

Drainage Analysis
Burlington Solar One, LLC
Prospect Street - Burlington, Connecticut

Prepared by:

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Prepared for:

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Burlington Solar One **Drainage Summary**

The subject site is located in the Town of Burlington, on the north side of Prospect Street, comprising 62.98 acres of Industrial I Zone. Site soils are Hinkley [38], Canton/Charlton [62] soils in the upland areas associated with the proposed solar array. Inland wetland soils comprise 0.44 acres for a centrally located wetland within the property, 4.36 acres east side along the Wildcat Brook and 0.59 acres west side along the Whigville Brook. These wetland locations are all in excess of 100' from any activity associated with the construction of the proposed solar array. Site slopes vary from 1.6% to 13% within the proposed solar array area. Property historically was utilized as an earth removal site from the 1960's to current. Various small excavations and past disturbances are evident in the upland area of the proposed solar array.

The proposed solar project area is 11.6 acres located within a wooded upland area 1,500 l.f. north of Prospect Street. The project area disturbance is 111 l.f. away from wetlands along the Wildcat Brook, 230 l.f. from the centrally located wetland to stormwater quality basin, and 110 l.f. from the same to the outfall from the stormwater quality basin.

The majority of the solar site historically sheet flows to the area around and adjacent to the isolated wetland area (0.44 acres) and infiltrates into existing soils. The isolated wetland and surrounding areas are topographically not connected, in a surface drainage sense, to either the Wildcat Brook or the Whigville Brook drainage sheds.

Some site grading is utilized to establish uniform grades (8% or less) and drainage patterns within the solar site. A combination of two stormwater quality basins, infiltration trenches and grass lined swales are utilized to mitigate increase in run-off due to the project. The stormwater quality basins will have a multi-stage outlet design and emergency overflow. Both stormwater quality features include an up-slope 2% gradient grass infiltration and filter strip to provide primary treatment of up-gradient sheetflows. A stone infiltration trench is provided for both stormwater quality features to enhance the treatment process and will also provide a level of temporary sediment and erosion control during construction. These basins shall be utilized as temporary sediment basins during construction and have been sized appropriately for dry and wet storage requirements. Site design grades are 1%-5% (58% of area), 6%-7% (20% of area) and 8% (22% of area). The western stormwater quality basin will outlet into the eastern stormwater quality basin to further promote groundwater recharge and mitigation of peak run-off flows. Developed drainage flows from this project are not directed or outletted to areas adjacent to the brooks bordering the east and west property lines.

The connection to the solar field from a utility standpoint will follow the existing access road from Prospect Street into the site and northerly to the solar field area.

Overall peak flows have been reduced in the 2-year through 100-year storm events as shown in the tables below. In the area of proposed solar array, the hydrologic soil group has been reduced one group (from A to B, or B to C) in conformance with Appendix I “Stormwater Management at Solar Array Construction Projects”. Additionally, the imperviousness of the solar panels is not needed to be considered as the separation distance between each row of panels is greater than the width of the panels in a horizontal plane. This is also in conformance with Appendix I “Stormwater Management at Solar Array Construction Projects”.

Burlington Solar One – Peak Flows

<u>Storm (YR)</u>	<u>Developed to Point of Analysis (CFS)</u>	<u>Pre-Developed to Point of Analysis (CFS)</u>	<u>Peak Flow Diff. (CFS)</u>
1	0.94	1.49	-0.55
2	2.97	3.85	-0.88
5	9.27	9.54	-0.27
10	15.45	15.51	-0.06
25	24.90	25.07	-0.17
50	32.01	32.55	-0.54
100	39.30	41.38	-2.08

Stormwater Infiltration Basin #1 Flow/Elevation Data

<u>Storm (YR)</u>	<u>Routed Outflow (Not Inc. Exfiltration) (CFS)</u>	<u>Inflow (CFS)</u>	<u>Peak Flow Diff. (CFS)</u>	<u>Water Surface Elevation (FT)</u>
1	0.00	1.87	-1.87	404.01
2	0.00	3.46	-3.46	404.41
5	0.76	6.56	-5.80	405.39
10	1.14	9.41	-8.27	406.21
25	3.63	13.64	-10.01	407.17
50	8.40	16.82	-8.42	407.36
100	13.08	20.47	-7.39	407.51

Top Berm Elevation = 408.50

Stormwater Infiltration Basin #2 Flow/Elevation Data

<u>Storm (YR)</u>	<u>Routed Outflow (Not Inc. Exfiltration) (CFS)</u>	<u>Inflow (CFS)</u>	<u>Peak Flow Diff. (CFS)</u>	<u>Water Surface Elevation (FT)</u>
1	0.00	3.24	-3.24	392.68
2	1.26	6.00	-4.74	393.65
5	4.85	11.82	-6.97	394.89
10	8.14	17.18	-9.04	395.75
25	13.05	24.90	-11.85	396.89
50	16.77	34.16	-17.39	398.12
100	19.94	46.78	-26.84	399.45

Top Berm Elevation = 401.00

Water Quality Volume Basin #1

Drainage Area = 9.053 Acres
% Impervious Surfaces = 2.9%

WQV = 0.057 Ac-Ft (Elevation 404.50)

Water Quality Volume Basin #2

Drainage Area = 15.756 Acres
% Impervious Surfaces = 0.7%

WQV = 0.074 Ac-Ft (Elevation 392.80)

Temporary Sediment Basin #1 Sizing Calculation

Drainage Area = 5.77 Acres (Active Construction Area)
Erosion Rate = 50 tons/acre/year
Trap Efficiency = 80%
Delivery Rate = 37%
Sediment Density = 90

Dry Volume = 0.044 Ac-Ft
Wet Volume = 0.088 Ac-Ft (2x Dry volume)

Total Storage Volume = 0.132 Ac-Ft (Elevation 405.00)

Temporary Sediment Basin #1 Sizing Calculation

Drainage Area = 9.502 Acres (Active Construction Area)

Erosion Rate = 50 tons/acre/year

Trap Efficiency = 80%

Delivery Rate = 35%

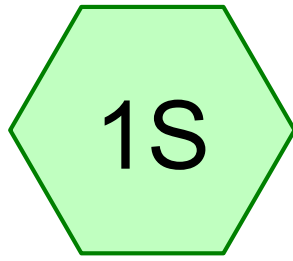
Sediment Density = 90

Dry Volume = 0.068 Ac-Ft

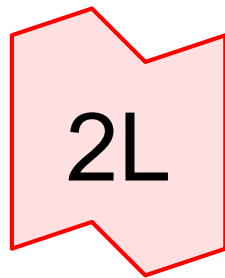
Wet Volume = 0.136 Ac-Ft (2x Dry volume)

Total Storage Volume = 0.204 Ac-Ft (Elevation 393.80)

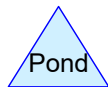
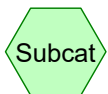
Note: These estimates of sediment storage do not include the sediment that will be trapped or controlled by up-gradient siltation controls shown on the plan.



DA-1



POA



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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.197	61	>75% Grass cover, Good, HSG B (1S)
0.829	74	>75% Grass cover, Good, HSG C (1S)
0.072	96	Gravel surface, HSG C (1S)
6.865	77	Newly graded area, HSG A (1S)
0.053	98	Paved parking, HSG C (1S)
0.174	98	Roofs, HSG C (1S)
4.318	30	Woods, Good, HSG A (1S)
15.012	55	Woods, Good, HSG B (1S)
4.250	70	Woods, Good, HSG C (1S)
31.770	59	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
11.183	HSG A	1S
15.209	HSG B	1S
5.378	HSG C	1S
0.000	HSG D	
0.000	Other	
31.770		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.197	0.829	0.000	0.000	1.026	>75% Grass cover, Good	1S
0.000	0.000	0.072	0.000	0.000	0.072	Gravel surface	1S
6.865	0.000	0.000	0.000	0.000	6.865	Newly graded area	1S
0.000	0.000	0.053	0.000	0.000	0.053	Paved parking	1S
0.000	0.000	0.174	0.000	0.000	0.174	Roofs	1S
4.318	15.012	4.250	0.000	0.000	23.580	Woods, Good	1S
11.183	15.209	5.378	0.000	0.000	31.770	TOTAL AREA	

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Type III 24-hr 1-Year Rainfall=2.86"

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Page 5

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

Subcatchment 1S: DA-1

Runoff Area=31.770 ac 0.71% Impervious Runoff Depth>0.20"
Flow Length=1,900' Tc=105.2 min CN=59 Runoff=1.49 cfs 0.527 af

Link 2L: POA

Inflow=1.49 cfs 0.527 af
Primary=1.49 cfs 0.527 af

Total Runoff Area = 31.770 ac Runoff Volume = 0.527 af Average Runoff Depth = 0.20"
99.29% Pervious = 31.543 ac 0.71% Impervious = 0.227 ac

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Burlington Solar One - Pre-Developed
 Type III 24-hr 1-Year Rainfall=2.86"

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Page 6

Summary for Subcatchment 1S: DA-1

Runoff = 1.49 cfs @ 13.92 hrs, Volume= 0.527 af, Depth> 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 1-Year Rainfall=2.86"

Area (ac)	CN	Description
0.174	98	Roofs, HSG C
0.072	96	Gravel surface, HSG C
0.053	98	Paved parking, HSG C
0.197	61	>75% Grass cover, Good, HSG B
0.829	74	>75% Grass cover, Good, HSG C
4.318	30	Woods, Good, HSG A
15.012	55	Woods, Good, HSG B
4.250	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
31.770	59	Weighted Average
31.543		99.29% Pervious Area
0.227		0.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

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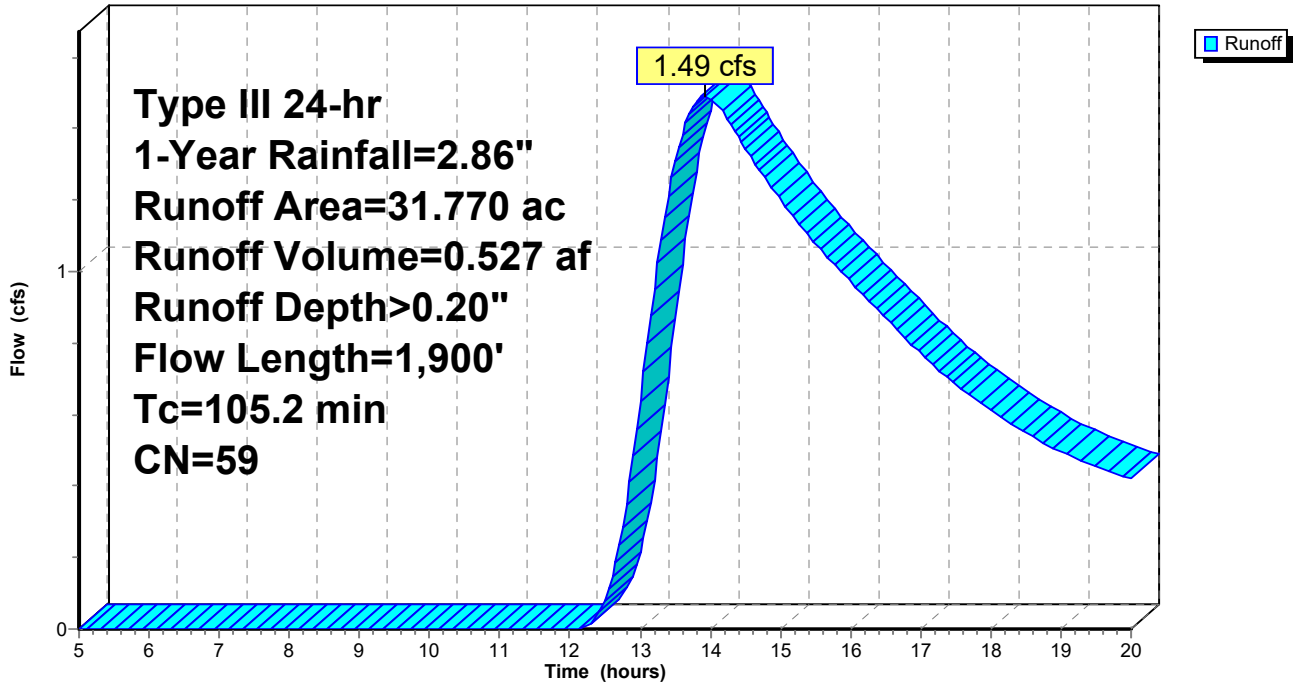
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Type III 24-hr 1-Year Rainfall=2.86"

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Page 7

Subcatchment 1S: DA-1

Hydrograph



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Type III 24-hr 1-Year Rainfall=2.86"

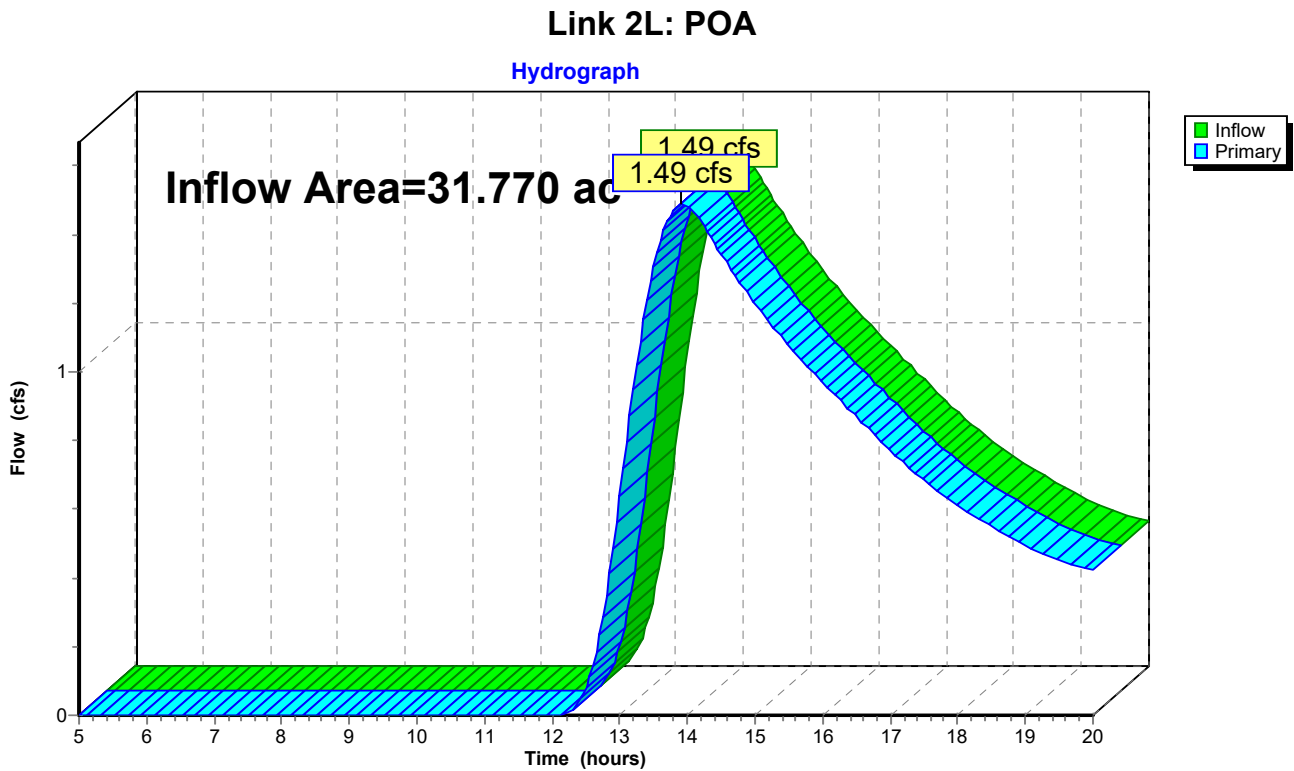
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Page 8

Summary for Link 2L: POA

Inflow Area = 31.770 ac, 0.71% Impervious, Inflow Depth > 0.20" for 1-Year event
Inflow = 1.49 cfs @ 13.92 hrs, Volume= 0.527 af
Primary = 1.49 cfs @ 13.92 hrs, Volume= 0.527 af, Atten= 0%, Lag= 0.0 min

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



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Type III 24-hr 2-Year Rainfall=3.58"

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Page 9

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

Subcatchment 1S: DA-1

Runoff Area=31.770 ac 0.71% Impervious Runoff Depth>0.43"
Flow Length=1,900' Tc=105.2 min CN=59 Runoff=3.85 cfs 1.134 af

Link 2L: POA

Inflow=3.85 cfs 1.134 af
Primary=3.85 cfs 1.134 af

Total Runoff Area = 31.770 ac Runoff Volume = 1.134 af Average Runoff Depth = 0.43"
99.29% Pervious = 31.543 ac 0.71% Impervious = 0.227 ac

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Type III 24-hr 2-Year Rainfall=3.58"

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Page 10

Summary for Subcatchment 1S: DA-1

Runoff = 3.85 cfs @ 13.71 hrs, Volume= 1.134 af, Depth> 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.58"

Area (ac)	CN	Description
0.174	98	Roofs, HSG C
0.072	96	Gravel surface, HSG C
0.053	98	Paved parking, HSG C
0.197	61	>75% Grass cover, Good, HSG B
0.829	74	>75% Grass cover, Good, HSG C
4.318	30	Woods, Good, HSG A
15.012	55	Woods, Good, HSG B
4.250	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
31.770	59	Weighted Average
31.543		99.29% Pervious Area
0.227		0.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

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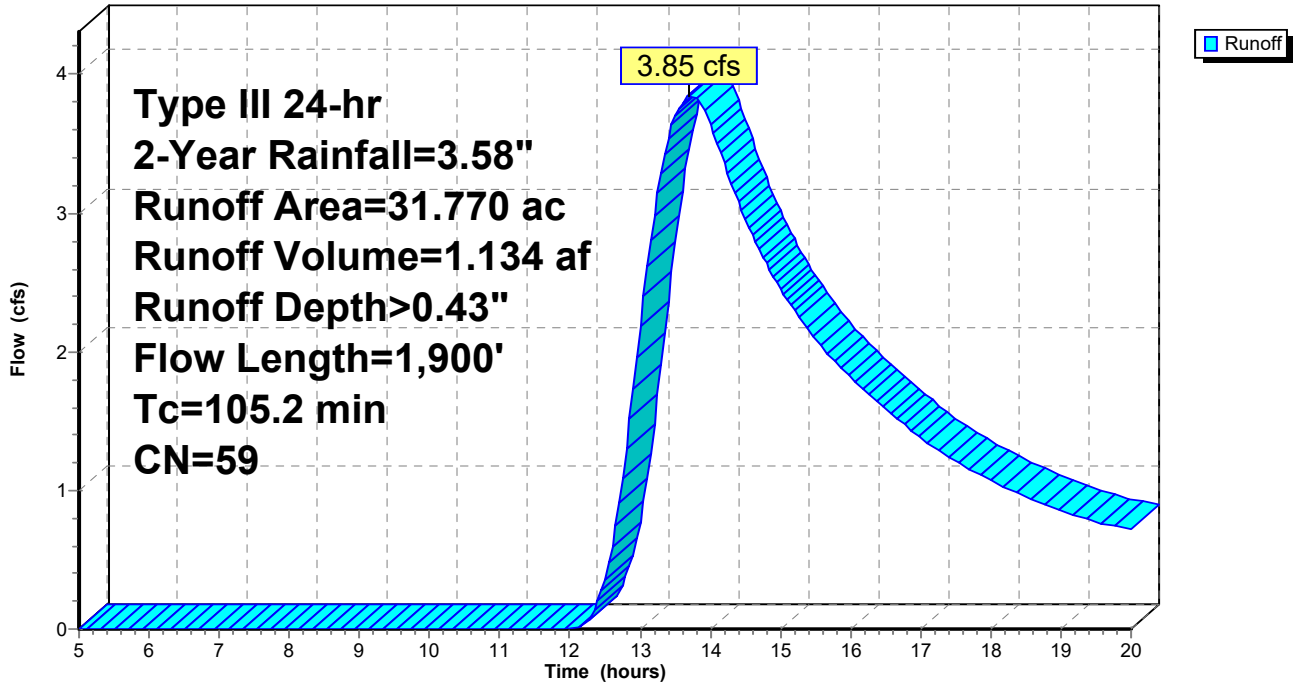
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Type III 24-hr 2-Year Rainfall=3.58"

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Page 11

Subcatchment 1S: DA-1

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Type III 24-hr 2-Year Rainfall=3.58"

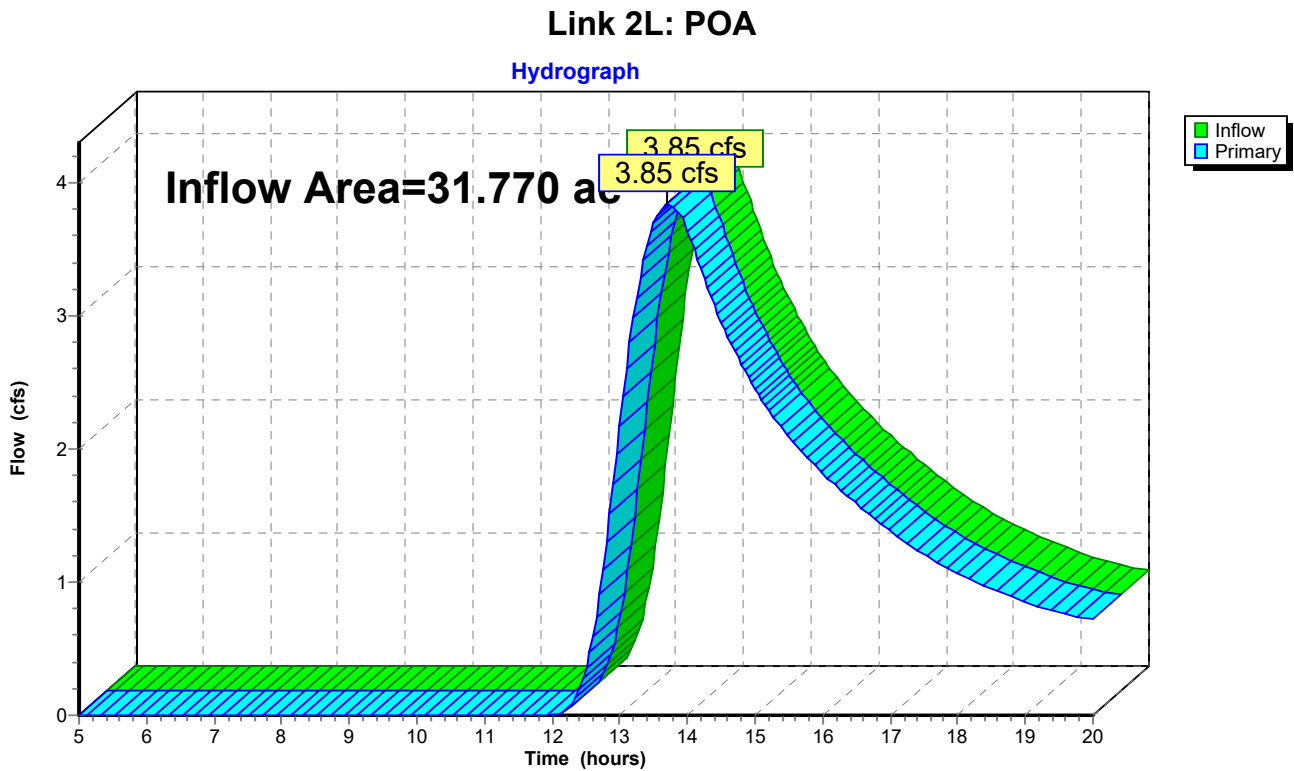
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Page 12

Summary for Link 2L: POA

Inflow Area = 31.770 ac, 0.71% Impervious, Inflow Depth > 0.43" for 2-Year event
Inflow = 3.85 cfs @ 13.71 hrs, Volume= 1.134 af
Primary = 3.85 cfs @ 13.71 hrs, Volume= 1.134 af, Atten= 0%, Lag= 0.0 min

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



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Type III 24-hr 5-Year Rainfall=4.76"

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Page 13

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

Subcatchment 1S: DA-1

Runoff Area=31.770 ac 0.71% Impervious Runoff Depth>0.93"
Flow Length=1,900' Tc=105.2 min CN=59 Runoff=9.54 cfs 2.468 af

Link 2L: POA

Inflow=9.54 cfs 2.468 af
Primary=9.54 cfs 2.468 af

Total Runoff Area = 31.770 ac Runoff Volume = 2.468 af Average Runoff Depth = 0.93"
99.29% Pervious = 31.543 ac 0.71% Impervious = 0.227 ac

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Type III 24-hr 5-Year Rainfall=4.76"

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Page 14

Summary for Subcatchment 1S: DA-1

Runoff = 9.54 cfs @ 13.57 hrs, Volume= 2.468 af, Depth> 0.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-Year Rainfall=4.76"

Area (ac)	CN	Description
0.174	98	Roofs, HSG C
0.072	96	Gravel surface, HSG C
0.053	98	Paved parking, HSG C
0.197	61	>75% Grass cover, Good, HSG B
0.829	74	>75% Grass cover, Good, HSG C
4.318	30	Woods, Good, HSG A
15.012	55	Woods, Good, HSG B
4.250	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
31.770	59	Weighted Average
31.543		99.29% Pervious Area
0.227		0.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

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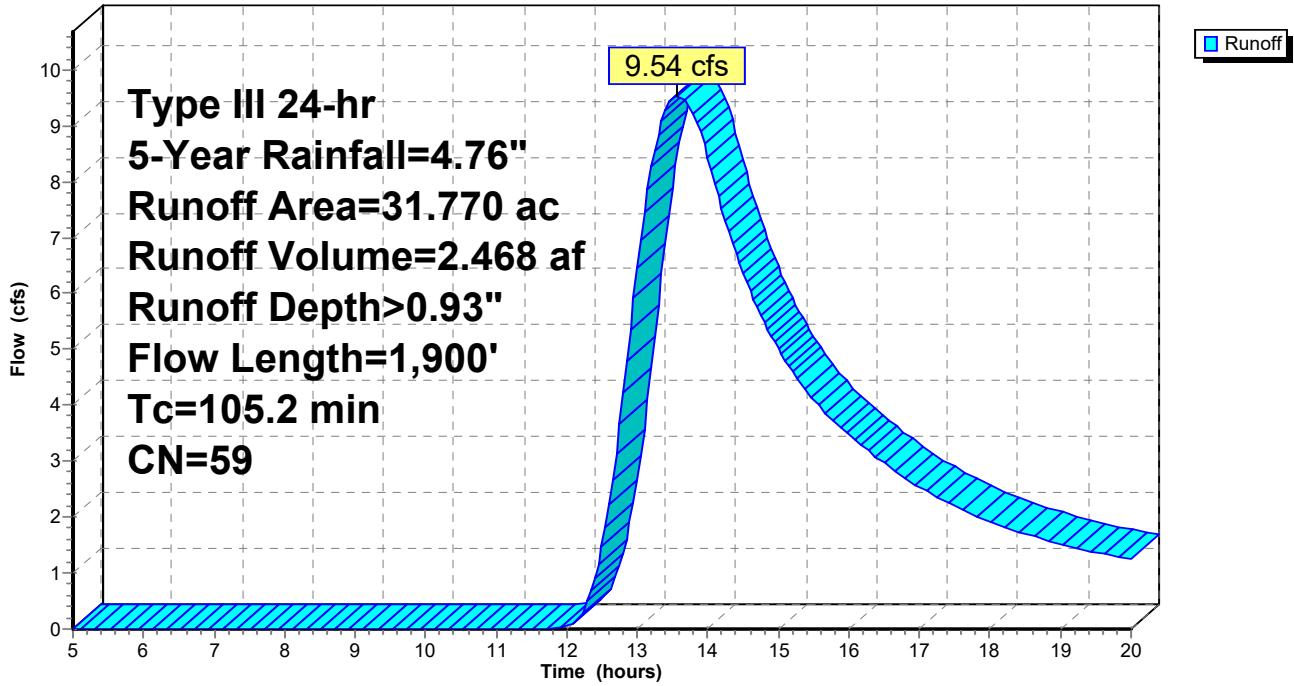
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Type III 24-hr 5-Year Rainfall=4.76"

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Page 15

Subcatchment 1S: DA-1

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Type III 24-hr 5-Year Rainfall=4.76"

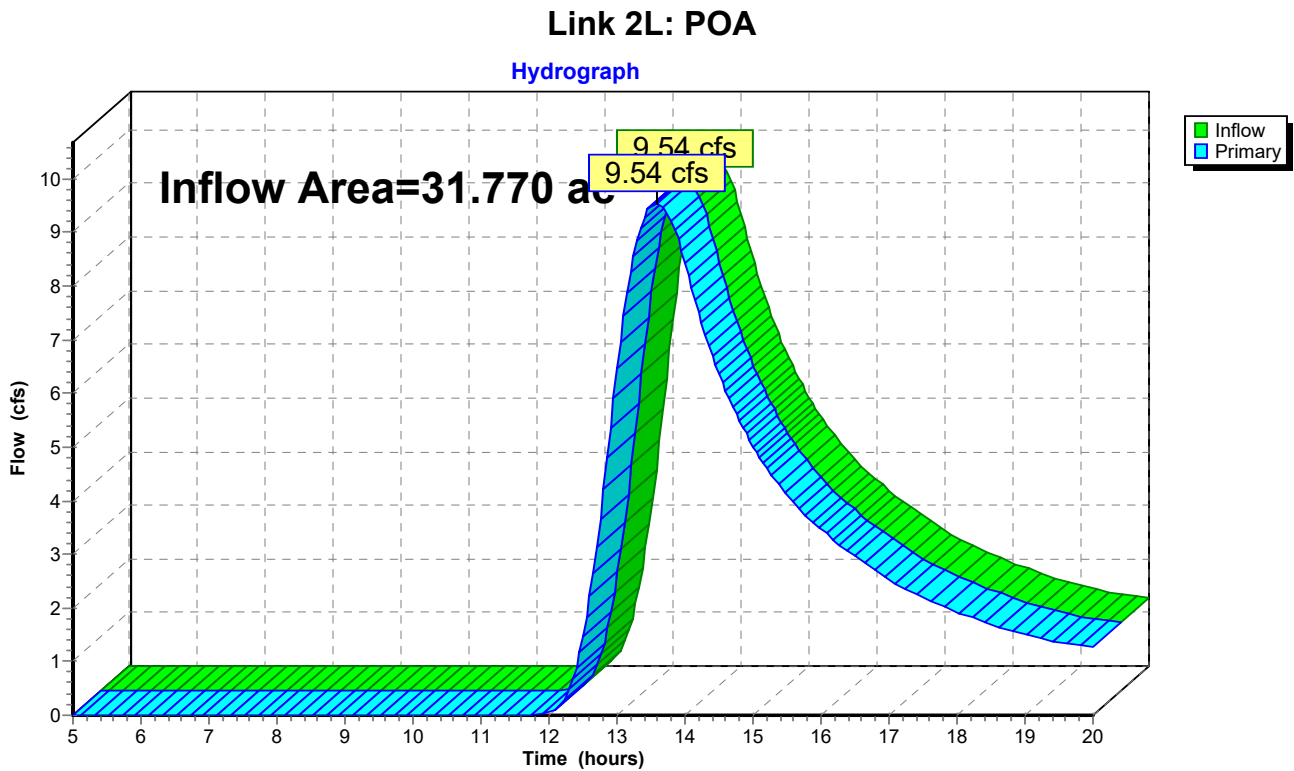
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Page 16

Summary for Link 2L: POA

Inflow Area = 31.770 ac, 0.71% Impervious, Inflow Depth > 0.93" for 5-Year event
Inflow = 9.54 cfs @ 13.57 hrs, Volume= 2.468 af
Primary = 9.54 cfs @ 13.57 hrs, Volume= 2.468 af, Atten= 0%, Lag= 0.0 min

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



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Type III 24-hr 10-Year Rainfall=5.74"

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Page 17

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

Subcatchment 1S: DA-1

Runoff Area=31.770 ac 0.71% Impervious Runoff Depth>1.44"
Flow Length=1,900' Tc=105.2 min CN=59 Runoff=15.51 cfs 3.819 af

Link 2L: POA

Inflow=15.51 cfs 3.819 af
Primary=15.51 cfs 3.819 af

Total Runoff Area = 31.770 ac Runoff Volume = 3.819 af Average Runoff Depth = 1.44"
99.29% Pervious = 31.543 ac 0.71% Impervious = 0.227 ac

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 Type III 24-hr 10-Year Rainfall=5.74"

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Page 18

Summary for Subcatchment 1S: DA-1

Runoff = 15.51 cfs @ 13.51 hrs, Volume= 3.819 af, Depth> 1.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-Year Rainfall=5.74"

Area (ac)	CN	Description
0.174	98	Roofs, HSG C
0.072	96	Gravel surface, HSG C
0.053	98	Paved parking, HSG C
0.197	61	>75% Grass cover, Good, HSG B
0.829	74	>75% Grass cover, Good, HSG C
4.318	30	Woods, Good, HSG A
15.012	55	Woods, Good, HSG B
4.250	70	Woods, Good, HSG C
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31.770	59	Weighted Average
31.543		99.29% Pervious Area
0.227		0.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

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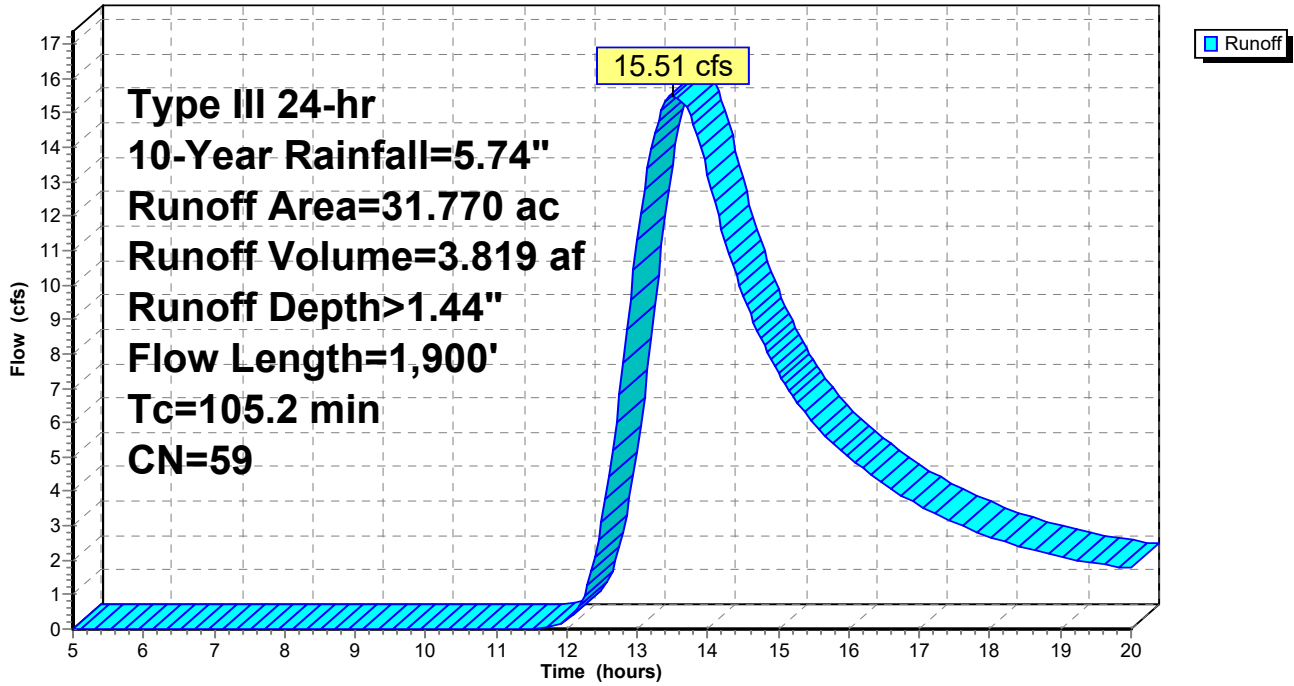
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Type III 24-hr 10-Year Rainfall=5.74"

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Page 19

Subcatchment 1S: DA-1

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Burlington Solar One - Pre-Developed
Type III 24-hr 10-Year Rainfall=5.74"

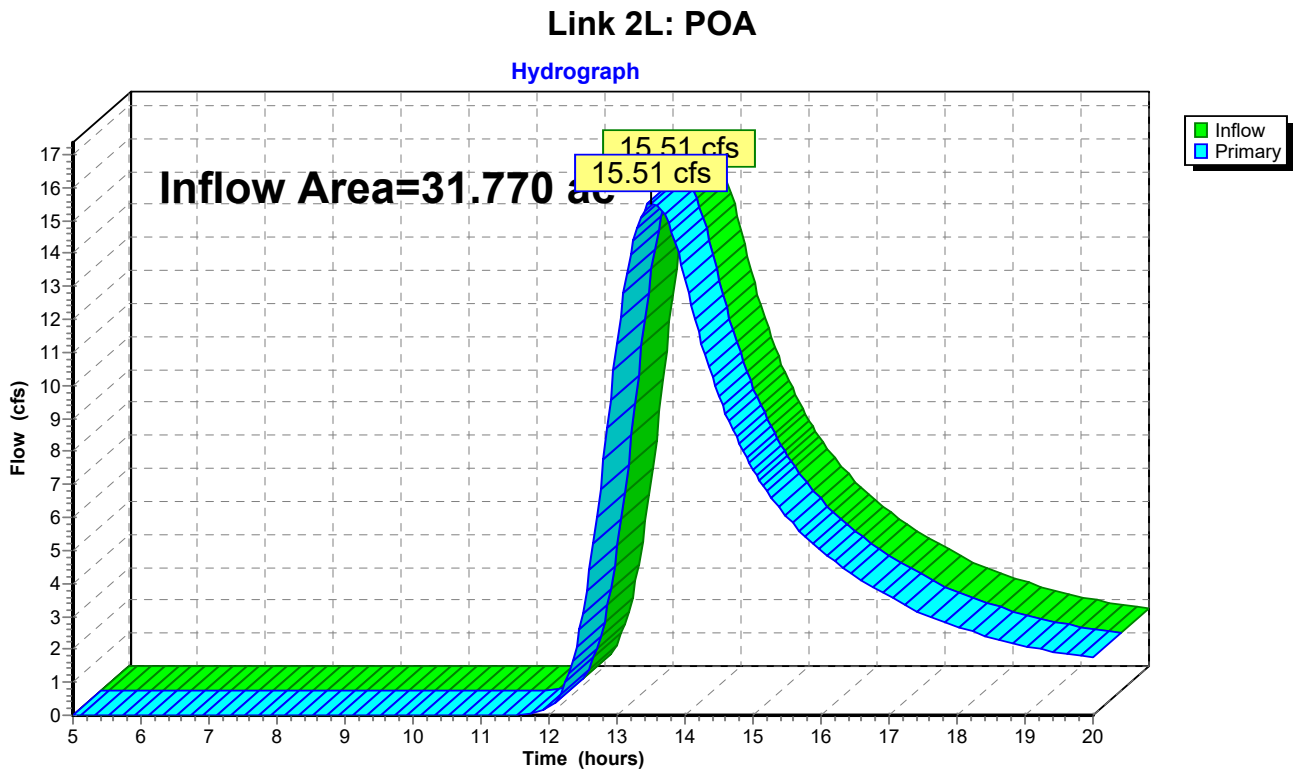
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Page 20

Summary for Link 2L: POA

Inflow Area = 31.770 ac, 0.71% Impervious, Inflow Depth > 1.44" for 10-Year event
Inflow = 15.51 cfs @ 13.51 hrs, Volume= 3.819 af
Primary = 15.51 cfs @ 13.51 hrs, Volume= 3.819 af, Atten= 0%, Lag= 0.0 min

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



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Burlington Solar One - Pre-Developed
Type III 24-hr 25-Year Rainfall=7.10"

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Page 21

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

Subcatchment 1S: DA-1

Runoff Area=31.770 ac 0.71% Impervious Runoff Depth>2.25"
Flow Length=1,900' Tc=105.2 min CN=59 Runoff=25.07 cfs 5.960 af

Link 2L: POA

Inflow=25.07 cfs 5.960 af
Primary=25.07 cfs 5.960 af

Total Runoff Area = 31.770 ac Runoff Volume = 5.960 af Average Runoff Depth = 2.25"
99.29% Pervious = 31.543 ac 0.71% Impervious = 0.227 ac

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Burlington Solar One - Pre-Developed
Type III 24-hr 25-Year Rainfall=7.10"

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Page 22

Summary for Subcatchment 1S: DA-1

Runoff = 25.07 cfs @ 13.46 hrs, Volume= 5.960 af, Depth> 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=7.10"

Area (ac)	CN	Description
0.174	98	Roofs, HSG C
0.072	96	Gravel surface, HSG C
0.053	98	Paved parking, HSG C
0.197	61	>75% Grass cover, Good, HSG B
0.829	74	>75% Grass cover, Good, HSG C
4.318	30	Woods, Good, HSG A
15.012	55	Woods, Good, HSG B
4.250	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
31.770	59	Weighted Average
31.543		99.29% Pervious Area
0.227		0.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

Prospect Solar One - Pre 8-6-2020

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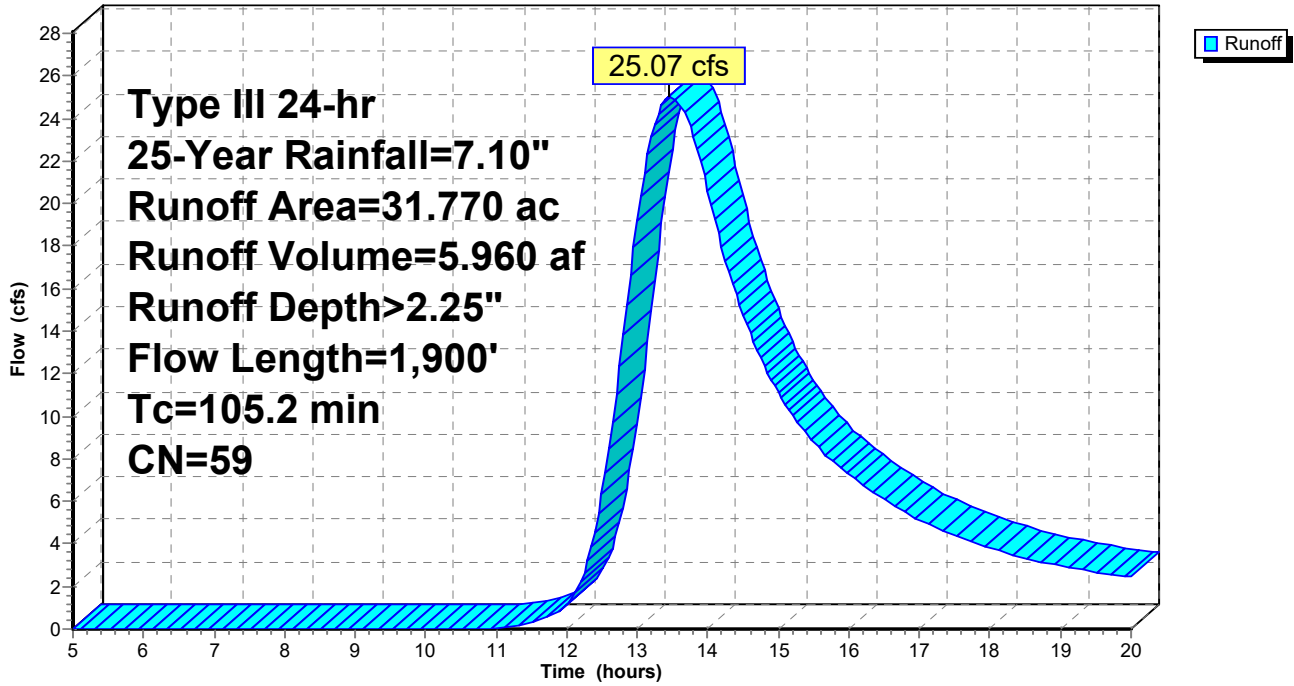
Burlington Solar One - Pre-Developed
Type III 24-hr 25-Year Rainfall=7.10"

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Page 23

Subcatchment 1S: DA-1

Hydrograph



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Burlington Solar One - Pre-Developed
Type III 24-hr 25-Year Rainfall=7.10"

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Page 24

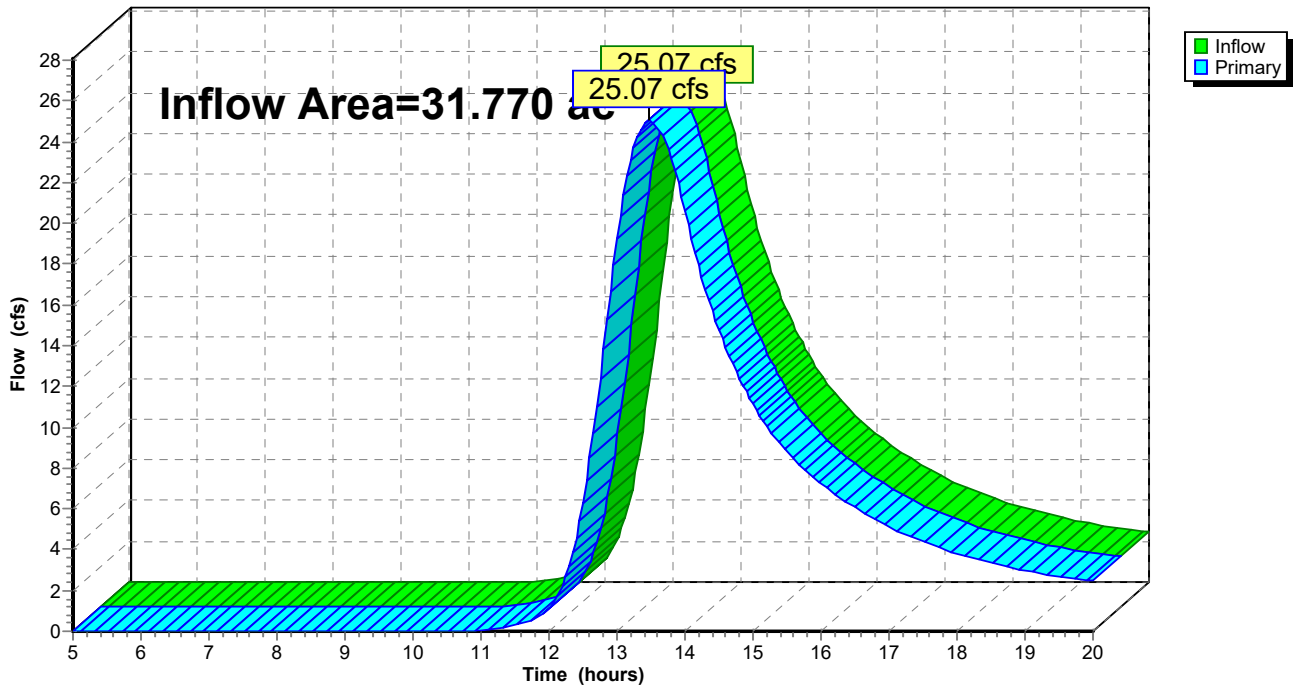
Summary for Link 2L: POA

Inflow Area = 31.770 ac, 0.71% Impervious, Inflow Depth > 2.25" for 25-Year event
Inflow = 25.07 cfs @ 13.46 hrs, Volume= 5.960 af
Primary = 25.07 cfs @ 13.46 hrs, Volume= 5.960 af, Atten= 0%, Lag= 0.0 min

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

Link 2L: POA

Hydrograph



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Burlington Solar One - Pre-Developed
Type III 24-hr 50-Year Rainfall=8.08"

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Page 25

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

Subcatchment 1S: DA-1

Runoff Area=31.770 ac 0.71% Impervious Runoff Depth>2.89"
Flow Length=1,900' Tc=105.2 min CN=59 Runoff=32.55 cfs 7.649 af

Link 2L: POA

Inflow=32.55 cfs 7.649 af
Primary=32.55 cfs 7.649 af

Total Runoff Area = 31.770 ac Runoff Volume = 7.649 af Average Runoff Depth = 2.89"
99.29% Pervious = 31.543 ac 0.71% Impervious = 0.227 ac

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Burlington Solar One - Pre-Developed
 Type III 24-hr 50-Year Rainfall=8.08"

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Page 26

Summary for Subcatchment 1S: DA-1

Runoff = 32.55 cfs @ 13.45 hrs, Volume= 7.649 af, Depth> 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-Year Rainfall=8.08"

Area (ac)	CN	Description
0.174	98	Roofs, HSG C
0.072	96	Gravel surface, HSG C
0.053	98	Paved parking, HSG C
0.197	61	>75% Grass cover, Good, HSG B
0.829	74	>75% Grass cover, Good, HSG C
4.318	30	Woods, Good, HSG A
15.012	55	Woods, Good, HSG B
4.250	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
31.770	59	Weighted Average
31.543		99.29% Pervious Area
0.227		0.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

Prospect Solar One - Pre 8-6-2020

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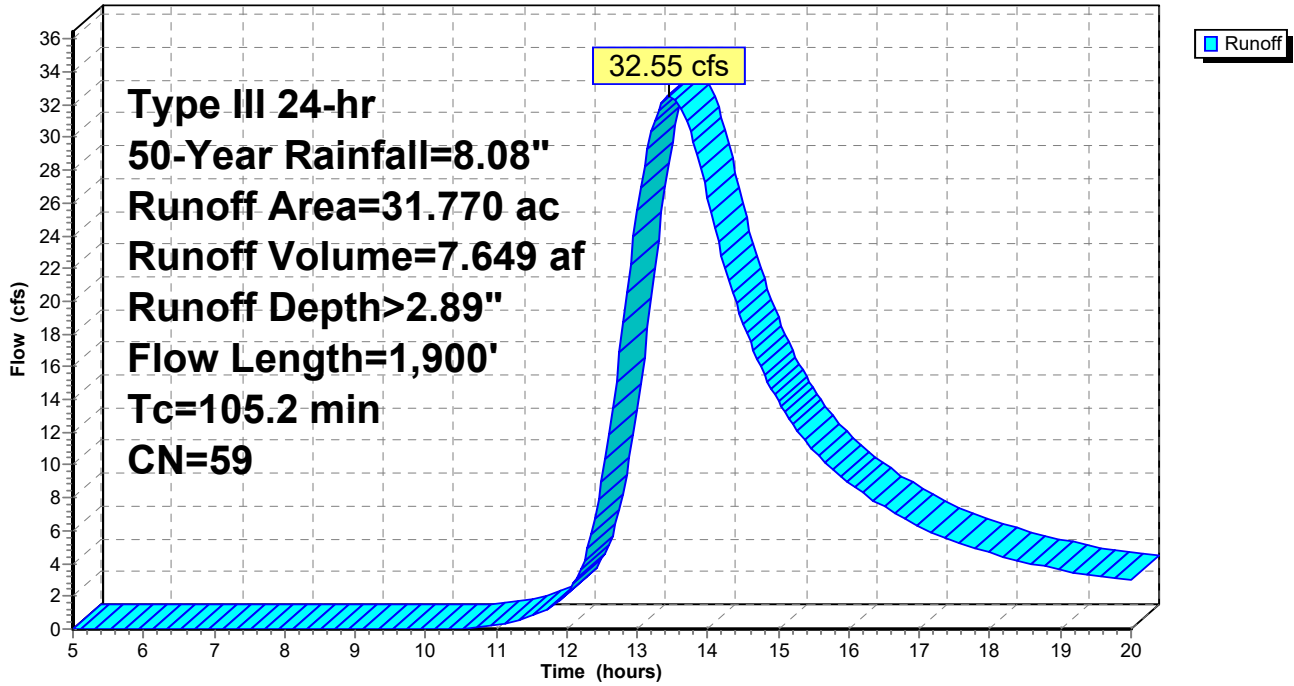
Burlington Solar One - Pre-Developed
Type III 24-hr 50-Year Rainfall=8.08"

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Page 27

Subcatchment 1S: DA-1

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Type III 24-hr 50-Year Rainfall=8.08"

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Page 28

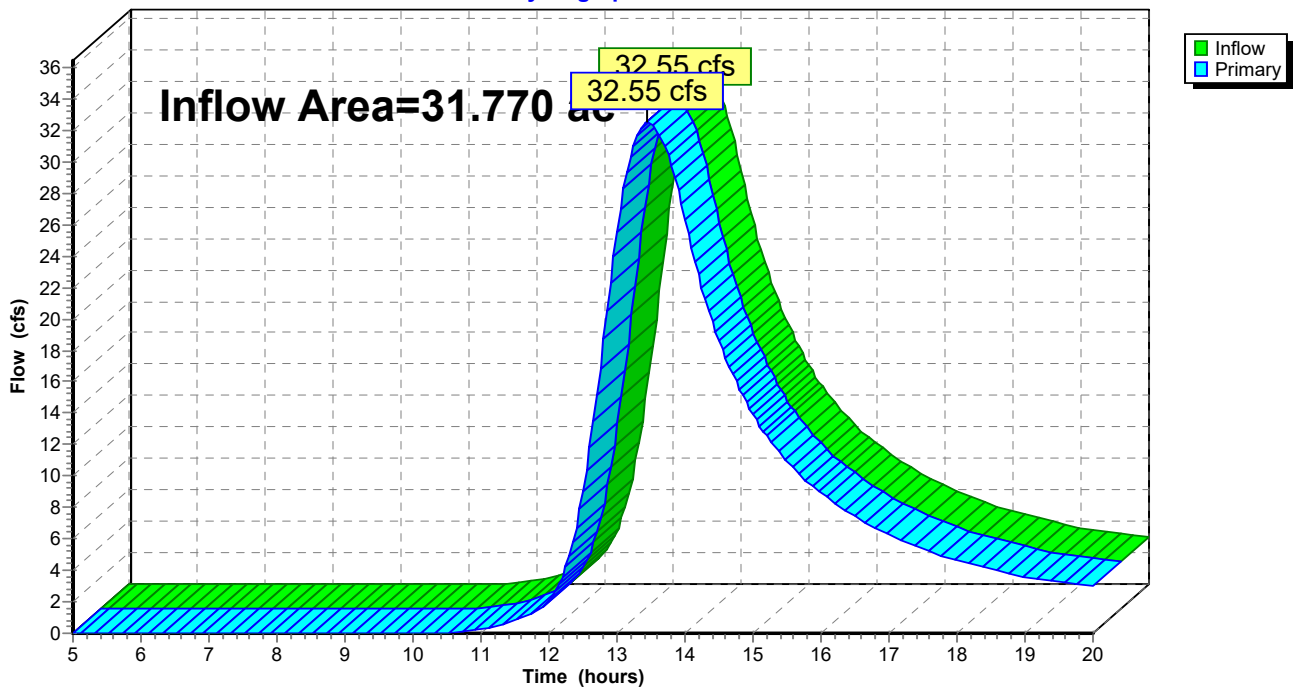
Summary for Link 2L: POA

Inflow Area = 31.770 ac, 0.71% Impervious, Inflow Depth > 2.89" for 50-Year event
Inflow = 32.55 cfs @ 13.45 hrs, Volume= 7.649 af
Primary = 32.55 cfs @ 13.45 hrs, Volume= 7.649 af, Atten= 0%, Lag= 0.0 min

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

Link 2L: POA

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Burlington Solar One - Pre-Developed
Type III 24-hr 100-Year Rainfall=9.18"

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Page 29

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

Subcatchment 1S: DA-1

Runoff Area=31.770 ac 0.71% Impervious Runoff Depth>3.65"
Flow Length=1,900' Tc=105.2 min CN=59 Runoff=41.38 cfs 9.658 af

Link 2L: POA

Inflow=41.38 cfs 9.658 af
Primary=41.38 cfs 9.658 af

Total Runoff Area = 31.770 ac Runoff Volume = 9.658 af Average Runoff Depth = 3.65"
99.29% Pervious = 31.543 ac 0.71% Impervious = 0.227 ac

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Type III 24-hr 100-Year Rainfall=9.18"

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Page 30

Summary for Subcatchment 1S: DA-1

Runoff = 41.38 cfs @ 13.45 hrs, Volume= 9.658 af, Depth> 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=9.18"

Area (ac)	CN	Description
0.174	98	Roofs, HSG C
0.072	96	Gravel surface, HSG C
0.053	98	Paved parking, HSG C
0.197	61	>75% Grass cover, Good, HSG B
0.829	74	>75% Grass cover, Good, HSG C
4.318	30	Woods, Good, HSG A
15.012	55	Woods, Good, HSG B
4.250	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
31.770	59	Weighted Average
31.543		99.29% Pervious Area
0.227		0.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

Prospect Solar One - Pre 8-6-2020

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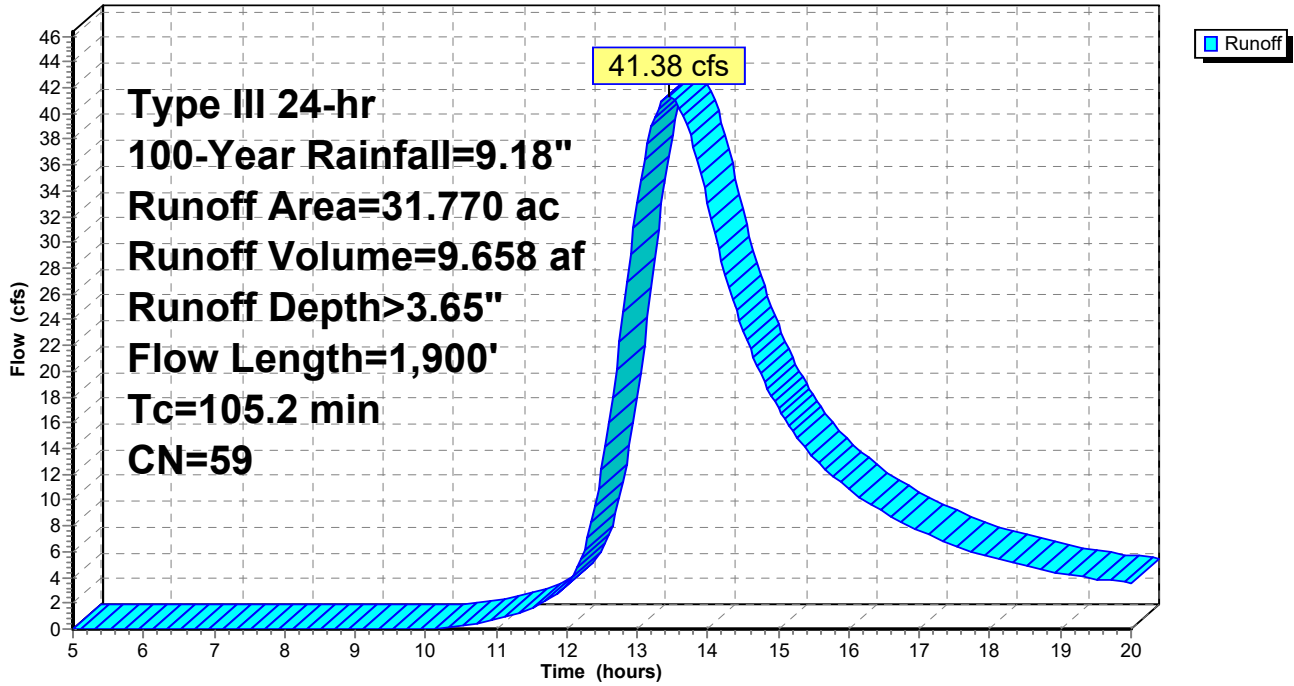
Burlington Solar One - Pre-Developed
Type III 24-hr 100-Year Rainfall=9.18"

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Page 31

Subcatchment 1S: DA-1

Hydrograph



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Type III 24-hr 100-Year Rainfall=9.18"

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Page 32

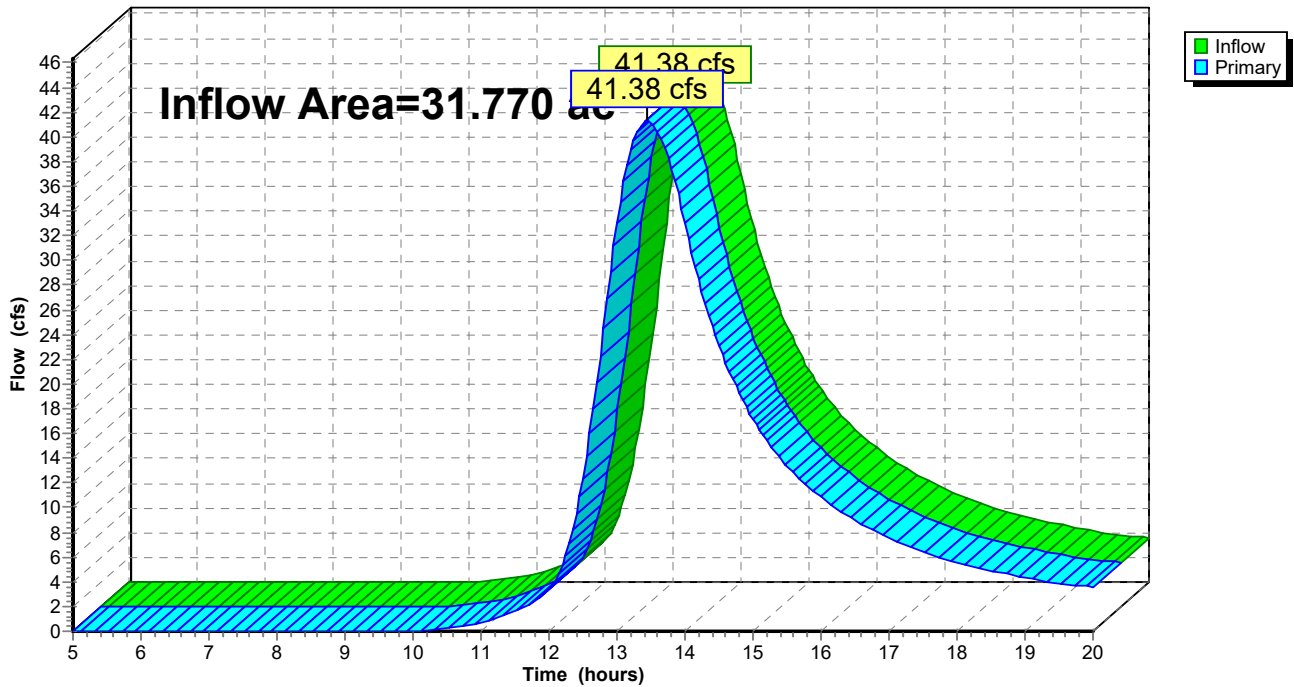
Summary for Link 2L: POA

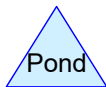
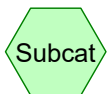
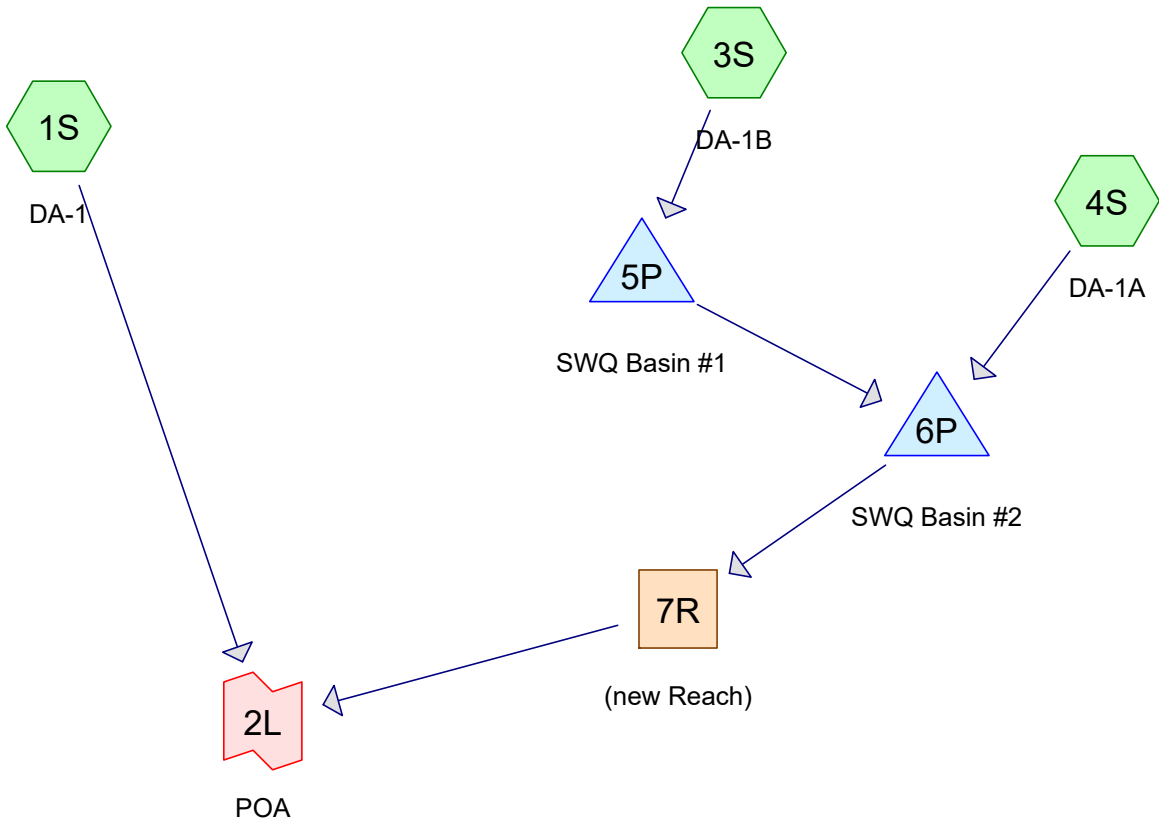
Inflow Area = 31.770 ac, 0.71% Impervious, Inflow Depth > 3.65" for 100-Year event
Inflow = 41.38 cfs @ 13.45 hrs, Volume= 9.658 af
Primary = 41.38 cfs @ 13.45 hrs, Volume= 9.658 af, Atten= 0%, Lag= 0.0 min

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

Link 2L: POA

Hydrograph





Routing Diagram for Prospect Solar One - Post 8-7-2020
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Prospect Solar One - Post 8-7-2020

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Page 2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.180	61	>75% Grass cover, Good, HSG B (3S)
1.110	74	>75% Grass cover, Good, HSG C (3S, 4S)
0.072	96	Gravel surface, HSG C (3S)
1.135	58	Meadow, non-grazed, HSG B (1S, 3S, 4S)
14.699	71	Meadow, non-grazed, HSG C (1S, 3S, 4S)
6.865	77	Newly graded area, HSG A (1S)
0.090	98	Paved parking, HSG C (3S, 4S)
0.210	98	Roofs, HSG C (3S, 4S)
4.035	30	Woods, Good, HSG A (1S, 3S)
4.416	55	Woods, Good, HSG B (1S, 3S, 4S)
6.809	70	Woods, Good, HSG C (1S, 3S, 4S)
39.621	66	TOTAL AREA

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Page 3

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
10.900	HSG A	1S, 3S
5.731	HSG B	1S, 3S, 4S
22.990	HSG C	1S, 3S, 4S
0.000	HSG D	
0.000	Other	
39.621		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.180	1.110	0.000	0.000	1.290	>75% Grass cover, Good	3S, 4S
0.000	0.000	0.072	0.000	0.000	0.072	Gravel surface	3S
0.000	1.135	14.699	0.000	0.000	15.834	Meadow, non-grazed	1S, 3S, 4S
6.865	0.000	0.000	0.000	0.000	6.865	Newly graded area	1S
0.000	0.000	0.090	0.000	0.000	0.090	Paved parking	3S, 4S
0.000	0.000	0.210	0.000	0.000	0.210	Roofs	3S, 4S
4.035	4.416	6.809	0.000	0.000	15.260	Woods, Good	1S, 3S, 4S
10.900	5.731	22.990	0.000	0.000	39.621	TOTAL AREA	

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Burlington Solar One - Developed
Type III 24-hr 1-Year Rainfall=2.86"

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Page 5

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: DA-1

Runoff Area=14.812 ac 0.00% Impervious Runoff Depth=0.31"
Flow Length=1,900' Tc=105.2 min CN=61 Runoff=0.94 cfs 0.387 af

Subcatchment 3S: DA-1B

Runoff Area=9.053 ac 2.12% Impervious Runoff Depth=0.60"
Flow Length=1,487' Tc=69.3 min CN=69 Runoff=1.87 cfs 0.450 af

Subcatchment 4S: DA-1A

Runoff Area=15.756 ac 0.69% Impervious Runoff Depth=0.60"
Flow Length=1,518' Tc=69.9 min CN=69 Runoff=3.24 cfs 0.783 af

Reach 7R: (new Reach)

Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.100 L=800.0' S=0.0200 '/' Capacity=140.87 cfs Outflow=0.00 cfs 0.000 af

Pond 5P: SWQ Basin #1

Peak Elev=404.01' Storage=0.001 af Inflow=1.87 cfs 0.450 af
Discarded=1.87 cfs 0.450 af Primary=0.00 cfs 0.000 af Outflow=1.87 cfs 0.450 af

Pond 6P: SWQ Basin #2

Peak Elev=392.68' Storage=0.067 af Inflow=3.24 cfs 0.783 af
Discarded=2.21 cfs 0.783 af Primary=0.00 cfs 0.000 af Outflow=2.21 cfs 0.783 af

Link 2L: POA

Inflow=0.94 cfs 0.387 af
Primary=0.94 cfs 0.387 af

Total Runoff Area = 39.621 ac Runoff Volume = 1.619 af Average Runoff Depth = 0.49"
99.24% Pervious = 39.321 ac 0.76% Impervious = 0.300 ac

Prospect Solar One - Post 8-7-2020

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Burlington Solar One - Developed
Type III 24-hr 1-Year Rainfall=2.86"

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Page 6

Summary for Subcatchment 1S: DA-1

Runoff = 0.94 cfs @ 13.82 hrs, Volume= 0.387 af, Depth= 0.31"

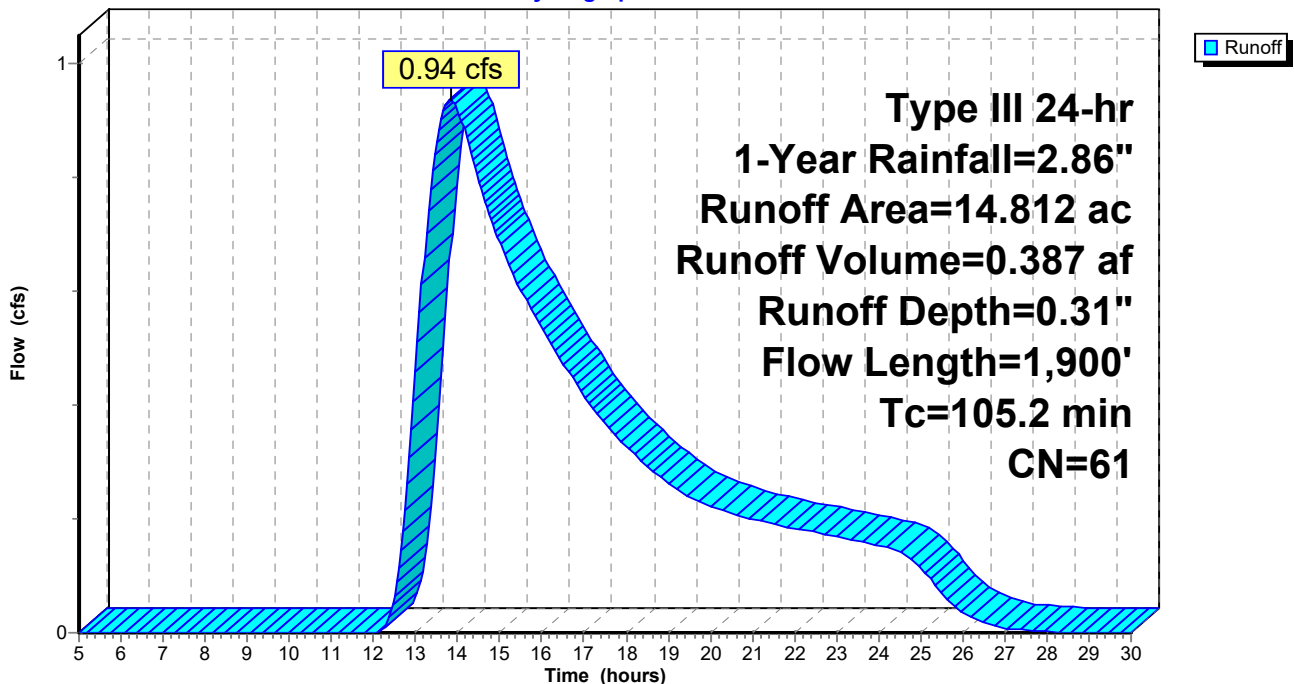
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.86"

Area (ac)	CN	Description
3.912	30	Woods, Good, HSG A
1.830	55	Woods, Good, HSG B
1.643	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
0.367	58	Meadow, non-grazed, HSG B
0.195	71	Meadow, non-grazed, HSG C
14.812	61	Weighted Average
14.812		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

Subcatchment 1S: DA-1

Hydrograph



Prospect Solar One - Post 8-7-2020

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Burlington Solar One - Developed
 Type III 24-hr 1-Year Rainfall=2.86"

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Page 7

Summary for Subcatchment 3S: DA-1B

Runoff = 1.87 cfs @ 13.07 hrs, Volume= 0.450 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 1-Year Rainfall=2.86"

Area (ac)	CN	Description
0.139	98	Roofs, HSG C
0.053	98	Paved parking, HSG C
0.072	96	Gravel surface, HSG C
0.180	61	>75% Grass cover, Good, HSG B
0.524	74	>75% Grass cover, Good, HSG C
0.123	30	Woods, Good, HSG A
0.665	55	Woods, Good, HSG B
1.527	70	Woods, Good, HSG C
0.263	58	Meadow, non-grazed, HSG B
5.507	71	Meadow, non-grazed, HSG C
9.053	69	Weighted Average
8.861		97.88% Pervious Area
0.192		2.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
16.4	760	0.0950	0.77		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
6.3	627	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.3	1,487	Total			

Prospect Solar One - Post 8-7-2020

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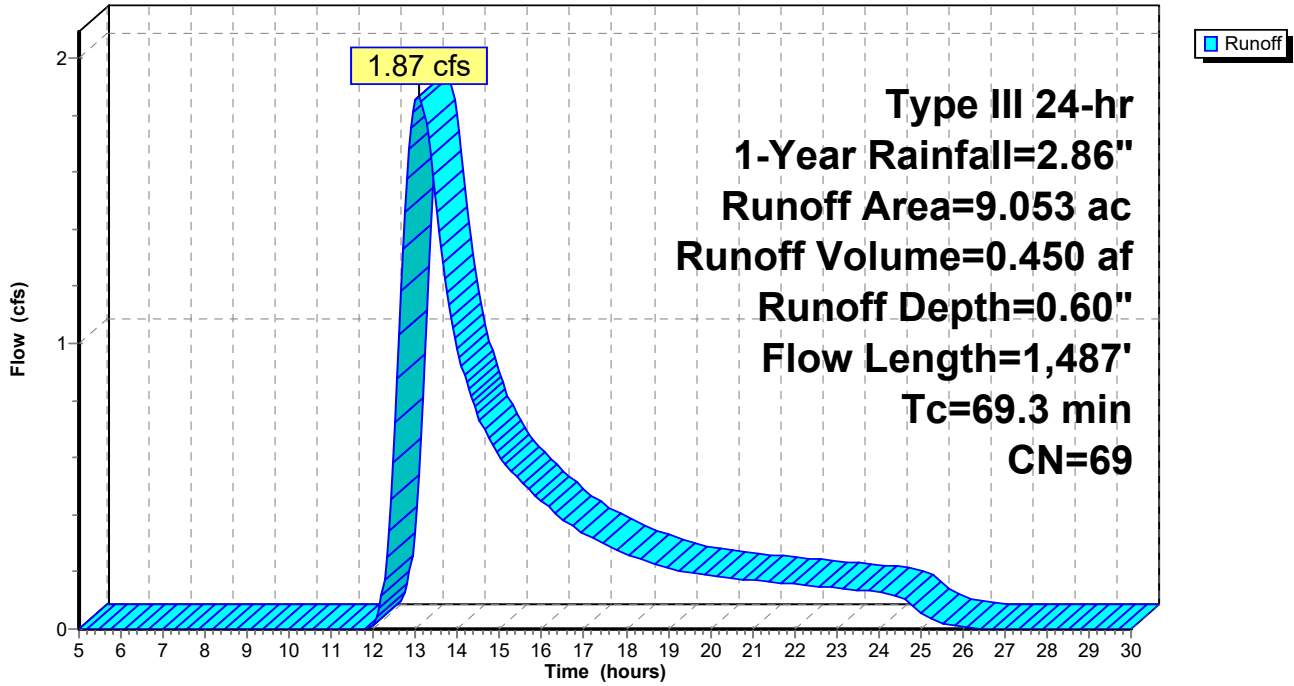
Burlington Solar One - Developed
Type III 24-hr 1-Year Rainfall=2.86"

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Page 8

Subcatchment 3S: DA-1B

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Burlington Solar One - Developed
Type III 24-hr 1-Year Rainfall=2.86"

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Page 9

Summary for Subcatchment 4S: DA-1A

Runoff = 3.24 cfs @ 13.08 hrs, Volume= 0.783 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-Year Rainfall=2.86"

Area (ac)	CN	Description
0.071	98	Roofs, HSG C
0.037	98	Paved parking, HSG C
0.586	74	>75% Grass cover, Good, HSG C
1.921	55	Woods, Good, HSG B
3.639	70	Woods, Good, HSG C
0.505	58	Meadow, non-grazed, HSG B
8.997	71	Meadow, non-grazed, HSG C
15.756	69	Weighted Average
15.648		99.31% Pervious Area
0.108		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
17.6	821	0.0970	0.78		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
5.7	597	0.0620	1.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.9	1,518	Total			

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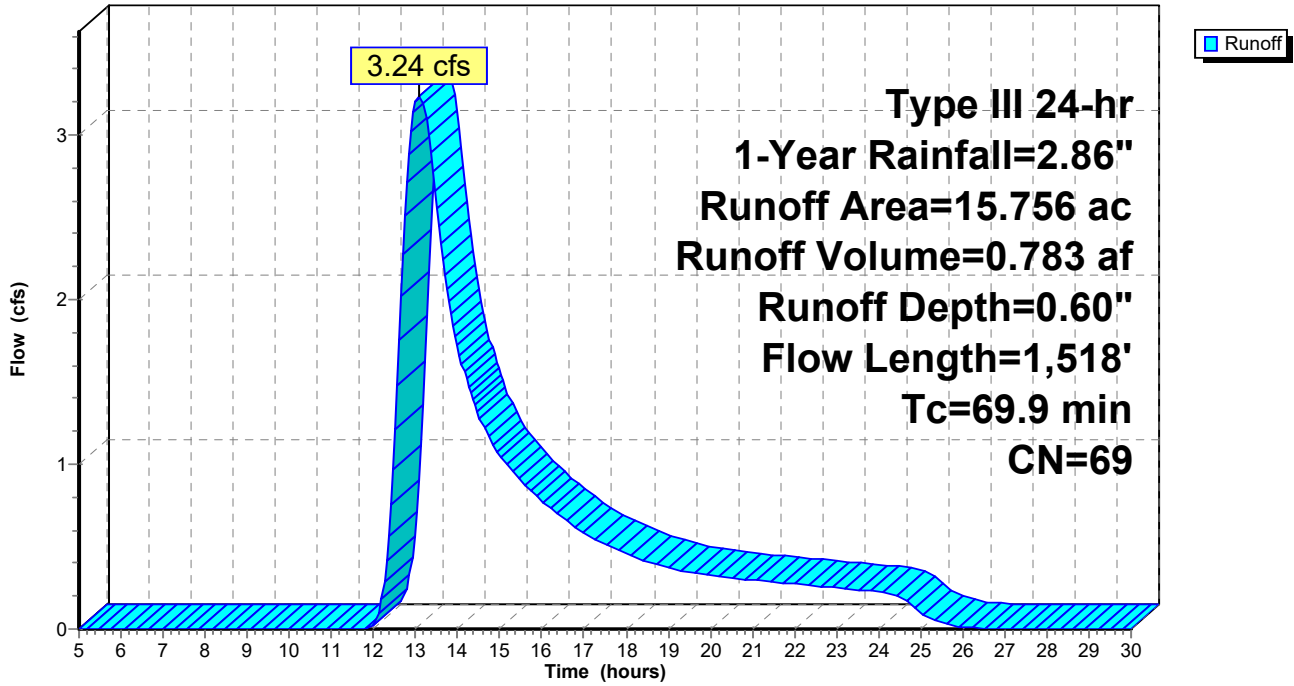
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Type III 24-hr 1-Year Rainfall=2.86"

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Page 10

Subcatchment 4S: DA-1A

Hydrograph



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Page 11

Summary for Reach 7R: (new Reach)

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

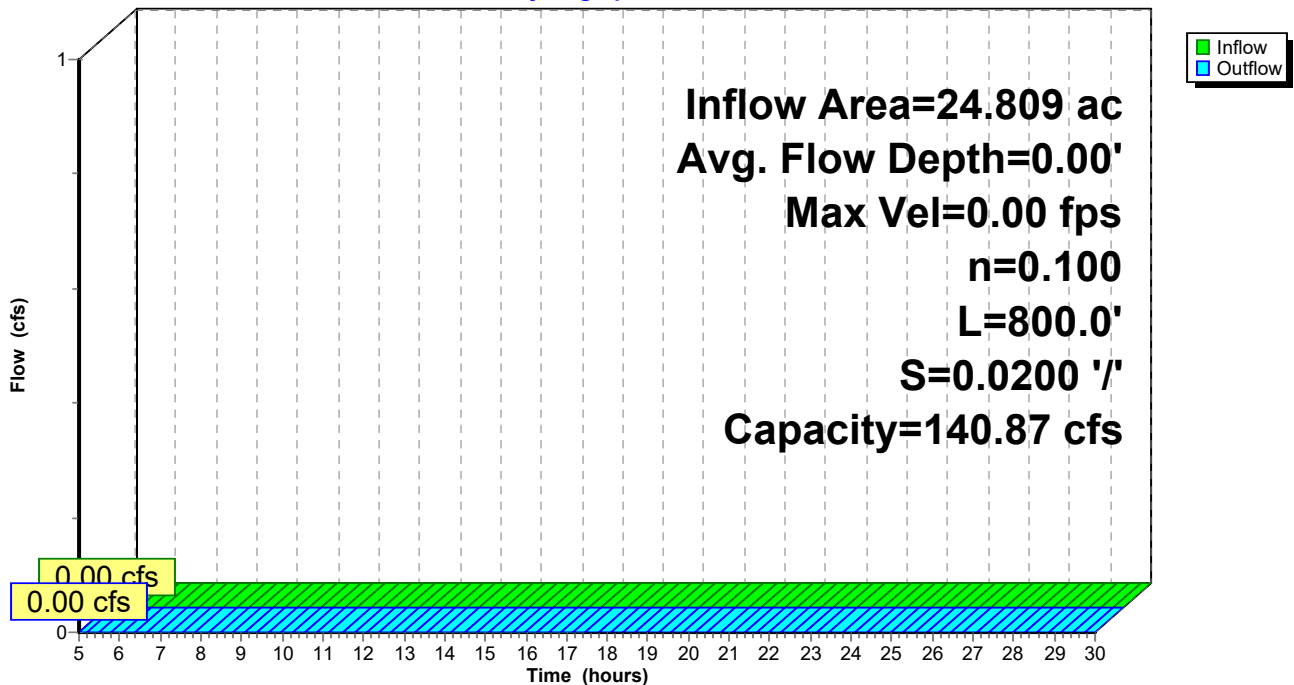
Peak Storage= 0 cf @ 5.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.00' Flow Area= 90.0 sf, Capacity= 140.87 cfs

40.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 50.0 '/' Top Width= 140.00'
Length= 800.0' Slope= 0.0200 '/'
Inlet Invert= 380.00', Outlet Invert= 364.00'



Reach 7R: (new Reach)

Hydrograph



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Page 12

Stage-Discharge for Reach 7R: (new Reach)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
380.00	0.00	0.00	380.52	1.09	37.37
380.01	0.10	0.04	380.53	1.10	38.79
380.02	0.15	0.12	380.54	1.11	40.23
380.03	0.20	0.25	380.55	1.12	41.70
380.04	0.24	0.40	380.56	1.13	43.20
380.05	0.27	0.58	380.57	1.15	44.73
380.06	0.31	0.79	380.58	1.16	46.29
380.07	0.34	1.03	380.59	1.17	47.88
380.08	0.37	1.30	380.60	1.18	49.50
380.09	0.40	1.59	380.61	1.19	51.15
380.10	0.42	1.90	380.62	1.20	52.83
380.11	0.45	2.24	380.63	1.21	54.54
380.12	0.47	2.60	380.64	1.22	56.28
380.13	0.49	2.99	380.65	1.23	58.05
380.14	0.52	3.40	380.66	1.24	59.85
380.15	0.54	3.83	380.67	1.25	61.68
380.16	0.56	4.29	380.68	1.26	63.55
380.17	0.58	4.77	380.69	1.27	65.45
380.18	0.60	5.28	380.70	1.28	67.38
380.19	0.62	5.81	380.71	1.29	69.34
380.20	0.64	6.36	380.72	1.30	71.33
380.21	0.65	6.94	380.73	1.31	73.35
380.22	0.67	7.54	380.74	1.32	75.41
380.23	0.69	8.17	380.75	1.33	77.50
380.24	0.71	8.82	380.76	1.34	79.62
380.25	0.72	9.49	380.77	1.35	81.78
380.26	0.74	10.19	380.78	1.36	83.97
380.27	0.76	10.91	380.79	1.37	86.19
380.28	0.77	11.66	380.80	1.38	88.45
380.29	0.79	12.43	380.81	1.39	90.73
380.30	0.80	13.23	380.82	1.40	93.06
380.31	0.82	14.05	380.83	1.41	95.42
380.32	0.83	14.90	380.84	1.42	97.81
380.33	0.85	15.77	380.85	1.43	100.23
380.34	0.86	16.67	380.86	1.44	102.69
380.35	0.87	17.59	380.87	1.45	105.19
380.36	0.89	18.54	380.88	1.46	107.72
380.37	0.90	19.52	380.89	1.47	110.28
380.38	0.92	20.52	380.90	1.48	112.88
380.39	0.93	21.55	380.91	1.48	115.52
380.40	0.94	22.60	380.92	1.49	118.19
380.41	0.95	23.68	380.93	1.50	120.90
380.42	0.97	24.79	380.94	1.51	123.64
380.43	0.98	25.92	380.95	1.52	126.42
380.44	0.99	27.08	380.96	1.53	129.24
380.45	1.01	28.27	380.97	1.54	132.09
380.46	1.02	29.49	380.98	1.55	134.98
380.47	1.03	30.73	380.99	1.56	137.90
380.48	1.04	32.00	381.00	1.57	140.87
380.49	1.05	33.30			
380.50	1.07	34.63			
380.51	1.08	35.99			

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Page 13

Stage-Area-Storage for Reach 7R: (new Reach)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
380.00	0.0	0	380.52	34.3	27,456
380.01	0.4	324	380.53	35.2	28,196
380.02	0.8	656	380.54	36.2	28,944
380.03	1.2	996	380.55	37.1	29,700
380.04	1.7	1,344	380.56	38.1	30,464
380.05	2.1	1,700	380.57	39.0	31,236
380.06	2.6	2,064	380.58	40.0	32,016
380.07	3.0	2,436	380.59	41.0	32,804
380.08	3.5	2,816	380.60	42.0	33,600
380.09	4.0	3,204	380.61	43.0	34,404
380.10	4.5	3,600	380.62	44.0	35,216
380.11	5.0	4,004	380.63	45.0	36,036
380.12	5.5	4,416	380.64	46.1	36,864
380.13	6.0	4,836	380.65	47.1	37,700
380.14	6.6	5,264	380.66	48.2	38,544
380.15	7.1	5,700	380.67	49.2	39,396
380.16	7.7	6,144	380.68	50.3	40,256
380.17	8.2	6,596	380.69	51.4	41,124
380.18	8.8	7,056	380.70	52.5	42,000
380.19	9.4	7,524	380.71	53.6	42,884
380.20	10.0	8,000	380.72	54.7	43,776
380.21	10.6	8,484	380.73	55.8	44,676
380.22	11.2	8,976	380.74	57.0	45,584
380.23	11.8	9,476	380.75	58.1	46,500
380.24	12.5	9,984	380.76	59.3	47,424
380.25	13.1	10,500	380.77	60.4	48,356
380.26	13.8	11,024	380.78	61.6	49,296
380.27	14.4	11,556	380.79	62.8	50,244
380.28	15.1	12,096	380.80	64.0	51,200
380.29	15.8	12,644	380.81	65.2	52,164
380.30	16.5	13,200	380.82	66.4	53,136
380.31	17.2	13,764	380.83	67.6	54,116
380.32	17.9	14,336	380.84	68.9	55,104
380.33	18.6	14,916	380.85	70.1	56,100
380.34	19.4	15,504	380.86	71.4	57,104
380.35	20.1	16,100	380.87	72.6	58,116
380.36	20.9	16,704	380.88	73.9	59,136
380.37	21.6	17,316	380.89	75.2	60,164
380.38	22.4	17,936	380.90	76.5	61,200
380.39	23.2	18,564	380.91	77.8	62,244
380.40	24.0	19,200	380.92	79.1	63,296
380.41	24.8	19,844	380.93	80.4	64,356
380.42	25.6	20,496	380.94	81.8	65,424
380.43	26.4	21,156	380.95	83.1	66,500
380.44	27.3	21,824	380.96	84.5	67,584
380.45	28.1	22,500	380.97	85.8	68,676
380.46	29.0	23,184	380.98	87.2	69,776
380.47	29.8	23,876	380.99	88.6	70,884
380.48	30.7	24,576	381.00	90.0	72,000
380.49	31.6	25,284			
380.50	32.5	26,000			
380.51	33.4	26,724			

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Page 14

Summary for Pond 5P: SWQ Basin #1

Inflow Area = 9.053 ac, 2.12% Impervious, Inflow Depth = 0.60" for 1-Year event
 Inflow = 1.87 cfs @ 13.07 hrs, Volume= 0.450 af
 Outflow = 1.87 cfs @ 13.07 hrs, Volume= 0.450 af, Atten= 0%, Lag= 0.2 min
 Discarded = 1.87 cfs @ 13.07 hrs, Volume= 0.450 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 404.01' @ 13.07 hrs Surf.Area= 0.111 ac Storage= 0.001 af

Plug-Flow detention time= 0.4 min calculated for 0.449 af (100% of inflow)
 Center-of-Mass det. time= 0.4 min (947.9 - 947.6)

Volume	Invert	Avail.Storage	Storage Description			
#1	404.00'	1.013 af	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
404.00	0.111	566.0	0.000	0.000	0.111	
406.00	0.205	610.0	0.311	0.311	0.209	
408.00	0.306	653.0	0.508	0.819	0.313	
408.50	0.477	706.0	0.194	1.013	0.444	

Device	Routing	Invert	Outlet Devices	
#1	Discarded	404.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	407.00'	20.5" x 38.0" Horiz. CL-Top C= 0.600 Limited to weir flow at low heads	
#3	Primary	404.50'	6.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=1.87 cfs @ 13.07 hrs HW=404.01' (Free Discharge)
 ↳ **1=Exfiltration** (Exfiltration Controls 1.87 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=404.00' TW=392.00' (Dynamic Tailwater)
 ↳ **2=CL-Top** (Controls 0.00 cfs)
 ↳ **3=Orifice/Grate** (Controls 0.00 cfs)

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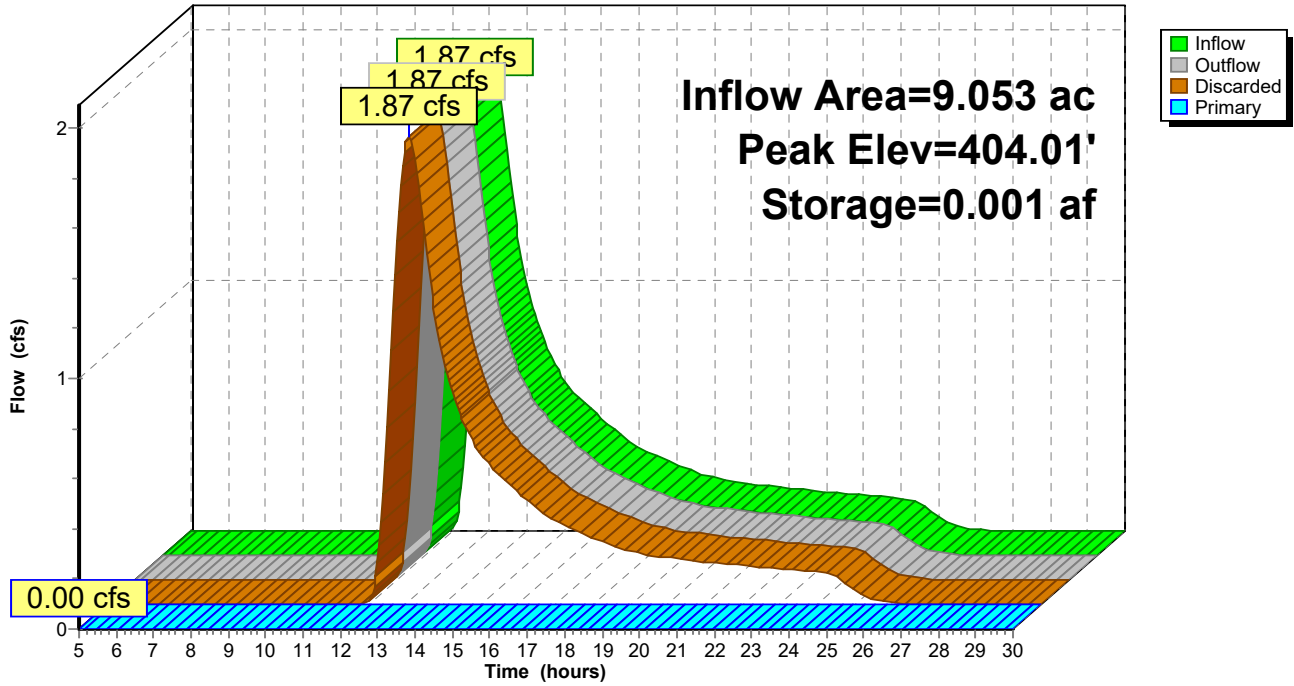
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Page 15

Pond 5P: SWQ Basin #1

Hydrograph



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Page 16

Stage-Discharge for Pond 5P: SWQ Basin #1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
404.00	0.00	0.00	0.00	406.60	5.99	4.70	1.29
404.05	2.28	2.28	0.00	406.65	6.05	4.75	1.30
404.10	2.32	2.32	0.00	406.70	6.12	4.80	1.32
404.15	2.36	2.36	0.00	406.75	6.19	4.85	1.34
404.20	2.40	2.40	0.00	406.80	6.25	4.90	1.35
404.25	2.44	2.44	0.00	406.85	6.32	4.95	1.37
404.30	2.49	2.49	0.00	406.90	6.39	5.00	1.39
404.35	2.53	2.53	0.00	406.95	6.45	5.05	1.40
404.40	2.57	2.57	0.00	407.00	6.52	5.10	1.42
404.45	2.61	2.61	0.00	407.05	6.94	5.15	1.79
404.50	2.66	2.66	0.00	407.10	7.66	5.20	2.46
404.55	2.71	2.70	0.01	407.15	8.57	5.26	3.32
404.60	2.78	2.75	0.03	407.20	9.64	5.31	4.33
404.65	2.86	2.79	0.07	407.25	10.84	5.36	5.48
404.70	2.95	2.84	0.11	407.30	12.16	5.41	6.75
404.75	3.05	2.88	0.17	407.35	13.59	5.46	8.13
404.80	3.16	2.93	0.23	407.40	15.12	5.52	9.60
404.85	3.27	2.97	0.30	407.45	16.75	5.57	11.18
404.90	3.38	3.02	0.36	407.50	18.46	5.62	12.84
404.95	3.49	3.07	0.43	407.55	20.26	5.68	14.59
405.00	3.59	3.11	0.47	407.60	22.14	5.73	16.41
405.05	3.68	3.16	0.52	407.65	24.10	5.79	18.32
405.10	3.77	3.21	0.56	407.70	26.14	5.84	20.30
405.15	3.86	3.26	0.60	407.75	28.24	5.89	22.35
405.20	3.94	3.31	0.63	407.80	30.41	5.95	24.46
405.25	4.02	3.36	0.67	407.85	31.68	6.00	25.68
405.30	4.11	3.41	0.70	407.90	32.45	6.06	26.39
405.35	4.19	3.45	0.73	407.95	33.19	6.12	27.08
405.40	4.27	3.50	0.76	408.00	33.92	6.17	27.75
405.45	4.35	3.56	0.79	408.05	34.89	6.48	28.41
405.50	4.42	3.61	0.82	408.10	35.85	6.80	29.05
405.55	4.50	3.66	0.85	408.15	36.80	7.13	29.68
405.60	4.58	3.71	0.87	408.20	37.75	7.46	30.29
405.65	4.66	3.76	0.90	408.25	38.69	7.80	30.89
405.70	4.73	3.81	0.92	408.30	39.63	8.15	31.48
405.75	4.81	3.87	0.95	408.35	40.56	8.50	32.06
405.80	4.89	3.92	0.97	408.40	41.50	8.87	32.63
405.85	4.96	3.97	0.99	408.45	42.42	9.24	33.18
405.90	5.04	4.03	1.01	408.50	43.35	9.62	33.73
405.95	5.12	4.08	1.04				
406.00	5.19	4.13	1.06				
406.05	5.26	4.18	1.08				
406.10	5.32	4.23	1.10				
406.15	5.39	4.27	1.12				
406.20	5.46	4.32	1.14				
406.25	5.52	4.37	1.16				
406.30	5.59	4.41	1.18				
406.35	5.66	4.46	1.20				
406.40	5.72	4.51	1.21				
406.45	5.79	4.56	1.23				
406.50	5.86	4.61	1.25				
406.55	5.92	4.65	1.27				

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Page 17

Stage-Area-Storage for Pond 5P: SWQ Basin #1

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
404.00	0.111	0.000	406.60	0.233	0.443
404.05	0.113	0.006	406.65	0.236	0.454
404.10	0.115	0.011	406.70	0.238	0.466
404.15	0.117	0.017	406.75	0.241	0.478
404.20	0.119	0.023	406.80	0.243	0.490
404.25	0.121	0.029	406.85	0.245	0.502
404.30	0.123	0.035	406.90	0.248	0.515
404.35	0.125	0.041	406.95	0.250	0.527
404.40	0.128	0.048	407.00	0.253	0.540
404.45	0.130	0.054	407.05	0.256	0.553
404.50	0.132	0.061	407.10	0.258	0.565
404.55	0.134	0.067	407.15	0.261	0.578
404.60	0.136	0.074	407.20	0.263	0.591
404.65	0.138	0.081	407.25	0.266	0.605
404.70	0.141	0.088	407.30	0.268	0.618
404.75	0.143	0.095	407.35	0.271	0.631
404.80	0.145	0.102	407.40	0.274	0.645
404.85	0.147	0.109	407.45	0.276	0.659
404.90	0.150	0.117	407.50	0.279	0.673
404.95	0.152	0.124	407.55	0.282	0.687
405.00	0.154	0.132	407.60	0.284	0.701
405.05	0.157	0.140	407.65	0.287	0.715
405.10	0.159	0.148	407.70	0.290	0.730
405.15	0.162	0.156	407.75	0.292	0.744
405.20	0.164	0.164	407.80	0.295	0.759
405.25	0.166	0.172	407.85	0.298	0.774
405.30	0.169	0.181	407.90	0.300	0.789
405.35	0.171	0.189	407.95	0.303	0.804
405.40	0.174	0.198	408.00	0.306	0.819
405.45	0.176	0.206	408.05	0.321	0.835
405.50	0.179	0.215	408.10	0.337	0.851
405.55	0.181	0.224	408.15	0.353	0.868
405.60	0.184	0.233	408.20	0.370	0.886
405.65	0.186	0.243	408.25	0.387	0.905
405.70	0.189	0.252	408.30	0.404	0.925
405.75	0.192	0.262	408.35	0.422	0.946
405.80	0.194	0.271	408.40	0.440	0.967
405.85	0.197	0.281	408.45	0.458	0.990
405.90	0.200	0.291	408.50	0.477	1.013
405.95	0.202	0.301			
406.00	0.205	0.311			
406.05	0.207	0.322			
406.10	0.210	0.332			
406.15	0.212	0.342			
406.20	0.214	0.353			
406.25	0.217	0.364			
406.30	0.219	0.375			
406.35	0.221	0.386			
406.40	0.224	0.397			
406.45	0.226	0.408			
406.50	0.228	0.420			
406.55	0.231	0.431			

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Page 18

Summary for Pond 6P: SWQ Basin #2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 0.38" for 1-Year event
 Inflow = 3.24 cfs @ 13.08 hrs, Volume= 0.783 af
 Outflow = 2.21 cfs @ 13.67 hrs, Volume= 0.783 af, Atten= 32%, Lag= 35.0 min
 Discarded = 2.21 cfs @ 13.67 hrs, Volume= 0.783 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 392.68' @ 13.67 hrs Surf.Area= 0.110 ac Storage= 0.067 af

Plug-Flow detention time= 7.6 min calculated for 0.783 af (100% of inflow)
 Center-of-Mass det. time= 7.6 min (955.7 - 948.2)

Volume	Invert	Avail.Storage	Storage Description		
#1	392.00'	2.529 af	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
392.00	0.088	313.0	0.000	0.000	0.088
394.00	0.158	408.0	0.243	0.243	0.214
396.00	0.246	503.0	0.401	0.643	0.374
398.00	0.346	588.0	0.589	1.233	0.545
400.00	0.461	674.0	0.804	2.037	0.745
401.00	0.524	699.0	0.492	2.529	0.810

Device	Routing	Invert	Outlet Devices	
#1	Discarded	392.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	399.50'	20.5" x 38.0" Horiz. Top Grate C= 0.600 Limited to weir flow at low heads	
#3	Primary	392.80'	6.0" W x 46.0" H Vert. Weir C= 0.600	

Discarded OutFlow Max=2.21 cfs @ 13.67 hrs HW=392.68' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 2.21 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=392.00' TW=380.00' (Dynamic Tailwater)

↳ **2=Top Grate** (Controls 0.00 cfs)

↳ **3=Weir** (Controls 0.00 cfs)

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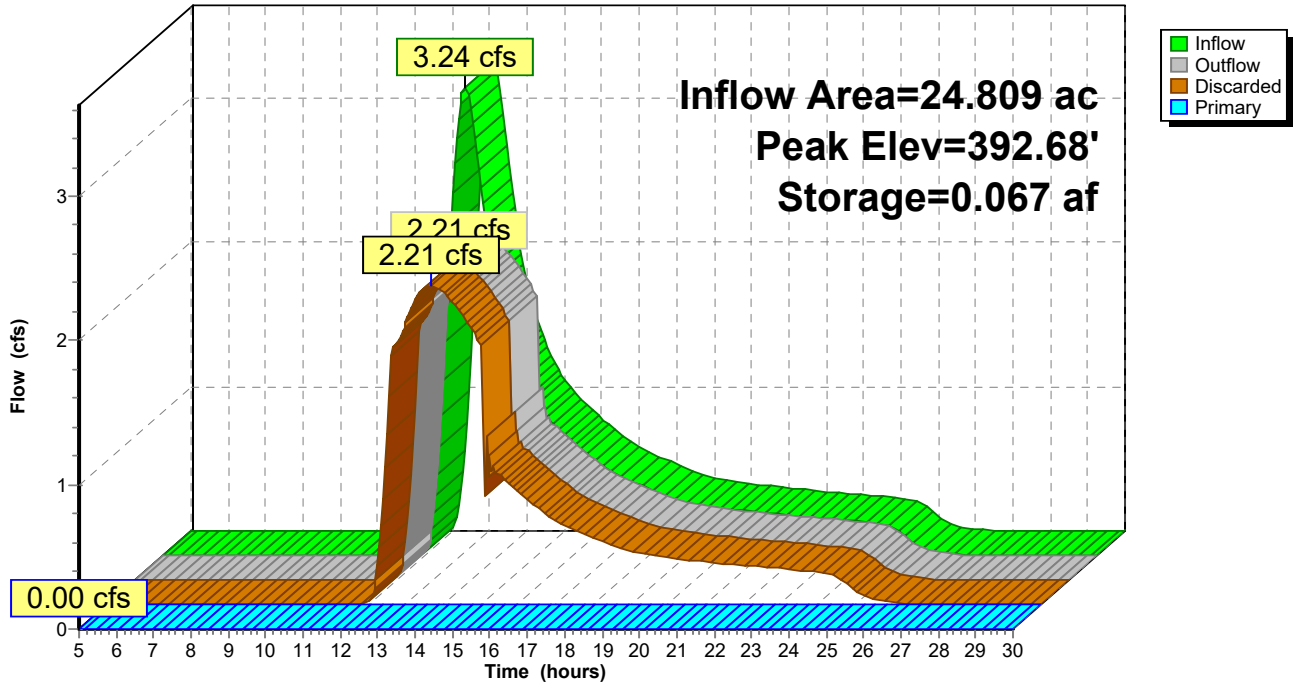
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Page 19

Pond 6P: SWQ Basin #2

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Page 20

Stage-Discharge for Pond 6P: SWQ Basin #2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
392.00	0.00	0.00	0.00	397.20	20.26	6.13	14.13
392.10	1.84	1.84	0.00	397.30	20.68	6.23	14.45
392.20	1.90	1.90	0.00	397.40	21.09	6.34	14.76
392.30	1.96	1.96	0.00	397.50	21.50	6.44	15.06
392.40	2.02	2.02	0.00	397.60	21.90	6.55	15.35
392.50	2.09	2.09	0.00	397.70	22.29	6.65	15.64
392.60	2.16	2.16	0.00	397.80	22.68	6.76	15.92
392.70	2.22	2.22	0.00	397.90	23.07	6.87	16.20
392.80	2.29	2.29	0.00	398.00	23.45	6.98	16.47
392.90	2.41	2.36	0.05	398.10	23.82	7.09	16.73
393.00	2.57	2.43	0.14	398.20	24.19	7.19	16.99
393.10	2.76	2.50	0.26	398.30	24.55	7.30	17.25
393.20	2.98	2.57	0.41	398.40	24.92	7.41	17.50
393.30	3.21	2.65	0.57	398.50	25.27	7.53	17.75
393.40	3.47	2.72	0.75	398.60	25.63	7.64	17.99
393.50	3.73	2.79	0.94	398.70	25.98	7.75	18.23
393.60	4.02	2.87	1.15	398.80	26.34	7.87	18.47
393.70	4.32	2.95	1.37	398.90	26.68	7.98	18.70
393.80	4.63	3.03	1.60	399.00	27.03	8.10	18.93
393.90	4.96	3.11	1.85	399.10	27.37	8.21	19.16
394.00	5.30	3.19	2.11	399.20	27.72	8.33	19.39
394.10	5.64	3.27	2.38	399.30	28.06	8.45	19.61
394.20	6.00	3.35	2.66	399.40	28.39	8.57	19.83
394.30	6.38	3.43	2.95	399.50	28.73	8.69	20.04
394.40	6.76	3.51	3.25	399.60	30.07	8.81	21.27
394.50	7.15	3.59	3.56	399.70	32.25	8.93	23.32
394.60	7.55	3.68	3.88	399.80	34.97	9.05	25.92
394.70	7.97	3.76	4.20	399.90	38.13	9.17	28.95
394.80	8.39	3.85	4.54	400.00	41.66	9.30	32.37
394.90	8.82	3.94	4.88	400.10	45.53	9.42	36.11
395.00	9.26	4.02	5.24	400.20	49.71	9.54	40.17
395.10	9.71	4.11	5.60	400.30	54.18	9.67	44.51
395.20	10.17	4.20	5.97	400.40	56.40	9.80	46.61
395.30	10.64	4.30	6.34	400.50	58.06	9.92	48.14
395.40	11.12	4.39	6.73	400.60	59.65	10.05	49.60
395.50	11.60	4.48	7.12	400.70	61.19	10.18	51.01
395.60	12.09	4.57	7.52	400.80	62.67	10.31	52.37
395.70	12.60	4.67	7.93	400.90	64.11	10.44	53.67
395.80	13.11	4.77	8.34	401.00	65.51	10.57	54.94
395.90	13.62	4.86	8.76				
396.00	14.15	4.96	9.19				
396.10	14.68	5.05	9.62				
396.20	15.21	5.15	10.06				
396.30	15.75	5.24	10.51				
396.40	16.30	5.34	10.96				
396.50	16.86	5.43	11.42				
396.60	17.42	5.53	11.89				
396.70	17.96	5.63	12.33				
396.80	18.46	5.73	12.73				
396.90	18.93	5.83	13.10				
397.00	19.38	5.93	13.46				
397.10	19.83	6.03	13.80				

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Page 21

Stage-Area-Storage for Pond 6P: SWQ Basin #2

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
392.00	0.088	0.000	397.20	0.304	0.973
392.10	0.091	0.009	397.30	0.309	1.003
392.20	0.094	0.018	397.40	0.314	1.035
392.30	0.097	0.028	397.50	0.319	1.066
392.40	0.100	0.038	397.60	0.325	1.098
392.50	0.104	0.048	397.70	0.330	1.131
392.60	0.107	0.058	397.80	0.335	1.164
392.70	0.110	0.069	397.90	0.341	1.198
392.80	0.114	0.080	398.00	0.346	1.233
392.90	0.117	0.092	398.10	0.351	1.267
393.00	0.120	0.104	398.20	0.357	1.303
393.10	0.124	0.116	398.30	0.362	1.339
393.20	0.128	0.129	398.40	0.368	1.375
393.30	0.131	0.142	398.50	0.373	1.412
393.40	0.135	0.155	398.60	0.379	1.450
393.50	0.139	0.169	398.70	0.384	1.488
393.60	0.142	0.183	398.80	0.390	1.527
393.70	0.146	0.197	398.90	0.396	1.566
393.80	0.150	0.212	399.00	0.401	1.606
393.90	0.154	0.227	399.10	0.407	1.646
394.00	0.158	0.243	399.20	0.413	1.687
394.10	0.162	0.259	399.30	0.419	1.729
394.20	0.166	0.275	399.40	0.425	1.771
394.30	0.170	0.292	399.50	0.431	1.814
394.40	0.174	0.309	399.60	0.437	1.857
394.50	0.178	0.327	399.70	0.443	1.901
394.60	0.182	0.345	399.80	0.449	1.946
394.70	0.187	0.363	399.90	0.455	1.991
394.80	0.191	0.382	400.00	0.461	2.037
394.90	0.195	0.401	400.10	0.467	2.083
395.00	0.200	0.421	400.20	0.473	2.130
395.10	0.204	0.441	400.30	0.479	2.178
395.20	0.208	0.462	400.40	0.486	2.226
395.30	0.213	0.483	400.50	0.492	2.275
395.40	0.218	0.504	400.60	0.498	2.325
395.50	0.222	0.526	400.70	0.505	2.375
395.60	0.227	0.549	400.80	0.511	2.425
395.70	0.232	0.572	400.90	0.518	2.477
395.80	0.236	0.595	401.00	0.524	2.529
395.90	0.241	0.619			
396.00	0.246	0.643			
396.10	0.251	0.668			
396.20	0.255	0.693			
396.30	0.260	0.719			
396.40	0.265	0.745			
396.50	0.269	0.772			
396.60	0.274	0.799			
396.70	0.279	0.827			
396.80	0.284	0.855			
396.90	0.289	0.884			
397.00	0.294	0.913			
397.10	0.299	0.943			

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Page 22

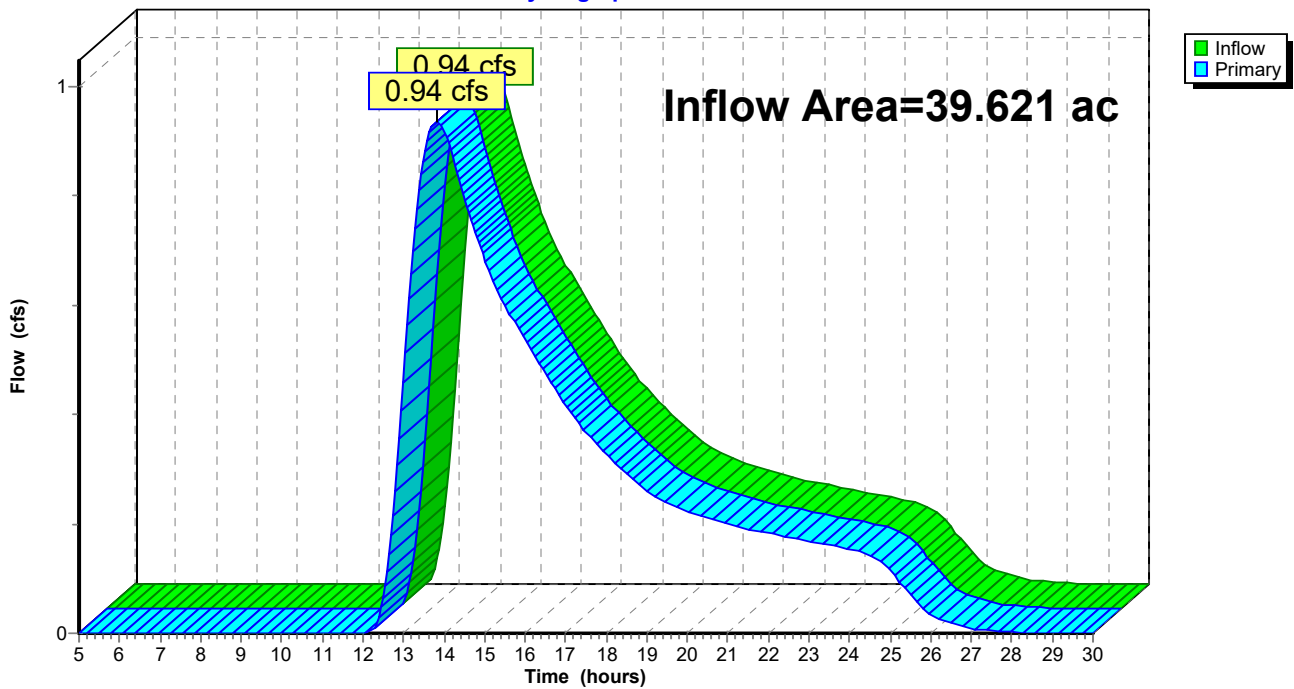
Summary for Link 2L: POA

Inflow Area = 39.621 ac, 0.76% Impervious, Inflow Depth = 0.12" for 1-Year event
Inflow = 0.94 cfs @ 13.82 hrs, Volume= 0.387 af
Primary = 0.94 cfs @ 13.82 hrs, Volume= 0.387 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Link 2L: POA

Hydrograph



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Page 23

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: DA-1 Runoff Area=14.812 ac 0.00% Impervious Runoff Depth=0.61"
Flow Length=1,900' Tc=105.2 min CN=61 Runoff=2.21 cfs 0.752 af

Subcatchment 3S: DA-1B Runoff Area=9.053 ac 2.12% Impervious Runoff Depth=1.00"
Flow Length=1,487' Tc=69.3 min CN=69 Runoff=3.46 cfs 0.756 af

Subcatchment 4S: DA-1A Runoff Area=15.756 ac 0.69% Impervious Runoff Depth=1.00"
Flow Length=1,518' Tc=69.9 min CN=69 Runoff=6.00 cfs 1.316 af

Reach 7R: (new Reach) Avg. Flow Depth=0.06' Max Vel=0.32 fps Inflow=1.26 cfs 0.123 af
n=0.100 L=800.0' S=0.0200 '/' Capacity=140.87 cfs Outflow=0.88 cfs 0.123 af

Pond 5P: SWQ Basin #1 Peak Elev=404.41' Storage=0.048 af Inflow=3.46 cfs 0.756 af
Discarded=2.58 cfs 0.756 af Primary=0.00 cfs 0.000 af Outflow=2.58 cfs 0.756 af

Pond 6P: SWQ Basin #2 Peak Elev=393.65' Storage=0.190 af Inflow=6.00 cfs 1.316 af
Discarded=2.91 cfs 1.193 af Primary=1.26 cfs 0.123 af Outflow=4.17 cfs 1.316 af

Link 2L: POA Inflow=2.97 cfs 0.874 af
Primary=2.97 cfs 0.874 af

Total Runoff Area = 39.621 ac Runoff Volume = 2.824 af Average Runoff Depth = 0.86"
99.24% Pervious = 39.321 ac 0.76% Impervious = 0.300 ac

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Page 24

Summary for Subcatchment 1S: DA-1

Runoff = 2.21 cfs @ 13.68 hrs, Volume= 0.752 af, Depth= 0.61"

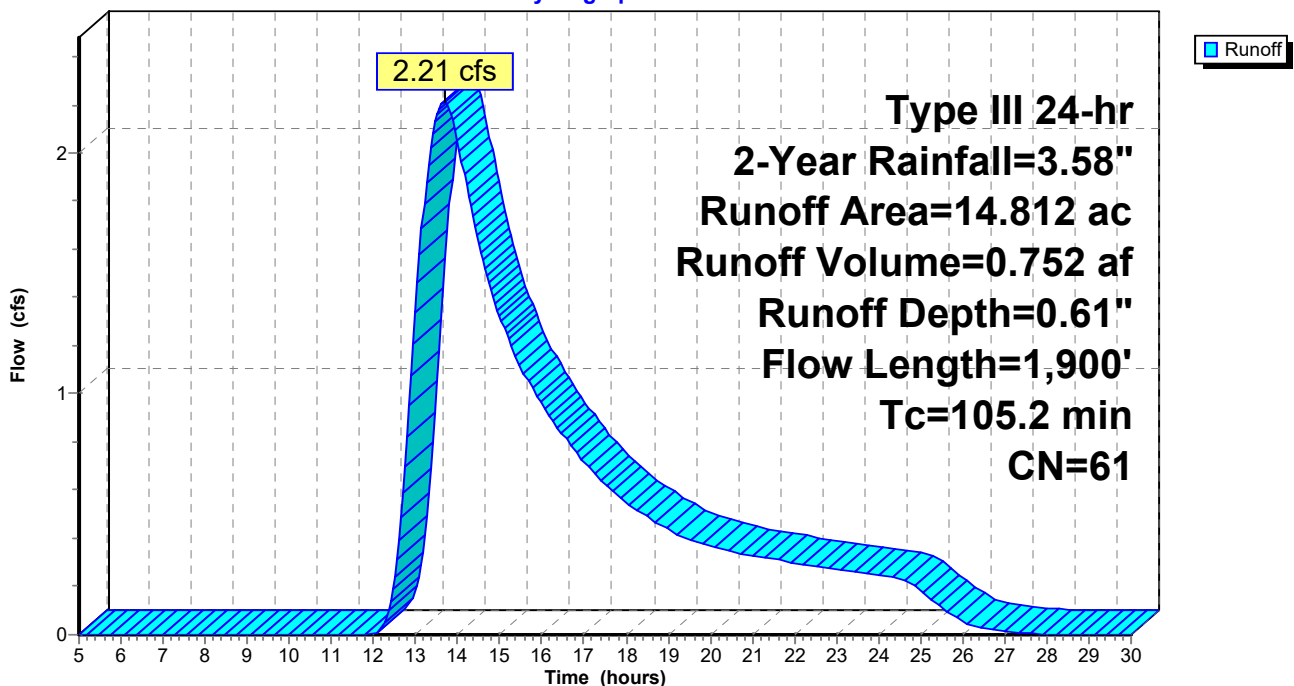
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-Year Rainfall=3.58"

Area (ac)	CN	Description
3.912	30	Woods, Good, HSG A
1.830	55	Woods, Good, HSG B
1.643	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
0.367	58	Meadow, non-grazed, HSG B
0.195	71	Meadow, non-grazed, HSG C
14.812	61	Weighted Average
14.812		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

Subcatchment 1S: DA-1

Hydrograph



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Page 25

Summary for Subcatchment 3S: DA-1B

Runoff = 3.46 cfs @ 13.02 hrs, Volume= 0.756 af, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-Year Rainfall=3.58"

Area (ac)	CN	Description
0.139	98	Roofs, HSG C
0.053	98	Paved parking, HSG C
0.072	96	Gravel surface, HSG C
0.180	61	>75% Grass cover, Good, HSG B
0.524	74	>75% Grass cover, Good, HSG C
0.123	30	Woods, Good, HSG A
0.665	55	Woods, Good, HSG B
1.527	70	Woods, Good, HSG C
0.263	58	Meadow, non-grazed, HSG B
5.507	71	Meadow, non-grazed, HSG C
9.053	69	Weighted Average
8.861		97.88% Pervious Area
0.192		2.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
16.4	760	0.0950	0.77		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
6.3	627	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.3	1,487	Total			

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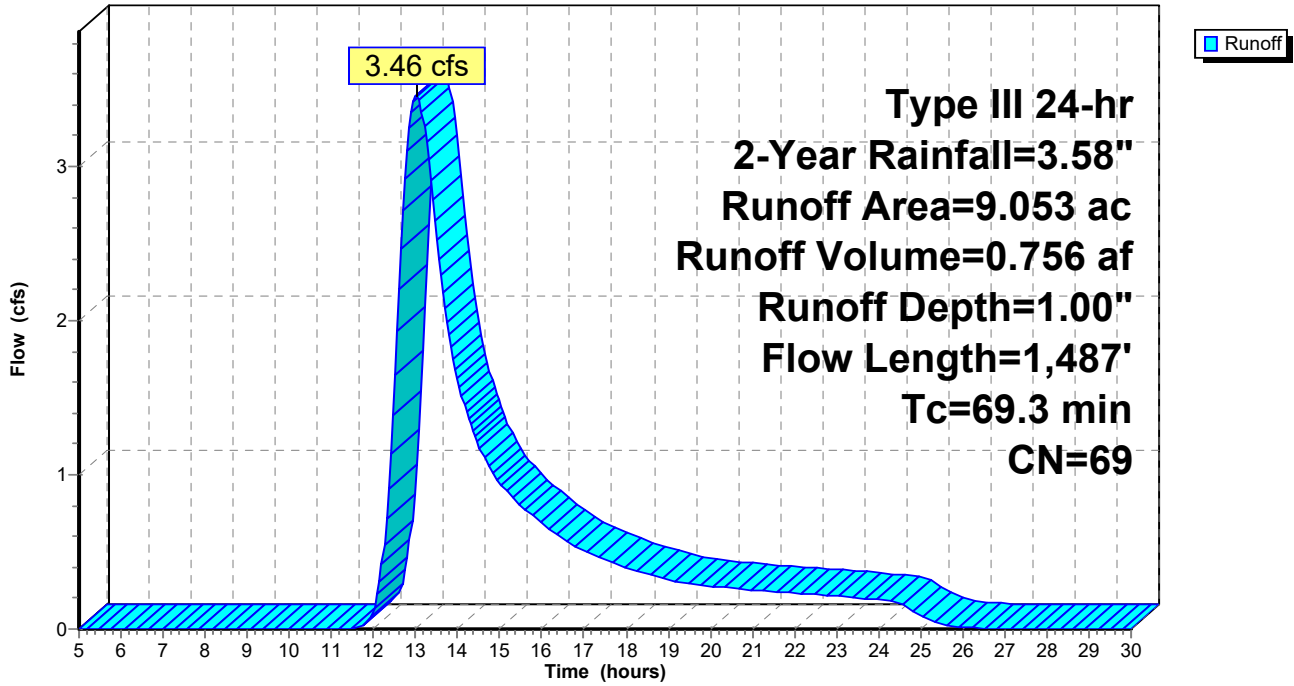
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Page 26

Subcatchment 3S: DA-1B

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Page 27

Summary for Subcatchment 4S: DA-1A

Runoff = 6.00 cfs @ 13.02 hrs, Volume= 1.316 af, Depth= 1.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 2-Year Rainfall=3.58"

Area (ac)	CN	Description
0.071	98	Roofs, HSG C
0.037	98	Paved parking, HSG C
0.586	74	>75% Grass cover, Good, HSG C
1.921	55	Woods, Good, HSG B
3.639	70	Woods, Good, HSG C
0.505	58	Meadow, non-grazed, HSG B
8.997	71	Meadow, non-grazed, HSG C
15.756	69	Weighted Average
15.648		99.31% Pervious Area
0.108		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
17.6	821	0.0970	0.78		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
5.7	597	0.0620	1.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.9	1,518	Total			

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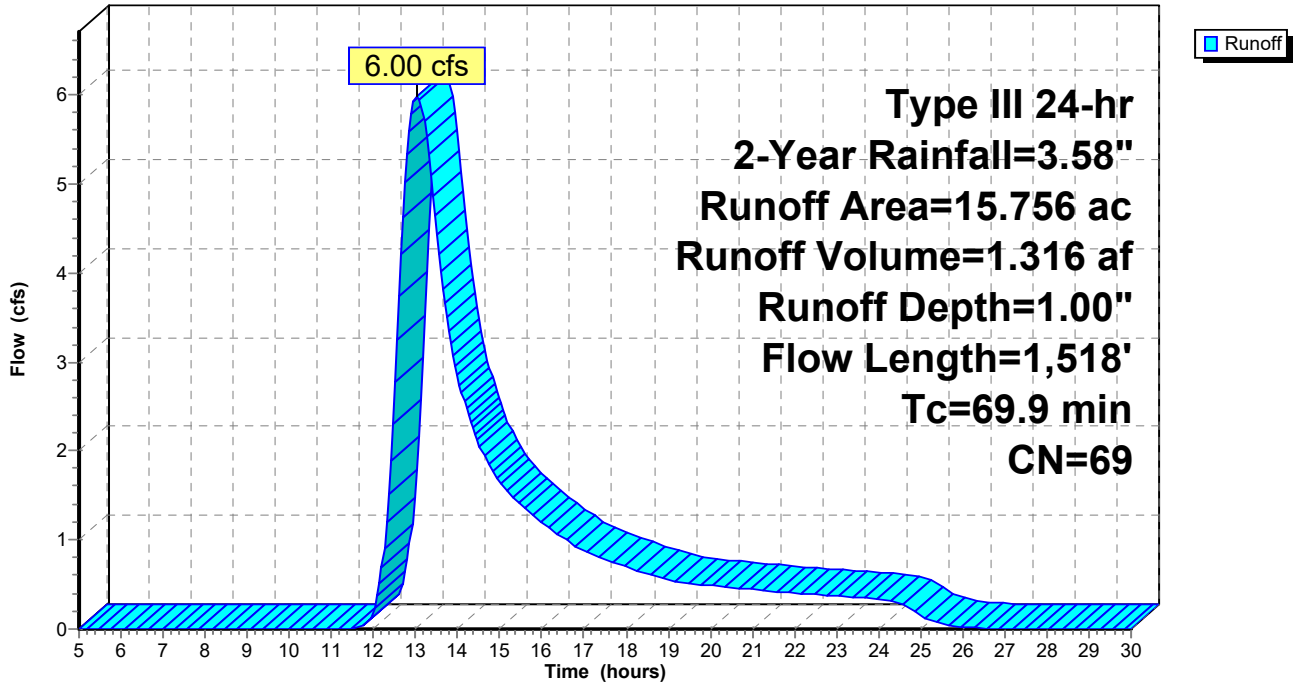
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Page 28

Subcatchment 4S: DA-1A

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Page 29

Summary for Reach 7R: (new Reach)

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 0.06" for 2-Year event
Inflow = 1.26 cfs @ 13.56 hrs, Volume= 0.123 af
Outflow = 0.88 cfs @ 14.07 hrs, Volume= 0.123 af, Atten= 30%, Lag= 30.1 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.32 fps, Min. Travel Time= 41.7 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 109.2 min

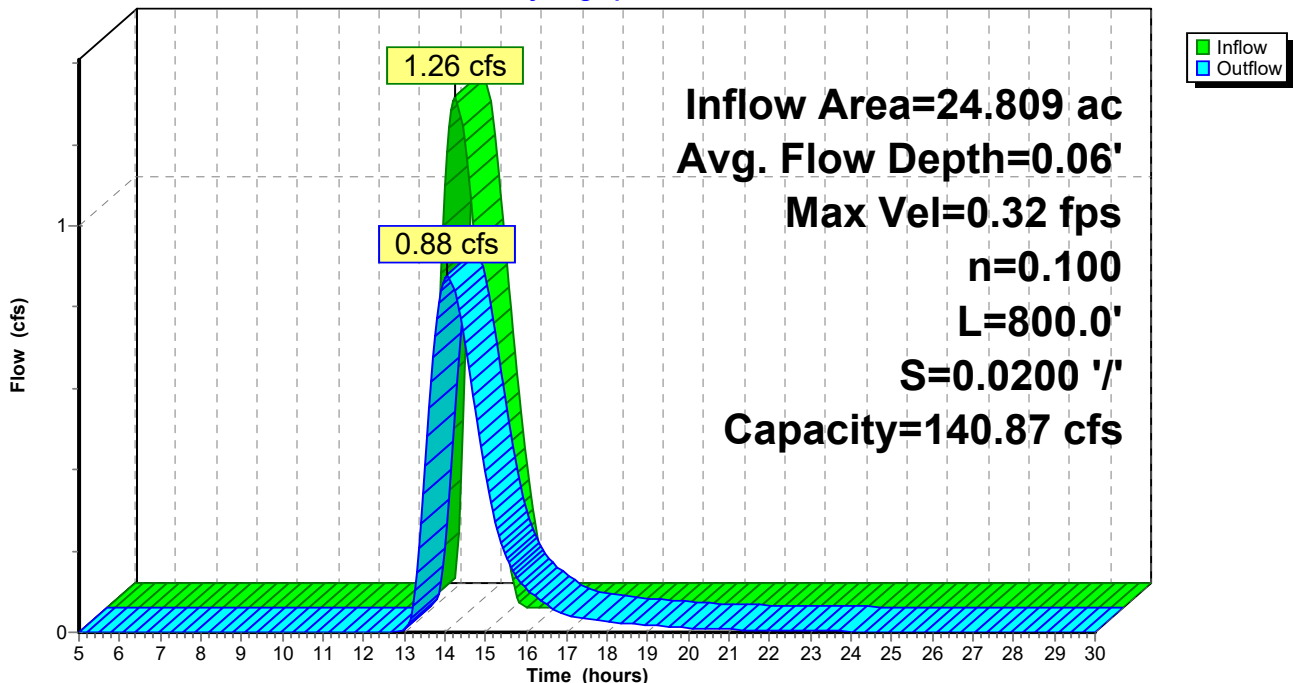
Peak Storage= 2,193 cf @ 14.07 hrs
Average Depth at Peak Storage= 0.06'
Bank-Full Depth= 1.00' Flow Area= 90.0 sf, Capacity= 140.87 cfs

40.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 50.0 '/' Top Width= 140.00'
Length= 800.0' Slope= 0.0200 '/'
Inlet Invert= 380.00', Outlet Invert= 364.00'



Reach 7R: (new Reach)

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Page 30

Stage-Discharge for Reach 7R: (new Reach)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
380.00	0.00	0.00	380.52	1.09	37.37
380.01	0.10	0.04	380.53	1.10	38.79
380.02	0.15	0.12	380.54	1.11	40.23
380.03	0.20	0.25	380.55	1.12	41.70
380.04	0.24	0.40	380.56	1.13	43.20
380.05	0.27	0.58	380.57	1.15	44.73
380.06	0.31	0.79	380.58	1.16	46.29
380.07	0.34	1.03	380.59	1.17	47.88
380.08	0.37	1.30	380.60	1.18	49.50
380.09	0.40	1.59	380.61	1.19	51.15
380.10	0.42	1.90	380.62	1.20	52.83
380.11	0.45	2.24	380.63	1.21	54.54
380.12	0.47	2.60	380.64	1.22	56.28
380.13	0.49	2.99	380.65	1.23	58.05
380.14	0.52	3.40	380.66	1.24	59.85
380.15	0.54	3.83	380.67	1.25	61.68
380.16	0.56	4.29	380.68	1.26	63.55
380.17	0.58	4.77	380.69	1.27	65.45
380.18	0.60	5.28	380.70	1.28	67.38
380.19	0.62	5.81	380.71	1.29	69.34
380.20	0.64	6.36	380.72	1.30	71.33
380.21	0.65	6.94	380.73	1.31	73.35
380.22	0.67	7.54	380.74	1.32	75.41
380.23	0.69	8.17	380.75	1.33	77.50
380.24	0.71	8.82	380.76	1.34	79.62
380.25	0.72	9.49	380.77	1.35	81.78
380.26	0.74	10.19	380.78	1.36	83.97
380.27	0.76	10.91	380.79	1.37	86.19
380.28	0.77	11.66	380.80	1.38	88.45
380.29	0.79	12.43	380.81	1.39	90.73
380.30	0.80	13.23	380.82	1.40	93.06
380.31	0.82	14.05	380.83	1.41	95.42
380.32	0.83	14.90	380.84	1.42	97.81
380.33	0.85	15.77	380.85	1.43	100.23
380.34	0.86	16.67	380.86	1.44	102.69
380.35	0.87	17.59	380.87	1.45	105.19
380.36	0.89	18.54	380.88	1.46	107.72
380.37	0.90	19.52	380.89	1.47	110.28
380.38	0.92	20.52	380.90	1.48	112.88
380.39	0.93	21.55	380.91	1.48	115.52
380.40	0.94	22.60	380.92	1.49	118.19
380.41	0.95	23.68	380.93	1.50	120.90
380.42	0.97	24.79	380.94	1.51	123.64
380.43	0.98	25.92	380.95	1.52	126.42
380.44	0.99	27.08	380.96	1.53	129.24
380.45	1.01	28.27	380.97	1.54	132.09
380.46	1.02	29.49	380.98	1.55	134.98
380.47	1.03	30.73	380.99	1.56	137.90
380.48	1.04	32.00	381.00	1.57	140.87
380.49	1.05	33.30			
380.50	1.07	34.63			
380.51	1.08	35.99			

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Page 31

Stage-Area-Storage for Reach 7R: (new Reach)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
380.00	0.0	0	380.52	34.3	27,456
380.01	0.4	324	380.53	35.2	28,196
380.02	0.8	656	380.54	36.2	28,944
380.03	1.2	996	380.55	37.1	29,700
380.04	1.7	1,344	380.56	38.1	30,464
380.05	2.1	1,700	380.57	39.0	31,236
380.06	2.6	2,064	380.58	40.0	32,016
380.07	3.0	2,436	380.59	41.0	32,804
380.08	3.5	2,816	380.60	42.0	33,600
380.09	4.0	3,204	380.61	43.0	34,404
380.10	4.5	3,600	380.62	44.0	35,216
380.11	5.0	4,004	380.63	45.0	36,036
380.12	5.5	4,416	380.64	46.1	36,864
380.13	6.0	4,836	380.65	47.1	37,700
380.14	6.6	5,264	380.66	48.2	38,544
380.15	7.1	5,700	380.67	49.2	39,396
380.16	7.7	6,144	380.68	50.3	40,256
380.17	8.2	6,596	380.69	51.4	41,124
380.18	8.8	7,056	380.70	52.5	42,000
380.19	9.4	7,524	380.71	53.6	42,884
380.20	10.0	8,000	380.72	54.7	43,776
380.21	10.6	8,484	380.73	55.8	44,676
380.22	11.2	8,976	380.74	57.0	45,584
380.23	11.8	9,476	380.75	58.1	46,500
380.24	12.5	9,984	380.76	59.3	47,424
380.25	13.1	10,500	380.77	60.4	48,356
380.26	13.8	11,024	380.78	61.6	49,296
380.27	14.4	11,556	380.79	62.8	50,244
380.28	15.1	12,096	380.80	64.0	51,200
380.29	15.8	12,644	380.81	65.2	52,164
380.30	16.5	13,200	380.82	66.4	53,136
380.31	17.2	13,764	380.83	67.6	54,116
380.32	17.9	14,336	380.84	68.9	55,104
380.33	18.6	14,916	380.85	70.1	56,100
380.34	19.4	15,504	380.86	71.4	57,104
380.35	20.1	16,100	380.87	72.6	58,116
380.36	20.9	16,704	380.88	73.9	59,136
380.37	21.6	17,316	380.89	75.2	60,164
380.38	22.4	17,936	380.90	76.5	61,200
380.39	23.2	18,564	380.91	77.8	62,244
380.40	24.0	19,200	380.92	79.1	63,296
380.41	24.8	19,844	380.93	80.4	64,356
380.42	25.6	20,496	380.94	81.8	65,424
380.43	26.4	21,156	380.95	83.1	66,500
380.44	27.3	21,824	380.96	84.5	67,584
380.45	28.1	22,500	380.97	85.8	68,676
380.46	29.0	23,184	380.98	87.2	69,776
380.47	29.8	23,876	380.99	88.6	70,884
380.48	30.7	24,576	381.00	90.0	72,000
380.49	31.6	25,284			
380.50	32.5	26,000			
380.51	33.4	26,724			

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Page 32

Summary for Pond 5P: SWQ Basin #1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=2)

Inflow Area = 9.053 ac, 2.12% Impervious, Inflow Depth = 1.00" for 2-Year event
 Inflow = 3.46 cfs @ 13.02 hrs, Volume= 0.756 af
 Outflow = 2.58 cfs @ 13.48 hrs, Volume= 0.756 af, Atten= 26%, Lag= 27.8 min
 Discarded = 2.58 cfs @ 13.48 hrs, Volume= 0.756 af
 Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 404.41' @ 13.48 hrs Surf.Area= 0.128 ac Storage= 0.048 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 4.1 min (933.8 - 929.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	404.00'	1.013 af	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
404.00	0.111	566.0	0.000	0.000	0.111
406.00	0.205	610.0	0.311	0.311	0.209
408.00	0.306	653.0	0.508	0.819	0.313
408.50	0.477	706.0	0.194	1.013	0.444

Device	Routing	Invert	Outlet Devices	
#1	Discarded	404.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	407.00'	20.5" x 38.0" Horiz. CL-Top C= 0.600 Limited to weir flow at low heads	
#3	Primary	404.50'	6.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=2.58 cfs @ 13.48 hrs HW=404.41' (Free Discharge)

↑**1=Exfiltration** (Exfiltration Controls 2.58 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=404.00' TW=392.00' (Dynamic Tailwater)

↑**2=CL-Top** (Controls 0.00 cfs)

↑**3=Orifice/Grate** (Controls 0.00 cfs)

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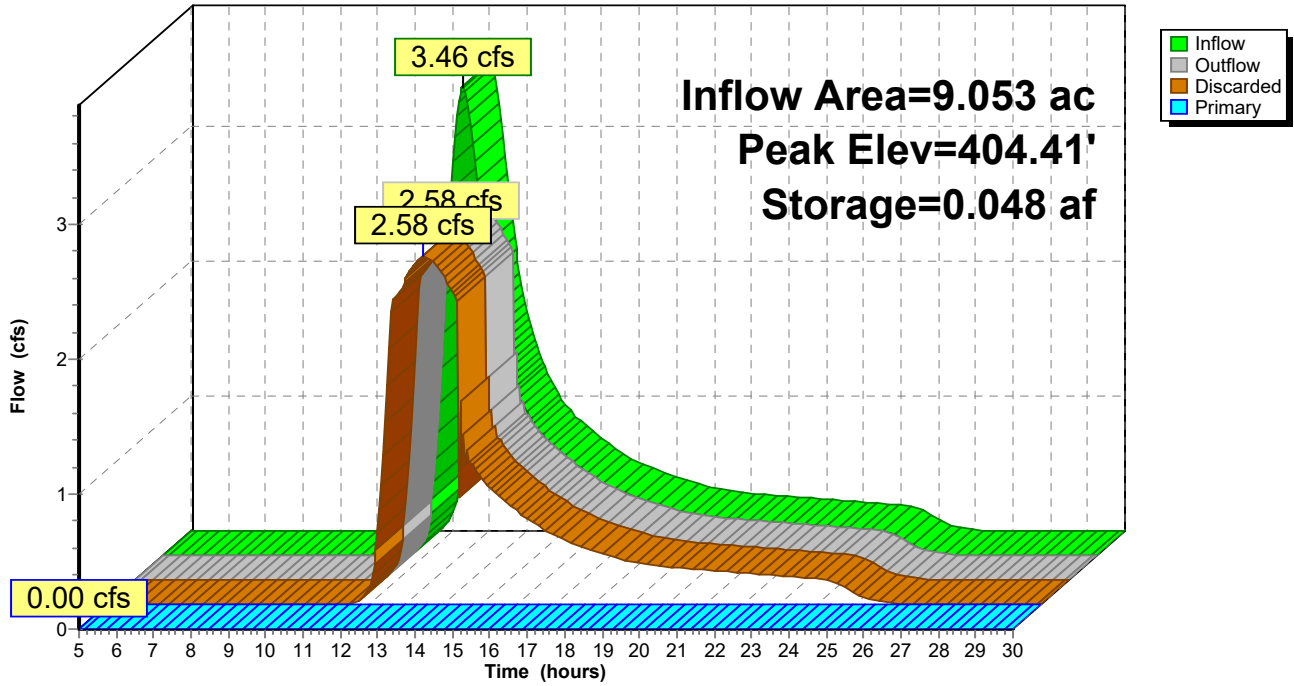
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Type III 24-hr 2-Year Rainfall=3.58"

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Page 33

Pond 5P: SWQ Basin #1

Hydrograph



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Page 34

Stage-Discharge for Pond 5P: SWQ Basin #1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
404.00	0.00	0.00	0.00	406.60	5.99	4.70	1.29
404.05	2.28	2.28	0.00	406.65	6.05	4.75	1.30
404.10	2.32	2.32	0.00	406.70	6.12	4.80	1.32
404.15	2.36	2.36	0.00	406.75	6.19	4.85	1.34
404.20	2.40	2.40	0.00	406.80	6.25	4.90	1.35
404.25	2.44	2.44	0.00	406.85	6.32	4.95	1.37
404.30	2.49	2.49	0.00	406.90	6.39	5.00	1.39
404.35	2.53	2.53	0.00	406.95	6.45	5.05	1.40
404.40	2.57	2.57	0.00	407.00	6.52	5.10	1.42
404.45	2.61	2.61	0.00	407.05	6.94	5.15	1.79
404.50	2.66	2.66	0.00	407.10	7.66	5.20	2.46
404.55	2.71	2.70	0.01	407.15	8.57	5.26	3.32
404.60	2.78	2.75	0.03	407.20	9.64	5.31	4.33
404.65	2.86	2.79	0.07	407.25	10.84	5.36	5.48
404.70	2.95	2.84	0.11	407.30	12.16	5.41	6.75
404.75	3.05	2.88	0.17	407.35	13.59	5.46	8.13
404.80	3.16	2.93	0.23	407.40	15.12	5.52	9.60
404.85	3.27	2.97	0.30	407.45	16.75	5.57	11.18
404.90	3.38	3.02	0.36	407.50	18.46	5.62	12.84
404.95	3.49	3.07	0.43	407.55	20.26	5.68	14.59
405.00	3.59	3.11	0.47	407.60	22.14	5.73	16.41
405.05	3.68	3.16	0.52	407.65	24.10	5.79	18.32
405.10	3.77	3.21	0.56	407.70	26.14	5.84	20.30
405.15	3.86	3.26	0.60	407.75	28.24	5.89	22.35
405.20	3.94	3.31	0.63	407.80	30.41	5.95	24.46
405.25	4.02	3.36	0.67	407.85	31.68	6.00	25.68
405.30	4.11	3.41	0.70	407.90	32.45	6.06	26.39
405.35	4.19	3.45	0.73	407.95	33.19	6.12	27.08
405.40	4.27	3.50	0.76	408.00	33.92	6.17	27.75
405.45	4.35	3.56	0.79	408.05	34.89	6.48	28.41
405.50	4.42	3.61	0.82	408.10	35.85	6.80	29.05
405.55	4.50	3.66	0.85	408.15	36.80	7.13	29.68
405.60	4.58	3.71	0.87	408.20	37.75	7.46	30.29
405.65	4.66	3.76	0.90	408.25	38.69	7.80	30.89
405.70	4.73	3.81	0.92	408.30	39.63	8.15	31.48
405.75	4.81	3.87	0.95	408.35	40.56	8.50	32.06
405.80	4.89	3.92	0.97	408.40	41.50	8.87	32.63
405.85	4.96	3.97	0.99	408.45	42.42	9.24	33.18
405.90	5.04	4.03	1.01	408.50	43.35	9.62	33.73
405.95	5.12	4.08	1.04				
406.00	5.19	4.13	1.06				
406.05	5.26	4.18	1.08				
406.10	5.32	4.23	1.10				
406.15	5.39	4.27	1.12				
406.20	5.46	4.32	1.14				
406.25	5.52	4.37	1.16				
406.30	5.59	4.41	1.18				
406.35	5.66	4.46	1.20				
406.40	5.72	4.51	1.21				
406.45	5.79	4.56	1.23				
406.50	5.86	4.61	1.25				
406.55	5.92	4.65	1.27				

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Page 35

Stage-Area-Storage for Pond 5P: SWQ Basin #1

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
404.00	0.111	0.000	406.60	0.233	0.443
404.05	0.113	0.006	406.65	0.236	0.454
404.10	0.115	0.011	406.70	0.238	0.466
404.15	0.117	0.017	406.75	0.241	0.478
404.20	0.119	0.023	406.80	0.243	0.490
404.25	0.121	0.029	406.85	0.245	0.502
404.30	0.123	0.035	406.90	0.248	0.515
404.35	0.125	0.041	406.95	0.250	0.527
404.40	0.128	0.048	407.00	0.253	0.540
404.45	0.130	0.054	407.05	0.256	0.553
404.50	0.132	0.061	407.10	0.258	0.565
404.55	0.134	0.067	407.15	0.261	0.578
404.60	0.136	0.074	407.20	0.263	0.591
404.65	0.138	0.081	407.25	0.266	0.605
404.70	0.141	0.088	407.30	0.268	0.618
404.75	0.143	0.095	407.35	0.271	0.631
404.80	0.145	0.102	407.40	0.274	0.645
404.85	0.147	0.109	407.45	0.276	0.659
404.90	0.150	0.117	407.50	0.279	0.673
404.95	0.152	0.124	407.55	0.282	0.687
405.00	0.154	0.132	407.60	0.284	0.701
405.05	0.157	0.140	407.65	0.287	0.715
405.10	0.159	0.148	407.70	0.290	0.730
405.15	0.162	0.156	407.75	0.292	0.744
405.20	0.164	0.164	407.80	0.295	0.759
405.25	0.166	0.172	407.85	0.298	0.774
405.30	0.169	0.181	407.90	0.300	0.789
405.35	0.171	0.189	407.95	0.303	0.804
405.40	0.174	0.198	408.00	0.306	0.819
405.45	0.176	0.206	408.05	0.321	0.835
405.50	0.179	0.215	408.10	0.337	0.851
405.55	0.181	0.224	408.15	0.353	0.868
405.60	0.184	0.233	408.20	0.370	0.886
405.65	0.186	0.243	408.25	0.387	0.905
405.70	0.189	0.252	408.30	0.404	0.925
405.75	0.192	0.262	408.35	0.422	0.946
405.80	0.194	0.271	408.40	0.440	0.967
405.85	0.197	0.281	408.45	0.458	0.990
405.90	0.200	0.291	408.50	0.477	1.013
405.95	0.202	0.301			
406.00	0.205	0.311			
406.05	0.207	0.322			
406.10	0.210	0.332			
406.15	0.212	0.342			
406.20	0.214	0.353			
406.25	0.217	0.364			
406.30	0.219	0.375			
406.35	0.221	0.386			
406.40	0.224	0.397			
406.45	0.226	0.408			
406.50	0.228	0.420			
406.55	0.231	0.431			

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Page 36

Summary for Pond 6P: SWQ Basin #2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 0.64" for 2-Year event
 Inflow = 6.00 cfs @ 13.02 hrs, Volume= 1.316 af
 Outflow = 4.17 cfs @ 13.56 hrs, Volume= 1.316 af, Atten= 31%, Lag= 32.5 min
 Discarded = 2.91 cfs @ 13.56 hrs, Volume= 1.193 af
 Primary = 1.26 cfs @ 13.56 hrs, Volume= 0.123 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 393.65' @ 13.56 hrs Surf.Area= 0.144 ac Storage= 0.190 af

Plug-Flow detention time= 18.3 min calculated for 1.316 af (100% of inflow)
 Center-of-Mass det. time= 18.3 min (948.6 - 930.3)

Volume	Invert	Avail.Storage	Storage Description			
#1	392.00'	2.529 af	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
392.00	0.088	313.0	0.000	0.000	0.088	
394.00	0.158	408.0	0.243	0.243	0.214	
396.00	0.246	503.0	0.401	0.643	0.374	
398.00	0.346	588.0	0.589	1.233	0.545	
400.00	0.461	674.0	0.804	2.037	0.745	
401.00	0.524	699.0	0.492	2.529	0.810	

Device	Routing	Invert	Outlet Devices	
#1	Discarded	392.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	399.50'	20.5" x 38.0" Horiz. Top Grate C= 0.600 Limited to weir flow at low heads	
#3	Primary	392.80'	6.0" W x 46.0" H Vert. Weir C= 0.600	

Discarded OutFlow Max=2.91 cfs @ 13.56 hrs HW=393.65' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 2.91 cfs)

Primary OutFlow Max=1.26 cfs @ 13.56 hrs HW=393.65' TW=380.05' (Dynamic Tailwater)

↳ **2=Top Grate** (Controls 0.00 cfs)

↳ **3=Weir** (Orifice Controls 1.26 cfs @ 2.96 fps)

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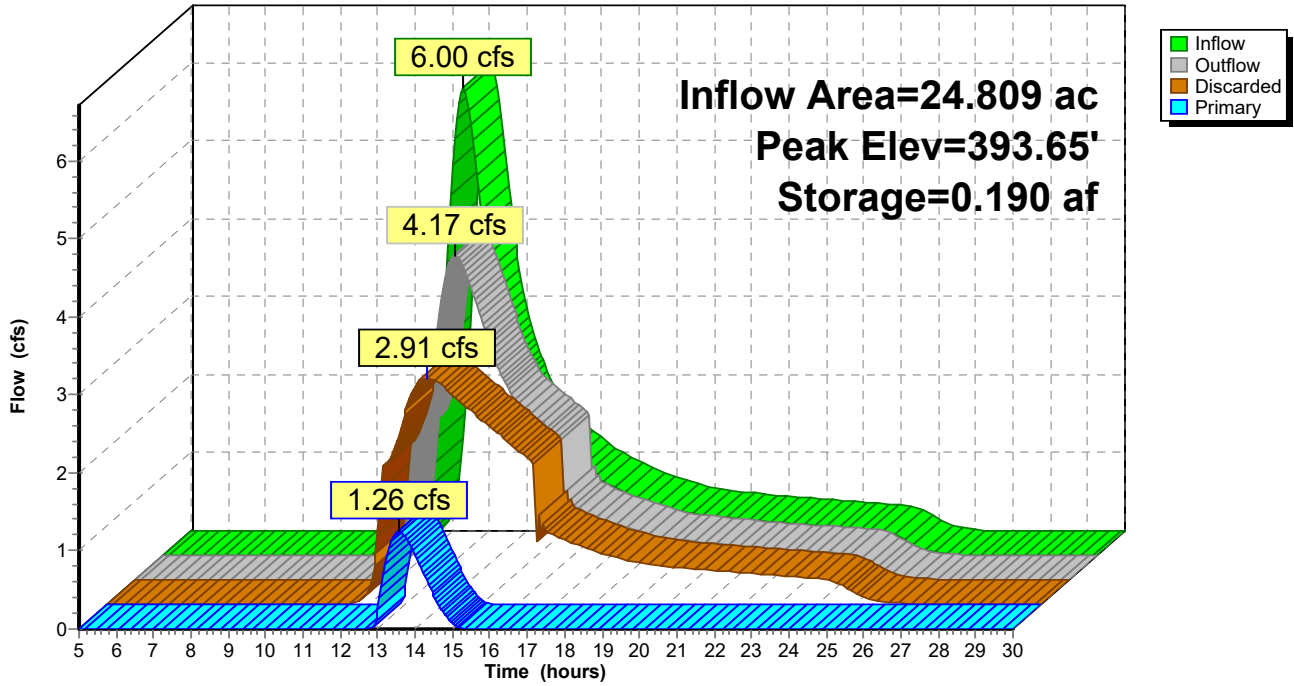
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Page 37

Pond 6P: SWQ Basin #2

Hydrograph



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Page 38

Stage-Discharge for Pond 6P: SWQ Basin #2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
392.00	0.00	0.00	0.00	397.20	20.26	6.13	14.13
392.10	1.84	1.84	0.00	397.30	20.68	6.23	14.45
392.20	1.90	1.90	0.00	397.40	21.09	6.34	14.76
392.30	1.96	1.96	0.00	397.50	21.50	6.44	15.06
392.40	2.02	2.02	0.00	397.60	21.90	6.55	15.35
392.50	2.09	2.09	0.00	397.70	22.29	6.65	15.64
392.60	2.16	2.16	0.00	397.80	22.68	6.76	15.92
392.70	2.22	2.22	0.00	397.90	23.07	6.87	16.20
392.80	2.29	2.29	0.00	398.00	23.45	6.98	16.47
392.90	2.41	2.36	0.05	398.10	23.82	7.09	16.73
393.00	2.57	2.43	0.14	398.20	24.19	7.19	16.99
393.10	2.76	2.50	0.26	398.30	24.55	7.30	17.25
393.20	2.98	2.57	0.41	398.40	24.92	7.41	17.50
393.30	3.21	2.65	0.57	398.50	25.27	7.53	17.75
393.40	3.47	2.72	0.75	398.60	25.63	7.64	17.99
393.50	3.73	2.79	0.94	398.70	25.98	7.75	18.23
393.60	4.02	2.87	1.15	398.80	26.34	7.87	18.47
393.70	4.32	2.95	1.37	398.90	26.68	7.98	18.70
393.80	4.63	3.03	1.60	399.00	27.03	8.10	18.93
393.90	4.96	3.11	1.85	399.10	27.37	8.21	19.16
394.00	5.30	3.19	2.11	399.20	27.72	8.33	19.39
394.10	5.64	3.27	2.38	399.30	28.06	8.45	19.61
394.20	6.00	3.35	2.66	399.40	28.39	8.57	19.83
394.30	6.38	3.43	2.95	399.50	28.73	8.69	20.04
394.40	6.76	3.51	3.25	399.60	30.07	8.81	21.27
394.50	7.15	3.59	3.56	399.70	32.25	8.93	23.32
394.60	7.55	3.68	3.88	399.80	34.97	9.05	25.92
394.70	7.97	3.76	4.20	399.90	38.13	9.17	28.95
394.80	8.39	3.85	4.54	400.00	41.66	9.30	32.37
394.90	8.82	3.94	4.88	400.10	45.53	9.42	36.11
395.00	9.26	4.02	5.24	400.20	49.71	9.54	40.17
395.10	9.71	4.11	5.60	400.30	54.18	9.67	44.51
395.20	10.17	4.20	5.97	400.40	56.40	9.80	46.61
395.30	10.64	4.30	6.34	400.50	58.06	9.92	48.14
395.40	11.12	4.39	6.73	400.60	59.65	10.05	49.60
395.50	11.60	4.48	7.12	400.70	61.19	10.18	51.01
395.60	12.09	4.57	7.52	400.80	62.67	10.31	52.37
395.70	12.60	4.67	7.93	400.90	64.11	10.44	53.67
395.80	13.11	4.77	8.34	401.00	65.51	10.57	54.94
395.90	13.62	4.86	8.76				
396.00	14.15	4.96	9.19				
396.10	14.68	5.05	9.62				
396.20	15.21	5.15	10.06				
396.30	15.75	5.24	10.51				
396.40	16.30	5.34	10.96				
396.50	16.86	5.43	11.42				
396.60	17.42	5.53	11.89				
396.70	17.96	5.63	12.33				
396.80	18.46	5.73	12.73				
396.90	18.93	5.83	13.10				
397.00	19.38	5.93	13.46				
397.10	19.83	6.03	13.80				

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Page 39

Stage-Area-Storage for Pond 6P: SWQ Basin #2

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
392.00	0.088	0.000	397.20	0.304	0.973
392.10	0.091	0.009	397.30	0.309	1.003
392.20	0.094	0.018	397.40	0.314	1.035
392.30	0.097	0.028	397.50	0.319	1.066
392.40	0.100	0.038	397.60	0.325	1.098
392.50	0.104	0.048	397.70	0.330	1.131
392.60	0.107	0.058	397.80	0.335	1.164
392.70	0.110	0.069	397.90	0.341	1.198
392.80	0.114	0.080	398.00	0.346	1.233
392.90	0.117	0.092	398.10	0.351	1.267
393.00	0.120	0.104	398.20	0.357	1.303
393.10	0.124	0.116	398.30	0.362	1.339
393.20	0.128	0.129	398.40	0.368	1.375
393.30	0.131	0.142	398.50	0.373	1.412
393.40	0.135	0.155	398.60	0.379	1.450
393.50	0.139	0.169	398.70	0.384	1.488
393.60	0.142	0.183	398.80	0.390	1.527
393.70	0.146	0.197	398.90	0.396	1.566
393.80	0.150	0.212	399.00	0.401	1.606
393.90	0.154	0.227	399.10	0.407	1.646
394.00	0.158	0.243	399.20	0.413	1.687
394.10	0.162	0.259	399.30	0.419	1.729
394.20	0.166	0.275	399.40	0.425	1.771
394.30	0.170	0.292	399.50	0.431	1.814
394.40	0.174	0.309	399.60	0.437	1.857
394.50	0.178	0.327	399.70	0.443	1.901
394.60	0.182	0.345	399.80	0.449	1.946
394.70	0.187	0.363	399.90	0.455	1.991
394.80	0.191	0.382	400.00	0.461	2.037
394.90	0.195	0.401	400.10	0.467	2.083
395.00	0.200	0.421	400.20	0.473	2.130
395.10	0.204	0.441	400.30	0.479	2.178
395.20	0.208	0.462	400.40	0.486	2.226
395.30	0.213	0.483	400.50	0.492	2.275
395.40	0.218	0.504	400.60	0.498	2.325
395.50	0.222	0.526	400.70	0.505	2.375
395.60	0.227	0.549	400.80	0.511	2.425
395.70	0.232	0.572	400.90	0.518	2.477
395.80	0.236	0.595	401.00	0.524	2.529
395.90	0.241	0.619			
396.00	0.246	0.643			
396.10	0.251	0.668			
396.20	0.255	0.693			
396.30	0.260	0.719			
396.40	0.265	0.745			
396.50	0.269	0.772			
396.60	0.274	0.799			
396.70	0.279	0.827			
396.80	0.284	0.855			
396.90	0.289	0.884			
397.00	0.294	0.913			
397.10	0.299	0.943			

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Page 40

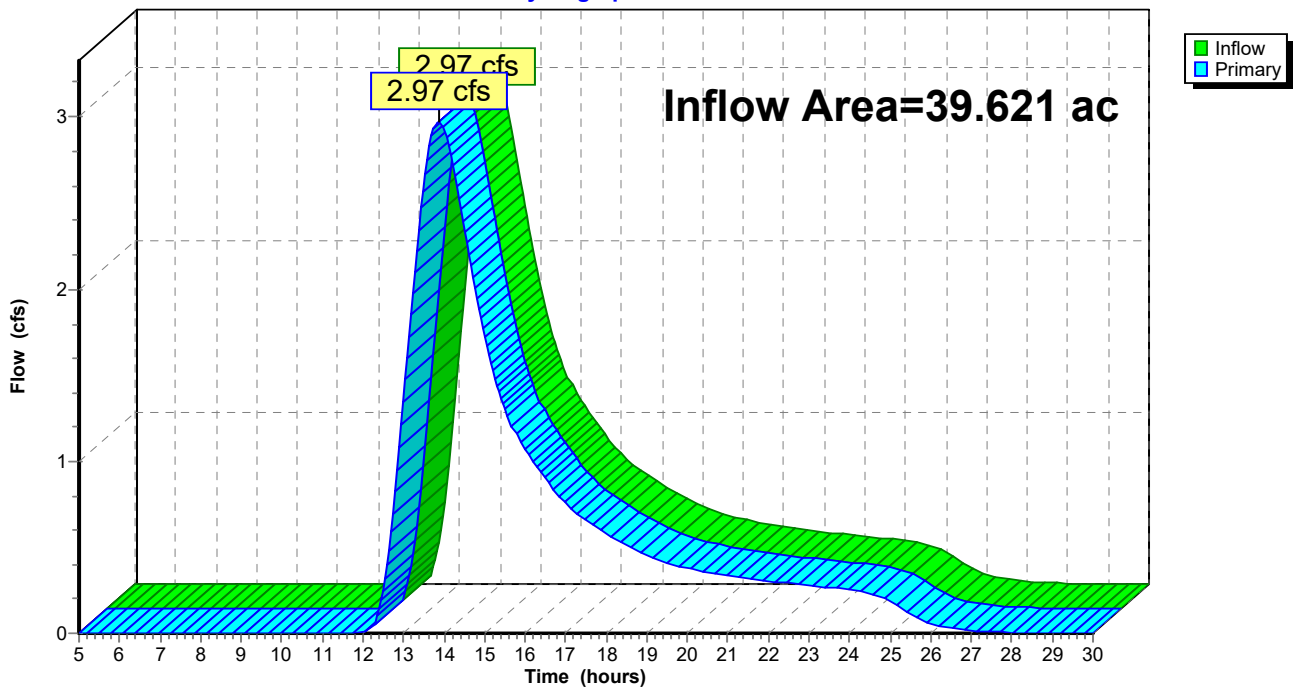
Summary for Link 2L: POA

Inflow Area = 39.621 ac, 0.76% Impervious, Inflow Depth = 0.26" for 2-Year event
Inflow = 2.97 cfs @ 13.88 hrs, Volume= 0.874 af
Primary = 2.97 cfs @ 13.88 hrs, Volume= 0.874 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Link 2L: POA

Hydrograph



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Page 41

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: DA-1 Runoff Area=14.812 ac 0.00% Impervious Runoff Depth=1.23"
Flow Length=1,900' Tc=105.2 min CN=61 Runoff=5.13 cfs 1.515 af

Subcatchment 3S: DA-1B Runoff Area=9.053 ac 2.12% Impervious Runoff Depth=1.78"
Flow Length=1,487' Tc=69.3 min CN=69 Runoff=6.56 cfs 1.347 af

Subcatchment 4S: DA-1A Runoff Area=15.756 ac 0.69% Impervious Runoff Depth=1.78"
Flow Length=1,518' Tc=69.9 min CN=69 Runoff=11.38 cfs 2.343 af

Reach 7R: (new Reach) Avg. Flow Depth=0.16' Max Vel=0.56 fps Inflow=4.85 cfs 0.663 af
n=0.100 L=800.0' S=0.0200 '/' Capacity=140.87 cfs Outflow=4.31 cfs 0.663 af

Pond 5P: SWQ Basin #1 Peak Elev=405.39' Storage=0.197 af Inflow=6.56 cfs 1.347 af
Discarded=3.50 cfs 1.259 af Primary=0.76 cfs 0.088 af Outflow=4.26 cfs 1.347 af

Pond 6P: SWQ Basin #2 Peak Elev=394.89' Storage=0.399 af Inflow=11.82 cfs 2.431 af
Discarded=3.93 cfs 1.768 af Primary=4.85 cfs 0.663 af Outflow=8.77 cfs 2.431 af

Link 2L: POA Inflow=9.27 cfs 2.178 af
Primary=9.27 cfs 2.178 af

Total Runoff Area = 39.621 ac Runoff Volume = 5.205 af Average Runoff Depth = 1.58"
99.24% Pervious = 39.321 ac 0.76% Impervious = 0.300 ac

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Page 42

Summary for Subcatchment 1S: DA-1

Runoff = 5.13 cfs @ 13.55 hrs, Volume= 1.515 af, Depth= 1.23"

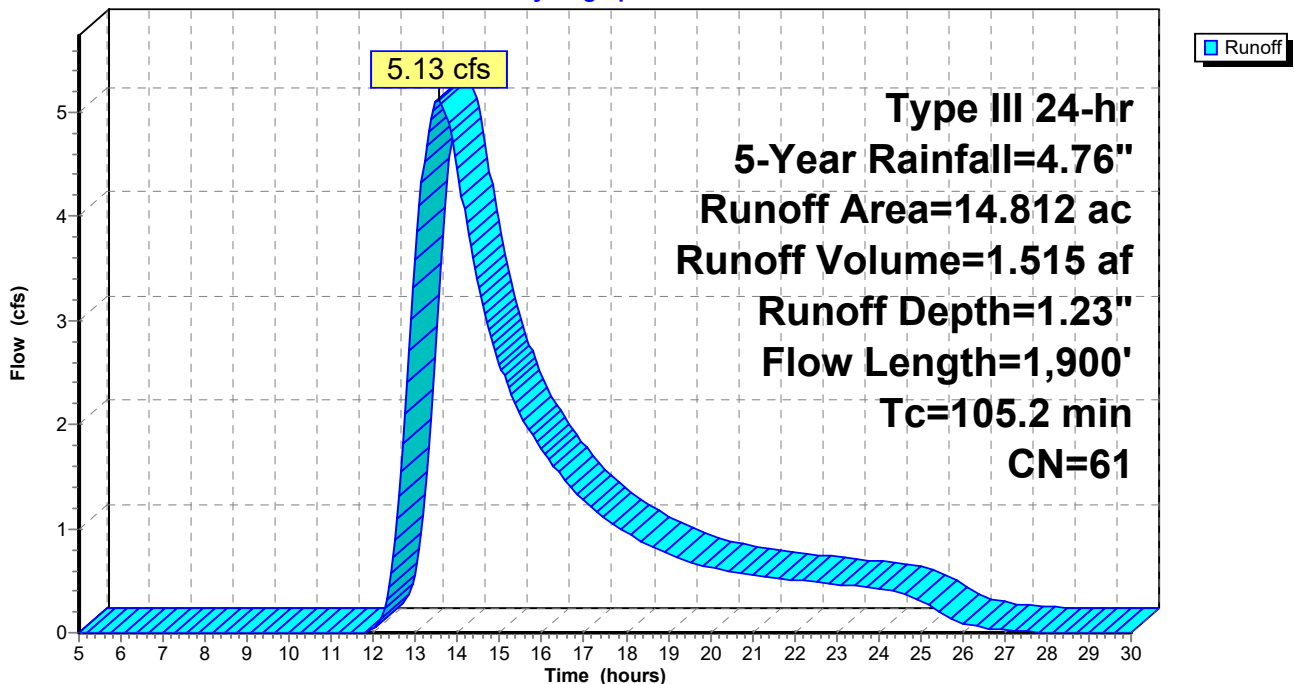
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 5-Year Rainfall=4.76"

Area (ac)	CN	Description
3.912	30	Woods, Good, HSG A
1.830	55	Woods, Good, HSG B
1.643	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
0.367	58	Meadow, non-grazed, HSG B
0.195	71	Meadow, non-grazed, HSG C
14.812	61	Weighted Average
14.812		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

Subcatchment 1S: DA-1

Hydrograph



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Page 43

Summary for Subcatchment 3S: DA-1B

Runoff = 6.56 cfs @ 12.99 hrs, Volume= 1.347 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 5-Year Rainfall=4.76"

Area (ac)	CN	Description
0.139	98	Roofs, HSG C
0.053	98	Paved parking, HSG C
0.072	96	Gravel surface, HSG C
0.180	61	>75% Grass cover, Good, HSG B
0.524	74	>75% Grass cover, Good, HSG C
0.123	30	Woods, Good, HSG A
0.665	55	Woods, Good, HSG B
1.527	70	Woods, Good, HSG C
0.263	58	Meadow, non-grazed, HSG B
5.507	71	Meadow, non-grazed, HSG C
9.053	69	Weighted Average
8.861		97.88% Pervious Area
0.192		2.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
16.4	760	0.0950	0.77		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
6.3	627	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.3	1,487	Total			

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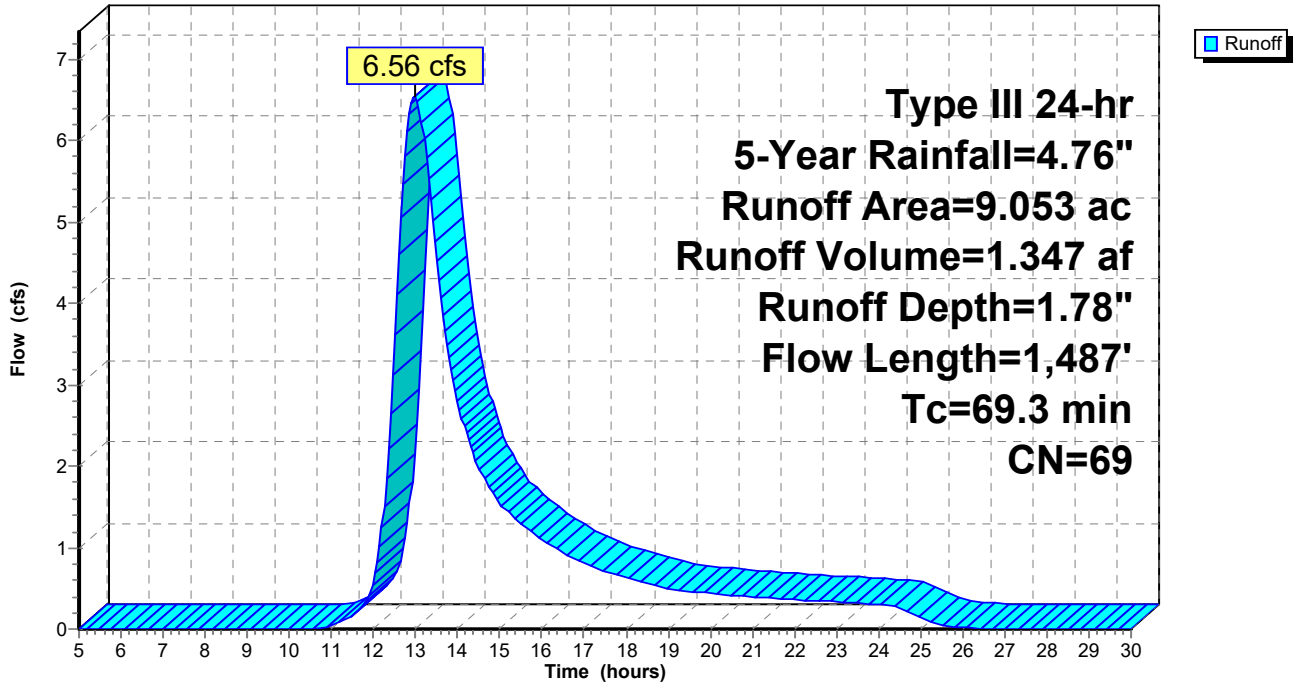
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Page 44

Subcatchment 3S: DA-1B

Hydrograph



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Page 45

Summary for Subcatchment 4S: DA-1A

Runoff = 11.38 cfs @ 12.99 hrs, Volume= 2.343 af, Depth= 1.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 5-Year Rainfall=4.76"

Area (ac)	CN	Description
0.071	98	Roofs, HSG C
0.037	98	Paved parking, HSG C
0.586	74	>75% Grass cover, Good, HSG C
1.921	55	Woods, Good, HSG B
3.639	70	Woods, Good, HSG C
0.505	58	Meadow, non-grazed, HSG B
8.997	71	Meadow, non-grazed, HSG C
15.756	69	Weighted Average
15.648		99.31% Pervious Area
0.108		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
17.6	821	0.0970	0.78		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
5.7	597	0.0620	1.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.9	1,518	Total			

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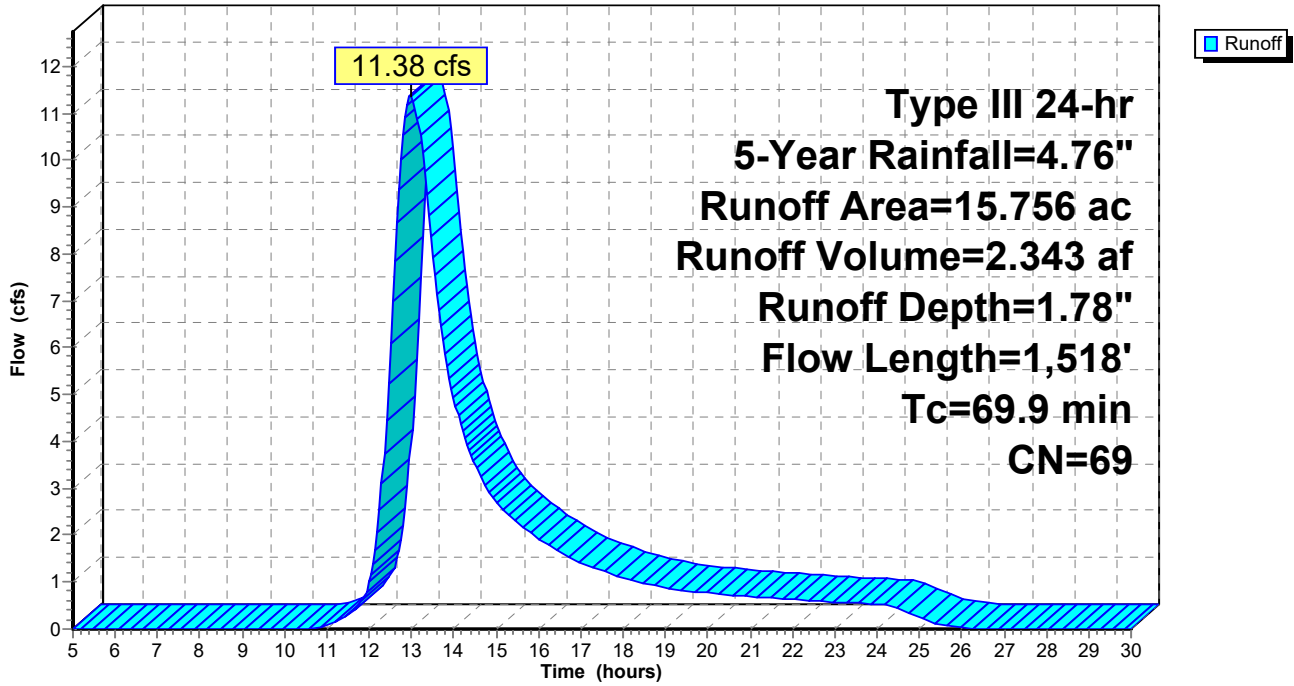
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Page 46

Subcatchment 4S: DA-1A

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Page 47

Summary for Reach 7R: (new Reach)

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 0.32" for 5-Year event
Inflow = 4.85 cfs @ 13.49 hrs, Volume= 0.663 af
Outflow = 4.31 cfs @ 13.84 hrs, Volume= 0.663 af, Atten= 11%, Lag= 20.9 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.56 fps, Min. Travel Time= 23.8 min
Avg. Velocity = 0.17 fps, Avg. Travel Time= 79.7 min

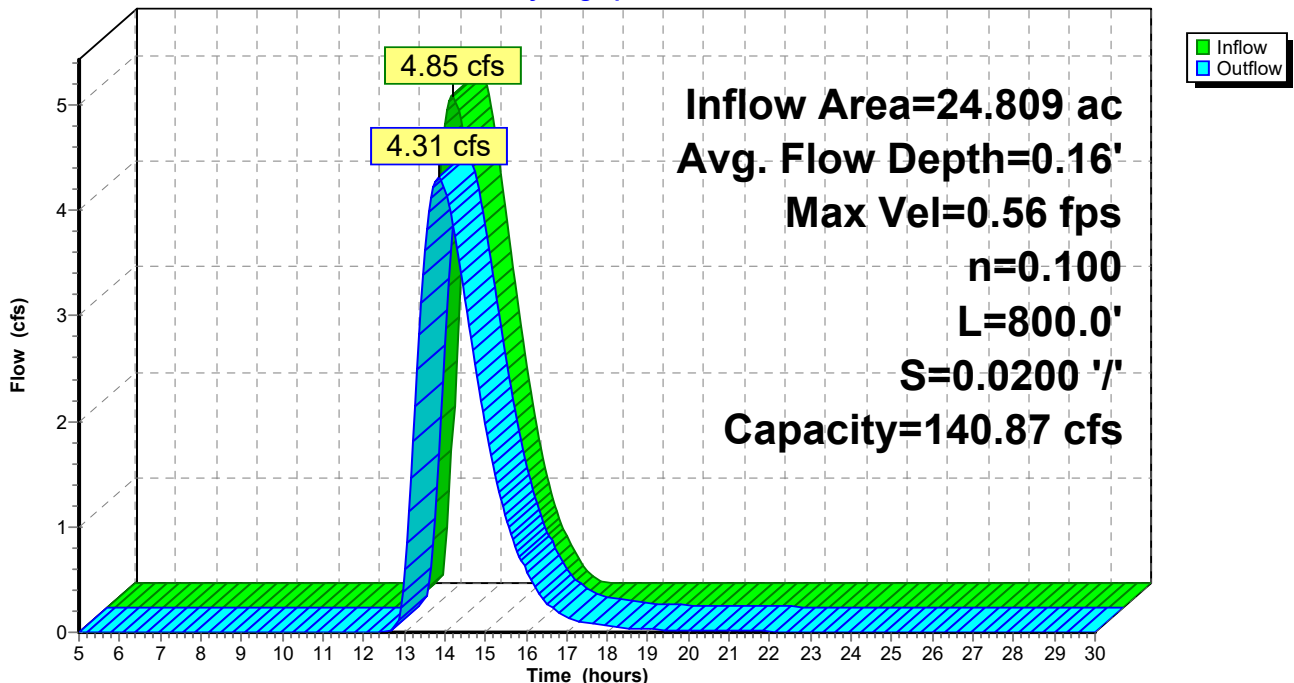
Peak Storage= 6,165 cf @ 13.84 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 1.00' Flow Area= 90.0 sf, Capacity= 140.87 cfs

40.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 50.0 '/' Top Width= 140.00'
Length= 800.0' Slope= 0.0200 '/'
Inlet Invert= 380.00', Outlet Invert= 364.00'



Reach 7R: (new Reach)

Hydrograph



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Page 48

Stage-Discharge for Reach 7R: (new Reach)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
380.00	0.00	0.00	380.52	1.09	37.37
380.01	0.10	0.04	380.53	1.10	38.79
380.02	0.15	0.12	380.54	1.11	40.23
380.03	0.20	0.25	380.55	1.12	41.70
380.04	0.24	0.40	380.56	1.13	43.20
380.05	0.27	0.58	380.57	1.15	44.73
380.06	0.31	0.79	380.58	1.16	46.29
380.07	0.34	1.03	380.59	1.17	47.88
380.08	0.37	1.30	380.60	1.18	49.50
380.09	0.40	1.59	380.61	1.19	51.15
380.10	0.42	1.90	380.62	1.20	52.83
380.11	0.45	2.24	380.63	1.21	54.54
380.12	0.47	2.60	380.64	1.22	56.28
380.13	0.49	2.99	380.65	1.23	58.05
380.14	0.52	3.40	380.66	1.24	59.85
380.15	0.54	3.83	380.67	1.25	61.68
380.16	0.56	4.29	380.68	1.26	63.55
380.17	0.58	4.77	380.69	1.27	65.45
380.18	0.60	5.28	380.70	1.28	67.38
380.19	0.62	5.81	380.71	1.29	69.34
380.20	0.64	6.36	380.72	1.30	71.33
380.21	0.65	6.94	380.73	1.31	73.35
380.22	0.67	7.54	380.74	1.32	75.41
380.23	0.69	8.17	380.75	1.33	77.50
380.24	0.71	8.82	380.76	1.34	79.62
380.25	0.72	9.49	380.77	1.35	81.78
380.26	0.74	10.19	380.78	1.36	83.97
380.27	0.76	10.91	380.79	1.37	86.19
380.28	0.77	11.66	380.80	1.38	88.45
380.29	0.79	12.43	380.81	1.39	90.73
380.30	0.80	13.23	380.82	1.40	93.06
380.31	0.82	14.05	380.83	1.41	95.42
380.32	0.83	14.90	380.84	1.42	97.81
380.33	0.85	15.77	380.85	1.43	100.23
380.34	0.86	16.67	380.86	1.44	102.69
380.35	0.87	17.59	380.87	1.45	105.19
380.36	0.89	18.54	380.88	1.46	107.72
380.37	0.90	19.52	380.89	1.47	110.28
380.38	0.92	20.52	380.90	1.48	112.88
380.39	0.93	21.55	380.91	1.48	115.52
380.40	0.94	22.60	380.92	1.49	118.19
380.41	0.95	23.68	380.93	1.50	120.90
380.42	0.97	24.79	380.94	1.51	123.64
380.43	0.98	25.92	380.95	1.52	126.42
380.44	0.99	27.08	380.96	1.53	129.24
380.45	1.01	28.27	380.97	1.54	132.09
380.46	1.02	29.49	380.98	1.55	134.98
380.47	1.03	30.73	380.99	1.56	137.90
380.48	1.04	32.00	381.00	1.57	140.87
380.49	1.05	33.30			
380.50	1.07	34.63			
380.51	1.08	35.99			

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Page 49

Stage-Area-Storage for Reach 7R: (new Reach)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
380.00	0.0	0	380.52	34.3	27,456
380.01	0.4	324	380.53	35.2	28,196
380.02	0.8	656	380.54	36.2	28,944
380.03	1.2	996	380.55	37.1	29,700
380.04	1.7	1,344	380.56	38.1	30,464
380.05	2.1	1,700	380.57	39.0	31,236
380.06	2.6	2,064	380.58	40.0	32,016
380.07	3.0	2,436	380.59	41.0	32,804
380.08	3.5	2,816	380.60	42.0	33,600
380.09	4.0	3,204	380.61	43.0	34,404
380.10	4.5	3,600	380.62	44.0	35,216
380.11	5.0	4,004	380.63	45.0	36,036
380.12	5.5	4,416	380.64	46.1	36,864
380.13	6.0	4,836	380.65	47.1	37,700
380.14	6.6	5,264	380.66	48.2	38,544
380.15	7.1	5,700	380.67	49.2	39,396
380.16	7.7	6,144	380.68	50.3	40,256
380.17	8.2	6,596	380.69	51.4	41,124
380.18	8.8	7,056	380.70	52.5	42,000
380.19	9.4	7,524	380.71	53.6	42,884
380.20	10.0	8,000	380.72	54.7	43,776
380.21	10.6	8,484	380.73	55.8	44,676
380.22	11.2	8,976	380.74	57.0	45,584
380.23	11.8	9,476	380.75	58.1	46,500
380.24	12.5	9,984	380.76	59.3	47,424
380.25	13.1	10,500	380.77	60.4	48,356
380.26	13.8	11,024	380.78	61.6	49,296
380.27	14.4	11,556	380.79	62.8	50,244
380.28	15.1	12,096	380.80	64.0	51,200
380.29	15.8	12,644	380.81	65.2	52,164
380.30	16.5	13,200	380.82	66.4	53,136
380.31	17.2	13,764	380.83	67.6	54,116
380.32	17.9	14,336	380.84	68.9	55,104
380.33	18.6	14,916	380.85	70.1	56,100
380.34	19.4	15,504	380.86	71.4	57,104
380.35	20.1	16,100	380.87	72.6	58,116
380.36	20.9	16,704	380.88	73.9	59,136
380.37	21.6	17,316	380.89	75.2	60,164
380.38	22.4	17,936	380.90	76.5	61,200
380.39	23.2	18,564	380.91	77.8	62,244
380.40	24.0	19,200	380.92	79.1	63,296
380.41	24.8	19,844	380.93	80.4	64,356
380.42	25.6	20,496	380.94	81.8	65,424
380.43	26.4	21,156	380.95	83.1	66,500
380.44	27.3	21,824	380.96	84.5	67,584
380.45	28.1	22,500	380.97	85.8	68,676
380.46	29.0	23,184	380.98	87.2	69,776
380.47	29.8	23,876	380.99	88.6	70,884
380.48	30.7	24,576	381.00	90.0	72,000
380.49	31.6	25,284			
380.50	32.5	26,000			
380.51	33.4	26,724			

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Page 50

Summary for Pond 5P: SWQ Basin #1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=2)

Inflow Area = 9.053 ac, 2.12% Impervious, Inflow Depth = 1.78" for 5-Year event
 Inflow = 6.56 cfs @ 12.99 hrs, Volume= 1.347 af
 Outflow = 4.26 cfs @ 13.56 hrs, Volume= 1.347 af, Atten= 35%, Lag= 34.2 min
 Discarded = 3.50 cfs @ 13.56 hrs, Volume= 1.259 af
 Primary = 0.76 cfs @ 13.56 hrs, Volume= 0.088 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 405.39' @ 13.56 hrs Surf.Area= 0.173 ac Storage= 0.197 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 15.6 min (927.3 - 911.7)

Volume	Invert	Avail.Storage	Storage Description			
#1	404.00'	1.013 af	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
404.00	0.111	566.0	0.000	0.000	0.111	
406.00	0.205	610.0	0.311	0.311	0.209	
408.00	0.306	653.0	0.508	0.819	0.313	
408.50	0.477	706.0	0.194	1.013	0.444	

Device	Routing	Invert	Outlet Devices	
#1	Discarded	404.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	407.00'	20.5" x 38.0" Horiz. CL-Top C= 0.600 Limited to weir flow at low heads	
#3	Primary	404.50'	6.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=3.50 cfs @ 13.56 hrs HW=405.39' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 3.50 cfs)

Primary OutFlow Max=0.76 cfs @ 13.56 hrs HW=405.39' TW=394.88' (Dynamic Tailwater)

↳ **2=CL-Top** (Controls 0.00 cfs)

↳ **3=Orifice/Grate** (Orifice Controls 0.76 cfs @ 3.86 fps)

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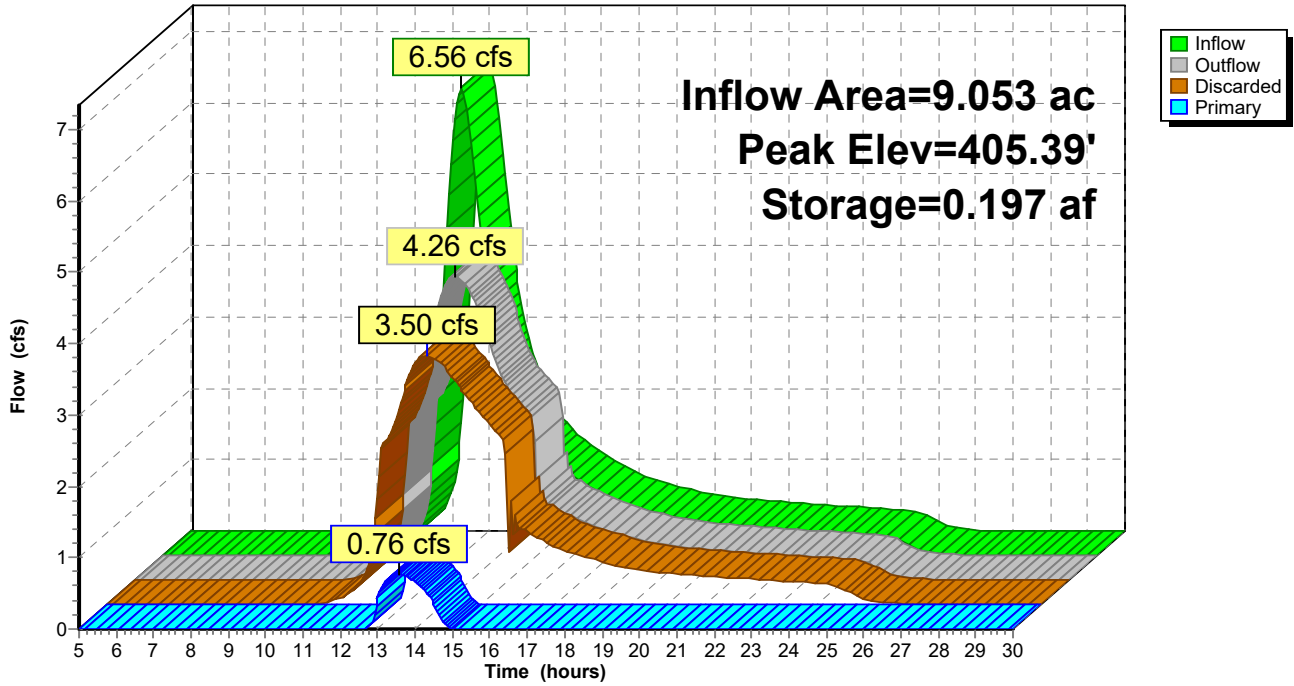
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Type III 24-hr 5-Year Rainfall=4.76"

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Page 51

Pond 5P: SWQ Basin #1

Hydrograph



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Page 52

Stage-Discharge for Pond 5P: SWQ Basin #1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
404.00	0.00	0.00	0.00	406.60	5.99	4.70	1.29
404.05	2.28	2.28	0.00	406.65	6.05	4.75	1.30
404.10	2.32	2.32	0.00	406.70	6.12	4.80	1.32
404.15	2.36	2.36	0.00	406.75	6.19	4.85	1.34
404.20	2.40	2.40	0.00	406.80	6.25	4.90	1.35
404.25	2.44	2.44	0.00	406.85	6.32	4.95	1.37
404.30	2.49	2.49	0.00	406.90	6.39	5.00	1.39
404.35	2.53	2.53	0.00	406.95	6.45	5.05	1.40
404.40	2.57	2.57	0.00	407.00	6.52	5.10	1.42
404.45	2.61	2.61	0.00	407.05	6.94	5.15	1.79
404.50	2.66	2.66	0.00	407.10	7.66	5.20	2.46
404.55	2.71	2.70	0.01	407.15	8.57	5.26	3.32
404.60	2.78	2.75	0.03	407.20	9.64	5.31	4.33
404.65	2.86	2.79	0.07	407.25	10.84	5.36	5.48
404.70	2.95	2.84	0.11	407.30	12.16	5.41	6.75
404.75	3.05	2.88	0.17	407.35	13.59	5.46	8.13
404.80	3.16	2.93	0.23	407.40	15.12	5.52	9.60
404.85	3.27	2.97	0.30	407.45	16.75	5.57	11.18
404.90	3.38	3.02	0.36	407.50	18.46	5.62	12.84
404.95	3.49	3.07	0.43	407.55	20.26	5.68	14.59
405.00	3.59	3.11	0.47	407.60	22.14	5.73	16.41
405.05	3.68	3.16	0.52	407.65	24.10	5.79	18.32
405.10	3.77	3.21	0.56	407.70	26.14	5.84	20.30
405.15	3.86	3.26	0.60	407.75	28.24	5.89	22.35
405.20	3.94	3.31	0.63	407.80	30.41	5.95	24.46
405.25	4.02	3.36	0.67	407.85	31.68	6.00	25.68
405.30	4.11	3.41	0.70	407.90	32.45	6.06	26.39
405.35	4.19	3.45	0.73	407.95	33.19	6.12	27.08
405.40	4.27	3.50	0.76	408.00	33.92	6.17	27.75
405.45	4.35	3.56	0.79	408.05	34.89	6.48	28.41
405.50	4.42	3.61	0.82	408.10	35.85	6.80	29.05
405.55	4.50	3.66	0.85	408.15	36.80	7.13	29.68
405.60	4.58	3.71	0.87	408.20	37.75	7.46	30.29
405.65	4.66	3.76	0.90	408.25	38.69	7.80	30.89
405.70	4.73	3.81	0.92	408.30	39.63	8.15	31.48
405.75	4.81	3.87	0.95	408.35	40.56	8.50	32.06
405.80	4.89	3.92	0.97	408.40	41.50	8.87	32.63
405.85	4.96	3.97	0.99	408.45	42.42	9.24	33.18
405.90	5.04	4.03	1.01	408.50	43.35	9.62	33.73
405.95	5.12	4.08	1.04				
406.00	5.19	4.13	1.06				
406.05	5.26	4.18	1.08				
406.10	5.32	4.23	1.10				
406.15	5.39	4.27	1.12				
406.20	5.46	4.32	1.14				
406.25	5.52	4.37	1.16				
406.30	5.59	4.41	1.18				
406.35	5.66	4.46	1.20				
406.40	5.72	4.51	1.21				
406.45	5.79	4.56	1.23				
406.50	5.86	4.61	1.25				
406.55	5.92	4.65	1.27				

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Page 53

Stage-Area-Storage for Pond 5P: SWQ Basin #1

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
404.00	0.111	0.000	406.60	0.233	0.443
404.05	0.113	0.006	406.65	0.236	0.454
404.10	0.115	0.011	406.70	0.238	0.466
404.15	0.117	0.017	406.75	0.241	0.478
404.20	0.119	0.023	406.80	0.243	0.490
404.25	0.121	0.029	406.85	0.245	0.502
404.30	0.123	0.035	406.90	0.248	0.515
404.35	0.125	0.041	406.95	0.250	0.527
404.40	0.128	0.048	407.00	0.253	0.540
404.45	0.130	0.054	407.05	0.256	0.553
404.50	0.132	0.061	407.10	0.258	0.565
404.55	0.134	0.067	407.15	0.261	0.578
404.60	0.136	0.074	407.20	0.263	0.591
404.65	0.138	0.081	407.25	0.266	0.605
404.70	0.141	0.088	407.30	0.268	0.618
404.75	0.143	0.095	407.35	0.271	0.631
404.80	0.145	0.102	407.40	0.274	0.645
404.85	0.147	0.109	407.45	0.276	0.659
404.90	0.150	0.117	407.50	0.279	0.673
404.95	0.152	0.124	407.55	0.282	0.687
405.00	0.154	0.132	407.60	0.284	0.701
405.05	0.157	0.140	407.65	0.287	0.715
405.10	0.159	0.148	407.70	0.290	0.730
405.15	0.162	0.156	407.75	0.292	0.744
405.20	0.164	0.164	407.80	0.295	0.759
405.25	0.166	0.172	407.85	0.298	0.774
405.30	0.169	0.181	407.90	0.300	0.789
405.35	0.171	0.189	407.95	0.303	0.804
405.40	0.174	0.198	408.00	0.306	0.819
405.45	0.176	0.206	408.05	0.321	0.835
405.50	0.179	0.215	408.10	0.337	0.851
405.55	0.181	0.224	408.15	0.353	0.868
405.60	0.184	0.233	408.20	0.370	0.886
405.65	0.186	0.243	408.25	0.387	0.905
405.70	0.189	0.252	408.30	0.404	0.925
405.75	0.192	0.262	408.35	0.422	0.946
405.80	0.194	0.271	408.40	0.440	0.967
405.85	0.197	0.281	408.45	0.458	0.990
405.90	0.200	0.291	408.50	0.477	1.013
405.95	0.202	0.301			
406.00	0.205	0.311			
406.05	0.207	0.322			
406.10	0.210	0.332			
406.15	0.212	0.342			
406.20	0.214	0.353			
406.25	0.217	0.364			
406.30	0.219	0.375			
406.35	0.221	0.386			
406.40	0.224	0.397			
406.45	0.226	0.408			
406.50	0.228	0.420			
406.55	0.231	0.431			

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Page 54

Summary for Pond 6P: SWQ Basin #2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 1.18" for 5-Year event
 Inflow = 11.82 cfs @ 13.02 hrs, Volume= 2.431 af
 Outflow = 8.77 cfs @ 13.49 hrs, Volume= 2.431 af, Atten= 26%, Lag= 28.3 min
 Discarded = 3.93 cfs @ 13.49 hrs, Volume= 1.768 af
 Primary = 4.85 cfs @ 13.49 hrs, Volume= 0.663 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 394.89' @ 13.49 hrs Surf.Area= 0.195 ac Storage= 0.399 af

Plug-Flow detention time= 24.1 min calculated for 2.431 af (100% of inflow)
 Center-of-Mass det. time= 24.0 min (933.2 - 909.1)

Volume	Invert	Avail.Storage	Storage Description			
#1	392.00'	2.529 af	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
392.00	0.088	313.0	0.000	0.000	0.088	
394.00	0.158	408.0	0.243	0.243	0.214	
396.00	0.246	503.0	0.401	0.643	0.374	
398.00	0.346	588.0	0.589	1.233	0.545	
400.00	0.461	674.0	0.804	2.037	0.745	
401.00	0.524	699.0	0.492	2.529	0.810	

Device	Routing	Invert	Outlet Devices	
#1	Discarded	392.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	399.50'	20.5" x 38.0" Horiz. Top Grate C= 0.600 Limited to weir flow at low heads	
#3	Primary	392.80'	6.0" W x 46.0" H Vert. Weir C= 0.600	

Discarded OutFlow Max=3.93 cfs @ 13.49 hrs HW=394.89' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 3.93 cfs)

Primary OutFlow Max=4.84 cfs @ 13.49 hrs HW=394.89' TW=380.14' (Dynamic Tailwater)

↳ **2=Top Grate** (Controls 0.00 cfs)

↳ **3=Weir** (Orifice Controls 4.84 cfs @ 4.64 fps)

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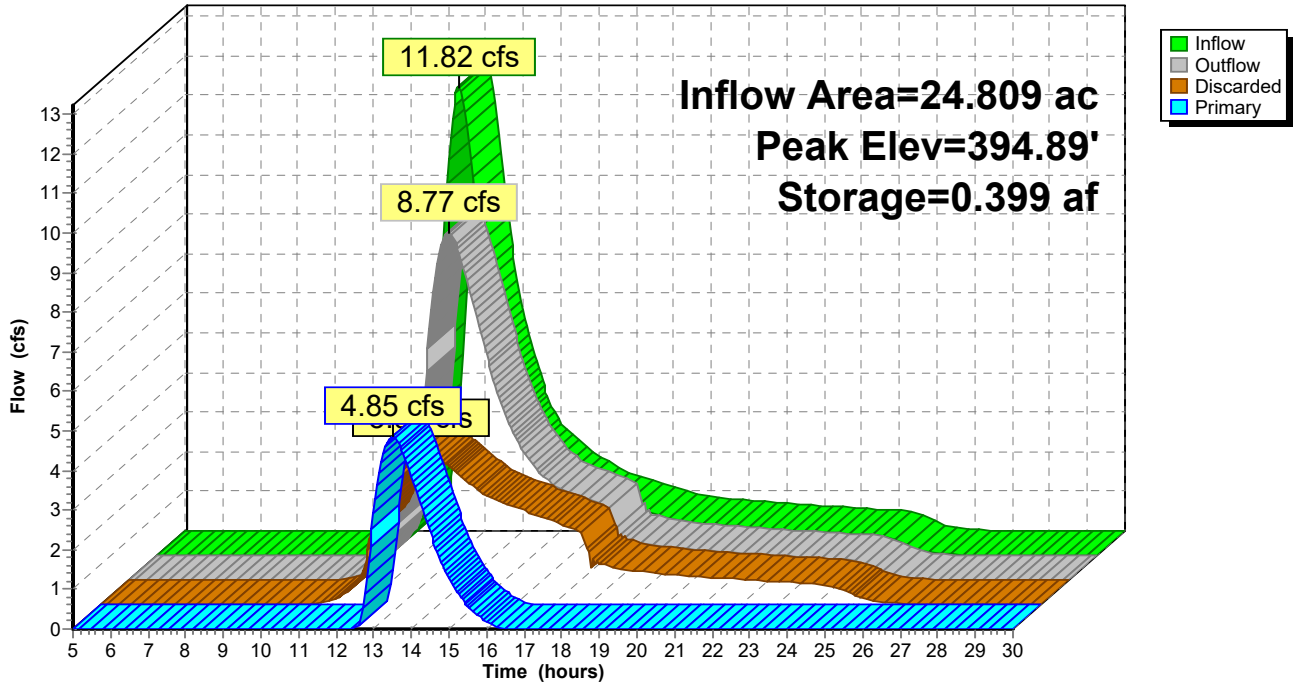
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Page 55

Pond 6P: SWQ Basin #2

Hydrograph



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Page 56

Stage-Discharge for Pond 6P: SWQ Basin #2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
392.00	0.00	0.00	0.00	397.20	20.26	6.13	14.13
392.10	1.84	1.84	0.00	397.30	20.68	6.23	14.45
392.20	1.90	1.90	0.00	397.40	21.09	6.34	14.76
392.30	1.96	1.96	0.00	397.50	21.50	6.44	15.06
392.40	2.02	2.02	0.00	397.60	21.90	6.55	15.35
392.50	2.09	2.09	0.00	397.70	22.29	6.65	15.64
392.60	2.16	2.16	0.00	397.80	22.68	6.76	15.92
392.70	2.22	2.22	0.00	397.90	23.07	6.87	16.20
392.80	2.29	2.29	0.00	398.00	23.45	6.98	16.47
392.90	2.41	2.36	0.05	398.10	23.82	7.09	16.73
393.00	2.57	2.43	0.14	398.20	24.19	7.19	16.99
393.10	2.76	2.50	0.26	398.30	24.55	7.30	17.25
393.20	2.98	2.57	0.41	398.40	24.92	7.41	17.50
393.30	3.21	2.65	0.57	398.50	25.27	7.53	17.75
393.40	3.47	2.72	0.75	398.60	25.63	7.64	17.99
393.50	3.73	2.79	0.94	398.70	25.98	7.75	18.23
393.60	4.02	2.87	1.15	398.80	26.34	7.87	18.47
393.70	4.32	2.95	1.37	398.90	26.68	7.98	18.70
393.80	4.63	3.03	1.60	399.00	27.03	8.10	18.93
393.90	4.96	3.11	1.85	399.10	27.37	8.21	19.16
394.00	5.30	3.19	2.11	399.20	27.72	8.33	19.39
394.10	5.64	3.27	2.38	399.30	28.06	8.45	19.61
394.20	6.00	3.35	2.66	399.40	28.39	8.57	19.83
394.30	6.38	3.43	2.95	399.50	28.73	8.69	20.04
394.40	6.76	3.51	3.25	399.60	30.07	8.81	21.27
394.50	7.15	3.59	3.56	399.70	32.25	8.93	23.32
394.60	7.55	3.68	3.88	399.80	34.97	9.05	25.92
394.70	7.97	3.76	4.20	399.90	38.13	9.17	28.95
394.80	8.39	3.85	4.54	400.00	41.66	9.30	32.37
394.90	8.82	3.94	4.88	400.10	45.53	9.42	36.11
395.00	9.26	4.02	5.24	400.20	49.71	9.54	40.17
395.10	9.71	4.11	5.60	400.30	54.18	9.67	44.51
395.20	10.17	4.20	5.97	400.40	56.40	9.80	46.61
395.30	10.64	4.30	6.34	400.50	58.06	9.92	48.14
395.40	11.12	4.39	6.73	400.60	59.65	10.05	49.60
395.50	11.60	4.48	7.12	400.70	61.19	10.18	51.01
395.60	12.09	4.57	7.52	400.80	62.67	10.31	52.37
395.70	12.60	4.67	7.93	400.90	64.11	10.44	53.67
395.80	13.11	4.77	8.34	401.00	65.51	10.57	54.94
395.90	13.62	4.86	8.76				
396.00	14.15	4.96	9.19				
396.10	14.68	5.05	9.62				
396.20	15.21	5.15	10.06				
396.30	15.75	5.24	10.51				
396.40	16.30	5.34	10.96				
396.50	16.86	5.43	11.42				
396.60	17.42	5.53	11.89				
396.70	17.96	5.63	12.33				
396.80	18.46	5.73	12.73				
396.90	18.93	5.83	13.10				
397.00	19.38	5.93	13.46				
397.10	19.83	6.03	13.80				

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Page 57

Stage-Area-Storage for Pond 6P: SWQ Basin #2

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
392.00	0.088	0.000	397.20	0.304	0.973
392.10	0.091	0.009	397.30	0.309	1.003
392.20	0.094	0.018	397.40	0.314	1.035
392.30	0.097	0.028	397.50	0.319	1.066
392.40	0.100	0.038	397.60	0.325	1.098
392.50	0.104	0.048	397.70	0.330	1.131
392.60	0.107	0.058	397.80	0.335	1.164
392.70	0.110	0.069	397.90	0.341	1.198
392.80	0.114	0.080	398.00	0.346	1.233
392.90	0.117	0.092	398.10	0.351	1.267
393.00	0.120	0.104	398.20	0.357	1.303
393.10	0.124	0.116	398.30	0.362	1.339
393.20	0.128	0.129	398.40	0.368	1.375
393.30	0.131	0.142	398.50	0.373	1.412
393.40	0.135	0.155	398.60	0.379	1.450
393.50	0.139	0.169	398.70	0.384	1.488
393.60	0.142	0.183	398.80	0.390	1.527
393.70	0.146	0.197	398.90	0.396	1.566
393.80	0.150	0.212	399.00	0.401	1.606
393.90	0.154	0.227	399.10	0.407	1.646
394.00	0.158	0.243	399.20	0.413	1.687
394.10	0.162	0.259	399.30	0.419	1.729
394.20	0.166	0.275	399.40	0.425	1.771
394.30	0.170	0.292	399.50	0.431	1.814
394.40	0.174	0.309	399.60	0.437	1.857
394.50	0.178	0.327	399.70	0.443	1.901
394.60	0.182	0.345	399.80	0.449	1.946
394.70	0.187	0.363	399.90	0.455	1.991
394.80	0.191	0.382	400.00	0.461	2.037
394.90	0.195	0.401	400.10	0.467	2.083
395.00	0.200	0.421	400.20	0.473	2.130
395.10	0.204	0.441	400.30	0.479	2.178
395.20	0.208	0.462	400.40	0.486	2.226
395.30	0.213	0.483	400.50	0.492	2.275
395.40	0.218	0.504	400.60	0.498	2.325
395.50	0.222	0.526	400.70	0.505	2.375
395.60	0.227	0.549	400.80	0.511	2.425
395.70	0.232	0.572	400.90	0.518	2.477
395.80	0.236	0.595	401.00	0.524	2.529
395.90	0.241	0.619			
396.00	0.246	0.643			
396.10	0.251	0.668			
396.20	0.255	0.693			
396.30	0.260	0.719			
396.40	0.265	0.745			
396.50	0.269	0.772			
396.60	0.274	0.799			
396.70	0.279	0.827			
396.80	0.284	0.855			
396.90	0.289	0.884			
397.00	0.294	0.913			
397.10	0.299	0.943			

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Page 58

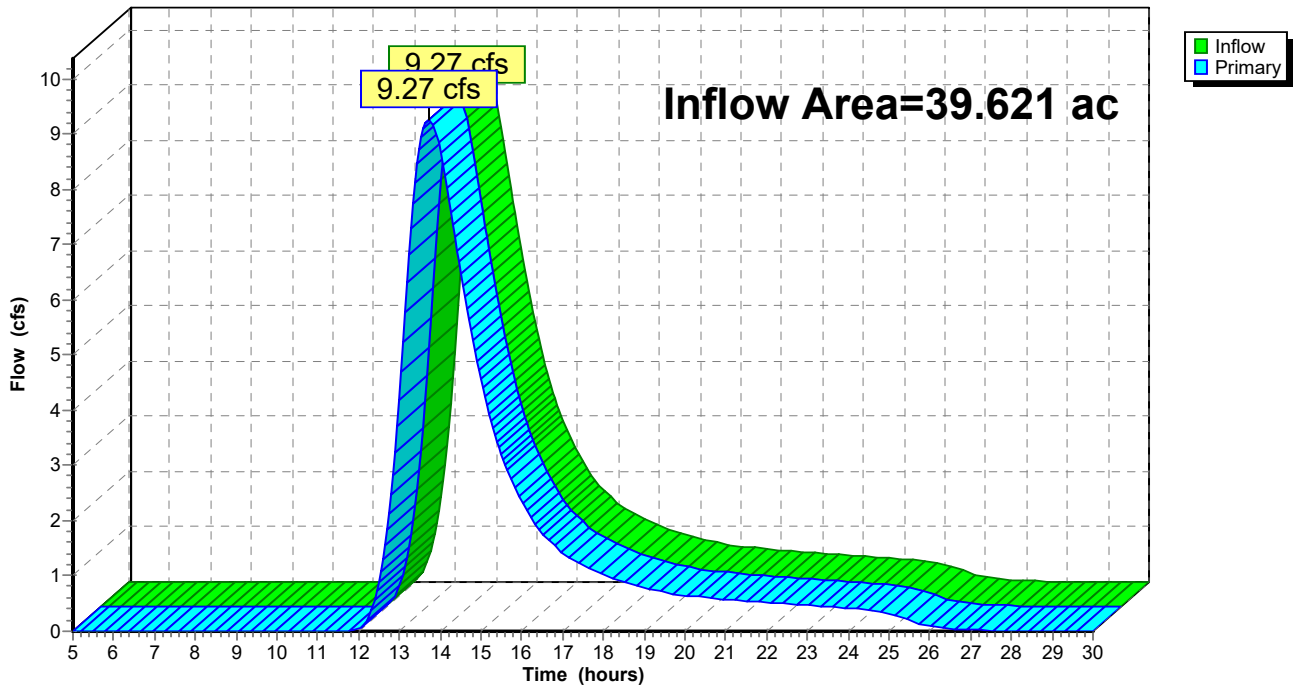
Summary for Link 2L: POA

Inflow Area = 39.621 ac, 0.76% Impervious, Inflow Depth = 0.66" for 5-Year event
Inflow = 9.27 cfs @ 13.72 hrs, Volume= 2.178 af
Primary = 9.27 cfs @ 13.72 hrs, Volume= 2.178 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Link 2L: POA

Hydrograph



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Burlington Solar One - Developed
Type III 24-hr 10-Year Rainfall=5.74"

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Page 59

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: DA-1 Runoff Area=14.812 ac 0.00% Impervious Runoff Depth=1.83"
Flow Length=1,900' Tc=105.2 min CN=61 Runoff=8.10 cfs 2.263 af

Subcatchment 3S: DA-1B Runoff Area=9.053 ac 2.12% Impervious Runoff Depth=2.51"
Flow Length=1,487' Tc=69.3 min CN=69 Runoff=9.41 cfs 1.894 af

Subcatchment 4S: DA-1A Runoff Area=15.756 ac 0.69% Impervious Runoff Depth=2.51"
Flow Length=1,518' Tc=69.9 min CN=69 Runoff=16.36 cfs 3.297 af

Reach 7R: (new Reach) Avg. Flow Depth=0.22' Max Vel=0.67 fps Inflow=8.14 cfs 1.277 af
n=0.100 L=800.0' S=0.0200 '/' Capacity=140.87 cfs Outflow=7.55 cfs 1.276 af

Pond 5P: SWQ Basin #1 Peak Elev=406.21' Storage=0.355 af Inflow=9.41 cfs 1.894 af
Discarded=4.33 cfs 1.693 af Primary=1.14 cfs 0.201 af Outflow=5.47 cfs 1.894 af

Pond 6P: SWQ Basin #2 Peak Elev=395.75' Storage=0.584 af Inflow=17.18 cfs 3.498 af
Discarded=4.72 cfs 2.222 af Primary=8.14 cfs 1.277 af Outflow=12.86 cfs 3.498 af

Link 2L: POA Inflow=15.45 cfs 3.540 af
Primary=15.45 cfs 3.540 af

Total Runoff Area = 39.621 ac Runoff Volume = 7.455 af Average Runoff Depth = 2.26"
99.24% Pervious = 39.321 ac 0.76% Impervious = 0.300 ac

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Page 60

Summary for Subcatchment 1S: DA-1

Runoff = 8.10 cfs @ 13.47 hrs, Volume= 2.263 af, Depth= 1.83"

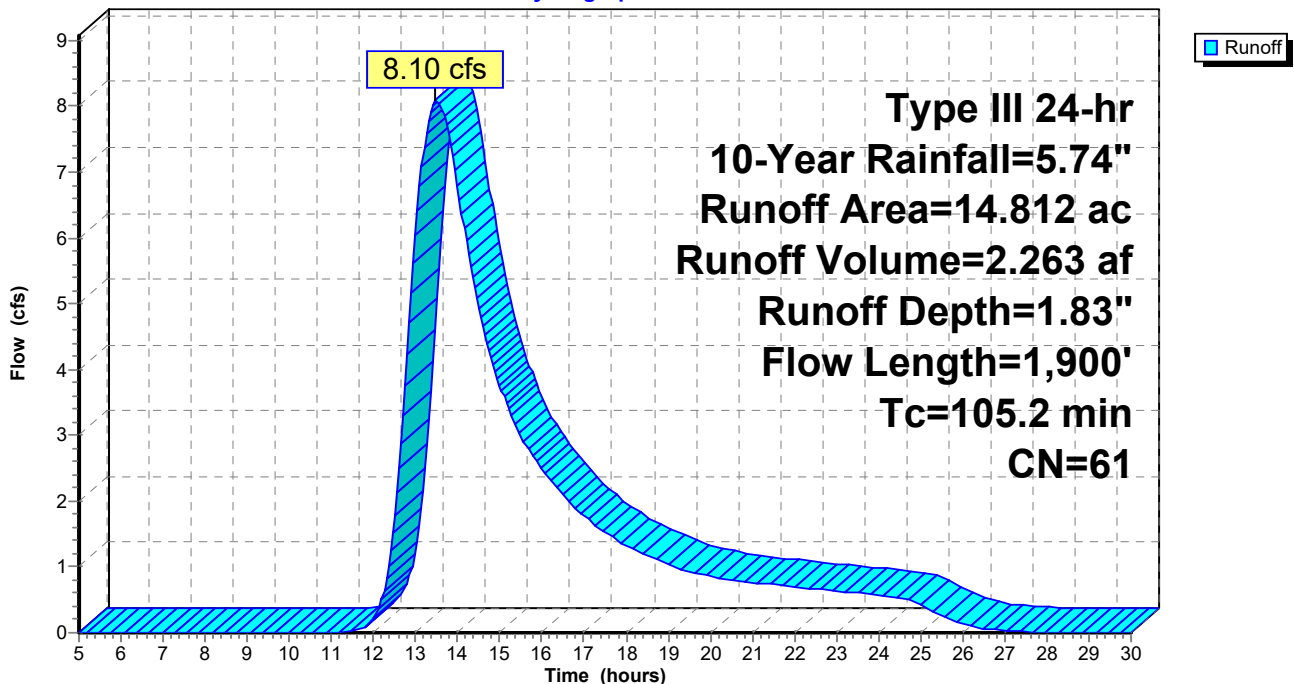
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-Year Rainfall=5.74"

Area (ac)	CN	Description
3.912	30	Woods, Good, HSG A
1.830	55	Woods, Good, HSG B
1.643	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
0.367	58	Meadow, non-grazed, HSG B
0.195	71	Meadow, non-grazed, HSG C
14.812	61	Weighted Average
14.812		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

Subcatchment 1S: DA-1

Hydrograph



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Page 61

Summary for Subcatchment 3S: DA-1B

Runoff = 9.41 cfs @ 12.97 hrs, Volume= 1.894 af, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 10-Year Rainfall=5.74"

Area (ac)	CN	Description
0.139	98	Roofs, HSG C
0.053	98	Paved parking, HSG C
0.072	96	Gravel surface, HSG C
0.180	61	>75% Grass cover, Good, HSG B
0.524	74	>75% Grass cover, Good, HSG C
0.123	30	Woods, Good, HSG A
0.665	55	Woods, Good, HSG B
1.527	70	Woods, Good, HSG C
0.263	58	Meadow, non-grazed, HSG B
5.507	71	Meadow, non-grazed, HSG C
9.053	69	Weighted Average
8.861		97.88% Pervious Area
0.192		2.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
16.4	760	0.0950	0.77		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
6.3	627	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.3	1,487	Total			

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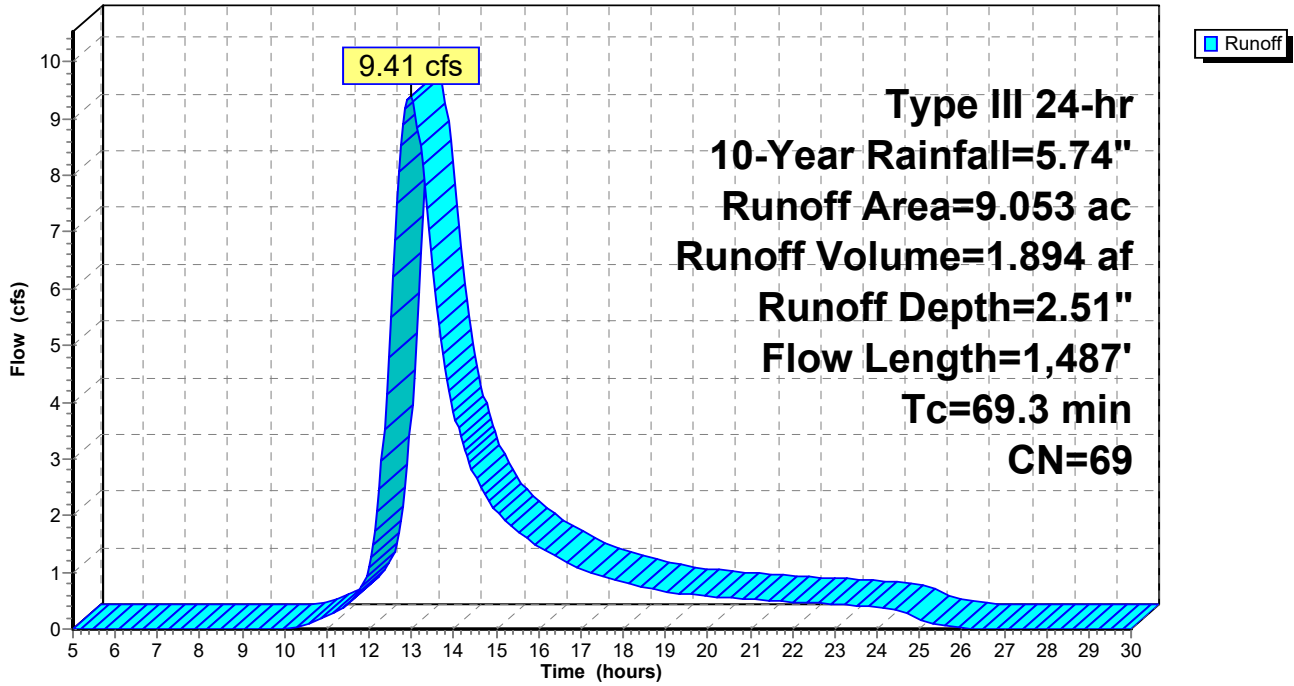
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Type III 24-hr 10-Year Rainfall=5.74"

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Page 62

Subcatchment 3S: DA-1B

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Page 63

Summary for Subcatchment 4S: DA-1A

Runoff = 16.36 cfs @ 12.97 hrs, Volume= 3.297 af, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=5.74"

Area (ac)	CN	Description
0.071	98	Roofs, HSG C
0.037	98	Paved parking, HSG C
0.586	74	>75% Grass cover, Good, HSG C
1.921	55	Woods, Good, HSG B
3.639	70	Woods, Good, HSG C
0.505	58	Meadow, non-grazed, HSG B
8.997	71	Meadow, non-grazed, HSG C
15.756	69	Weighted Average
15.648		99.31% Pervious Area
0.108		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
17.6	821	0.0970	0.78		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
5.7	597	0.0620	1.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.9	1,518	Total			

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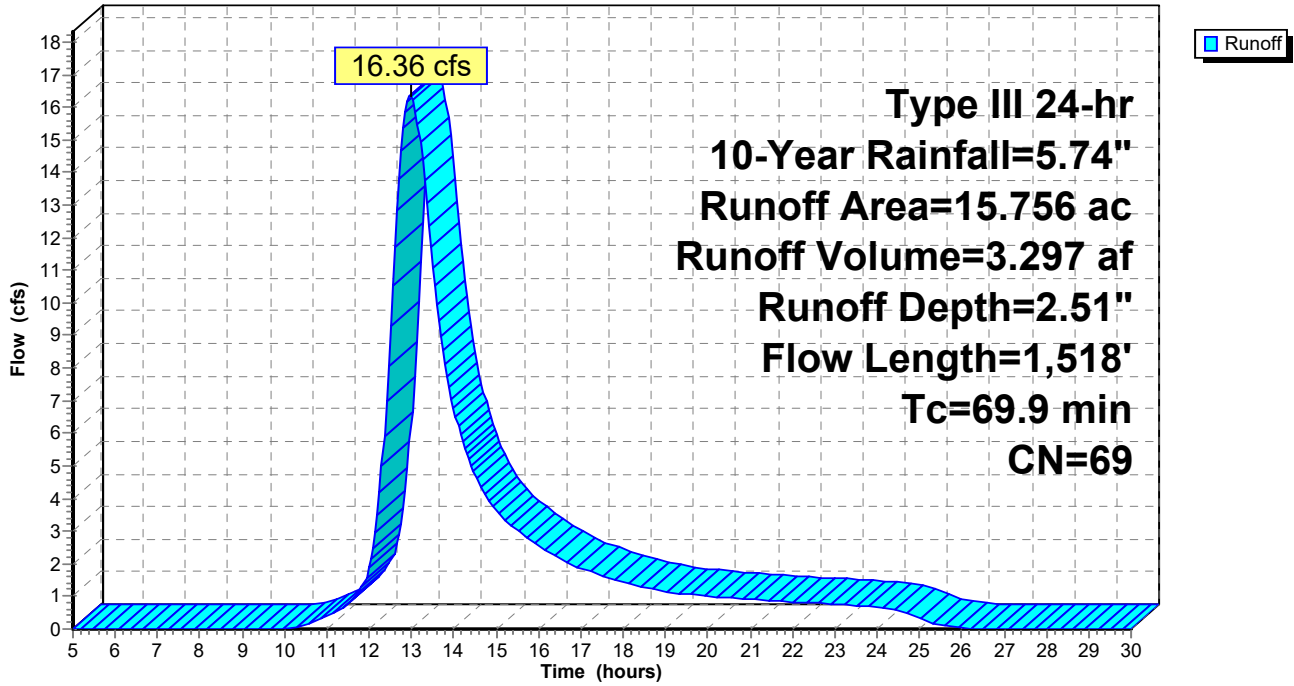
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Type III 24-hr 10-Year Rainfall=5.74"

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Page 64

Subcatchment 4S: DA-1A

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Type III 24-hr 10-Year Rainfall=5.74"

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Page 65

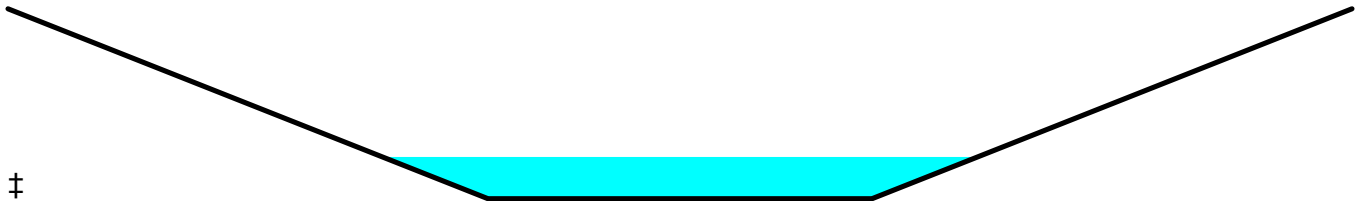
Summary for Reach 7R: (new Reach)

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 0.62" for 10-Year event
Inflow = 8.14 cfs @ 13.45 hrs, Volume= 1.277 af
Outflow = 7.55 cfs @ 13.74 hrs, Volume= 1.276 af, Atten= 7%, Lag= 17.4 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.67 fps, Min. Travel Time= 19.8 min
Avg. Velocity = 0.20 fps, Avg. Travel Time= 67.2 min

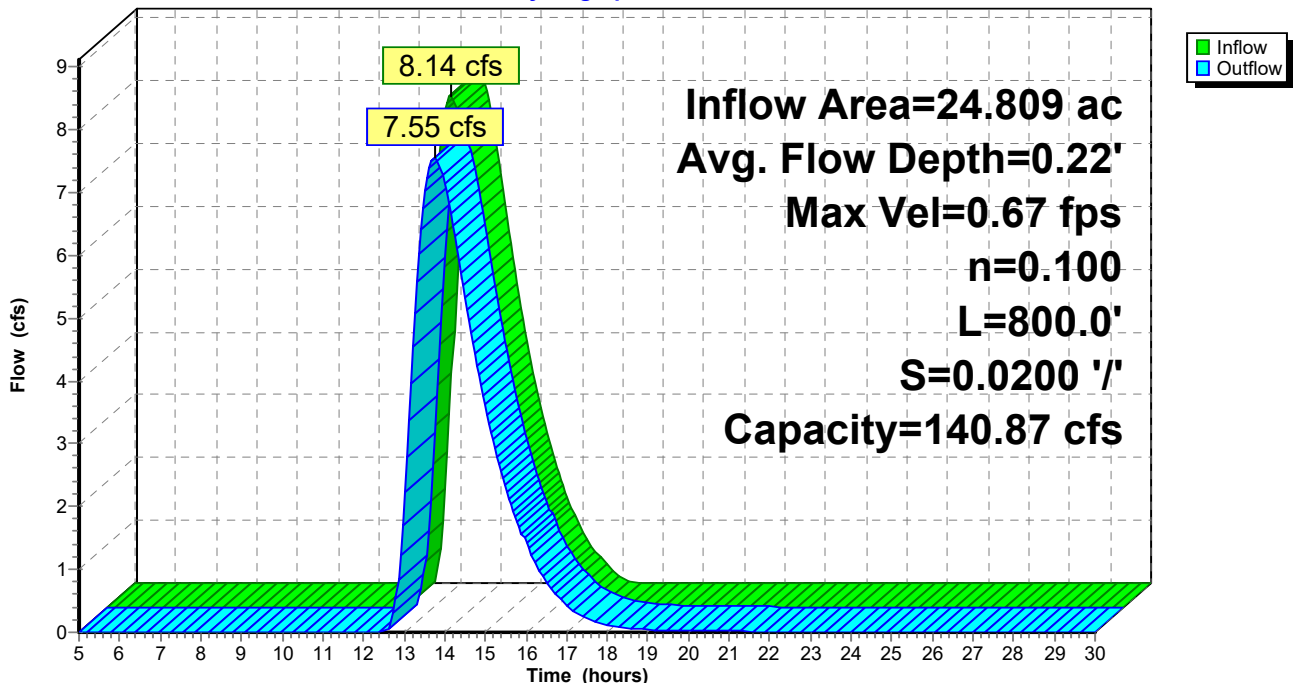
Peak Storage= 8,983 cf @ 13.74 hrs
Average Depth at Peak Storage= 0.22'
Bank-Full Depth= 1.00' Flow Area= 90.0 sf, Capacity= 140.87 cfs

40.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 50.0 '/' Top Width= 140.00'
Length= 800.0' Slope= 0.0200 '/'
Inlet Invert= 380.00', Outlet Invert= 364.00'



Reach 7R: (new Reach)

Hydrograph



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Page 66

Stage-Discharge for Reach 7R: (new Reach)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
380.00	0.00	0.00	380.52	1.09	37.37
380.01	0.10	0.04	380.53	1.10	38.79
380.02	0.15	0.12	380.54	1.11	40.23
380.03	0.20	0.25	380.55	1.12	41.70
380.04	0.24	0.40	380.56	1.13	43.20
380.05	0.27	0.58	380.57	1.15	44.73
380.06	0.31	0.79	380.58	1.16	46.29
380.07	0.34	1.03	380.59	1.17	47.88
380.08	0.37	1.30	380.60	1.18	49.50
380.09	0.40	1.59	380.61	1.19	51.15
380.10	0.42	1.90	380.62	1.20	52.83
380.11	0.45	2.24	380.63	1.21	54.54
380.12	0.47	2.60	380.64	1.22	56.28
380.13	0.49	2.99	380.65	1.23	58.05
380.14	0.52	3.40	380.66	1.24	59.85
380.15	0.54	3.83	380.67	1.25	61.68
380.16	0.56	4.29	380.68	1.26	63.55
380.17	0.58	4.77	380.69	1.27	65.45
380.18	0.60	5.28	380.70	1.28	67.38
380.19	0.62	5.81	380.71	1.29	69.34
380.20	0.64	6.36	380.72	1.30	71.33
380.21	0.65	6.94	380.73	1.31	73.35
380.22	0.67	7.54	380.74	1.32	75.41
380.23	0.69	8.17	380.75	1.33	77.50
380.24	0.71	8.82	380.76	1.34	79.62
380.25	0.72	9.49	380.77	1.35	81.78
380.26	0.74	10.19	380.78	1.36	83.97
380.27	0.76	10.91	380.79	1.37	86.19
380.28	0.77	11.66	380.80	1.38	88.45
380.29	0.79	12.43	380.81	1.39	90.73
380.30	0.80	13.23	380.82	1.40	93.06
380.31	0.82	14.05	380.83	1.41	95.42
380.32	0.83	14.90	380.84	1.42	97.81
380.33	0.85	15.77	380.85	1.43	100.23
380.34	0.86	16.67	380.86	1.44	102.69
380.35	0.87	17.59	380.87	1.45	105.19
380.36	0.89	18.54	380.88	1.46	107.72
380.37	0.90	19.52	380.89	1.47	110.28
380.38	0.92	20.52	380.90	1.48	112.88
380.39	0.93	21.55	380.91	1.48	115.52
380.40	0.94	22.60	380.92	1.49	118.19
380.41	0.95	23.68	380.93	1.50	120.90
380.42	0.97	24.79	380.94	1.51	123.64
380.43	0.98	25.92	380.95	1.52	126.42
380.44	0.99	27.08	380.96	1.53	129.24
380.45	1.01	28.27	380.97	1.54	132.09
380.46	1.02	29.49	380.98	1.55	134.98
380.47	1.03	30.73	380.99	1.56	137.90
380.48	1.04	32.00	381.00	1.57	140.87
380.49	1.05	33.30			
380.50	1.07	34.63			
380.51	1.08	35.99			

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Page 67

Stage-Area-Storage for Reach 7R: (new Reach)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
380.00	0.0	0	380.52	34.3	27,456
380.01	0.4	324	380.53	35.2	28,196
380.02	0.8	656	380.54	36.2	28,944
380.03	1.2	996	380.55	37.1	29,700
380.04	1.7	1,344	380.56	38.1	30,464
380.05	2.1	1,700	380.57	39.0	31,236
380.06	2.6	2,064	380.58	40.0	32,016
380.07	3.0	2,436	380.59	41.0	32,804
380.08	3.5	2,816	380.60	42.0	33,600
380.09	4.0	3,204	380.61	43.0	34,404
380.10	4.5	3,600	380.62	44.0	35,216
380.11	5.0	4,004	380.63	45.0	36,036
380.12	5.5	4,416	380.64	46.1	36,864
380.13	6.0	4,836	380.65	47.1	37,700
380.14	6.6	5,264	380.66	48.2	38,544
380.15	7.1	5,700	380.67	49.2	39,396
380.16	7.7	6,144	380.68	50.3	40,256
380.17	8.2	6,596	380.69	51.4	41,124
380.18	8.8	7,056	380.70	52.5	42,000
380.19	9.4	7,524	380.71	53.6	42,884
380.20	10.0	8,000	380.72	54.7	43,776
380.21	10.6	8,484	380.73	55.8	44,676
380.22	11.2	8,976	380.74	57.0	45,584
380.23	11.8	9,476	380.75	58.1	46,500
380.24	12.5	9,984	380.76	59.3	47,424
380.25	13.1	10,500	380.77	60.4	48,356
380.26	13.8	11,024	380.78	61.6	49,296
380.27	14.4	11,556	380.79	62.8	50,244
380.28	15.1	12,096	380.80	64.0	51,200
380.29	15.8	12,644	380.81	65.2	52,164
380.30	16.5	13,200	380.82	66.4	53,136
380.31	17.2	13,764	380.83	67.6	54,116
380.32	17.9	14,336	380.84	68.9	55,104
380.33	18.6	14,916	380.85	70.1	56,100
380.34	19.4	15,504	380.86	71.4	57,104
380.35	20.1	16,100	380.87	72.6	58,116
380.36	20.9	16,704	380.88	73.9	59,136
380.37	21.6	17,316	380.89	75.2	60,164
380.38	22.4	17,936	380.90	76.5	61,200
380.39	23.2	18,564	380.91	77.8	62,244
380.40	24.0	19,200	380.92	79.1	63,296
380.41	24.8	19,844	380.93	80.4	64,356
380.42	25.6	20,496	380.94	81.8	65,424
380.43	26.4	21,156	380.95	83.1	66,500
380.44	27.3	21,824	380.96	84.5	67,584
380.45	28.1	22,500	380.97	85.8	68,676
380.46	29.0	23,184	380.98	87.2	69,776
380.47	29.8	23,876	380.99	88.6	70,884
380.48	30.7	24,576	381.00	90.0	72,000
380.49	31.6	25,284			
380.50	32.5	26,000			
380.51	33.4	26,724			

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Page 68

Summary for Pond 5P: SWQ Basin #1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=2)

Inflow Area = 9.053 ac, 2.12% Impervious, Inflow Depth = 2.51" for 10-Year event
 Inflow = 9.41 cfs @ 12.97 hrs, Volume= 1.894 af
 Outflow = 5.47 cfs @ 13.63 hrs, Volume= 1.894 af, Atten= 42%, Lag= 39.7 min
 Discarded = 4.33 cfs @ 13.63 hrs, Volume= 1.693 af
 Primary = 1.14 cfs @ 13.63 hrs, Volume= 0.201 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 406.21' @ 13.63 hrs Surf.Area= 0.215 ac Storage= 0.355 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 24.2 min (925.7 - 901.5)

Volume	Invert	Avail.Storage	Storage Description			
#1	404.00'	1.013 af	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
404.00	0.111	566.0	0.000	0.000	0.111	
406.00	0.205	610.0	0.311	0.311	0.209	
408.00	0.306	653.0	0.508	0.819	0.313	
408.50	0.477	706.0	0.194	1.013	0.444	

Device	Routing	Invert	Outlet Devices	
#1	Discarded	404.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	407.00'	20.5" x 38.0" Horiz. CL-Top C= 0.600 Limited to weir flow at low heads	
#3	Primary	404.50'	6.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=4.33 cfs @ 13.63 hrs HW=406.21' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 4.33 cfs)

Primary OutFlow Max=1.14 cfs @ 13.63 hrs HW=406.21' TW=395.69' (Dynamic Tailwater)

↳ **2=CL-Top** (Controls 0.00 cfs)

↳ **3=Orifice/Grate** (Orifice Controls 1.14 cfs @ 5.81 fps)

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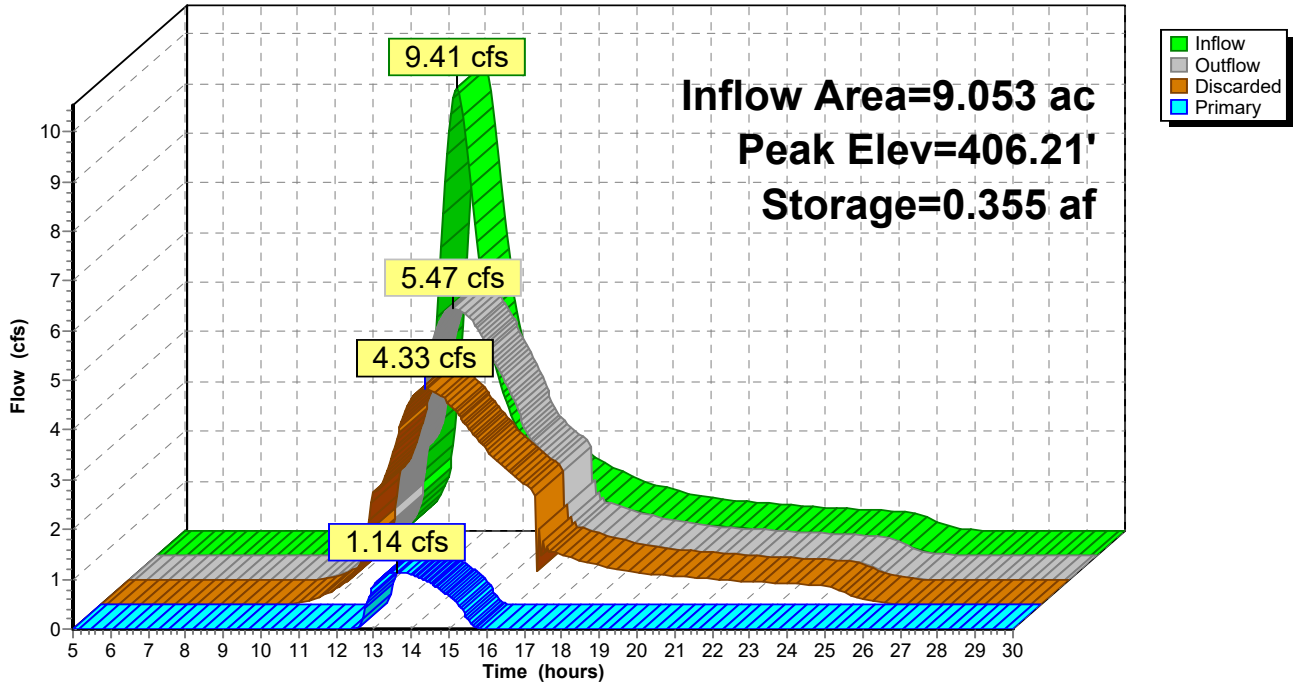
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Page 69

Pond 5P: SWQ Basin #1

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Page 70

Stage-Discharge for Pond 5P: SWQ Basin #1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
404.00	0.00	0.00	0.00	406.60	5.99	4.70	1.29
404.05	2.28	2.28	0.00	406.65	6.05	4.75	1.30
404.10	2.32	2.32	0.00	406.70	6.12	4.80	1.32
404.15	2.36	2.36	0.00	406.75	6.19	4.85	1.34
404.20	2.40	2.40	0.00	406.80	6.25	4.90	1.35
404.25	2.44	2.44	0.00	406.85	6.32	4.95	1.37
404.30	2.49	2.49	0.00	406.90	6.39	5.00	1.39
404.35	2.53	2.53	0.00	406.95	6.45	5.05	1.40
404.40	2.57	2.57	0.00	407.00	6.52	5.10	1.42
404.45	2.61	2.61	0.00	407.05	6.94	5.15	1.79
404.50	2.66	2.66	0.00	407.10	7.66	5.20	2.46
404.55	2.71	2.70	0.01	407.15	8.57	5.26	3.32
404.60	2.78	2.75	0.03	407.20	9.64	5.31	4.33
404.65	2.86	2.79	0.07	407.25	10.84	5.36	5.48
404.70	2.95	2.84	0.11	407.30	12.16	5.41	6.75
404.75	3.05	2.88	0.17	407.35	13.59	5.46	8.13
404.80	3.16	2.93	0.23	407.40	15.12	5.52	9.60
404.85	3.27	2.97	0.30	407.45	16.75	5.57	11.18
404.90	3.38	3.02	0.36	407.50	18.46	5.62	12.84
404.95	3.49	3.07	0.43	407.55	20.26	5.68	14.59
405.00	3.59	3.11	0.47	407.60	22.14	5.73	16.41
405.05	3.68	3.16	0.52	407.65	24.10	5.79	18.32
405.10	3.77	3.21	0.56	407.70	26.14	5.84	20.30
405.15	3.86	3.26	0.60	407.75	28.24	5.89	22.35
405.20	3.94	3.31	0.63	407.80	30.41	5.95	24.46
405.25	4.02	3.36	0.67	407.85	31.68	6.00	25.68
405.30	4.11	3.41	0.70	407.90	32.45	6.06	26.39
405.35	4.19	3.45	0.73	407.95	33.19	6.12	27.08
405.40	4.27	3.50	0.76	408.00	33.92	6.17	27.75
405.45	4.35	3.56	0.79	408.05	34.89	6.48	28.41
405.50	4.42	3.61	0.82	408.10	35.85	6.80	29.05
405.55	4.50	3.66	0.85	408.15	36.80	7.13	29.68
405.60	4.58	3.71	0.87	408.20	37.75	7.46	30.29
405.65	4.66	3.76	0.90	408.25	38.69	7.80	30.89
405.70	4.73	3.81	0.92	408.30	39.63	8.15	31.48
405.75	4.81	3.87	0.95	408.35	40.56	8.50	32.06
405.80	4.89	3.92	0.97	408.40	41.50	8.87	32.63
405.85	4.96	3.97	0.99	408.45	42.42	9.24	33.18
405.90	5.04	4.03	1.01	408.50	43.35	9.62	33.73
405.95	5.12	4.08	1.04				
406.00	5.19	4.13	1.06				
406.05	5.26	4.18	1.08				
406.10	5.32	4.23	1.10				
406.15	5.39	4.27	1.12				
406.20	5.46	4.32	1.14				
406.25	5.52	4.37	1.16				
406.30	5.59	4.41	1.18				
406.35	5.66	4.46	1.20				
406.40	5.72	4.51	1.21				
406.45	5.79	4.56	1.23				
406.50	5.86	4.61	1.25				
406.55	5.92	4.65	1.27				

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Page 71

Stage-Area-Storage for Pond 5P: SWQ Basin #1

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
404.00	0.111	0.000	406.60	0.233	0.443
404.05	0.113	0.006	406.65	0.236	0.454
404.10	0.115	0.011	406.70	0.238	0.466
404.15	0.117	0.017	406.75	0.241	0.478
404.20	0.119	0.023	406.80	0.243	0.490
404.25	0.121	0.029	406.85	0.245	0.502
404.30	0.123	0.035	406.90	0.248	0.515
404.35	0.125	0.041	406.95	0.250	0.527
404.40	0.128	0.048	407.00	0.253	0.540
404.45	0.130	0.054	407.05	0.256	0.553
404.50	0.132	0.061	407.10	0.258	0.565
404.55	0.134	0.067	407.15	0.261	0.578
404.60	0.136	0.074	407.20	0.263	0.591
404.65	0.138	0.081	407.25	0.266	0.605
404.70	0.141	0.088	407.30	0.268	0.618
404.75	0.143	0.095	407.35	0.271	0.631
404.80	0.145	0.102	407.40	0.274	0.645
404.85	0.147	0.109	407.45	0.276	0.659
404.90	0.150	0.117	407.50	0.279	0.673
404.95	0.152	0.124	407.55	0.282	0.687
405.00	0.154	0.132	407.60	0.284	0.701
405.05	0.157	0.140	407.65	0.287	0.715
405.10	0.159	0.148	407.70	0.290	0.730
405.15	0.162	0.156	407.75	0.292	0.744
405.20	0.164	0.164	407.80	0.295	0.759
405.25	0.166	0.172	407.85	0.298	0.774
405.30	0.169	0.181	407.90	0.300	0.789
405.35	0.171	0.189	407.95	0.303	0.804
405.40	0.174	0.198	408.00	0.306	0.819
405.45	0.176	0.206	408.05	0.321	0.835
405.50	0.179	0.215	408.10	0.337	0.851
405.55	0.181	0.224	408.15	0.353	0.868
405.60	0.184	0.233	408.20	0.370	0.886
405.65	0.186	0.243	408.25	0.387	0.905
405.70	0.189	0.252	408.30	0.404	0.925
405.75	0.192	0.262	408.35	0.422	0.946
405.80	0.194	0.271	408.40	0.440	0.967
405.85	0.197	0.281	408.45	0.458	0.990
405.90	0.200	0.291	408.50	0.477	1.013
405.95	0.202	0.301			
406.00	0.205	0.311			
406.05	0.207	0.322			
406.10	0.210	0.332			
406.15	0.212	0.342			
406.20	0.214	0.353			
406.25	0.217	0.364			
406.30	0.219	0.375			
406.35	0.221	0.386			
406.40	0.224	0.397			
406.45	0.226	0.408			
406.50	0.228	0.420			
406.55	0.231	0.431			

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Page 72

Summary for Pond 6P: SWQ Basin #2

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 1.69" for 10-Year event
 Inflow = 17.18 cfs @ 12.99 hrs, Volume= 3.498 af
 Outflow = 12.86 cfs @ 13.45 hrs, Volume= 3.498 af, Atten= 25%, Lag= 27.8 min
 Discarded = 4.72 cfs @ 13.45 hrs, Volume= 2.222 af
 Primary = 8.14 cfs @ 13.45 hrs, Volume= 1.277 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 395.75' @ 13.45 hrs Surf.Area= 0.234 ac Storage= 0.584 af

Plug-Flow detention time= 26.1 min calculated for 3.491 af (100% of inflow)
 Center-of-Mass det. time= 26.1 min (924.6 - 898.6)

Volume	Invert	Avail.Storage	Storage Description		
#1	392.00'	2.529 af	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
392.00	0.088	313.0	0.000	0.000	0.088
394.00	0.158	408.0	0.243	0.243	0.214
396.00	0.246	503.0	0.401	0.643	0.374
398.00	0.346	588.0	0.589	1.233	0.545
400.00	0.461	674.0	0.804	2.037	0.745
401.00	0.524	699.0	0.492	2.529	0.810

Device	Routing	Invert	Outlet Devices	
#1	Discarded	392.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	399.50'	20.5" x 38.0" Horiz. Top Grate C= 0.600 Limited to weir flow at low heads	
#3	Primary	392.80'	6.0" W x 46.0" H Vert. Weir C= 0.600	

Discarded OutFlow Max=4.72 cfs @ 13.45 hrs HW=395.75' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 4.72 cfs)

Primary OutFlow Max=8.14 cfs @ 13.45 hrs HW=395.75' TW=380.21' (Dynamic Tailwater)

↑ **2=Top Grate** (Controls 0.00 cfs)

↑ **3=Weir** (Orifice Controls 8.14 cfs @ 5.51 fps)

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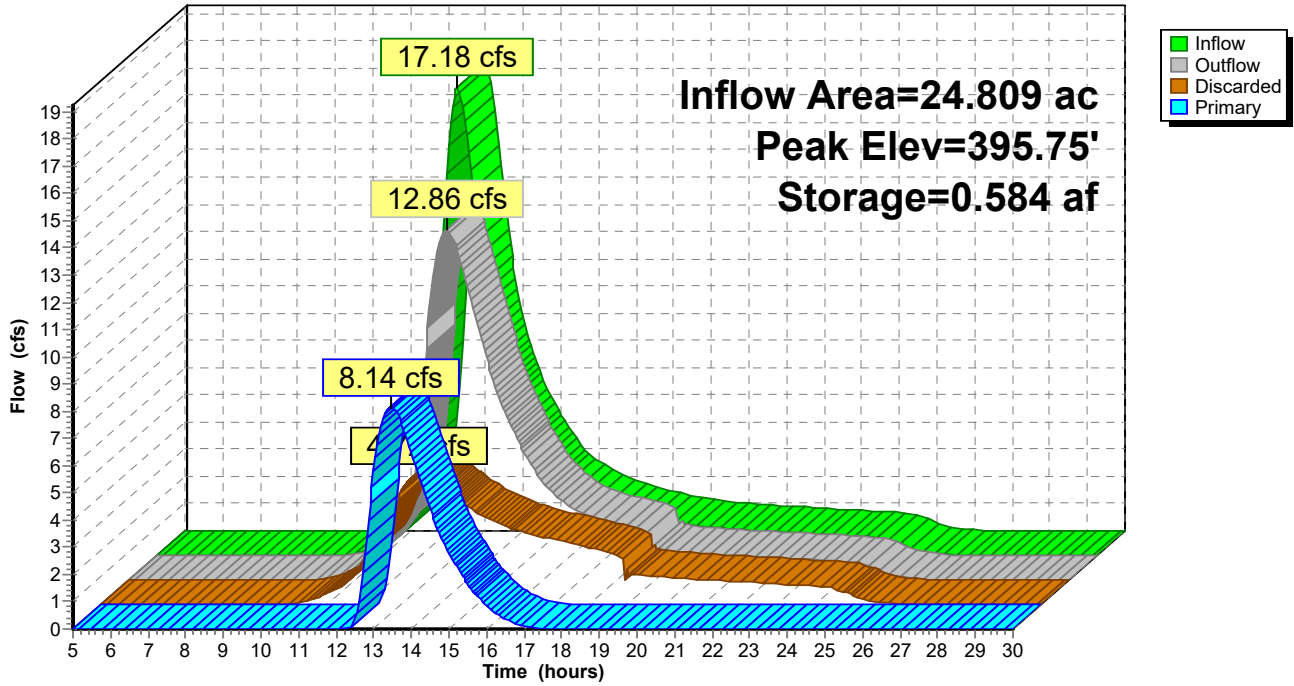
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Page 73

Pond 6P: SWQ Basin #2

Hydrograph



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Page 74

Stage-Discharge for Pond 6P: SWQ Basin #2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
392.00	0.00	0.00	0.00	397.20	20.26	6.13	14.13
392.10	1.84	1.84	0.00	397.30	20.68	6.23	14.45
392.20	1.90	1.90	0.00	397.40	21.09	6.34	14.76
392.30	1.96	1.96	0.00	397.50	21.50	6.44	15.06
392.40	2.02	2.02	0.00	397.60	21.90	6.55	15.35
392.50	2.09	2.09	0.00	397.70	22.29	6.65	15.64
392.60	2.16	2.16	0.00	397.80	22.68	6.76	15.92
392.70	2.22	2.22	0.00	397.90	23.07	6.87	16.20
392.80	2.29	2.29	0.00	398.00	23.45	6.98	16.47
392.90	2.41	2.36	0.05	398.10	23.82	7.09	16.73
393.00	2.57	2.43	0.14	398.20	24.19	7.19	16.99
393.10	2.76	2.50	0.26	398.30	24.55	7.30	17.25
393.20	2.98	2.57	0.41	398.40	24.92	7.41	17.50
393.30	3.21	2.65	0.57	398.50	25.27	7.53	17.75
393.40	3.47	2.72	0.75	398.60	25.63	7.64	17.99
393.50	3.73	2.79	0.94	398.70	25.98	7.75	18.23
393.60	4.02	2.87	1.15	398.80	26.34	7.87	18.47
393.70	4.32	2.95	1.37	398.90	26.68	7.98	18.70
393.80	4.63	3.03	1.60	399.00	27.03	8.10	18.93
393.90	4.96	3.11	1.85	399.10	27.37	8.21	19.16
394.00	5.30	3.19	2.11	399.20	27.72	8.33	19.39
394.10	5.64	3.27	2.38	399.30	28.06	8.45	19.61
394.20	6.00	3.35	2.66	399.40	28.39	8.57	19.83
394.30	6.38	3.43	2.95	399.50	28.73	8.69	20.04
394.40	6.76	3.51	3.25	399.60	30.07	8.81	21.27
394.50	7.15	3.59	3.56	399.70	32.25	8.93	23.32
394.60	7.55	3.68	3.88	399.80	34.97	9.05	25.92
394.70	7.97	3.76	4.20	399.90	38.13	9.17	28.95
394.80	8.39	3.85	4.54	400.00	41.66	9.30	32.37
394.90	8.82	3.94	4.88	400.10	45.53	9.42	36.11
395.00	9.26	4.02	5.24	400.20	49.71	9.54	40.17
395.10	9.71	4.11	5.60	400.30	54.18	9.67	44.51
395.20	10.17	4.20	5.97	400.40	56.40	9.80	46.61
395.30	10.64	4.30	6.34	400.50	58.06	9.92	48.14
395.40	11.12	4.39	6.73	400.60	59.65	10.05	49.60
395.50	11.60	4.48	7.12	400.70	61.19	10.18	51.01
395.60	12.09	4.57	7.52	400.80	62.67	10.31	52.37
395.70	12.60	4.67	7.93	400.90	64.11	10.44	53.67
395.80	13.11	4.77	8.34	401.00	65.51	10.57	54.94
395.90	13.62	4.86	8.76				
396.00	14.15	4.96	9.19				
396.10	14.68	5.05	9.62				
396.20	15.21	5.15	10.06				
396.30	15.75	5.24	10.51				
396.40	16.30	5.34	10.96				
396.50	16.86	5.43	11.42				
396.60	17.42	5.53	11.89				
396.70	17.96	5.63	12.33				
396.80	18.46	5.73	12.73				
396.90	18.93	5.83	13.10				
397.00	19.38	5.93	13.46				
397.10	19.83	6.03	13.80				

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Page 75

Stage-Area-Storage for Pond 6P: SWQ Basin #2

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
392.00	0.088	0.000	397.20	0.304	0.973
392.10	0.091	0.009	397.30	0.309	1.003
392.20	0.094	0.018	397.40	0.314	1.035
392.30	0.097	0.028	397.50	0.319	1.066
392.40	0.100	0.038	397.60	0.325	1.098
392.50	0.104	0.048	397.70	0.330	1.131
392.60	0.107	0.058	397.80	0.335	1.164
392.70	0.110	0.069	397.90	0.341	1.198
392.80	0.114	0.080	398.00	0.346	1.233
392.90	0.117	0.092	398.10	0.351	1.267
393.00	0.120	0.104	398.20	0.357	1.303
393.10	0.124	0.116	398.30	0.362	1.339
393.20	0.128	0.129	398.40	0.368	1.375
393.30	0.131	0.142	398.50	0.373	1.412
393.40	0.135	0.155	398.60	0.379	1.450
393.50	0.139	0.169	398.70	0.384	1.488
393.60	0.142	0.183	398.80	0.390	1.527
393.70	0.146	0.197	398.90	0.396	1.566
393.80	0.150	0.212	399.00	0.401	1.606
393.90	0.154	0.227	399.10	0.407	1.646
394.00	0.158	0.243	399.20	0.413	1.687
394.10	0.162	0.259	399.30	0.419	1.729
394.20	0.166	0.275	399.40	0.425	1.771
394.30	0.170	0.292	399.50	0.431	1.814
394.40	0.174	0.309	399.60	0.437	1.857
394.50	0.178	0.327	399.70	0.443	1.901
394.60	0.182	0.345	399.80	0.449	1.946
394.70	0.187	0.363	399.90	0.455	1.991
394.80	0.191	0.382	400.00	0.461	2.037
394.90	0.195	0.401	400.10	0.467	2.083
395.00	0.200	0.421	400.20	0.473	2.130
395.10	0.204	0.441	400.30	0.479	2.178
395.20	0.208	0.462	400.40	0.486	2.226
395.30	0.213	0.483	400.50	0.492	2.275
395.40	0.218	0.504	400.60	0.498	2.325
395.50	0.222	0.526	400.70	0.505	2.375
395.60	0.227	0.549	400.80	0.511	2.425
395.70	0.232	0.572	400.90	0.518	2.477
395.80	0.236	0.595	401.00	0.524	2.529
395.90	0.241	0.619			
396.00	0.246	0.643			
396.10	0.251	0.668			
396.20	0.255	0.693			
396.30	0.260	0.719			
396.40	0.265	0.745			
396.50	0.269	0.772			
396.60	0.274	0.799			
396.70	0.279	0.827			
396.80	0.284	0.855			
396.90	0.289	0.884			
397.00	0.294	0.913			
397.10	0.299	0.943			

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Page 76

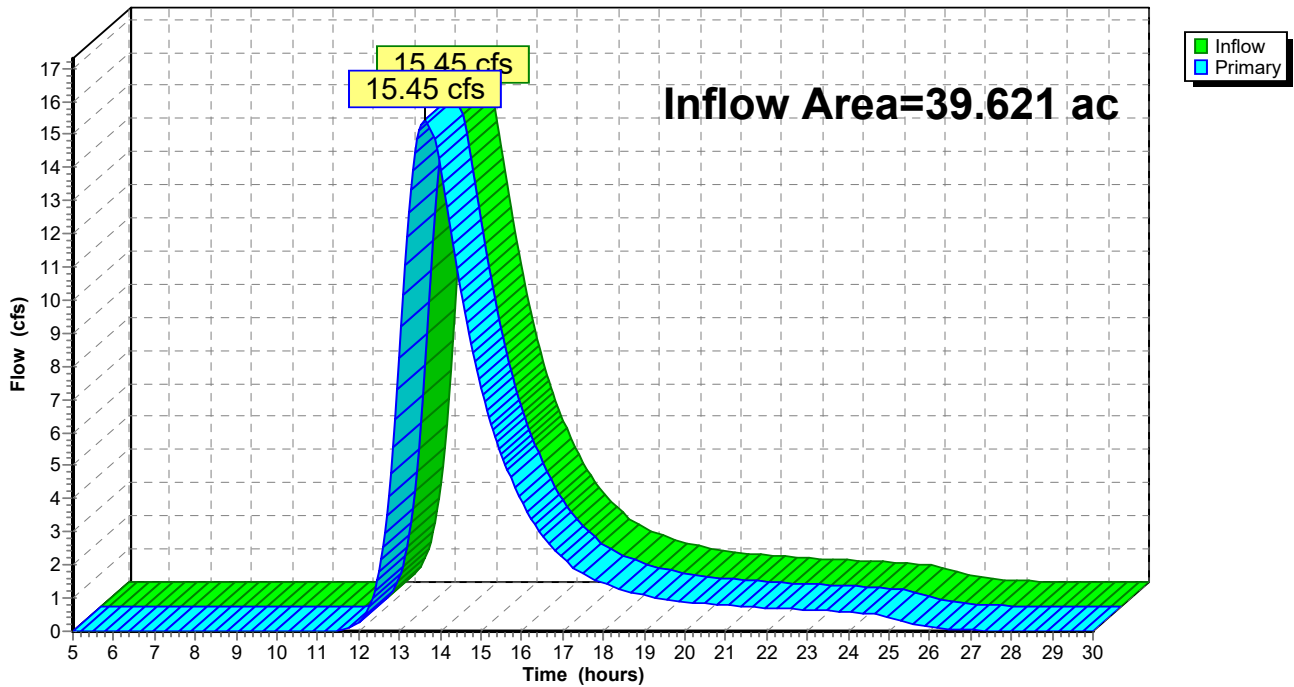
Summary for Link 2L: POA

Inflow Area = 39.621 ac, 0.76% Impervious, Inflow Depth = 1.07" for 10-Year event
Inflow = 15.45 cfs @ 13.65 hrs, Volume= 3.540 af
Primary = 15.45 cfs @ 13.65 hrs, Volume= 3.540 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Link 2L: POA

Hydrograph



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Page 77

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: DA-1

Runoff Area=14.812 ac 0.00% Impervious Runoff Depth=2.77"
Flow Length=1,900' Tc=105.2 min CN=61 Runoff=12.75 cfs 3.424 af

Subcatchment 3S: DA-1B

Runoff Area=9.053 ac 2.12% Impervious Runoff Depth=3.60"
Flow Length=1,487' Tc=69.3 min CN=69 Runoff=13.64 cfs 2.713 af

Subcatchment 4S: DA-1A

Runoff Area=15.756 ac 0.69% Impervious Runoff Depth=3.60"
Flow Length=1,518' Tc=69.9 min CN=69 Runoff=23.72 cfs 4.722 af

Reach 7R: (new Reach)

Avg. Flow Depth=0.29' Max Vel=0.79 fps Inflow=13.05 cfs 2.312 af
n=0.100 L=800.0' S=0.0200 '/' Capacity=140.87 cfs Outflow=12.60 cfs 2.312 af

Pond 5P: SWQ Basin #1

Peak Elev=407.17' Storage=0.583 af Inflow=13.64 cfs 2.713 af
Discarded=5.27 cfs 2.287 af Primary=3.63 cfs 0.426 af Outflow=8.90 cfs 2.713 af

Pond 6P: SWQ Basin #2

Peak Elev=396.89' Storage=0.880 af Inflow=24.90 cfs 5.148 af
Discarded=5.81 cfs 2.836 af Primary=13.05 cfs 2.312 af Outflow=18.86 cfs 5.148 af

Link 2L: POA

Inflow=24.90 cfs 5.737 af
Primary=24.90 cfs 5.737 af

Total Runoff Area = 39.621 ac Runoff Volume = 10.859 af Average Runoff Depth = 3.29"
99.24% Pervious = 39.321 ac 0.76% Impervious = 0.300 ac

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Page 78

Summary for Subcatchment 1S: DA-1

Runoff = 12.75 cfs @ 13.46 hrs, Volume= 3.424 af, Depth= 2.77"

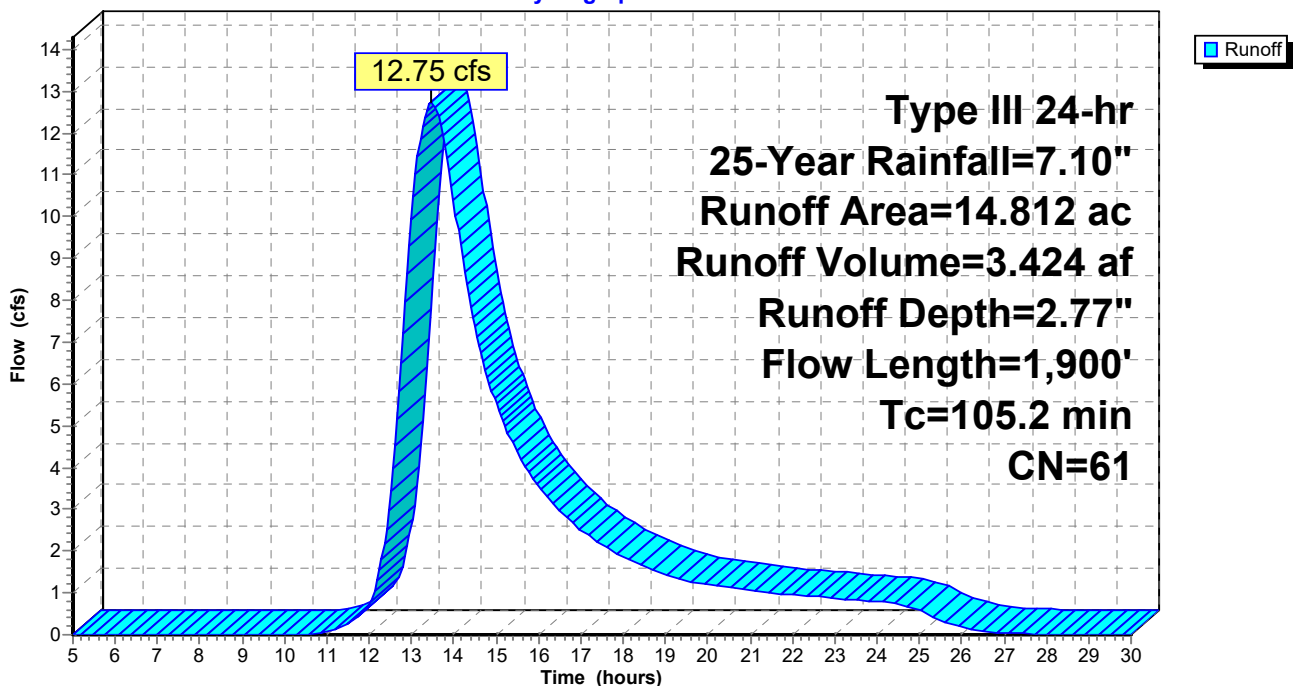
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Rainfall=7.10"

Area (ac)	CN	Description
3.912	30	Woods, Good, HSG A
1.830	55	Woods, Good, HSG B
1.643	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
0.367	58	Meadow, non-grazed, HSG B
0.195	71	Meadow, non-grazed, HSG C
14.812	61	Weighted Average
14.812		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

Subcatchment 1S: DA-1

Hydrograph



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Page 79

Summary for Subcatchment 3S: DA-1B

Runoff = 13.64 cfs @ 12.95 hrs, Volume= 2.713 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Rainfall=7.10"

Area (ac)	CN	Description
0.139	98	Roofs, HSG C
0.053	98	Paved parking, HSG C
0.072	96	Gravel surface, HSG C
0.180	61	>75% Grass cover, Good, HSG B
0.524	74	>75% Grass cover, Good, HSG C
0.123	30	Woods, Good, HSG A
0.665	55	Woods, Good, HSG B
1.527	70	Woods, Good, HSG C
0.263	58	Meadow, non-grazed, HSG B
5.507	71	Meadow, non-grazed, HSG C
9.053	69	Weighted Average
8.861		97.88% Pervious Area
0.192		2.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
16.4	760	0.0950	0.77		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
6.3	627	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.3	1,487	Total			

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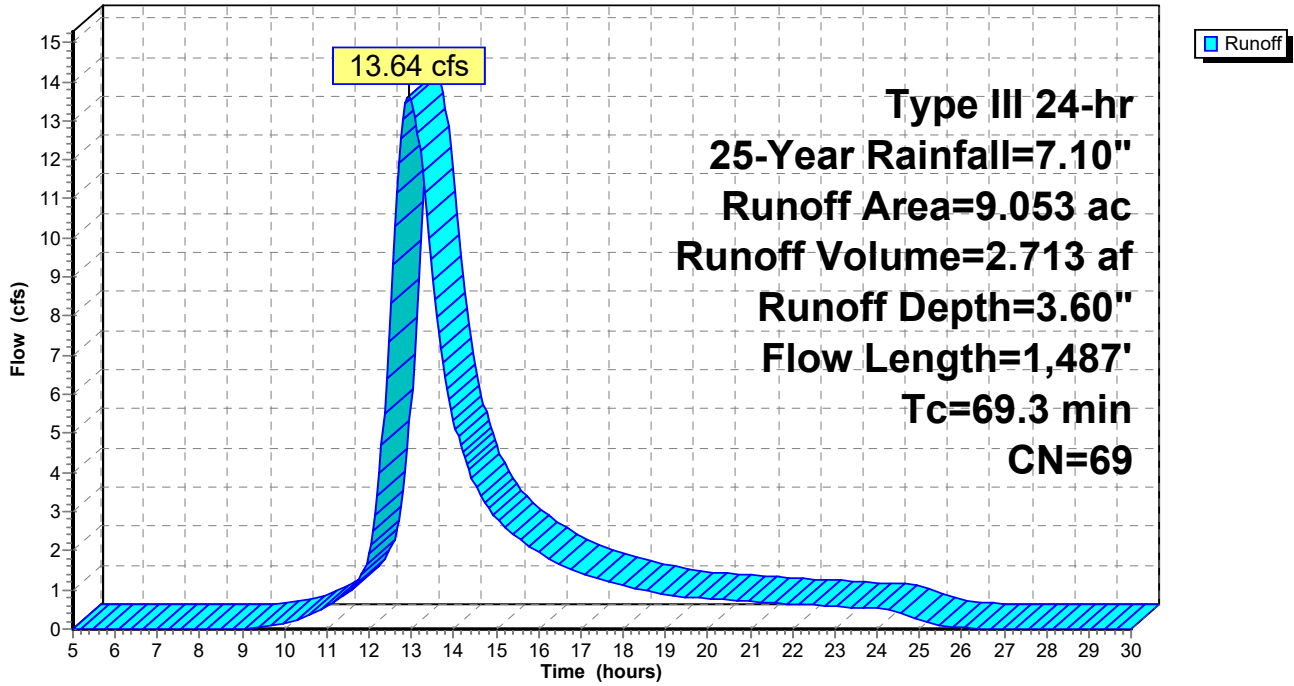
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Type III 24-hr 25-Year Rainfall=7.10"

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Page 80

Subcatchment 3S: DA-1B

Hydrograph



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Page 81

Summary for Subcatchment 4S: DA-1A

Runoff = 23.72 cfs @ 12.96 hrs, Volume= 4.722 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25-Year Rainfall=7.10"

Area (ac)	CN	Description
0.071	98	Roofs, HSG C
0.037	98	Paved parking, HSG C
0.586	74	>75% Grass cover, Good, HSG C
1.921	55	Woods, Good, HSG B
3.639	70	Woods, Good, HSG C
0.505	58	Meadow, non-grazed, HSG B
8.997	71	Meadow, non-grazed, HSG C
15.756	69	Weighted Average
15.648		99.31% Pervious Area
0.108		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
17.6	821	0.0970	0.78		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
5.7	597	0.0620	1.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.9	1,518	Total			

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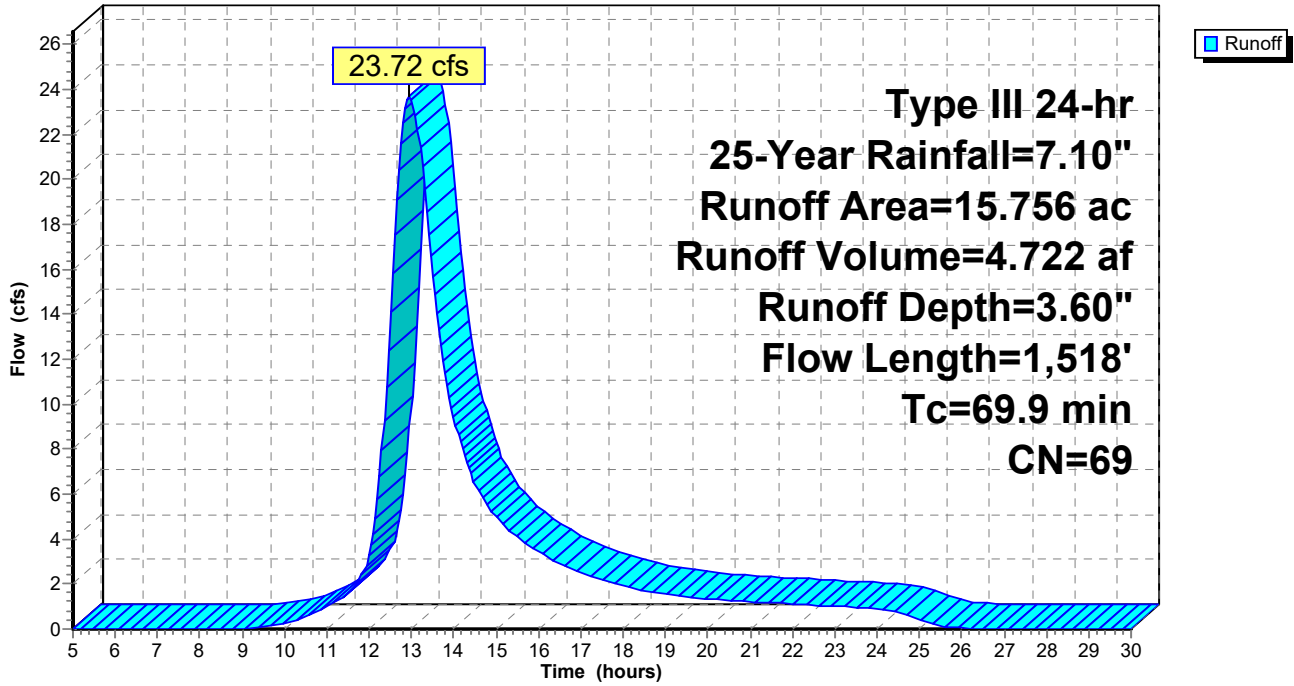
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Type III 24-hr 25-Year Rainfall=7.10"

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Page 82

Subcatchment 4S: DA-1A

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Type III 24-hr 25-Year Rainfall=7.10"

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Page 83

Summary for Reach 7R: (new Reach)

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 1.12" for 25-Year event
Inflow = 13.05 cfs @ 13.53 hrs, Volume= 2.312 af
Outflow = 12.60 cfs @ 13.74 hrs, Volume= 2.312 af, Atten= 3%, Lag= 13.1 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.79 fps, Min. Travel Time= 16.9 min
Avg. Velocity = 0.24 fps, Avg. Travel Time= 56.2 min

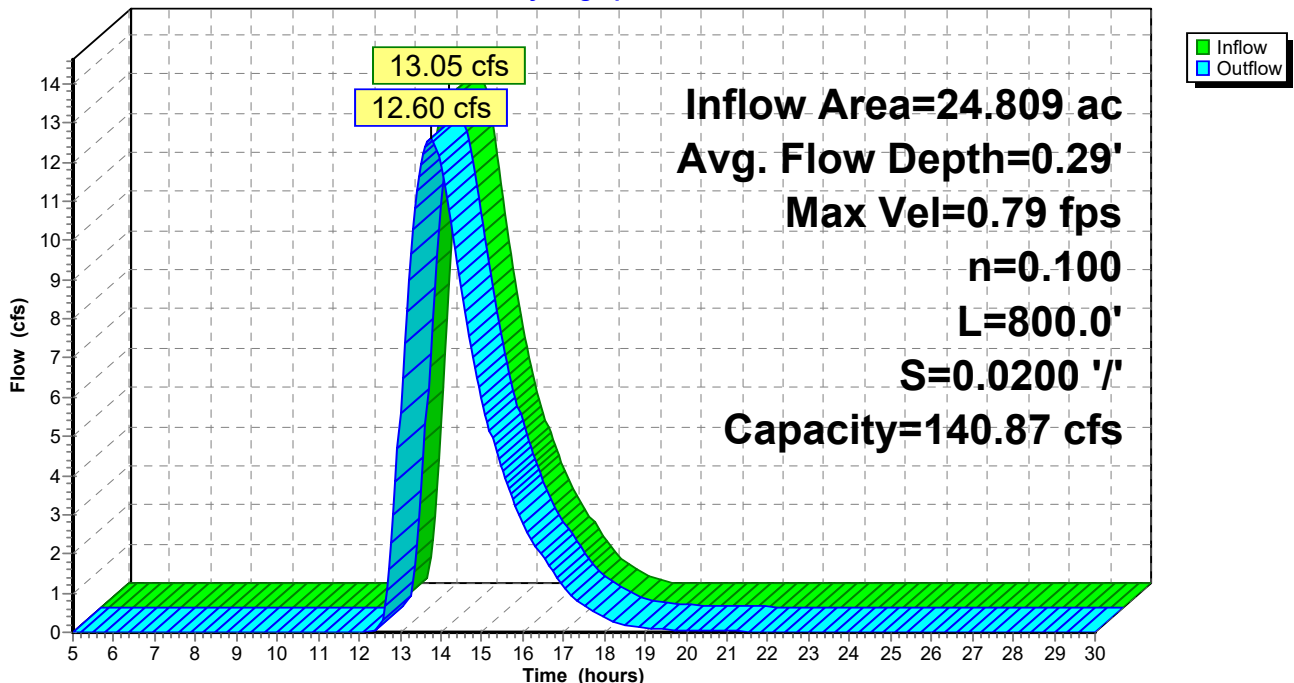
Peak Storage= 12,762 cf @ 13.74 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.00' Flow Area= 90.0 sf, Capacity= 140.87 cfs

40.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 50.0 '/ Top Width= 140.00'
Length= 800.0' Slope= 0.0200 '/
Inlet Invert= 380.00', Outlet Invert= 364.00'



Reach 7R: (new Reach)

Hydrograph



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Type III 24-hr 25-Year Rainfall=7.10"

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Page 84

Stage-Discharge for Reach 7R: (new Reach)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
380.00	0.00	0.00	380.52	1.09	37.37
380.01	0.10	0.04	380.53	1.10	38.79
380.02	0.15	0.12	380.54	1.11	40.23
380.03	0.20	0.25	380.55	1.12	41.70
380.04	0.24	0.40	380.56	1.13	43.20
380.05	0.27	0.58	380.57	1.15	44.73
380.06	0.31	0.79	380.58	1.16	46.29
380.07	0.34	1.03	380.59	1.17	47.88
380.08	0.37	1.30	380.60	1.18	49.50
380.09	0.40	1.59	380.61	1.19	51.15
380.10	0.42	1.90	380.62	1.20	52.83
380.11	0.45	2.24	380.63	1.21	54.54
380.12	0.47	2.60	380.64	1.22	56.28
380.13	0.49	2.99	380.65	1.23	58.05
380.14	0.52	3.40	380.66	1.24	59.85
380.15	0.54	3.83	380.67	1.25	61.68
380.16	0.56	4.29	380.68	1.26	63.55
380.17	0.58	4.77	380.69	1.27	65.45
380.18	0.60	5.28	380.70	1.28	67.38
380.19	0.62	5.81	380.71	1.29	69.34
380.20	0.64	6.36	380.72	1.30	71.33
380.21	0.65	6.94	380.73	1.31	73.35
380.22	0.67	7.54	380.74	1.32	75.41
380.23	0.69	8.17	380.75	1.33	77.50
380.24	0.71	8.82	380.76	1.34	79.62
380.25	0.72	9.49	380.77	1.35	81.78
380.26	0.74	10.19	380.78	1.36	83.97
380.27	0.76	10.91	380.79	1.37	86.19
380.28	0.77	11.66	380.80	1.38	88.45
380.29	0.79	12.43	380.81	1.39	90.73
380.30	0.80	13.23	380.82	1.40	93.06
380.31	0.82	14.05	380.83	1.41	95.42
380.32	0.83	14.90	380.84	1.42	97.81
380.33	0.85	15.77	380.85	1.43	100.23
380.34	0.86	16.67	380.86	1.44	102.69
380.35	0.87	17.59	380.87	1.45	105.19
380.36	0.89	18.54	380.88	1.46	107.72
380.37	0.90	19.52	380.89	1.47	110.28
380.38	0.92	20.52	380.90	1.48	112.88
380.39	0.93	21.55	380.91	1.48	115.52
380.40	0.94	22.60	380.92	1.49	118.19
380.41	0.95	23.68	380.93	1.50	120.90
380.42	0.97	24.79	380.94	1.51	123.64
380.43	0.98	25.92	380.95	1.52	126.42
380.44	0.99	27.08	380.96	1.53	129.24
380.45	1.01	28.27	380.97	1.54	132.09
380.46	1.02	29.49	380.98	1.55	134.98
380.47	1.03	30.73	380.99	1.56	137.90
380.48	1.04	32.00	381.00	1.57	140.87
380.49	1.05	33.30			
380.50	1.07	34.63			
380.51	1.08	35.99			

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Page 85

Stage-Area-Storage for Reach 7R: (new Reach)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
380.00	0.0	0	380.52	34.3	27,456
380.01	0.4	324	380.53	35.2	28,196
380.02	0.8	656	380.54	36.2	28,944
380.03	1.2	996	380.55	37.1	29,700
380.04	1.7	1,344	380.56	38.1	30,464
380.05	2.1	1,700	380.57	39.0	31,236
380.06	2.6	2,064	380.58	40.0	32,016
380.07	3.0	2,436	380.59	41.0	32,804
380.08	3.5	2,816	380.60	42.0	33,600
380.09	4.0	3,204	380.61	43.0	34,404
380.10	4.5	3,600	380.62	44.0	35,216
380.11	5.0	4,004	380.63	45.0	36,036
380.12	5.5	4,416	380.64	46.1	36,864
380.13	6.0	4,836	380.65	47.1	37,700
380.14	6.6	5,264	380.66	48.2	38,544
380.15	7.1	5,700	380.67	49.2	39,396
380.16	7.7	6,144	380.68	50.3	40,256
380.17	8.2	6,596	380.69	51.4	41,124
380.18	8.8	7,056	380.70	52.5	42,000
380.19	9.4	7,524	380.71	53.6	42,884
380.20	10.0	8,000	380.72	54.7	43,776
380.21	10.6	8,484	380.73	55.8	44,676
380.22	11.2	8,976	380.74	57.0	45,584
380.23	11.8	9,476	380.75	58.1	46,500
380.24	12.5	9,984	380.76	59.3	47,424
380.25	13.1	10,500	380.77	60.4	48,356
380.26	13.8	11,024	380.78	61.6	49,296
380.27	14.4	11,556	380.79	62.8	50,244
380.28	15.1	12,096	380.80	64.0	51,200
380.29	15.8	12,644	380.81	65.2	52,164
380.30	16.5	13,200	380.82	66.4	53,136
380.31	17.2	13,764	380.83	67.6	54,116
380.32	17.9	14,336	380.84	68.9	55,104
380.33	18.6	14,916	380.85	70.1	56,100
380.34	19.4	15,504	380.86	71.4	57,104
380.35	20.1	16,100	380.87	72.6	58,116
380.36	20.9	16,704	380.88	73.9	59,136
380.37	21.6	17,316	380.89	75.2	60,164
380.38	22.4	17,936	380.90	76.5	61,200
380.39	23.2	18,564	380.91	77.8	62,244
380.40	24.0	19,200	380.92	79.1	63,296
380.41	24.8	19,844	380.93	80.4	64,356
380.42	25.6	20,496	380.94	81.8	65,424
380.43	26.4	21,156	380.95	83.1	66,500
380.44	27.3	21,824	380.96	84.5	67,584
380.45	28.1	22,500	380.97	85.8	68,676
380.46	29.0	23,184	380.98	87.2	69,776
380.47	29.8	23,876	380.99	88.6	70,884
380.48	30.7	24,576	381.00	90.0	72,000
380.49	31.6	25,284			
380.50	32.5	26,000			
380.51	33.4	26,724			

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Page 86

Summary for Pond 5P: SWQ Basin #1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)

Inflow Area = 9.053 ac, 2.12% Impervious, Inflow Depth = 3.60" for 25-Year event
 Inflow = 13.64 cfs @ 12.95 hrs, Volume= 2.713 af
 Outflow = 8.90 cfs @ 13.51 hrs, Volume= 2.713 af, Atten= 35%, Lag= 33.4 min
 Discarded = 5.27 cfs @ 13.51 hrs, Volume= 2.287 af
 Primary = 3.63 cfs @ 13.51 hrs, Volume= 0.426 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 407.17' @ 13.51 hrs Surf.Area= 0.261 ac Storage= 0.583 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 33.1 min (924.1 - 891.1)

Volume	Invert	Avail.Storage	Storage Description			
#1	404.00'	1.013 af	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
404.00	0.111	566.0	0.000	0.000	0.111	
406.00	0.205	610.0	0.311	0.311	0.209	
408.00	0.306	653.0	0.508	0.819	0.313	
408.50	0.477	706.0	0.194	1.013	0.444	

Device	Routing	Invert	Outlet Devices	
#1	Discarded	404.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	407.00'	20.5" x 38.0" Horiz. CL-Top C= 0.600 Limited to weir flow at low heads	
#3	Primary	404.50'	6.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=5.27 cfs @ 13.51 hrs HW=407.17' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 5.27 cfs)

Primary OutFlow Max=3.62 cfs @ 13.51 hrs HW=407.17' TW=396.88' (Dynamic Tailwater)

↳ **2=CL-Top** (Weir Controls 2.15 cfs @ 1.33 fps)

↳ **3=Orifice/Grate** (Orifice Controls 1.47 cfs @ 7.48 fps)

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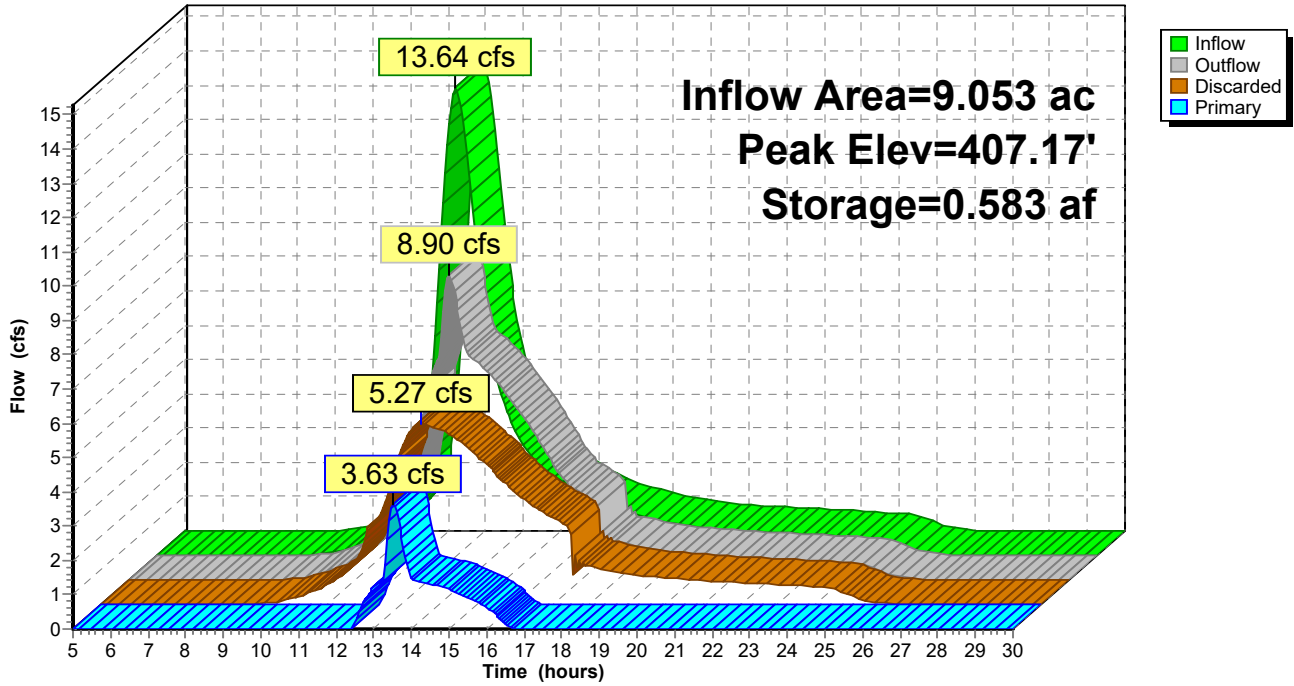
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Page 87

Pond 5P: SWQ Basin #1

Hydrograph



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Page 88

Stage-Discharge for Pond 5P: SWQ Basin #1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
404.00	0.00	0.00	0.00	406.60	5.99	4.70	1.29
404.05	2.28	2.28	0.00	406.65	6.05	4.75	1.30
404.10	2.32	2.32	0.00	406.70	6.12	4.80	1.32
404.15	2.36	2.36	0.00	406.75	6.19	4.85	1.34
404.20	2.40	2.40	0.00	406.80	6.25	4.90	1.35
404.25	2.44	2.44	0.00	406.85	6.32	4.95	1.37
404.30	2.49	2.49	0.00	406.90	6.39	5.00	1.39
404.35	2.53	2.53	0.00	406.95	6.45	5.05	1.40
404.40	2.57	2.57	0.00	407.00	6.52	5.10	1.42
404.45	2.61	2.61	0.00	407.05	6.94	5.15	1.79
404.50	2.66	2.66	0.00	407.10	7.66	5.20	2.46
404.55	2.71	2.70	0.01	407.15	8.57	5.26	3.32
404.60	2.78	2.75	0.03	407.20	9.64	5.31	4.33
404.65	2.86	2.79	0.07	407.25	10.84	5.36	5.48
404.70	2.95	2.84	0.11	407.30	12.16	5.41	6.75
404.75	3.05	2.88	0.17	407.35	13.59	5.46	8.13
404.80	3.16	2.93	0.23	407.40	15.12	5.52	9.60
404.85	3.27	2.97	0.30	407.45	16.75	5.57	11.18
404.90	3.38	3.02	0.36	407.50	18.46	5.62	12.84
404.95	3.49	3.07	0.43	407.55	20.26	5.68	14.59
405.00	3.59	3.11	0.47	407.60	22.14	5.73	16.41
405.05	3.68	3.16	0.52	407.65	24.10	5.79	18.32
405.10	3.77	3.21	0.56	407.70	26.14	5.84	20.30
405.15	3.86	3.26	0.60	407.75	28.24	5.89	22.35
405.20	3.94	3.31	0.63	407.80	30.41	5.95	24.46
405.25	4.02	3.36	0.67	407.85	31.68	6.00	25.68
405.30	4.11	3.41	0.70	407.90	32.45	6.06	26.39
405.35	4.19	3.45	0.73	407.95	33.19	6.12	27.08
405.40	4.27	3.50	0.76	408.00	33.92	6.17	27.75
405.45	4.35	3.56	0.79	408.05	34.89	6.48	28.41
405.50	4.42	3.61	0.82	408.10	35.85	6.80	29.05
405.55	4.50	3.66	0.85	408.15	36.80	7.13	29.68
405.60	4.58	3.71	0.87	408.20	37.75	7.46	30.29
405.65	4.66	3.76	0.90	408.25	38.69	7.80	30.89
405.70	4.73	3.81	0.92	408.30	39.63	8.15	31.48
405.75	4.81	3.87	0.95	408.35	40.56	8.50	32.06
405.80	4.89	3.92	0.97	408.40	41.50	8.87	32.63
405.85	4.96	3.97	0.99	408.45	42.42	9.24	33.18
405.90	5.04	4.03	1.01	408.50	43.35	9.62	33.73
405.95	5.12	4.08	1.04				
406.00	5.19	4.13	1.06				
406.05	5.26	4.18	1.08				
406.10	5.32	4.23	1.10				
406.15	5.39	4.27	1.12				
406.20	5.46	4.32	1.14				
406.25	5.52	4.37	1.16				
406.30	5.59	4.41	1.18				
406.35	5.66	4.46	1.20				
406.40	5.72	4.51	1.21				
406.45	5.79	4.56	1.23				
406.50	5.86	4.61	1.25				
406.55	5.92	4.65	1.27				

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Printed 9/3/2020

Page 89

Stage-Area-Storage for Pond 5P: SWQ Basin #1

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
404.00	0.111	0.000	406.60	0.233	0.443
404.05	0.113	0.006	406.65	0.236	0.454
404.10	0.115	0.011	406.70	0.238	0.466
404.15	0.117	0.017	406.75	0.241	0.478
404.20	0.119	0.023	406.80	0.243	0.490
404.25	0.121	0.029	406.85	0.245	0.502
404.30	0.123	0.035	406.90	0.248	0.515
404.35	0.125	0.041	406.95	0.250	0.527
404.40	0.128	0.048	407.00	0.253	0.540
404.45	0.130	0.054	407.05	0.256	0.553
404.50	0.132	0.061	407.10	0.258	0.565
404.55	0.134	0.067	407.15	0.261	0.578
404.60	0.136	0.074	407.20	0.263	0.591
404.65	0.138	0.081	407.25	0.266	0.605
404.70	0.141	0.088	407.30	0.268	0.618
404.75	0.143	0.095	407.35	0.271	0.631
404.80	0.145	0.102	407.40	0.274	0.645
404.85	0.147	0.109	407.45	0.276	0.659
404.90	0.150	0.117	407.50	0.279	0.673
404.95	0.152	0.124	407.55	0.282	0.687
405.00	0.154	0.132	407.60	0.284	0.701
405.05	0.157	0.140	407.65	0.287	0.715
405.10	0.159	0.148	407.70	0.290	0.730
405.15	0.162	0.156	407.75	0.292	0.744
405.20	0.164	0.164	407.80	0.295	0.759
405.25	0.166	0.172	407.85	0.298	0.774
405.30	0.169	0.181	407.90	0.300	0.789
405.35	0.171	0.189	407.95	0.303	0.804
405.40	0.174	0.198	408.00	0.306	0.819
405.45	0.176	0.206	408.05	0.321	0.835
405.50	0.179	0.215	408.10	0.337	0.851
405.55	0.181	0.224	408.15	0.353	0.868
405.60	0.184	0.233	408.20	0.370	0.886
405.65	0.186	0.243	408.25	0.387	0.905
405.70	0.189	0.252	408.30	0.404	0.925
405.75	0.192	0.262	408.35	0.422	0.946
405.80	0.194	0.271	408.40	0.440	0.967
405.85	0.197	0.281	408.45	0.458	0.990
405.90	0.200	0.291	408.50	0.477	1.013
405.95	0.202	0.301			
406.00	0.205	0.311			
406.05	0.207	0.322			
406.10	0.210	0.332			
406.15	0.212	0.342			
406.20	0.214	0.353			
406.25	0.217	0.364			
406.30	0.219	0.375			
406.35	0.221	0.386			
406.40	0.224	0.397			
406.45	0.226	0.408			
406.50	0.228	0.420			
406.55	0.231	0.431			

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Page 90

Summary for Pond 6P: SWQ Basin #2

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 2.49" for 25-Year event
 Inflow = 24.90 cfs @ 12.97 hrs, Volume= 5.148 af
 Outflow = 18.86 cfs @ 13.53 hrs, Volume= 5.148 af, Atten= 24%, Lag= 33.5 min
 Discarded = 5.81 cfs @ 13.53 hrs, Volume= 2.836 af
 Primary = 13.05 cfs @ 13.53 hrs, Volume= 2.312 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 396.89' @ 13.53 hrs Surf.Area= 0.288 ac Storage= 0.880 af

Plug-Flow detention time= 27.9 min calculated for 5.138 af (100% of inflow)
 Center-of-Mass det. time= 27.9 min (916.2 - 888.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	392.00'	2.529 af	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
392.00	0.088	313.0	0.000	0.000	0.088
394.00	0.158	408.0	0.243	0.243	0.214
396.00	0.246	503.0	0.401	0.643	0.374
398.00	0.346	588.0	0.589	1.233	0.545
400.00	0.461	674.0	0.804	2.037	0.745
401.00	0.524	699.0	0.492	2.529	0.810

Device	Routing	Invert	Outlet Devices	
#1	Discarded	392.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	399.50'	20.5" x 38.0" Horiz. Top Grate C= 0.600 Limited to weir flow at low heads	
#3	Primary	392.80'	6.0" W x 46.0" H Vert. Weir C= 0.600	

Discarded OutFlow Max=5.81 cfs @ 13.53 hrs HW=396.88' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 5.81 cfs)

Primary OutFlow Max=13.05 cfs @ 13.53 hrs HW=396.88' TW=380.29' (Dynamic Tailwater)

↑ **2=Top Grate** (Controls 0.00 cfs)

↑ **3=Weir** (Orifice Controls 13.05 cfs @ 6.81 fps)

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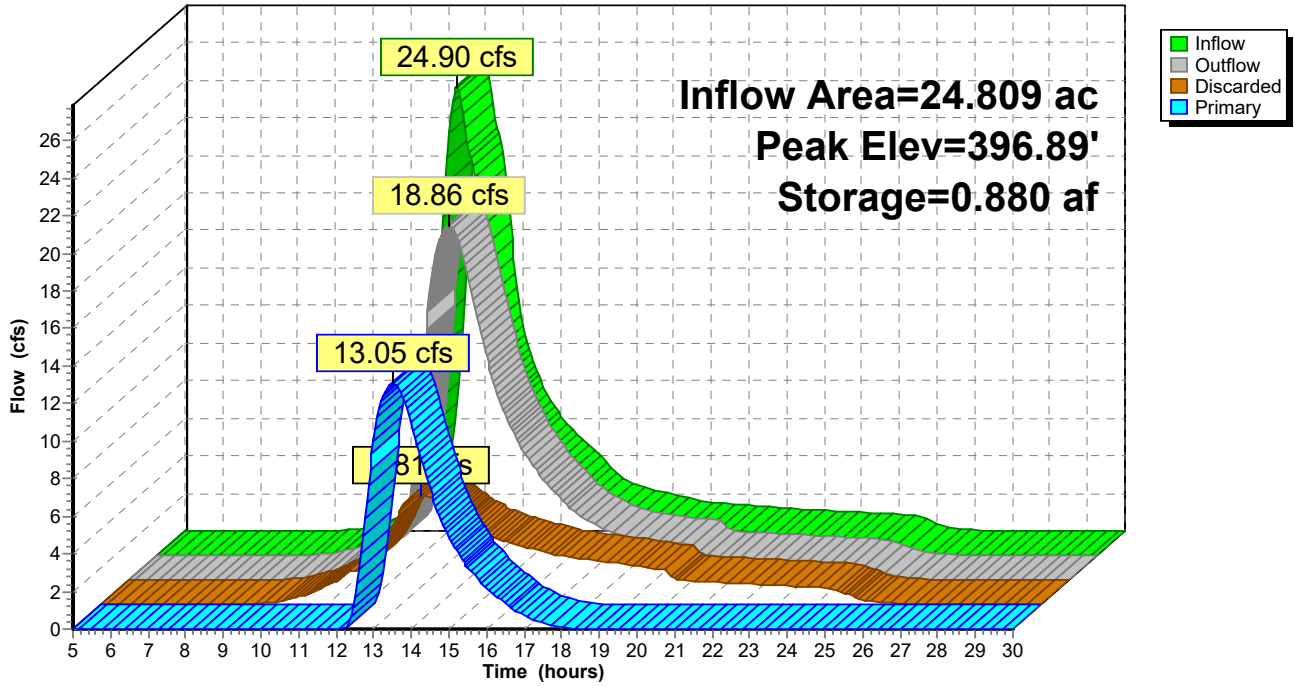
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Page 91

Pond 6P: SWQ Basin #2

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Page 92

Stage-Discharge for Pond 6P: SWQ Basin #2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
392.00	0.00	0.00	0.00	397.20	20.26	6.13	14.13
392.10	1.84	1.84	0.00	397.30	20.68	6.23	14.45
392.20	1.90	1.90	0.00	397.40	21.09	6.34	14.76
392.30	1.96	1.96	0.00	397.50	21.50	6.44	15.06
392.40	2.02	2.02	0.00	397.60	21.90	6.55	15.35
392.50	2.09	2.09	0.00	397.70	22.29	6.65	15.64
392.60	2.16	2.16	0.00	397.80	22.68	6.76	15.92
392.70	2.22	2.22	0.00	397.90	23.07	6.87	16.20
392.80	2.29	2.29	0.00	398.00	23.45	6.98	16.47
392.90	2.41	2.36	0.05	398.10	23.82	7.09	16.73
393.00	2.57	2.43	0.14	398.20	24.19	7.19	16.99
393.10	2.76	2.50	0.26	398.30	24.55	7.30	17.25
393.20	2.98	2.57	0.41	398.40	24.92	7.41	17.50
393.30	3.21	2.65	0.57	398.50	25.27	7.53	17.75
393.40	3.47	2.72	0.75	398.60	25.63	7.64	17.99
393.50	3.73	2.79	0.94	398.70	25.98	7.75	18.23
393.60	4.02	2.87	1.15	398.80	26.34	7.87	18.47
393.70	4.32	2.95	1.37	398.90	26.68	7.98	18.70
393.80	4.63	3.03	1.60	399.00	27.03	8.10	18.93
393.90	4.96	3.11	1.85	399.10	27.37	8.21	19.16
394.00	5.30	3.19	2.11	399.20	27.72	8.33	19.39
394.10	5.64	3.27	2.38	399.30	28.06	8.45	19.61
394.20	6.00	3.35	2.66	399.40	28.39	8.57	19.83
394.30	6.38	3.43	2.95	399.50	28.73	8.69	20.04
394.40	6.76	3.51	3.25	399.60	30.07	8.81	21.27
394.50	7.15	3.59	3.56	399.70	32.25	8.93	23.32
394.60	7.55	3.68	3.88	399.80	34.97	9.05	25.92
394.70	7.97	3.76	4.20	399.90	38.13	9.17	28.95
394.80	8.39	3.85	4.54	400.00	41.66	9.30	32.37
394.90	8.82	3.94	4.88	400.10	45.53	9.42	36.11
395.00	9.26	4.02	5.24	400.20	49.71	9.54	40.17
395.10	9.71	4.11	5.60	400.30	54.18	9.67	44.51
395.20	10.17	4.20	5.97	400.40	56.40	9.80	46.61
395.30	10.64	4.30	6.34	400.50	58.06	9.92	48.14
395.40	11.12	4.39	6.73	400.60	59.65	10.05	49.60
395.50	11.60	4.48	7.12	400.70	61.19	10.18	51.01
395.60	12.09	4.57	7.52	400.80	62.67	10.31	52.37
395.70	12.60	4.67	7.93	400.90	64.11	10.44	53.67
395.80	13.11	4.77	8.34	401.00	65.51	10.57	54.94
395.90	13.62	4.86	8.76				
396.00	14.15	4.96	9.19				
396.10	14.68	5.05	9.62				
396.20	15.21	5.15	10.06				
396.30	15.75	5.24	10.51				
396.40	16.30	5.34	10.96				
396.50	16.86	5.43	11.42				
396.60	17.42	5.53	11.89				
396.70	17.96	5.63	12.33				
396.80	18.46	5.73	12.73				
396.90	18.93	5.83	13.10				
397.00	19.38	5.93	13.46				
397.10	19.83	6.03	13.80				

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Page 93

Stage-Area-Storage for Pond 6P: SWQ Basin #2

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
392.00	0.088	0.000	397.20	0.304	0.973
392.10	0.091	0.009	397.30	0.309	1.003
392.20	0.094	0.018	397.40	0.314	1.035
392.30	0.097	0.028	397.50	0.319	1.066
392.40	0.100	0.038	397.60	0.325	1.098
392.50	0.104	0.048	397.70	0.330	1.131
392.60	0.107	0.058	397.80	0.335	1.164
392.70	0.110	0.069	397.90	0.341	1.198
392.80	0.114	0.080	398.00	0.346	1.233
392.90	0.117	0.092	398.10	0.351	1.267
393.00	0.120	0.104	398.20	0.357	1.303
393.10	0.124	0.116	398.30	0.362	1.339
393.20	0.128	0.129	398.40	0.368	1.375
393.30	0.131	0.142	398.50	0.373	1.412
393.40	0.135	0.155	398.60	0.379	1.450
393.50	0.139	0.169	398.70	0.384	1.488
393.60	0.142	0.183	398.80	0.390	1.527
393.70	0.146	0.197	398.90	0.396	1.566
393.80	0.150	0.212	399.00	0.401	1.606
393.90	0.154	0.227	399.10	0.407	1.646
394.00	0.158	0.243	399.20	0.413	1.687
394.10	0.162	0.259	399.30	0.419	1.729
394.20	0.166	0.275	399.40	0.425	1.771
394.30	0.170	0.292	399.50	0.431	1.814
394.40	0.174	0.309	399.60	0.437	1.857
394.50	0.178	0.327	399.70	0.443	1.901
394.60	0.182	0.345	399.80	0.449	1.946
394.70	0.187	0.363	399.90	0.455	1.991
394.80	0.191	0.382	400.00	0.461	2.037
394.90	0.195	0.401	400.10	0.467	2.083
395.00	0.200	0.421	400.20	0.473	2.130
395.10	0.204	0.441	400.30	0.479	2.178
395.20	0.208	0.462	400.40	0.486	2.226
395.30	0.213	0.483	400.50	0.492	2.275
395.40	0.218	0.504	400.60	0.498	2.325
395.50	0.222	0.526	400.70	0.505	2.375
395.60	0.227	0.549	400.80	0.511	2.425
395.70	0.232	0.572	400.90	0.518	2.477
395.80	0.236	0.595	401.00	0.524	2.529
395.90	0.241	0.619			
396.00	0.246	0.643			
396.10	0.251	0.668			
396.20	0.255	0.693			
396.30	0.260	0.719			
396.40	0.265	0.745			
396.50	0.269	0.772			
396.60	0.274	0.799			
396.70	0.279	0.827			
396.80	0.284	0.855			
396.90	0.289	0.884			
397.00	0.294	0.913			
397.10	0.299	0.943			

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Page 94

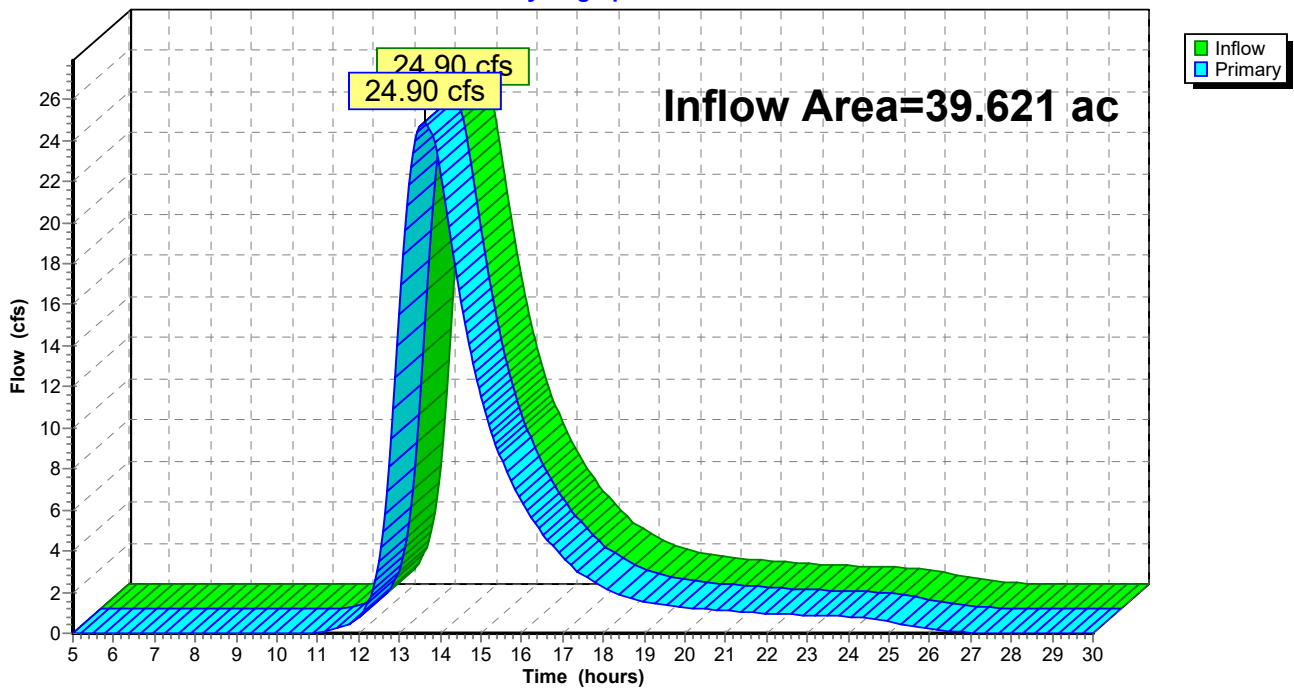
Summary for Link 2L: POA

Inflow Area = 39.621 ac, 0.76% Impervious, Inflow Depth = 1.74" for 25-Year event
Inflow = 24.90 cfs @ 13.62 hrs, Volume= 5.737 af
Primary = 24.90 cfs @ 13.62 hrs, Volume= 5.737 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Link 2L: POA

Hydrograph



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Page 95

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: DA-1

Runoff Area=14.812 ac 0.00% Impervious Runoff Depth=3.51"
Flow Length=1,900' Tc=105.2 min CN=61 Runoff=16.36 cfs 4.327 af

Subcatchment 3S: DA-1B

Runoff Area=9.053 ac 2.12% Impervious Runoff Depth=4.42"
Flow Length=1,487' Tc=69.3 min CN=69 Runoff=16.82 cfs 3.333 af

Subcatchment 4S: DA-1A

Runoff Area=15.756 ac 0.69% Impervious Runoff Depth=4.42"
Flow Length=1,518' Tc=69.9 min CN=69 Runoff=29.25 cfs 5.800 af

Reach 7R: (new Reach)

Avg. Flow Depth=0.34' Max Vel=0.86 fps Inflow=16.77 cfs 3.236 af
n=0.100 L=800.0' S=0.0200 '/' Capacity=140.87 cfs Outflow=16.37 cfs 3.236 af

Pond 5P: SWQ Basin #1

Peak Elev=407.36' Storage=0.634 af Inflow=16.82 cfs 3.333 af
Discarded=5.47 cfs 2.584 af Primary=8.40 cfs 0.749 af Outflow=13.87 cfs 3.333 af

Pond 6P: SWQ Basin #2

Peak Elev=398.12' Storage=1.273 af Inflow=34.16 cfs 6.549 af
Discarded=7.10 cfs 3.313 af Primary=16.77 cfs 3.236 af Outflow=23.88 cfs 6.549 af

Link 2L: POA

Inflow=32.01 cfs 7.563 af
Primary=32.01 cfs 7.563 af

Total Runoff Area = 39.621 ac Runoff Volume = 13.461 af Average Runoff Depth = 4.08"
99.24% Pervious = 39.321 ac 0.76% Impervious = 0.300 ac

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Page 96

Summary for Subcatchment 1S: DA-1

Runoff = 16.36 cfs @ 13.45 hrs, Volume= 4.327 af, Depth= 3.51"

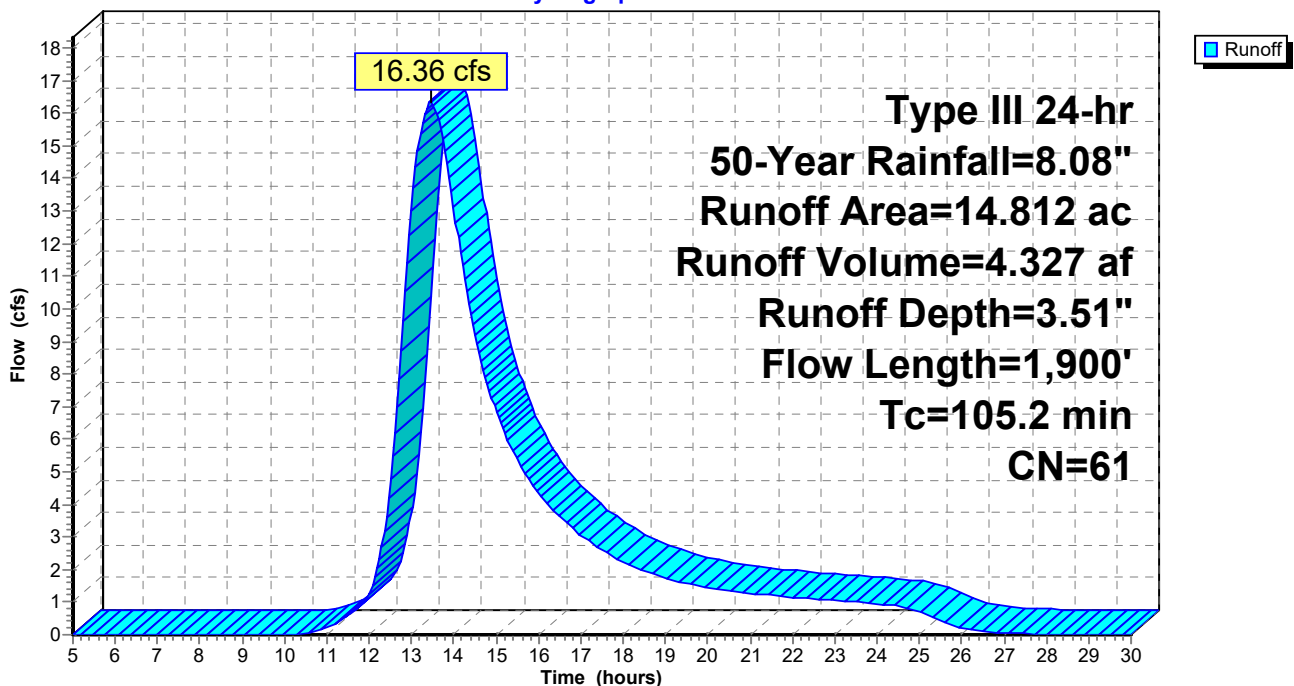
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-Year Rainfall=8.08"

Area (ac)	CN	Description
3.912	30	Woods, Good, HSG A
1.830	55	Woods, Good, HSG B
1.643	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
0.367	58	Meadow, non-grazed, HSG B
0.195	71	Meadow, non-grazed, HSG C
14.812	61	Weighted Average
14.812		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

Subcatchment 1S: DA-1

Hydrograph



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Page 97

Summary for Subcatchment 3S: DA-1B

Runoff = 16.82 cfs @ 12.94 hrs, Volume= 3.333 af, Depth= 4.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 50-Year Rainfall=8.08"

Area (ac)	CN	Description
0.139	98	Roofs, HSG C
0.053	98	Paved parking, HSG C
0.072	96	Gravel surface, HSG C
0.180	61	>75% Grass cover, Good, HSG B
0.524	74	>75% Grass cover, Good, HSG C
0.123	30	Woods, Good, HSG A
0.665	55	Woods, Good, HSG B
1.527	70	Woods, Good, HSG C
0.263	58	Meadow, non-grazed, HSG B
5.507	71	Meadow, non-grazed, HSG C
9.053	69	Weighted Average
8.861		97.88% Pervious Area
0.192		2.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
16.4	760	0.0950	0.77		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
6.3	627	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.3	1,487	Total			

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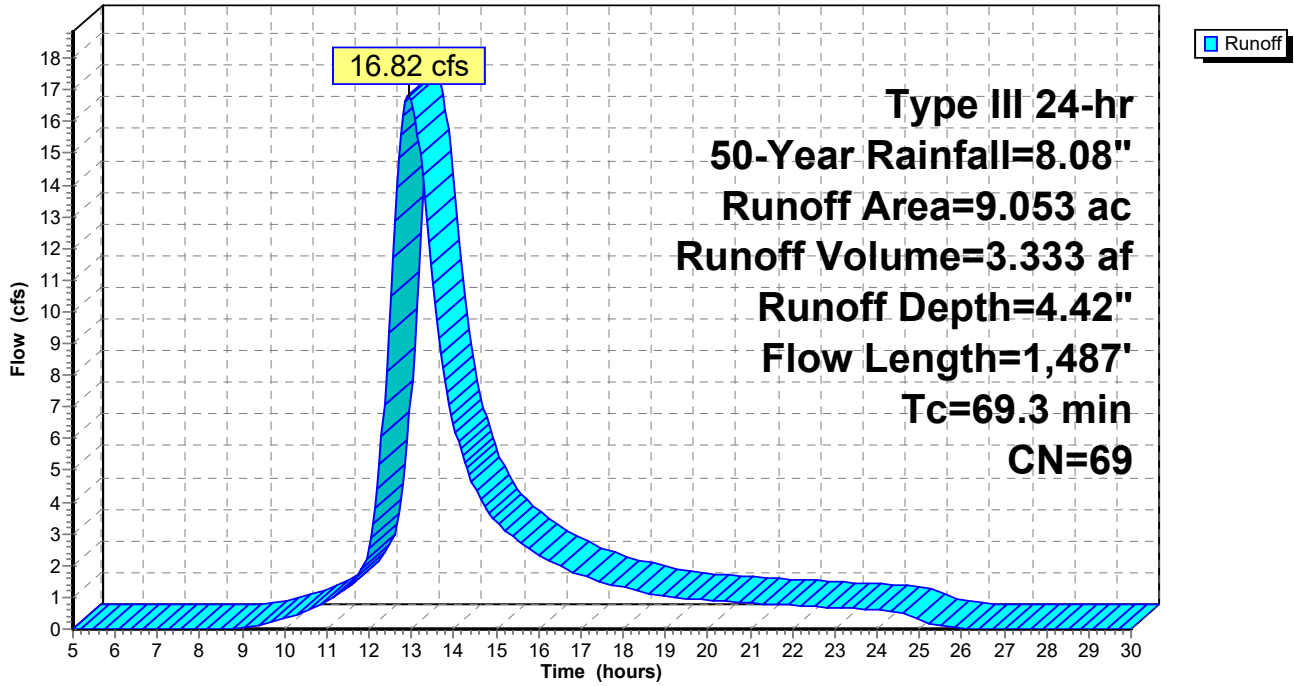
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Page 98

Subcatchment 3S: DA-1B

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Page 99

Summary for Subcatchment 4S: DA-1A

Runoff = 29.25 cfs @ 12.95 hrs, Volume= 5.800 af, Depth= 4.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=8.08"

Area (ac)	CN	Description
0.071	98	Roofs, HSG C
0.037	98	Paved parking, HSG C
0.586	74	>75% Grass cover, Good, HSG C
1.921	55	Woods, Good, HSG B
3.639	70	Woods, Good, HSG C
0.505	58	Meadow, non-grazed, HSG B
8.997	71	Meadow, non-grazed, HSG C
15.756	69	Weighted Average
15.648		99.31% Pervious Area
0.108		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
17.6	821	0.0970	0.78		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
5.7	597	0.0620	1.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.9	1,518	Total			

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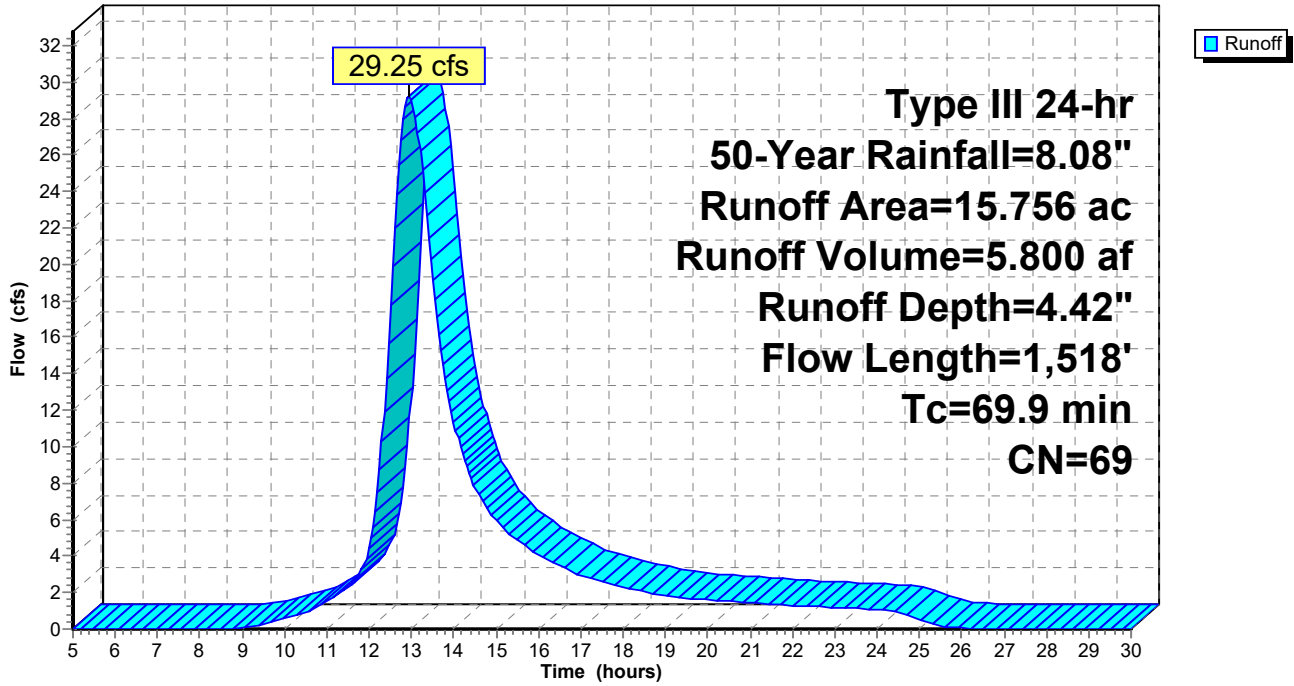
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Page 100

Subcatchment 4S: DA-1A

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Page 101

Summary for Reach 7R: (new Reach)

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 1.57" for 50-Year event
Inflow = 16.77 cfs @ 13.56 hrs, Volume= 3.236 af
Outflow = 16.37 cfs @ 13.78 hrs, Volume= 3.236 af, Atten= 2%, Lag= 13.1 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.86 fps, Min. Travel Time= 15.6 min
Avg. Velocity = 0.26 fps, Avg. Travel Time= 50.7 min

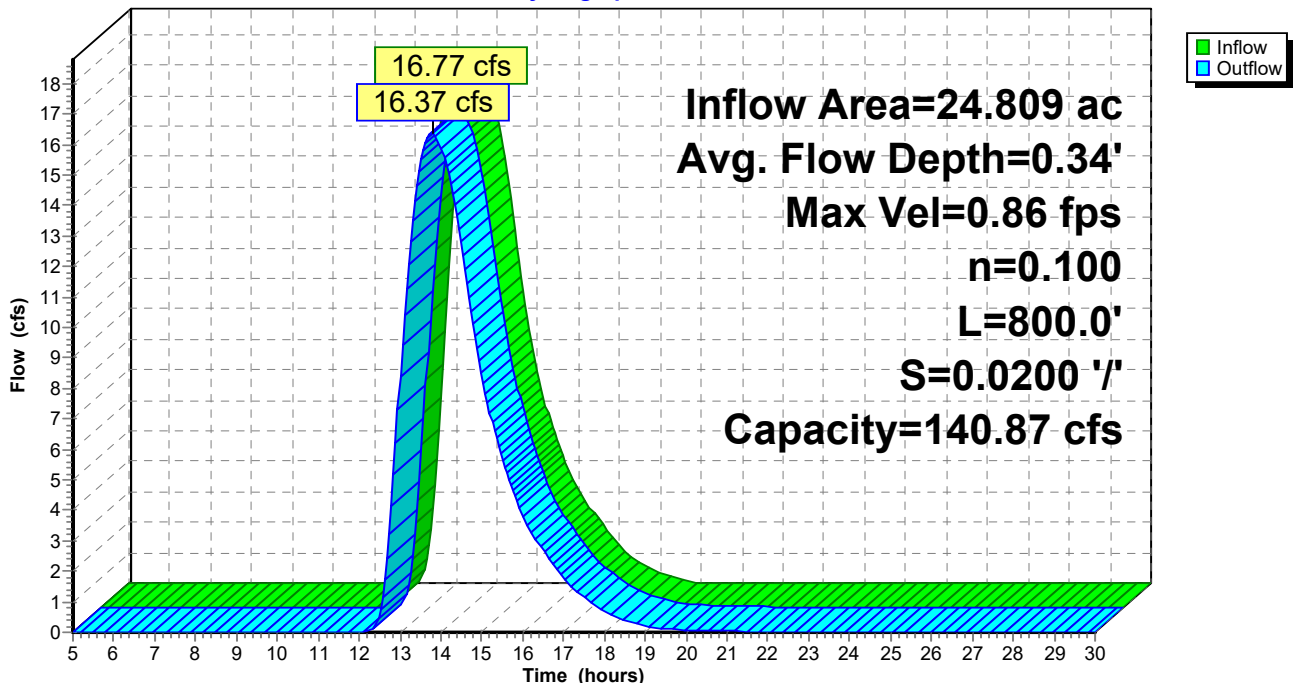
Peak Storage= 15,311 cf @ 13.78 hrs
Average Depth at Peak Storage= 0.34'
Bank-Full Depth= 1.00' Flow Area= 90.0 sf, Capacity= 140.87 cfs

40.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 50.0 ' / ' Top Width= 140.00'
Length= 800.0' Slope= 0.0200 ' / '
Inlet Invert= 380.00', Outlet Invert= 364.00'



Reach 7R: (new Reach)

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Page 102

Stage-Discharge for Reach 7R: (new Reach)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
380.00	0.00	0.00	380.52	1.09	37.37
380.01	0.10	0.04	380.53	1.10	38.79
380.02	0.15	0.12	380.54	1.11	40.23
380.03	0.20	0.25	380.55	1.12	41.70
380.04	0.24	0.40	380.56	1.13	43.20
380.05	0.27	0.58	380.57	1.15	44.73
380.06	0.31	0.79	380.58	1.16	46.29
380.07	0.34	1.03	380.59	1.17	47.88
380.08	0.37	1.30	380.60	1.18	49.50
380.09	0.40	1.59	380.61	1.19	51.15
380.10	0.42	1.90	380.62	1.20	52.83
380.11	0.45	2.24	380.63	1.21	54.54
380.12	0.47	2.60	380.64	1.22	56.28
380.13	0.49	2.99	380.65	1.23	58.05
380.14	0.52	3.40	380.66	1.24	59.85
380.15	0.54	3.83	380.67	1.25	61.68
380.16	0.56	4.29	380.68	1.26	63.55
380.17	0.58	4.77	380.69	1.27	65.45
380.18	0.60	5.28	380.70	1.28	67.38
380.19	0.62	5.81	380.71	1.29	69.34
380.20	0.64	6.36	380.72	1.30	71.33
380.21	0.65	6.94	380.73	1.31	73.35
380.22	0.67	7.54	380.74	1.32	75.41
380.23	0.69	8.17	380.75	1.33	77.50
380.24	0.71	8.82	380.76	1.34	79.62
380.25	0.72	9.49	380.77	1.35	81.78
380.26	0.74	10.19	380.78	1.36	83.97
380.27	0.76	10.91	380.79	1.37	86.19
380.28	0.77	11.66	380.80	1.38	88.45
380.29	0.79	12.43	380.81	1.39	90.73
380.30	0.80	13.23	380.82	1.40	93.06
380.31	0.82	14.05	380.83	1.41	95.42
380.32	0.83	14.90	380.84	1.42	97.81
380.33	0.85	15.77	380.85	1.43	100.23
380.34	0.86	16.67	380.86	1.44	102.69
380.35	0.87	17.59	380.87	1.45	105.19
380.36	0.89	18.54	380.88	1.46	107.72
380.37	0.90	19.52	380.89	1.47	110.28
380.38	0.92	20.52	380.90	1.48	112.88
380.39	0.93	21.55	380.91	1.48	115.52
380.40	0.94	22.60	380.92	1.49	118.19
380.41	0.95	23.68	380.93	1.50	120.90
380.42	0.97	24.79	380.94	1.51	123.64
380.43	0.98	25.92	380.95	1.52	126.42
380.44	0.99	27.08	380.96	1.53	129.24
380.45	1.01	28.27	380.97	1.54	132.09
380.46	1.02	29.49	380.98	1.55	134.98
380.47	1.03	30.73	380.99	1.56	137.90
380.48	1.04	32.00	381.00	1.57	140.87
380.49	1.05	33.30			
380.50	1.07	34.63			
380.51	1.08	35.99			

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Page 103

Stage-Area-Storage for Reach 7R: (new Reach)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
380.00	0.0	0	380.52	34.3	27,456
380.01	0.4	324	380.53	35.2	28,196
380.02	0.8	656	380.54	36.2	28,944
380.03	1.2	996	380.55	37.1	29,700
380.04	1.7	1,344	380.56	38.1	30,464
380.05	2.1	1,700	380.57	39.0	31,236
380.06	2.6	2,064	380.58	40.0	32,016
380.07	3.0	2,436	380.59	41.0	32,804
380.08	3.5	2,816	380.60	42.0	33,600
380.09	4.0	3,204	380.61	43.0	34,404
380.10	4.5	3,600	380.62	44.0	35,216
380.11	5.0	4,004	380.63	45.0	36,036
380.12	5.5	4,416	380.64	46.1	36,864
380.13	6.0	4,836	380.65	47.1	37,700
380.14	6.6	5,264	380.66	48.2	38,544
380.15	7.1	5,700	380.67	49.2	39,396
380.16	7.7	6,144	380.68	50.3	40,256
380.17	8.2	6,596	380.69	51.4	41,124
380.18	8.8	7,056	380.70	52.5	42,000
380.19	9.4	7,524	380.71	53.6	42,884
380.20	10.0	8,000	380.72	54.7	43,776
380.21	10.6	8,484	380.73	55.8	44,676
380.22	11.2	8,976	380.74	57.0	45,584
380.23	11.8	9,476	380.75	58.1	46,500
380.24	12.5	9,984	380.76	59.3	47,424
380.25	13.1	10,500	380.77	60.4	48,356
380.26	13.8	11,024	380.78	61.6	49,296
380.27	14.4	11,556	380.79	62.8	50,244
380.28	15.1	12,096	380.80	64.0	51,200
380.29	15.8	12,644	380.81	65.2	52,164
380.30	16.5	13,200	380.82	66.4	53,136
380.31	17.2	13,764	380.83	67.6	54,116
380.32	17.9	14,336	380.84	68.9	55,104
380.33	18.6	14,916	380.85	70.1	56,100
380.34	19.4	15,504	380.86	71.4	57,104
380.35	20.1	16,100	380.87	72.6	58,116
380.36	20.9	16,704	380.88	73.9	59,136
380.37	21.6	17,316	380.89	75.2	60,164
380.38	22.4	17,936	380.90	76.5	61,200
380.39	23.2	18,564	380.91	77.8	62,244
380.40	24.0	19,200	380.92	79.1	63,296
380.41	24.8	19,844	380.93	80.4	64,356
380.42	25.6	20,496	380.94	81.8	65,424
380.43	26.4	21,156	380.95	83.1	66,500
380.44	27.3	21,824	380.96	84.5	67,584
380.45	28.1	22,500	380.97	85.8	68,676
380.46	29.0	23,184	380.98	87.2	69,776
380.47	29.8	23,876	380.99	88.6	70,884
380.48	30.7	24,576	381.00	90.0	72,000
380.49	31.6	25,284			
380.50	32.5	26,000			
380.51	33.4	26,724			

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Page 104

Summary for Pond 5P: SWQ Basin #1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)

Inflow Area = 9.053 ac, 2.12% Impervious, Inflow Depth = 4.42" for 50-Year event
 Inflow = 16.82 cfs @ 12.94 hrs, Volume= 3.333 af
 Outflow = 13.87 cfs @ 13.28 hrs, Volume= 3.333 af, Atten= 18%, Lag= 20.6 min
 Discarded = 5.47 cfs @ 13.28 hrs, Volume= 2.584 af
 Primary = 8.40 cfs @ 13.28 hrs, Volume= 0.749 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 407.36' @ 13.28 hrs Surf.Area= 0.271 ac Storage= 0.634 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 32.1 min (917.2 - 885.1)

Volume	Invert	Avail.Storage	Storage Description			
#1	404.00'	1.013 af	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)	
404.00	0.111	566.0	0.000	0.000	0.111	
406.00	0.205	610.0	0.311	0.311	0.209	
408.00	0.306	653.0	0.508	0.819	0.313	
408.50	0.477	706.0	0.194	1.013	0.444	

Device	Routing	Invert	Outlet Devices	
#1	Discarded	404.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	407.00'	20.5" x 38.0" Horiz. CL-Top C= 0.600 Limited to weir flow at low heads	
#3	Primary	404.50'	6.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=5.47 cfs @ 13.28 hrs HW=407.36' (Free Discharge)

↳ **1=Exfiltration** (Exfiltration Controls 5.47 cfs)

Primary OutFlow Max=8.37 cfs @ 13.28 hrs HW=407.36' TW=397.78' (Dynamic Tailwater)

↳ **2=CL-Top** (Weir Controls 6.84 cfs @ 1.96 fps)

↳ **3=Orifice/Grate** (Orifice Controls 1.53 cfs @ 7.78 fps)

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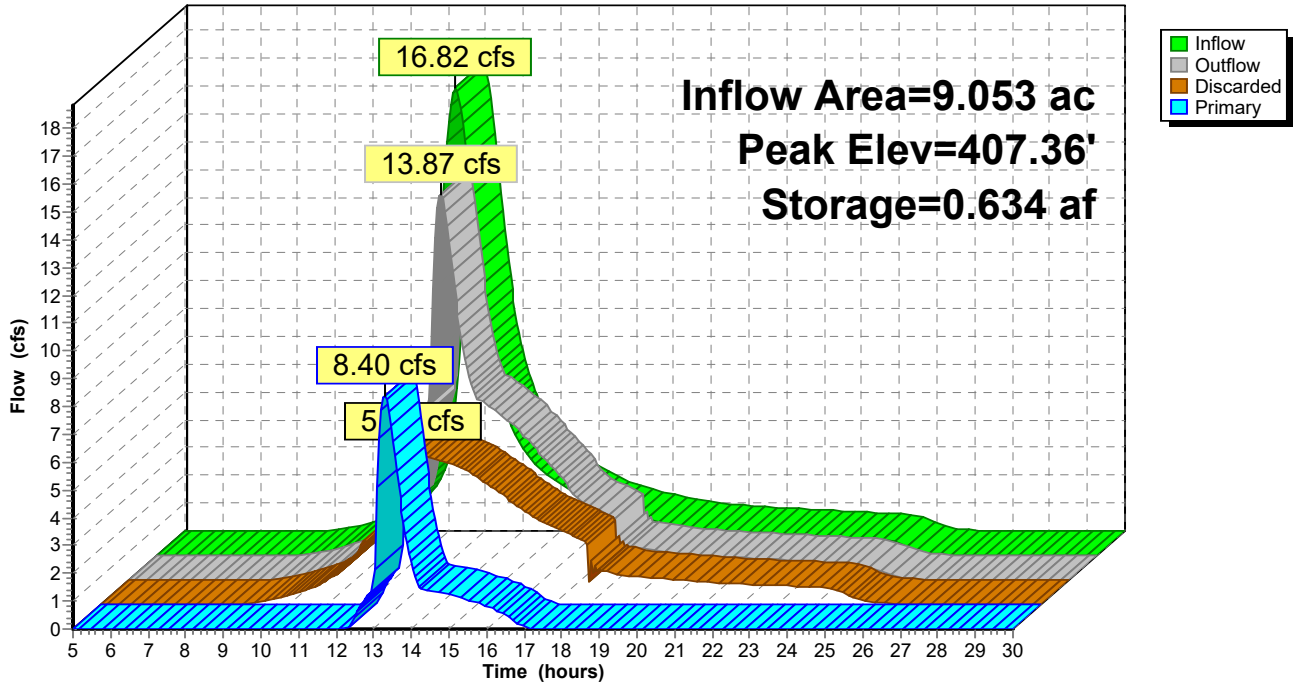
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Page 105

Pond 5P: SWQ Basin #1

Hydrograph



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Page 106

Stage-Discharge for Pond 5P: SWQ Basin #1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
404.00	0.00	0.00	0.00	406.60	5.99	4.70	1.29
404.05	2.28	2.28	0.00	406.65	6.05	4.75	1.30
404.10	2.32	2.32	0.00	406.70	6.12	4.80	1.32
404.15	2.36	2.36	0.00	406.75	6.19	4.85	1.34
404.20	2.40	2.40	0.00	406.80	6.25	4.90	1.35
404.25	2.44	2.44	0.00	406.85	6.32	4.95	1.37
404.30	2.49	2.49	0.00	406.90	6.39	5.00	1.39
404.35	2.53	2.53	0.00	406.95	6.45	5.05	1.40
404.40	2.57	2.57	0.00	407.00	6.52	5.10	1.42
404.45	2.61	2.61	0.00	407.05	6.94	5.15	1.79
404.50	2.66	2.66	0.00	407.10	7.66	5.20	2.46
404.55	2.71	2.70	0.01	407.15	8.57	5.26	3.32
404.60	2.78	2.75	0.03	407.20	9.64	5.31	4.33
404.65	2.86	2.79	0.07	407.25	10.84	5.36	5.48
404.70	2.95	2.84	0.11	407.30	12.16	5.41	6.75
404.75	3.05	2.88	0.17	407.35	13.59	5.46	8.13
404.80	3.16	2.93	0.23	407.40	15.12	5.52	9.60
404.85	3.27	2.97	0.30	407.45	16.75	5.57	11.18
404.90	3.38	3.02	0.36	407.50	18.46	5.62	12.84
404.95	3.49	3.07	0.43	407.55	20.26	5.68	14.59
405.00	3.59	3.11	0.47	407.60	22.14	5.73	16.41
405.05	3.68	3.16	0.52	407.65	24.10	5.79	18.32
405.10	3.77	3.21	0.56	407.70	26.14	5.84	20.30
405.15	3.86	3.26	0.60	407.75	28.24	5.89	22.35
405.20	3.94	3.31	0.63	407.80	30.41	5.95	24.46
405.25	4.02	3.36	0.67	407.85	31.68	6.00	25.68
405.30	4.11	3.41	0.70	407.90	32.45	6.06	26.39
405.35	4.19	3.45	0.73	407.95	33.19	6.12	27.08
405.40	4.27	3.50	0.76	408.00	33.92	6.17	27.75
405.45	4.35	3.56	0.79	408.05	34.89	6.48	28.41
405.50	4.42	3.61	0.82	408.10	35.85	6.80	29.05
405.55	4.50	3.66	0.85	408.15	36.80	7.13	29.68
405.60	4.58	3.71	0.87	408.20	37.75	7.46	30.29
405.65	4.66	3.76	0.90	408.25	38.69	7.80	30.89
405.70	4.73	3.81	0.92	408.30	39.63	8.15	31.48
405.75	4.81	3.87	0.95	408.35	40.56	8.50	32.06
405.80	4.89	3.92	0.97	408.40	41.50	8.87	32.63
405.85	4.96	3.97	0.99	408.45	42.42	9.24	33.18
405.90	5.04	4.03	1.01	408.50	43.35	9.62	33.73
405.95	5.12	4.08	1.04				
406.00	5.19	4.13	1.06				
406.05	5.26	4.18	1.08				
406.10	5.32	4.23	1.10				
406.15	5.39	4.27	1.12				
406.20	5.46	4.32	1.14				
406.25	5.52	4.37	1.16				
406.30	5.59	4.41	1.18				
406.35	5.66	4.46	1.20				
406.40	5.72	4.51	1.21				
406.45	5.79	4.56	1.23				
406.50	5.86	4.61	1.25				
406.55	5.92	4.65	1.27				

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Page 107

Stage-Area-Storage for Pond 5P: SWQ Basin #1

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
404.00	0.111	0.000	406.60	0.233	0.443
404.05	0.113	0.006	406.65	0.236	0.454
404.10	0.115	0.011	406.70	0.238	0.466
404.15	0.117	0.017	406.75	0.241	0.478
404.20	0.119	0.023	406.80	0.243	0.490
404.25	0.121	0.029	406.85	0.245	0.502
404.30	0.123	0.035	406.90	0.248	0.515
404.35	0.125	0.041	406.95	0.250	0.527
404.40	0.128	0.048	407.00	0.253	0.540
404.45	0.130	0.054	407.05	0.256	0.553
404.50	0.132	0.061	407.10	0.258	0.565
404.55	0.134	0.067	407.15	0.261	0.578
404.60	0.136	0.074	407.20	0.263	0.591
404.65	0.138	0.081	407.25	0.266	0.605
404.70	0.141	0.088	407.30	0.268	0.618
404.75	0.143	0.095	407.35	0.271	0.631
404.80	0.145	0.102	407.40	0.274	0.645
404.85	0.147	0.109	407.45	0.276	0.659
404.90	0.150	0.117	407.50	0.279	0.673
404.95	0.152	0.124	407.55	0.282	0.687
405.00	0.154	0.132	407.60	0.284	0.701
405.05	0.157	0.140	407.65	0.287	0.715
405.10	0.159	0.148	407.70	0.290	0.730
405.15	0.162	0.156	407.75	0.292	0.744
405.20	0.164	0.164	407.80	0.295	0.759
405.25	0.166	0.172	407.85	0.298	0.774
405.30	0.169	0.181	407.90	0.300	0.789
405.35	0.171	0.189	407.95	0.303	0.804
405.40	0.174	0.198	408.00	0.306	0.819
405.45	0.176	0.206	408.05	0.321	0.835
405.50	0.179	0.215	408.10	0.337	0.851
405.55	0.181	0.224	408.15	0.353	0.868
405.60	0.184	0.233	408.20	0.370	0.886
405.65	0.186	0.243	408.25	0.387	0.905
405.70	0.189	0.252	408.30	0.404	0.925
405.75	0.192	0.262	408.35	0.422	0.946
405.80	0.194	0.271	408.40	0.440	0.967
405.85	0.197	0.281	408.45	0.458	0.990
405.90	0.200	0.291	408.50	0.477	1.013
405.95	0.202	0.301			
406.00	0.205	0.311			
406.05	0.207	0.322			
406.10	0.210	0.332			
406.15	0.212	0.342			
406.20	0.214	0.353			
406.25	0.217	0.364			
406.30	0.219	0.375			
406.35	0.221	0.386			
406.40	0.224	0.397			
406.45	0.226	0.408			
406.50	0.228	0.420			
406.55	0.231	0.431			

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Page 108

Summary for Pond 6P: SWQ Basin #2

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 3.17" for 50-Year event
 Inflow = 34.16 cfs @ 13.18 hrs, Volume= 6.549 af
 Outflow = 23.88 cfs @ 13.56 hrs, Volume= 6.549 af, Atten= 30%, Lag= 23.2 min
 Discarded = 7.10 cfs @ 13.56 hrs, Volume= 3.313 af
 Primary = 16.77 cfs @ 13.56 hrs, Volume= 3.236 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 398.12' @ 13.56 hrs Surf.Area= 0.352 ac Storage= 1.273 af

Plug-Flow detention time= 30.1 min calculated for 6.549 af (100% of inflow)
 Center-of-Mass det. time= 30.1 min (910.4 - 880.3)

Volume	Invert	Avail.Storage	Storage Description		
#1	392.00'	2.529 af	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
392.00	0.088	313.0	0.000	0.000	0.088
394.00	0.158	408.0	0.243	0.243	0.214
396.00	0.246	503.0	0.401	0.643	0.374
398.00	0.346	588.0	0.589	1.233	0.545
400.00	0.461	674.0	0.804	2.037	0.745
401.00	0.524	699.0	0.492	2.529	0.810

Device	Routing	Invert	Outlet Devices	
#1	Discarded	392.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	399.50'	20.5" x 38.0" Horiz. Top Grate C= 0.600 Limited to weir flow at low heads	
#3	Primary	392.80'	6.0" W x 46.0" H Vert. Weir C= 0.600	

Discarded OutFlow Max=7.10 cfs @ 13.56 hrs HW=398.11' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 7.10 cfs)

Primary OutFlow Max=16.77 cfs @ 13.56 hrs HW=398.11' TW=380.33' (Dynamic Tailwater)

↑ **2=Top Grate** (Controls 0.00 cfs)

↑ **3=Weir** (Orifice Controls 16.77 cfs @ 8.75 fps)

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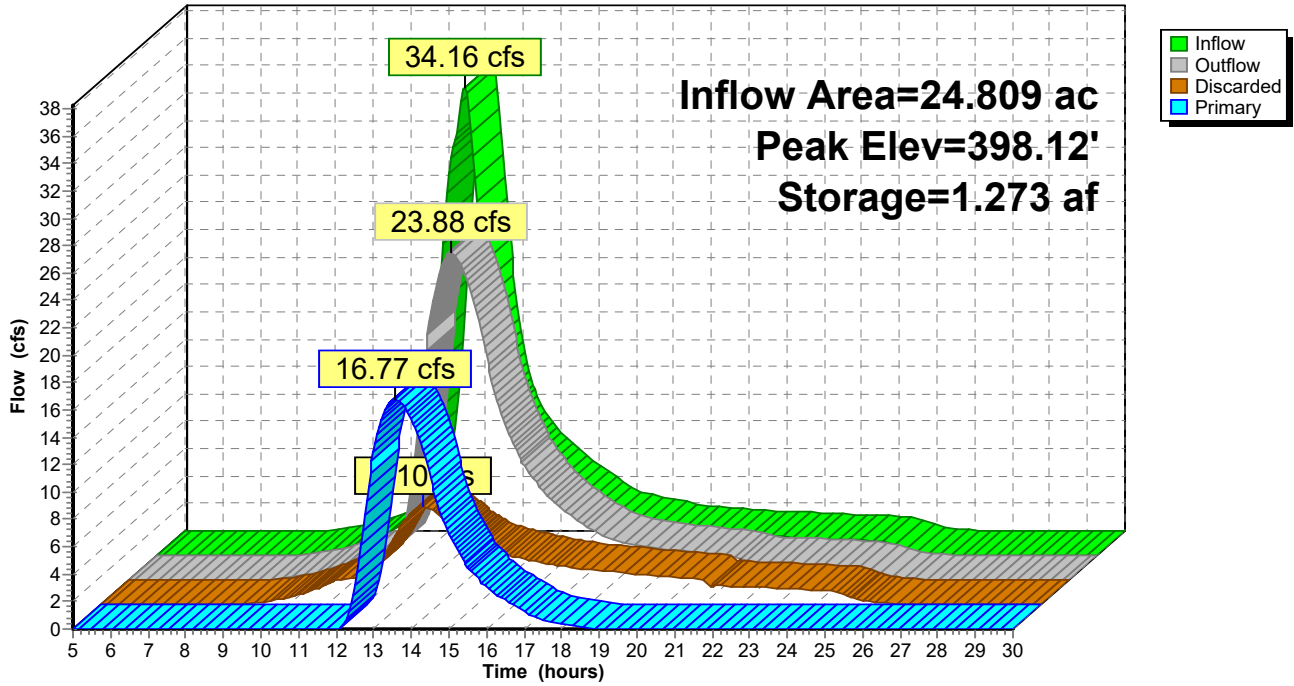
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Page 109

Pond 6P: SWQ Basin #2

Hydrograph



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Page 110

Stage-Discharge for Pond 6P: SWQ Basin #2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
392.00	0.00	0.00	0.00	397.20	20.26	6.13	14.13
392.10	1.84	1.84	0.00	397.30	20.68	6.23	14.45
392.20	1.90	1.90	0.00	397.40	21.09	6.34	14.76
392.30	1.96	1.96	0.00	397.50	21.50	6.44	15.06
392.40	2.02	2.02	0.00	397.60	21.90	6.55	15.35
392.50	2.09	2.09	0.00	397.70	22.29	6.65	15.64
392.60	2.16	2.16	0.00	397.80	22.68	6.76	15.92
392.70	2.22	2.22	0.00	397.90	23.07	6.87	16.20
392.80	2.29	2.29	0.00	398.00	23.45	6.98	16.47
392.90	2.41	2.36	0.05	398.10	23.82	7.09	16.73
393.00	2.57	2.43	0.14	398.20	24.19	7.19	16.99
393.10	2.76	2.50	0.26	398.30	24.55	7.30	17.25
393.20	2.98	2.57	0.41	398.40	24.92	7.41	17.50
393.30	3.21	2.65	0.57	398.50	25.27	7.53	17.75
393.40	3.47	2.72	0.75	398.60	25.63	7.64	17.99
393.50	3.73	2.79	0.94	398.70	25.98	7.75	18.23
393.60	4.02	2.87	1.15	398.80	26.34	7.87	18.47
393.70	4.32	2.95	1.37	398.90	26.68	7.98	18.70
393.80	4.63	3.03	1.60	399.00	27.03	8.10	18.93
393.90	4.96	3.11	1.85	399.10	27.37	8.21	19.16
394.00	5.30	3.19	2.11	399.20	27.72	8.33	19.39
394.10	5.64	3.27	2.38	399.30	28.06	8.45	19.61
394.20	6.00	3.35	2.66	399.40	28.39	8.57	19.83
394.30	6.38	3.43	2.95	399.50	28.73	8.69	20.04
394.40	6.76	3.51	3.25	399.60	30.07	8.81	21.27
394.50	7.15	3.59	3.56	399.70	32.25	8.93	23.32
394.60	7.55	3.68	3.88	399.80	34.97	9.05	25.92
394.70	7.97	3.76	4.20	399.90	38.13	9.17	28.95
394.80	8.39	3.85	4.54	400.00	41.66	9.30	32.37
394.90	8.82	3.94	4.88	400.10	45.53	9.42	36.11
395.00	9.26	4.02	5.24	400.20	49.71	9.54	40.17
395.10	9.71	4.11	5.60	400.30	54.18	9.67	44.51
395.20	10.17	4.20	5.97	400.40	56.40	9.80	46.61
395.30	10.64	4.30	6.34	400.50	58.06	9.92	48.14
395.40	11.12	4.39	6.73	400.60	59.65	10.05	49.60
395.50	11.60	4.48	7.12	400.70	61.19	10.18	51.01
395.60	12.09	4.57	7.52	400.80	62.67	10.31	52.37
395.70	12.60	4.67	7.93	400.90	64.11	10.44	53.67
395.80	13.11	4.77	8.34	401.00	65.51	10.57	54.94
395.90	13.62	4.86	8.76				
396.00	14.15	4.96	9.19				
396.10	14.68	5.05	9.62				
396.20	15.21	5.15	10.06				
396.30	15.75	5.24	10.51				
396.40	16.30	5.34	10.96				
396.50	16.86	5.43	11.42				
396.60	17.42	5.53	11.89				
396.70	17.96	5.63	12.33				
396.80	18.46	5.73	12.73				
396.90	18.93	5.83	13.10				
397.00	19.38	5.93	13.46				
397.10	19.83	6.03	13.80				

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Page 111

Stage-Area-Storage for Pond 6P: SWQ Basin #2

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
392.00	0.088	0.000	397.20	0.304	0.973
392.10	0.091	0.009	397.30	0.309	1.003
392.20	0.094	0.018	397.40	0.314	1.035
392.30	0.097	0.028	397.50	0.319	1.066
392.40	0.100	0.038	397.60	0.325	1.098
392.50	0.104	0.048	397.70	0.330	1.131
392.60	0.107	0.058	397.80	0.335	1.164
392.70	0.110	0.069	397.90	0.341	1.198
392.80	0.114	0.080	398.00	0.346	1.233
392.90	0.117	0.092	398.10	0.351	1.267
393.00	0.120	0.104	398.20	0.357	1.303
393.10	0.124	0.116	398.30	0.362	1.339
393.20	0.128	0.129	398.40	0.368	1.375
393.30	0.131	0.142	398.50	0.373	1.412
393.40	0.135	0.155	398.60	0.379	1.450
393.50	0.139	0.169	398.70	0.384	1.488
393.60	0.142	0.183	398.80	0.390	1.527
393.70	0.146	0.197	398.90	0.396	1.566
393.80	0.150	0.212	399.00	0.401	1.606
393.90	0.154	0.227	399.10	0.407	1.646
394.00	0.158	0.243	399.20	0.413	1.687
394.10	0.162	0.259	399.30	0.419	1.729
394.20	0.166	0.275	399.40	0.425	1.771
394.30	0.170	0.292	399.50	0.431	1.814
394.40	0.174	0.309	399.60	0.437	1.857
394.50	0.178	0.327	399.70	0.443	1.901
394.60	0.182	0.345	399.80	0.449	1.946
394.70	0.187	0.363	399.90	0.455	1.991
394.80	0.191	0.382	400.00	0.461	2.037
394.90	0.195	0.401	400.10	0.467	2.083
395.00	0.200	0.421	400.20	0.473	2.130
395.10	0.204	0.441	400.30	0.479	2.178
395.20	0.208	0.462	400.40	0.486	2.226
395.30	0.213	0.483	400.50	0.492	2.275
395.40	0.218	0.504	400.60	0.498	2.325
395.50	0.222	0.526	400.70	0.505	2.375
395.60	0.227	0.549	400.80	0.511	2.425
395.70	0.232	0.572	400.90	0.518	2.477
395.80	0.236	0.595	401.00	0.524	2.529
395.90	0.241	0.619			
396.00	0.246	0.643			
396.10	0.251	0.668			
396.20	0.255	0.693			
396.30	0.260	0.719			
396.40	0.265	0.745			
396.50	0.269	0.772			
396.60	0.274	0.799			
396.70	0.279	0.827			
396.80	0.284	0.855			
396.90	0.289	0.884			
397.00	0.294	0.913			
397.10	0.299	0.943			

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Page 112

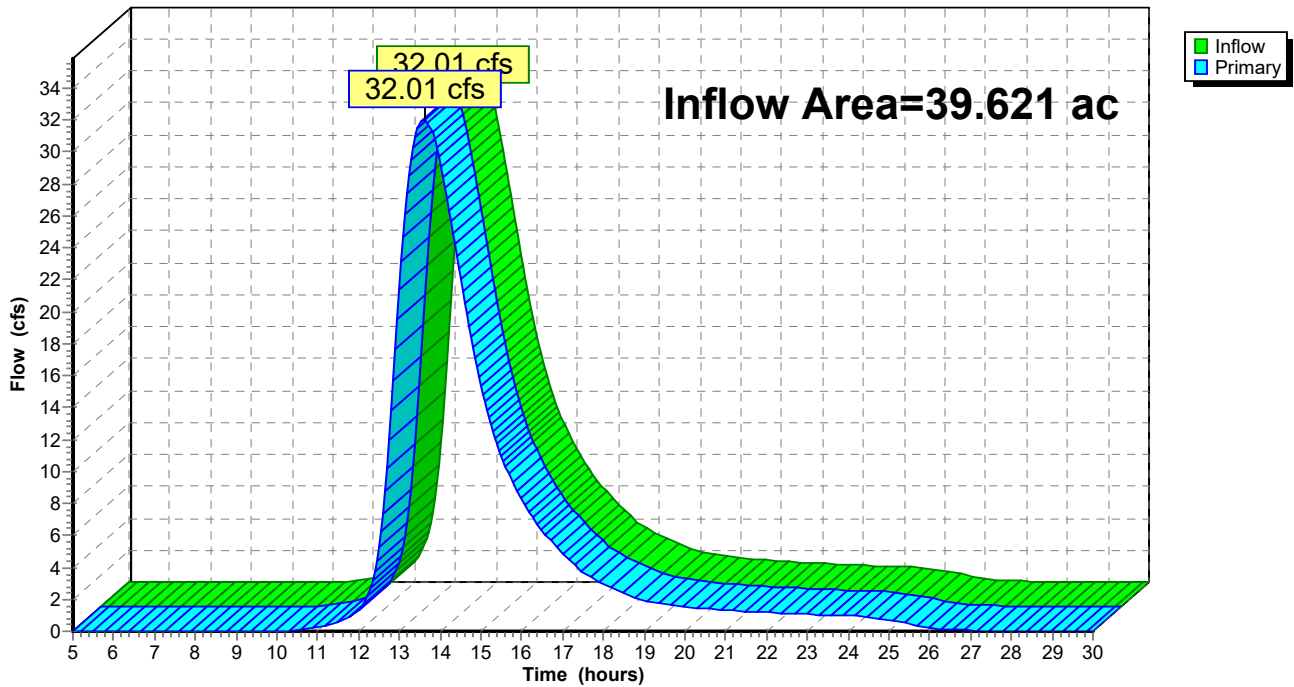
Summary for Link 2L: POA

Inflow Area = 39.621 ac, 0.76% Impervious, Inflow Depth = 2.29" for 50-Year event
Inflow = 32.01 cfs @ 13.61 hrs, Volume= 7.563 af
Primary = 32.01 cfs @ 13.61 hrs, Volume= 7.563 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Link 2L: POA

Hydrograph



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Page 113

Time span=5.00-30.00 hrs, dt=0.05 hrs, 501 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1S: DA-1 Runoff Area=14.812 ac 0.00% Impervious Runoff Depth=4.37"
Flow Length=1,900' Tc=105.2 min CN=61 Runoff=20.59 cfs 5.391 af

Subcatchment 3S: DA-1B Runoff Area=9.053 ac 2.12% Impervious Runoff Depth=5.37"
Flow Length=1,487' Tc=69.3 min CN=69 Runoff=20.47 cfs 4.050 af

Subcatchment 4S: DA-1A Runoff Area=15.756 ac 0.69% Impervious Runoff Depth=5.37"
Flow Length=1,518' Tc=69.9 min CN=69 Runoff=35.60 cfs 7.049 af

Reach 7R: (new Reach) Avg. Flow Depth=0.37' Max Vel=0.90 fps Inflow=19.94 cfs 4.320 af
n=0.100 L=800.0' S=0.0200 '/' Capacity=140.87 cfs Outflow=19.63 cfs 4.319 af

Pond 5P: SWQ Basin #1 Peak Elev=407.51' Storage=0.675 af Inflow=20.47 cfs 4.050 af
Discarded=5.63 cfs 2.892 af Primary=13.08 cfs 1.158 af Outflow=18.71 cfs 4.050 af

Pond 6P: SWQ Basin #2 Peak Elev=399.45' Storage=1.793 af Inflow=46.78 cfs 8.207 af
Discarded=8.63 cfs 3.888 af Primary=19.94 cfs 4.320 af Outflow=28.57 cfs 8.207 af

Link 2L: POA Inflow=39.30 cfs 9.710 af
Primary=39.30 cfs 9.710 af

Total Runoff Area = 39.621 ac Runoff Volume = 16.490 af Average Runoff Depth = 4.99"
99.24% Pervious = 39.321 ac 0.76% Impervious = 0.300 ac

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Page 114

Summary for Subcatchment 1S: DA-1

Runoff = 20.59 cfs @ 13.44 hrs, Volume= 5.391 af, Depth= 4.37"

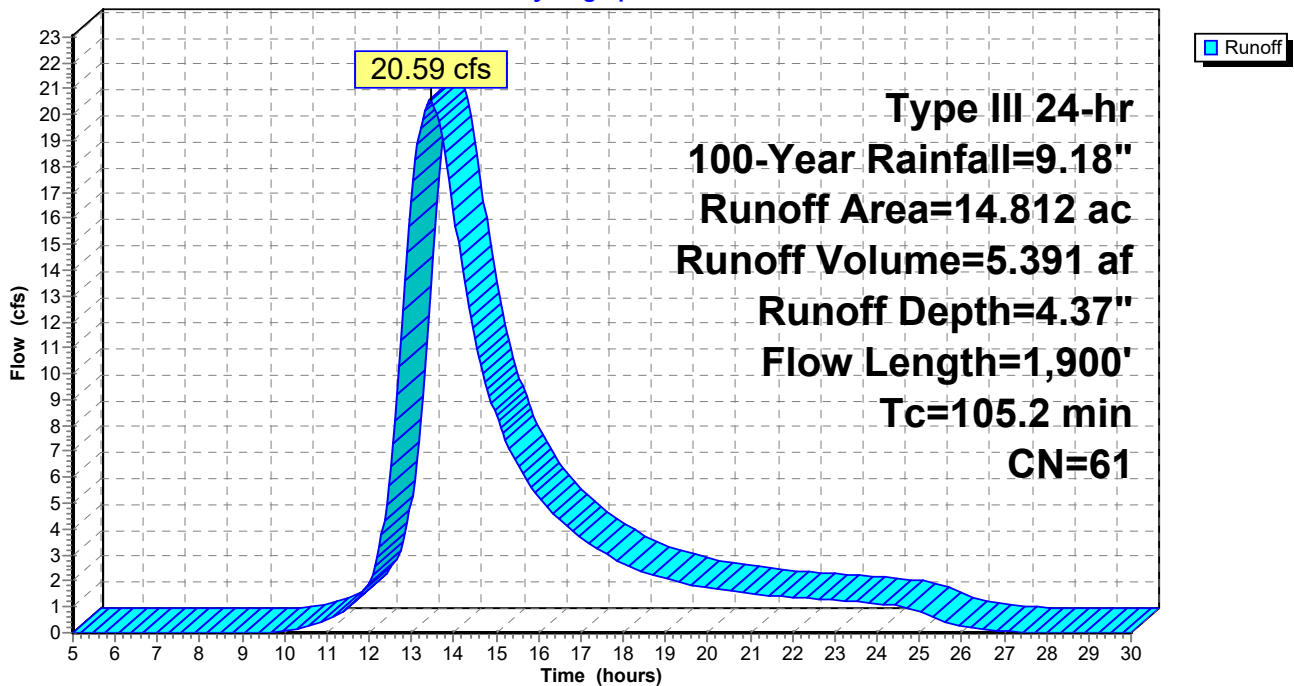
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-Year Rainfall=9.18"

Area (ac)	CN	Description
3.912	30	Woods, Good, HSG A
1.830	55	Woods, Good, HSG B
1.643	70	Woods, Good, HSG C
6.865	77	Newly graded area, HSG A
0.367	58	Meadow, non-grazed, HSG B
0.195	71	Meadow, non-grazed, HSG C
14.812	61	Weighted Average
14.812		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
58.6	1,800	0.0420	0.51		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
105.2	1,900	Total			

Subcatchment 1S: DA-1

Hydrograph



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Page 115

Summary for Subcatchment 3S: DA-1B

Runoff = 20.47 cfs @ 12.93 hrs, Volume= 4.050 af, Depth= 5.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Type III 24-hr 100-Year Rainfall=9.18"

Area (ac)	CN	Description
0.139	98	Roofs, HSG C
0.053	98	Paved parking, HSG C
0.072	96	Gravel surface, HSG C
0.180	61	>75% Grass cover, Good, HSG B
0.524	74	>75% Grass cover, Good, HSG C
0.123	30	Woods, Good, HSG A
0.665	55	Woods, Good, HSG B
1.527	70	Woods, Good, HSG C
0.263	58	Meadow, non-grazed, HSG B
5.507	71	Meadow, non-grazed, HSG C
9.053	69	Weighted Average
8.861		97.88% Pervious Area
0.192		2.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
16.4	760	0.0950	0.77		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
6.3	627	0.0560	1.66		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.3	1,487	Total			

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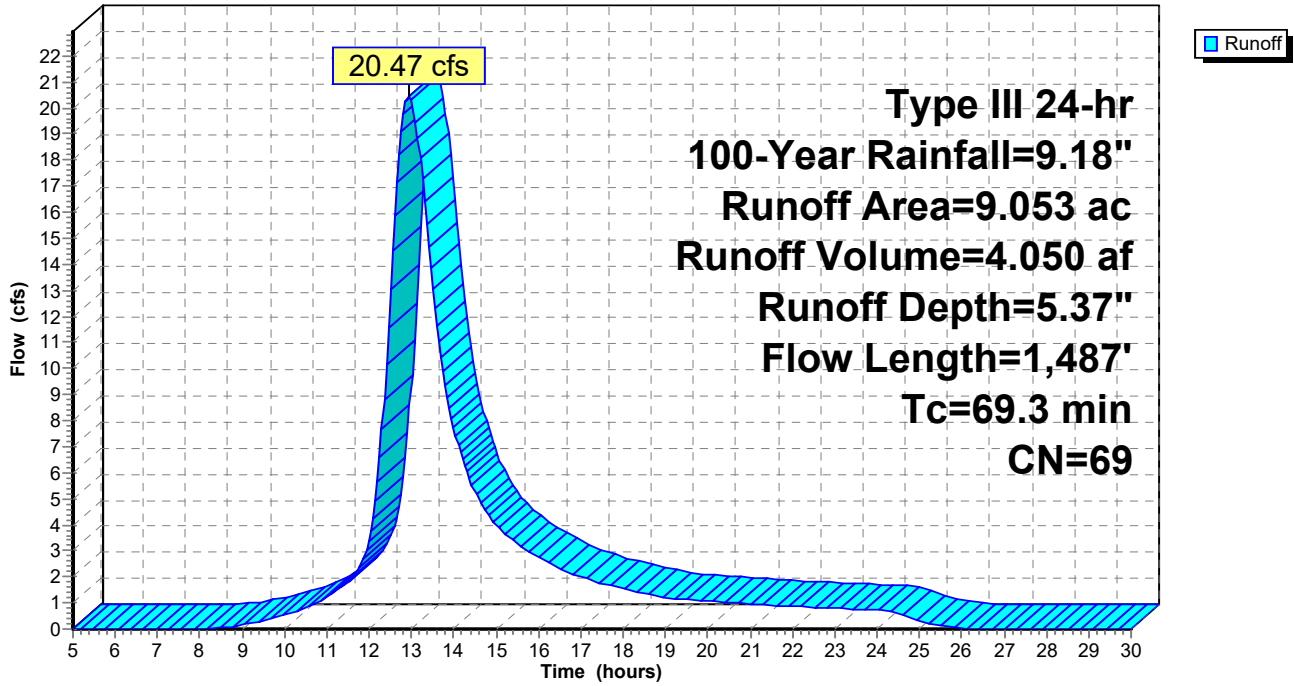
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Page 116

Subcatchment 3S: DA-1B

Hydrograph



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Page 117

Summary for Subcatchment 4S: DA-1A

Runoff = 35.60 cfs @ 12.95 hrs, Volume= 7.049 af, Depth= 5.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=9.18"

Area (ac)	CN	Description
0.071	98	Roofs, HSG C
0.037	98	Paved parking, HSG C
0.586	74	>75% Grass cover, Good, HSG C
1.921	55	Woods, Good, HSG B
3.639	70	Woods, Good, HSG C
0.505	58	Meadow, non-grazed, HSG B
8.997	71	Meadow, non-grazed, HSG C
15.756	69	Weighted Average
15.648		99.31% Pervious Area
0.108		0.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
46.6	100	0.0100	0.04		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 3.58"
17.6	821	0.0970	0.78		Shallow Concentrated Flow, Forest w/Heavy Litter Kv= 2.5 fps
5.7	597	0.0620	1.74		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
69.9	1,518	Total			

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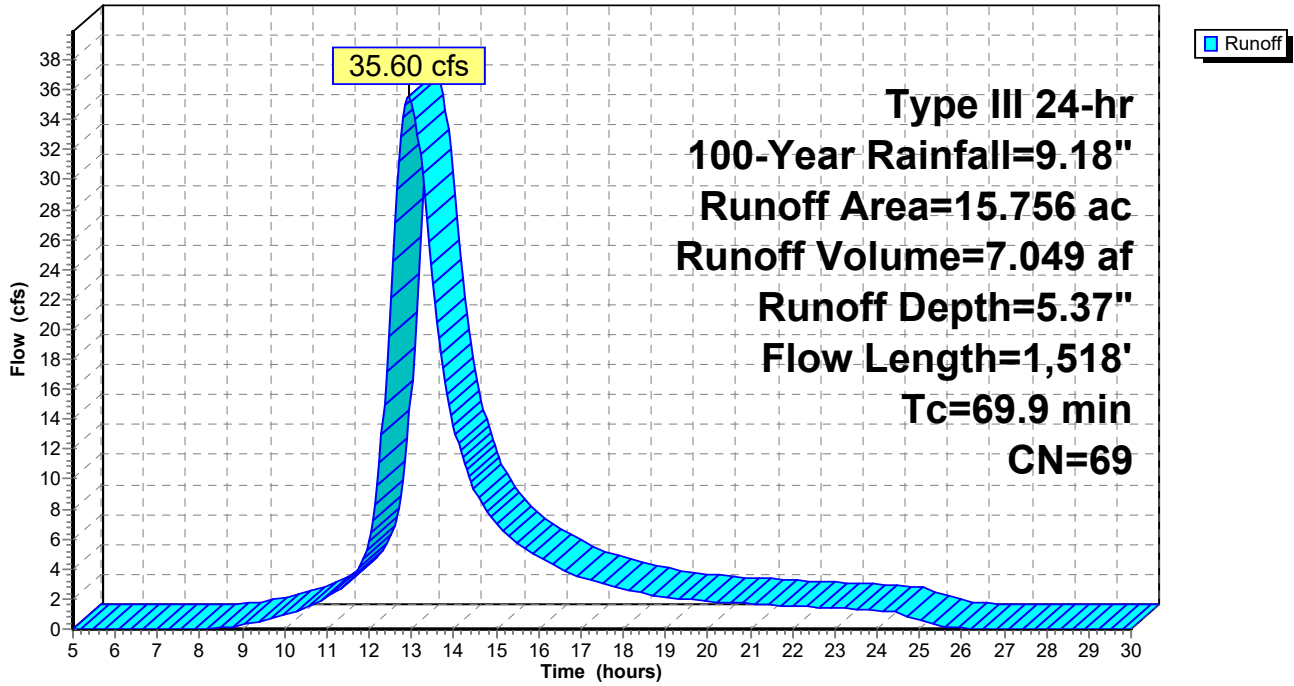
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Page 118

Subcatchment 4S: DA-1A

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Page 119

Summary for Reach 7R: (new Reach)

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 2.09" for 100-Year event
Inflow = 19.94 cfs @ 13.59 hrs, Volume= 4.320 af
Outflow = 19.63 cfs @ 13.81 hrs, Volume= 4.319 af, Atten= 2%, Lag= 12.8 min

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.90 fps, Min. Travel Time= 14.8 min
Avg. Velocity = 0.29 fps, Avg. Travel Time= 46.0 min

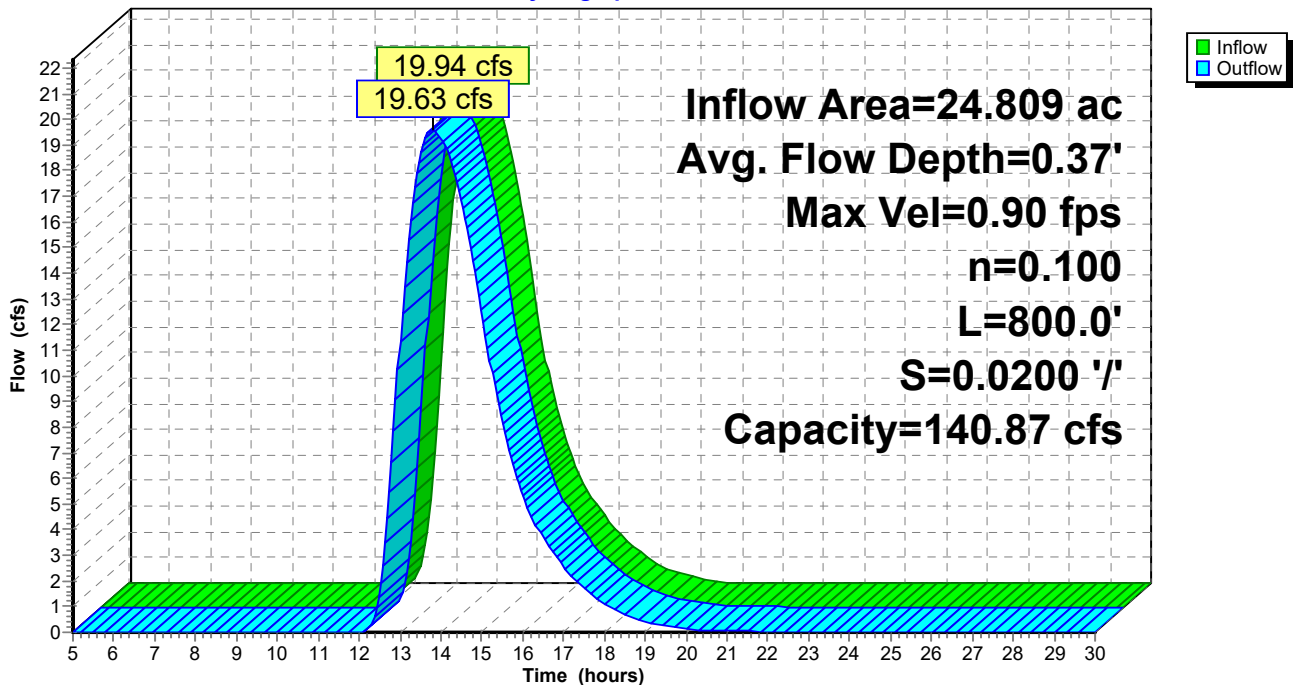
Peak Storage= 17,384 cf @ 13.81 hrs
Average Depth at Peak Storage= 0.37'
Bank-Full Depth= 1.00' Flow Area= 90.0 sf, Capacity= 140.87 cfs

40.00' x 1.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 50.0 '/' Top Width= 140.00'
Length= 800.0' Slope= 0.0200 '/'
Inlet Invert= 380.00', Outlet Invert= 364.00'



Reach 7R: (new Reach)

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Page 120

Stage-Discharge for Reach 7R: (new Reach)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
380.00	0.00	0.00	380.52	1.09	37.37
380.01	0.10	0.04	380.53	1.10	38.79
380.02	0.15	0.12	380.54	1.11	40.23
380.03	0.20	0.25	380.55	1.12	41.70
380.04	0.24	0.40	380.56	1.13	43.20
380.05	0.27	0.58	380.57	1.15	44.73
380.06	0.31	0.79	380.58	1.16	46.29
380.07	0.34	1.03	380.59	1.17	47.88
380.08	0.37	1.30	380.60	1.18	49.50
380.09	0.40	1.59	380.61	1.19	51.15
380.10	0.42	1.90	380.62	1.20	52.83
380.11	0.45	2.24	380.63	1.21	54.54
380.12	0.47	2.60	380.64	1.22	56.28
380.13	0.49	2.99	380.65	1.23	58.05
380.14	0.52	3.40	380.66	1.24	59.85
380.15	0.54	3.83	380.67	1.25	61.68
380.16	0.56	4.29	380.68	1.26	63.55
380.17	0.58	4.77	380.69	1.27	65.45
380.18	0.60	5.28	380.70	1.28	67.38
380.19	0.62	5.81	380.71	1.29	69.34
380.20	0.64	6.36	380.72	1.30	71.33
380.21	0.65	6.94	380.73	1.31	73.35
380.22	0.67	7.54	380.74	1.32	75.41
380.23	0.69	8.17	380.75	1.33	77.50
380.24	0.71	8.82	380.76	1.34	79.62
380.25	0.72	9.49	380.77	1.35	81.78
380.26	0.74	10.19	380.78	1.36	83.97
380.27	0.76	10.91	380.79	1.37	86.19
380.28	0.77	11.66	380.80	1.38	88.45
380.29	0.79	12.43	380.81	1.39	90.73
380.30	0.80	13.23	380.82	1.40	93.06
380.31	0.82	14.05	380.83	1.41	95.42
380.32	0.83	14.90	380.84	1.42	97.81
380.33	0.85	15.77	380.85	1.43	100.23
380.34	0.86	16.67	380.86	1.44	102.69
380.35	0.87	17.59	380.87	1.45	105.19
380.36	0.89	18.54	380.88	1.46	107.72
380.37	0.90	19.52	380.89	1.47	110.28
380.38	0.92	20.52	380.90	1.48	112.88
380.39	0.93	21.55	380.91	1.48	115.52
380.40	0.94	22.60	380.92	1.49	118.19
380.41	0.95	23.68	380.93	1.50	120.90
380.42	0.97	24.79	380.94	1.51	123.64
380.43	0.98	25.92	380.95	1.52	126.42
380.44	0.99	27.08	380.96	1.53	129.24
380.45	1.01	28.27	380.97	1.54	132.09
380.46	1.02	29.49	380.98	1.55	134.98
380.47	1.03	30.73	380.99	1.56	137.90
380.48	1.04	32.00	381.00	1.57	140.87
380.49	1.05	33.30			
380.50	1.07	34.63			
380.51	1.08	35.99			

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Page 121

Stage-Area-Storage for Reach 7R: (new Reach)

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
380.00	0.0	0	380.52	34.3	27,456
380.01	0.4	324	380.53	35.2	28,196
380.02	0.8	656	380.54	36.2	28,944
380.03	1.2	996	380.55	37.1	29,700
380.04	1.7	1,344	380.56	38.1	30,464
380.05	2.1	1,700	380.57	39.0	31,236
380.06	2.6	2,064	380.58	40.0	32,016
380.07	3.0	2,436	380.59	41.0	32,804
380.08	3.5	2,816	380.60	42.0	33,600
380.09	4.0	3,204	380.61	43.0	34,404
380.10	4.5	3,600	380.62	44.0	35,216
380.11	5.0	4,004	380.63	45.0	36,036
380.12	5.5	4,416	380.64	46.1	36,864
380.13	6.0	4,836	380.65	47.1	37,700
380.14	6.6	5,264	380.66	48.2	38,544
380.15	7.1	5,700	380.67	49.2	39,396
380.16	7.7	6,144	380.68	50.3	40,256
380.17	8.2	6,596	380.69	51.4	41,124
380.18	8.8	7,056	380.70	52.5	42,000
380.19	9.4	7,524	380.71	53.6	42,884
380.20	10.0	8,000	380.72	54.7	43,776
380.21	10.6	8,484	380.73	55.8	44,676
380.22	11.2	8,976	380.74	57.0	45,584
380.23	11.8	9,476	380.75	58.1	46,500
380.24	12.5	9,984	380.76	59.3	47,424
380.25	13.1	10,500	380.77	60.4	48,356
380.26	13.8	11,024	380.78	61.6	49,296
380.27	14.4	11,556	380.79	62.8	50,244
380.28	15.1	12,096	380.80	64.0	51,200
380.29	15.8	12,644	380.81	65.2	52,164
380.30	16.5	13,200	380.82	66.4	53,136
380.31	17.2	13,764	380.83	67.6	54,116
380.32	17.9	14,336	380.84	68.9	55,104
380.33	18.6	14,916	380.85	70.1	56,100
380.34	19.4	15,504	380.86	71.4	57,104
380.35	20.1	16,100	380.87	72.6	58,116
380.36	20.9	16,704	380.88	73.9	59,136
380.37	21.6	17,316	380.89	75.2	60,164
380.38	22.4	17,936	380.90	76.5	61,200
380.39	23.2	18,564	380.91	77.8	62,244
380.40	24.0	19,200	380.92	79.1	63,296
380.41	24.8	19,844	380.93	80.4	64,356
380.42	25.6	20,496	380.94	81.8	65,424
380.43	26.4	21,156	380.95	83.1	66,500
380.44	27.3	21,824	380.96	84.5	67,584
380.45	28.1	22,500	380.97	85.8	68,676
380.46	29.0	23,184	380.98	87.2	69,776
380.47	29.8	23,876	380.99	88.6	70,884
380.48	30.7	24,576	381.00	90.0	72,000
380.49	31.6	25,284			
380.50	32.5	26,000			
380.51	33.4	26,724			

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Page 122

Summary for Pond 5P: SWQ Basin #1

Inflow Area = 9.053 ac, 2.12% Impervious, Inflow Depth = 5.37" for 100-Year event
 Inflow = 20.47 cfs @ 12.93 hrs, Volume= 4.050 af
 Outflow = 18.71 cfs @ 13.16 hrs, Volume= 4.050 af, Atten= 9%, Lag= 14.0 min
 Discarded = 5.63 cfs @ 13.16 hrs, Volume= 2.892 af
 Primary = 13.08 cfs @ 13.16 hrs, Volume= 1.158 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
 Peak Elev= 407.51' @ 13.16 hrs Surf.Area= 0.279 ac Storage= 0.675 af

Plug-Flow detention time= 30.7 min calculated for 4.050 af (100% of inflow)
 Center-of-Mass det. time= 30.7 min (910.2 - 879.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	404.00'	1.013 af	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
404.00	0.111	566.0	0.000	0.000	0.111
406.00	0.205	610.0	0.311	0.311	0.209
408.00	0.306	653.0	0.508	0.819	0.313
408.50	0.477	706.0	0.194	1.013	0.444

Device	Routing	Invert	Outlet Devices	
#1	Discarded	404.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	407.00'	20.5" x 38.0" Horiz. CL-Top C= 0.600 Limited to weir flow at low heads	
#3	Primary	404.50'	6.0" Vert. Orifice/Grate C= 0.600	

Discarded OutFlow Max=5.63 cfs @ 13.16 hrs HW=407.51' (Free Discharge)
 ↳ **1=Exfiltration** (Exfiltration Controls 5.63 cfs)

Primary OutFlow Max=13.04 cfs @ 13.16 hrs HW=407.51' TW=398.59' (Dynamic Tailwater)
 ↳ **2=CL-Top** (Weir Controls 11.47 cfs @ 2.33 fps)
 ↳ **3=Orifice/Grate** (Orifice Controls 1.57 cfs @ 7.99 fps)

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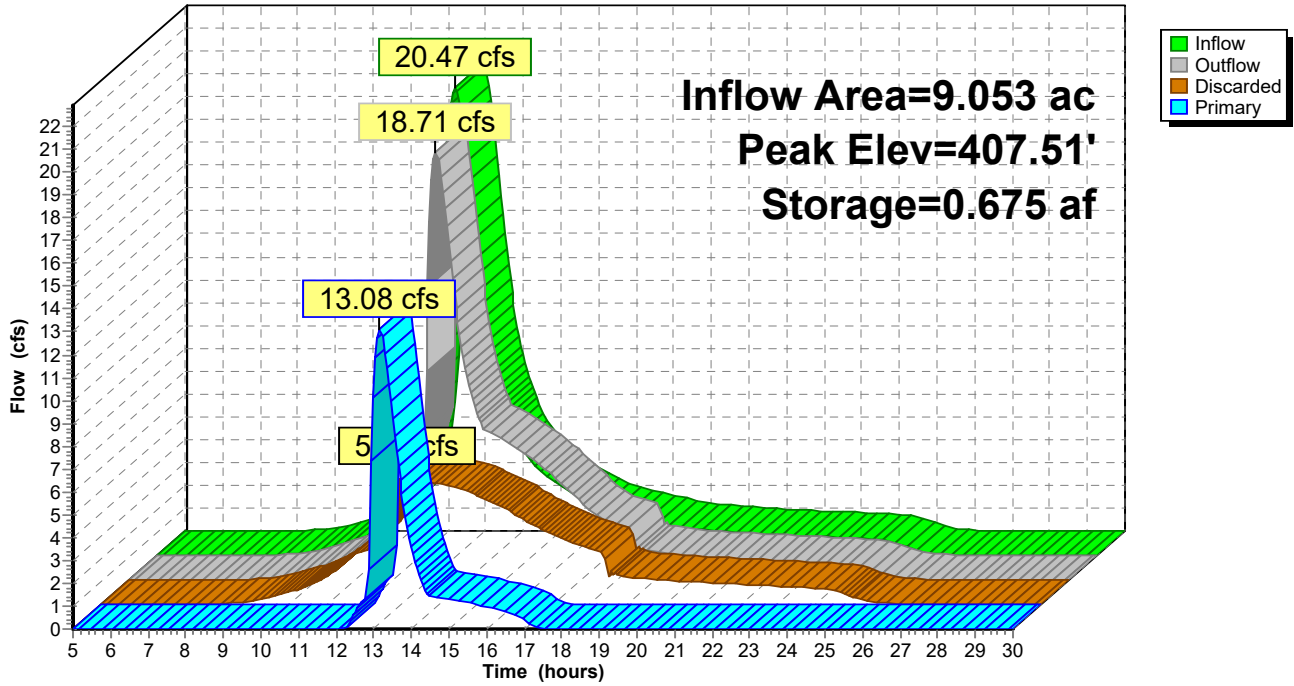
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Type III 24-hr 100-Year Rainfall=9.18"

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Page 123

Pond 5P: SWQ Basin #1

Hydrograph



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Page 124

Stage-Discharge for Pond 5P: SWQ Basin #1

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
404.00	0.00	0.00	0.00	406.60	5.99	4.70	1.29
404.05	2.28	2.28	0.00	406.65	6.05	4.75	1.30
404.10	2.32	2.32	0.00	406.70	6.12	4.80	1.32
404.15	2.36	2.36	0.00	406.75	6.19	4.85	1.34
404.20	2.40	2.40	0.00	406.80	6.25	4.90	1.35
404.25	2.44	2.44	0.00	406.85	6.32	4.95	1.37
404.30	2.49	2.49	0.00	406.90	6.39	5.00	1.39
404.35	2.53	2.53	0.00	406.95	6.45	5.05	1.40
404.40	2.57	2.57	0.00	407.00	6.52	5.10	1.42
404.45	2.61	2.61	0.00	407.05	6.94	5.15	1.79
404.50	2.66	2.66	0.00	407.10	7.66	5.20	2.46
404.55	2.71	2.70	0.01	407.15	8.57	5.26	3.32
404.60	2.78	2.75	0.03	407.20	9.64	5.31	4.33
404.65	2.86	2.79	0.07	407.25	10.84	5.36	5.48
404.70	2.95	2.84	0.11	407.30	12.16	5.41	6.75
404.75	3.05	2.88	0.17	407.35	13.59	5.46	8.13
404.80	3.16	2.93	0.23	407.40	15.12	5.52	9.60
404.85	3.27	2.97	0.30	407.45	16.75	5.57	11.18
404.90	3.38	3.02	0.36	407.50	18.46	5.62	12.84
404.95	3.49	3.07	0.43	407.55	20.26	5.68	14.59
405.00	3.59	3.11	0.47	407.60	22.14	5.73	16.41
405.05	3.68	3.16	0.52	407.65	24.10	5.79	18.32
405.10	3.77	3.21	0.56	407.70	26.14	5.84	20.30
405.15	3.86	3.26	0.60	407.75	28.24	5.89	22.35
405.20	3.94	3.31	0.63	407.80	30.41	5.95	24.46
405.25	4.02	3.36	0.67	407.85	31.68	6.00	25.68
405.30	4.11	3.41	0.70	407.90	32.45	6.06	26.39
405.35	4.19	3.45	0.73	407.95	33.19	6.12	27.08
405.40	4.27	3.50	0.76	408.00	33.92	6.17	27.75
405.45	4.35	3.56	0.79	408.05	34.89	6.48	28.41
405.50	4.42	3.61	0.82	408.10	35.85	6.80	29.05
405.55	4.50	3.66	0.85	408.15	36.80	7.13	29.68
405.60	4.58	3.71	0.87	408.20	37.75	7.46	30.29
405.65	4.66	3.76	0.90	408.25	38.69	7.80	30.89
405.70	4.73	3.81	0.92	408.30	39.63	8.15	31.48
405.75	4.81	3.87	0.95	408.35	40.56	8.50	32.06
405.80	4.89	3.92	0.97	408.40	41.50	8.87	32.63
405.85	4.96	3.97	0.99	408.45	42.42	9.24	33.18
405.90	5.04	4.03	1.01	408.50	43.35	9.62	33.73
405.95	5.12	4.08	1.04				
406.00	5.19	4.13	1.06				
406.05	5.26	4.18	1.08				
406.10	5.32	4.23	1.10				
406.15	5.39	4.27	1.12				
406.20	5.46	4.32	1.14				
406.25	5.52	4.37	1.16				
406.30	5.59	4.41	1.18				
406.35	5.66	4.46	1.20				
406.40	5.72	4.51	1.21				
406.45	5.79	4.56	1.23				
406.50	5.86	4.61	1.25				
406.55	5.92	4.65	1.27				

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Page 125

Stage-Area-Storage for Pond 5P: SWQ Basin #1

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
404.00	0.111	0.000	406.60	0.233	0.443
404.05	0.113	0.006	406.65	0.236	0.454
404.10	0.115	0.011	406.70	0.238	0.466
404.15	0.117	0.017	406.75	0.241	0.478
404.20	0.119	0.023	406.80	0.243	0.490
404.25	0.121	0.029	406.85	0.245	0.502
404.30	0.123	0.035	406.90	0.248	0.515
404.35	0.125	0.041	406.95	0.250	0.527
404.40	0.128	0.048	407.00	0.253	0.540
404.45	0.130	0.054	407.05	0.256	0.553
404.50	0.132	0.061	407.10	0.258	0.565
404.55	0.134	0.067	407.15	0.261	0.578
404.60	0.136	0.074	407.20	0.263	0.591
404.65	0.138	0.081	407.25	0.266	0.605
404.70	0.141	0.088	407.30	0.268	0.618
404.75	0.143	0.095	407.35	0.271	0.631
404.80	0.145	0.102	407.40	0.274	0.645
404.85	0.147	0.109	407.45	0.276	0.659
404.90	0.150	0.117	407.50	0.279	0.673
404.95	0.152	0.124	407.55	0.282	0.687
405.00	0.154	0.132	407.60	0.284	0.701
405.05	0.157	0.140	407.65	0.287	0.715
405.10	0.159	0.148	407.70	0.290	0.730
405.15	0.162	0.156	407.75	0.292	0.744
405.20	0.164	0.164	407.80	0.295	0.759
405.25	0.166	0.172	407.85	0.298	0.774
405.30	0.169	0.181	407.90	0.300	0.789
405.35	0.171	0.189	407.95	0.303	0.804
405.40	0.174	0.198	408.00	0.306	0.819
405.45	0.176	0.206	408.05	0.321	0.835
405.50	0.179	0.215	408.10	0.337	0.851
405.55	0.181	0.224	408.15	0.353	0.868
405.60	0.184	0.233	408.20	0.370	0.886
405.65	0.186	0.243	408.25	0.387	0.905
405.70	0.189	0.252	408.30	0.404	0.925
405.75	0.192	0.262	408.35	0.422	0.946
405.80	0.194	0.271	408.40	0.440	0.967
405.85	0.197	0.281	408.45	0.458	0.990
405.90	0.200	0.291	408.50	0.477	1.013
405.95	0.202	0.301			
406.00	0.205	0.311			
406.05	0.207	0.322			
406.10	0.210	0.332			
406.15	0.212	0.342			
406.20	0.214	0.353			
406.25	0.217	0.364			
406.30	0.219	0.375			
406.35	0.221	0.386			
406.40	0.224	0.397			
406.45	0.226	0.408			
406.50	0.228	0.420			
406.55	0.231	0.431			

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Page 126

Summary for Pond 6P: SWQ Basin #2

Inflow Area = 24.809 ac, 1.21% Impervious, Inflow Depth = 3.97" for 100-Year event
Inflow = 46.78 cfs @ 13.08 hrs, Volume= 8.207 af
Outflow = 28.57 cfs @ 13.59 hrs, Volume= 8.207 af, Atten= 39%, Lag= 30.7 min
Discarded = 8.63 cfs @ 13.59 hrs, Volume= 3.888 af
Primary = 19.94 cfs @ 13.59 hrs, Volume= 4.320 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 399.45' @ 13.59 hrs Surf.Area= 0.428 ac Storage= 1.793 af

Plug-Flow detention time= 33.7 min calculated for 8.191 af (100% of inflow)
Center-of-Mass det. time= 33.7 min (906.8 - 873.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	392.00'	2.529 af	Custom Stage Data (Irregular) Listed below (Recalc)		
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
392.00	0.088	313.0	0.000	0.000	0.088
394.00	0.158	408.0	0.243	0.243	0.214
396.00	0.246	503.0	0.401	0.643	0.374
398.00	0.346	588.0	0.589	1.233	0.545
400.00	0.461	674.0	0.804	2.037	0.745
401.00	0.524	699.0	0.492	2.529	0.810

Device	Routing	Invert	Outlet Devices	
#1	Discarded	392.00'	20.000 in/hr Exfiltration over Surface area Phase-In= 0.01'	
#2	Primary	399.50'	20.5" x 38.0" Horiz. Top Grate C= 0.600 Limited to weir flow at low heads	
#3	Primary	392.80'	6.0" W x 46.0" H Vert. Weir C= 0.600	

Discarded OutFlow Max=8.63 cfs @ 13.59 hrs HW=399.45' (Free Discharge)

↑ **1=Exfiltration** (Exfiltration Controls 8.63 cfs)

Primary OutFlow Max=19.94 cfs @ 13.59 hrs HW=399.45' TW=380.37' (Dynamic Tailwater)

↑ **2=Top Grate** (Controls 0.00 cfs)

↑ **3=Weir** (Orifice Controls 19.94 cfs @ 10.40 fps)

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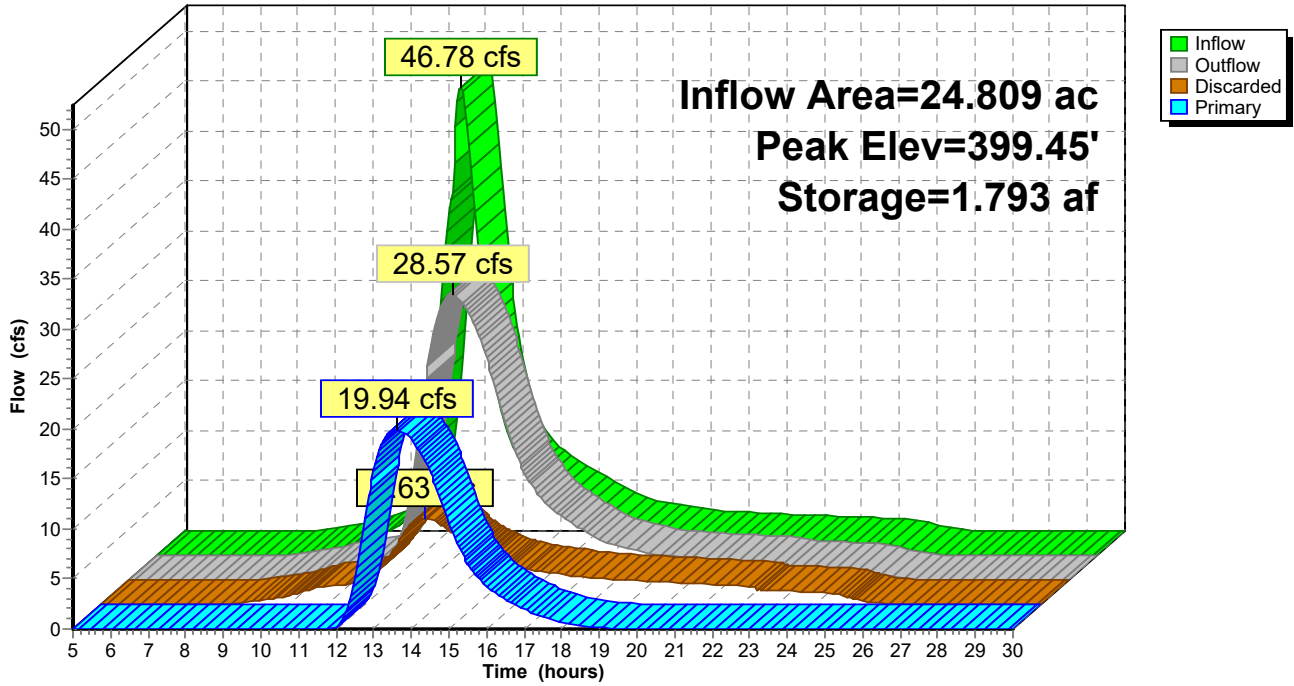
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Page 127

Pond 6P: SWQ Basin #2

Hydrograph



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Page 128

Stage-Discharge for Pond 6P: SWQ Basin #2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
392.00	0.00	0.00	0.00	397.20	20.26	6.13	14.13
392.10	1.84	1.84	0.00	397.30	20.68	6.23	14.45
392.20	1.90	1.90	0.00	397.40	21.09	6.34	14.76
392.30	1.96	1.96	0.00	397.50	21.50	6.44	15.06
392.40	2.02	2.02	0.00	397.60	21.90	6.55	15.35
392.50	2.09	2.09	0.00	397.70	22.29	6.65	15.64
392.60	2.16	2.16	0.00	397.80	22.68	6.76	15.92
392.70	2.22	2.22	0.00	397.90	23.07	6.87	16.20
392.80	2.29	2.29	0.00	398.00	23.45	6.98	16.47
392.90	2.41	2.36	0.05	398.10	23.82	7.09	16.73
393.00	2.57	2.43	0.14	398.20	24.19	7.19	16.99
393.10	2.76	2.50	0.26	398.30	24.55	7.30	17.25
393.20	2.98	2.57	0.41	398.40	24.92	7.41	17.50
393.30	3.21	2.65	0.57	398.50	25.27	7.53	17.75
393.40	3.47	2.72	0.75	398.60	25.63	7.64	17.99
393.50	3.73	2.79	0.94	398.70	25.98	7.75	18.23
393.60	4.02	2.87	1.15	398.80	26.34	7.87	18.47
393.70	4.32	2.95	1.37	398.90	26.68	7.98	18.70
393.80	4.63	3.03	1.60	399.00	27.03	8.10	18.93
393.90	4.96	3.11	1.85	399.10	27.37	8.21	19.16
394.00	5.30	3.19	2.11	399.20	27.72	8.33	19.39
394.10	5.64	3.27	2.38	399.30	28.06	8.45	19.61
394.20	6.00	3.35	2.66	399.40	28.39	8.57	19.83
394.30	6.38	3.43	2.95	399.50	28.73	8.69	20.04
394.40	6.76	3.51	3.25	399.60	30.07	8.81	21.27
394.50	7.15	3.59	3.56	399.70	32.25	8.93	23.32
394.60	7.55	3.68	3.88	399.80	34.97	9.05	25.92
394.70	7.97	3.76	4.20	399.90	38.13	9.17	28.95
394.80	8.39	3.85	4.54	400.00	41.66	9.30	32.37
394.90	8.82	3.94	4.88	400.10	45.53	9.42	36.11
395.00	9.26	4.02	5.24	400.20	49.71	9.54	40.17
395.10	9.71	4.11	5.60	400.30	54.18	9.67	44.51
395.20	10.17	4.20	5.97	400.40	56.40	9.80	46.61
395.30	10.64	4.30	6.34	400.50	58.06	9.92	48.14
395.40	11.12	4.39	6.73	400.60	59.65	10.05	49.60
395.50	11.60	4.48	7.12	400.70	61.19	10.18	51.01
395.60	12.09	4.57	7.52	400.80	62.67	10.31	52.37
395.70	12.60	4.67	7.93	400.90	64.11	10.44	53.67
395.80	13.11	4.77	8.34	401.00	65.51	10.57	54.94
395.90	13.62	4.86	8.76				
396.00	14.15	4.96	9.19				
396.10	14.68	5.05	9.62				
396.20	15.21	5.15	10.06				
396.30	15.75	5.24	10.51				
396.40	16.30	5.34	10.96				
396.50	16.86	5.43	11.42				
396.60	17.42	5.53	11.89				
396.70	17.96	5.63	12.33				
396.80	18.46	5.73	12.73				
396.90	18.93	5.83	13.10				
397.00	19.38	5.93	13.46				
397.10	19.83	6.03	13.80				

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Page 129

Stage-Area-Storage for Pond 6P: SWQ Basin #2

Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
392.00	0.088	0.000	397.20	0.304	0.973
392.10	0.091	0.009	397.30	0.309	1.003
392.20	0.094	0.018	397.40	0.314	1.035
392.30	0.097	0.028	397.50	0.319	1.066
392.40	0.100	0.038	397.60	0.325	1.098
392.50	0.104	0.048	397.70	0.330	1.131
392.60	0.107	0.058	397.80	0.335	1.164
392.70	0.110	0.069	397.90	0.341	1.198
392.80	0.114	0.080	398.00	0.346	1.233
392.90	0.117	0.092	398.10	0.351	1.267
393.00	0.120	0.104	398.20	0.357	1.303
393.10	0.124	0.116	398.30	0.362	1.339
393.20	0.128	0.129	398.40	0.368	1.375
393.30	0.131	0.142	398.50	0.373	1.412
393.40	0.135	0.155	398.60	0.379	1.450
393.50	0.139	0.169	398.70	0.384	1.488
393.60	0.142	0.183	398.80	0.390	1.527
393.70	0.146	0.197	398.90	0.396	1.566
393.80	0.150	0.212	399.00	0.401	1.606
393.90	0.154	0.227	399.10	0.407	1.646
394.00	0.158	0.243	399.20	0.413	1.687
394.10	0.162	0.259	399.30	0.419	1.729
394.20	0.166	0.275	399.40	0.425	1.771
394.30	0.170	0.292	399.50	0.431	1.814
394.40	0.174	0.309	399.60	0.437	1.857
394.50	0.178	0.327	399.70	0.443	1.901
394.60	0.182	0.345	399.80	0.449	1.946
394.70	0.187	0.363	399.90	0.455	1.991
394.80	0.191	0.382	400.00	0.461	2.037
394.90	0.195	0.401	400.10	0.467	2.083
395.00	0.200	0.421	400.20	0.473	2.130
395.10	0.204	0.441	400.30	0.479	2.178
395.20	0.208	0.462	400.40	0.486	2.226
395.30	0.213	0.483	400.50	0.492	2.275
395.40	0.218	0.504	400.60	0.498	2.325
395.50	0.222	0.526	400.70	0.505	2.375
395.60	0.227	0.549	400.80	0.511	2.425
395.70	0.232	0.572	400.90	0.518	2.477
395.80	0.236	0.595	401.00	0.524	2.529
395.90	0.241	0.619			
396.00	0.246	0.643			
396.10	0.251	0.668			
396.20	0.255	0.693			
396.30	0.260	0.719			
396.40	0.265	0.745			
396.50	0.269	0.772			
396.60	0.274	0.799			
396.70	0.279	0.827			
396.80	0.284	0.855			
396.90	0.289	0.884			
397.00	0.294	0.913			
397.10	0.299	0.943			

Prospect Solar One - Post 8-7-2020

Prepared by R.R. Hiltbrand Engineers

HydroCAD® 10.00-22 s/n 08647 © 2018 HydroCAD Software Solutions LLC

Burlington Solar One - Developed
Type III 24-hr 100-Year Rainfall=9.18"

Printed 9/3/2020

Page 130

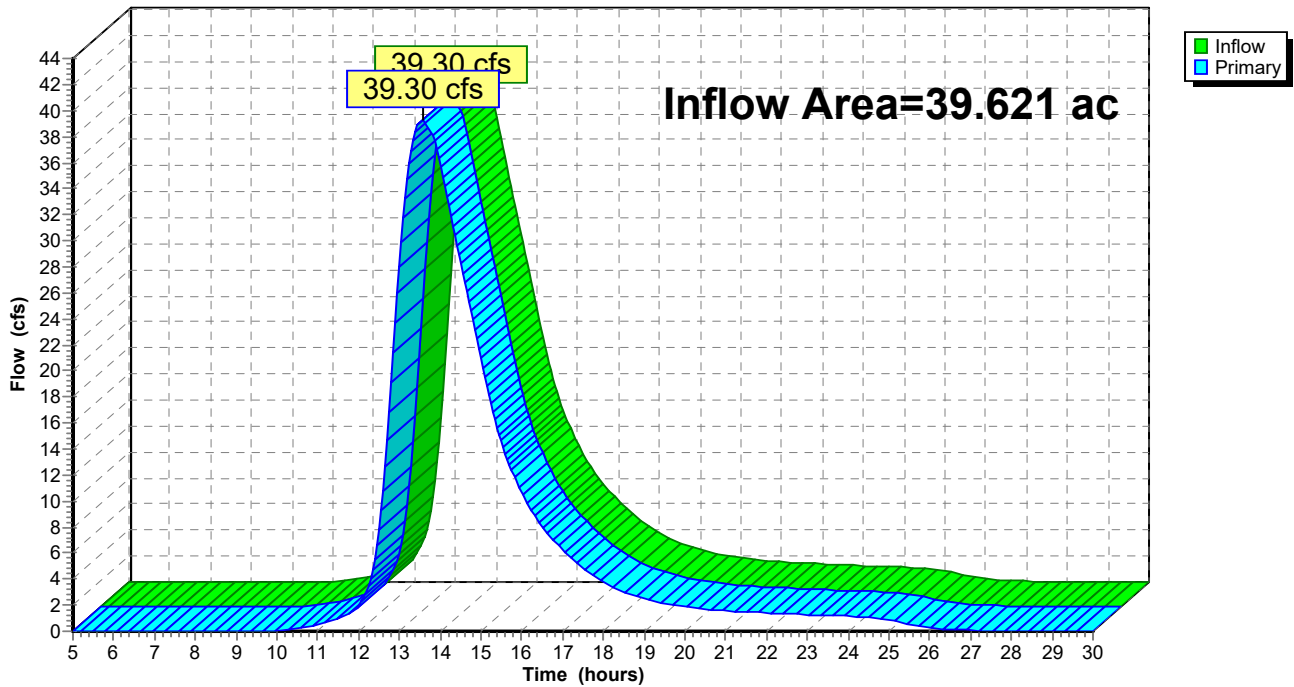
Summary for Link 2L: POA

Inflow Area = 39.621 ac, 0.76% Impervious, Inflow Depth = 2.94" for 100-Year event
Inflow = 39.30 cfs @ 13.57 hrs, Volume= 9.710 af
Primary = 39.30 cfs @ 13.57 hrs, Volume= 9.710 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-30.00 hrs, dt= 0.05 hrs

Link 2L: POA

Hydrograph



**NOAA Atlas 14, Volume 10, Version 3 WHIGVILLE
RSVR**



Station ID: 06-9508

Location name: Burlington, Connecticut, USA*

Latitude: 41.7333°, Longitude: -72.95°

Elevation:

Elevation (station metadata): 581 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps & aerals](#)

PF tabular

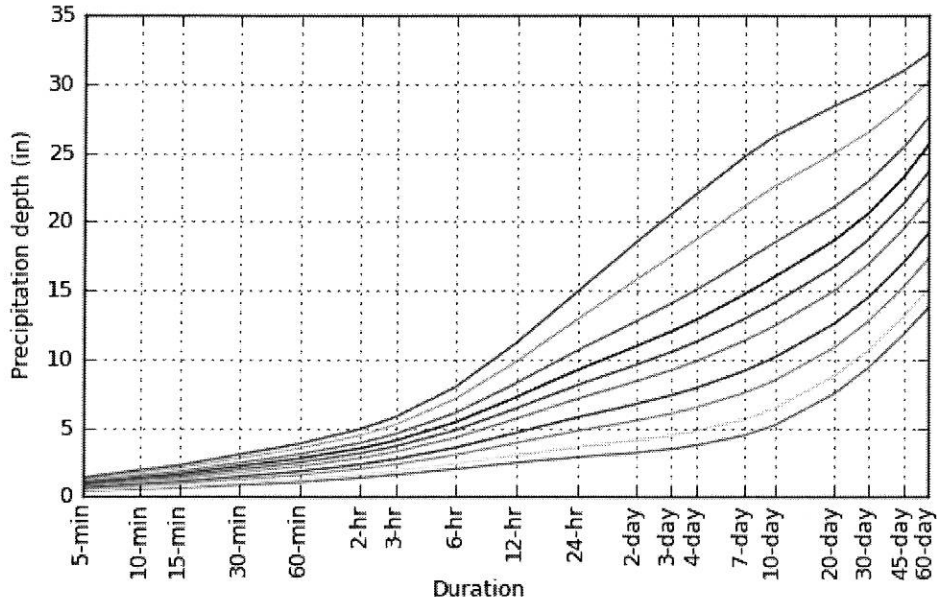
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.365 (0.277-0.479)	0.435 (0.329-0.571)	0.549 (0.415-0.724)	0.643 (0.483-0.852)	0.773 (0.564-1.07)	0.872 (0.625-1.23)	0.973 (0.679-1.42)	1.08 (0.723-1.62)	1.23 (0.797-1.91)	1.35 (0.855-2.13)
10-min	0.517 (0.392-0.679)	0.616 (0.467-0.809)	0.777 (0.587-1.02)	0.910 (0.685-1.21)	1.09 (0.799-1.51)	1.23 (0.885-1.74)	1.38 (0.962-2.01)	1.53 (1.02-2.29)	1.75 (1.13-2.70)	1.91 (1.21-3.02)
15-min	0.609 (0.462-0.799)	0.724 (0.549-0.952)	0.913 (0.691-1.20)	1.07 (0.805-1.42)	1.29 (0.940-1.78)	1.45 (1.04-2.05)	1.62 (1.13-2.36)	1.80 (1.21-2.70)	2.05 (1.33-3.18)	2.25 (1.43-3.56)
30-min	0.824 (0.625-1.08)	0.981 (0.743-1.29)	1.24 (0.935-1.63)	1.45 (1.09-1.92)	1.74 (1.27-2.41)	1.97 (1.41-2.77)	2.19 (1.53-3.19)	2.44 (1.63-3.65)	2.78 (1.80-4.30)	3.05 (1.93-4.81)
60-min	1.04 (0.789-1.37)	1.24 (0.938-1.63)	1.56 (1.18-2.06)	1.83 (1.38-2.42)	2.20 (1.61-3.03)	2.48 (1.78-3.49)	2.77 (1.93-4.03)	3.08 (2.06-4.60)	3.50 (2.26-5.42)	3.84 (2.43-6.07)
2-hr	1.36 (1.04-1.78)	1.61 (1.23-2.10)	2.01 (1.53-2.64)	2.34 (1.77-3.09)	2.80 (2.06-3.85)	3.15 (2.27-4.41)	3.50 (2.46-5.09)	3.90 (2.62-5.81)	4.46 (2.89-6.88)	4.90 (3.11-7.72)
3-hr	1.58 (1.21-2.06)	1.87 (1.43-2.43)	2.34 (1.78-3.05)	2.72 (2.06-3.58)	3.26 (2.40-4.47)	3.66 (2.65-5.13)	4.08 (2.88-5.93)	4.55 (3.06-6.77)	5.23 (3.40-8.06)	5.79 (3.68-9.11)
6-hr	2.00 (1.54-2.59)	2.39 (1.83-3.10)	3.03 (2.32-3.94)	3.56 (2.71-4.65)	4.29 (3.18-5.87)	4.83 (3.52-6.77)	5.41 (3.86-7.90)	6.10 (4.11-9.05)	7.12 (4.64-10.9)	7.99 (5.10-12.5)
12-hr	2.45 (1.89-3.15)	3.00 (2.31-3.86)	3.89 (2.99-5.03)	4.64 (3.54-6.03)	5.66 (4.22-7.74)	6.41 (4.71-8.99)	7.23 (5.21-10.6)	8.24 (5.57-12.2)	9.81 (6.41-15.0)	11.2 (7.15-17.5)
24-hr	2.86 (2.21-3.65)	3.58 (2.77-4.58)	4.76 (3.68-6.12)	5.74 (4.41-7.43)	7.10 (5.33-9.71)	8.08 (5.99-11.4)	9.18 (6.69-13.5)	10.6 (7.18-15.6)	12.9 (8.42-19.7)	14.9 (9.54-23.2)
2-day	3.19 (2.49-4.06)	4.08 (3.17-5.20)	5.53 (4.29-7.07)	6.74 (5.20-8.66)	8.40 (6.35-11.5)	9.60 (7.17-13.5)	11.0 (8.08-16.2)	12.8 (8.68-18.8)	15.8 (10.4-24.1)	18.5 (11.9-28.8)
3-day	3.47 (2.71-4.40)	4.45 (3.47-5.64)	6.05 (4.70-7.70)	7.38 (5.71-9.45)	9.21 (6.99-12.6)	10.5 (7.89-14.8)	12.0 (8.90-17.8)	14.1 (9.57-20.7)	17.5 (11.5-26.6)	20.6 (13.3-31.9)
4-day	3.73 (2.92-4.71)	4.77 (3.73-6.04)	6.48 (5.05-8.23)	7.90 (6.12-10.1)	9.85 (7.49-13.4)	11.3 (8.46-15.8)	12.9 (9.54-19.0)	15.0 (10.2-22.1)	18.7 (12.3-28.4)	22.0 (14.2-34.1)
7-day	4.45 (3.49-5.59)	5.62 (4.41-7.08)	7.54 (5.90-9.53)	9.14 (7.11-11.6)	11.3 (8.64-15.3)	12.9 (9.72-18.0)	14.7 (10.9-21.6)	17.1 (11.7-25.0)	21.1 (13.9-32.0)	24.7 (16.0-38.2)
10-day	5.18 (4.08-6.49)	6.41 (5.04-8.05)	8.44 (6.61-10.6)	10.1 (7.89-12.8)	12.4 (9.48-16.7)	14.1 (10.6-19.5)	16.0 (11.8-23.3)	18.5 (12.7-26.9)	22.6 (14.9-34.1)	26.2 (17.0-40.4)
20-day	7.49 (5.92-9.34)	8.77 (6.93-10.9)	10.9 (8.55-13.6)	12.6 (9.86-15.9)	15.0 (11.4-19.9)	16.7 (12.6-22.9)	18.6 (13.7-26.8)	21.1 (14.5-30.6)	25.0 (16.6-37.6)	28.4 (18.5-43.7)
30-day	9.41 (7.47-11.7)	10.7 (8.48-13.3)	12.8 (10.1-16.0)	14.5 (11.4-18.3)	16.9 (13.0-22.4)	18.7 (14.1-25.4)	20.6 (15.1-29.2)	23.0 (15.9-33.2)	26.5 (17.7-39.8)	29.6 (19.3-45.4)
45-day	11.8 (9.36-14.6)	13.1 (10.4-16.2)	15.2 (12.1-18.9)	17.0 (13.4-21.3)	19.5 (14.9-25.5)	21.3 (16.0-28.6)	23.2 (16.9-32.4)	25.4 (17.6-36.5)	28.5 (19.0-42.6)	31.0 (20.2-47.4)
60-day	13.7 (10.9-16.9)	15.1 (12.0-18.6)	17.3 (13.7-21.4)	19.1 (15.1-23.9)	21.6 (16.6-28.2)	23.6 (17.7-31.4)	25.5 (18.5-35.2)	27.5 (19.2-39.5)	30.2 (20.2-45.1)	32.2 (21.1-49.3)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

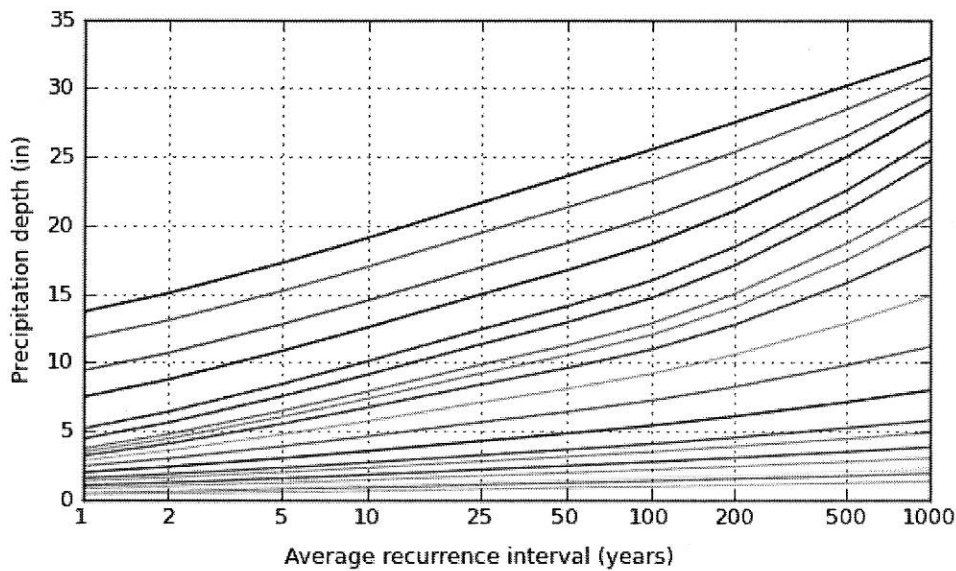
[Back to Top](#)

PF graphical

PDS-based depth-duration-frequency (DDF) curves
 Latitude: 41.7333°, Longitude: -72.9500°



Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000

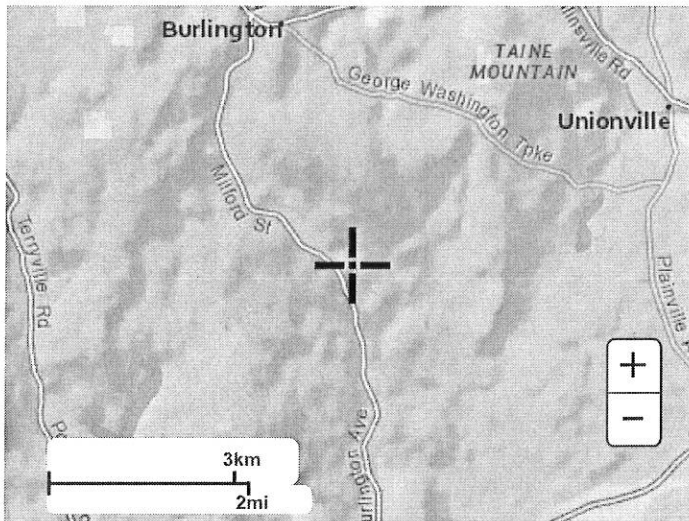


Duration	
5-min	2-day
10-min	3-day
15-min	4-day
30-min	7-day
60-min	10-day
2-hr	20-day
3-hr	30-day
6-hr	45-day
12-hr	60-day
24-hr	

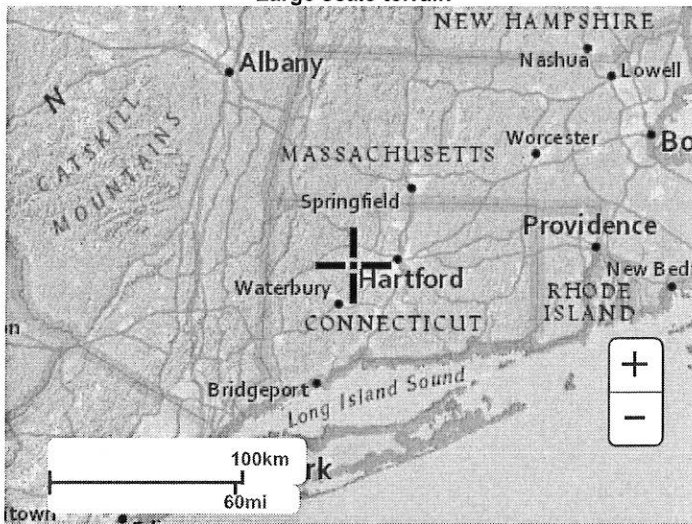
[Back to Top](#)

Maps & aerials

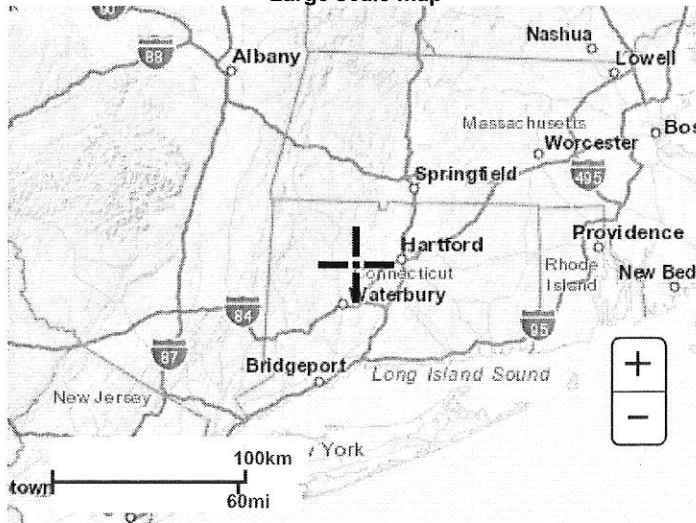
Small scale terrain



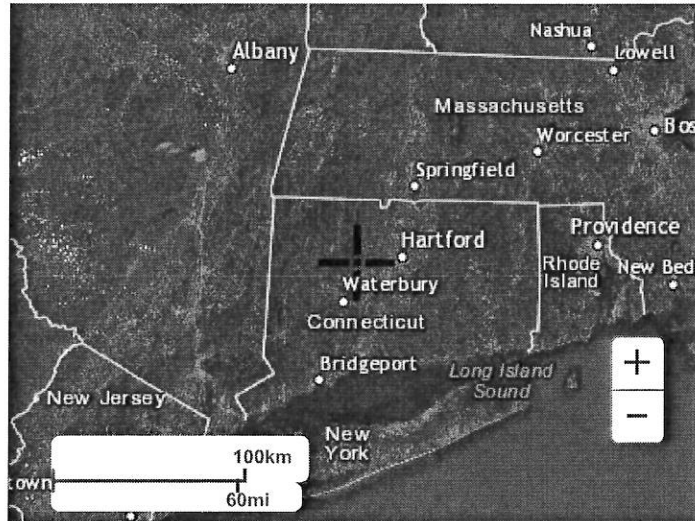
Large scale terrain



Large scale map



Large scale aerial



[Back to Top](#)

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1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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Soil Map—State of Connecticut



Map Scale: 1:7,210 if printed on B landscape (17" x 11") sheet.



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




Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: State of Connecticut
 Survey Area Data: Version 20, Jun 9, 2020

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

Date(s) aerial images were photographed: Sep 25, 2019—Nov 9, 2019

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	57.2	13.1%
12	Raypol silt loam	5.3	1.2%
13	Walpole sandy loam, 0 to 3 percent slopes	2.6	0.6%
15	Scarboro muck, 0 to 3 percent slopes	0.4	0.1%
23A	Sudbury sandy loam, 0 to 5 percent slopes	9.3	2.1%
29A	Agawam fine sandy loam, 0 to 3 percent slopes	32.0	7.4%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	3.7	0.8%
34A	Merrimac fine sandy loam, 0 to 3 percent slopes	17.6	4.0%
34B	Merrimac fine sandy loam, 3 to 8 percent slopes	1.7	0.4%
38C	Hinckley loamy sand, 3 to 15 percent slopes	50.2	11.5%
38E	Hinckley loamy sand, 15 to 45 percent slopes	33.4	7.7%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	8.0	1.8%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	15.9	3.6%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	47.2	10.8%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	29.6	6.8%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	20.1	4.6%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	9.8	2.3%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	31.9	7.3%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	0.1	0.0%
86C	Paxton and Montauk fine sandy loams, 3 to 15 percent slopes, extremely stony	1.5	0.3%
102	Pootatuck fine sandy loam	14.7	3.4%
103	Rippowam fine sandy loam	24.7	5.7%
108	Saco silt loam	7.4	1.7%
305	Udorthents-Pits complex, gravelly	7.9	1.8%
306	Udorthents-Urban land complex	1.1	0.3%
702B	Tisbury silt loam, 3 to 8 percent slopes	2.4	0.6%
Totals for Area of Interest		435.9	100.0%