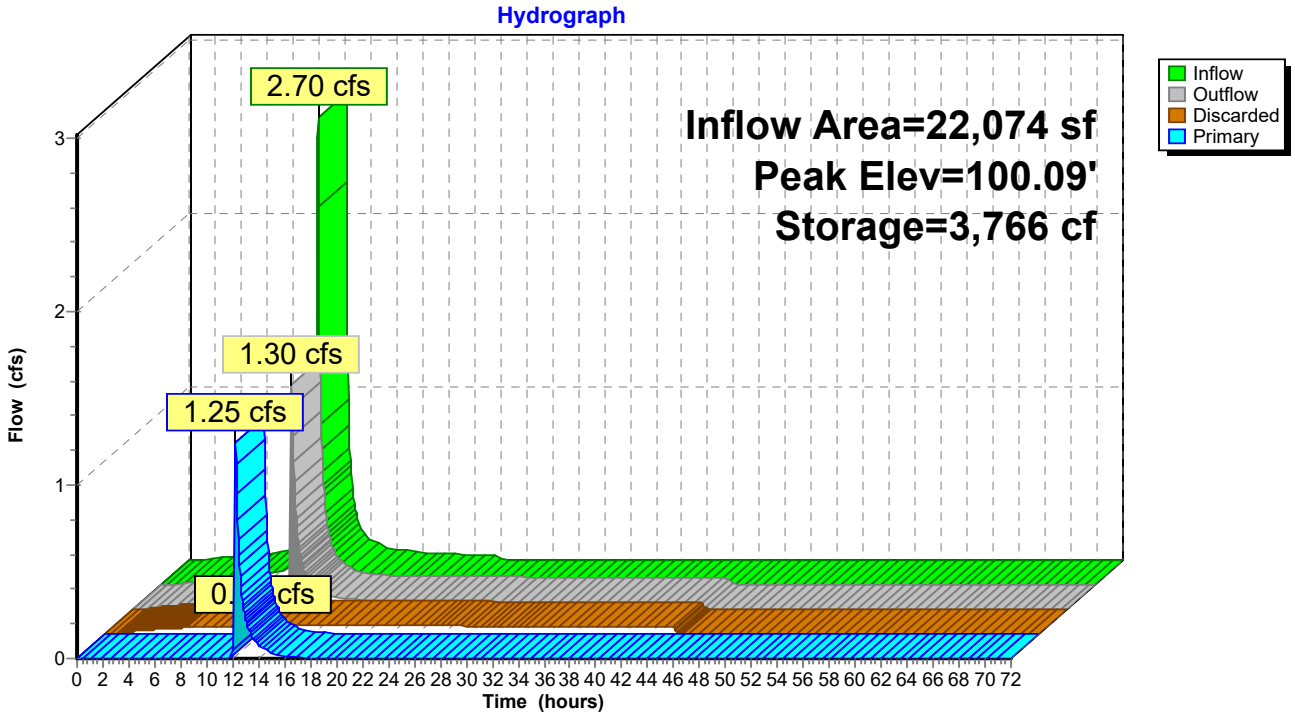
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 9.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.05 cfs @ 12.15 hrs HW=100.02' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=1.23 cfs @ 12.26 hrs HW=100.09' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 1.23 cfs @ 0.74 fps)

Pond 10P: Basic Rain Garden (infiltration only)



Summary for Pond 11P: Basic Porous Pavement (infiltration only)

Inflow Area = 85,494 sf,100.00% Impervious, Inflow Depth = 4.92" for 10-Year _Current event
Inflow = 10.46 cfs @ 12.13 hrs, Volume= 35,073 cf
Outflow = 0.99 cfs @ 11.35 hrs, Volume= 35,073 cf, Atten= 91%, Lag= 0.0 min
Discarded = 0.99 cfs @ 11.35 hrs, Volume= 35,073 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 99.66' @ 12.98 hrs Surf.Area= 85,494 sf Storage= 12,184 cf

Plug-Flow detention time= 81.9 min calculated for 35,073 cf (100% of inflow)
Center-of-Mass det. time= 81.9 min (830.2 - 748.3)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	38,814 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

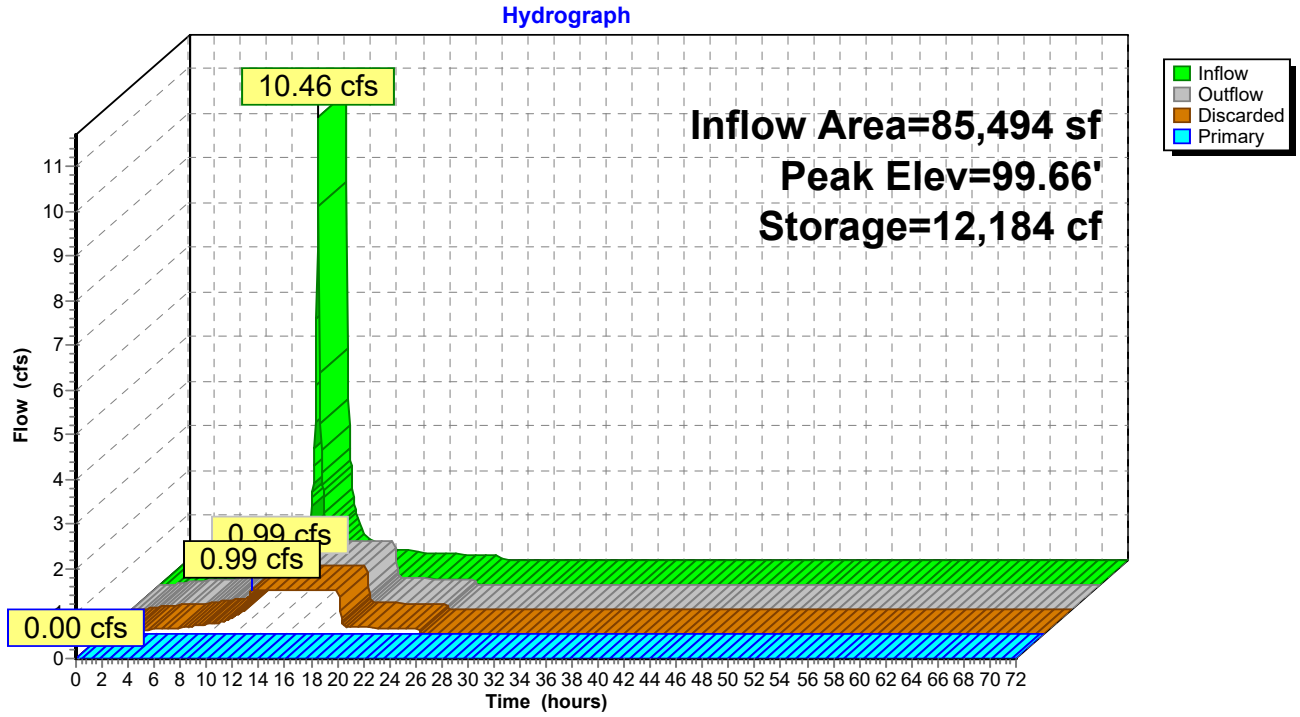
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	85,494	0.0	0	0
99.75	85,494	35.0	14,961	14,961
99.83	85,494	15.0	1,026	15,987
100.01	85,494	15.0	2,308	18,296
100.25	85,494	100.0	20,519	38,814

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.99 cfs @ 11.35 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.99 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Controls 0.00 cfs)

Pond 11P: Basic Porous Pavement (infiltration only)



Summary for Pond 12P: Basic Porous Pavement (infiltration only)

Inflow Area = 4,605 sf,100.00% Impervious, Inflow Depth = 4.92" for 10-Year _Current event
Inflow = 0.56 cfs @ 12.13 hrs, Volume= 1,889 cf
Outflow = 0.05 cfs @ 11.35 hrs, Volume= 1,889 cf, Atten= 91%, Lag= 0.0 min
Discarded = 0.05 cfs @ 11.35 hrs, Volume= 1,889 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 4L : DA 4: Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 99.66' @ 12.98 hrs Surf.Area= 4,605 sf Storage= 664 cf

Plug-Flow detention time= 84.3 min calculated for 1,888 cf (100% of inflow)
Center-of-Mass det. time= 84.2 min (832.5 - 748.3)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	4,393 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

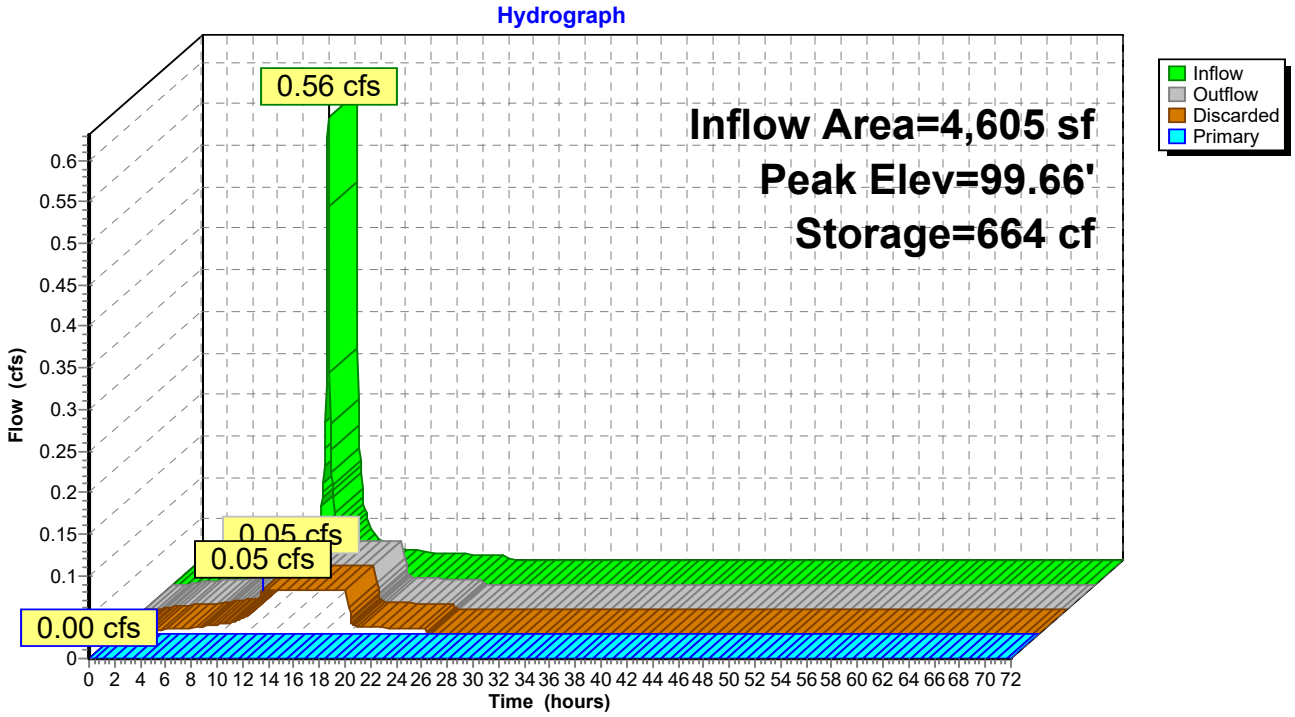
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	4,605	0.0	0	0
99.75	4,605	35.0	806	806
99.83	4,605	15.0	55	861
100.01	4,605	15.0	124	985
100.25	4,605	100.0	1,105	2,091
100.75	4,605	100.0	2,303	4,393

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.05 cfs @ 11.35 hrs HW=99.27' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
2=Edge of Porous Asphalt (Controls 0.00 cfs)

Pond 12P: Basic Porous Pavement (infiltration only)

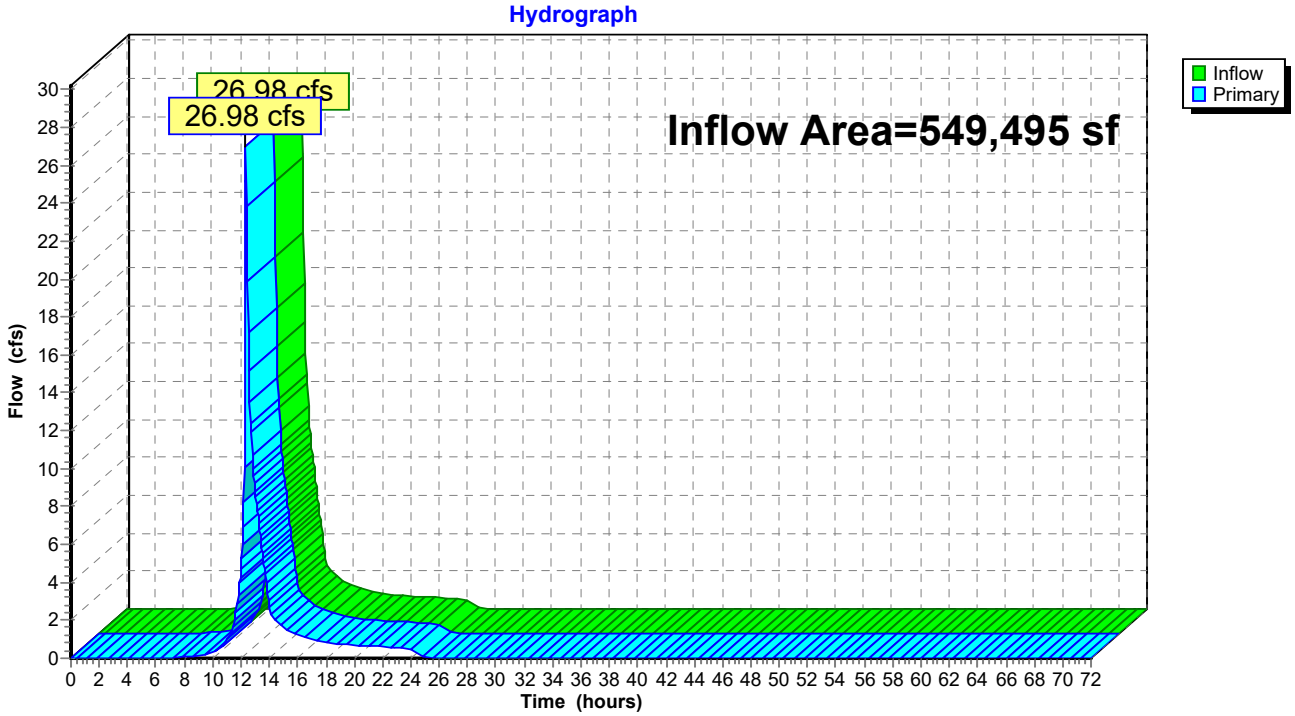


Summary for Link 1L: Combined Flows

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 2.46" for 10-Year _Current event
Inflow = 26.98 cfs @ 12.32 hrs, Volume= 112,517 cf
Primary = 26.98 cfs @ 12.32 hrs, Volume= 112,517 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 1Ri : Inlet Pipe

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1L: Combined Flows

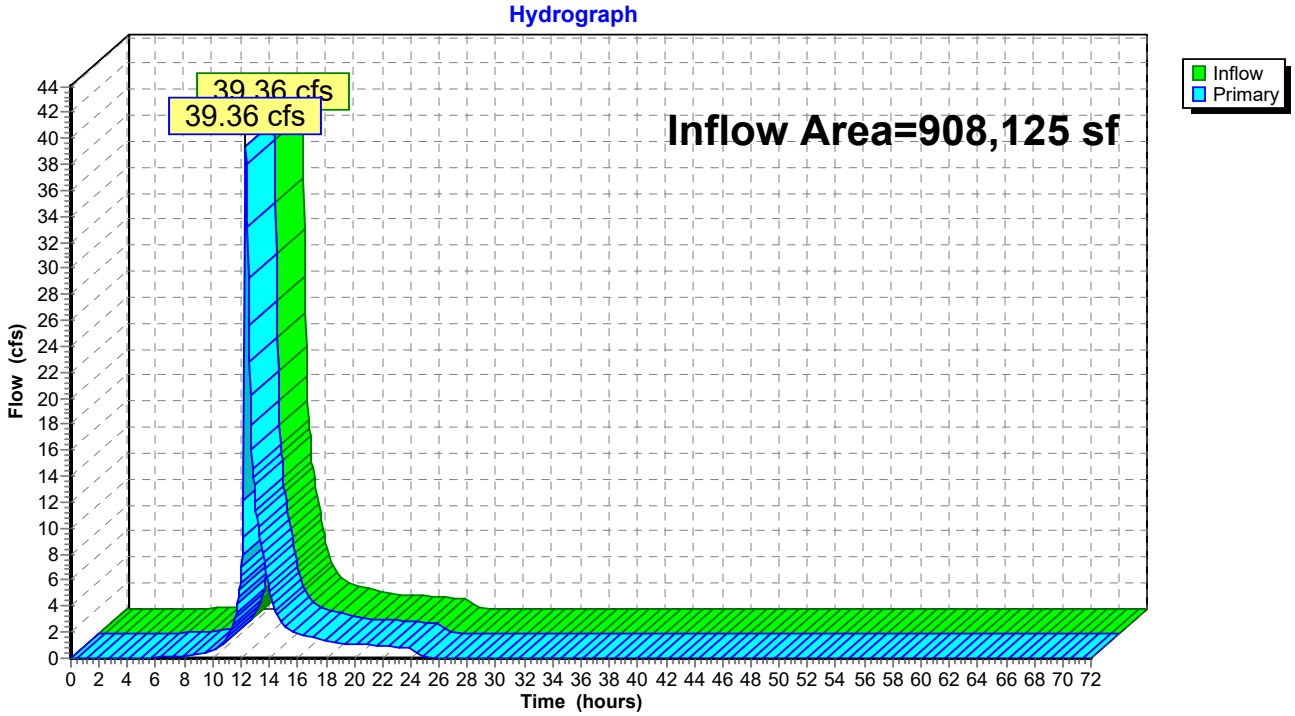


Summary for Link 2L: Combined Flows

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 2.36" for 10-Year _Current event
Inflow = 39.36 cfs @ 12.33 hrs, Volume= 178,678 cf
Primary = 39.36 cfs @ 12.33 hrs, Volume= 178,678 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 2Ri : Inlet Pipe

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 2L: Combined Flows

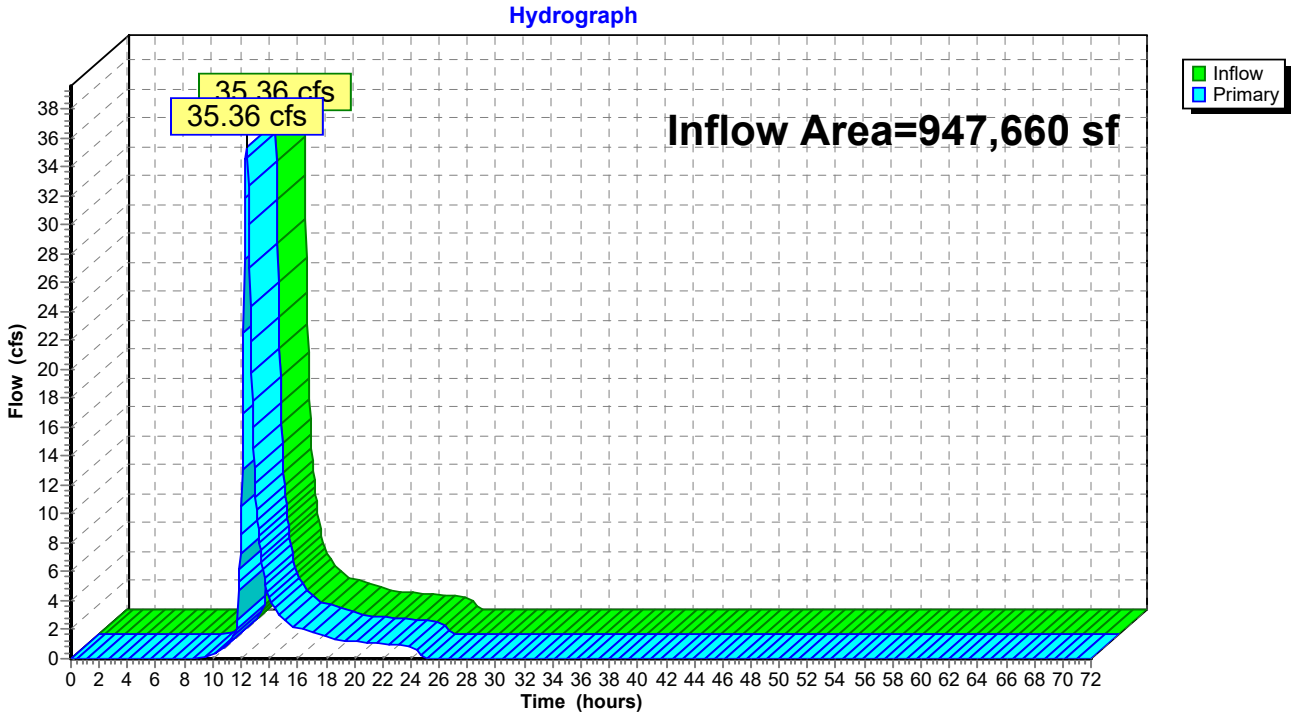


Summary for Link 3L: dA3

Inflow Area = 947,660 sf, 12.29% Impervious, Inflow Depth = 2.26" for 10-Year _Current event
Inflow = 35.36 cfs @ 12.40 hrs, Volume= 178,652 cf
Primary = 35.36 cfs @ 12.40 hrs, Volume= 178,652 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 3L: dA3

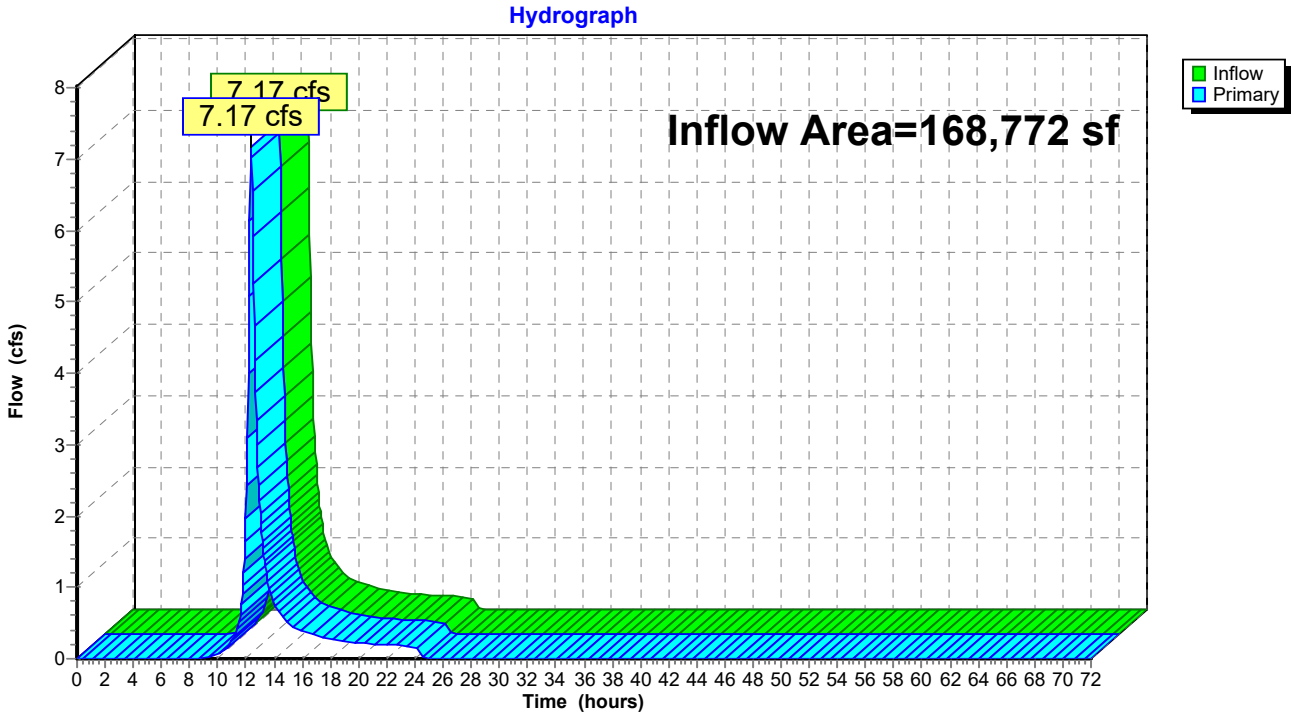


Summary for Link 4L: DA 4: Combined Flows

Inflow Area = 168,772 sf, 3.14% Impervious, Inflow Depth = 2.43" for 10-Year _Current event
Inflow = 7.17 cfs @ 12.36 hrs, Volume= 34,240 cf
Primary = 7.17 cfs @ 12.36 hrs, Volume= 34,240 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: DA 4: Combined Flows



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA 1: CN w/ IC areas Runoff Area=549,495 sf 18.28% Impervious Runoff Depth=3.84"
Tc=19.8 min CN=74/98 Runoff=39.54 cfs 175,807 cf

Subcatchment1Sa: DA 1: CN w/ IC areas Runoff Area=492,891 sf 8.90% Impervious Runoff Depth=3.59"
Tc=19.8 min CN=74/98 Runoff=33.82 cfs 147,639 cf

Subcatchment1Sb: DA 1: Roofs Runoff Area=21,359 sf 100.00% Impervious Runoff Depth=5.97"
Tc=6.0 min CN=0/98 Runoff=3.15 cfs 10,629 cf

Subcatchment1Sc: DA1: Driveways Runoff Area=35,245 sf 100.00% Impervious Runoff Depth=5.97"
Tc=6.0 min CN=0/98 Runoff=5.20 cfs 17,539 cf

Subcatchment2S: DA 2: CN w/ IC areas Runoff Area=908,125 sf 25.71% Impervious Runoff Depth=4.03"
Tc=21.8 min CN=74/98 Runoff=64.78 cfs 305,214 cf

Subcatchment2Sa: DA 2: CN w/ IC areas Runoff Area=759,404 sf 11.16% Impervious Runoff Depth=3.65"
Tc=21.8 min CN=74/98 Runoff=50.39 cfs 231,205 cf

Subcatchment2Sb: DA 2: Roofs Runoff Area=53,997 sf 100.00% Impervious Runoff Depth=5.97"
Tc=6.0 min CN=0/98 Runoff=7.96 cfs 26,871 cf

Subcatchment2Sc: DA 2: Driveways Runoff Area=94,724 sf 100.00% Impervious Runoff Depth=5.97"
Tc=6.0 min CN=0/98 Runoff=13.97 cfs 47,138 cf

Subcatchment3S: DA 3: CN w/ IC areas Runoff Area=947,660 sf 12.29% Impervious Runoff Depth=3.68"
Tc=27.9 min CN=74/98 Runoff=56.00 cfs 290,857 cf

Subcatchment3Sa: DA 3: CN w/ IC areas Runoff Area=840,092 sf 1.06% Impervious Runoff Depth=3.39"
Tc=27.9 min CN=74/98 Runoff=46.75 cfs 237,328 cf

Subcatchment3Sb: DA 3: Roofs Runoff Area=22,074 sf 100.00% Impervious Runoff Depth=5.97"
Tc=6.0 min CN=0/98 Runoff=3.25 cfs 10,985 cf

Subcatchment3Sc: DA 3: Driveways Runoff Area=85,494 sf 100.00% Impervious Runoff Depth=5.97"
Tc=6.0 min CN=0/98 Runoff=12.61 cfs 42,545 cf

Subcatchment4S: DA 4: CN w/ IC areas Runoff Area=168,772 sf 3.14% Impervious Runoff Depth=3.44"
Tc=24.4 min CN=74/98 Runoff=10.16 cfs 48,440 cf

Subcatchment4Sa: DA 4: CN w/ IC areas Runoff Area=163,472 sf 0.00% Impervious Runoff Depth=3.36"
Tc=24.4 min CN=74/0 Runoff=9.68 cfs 45,803 cf

Subcatchment4Sb: DA 4: Roofs Runoff Area=695 sf 100.00% Impervious Runoff Depth=5.97"
Tc=6.0 min CN=0/98 Runoff=0.10 cfs 346 cf

Subcatchment4Sc: DA 4: Driveways Runoff Area=4,605 sf 100.00% Impervious Runoff Depth=5.97"
Tc=6.0 min CN=0/98 Runoff=0.68 cfs 2,292 cf

Reach 1Ri: Inlet Pipe Avg. Flow Depth=1.34' Max Vel=9.42 fps Inflow=35.09 cfs 149,036 cf
48.0" Round Pipe n=0.013 L=100.0' S=0.0100 '/' Capacity=143.64 cfs Outflow=34.79 cfs 149,077 cf

Reach 1Ro: outlet Avg. Flow Depth=0.78' Max Vel=4.74 fps Inflow=6.16 cfs 141,837 cf
30.0" Round Pipe n=0.013 L=925.0' S=0.0051 '/' Capacity=29.39 cfs Outflow=6.15 cfs 141,826 cf

Reach 2Ri: Inlet Pipe Avg. Flow Depth=1.69' Max Vel=10.58 fps Inflow=53.60 cfs 238,680 cf
48.0" Round Pipe n=0.013 L=100.0' S=0.0100 '/' Capacity=143.64 cfs Outflow=53.29 cfs 238,720 cf

Reach 2Ro: Outlet Avg. Flow Depth=1.23' Max Vel=9.60 fps Inflow=29.01 cfs 233,910 cf
42.0" Round Pipe n=0.013 L=190.0' S=0.0118 '/' Capacity=109.48 cfs Outflow=28.93 cfs 233,911 cf

Pond 1P: Basic Rain Garden (w/ Peak Elev=100.45' Storage=13,586 cf Inflow=33.82 cfs 147,639 cf
Primary=12.46 cfs 124,928 cf Secondary=21.21 cfs 20,784 cf Tertiary=0.00 cfs 0 cf Outflow=33.67 cfs 145,712 cf

Pond 2P: Basic Rain Garden (infiltration Peak Elev=100.11' Storage=4,283 cf Inflow=3.15 cfs 10,629 cf
Discarded=0.06 cfs 7,306 cf Primary=1.83 cfs 3,323 cf Outflow=1.89 cfs 10,629 cf

Pond 3P: Basic Porous Pavement Peak Elev=99.83' Storage=6,612 cf Inflow=5.20 cfs 17,539 cf
Discarded=0.41 cfs 17,539 cf Primary=0.00 cfs 0 cf Outflow=0.41 cfs 17,539 cf

Pond 4P: Basin 1 Medium Case Peak Elev=76.49' Storage=72,539 cf Inflow=34.79 cfs 149,077 cf
Primary=4.99 cfs 137,247 cf Secondary=1.16 cfs 4,590 cf Tertiary=0.00 cfs 0 cf Outflow=6.16 cfs 141,837 cf

Pond 5P: Basic Rain Garden (w/ Peak Elev=100.56' Storage=15,297 cf Inflow=50.39 cfs 231,205 cf
Primary=13.98 cfs 178,452 cf Secondary=33.13 cfs 50,003 cf Tertiary=3.17 cfs 1,658 cf Outflow=50.28 cfs 230,113 cf

Pond 6P: Basic Rain Garden (infiltration Peak Elev=100.11' Storage=10,734 cf Inflow=7.96 cfs 26,871 cf
Discarded=0.14 cfs 18,308 cf Primary=4.73 cfs 8,567 cf Outflow=4.87 cfs 26,875 cf

Pond 7P: Basic Porous Pavement Peak Elev=99.83' Storage=17,770 cf Inflow=13.97 cfs 47,138 cf
Discarded=1.10 cfs 47,138 cf Primary=0.00 cfs 0 cf Outflow=1.10 cfs 47,138 cf

Pond 8P: Basin 2 Medium Case Peak Elev=71.74' Storage=60,972 cf Inflow=53.29 cfs 238,720 cf
Primary=22.44 cfs 224,402 cf Secondary=6.58 cfs 9,508 cf Tertiary=0.00 cfs 0 cf Outflow=29.01 cfs 233,910 cf

Pond 9P: Basic Rain Garden (w/ Peak Elev=101.20' Storage=3,282 cf Inflow=46.75 cfs 237,328 cf
Primary=2.94 cfs 103,986 cf Secondary=21.33 cfs 86,456 cf Tertiary=22.48 cfs 46,656 cf Outflow=46.75 cfs 237,098 cf

Pond 10P: Basic Rain Garden (infiltration Peak Elev=100.15' Storage=4,005 cf Inflow=3.25 cfs 10,985 cf
Discarded=0.05 cfs 6,760 cf Primary=2.45 cfs 4,221 cf Outflow=2.50 cfs 10,981 cf

Pond 11P: Basic Porous Pavement Peak Elev=99.83' Storage=16,038 cf Inflow=12.61 cfs 42,545 cf
Discarded=0.99 cfs 42,545 cf Primary=0.00 cfs 0 cf Outflow=0.99 cfs 42,545 cf

Pond 12P: Basic Porous Pavement (infiltration Peak Elev=99.84' Storage=871 cf Inflow=0.68 cfs 2,292 cf
Discarded=0.05 cfs 2,291 cf Primary=0.00 cfs 0 cf Outflow=0.05 cfs 2,291 cf

Link 1L: Combined Flows Inflow=35.09 cfs 149,036 cf
Primary=35.09 cfs 149,036 cf

Link 2L: Combined Flows Inflow=53.60 cfs 238,680 cf
Primary=53.60 cfs 238,680 cf

Link 3L: dA3

Inflow=47.74 cfs 241,319 cf
Primary=47.74 cfs 241,319 cf

Link 4L: DA 4: Combined Flows

Inflow=9.71 cfs 46,149 cf
Primary=9.71 cfs 46,149 cf

Total Runoff Area = 5,148,104 sf Runoff Volume = 1,640,637 cf Average Runoff Depth = 3.82"
82.29% Pervious = 4,236,632 sf 17.71% Impervious = 911,472 sf

Summary for Subcatchment 1S: DA 1: CN w/ IC areas

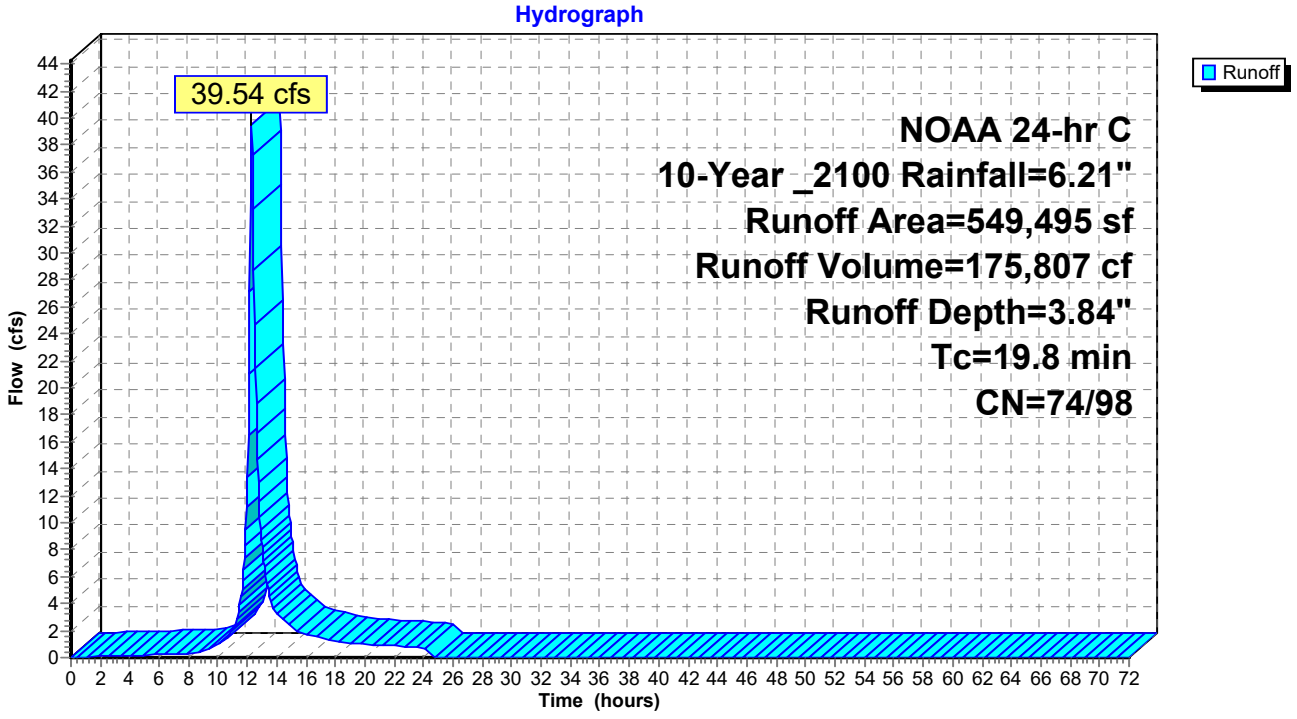
Runoff = 39.54 cfs @ 12.29 hrs, Volume= 175,807 cf, Depth= 3.84"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	100,459	98	Impervious
	317,162	74	>75% Grass cover, Good, HSG C
	131,575	73	Woods, Fair, HSG C
	299	70	Woods, Good, HSG C
	549,495	78	Weighted Average
	449,036	74	81.72% Pervious Area
	100,459	98	18.28% Impervious Area

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

Subcatchment 1S: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sa: DA 1: CN w/ IC areas

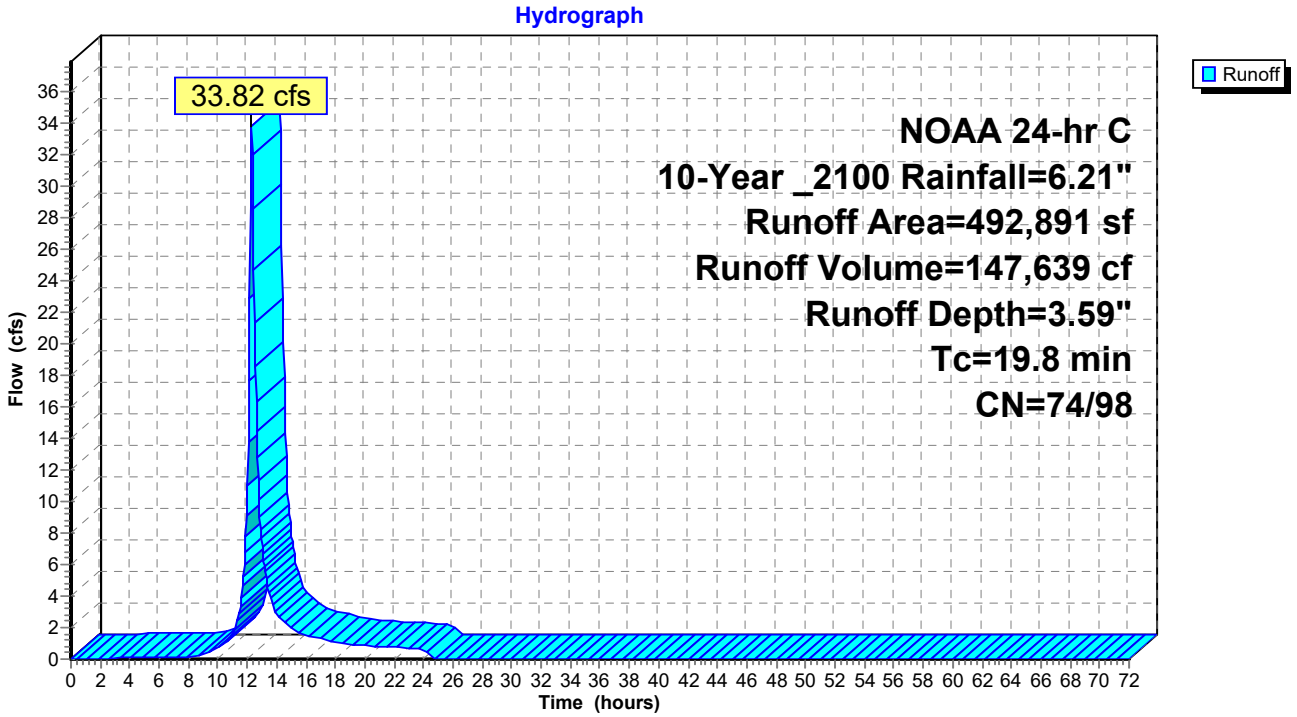
Runoff = 33.82 cfs @ 12.29 hrs, Volume= 147,639 cf, Depth= 3.59"
Routed to Pond 1P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	43,855	98	Impervious
	317,162	74	>75% Grass cover, Good, HSG C
	131,575	73	Woods, Fair, HSG C
	299	70	Woods, Good, HSG C
	492,891	76	Weighted Average
	449,036	74	91.10% Pervious Area
	43,855	98	8.90% Impervious Area

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

Subcatchment 1Sa: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sb: DA 1: Roofs Combined

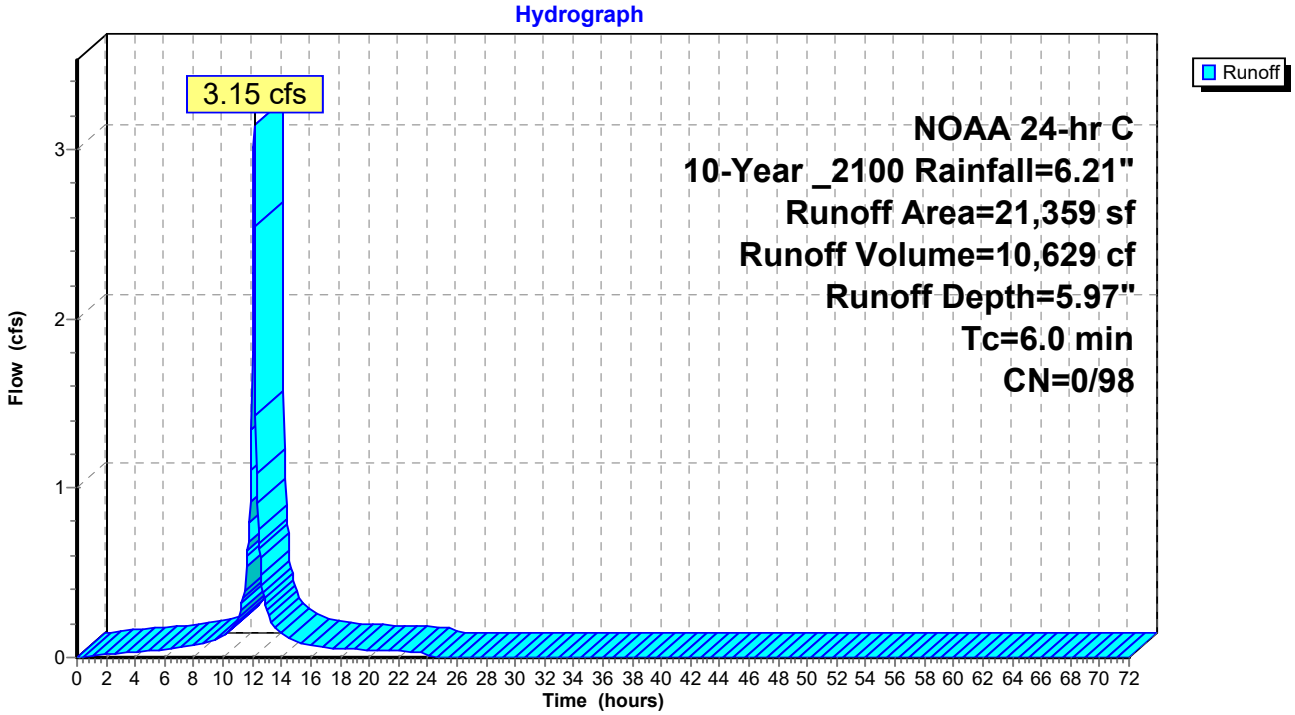
Runoff = 3.15 cfs @ 12.13 hrs, Volume= 10,629 cf, Depth= 5.97"
Routed to Pond 2P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	21,359	98	
	21,359	98	100.00% Impervious Area

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

Subcatchment 1Sb: DA 1: Roofs Combined



Summary for Subcatchment 1Sc: DA1: Driveways (other)

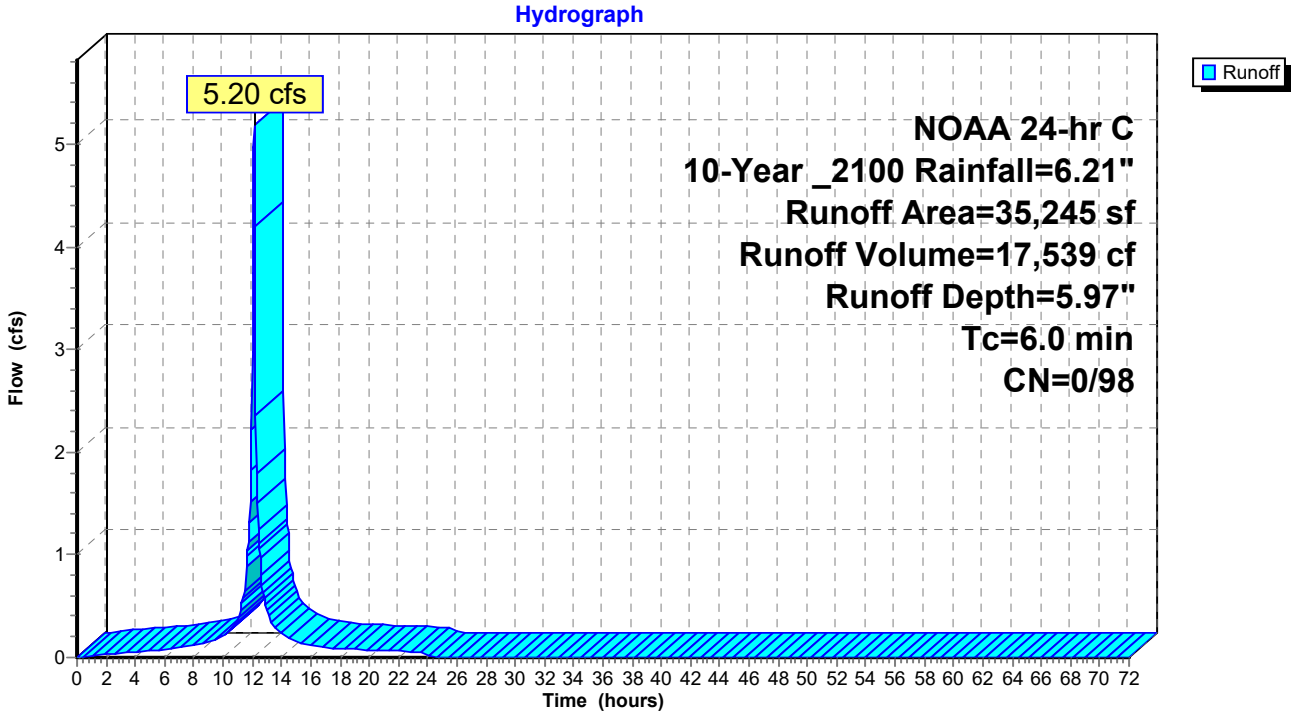
Runoff = 5.20 cfs @ 12.13 hrs, Volume= 17,539 cf, Depth= 5.97"
Routed to Pond 3P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	35,245	98	
	35,245	98	100.00% Impervious Area

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

Subcatchment 1Sc: DA1: Driveways (other)



Summary for Subcatchment 2S: DA 2: CN w/ IC areas

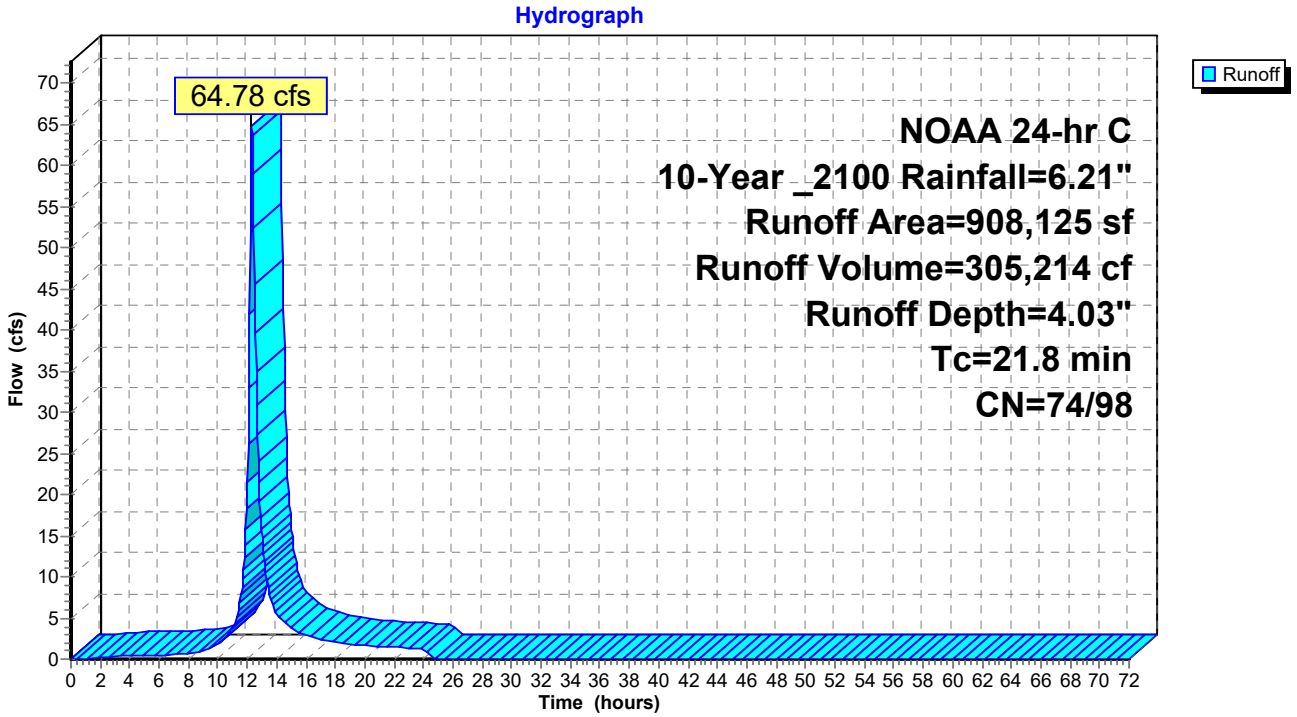
Runoff = 64.78 cfs @ 12.32 hrs, Volume= 305,214 cf, Depth= 4.03"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	233,471	98	Impervious
	1	65	Brush, Good, HSG C
	620,871	74	>75% Grass cover, Good, HSG C
	1,845	72	Woods/grass comb., Good, HSG C
	51,937	73	Woods, Fair, HSG C
	908,125	80	Weighted Average
	674,654	74	74.29% Pervious Area
	233,471	98	25.71% Impervious Area

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

Subcatchment 2S: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sa: DA 2: CN w/ IC areas

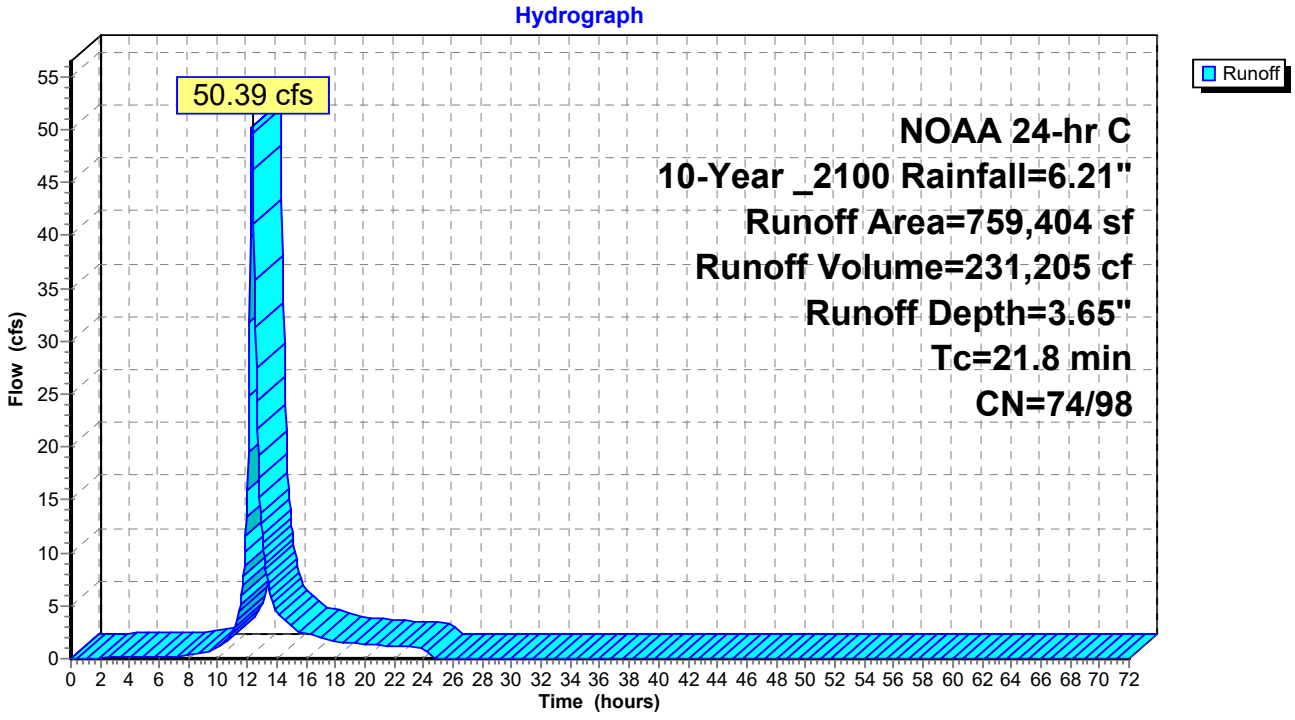
Runoff = 50.39 cfs @ 12.32 hrs, Volume= 231,205 cf, Depth= 3.65"
Routed to Pond 5P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	84,750	98	Impervious
	1	65	Brush, Good, HSG C
	620,871	74	>75% Grass cover, Good, HSG C
	1,845	72	Woods/grass comb., Good, HSG C
	51,937	73	Woods, Fair, HSG C
	759,404	77	Weighted Average
	674,654	74	88.84% Pervious Area
	84,750	98	11.16% Impervious Area

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

Subcatchment 2Sa: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sb: DA 2: Roofs

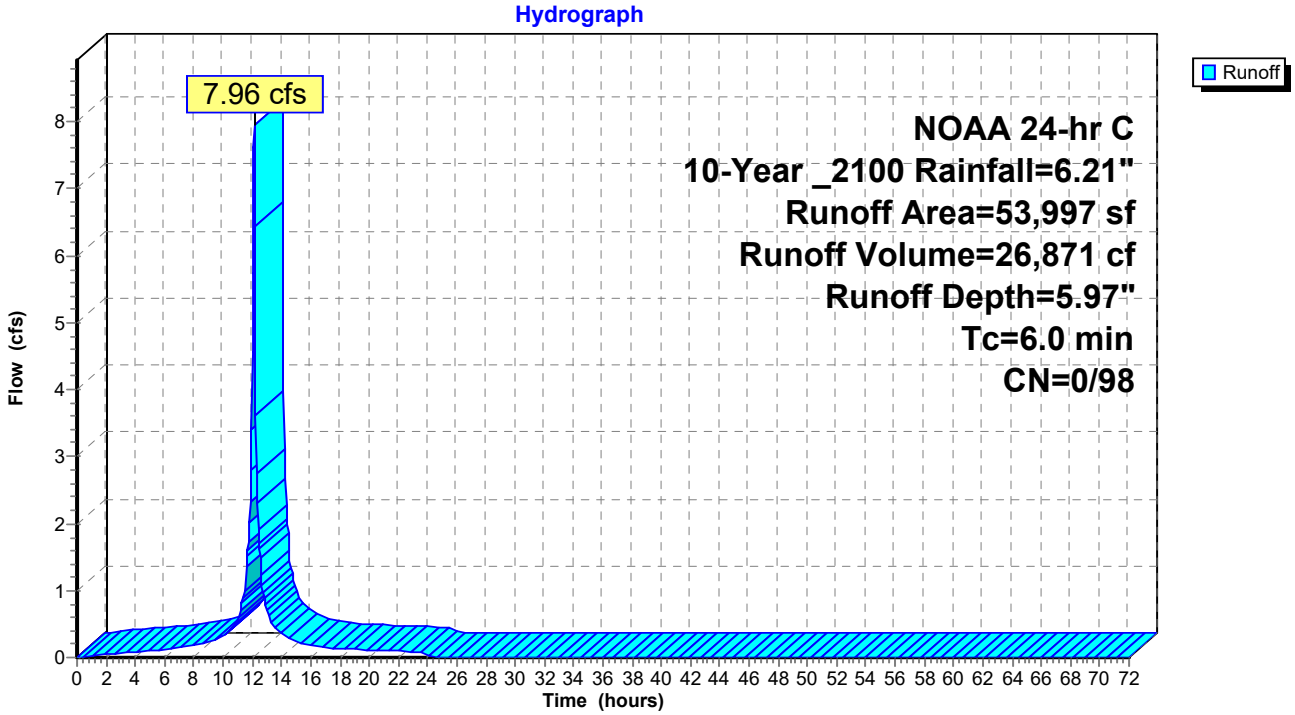
Runoff = 7.96 cfs @ 12.13 hrs, Volume= 26,871 cf, Depth= 5.97"
Routed to Pond 6P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	53,997	98	
	53,997	98	100.00% Impervious Area

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

Subcatchment 2Sb: DA 2: Roofs



Summary for Subcatchment 2Sc: DA 2: Driveways (other)

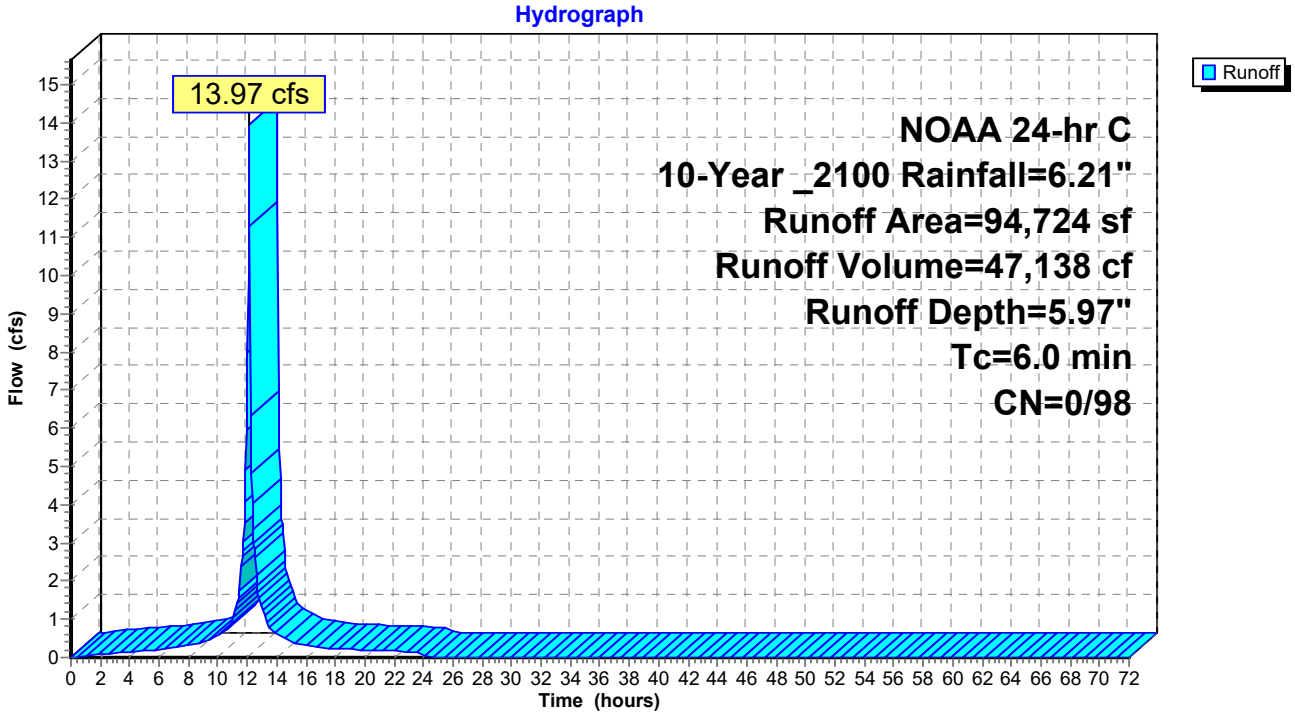
Runoff = 13.97 cfs @ 12.13 hrs, Volume= 47,138 cf, Depth= 5.97"
Routed to Pond 7P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	94,724	98	
	94,724	98	100.00% Impervious Area

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

Subcatchment 2Sc: DA 2: Driveways (other)



Summary for Subcatchment 3S: DA 3: CN w/ IC areas

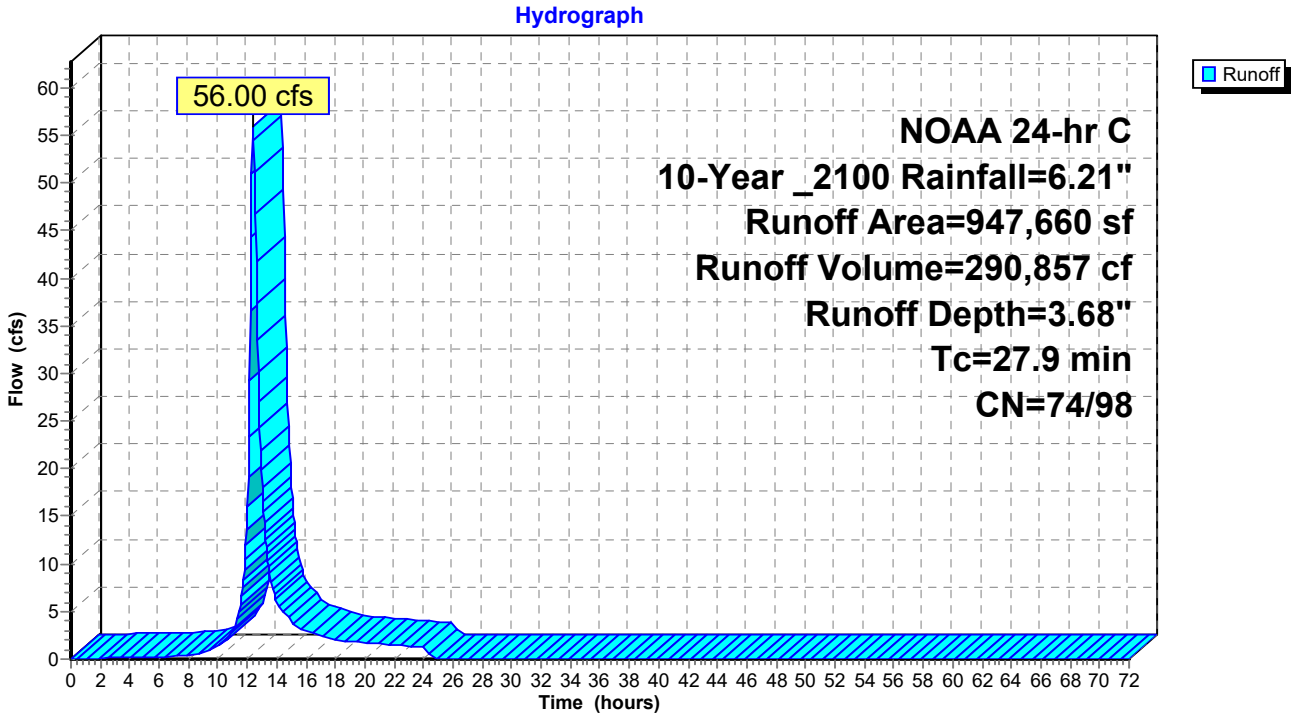
Runoff = 56.00 cfs @ 12.40 hrs, Volume= 290,857 cf, Depth= 3.68"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	116,506	98	Impervious
	4,930	79	50-75% Grass cover, Fair, HSG C
	592,347	74	>75% Grass cover, Good, HSG C
	169,305	73	Woods, Fair, HSG C
	64,572	70	Woods, Good, HSG C
	947,660	77	Weighted Average
	831,154	74	87.71% Pervious Area
	116,506	98	12.29% Impervious Area

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

Subcatchment 3S: DA 3: CN w/ IC areas



Summary for Subcatchment 3Sa: DA 3: CN w/ IC areas

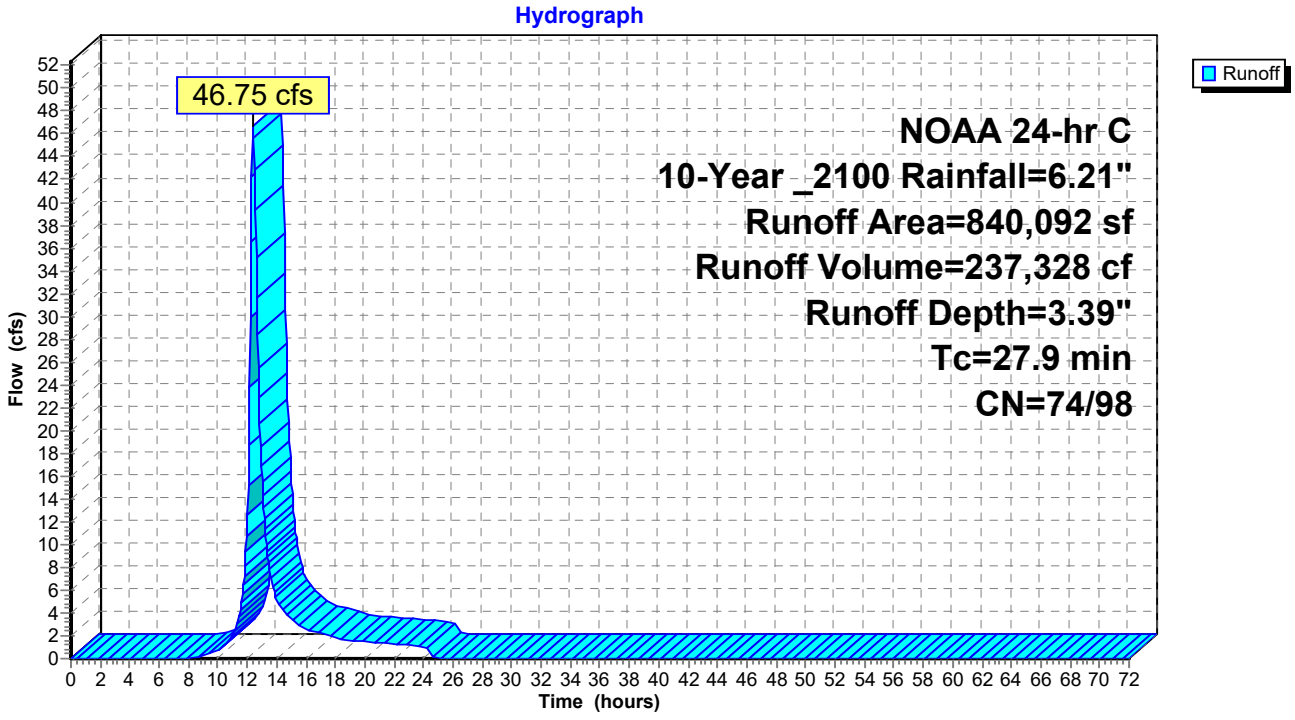
Runoff = 46.75 cfs @ 12.40 hrs, Volume= 237,328 cf, Depth= 3.39"
Routed to Pond 9P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	8,938	98	Impervious
	4,930	79	50-75% Grass cover, Fair, HSG C
	592,347	74	>75% Grass cover, Good, HSG C
	169,305	73	Woods, Fair, HSG C
	64,572	70	Woods, Good, HSG C
	840,092	74	Weighted Average
	831,154	74	98.94% Pervious Area
	8,938	98	1.06% Impervious Area

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

Subcatchment 3Sa: DA 3: CN w/ IC areas



Summary for Subcatchment 3Sb: DA 3: Roofs

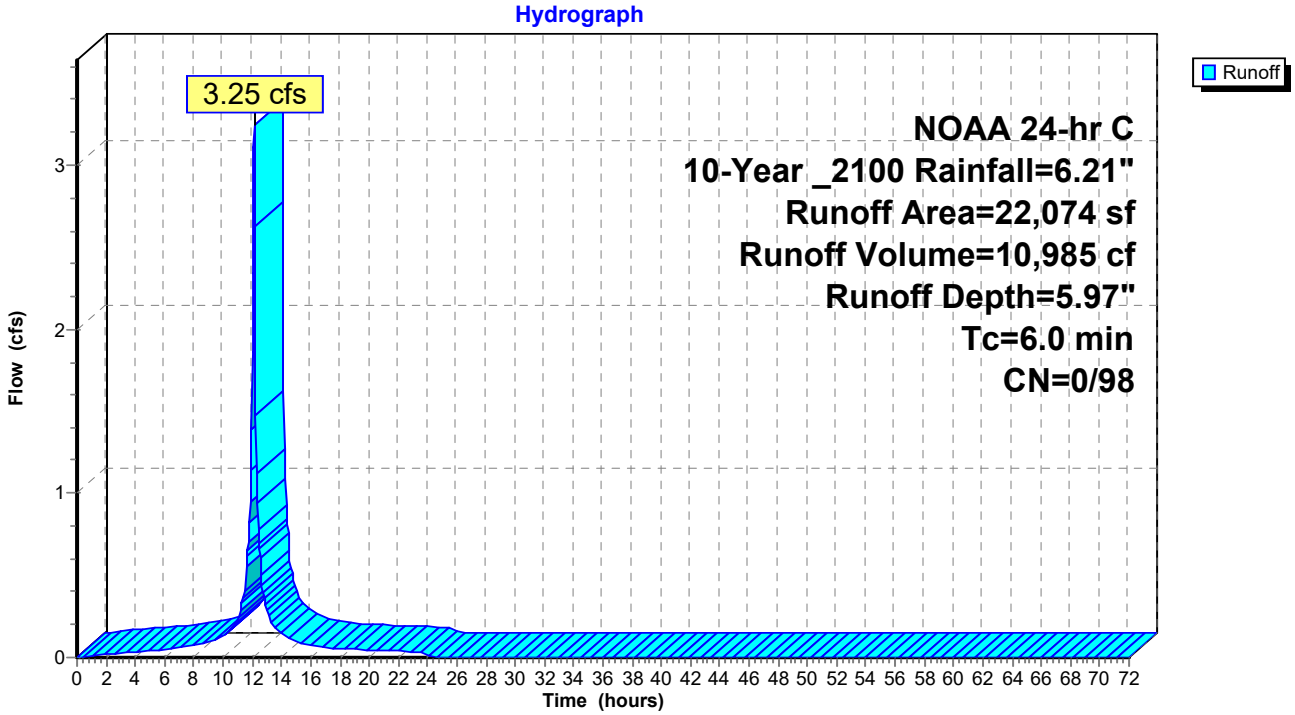
Runoff = 3.25 cfs @ 12.13 hrs, Volume= 10,985 cf, Depth= 5.97"
Routed to Pond 10P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	22,074	98	
	22,074	98	100.00% Impervious Area

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

Subcatchment 3Sb: DA 3: Roofs



Summary for Subcatchment 3Sc: DA 3: Driveways (other)

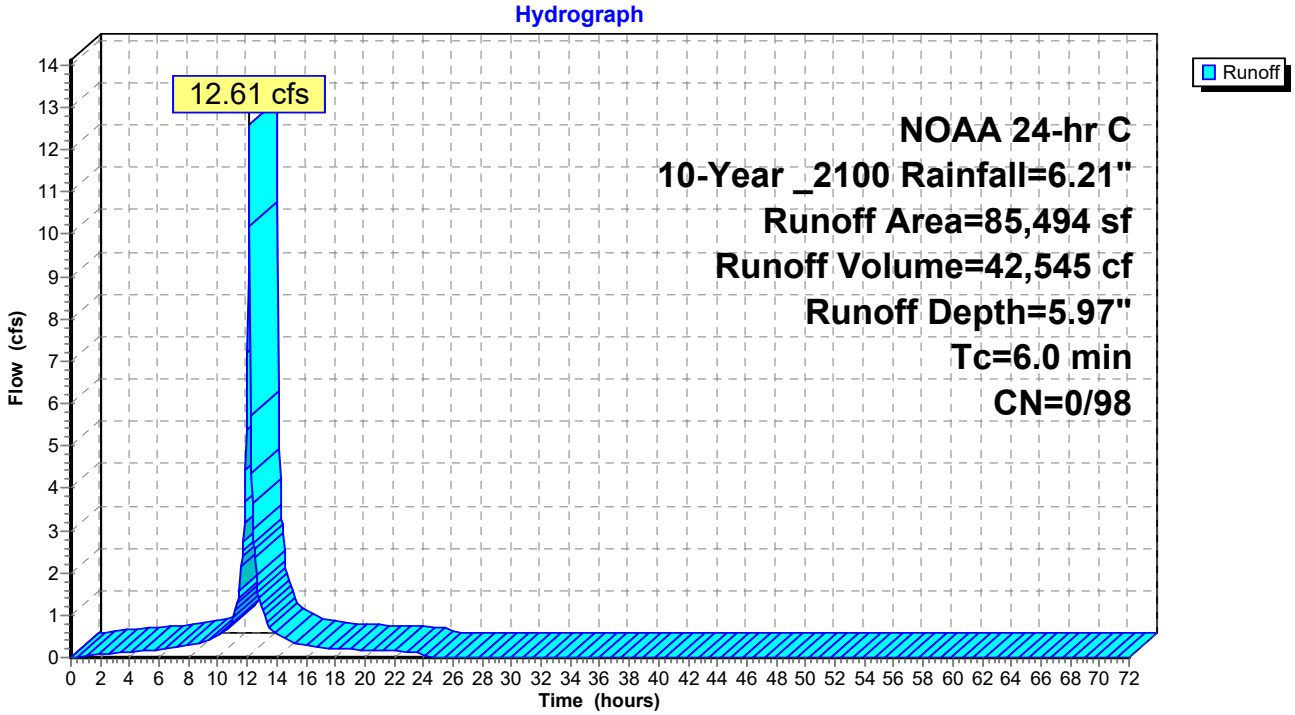
Runoff = 12.61 cfs @ 12.13 hrs, Volume= 42,545 cf, Depth= 5.97"
Routed to Pond 11P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	85,494	98	
	85,494	98	100.00% Impervious Area

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

Subcatchment 3Sc: DA 3: Driveways (other)



Summary for Subcatchment 4S: DA 4: CN w/ IC areas

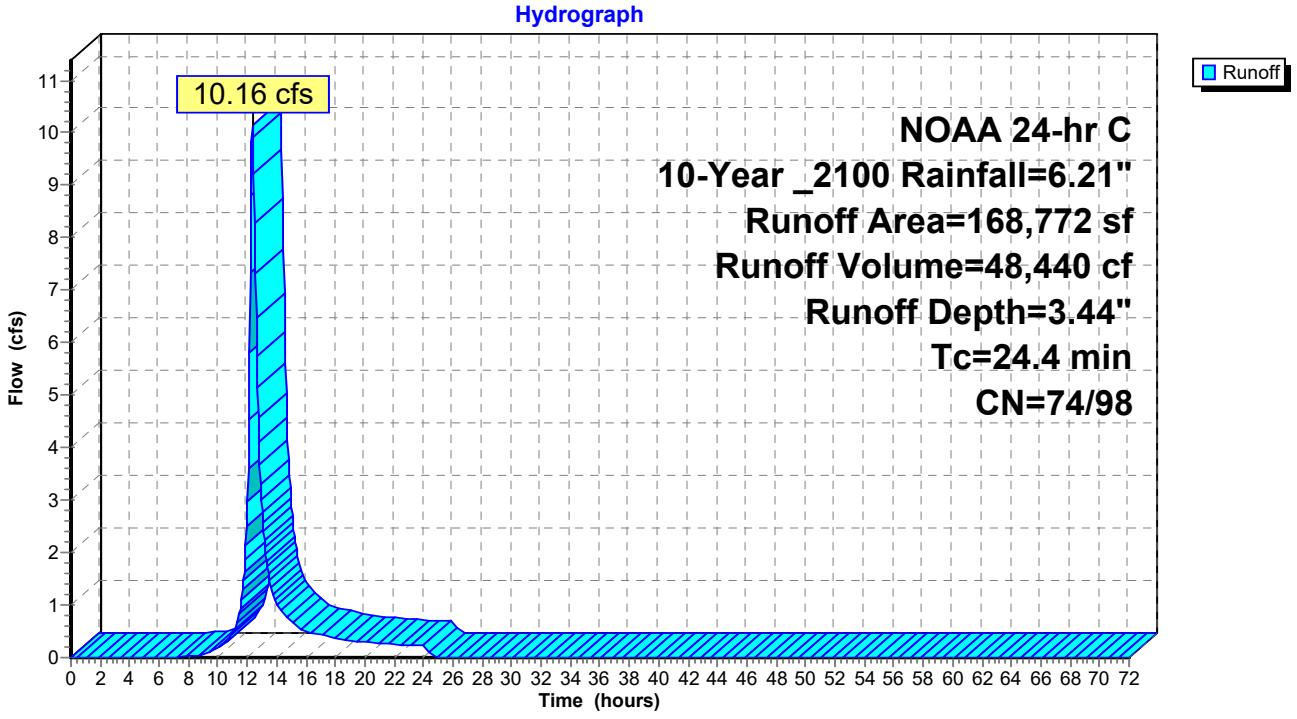
Runoff = 10.16 cfs @ 12.35 hrs, Volume= 48,440 cf, Depth= 3.44"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	5,300	98	Impervious
	117,799	74	>75% Grass cover, Good, HSG C
	4,778	72	Woods/grass comb., Good, HSG C
	40,895	73	Woods, Fair, HSG C
	168,772	74	Weighted Average
	163,472	74	96.86% Pervious Area
	5,300	98	3.14% Impervious Area

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

Subcatchment 4S: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sa: DA 4: CN w/ IC areas

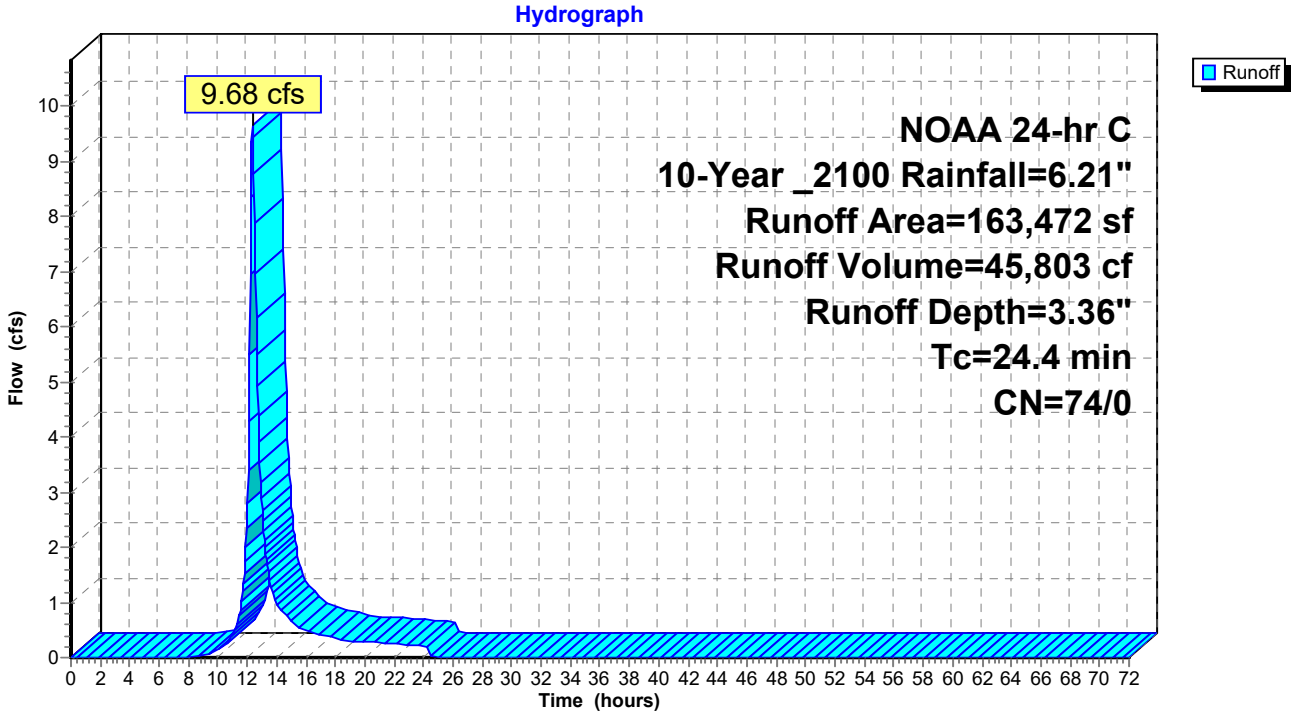
Runoff = 9.68 cfs @ 12.35 hrs, Volume= 45,803 cf, Depth= 3.36"
Routed to Link 4L : DA 4: Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	0	98	Impervious
	117,799	74	>75% Grass cover, Good, HSG C
	4,778	72	Woods/grass comb., Good, HSG C
	40,895	73	Woods, Fair, HSG C
	163,472	74	Weighted Average
	163,472	74	100.00% Pervious Area

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

Subcatchment 4Sa: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sb: DA 4: Roofs

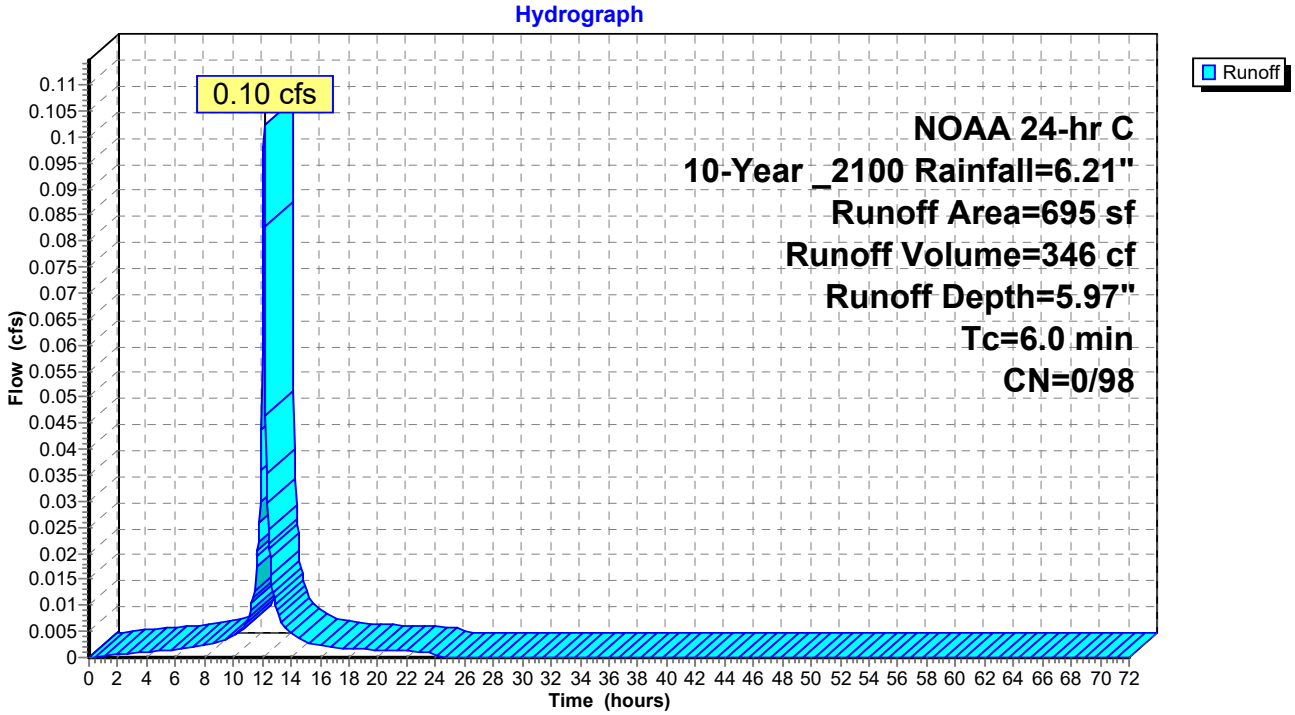
Runoff = 0.10 cfs @ 12.13 hrs, Volume= 346 cf, Depth= 5.97"
Routed to Link 4L : DA 4: Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	695	98	
	695	98	100.00% Impervious Area

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

Subcatchment 4Sb: DA 4: Roofs



Summary for Subcatchment 4Sc: DA 4: Driveways (other)

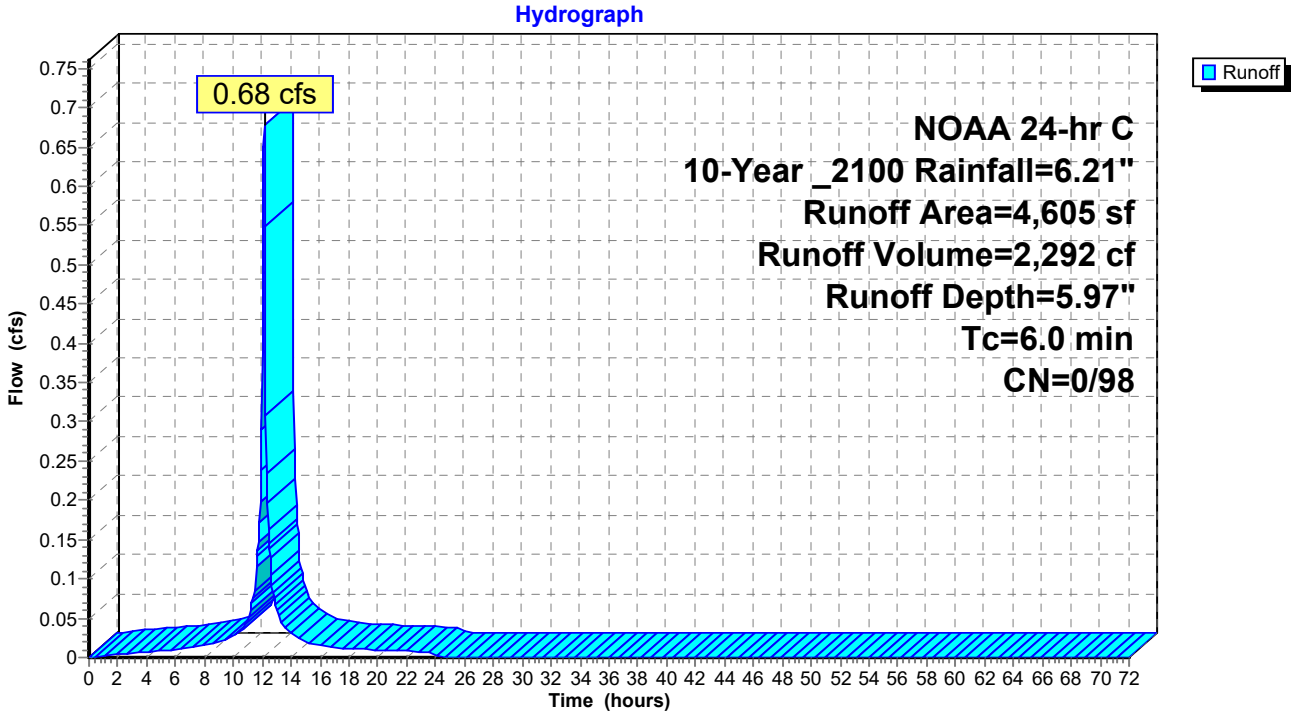
Runoff = 0.68 cfs @ 12.13 hrs, Volume= 2,292 cf, Depth= 5.97"
Routed to Pond 12P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 10-Year _2100 Rainfall=6.21"

	Area (sf)	CN	Description
*	4,605	98	
	4,605	98	100.00% Impervious Area

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

Subcatchment 4Sc: DA 4: Driveways (other)



Summary for Reach 1Ri: Inlet Pipe

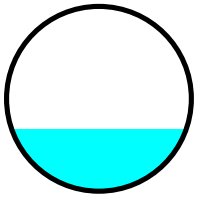
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 3.25" for 10-Year _2100 event
Inflow = 35.09 cfs @ 12.29 hrs, Volume= 149,036 cf
Outflow = 34.79 cfs @ 12.31 hrs, Volume= 149,077 cf, Atten= 1%, Lag= 0.7 min
Routed to Pond 4P : Basin 1 Medium Case

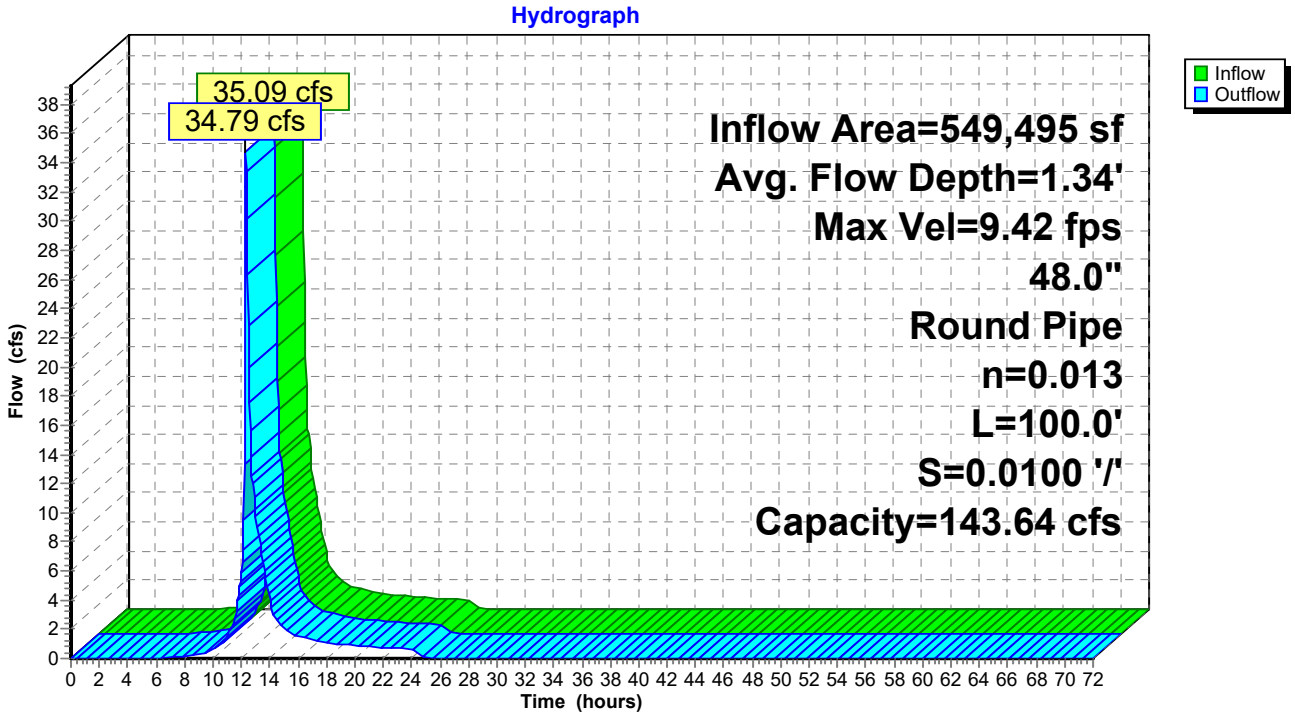
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 9.42 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.97 fps, Avg. Travel Time= 0.6 min

Peak Storage= 370 cf @ 12.30 hrs
Average Depth at Peak Storage= 1.34' , Surface Width= 3.78'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 143.64 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 75.00', Outlet Invert= 74.00'



Reach 1Ri: Inlet Pipe



Summary for Reach 1Ro: outlet

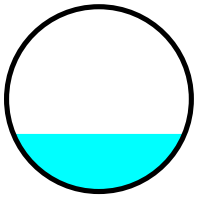
[52] Hint: Inlet/Outlet conditions not evaluated

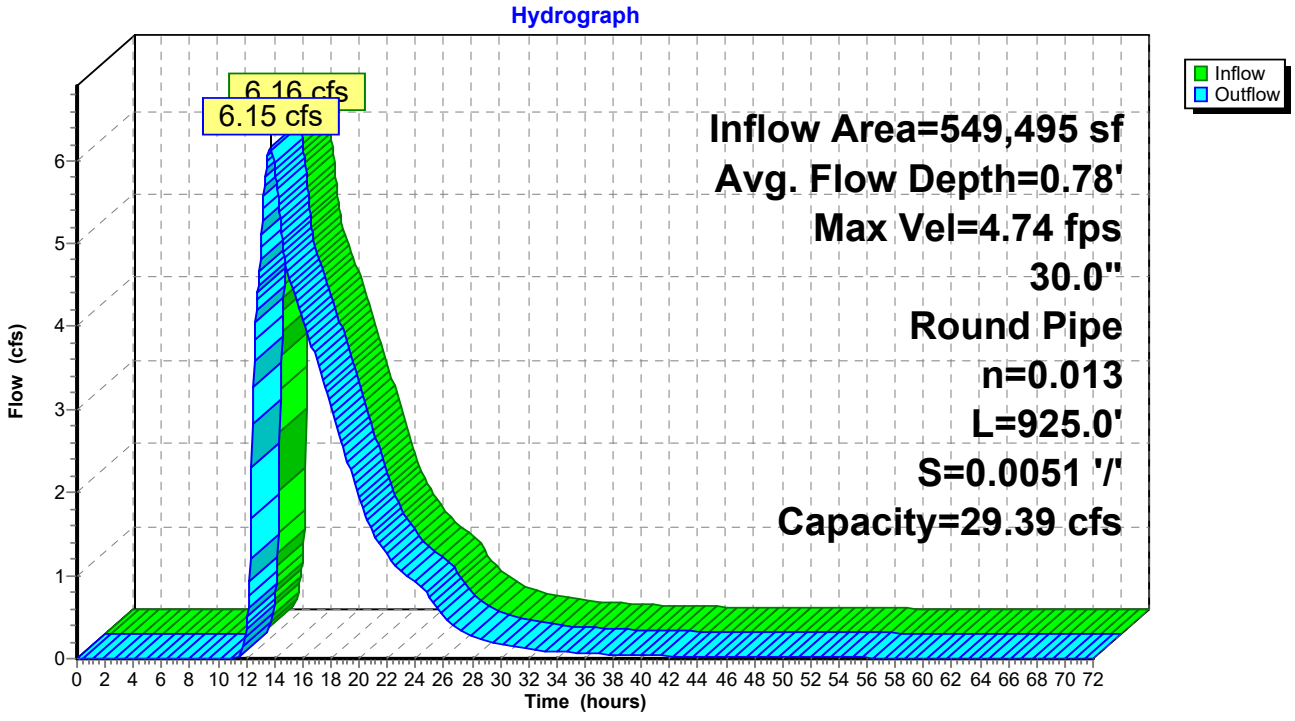
Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth > 3.10" for 10-Year _2100 event
Inflow = 6.16 cfs @ 13.60 hrs, Volume= 141,837 cf
Outflow = 6.15 cfs @ 13.70 hrs, Volume= 141,826 cf, Atten= 0%, Lag= 5.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.74 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 1.57 fps, Avg. Travel Time= 9.8 min

Peak Storage= 1,202 cf @ 13.64 hrs
Average Depth at Peak Storage= 0.78' , Surface Width= 2.31'
Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 29.39 cfs

30.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 925.0' Slope= 0.0051 '/'
Inlet Invert= 70.75', Outlet Invert= 66.00'





Summary for Reach 2Ri: Inlet Pipe

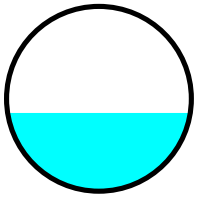
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 3.15" for 10-Year _2100 event
Inflow = 53.60 cfs @ 12.31 hrs, Volume= 238,680 cf
Outflow = 53.29 cfs @ 12.32 hrs, Volume= 238,720 cf, Atten= 1%, Lag= 0.3 min
Routed to Pond 8P : Basin 2 Medium Case

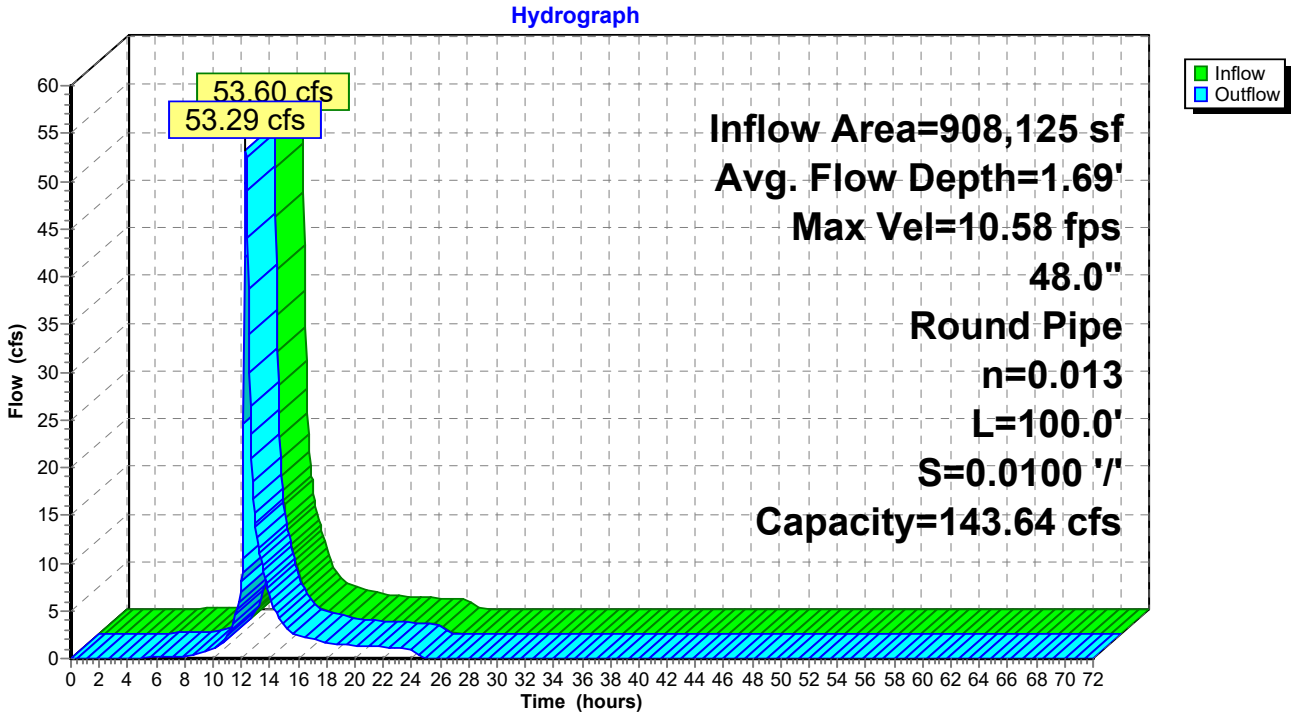
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 10.58 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.35 fps, Avg. Travel Time= 0.5 min

Peak Storage= 504 cf @ 12.31 hrs
Average Depth at Peak Storage= 1.69' , Surface Width= 3.95'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 143.64 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 70.00', Outlet Invert= 69.00'



Reach 2Ri: Inlet Pipe



Summary for Reach 2Ro: Outlet

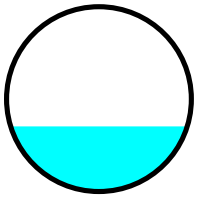
[52] Hint: Inlet/Outlet conditions not evaluated

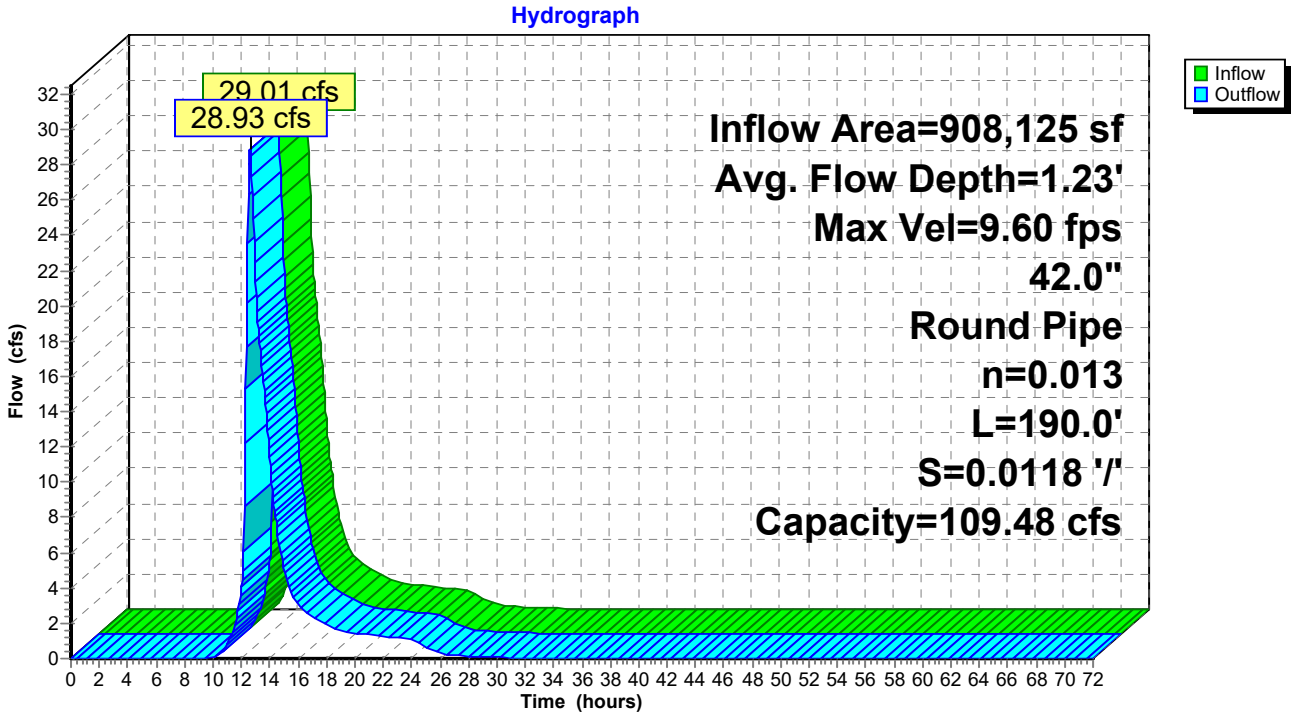
Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 3.09" for 10-Year _2100 event
Inflow = 29.01 cfs @ 12.61 hrs, Volume= 233,910 cf
Outflow = 28.93 cfs @ 12.62 hrs, Volume= 233,911 cf, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 9.60 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.02 fps, Avg. Travel Time= 1.6 min

Peak Storage= 573 cf @ 12.62 hrs
Average Depth at Peak Storage= 1.23' , Surface Width= 3.34'
Bank-Full Depth= 3.50' Flow Area= 9.6 sf, Capacity= 109.48 cfs

42.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 190.0' Slope= 0.0118 '/'
Inlet Invert= 65.75', Outlet Invert= 63.50'





Summary for Pond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 492,891 sf, 8.90% Impervious, Inflow Depth = 3.59" for 10-Year _2100 event
Inflow = 33.82 cfs @ 12.29 hrs, Volume= 147,639 cf
Outflow = 33.67 cfs @ 12.30 hrs, Volume= 145,712 cf, Atten= 0%, Lag= 0.4 min
Primary = 12.46 cfs @ 12.30 hrs, Volume= 124,928 cf
Routed to Link 1L : Combined Flows
Secondary = 21.21 cfs @ 12.30 hrs, Volume= 20,784 cf
Routed to Link 1L : Combined Flows
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.45' @ 12.30 hrs Surf.Area= 6,125 sf Storage= 13,586 cf

Plug-Flow detention time= 23.0 min calculated for 145,611 cf (99% of inflow)
Center-of-Mass det. time= 15.2 min (845.9 - 830.7)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,737 cf	x 9.00 = 15,635 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.75	175	100.0	217	497	363

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 9.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 9.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 9.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 9.00** 2 End Contraction(s)

Primary OutFlow Max=12.46 cfs @ 12.30 hrs HW=100.45' (Free Discharge)
└─**1=Culvert** (Passes 12.46 cfs of 18.64 cfs potential flow)
└─**2=6" HDPE Underdrain** (Barrel Controls 12.46 cfs @ 7.05 fps)

Secondary OutFlow Max=21.16 cfs @ 12.30 hrs HW=100.45' (Free Discharge)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 21.16 cfs @ 1.75 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=93.75' (Free Discharge)
└─**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

ond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

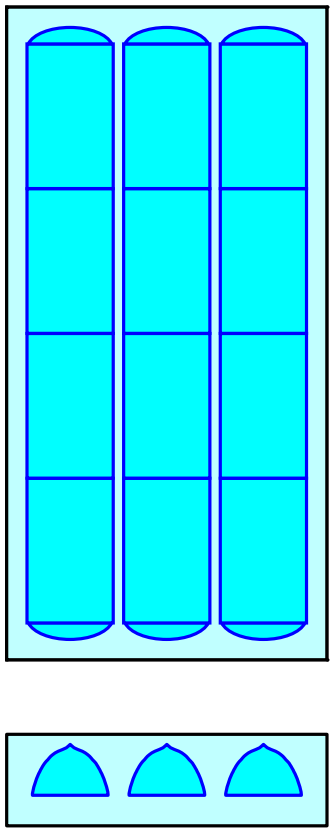
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

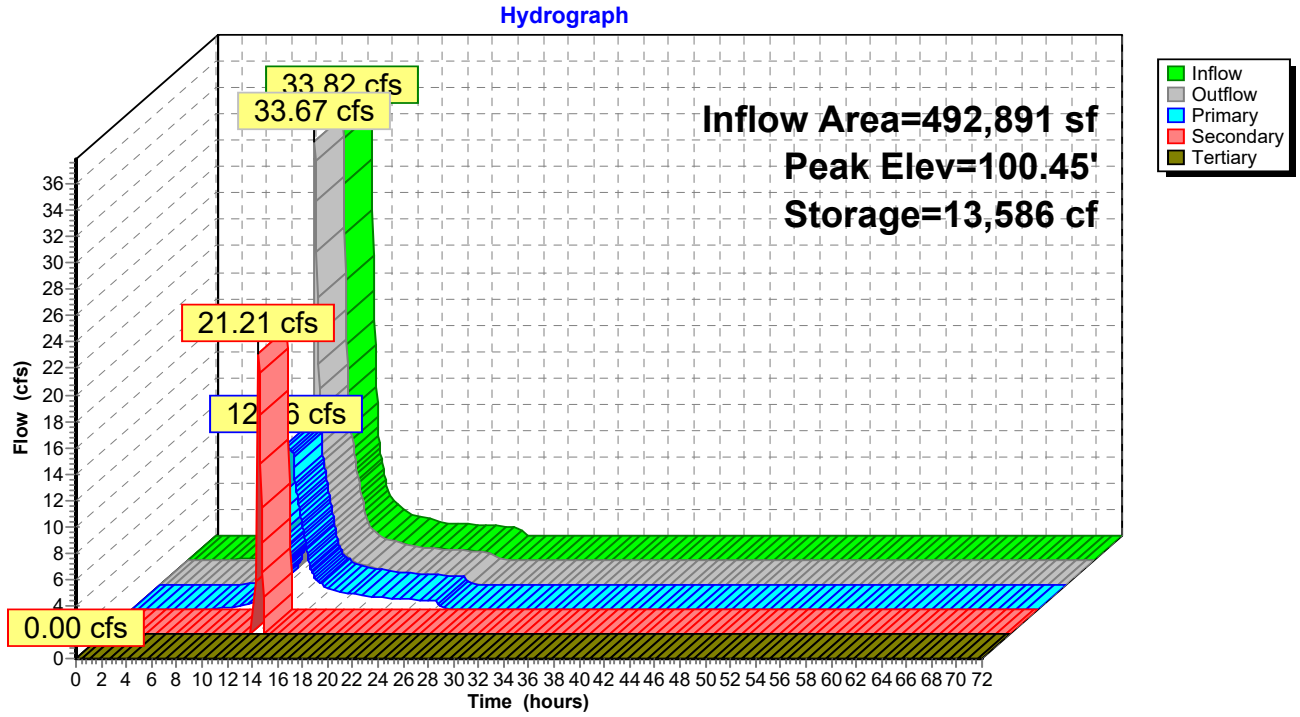
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 2P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 21,359 sf,100.00% Impervious, Inflow Depth = 5.97" for 10-Year _2100 event
Inflow = 3.15 cfs @ 12.13 hrs, Volume= 10,629 cf
Outflow = 1.89 cfs @ 12.22 hrs, Volume= 10,629 cf, Atten= 40%, Lag= 5.9 min
Discarded = 0.06 cfs @ 12.15 hrs, Volume= 7,306 cf
Primary = 1.83 cfs @ 12.22 hrs, Volume= 3,323 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 100.11' @ 12.22 hrs Surf.Area= 5,000 sf Storage= 4,283 cf

Plug-Flow detention time= 449.4 min calculated for 10,622 cf (100% of inflow)
Center-of-Mass det. time= 450.0 min (1,195.3 - 745.3)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 10.00 = 6,220 cf Total Available Storage

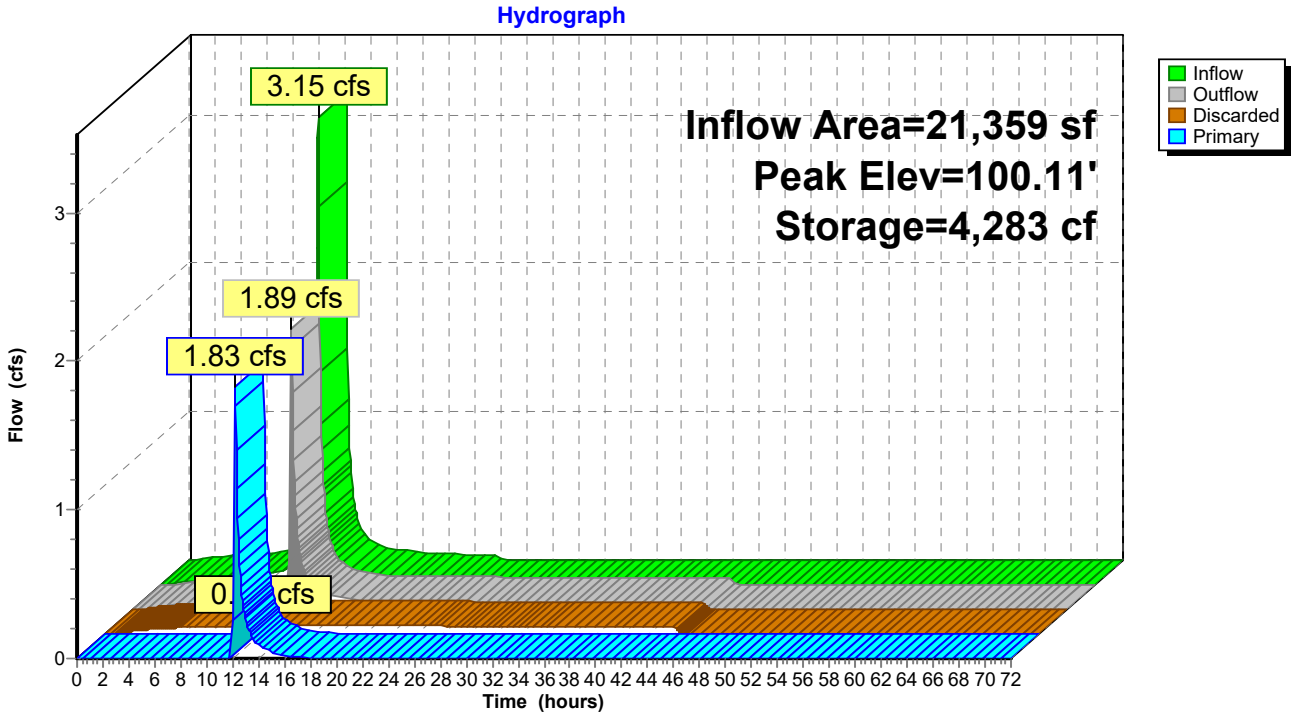
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 10.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.06 cfs @ 12.15 hrs HW=100.06' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=1.70 cfs @ 12.22 hrs HW=100.11' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 1.70 cfs @ 0.80 fps)

Pond 2P: Basic Rain Garden (infiltration only)



Summary for Pond 3P: Basic Porous Pavement (infiltration only)

Inflow Area = 35,245 sf,100.00% Impervious, Inflow Depth = 5.97" for 10-Year _2100 event
Inflow = 5.20 cfs @ 12.13 hrs, Volume= 17,539 cf
Outflow = 0.41 cfs @ 11.15 hrs, Volume= 17,539 cf, Atten= 92%, Lag= 0.0 min
Discarded = 0.41 cfs @ 11.15 hrs, Volume= 17,539 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 99.83' @ 13.14 hrs Surf.Area= 35,245 sf Storage= 6,612 cf

Plug-Flow detention time= 112.7 min calculated for 17,539 cf (100% of inflow)
Center-of-Mass det. time= 112.6 min (858.0 - 745.3)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	16,001 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

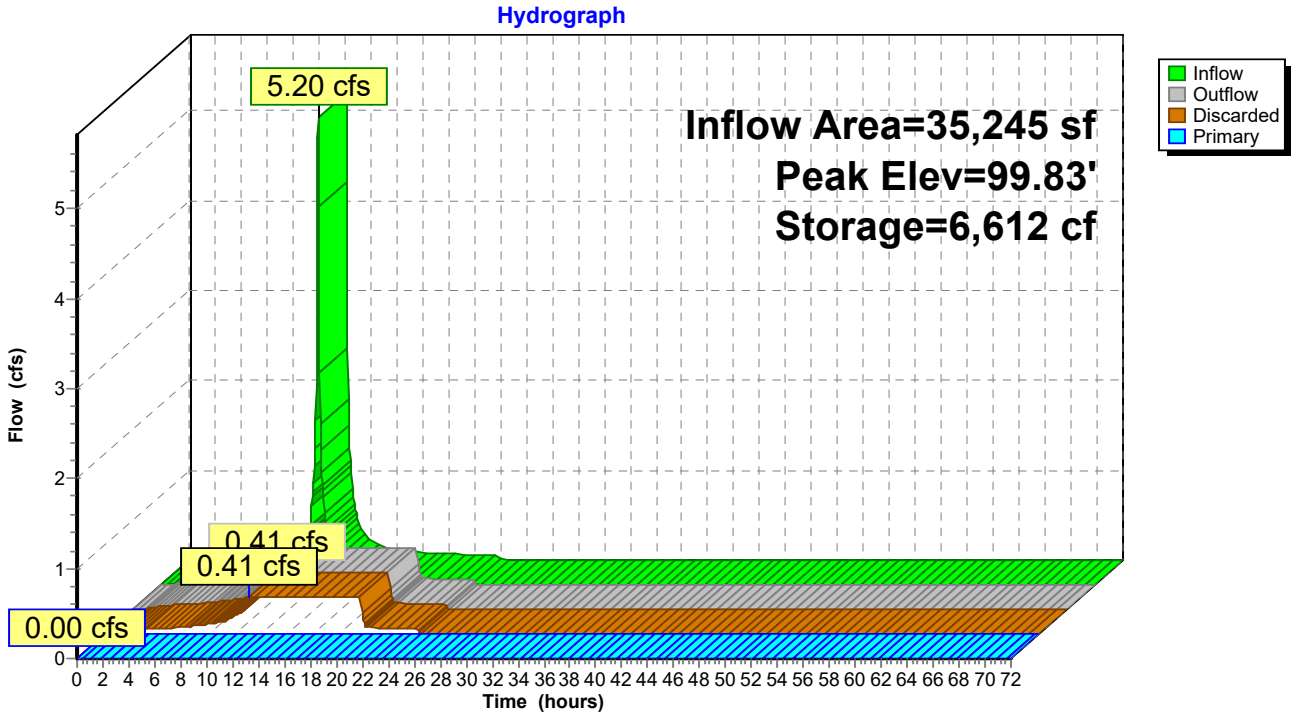
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	35,245	0.0	0	0
99.75	35,245	35.0	6,168	6,168
99.83	35,245	15.0	423	6,591
100.01	35,245	15.0	952	7,542
100.25	35,245	100.0	8,459	16,001

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.41 cfs @ 11.15 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Controls 0.00 cfs)

Pond 3P: Basic Porous Pavement (infiltration only)



Summary for Pond 4P: Basin 1 Medium Case

[63] Warning: Exceeded Reach 1Ri INLET depth by 1.00' @ 14.15 hrs

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 3.26" for 10-Year _2100 event
Inflow = 34.79 cfs @ 12.31 hrs, Volume= 149,077 cf
Outflow = 6.16 cfs @ 13.60 hrs, Volume= 141,837 cf, Atten= 82%, Lag= 77.7 min
Primary = 4.99 cfs @ 13.60 hrs, Volume= 137,247 cf
Routed to Reach 1Ro : outlet
Secondary = 1.16 cfs @ 13.60 hrs, Volume= 4,590 cf
Routed to Reach 1Ro : outlet
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 1Ro : outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 76.49' @ 13.60 hrs Surf.Area= 32,552 sf Storage= 72,539 cf

Plug-Flow detention time= 249.0 min calculated for 141,837 cf (95% of inflow)
Center-of-Mass det. time= 221.5 min (1,066.3 - 844.8)

Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	162,840 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
74.00	25,611	0	0
79.00	39,525	162,840	162,840

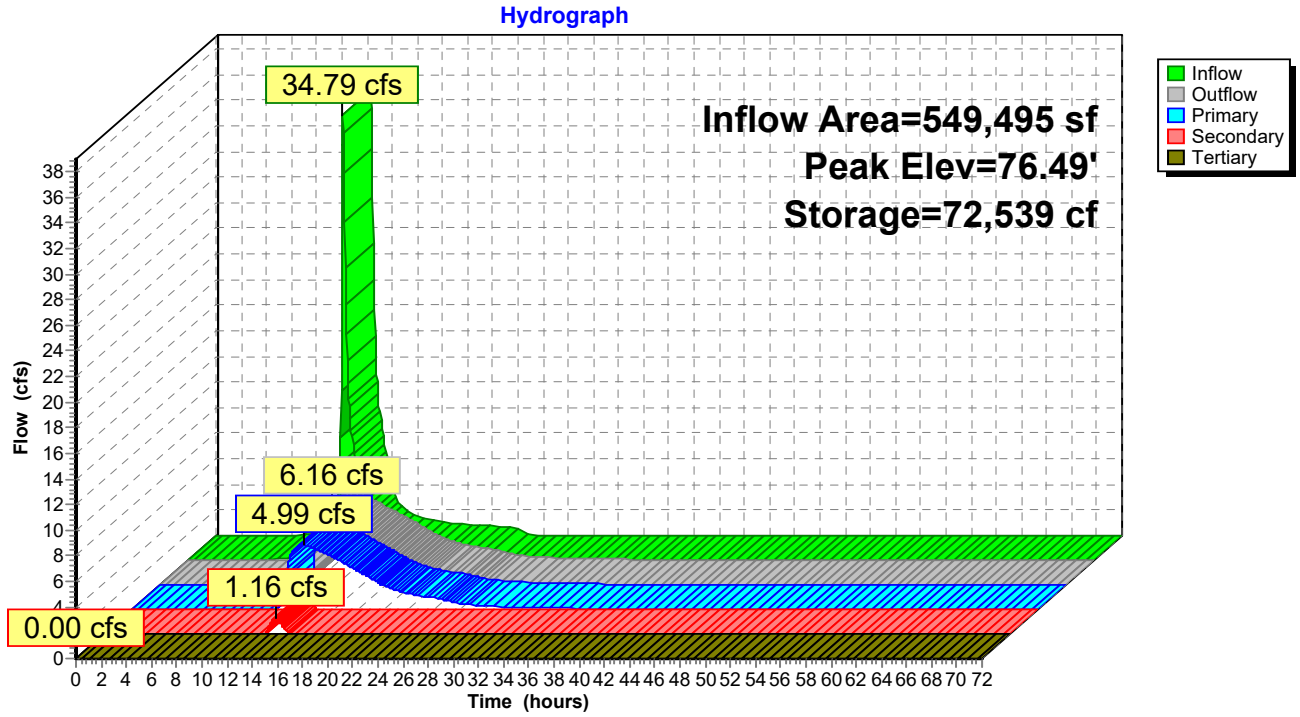
Device	Routing	Invert	Outlet Devices
#1	Primary	74.25'	**12.0" Vert. Low Flow Orifice** C= 0.600 Limited to weir flow at low heads
#2	Secondary	76.25'	**18.0" W x 12.0" H Vert. 2-YR Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	78.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.99 cfs @ 13.60 hrs HW=76.49' (Free Discharge)
1=Low Flow Orifice (Orifice Controls 4.99 cfs @ 6.36 fps)

Secondary OutFlow Max=1.16 cfs @ 13.60 hrs HW=76.49' (Free Discharge)
2=2-YR Orifice (Orifice Controls 1.16 cfs @ 1.59 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=74.00' (Free Discharge)
3=Orifice/Grate (Controls 0.00 cfs)

Pond 4P: Basin 1 Medium Case



Summary for Pond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 759,404 sf, 11.16% Impervious, Inflow Depth = 3.65" for 10-Year _2100 event
Inflow = 50.39 cfs @ 12.32 hrs, Volume= 231,205 cf
Outflow = 50.28 cfs @ 12.32 hrs, Volume= 230,113 cf, Atten= 0%, Lag= 0.2 min
Primary = 13.98 cfs @ 12.32 hrs, Volume= 178,452 cf
Routed to Link 2L : Combined Flows
Secondary = 33.13 cfs @ 12.32 hrs, Volume= 50,003 cf
Routed to Link 2L : Combined Flows
Tertiary = 3.17 cfs @ 12.32 hrs, Volume= 1,658 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.56' @ 12.32 hrs Surf.Area= 6,805 sf Storage= 15,297 cf

Plug-Flow detention time= 15.7 min calculated for 230,113 cf (100% of inflow)
Center-of-Mass det. time= 12.5 min (842.1 - 829.6)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	365 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,606 cf	x 10.00 = 16,060 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.00	175	100.0	86	365	327

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 10.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 10.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 10.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 10.00** 2 End Contraction(s)

Primary OutFlow Max=13.97 cfs @ 12.32 hrs HW=100.56' (Free Discharge)
└─**1=Culvert** (Passes 13.97 cfs of 20.91 cfs potential flow)
└─**2=6" HDPE Underdrain** (Barrel Controls 13.97 cfs @ 7.12 fps)

Secondary OutFlow Max=32.83 cfs @ 12.32 hrs HW=100.56' (Free Discharge)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 32.83 cfs @ 1.95 fps)

Tertiary OutFlow Max=2.89 cfs @ 12.32 hrs HW=100.56' (Free Discharge)
└─**4=Sharp-Crested Rectangular Weir** (Weir Controls 2.89 cfs @ 0.80 fps)

ond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

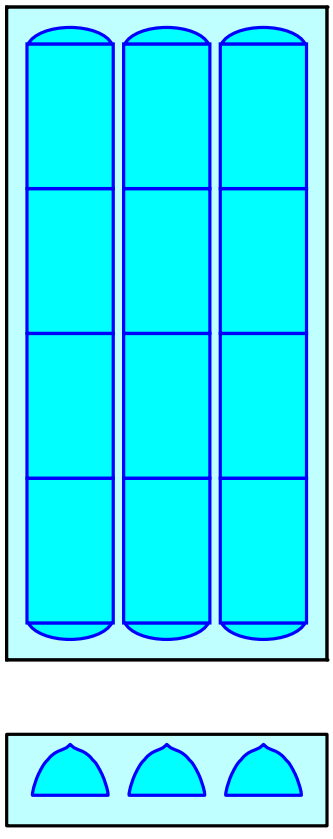
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

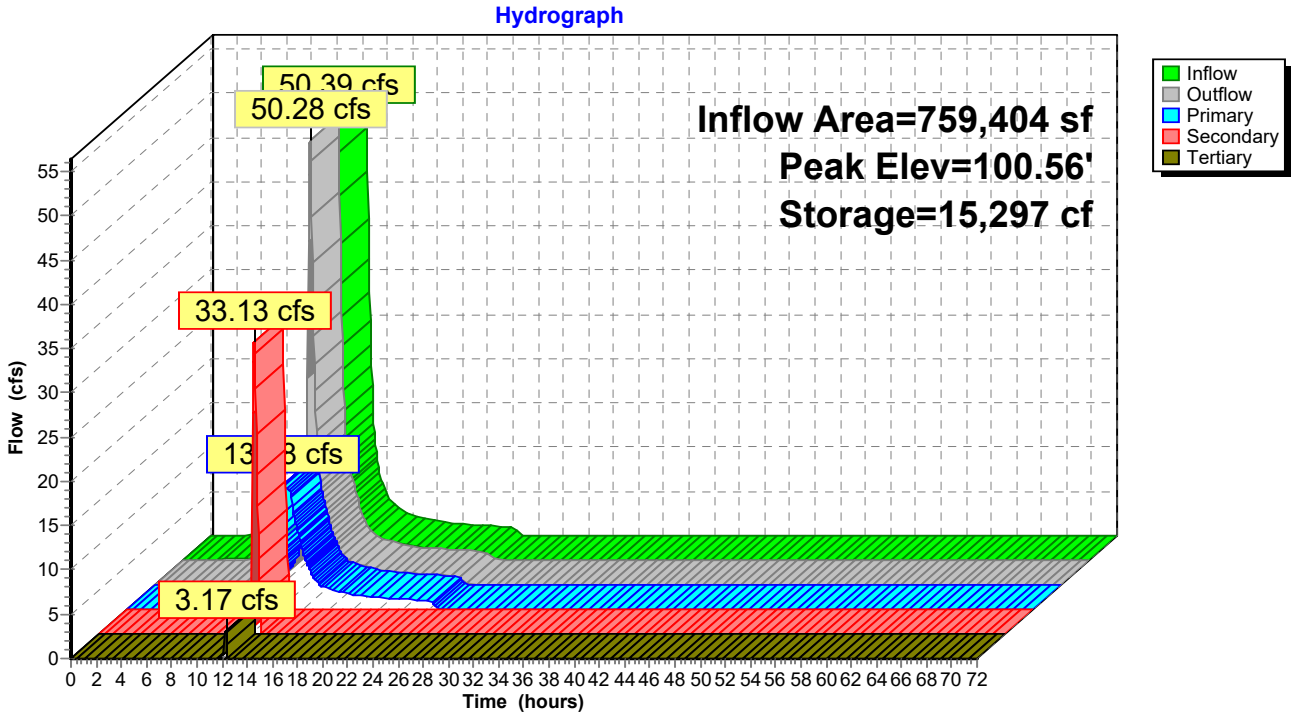
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 6P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 53,997 sf,100.00% Impervious, Inflow Depth = 5.97" for 10-Year _2100 event
Inflow = 7.96 cfs @ 12.13 hrs, Volume= 26,871 cf
Outflow = 4.87 cfs @ 12.22 hrs, Volume= 26,875 cf, Atten= 39%, Lag= 5.7 min
Discarded = 0.14 cfs @ 12.15 hrs, Volume= 18,308 cf
Primary = 4.73 cfs @ 12.22 hrs, Volume= 8,567 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 100.11' @ 12.22 hrs Surf.Area= 12,500 sf Storage= 10,734 cf

Plug-Flow detention time= 445.9 min calculated for 26,856 cf (100% of inflow)
Center-of-Mass det. time= 446.5 min (1,191.9 - 745.3)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 25.00 = 15,550 cf Total Available Storage

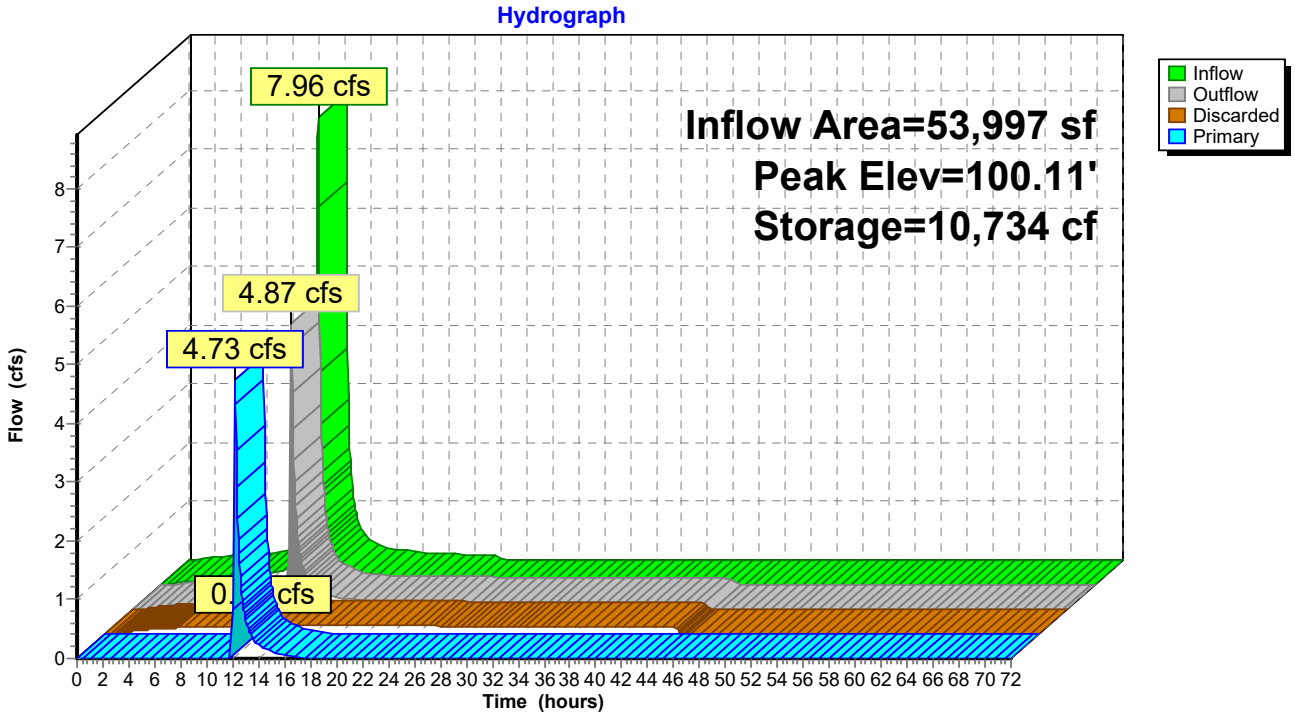
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 25.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.14 cfs @ 12.15 hrs HW=100.07' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=4.44 cfs @ 12.22 hrs HW=100.11' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 4.44 cfs @ 0.81 fps)

Pond 6P: Basic Rain Garden (infiltration only)



Summary for Pond 7P: Basic Porous Pavement (infiltration only)

Inflow Area = 94,724 sf,100.00% Impervious, Inflow Depth = 5.97" for 10-Year _2100 event
Inflow = 13.97 cfs @ 12.13 hrs, Volume= 47,138 cf
Outflow = 1.10 cfs @ 11.15 hrs, Volume= 47,138 cf, Atten= 92%, Lag= 0.0 min
Discarded = 1.10 cfs @ 11.15 hrs, Volume= 47,138 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 99.83' @ 13.14 hrs Surf.Area= 94,724 sf Storage= 17,770 cf

Plug-Flow detention time= 112.7 min calculated for 47,138 cf (100% of inflow)
Center-of-Mass det. time= 112.6 min (858.0 - 745.3)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	43,005 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

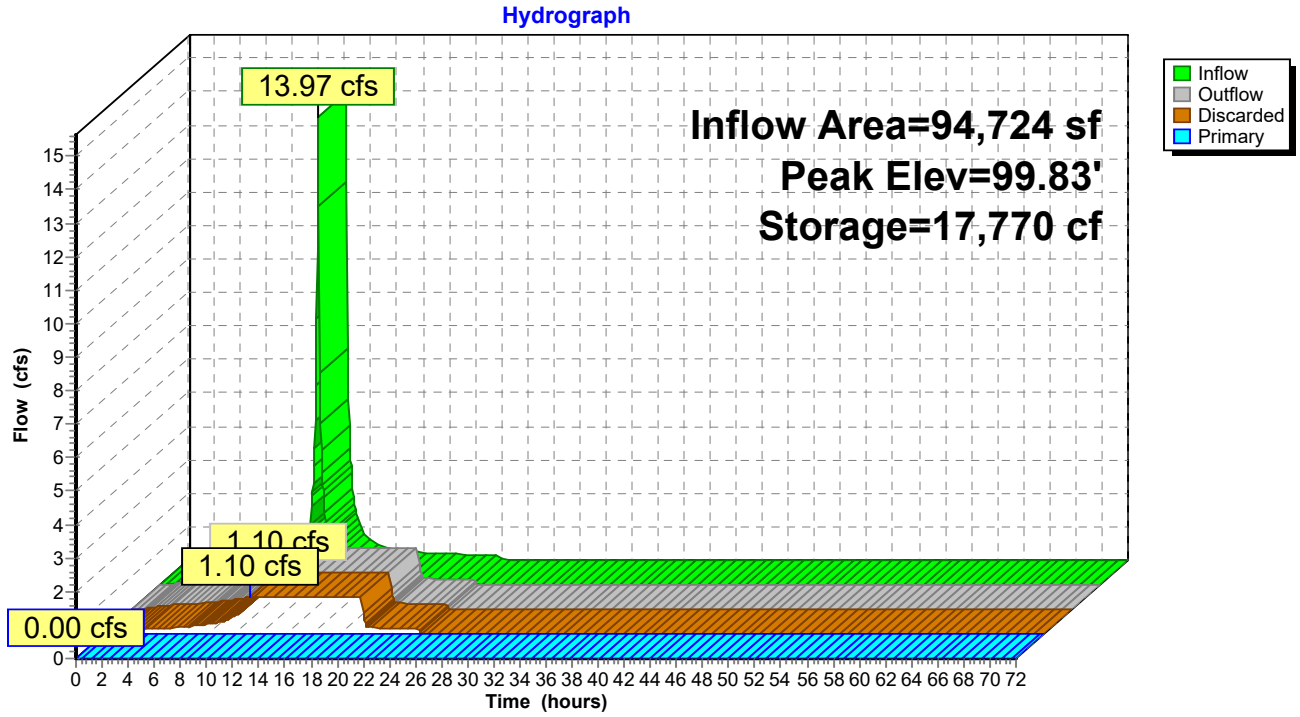
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	94,724	0.0	0	0
99.75	94,724	35.0	16,577	16,577
99.83	94,724	15.0	1,137	17,713
100.01	94,724	15.0	2,558	20,271
100.25	94,724	100.0	22,734	43,005

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=1.10 cfs @ 11.15 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 1.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Controls 0.00 cfs)

Pond 7P: Basic Porous Pavement (infiltration only)



Summary for Pond 8P: Basin 2 Medium Case

[63] Warning: Exceeded Reach 2Ri INLET depth by 0.65' @ 12.80 hrs

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 3.15" for 10-Year _2100 event
Inflow = 53.29 cfs @ 12.32 hrs, Volume= 238,720 cf
Outflow = 29.01 cfs @ 12.61 hrs, Volume= 233,910 cf, Atten= 46%, Lag= 17.9 min
Primary = 22.44 cfs @ 12.61 hrs, Volume= 224,402 cf
Routed to Reach 2Ro : Outlet
Secondary = 6.58 cfs @ 12.61 hrs, Volume= 9,508 cf
Routed to Reach 2Ro : Outlet
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 2Ro : Outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 71.74' @ 12.61 hrs Surf.Area= 25,644 sf Storage= 60,972 cf

Plug-Flow detention time= 73.4 min calculated for 233,747 cf (98% of inflow)
Center-of-Mass det. time= 62.6 min (902.7 - 840.1)

Volume	Invert	Avail.Storage	Storage Description
#1	69.00'	125,280 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.00	18,889	0	0
74.00	31,223	125,280	125,280

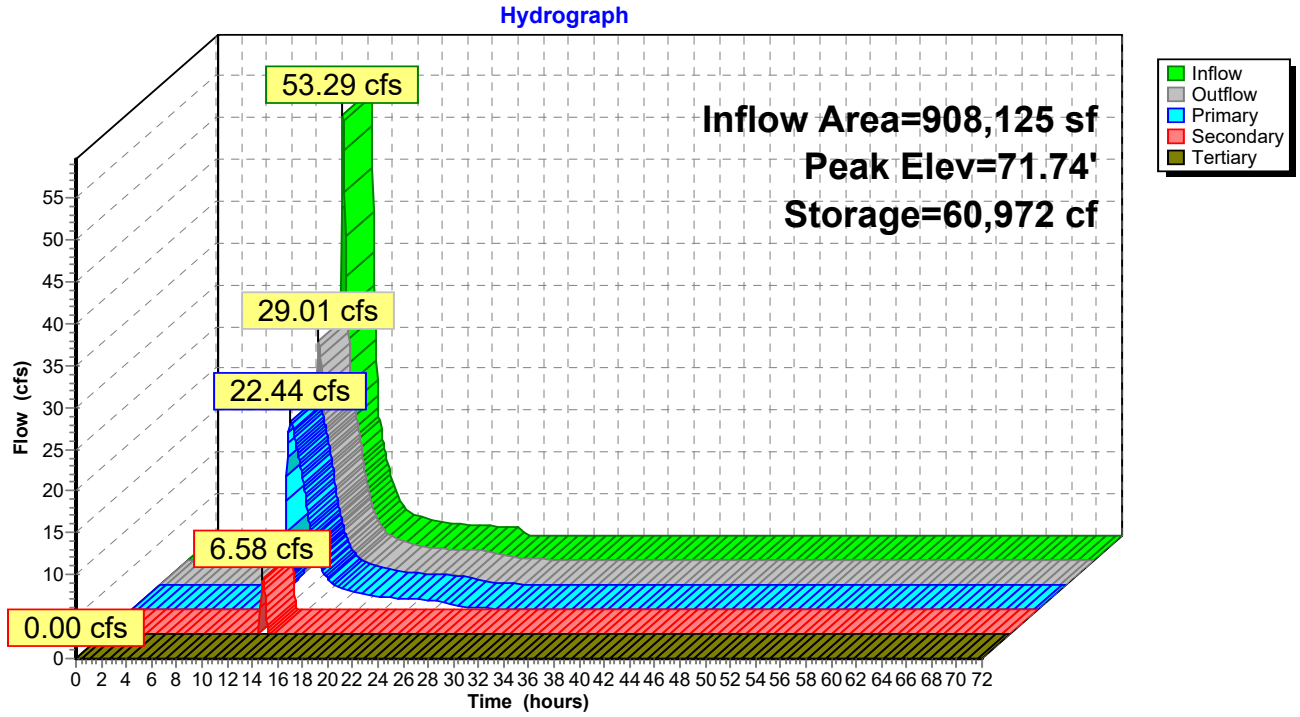
Device	Routing	Invert	Outlet Devices
#1	Primary	69.25'	**18.0" Vert. Low Flow Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Secondary	71.25'	**24.0" W x 18.0" H Vert. 2-YR Orifice X 3.00** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	73.75'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=22.42 cfs @ 12.61 hrs HW=71.74' (Free Discharge)
1=Low Flow Orifice (Orifice Controls 22.42 cfs @ 6.34 fps)

Secondary OutFlow Max=6.51 cfs @ 12.61 hrs HW=71.74' (Free Discharge)
2=2-YR Orifice (Orifice Controls 6.51 cfs @ 2.24 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.00' (Free Discharge)
3=Orifice/Grate (Controls 0.00 cfs)

Pond 8P: Basin 2 Medium Case



Summary for Pond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 840,092 sf, 1.06% Impervious, Inflow Depth = 3.39" for 10-Year _2100 event
Inflow = 46.75 cfs @ 12.40 hrs, Volume= 237,328 cf
Outflow = 46.75 cfs @ 12.40 hrs, Volume= 237,098 cf, Atten= 0%, Lag= 0.1 min
Primary = 2.94 cfs @ 12.40 hrs, Volume= 103,986 cf
Routed to Link 3L : dA3
Secondary = 21.33 cfs @ 12.40 hrs, Volume= 86,456 cf
Routed to Link 3L : dA3
Tertiary = 22.48 cfs @ 12.40 hrs, Volume= 46,656 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 101.20' @ 12.40 hrs Surf.Area= 1,361 sf Storage= 3,282 cf

Plug-Flow detention time= 7.7 min calculated for 236,934 cf (100% of inflow)
Center-of-Mass det. time= 7.2 min (856.4 - 849.2)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,737 cf	x 2.00 = 3,475 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.75	175	100.0	217	497	363

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 2.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 2.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 2.00** 2 End Contraction(s)

Primary OutFlow Max=2.94 cfs @ 12.40 hrs HW=101.20' (Free Discharge)
↑—**1=Culvert** (Passes 2.94 cfs of 4.40 cfs potential flow)
↑—**2=6" HDPE Underdrain** (Barrel Controls 2.94 cfs @ 7.49 fps)

Secondary OutFlow Max=21.31 cfs @ 12.40 hrs HW=101.20' (Free Discharge)
↑—**3=Broad-Crested Rectangular Weir** (Weir Controls 21.31 cfs @ 2.96 fps)

Tertiary OutFlow Max=22.46 cfs @ 12.40 hrs HW=101.20' (Free Discharge)
↑—**4=Sharp-Crested Rectangular Weir** (Weir Controls 22.46 cfs @ 2.74 fps)

ond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

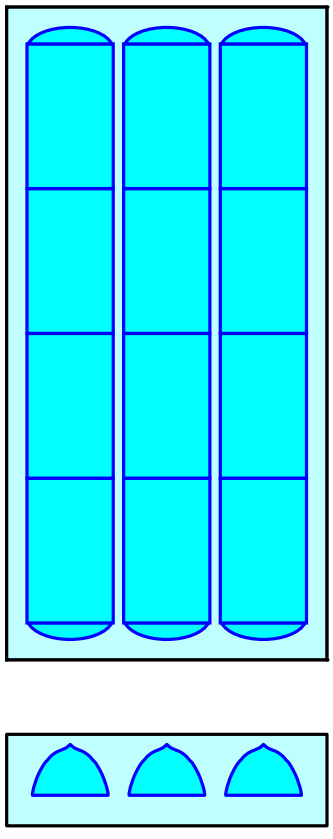
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

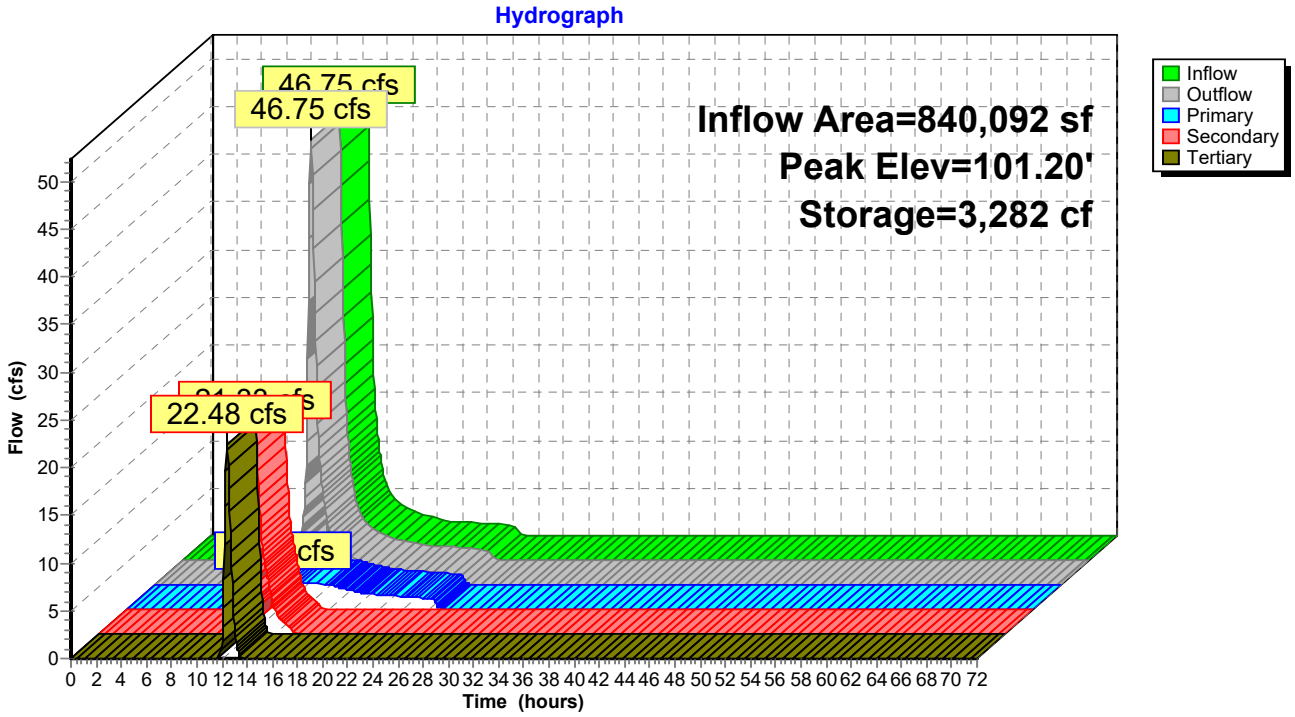
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 10P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 22,074 sf,100.00% Impervious, Inflow Depth = 5.97" for 10-Year _2100 event
Inflow = 3.25 cfs @ 12.13 hrs, Volume= 10,985 cf
Outflow = 2.50 cfs @ 12.19 hrs, Volume= 10,981 cf, Atten= 23%, Lag= 3.7 min
Discarded = 0.05 cfs @ 12.10 hrs, Volume= 6,760 cf
Primary = 2.45 cfs @ 12.19 hrs, Volume= 4,221 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 100.15' @ 12.19 hrs Surf.Area= 4,500 sf Storage= 4,005 cf

Plug-Flow detention time= 410.1 min calculated for 10,973 cf (100% of inflow)
Center-of-Mass det. time= 410.5 min (1,155.8 - 745.3)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 9.00 = 5,598 cf Total Available Storage

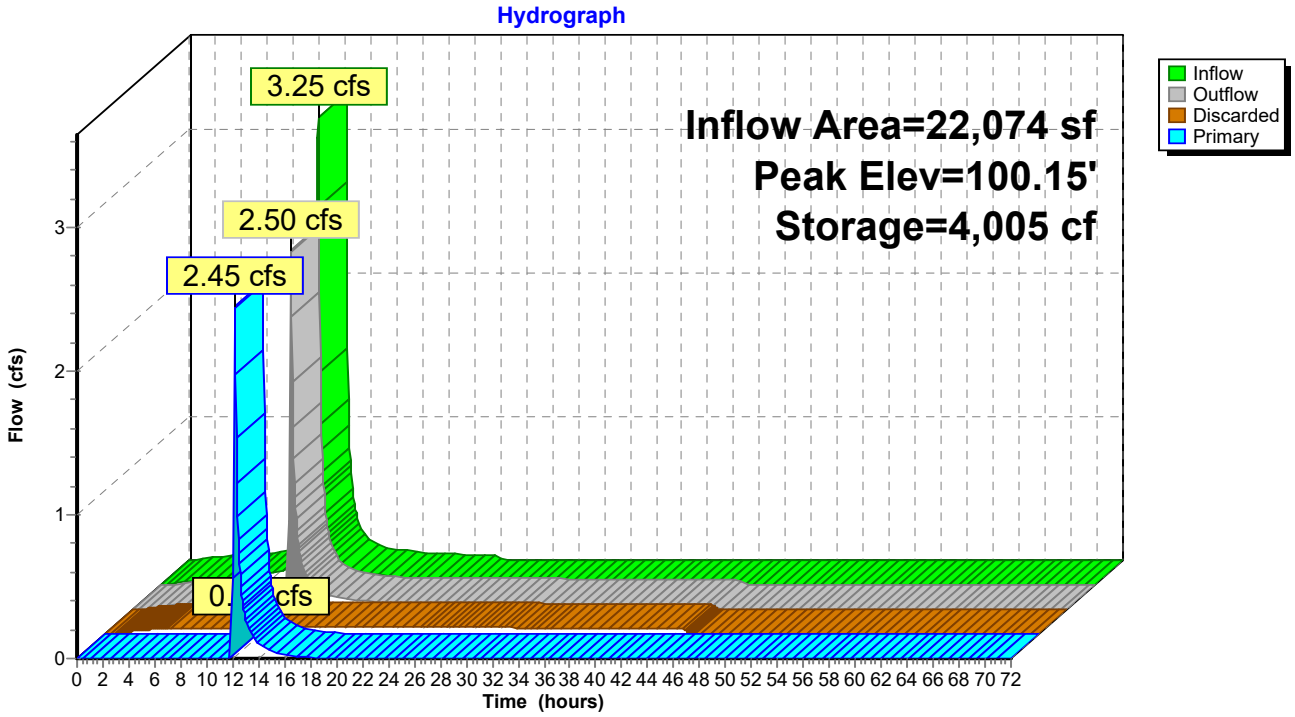
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 9.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.05 cfs @ 12.10 hrs HW=100.09' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=2.39 cfs @ 12.19 hrs HW=100.14' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 2.39 cfs @ 0.92 fps)

Pond 10P: Basic Rain Garden (infiltration only)



Summary for Pond 11P: Basic Porous Pavement (infiltration only)

Inflow Area = 85,494 sf,100.00% Impervious, Inflow Depth = 5.97" for 10-Year _2100 event
Inflow = 12.61 cfs @ 12.13 hrs, Volume= 42,545 cf
Outflow = 0.99 cfs @ 11.15 hrs, Volume= 42,545 cf, Atten= 92%, Lag= 0.0 min
Discarded = 0.99 cfs @ 11.15 hrs, Volume= 42,545 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 99.83' @ 13.14 hrs Surf.Area= 85,494 sf Storage= 16,038 cf

Plug-Flow detention time= 112.7 min calculated for 42,545 cf (100% of inflow)
Center-of-Mass det. time= 112.6 min (858.0 - 745.3)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	38,814 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

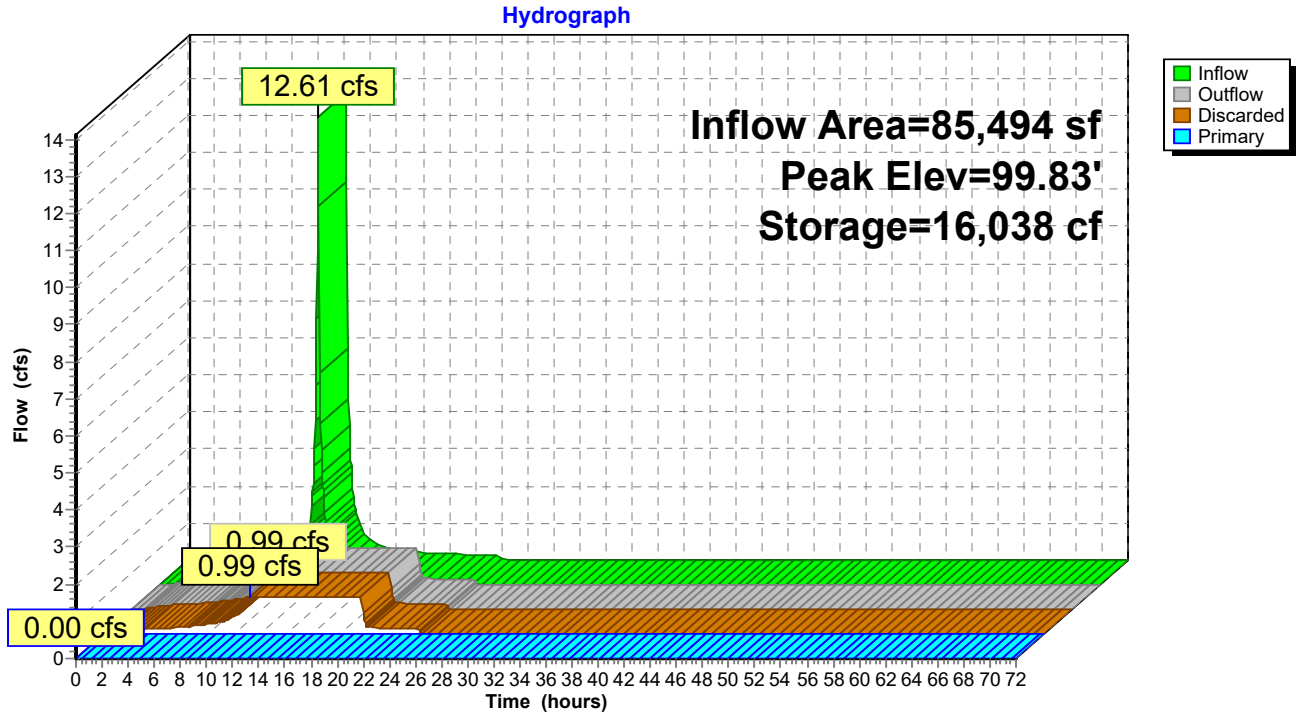
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	85,494	0.0	0	0
99.75	85,494	35.0	14,961	14,961
99.83	85,494	15.0	1,026	15,987
100.01	85,494	15.0	2,308	18,296
100.25	85,494	100.0	20,519	38,814

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.99 cfs @ 11.15 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.99 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Controls 0.00 cfs)

Pond 11P: Basic Porous Pavement (infiltration only)



Summary for Pond 12P: Basic Porous Pavement (infiltration only)

Inflow Area = 4,605 sf,100.00% Impervious, Inflow Depth = 5.97" for 10-Year _2100 event
Inflow = 0.68 cfs @ 12.13 hrs, Volume= 2,292 cf
Outflow = 0.05 cfs @ 11.20 hrs, Volume= 2,291 cf, Atten= 92%, Lag= 0.0 min
Discarded = 0.05 cfs @ 11.20 hrs, Volume= 2,291 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link 4L : DA 4: Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 99.84' @ 13.14 hrs Surf.Area= 4,605 sf Storage= 871 cf

Plug-Flow detention time= 115.1 min calculated for 2,290 cf (100% of inflow)
Center-of-Mass det. time= 115.0 min (860.3 - 745.3)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	4,393 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

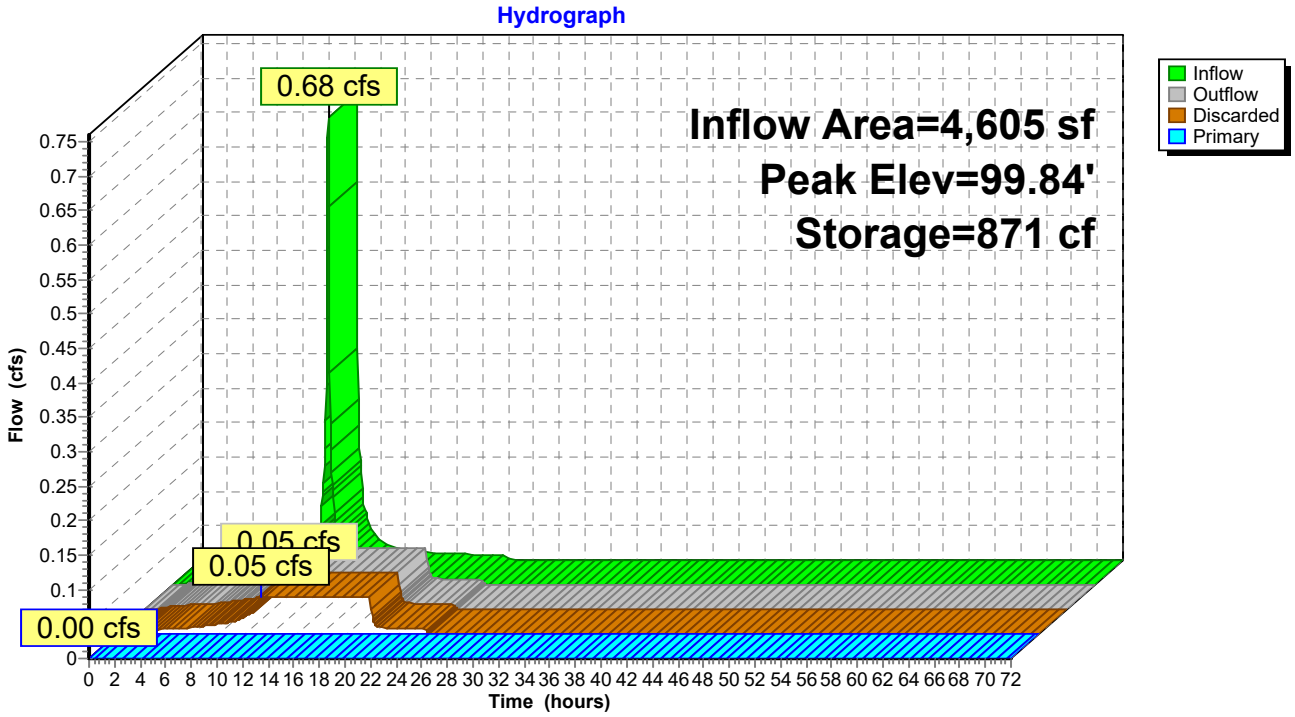
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	4,605	0.0	0	0
99.75	4,605	35.0	806	806
99.83	4,605	15.0	55	861
100.01	4,605	15.0	124	985
100.25	4,605	100.0	1,105	2,091
100.75	4,605	100.0	2,303	4,393

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.05 cfs @ 11.20 hrs HW=99.27' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=99.25' (Free Discharge)
2=Edge of Porous Asphalt (Controls 0.00 cfs)

Pond 12P: Basic Porous Pavement (infiltration only)

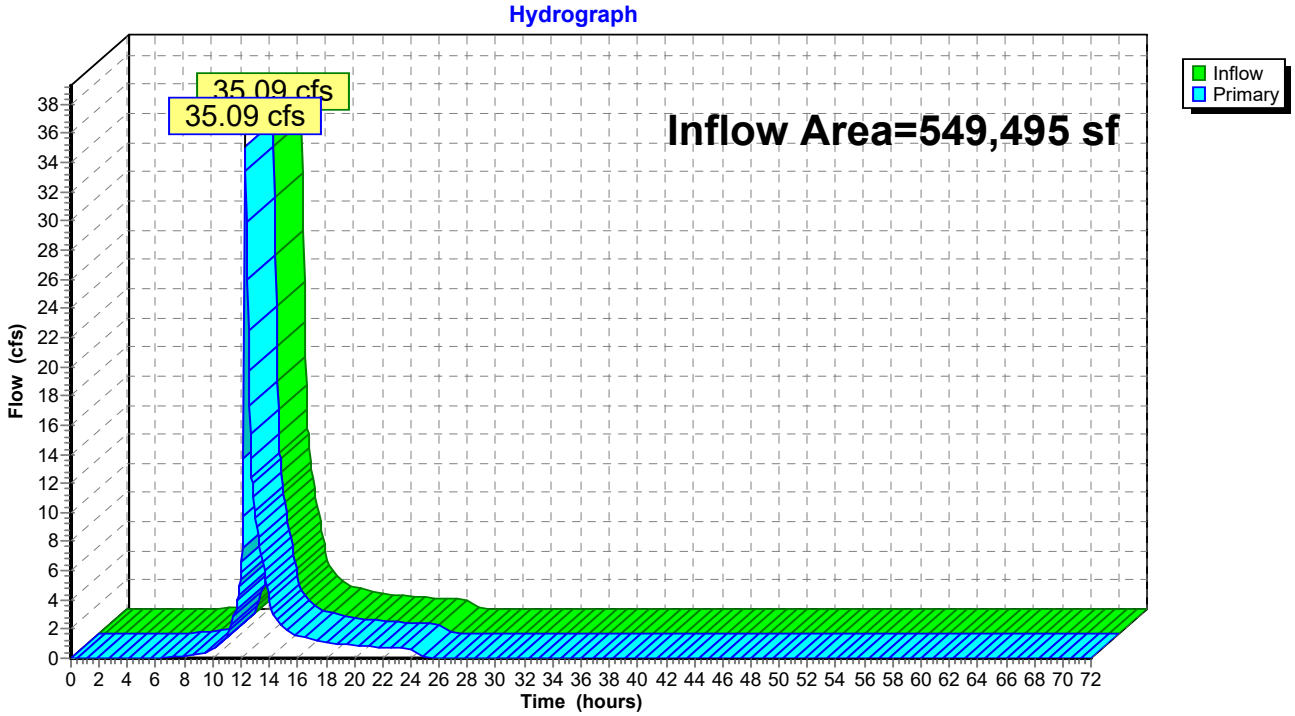


Summary for Link 1L: Combined Flows

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 3.25" for 10-Year _2100 event
Inflow = 35.09 cfs @ 12.29 hrs, Volume= 149,036 cf
Primary = 35.09 cfs @ 12.29 hrs, Volume= 149,036 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 1Ri : Inlet Pipe

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1L: Combined Flows

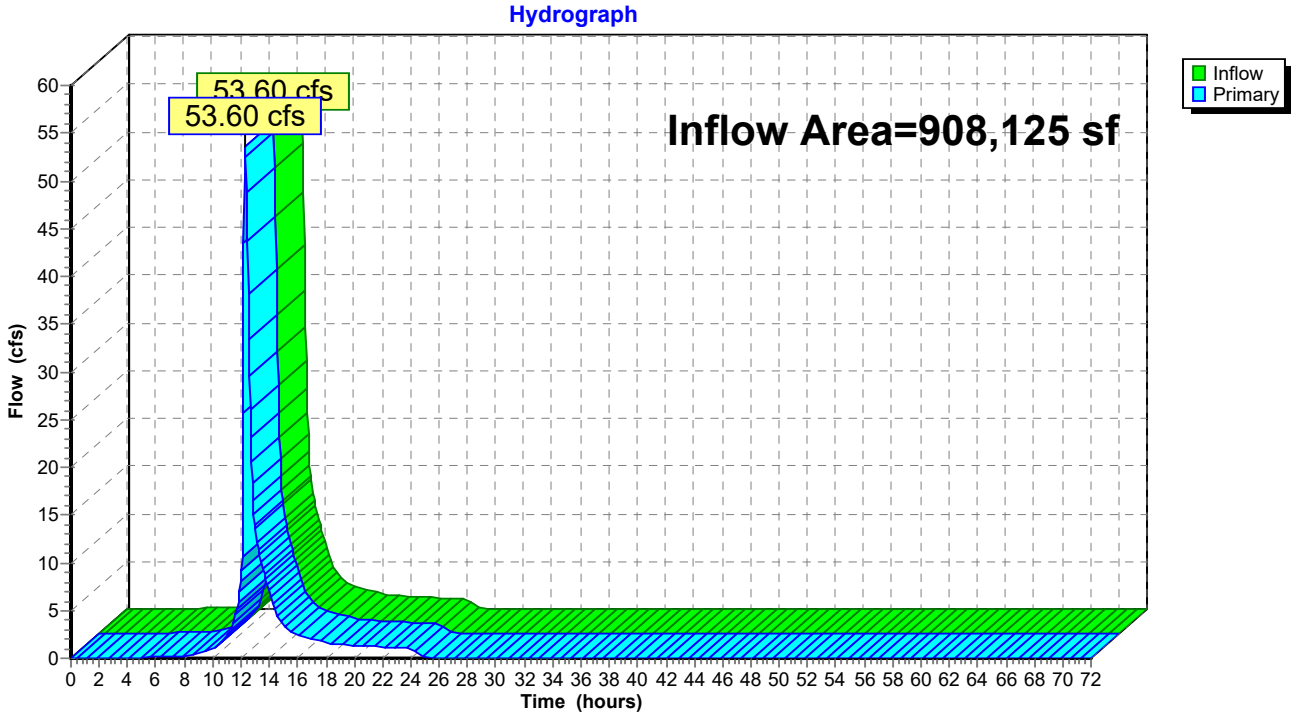


Summary for Link 2L: Combined Flows

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 3.15" for 10-Year _2100 event
Inflow = 53.60 cfs @ 12.31 hrs, Volume= 238,680 cf
Primary = 53.60 cfs @ 12.31 hrs, Volume= 238,680 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 2Ri : Inlet Pipe

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 2L: Combined Flows

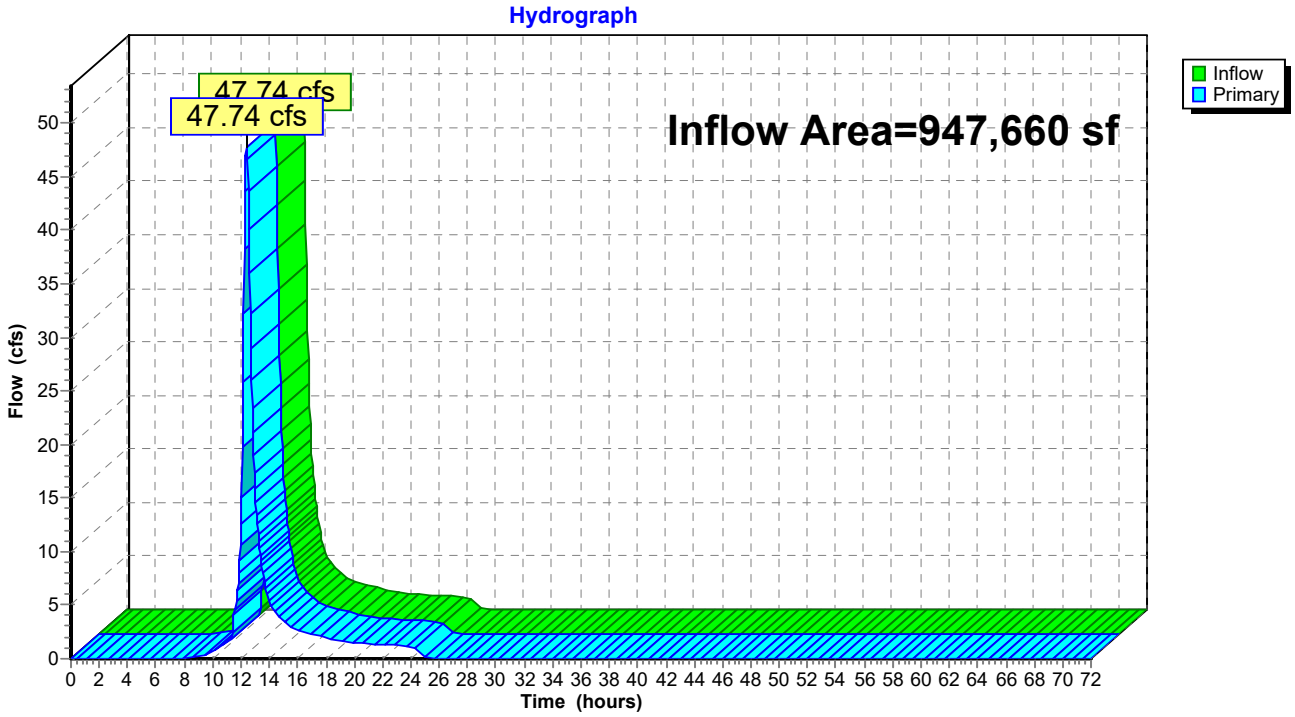


Summary for Link 3L: dA3

Inflow Area = 947,660 sf, 12.29% Impervious, Inflow Depth = 3.06" for 10-Year _2100 event
Inflow = 47.74 cfs @ 12.40 hrs, Volume= 241,319 cf
Primary = 47.74 cfs @ 12.40 hrs, Volume= 241,319 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 3L: dA3

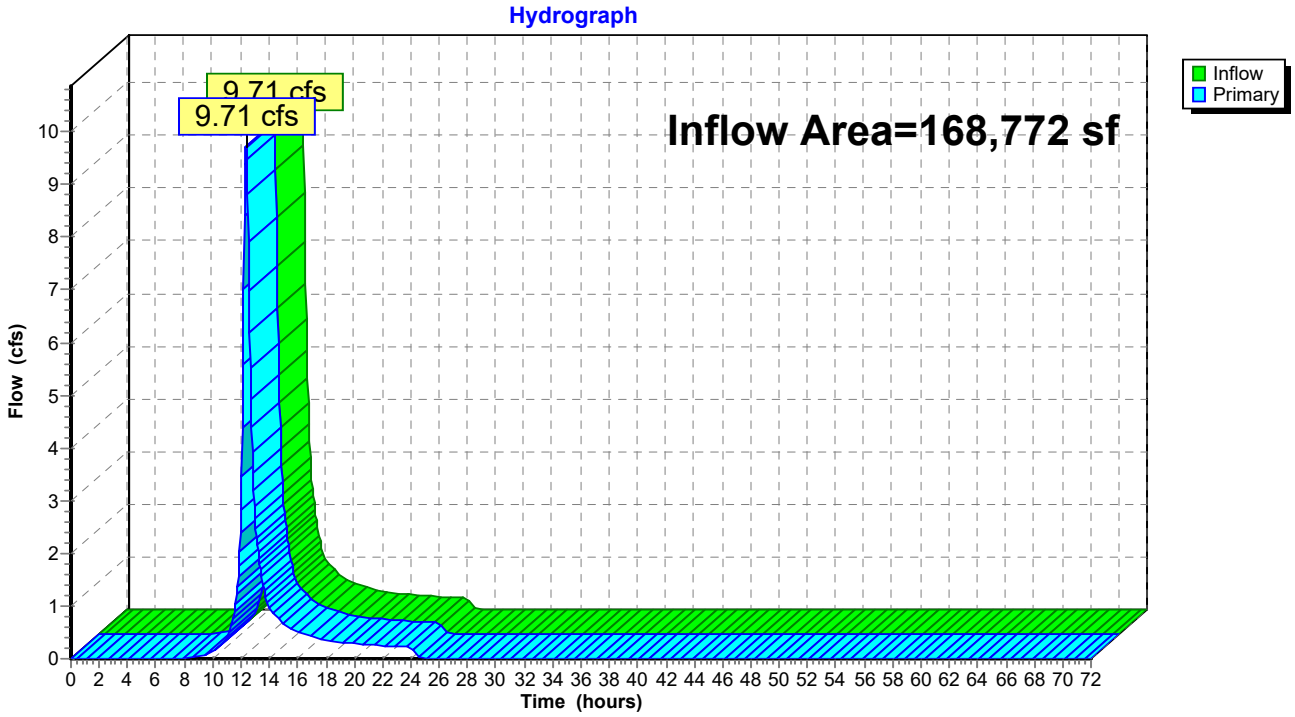


Summary for Link 4L: DA 4: Combined Flows

Inflow Area = 168,772 sf, 3.14% Impervious, Inflow Depth = 3.28" for 10-Year _2100 event
Inflow = 9.71 cfs @ 12.35 hrs, Volume= 46,149 cf
Primary = 9.71 cfs @ 12.35 hrs, Volume= 46,149 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: DA 4: Combined Flows



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA 1: CN w/ IC areas Runoff Area=549,495 sf 18.28% Impervious Runoff Depth=6.32"
Tc=19.8 min CN=74/98 Runoff=64.89 cfs 289,328 cf

Subcatchment 1Sa: DA 1: CN w/ IC areas Runoff Area=492,891 sf 8.90% Impervious Runoff Depth=6.04"
Tc=19.8 min CN=74/98 Runoff=56.62 cfs 248,245 cf

Subcatchment 1Sb: DA 1: Roofs Runoff Area=21,359 sf 100.00% Impervious Runoff Depth=8.71"
Tc=6.0 min CN=0/98 Runoff=4.55 cfs 15,502 cf

Subcatchment 1Sc: DA1: Driveways Runoff Area=35,245 sf 100.00% Impervious Runoff Depth=8.71"
Tc=6.0 min CN=0/98 Runoff=7.50 cfs 25,581 cf

Subcatchment 2S: DA 2: CN w/ IC areas Runoff Area=908,125 sf 25.71% Impervious Runoff Depth=6.54"
Tc=21.8 min CN=74/98 Runoff=104.81 cfs 494,606 cf

Subcatchment 2Sa: DA 2: CN w/ IC areas Runoff Area=759,404 sf 11.16% Impervious Runoff Depth=6.11"
Tc=21.8 min CN=74/98 Runoff=84.00 cfs 386,664 cf

Subcatchment 2Sb: DA 2: Roofs Runoff Area=53,997 sf 100.00% Impervious Runoff Depth=8.71"
Tc=6.0 min CN=0/98 Runoff=11.50 cfs 39,191 cf

Subcatchment 2Sc: DA 2: Driveways Runoff Area=94,724 sf 100.00% Impervious Runoff Depth=8.71"
Tc=6.0 min CN=0/98 Runoff=20.17 cfs 68,751 cf

Subcatchment 3S: DA 3: CN w/ IC areas Runoff Area=947,660 sf 12.29% Impervious Runoff Depth=6.14"
Tc=27.9 min CN=74/98 Runoff=93.25 cfs 485,138 cf

Subcatchment 3Sa: DA 3: CN w/ IC areas Runoff Area=840,092 sf 1.06% Impervious Runoff Depth=5.81"
Tc=27.9 min CN=74/98 Runoff=79.86 cfs 407,065 cf

Subcatchment 3Sb: DA 3: Roofs Runoff Area=22,074 sf 100.00% Impervious Runoff Depth=8.71"
Tc=6.0 min CN=0/98 Runoff=4.70 cfs 16,021 cf

Subcatchment 3Sc: DA 3: Driveways Runoff Area=85,494 sf 100.00% Impervious Runoff Depth=8.71"
Tc=6.0 min CN=0/98 Runoff=18.20 cfs 62,052 cf

Subcatchment 4S: DA 4: CN w/ IC areas Runoff Area=168,772 sf 3.14% Impervious Runoff Depth=5.88"
Tc=24.4 min CN=74/98 Runoff=17.26 cfs 82,633 cf

Subcatchment 4Sa: DA 4: CN w/ IC areas Runoff Area=163,472 sf 0.00% Impervious Runoff Depth=5.78"
Tc=24.4 min CN=74/0 Runoff=16.56 cfs 78,786 cf

Subcatchment 4Sb: DA 4: Roofs Runoff Area=695 sf 100.00% Impervious Runoff Depth=8.71"
Tc=6.0 min CN=0/98 Runoff=0.15 cfs 504 cf

Subcatchment 4Sc: DA 4: Driveways Runoff Area=4,605 sf 100.00% Impervious Runoff Depth=8.71"
Tc=6.0 min CN=0/98 Runoff=0.98 cfs 3,342 cf

Reach 1Ri: Inlet Pipe Avg. Flow Depth=1.83' Max Vel=10.96 fps Inflow=61.95 cfs 258,325 cf
48.0" Round Pipe n=0.013 L=100.0' S=0.0100 '/' Capacity=143.64 cfs Outflow=61.11 cfs 258,349 cf

Reach 1Ro: outlet Avg. Flow Depth=1.45' Max Vel=6.34 fps Inflow=18.73 cfs 251,095 cf
30.0" Round Pipe n=0.013 L=925.0' S=0.0051 '/' Capacity=29.39 cfs Outflow=18.70 cfs 251,085 cf

Reach 2Ri: Inlet Pipe Avg. Flow Depth=2.39' Max Vel=12.24 fps Inflow=96.27 cfs 415,331 cf
48.0" Round Pipe n=0.013 L=100.0' S=0.0100 '/' Capacity=143.64 cfs Outflow=95.81 cfs 415,351 cf

Reach 2Ro: Outlet Avg. Flow Depth=1.98' Max Vel=11.96 fps Inflow=67.33 cfs 410,553 cf
42.0" Round Pipe n=0.013 L=190.0' S=0.0118 '/' Capacity=109.48 cfs Outflow=67.10 cfs 410,558 cf

Pond 1P: Basic Rain Garden (w/ Peak Elev=100.63' Storage=13,875 cf Inflow=56.62 cfs 248,245 cf
Primary=12.65 cfs 181,157 cf Secondary=35.42 cfs 59,902 cf Tertiary=8.48 cfs 5,934 cf Outflow=56.56 cfs 246,993 cf

Pond 2P: Basic Rain Garden (infiltration Peak Elev=100.19' Storage=4,670 cf Inflow=4.55 cfs 15,502 cf
Discarded=0.06 cfs 7,843 cf Primary=4.05 cfs 7,660 cf Outflow=4.10 cfs 15,502 cf

Pond 3P: Basic Porous Pavement Peak Elev=100.01' Storage=7,568 cf Inflow=7.50 cfs 25,581 cf
Discarded=0.41 cfs 21,952 cf Primary=3.49 cfs 3,672 cf Outflow=3.90 cfs 25,624 cf

Pond 4P: Basin 1 Medium Case Peak Elev=77.52' Storage=107,417 cf Inflow=61.11 cfs 258,349 cf
Primary=6.29 cfs 182,526 cf Secondary=12.44 cfs 68,570 cf Tertiary=0.00 cfs 0 cf Outflow=18.73 cfs 251,095 cf

Pond 5P: Basic Rain Garden (w/ Peak Elev=100.73' Storage=15,583 cf Inflow=84.00 cfs 386,664 cf
Primary=14.17 cfs 256,614 cf Secondary=48.50 cfs 108,157 cf Tertiary=21.26 cfs 21,242 cf Outflow=83.93 cfs 386,013 cf

Pond 6P: Basic Rain Garden (infiltration Peak Elev=100.19' Storage=11,682 cf Inflow=11.50 cfs 39,191 cf
Discarded=0.14 cfs 19,631 cf Primary=10.16 cfs 19,565 cf Outflow=10.30 cfs 39,196 cf

Pond 7P: Basic Porous Pavement Peak Elev=100.02' Storage=21,097 cf Inflow=20.17 cfs 68,751 cf
Discarded=1.10 cfs 58,998 cf Primary=8.34 cfs 9,753 cf Outflow=9.43 cfs 68,751 cf

Pond 8P: Basin 2 Medium Case Peak Elev=72.86' Storage=91,215 cf Inflow=95.81 cfs 415,351 cf
Primary=28.77 cfs 331,164 cf Secondary=38.57 cfs 79,389 cf Tertiary=0.00 cfs 0 cf Outflow=67.33 cfs 410,553 cf

Pond 9P: Basic Rain Garden (w/ Peak Elev=101.58' Storage=3,415 cf Inflow=79.86 cfs 407,065 cf
Primary=3.03 cfs 139,078 cf Secondary=34.33 cfs 162,270 cf Tertiary=42.50 cfs 105,501 cf Outflow=79.85 cfs 406,849 cf

Pond 10P: Basic Rain Garden (infiltration Peak Elev=100.21' Storage=4,287 cf Inflow=4.70 cfs 16,021 cf
Discarded=0.05 cfs 7,145 cf Primary=4.20 cfs 8,874 cf Outflow=4.25 cfs 16,020 cf

Pond 11P: Basic Porous Pavement Peak Elev=100.02' Storage=18,975 cf Inflow=18.20 cfs 62,052 cf
Discarded=0.99 cfs 53,249 cf Primary=7.81 cfs 8,803 cf Outflow=8.80 cfs 62,052 cf

Pond 12P: Basic Porous Pavement (infiltration Peak Elev=100.00' Storage=981 cf Inflow=0.98 cfs 3,342 cf
Discarded=0.05 cfs 2,861 cf Primary=0.91 cfs 542 cf Outflow=0.97 cfs 3,403 cf

Link 1L: Combined Flows Inflow=61.95 cfs 258,325 cf
Primary=61.95 cfs 258,325 cf

Link 2L: Combined Flows Inflow=96.27 cfs 415,331 cf
Primary=96.27 cfs 415,331 cf

Link 3L: dA3

Inflow=85.96 cfs 424,526 cf
Primary=85.96 cfs 424,526 cf

Link 4L: DA 4: Combined Flows

Inflow=16.76 cfs 79,832 cf
Primary=16.76 cfs 79,832 cf

Total Runoff Area = 5,148,104 sf Runoff Volume = 2,703,410 cf Average Runoff Depth = 6.30"
82.29% Pervious = 4,236,632 sf 17.71% Impervious = 911,472 sf

Summary for Subcatchment 1S: DA 1: CN w/ IC areas

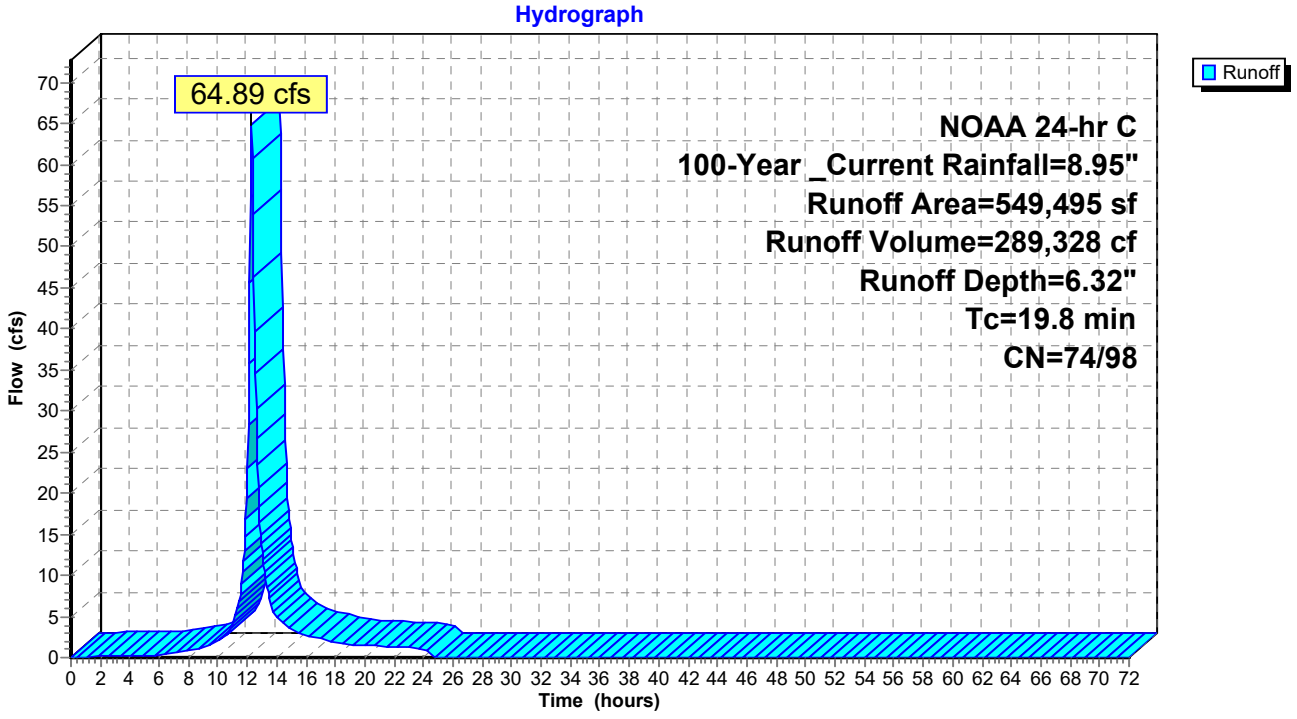
Runoff = 64.89 cfs @ 12.29 hrs, Volume= 289,328 cf, Depth= 6.32"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	100,459	98	Impervious
	317,162	74	>75% Grass cover, Good, HSG C
	131,575	73	Woods, Fair, HSG C
	299	70	Woods, Good, HSG C
	549,495	78	Weighted Average
	449,036	74	81.72% Pervious Area
	100,459	98	18.28% Impervious Area

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

Subcatchment 1S: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sa: DA 1: CN w/ IC areas

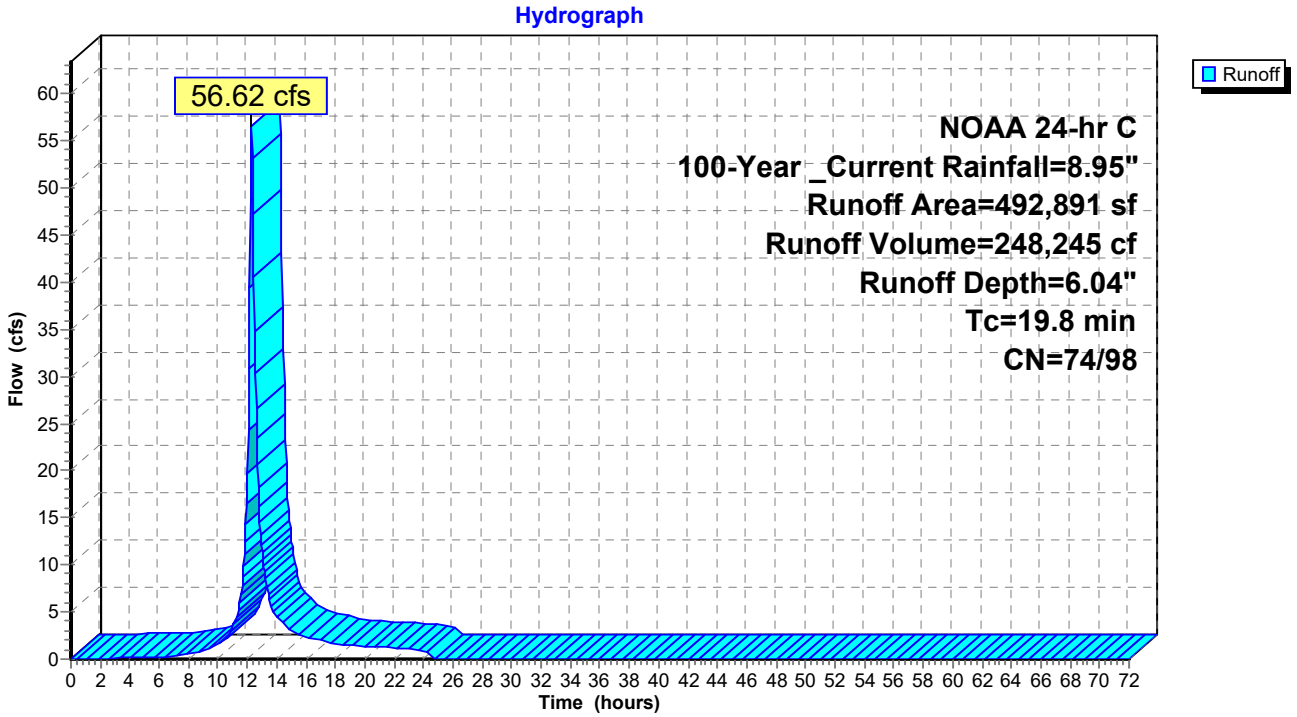
Runoff = 56.62 cfs @ 12.29 hrs, Volume= 248,245 cf, Depth= 6.04"
Routed to Pond 1P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	43,855	98	Impervious
	317,162	74	>75% Grass cover, Good, HSG C
	131,575	73	Woods, Fair, HSG C
	299	70	Woods, Good, HSG C
	492,891	76	Weighted Average
	449,036	74	91.10% Pervious Area
	43,855	98	8.90% Impervious Area

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

Subcatchment 1Sa: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sb: DA 1: Roofs Combined

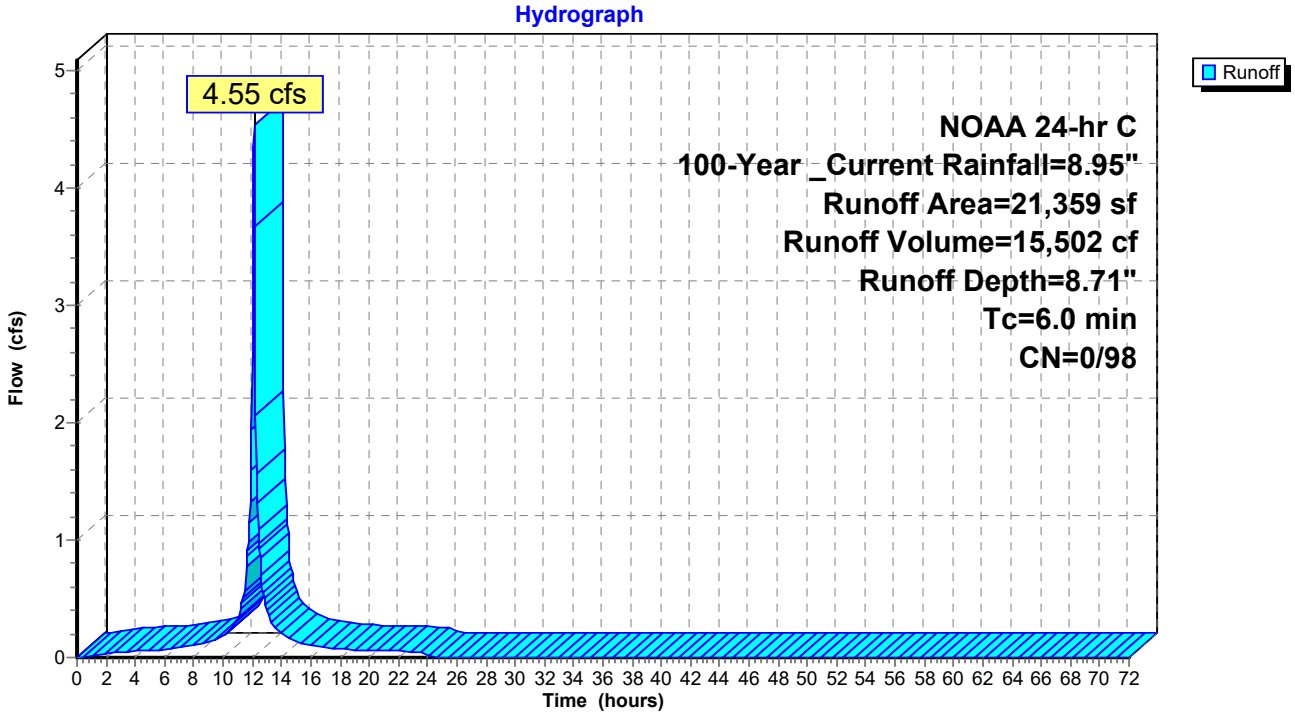
Runoff = 4.55 cfs @ 12.13 hrs, Volume= 15,502 cf, Depth= 8.71"
Routed to Pond 2P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	21,359	98	
	21,359	98	100.00% Impervious Area

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

Subcatchment 1Sb: DA 1: Roofs Combined



Summary for Subcatchment 1Sc: DA1: Driveways (other)

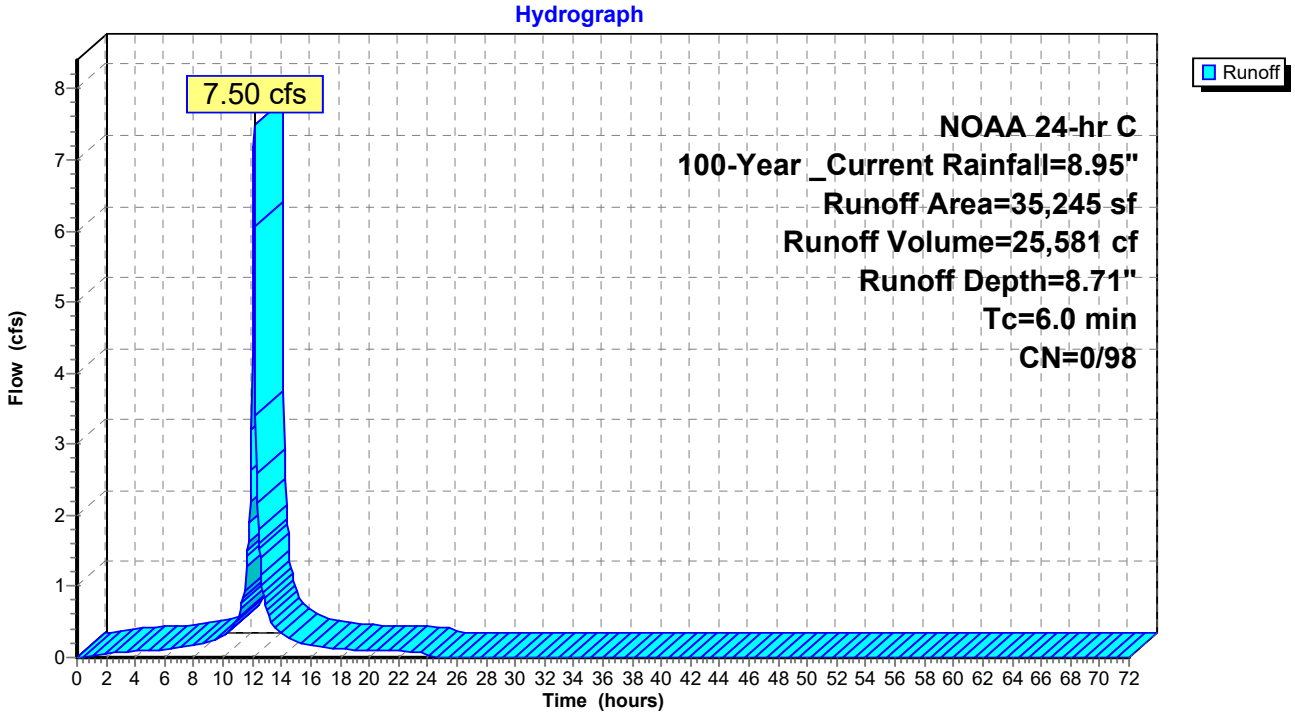
Runoff = 7.50 cfs @ 12.13 hrs, Volume= 25,581 cf, Depth= 8.71"
Routed to Pond 3P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	35,245	98	
	35,245	98	100.00% Impervious Area

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

Subcatchment 1Sc: DA1: Driveways (other)



Summary for Subcatchment 2S: DA 2: CN w/ IC areas

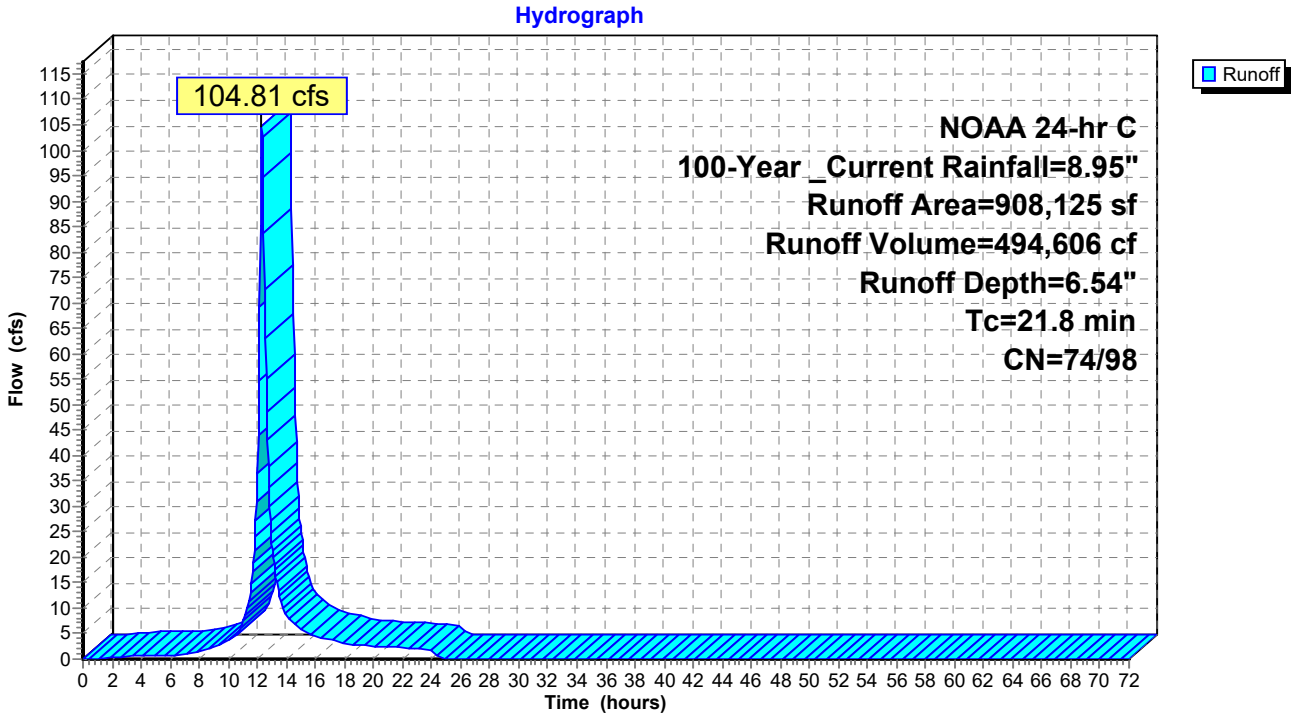
Runoff = 104.81 cfs @ 12.31 hrs, Volume= 494,606 cf, Depth= 6.54"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	233,471	98	Impervious
	1	65	Brush, Good, HSG C
	620,871	74	>75% Grass cover, Good, HSG C
	1,845	72	Woods/grass comb., Good, HSG C
	51,937	73	Woods, Fair, HSG C
	908,125	80	Weighted Average
	674,654	74	74.29% Pervious Area
	233,471	98	25.71% Impervious Area

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

Subcatchment 2S: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sa: DA 2: CN w/ IC areas

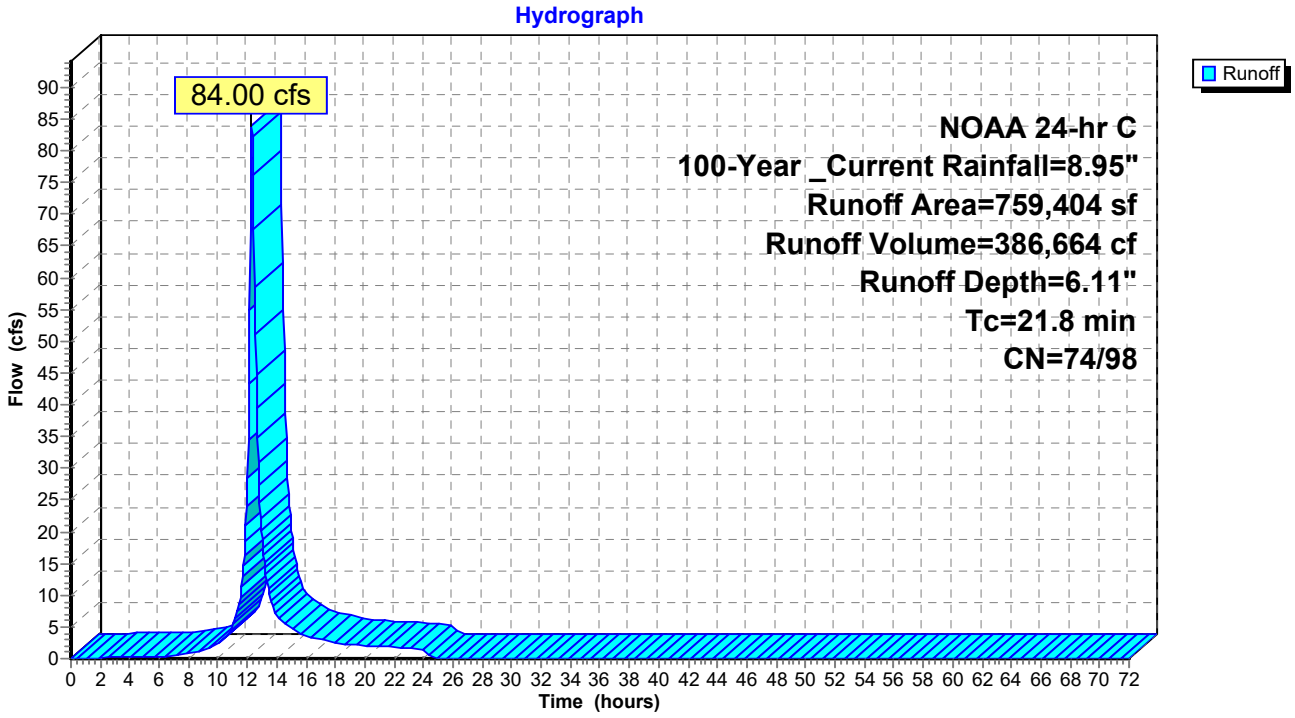
Runoff = 84.00 cfs @ 12.31 hrs, Volume= 386,664 cf, Depth= 6.11"
Routed to Pond 5P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	84,750	98	Impervious
	1	65	Brush, Good, HSG C
	620,871	74	>75% Grass cover, Good, HSG C
	1,845	72	Woods/grass comb., Good, HSG C
	51,937	73	Woods, Fair, HSG C
	759,404	77	Weighted Average
	674,654	74	88.84% Pervious Area
	84,750	98	11.16% Impervious Area

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

Subcatchment 2Sa: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sb: DA 2: Roofs

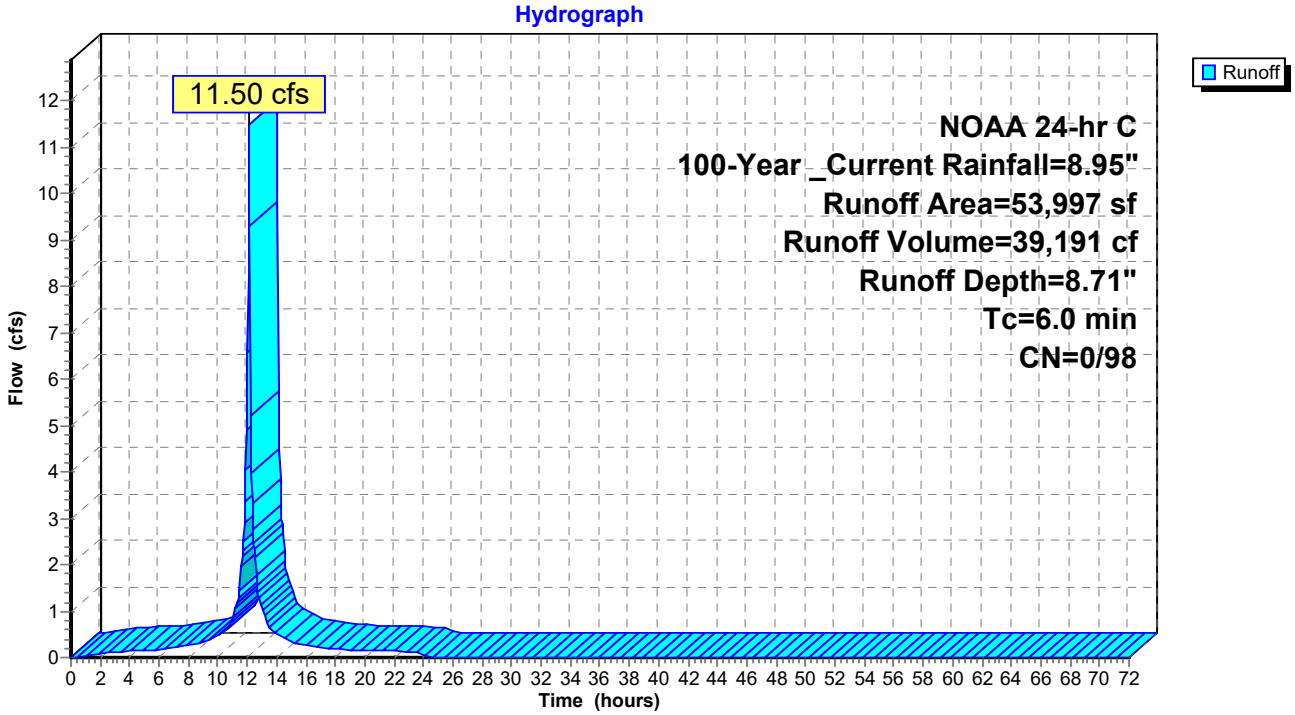
Runoff = 11.50 cfs @ 12.13 hrs, Volume= 39,191 cf, Depth= 8.71"
Routed to Pond 6P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	53,997	98	
	53,997	98	100.00% Impervious Area

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

Subcatchment 2Sb: DA 2: Roofs



Summary for Subcatchment 2Sc: DA 2: Driveways (other)

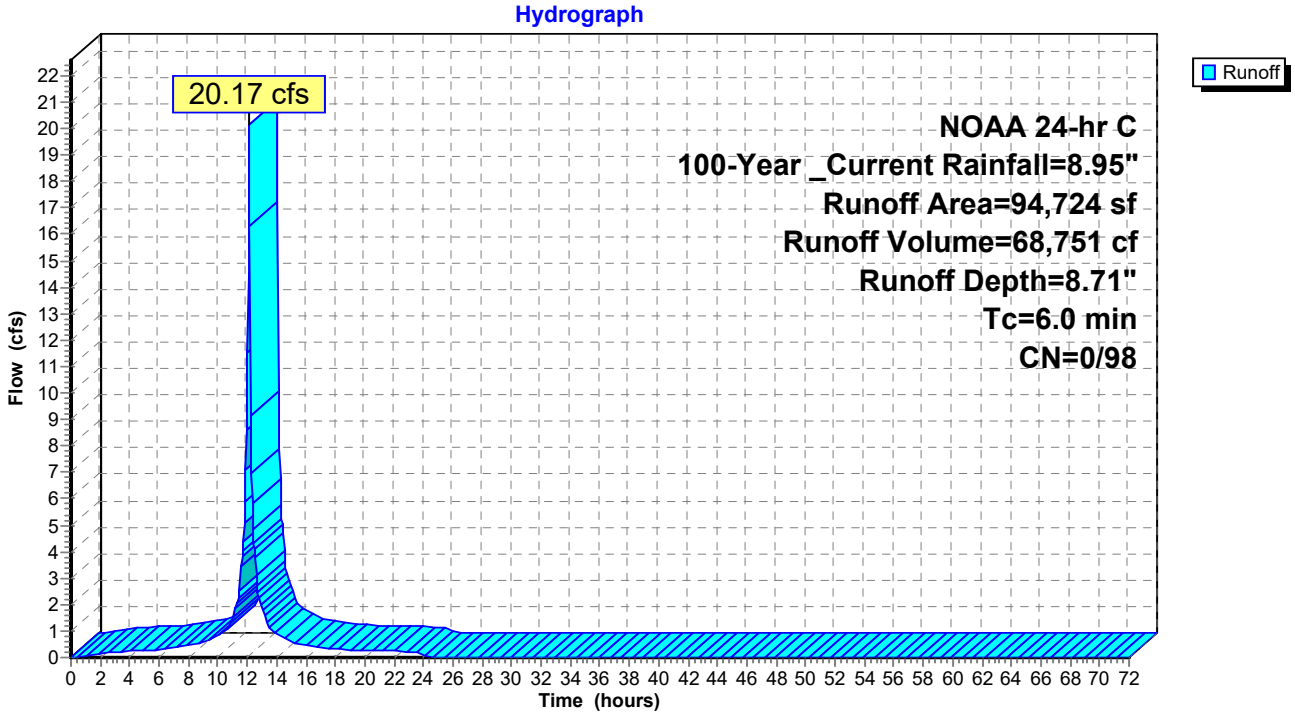
Runoff = 20.17 cfs @ 12.13 hrs, Volume= 68,751 cf, Depth= 8.71"
Routed to Pond 7P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	94,724	98	
	94,724	98	100.00% Impervious Area

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

Subcatchment 2Sc: DA 2: Driveways (other)



Summary for Subcatchment 3S: DA 3: CN w/ IC areas

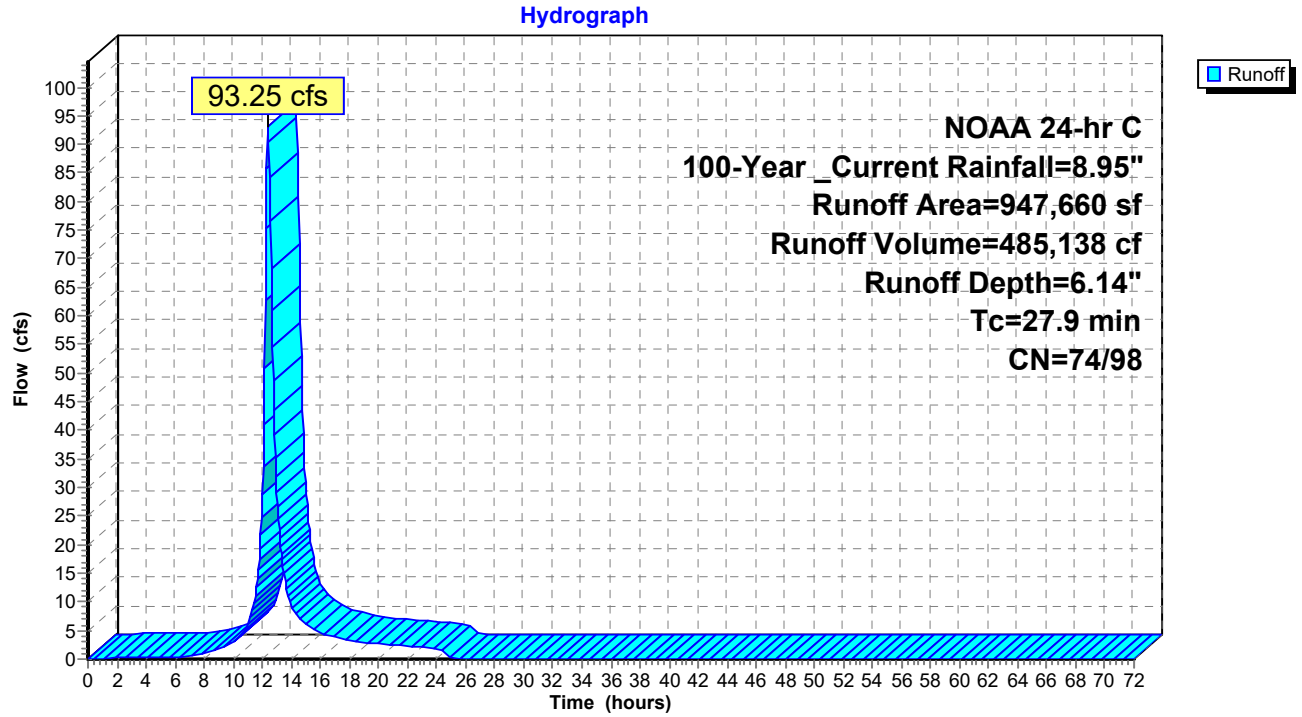
Runoff = 93.25 cfs @ 12.39 hrs, Volume= 485,138 cf, Depth= 6.14"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	116,506	98	Impervious
	4,930	79	50-75% Grass cover, Fair, HSG C
	592,347	74	>75% Grass cover, Good, HSG C
	169,305	73	Woods, Fair, HSG C
	64,572	70	Woods, Good, HSG C
	947,660	77	Weighted Average
	831,154	74	87.71% Pervious Area
	116,506	98	12.29% Impervious Area

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

Subcatchment 3S: DA 3: CN w/ IC areas



Summary for Subcatchment 3Sa: DA 3: CN w/ IC areas

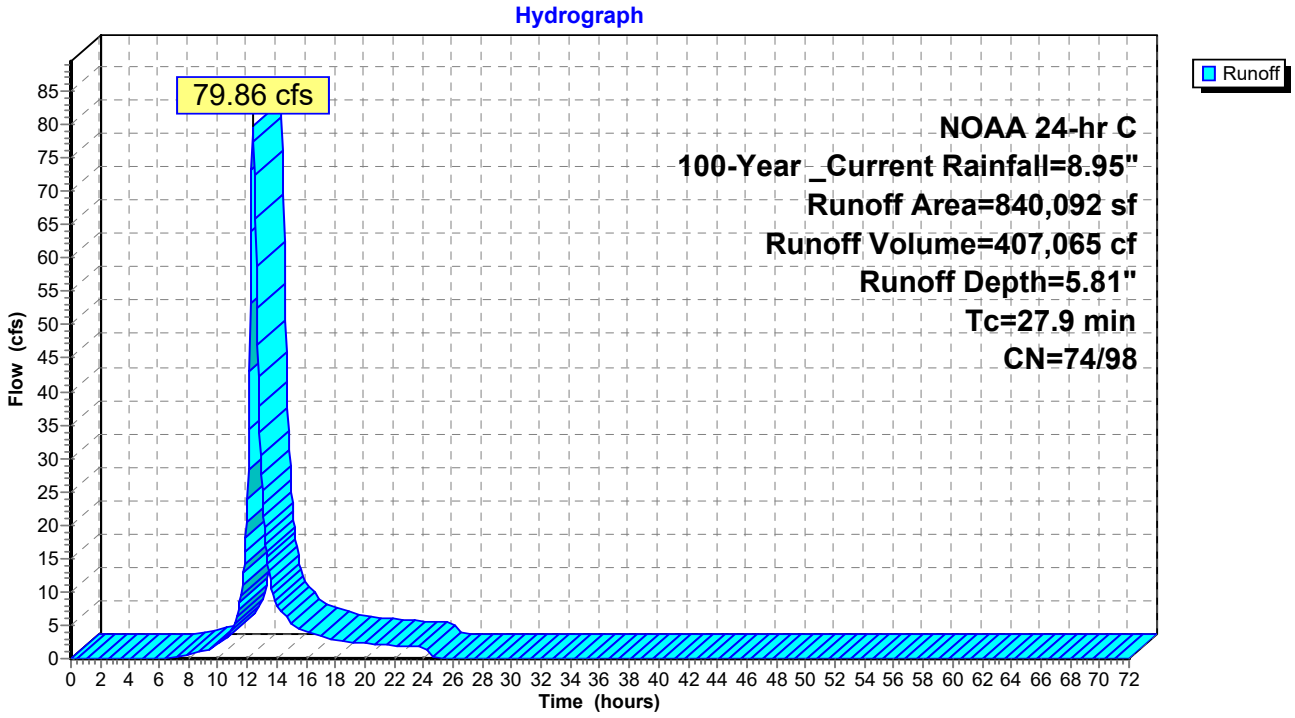
Runoff = 79.86 cfs @ 12.39 hrs, Volume= 407,065 cf, Depth= 5.81"
Routed to Pond 9P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	8,938	98	Impervious
	4,930	79	50-75% Grass cover, Fair, HSG C
	592,347	74	>75% Grass cover, Good, HSG C
	169,305	73	Woods, Fair, HSG C
	64,572	70	Woods, Good, HSG C
	840,092	74	Weighted Average
	831,154	74	98.94% Pervious Area
	8,938	98	1.06% Impervious Area

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

Subcatchment 3Sa: DA 3: CN w/ IC areas



Summary for Subcatchment 3Sb: DA 3: Roofs

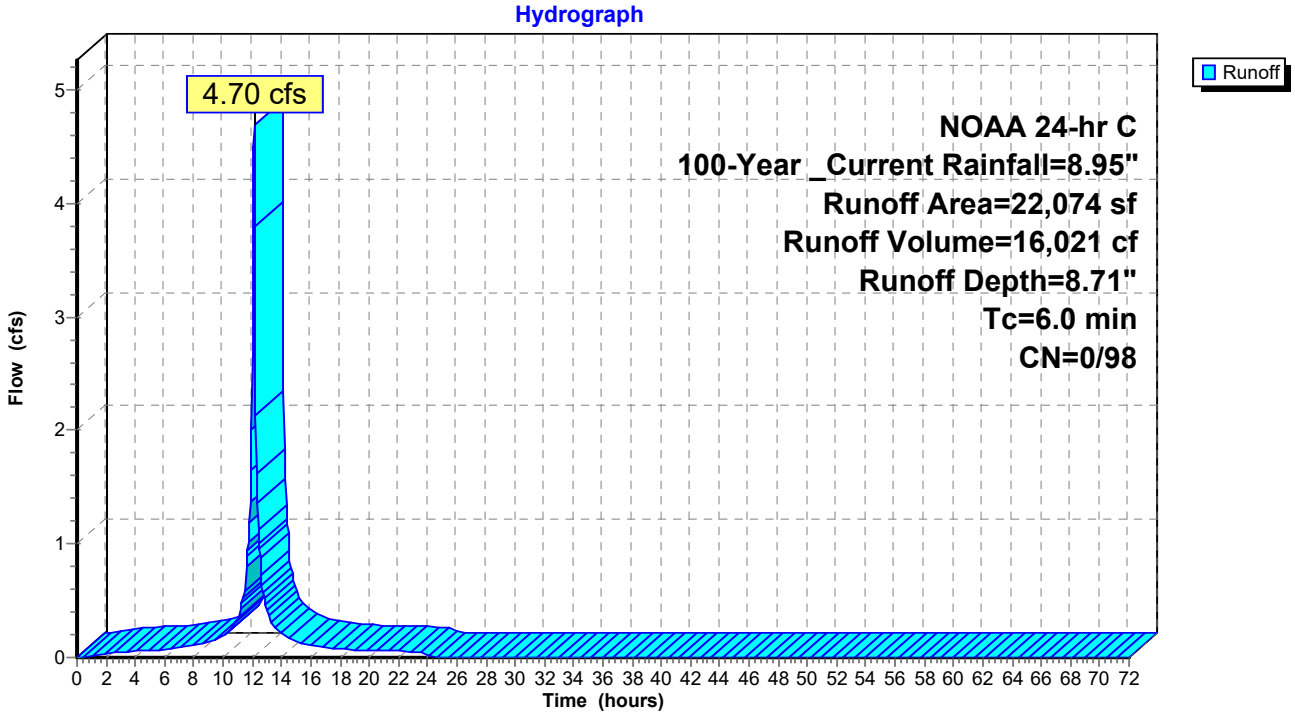
Runoff = 4.70 cfs @ 12.13 hrs, Volume= 16,021 cf, Depth= 8.71"
Routed to Pond 10P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	22,074	98	
	22,074	98	100.00% Impervious Area

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

Subcatchment 3Sb: DA 3: Roofs



Summary for Subcatchment 3Sc: DA 3: Driveways (other)

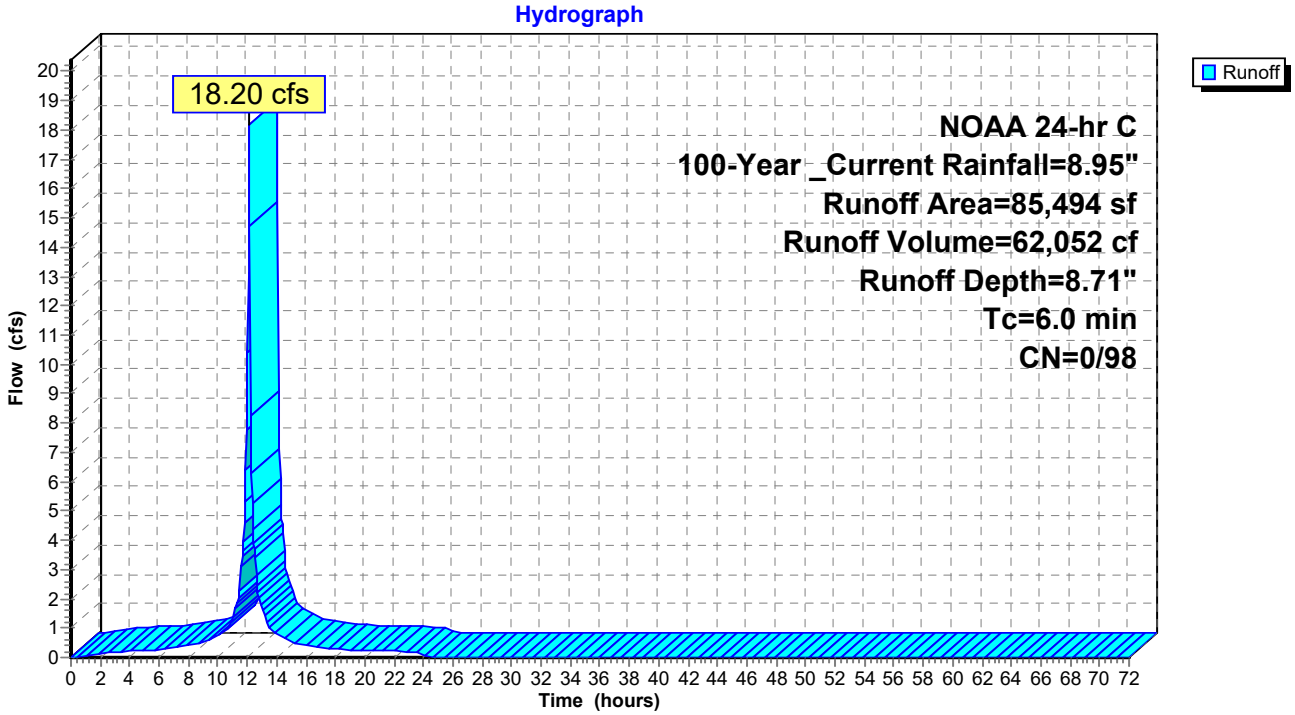
Runoff = 18.20 cfs @ 12.13 hrs, Volume= 62,052 cf, Depth= 8.71"
Routed to Pond 11P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	85,494	98	
	85,494	98	100.00% Impervious Area

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

Subcatchment 3Sc: DA 3: Driveways (other)



Summary for Subcatchment 4S: DA 4: CN w/ IC areas

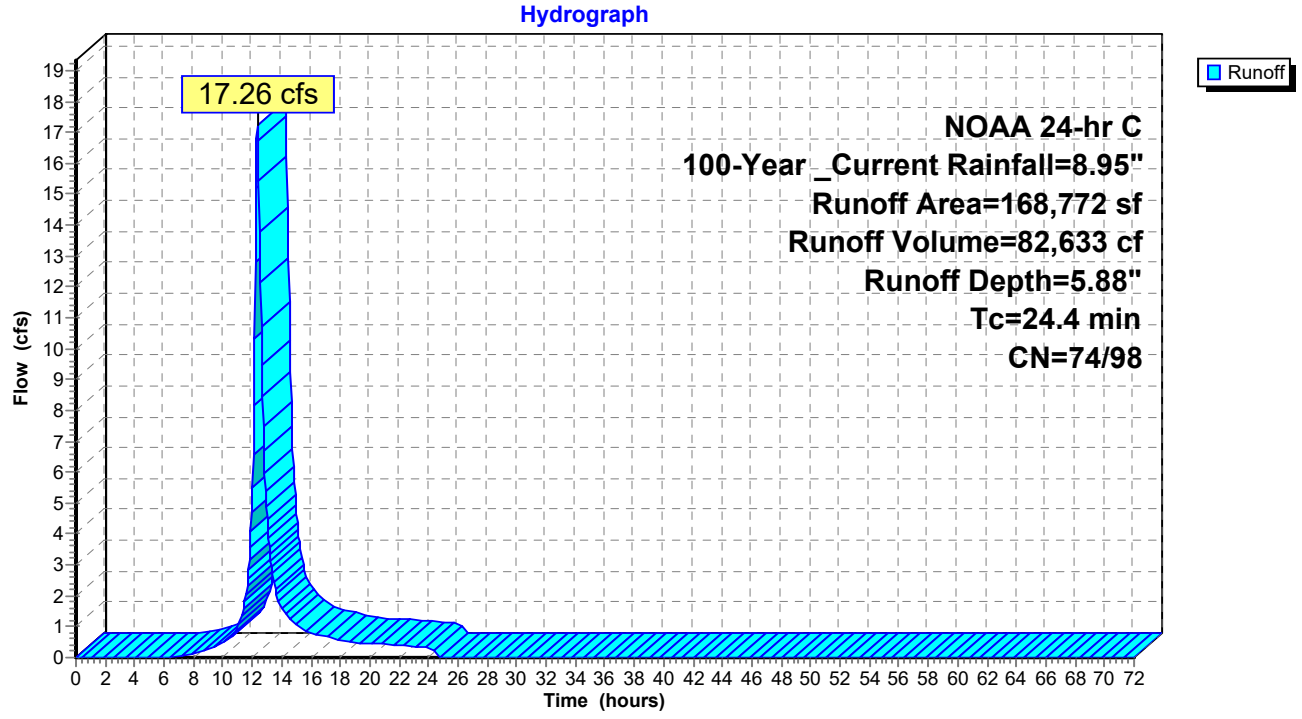
Runoff = 17.26 cfs @ 12.35 hrs, Volume= 82,633 cf, Depth= 5.88"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	5,300	98	Impervious
	117,799	74	>75% Grass cover, Good, HSG C
	4,778	72	Woods/grass comb., Good, HSG C
	40,895	73	Woods, Fair, HSG C
	168,772	74	Weighted Average
	163,472	74	96.86% Pervious Area
	5,300	98	3.14% Impervious Area

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

Subcatchment 4S: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sa: DA 4: CN w/ IC areas

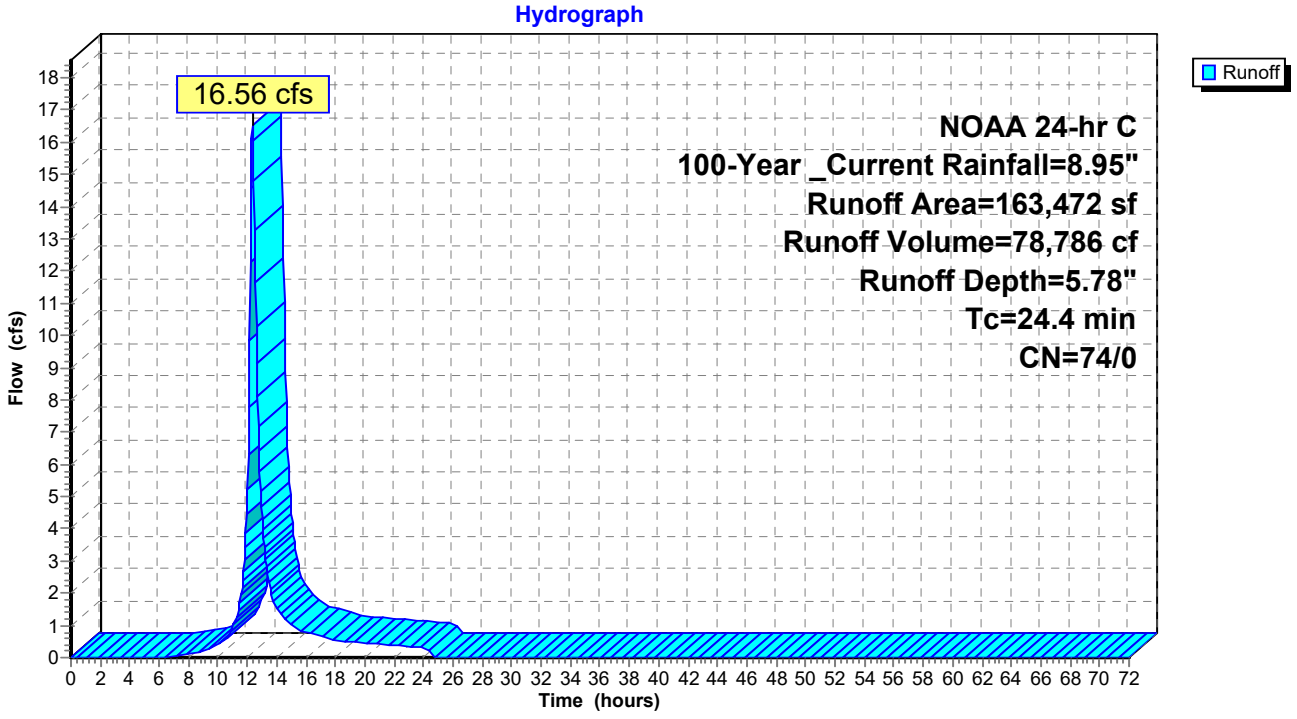
Runoff = 16.56 cfs @ 12.35 hrs, Volume= 78,786 cf, Depth= 5.78"
Routed to Link 4L : DA 4: Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	0	98	Impervious
	117,799	74	>75% Grass cover, Good, HSG C
	4,778	72	Woods/grass comb., Good, HSG C
	40,895	73	Woods, Fair, HSG C
	163,472	74	Weighted Average
	163,472	74	100.00% Pervious Area

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

Subcatchment 4Sa: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sb: DA 4: Roofs

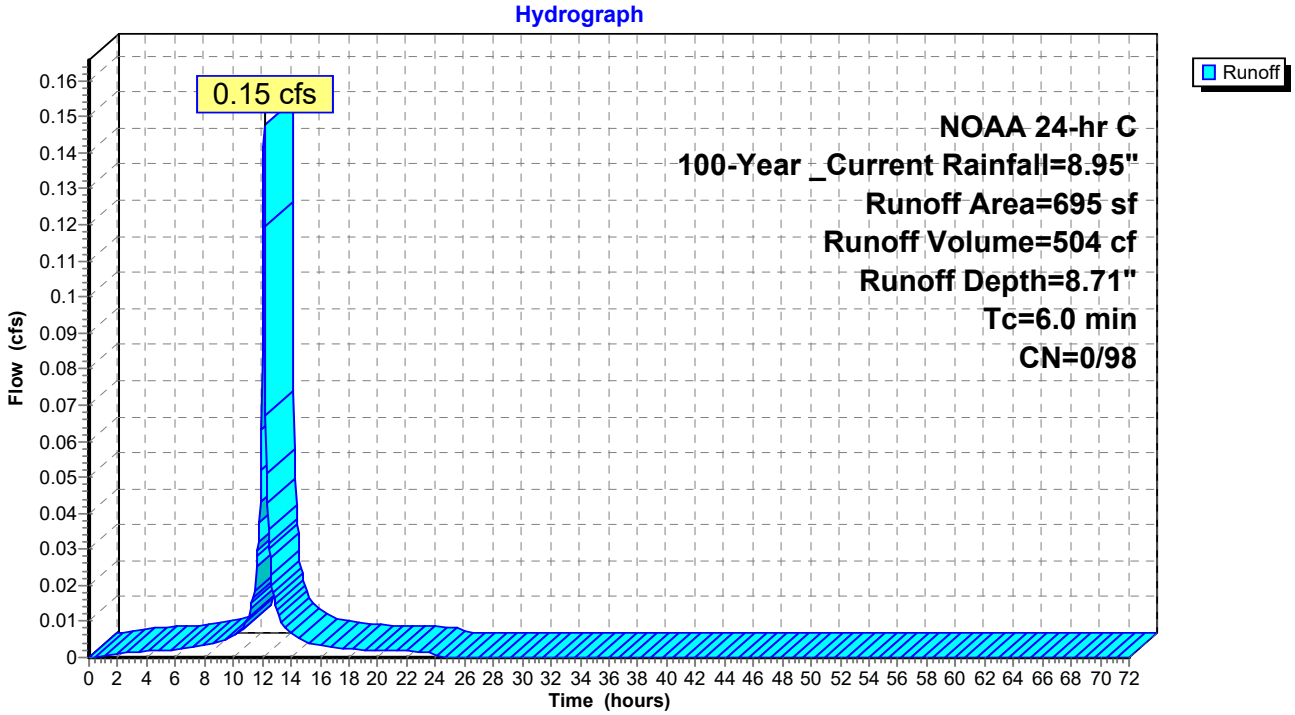
Runoff = 0.15 cfs @ 12.13 hrs, Volume= 504 cf, Depth= 8.71"
Routed to Link 4L : DA 4: Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	695	98	
	695	98	100.00% Impervious Area

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

Subcatchment 4Sb: DA 4: Roofs



Summary for Subcatchment 4Sc: DA 4: Driveways (other)

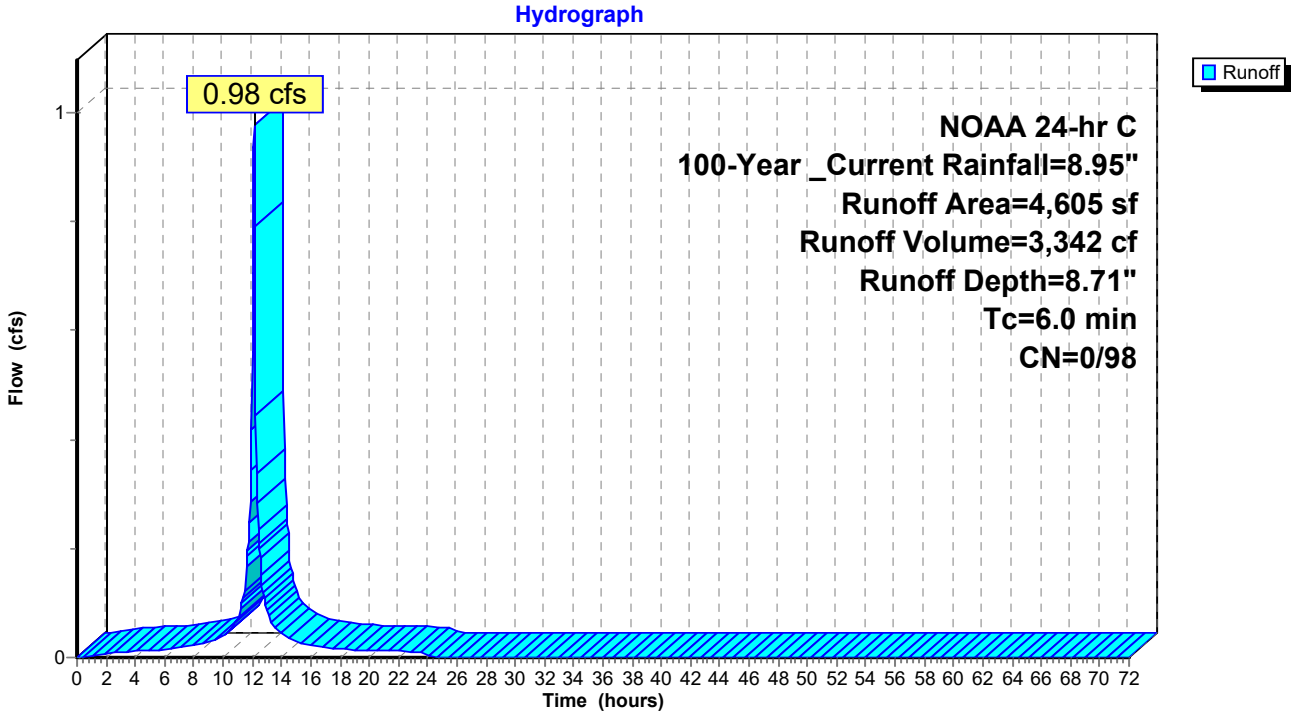
Runoff = 0.98 cfs @ 12.13 hrs, Volume= 3,342 cf, Depth= 8.71"
Routed to Pond 12P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _Current Rainfall=8.95"

	Area (sf)	CN	Description
*	4,605	98	
	4,605	98	100.00% Impervious Area

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

Subcatchment 4Sc: DA 4: Driveways (other)



Summary for Reach 1Ri: Inlet Pipe

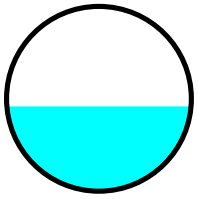
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 5.64" for 100-Year _Current event
Inflow = 61.95 cfs @ 12.27 hrs, Volume= 258,325 cf
Outflow = 61.11 cfs @ 12.28 hrs, Volume= 258,349 cf, Atten= 1%, Lag= 0.2 min
Routed to Pond 4P : Basin 1 Medium Case

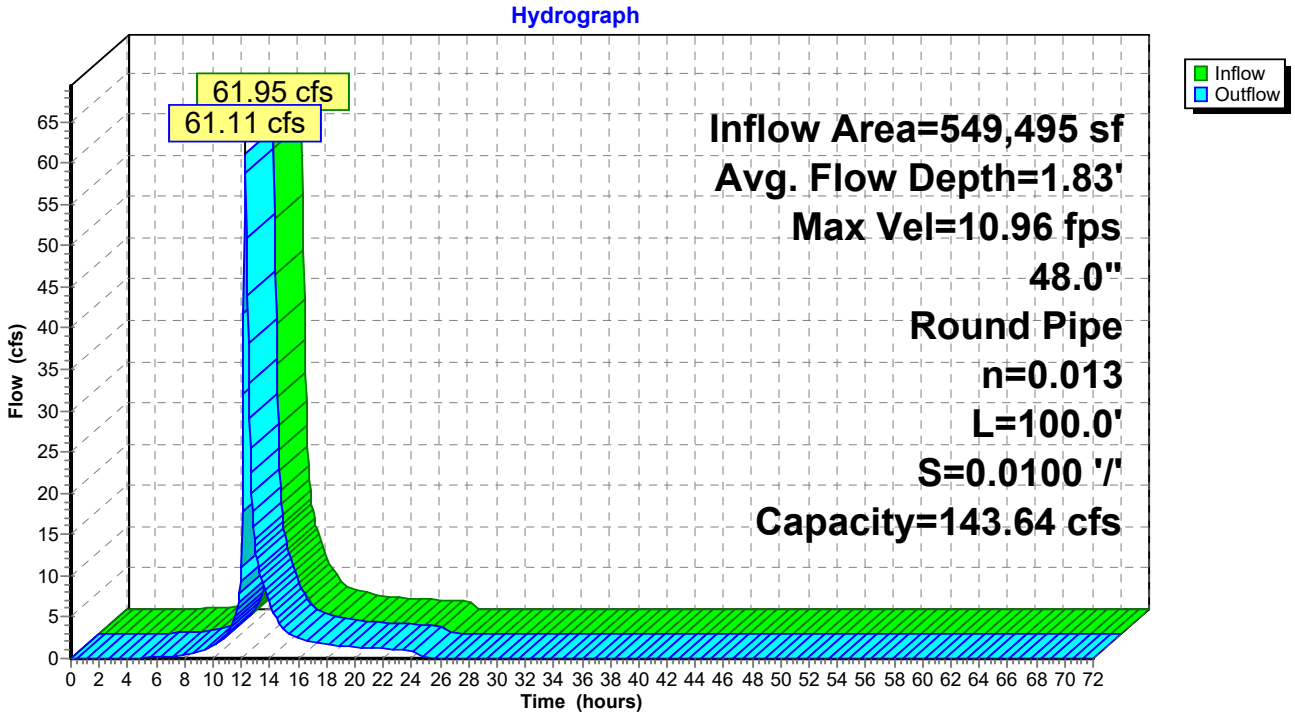
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 10.96 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.35 fps, Avg. Travel Time= 0.5 min

Peak Storage= 561 cf @ 12.27 hrs
Average Depth at Peak Storage= 1.83' , Surface Width= 3.99'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 143.64 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 75.00', Outlet Invert= 74.00'



Reach 1Ri: Inlet Pipe



Summary for Reach 1Ro: outlet

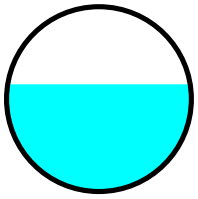
[52] Hint: Inlet/Outlet conditions not evaluated

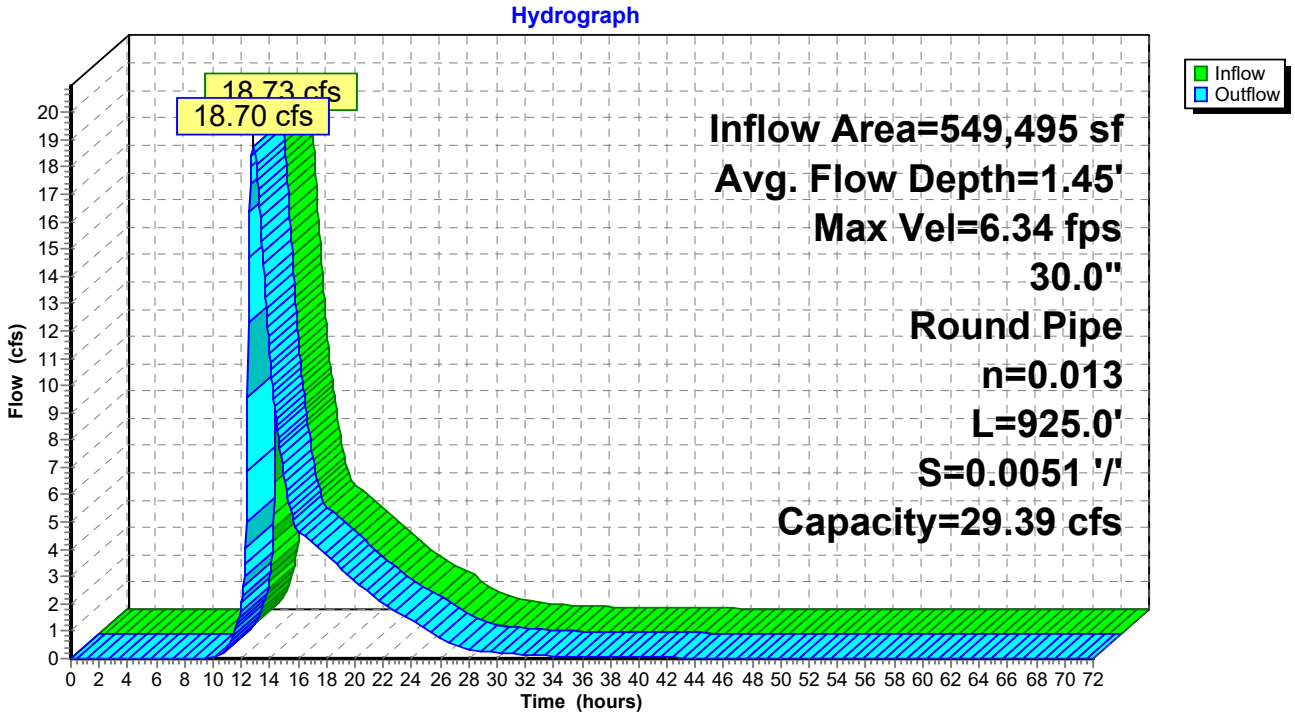
Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth > 5.48" for 100-Year _Current event
Inflow = 18.73 cfs @ 12.78 hrs, Volume= 251,095 cf
Outflow = 18.70 cfs @ 12.85 hrs, Volume= 251,085 cf, Atten= 0%, Lag= 4.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.34 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 1.73 fps, Avg. Travel Time= 8.9 min

Peak Storage= 2,728 cf @ 12.81 hrs
Average Depth at Peak Storage= 1.45' , Surface Width= 2.47'
Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 29.39 cfs

30.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 925.0' Slope= 0.0051 '/'
Inlet Invert= 70.75', Outlet Invert= 66.00'





Summary for Reach 2Ri: Inlet Pipe

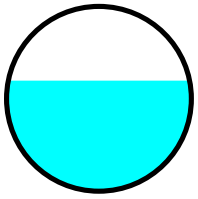
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 5.49" for 100-Year _Current event
Inflow = 96.27 cfs @ 12.30 hrs, Volume= 415,331 cf
Outflow = 95.81 cfs @ 12.30 hrs, Volume= 415,351 cf, Atten= 0%, Lag= 0.3 min
Routed to Pond 8P : Basin 2 Medium Case

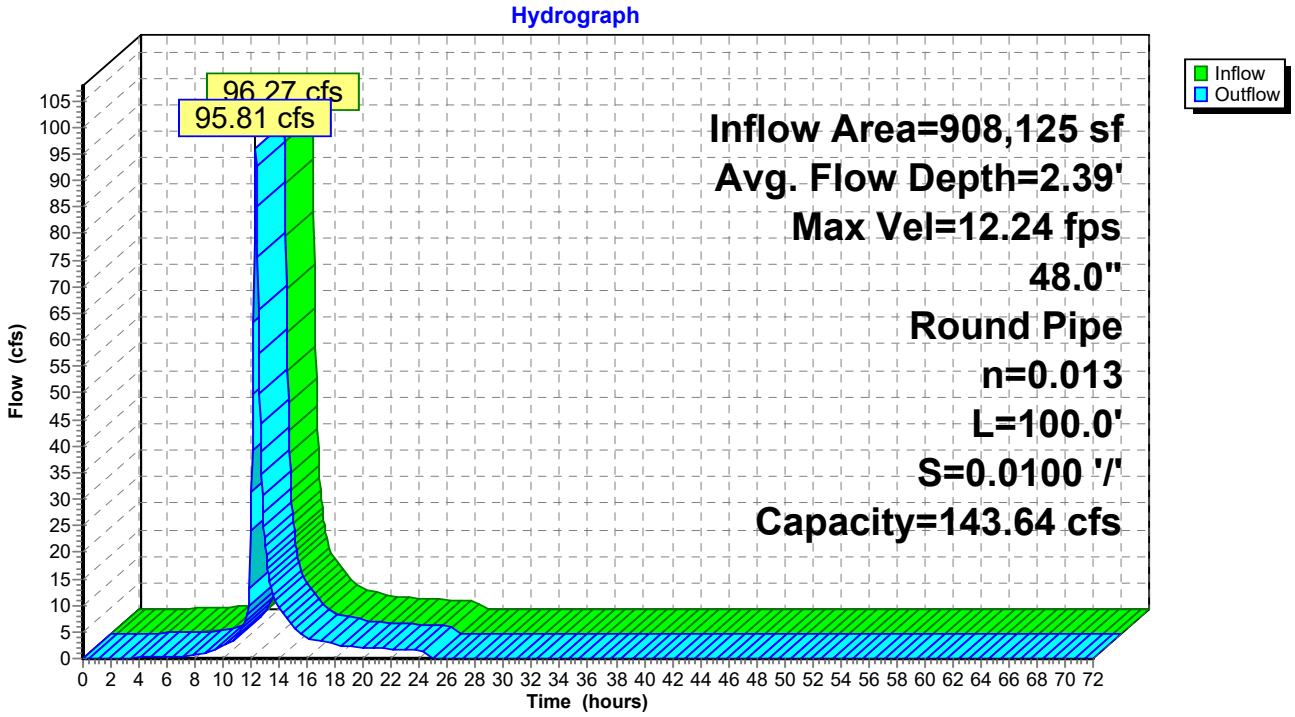
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 12.24 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.82 fps, Avg. Travel Time= 0.4 min

Peak Storage= 784 cf @ 12.30 hrs
Average Depth at Peak Storage= 2.39' , Surface Width= 3.92'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 143.64 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 70.00', Outlet Invert= 69.00'



Reach 2Ri: Inlet Pipe



Summary for Reach 2Ro: Outlet

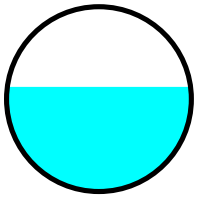
[52] Hint: Inlet/Outlet conditions not evaluated

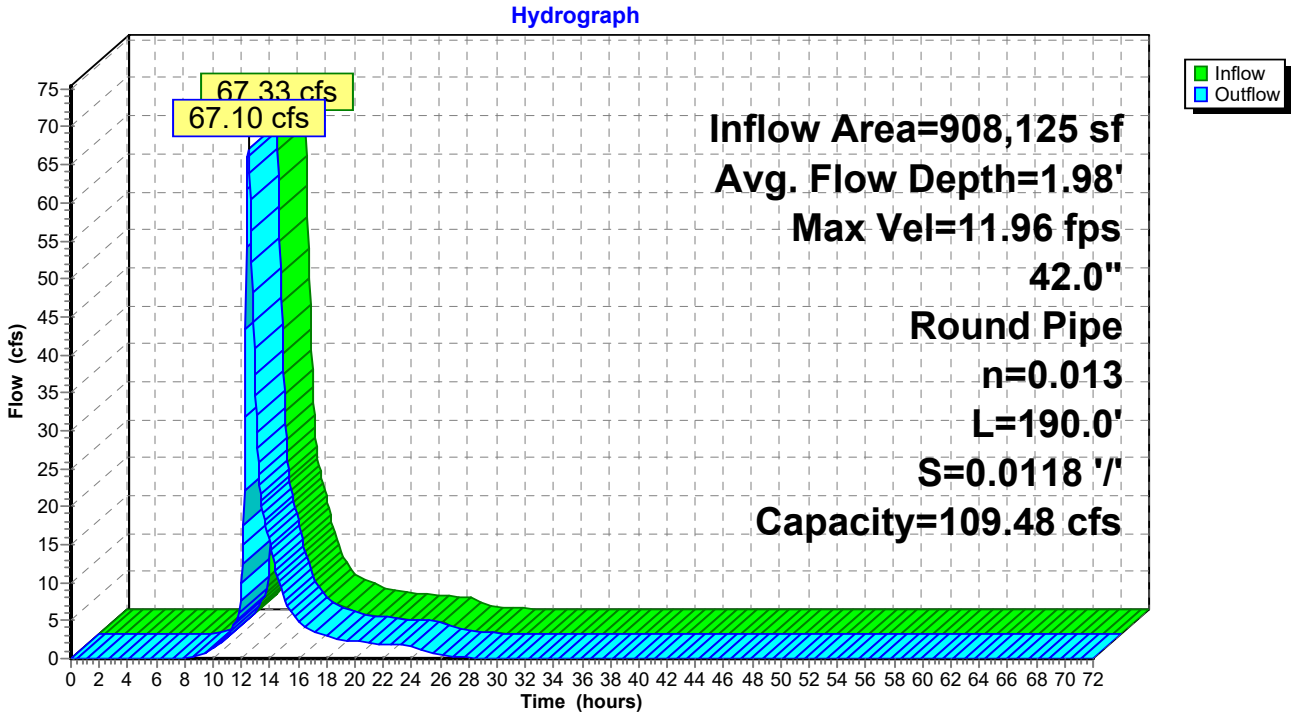
Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 5.43" for 100-Year _Current event
Inflow = 67.33 cfs @ 12.49 hrs, Volume= 410,553 cf
Outflow = 67.10 cfs @ 12.50 hrs, Volume= 410,558 cf, Atten= 0%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 11.96 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.26 fps, Avg. Travel Time= 1.4 min

Peak Storage= 1,067 cf @ 12.50 hrs
Average Depth at Peak Storage= 1.98' , Surface Width= 3.47'
Bank-Full Depth= 3.50' Flow Area= 9.6 sf, Capacity= 109.48 cfs

42.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 190.0' Slope= 0.0118 '/'
Inlet Invert= 65.75', Outlet Invert= 63.50'





Summary for Pond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 492,891 sf, 8.90% Impervious, Inflow Depth = 6.04" for 100-Year _Current event
Inflow = 56.62 cfs @ 12.29 hrs, Volume= 248,245 cf
Outflow = 56.56 cfs @ 12.29 hrs, Volume= 246,993 cf, Atten= 0%, Lag= 0.2 min
Primary = 12.65 cfs @ 12.29 hrs, Volume= 181,157 cf
Routed to Link 1L : Combined Flows
Secondary = 35.42 cfs @ 12.29 hrs, Volume= 59,902 cf
Routed to Link 1L : Combined Flows
Tertiary = 8.48 cfs @ 12.29 hrs, Volume= 5,934 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.63' @ 12.29 hrs Surf.Area= 6,125 sf Storage= 13,875 cf

Plug-Flow detention time= 15.0 min calculated for 246,993 cf (99% of inflow)
Center-of-Mass det. time= 11.5 min (829.5 - 818.0)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,737 cf	x 9.00 = 15,635 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.75	175	100.0	217	497	363

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 9.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 9.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 9.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 9.00** 2 End Contraction(s)

Primary OutFlow Max=12.65 cfs @ 12.29 hrs HW=100.63' (Free Discharge)
└─**1=Culvert** (Passes 12.65 cfs of 18.93 cfs potential flow)
└─**2=6" HDPE Underdrain** (Barrel Controls 12.65 cfs @ 7.16 fps)

Secondary OutFlow Max=35.25 cfs @ 12.29 hrs HW=100.63' (Free Discharge)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 35.25 cfs @ 2.07 fps)

Tertiary OutFlow Max=8.28 cfs @ 12.29 hrs HW=100.63' (Free Discharge)
└─**4=Sharp-Crested Rectangular Weir** (Weir Controls 8.28 cfs @ 1.18 fps)

ond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

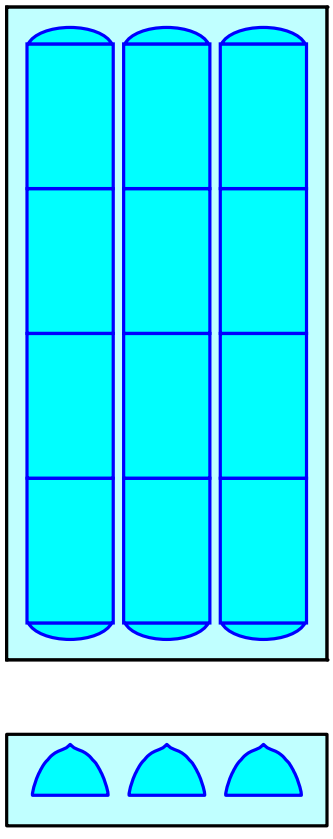
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

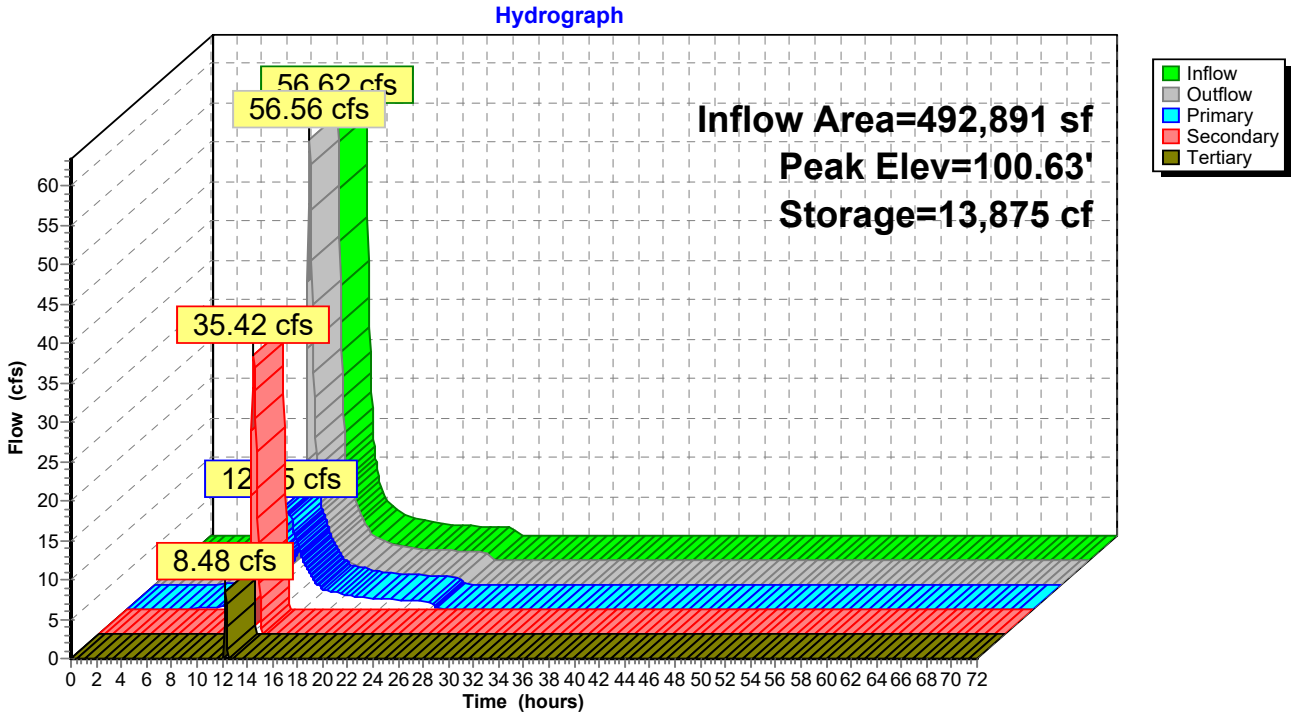
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 2P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 21,359 sf,100.00% Impervious, Inflow Depth = 8.71" for 100-Year _Current event
Inflow = 4.55 cfs @ 12.13 hrs, Volume= 15,502 cf
Outflow = 4.10 cfs @ 12.16 hrs, Volume= 15,502 cf, Atten= 10%, Lag= 2.1 min
Discarded = 0.06 cfs @ 11.90 hrs, Volume= 7,843 cf
Primary = 4.05 cfs @ 12.16 hrs, Volume= 7,660 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 100.19' @ 12.16 hrs Surf.Area= 5,000 sf Storage= 4,670 cf

Plug-Flow detention time= 347.2 min calculated for 15,492 cf (100% of inflow)
Center-of-Mass det. time= 347.9 min (1,088.3 - 740.4)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 10.00 = 6,220 cf Total Available Storage

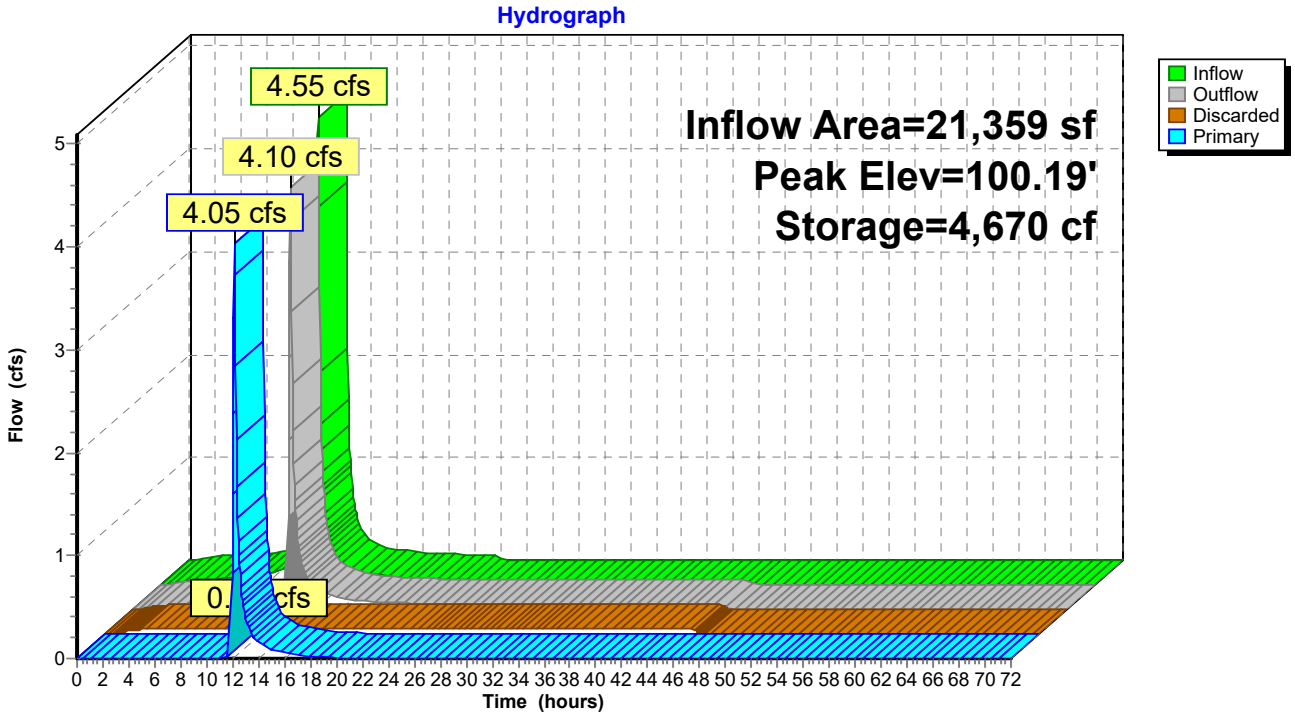
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 10.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.06 cfs @ 11.90 hrs HW=100.02' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=3.96 cfs @ 12.16 hrs HW=100.19' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 3.96 cfs @ 1.06 fps)

Pond 2P: Basic Rain Garden (infiltration only)



Summary for Pond 3P: Basic Porous Pavement (infiltration only)

Inflow Area = 35,245 sf,100.00% Impervious, Inflow Depth = 8.71" for 100-Year _Current event
Inflow = 7.50 cfs @ 12.13 hrs, Volume= 25,581 cf
Outflow = 3.90 cfs @ 12.24 hrs, Volume= 25,624 cf, Atten= 48%, Lag= 7.1 min
Discarded = 0.41 cfs @ 10.75 hrs, Volume= 21,952 cf
Primary = 3.49 cfs @ 12.24 hrs, Volume= 3,672 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 100.01' @ 12.25 hrs Surf.Area= 35,245 sf Storage= 7,568 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 115.1 min (855.5 - 740.4)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	16,001 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

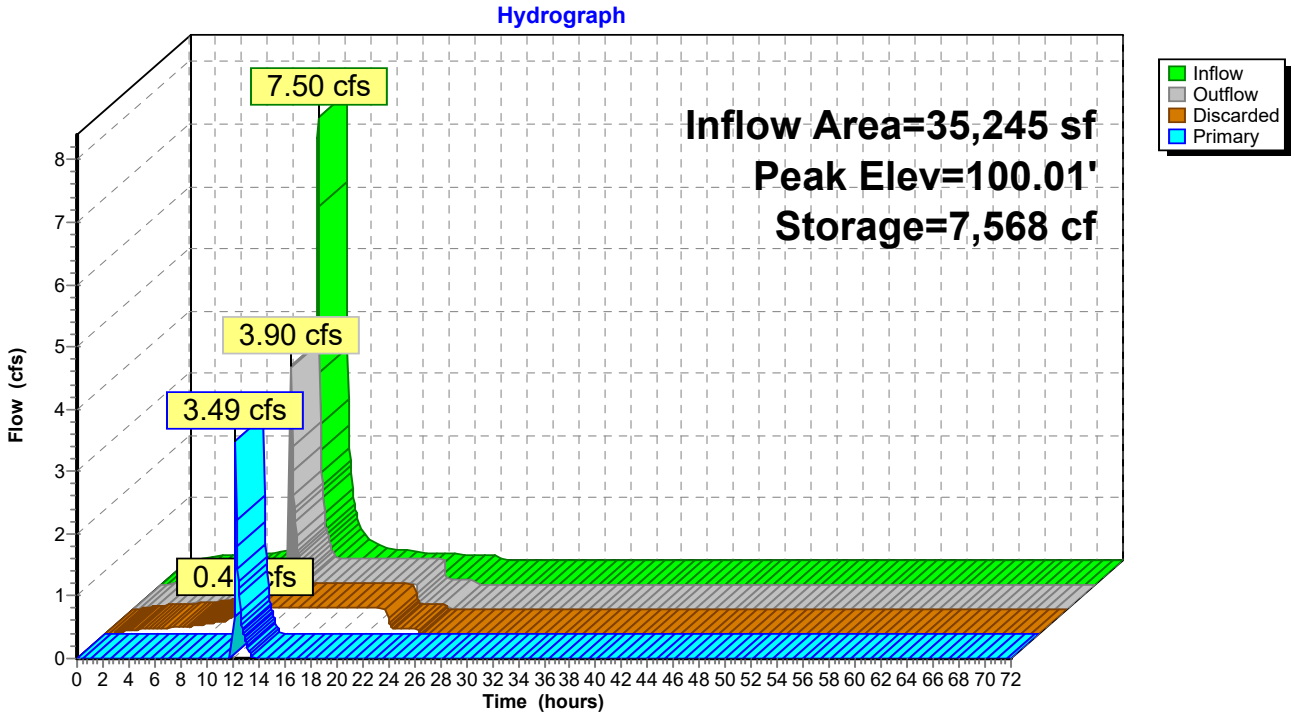
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	35,245	0.0	0	0
99.75	35,245	35.0	6,168	6,168
99.83	35,245	15.0	423	6,591
100.01	35,245	15.0	952	7,542
100.25	35,245	100.0	8,459	16,001

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.41 cfs @ 10.75 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=3.30 cfs @ 12.24 hrs HW=100.01' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Weir Controls 3.30 cfs @ 0.28 fps)

Pond 3P: Basic Porous Pavement (infiltration only)



Summary for Pond 4P: Basin 1 Medium Case

[63] Warning: Exceeded Reach 1Ri INLET depth by 1.65' @ 12.95 hrs

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 5.64" for 100-Year _Current event
Inflow = 61.11 cfs @ 12.28 hrs, Volume= 258,349 cf
Outflow = 18.73 cfs @ 12.78 hrs, Volume= 251,095 cf, Atten= 69%, Lag= 30.1 min
Primary = 6.29 cfs @ 12.78 hrs, Volume= 182,526 cf
Routed to Reach 1Ro : outlet
Secondary = 12.44 cfs @ 12.78 hrs, Volume= 68,570 cf
Routed to Reach 1Ro : outlet
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 1Ro : outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 77.52' @ 12.78 hrs Surf.Area= 35,409 sf Storage= 107,417 cf

Plug-Flow detention time= 185.7 min calculated for 250,921 cf (97% of inflow)
Center-of-Mass det. time= 170.7 min (997.8 - 827.1)

Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	162,840 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
74.00	25,611	0	0
79.00	39,525	162,840	162,840

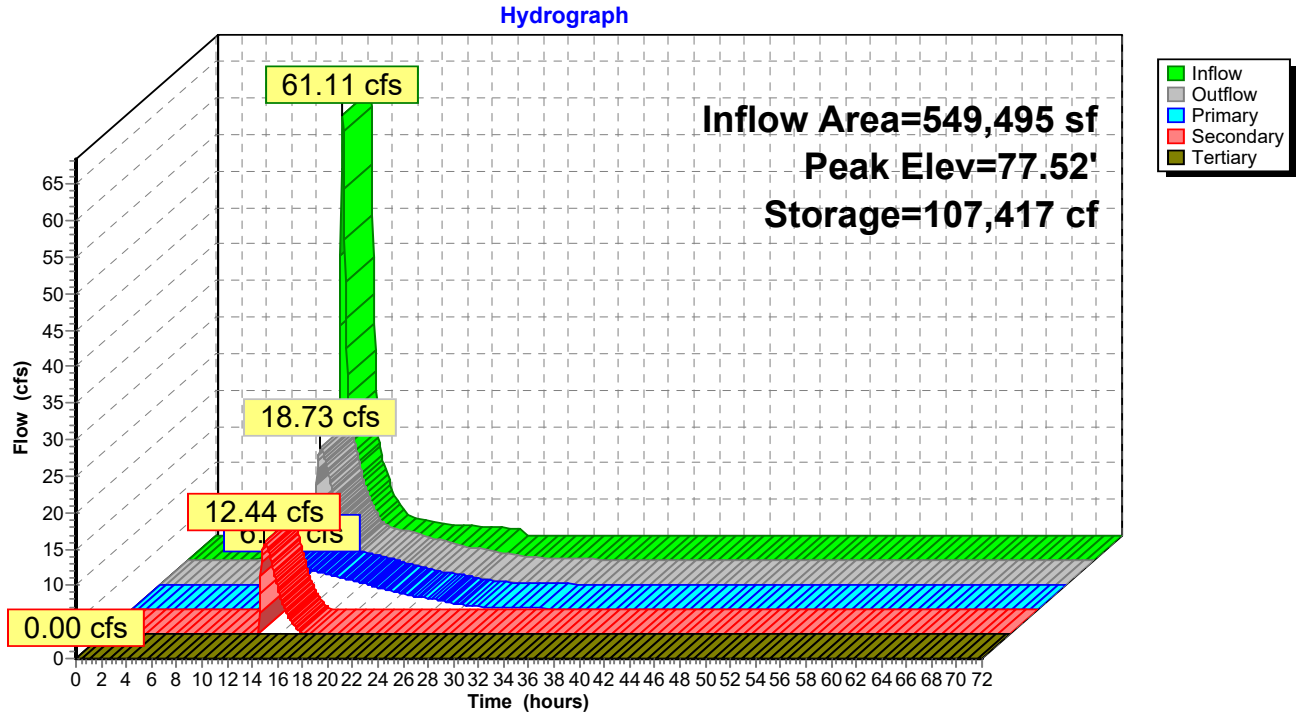
Device	Routing	Invert	Outlet Devices
#1	Primary	74.25'	**12.0" Vert. Low Flow Orifice** C= 0.600 Limited to weir flow at low heads
#2	Secondary	76.25'	**18.0" W x 12.0" H Vert. 2-YR Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	78.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=6.29 cfs @ 12.78 hrs HW=77.52' (Free Discharge)
1=Low Flow Orifice (Orifice Controls 6.29 cfs @ 8.01 fps)

Secondary OutFlow Max=12.43 cfs @ 12.78 hrs HW=77.52' (Free Discharge)
2=2-YR Orifice (Orifice Controls 12.43 cfs @ 4.14 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=74.00' (Free Discharge)
3=Orifice/Grate (Controls 0.00 cfs)

Pond 4P: Basin 1 Medium Case



Summary for Pond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 759,404 sf, 11.16% Impervious, Inflow Depth = 6.11" for 100-Year _Current event
Inflow = 84.00 cfs @ 12.31 hrs, Volume= 386,664 cf
Outflow = 83.93 cfs @ 12.32 hrs, Volume= 386,013 cf, Atten= 0%, Lag= 0.1 min
Primary = 14.17 cfs @ 12.32 hrs, Volume= 256,614 cf
Routed to Link 2L : Combined Flows
Secondary = 48.50 cfs @ 12.32 hrs, Volume= 108,157 cf
Routed to Link 2L : Combined Flows
Tertiary = 21.26 cfs @ 12.32 hrs, Volume= 21,242 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.73' @ 12.32 hrs Surf.Area= 6,805 sf Storage= 15,583 cf

Plug-Flow detention time= 11.2 min calculated for 386,013 cf (100% of inflow)
Center-of-Mass det. time= 9.9 min (827.5 - 817.6)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	365 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,606 cf	x 10.00 = 16,060 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.00	175	100.0	86	365	327

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 10.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 10.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 10.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 10.00** 2 End Contraction(s)

Primary OutFlow Max=14.17 cfs @ 12.32 hrs HW=100.72' (Free Discharge)
└**1=Culvert** (Passes 14.17 cfs of 21.20 cfs potential flow)
└**2=6" HDPE Underdrain** (Barrel Controls 14.17 cfs @ 7.21 fps)

Secondary OutFlow Max=48.17 cfs @ 12.32 hrs HW=100.72' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 48.17 cfs @ 2.22 fps)

Tertiary OutFlow Max=20.72 cfs @ 12.32 hrs HW=100.72' (Free Discharge)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 20.72 cfs @ 1.55 fps)

ond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

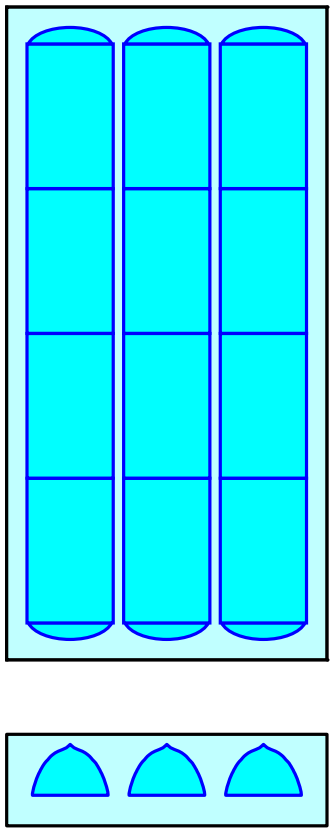
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

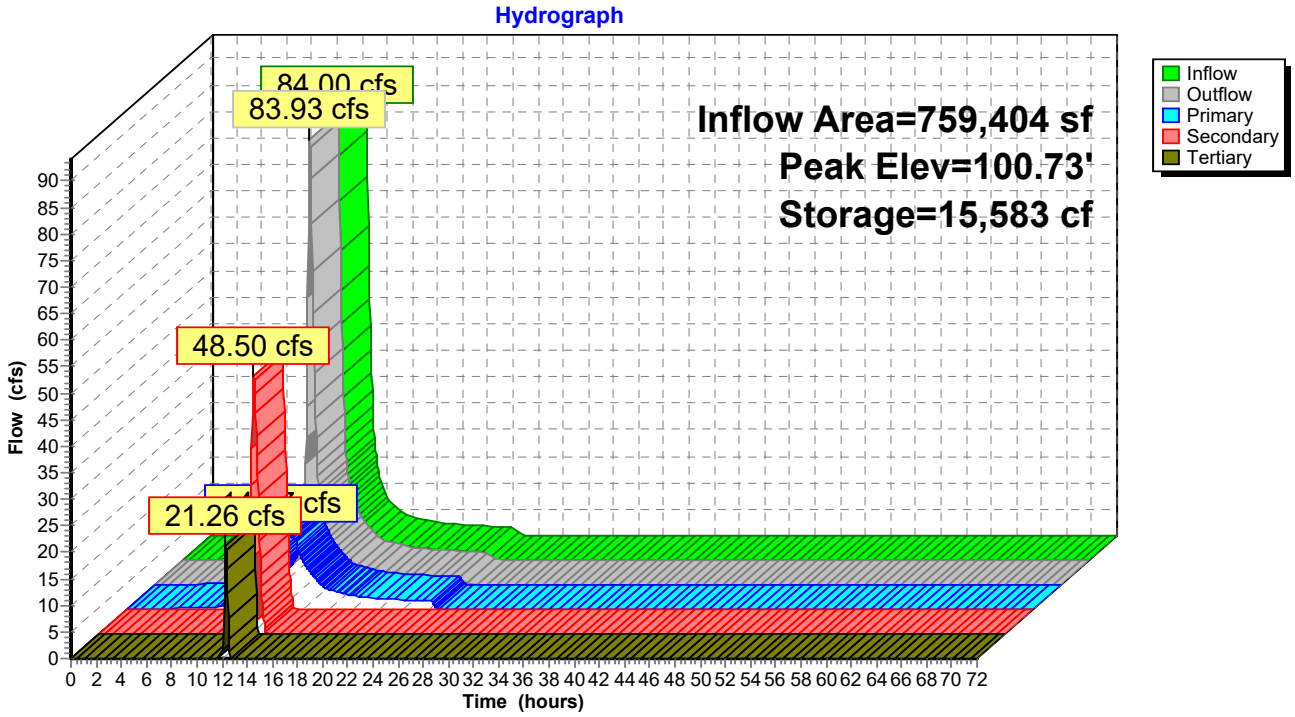
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 6P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 53,997 sf,100.00% Impervious, Inflow Depth = 8.71" for 100-Year _Current event
Inflow = 11.50 cfs @ 12.13 hrs, Volume= 39,191 cf
Outflow = 10.30 cfs @ 12.16 hrs, Volume= 39,196 cf, Atten= 10%, Lag= 1.9 min
Discarded = 0.14 cfs @ 11.90 hrs, Volume= 19,631 cf
Primary = 10.16 cfs @ 12.16 hrs, Volume= 19,565 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 100.19' @ 12.16 hrs Surf.Area= 12,500 sf Storage= 11,682 cf

Plug-Flow detention time= 344.3 min calculated for 39,169 cf (100% of inflow)
Center-of-Mass det. time= 345.0 min (1,085.4 - 740.4)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 25.00 = 15,550 cf Total Available Storage

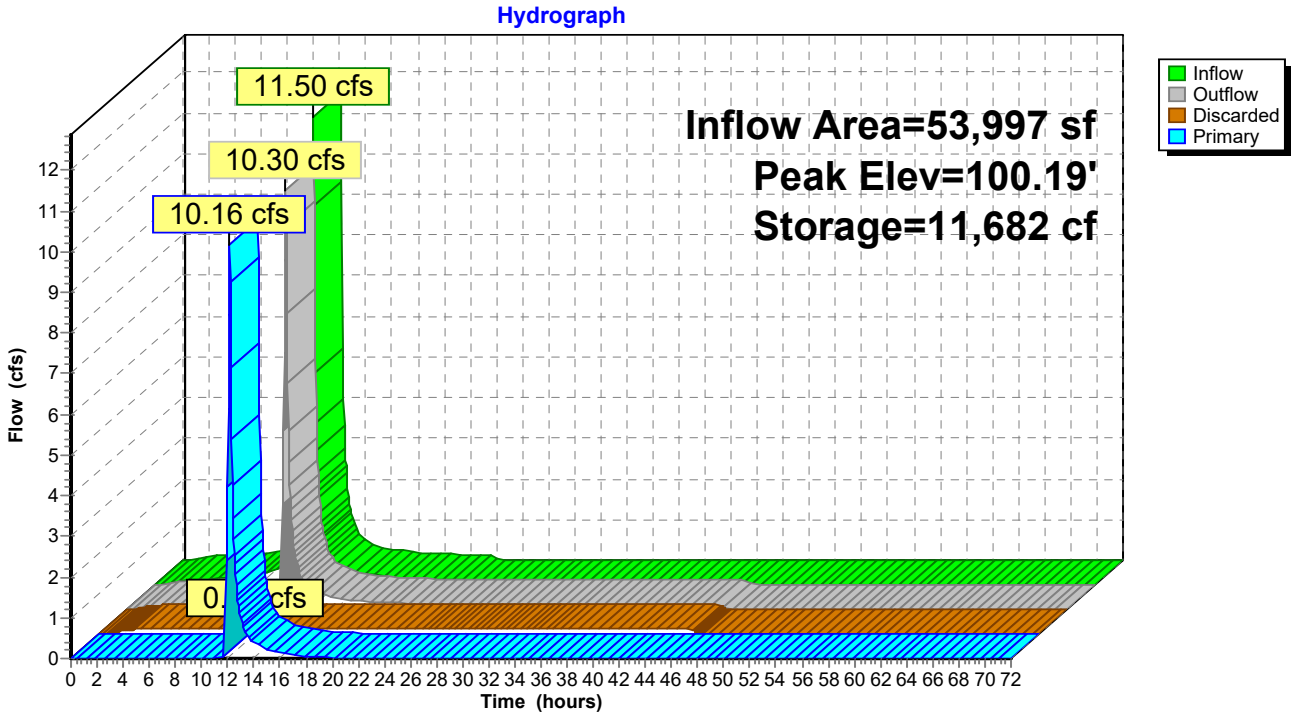
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 25.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.14 cfs @ 11.90 hrs HW=100.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=9.97 cfs @ 12.16 hrs HW=100.19' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 9.97 cfs @ 1.06 fps)

Pond 6P: Basic Rain Garden (infiltration only)



Summary for Pond 7P: Basic Porous Pavement (infiltration only)

Inflow Area = 94,724 sf,100.00% Impervious, Inflow Depth = 8.71" for 100-Year _Current event
Inflow = 20.17 cfs @ 12.13 hrs, Volume= 68,751 cf
Outflow = 9.43 cfs @ 12.27 hrs, Volume= 68,751 cf, Atten= 53%, Lag= 8.6 min
Discarded = 1.10 cfs @ 10.75 hrs, Volume= 58,998 cf
Primary = 8.34 cfs @ 12.27 hrs, Volume= 9,753 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 100.02' @ 12.25 hrs Surf.Area= 94,724 sf Storage= 21,097 cf

Plug-Flow detention time= 115.5 min calculated for 68,704 cf (100% of inflow)
Center-of-Mass det. time= 115.4 min (855.8 - 740.4)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	43,005 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

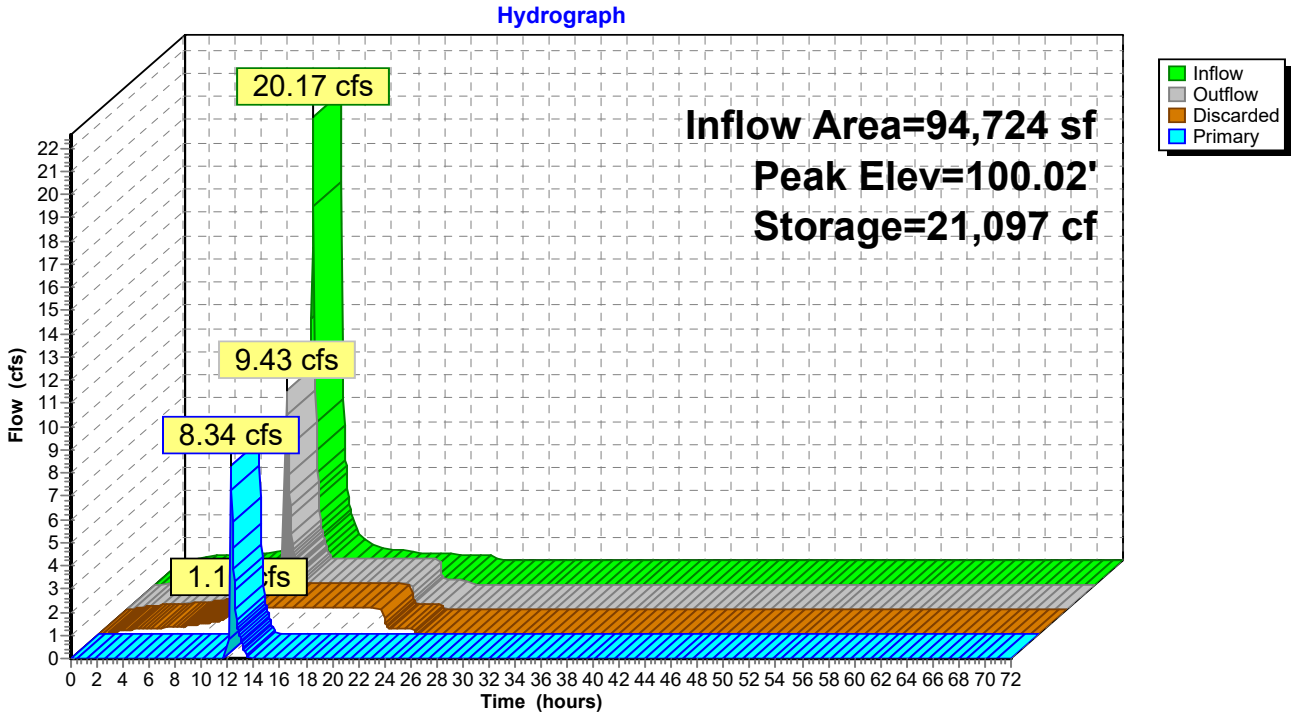
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	94,724	0.0	0	0
99.75	94,724	35.0	16,577	16,577
99.83	94,724	15.0	1,137	17,713
100.01	94,724	15.0	2,558	20,271
100.25	94,724	100.0	22,734	43,005

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=1.10 cfs @ 10.75 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 1.10 cfs)

Primary OutFlow Max=7.57 cfs @ 12.27 hrs HW=100.02' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Weir Controls 7.57 cfs @ 0.36 fps)

Pond 7P: Basic Porous Pavement (infiltration only)



Summary for Pond 8P: Basin 2 Medium Case

[63] Warning: Exceeded Reach 2Ri INLET depth by 1.14' @ 12.65 hrs

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 5.49" for 100-Year _Current event
Inflow = 95.81 cfs @ 12.30 hrs, Volume= 415,351 cf
Outflow = 67.33 cfs @ 12.49 hrs, Volume= 410,553 cf, Atten= 30%, Lag= 11.6 min
Primary = 28.77 cfs @ 12.49 hrs, Volume= 331,164 cf
Routed to Reach 2Ro : Outlet
Secondary = 38.57 cfs @ 12.49 hrs, Volume= 79,389 cf
Routed to Reach 2Ro : Outlet
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Reach 2Ro : Outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 72.86' @ 12.49 hrs Surf.Area= 28,404 sf Storage= 91,215 cf

Plug-Flow detention time= 56.3 min calculated for 410,553 cf (99% of inflow)
Center-of-Mass det. time= 48.8 min (872.3 - 823.5)

Volume	Invert	Avail.Storage	Storage Description
#1	69.00'	125,280 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.00	18,889	0	0
74.00	31,223	125,280	125,280

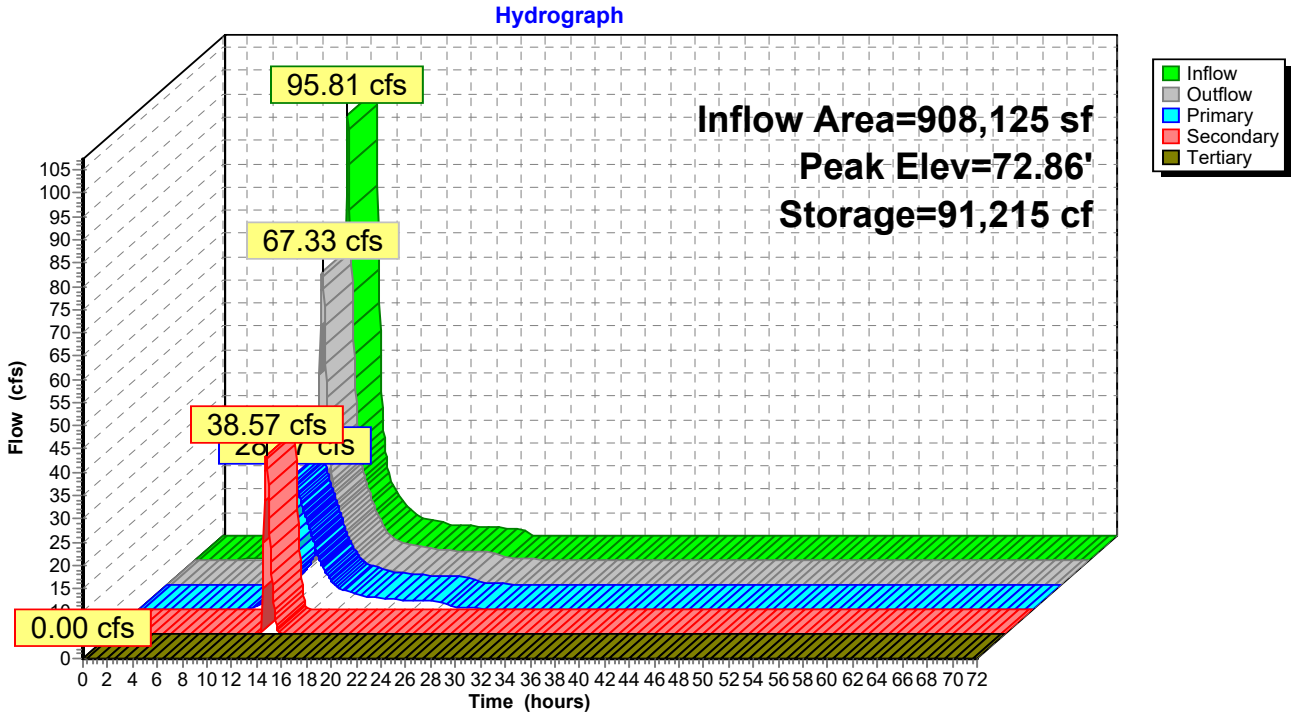
Device	Routing	Invert	Outlet Devices
#1	Primary	69.25'	**18.0" Vert. Low Flow Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Secondary	71.25'	**24.0" W x 18.0" H Vert. 2-YR Orifice X 3.00** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	73.75'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=28.75 cfs @ 12.49 hrs HW=72.85' (Free Discharge)
1=Low Flow Orifice (Orifice Controls 28.75 cfs @ 8.14 fps)

Secondary OutFlow Max=38.49 cfs @ 12.49 hrs HW=72.85' (Free Discharge)
2=2-YR Orifice (Orifice Controls 38.49 cfs @ 4.28 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=69.00' (Free Discharge)
3=Orifice/Grate (Controls 0.00 cfs)

Pond 8P: Basin 2 Medium Case



Summary for Pond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 840,092 sf, 1.06% Impervious, Inflow Depth = 5.81" for 100-Year _Current event
Inflow = 79.86 cfs @ 12.39 hrs, Volume= 407,065 cf
Outflow = 79.85 cfs @ 12.39 hrs, Volume= 406,849 cf, Atten= 0%, Lag= 0.1 min
Primary = 3.03 cfs @ 12.39 hrs, Volume= 139,078 cf
Routed to Link 3L : dA3
Secondary = 34.33 cfs @ 12.39 hrs, Volume= 162,270 cf
Routed to Link 3L : dA3
Tertiary = 42.50 cfs @ 12.39 hrs, Volume= 105,501 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 101.58' @ 12.39 hrs Surf.Area= 1,361 sf Storage= 3,415 cf

Plug-Flow detention time= 6.2 min calculated for 406,566 cf (100% of inflow)
Center-of-Mass det. time= 5.9 min (839.8 - 833.9)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,737 cf	x 2.00 = 3,475 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.75	175	100.0	217	497	363

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 2.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 2.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 2.00** 2 End Contraction(s)

Primary OutFlow Max=3.03 cfs @ 12.39 hrs HW=101.58' (Free Discharge)
↑—**1=Culvert** (Passes 3.03 cfs of 4.53 cfs potential flow)
↑—**2=6" HDPE Underdrain** (Barrel Controls 3.03 cfs @ 7.71 fps)

Secondary OutFlow Max=34.23 cfs @ 12.39 hrs HW=101.58' (Free Discharge)
↑—**3=Broad-Crested Rectangular Weir** (Weir Controls 34.23 cfs @ 3.61 fps)

Tertiary OutFlow Max=42.36 cfs @ 12.39 hrs HW=101.58' (Free Discharge)
↑—**4=Sharp-Crested Rectangular Weir** (Weir Controls 42.36 cfs @ 3.40 fps)

ond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

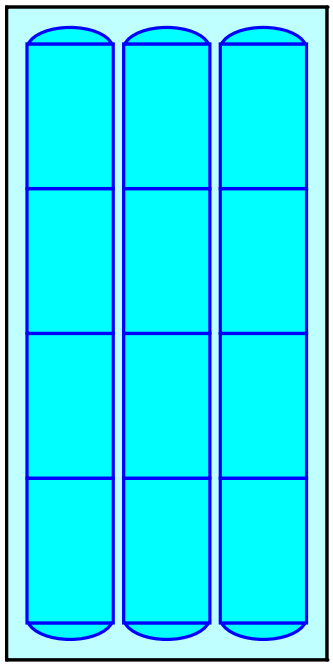
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

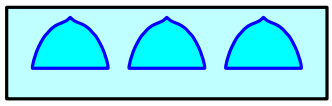
12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

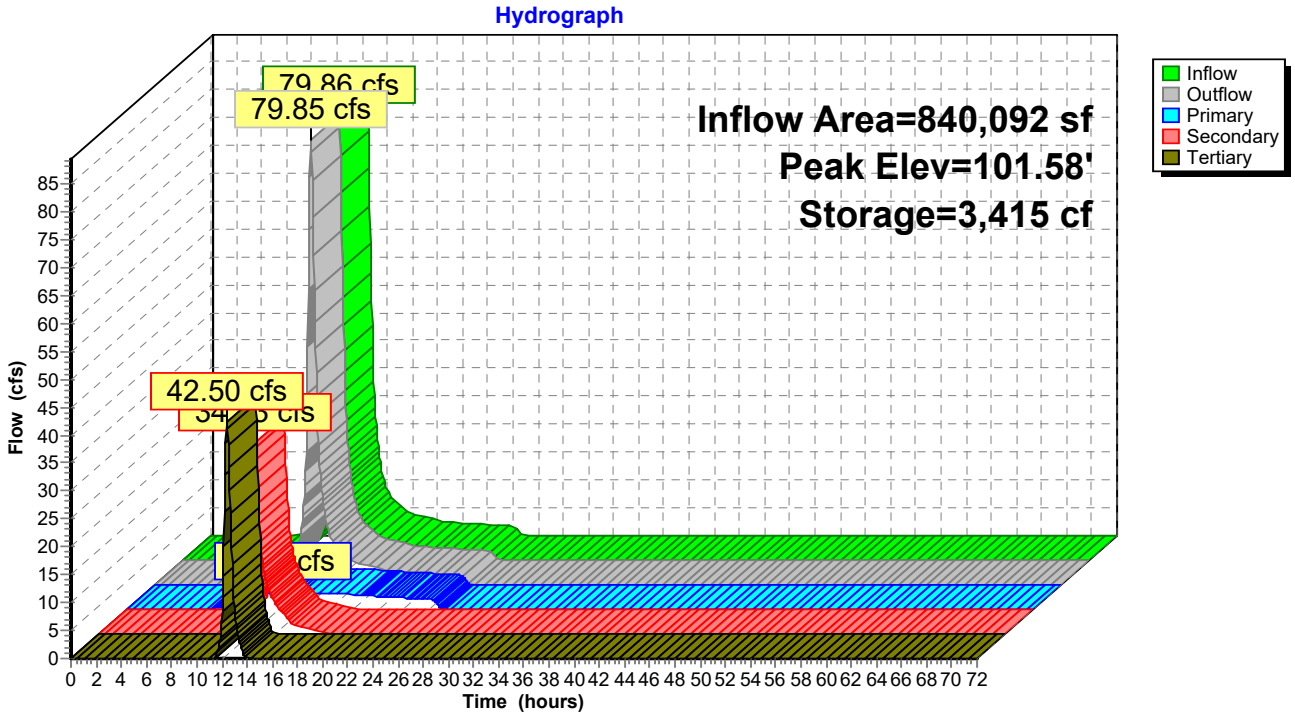
Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone





Pond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 10P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 22,074 sf,100.00% Impervious, Inflow Depth = 8.71" for 100-Year _Current event
Inflow = 4.70 cfs @ 12.13 hrs, Volume= 16,021 cf
Outflow = 4.25 cfs @ 12.16 hrs, Volume= 16,020 cf, Atten= 10%, Lag= 1.8 min
Discarded = 0.05 cfs @ 11.75 hrs, Volume= 7,145 cf
Primary = 4.20 cfs @ 12.16 hrs, Volume= 8,874 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 100.21' @ 12.16 hrs Surf.Area= 4,500 sf Storage= 4,287 cf

Plug-Flow detention time= 313.5 min calculated for 16,020 cf (100% of inflow)
Center-of-Mass det. time= 313.3 min (1,053.7 - 740.4)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 9.00 = 5,598 cf Total Available Storage

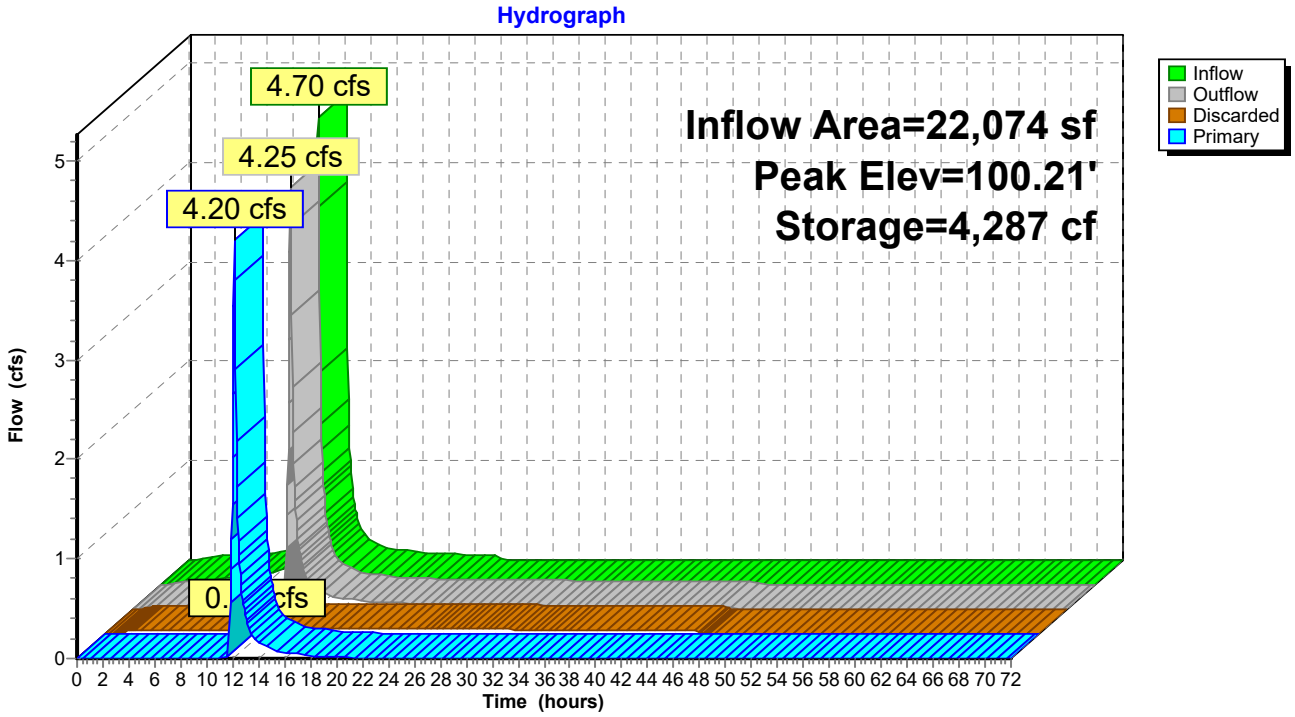
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 9.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.05 cfs @ 11.75 hrs HW=100.03' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=4.14 cfs @ 12.16 hrs HW=100.21' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 4.14 cfs @ 1.11 fps)

Pond 10P: Basic Rain Garden (infiltration only)



Summary for Pond 11P: Basic Porous Pavement (infiltration only)

Inflow Area = 85,494 sf,100.00% Impervious, Inflow Depth = 8.71" for 100-Year _Current event
Inflow = 18.20 cfs @ 12.13 hrs, Volume= 62,052 cf
Outflow = 8.80 cfs @ 12.27 hrs, Volume= 62,052 cf, Atten= 52%, Lag= 8.4 min
Discarded = 0.99 cfs @ 10.75 hrs, Volume= 53,249 cf
Primary = 7.81 cfs @ 12.27 hrs, Volume= 8,803 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 100.02' @ 12.25 hrs Surf.Area= 85,494 sf Storage= 18,975 cf

Plug-Flow detention time= 115.5 min calculated for 62,009 cf (100% of inflow)
Center-of-Mass det. time= 115.4 min (855.8 - 740.4)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	38,814 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

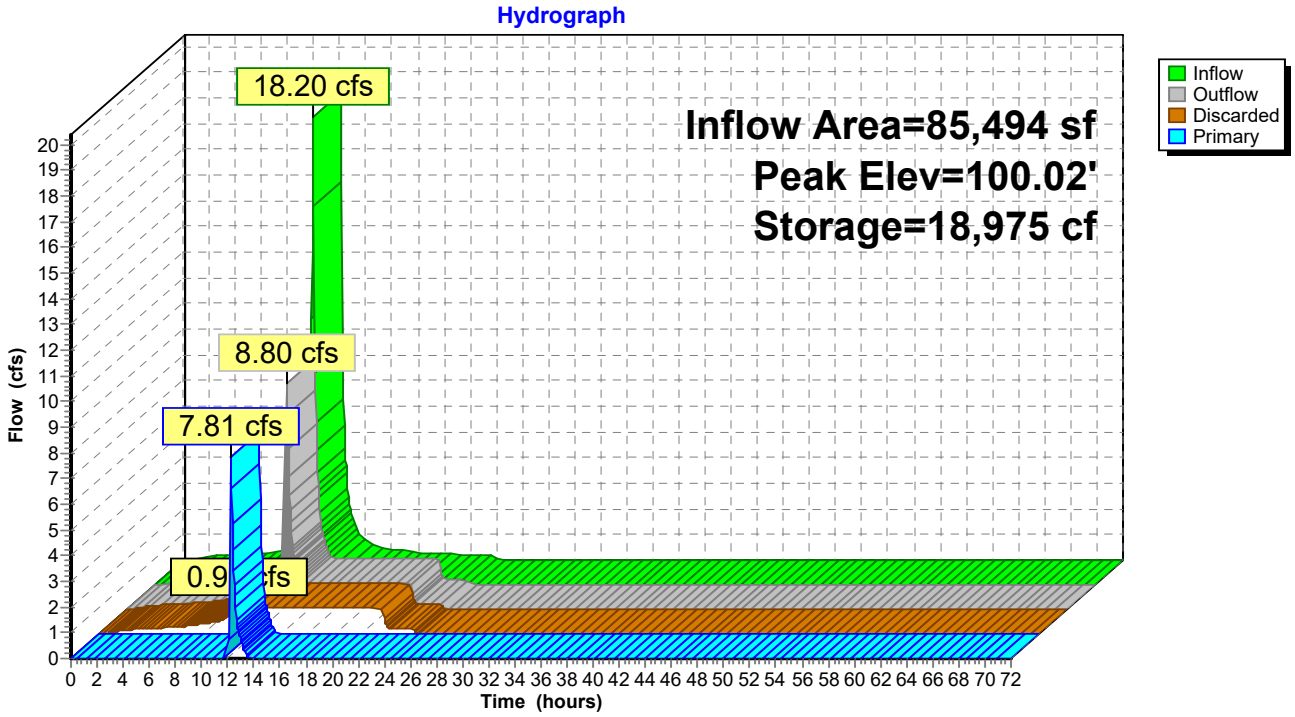
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	85,494	0.0	0	0
99.75	85,494	35.0	14,961	14,961
99.83	85,494	15.0	1,026	15,987
100.01	85,494	15.0	2,308	18,296
100.25	85,494	100.0	20,519	38,814

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.99 cfs @ 10.75 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.99 cfs)

Primary OutFlow Max=7.04 cfs @ 12.27 hrs HW=100.02' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Weir Controls 7.04 cfs @ 0.35 fps)

Pond 11P: Basic Porous Pavement (infiltration only)



Summary for Pond 12P: Basic Porous Pavement (infiltration only)

[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)

Inflow Area = 4,605 sf,100.00% Impervious, Inflow Depth = 8.71" for 100-Year _Current event
Inflow = 0.98 cfs @ 12.13 hrs, Volume= 3,342 cf
Outflow = 0.97 cfs @ 12.20 hrs, Volume= 3,403 cf, Atten= 1%, Lag= 4.6 min
Discarded = 0.05 cfs @ 10.80 hrs, Volume= 2,861 cf
Primary = 0.91 cfs @ 12.20 hrs, Volume= 542 cf
Routed to Link 4L : DA 4: Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.00' @ 12.20 hrs Surf.Area= 4,605 sf Storage= 981 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 113.7 min (854.1 - 740.4)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	4,393 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

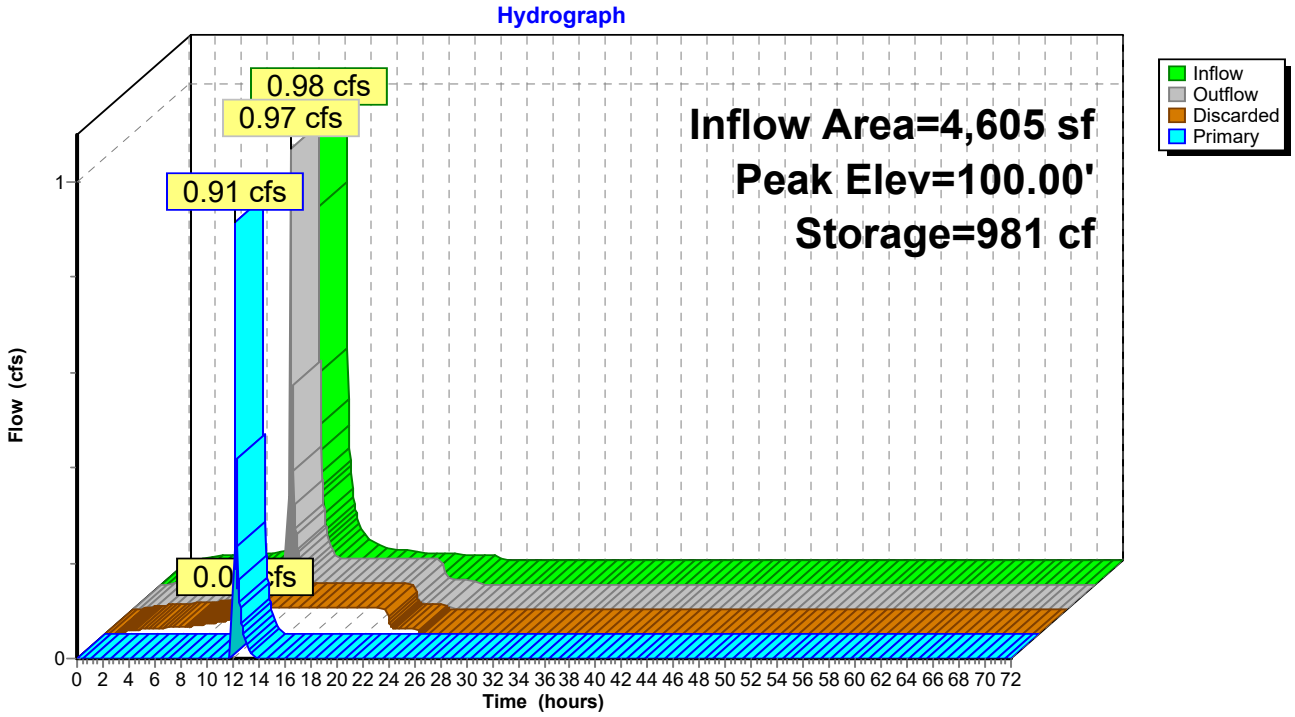
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	4,605	0.0	0	0
99.75	4,605	35.0	806	806
99.83	4,605	15.0	55	861
100.01	4,605	15.0	124	985
100.25	4,605	100.0	1,105	2,091
100.75	4,605	100.0	2,303	4,393

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.05 cfs @ 10.80 hrs HW=99.27' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.46 cfs @ 12.20 hrs HW=100.00' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Weir Controls 0.46 cfs @ 0.14 fps)

Pond 12P: Basic Porous Pavement (infiltration only)

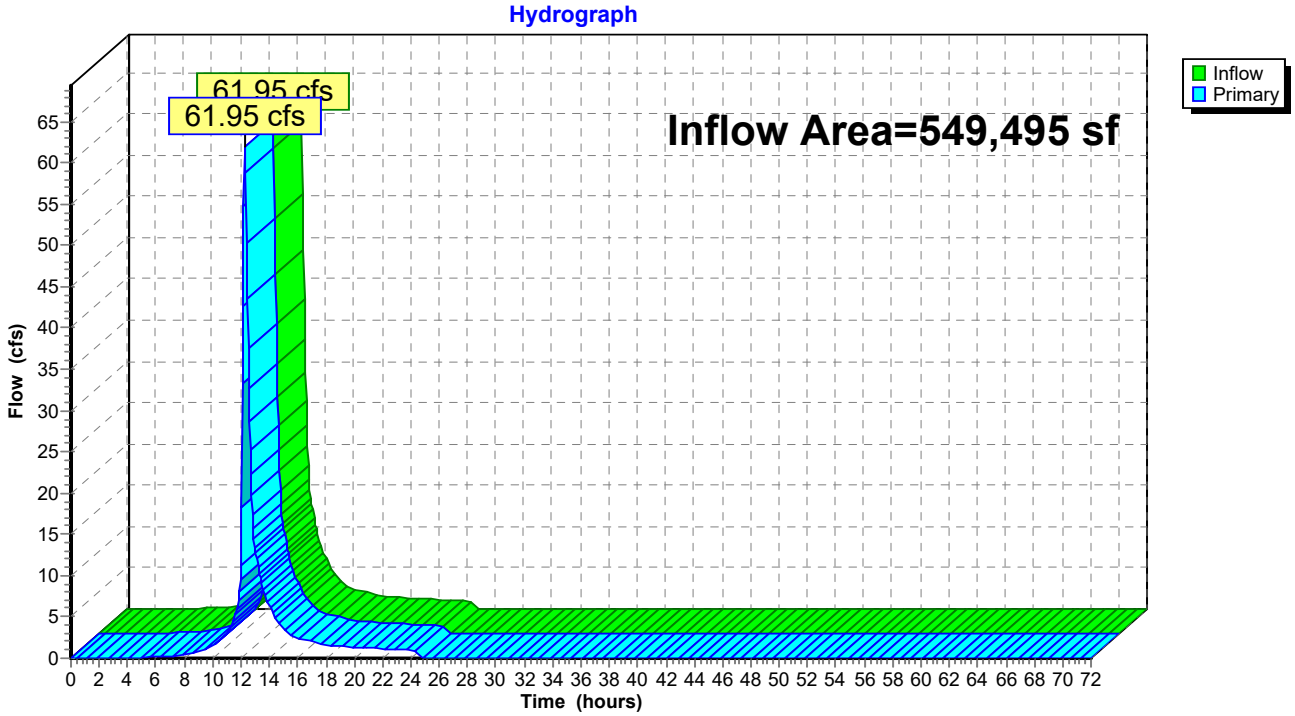


Summary for Link 1L: Combined Flows

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 5.64" for 100-Year _Current event
Inflow = 61.95 cfs @ 12.27 hrs, Volume= 258,325 cf
Primary = 61.95 cfs @ 12.27 hrs, Volume= 258,325 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 1Ri : Inlet Pipe

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1L: Combined Flows

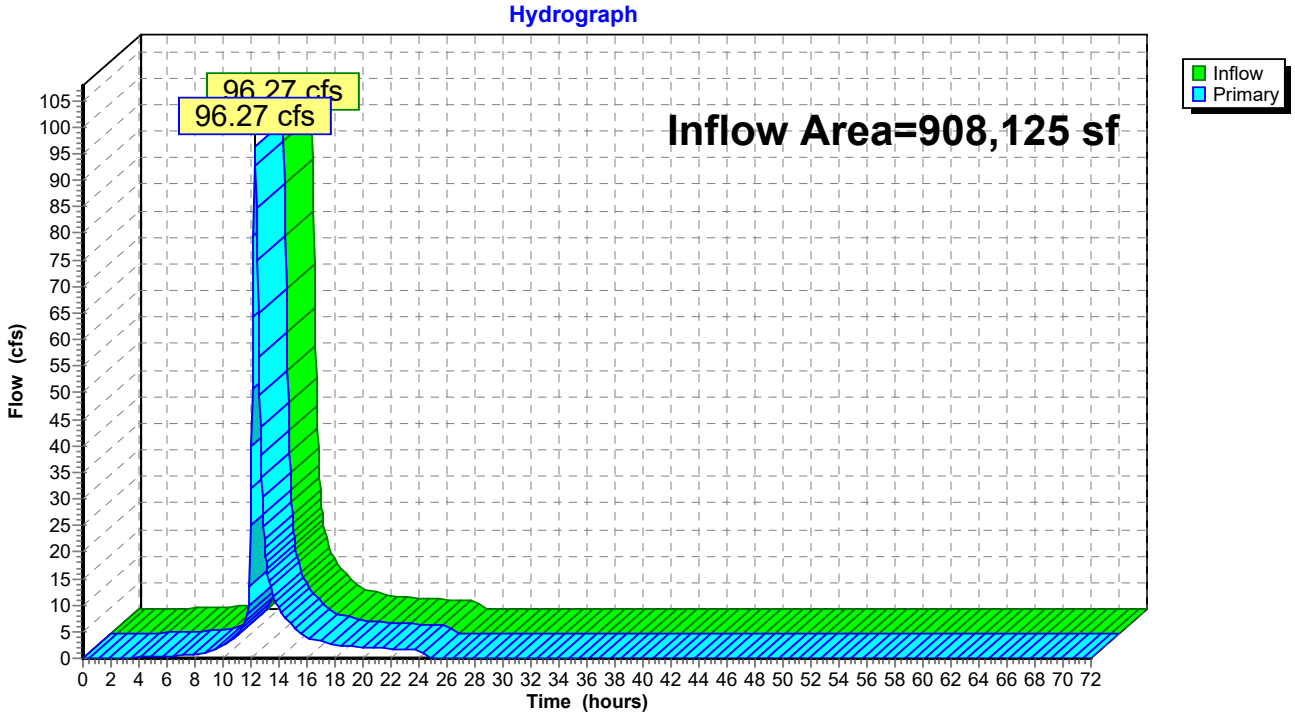


Summary for Link 2L: Combined Flows

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 5.49" for 100-Year _Current event
Inflow = 96.27 cfs @ 12.30 hrs, Volume= 415,331 cf
Primary = 96.27 cfs @ 12.30 hrs, Volume= 415,331 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 2Ri : Inlet Pipe

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 2L: Combined Flows

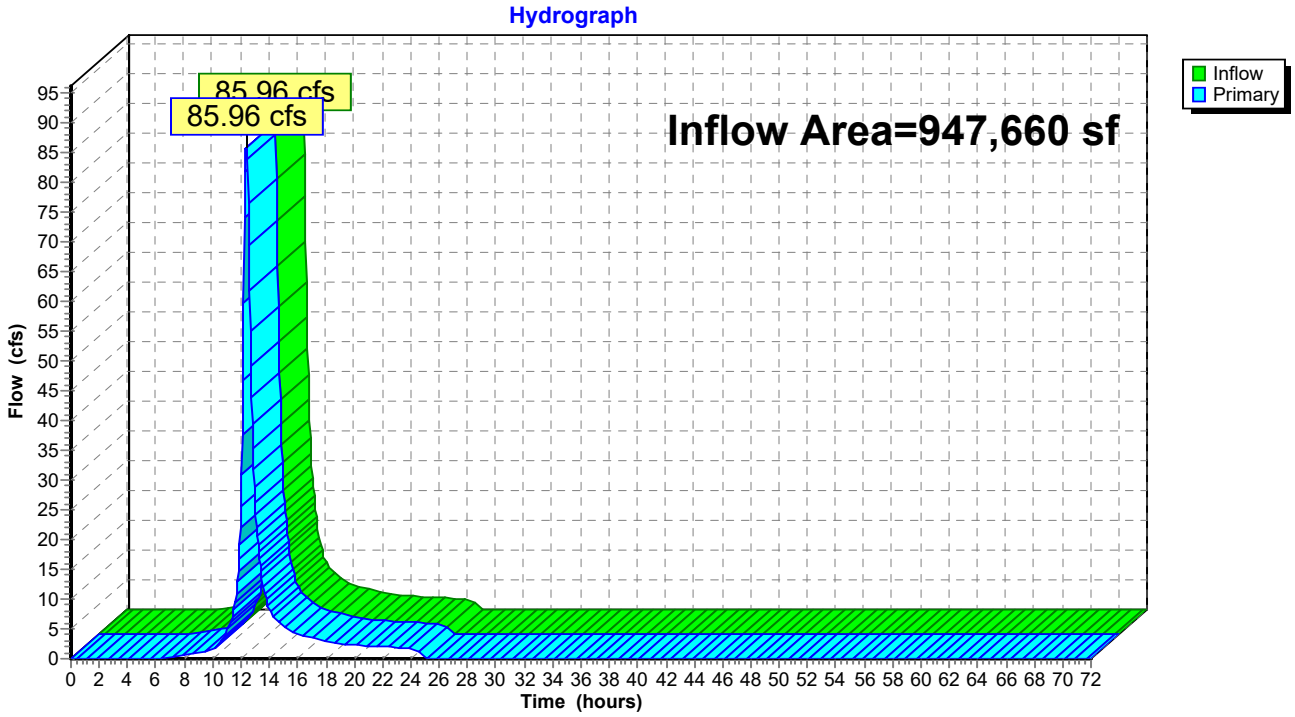


Summary for Link 3L: dA3

Inflow Area = 947,660 sf, 12.29% Impervious, Inflow Depth = 5.38" for 100-Year _Current event
Inflow = 85.96 cfs @ 12.37 hrs, Volume= 424,526 cf
Primary = 85.96 cfs @ 12.37 hrs, Volume= 424,526 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 3L: dA3

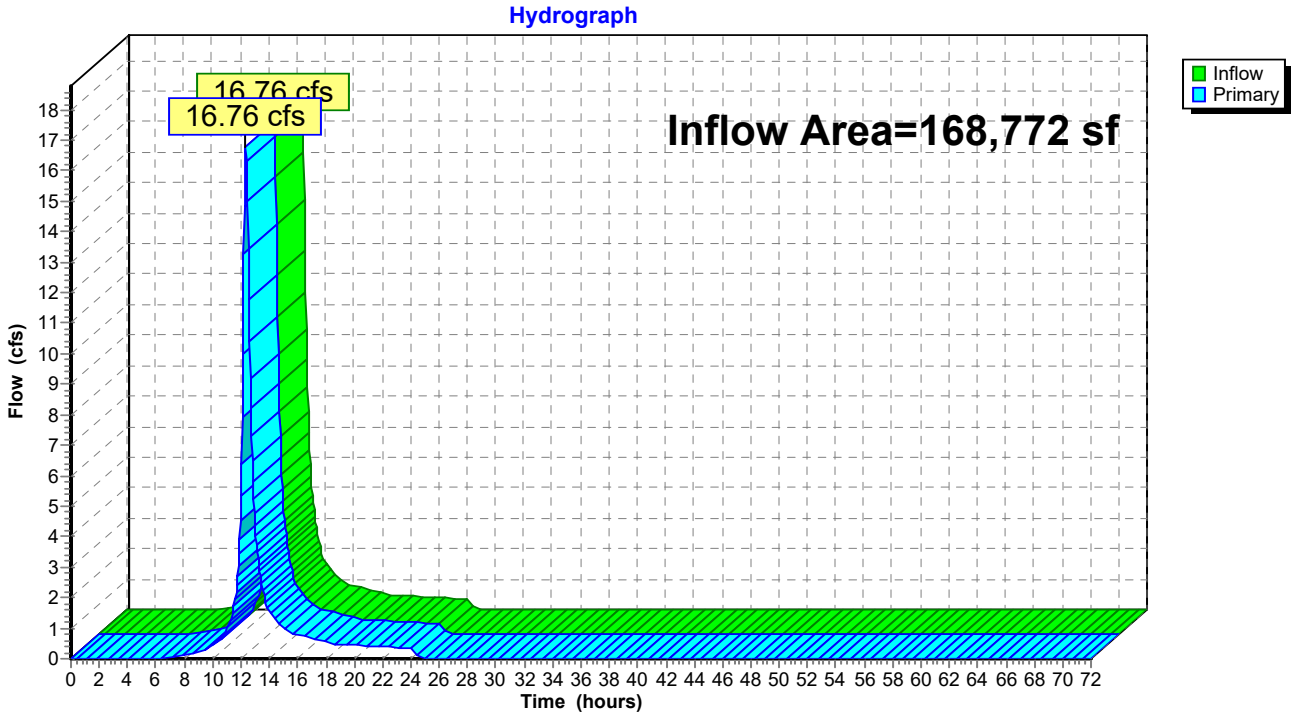


Summary for Link 4L: DA 4: Combined Flows

Inflow Area = 168,772 sf, 3.14% Impervious, Inflow Depth = 5.68" for 100-Year _Current event
Inflow = 16.76 cfs @ 12.34 hrs, Volume= 79,832 cf
Primary = 16.76 cfs @ 12.34 hrs, Volume= 79,832 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: DA 4: Combined Flows



Time span=0.00-72.00 hrs, dt=0.05 hrs, 1441 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: DA 1: CN w/ IC areas Runoff Area=549,495 sf 18.28% Impervious Runoff Depth=9.33"
Tc=19.8 min CN=74/98 Runoff=94.96 cfs 427,449 cf

Subcatchment 1Sa: DA 1: CN w/ IC areas Runoff Area=492,891 sf 8.90% Impervious Runoff Depth=9.04"
Tc=19.8 min CN=74/98 Runoff=83.71 cfs 371,277 cf

Subcatchment 1Sb: DA 1: Roofs Runoff Area=21,359 sf 100.00% Impervious Runoff Depth=11.91"
Tc=6.0 min CN=0/98 Runoff=6.18 cfs 21,196 cf

Subcatchment 1Sc: DA1: Driveways Runoff Area=35,245 sf 100.00% Impervious Runoff Depth=11.91"
Tc=6.0 min CN=0/98 Runoff=10.19 cfs 34,976 cf

Subcatchment 2S: DA 2: CN w/ IC areas Runoff Area=908,125 sf 25.71% Impervious Runoff Depth=9.57"
Tc=21.8 min CN=74/98 Runoff=152.20 cfs 724,127 cf

Subcatchment 2Sa: DA 2: CN w/ IC areas Runoff Area=759,404 sf 11.16% Impervious Runoff Depth=9.11"
Tc=21.8 min CN=74/98 Runoff=123.91 cfs 576,541 cf

Subcatchment 2Sb: DA 2: Roofs Runoff Area=53,997 sf 100.00% Impervious Runoff Depth=11.91"
Tc=6.0 min CN=0/98 Runoff=15.62 cfs 53,585 cf

Subcatchment 2Sc: DA 2: Driveways Runoff Area=94,724 sf 100.00% Impervious Runoff Depth=11.91"
Tc=6.0 min CN=0/98 Runoff=27.40 cfs 94,002 cf

Subcatchment 3S: DA 3: CN w/ IC areas Runoff Area=947,660 sf 12.29% Impervious Runoff Depth=9.15"
Tc=27.9 min CN=74/98 Runoff=137.53 cfs 722,285 cf

Subcatchment 3Sa: DA 3: CN w/ IC areas Runoff Area=840,092 sf 1.06% Impervious Runoff Depth=8.79"
Tc=27.9 min CN=74/98 Runoff=119.32 cfs 615,538 cf

Subcatchment 3Sb: DA 3: Roofs Runoff Area=22,074 sf 100.00% Impervious Runoff Depth=11.91"
Tc=6.0 min CN=0/98 Runoff=6.38 cfs 21,906 cf

Subcatchment 3Sc: DA 3: Driveways Runoff Area=85,494 sf 100.00% Impervious Runoff Depth=11.91"
Tc=6.0 min CN=0/98 Runoff=24.73 cfs 84,842 cf

Subcatchment 4S: DA 4: CN w/ IC areas Runoff Area=168,772 sf 3.14% Impervious Runoff Depth=8.86"
Tc=24.4 min CN=74/98 Runoff=25.71 cfs 124,579 cf

Subcatchment 4Sa: DA 4: CN w/ IC areas Runoff Area=163,472 sf 0.00% Impervious Runoff Depth=8.76"
Tc=24.4 min CN=74/0 Runoff=24.75 cfs 119,320 cf

Subcatchment 4Sb: DA 4: Roofs Runoff Area=695 sf 100.00% Impervious Runoff Depth=11.91"
Tc=6.0 min CN=0/98 Runoff=0.20 cfs 690 cf

Subcatchment 4Sc: DA 4: Driveways Runoff Area=4,605 sf 100.00% Impervious Runoff Depth=11.91"
Tc=6.0 min CN=0/98 Runoff=1.33 cfs 4,570 cf

Reach 1Ri: Inlet Pipe Avg. Flow Depth=2.31' Max Vel=12.07 fps Inflow=90.97 cfs 393,184 cf
48.0" Round Pipe n=0.013 L=100.0' S=0.0100 '/' Capacity=143.64 cfs Outflow=90.54 cfs 393,202 cf

Reach 1Ro: outlet Avg. Flow Depth=2.15' Max Vel=6.83 fps Inflow=30.73 cfs 385,914 cf
30.0" Round Pipe n=0.013 L=925.0' S=0.0051 '/' Capacity=29.39 cfs Outflow=30.55 cfs 385,903 cf

Reach 2Ri: Inlet Pipe Avg. Flow Depth=3.23' Max Vel=13.03 fps Inflow=141.97 cfs 634,068 cf
48.0" Round Pipe n=0.013 L=100.0' S=0.0100 '/' Capacity=143.64 cfs Outflow=141.47 cfs 634,074 cf

Reach 2Ro: Outlet Avg. Flow Depth=2.66' Max Vel=12.91 fps Inflow=101.15 cfs 626,147 cf
42.0" Round Pipe n=0.013 L=190.0' S=0.0118 '/' Capacity=109.48 cfs Outflow=101.18 cfs 626,155 cf

Pond 1P: Basic Rain Garden (w/ Peak Elev=100.76' Storage=14,082 cf Inflow=83.71 cfs 371,277 cf
Primary=12.79 cfs 242,221 cf Secondary=46.94 cfs 104,239 cf Tertiary=23.91 cfs 23,855 cf Outflow=83.64 cfs 370,315 cf

Pond 2P: Basic Rain Garden (infiltration Peak Elev=100.24' Storage=4,898 cf Inflow=6.18 cfs 21,196 cf
Discarded=0.06 cfs 8,049 cf Primary=5.64 cfs 13,147 cf Outflow=5.70 cfs 21,196 cf

Pond 3P: Basic Porous Pavement Peak Elev=100.02' Storage=7,930 cf Inflow=10.19 cfs 34,976 cf
Discarded=0.41 cfs 25,572 cf Primary=9.43 cfs 9,722 cf Outflow=9.83 cfs 35,294 cf

Pond 4P: Basin 1 Medium Case Peak Elev=78.92' Storage=159,557 cf Inflow=90.54 cfs 393,202 cf
Primary=7.72 cfs 229,725 cf Secondary=21.21 cfs 154,469 cf Tertiary=1.79 cfs 1,720 cf Outflow=30.73 cfs 385,914 cf

Pond 5P: Basic Rain Garden (w/ Peak Elev=100.88' Storage=15,844 cf Inflow=123.91 cfs 576,541 cf
Primary=14.34 cfs 340,579 cf Secondary=64.62 cfs 176,717 cf Tertiary=44.88 cfs 58,045 cf Outflow=123.85 cfs 575,341 cf

Pond 6P: Basic Rain Garden (infiltration Peak Elev=100.24' Storage=12,250 cf Inflow=15.62 cfs 53,585 cf
Discarded=0.14 cfs 20,133 cf Primary=14.14 cfs 33,455 cf Outflow=14.28 cfs 53,588 cf

Pond 7P: Basic Porous Pavement Peak Elev=100.04' Storage=23,080 cf Inflow=27.40 cfs 94,002 cf
Discarded=1.10 cfs 68,729 cf Primary=24.09 cfs 25,272 cf Outflow=25.19 cfs 94,002 cf

Pond 8P: Basin 2 Medium Case Peak Elev=73.99' Storage=125,095 cf Inflow=141.47 cfs 634,074 cf
Primary=34.01 cfs 447,640 cf Secondary=60.82 cfs 174,083 cf Tertiary=6.32 cfs 4,424 cf Outflow=101.15 cfs 626,147 cf

Pond 9P: Basic Rain Garden (w/ Peak Elev=101.99' Storage=3,475 cf Inflow=119.32 cfs 615,538 cf
Primary=3.12 cfs 165,622 cf Secondary=48.23 cfs 262,726 cf Tertiary=68.15 cfs 186,973 cf Outflow=119.49 cfs 615,321 cf

Pond 10P: Basic Rain Garden (infiltration Peak Elev=100.26' Storage=4,505 cf Inflow=6.38 cfs 21,906 cf
Discarded=0.05 cfs 7,291 cf Primary=5.82 cfs 14,614 cf Outflow=5.88 cfs 21,905 cf

Pond 11P: Basic Porous Pavement Peak Elev=100.04' Storage=20,650 cf Inflow=24.73 cfs 84,842 cf
Discarded=0.99 cfs 62,032 cf Primary=22.27 cfs 22,810 cf Outflow=23.25 cfs 84,842 cf

Pond 12P: Basic Porous Pavement (infiltration Peak Elev=100.00' Storage=981 cf Inflow=1.33 cfs 4,570 cf
Discarded=0.05 cfs 3,333 cf Primary=1.28 cfs 1,244 cf Outflow=1.33 cfs 4,577 cf

Link 1L: Combined Flows Inflow=90.97 cfs 393,184 cf
Primary=90.97 cfs 393,184 cf

Link 2L: Combined Flows Inflow=141.97 cfs 634,068 cf
Primary=141.97 cfs 634,068 cf

Link 3L: dA3

Inflow=127.91 cfs 652,745 cf
Primary=127.91 cfs 652,745 cf

Link 4L: DA 4: Combined Flows

Inflow=25.16 cfs 121,253 cf
Primary=25.16 cfs 121,253 cf

Total Runoff Area = 5,148,104 sf Runoff Volume = 3,996,883 cf Average Runoff Depth = 9.32"
82.29% Pervious = 4,236,632 sf 17.71% Impervious = 911,472 sf

Summary for Subcatchment 1S: DA 1: CN w/ IC areas

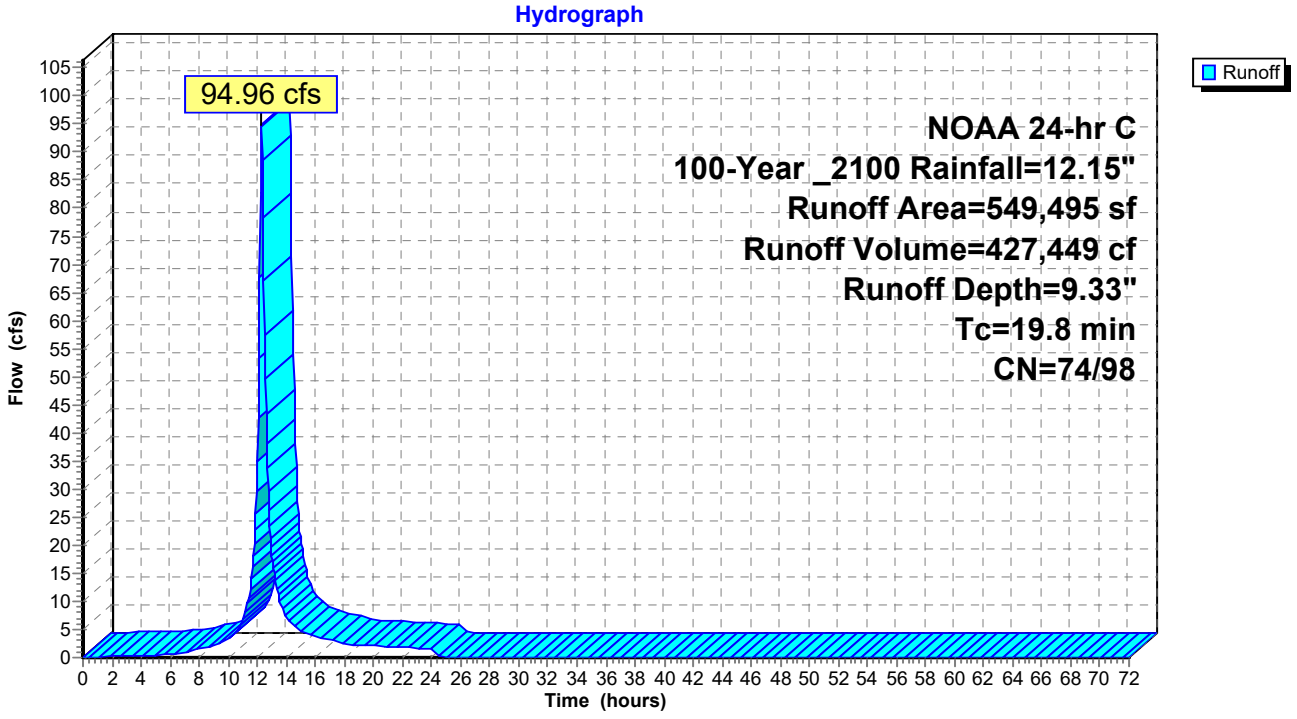
Runoff = 94.96 cfs @ 12.28 hrs, Volume= 427,449 cf, Depth= 9.33"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	100,459	98	Impervious
	317,162	74	>75% Grass cover, Good, HSG C
	131,575	73	Woods, Fair, HSG C
	299	70	Woods, Good, HSG C
	549,495	78	Weighted Average
	449,036	74	81.72% Pervious Area
	100,459	98	18.28% Impervious Area

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

Subcatchment 1S: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sa: DA 1: CN w/ IC areas

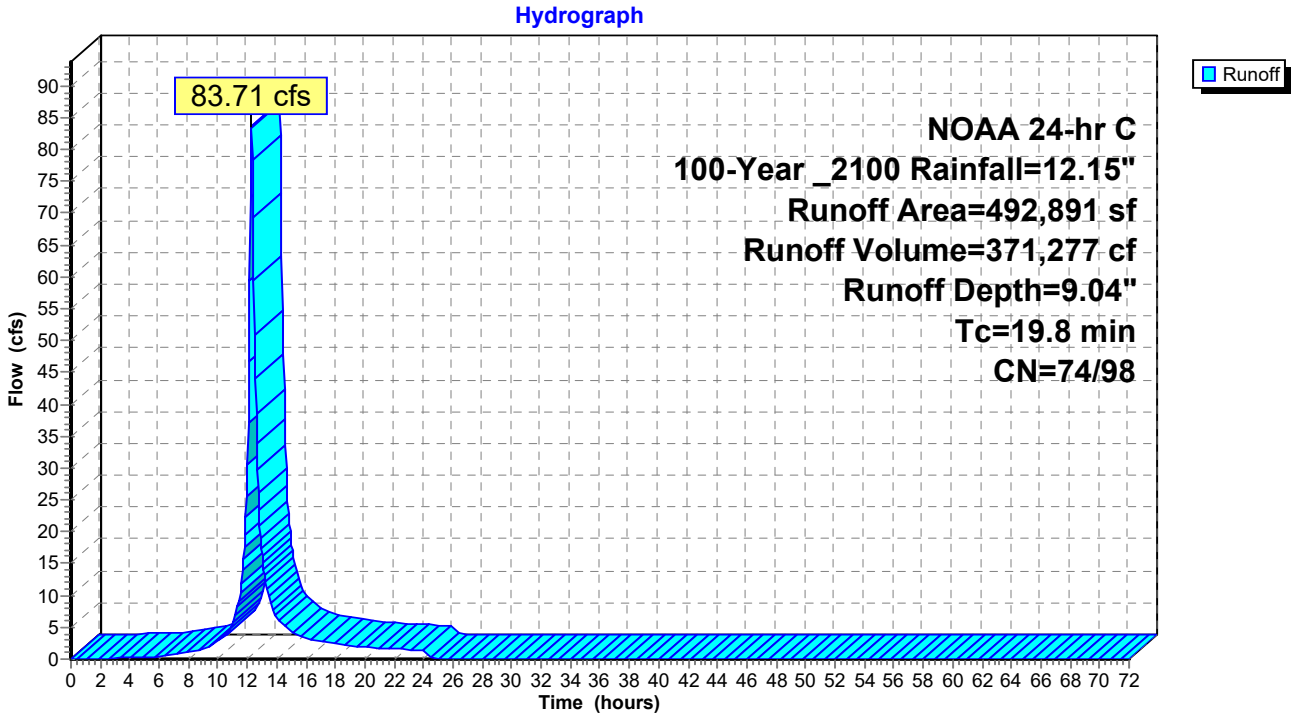
Runoff = 83.71 cfs @ 12.29 hrs, Volume= 371,277 cf, Depth= 9.04"
Routed to Pond 1P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	43,855	98	Impervious
	317,162	74	>75% Grass cover, Good, HSG C
	131,575	73	Woods, Fair, HSG C
	299	70	Woods, Good, HSG C
	492,891	76	Weighted Average
	449,036	74	91.10% Pervious Area
	43,855	98	8.90% Impervious Area

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

Subcatchment 1Sa: DA 1: CN w/ IC areas



Summary for Subcatchment 1Sb: DA 1: Roofs Combined

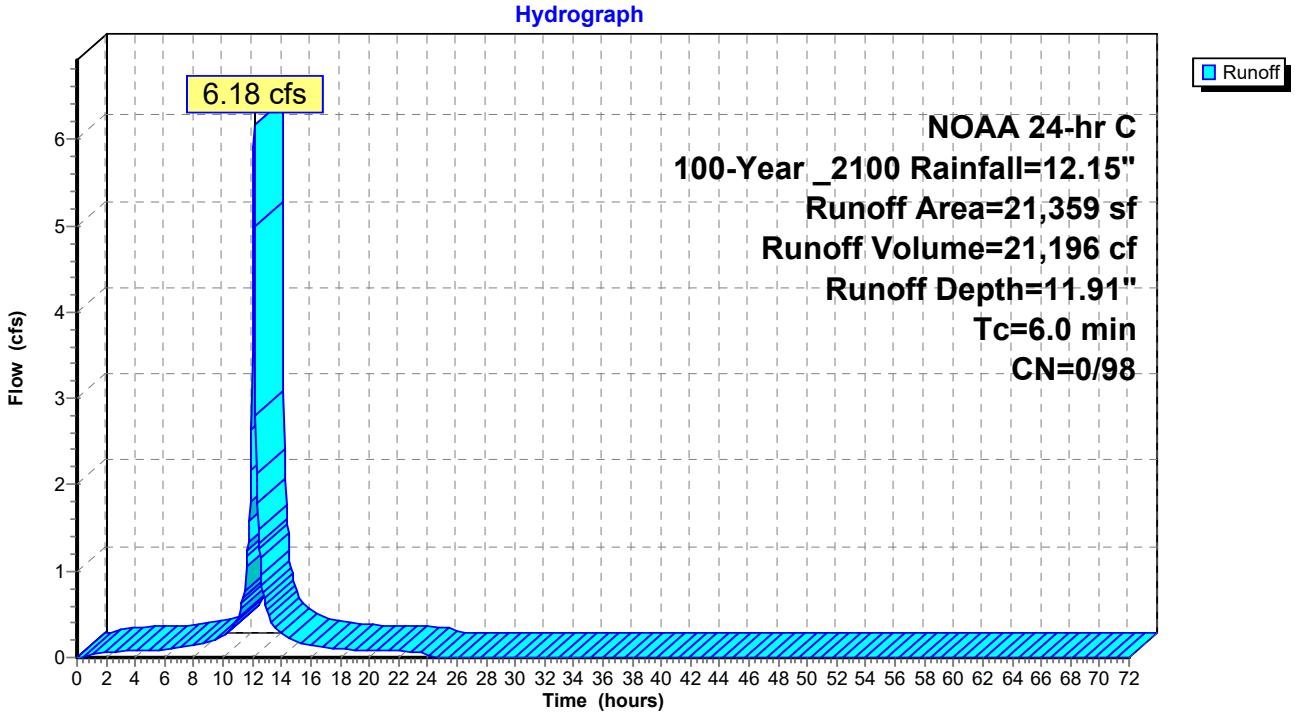
Runoff = 6.18 cfs @ 12.13 hrs, Volume= 21,196 cf, Depth=11.91"
Routed to Pond 2P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	21,359	98	
	21,359	98	100.00% Impervious Area

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

Subcatchment 1Sb: DA 1: Roofs Combined



Summary for Subcatchment 1Sc: DA1: Driveways (other)

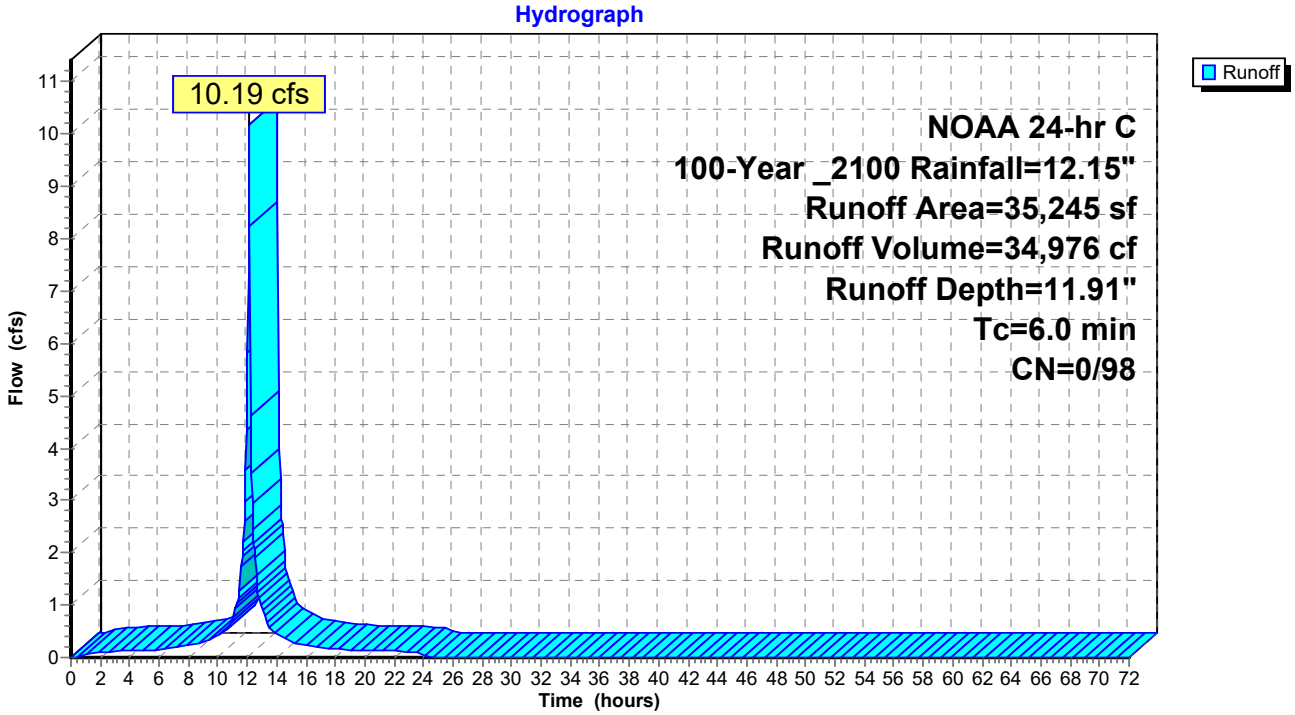
Runoff = 10.19 cfs @ 12.13 hrs, Volume= 34,976 cf, Depth=11.91"
Routed to Pond 3P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	35,245	98	
	35,245	98	100.00% Impervious Area

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

Subcatchment 1Sc: DA1: Driveways (other)



Summary for Subcatchment 2S: DA 2: CN w/ IC areas

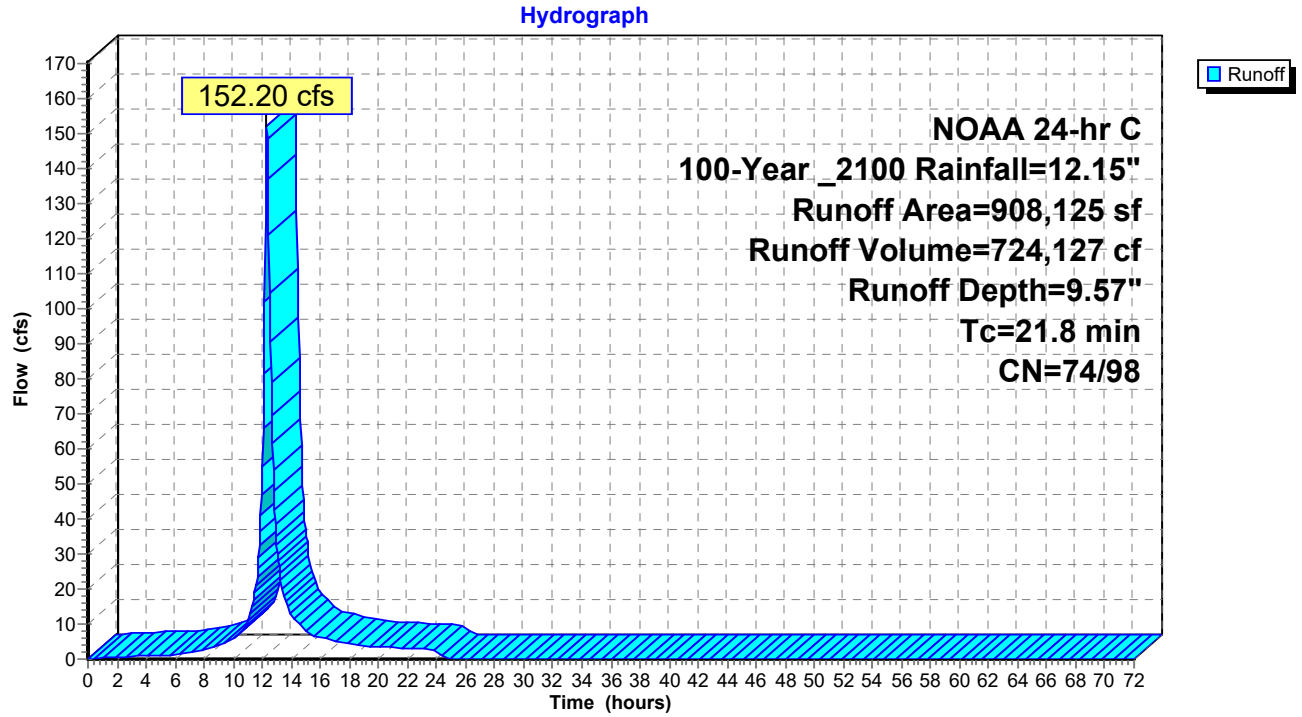
Runoff = 152.20 cfs @ 12.31 hrs, Volume= 724,127 cf, Depth= 9.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	233,471	98	Impervious
	1	65	Brush, Good, HSG C
	620,871	74	>75% Grass cover, Good, HSG C
	1,845	72	Woods/grass comb., Good, HSG C
	51,937	73	Woods, Fair, HSG C
	908,125	80	Weighted Average
	674,654	74	74.29% Pervious Area
	233,471	98	25.71% Impervious Area

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

Subcatchment 2S: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sa: DA 2: CN w/ IC areas

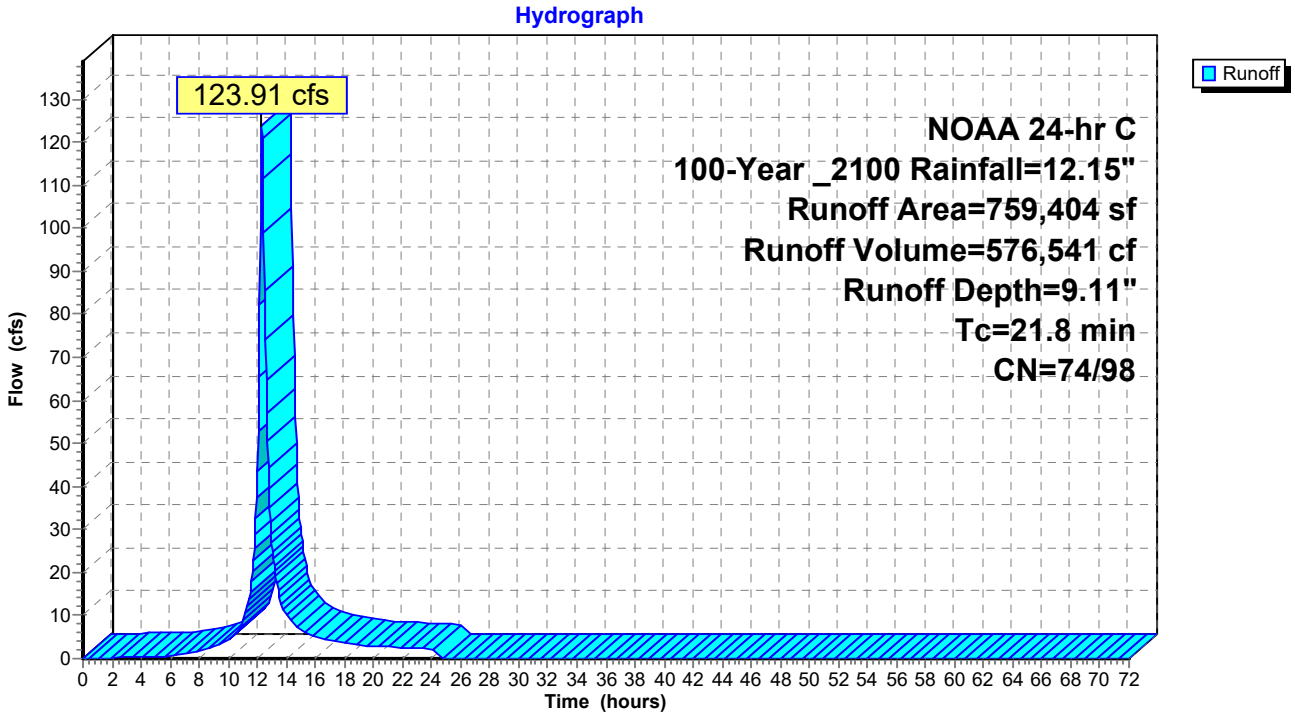
Runoff = 123.91 cfs @ 12.31 hrs, Volume= 576,541 cf, Depth= 9.11"
Routed to Pond 5P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	84,750	98	Impervious
	1	65	Brush, Good, HSG C
	620,871	74	>75% Grass cover, Good, HSG C
	1,845	72	Woods/grass comb., Good, HSG C
	51,937	73	Woods, Fair, HSG C
	759,404	77	Weighted Average
	674,654	74	88.84% Pervious Area
	84,750	98	11.16% Impervious Area

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

Subcatchment 2Sa: DA 2: CN w/ IC areas



Summary for Subcatchment 2Sb: DA 2: Roofs

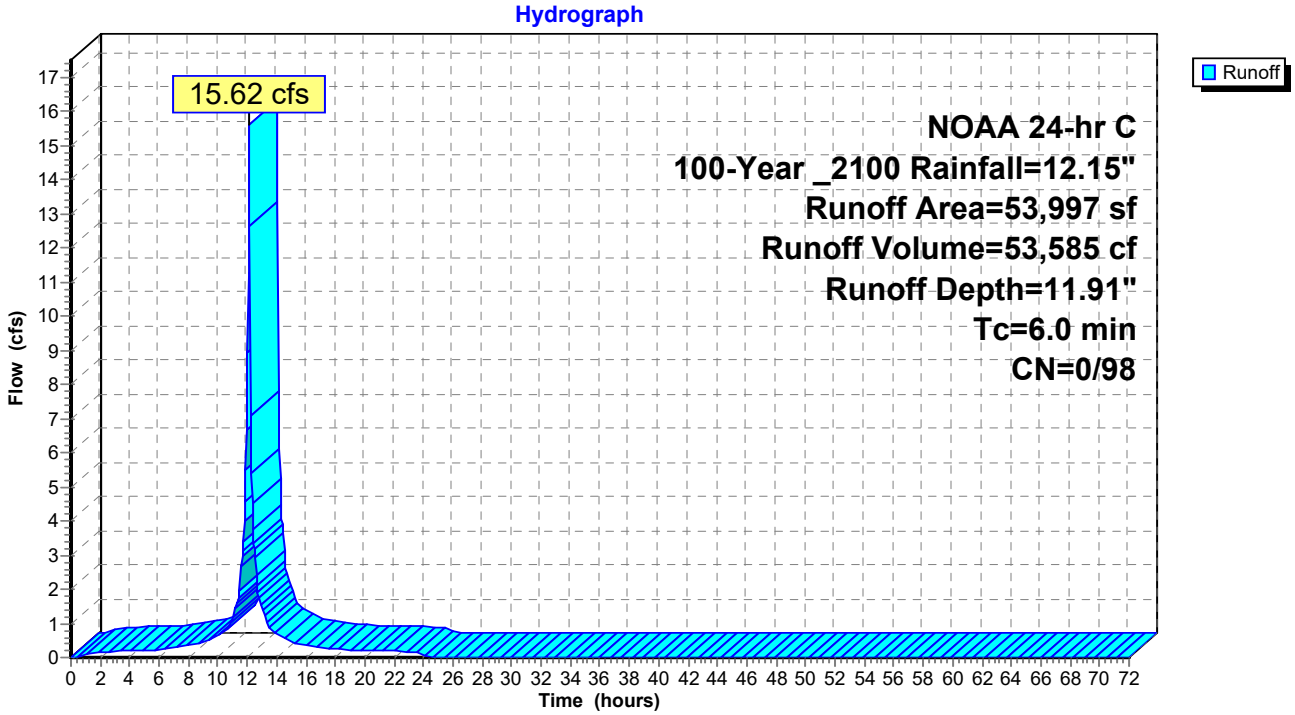
Runoff = 15.62 cfs @ 12.13 hrs, Volume= 53,585 cf, Depth=11.91"
Routed to Pond 6P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	53,997	98	
	53,997	98	100.00% Impervious Area

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

Subcatchment 2Sb: DA 2: Roofs



Summary for Subcatchment 2Sc: DA 2: Driveways (other)

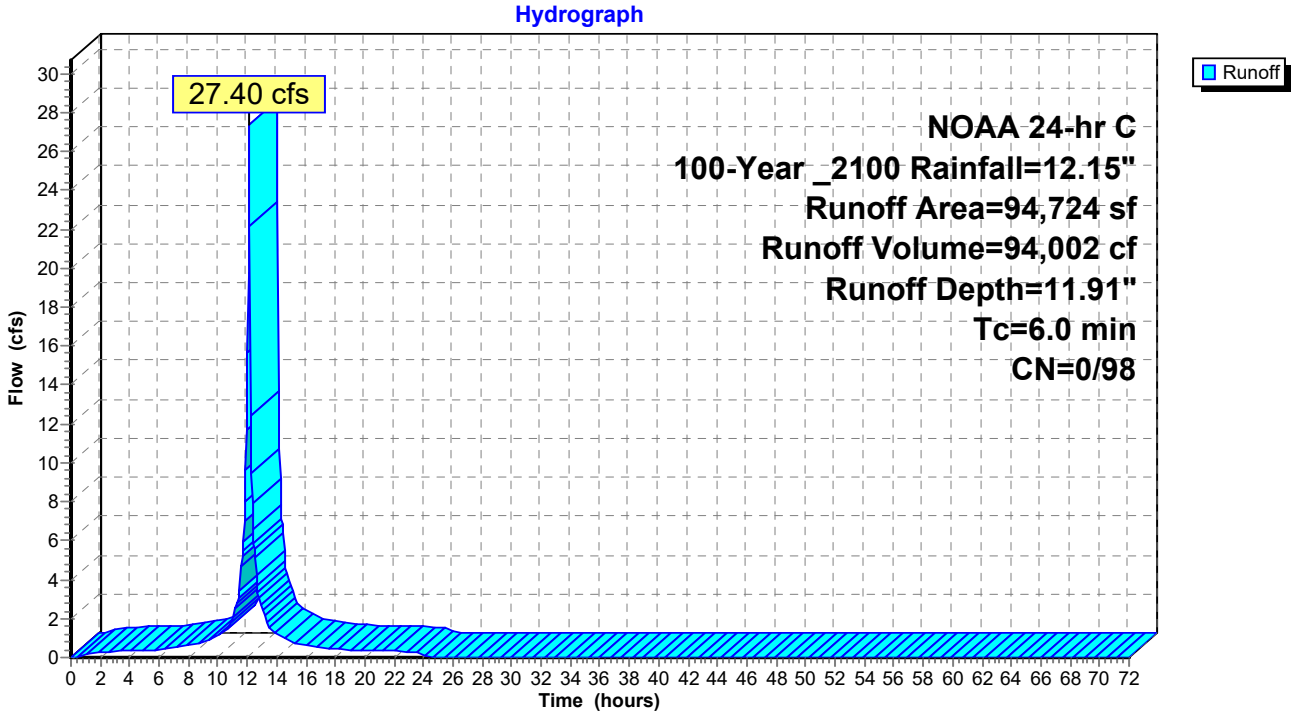
Runoff = 27.40 cfs @ 12.13 hrs, Volume= 94,002 cf, Depth=11.91"
Routed to Pond 7P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	94,724	98	
	94,724	98	100.00% Impervious Area

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

Subcatchment 2Sc: DA 2: Driveways (other)



Summary for Subcatchment 3S: DA 3: CN w/ IC areas

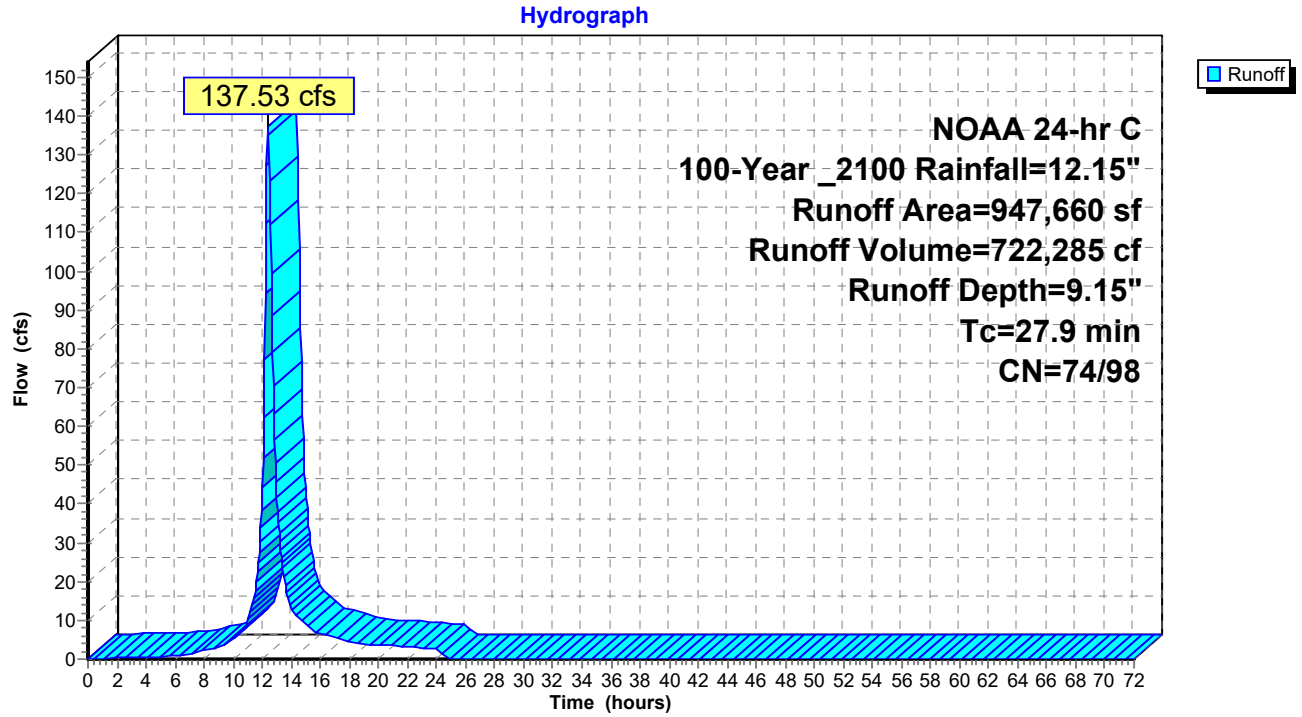
Runoff = 137.53 cfs @ 12.39 hrs, Volume= 722,285 cf, Depth= 9.15"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	116,506	98	Impervious
	4,930	79	50-75% Grass cover, Fair, HSG C
	592,347	74	>75% Grass cover, Good, HSG C
	169,305	73	Woods, Fair, HSG C
	64,572	70	Woods, Good, HSG C
	947,660	77	Weighted Average
	831,154	74	87.71% Pervious Area
	116,506	98	12.29% Impervious Area

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

Subcatchment 3S: DA 3: CN w/ IC areas



Summary for Subcatchment 3Sa: DA 3: CN w/ IC areas

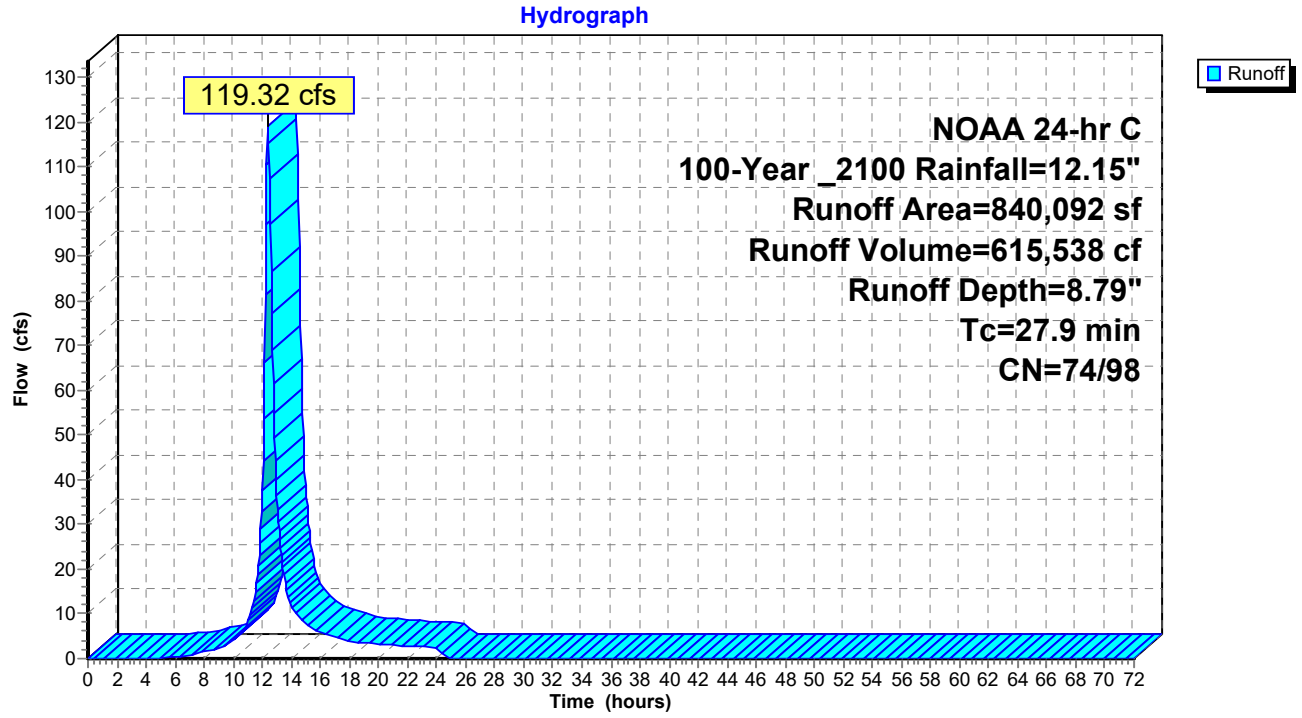
Runoff = 119.32 cfs @ 12.39 hrs, Volume= 615,538 cf, Depth= 8.79"
Routed to Pond 9P : Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	8,938	98	Impervious
	4,930	79	50-75% Grass cover, Fair, HSG C
	592,347	74	>75% Grass cover, Good, HSG C
	169,305	73	Woods, Fair, HSG C
	64,572	70	Woods, Good, HSG C
	840,092	74	Weighted Average
	831,154	74	98.94% Pervious Area
	8,938	98	1.06% Impervious Area

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

Subcatchment 3Sa: DA 3: CN w/ IC areas



Summary for Subcatchment 3Sb: DA 3: Roofs

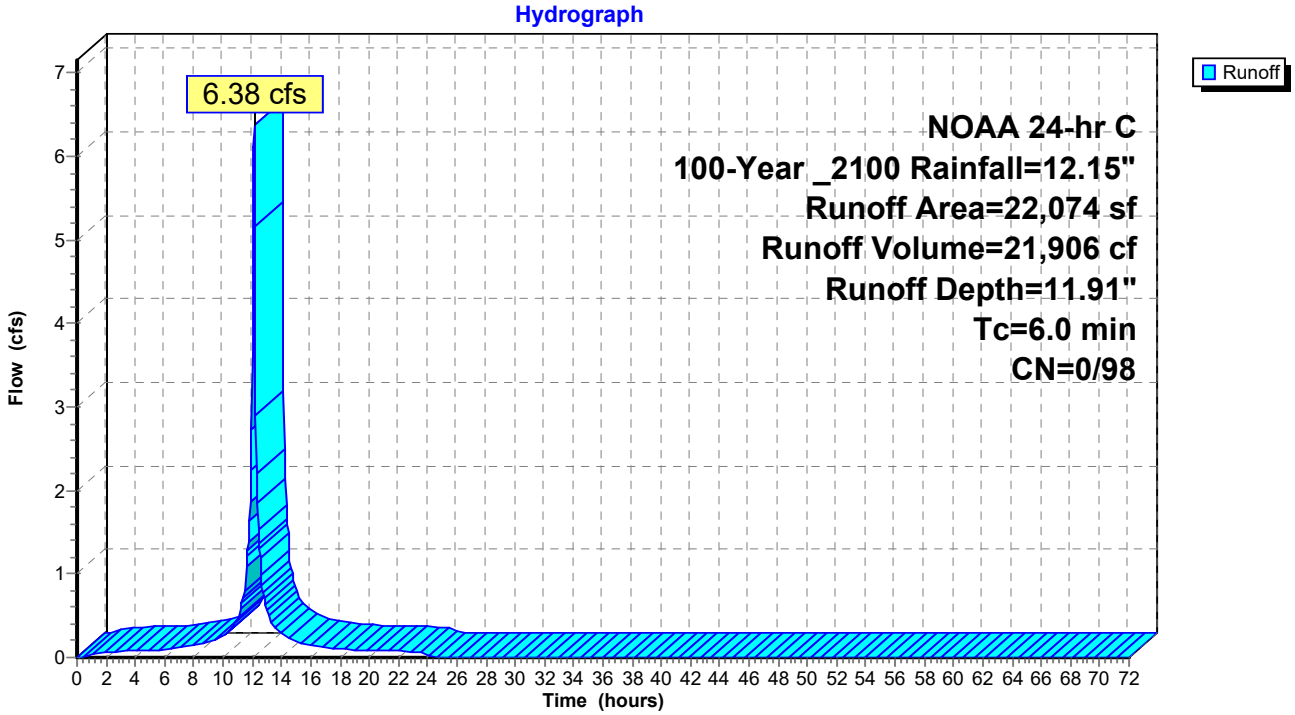
Runoff = 6.38 cfs @ 12.13 hrs, Volume= 21,906 cf, Depth=11.91"
Routed to Pond 10P : Basic Rain Garden (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	22,074	98	
	22,074	98	100.00% Impervious Area

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

Subcatchment 3Sb: DA 3: Roofs



Summary for Subcatchment 3Sc: DA 3: Driveways (other)

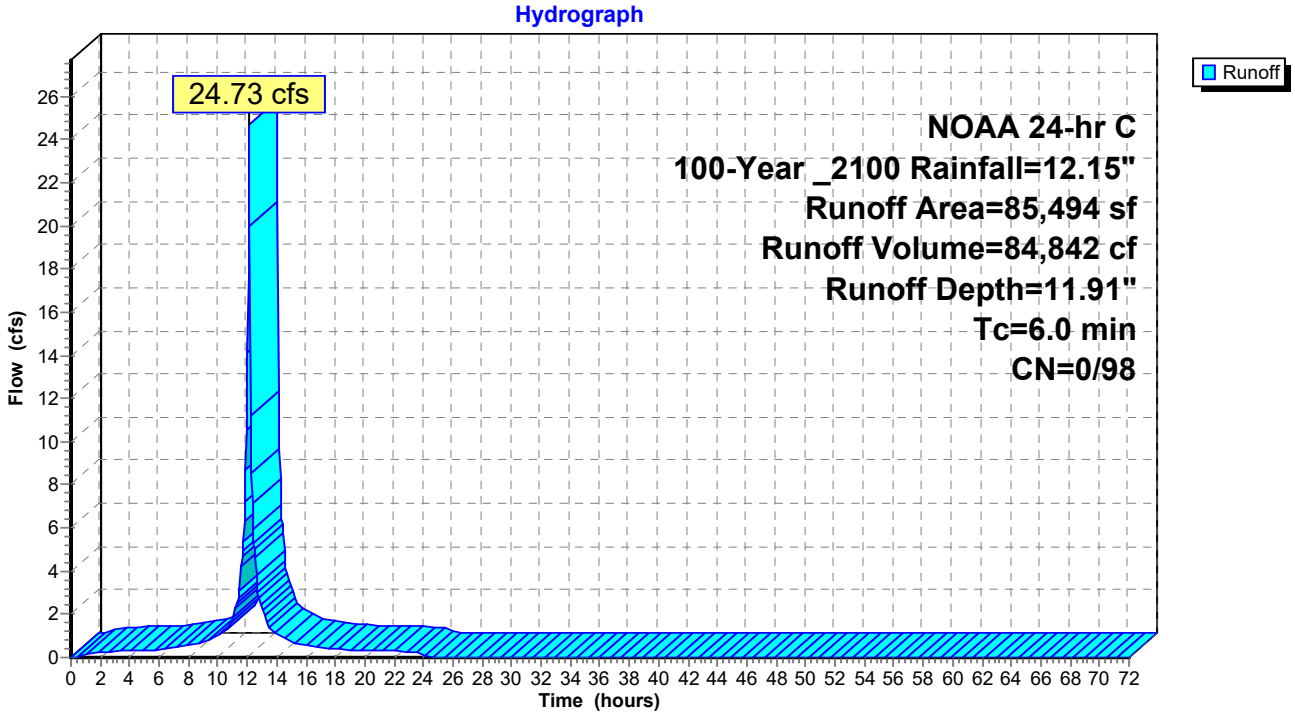
Runoff = 24.73 cfs @ 12.13 hrs, Volume= 84,842 cf, Depth=11.91"
Routed to Pond 11P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	85,494	98	
	85,494	98	100.00% Impervious Area

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

Subcatchment 3Sc: DA 3: Driveways (other)



Summary for Subcatchment 4S: DA 4: CN w/ IC areas

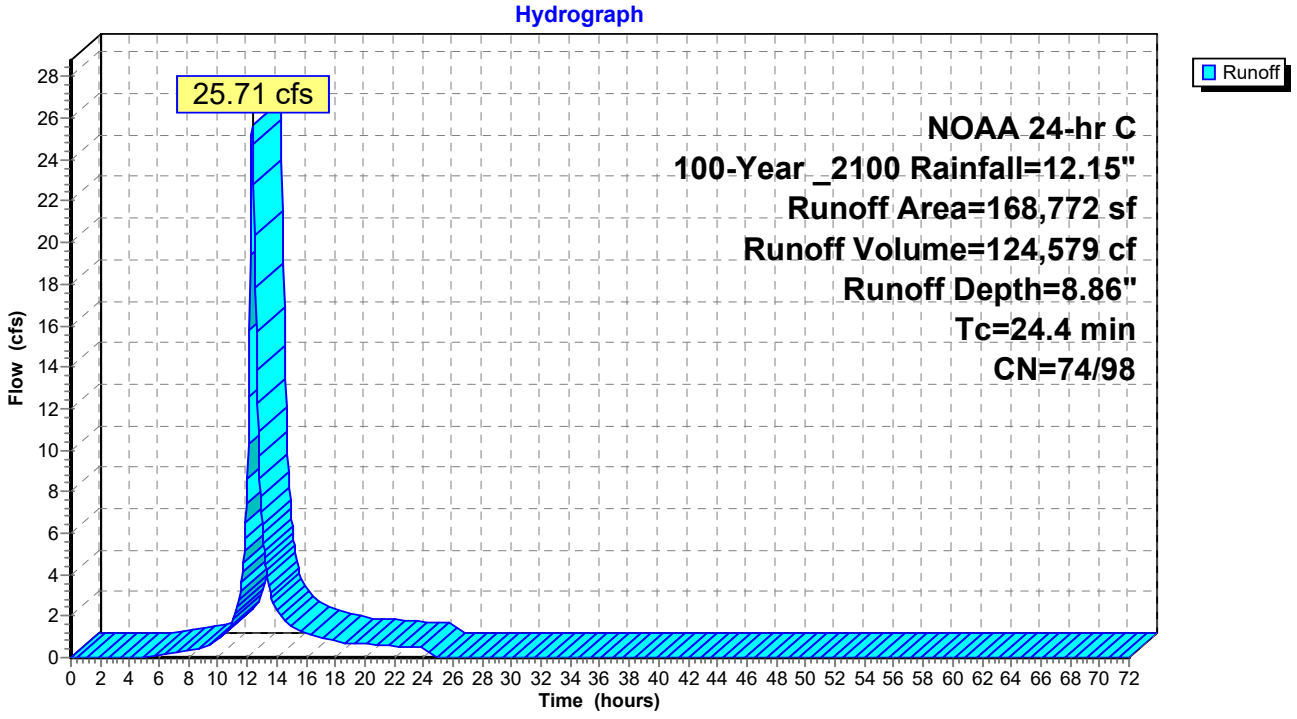
Runoff = 25.71 cfs @ 12.34 hrs, Volume= 124,579 cf, Depth= 8.86"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	5,300	98	Impervious
	117,799	74	>75% Grass cover, Good, HSG C
	4,778	72	Woods/grass comb., Good, HSG C
	40,895	73	Woods, Fair, HSG C
	168,772	74	Weighted Average
	163,472	74	96.86% Pervious Area
	5,300	98	3.14% Impervious Area

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

Subcatchment 4S: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sa: DA 4: CN w/ IC areas

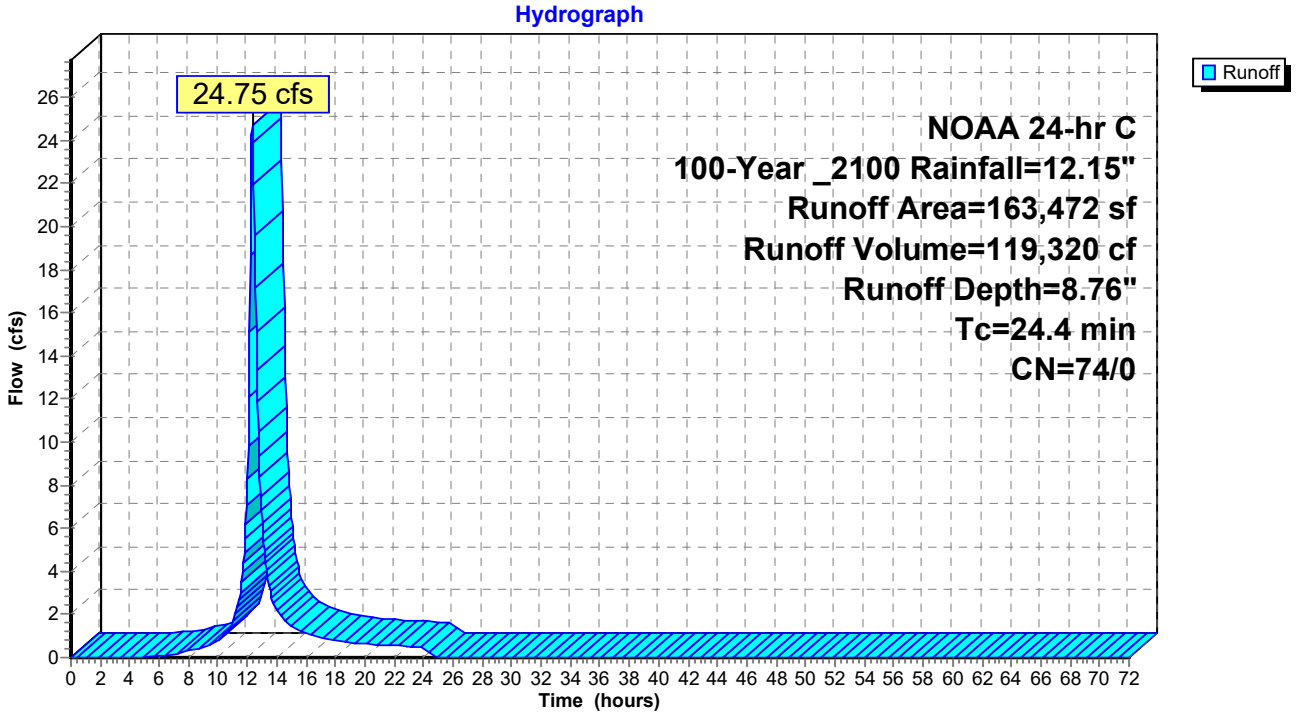
Runoff = 24.75 cfs @ 12.34 hrs, Volume= 119,320 cf, Depth= 8.76"
Routed to Link 4L : DA 4: Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	0	98	Impervious
	117,799	74	>75% Grass cover, Good, HSG C
	4,778	72	Woods/grass comb., Good, HSG C
	40,895	73	Woods, Fair, HSG C
	163,472	74	Weighted Average
	163,472	74	100.00% Pervious Area

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

Subcatchment 4Sa: DA 4: CN w/ IC areas



Summary for Subcatchment 4Sb: DA 4: Roofs

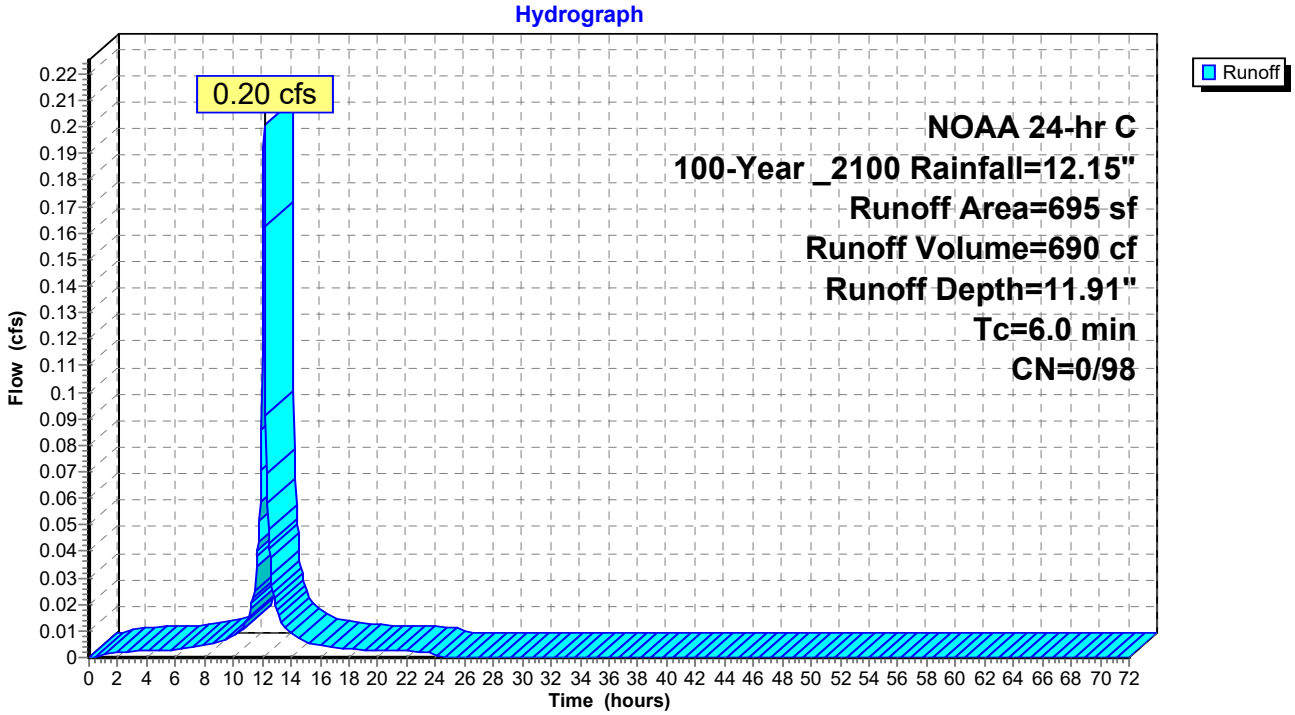
Runoff = 0.20 cfs @ 12.13 hrs, Volume= 690 cf, Depth=11.91"
Routed to Link 4L : DA 4: Combined Flows

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	695	98	
	695	98	100.00% Impervious Area

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

Subcatchment 4Sb: DA 4: Roofs



Summary for Subcatchment 4Sc: DA 4: Driveways (other)

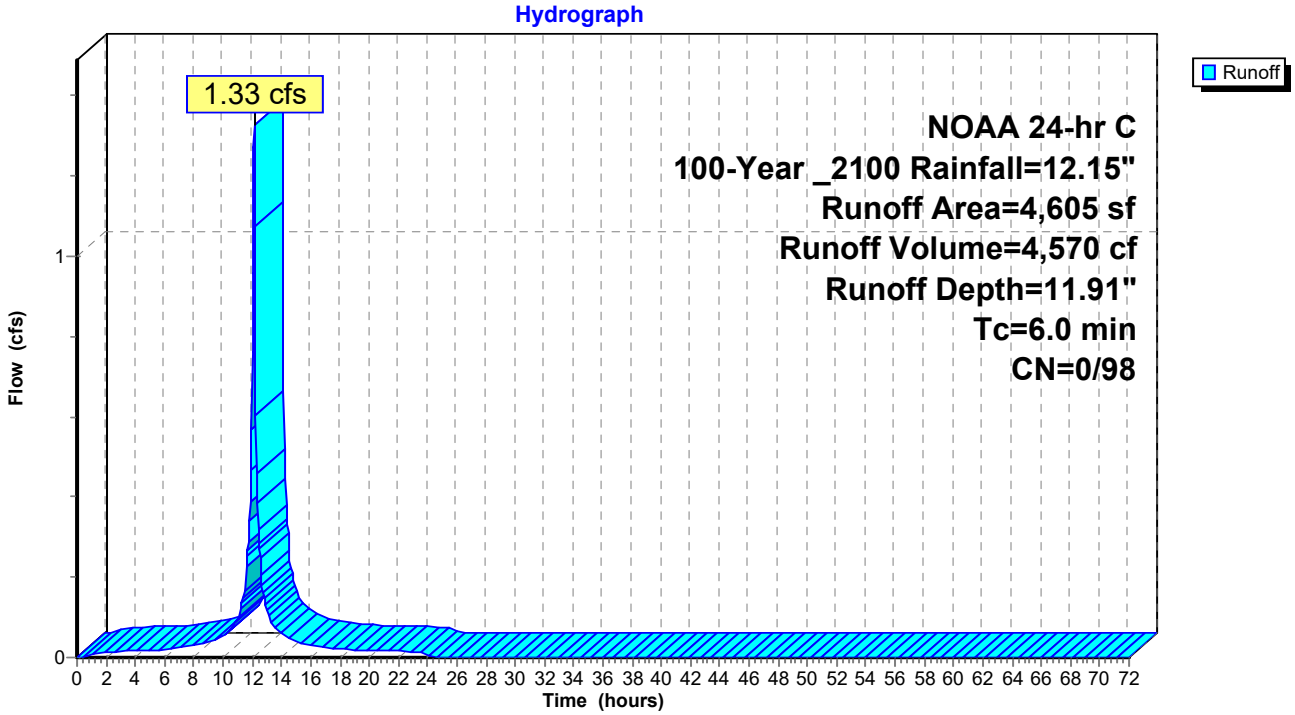
Runoff = 1.33 cfs @ 12.13 hrs, Volume= 4,570 cf, Depth=11.91"
Routed to Pond 12P : Basic Porous Pavement (infiltration only)

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv. UI as Pervious, Time Span= 0.00-72.00 hrs, dt= 0.05
NOAA 24-hr C 100-Year _2100 Rainfall=12.15"

	Area (sf)	CN	Description
*	4,605	98	
	4,605	98	100.00% Impervious Area

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

Subcatchment 4Sc: DA 4: Driveways (other)



Summary for Reach 1Ri: Inlet Pipe

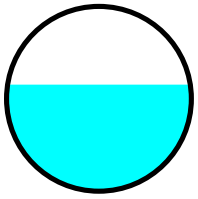
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 8.59" for 100-Year _2100 event
Inflow = 90.97 cfs @ 12.27 hrs, Volume= 393,184 cf
Outflow = 90.54 cfs @ 12.27 hrs, Volume= 393,202 cf, Atten= 0%, Lag= 0.2 min
Routed to Pond 4P : Basin 1 Medium Case

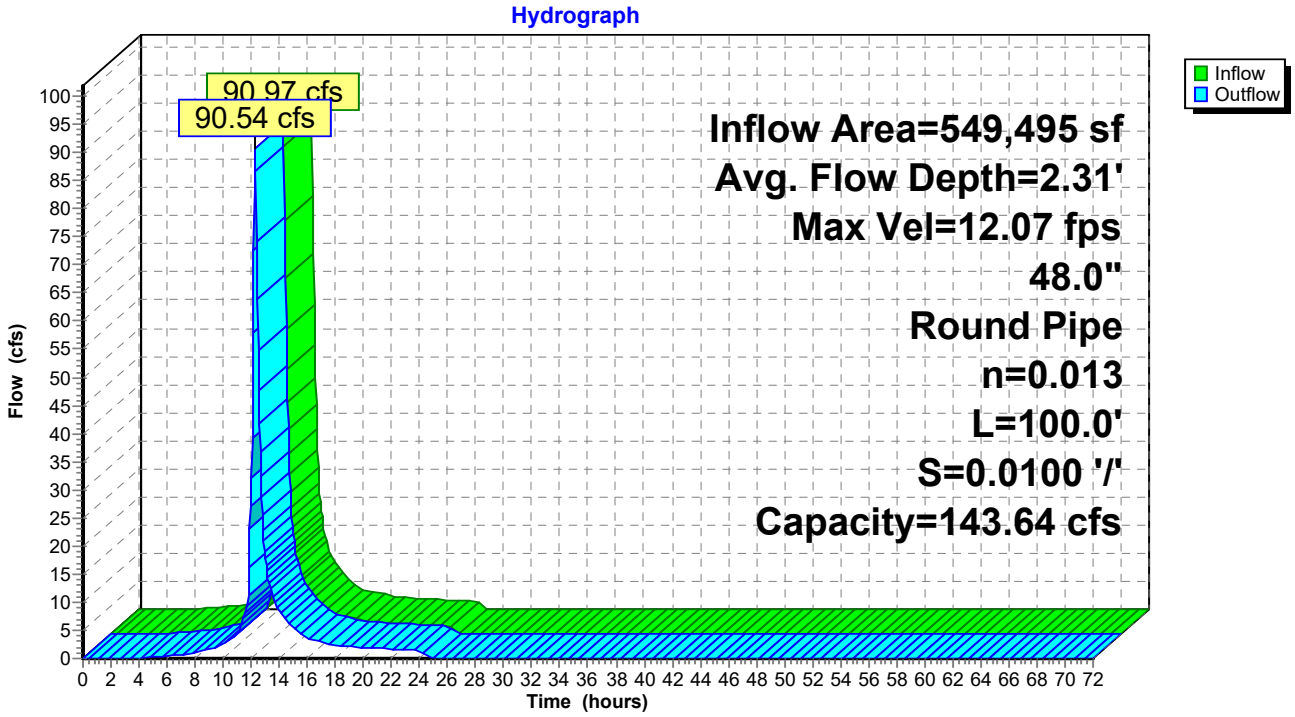
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 12.07 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.73 fps, Avg. Travel Time= 0.4 min

Peak Storage= 750 cf @ 12.27 hrs
Average Depth at Peak Storage= 2.31' , Surface Width= 3.95'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 143.64 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 75.00', Outlet Invert= 74.00'



Reach 1Ri: Inlet Pipe



Summary for Reach 1Ro: outlet

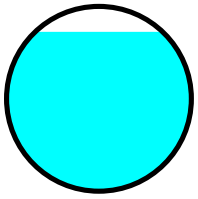
[52] Hint: Inlet/Outlet conditions not evaluated
[55] Hint: Peak inflow is 105% of Manning's capacity

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth > 8.43" for 100-Year _2100 event
Inflow = 30.73 cfs @ 12.72 hrs, Volume= 385,914 cf
Outflow = 30.55 cfs @ 12.81 hrs, Volume= 385,903 cf, Atten= 1%, Lag= 5.0 min

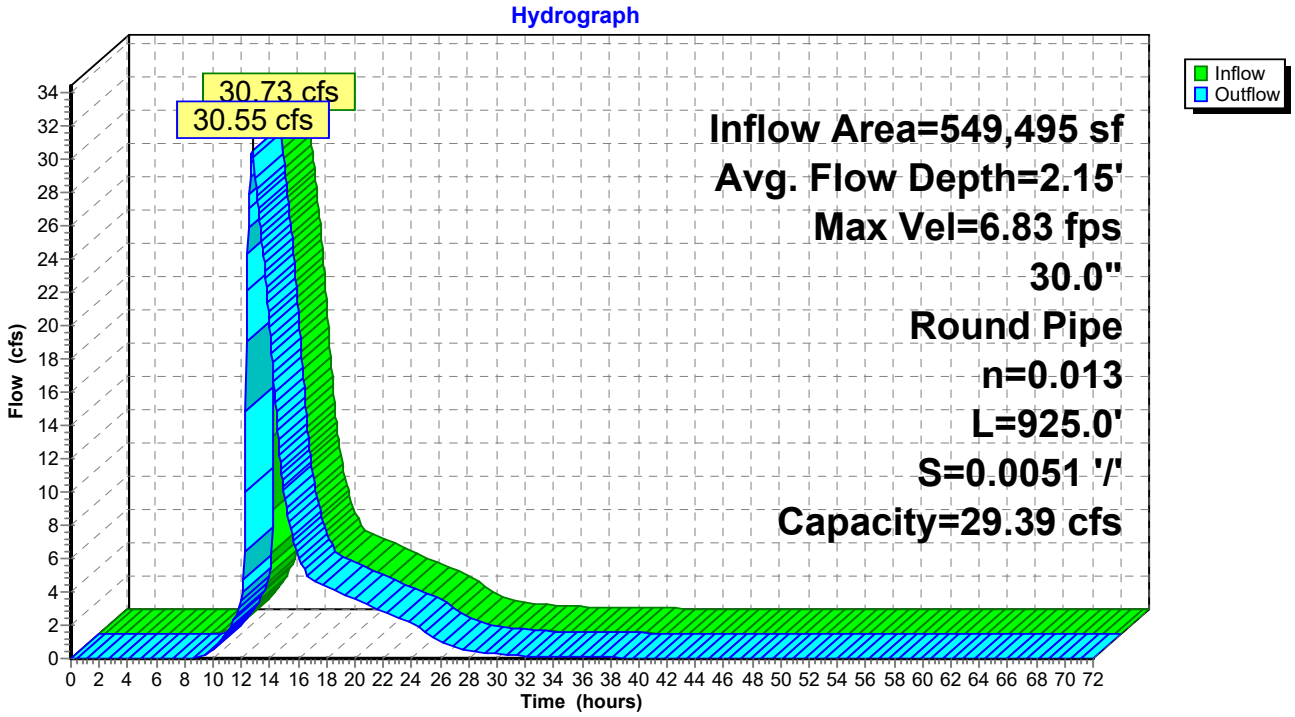
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.83 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 1.87 fps, Avg. Travel Time= 8.2 min

Peak Storage= 4,160 cf @ 12.77 hrs
Average Depth at Peak Storage= 2.15' , Surface Width= 1.73'
Bank-Full Depth= 2.50' Flow Area= 4.9 sf, Capacity= 29.39 cfs

30.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 925.0' Slope= 0.0051 '/'
Inlet Invert= 70.75', Outlet Invert= 66.00'



Reach 1Ro: outlet



Summary for Reach 2Ri: Inlet Pipe

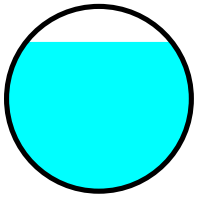
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 8.38" for 100-Year _2100 event
Inflow = 141.97 cfs @ 12.28 hrs, Volume= 634,068 cf
Outflow = 141.47 cfs @ 12.28 hrs, Volume= 634,074 cf, Atten= 0%, Lag= 0.2 min
Routed to Pond 8P : Basin 2 Medium Case

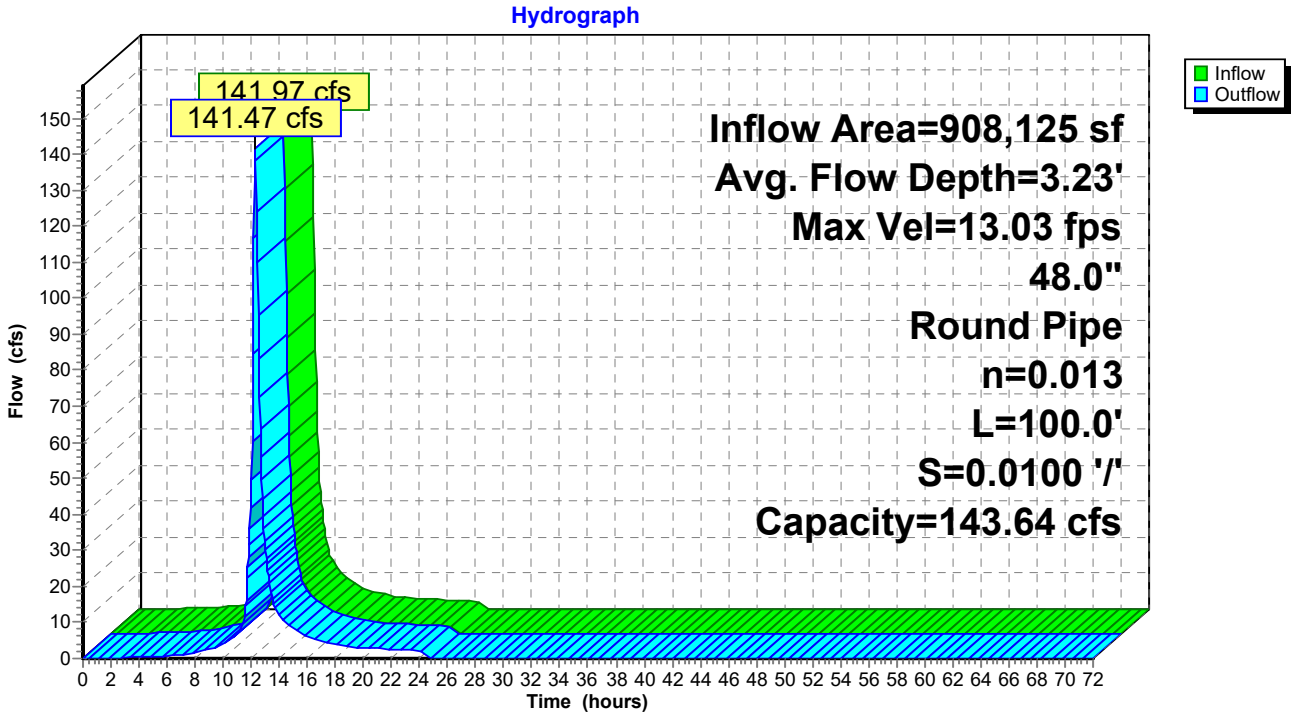
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 13.03 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.26 fps, Avg. Travel Time= 0.4 min

Peak Storage= 1,087 cf @ 12.28 hrs
Average Depth at Peak Storage= 3.23' , Surface Width= 3.16'
Bank-Full Depth= 4.00' Flow Area= 12.6 sf, Capacity= 143.64 cfs

48.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 100.0' Slope= 0.0100 '/'
Inlet Invert= 70.00', Outlet Invert= 69.00'



Reach 2Ri: Inlet Pipe



Summary for Reach 2Ro: Outlet

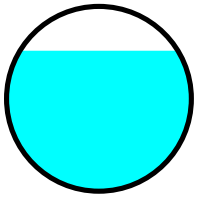
[52] Hint: Inlet/Outlet conditions not evaluated
[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 8.27" for 100-Year _2100 event
Inflow = 101.15 cfs @ 12.40 hrs, Volume= 626,147 cf
Outflow = 101.18 cfs @ 12.48 hrs, Volume= 626,155 cf, Atten= 0%, Lag= 4.9 min

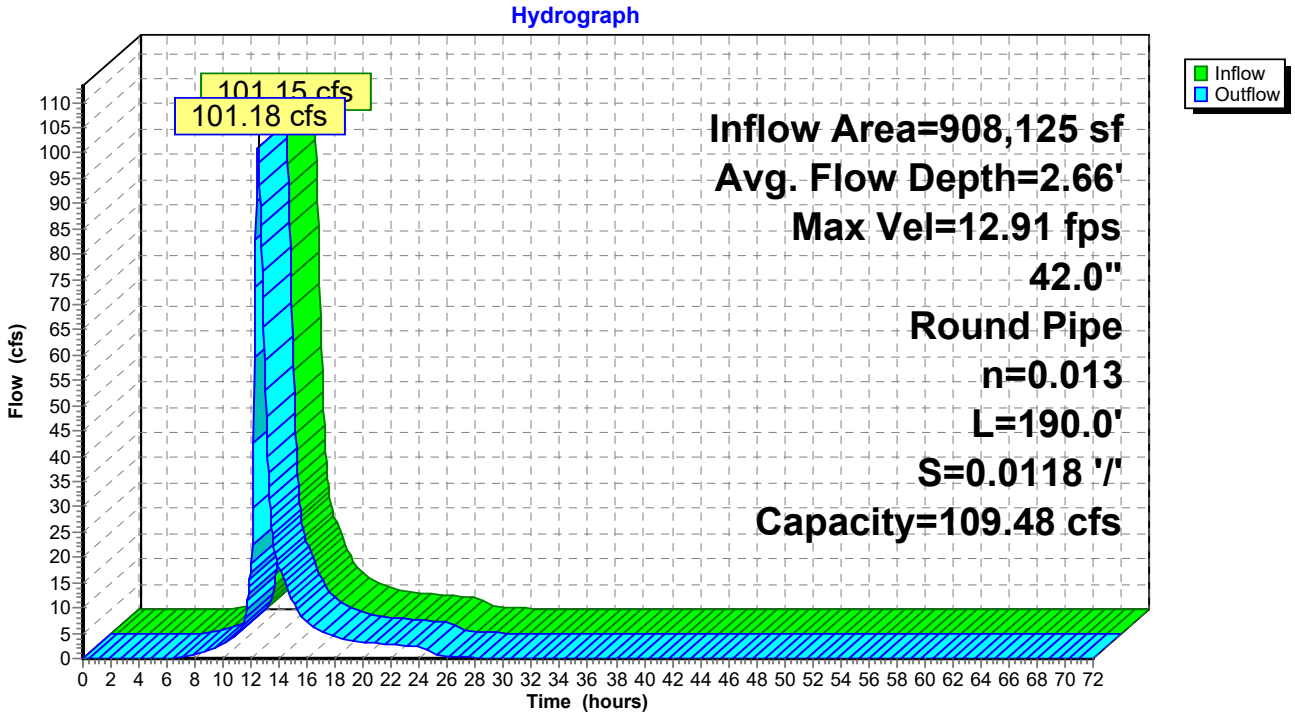
Routing by Stor-Ind+Trans method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Max. Velocity= 12.91 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.47 fps, Avg. Travel Time= 1.3 min

Peak Storage= 1,489 cf @ 12.48 hrs
Average Depth at Peak Storage= 2.66' , Surface Width= 2.99'
Bank-Full Depth= 3.50' Flow Area= 9.6 sf, Capacity= 109.48 cfs

42.0" Round Pipe
n= 0.013 Concrete pipe, bends & connections
Length= 190.0' Slope= 0.0118 '/'
Inlet Invert= 65.75', Outlet Invert= 63.50'



Reach 2Ro: Outlet



Summary for Pond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 492,891 sf, 8.90% Impervious, Inflow Depth = 9.04" for 100-Year _2100 event
Inflow = 83.71 cfs @ 12.29 hrs, Volume= 371,277 cf
Outflow = 83.64 cfs @ 12.29 hrs, Volume= 370,315 cf, Atten= 0%, Lag= 0.1 min
Primary = 12.79 cfs @ 12.29 hrs, Volume= 242,221 cf
Routed to Link 1L : Combined Flows
Secondary = 46.94 cfs @ 12.29 hrs, Volume= 104,239 cf
Routed to Link 1L : Combined Flows
Tertiary = 23.91 cfs @ 12.29 hrs, Volume= 23,855 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.76' @ 12.29 hrs Surf.Area= 6,125 sf Storage= 14,082 cf

Plug-Flow detention time= 11.7 min calculated for 370,315 cf (100% of inflow)
Center-of-Mass det. time= 9.7 min (817.6 - 807.9)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,737 cf	x 9.00 = 15,635 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.75	175	100.0	217	497	363

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 9.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 9.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 9.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 9.00** 2 End Contraction(s)

Primary OutFlow Max=12.79 cfs @ 12.29 hrs HW=100.76' (Free Discharge)
└**1=Culvert** (Passes 12.79 cfs of 19.14 cfs potential flow)
└**2=6" HDPE Underdrain** (Barrel Controls 12.79 cfs @ 7.24 fps)

Secondary OutFlow Max=46.65 cfs @ 12.29 hrs HW=100.76' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 46.65 cfs @ 2.27 fps)

Tertiary OutFlow Max=23.36 cfs @ 12.29 hrs HW=100.76' (Free Discharge)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 23.36 cfs @ 1.67 fps)

ond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

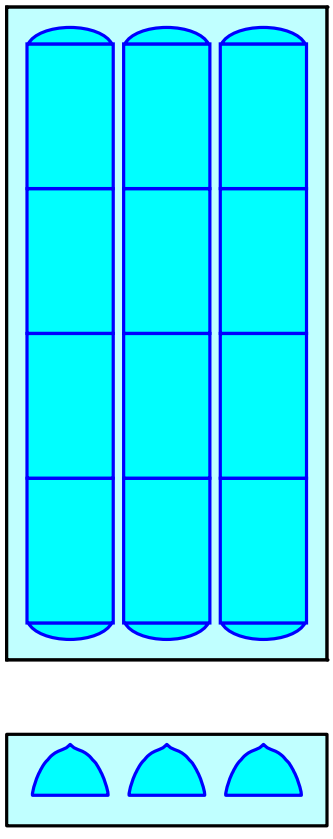
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

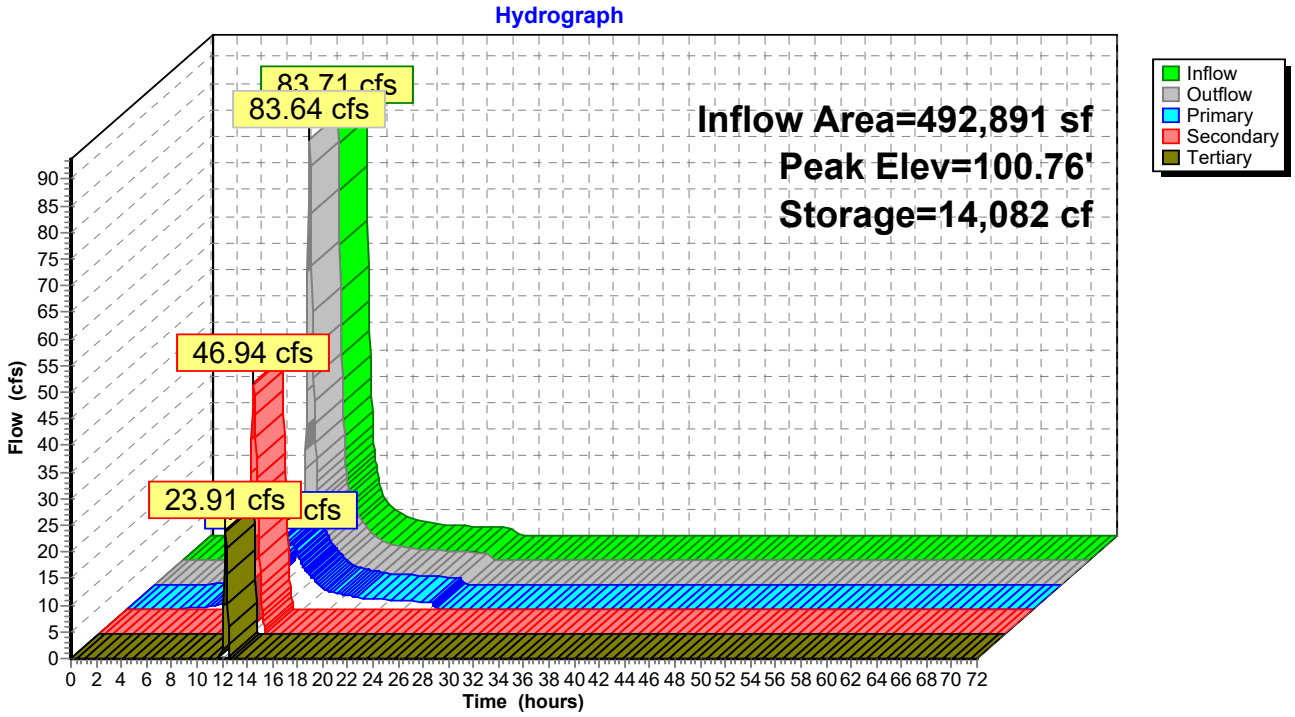
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 1P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 2P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 21,359 sf,100.00% Impervious, Inflow Depth = 11.91" for 100-Year _2100 event
Inflow = 6.18 cfs @ 12.13 hrs, Volume= 21,196 cf
Outflow = 5.70 cfs @ 12.16 hrs, Volume= 21,196 cf, Atten= 8%, Lag= 1.8 min
Discarded = 0.06 cfs @ 11.40 hrs, Volume= 8,049 cf
Primary = 5.64 cfs @ 12.16 hrs, Volume= 13,147 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 100.24' @ 12.16 hrs Surf.Area= 5,000 sf Storage= 4,898 cf

Plug-Flow detention time= 274.1 min calculated for 21,196 cf (100% of inflow)
Center-of-Mass det. time= 274.0 min (1,011.2 - 737.1)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 10.00 = 6,220 cf Total Available Storage

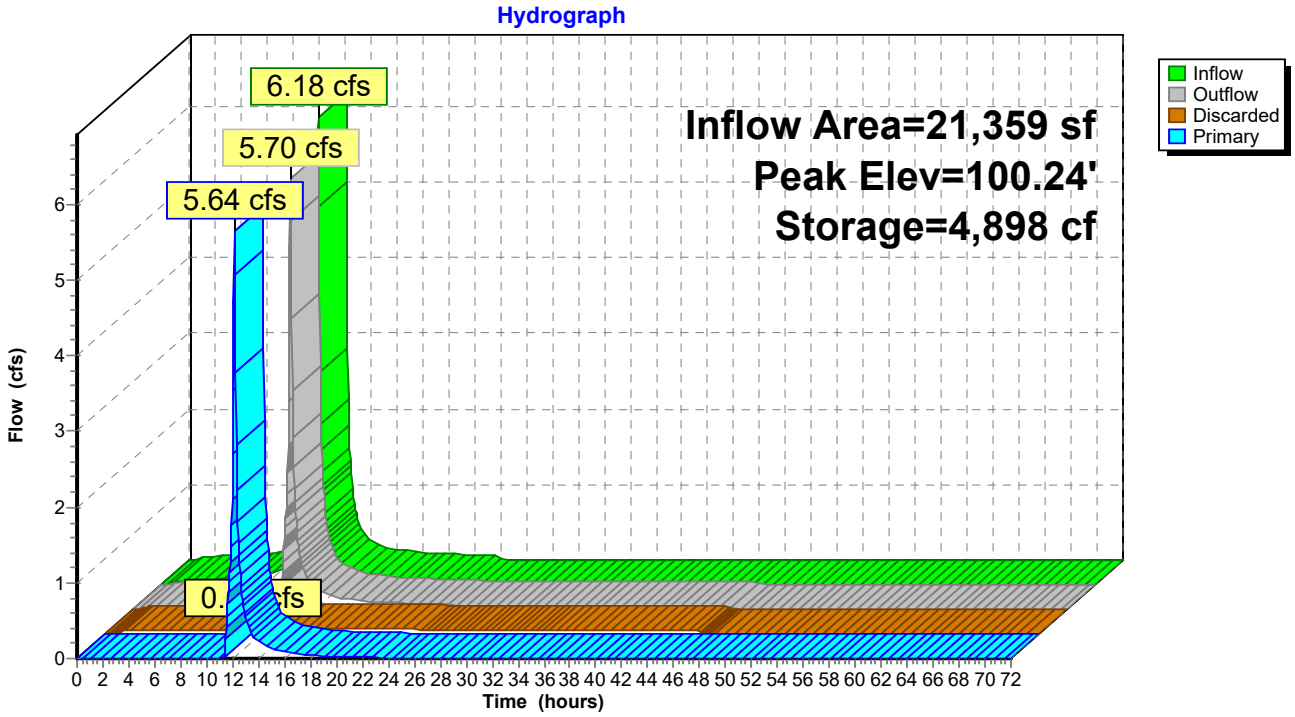
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 10.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.06 cfs @ 11.40 hrs HW=100.01' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=5.55 cfs @ 12.16 hrs HW=100.23' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 5.55 cfs @ 1.19 fps)

Pond 2P: Basic Rain Garden (infiltration only)



Summary for Pond 3P: Basic Porous Pavement (infiltration only)

Inflow Area = 35,245 sf,100.00% Impervious, Inflow Depth = 11.91" for 100-Year _2100 event
Inflow = 10.19 cfs @ 12.13 hrs, Volume= 34,976 cf
Outflow = 9.83 cfs @ 12.14 hrs, Volume= 35,294 cf, Atten= 4%, Lag= 1.0 min
Discarded = 0.41 cfs @ 10.05 hrs, Volume= 25,572 cf
Primary = 9.43 cfs @ 12.14 hrs, Volume= 9,722 cf
Routed to Link 1L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 100.02' @ 12.15 hrs Surf.Area= 35,245 sf Storage= 7,930 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 101.5 min (838.6 - 737.1)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	16,001 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

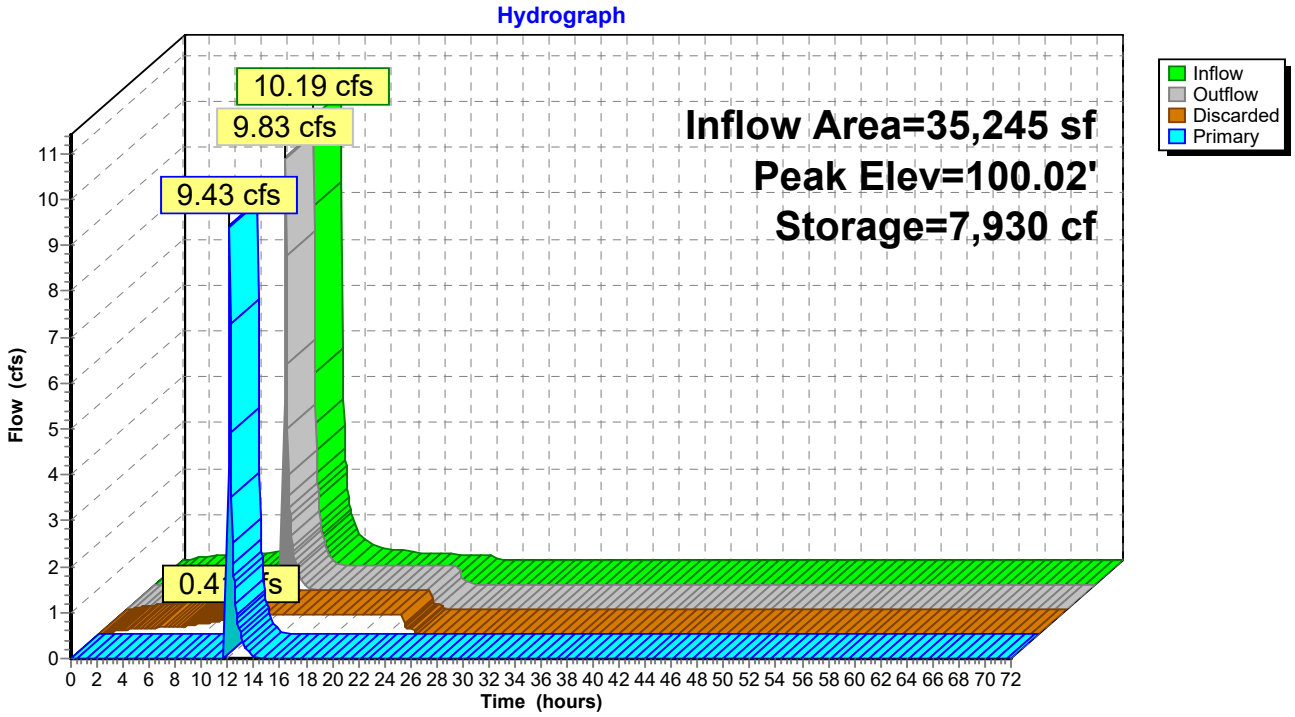
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	35,245	0.0	0	0
99.75	35,245	35.0	6,168	6,168
99.83	35,245	15.0	423	6,591
100.01	35,245	15.0	952	7,542
100.25	35,245	100.0	8,459	16,001

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.41 cfs @ 10.05 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.41 cfs)

Primary OutFlow Max=9.15 cfs @ 12.14 hrs HW=100.02' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Weir Controls 9.15 cfs @ 0.39 fps)

Pond 3P: Basic Porous Pavement (infiltration only)



Summary for Pond 4P: Basin 1 Medium Case

[63] Warning: Exceeded Reach 1Ri INLET depth by 2.81' @ 12.95 hrs

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 8.59" for 100-Year _2100 event
Inflow = 90.54 cfs @ 12.27 hrs, Volume= 393,202 cf
Outflow = 30.73 cfs @ 12.72 hrs, Volume= 385,914 cf, Atten= 66%, Lag= 27.0 min
Primary = 7.72 cfs @ 12.72 hrs, Volume= 229,725 cf
Routed to Reach 1Ro : outlet
Secondary = 21.21 cfs @ 12.72 hrs, Volume= 154,469 cf
Routed to Reach 1Ro : outlet
Tertiary = 1.79 cfs @ 12.72 hrs, Volume= 1,720 cf
Routed to Reach 1Ro : outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 78.92' @ 12.72 hrs Surf.Area= 39,293 sf Storage= 159,557 cf

Plug-Flow detention time= 157.4 min calculated for 385,914 cf (98% of inflow)
Center-of-Mass det. time= 145.9 min (960.8 - 814.9)

Volume	Invert	Avail.Storage	Storage Description
#1	74.00'	162,840 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
74.00	25,611	0	0
79.00	39,525	162,840	162,840

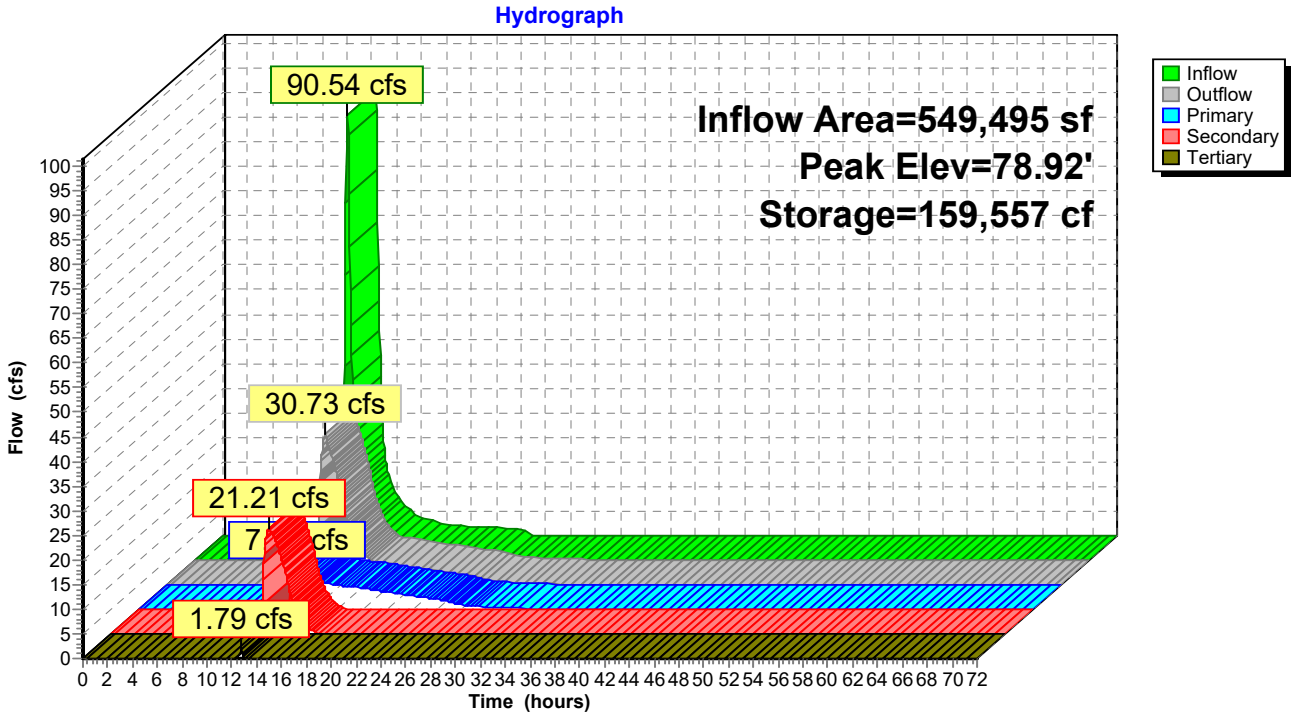
Device	Routing	Invert	Outlet Devices
#1	Primary	74.25'	**12.0" Vert. Low Flow Orifice** C= 0.600 Limited to weir flow at low heads
#2	Secondary	76.25'	**18.0" W x 12.0" H Vert. 2-YR Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	78.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=7.72 cfs @ 12.72 hrs HW=78.91' (Free Discharge)
1=Low Flow Orifice (Orifice Controls 7.72 cfs @ 9.83 fps)

Secondary OutFlow Max=21.20 cfs @ 12.72 hrs HW=78.91' (Free Discharge)
2=2-YR Orifice (Orifice Controls 21.20 cfs @ 7.07 fps)

Tertiary OutFlow Max=1.74 cfs @ 12.72 hrs HW=78.91' (Free Discharge)
3=Orifice/Grate (Weir Controls 1.74 cfs @ 1.33 fps)

Pond 4P: Basin 1 Medium Case



Summary for Pond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

Inflow Area = 759,404 sf, 11.16% Impervious, Inflow Depth = 9.11" for 100-Year _2100 event
Inflow = 123.91 cfs @ 12.31 hrs, Volume= 576,541 cf
Outflow = 123.85 cfs @ 12.31 hrs, Volume= 575,341 cf, Atten= 0%, Lag= 0.1 min
Primary = 14.34 cfs @ 12.31 hrs, Volume= 340,579 cf
Routed to Link 2L : Combined Flows
Secondary = 64.62 cfs @ 12.31 hrs, Volume= 176,717 cf
Routed to Link 2L : Combined Flows
Tertiary = 44.88 cfs @ 12.31 hrs, Volume= 58,045 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.88' @ 12.31 hrs Surf.Area= 6,805 sf Storage= 15,844 cf

Plug-Flow detention time= 10.0 min calculated for 574,942 cf (100% of inflow)
Center-of-Mass det. time= 8.7 min (816.6 - 807.8)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	365 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,606 cf	x 10.00 = 16,060 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.00	175	100.0	86	365	327

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 10.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 10.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 10.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 10.00** 2 End Contraction(s)

Primary OutFlow Max=14.34 cfs @ 12.31 hrs HW=100.87' (Free Discharge)
└**1=Culvert** (Passes 14.34 cfs of 21.46 cfs potential flow)
└**2=6" HDPE Underdrain** (Barrel Controls 14.34 cfs @ 7.30 fps)

Secondary OutFlow Max=64.21 cfs @ 12.31 hrs HW=100.87' (Free Discharge)
└**3=Broad-Crested Rectangular Weir** (Weir Controls 64.21 cfs @ 2.45 fps)

Tertiary OutFlow Max=44.22 cfs @ 12.31 hrs HW=100.87' (Free Discharge)
└**4=Sharp-Crested Rectangular Weir** (Weir Controls 44.22 cfs @ 2.00 fps)

ond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

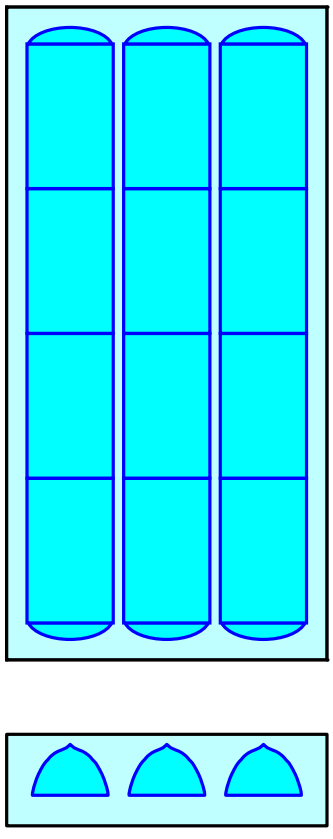
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

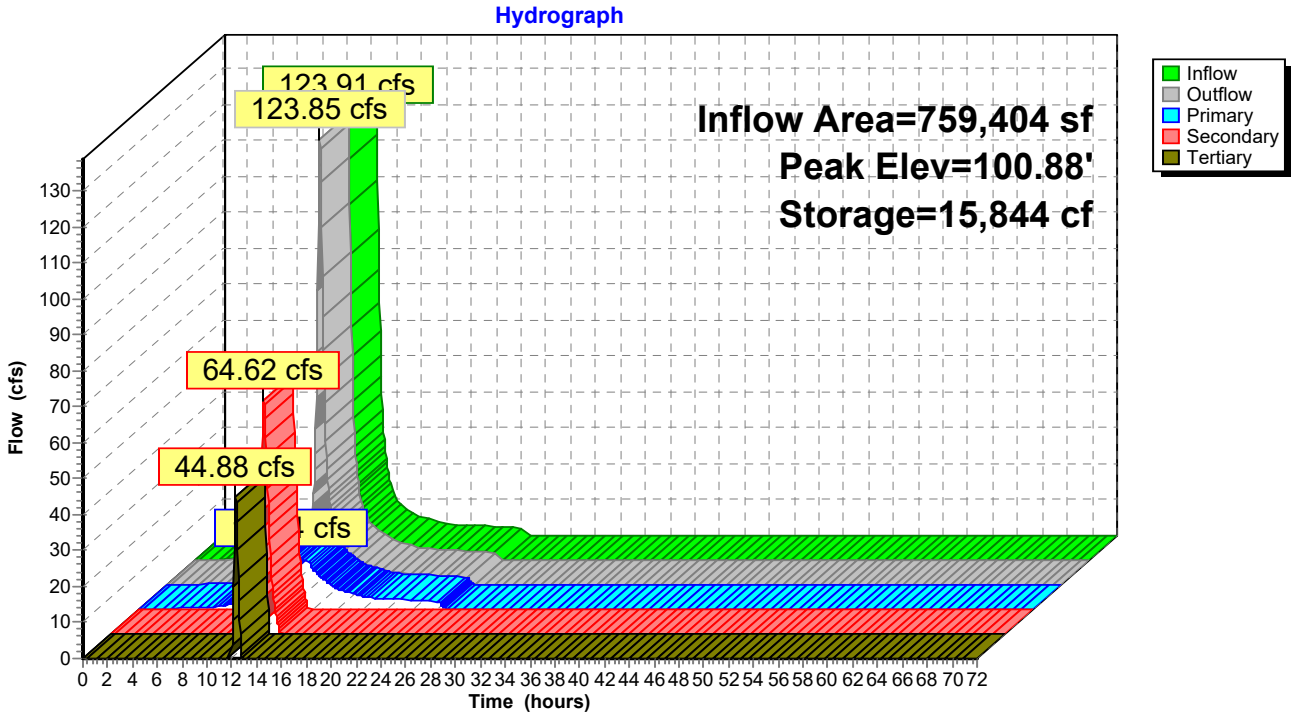
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 5P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 6P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 53,997 sf,100.00% Impervious, Inflow Depth = 11.91" for 100-Year _2100 event
Inflow = 15.62 cfs @ 12.13 hrs, Volume= 53,585 cf
Outflow = 14.28 cfs @ 12.15 hrs, Volume= 53,588 cf, Atten= 9%, Lag= 1.7 min
Discarded = 0.14 cfs @ 11.35 hrs, Volume= 20,133 cf
Primary = 14.14 cfs @ 12.15 hrs, Volume= 33,455 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 100.24' @ 12.15 hrs Surf.Area= 12,500 sf Storage= 12,250 cf

Plug-Flow detention time= 270.8 min calculated for 53,551 cf (100% of inflow)
Center-of-Mass det. time= 271.6 min (1,008.7 - 737.1)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 25.00 = 15,550 cf Total Available Storage

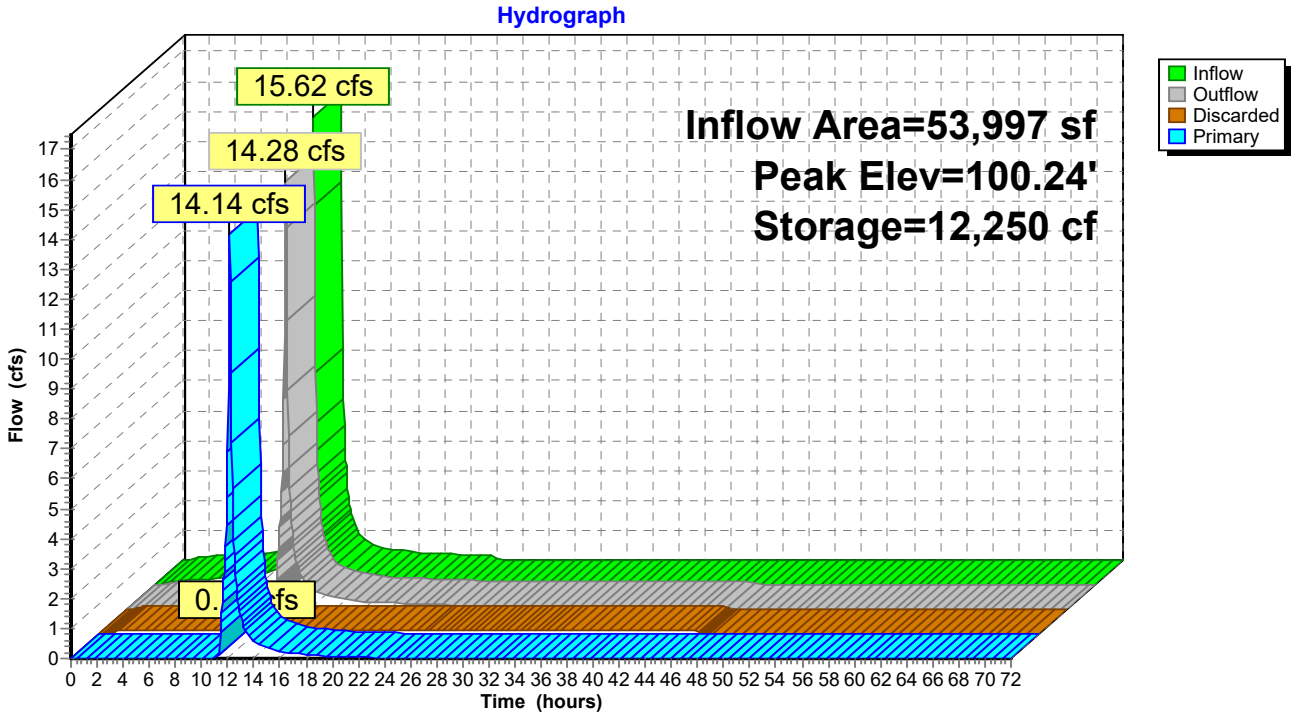
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 25.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.14 cfs @ 11.35 hrs HW=100.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=13.98 cfs @ 12.15 hrs HW=100.23' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 13.98 cfs @ 1.19 fps)

Pond 6P: Basic Rain Garden (infiltration only)



Summary for Pond 7P: Basic Porous Pavement (infiltration only)

Inflow Area = 94,724 sf,100.00% Impervious, Inflow Depth = 11.91" for 100-Year _2100 event
Inflow = 27.40 cfs @ 12.13 hrs, Volume= 94,002 cf
Outflow = 25.19 cfs @ 12.17 hrs, Volume= 94,002 cf, Atten= 8%, Lag= 2.6 min
Discarded = 1.10 cfs @ 10.05 hrs, Volume= 68,729 cf
Primary = 24.09 cfs @ 12.17 hrs, Volume= 25,272 cf
Routed to Link 2L : Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 100.04' @ 12.17 hrs Surf.Area= 94,724 sf Storage= 23,080 cf

Plug-Flow detention time= 102.9 min calculated for 93,936 cf (100% of inflow)
Center-of-Mass det. time= 102.8 min (840.0 - 737.1)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	43,005 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

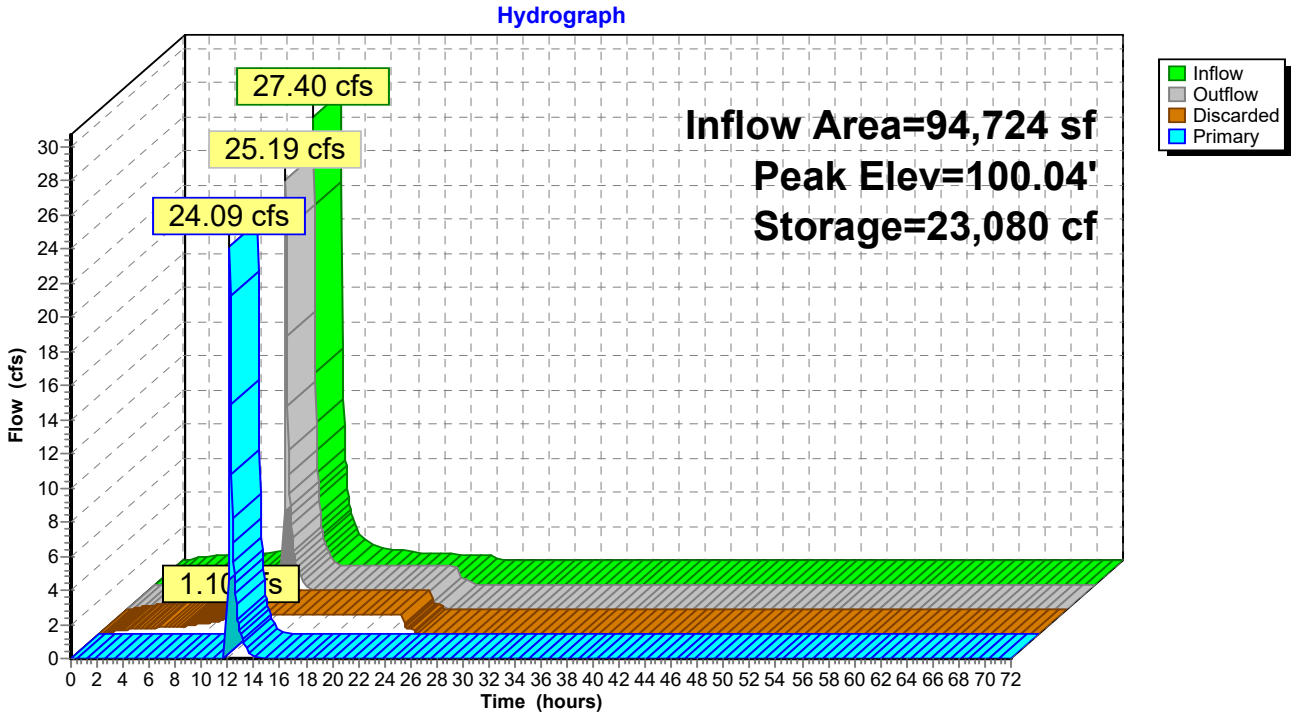
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	94,724	0.0	0	0
99.75	94,724	35.0	16,577	16,577
99.83	94,724	15.0	1,137	17,713
100.01	94,724	15.0	2,558	20,271
100.25	94,724	100.0	22,734	43,005

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=1.10 cfs @ 10.05 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 1.10 cfs)

Primary OutFlow Max=22.16 cfs @ 12.17 hrs HW=100.04' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Weir Controls 22.16 cfs @ 0.52 fps)

Pond 7P: Basic Porous Pavement (infiltration only)



Summary for Pond 8P: Basin 2 Medium Case

[63] Warning: Exceeded Reach 2Ri INLET depth by 1.84' @ 12.65 hrs

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 8.38" for 100-Year _2100 event
Inflow = 141.47 cfs @ 12.28 hrs, Volume= 634,074 cf
Outflow = 101.15 cfs @ 12.40 hrs, Volume= 626,147 cf, Atten= 29%, Lag= 6.9 min
Primary = 34.01 cfs @ 12.40 hrs, Volume= 447,640 cf
Routed to Reach 2Ro : Outlet
Secondary = 60.82 cfs @ 12.40 hrs, Volume= 174,083 cf
Routed to Reach 2Ro : Outlet
Tertiary = 6.32 cfs @ 12.40 hrs, Volume= 4,424 cf
Routed to Reach 2Ro : Outlet

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 73.99' @ 12.40 hrs Surf.Area= 31,208 sf Storage= 125,095 cf

Plug-Flow detention time= 48.6 min calculated for 625,713 cf (99% of inflow)
Center-of-Mass det. time= 41.7 min (853.9 - 812.2)

Volume	Invert	Avail.Storage	Storage Description
#1	69.00'	125,280 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
69.00	18,889	0	0
74.00	31,223	125,280	125,280

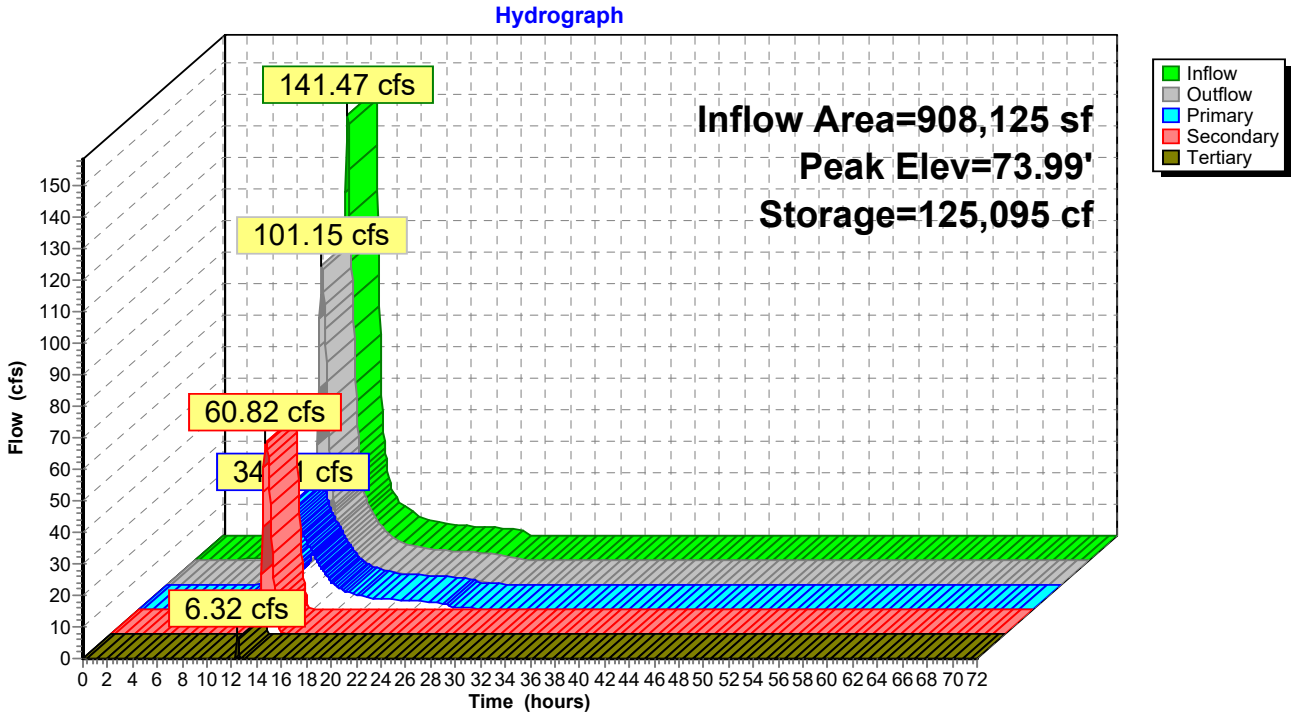
Device	Routing	Invert	Outlet Devices
#1	Primary	69.25'	**18.0" Vert. Low Flow Orifice X 2.00** C= 0.600 Limited to weir flow at low heads
#2	Secondary	71.25'	**24.0" W x 18.0" H Vert. 2-YR Orifice X 3.00** C= 0.600 Limited to weir flow at low heads
#3	Tertiary	73.75'	**48.0" x 48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=34.01 cfs @ 12.40 hrs HW=73.99' (Free Discharge)
↑**1=Low Flow Orifice** (Orifice Controls 34.01 cfs @ 9.62 fps)

Secondary OutFlow Max=60.82 cfs @ 12.40 hrs HW=73.99' (Free Discharge)
↑**2=2-YR Orifice** (Orifice Controls 60.82 cfs @ 6.76 fps)

Tertiary OutFlow Max=6.31 cfs @ 12.40 hrs HW=73.99' (Free Discharge)
↑**3=Orifice/Grate** (Weir Controls 6.31 cfs @ 1.62 fps)

Pond 8P: Basin 2 Medium Case



Summary for Pond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)

[93] Warning: Storage range exceeded by 0.24'
[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 840,092 sf, 1.06% Impervious, Inflow Depth = 8.79" for 100-Year _2100 event
Inflow = 119.32 cfs @ 12.39 hrs, Volume= 615,538 cf
Outflow = 119.49 cfs @ 12.39 hrs, Volume= 615,321 cf, Atten= 0%, Lag= 0.1 min
Primary = 3.12 cfs @ 12.39 hrs, Volume= 165,622 cf
Routed to Link 3L : dA3
Secondary = 48.23 cfs @ 12.39 hrs, Volume= 262,726 cf
Routed to Link 3L : dA3
Tertiary = 68.15 cfs @ 12.39 hrs, Volume= 186,973 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 101.99' @ 12.39 hrs Surf.Area= 1,361 sf Storage= 3,475 cf

Plug-Flow detention time= 4.8 min calculated for 614,894 cf (100% of inflow)
Center-of-Mass det. time= 4.6 min (826.7 - 822.1)

Volume	Invert	Avail.Storage	Storage Description
#1	97.75'	497 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
#2A	93.75'	689 cf	**15.75'W x 32.10'L x 4.50'H Field A** 2,275 cf Overall - 551 cf Embedded = 1,724 cf x 40.0% Voids
#3A	95.25'	551 cf	**ADS_StormTech SC-740 +Cap** x 12 Inside #2 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 3 Rows
		1,737 cf	x 2.00 = 3,475 cf Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.75	175	0.0	0	0	175
98.25	175	35.0	31	31	198
99.25	175	35.0	61	92	245
99.50	175	25.0	11	103	257
100.00	175	100.0	88	190	281
100.51	175	100.0	89	280	304
101.75	175	100.0	217	497	363

Device	Routing	Invert	Outlet Devices
#1	Primary	94.17'	**6.0" Round Culvert X 2.00** L= 10.0' Ke= 0.500 Inlet / Outlet Invert= 94.17' / 94.12' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Device 1	94.33'	**6.0" Round 6" HDPE Underdrain X 2.00** L= 32.0' Ke= 0.500 Inlet / Outlet Invert= 94.33' / 94.17' S= 0.0050 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#3	Secondary	100.00'	**3.0' long x 2.0' breadth Broad-Crested Rectangular Weir X 2.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00

2.50 3.00 3.50
Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

#4	Tertiary	100.50'	**6.0' long Sharp-Crested Rectangular Weir X 2.00** 2 End Contraction(s)

Primary OutFlow Max=3.12 cfs @ 12.39 hrs HW=101.99' (Free Discharge)
└─**1=Culvert** (Passes 3.12 cfs of 4.66 cfs potential flow)
└─**2=6" HDPE Underdrain** (Barrel Controls 3.12 cfs @ 7.93 fps)

Secondary OutFlow Max=48.02 cfs @ 12.39 hrs HW=101.99' (Free Discharge)
└─**3=Broad-Crested Rectangular Weir** (Weir Controls 48.02 cfs @ 4.02 fps)

Tertiary OutFlow Max=67.80 cfs @ 12.39 hrs HW=101.99' (Free Discharge)
└─**4=Sharp-Crested Rectangular Weir** (Weir Controls 67.80 cfs @ 3.99 fps)

ond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration) - Chamber Wizard Fi

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

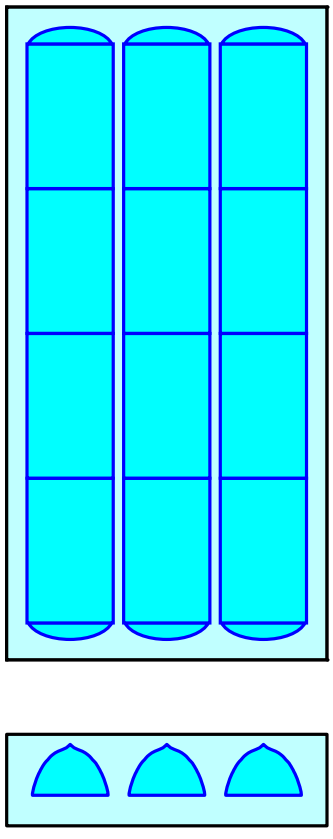
4 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 30.10' Row Length +12.0" End Stone x 2 = 32.10' Base Length
3 Rows x 51.0" Wide + 6.0" Spacing x 2 + 12.0" Side Stone x 2 = 15.75' Base Width
18.0" Stone Base + 30.0" Chamber Height + 6.0" Stone Cover = 4.50' Field Height

12 Chambers x 45.9 cf = 551.3 cf Chamber Storage

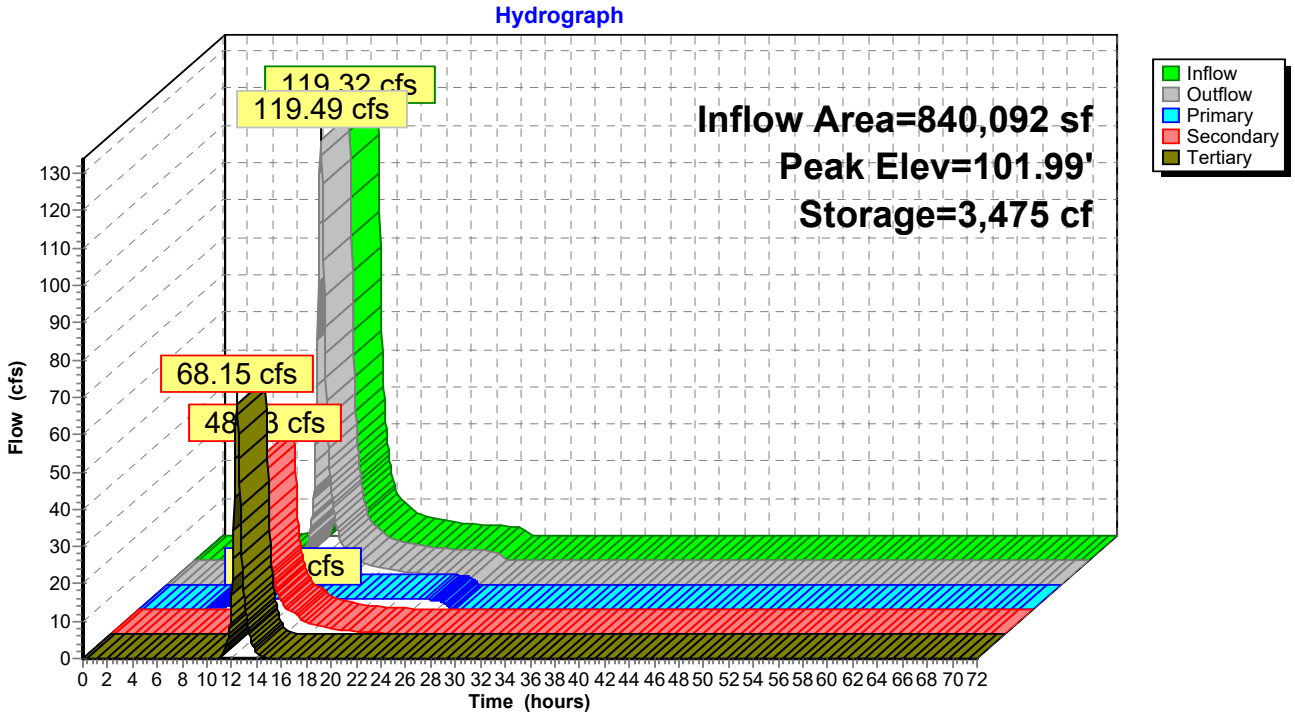
2,274.9 cf Field - 551.3 cf Chambers = 1,723.6 cf Stone x 40.0% Voids = 689.4 cf Stone Storage

Chamber Storage + Stone Storage = 1,240.7 cf = 0.028 af
Overall Storage Efficiency = 54.5%
Overall System Size = 32.10' x 15.75' x 4.50'

12 Chambers
84.3 cy Field
63.8 cy Stone



Pond 9P: Basic Rain Garden (w/ underdrain w/ 0.5" restrictive orifice), no infiltration)



Summary for Pond 10P: Basic Rain Garden (infiltration only)

Assumes infiltration through media is non-limiting.

Inflow Area = 22,074 sf,100.00% Impervious, Inflow Depth = 11.91" for 100-Year _2100 event
Inflow = 6.38 cfs @ 12.13 hrs, Volume= 21,906 cf
Outflow = 5.88 cfs @ 12.15 hrs, Volume= 21,905 cf, Atten= 8%, Lag= 1.6 min
Discarded = 0.05 cfs @ 11.05 hrs, Volume= 7,291 cf
Primary = 5.82 cfs @ 12.15 hrs, Volume= 14,614 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 100.26' @ 12.15 hrs Surf.Area= 4,500 sf Storage= 4,505 cf

Plug-Flow detention time= 245.7 min calculated for 21,905 cf (100% of inflow)
Center-of-Mass det. time= 245.6 min (982.7 - 737.1)

Volume	Invert	Avail.Storage	Storage Description
#1	98.25'	622 cf	**Custom Stage Data (Conic)**Listed below (Recalc)
		622 cf	x 9.00 = 5,598 cf Total Available Storage

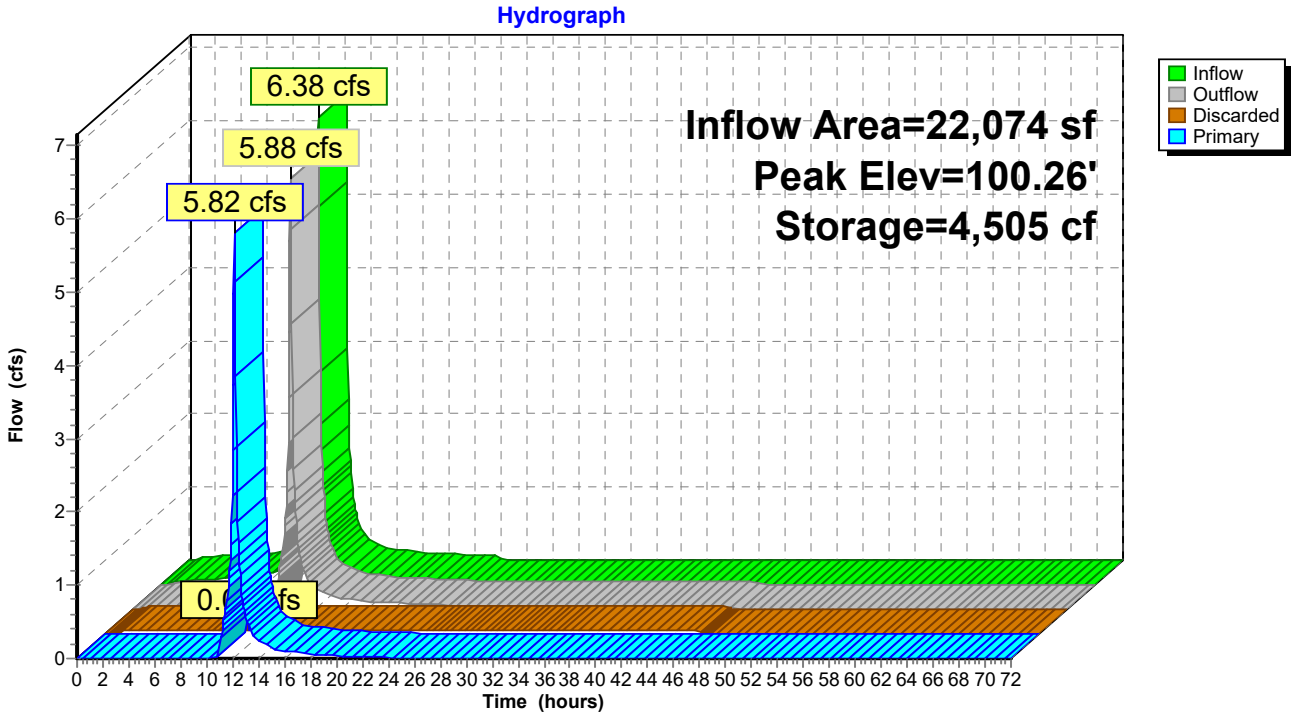
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
98.25	374	0.0	0	0	374
99.25	374	35.0	131	131	443
99.50	374	25.0	23	154	460
100.00	500	100.0	218	372	591
100.25	500	100.0	125	497	611
100.50	500	100.0	125	622	631

Device	Routing	Invert	Outlet Devices
#1	Discarded	98.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**2.0' long x 3.0' breadth Broad-Crested Rectangular Weir X 9.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Discarded OutFlow Max=0.05 cfs @ 11.05 hrs HW=100.01' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=5.78 cfs @ 12.15 hrs HW=100.26' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 5.78 cfs @ 1.25 fps)

Pond 10P: Basic Rain Garden (infiltration only)



Summary for Pond 11P: Basic Porous Pavement (infiltration only)

Inflow Area = 85,494 sf,100.00% Impervious, Inflow Depth = 11.91" for 100-Year _2100 event
Inflow = 24.73 cfs @ 12.13 hrs, Volume= 84,842 cf
Outflow = 23.25 cfs @ 12.17 hrs, Volume= 84,842 cf, Atten= 6%, Lag= 2.5 min
Discarded = 0.99 cfs @ 10.05 hrs, Volume= 62,032 cf
Primary = 22.27 cfs @ 12.17 hrs, Volume= 22,810 cf
Routed to Link 3L : dA3

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs
Peak Elev= 100.04' @ 12.17 hrs Surf.Area= 85,494 sf Storage= 20,650 cf

Plug-Flow detention time= 102.8 min calculated for 84,783 cf (100% of inflow)
Center-of-Mass det. time= 102.8 min (839.9 - 737.1)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	38,814 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

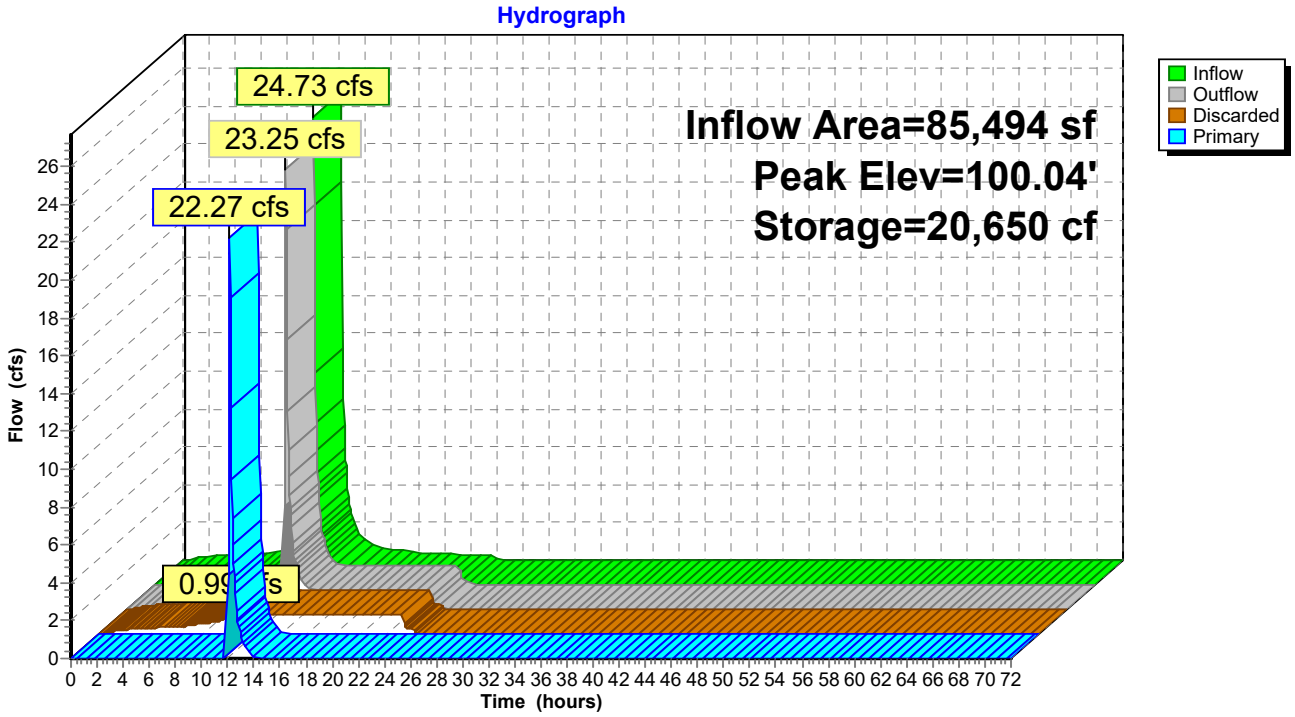
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	85,494	0.0	0	0
99.75	85,494	35.0	14,961	14,961
99.83	85,494	15.0	1,026	15,987
100.01	85,494	15.0	2,308	18,296
100.25	85,494	100.0	20,519	38,814

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.99 cfs @ 10.05 hrs HW=99.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.99 cfs)

Primary OutFlow Max=20.45 cfs @ 12.17 hrs HW=100.04' (Free Discharge)
↑—**2=Edge of Porous Asphalt** (Weir Controls 20.45 cfs @ 0.51 fps)

Pond 11P: Basic Porous Pavement (infiltration only)



Summary for Pond 12P: Basic Porous Pavement (infiltration only)

Inflow Area = 4,605 sf,100.00% Impervious, Inflow Depth = 11.91" for 100-Year _2100 event
Inflow = 1.33 cfs @ 12.13 hrs, Volume= 4,570 cf
Outflow = 1.33 cfs @ 12.13 hrs, Volume= 4,577 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.05 cfs @ 10.10 hrs, Volume= 3,333 cf
Primary = 1.28 cfs @ 12.13 hrs, Volume= 1,244 cf
Routed to Link 4L : DA 4: Combined Flows

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 100.00' @ 12.15 hrs Surf.Area= 4,605 sf Storage= 981 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 102.8 min (839.9 - 737.1)

Volume	Invert	Avail.Storage	Storage Description
#1	99.25'	4,393 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

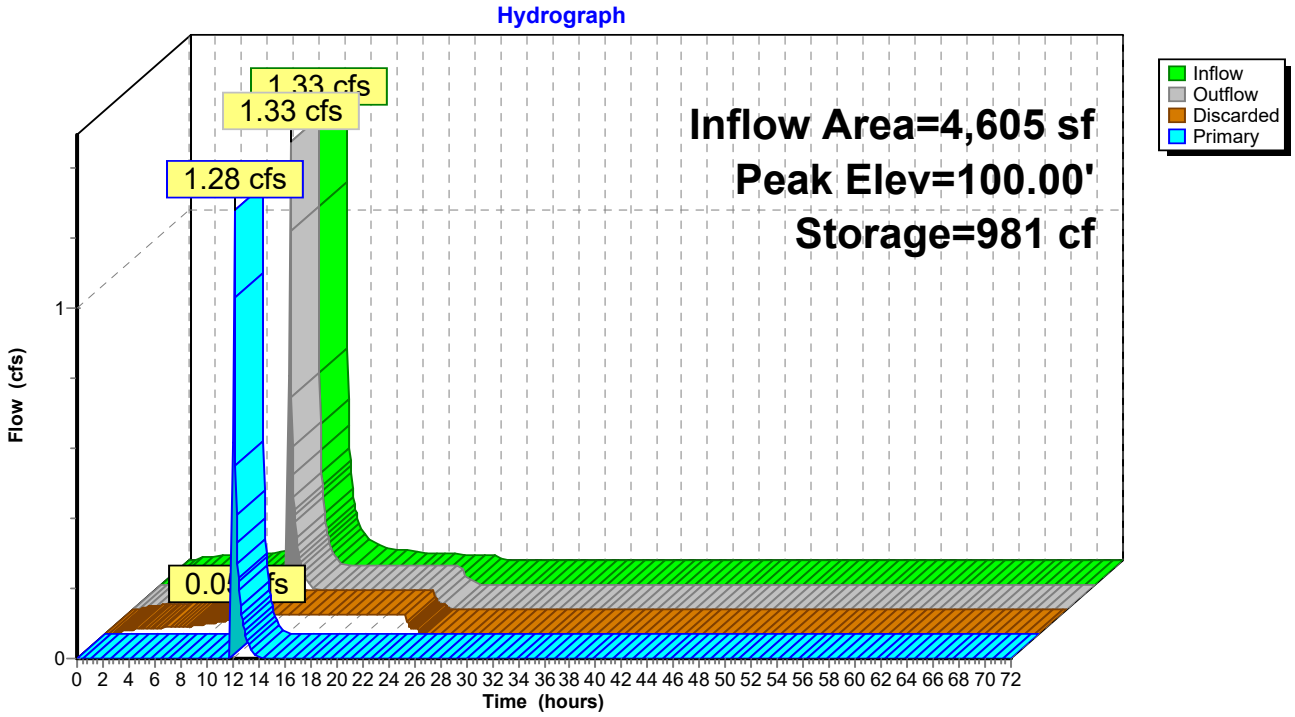
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
99.25	4,605	0.0	0	0
99.75	4,605	35.0	806	806
99.83	4,605	15.0	55	861
100.01	4,605	15.0	124	985
100.25	4,605	100.0	1,105	2,091
100.75	4,605	100.0	2,303	4,393

Device	Routing	Invert	Outlet Devices
#1	Discarded	99.25'	**0.500 in/hr Exfiltration over Surface area**
#2	Primary	100.00'	**15.0' long x 1.0' breadth Edge of Porous Asphalt X 76.00** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.05 cfs @ 10.10 hrs HW=99.27' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.05 cfs)

Primary OutFlow Max=0.78 cfs @ 12.13 hrs HW=100.00' (Free Discharge)
2=Edge of Porous Asphalt (Weir Controls 0.78 cfs @ 0.17 fps)

Pond 12P: Basic Porous Pavement (infiltration only)

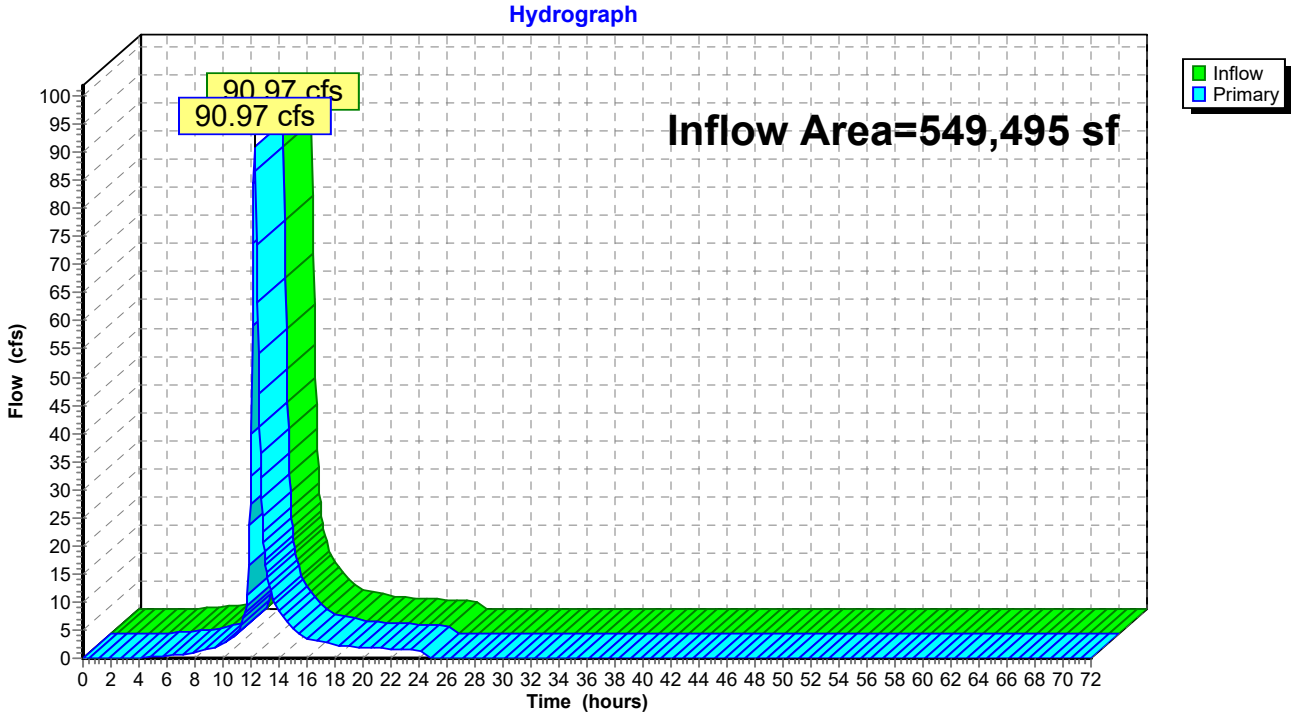


Summary for Link 1L: Combined Flows

Inflow Area = 549,495 sf, 18.28% Impervious, Inflow Depth = 8.59" for 100-Year _2100 event
Inflow = 90.97 cfs @ 12.27 hrs, Volume= 393,184 cf
Primary = 90.97 cfs @ 12.27 hrs, Volume= 393,184 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 1Ri : Inlet Pipe

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 1L: Combined Flows

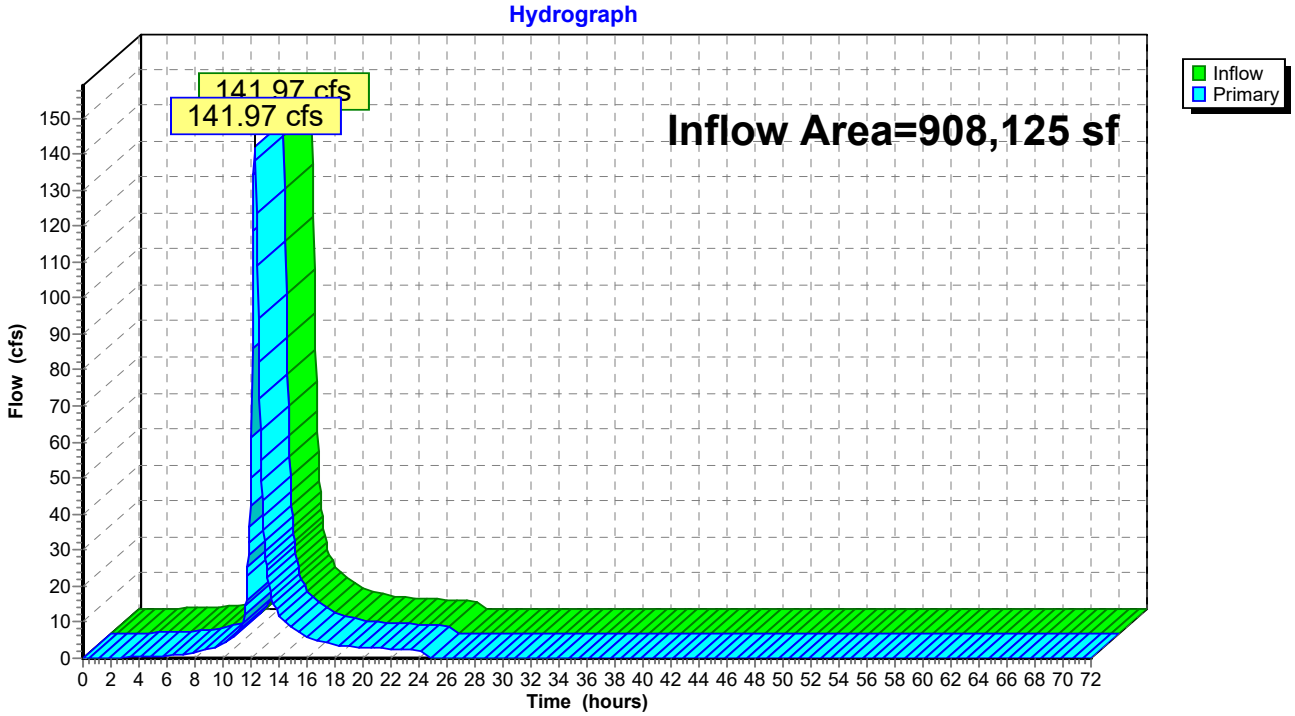


Summary for Link 2L: Combined Flows

Inflow Area = 908,125 sf, 25.71% Impervious, Inflow Depth = 8.38" for 100-Year _2100 event
Inflow = 141.97 cfs @ 12.28 hrs, Volume= 634,068 cf
Primary = 141.97 cfs @ 12.28 hrs, Volume= 634,068 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 2Ri : Inlet Pipe

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 2L: Combined Flows

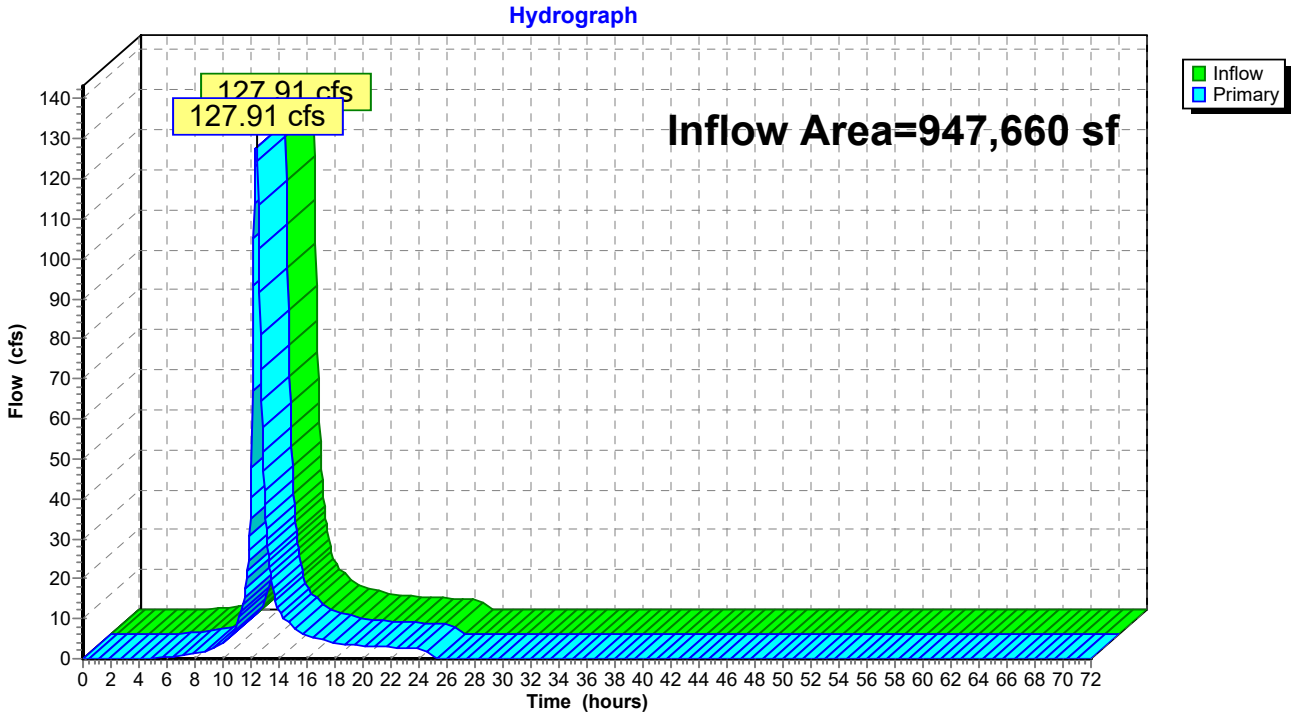


Summary for Link 3L: dA3

Inflow Area = 947,660 sf, 12.29% Impervious, Inflow Depth = 8.27" for 100-Year _2100 event
Inflow = 127.91 cfs @ 12.37 hrs, Volume= 652,745 cf
Primary = 127.91 cfs @ 12.37 hrs, Volume= 652,745 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 3L: dA3



Summary for Link 4L: DA 4: Combined Flows

Inflow Area = 168,772 sf, 3.14% Impervious, Inflow Depth = 8.62" for 100-Year _2100 event
Inflow = 25.16 cfs @ 12.34 hrs, Volume= 121,253 cf
Primary = 25.16 cfs @ 12.34 hrs, Volume= 121,253 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs

Link 4L: DA 4: Combined Flows