



CREATIVITY BEYOND ENGINEERING

Storm Water Management Plan for Lov-It Brands Campus Town of Bristol, WI

Project No. 3230212

July 26, 2024

PREPARED BY:

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INTRODUCTION

This stormwater management report discusses the hydrologic and hydraulic analysis of the proposed Lov-It Brands Campus in the Town of Bristol, WI. Stormwater management design for this development conforms to Wisconsin NR 151 and Dane County Ordinance Chapter 14.

The system design consists of a series of wet detention basins and infiltration basins, which meet peak reduction requirements, TSS removals for water quality requirements, infiltration requirements, and oil and grease control requirements. The status of the site is a new development. Calculations and modeling showing how the design standards are met are included in the appendix of this report.

METHODS OF ANALYSIS

Hydrologic analysis included in this report was performed using the HydroCAD hydrologic simulation computer model, version 10.10 by HydroCAD Software Solutions LLC. The discharges were generated using the SCS Dimensionless Unit Hydrograph Method for a 24-hour duration storm. Model parameters include drainage area, SCS runoff curve number, time of concentration, and 24-hour rainfall depths with Type MSE4 rainfall distribution curve. Table 1 has a summary of the rainfall used for this site's design.

Table 1 – Design Storm Events
Per Dane County Ch. 14 Stormwater Ordinance

Frequency (years)	Rainfall Depth (inches)
1	2.49
2	2.84
10	4.09
100	6.66
200	7.53

Water quality analysis included in this report was performed using the Source Loading and Management Model (SLAMM computer model). The design storm event is an average annual rainfall for the following region and year: Madison, 1981 (March 12 – December 2).

WATER QUANTITY DESIGN

The pre-developed conditions consist primarily of agricultural cropland. There are existing wetlands on the northwest and south/east areas of the site, and there are existing building structures remnant from a prior homestead at the north end of the site. Access to the site is from Russ & Mary Court, a town road that will be improved during the project. The post-development site will generate increased runoff due to the proposed warehouse buildings and associated parking and drive areas. Per the Dane County Ch. 14 ordinance, post-development peak runoff rates must match the pre-development rates for the 1-yr, 2-yr, 10-yr, 100-yr and 200-yr, 24-hr design storms.

The hydrologic study area for the post-developed site is approximately 69 AC. There are four main existing watersheds where development will occur:

- Watersheds E1 and E2 which drain to the northwest;
- Watershed E3 which drains to the southeast; and
- Watershed E4 represents the offsite area where work will occur for this project (Russ & Mary Court town road improvements), and will be untreated runoff due to grade

Areas onsite that are unimproved and outside the limits of disturbance are excluded from analysis. The existing wetlands will not be disturbed and will be referred to as the downstream waterbodies. E1 and E2 are tributary to the existing wetland on the north/west part of the site, and E3 and E4 are tributary to the existing wetland on the south/east side of the site.

There are 11 proposed watersheds. They are described as follows:

- P1: the first two warehouse roofs and the office building roof, which drain to Pond 1 (infiltration)
- P2: the third warehouse roof which drains to Pond 2 (infiltration)
- P3: the fourth warehouse roof which drains to Pond 3 (infiltration)
- P4: the fifth warehouse roof and adjacent pavement and greenspace that drains to Pond 4 (wet pond)
- P5: the sixth warehouse roof, the shop roof and adjacent pavement and greenspace that drains to Pond 5 (wet pond)
- P6: pavement and greenspace near warehouse buildings 1 and 2, that drains to Pond 6 (wet pond)
- P7: untreated runoff around the perimeter of the site that cannot be captured – these are areas improved due to grading or installation of the septic system. Areas drain to the north/west.
 - P7-bypass (P7B): areas beyond the P7 untreated areas that are unimproved and undisturbed. Ground cover matches the existing condition.
- P8: untreated runoff around the perimeter of the site that cannot be captured – these are areas improved due to grading or installation of the septic system. Areas drain to the south/east.
 - P8-bypass (P8B): areas beyond the P8 untreated areas that are unimproved and undisturbed. Ground cover matches the existing condition.
- P9: untreated area due to Russ & Mary Court town road improvements
- P10 and P11: these are areas where a majority of the septic area is to reside. The areas drain to two wet ponds, Pond 7 and Pond 8, respectively.

In order to reduce peak runoff, proposed greenspace areas will be deep-tilled if they are able to be. This excludes septic areas, but includes greenspace in the untreated perimeter areas of the site.

A reduction in peak discharge rates will be achieved by routing the post-development site through wet detention basins and infiltration basins. In order to demonstrate that flows are not increased to the downstream receiving waters, peak flows were matched pre to post for all areas draining to the north/west wetland and to the south/east wetland. See the attached hydrographs included in the Appendix for further design information. Table 2 shows a comparison of the peak rates.

Table 2
Comparison of Peak Rates

Peak flow to the following downstream waterbody:	1-yr (cfs)	2-yr (cfs)	10-yr (cfs)	100-yr (cfs)	200-yr (cfs)
Pre-development E1, E2 (North)	12.31	17.36	38.45	89.41	107.69
Post-dev. P1-P4, P7, P7B (North)	8.29	10.37	18.01	40.22	51.08
Pre-dev. E3, E4 (South)	11.71	17.00	39.44	94.57	114.53
Post-dev. P5, P6, P8, P8B, P9-P11 (South)	8.57	11.27	22.34	54.66	67.84
Pre-development Total	24.02	34.36	77.88	183.98	222.22
Post-development Total	16.85	21.63	40.35	94.74	118.90

WATER QUALITY DESIGN

Per Dane County Ch. 14 and NR 151, 80% TSS removal is required for new development. WinSLAMM modeling is provided to show that this is achieved through the stormwater management BMPs constructed.

Table 3 – Post-development TSS Removal

TSS Before (lbs)	TSS After (lbs)	Removal (%)
17,004	2,069	87.83%

INFILTRATION DESIGN

Per Dane County Ch. 14 ordinance, new developments are required to comply with one of two methods to satisfy infiltration requirements. These methods are either to infiltrate at least 90% of the pre-development infiltration volume or meet the pre-development groundwater recharge rate. Due to existing site and soil conditions, the groundwater recharge rate method will be used for meeting infiltration requirements. This method requires that the site meet the rate of 9.48 in/yr (per Dane County GIS – layer: Groundwater Recharge). Modeling shows that 21.09 in/yr is achieved, which meets the recharge rate. It is also required that if this method is used, 2% of the site area still be used for effective infiltration areas. The site area is roughly 70 AC, so 1.4 AC (or 61,000 sf) of infiltration area is needed. The 3 infiltration basin bottoms total to greater than 61,000 sf, so this is achieved. See Appendix for modeling and GIS-required recharge rate.

It is noted that this report has been prepared prior to receiving geotechnical engineering borings and test pits. The subsurface exploration report is currently in process. In lieu of Geotech borings, USDA Web Soil Survey information is being used, and indicates a native soil infiltration rate of 0.50 in/hr in areas of infiltration basins.

OIL & GREASE CONTROL

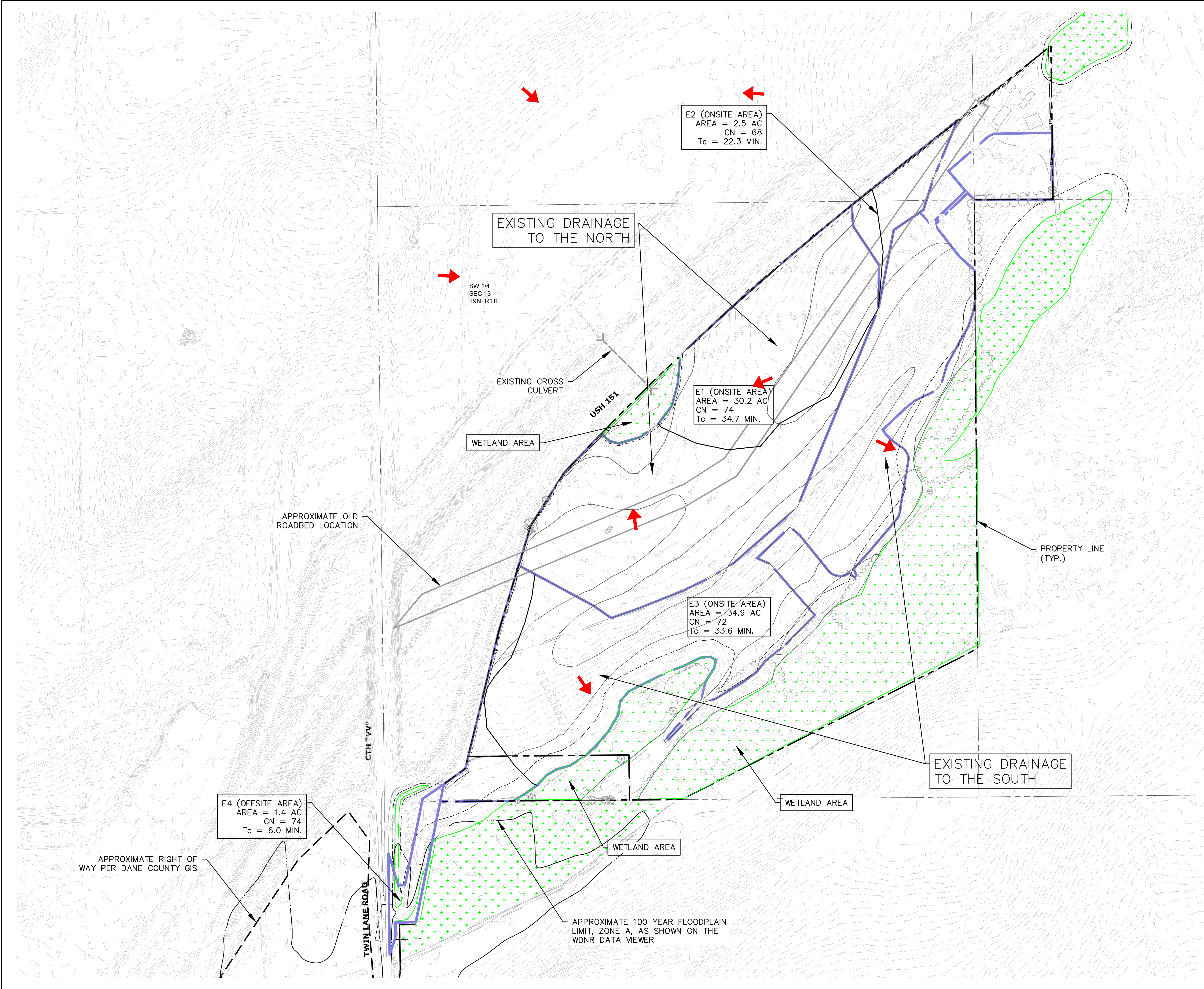
Per Dane County Ch. 14, oil and grease control is needed to treat the first 1/2-inch of runoff for parking and traffic areas. To meet this requirement, a Bio-Skirt with snout will be installed on each of the furthest downstream inlets prior to discharging into the wet ponds.

SUMMARY

The proposed site stormwater management system has been designed per NR 151 and the Dane County Ch. 14 stormwater management ordinance. The proposed site meets all requirements outlined in these code sections. Peak rate reductions are met, removal of TSS is greater than 80%, and infiltration and oil & grease requirements are met.

APPENDIX A

Hydrology Exhibits



NOTES & LEGEND

SURVEY WITHIN SITE LIMITS BY WAGNER EXCAVATING. TOPOGRAPHY OUTSIDE PROJECT LIMITS FROM DANE COUNTY GIS.

PARCEL BOUNDARIES DELINEATED BY WAGNER EXCAVATING ON SURVEY DATED 8/24/2023, PROVIDED TO RASMITH VIA CAD FILE ON 10/18/2023.

PROPERTY AREA = 101.3 AC

- WETLAND SETBACK
- 100-YR FLOOD LINE
- HSG BOUNDARY
- TIME OF CONCENTRATION PATH
- DELINEATED WETLANDS
- APPROXIMATE WETLANDS FROM DNR SURFACE WATER DATA VIEWER
- EXISTING WATERSHED BOUNDARY

ONSITE AREAS = CONSIST OF ALL IMPROVED AREAS, IMPERVIOUS OR PERVIOUS, WHETHER TREATED OR UNTREATED. THESE AREAS INCLUDE SITE IMPROVEMENTS, INCLUDING STORMWATER, SEPTIC AND DRAIN FIELD AREAS.

OFFSITE AREAS = CONSIST OF SITE IMPROVEMENTS OUTSIDE THE PROPERTY LIMITS (NAMELY, THE TOWN ROAD IMPROVEMENTS).

WETLAND AREAS = CONSIST OF DELINEATED WETLANDS AND AREAS BETWEEN THE WETLANDS AND THE PROPERTY LINES, WHICH WILL NOT BE DISTURBED. THESE AREAS WILL BE REFERRED TO AS THE OUTFALL AREAS OR DOWNSTREAM WATERBODIES.



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DESCRIPTION	DATE
LOV-IT BRANDS CAMPUS TOWN OF BRISTOL, WI EXISTING HYDROLOGY EXHIBIT	
© COPYRIGHT 2024 R.A. Smith, Inc.	
DATE: 07/26/2024	
SCALE: 1" = 200'	
JOB NO. 3230212	
PROJECT MANAGER: PAUL V. MCILHERAN, P.E.	
DESIGNED BY: AJS3	
CHECKED BY: PVM	
SHEET NUMBER	
HX-01	

P7
AREA = 2.2 AC
CN = 80
Tc = 6.0 MIN.

P3
AREA = 3.2 AC
CN = 94
Tc = 6.0 MIN.

P4
AREA = 6.1 AC
CN = 95
Tc = 6.0 MIN.

P2
AREA = 3.3 AC
CN = 94
Tc = 6.0 MIN.

P5
AREA = 15.3 AC
CN = 95
Tc = 6.0 MIN.

P7-BYPASS
AREA = 2.2 AC
CN = 78
Tc = 6.0 MIN.

P1
AREA = 7.8 AC
CN = 92
Tc = 6.0 MIN.

P8-BYPASS
AREA = 0.5 AC
CN = 73
Tc = 6.0 MIN.

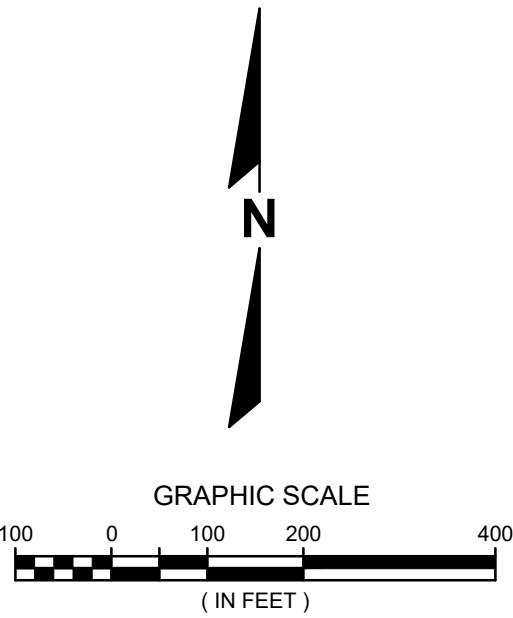
P6
AREA = 9.6 AC
CN = 93
Tc = 6.0 MIN.

P11
AREA = 5.0 AC
CN = 81
Tc = 6.0 MIN.

P10
AREA = 7.1 AC
CN = 85
Tc = 6.0 MIN.

P9
AREA = 1.4 AC
CN = 88
Tc = 6.0 MIN.

P8
AREA = 5.3 AC
CN = 74
Tc = 6.0 MIN.



NOTES & LEGEND

- SURVEY WITHIN SITE LIMITS BY WAGNER EXCAVATING. TOPOGRAPHY OUTSIDE PROJECT LIMITS FROM DANE COUNTY GIS.
- PARCEL BOUNDARIES DELINEATED BY WAGNER EXCAVATING ON SURVEY DATED 8/24/2023, PROVIDED TO RASMITH VIA CAD FILE ON 10/18/2023.
- PROPERTY AREA = 101.3 AC
- WETLAND SETBACK
 - 100-YR FLOOD LINE
 - HSG BOUNDARY
 - TIME OF CONCENTRATION PATH
 - DELINEATED WETLANDS
 - APPROXIMATE WETLANDS FROM DNR SURFACE WATER DATA VIEWER
 - PROPOSED WATERSHED BOUNDARY

STORMWATER REQUIREMENTS

NOTE: THESE REQUIREMENTS PER DANE COUNTY ORDINANCE, CHAPTER 14.

RUNOFF RATE CONTROL: POST-DEVELOPMENT PEAK RELEASE RATES MATCH PRE-DEVELOPMENT PEAK RELEASE RATES FOR THE 1-YR, 2-YR, 10-YR, 100-YR AND 200-YR, 24-HR DESIGN STORMS.

SEDIMENT CONTROL: 80% TSS REDUCTION.

INFILTRATION: MEET OR EXCEED THE ANNUAL PRE-DEVELOPMENT RECHARGE RATE.

OIL & GREASE CONTROL: TREAT THE FIRST 0.5-INCHES OF RUNOFF FROM PARKING AND TRAFFIC AREAS.

****ALL REQUIREMENTS WILL BE MET WITH BEST MANAGEMENT PRACTICES THAT INCLUDE WET PONDS, INFILTRATION BASINS, AND DEVICES TO TREAT OIL & GREASE.**

****EXISTING DRAINAGE PATTERNS WILL BE MAINTAINED. PRE-DEVELOPMENT RUNOFF TO THE NORTH WILL FLOW TO THE NORTH POST-DEVELOPMENT. AND LIKEWISE TO THE SOUTH.**



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DESCRIPTION	
DATE	
16745 W. Bluemound Road Brookfield, WI 53005-5938 (262) 781-1000 rasmith.com	
raSmith CREATIVITY BEYOND ENGINEERING	
Brookfield, WI Milwaukee, WI Appleton, WI Madison, WI Cedarburg, WI Naperville, IL Irvine, CA	
LOV-IT BRANDS CAMPUS TOWN OF BRISTOL, WI	
PROPOSED HYDROLOGY EXHIBIT	
© COPYRIGHT 2024 R.A. Smith, Inc.	
DATE: 07/26/2024	
SCALE: 1" = 200'	
JOB NO. 3230212	
PROJECT MANAGER: PAUL V. MCILHERAN, P.E.	
DESIGNED BY: AJS3	
CHECKED BY: PVM	
SHEET NUMBER	
HX-02	

APPENDIX B

USDA NRCS Soil Data



United States
Department of
Agriculture

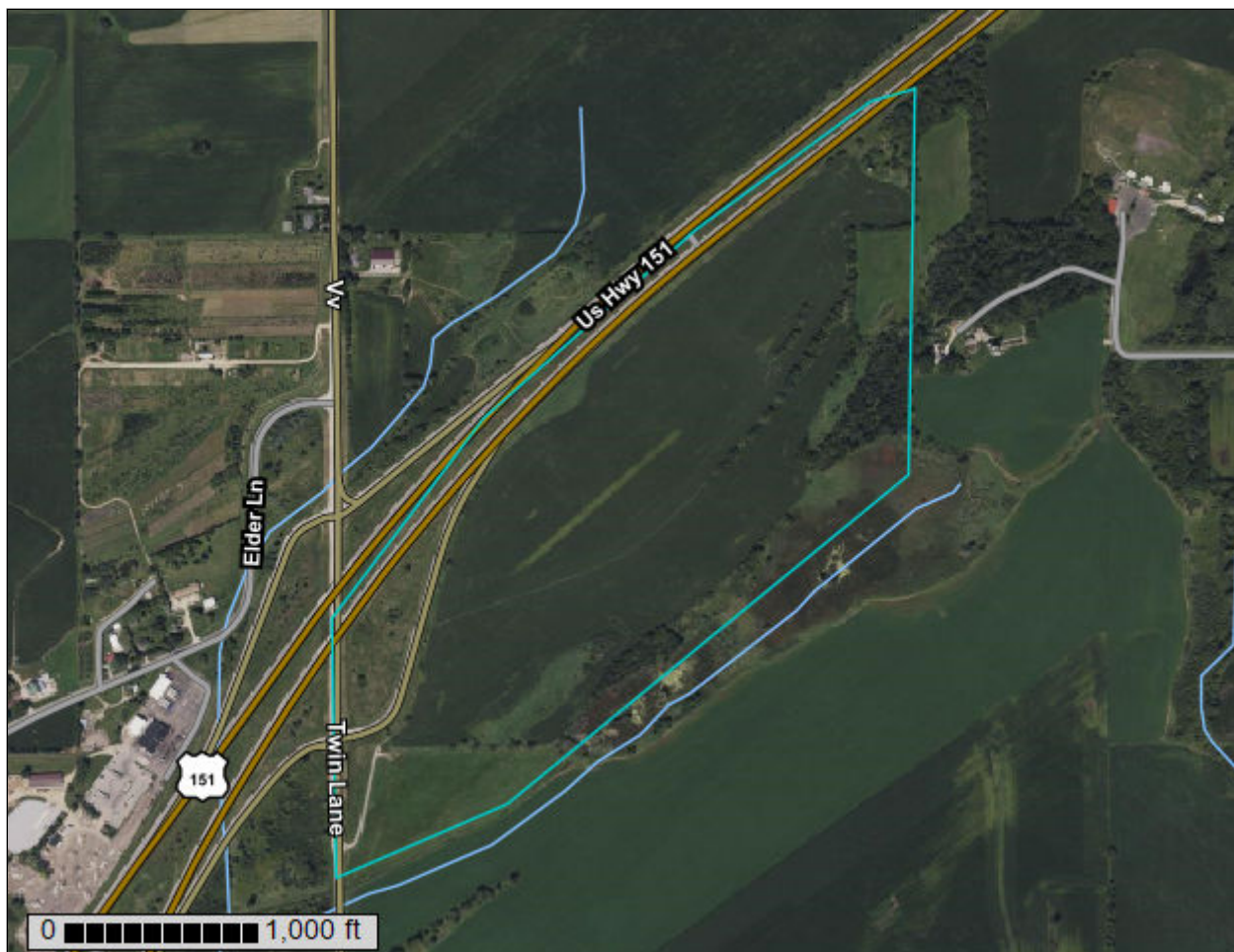
NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Dane County, Wisconsin

Lov-it Brands Campus



July 25, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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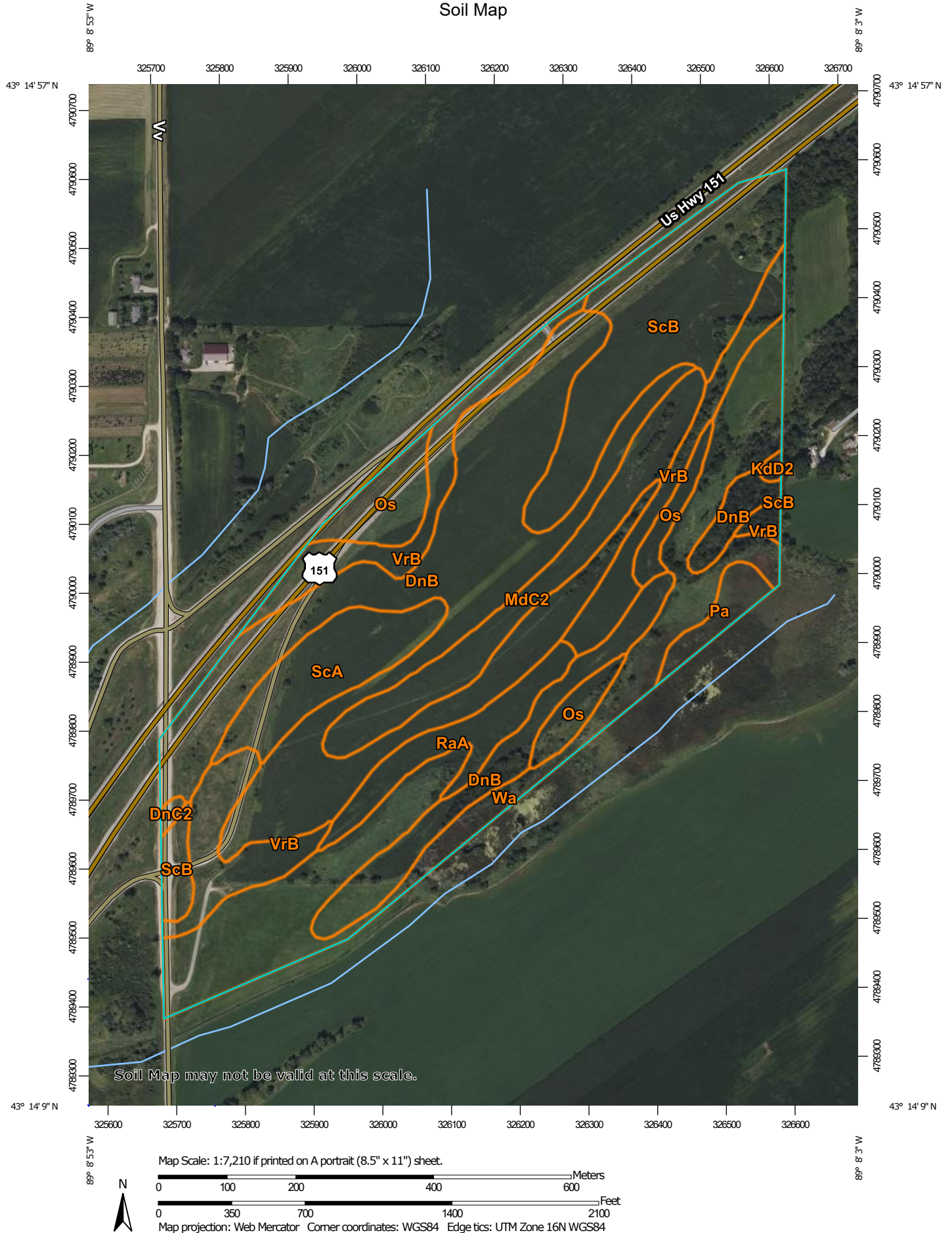
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Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

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 1:15,800.

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

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

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

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

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

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

Soil Survey Area: Dane County, Wisconsin
Survey Area Data: Version 22, Sep 8, 2023

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

Date(s) aerial images were photographed: Aug 4, 2022—Sep 13, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DnB	Dodge silt loam, 2 to 6 percent slopes	45.6	33.5%
DnC2	Dodge silt loam, 6 to 12 percent slopes, eroded	0.3	0.2%
KdD2	Kidder loam, 12 to 20 percent slopes, eroded	0.2	0.2%
MdC2	McHenry silt loam, 6 to 12 percent slopes, eroded	9.4	6.9%
Os	Orion silt loam, wet	6.9	5.0%
Pa	Palms muck, 0 to 2 percent slopes	2.1	1.5%
RaA	Radford silt loam, 0 to 3 percent slopes	5.0	3.7%
ScA	St. Charles silt loam, 0 to 2 percent slopes	7.4	5.5%
ScB	St. Charles silt loam, 2 to 6 percent slopes	18.6	13.6%
VrB	Virgil silt loam, 1 to 4 percent slopes	16.7	12.2%
Wa	Wacousta silty clay loam, 0 to 2 percent slopes	24.2	17.7%
Totals for Area of Interest		136.3	100.0%

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Custom Soil Resource Report

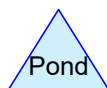
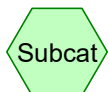
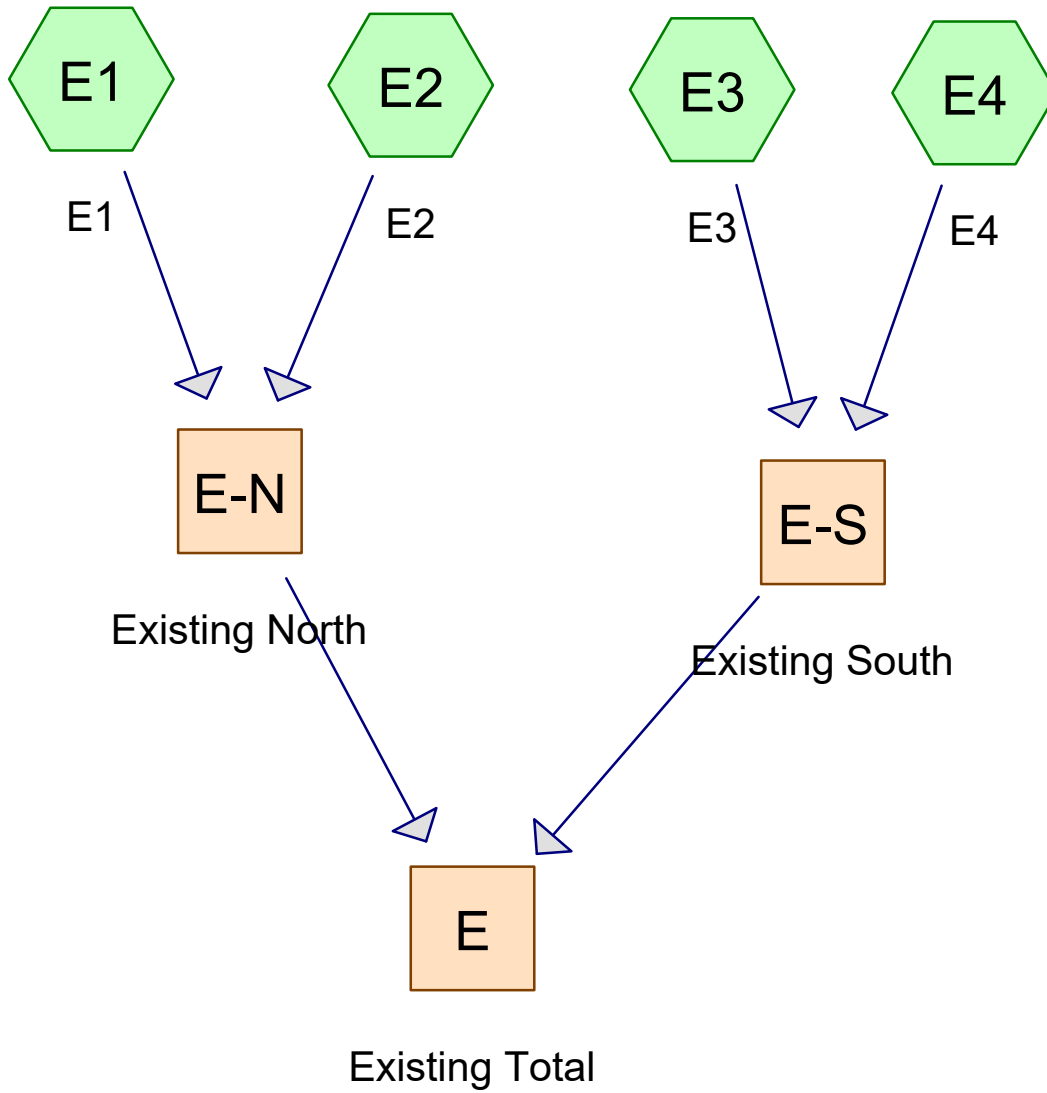
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APPENDIX C

Water Quantity Calculations



Routing Diagram for 3230212

Prepared by {enter your company name here}, Printed 7/25/2024
HydroCAD® 10.10-6a s/n 02878 © 2020 HydroCAD Software Solutions LLC

3230212

Prepared by {enter your company name here}

Printed 7/25/2024

HydroCAD® 10.10-6a s/n 02878 © 2020 HydroCAD Software Solutions LLC

Page 2

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	MSE 24-hr	4	Default	24.00	1	2.49	2
2	2-Year	MSE 24-hr	4	Default	24.00	1	2.84	2
3	10-Year	MSE 24-hr	4	Default	24.00	1	4.09	2
4	100-Year	MSE 24-hr	4	Default	24.00	1	6.66	2
5	200-Year	MSE 24-hr	4	Default	24.00	1	7.53	2

3230212

MSE 24-hr 4 1-Year Rainfall=2.49"

Prepared by {enter your company name here}

Printed 7/25/2024

HydroCAD® 10.10-6a s/n 02878 © 2020 HydroCAD Software Solutions LLC

Page 3

Summary for Subcatchment E1: E1

Runoff = 11.77 cfs @ 12.54 hrs, Volume= 1.516 af, Depth= 0.60"
 Routed to Reach E-N : Existing North

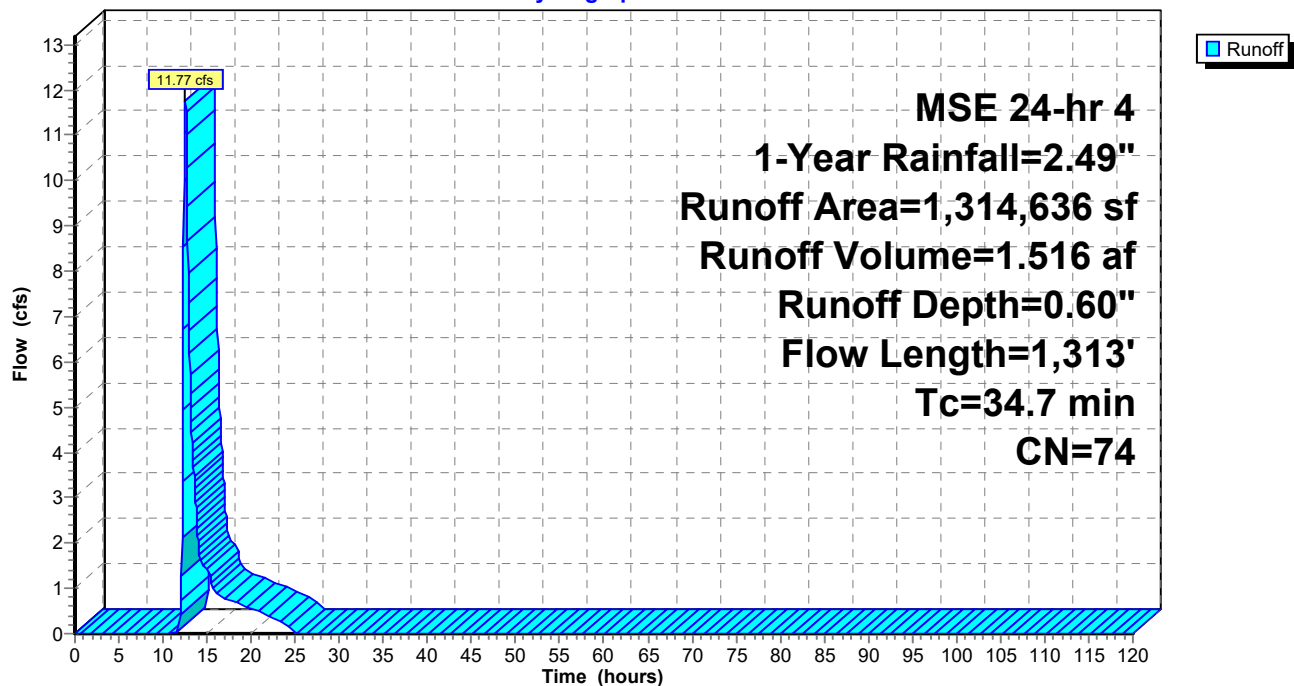
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 1-Year Rainfall=2.49"

	Area (sf)	CN	Description
*	585,135	68	HSG B
*	729,501	78	HSG C
	1,314,636	74	Weighted Average
	1,314,636		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	100	0.0072	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.84"
17.4	1,213	0.0166	1.16		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
34.7	1,313	Total			

Subcatchment E1: E1

Hydrograph



3230212

MSE 24-hr 4 1-Year Rainfall=2.49"

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Summary for Subcatchment E2: E2

Runoff = 0.65 cfs @ 12.40 hrs, Volume= 0.079 af, Depth= 0.38"
 Routed to Reach E-N : Existing North

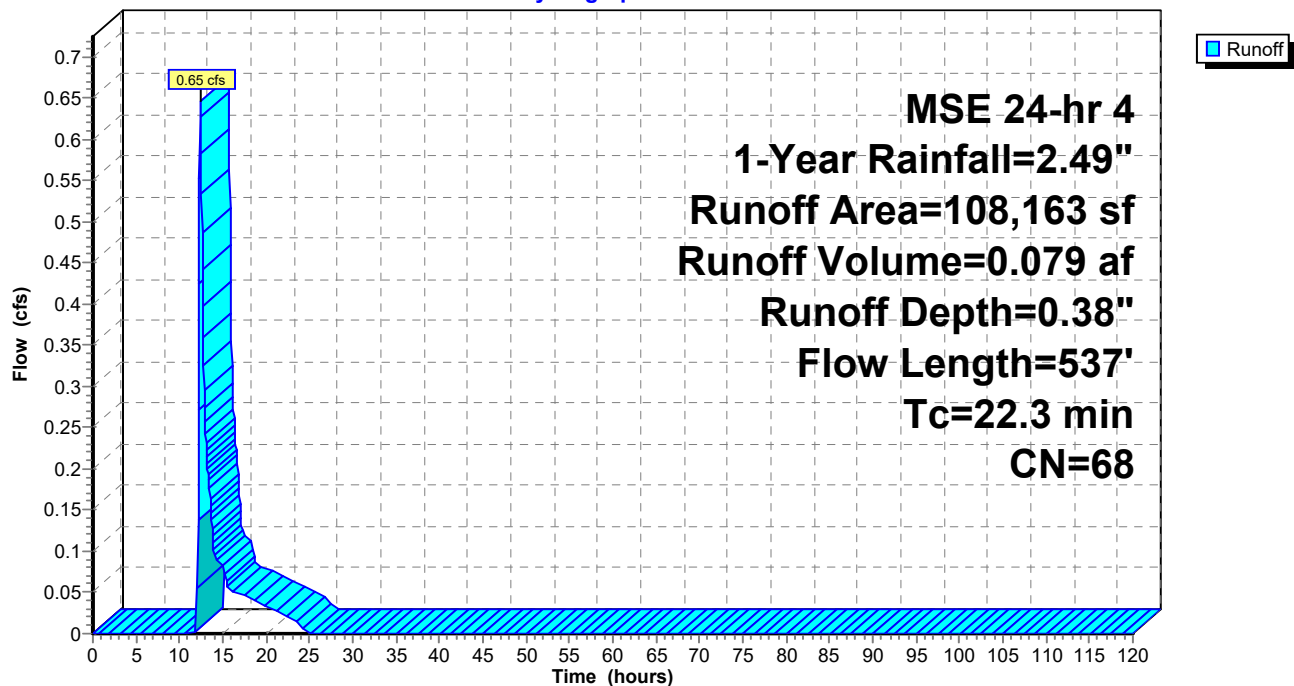
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 1-Year Rainfall=2.49"

	Area (sf)	CN	Description
*	105,225	68	HSG B
*	2,938	78	HSG C
	108,163	68	Weighted Average
	108,163		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.84"
7.1	437	0.0131	1.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
22.3	537	Total			

Subcatchment E2: E2

Hydrograph



3230212

MSE 24-hr 4 1-Year Rainfall=2.49"

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Summary for Subcatchment E3: E3

Runoff = 11.45 cfs @ 12.54 hrs, Volume= 1.522 af, Depth= 0.52"
 Routed to Reach E-S : Existing South

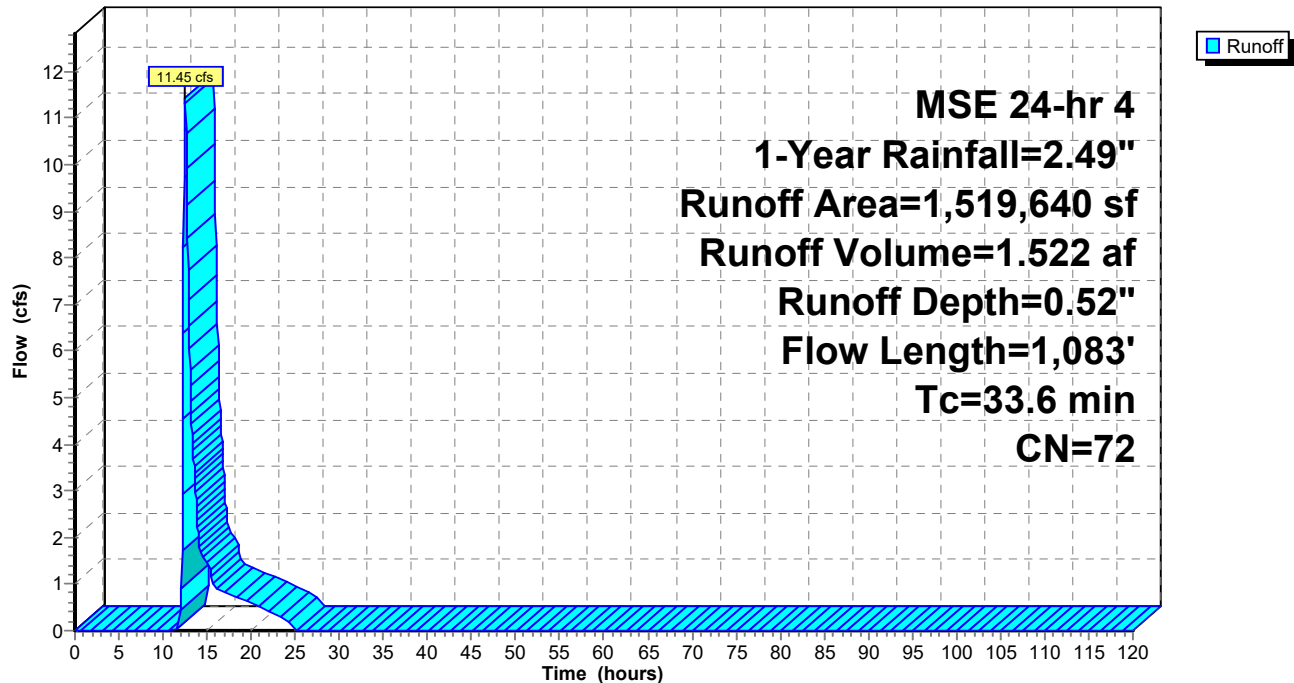
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 1-Year Rainfall=2.49"

	Area (sf)	CN	Description
*	946,337	68	HSG B
*	573,303	78	HSG C
	1,519,640	72	Weighted Average
	1,519,640		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	100	0.0056	0.09		Sheet Flow, Sheet
					Cultivated: Residue>20% n= 0.170 P2= 2.84"
14.5	983	0.0158	1.13		Shallow Concentrated Flow, Shallow
					Cultivated Straight Rows Kv= 9.0 fps
33.6	1,083	Total			

Subcatchment E3: E3

Hydrograph



3230212**MSE 24-hr 4 1-Year Rainfall=2.49"**

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Summary for Subcatchment E4: E4

Runoff = 1.27 cfs @ 12.14 hrs, Volume= 0.072 af, Depth= 0.60"

Routed to Reach E-S : Existing South

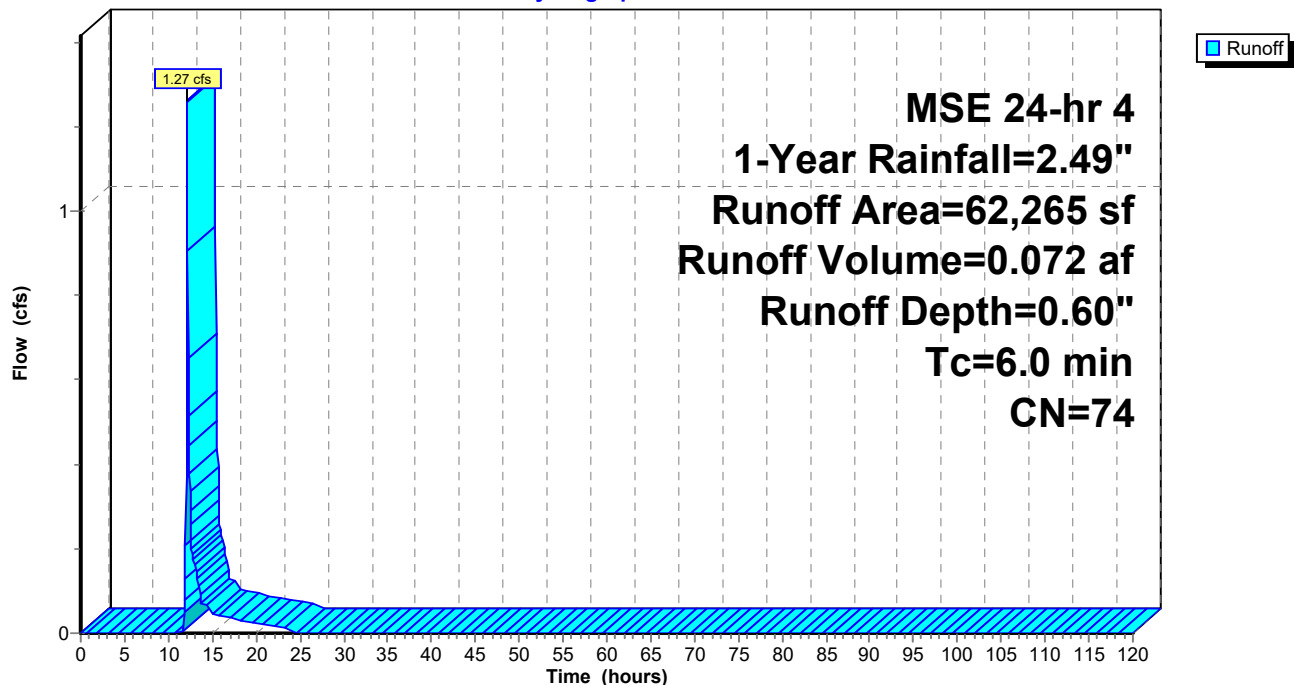
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

	Area (sf)	CN	Description
*	50,182	68	HSG B
	12,083	98	Paved parking, HSG B
	62,265	74	Weighted Average
	50,182		80.59% Pervious Area
	12,083		19.41% Impervious Area

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

Subcatchment E4: E4

Hydrograph



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MSE 24-hr 4 1-Year Rainfall=2.49"

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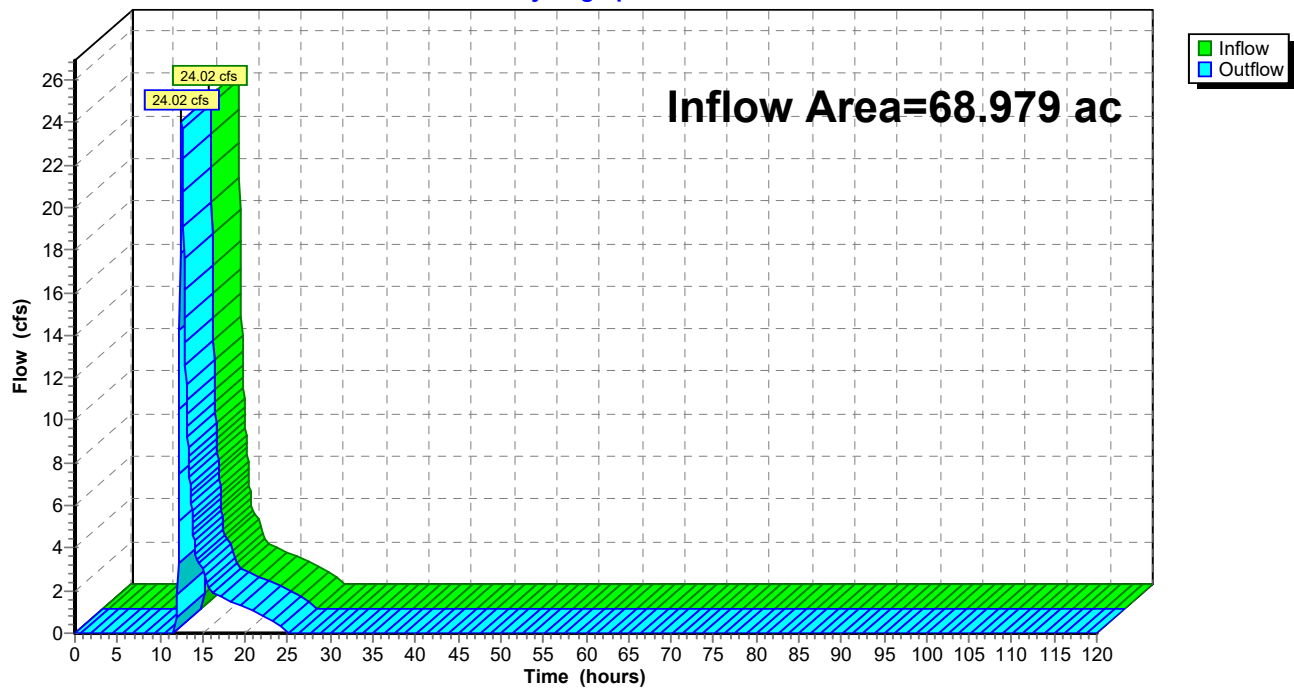
Summary for Reach E: Existing Total

Inflow Area = 68.979 ac, 0.40% Impervious, Inflow Depth = 0.55" for 1-Year event
Inflow = 24.02 cfs @ 12.54 hrs, Volume= 3.188 af
Outflow = 24.02 cfs @ 12.54 hrs, Volume= 3.188 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E: Existing Total

Hydrograph



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MSE 24-hr 4 1-Year Rainfall=2.49"

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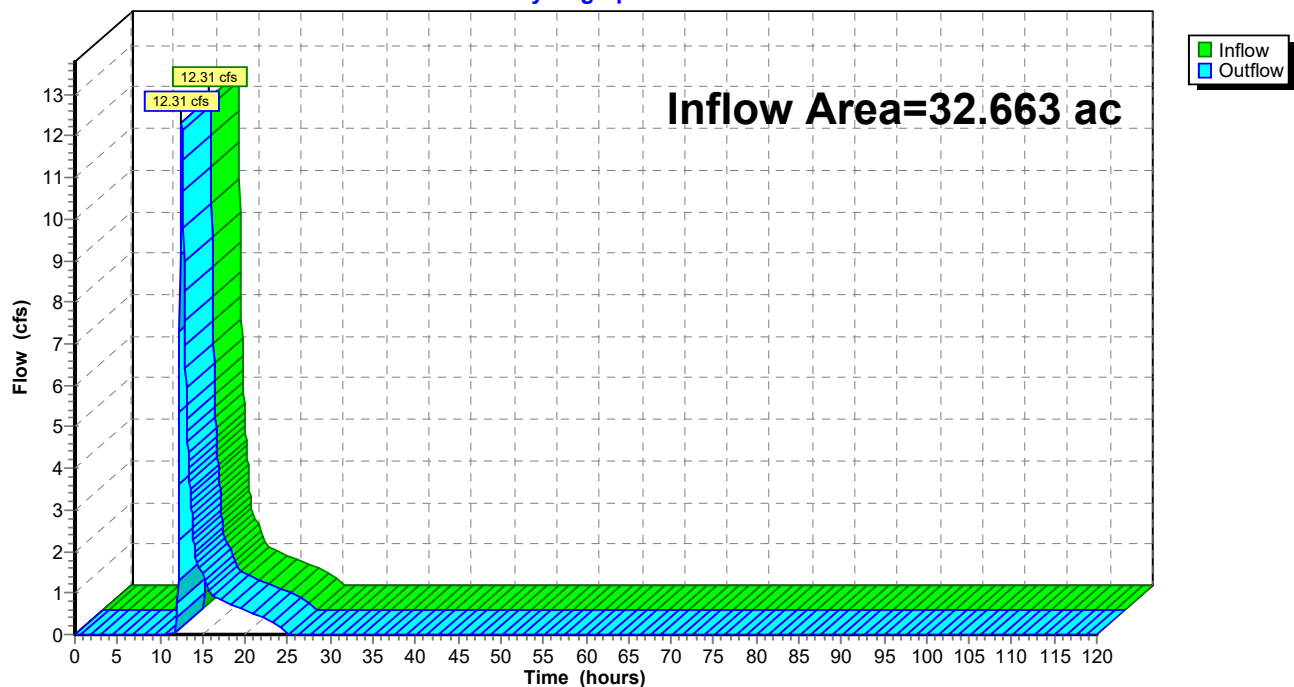
Summary for Reach E-N: Existing North

Inflow Area = 32.663 ac, 0.00% Impervious, Inflow Depth = 0.59" for 1-Year event
Inflow = 12.31 cfs @ 12.54 hrs, Volume= 1.595 af
Outflow = 12.31 cfs @ 12.54 hrs, Volume= 1.595 af, Atten= 0%, Lag= 0.0 min
Routed to Reach E : Existing Total

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E-N: Existing North

Hydrograph



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MSE 24-hr 4 1-Year Rainfall=2.49"

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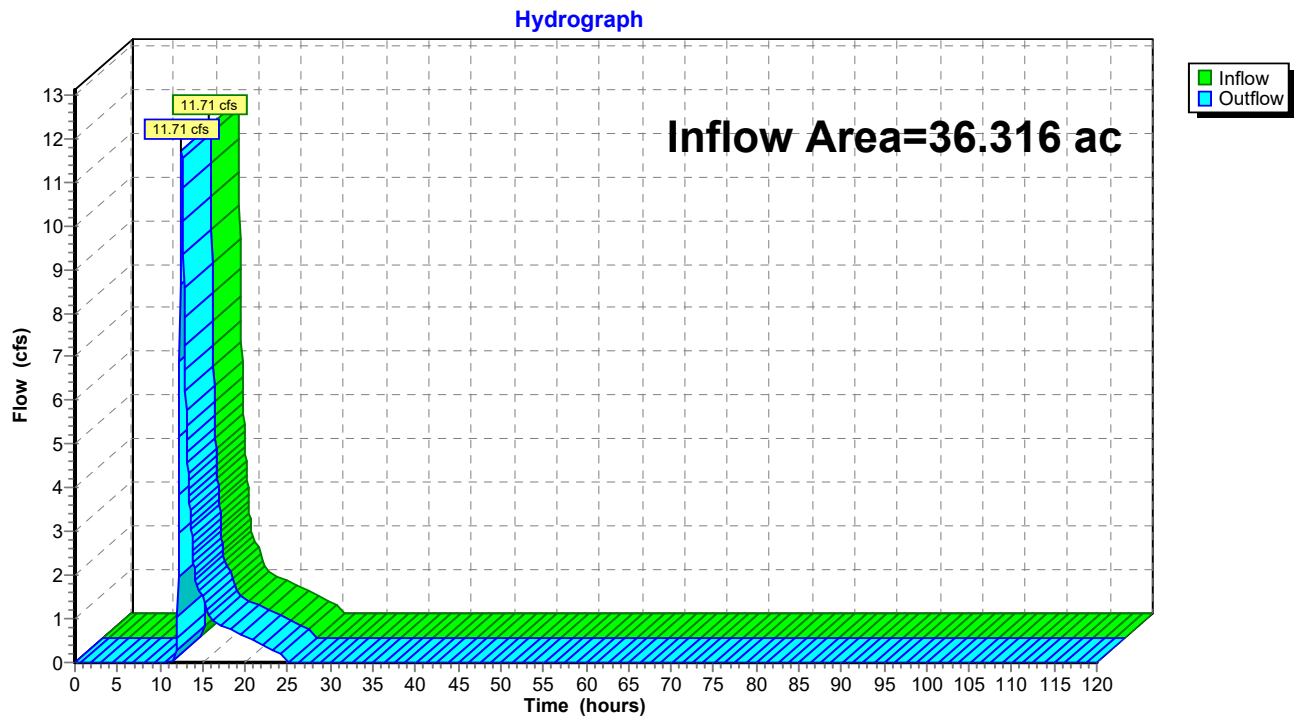
Page 9

Summary for Reach E-S: Existing South

Inflow Area = 36.316 ac, 0.76% Impervious, Inflow Depth = 0.53" for 1-Year event
Inflow = 11.71 cfs @ 12.54 hrs, Volume= 1.593 af
Outflow = 11.71 cfs @ 12.54 hrs, Volume= 1.593 af, Atten= 0%, Lag= 0.0 min
Routed to Reach E : Existing Total

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E-S: Existing South



3230212**MSE 24-hr 4 2-Year Rainfall=2.84"**

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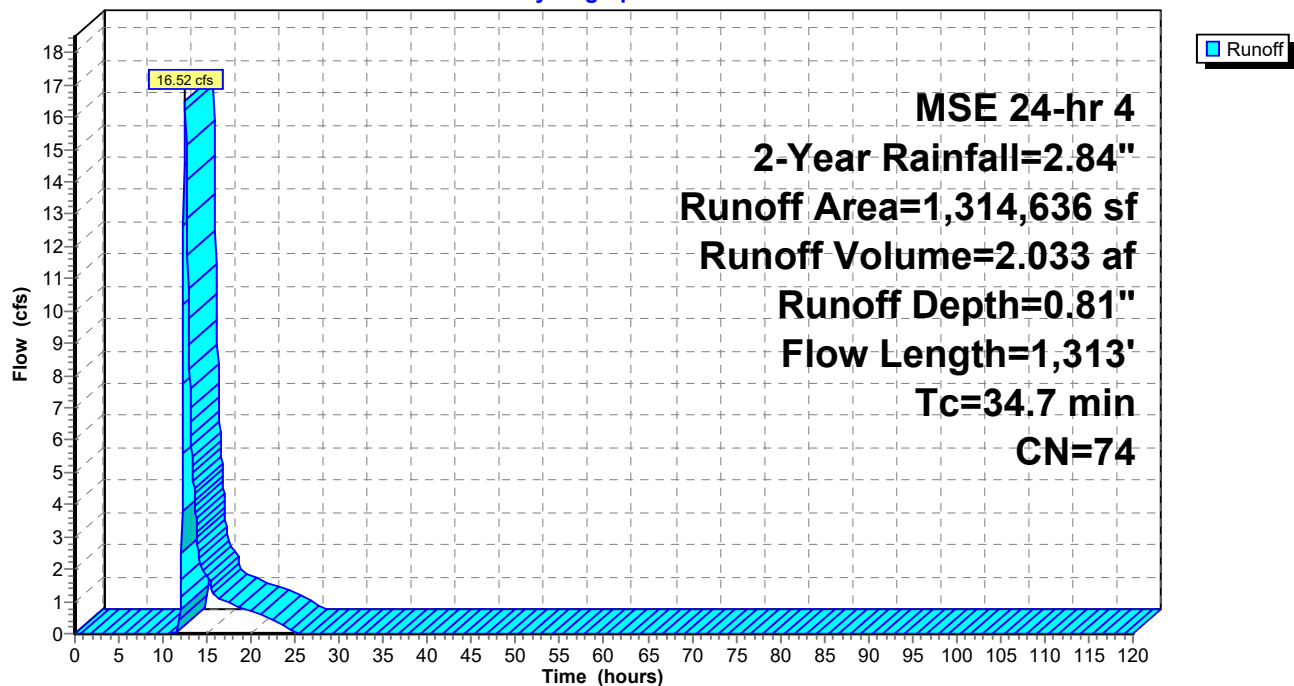
Summary for Subcatchment E1: E1

Runoff = 16.52 cfs @ 12.53 hrs, Volume= 2.033 af, Depth= 0.81"
 Routed to Reach E-N : Existing North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 2-Year Rainfall=2.84"

	Area (sf)	CN	Description
*	585,135	68	HSG B
*	729,501	78	HSG C
	1,314,636	74	Weighted Average
	1,314,636		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	100	0.0072	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.84"
17.4	1,213	0.0166	1.16		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
34.7	1,313	Total			

Subcatchment E1: E1**Hydrograph**

3230212**MSE 24-hr 4 2-Year Rainfall=2.84"**

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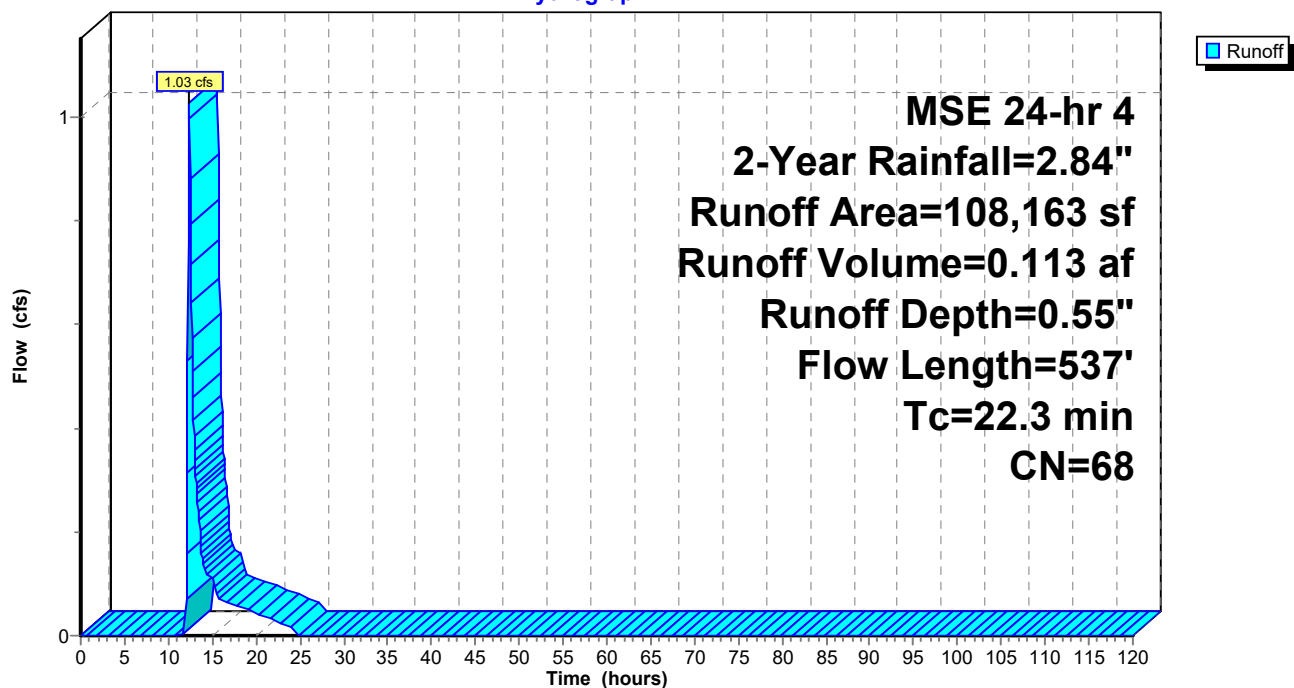
Summary for Subcatchment E2: E2

Runoff = 1.03 cfs @ 12.38 hrs, Volume= 0.113 af, Depth= 0.55"
 Routed to Reach E-N : Existing North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 2-Year Rainfall=2.84"

	Area (sf)	CN	Description
*	105,225	68	HSG B
*	2,938	78	HSG C
	108,163	68	Weighted Average
	108,163		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.84"
7.1	437	0.0131	1.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
22.3	537	Total			

Subcatchment E2: E2**Hydrograph**

3230212**MSE 24-hr 4 2-Year Rainfall=2.84"**

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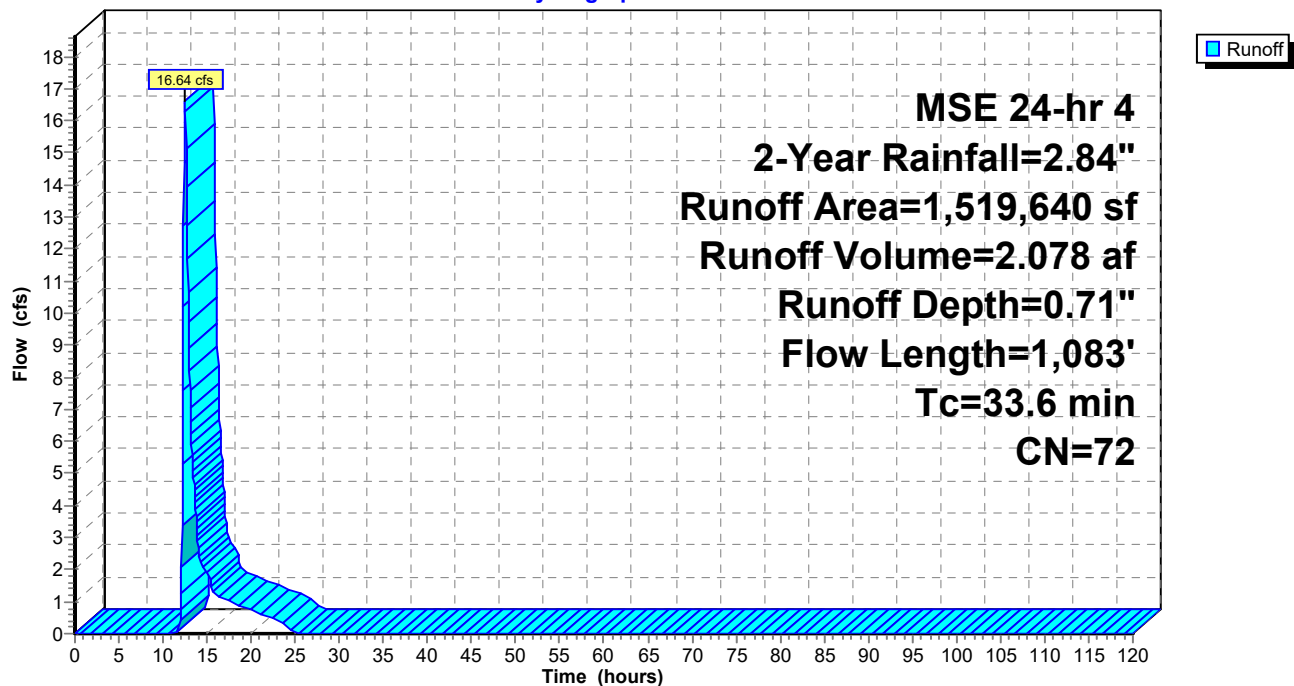
Summary for Subcatchment E3: E3

Runoff = 16.64 cfs @ 12.52 hrs, Volume= 2.078 af, Depth= 0.71"
 Routed to Reach E-S : Existing South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 2-Year Rainfall=2.84"

	Area (sf)	CN	Description
*	946,337	68	HSG B
*	573,303	78	HSG C
	1,519,640	72	Weighted Average
	1,519,640		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	100	0.0056	0.09		Sheet Flow, Sheet
					Cultivated: Residue>20% n= 0.170 P2= 2.84"
14.5	983	0.0158	1.13		Shallow Concentrated Flow, Shallow
					Cultivated Straight Rows Kv= 9.0 fps
33.6	1,083	Total			

Subcatchment E3: E3**Hydrograph**

3230212**MSE 24-hr 4 2-Year Rainfall=2.84"**

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Summary for Subcatchment E4: E4

Runoff = 1.75 cfs @ 12.14 hrs, Volume= 0.096 af, Depth= 0.81"

Routed to Reach E-S : Existing South

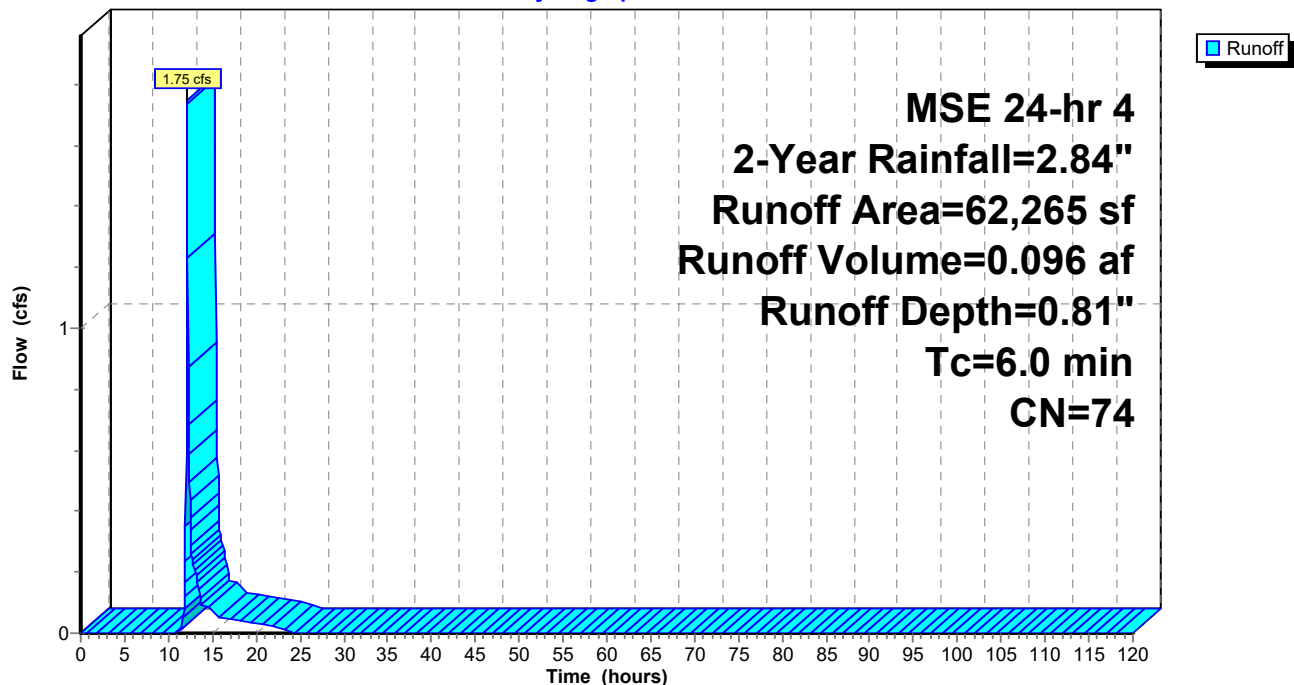
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

	Area (sf)	CN	Description
*	50,182	68	HSG B
	12,083	98	Paved parking, HSG B
	62,265	74	Weighted Average
	50,182		80.59% Pervious Area
	12,083		19.41% Impervious Area

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

Subcatchment E4: E4

Hydrograph



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MSE 24-hr 4 2-Year Rainfall=2.84"

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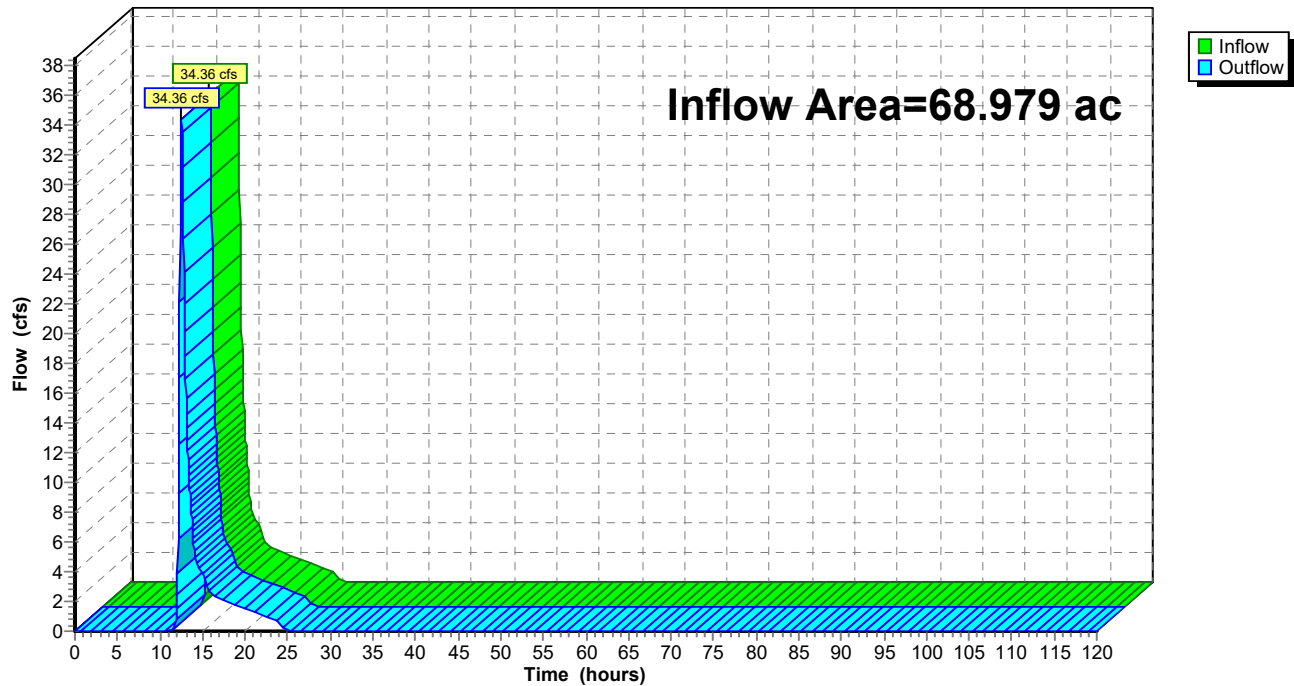
Summary for Reach E: Existing Total

Inflow Area = 68.979 ac, 0.40% Impervious, Inflow Depth = 0.75" for 2-Year event
Inflow = 34.36 cfs @ 12.52 hrs, Volume= 4.320 af
Outflow = 34.36 cfs @ 12.52 hrs, Volume= 4.320 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E: Existing Total

Hydrograph



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MSE 24-hr 4 2-Year Rainfall=2.84"

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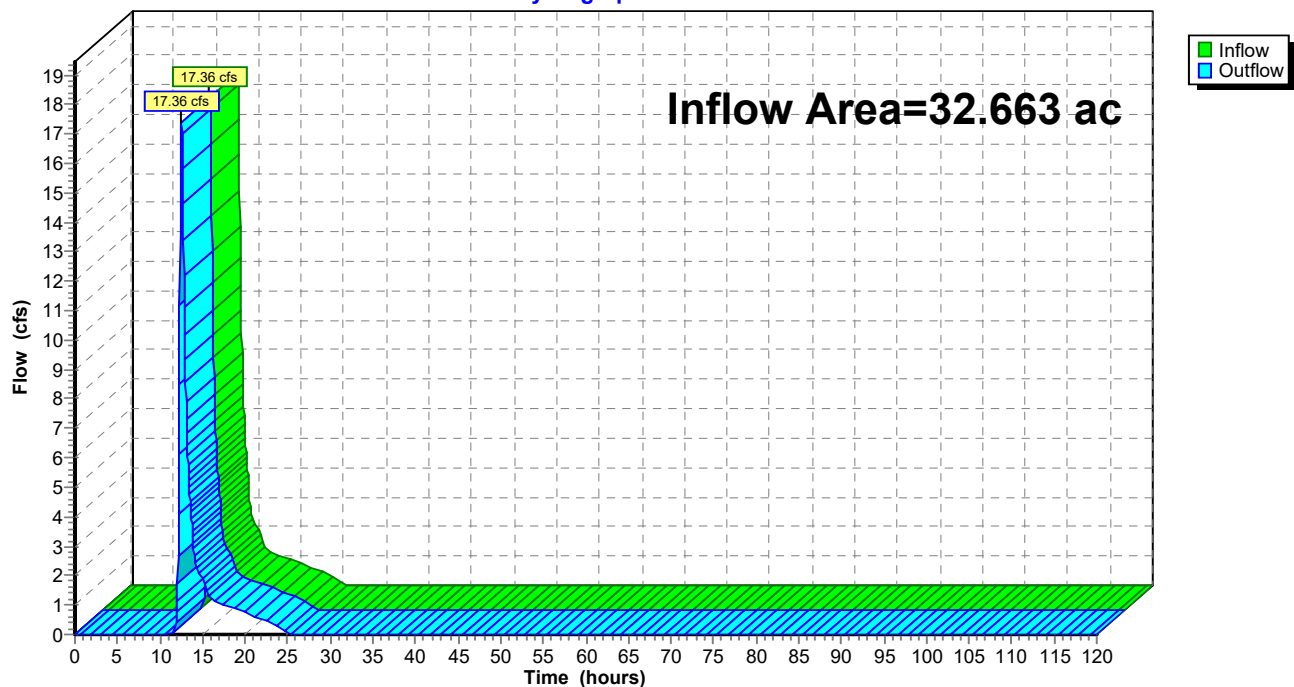
Summary for Reach E-N: Existing North

Inflow Area = 32.663 ac, 0.00% Impervious, Inflow Depth = 0.79" for 2-Year event
Inflow = 17.36 cfs @ 12.52 hrs, Volume= 2.146 af
Outflow = 17.36 cfs @ 12.52 hrs, Volume= 2.146 af, Atten= 0%, Lag= 0.0 min
Routed to Reach E : Existing Total

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E-N: Existing North

Hydrograph



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MSE 24-hr 4 2-Year Rainfall=2.84"

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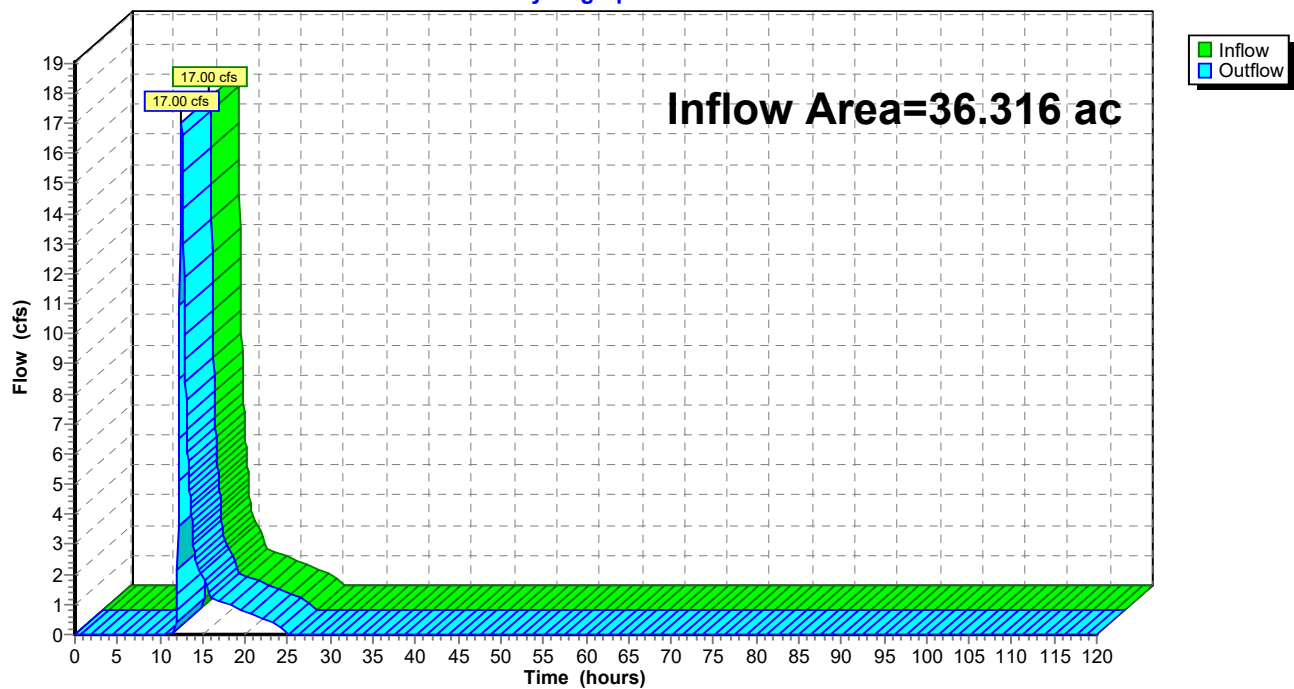
Summary for Reach E-S: Existing South

Inflow Area = 36.316 ac, 0.76% Impervious, Inflow Depth = 0.72" for 2-Year event
Inflow = 17.00 cfs @ 12.52 hrs, Volume= 2.174 af
Outflow = 17.00 cfs @ 12.52 hrs, Volume= 2.174 af, Atten= 0%, Lag= 0.0 min
Routed to Reach E : Existing Total

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E-S: Existing South

Hydrograph



3230212**MSE 24-hr 4 10-Year Rainfall=4.09"**

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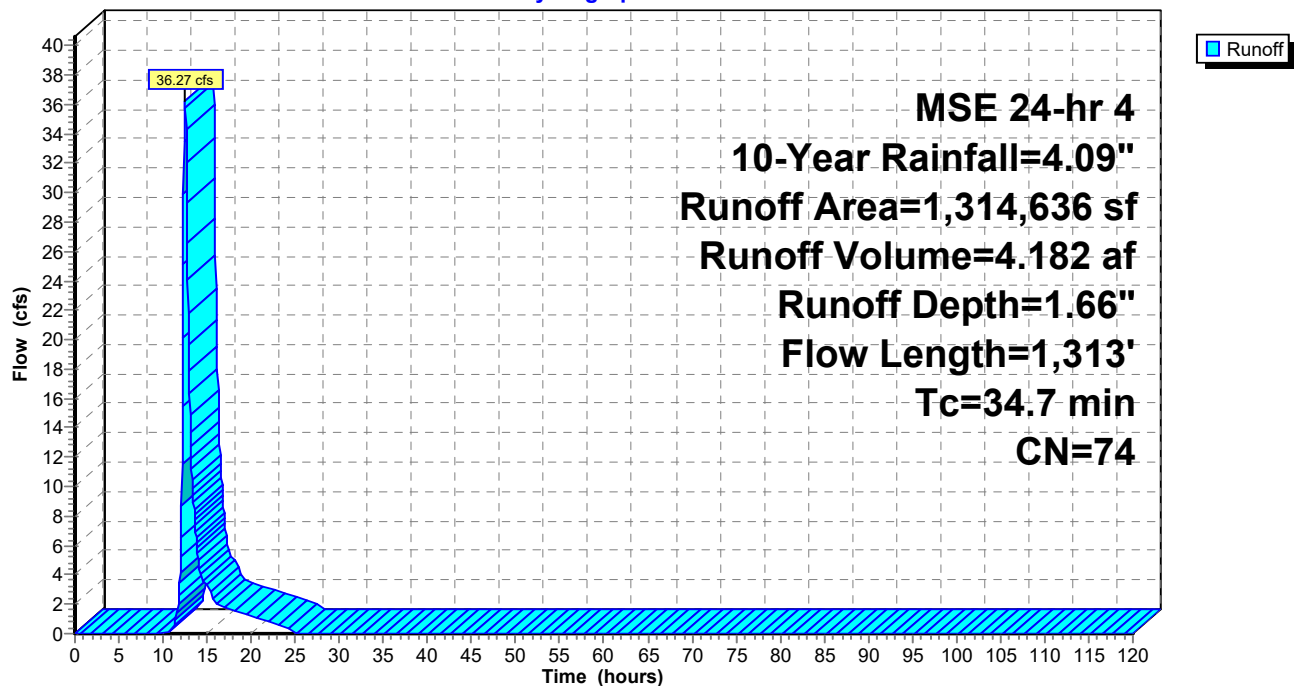
Summary for Subcatchment E1: E1

Runoff = 36.27 cfs @ 12.50 hrs, Volume= 4.182 af, Depth= 1.66"
 Routed to Reach E-N : Existing North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 10-Year Rainfall=4.09"

Area (sf)	CN	Description
* 585,135	68	HSG B
* 729,501	78	HSG C
1,314,636	74	Weighted Average
1,314,636		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	100	0.0072	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.84"
17.4	1,213	0.0166	1.16		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
34.7	1,313	Total			

Subcatchment E1: E1**Hydrograph**

3230212**MSE 24-hr 4 10-Year Rainfall=4.09"**

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Summary for Subcatchment E2: E2

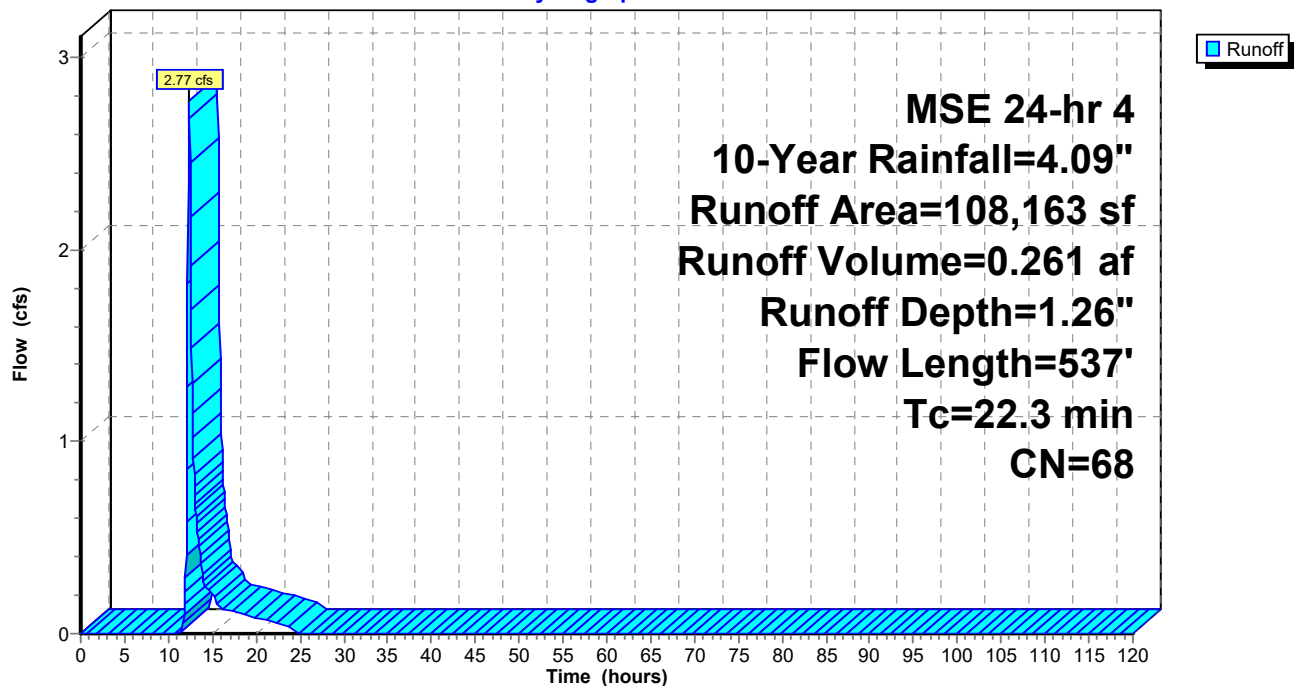
Runoff = 2.77 cfs @ 12.35 hrs, Volume= 0.261 af, Depth= 1.26"

Routed to Reach E-N : Existing North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

	Area (sf)	CN	Description
*	105,225	68	HSG B
*	2,938	78	HSG C
	108,163	68	Weighted Average
	108,163		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.84"
7.1	437	0.0131	1.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
22.3	537	Total			

Subcatchment E2: E2**Hydrograph**

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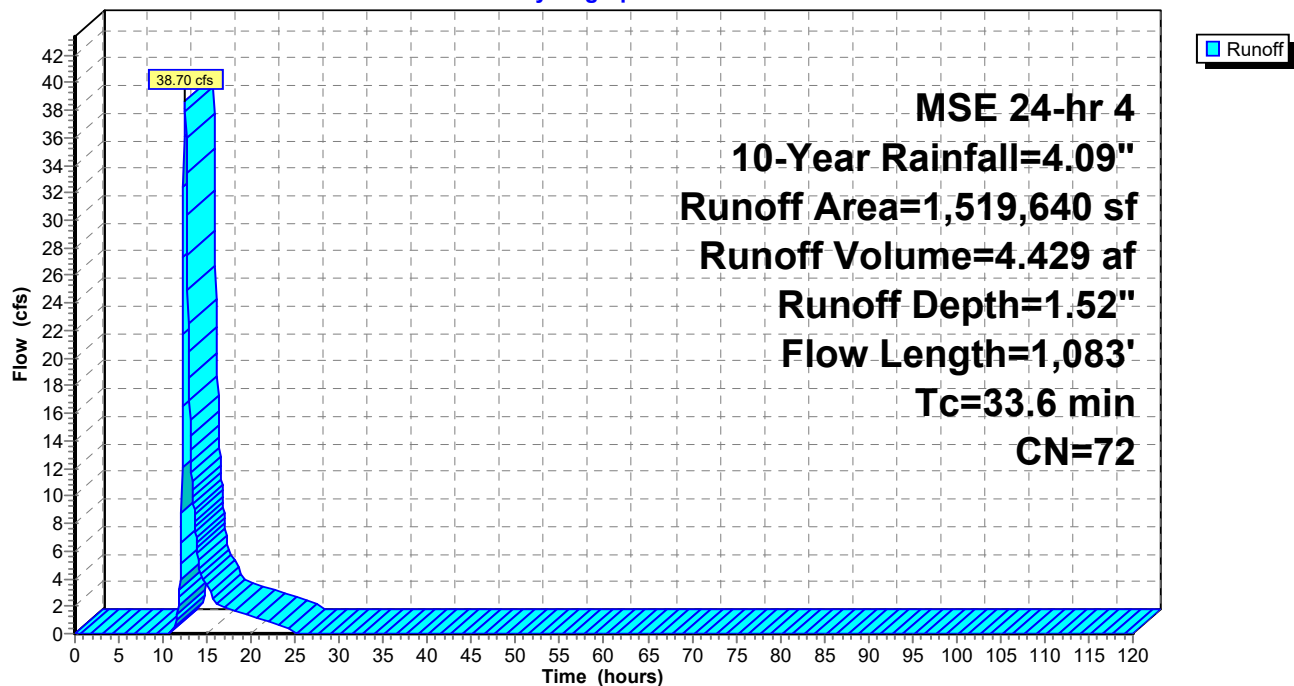
Summary for Subcatchment E3: E3

Runoff = 38.70 cfs @ 12.49 hrs, Volume= 4.429 af, Depth= 1.52"
 Routed to Reach E-S : Existing South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 10-Year Rainfall=4.09"

	Area (sf)	CN	Description
*	946,337	68	HSG B
*	573,303	78	HSG C
	1,519,640	72	Weighted Average
	1,519,640		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	100	0.0056	0.09		Sheet Flow, Sheet
					Cultivated: Residue>20% n= 0.170 P2= 2.84"
14.5	983	0.0158	1.13		Shallow Concentrated Flow, Shallow
					Cultivated Straight Rows Kv= 9.0 fps
33.6	1,083	Total			

Subcatchment E3: E3**Hydrograph**

3230212**MSE 24-hr 4 10-Year Rainfall=4.09"**

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Summary for Subcatchment E4: E4

Runoff = 3.72 cfs @ 12.14 hrs, Volume= 0.198 af, Depth= 1.66"

Routed to Reach E-S : Existing South

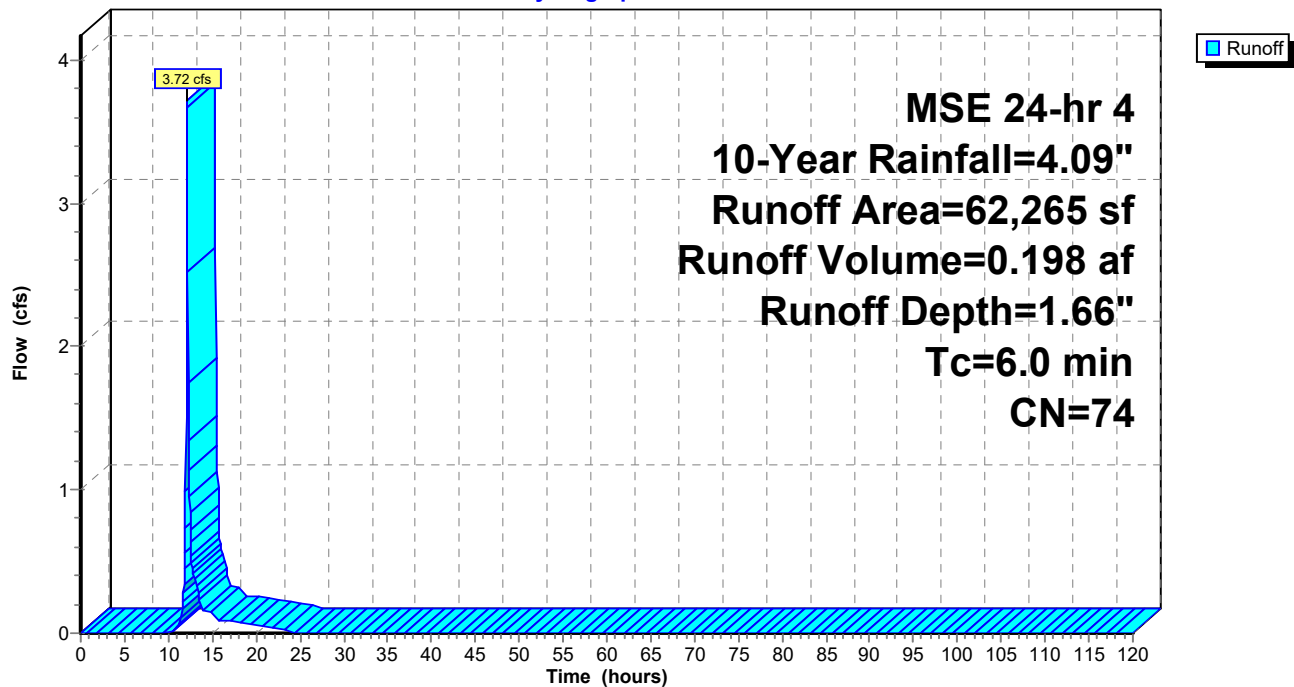
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

	Area (sf)	CN	Description
*	50,182	68	HSG B
	12,083	98	Paved parking, HSG B
	62,265	74	Weighted Average
	50,182		80.59% Pervious Area
	12,083		19.41% Impervious Area

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

Subcatchment E4: E4

Hydrograph



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MSE 24-hr 4 10-Year Rainfall=4.09"

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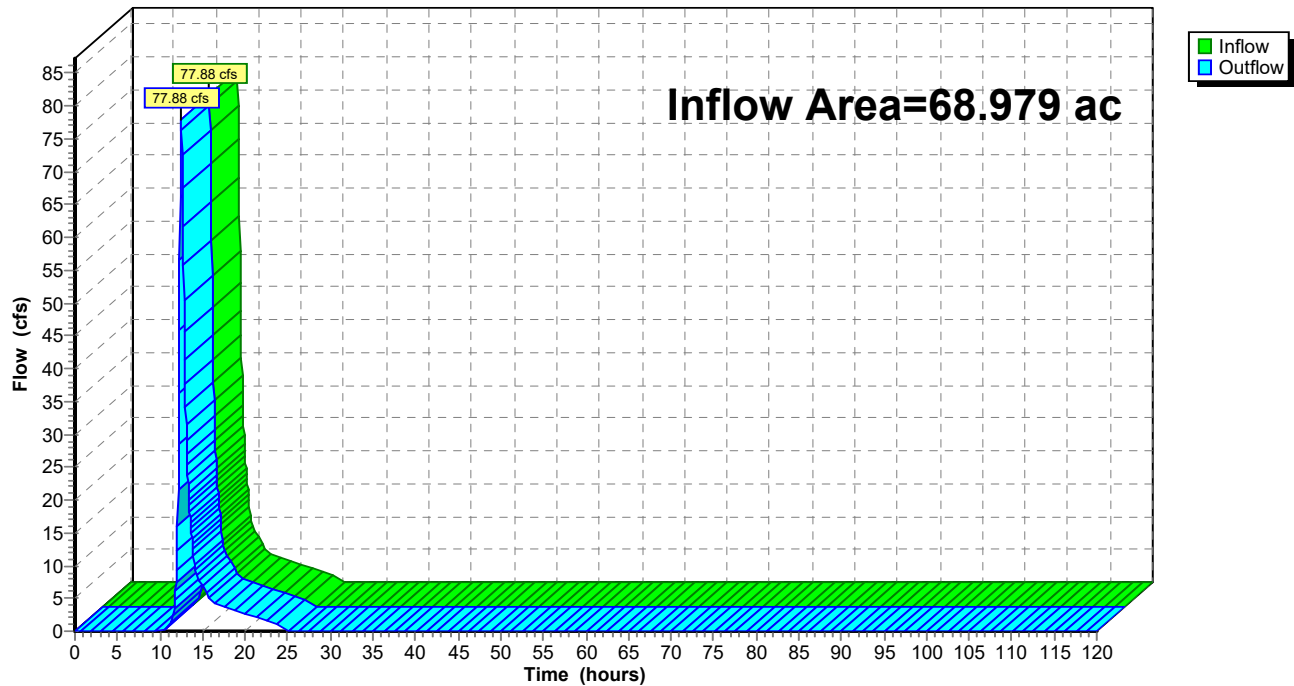
Summary for Reach E: Existing Total

Inflow Area = 68.979 ac, 0.40% Impervious, Inflow Depth = 1.58" for 10-Year event
Inflow = 77.88 cfs @ 12.49 hrs, Volume= 9.070 af
Outflow = 77.88 cfs @ 12.49 hrs, Volume= 9.070 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E: Existing Total

Hydrograph



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MSE 24-hr 4 10-Year Rainfall=4.09"

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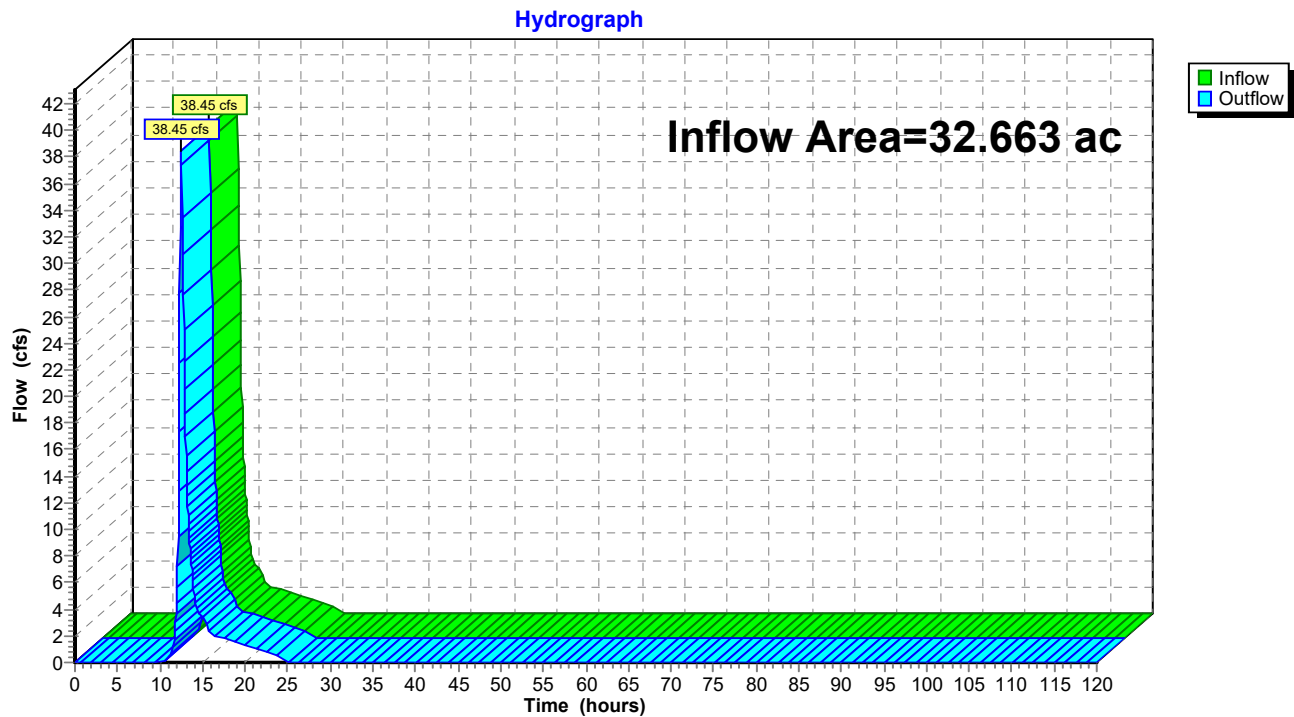
Page 22

Summary for Reach E-N: Existing North

Inflow Area = 32.663 ac, 0.00% Impervious, Inflow Depth = 1.63" for 10-Year event
Inflow = 38.45 cfs @ 12.49 hrs, Volume= 4.443 af
Outflow = 38.45 cfs @ 12.49 hrs, Volume= 4.443 af, Atten= 0%, Lag= 0.0 min
Routed to Reach E : Existing Total

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E-N: Existing North



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MSE 24-hr 4 10-Year Rainfall=4.09"

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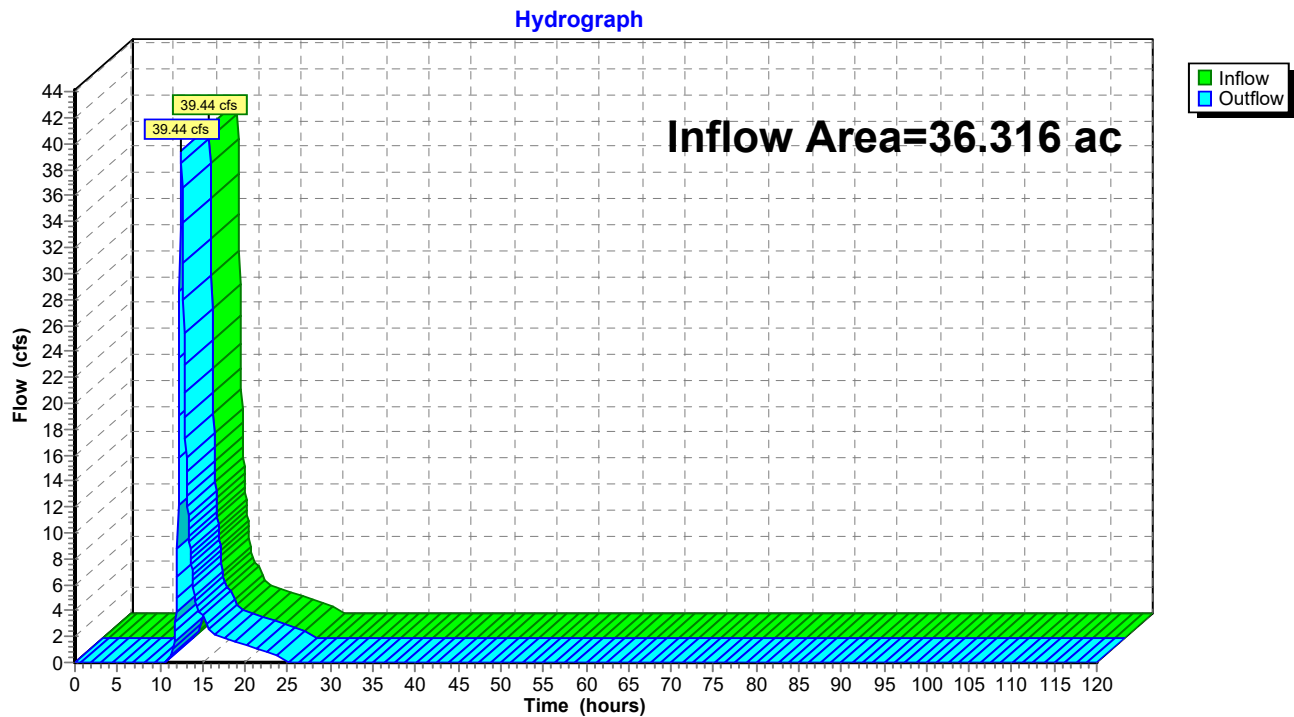
Page 23

Summary for Reach E-S: Existing South

Inflow Area = 36.316 ac, 0.76% Impervious, Inflow Depth = 1.53" for 10-Year event
Inflow = 39.44 cfs @ 12.49 hrs, Volume= 4.627 af
Outflow = 39.44 cfs @ 12.49 hrs, Volume= 4.627 af, Atten= 0%, Lag= 0.0 min
Routed to Reach E : Existing Total

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E-S: Existing South



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MSE 24-hr 4 100-Year Rainfall=6.66"

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Summary for Subcatchment E1: E1

Runoff = 83.56 cfs @ 12.48 hrs, Volume= 9.424 af, Depth= 3.75"
 Routed to Reach E-N : Existing North

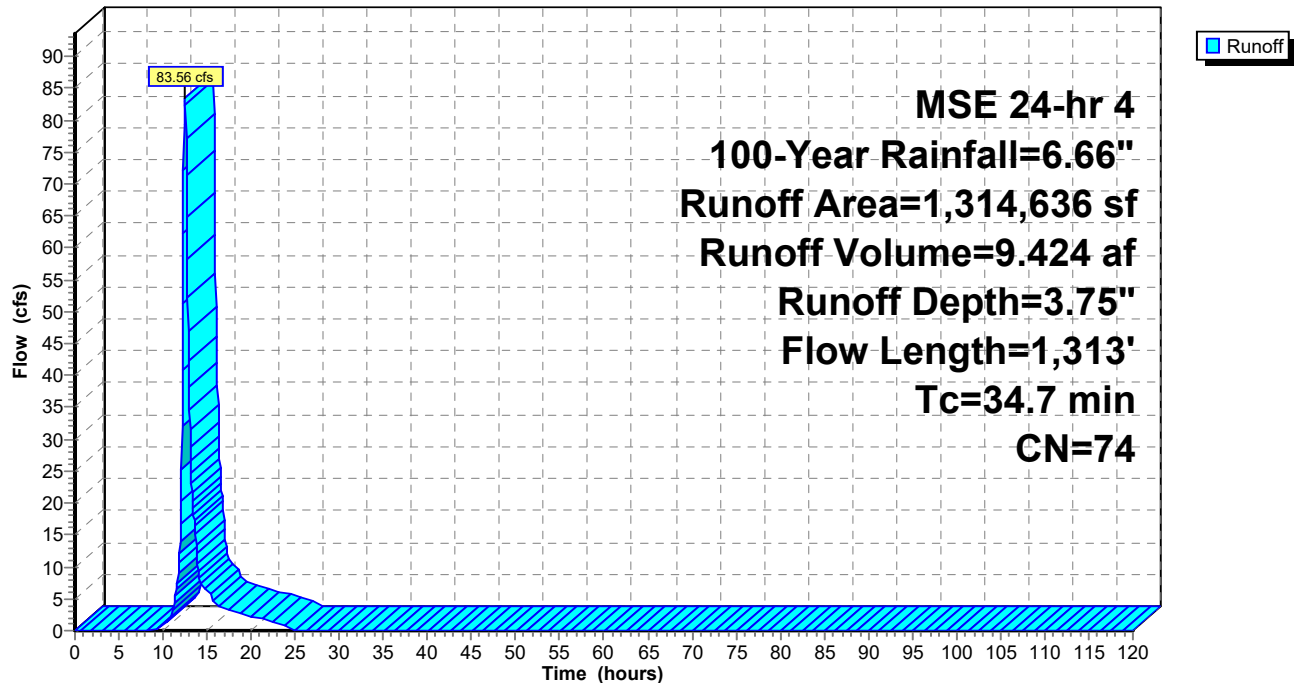
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 100-Year Rainfall=6.66"

	Area (sf)	CN	Description
*	585,135	68	HSG B
*	729,501	78	HSG C
	1,314,636	74	Weighted Average
	1,314,636		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	100	0.0072	0.10		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.84"
17.4	1,213	0.0166	1.16		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
34.7	1,313	Total			

Subcatchment E1: E1

Hydrograph



3230212**MSE 24-hr 4 100-Year Rainfall=6.66"**

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Summary for Subcatchment E2: E2

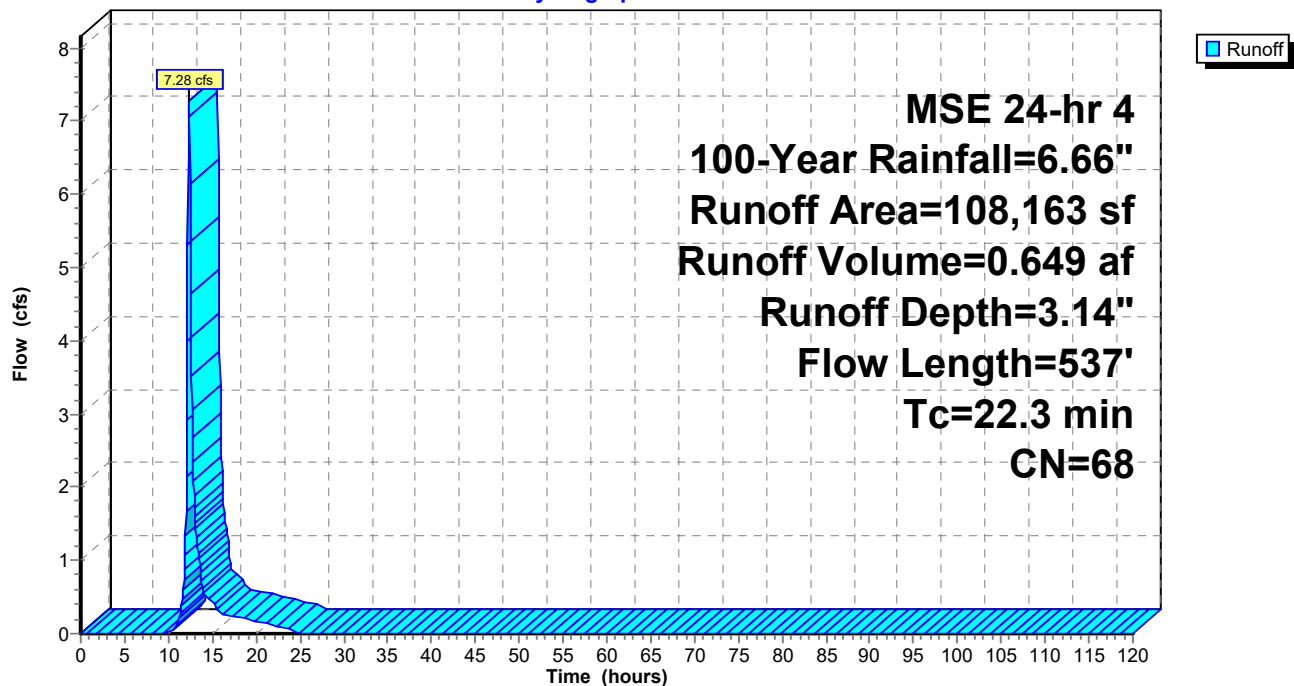
Runoff = 7.28 cfs @ 12.33 hrs, Volume= 0.649 af, Depth= 3.14"

Routed to Reach E-N : Existing North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

	Area (sf)	CN	Description
*	105,225	68	HSG B
*	2,938	78	HSG C
	108,163	68	Weighted Average
	108,163		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.84"
7.1	437	0.0131	1.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
22.3	537	Total			

Subcatchment E2: E2**Hydrograph**

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Summary for Subcatchment E3: E3

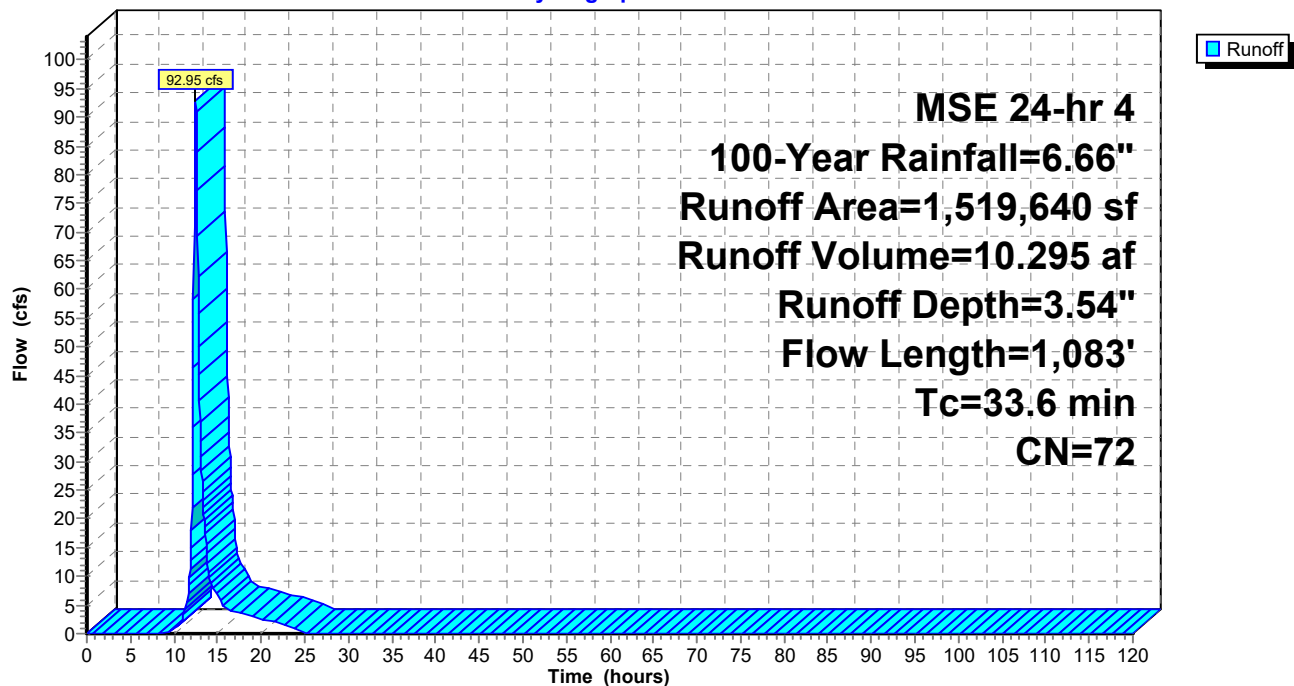
Runoff = 92.95 cfs @ 12.47 hrs, Volume= 10.295 af, Depth= 3.54"

Routed to Reach E-S : Existing South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

	Area (sf)	CN	Description
*	946,337	68	HSG B
*	573,303	78	HSG C
	1,519,640	72	Weighted Average
	1,519,640		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	100	0.0056	0.09		Sheet Flow, Sheet
					Cultivated: Residue>20% n= 0.170 P2= 2.84"
14.5	983	0.0158	1.13		Shallow Concentrated Flow, Shallow
					Cultivated Straight Rows Kv= 9.0 fps
33.6	1,083	Total			

Subcatchment E3: E3**Hydrograph**

3230212**MSE 24-hr 4 100-Year Rainfall=6.66"**

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Summary for Subcatchment E4: E4

Runoff = 8.34 cfs @ 12.13 hrs, Volume= 0.446 af, Depth= 3.75"

Routed to Reach E-S : Existing South

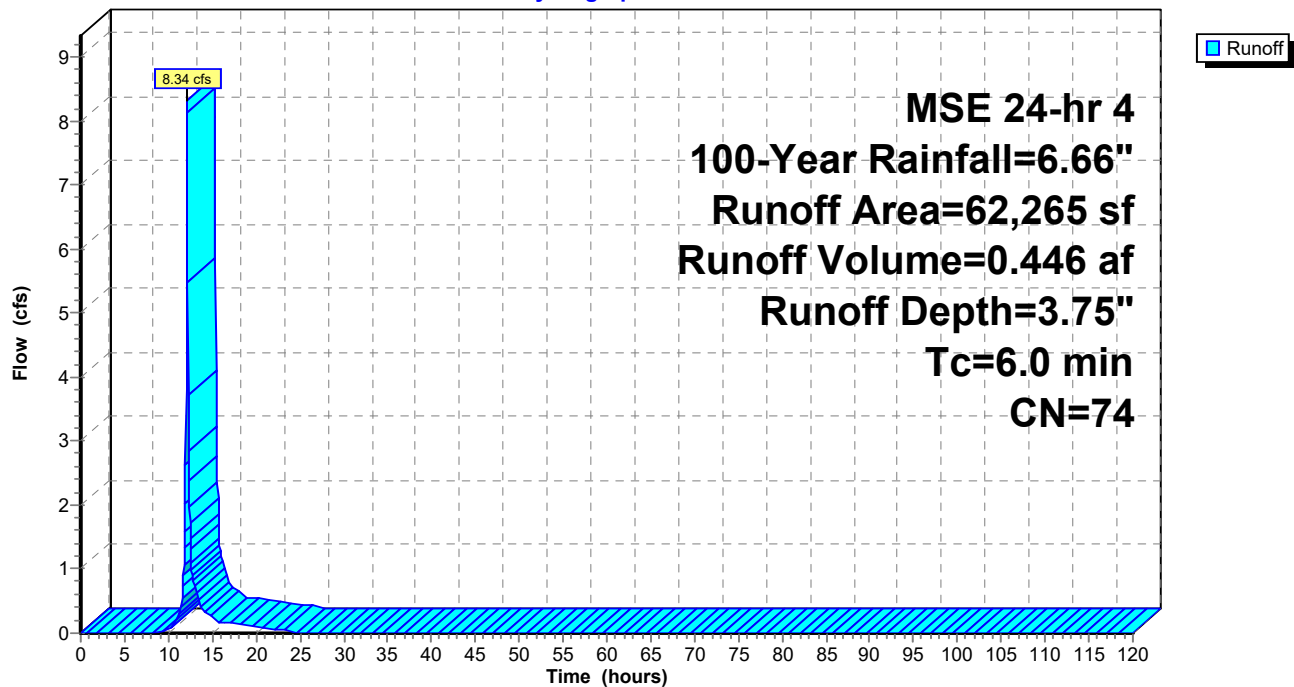
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

	Area (sf)	CN	Description
*	50,182	68	HSG B
	12,083	98	Paved parking, HSG B
	62,265	74	Weighted Average
	50,182		80.59% Pervious Area
	12,083		19.41% Impervious Area

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

Subcatchment E4: E4

Hydrograph



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MSE 24-hr 4 100-Year Rainfall=6.66"

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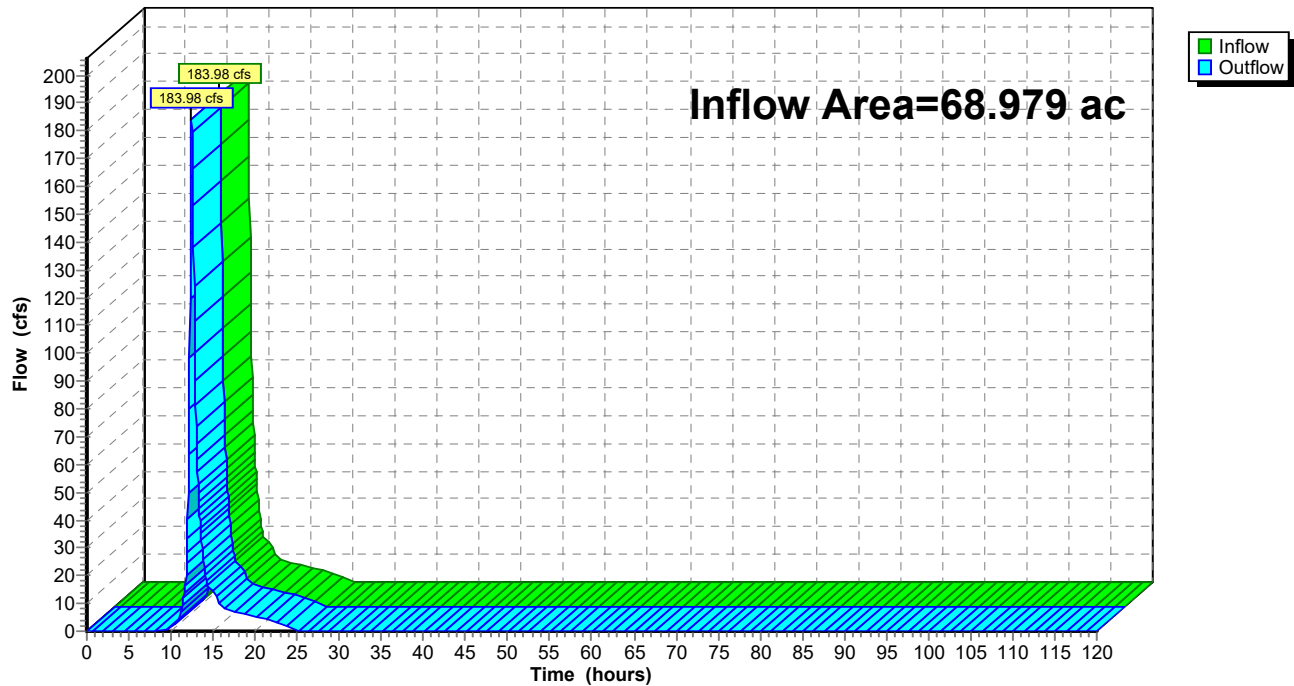
Summary for Reach E: Existing Total

Inflow Area = 68.979 ac, 0.40% Impervious, Inflow Depth = 3.62" for 100-Year event
Inflow = 183.98 cfs @ 12.47 hrs, Volume= 20.814 af
Outflow = 183.98 cfs @ 12.47 hrs, Volume= 20.814 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E: Existing Total

Hydrograph



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MSE 24-hr 4 100-Year Rainfall=6.66"

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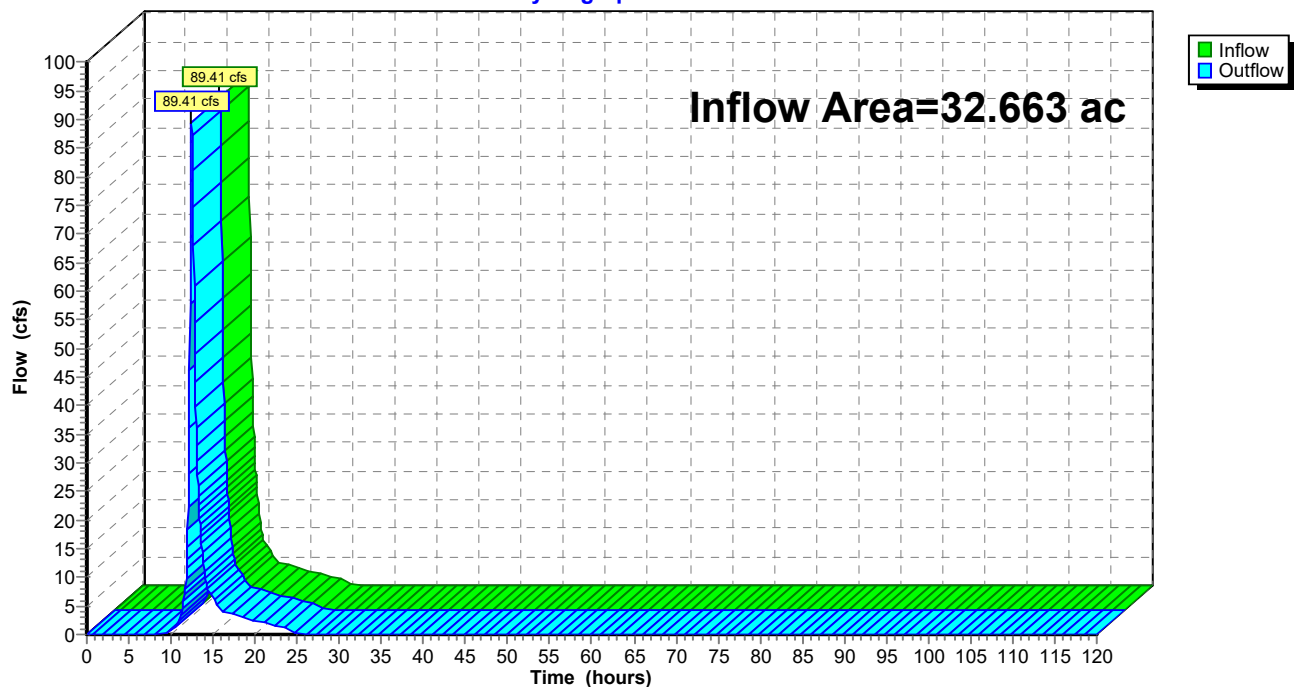
Summary for Reach E-N: Existing North

Inflow Area = 32.663 ac, 0.00% Impervious, Inflow Depth = 3.70" for 100-Year event
Inflow = 89.41 cfs @ 12.47 hrs, Volume= 10.073 af
Outflow = 89.41 cfs @ 12.47 hrs, Volume= 10.073 af, Atten= 0%, Lag= 0.0 min
Routed to Reach E : Existing Total

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E-N: Existing North

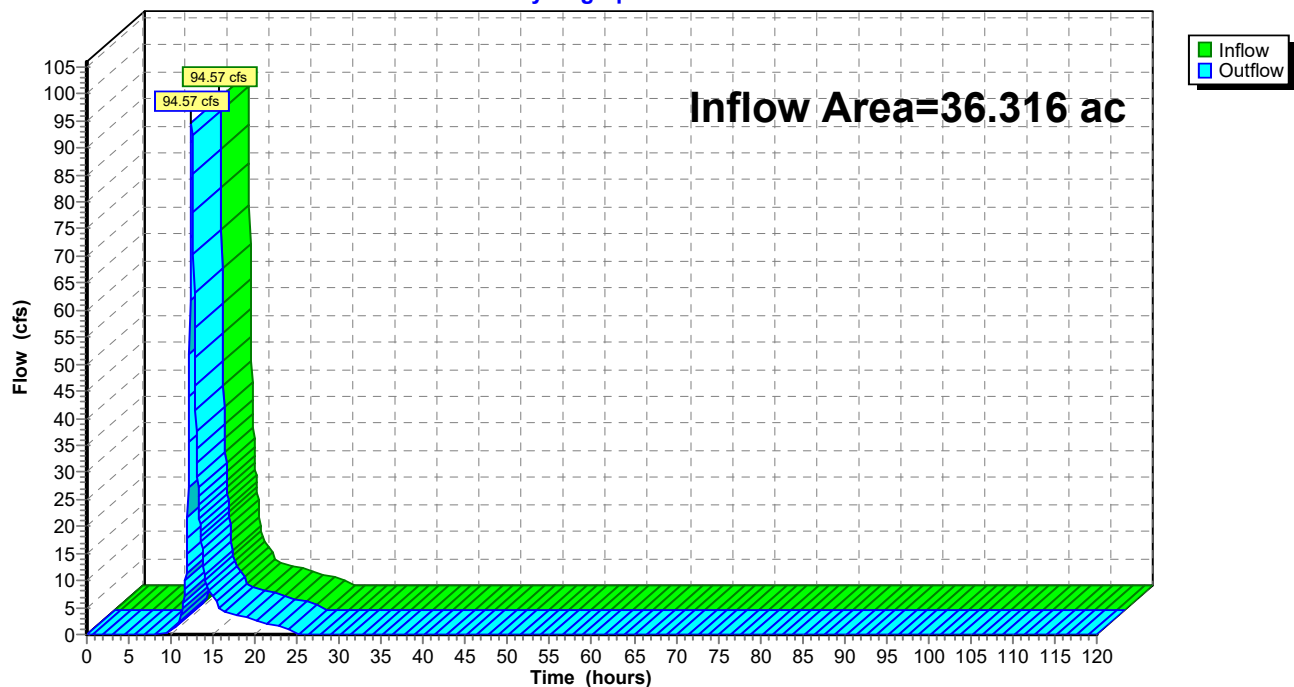
Hydrograph



Summary for Reach E-S: Existing South

Inflow Area = 36.316 ac, 0.76% Impervious, Inflow Depth = 3.55" for 100-Year event
Inflow = 94.57 cfs @ 12.47 hrs, Volume= 10.741 af
Outflow = 94.57 cfs @ 12.47 hrs, Volume= 10.741 af, Atten= 0%, Lag= 0.0 min
Routed to Reach E : Existing Total

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E-S: Existing South**Hydrograph**

3230212*MSE 24-hr 4 200-Year Rainfall=7.53"*

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Summary for Subcatchment E1: E1

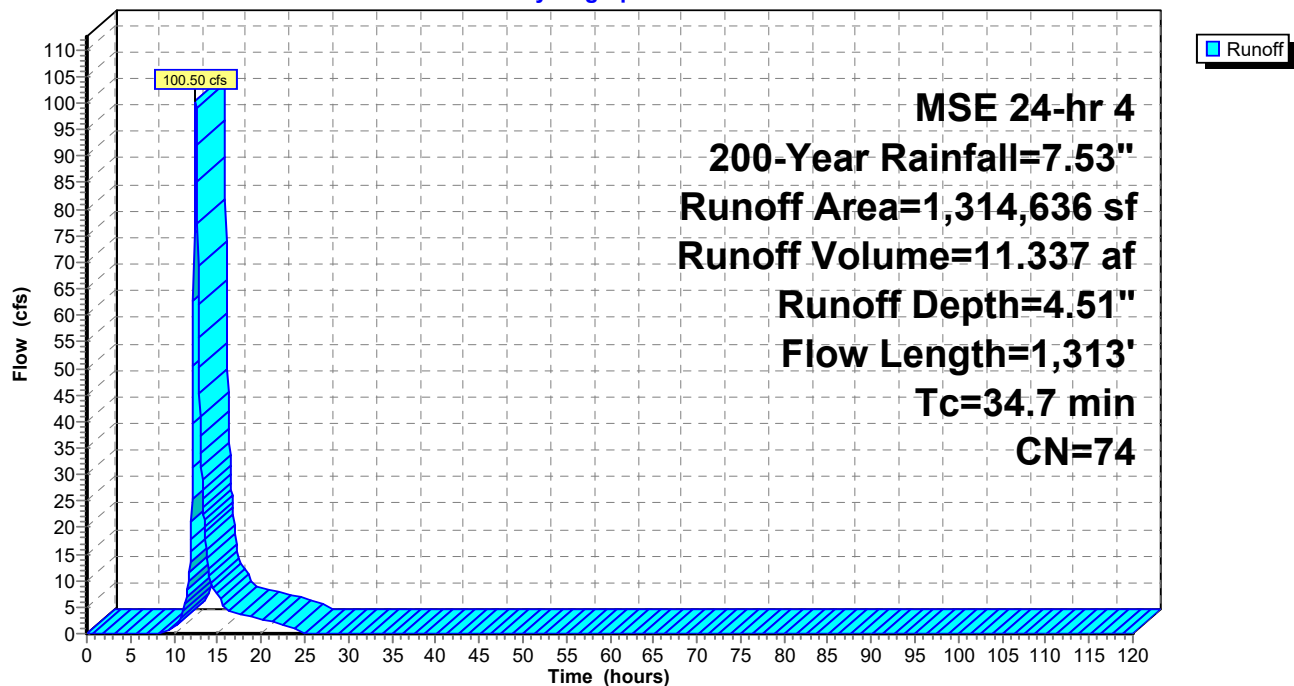
Runoff = 100.50 cfs @ 12.48 hrs, Volume= 11.337 af, Depth= 4.51"

Routed to Reach E-N : Existing North

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (sf)	CN	Description
*	585,135	68	HSG B
*	729,501	78	HSG C
	1,314,636	74	Weighted Average
	1,314,636		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.3	100	0.0072	0.10		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.84"
17.4	1,213	0.0166	1.16		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
34.7	1,313	Total			

Subcatchment E1: E1**Hydrograph**

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MSE 24-hr 4 200-Year Rainfall=7.53"

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Summary for Subcatchment E2: E2

Runoff = 8.96 cfs @ 12.33 hrs, Volume= 0.795 af, Depth= 3.84"
 Routed to Reach E-N : Existing North

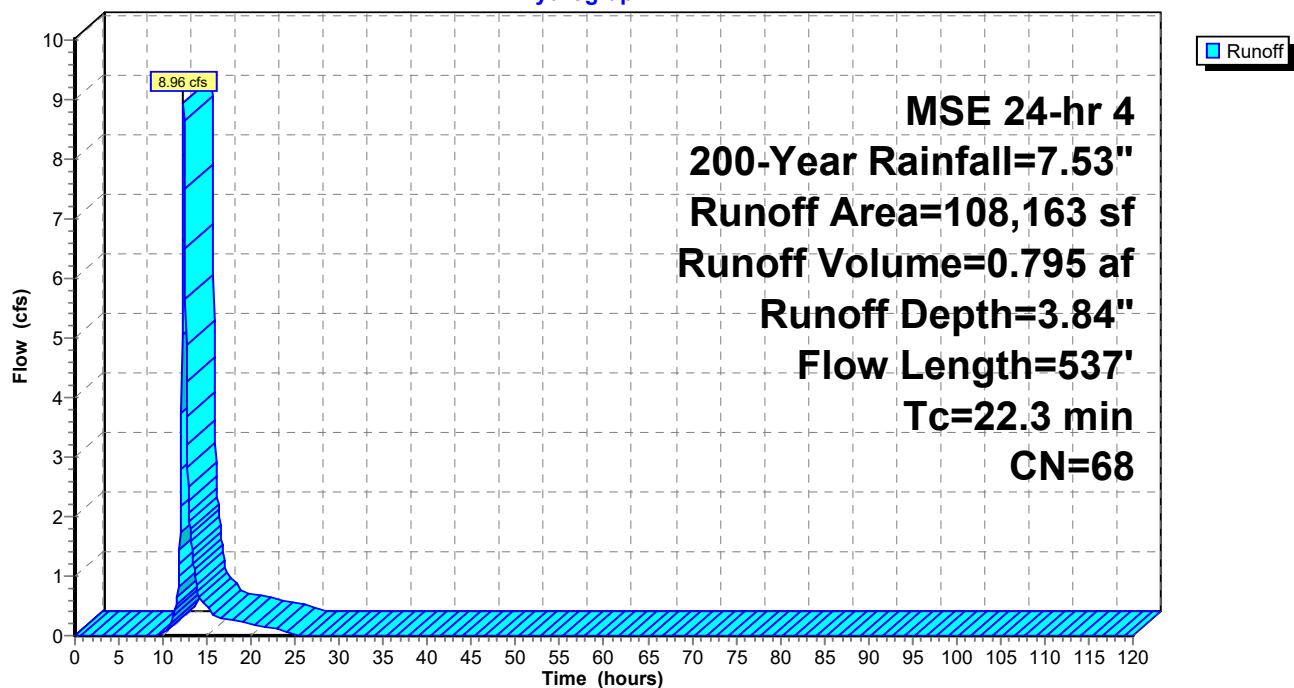
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (sf)	CN	Description
*	105,225	68	HSG B
*	2,938	78	HSG C
	108,163	68	Weighted Average
	108,163		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.84"
7.1	437	0.0131	1.03		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
22.3	537	Total			

Subcatchment E2: E2

Hydrograph



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Summary for Subcatchment E3: E3

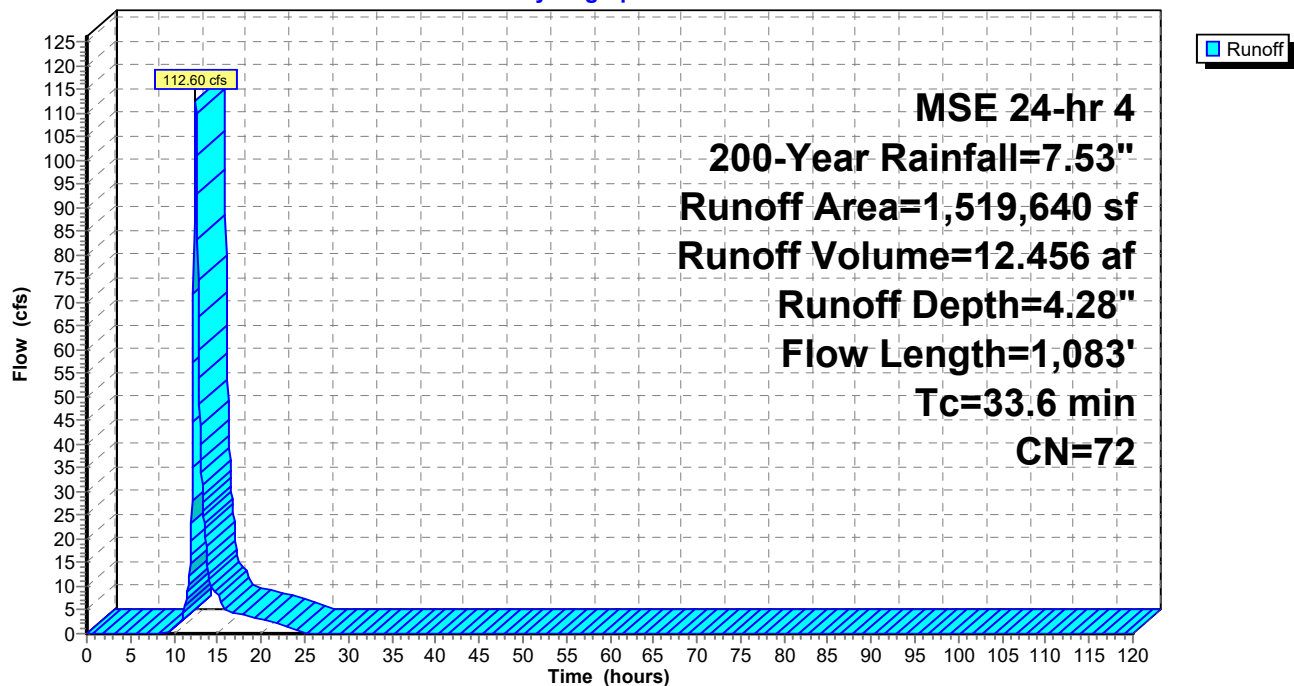
Runoff = 112.60 cfs @ 12.47 hrs, Volume= 12.456 af, Depth= 4.28"

Routed to Reach E-S : Existing South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (sf)	CN	Description
*	946,337	68	HSG B
*	573,303	78	HSG C
	1,519,640	72	Weighted Average
	1,519,640		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	100	0.0056	0.09		Sheet Flow, Sheet
					Cultivated: Residue>20% n= 0.170 P2= 2.84"
14.5	983	0.0158	1.13		Shallow Concentrated Flow, Shallow
					Cultivated Straight Rows Kv= 9.0 fps
33.6	1,083	Total			

Subcatchment E3: E3**Hydrograph**

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MSE 24-hr 4 200-Year Rainfall=7.53"

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Summary for Subcatchment E4: E4

Runoff = 9.97 cfs @ 12.13 hrs, Volume= 0.537 af, Depth= 4.51"
 Routed to Reach E-S : Existing South

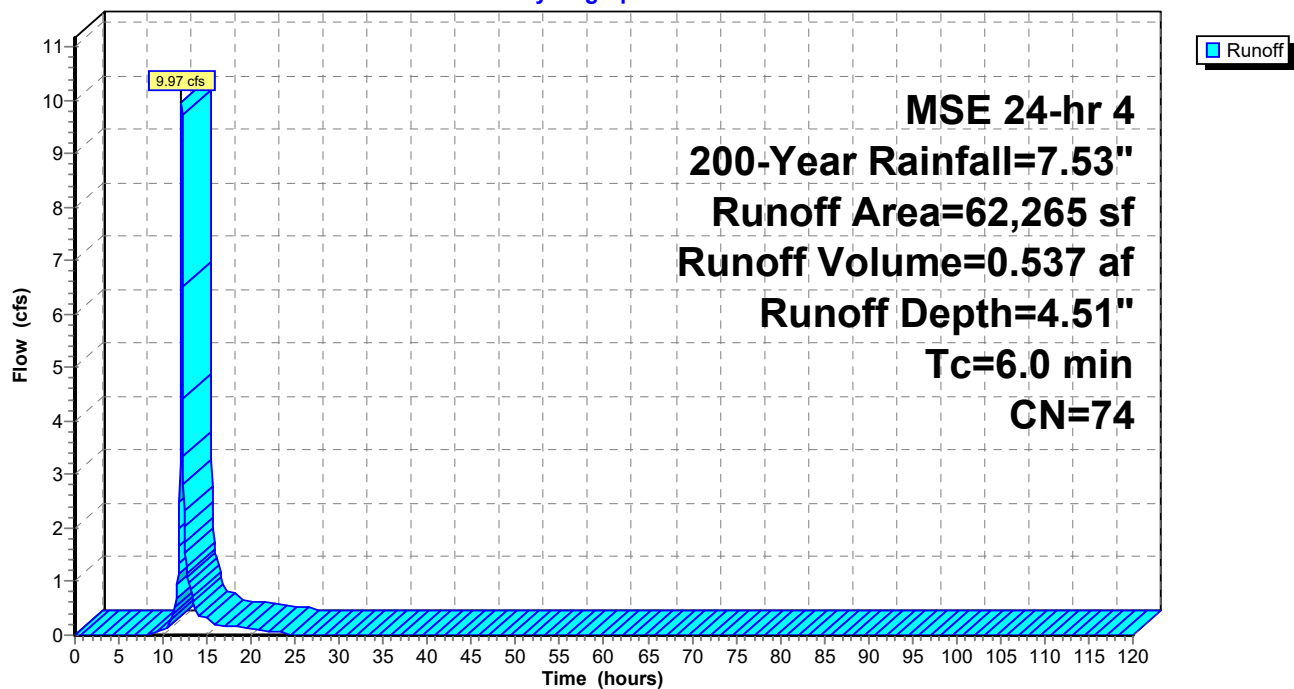
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (sf)	CN	Description
*	50,182	68	HSG B
	12,083	98	Paved parking, HSG B
	62,265	74	Weighted Average
	50,182		80.59% Pervious Area
	12,083		19.41% Impervious Area

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

Subcatchment E4: E4

Hydrograph



3230212

MSE 24-hr 4 200-Year Rainfall=7.53"

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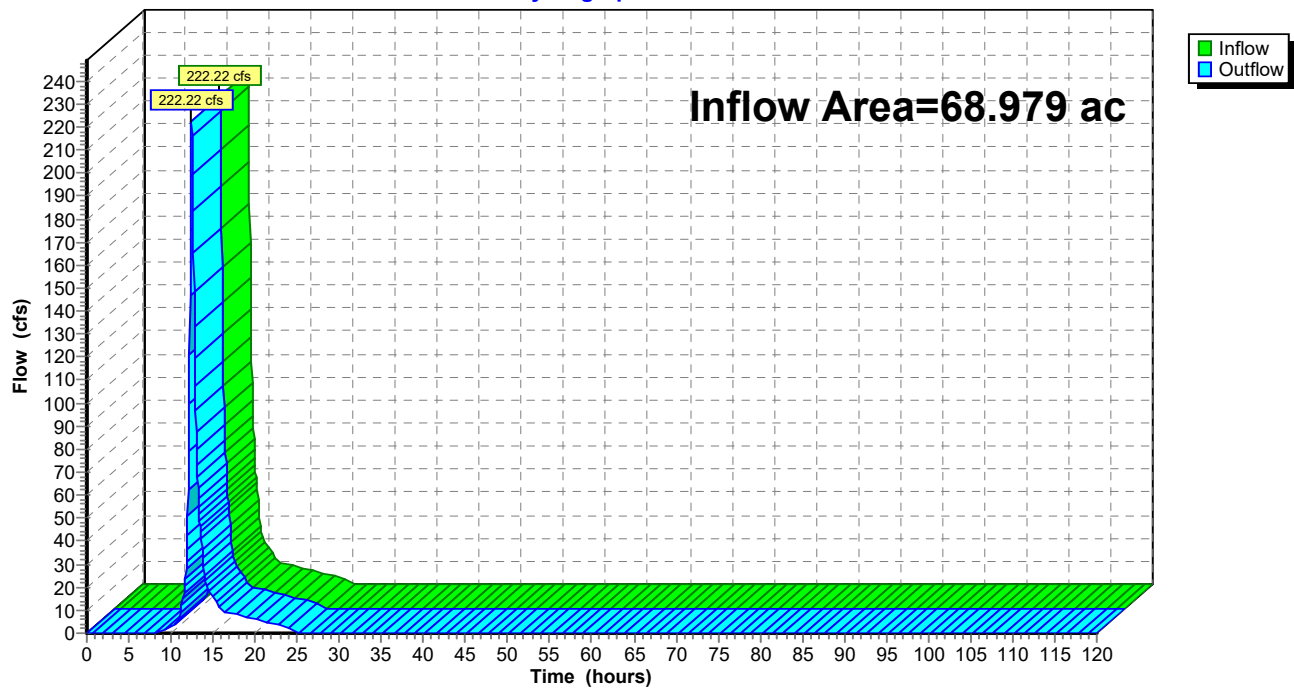
Summary for Reach E: Existing Total

Inflow Area = 68.979 ac, 0.40% Impervious, Inflow Depth = 4.37" for 200-Year event
Inflow = 222.22 cfs @ 12.47 hrs, Volume= 25.125 af
Outflow = 222.22 cfs @ 12.47 hrs, Volume= 25.125 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E: Existing Total

Hydrograph



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MSE 24-hr 4 200-Year Rainfall=7.53"

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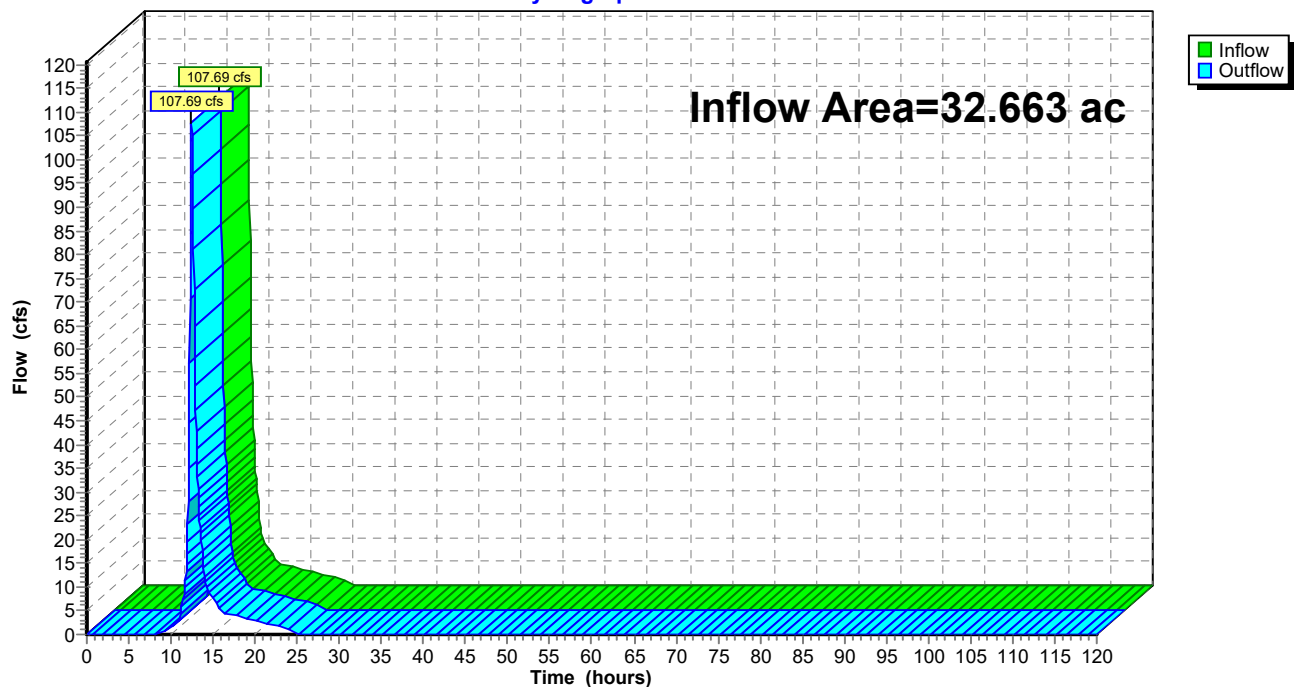
Summary for Reach E-N: Existing North

Inflow Area = 32.663 ac, 0.00% Impervious, Inflow Depth = 4.46" for 200-Year event
Inflow = 107.69 cfs @ 12.47 hrs, Volume= 12.132 af
Outflow = 107.69 cfs @ 12.47 hrs, Volume= 12.132 af, Atten= 0%, Lag= 0.0 min
Routed to Reach E : Existing Total

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E-N: Existing North

Hydrograph



3230212

MSE 24-hr 4 200-Year Rainfall=7.53"

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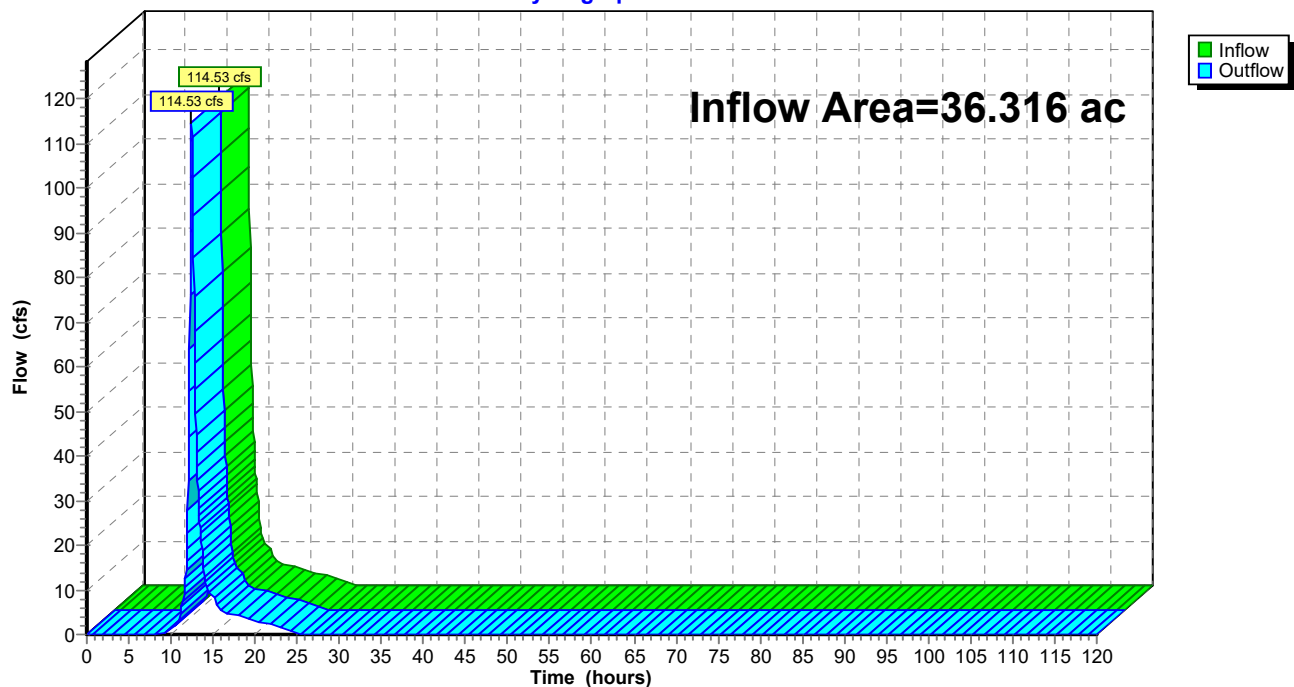
Summary for Reach E-S: Existing South

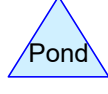
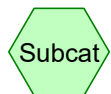
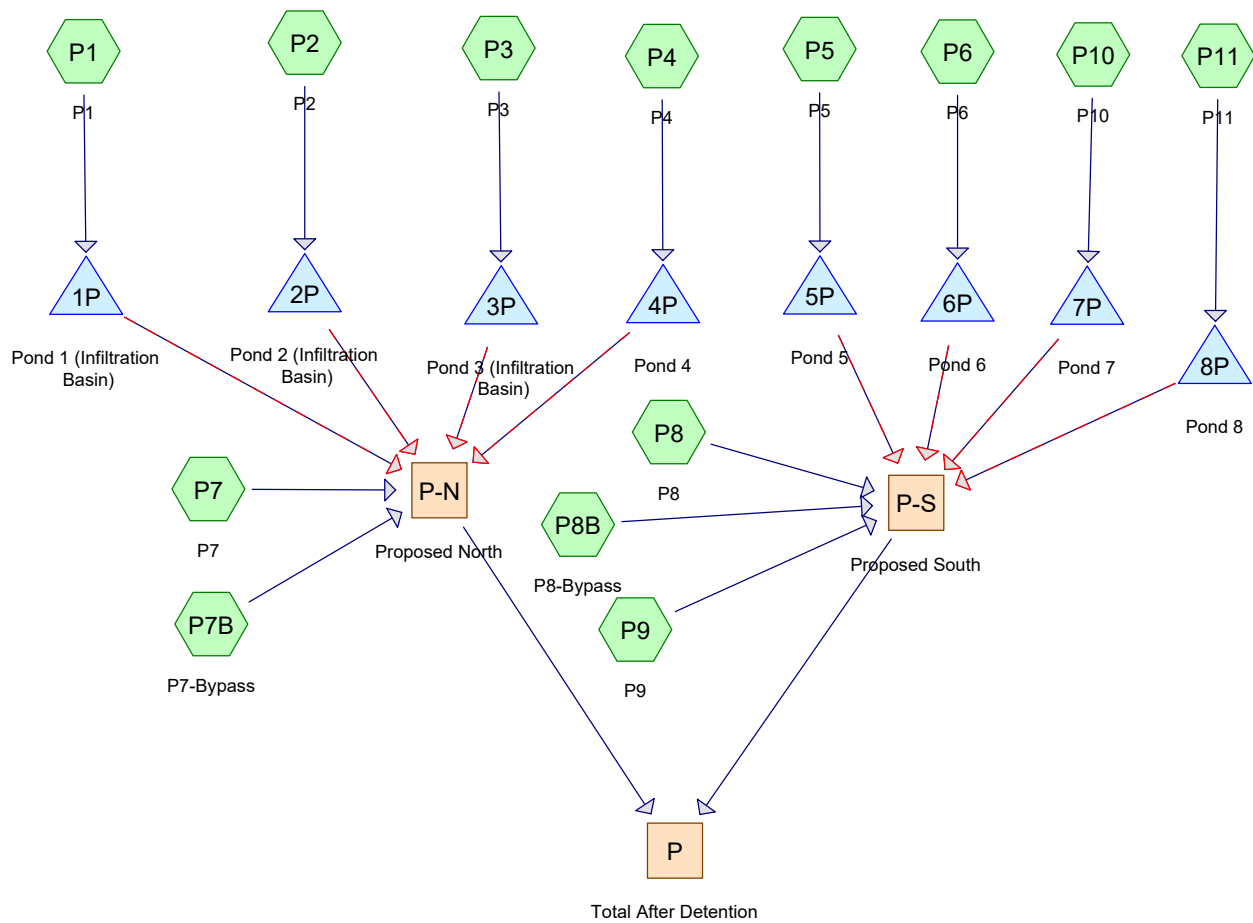
Inflow Area = 36.316 ac, 0.76% Impervious, Inflow Depth = 4.29" for 200-Year event
Inflow = 114.53 cfs @ 12.47 hrs, Volume= 12.993 af
Outflow = 114.53 cfs @ 12.47 hrs, Volume= 12.993 af, Atten= 0%, Lag= 0.0 min
Routed to Reach E : Existing Total

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach E-S: Existing South

Hydrograph





Routing Diagram for 3230212

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	MSE 24-hr	4	Default	24.00	1	2.49	2
2	2-Year	MSE 24-hr	4	Default	24.00	1	2.84	2
3	10-Year	MSE 24-hr	4	Default	24.00	1	4.09	2
4	100-Year	MSE 24-hr	4	Default	24.00	1	6.66	2
5	200-Year	MSE 24-hr	4	Default	24.00	1	7.53	2

3230212**MSE 24-hr 4 1-Year Rainfall=2.49"**

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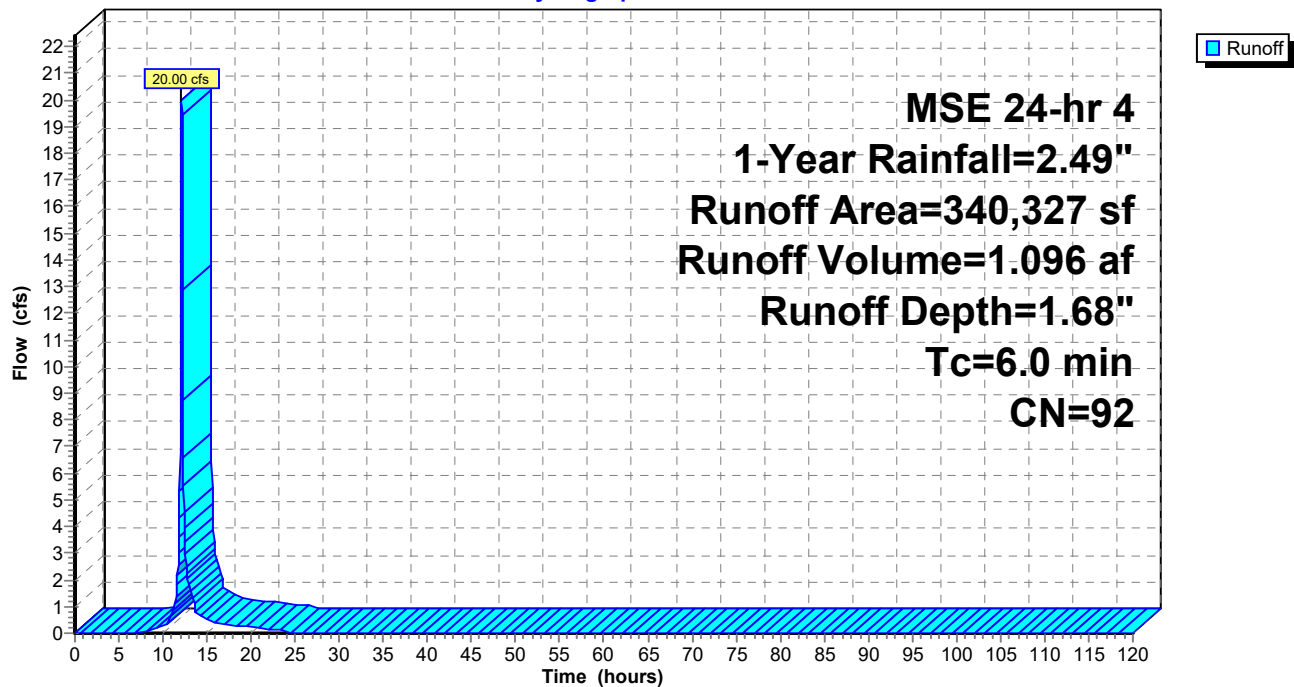
Summary for Subcatchment P1: P1

Runoff = 20.00 cfs @ 12.13 hrs, Volume= 1.096 af, Depth= 1.68"
Routed to Pond 1P : Pond 1 (Infiltration Basin)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
114,740	80	>75% Grass cover, Good, HSG D
225,587	98	Roofs, HSG D
340,327	92	Weighted Average
114,740		33.71% Pervious Area
225,587		66.29% Impervious Area

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

Subcatchment P1: P1**Hydrograph**

3230212**MSE 24-hr 4 1-Year Rainfall=2.49"**

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Summary for Subcatchment P10: P10

Runoff = 12.98 cfs @ 12.13 hrs, Volume= 0.690 af, Depth= 1.17"
 Routed to Pond 7P : Pond 7

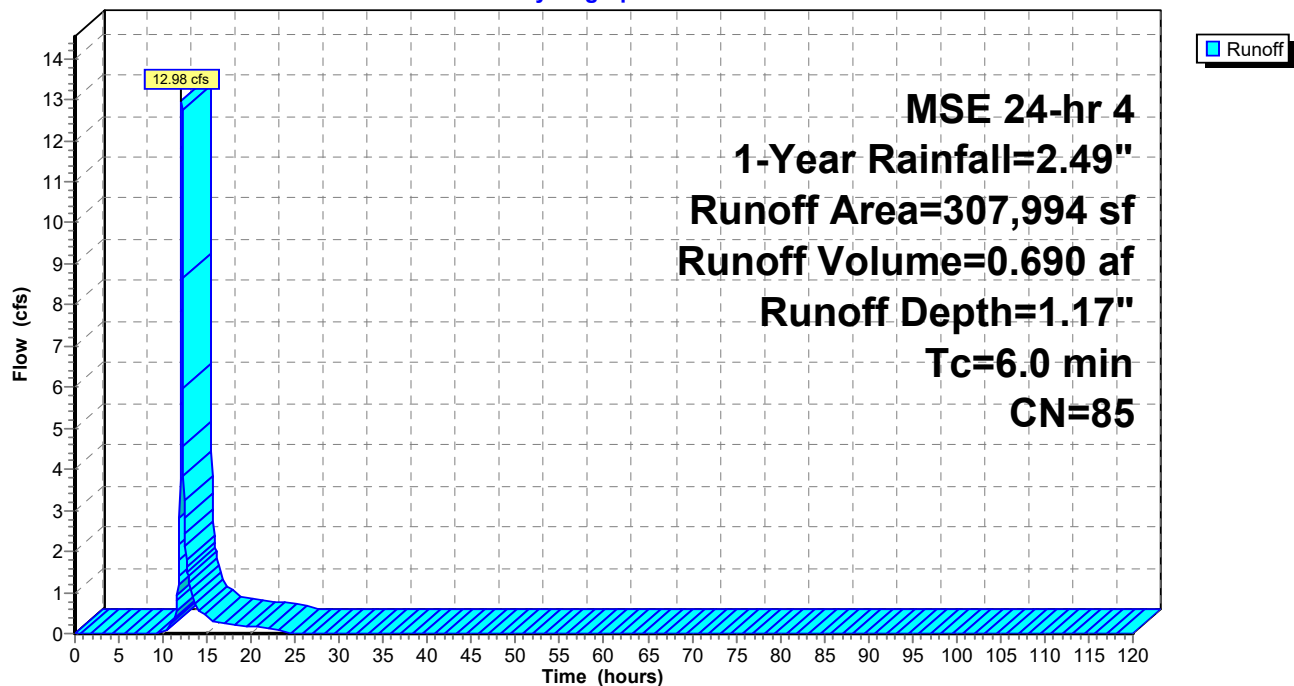
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
224,113	80	>75% Grass cover, Good, HSG D
15,978	98	Paved parking, HSG D
67,903	98	Water Surface, HSG D
307,994	85	Weighted Average
224,113		72.77% Pervious Area
83,881		27.23% Impervious Area

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

Subcatchment P10: P10

Hydrograph



3230212**MSE 24-hr 4 1-Year Rainfall=2.49"**

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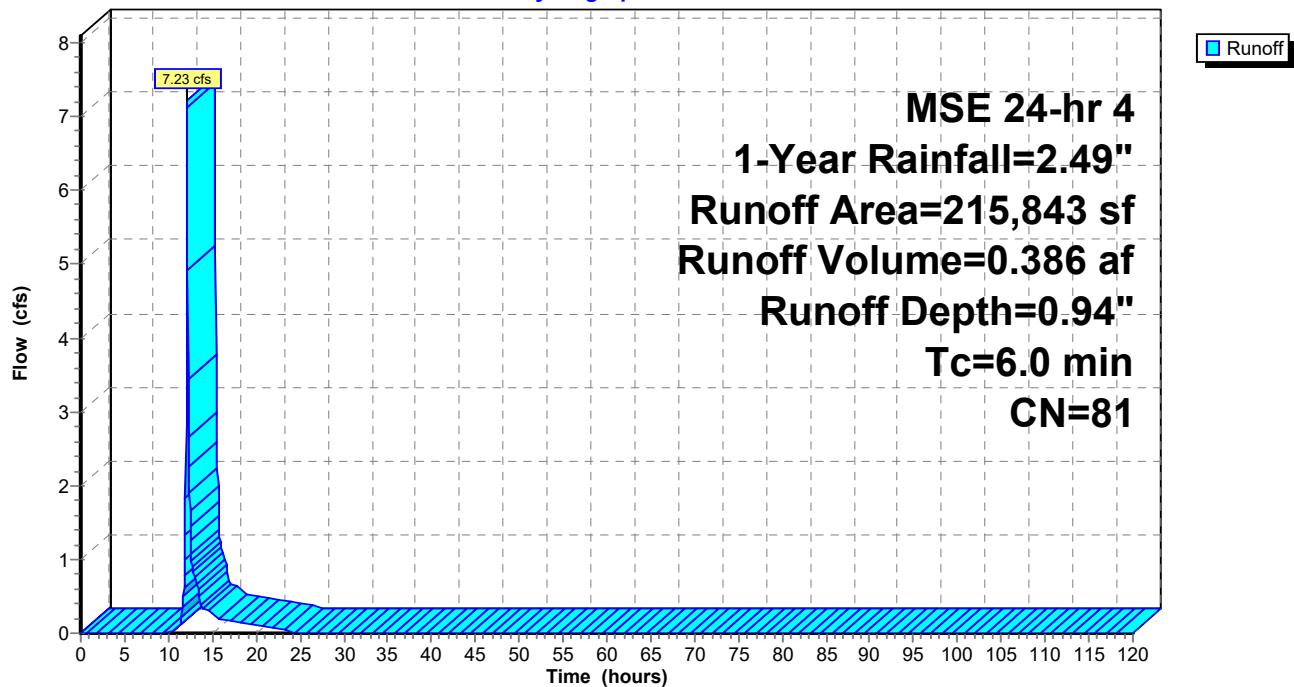
Summary for Subcatchment P11: P11

Runoff = 7.23 cfs @ 12.14 hrs, Volume= 0.386 af, Depth= 0.94"
Routed to Pond 8P : Pond 8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
204,687	80	>75% Grass cover, Good, HSG D
11,156	98	Water Surface, HSG D
215,843	81	Weighted Average
204,687		94.83% Pervious Area
11,156		5.17% Impervious Area

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

Subcatchment P11: P11**Hydrograph**

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Summary for Subcatchment P2: P2

Runoff = 9.01 cfs @ 12.13 hrs, Volume= 0.505 af, Depth= 1.86"
Routed to Pond 2P : Pond 2 (Infiltration Basin)

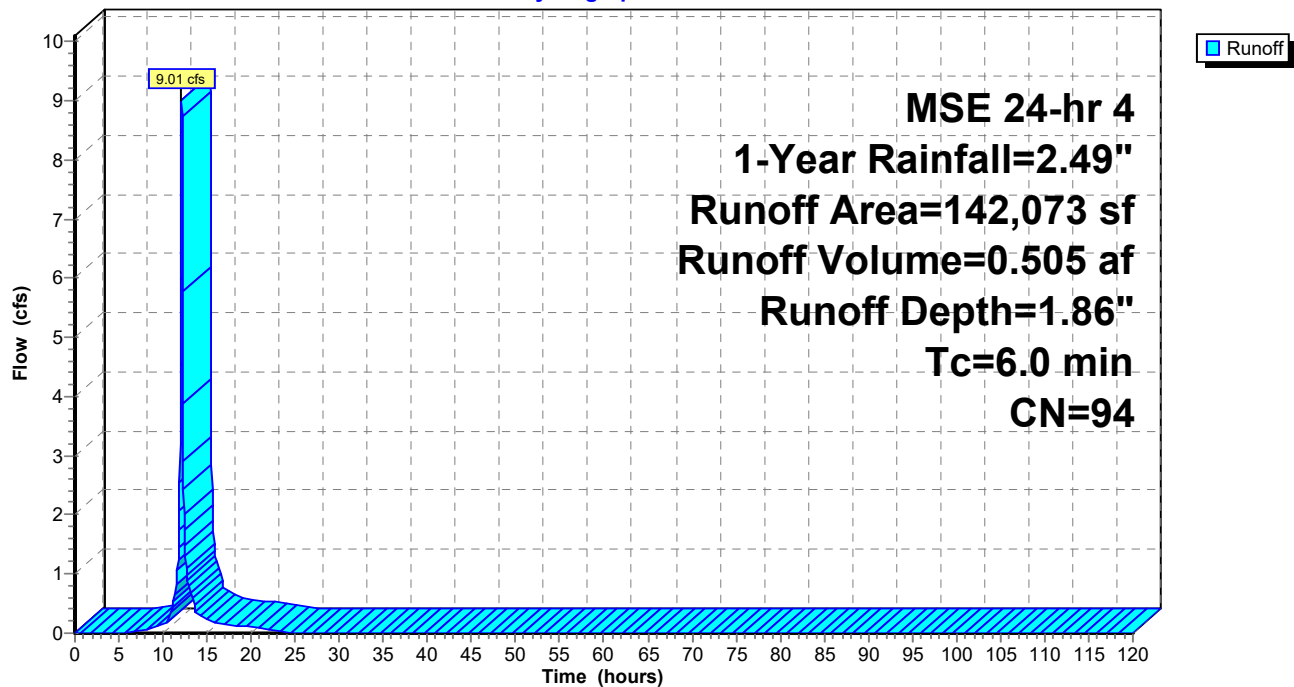
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
33,361	80	>75% Grass cover, Good, HSG D
108,712	98	Roofs, HSG C
142,073	94	Weighted Average
33,361		23.48% Pervious Area
108,712		76.52% Impervious Area

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

Subcatchment P2: P2

Hydrograph



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Summary for Subcatchment P3: P3

Runoff = 8.75 cfs @ 12.13 hrs, Volume= 0.490 af, Depth= 1.86"
Routed to Pond 3P : Pond 3 (Infiltration Basin)

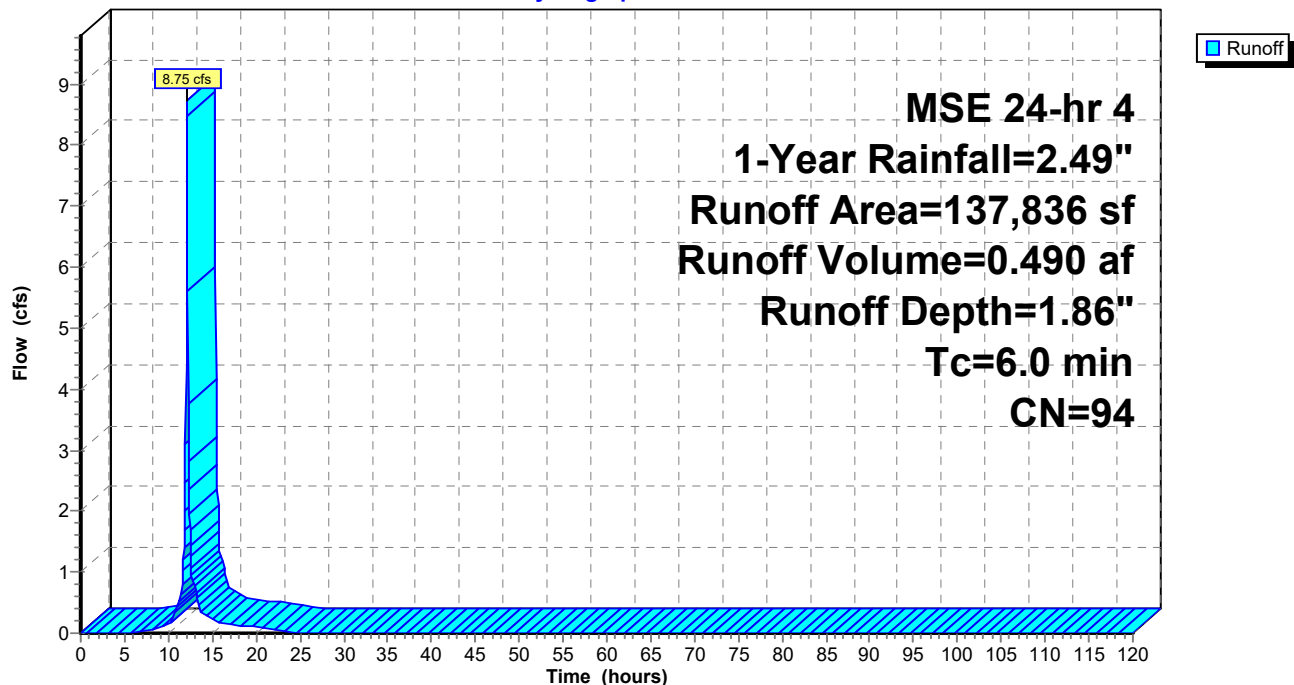
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
30,961	80	>75% Grass cover, Good, HSG D
106,875	98	Roofs, HSG D
137,836	94	Weighted Average
30,961		22.46% Pervious Area
106,875		77.54% Impervious Area

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

Subcatchment P3: P3

Hydrograph



3230212**MSE 24-hr 4 1-Year Rainfall=2.49"**

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Summary for Subcatchment P4: P4

Runoff = 17.46 cfs @ 12.13 hrs, Volume= 0.994 af, Depth= 1.95"
Routed to Pond 4P : Pond 4

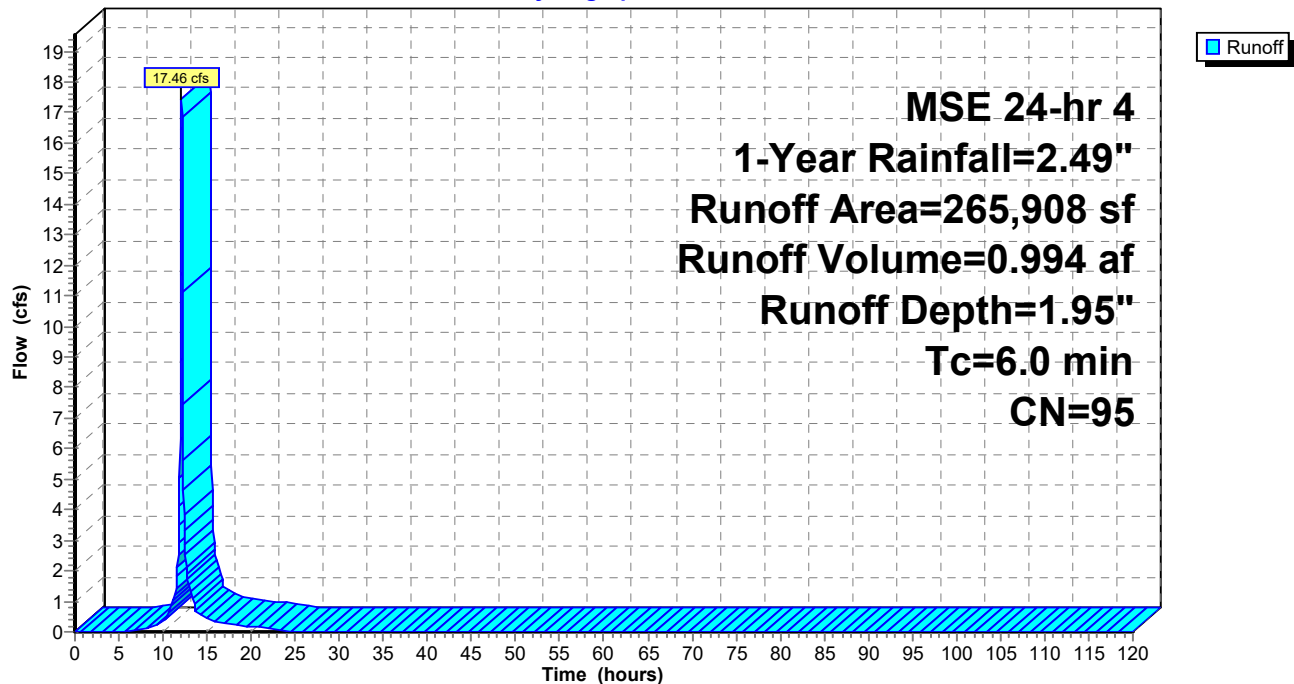
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
45,325	80	>75% Grass cover, Good, HSG D
108,712	98	Roofs, HSG D
97,063	98	Paved parking, HSG D
14,808	98	Water Surface, HSG D
265,908	95	Weighted Average
45,325		17.05% Pervious Area
220,583		82.95% Impervious Area

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

Subcatchment P4: P4

Hydrograph



3230212**MSE 24-hr 4 1-Year Rainfall=2.49"**

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Summary for Subcatchment P5: P5

Runoff = 43.78 cfs @ 12.13 hrs, Volume= 2.493 af, Depth= 1.95"
Routed to Pond 5P : Pond 5

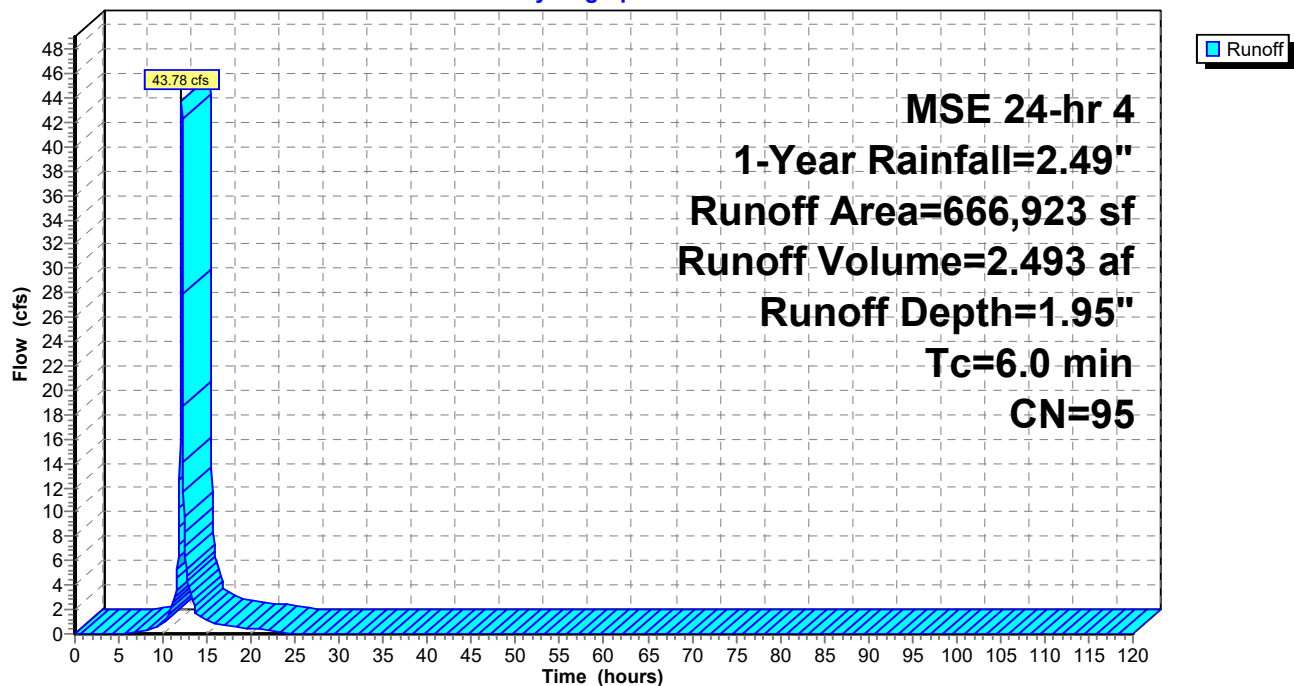
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
107,376	80	>75% Grass cover, Good, HSG D
122,680	98	Roofs, HSG D
325,512	98	Paved parking, HSG D
111,355	98	Water Surface, HSG D
666,923	95	Weighted Average
107,376		16.10% Pervious Area
559,547		83.90% Impervious Area

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

Subcatchment P5: P5

Hydrograph



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Summary for Subcatchment P6: P6

Runoff = 25.60 cfs @ 12.13 hrs, Volume= 1.418 af, Depth= 1.77"
 Routed to Pond 6P : Pond 6

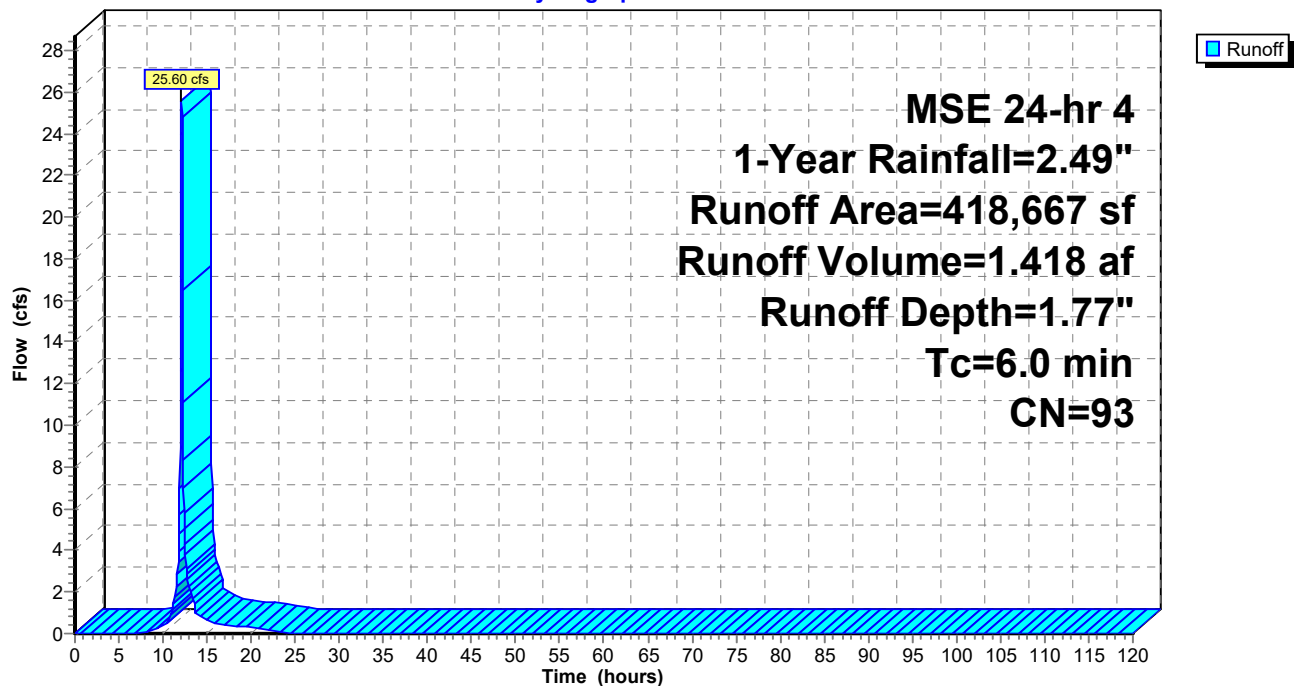
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
112,758	80	>75% Grass cover, Good, HSG D
269,805	98	Paved parking, HSG D
36,104	98	Water Surface, HSG D
418,667	93	Weighted Average
112,758		26.93% Pervious Area
305,909		73.07% Impervious Area

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

Subcatchment P6: P6

Hydrograph



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MSE 24-hr 4 1-Year Rainfall=2.49"

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Summary for Subcatchment P7: P7

Runoff = 3.03 cfs @ 12.14 hrs, Volume= 0.162 af, Depth= 0.88"
Routed to Reach P-N : Proposed North

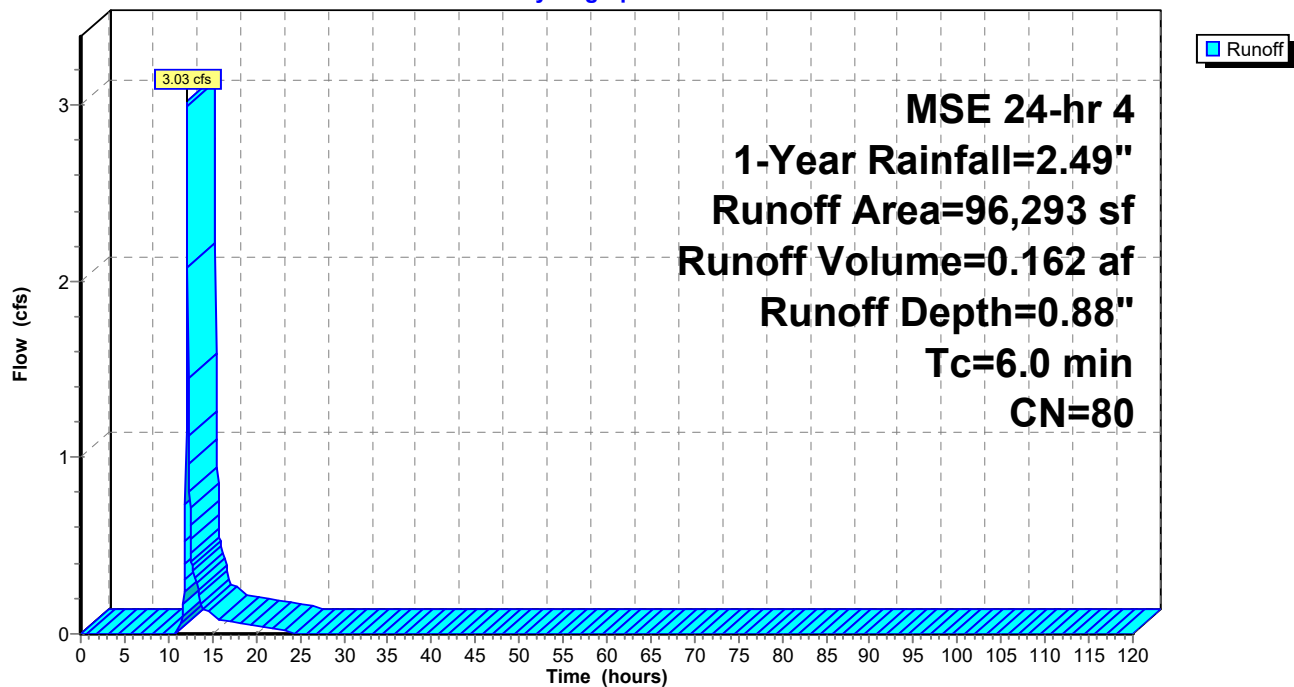
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
96,293	80	>75% Grass cover, Good, HSG D
96,293		100.00% Pervious Area

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

Subcatchment P7: P7

Hydrograph



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Summary for Subcatchment P7B: P7-Bypass

Runoff = 2.65 cfs @ 12.14 hrs, Volume= 0.144 af, Depth= 0.78"

Routed to Reach P-N : Proposed North

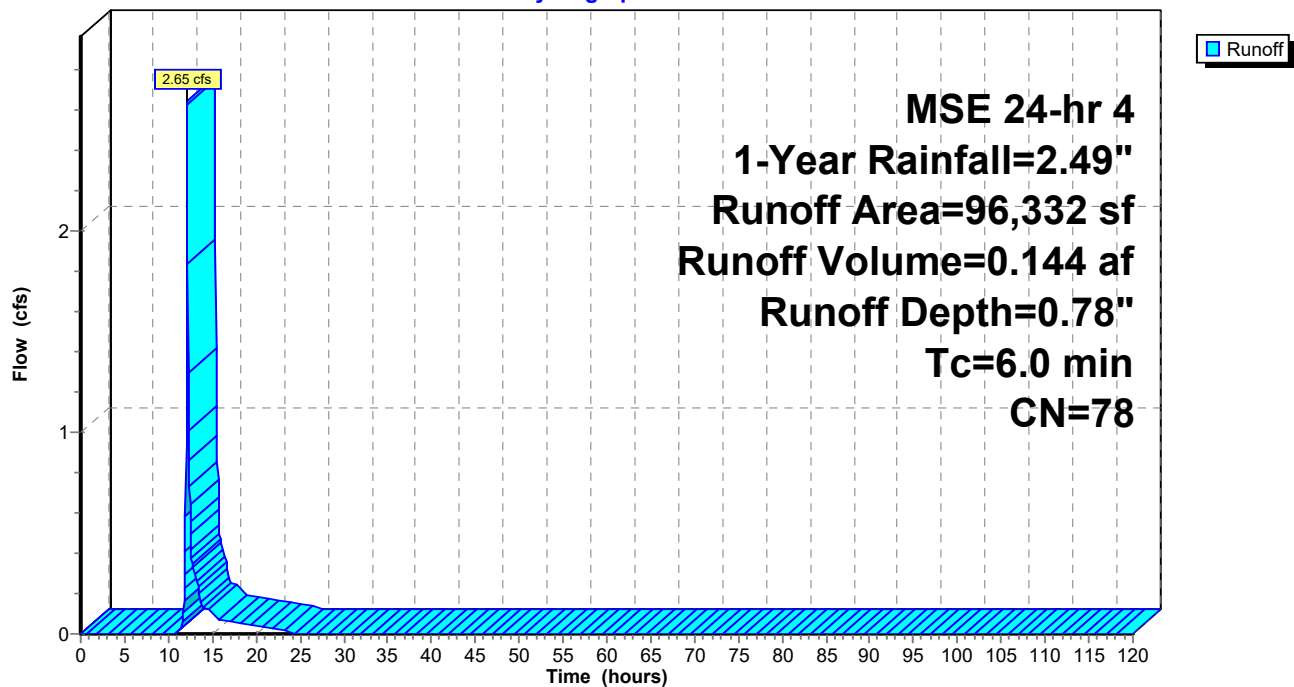
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

	Area (sf)	CN	Description
*	96,332	78	HSG C (pre-development)
	96,332		100.00% Pervious Area

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

Subcatchment P7B: P7-Bypass

Hydrograph



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Summary for Subcatchment P8: P8

Runoff = 4.72 cfs @ 12.14 hrs, Volume= 0.268 af, Depth= 0.60"

Routed to Reach P-S : Proposed South

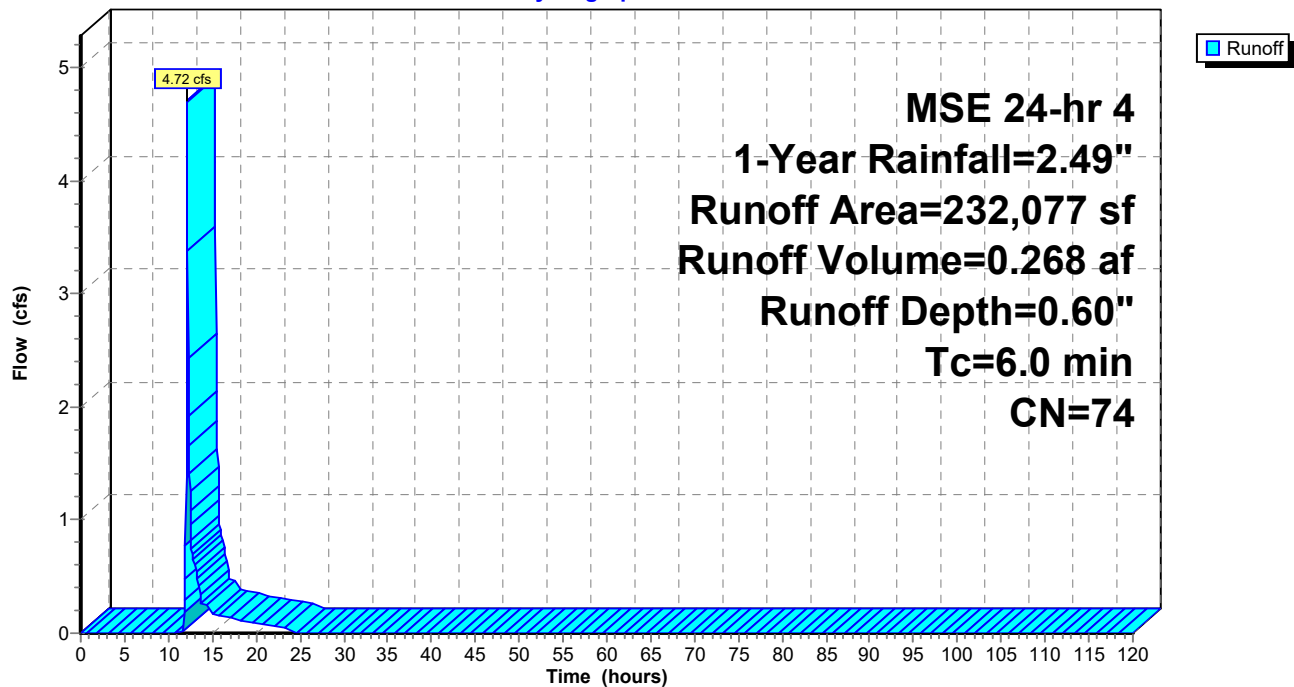
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
* 230,643	74	Septic area is HSG B, so goes to C. All other greenspace areas deep till, so HSG = C (74)
1,434	98	Paved parking, HSG D
232,077	74	Weighted Average
230,643		99.38% Pervious Area
1,434		0.62% Impervious Area

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

Subcatchment P8: P8

Hydrograph



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Summary for Subcatchment P8B: P8-Bypass

Runoff = 0.42 cfs @ 12.14 hrs, Volume= 0.024 af, Depth= 0.56"
Routed to Reach P-S : Proposed South

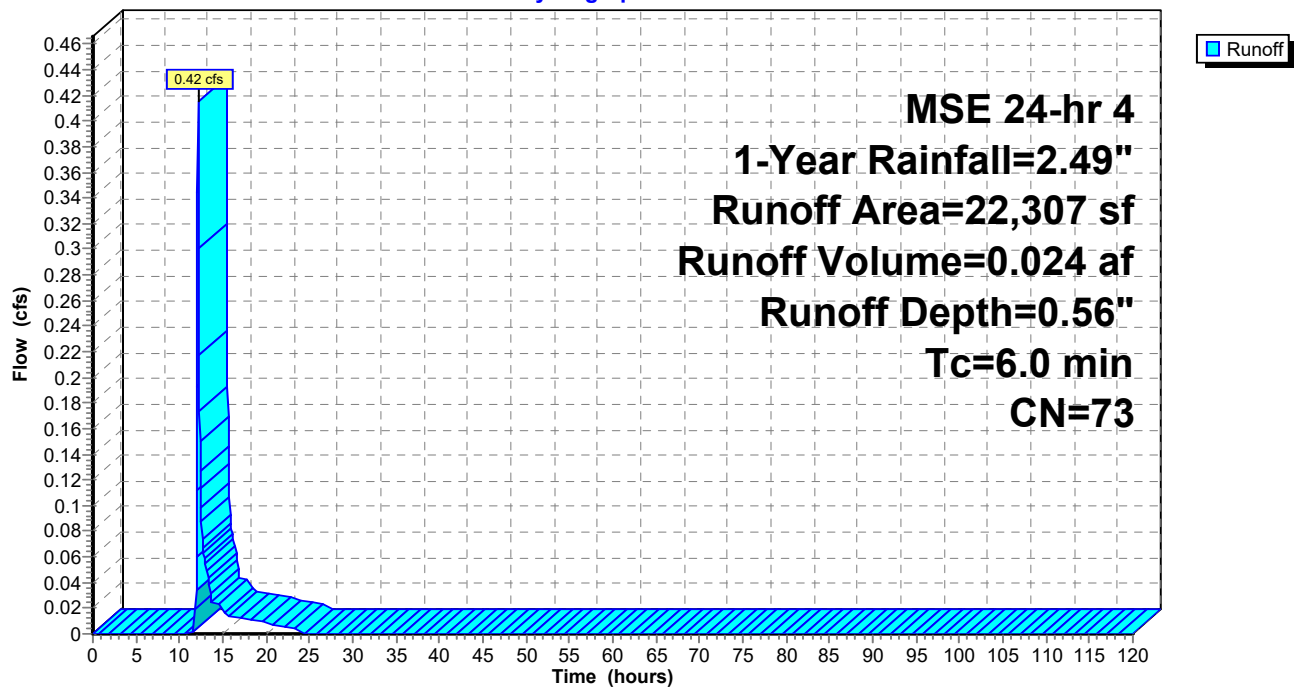
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

	Area (sf)	CN	Description
*	22,307	73	HSG B/C (pre-development)
	22,307		100.00% Pervious Area

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

Subcatchment P8B: P8-Bypass

Hydrograph



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Summary for Subcatchment P9: P9

Runoff = 3.06 cfs @ 12.13 hrs, Volume= 0.164 af, Depth= 1.37"

Routed to Reach P-S : Proposed South

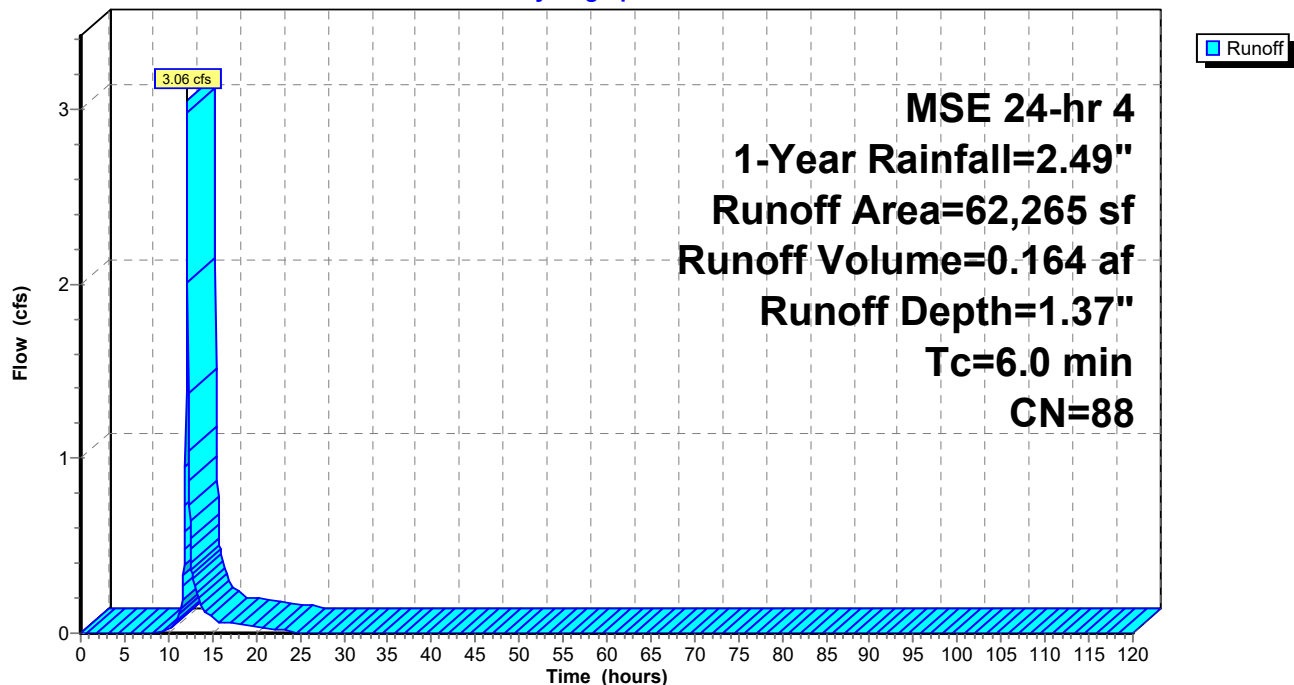
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 1-Year Rainfall=2.49"

Area (sf)	CN	Description
34,498	80	>75% Grass cover, Good, HSG D
27,767	98	Paved parking, HSG D
62,265	88	Weighted Average
34,498		55.41% Pervious Area
27,767		44.59% Impervious Area

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

Subcatchment P9: P9

Hydrograph



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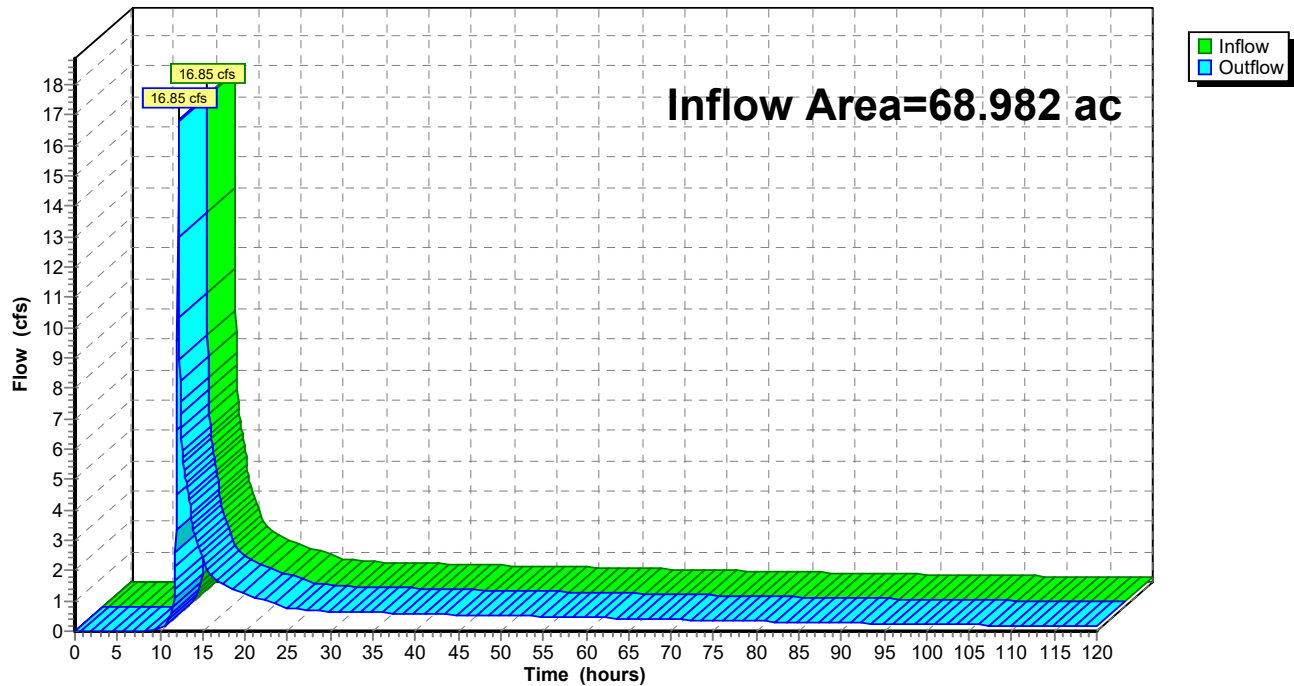
Summary for Reach P: Total After Detention

Inflow Area = 68.982 ac, 54.96% Impervious, Inflow Depth > 0.96" for 1-Year event
Inflow = 16.85 cfs @ 12.14 hrs, Volume= 5.499 af
Outflow = 16.85 cfs @ 12.14 hrs, Volume= 5.499 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P: Total After Detention

Hydrograph



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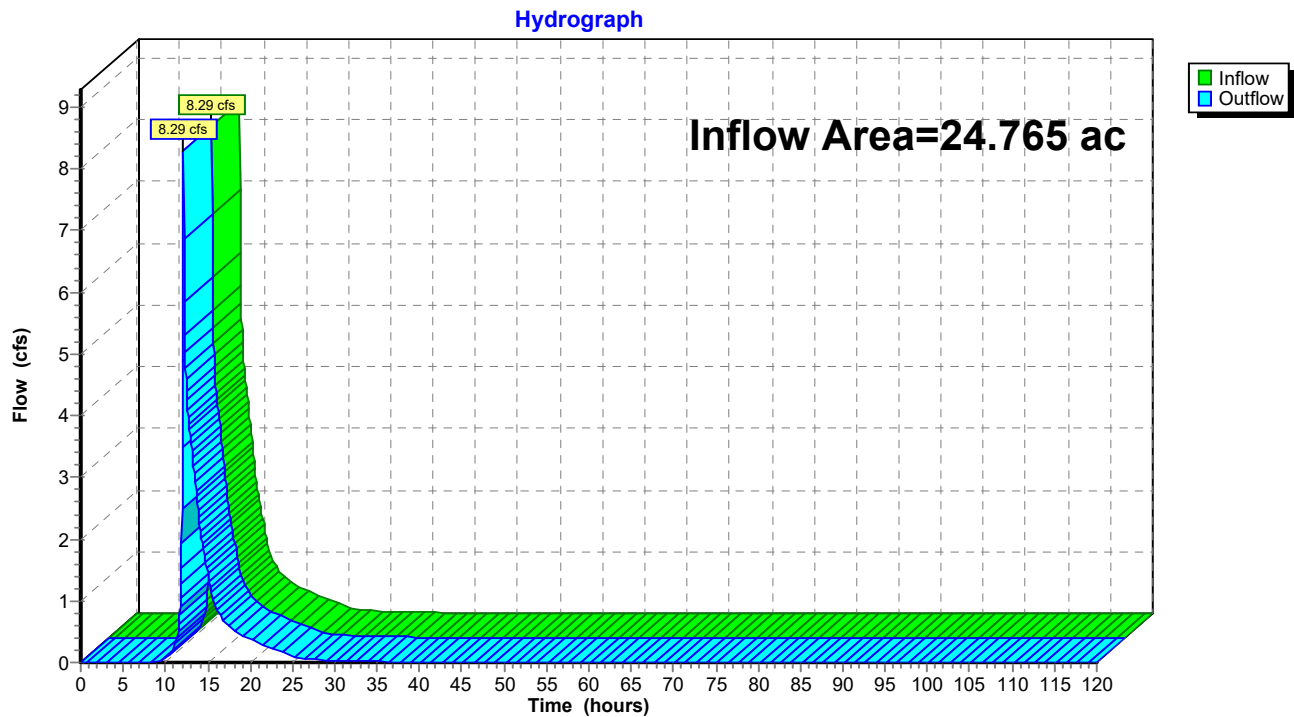
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Summary for Reach P-N: Proposed North

Inflow Area = 24.765 ac, 61.34% Impervious, Inflow Depth = 0.63" for 1-Year event
Inflow = 8.29 cfs @ 12.15 hrs, Volume= 1.300 af
Outflow = 8.29 cfs @ 12.15 hrs, Volume= 1.300 af, Atten= 0%, Lag= 0.0 min
Routed to Reach P : Total After Detention

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

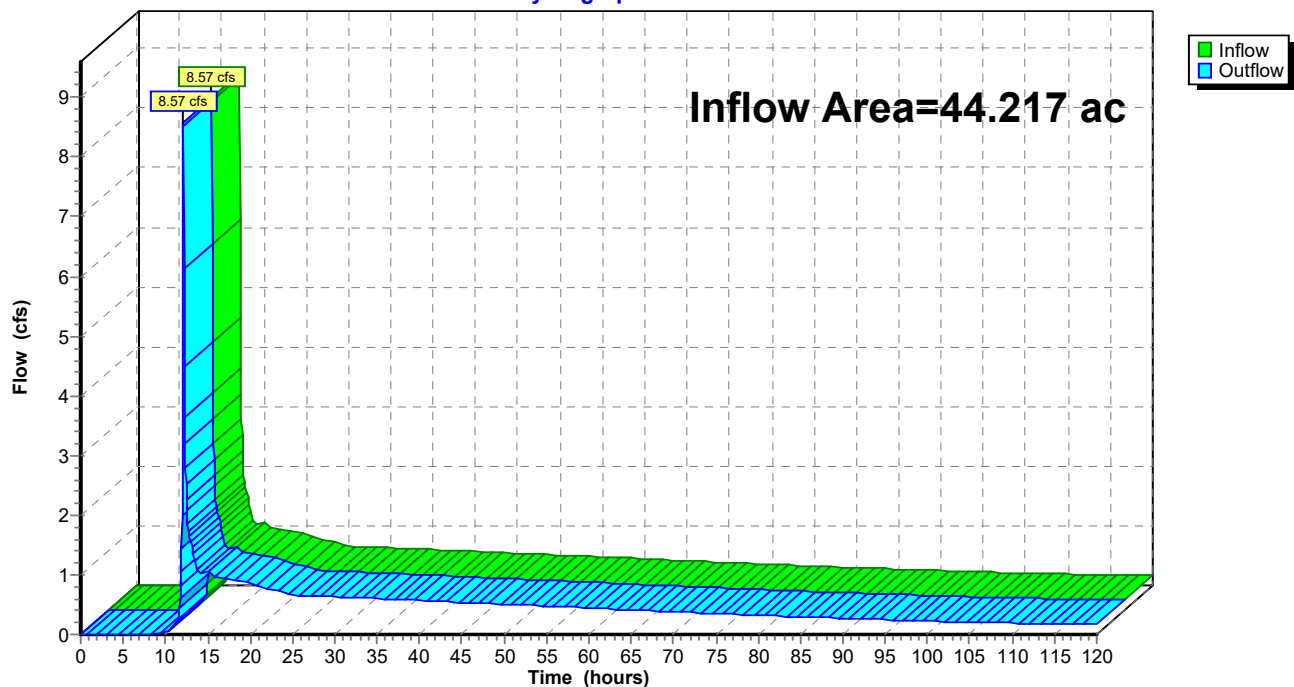
Reach P-N: Proposed North



Summary for Reach P-S: Proposed South

Inflow Area = 44.217 ac, 51.38% Impervious, Inflow Depth > 1.14" for 1-Year event
Inflow = 8.57 cfs @ 12.14 hrs, Volume= 4.199 af
Outflow = 8.57 cfs @ 12.14 hrs, Volume= 4.199 af, Atten= 0%, Lag= 0.0 min
Routed to Reach P : Total After Detention

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P-S: Proposed South**Hydrograph**

Summary for Pond 1P: Pond 1 (Infiltration Basin)

Inflow Area = 7.813 ac, 66.29% Impervious, Inflow Depth = 1.68" for 1-Year event
 Inflow = 20.00 cfs @ 12.13 hrs, Volume= 1.096 af
 Outflow = 0.64 cfs @ 14.93 hrs, Volume= 1.096 af, Atten= 97%, Lag= 168.3 min
 Discarded = 0.64 cfs @ 14.93 hrs, Volume= 1.096 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 910.55' @ 14.93 hrs Surf.Area= 55,010 sf Storage= 29,605 cf

Plug-Flow detention time= 468.3 min calculated for 1.096 af (100% of inflow)
 Center-of-Mass det. time= 467.9 min (1,265.2 - 797.3)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	316,468 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	52,675	0	0
915.00	73,912	316,468	316,468

Device	Routing	Invert	Outlet Devices
#1	Primary	911.00'	18.0" Round Culvert L= 500.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 911.00' / 910.00' S= 0.0020 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf
#2	Device 1	911.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	910.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.64 cfs @ 14.93 hrs HW=910.55' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.64 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **1=Culvert** (Controls 0.00 cfs)
 ↑ **2=Orifice/Grate** (Controls 0.00 cfs)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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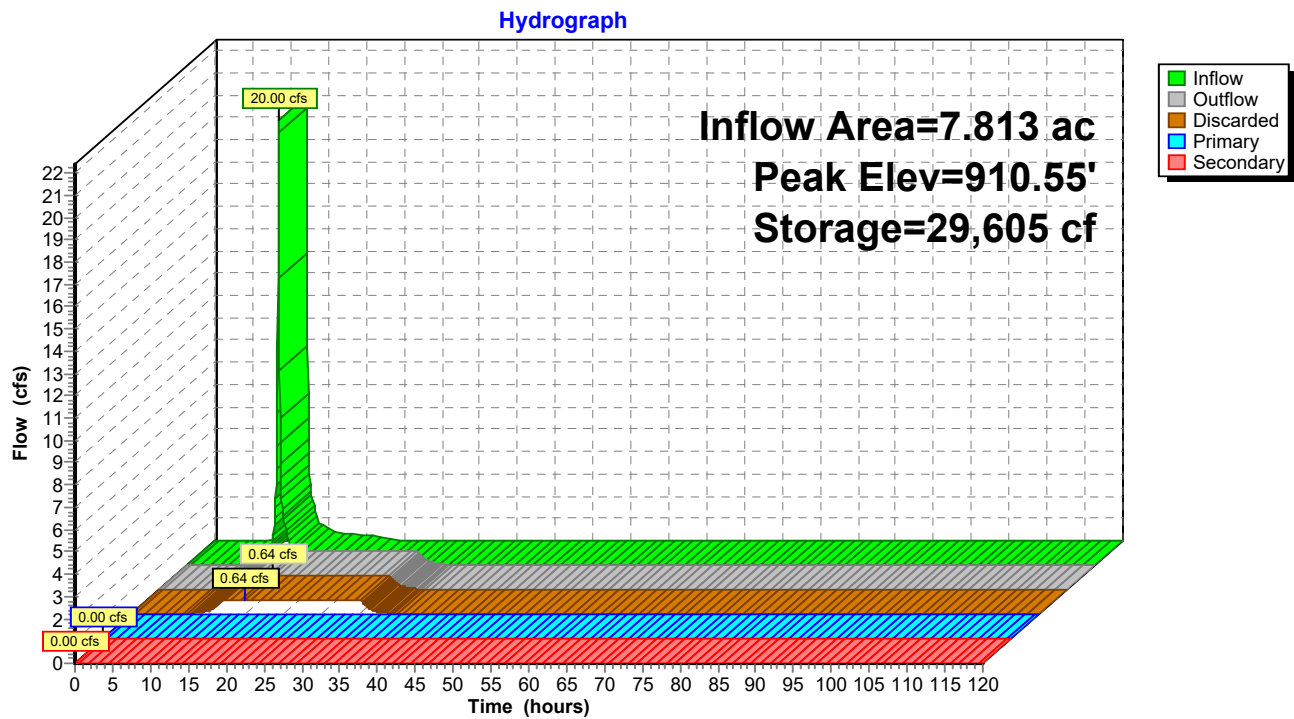
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Pond 1P: Pond 1 (Infiltration Basin)



Summary for Pond 2P: Pond 2 (Infiltration Basin)

Inflow Area = 3.262 ac, 76.52% Impervious, Inflow Depth = 1.86" for 1-Year event
 Inflow = 9.01 cfs @ 12.13 hrs, Volume= 0.505 af
 Outflow = 0.14 cfs @ 17.55 hrs, Volume= 0.505 af, Atten= 98%, Lag= 325.4 min
 Discarded = 0.14 cfs @ 17.55 hrs, Volume= 0.505 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 911.63' @ 17.55 hrs Surf.Area= 11,979 sf Storage= 16,167 cf

Plug-Flow detention time= 1,212.5 min calculated for 0.505 af (100% of inflow)
 Center-of-Mass det. time= 1,213.1 min (2,000.8 - 787.7)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	70,950 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	7,800	0	0
915.00	20,580	70,950	70,950

Device	Routing	Invert	Outlet Devices
#1	Primary	911.75'	18.0" Round Culvert L= 100.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 911.75' / 910.00' S= 0.0175 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	911.75'	15.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.50'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	910.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.14 cfs @ 17.55 hrs HW=911.63' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **1=Culvert** (Controls 0.00 cfs)
 ↑ **2=Orifice/Grate** (Controls 0.00 cfs)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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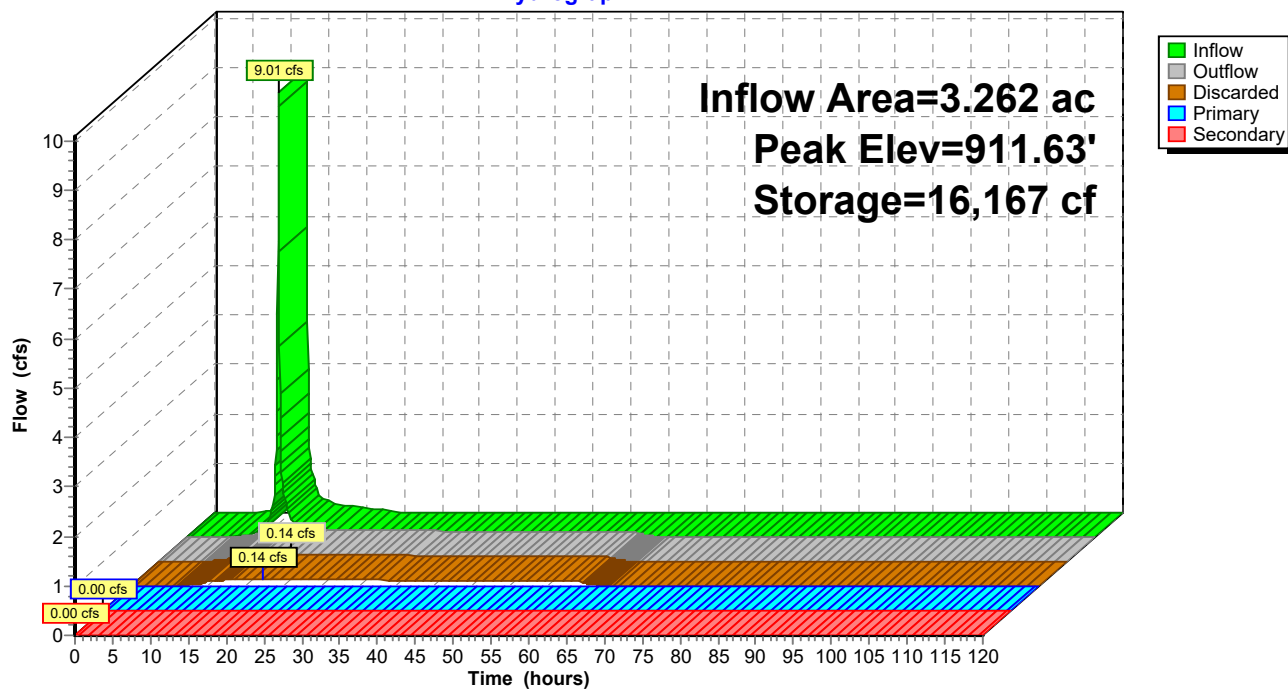
MSE 24-hr 4 1-Year Rainfall=2.49"

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Pond 2P: Pond 2 (Infiltration Basin)

Hydrograph



Summary for Pond 3P: Pond 3 (Infiltration Basin)

Inflow Area = 3.164 ac, 77.54% Impervious, Inflow Depth = 1.86" for 1-Year event
 Inflow = 8.75 cfs @ 12.13 hrs, Volume= 0.490 af
 Outflow = 0.16 cfs @ 15.68 hrs, Volume= 0.490 af, Atten= 98%, Lag= 213.0 min
 Discarded = 0.16 cfs @ 15.68 hrs, Volume= 0.490 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.19' @ 15.68 hrs Surf.Area= 14,138 sf Storage= 14,954 cf

Plug-Flow detention time= 928.0 min calculated for 0.490 af (100% of inflow)
 Center-of-Mass det. time= 928.4 min (1,716.1 - 787.7)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	87,998 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	10,993	0	0
918.00	24,206	87,998	87,998

Device	Routing	Invert	Outlet Devices
#1	Primary	914.25'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 914.25' / 913.00' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	914.25'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	916.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	917.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	913.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.16 cfs @ 15.68 hrs HW=914.19' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=913.00' (Free Discharge)
 ↑ **1=Culvert** (Controls 0.00 cfs)
 ↑ **2=Orifice/Grate** (Controls 0.00 cfs)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=913.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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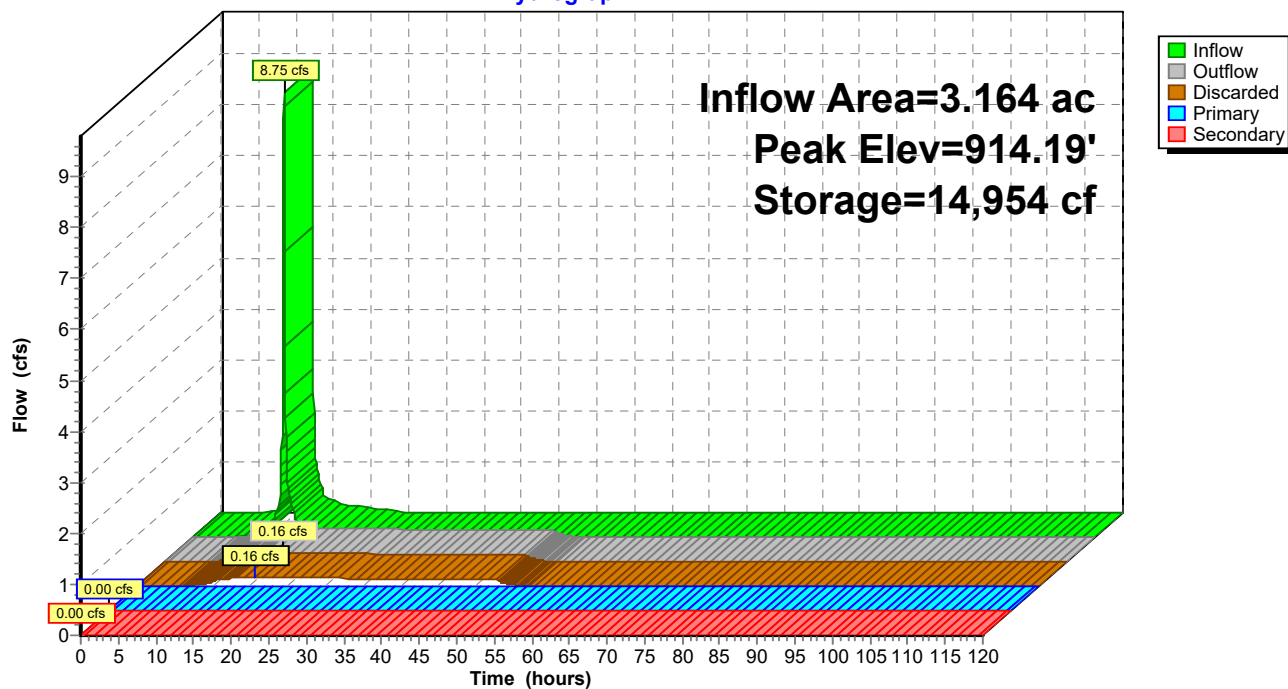
MSE 24-hr 4 1-Year Rainfall=2.49"

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Pond 3P: Pond 3 (Infiltration Basin)

Hydrograph



Summary for Pond 4P: Pond 4

Inflow Area = 6.104 ac, 82.95% Impervious, Inflow Depth = 1.95" for 1-Year event
 Inflow = 17.46 cfs @ 12.13 hrs, Volume= 0.994 af
 Outflow = 3.24 cfs @ 12.46 hrs, Volume= 0.993 af, Atten= 81%, Lag= 19.9 min
 Primary = 3.24 cfs @ 12.46 hrs, Volume= 0.993 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.23' @ 12.46 hrs Surf.Area= 18,546 sf Storage= 20,588 cf

Plug-Flow detention time= 184.3 min calculated for 0.993 af (100% of inflow)
 Center-of-Mass det. time= 186.0 min (968.0 - 782.1)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	111,868 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	14,812	0	0
918.00	29,935	111,868	111,868

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 913.00' / 912.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.50'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	917.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.24 cfs @ 12.46 hrs HW=914.23' (Free Discharge)

↑ **1=Culvert** (Passes 3.24 cfs of 5.05 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 3.24 cfs @ 4.13 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=913.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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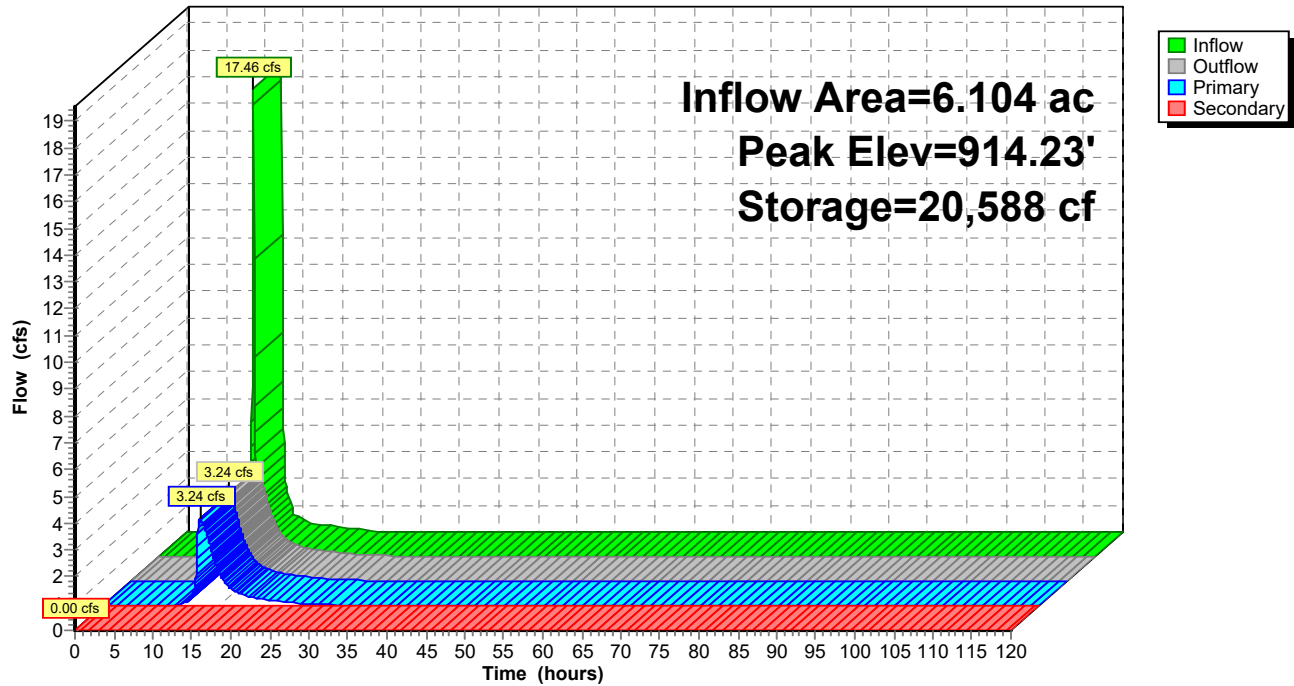
MSE 24-hr 4 1-Year Rainfall=2.49"

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Pond 4P: Pond 4

Hydrograph



Summary for Pond 5P: Pond 5

Inflow Area = 15.310 ac, 83.90% Impervious, Inflow Depth = 1.95" for 1-Year event
 Inflow = 43.78 cfs @ 12.13 hrs, Volume= 2.493 af
 Outflow = 0.20 cfs @ 23.33 hrs, Volume= 1.493 af, Atten= 100%, Lag= 672.1 min
 Primary = 0.20 cfs @ 23.33 hrs, Volume= 1.493 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 905.88' @ 23.33 hrs Surf.Area= 116,583 sf Storage= 99,952 cf

Plug-Flow detention time= 2,979.1 min calculated for 1.492 af (60% of inflow)
 Center-of-Mass det. time= 2,893.8 min (3,675.9 - 782.1)

Volume	Invert	Avail.Storage	Storage Description
#1	905.00'	631,265 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
905.00	111,357	0	0
910.00	141,149	631,265	631,265

Device	Routing	Invert	Outlet Devices
#1	Primary	905.00'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 905.00' / 904.00' S= 0.0050 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	905.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	906.10'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	908.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#5	Secondary	909.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.20 cfs @ 23.33 hrs HW=905.88' (Free Discharge)

↑ **1=Culvert** (Passes 0.20 cfs of 2.87 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.20 cfs @ 4.18 fps)
 ↑ **3=Orifice/Grate** (Controls 0.00 cfs)
 ↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=905.00' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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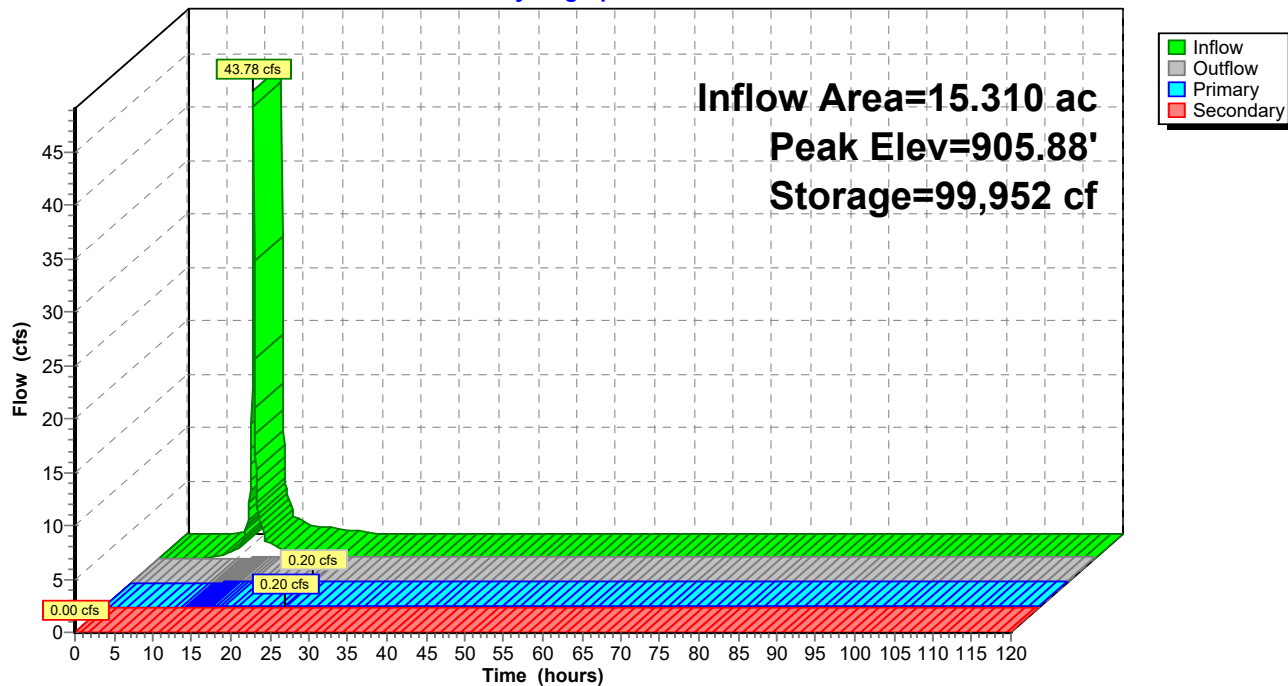
MSE 24-hr 4 1-Year Rainfall=2.49"

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Pond 5P: Pond 5

Hydrograph



Summary for Pond 6P: Pond 6

Inflow Area = 9.611 ac, 73.07% Impervious, Inflow Depth = 1.77" for 1-Year event
 Inflow = 25.60 cfs @ 12.13 hrs, Volume= 1.418 af
 Outflow = 0.26 cfs @ 20.52 hrs, Volume= 1.324 af, Atten= 99%, Lag= 503.6 min
 Primary = 0.26 cfs @ 20.52 hrs, Volume= 1.324 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 911.33' @ 20.52 hrs Surf.Area= 41,726 sf Storage= 51,604 cf

Plug-Flow detention time= 2,228.5 min calculated for 1.324 af (93% of inflow)
 Center-of-Mass det. time= 2,195.7 min (2,988.5 - 792.7)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	233,518 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	36,103	0	0
915.00	57,304	233,518	233,518

Device	Routing	Invert	Outlet Devices
#1	Primary	910.00'	12.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 910.00' / 909.00' S= 0.0050 ' / Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	910.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	912.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	913.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#5	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.26 cfs @ 20.52 hrs HW=911.33' (Free Discharge)

↑ **1=Culvert** (Passes 0.26 cfs of 2.73 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.26 cfs @ 5.28 fps)
 ↑ **3=Orifice/Grate** (Controls 0.00 cfs)
 ↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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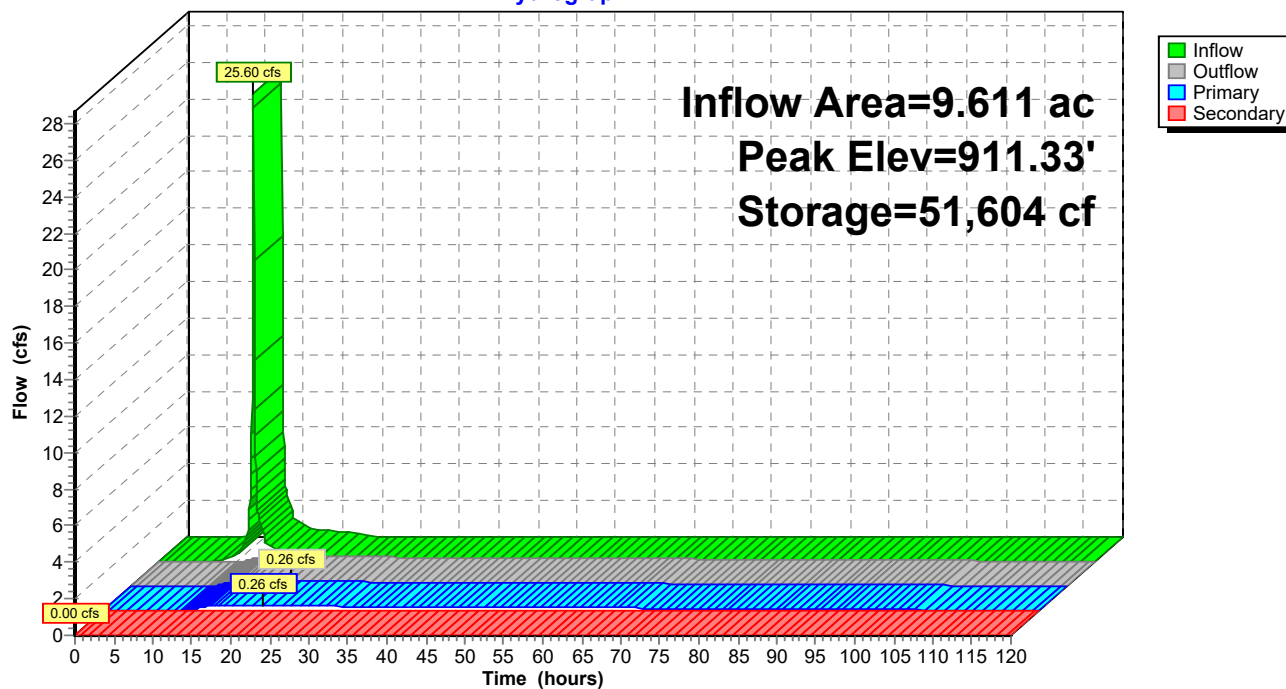
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Pond 6P: Pond 6

Hydrograph



Summary for Pond 7P: Pond 7

Inflow Area = 7.071 ac, 27.23% Impervious, Inflow Depth = 1.17" for 1-Year event
 Inflow = 12.98 cfs @ 12.13 hrs, Volume= 0.690 af
 Outflow = 0.12 cfs @ 21.97 hrs, Volume= 0.550 af, Atten= 99%, Lag= 590.2 min
 Primary = 0.12 cfs @ 21.97 hrs, Volume= 0.550 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 901.37' @ 21.97 hrs Surf.Area= 71,208 sf Storage= 25,519 cf

Plug-Flow detention time= 2,208.1 min calculated for 0.549 af (80% of inflow)
 Center-of-Mass det. time= 2,136.5 min (2,959.3 - 822.7)

Volume	Invert	Avail.Storage	Storage Description
#1	901.00'	257,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
901.00	66,000	0	0
902.00	80,000	73,000	73,000
903.00	93,000	86,500	159,500
904.00	103,000	98,000	257,500

Device	Routing	Invert	Outlet Devices
#1	Primary	901.00'	18.0" Round Culvert L= 20.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 901.00' / 900.50' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	901.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	902.75'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	903.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.12 cfs @ 21.97 hrs HW=901.37' (Free Discharge)

↑ **1=Culvert** (Passes 0.12 cfs of 0.89 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.12 cfs @ 2.39 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=901.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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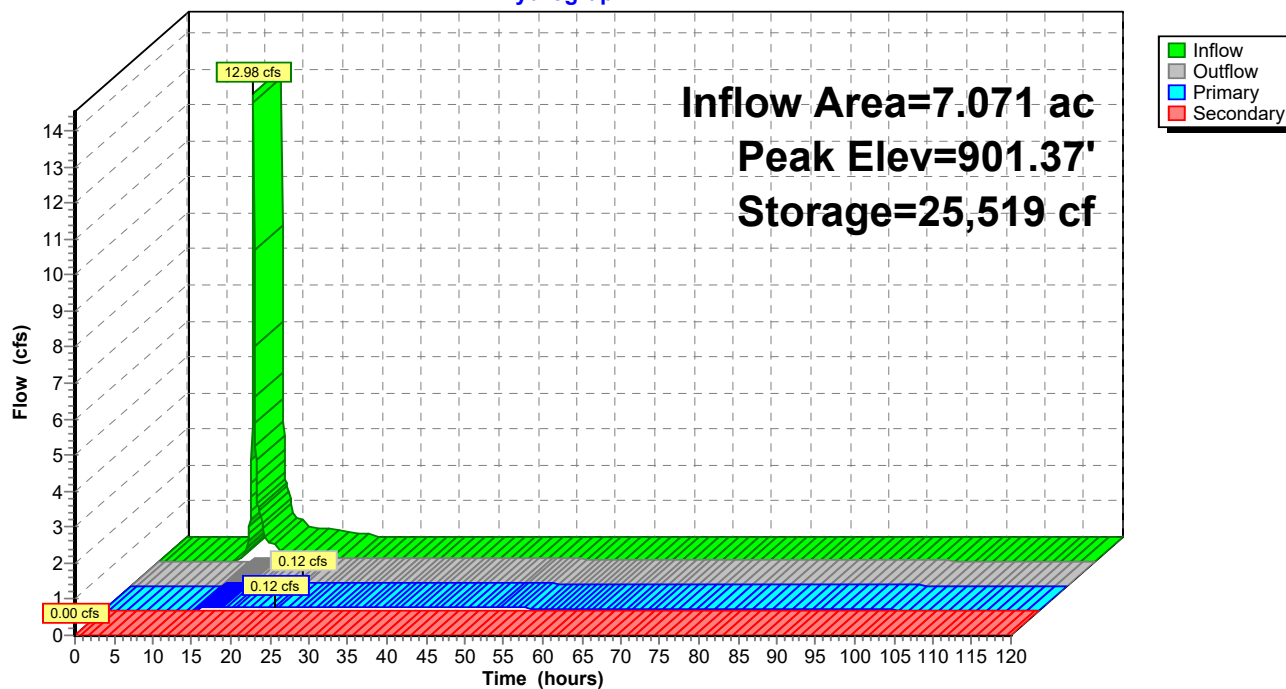
MSE 24-hr 4 1-Year Rainfall=2.49"

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Pond 7P: Pond 7

Hydrograph



Summary for Pond 8P: Pond 8

Inflow Area = 4.955 ac, 5.17% Impervious, Inflow Depth = 0.94" for 1-Year event
 Inflow = 7.23 cfs @ 12.14 hrs, Volume= 0.386 af
 Outflow = 0.18 cfs @ 15.84 hrs, Volume= 0.378 af, Atten= 98%, Lag= 221.9 min
 Primary = 0.18 cfs @ 15.84 hrs, Volume= 0.378 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 902.28' @ 15.84 hrs Surf.Area= 19,499 sf Storage= 12,067 cf

Plug-Flow detention time= 1,480.3 min calculated for 0.378 af (98% of inflow)
 Center-of-Mass det. time= 1,468.8 min (2,304.1 - 835.3)

Volume	Invert	Avail.Storage	Storage Description
#1	901.50'	59,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
901.50	11,000	0	0
902.00	17,000	7,000	7,000
903.00	26,000	21,500	28,500
904.00	36,000	31,000	59,500

Device	Routing	Invert	Outlet Devices
#1	Primary	901.50'	18.0" Round Culvert L= 20.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 901.50' / 901.00' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	901.50'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	902.25'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	903.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.18 cfs @ 15.84 hrs HW=902.28' (Free Discharge)

↑ **1=Culvert** (Passes 0.18 cfs of 3.30 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.09 cfs @ 4.01 fps)

↑ **3=Sharp-Crested Rectangular Weir** (Weir Controls 0.09 cfs @ 0.54 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=901.50' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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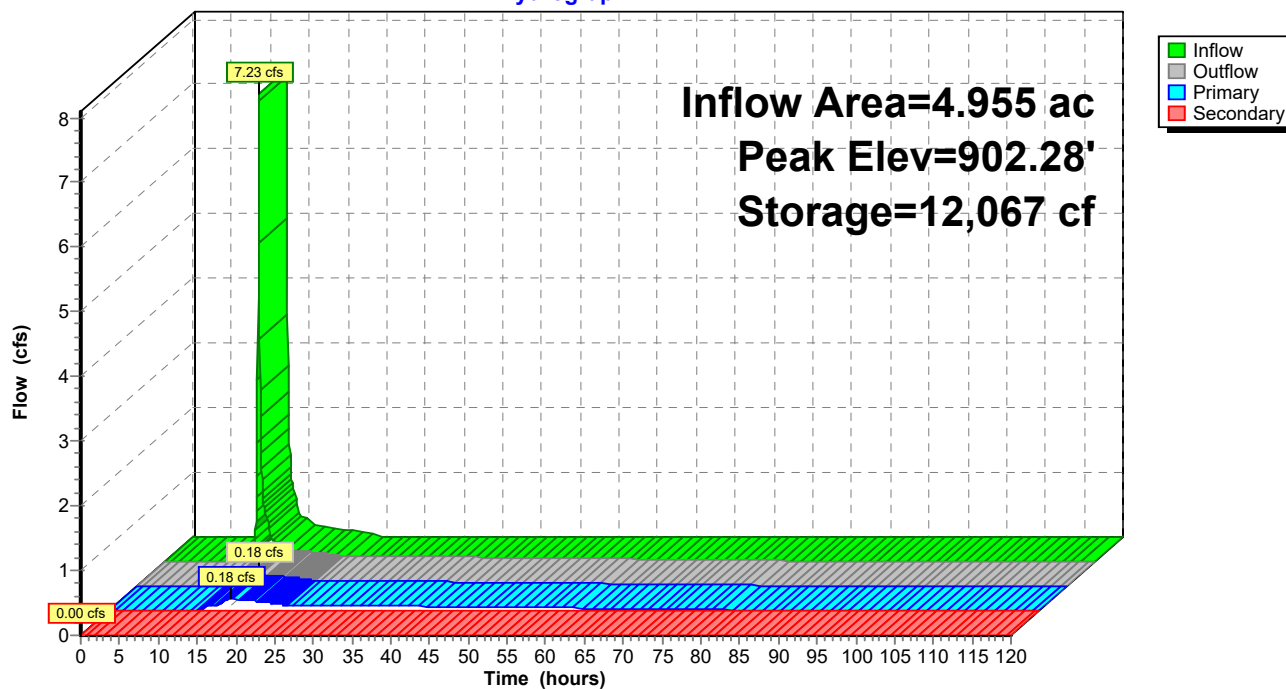
MSE 24-hr 4 1-Year Rainfall=2.49"

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Pond 8P: Pond 8

Hydrograph



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Summary for Subcatchment P1: P1

Runoff = 23.66 cfs @ 12.13 hrs, Volume= 1.309 af, Depth= 2.01"
 Routed to Pond 1P : Pond 1 (Infiltration Basin)

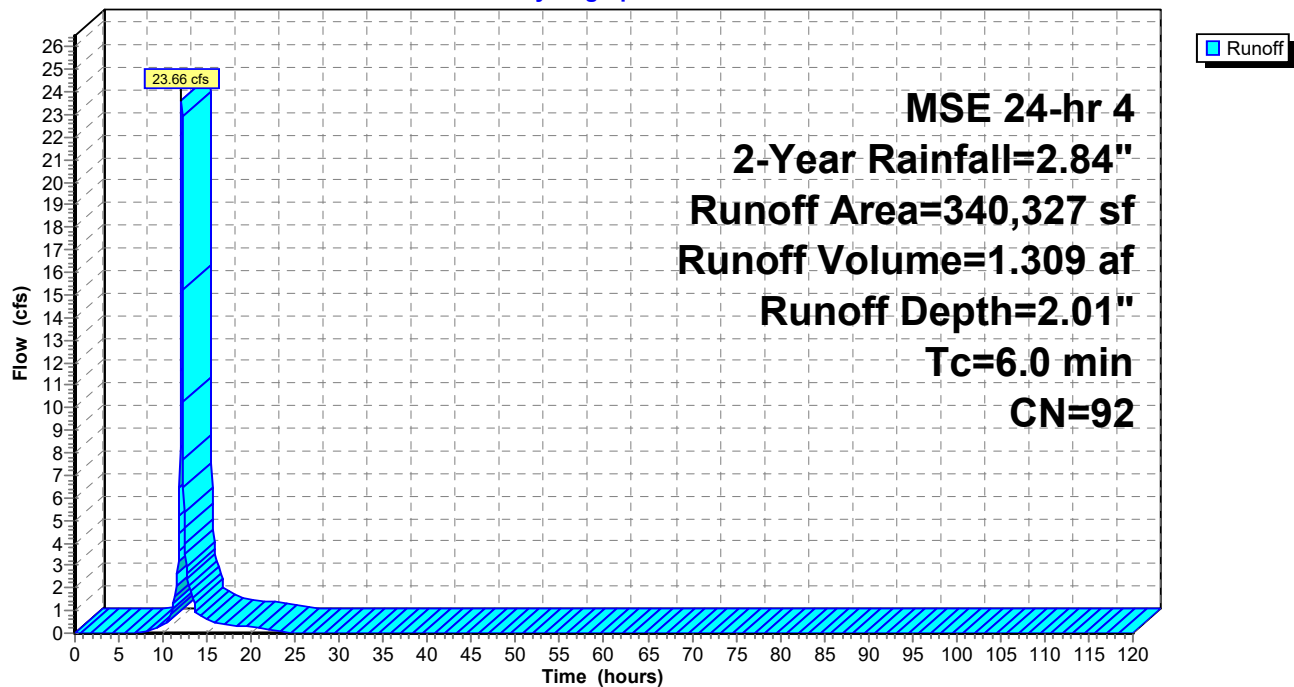
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 2-Year Rainfall=2.84"

Area (sf)	CN	Description
114,740	80	>75% Grass cover, Good, HSG D
225,587	98	Roofs, HSG D
340,327	92	Weighted Average
114,740		33.71% Pervious Area
225,587		66.29% Impervious Area

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

Subcatchment P1: P1

Hydrograph



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Summary for Subcatchment P10: P10

Runoff = 16.10 cfs @ 12.13 hrs, Volume= 0.857 af, Depth= 1.45"
 Routed to Pond 7P : Pond 7

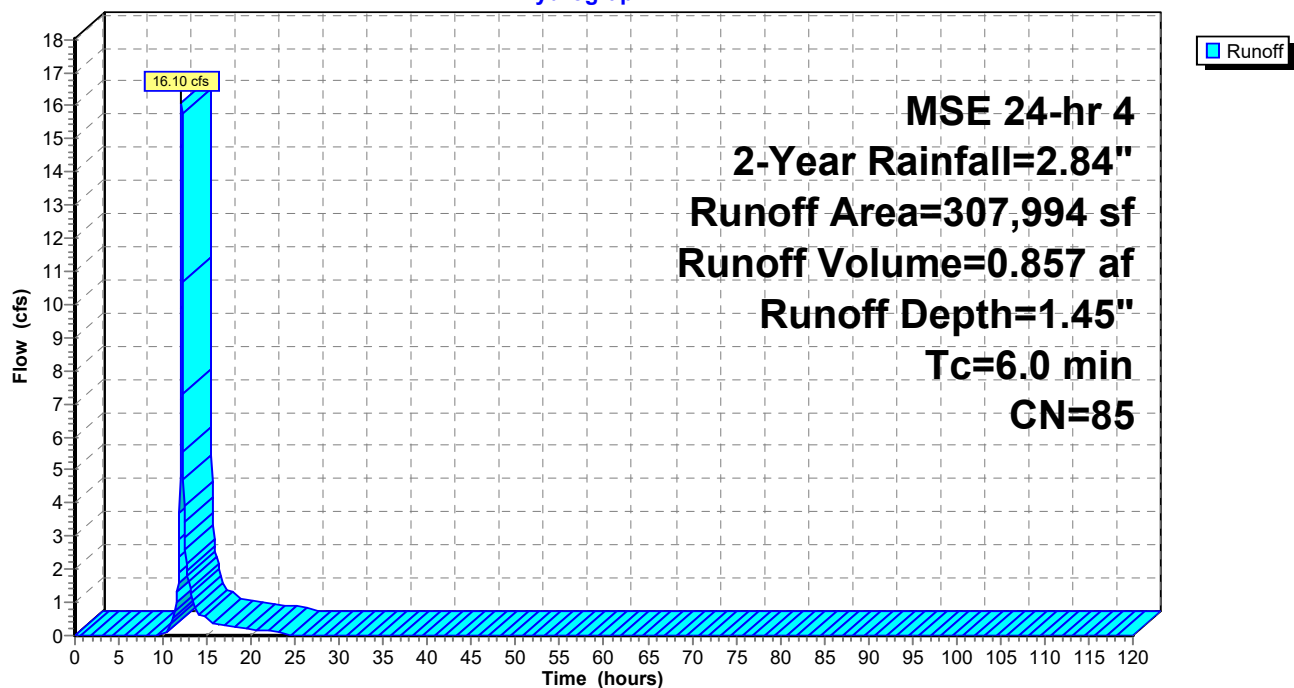
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 2-Year Rainfall=2.84"

Area (sf)	CN	Description
224,113	80	>75% Grass cover, Good, HSG D
15,978	98	Paved parking, HSG D
67,903	98	Water Surface, HSG D
307,994	85	Weighted Average
224,113		72.77% Pervious Area
83,881		27.23% Impervious Area

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

Subcatchment P10: P10

Hydrograph



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Summary for Subcatchment P11: P11

Runoff = 9.25 cfs @ 12.14 hrs, Volume= 0.492 af, Depth= 1.19"
Routed to Pond 8P : Pond 8

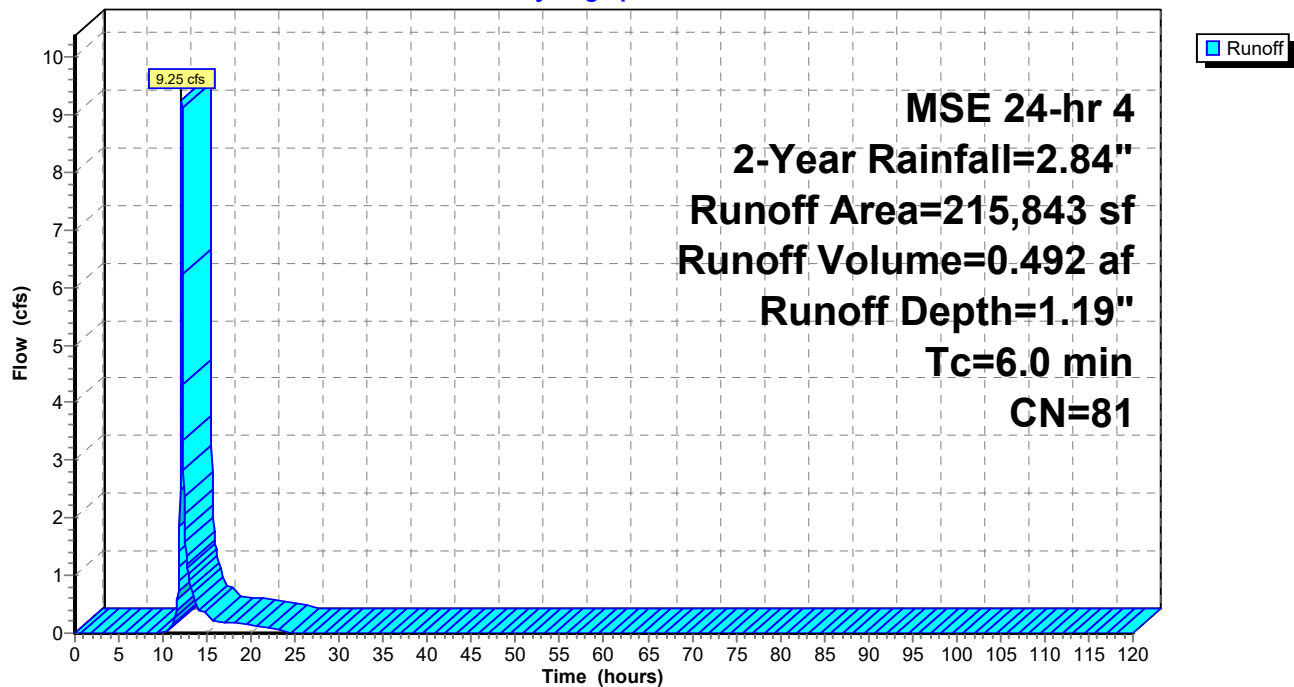
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

Area (sf)	CN	Description
204,687	80	>75% Grass cover, Good, HSG D
11,156	98	Water Surface, HSG D
215,843	81	Weighted Average
204,687		94.83% Pervious Area
11,156		5.17% Impervious Area

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

Subcatchment P11: P11

Hydrograph



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Summary for Subcatchment P2: P2

Runoff = 10.53 cfs @ 12.13 hrs, Volume= 0.597 af, Depth= 2.20"
 Routed to Pond 2P : Pond 2 (Infiltration Basin)

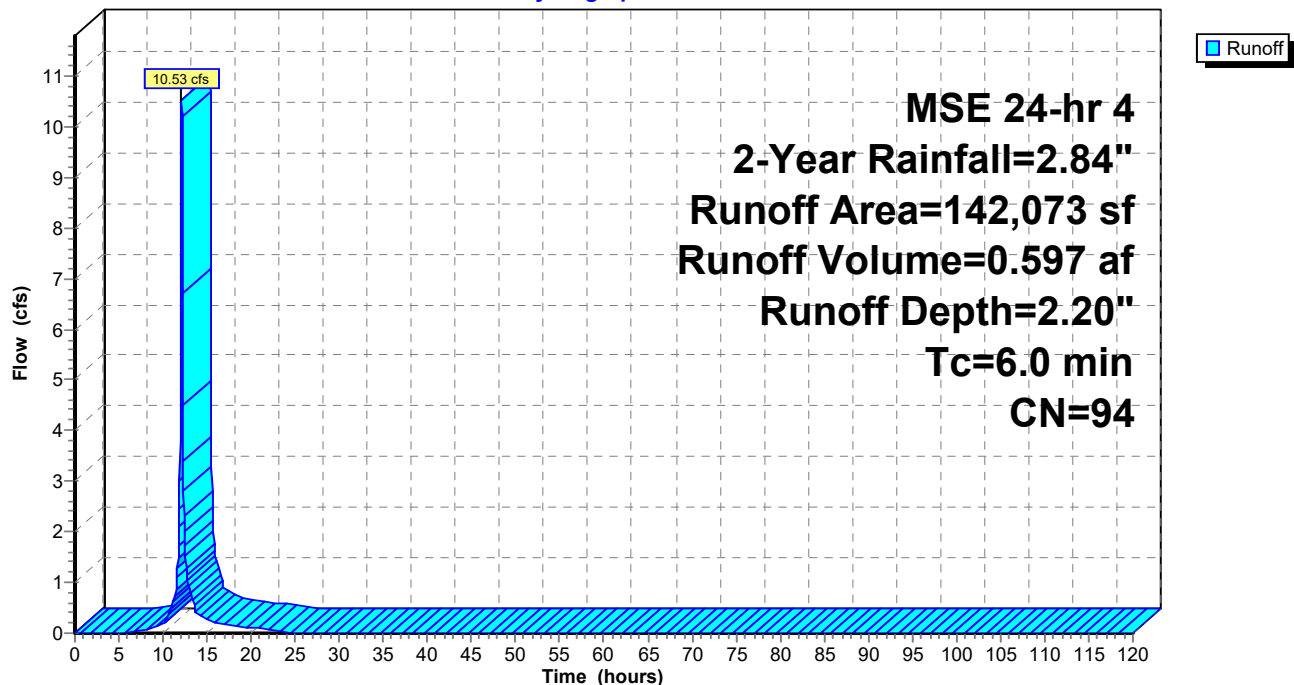
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 2-Year Rainfall=2.84"

Area (sf)	CN	Description
33,361	80	>75% Grass cover, Good, HSG D
108,712	98	Roofs, HSG C
142,073	94	Weighted Average
33,361		23.48% Pervious Area
108,712		76.52% Impervious Area

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

Subcatchment P2: P2

Hydrograph



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Summary for Subcatchment P3: P3

Runoff = 10.22 cfs @ 12.13 hrs, Volume= 0.579 af, Depth= 2.20"
Routed to Pond 3P : Pond 3 (Infiltration Basin)

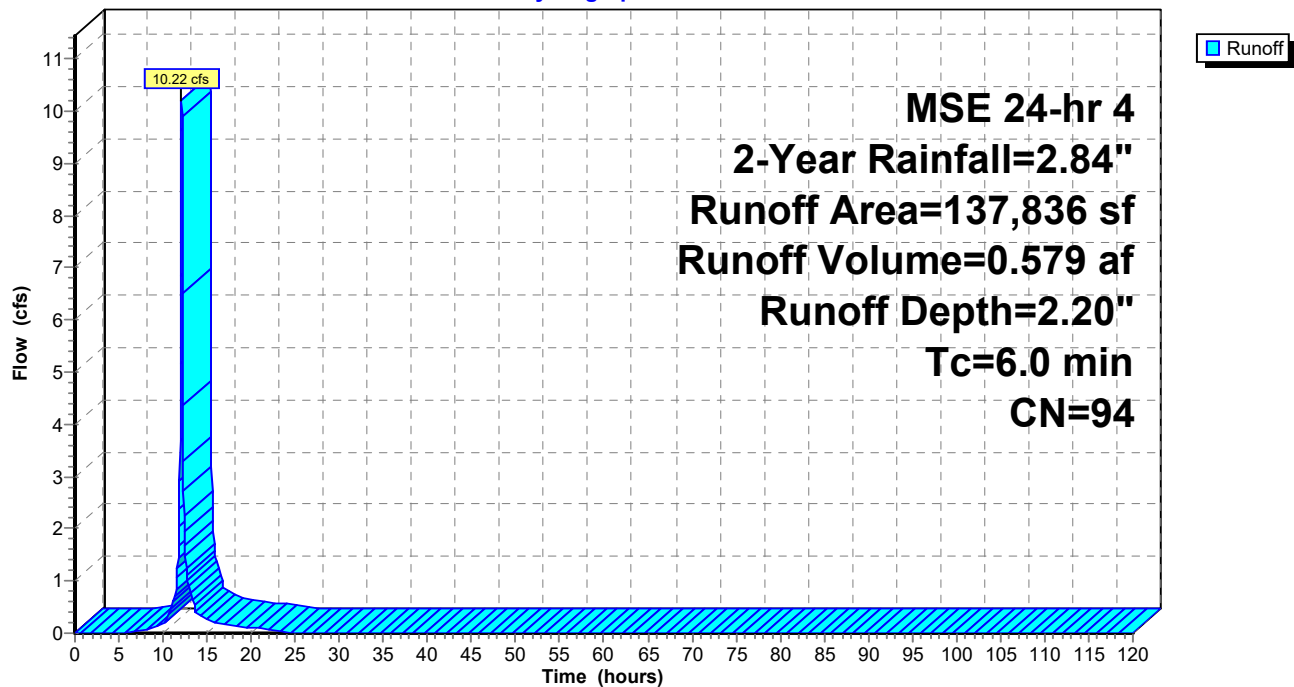
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

Area (sf)	CN	Description
30,961	80	>75% Grass cover, Good, HSG D
106,875	98	Roofs, HSG D
137,836	94	Weighted Average
30,961		22.46% Pervious Area
106,875		77.54% Impervious Area

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

Subcatchment P3: P3

Hydrograph



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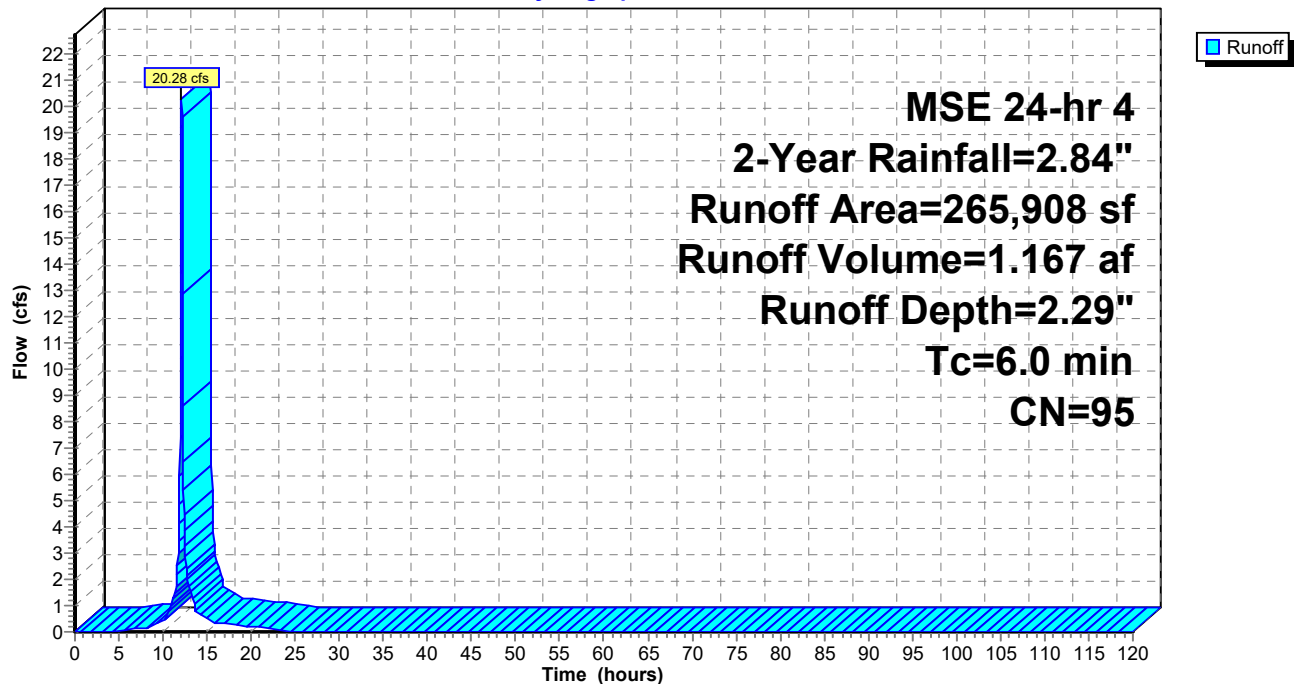
Summary for Subcatchment P4: P4

Runoff = 20.28 cfs @ 12.13 hrs, Volume= 1.167 af, Depth= 2.29"
 Routed to Pond 4P : Pond 4

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 2-Year Rainfall=2.84"

Area (sf)	CN	Description
45,325	80	>75% Grass cover, Good, HSG D
108,712	98	Roofs, HSG D
97,063	98	Paved parking, HSG D
14,808	98	Water Surface, HSG D
265,908	95	Weighted Average
45,325		17.05% Pervious Area
220,583		82.95% Impervious Area

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

Subcatchment P4: P4**Hydrograph**

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Summary for Subcatchment P5: P5

Runoff = 50.86 cfs @ 12.13 hrs, Volume= 2.926 af, Depth= 2.29"
Routed to Pond 5P : Pond 5

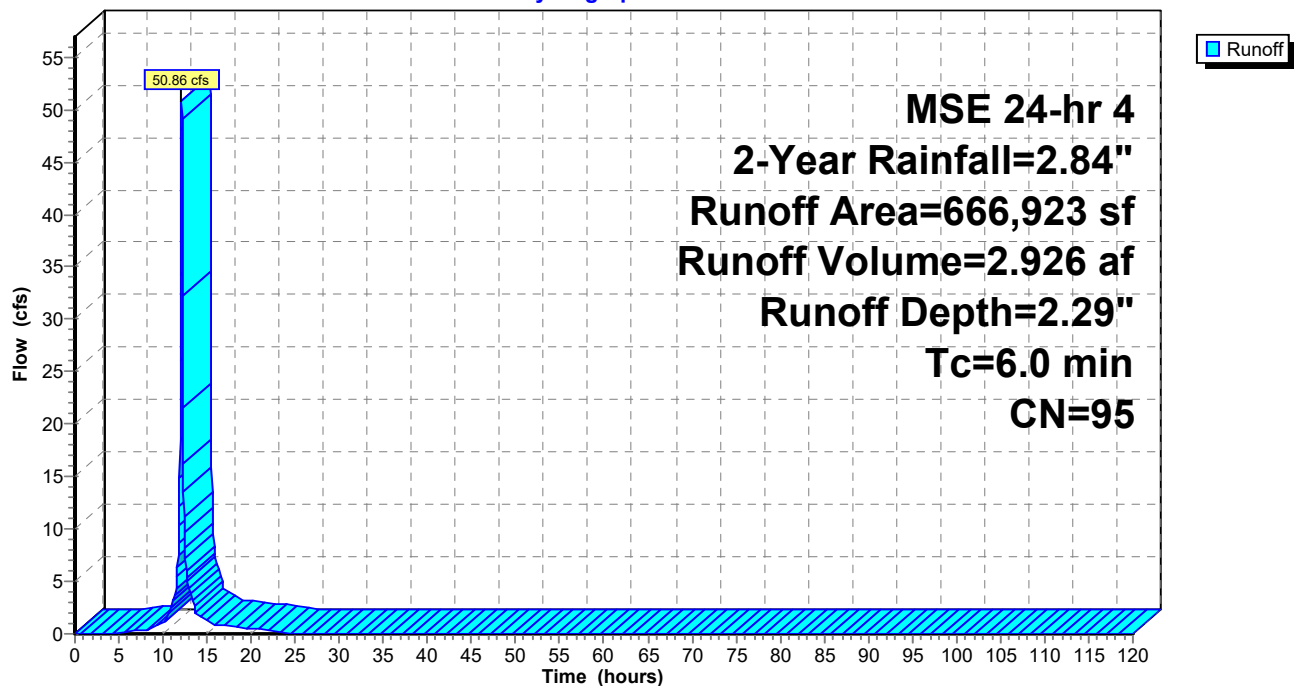
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

Area (sf)	CN	Description
107,376	80	>75% Grass cover, Good, HSG D
122,680	98	Roofs, HSG D
325,512	98	Paved parking, HSG D
111,355	98	Water Surface, HSG D
666,923	95	Weighted Average
107,376		16.10% Pervious Area
559,547		83.90% Impervious Area

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

Subcatchment P5: P5

Hydrograph



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Summary for Subcatchment P6: P6

Runoff = 30.09 cfs @ 12.13 hrs, Volume= 1.683 af, Depth= 2.10"
 Routed to Pond 6P : Pond 6

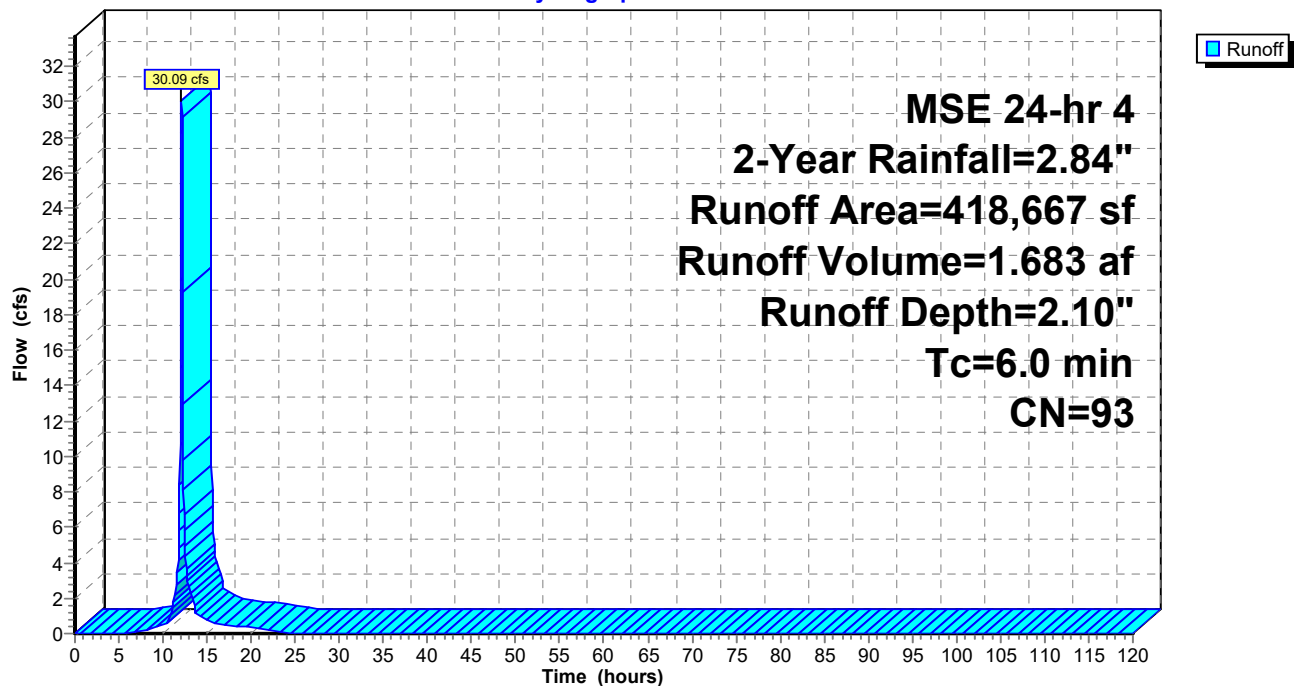
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 2-Year Rainfall=2.84"

Area (sf)	CN	Description
112,758	80	>75% Grass cover, Good, HSG D
269,805	98	Paved parking, HSG D
36,104	98	Water Surface, HSG D
418,667	93	Weighted Average
112,758		26.93% Pervious Area
305,909		73.07% Impervious Area

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

Subcatchment P6: P6

Hydrograph



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Summary for Subcatchment P7: P7

Runoff = 3.91 cfs @ 12.14 hrs, Volume= 0.208 af, Depth= 1.13"

Routed to Reach P-N : Proposed North

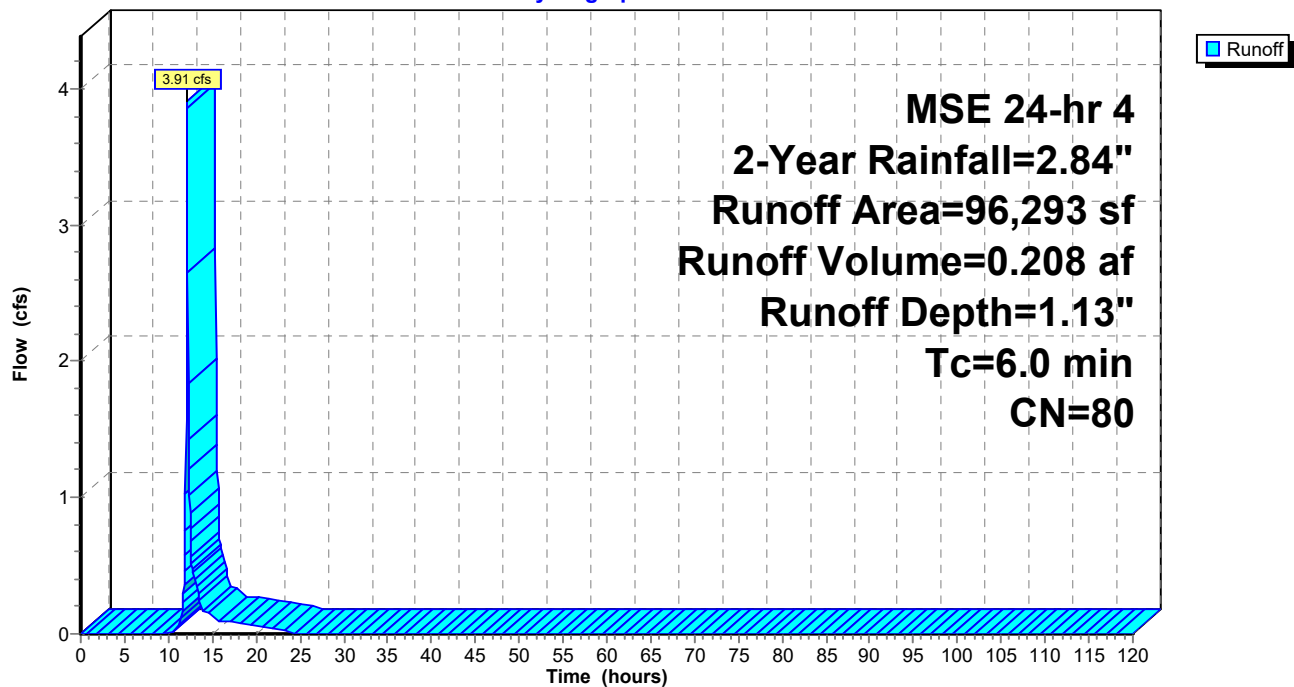
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

Area (sf)	CN	Description
96,293	80	>75% Grass cover, Good, HSG D
96,293		100.00% Pervious Area

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

Subcatchment P7: P7

Hydrograph



3230212**MSE 24-hr 4 2-Year Rainfall=2.84"**

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Summary for Subcatchment P7B: P7-Bypass

Runoff = 3.49 cfs @ 12.14 hrs, Volume= 0.187 af, Depth= 1.02"

Routed to Reach P-N : Proposed North

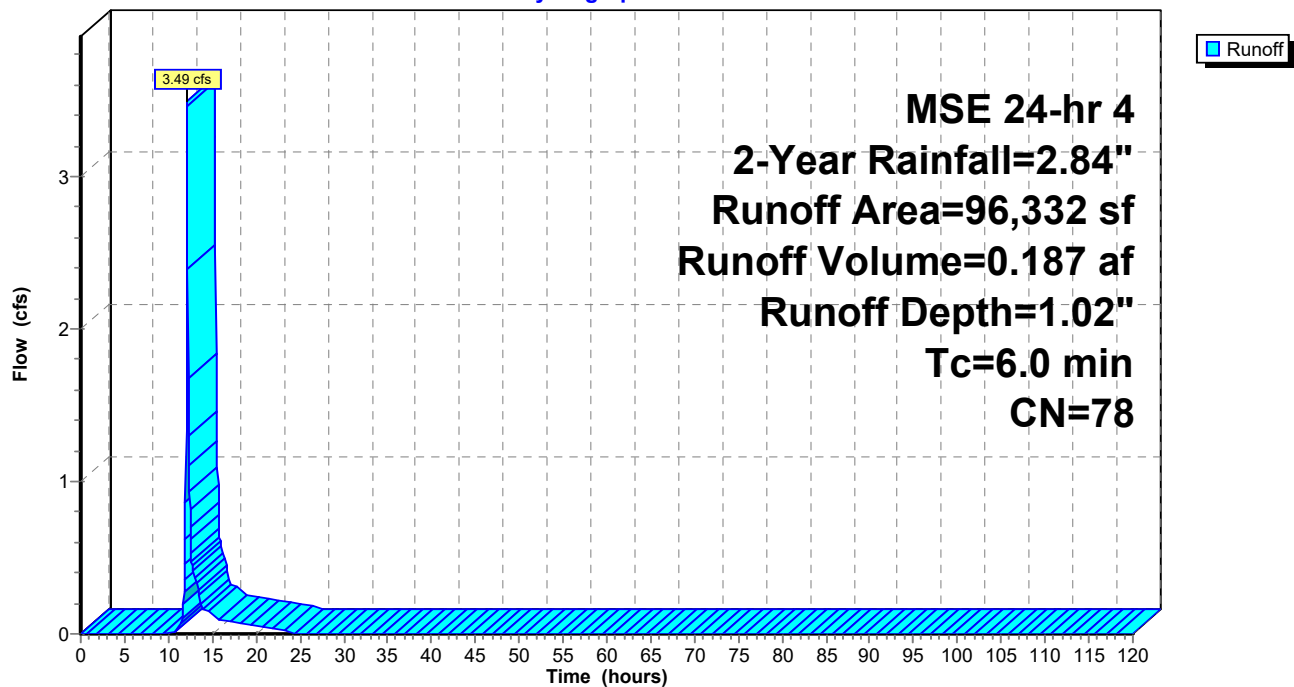
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

	Area (sf)	CN	Description
*	96,332	78	HSG C (pre-development)
	96,332		100.00% Pervious Area

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

Subcatchment P7B: P7-Bypass

Hydrograph



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Summary for Subcatchment P8: P8

Runoff = 6.52 cfs @ 12.14 hrs, Volume= 0.359 af, Depth= 0.81"

Routed to Reach P-S : Proposed South

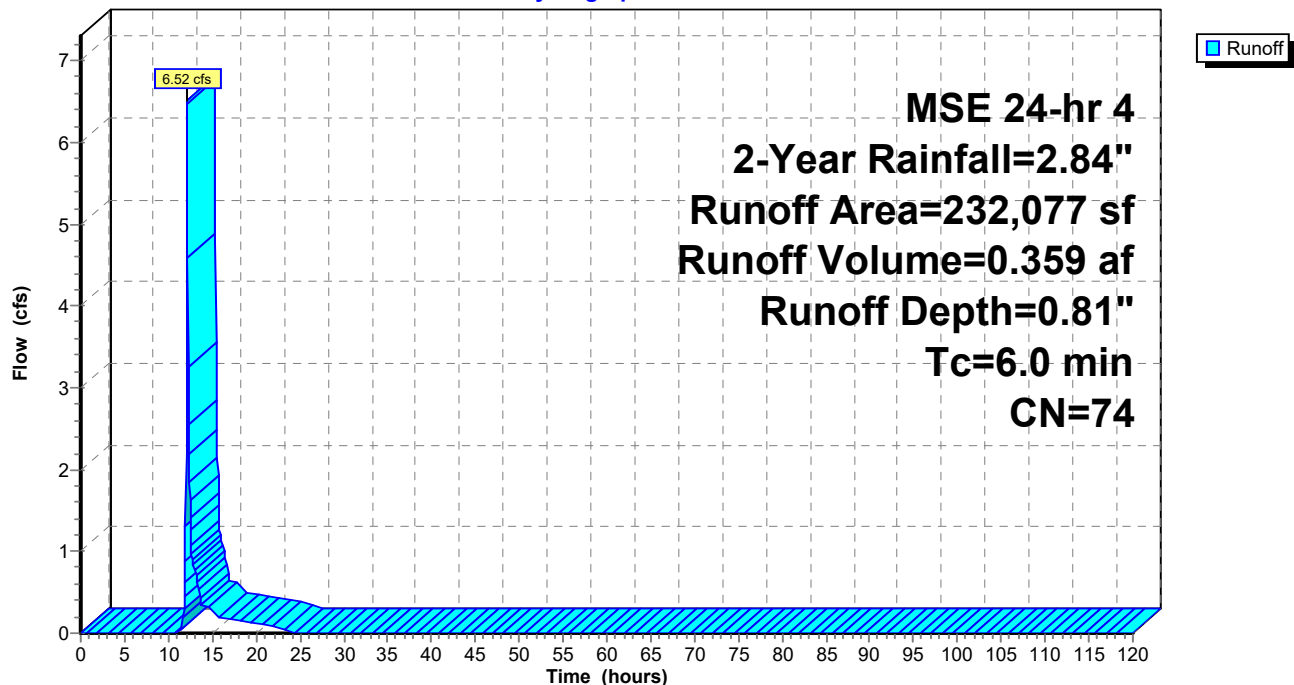
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

Area (sf)	CN	Description
* 230,643	74	Septic area is HSG B, so goes to C. All other greenspace areas deep till, so HSG = C (74)
1,434	98	Paved parking, HSG D
232,077	74	Weighted Average
230,643		99.38% Pervious Area
1,434		0.62% Impervious Area

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

Subcatchment P8: P8

Hydrograph



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Summary for Subcatchment P8B: P8-Bypass

Runoff = 0.58 cfs @ 12.14 hrs, Volume= 0.032 af, Depth= 0.76"
Routed to Reach P-S : Proposed South

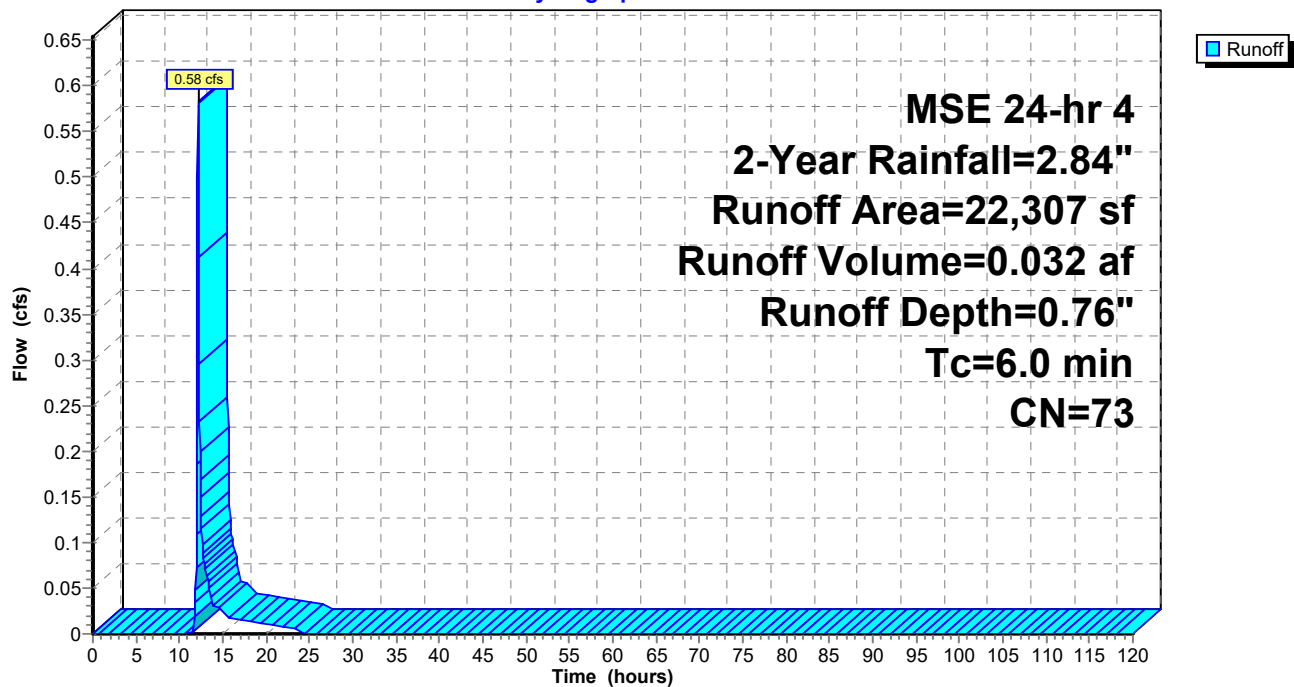
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

	Area (sf)	CN	Description
*	22,307	73	HSG B/C (pre-development)
	22,307		100.00% Pervious Area

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

Subcatchment P8B: P8-Bypass

Hydrograph



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Summary for Subcatchment P9: P9

Runoff = 3.71 cfs @ 12.13 hrs, Volume= 0.200 af, Depth= 1.68"

Routed to Reach P-S : Proposed South

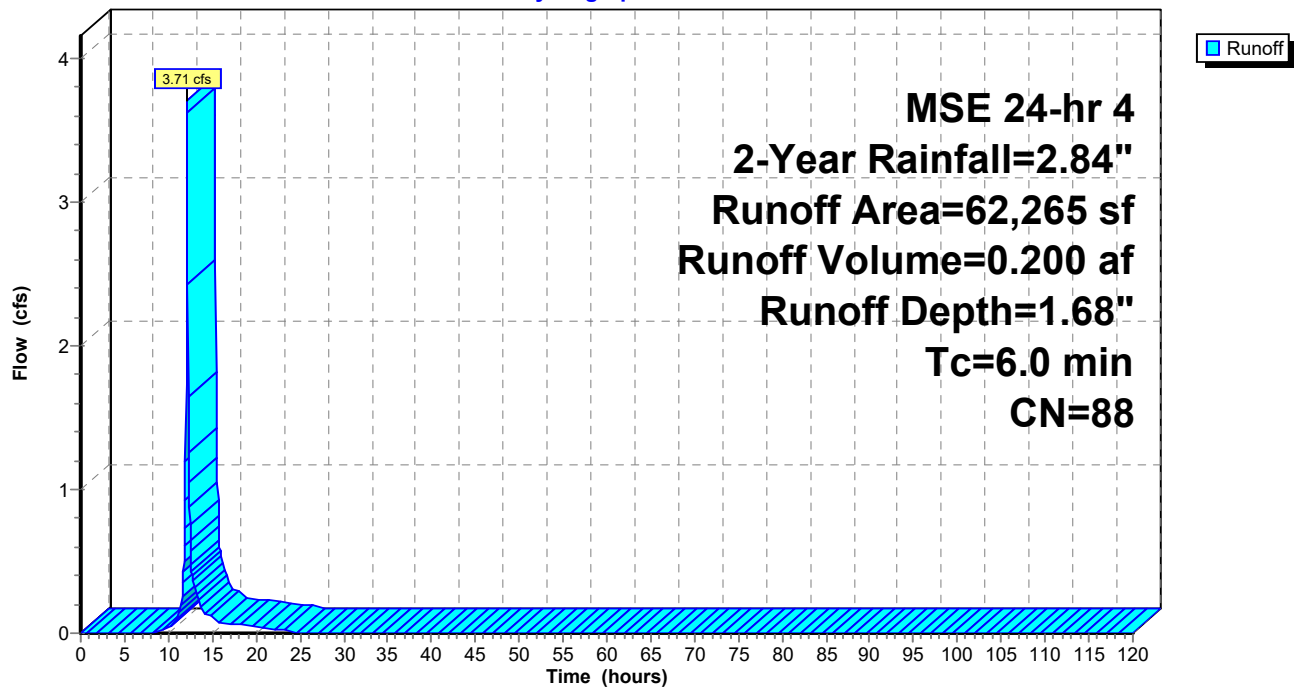
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 2-Year Rainfall=2.84"

Area (sf)	CN	Description
34,498	80	>75% Grass cover, Good, HSG D
27,767	98	Paved parking, HSG D
62,265	88	Weighted Average
34,498		55.41% Pervious Area
27,767		44.59% Impervious Area

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

Subcatchment P9: P9

Hydrograph



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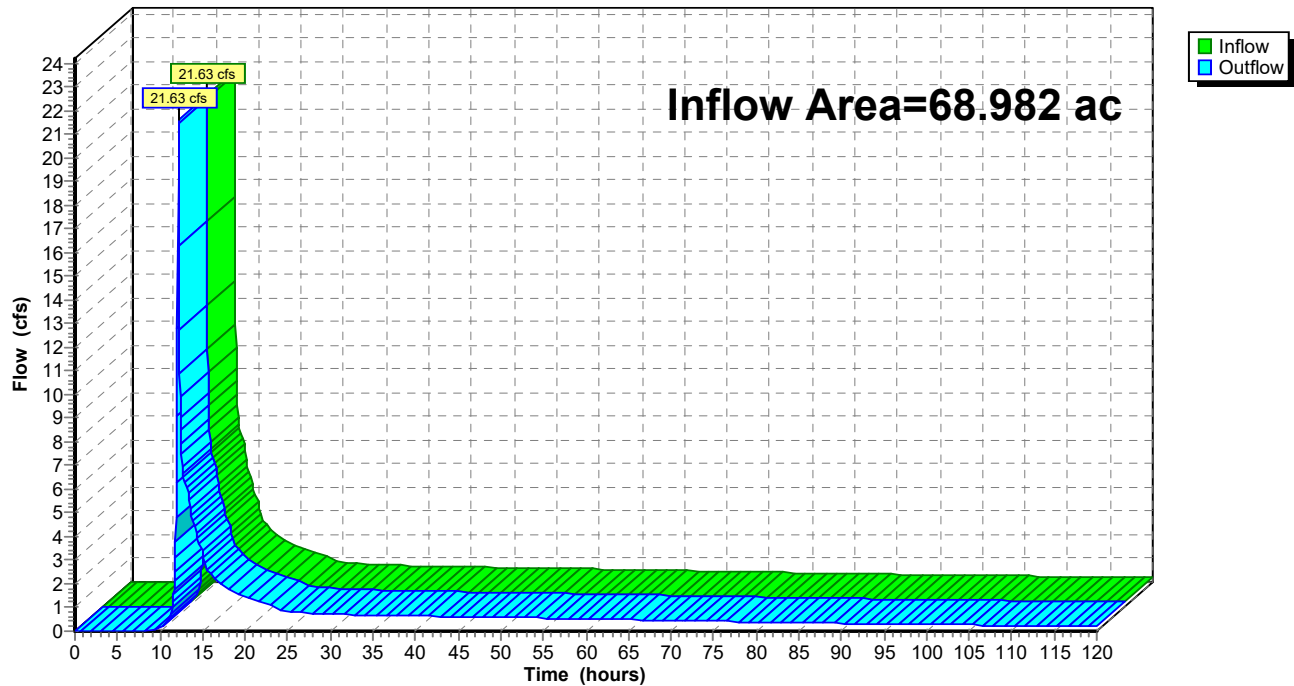
Summary for Reach P: Total After Detention

Inflow Area = 68.982 ac, 54.96% Impervious, Inflow Depth > 1.15" for 2-Year event
Inflow = 21.63 cfs @ 12.14 hrs, Volume= 6.620 af
Outflow = 21.63 cfs @ 12.14 hrs, Volume= 6.620 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P: Total After Detention

Hydrograph



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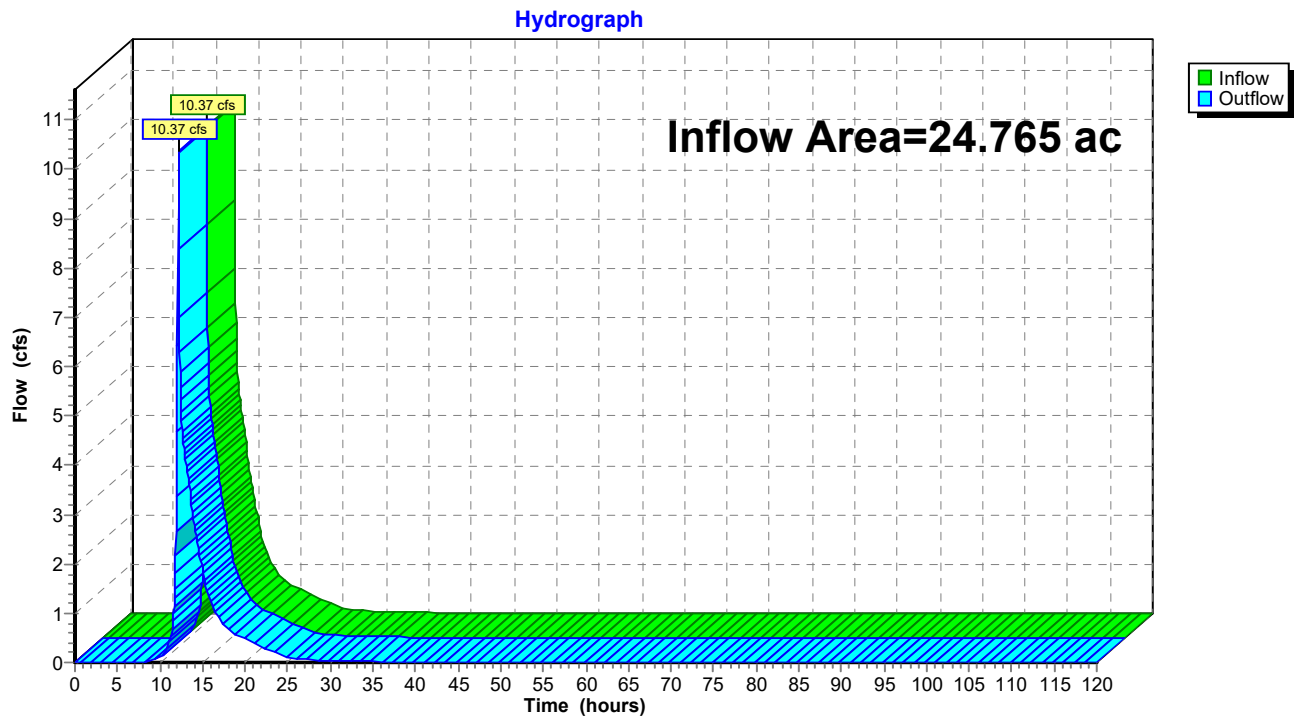
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Summary for Reach P-N: Proposed North

Inflow Area = 24.765 ac, 61.34% Impervious, Inflow Depth = 0.78" for 2-Year event
Inflow = 10.37 cfs @ 12.14 hrs, Volume= 1.614 af
Outflow = 10.37 cfs @ 12.14 hrs, Volume= 1.614 af, Atten= 0%, Lag= 0.0 min
Routed to Reach P : Total After Detention

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P-N: Proposed North



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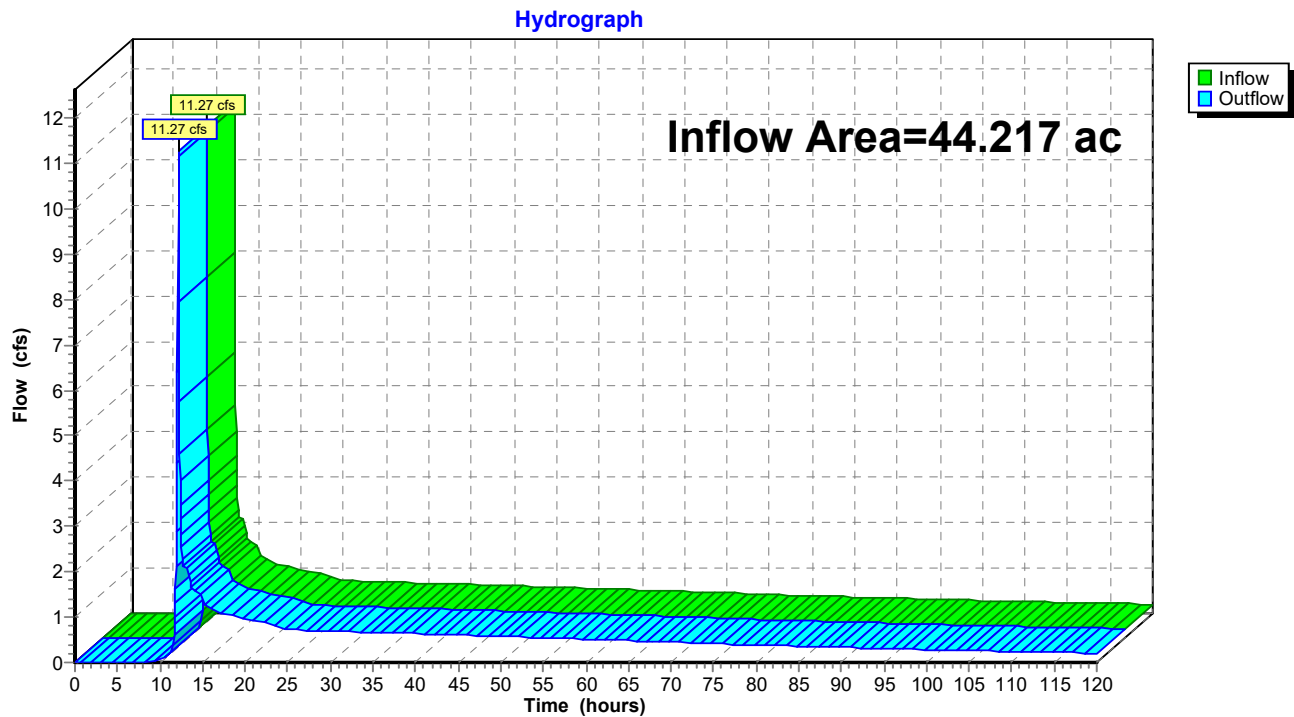
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Summary for Reach P-S: Proposed South

Inflow Area = 44.217 ac, 51.38% Impervious, Inflow Depth > 1.36" for 2-Year event
Inflow = 11.27 cfs @ 12.14 hrs, Volume= 5.006 af
Outflow = 11.27 cfs @ 12.14 hrs, Volume= 5.006 af, Atten= 0%, Lag= 0.0 min
Routed to Reach P : Total After Detention

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P-S: Proposed South



Summary for Pond 1P: Pond 1 (Infiltration Basin)

Inflow Area = 7.813 ac, 66.29% Impervious, Inflow Depth = 2.01" for 2-Year event
 Inflow = 23.66 cfs @ 12.13 hrs, Volume= 1.309 af
 Outflow = 0.64 cfs @ 15.07 hrs, Volume= 1.309 af, Atten= 97%, Lag= 176.2 min
 Discarded = 0.64 cfs @ 15.07 hrs, Volume= 1.309 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 910.68' @ 15.07 hrs Surf.Area= 55,558 sf Storage= 36,737 cf

Plug-Flow detention time= 567.7 min calculated for 1.308 af (100% of inflow)
 Center-of-Mass det. time= 567.9 min (1,361.0 - 793.1)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	316,468 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	52,675	0	0
915.00	73,912	316,468	316,468

Device	Routing	Invert	Outlet Devices
#1	Primary	911.00'	18.0" Round Culvert L= 500.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 911.00' / 910.00' S= 0.0020 '/' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf
#2	Device 1	911.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	910.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.64 cfs @ 15.07 hrs HW=910.68' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.64 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **1=Culvert** (Controls 0.00 cfs)
 ↑ **2=Orifice/Grate** (Controls 0.00 cfs)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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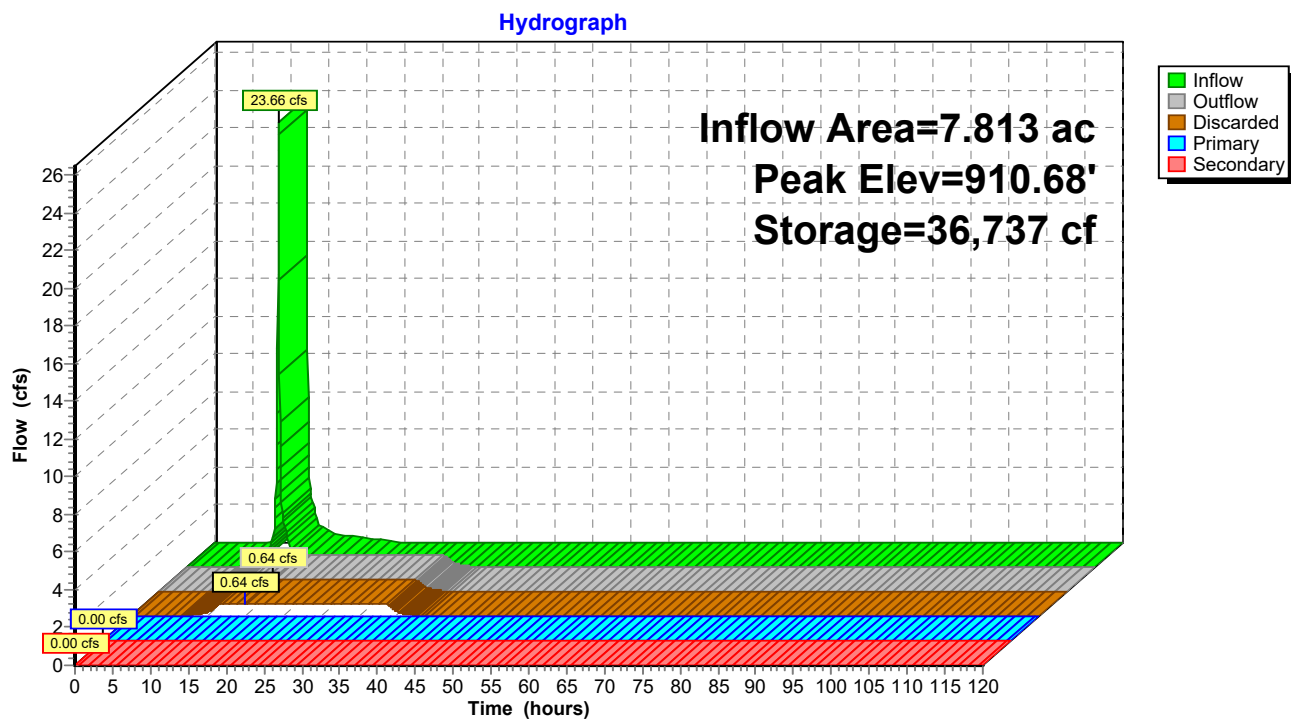
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Pond 1P: Pond 1 (Infiltration Basin)



Summary for Pond 2P: Pond 2 (Infiltration Basin)

Inflow Area = 3.262 ac, 76.52% Impervious, Inflow Depth = 2.20" for 2-Year event
 Inflow = 10.53 cfs @ 12.13 hrs, Volume= 0.597 af
 Outflow = 0.21 cfs @ 15.18 hrs, Volume= 0.597 af, Atten= 98%, Lag= 183.1 min
 Discarded = 0.15 cfs @ 15.18 hrs, Volume= 0.570 af
 Primary = 0.07 cfs @ 15.18 hrs, Volume= 0.027 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 911.86' @ 15.18 hrs Surf.Area= 12,562 sf Storage= 18,969 cf

Plug-Flow detention time= 1,275.2 min calculated for 0.597 af (100% of inflow)
 Center-of-Mass det. time= 1,275.8 min (2,059.7 - 783.8)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	70,950 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	7,800	0	0
915.00	20,580	70,950	70,950

Device	Routing	Invert	Outlet Devices
#1	Primary	911.75'	18.0" Round Culvert L= 100.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 911.75' / 910.00' S= 0.0175 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	911.75'	15.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.50'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	910.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.15 cfs @ 15.18 hrs HW=911.86' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.15 cfs)

Primary OutFlow Max=0.06 cfs @ 15.18 hrs HW=911.86' (Free Discharge)
 ↑ **1=Culvert** (Passes 0.06 cfs of 0.09 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.06 cfs @ 1.15 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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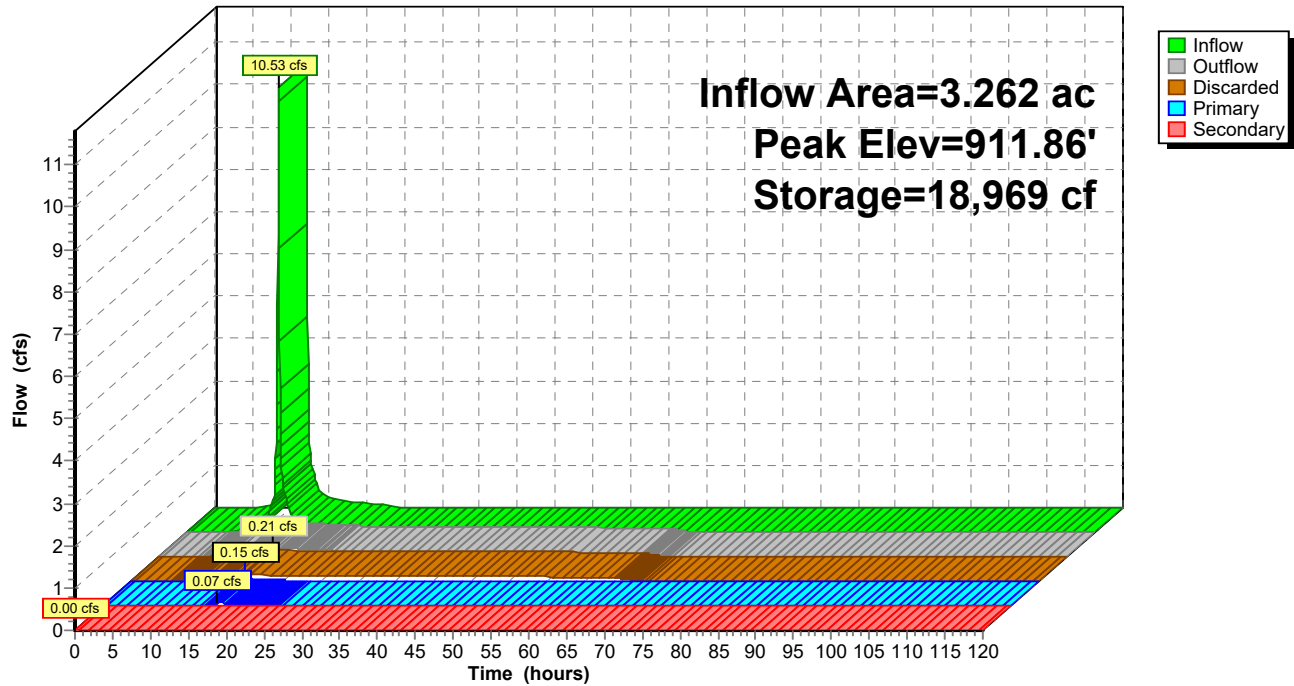
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Pond 2P: Pond 2 (Infiltration Basin)

Hydrograph



Summary for Pond 3P: Pond 3 (Infiltration Basin)

Inflow Area = 3.164 ac, 77.54% Impervious, Inflow Depth = 2.20" for 2-Year event
 Inflow = 10.22 cfs @ 12.13 hrs, Volume= 0.579 af
 Outflow = 0.24 cfs @ 15.10 hrs, Volume= 0.579 af, Atten= 98%, Lag= 178.5 min
 Discarded = 0.17 cfs @ 15.10 hrs, Volume= 0.553 af
 Primary = 0.07 cfs @ 15.10 hrs, Volume= 0.026 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.38' @ 15.10 hrs Surf.Area= 14,635 sf Storage= 17,660 cf

Plug-Flow detention time= 987.4 min calculated for 0.579 af (100% of inflow)
 Center-of-Mass det. time= 987.8 min (1,771.7 - 783.8)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	87,998 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	10,993	0	0
918.00	24,206	87,998	87,998

Device	Routing	Invert	Outlet Devices
#1	Primary	914.25'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 914.25' / 913.00' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	914.25'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	916.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	917.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	913.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.17 cfs @ 15.10 hrs HW=914.38' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.17 cfs)

Primary OutFlow Max=0.07 cfs @ 15.10 hrs HW=914.38' (Free Discharge)
 ↑ **1=Culvert** (Barrel Controls 0.07 cfs @ 1.41 fps)
 ↑ **2=Orifice/Grate** (Passes 0.07 cfs of 0.07 cfs potential flow)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=913.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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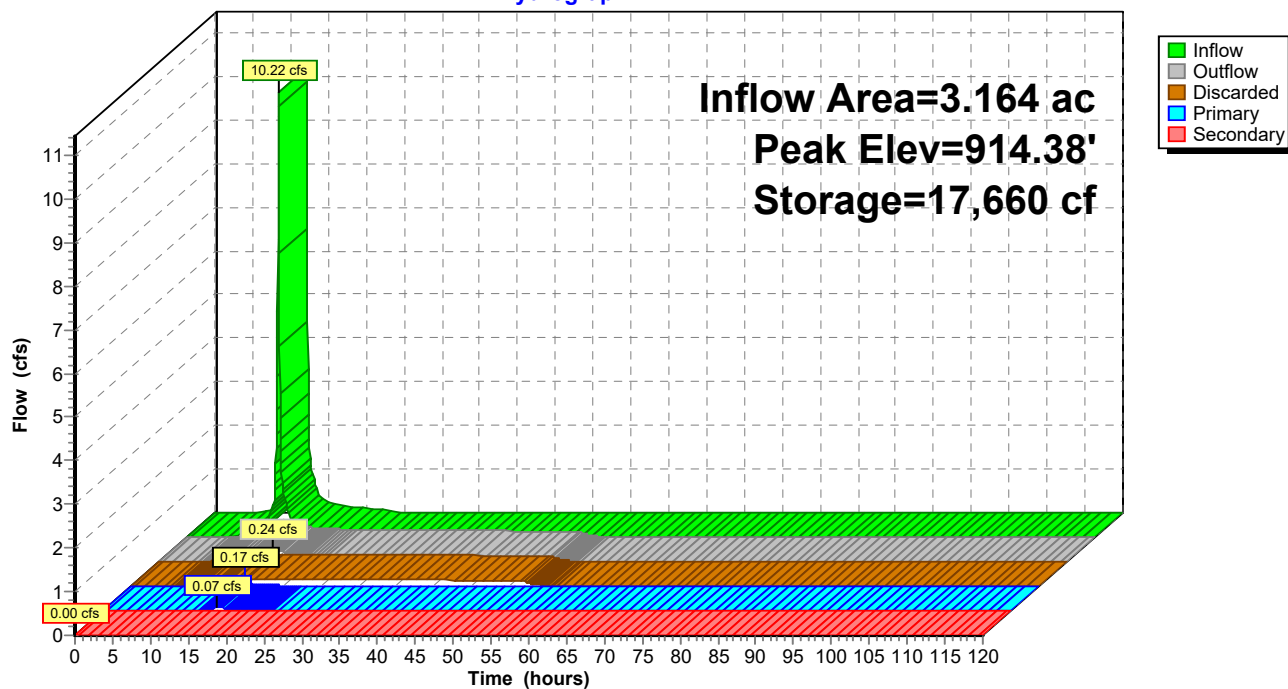
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Pond 3P: Pond 3 (Infiltration Basin)

Hydrograph



Summary for Pond 4P: Pond 4

Inflow Area = 6.104 ac, 82.95% Impervious, Inflow Depth = 2.29" for 2-Year event
 Inflow = 20.28 cfs @ 12.13 hrs, Volume= 1.167 af
 Outflow = 3.63 cfs @ 12.47 hrs, Volume= 1.166 af, Atten= 82%, Lag= 20.5 min
 Primary = 3.63 cfs @ 12.47 hrs, Volume= 1.166 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.42' @ 12.47 hrs Surf.Area= 19,106 sf Storage= 24,074 cf

Plug-Flow detention time= 174.1 min calculated for 1.165 af (100% of inflow)
 Center-of-Mass det. time= 175.8 min (954.3 - 778.4)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	111,868 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	14,812	0	0
918.00	29,935	111,868	111,868

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 913.00' / 912.00' S= 0.0050 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.50'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	917.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.63 cfs @ 12.47 hrs HW=914.42' (Free Discharge)

↑ **1=Culvert** (Passes 3.63 cfs of 6.18 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 3.63 cfs @ 4.62 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=913.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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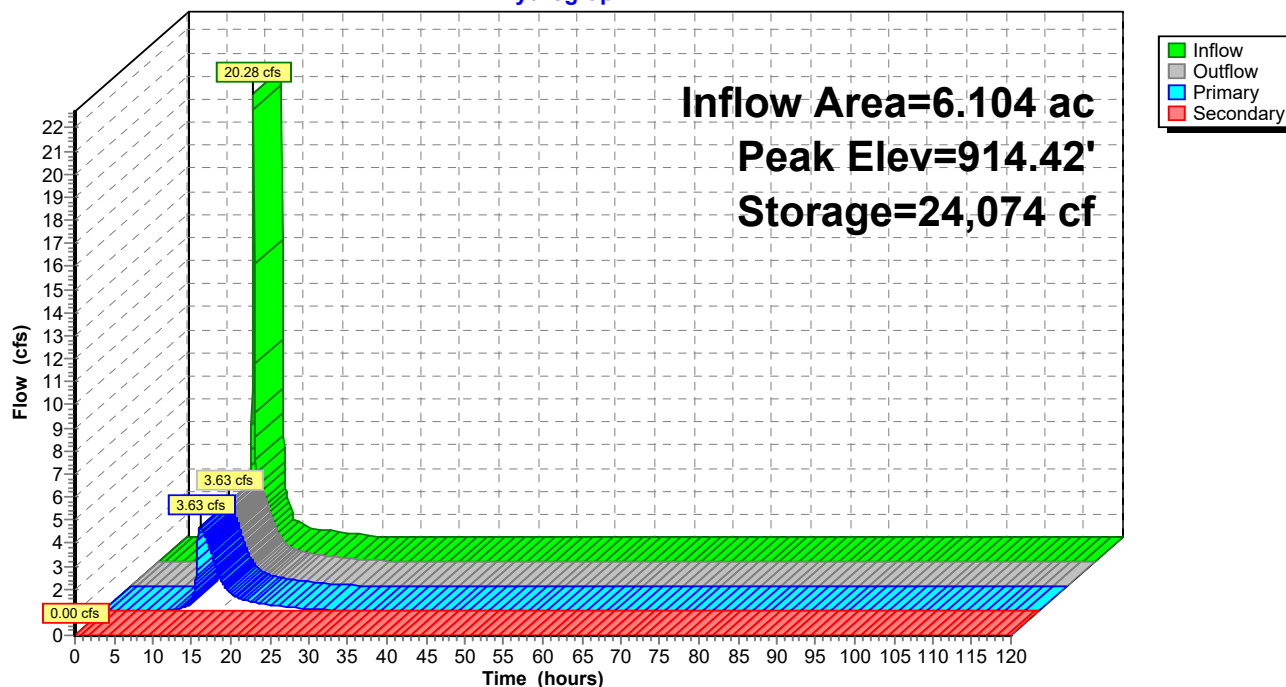
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Pond 4P: Pond 4

Hydrograph



Summary for Pond 5P: Pond 5

Inflow Area = 15.310 ac, 83.90% Impervious, Inflow Depth = 2.29" for 2-Year event
 Inflow = 50.86 cfs @ 12.13 hrs, Volume= 2.926 af
 Outflow = 0.22 cfs @ 23.42 hrs, Volume= 1.675 af, Atten= 100%, Lag= 677.7 min
 Primary = 0.22 cfs @ 23.42 hrs, Volume= 1.675 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 906.03' @ 23.42 hrs Surf.Area= 117,496 sf Storage= 117,891 cf

Plug-Flow detention time= 3,014.8 min calculated for 1.674 af (57% of inflow)
 Center-of-Mass det. time= 2,927.3 min (3,705.7 - 778.4)

Volume	Invert	Avail.Storage	Storage Description
#1	905.00'	631,265 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
905.00	111,357	0	0
910.00	141,149	631,265	631,265

Device	Routing	Invert	Outlet Devices
#1	Primary	905.00'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 905.00' / 904.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	905.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	906.10'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	908.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#5	Secondary	909.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.22 cfs @ 23.42 hrs HW=906.03' (Free Discharge)

↑ **1=Culvert** (Passes 0.22 cfs of 3.78 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.22 cfs @ 4.58 fps)
 ↑ **3=Orifice/Grate** (Controls 0.00 cfs)
 ↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=905.00' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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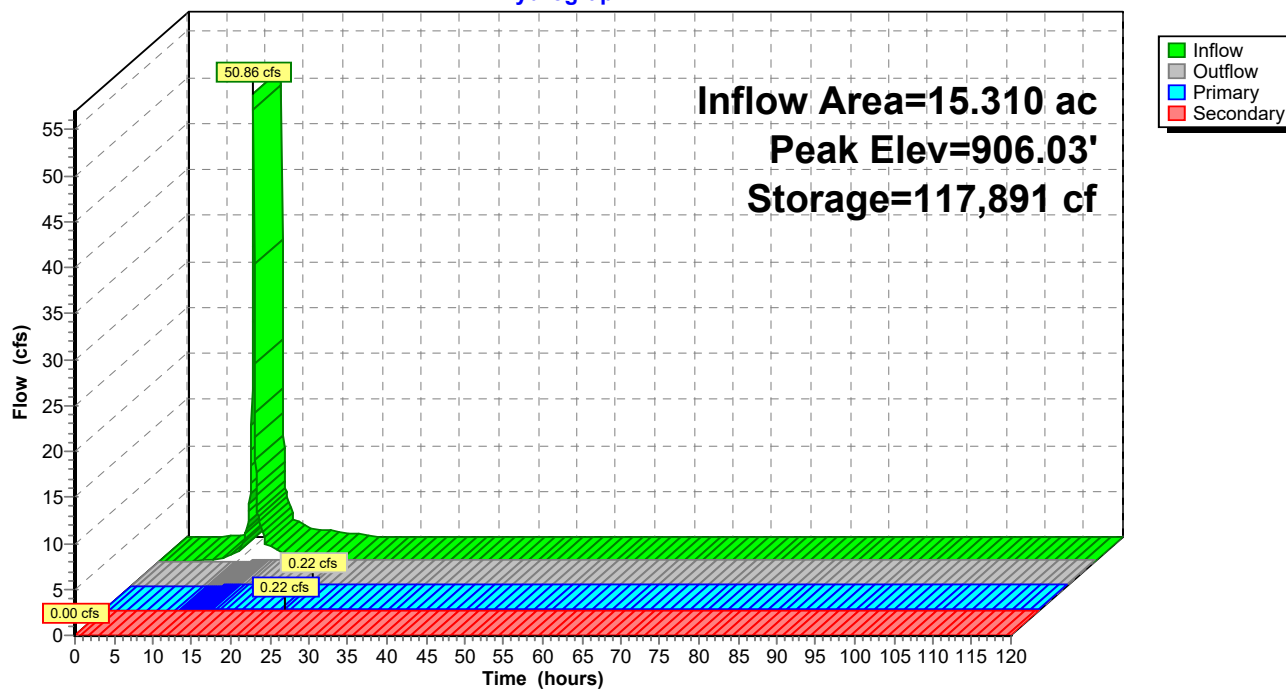
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Pond 5P: Pond 5

Hydrograph



Summary for Pond 6P: Pond 6

Inflow Area = 9.611 ac, 73.07% Impervious, Inflow Depth = 2.10" for 2-Year event
 Inflow = 30.09 cfs @ 12.13 hrs, Volume= 1.683 af
 Outflow = 0.28 cfs @ 20.81 hrs, Volume= 1.562 af, Atten= 99%, Lag= 520.8 min
 Primary = 0.28 cfs @ 20.81 hrs, Volume= 1.562 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 911.57' @ 20.81 hrs Surf.Area= 42,765 sf Storage= 61,954 cf

Plug-Flow detention time= 2,370.6 min calculated for 1.561 af (93% of inflow)
 Center-of-Mass det. time= 2,337.1 min (3,125.8 - 788.7)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	233,518 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	36,103	0	0
915.00	57,304	233,518	233,518

Device	Routing	Invert	Outlet Devices
#1	Primary	910.00'	12.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 910.00' / 909.00' S= 0.0050 ' / Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	910.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	912.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	913.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#5	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.28 cfs @ 20.81 hrs HW=911.57' (Free Discharge)

↑ **1=Culvert** (Passes 0.28 cfs of 2.89 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.28 cfs @ 5.79 fps)
 ↑ **3=Orifice/Grate** (Controls 0.00 cfs)
 ↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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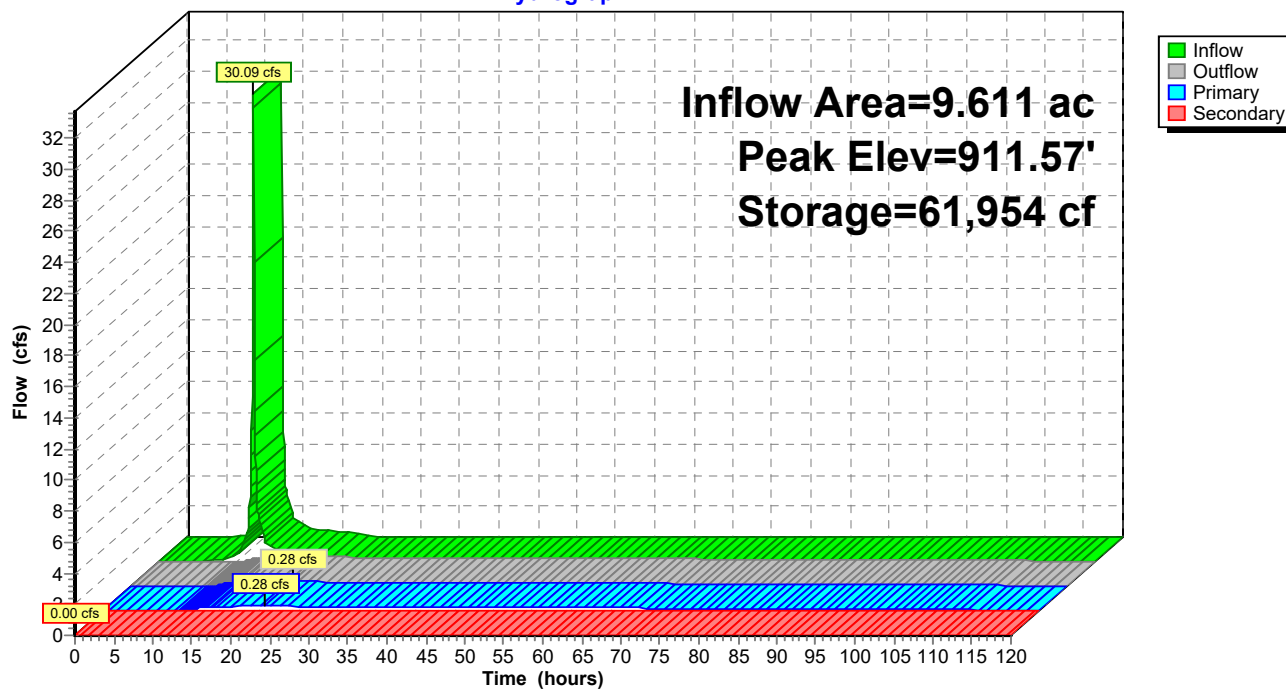
MSE 24-hr 4 2-Year Rainfall=2.84"

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Pond 6P: Pond 6

Hydrograph



Summary for Pond 7P: Pond 7

Inflow Area = 7.071 ac, 27.23% Impervious, Inflow Depth = 1.45" for 2-Year event
 Inflow = 16.10 cfs @ 12.13 hrs, Volume= 0.857 af
 Outflow = 0.14 cfs @ 22.04 hrs, Volume= 0.694 af, Atten= 99%, Lag= 594.2 min
 Primary = 0.14 cfs @ 22.04 hrs, Volume= 0.694 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 901.46' @ 22.04 hrs Surf.Area= 72,467 sf Storage= 31,981 cf

Plug-Flow detention time= 2,309.0 min calculated for 0.694 af (81% of inflow)
 Center-of-Mass det. time= 2,239.2 min (3,056.7 - 817.5)

Volume	Invert	Avail.Storage	Storage Description
#1	901.00'	257,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
901.00	66,000	0	0
902.00	80,000	73,000	73,000
903.00	93,000	86,500	159,500
904.00	103,000	98,000	257,500

Device	Routing	Invert	Outlet Devices
#1	Primary	901.00'	18.0" Round Culvert L= 20.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 901.00' / 900.50' S= 0.0250 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	901.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	902.75'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	903.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.14 cfs @ 22.04 hrs HW=901.46' (Free Discharge)

↑ **1=Culvert** (Passes 0.14 cfs of 1.34 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.14 cfs @ 2.79 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=901.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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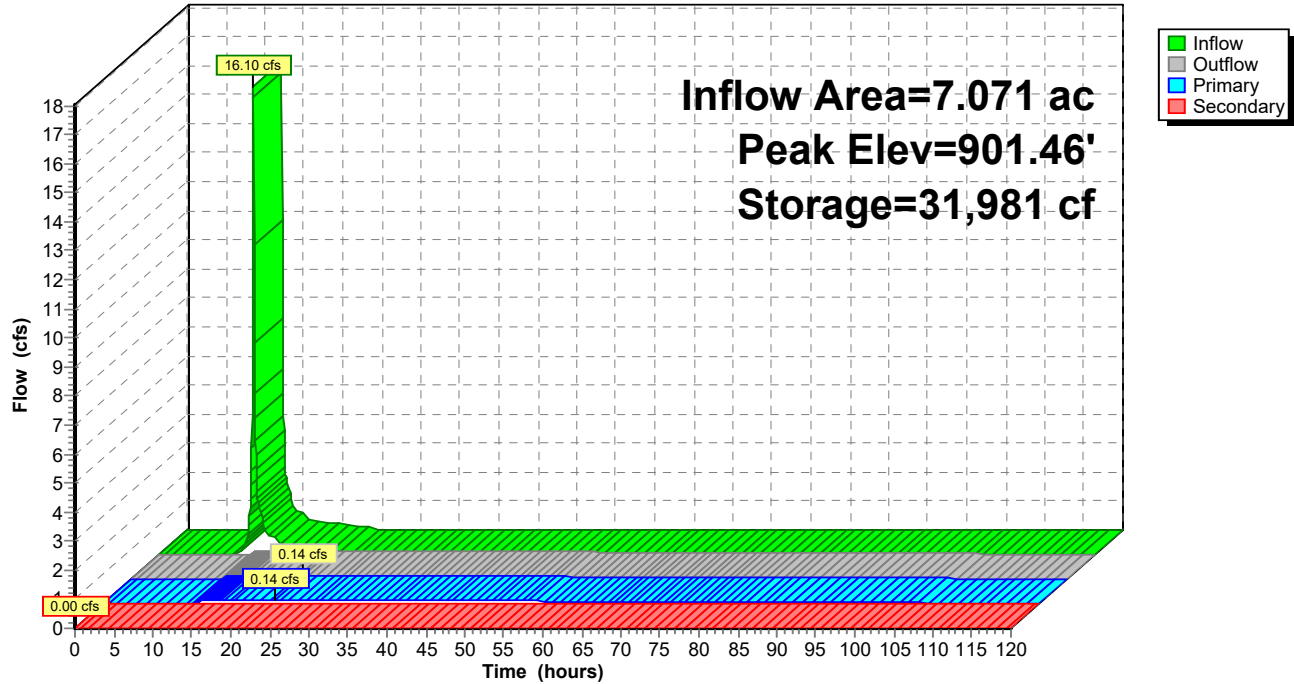
MSE 24-hr 4 2-Year Rainfall=2.84"

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Pond 7P: Pond 7

Hydrograph



Summary for Pond 8P: Pond 8

Inflow Area = 4.955 ac, 5.17% Impervious, Inflow Depth = 1.19" for 2-Year event
 Inflow = 9.25 cfs @ 12.14 hrs, Volume= 0.492 af
 Outflow = 0.58 cfs @ 13.53 hrs, Volume= 0.484 af, Atten= 94%, Lag= 83.9 min
 Primary = 0.58 cfs @ 13.53 hrs, Volume= 0.484 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 902.34' @ 13.53 hrs Surf.Area= 20,018 sf Storage= 13,206 cf

Plug-Flow detention time= 1,190.9 min calculated for 0.484 af (98% of inflow)
 Center-of-Mass det. time= 1,181.6 min (2,010.8 - 829.2)

Volume	Invert	Avail.Storage	Storage Description
#1	901.50'	59,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
901.50	11,000	0	0
902.00	17,000	7,000	7,000
903.00	26,000	21,500	28,500
904.00	36,000	31,000	59,500

Device	Routing	Invert	Outlet Devices
#1	Primary	901.50'	18.0" Round Culvert L= 20.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 901.50' / 901.00' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	901.50'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	902.25'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	903.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.58 cfs @ 13.53 hrs HW=902.34' (Free Discharge)

↑ **1=Culvert** (Passes 0.58 cfs of 3.70 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.09 cfs @ 4.18 fps)

↑ **3=Sharp-Crested Rectangular Weir** (Weir Controls 0.49 cfs @ 0.95 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=901.50' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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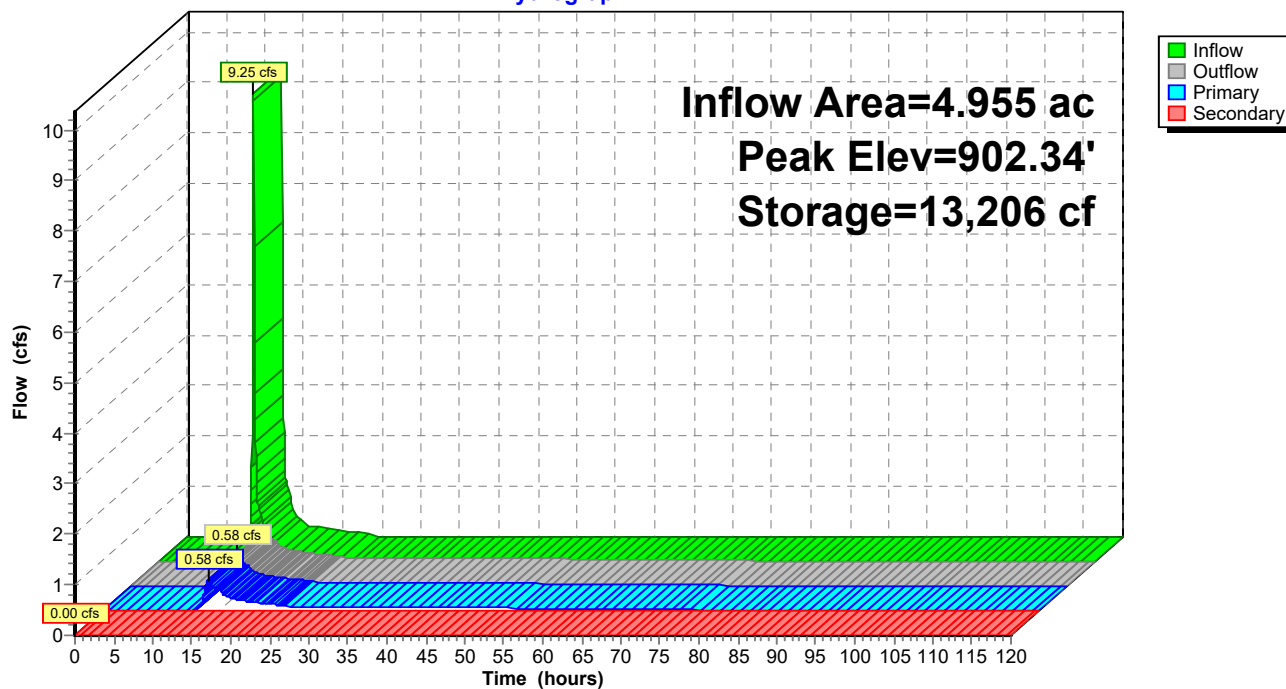
MSE 24-hr 4 2-Year Rainfall=2.84"

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Pond 8P: Pond 8

Hydrograph



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Summary for Subcatchment P1: P1

Runoff = 36.66 cfs @ 12.13 hrs, Volume= 2.086 af, Depth= 3.20"
 Routed to Pond 1P : Pond 1 (Infiltration Basin)

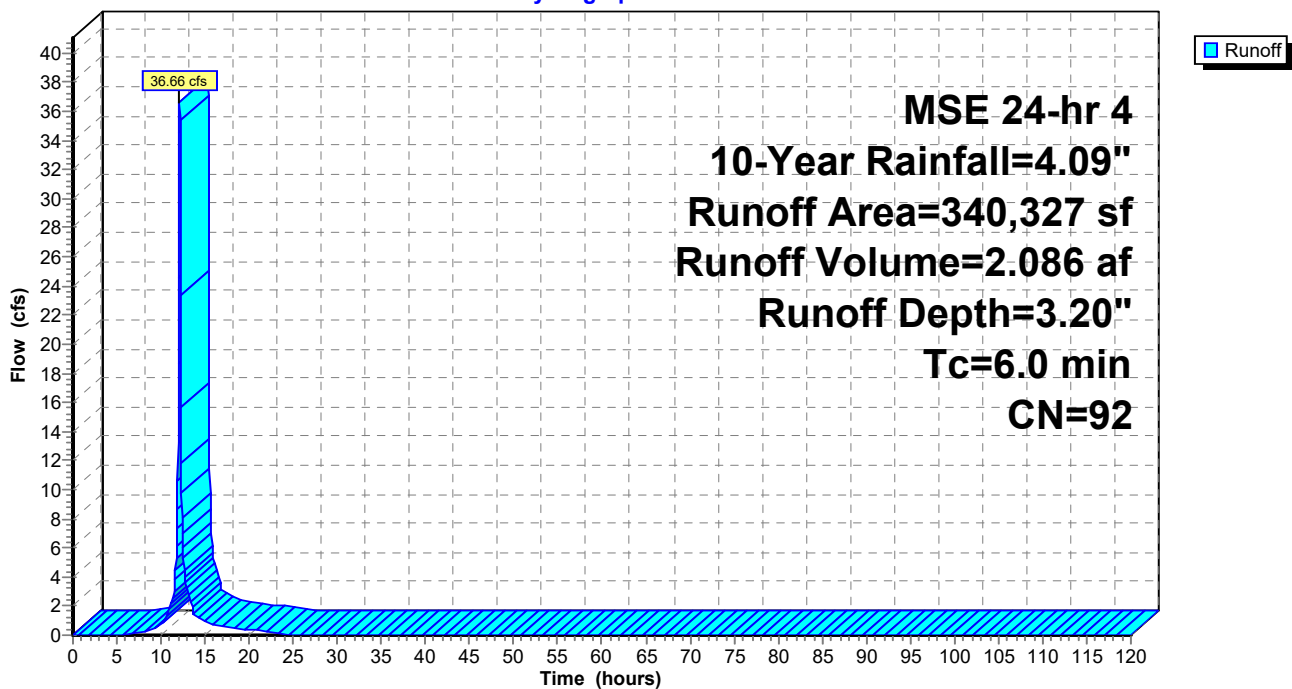
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 10-Year Rainfall=4.09"

Area (sf)	CN	Description
114,740	80	>75% Grass cover, Good, HSG D
225,587	98	Roofs, HSG D
340,327	92	Weighted Average
114,740		33.71% Pervious Area
225,587		66.29% Impervious Area

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

Subcatchment P1: P1

Hydrograph



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Summary for Subcatchment P10: P10

Runoff = 27.66 cfs @ 12.13 hrs, Volume= 1.496 af, Depth= 2.54"
 Routed to Pond 7P : Pond 7

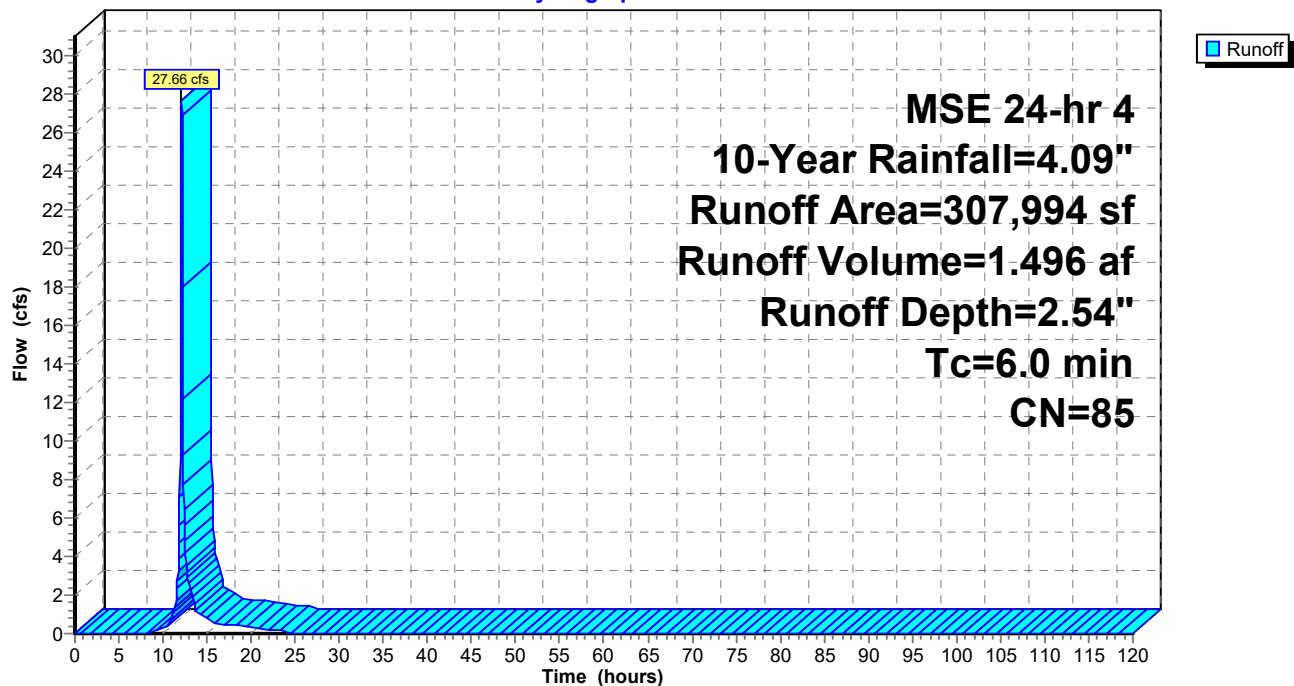
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 10-Year Rainfall=4.09"

Area (sf)	CN	Description
224,113	80	>75% Grass cover, Good, HSG D
15,978	98	Paved parking, HSG D
67,903	98	Water Surface, HSG D
307,994	85	Weighted Average
224,113		72.77% Pervious Area
83,881		27.23% Impervious Area

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

Subcatchment P10: P10

Hydrograph



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Summary for Subcatchment P11: P11

Runoff = 17.00 cfs @ 12.13 hrs, Volume= 0.907 af, Depth= 2.20"
 Routed to Pond 8P : Pond 8

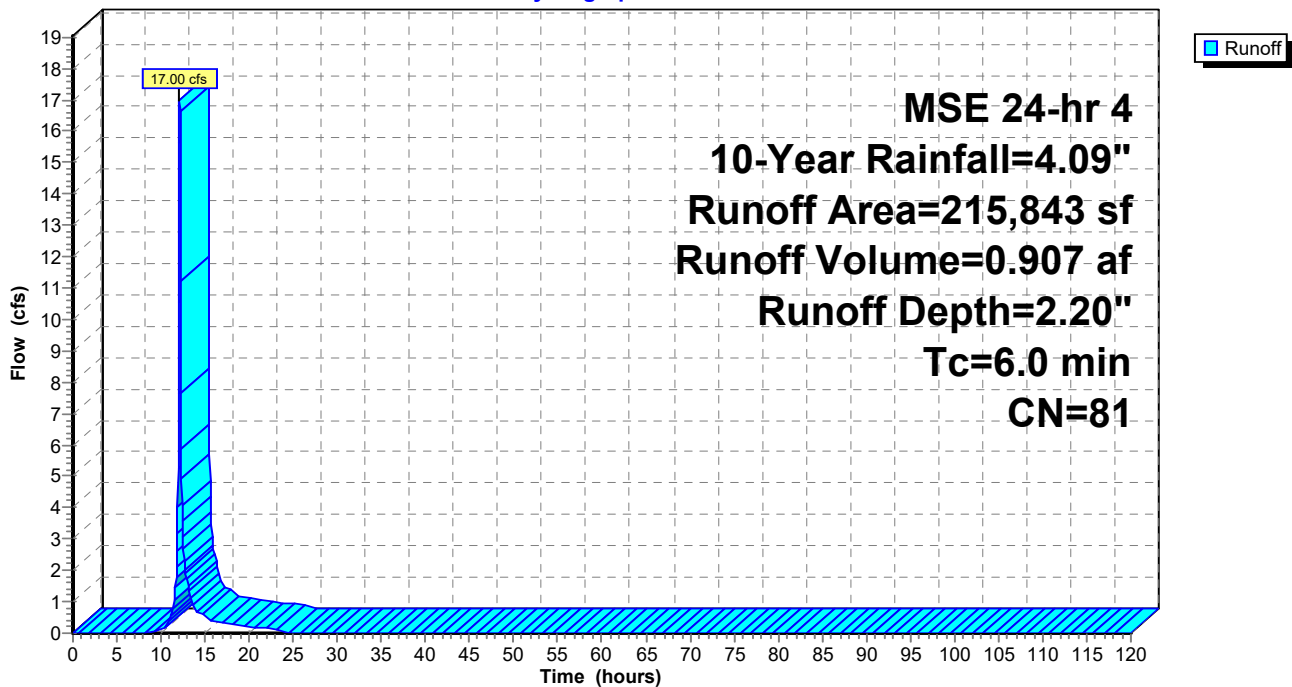
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 10-Year Rainfall=4.09"

Area (sf)	CN	Description
204,687	80	>75% Grass cover, Good, HSG D
11,156	98	Water Surface, HSG D
215,843	81	Weighted Average
204,687		94.83% Pervious Area
11,156		5.17% Impervious Area

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

Subcatchment P11: P11

Hydrograph



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Summary for Subcatchment P2: P2

Runoff = 15.91 cfs @ 12.13 hrs, Volume= 0.928 af, Depth= 3.41"
Routed to Pond 2P : Pond 2 (Infiltration Basin)

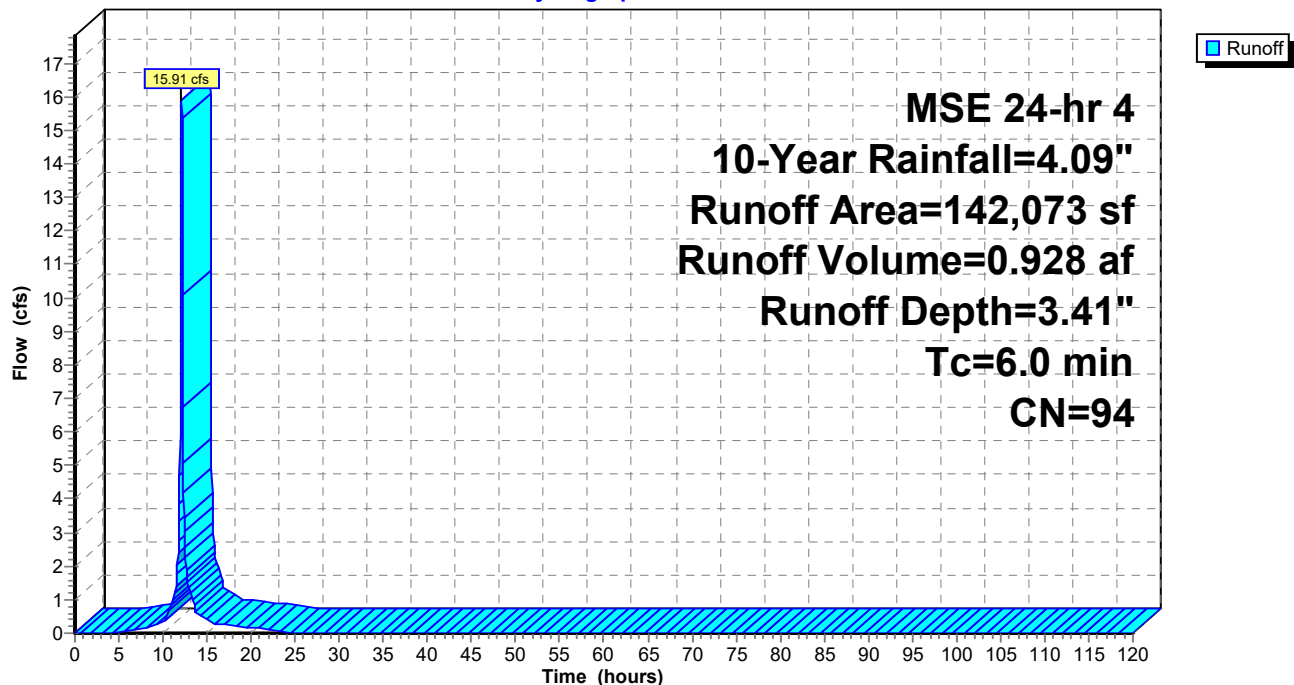
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

Area (sf)	CN	Description
33,361	80	>75% Grass cover, Good, HSG D
108,712	98	Roofs, HSG C
142,073	94	Weighted Average
33,361		23.48% Pervious Area
108,712		76.52% Impervious Area

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

Subcatchment P2: P2

Hydrograph



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Summary for Subcatchment P3: P3

Runoff = 15.43 cfs @ 12.13 hrs, Volume= 0.900 af, Depth= 3.41"
Routed to Pond 3P : Pond 3 (Infiltration Basin)

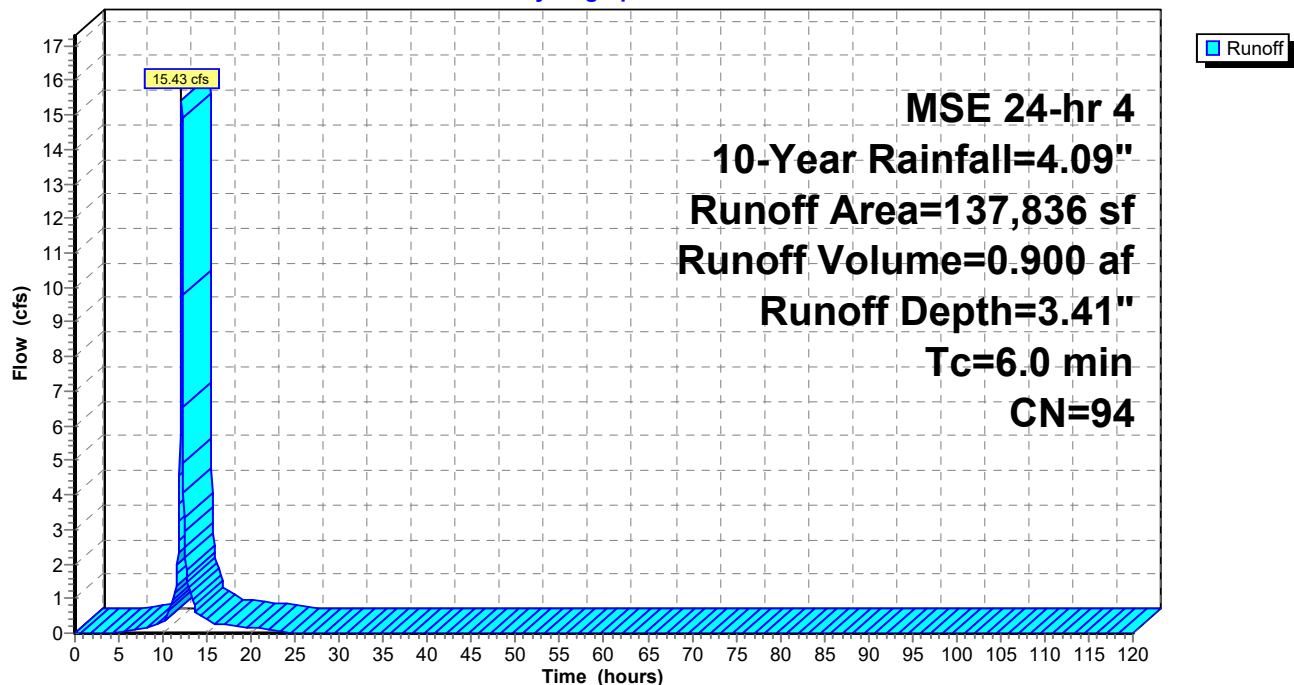
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

Area (sf)	CN	Description
30,961	80	>75% Grass cover, Good, HSG D
106,875	98	Roofs, HSG D
137,836	94	Weighted Average
30,961		22.46% Pervious Area
106,875		77.54% Impervious Area

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

Subcatchment P3: P3

Hydrograph



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Summary for Subcatchment P4: P4

Runoff = 30.27 cfs @ 12.13 hrs, Volume= 1.791 af, Depth= 3.52"
Routed to Pond 4P : Pond 4

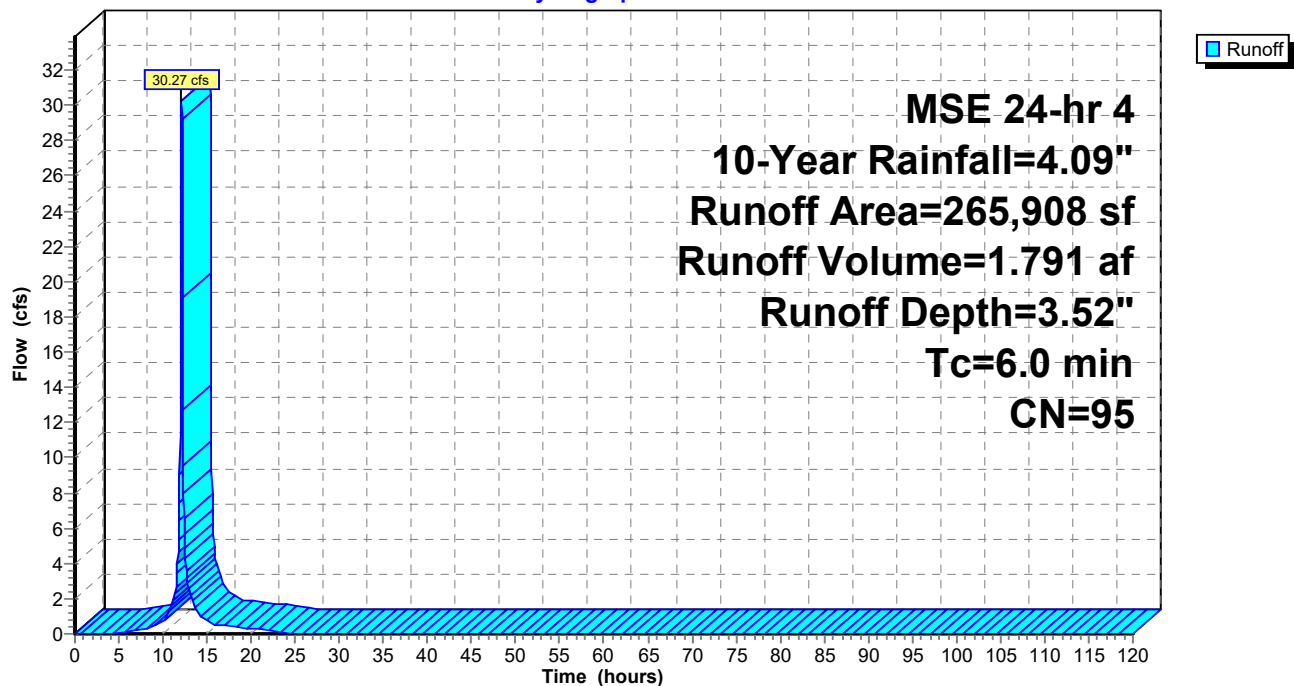
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

Area (sf)	CN	Description
45,325	80	>75% Grass cover, Good, HSG D
108,712	98	Roofs, HSG D
97,063	98	Paved parking, HSG D
14,808	98	Water Surface, HSG D
265,908	95	Weighted Average
45,325		17.05% Pervious Area
220,583		82.95% Impervious Area

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

Subcatchment P4: P4

Hydrograph



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Summary for Subcatchment P5: P5

Runoff = 75.92 cfs @ 12.13 hrs, Volume= 4.491 af, Depth= 3.52"
 Routed to Pond 5P : Pond 5

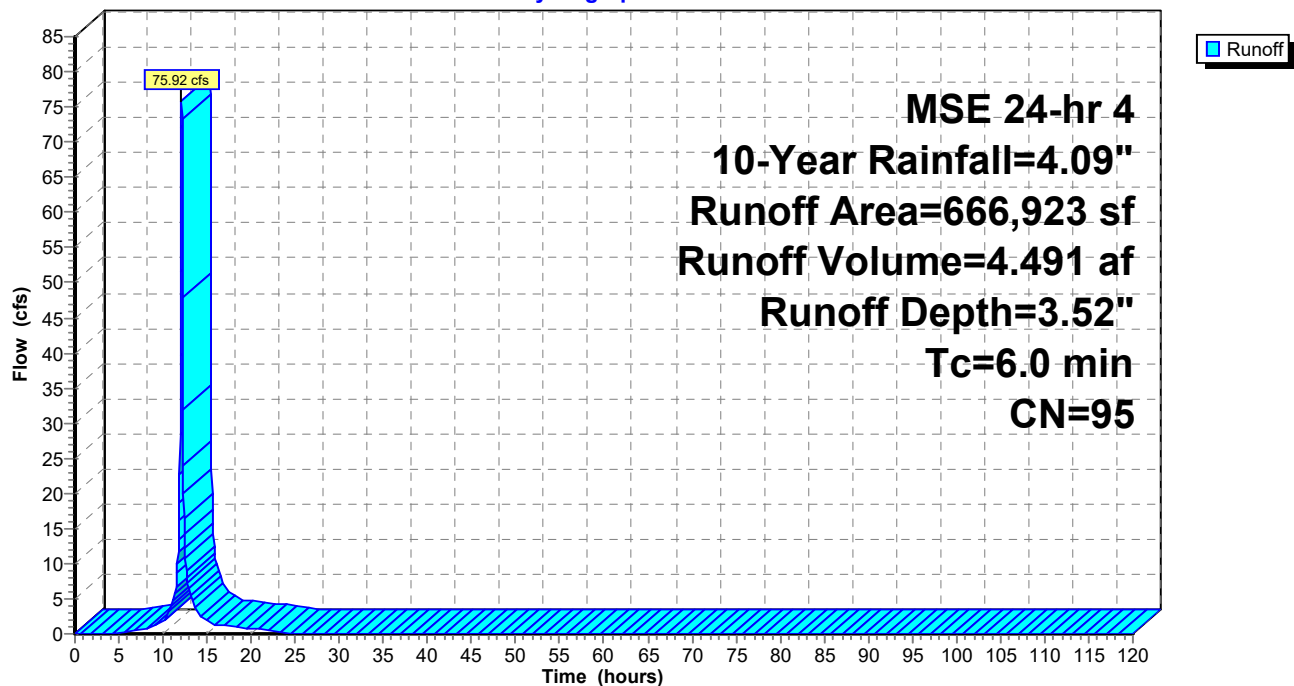
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 10-Year Rainfall=4.09"

Area (sf)	CN	Description
107,376	80	>75% Grass cover, Good, HSG D
122,680	98	Roofs, HSG D
325,512	98	Paved parking, HSG D
111,355	98	Water Surface, HSG D
666,923	95	Weighted Average
107,376		16.10% Pervious Area
559,547		83.90% Impervious Area

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

Subcatchment P5: P5

Hydrograph



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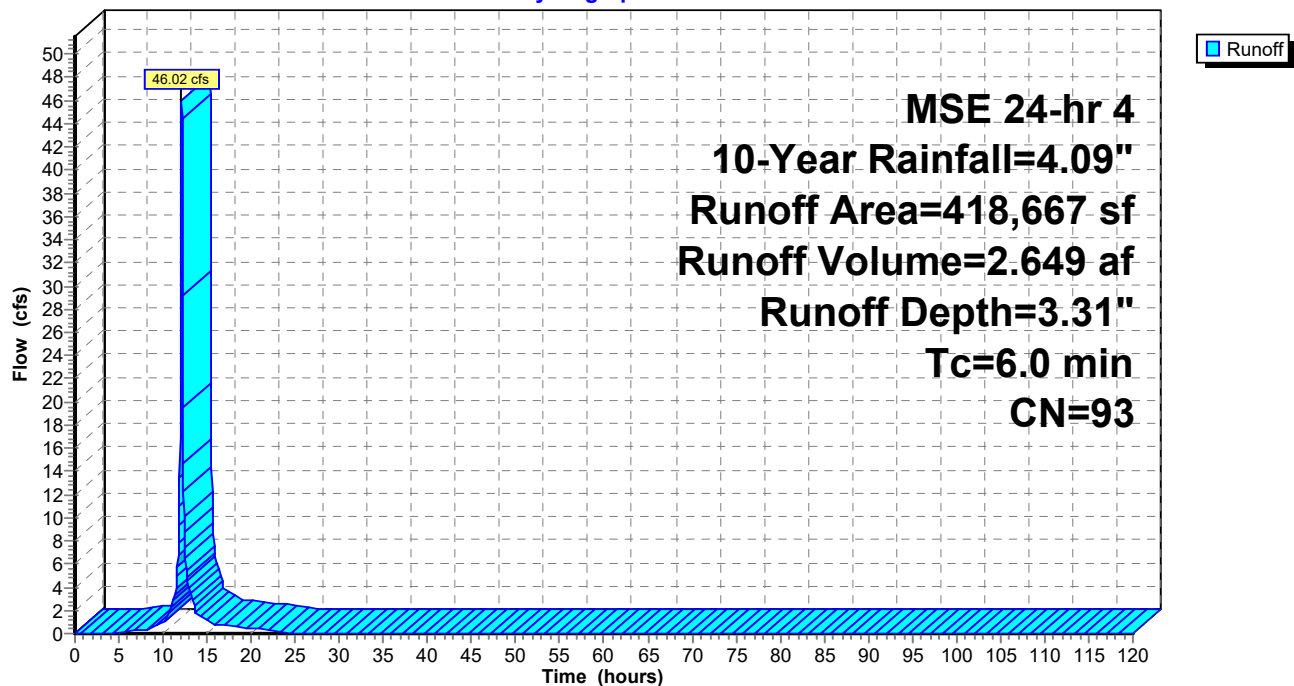
Summary for Subcatchment P6: P6

Runoff = 46.02 cfs @ 12.13 hrs, Volume= 2.649 af, Depth= 3.31"
Routed to Pond 6P : Pond 6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

Area (sf)	CN	Description
112,758	80	>75% Grass cover, Good, HSG D
269,805	98	Paved parking, HSG D
36,104	98	Water Surface, HSG D
418,667	93	Weighted Average
112,758		26.93% Pervious Area
305,909		73.07% Impervious Area

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

Subcatchment P6: P6**Hydrograph**

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Summary for Subcatchment P7: P7

Runoff = 7.32 cfs @ 12.13 hrs, Volume= 0.390 af, Depth= 2.12"

Routed to Reach P-N : Proposed North

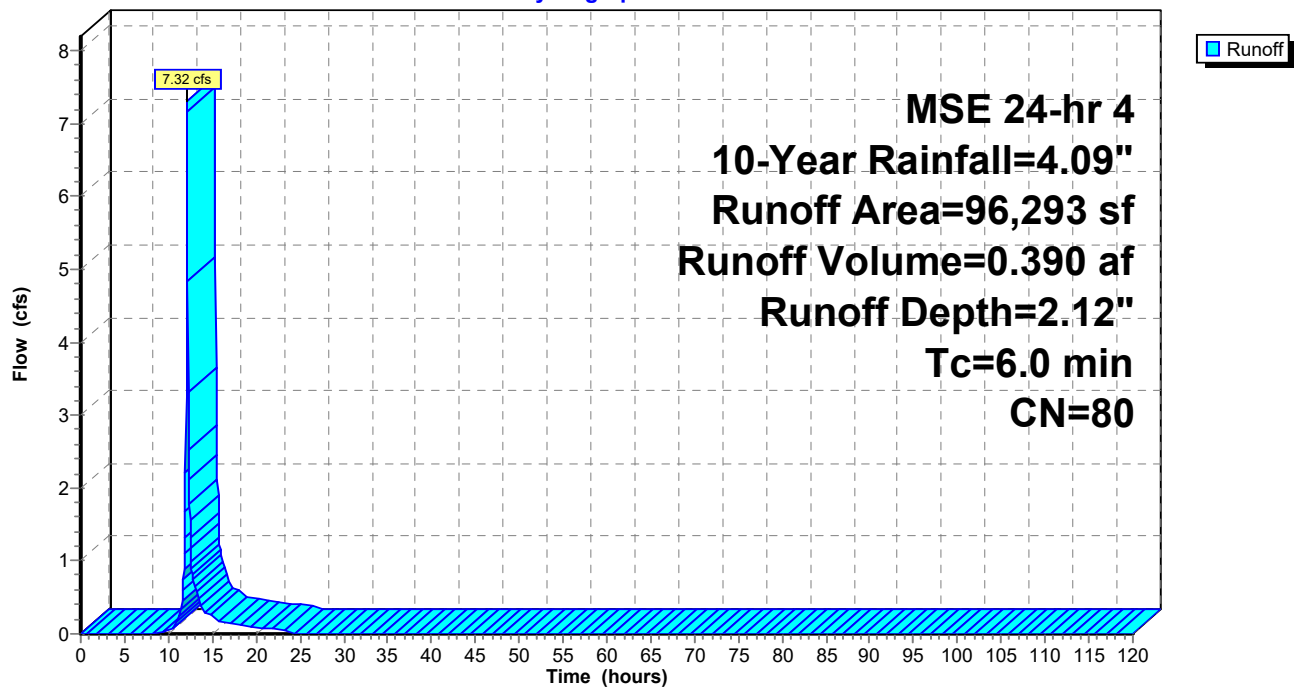
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

Area (sf)	CN	Description
96,293	80	>75% Grass cover, Good, HSG D
96,293		100.00% Pervious Area

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

Subcatchment P7: P7

Hydrograph



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Summary for Subcatchment P7B: P7-Bypass

Runoff = 6.79 cfs @ 12.13 hrs, Volume= 0.361 af, Depth= 1.96"

Routed to Reach P-N : Proposed North

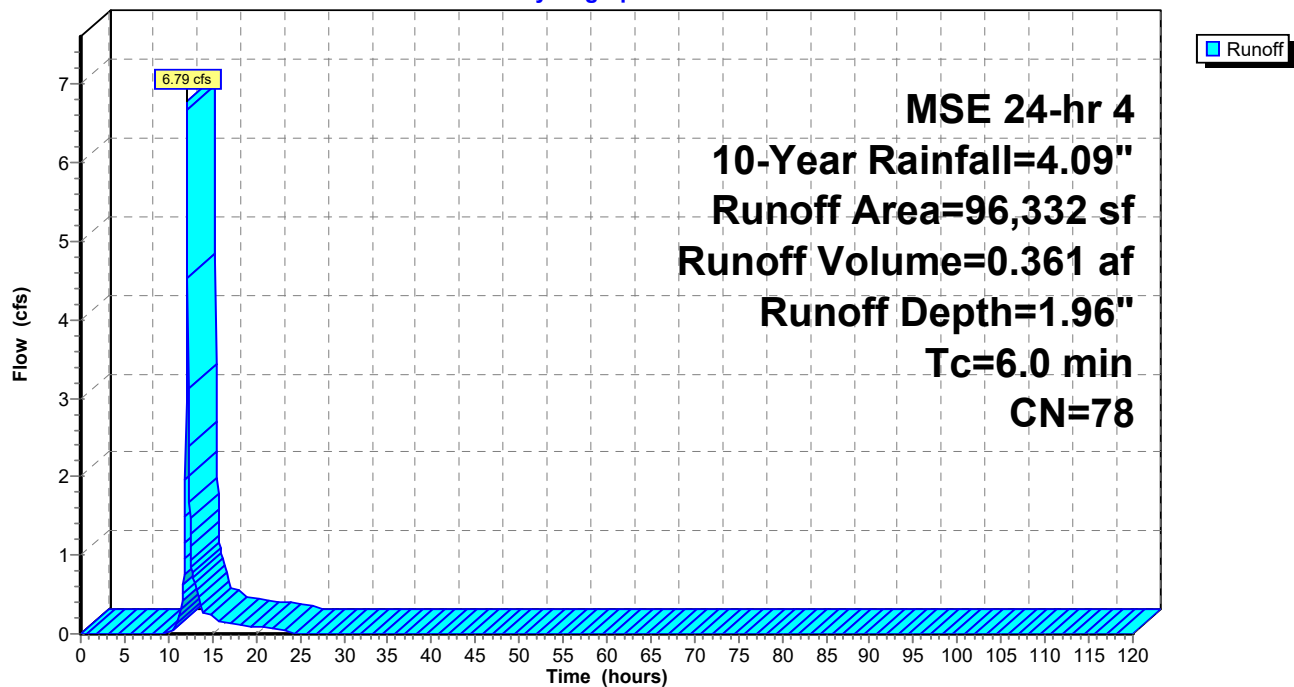
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

	Area (sf)	CN	Description
*	96,332	78	HSG C (pre-development)
	96,332		100.00% Pervious Area

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

Subcatchment P7B: P7-Bypass

Hydrograph



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Summary for Subcatchment P8: P8

Runoff = 13.87 cfs @ 12.14 hrs, Volume= 0.738 af, Depth= 1.66"

Routed to Reach P-S : Proposed South

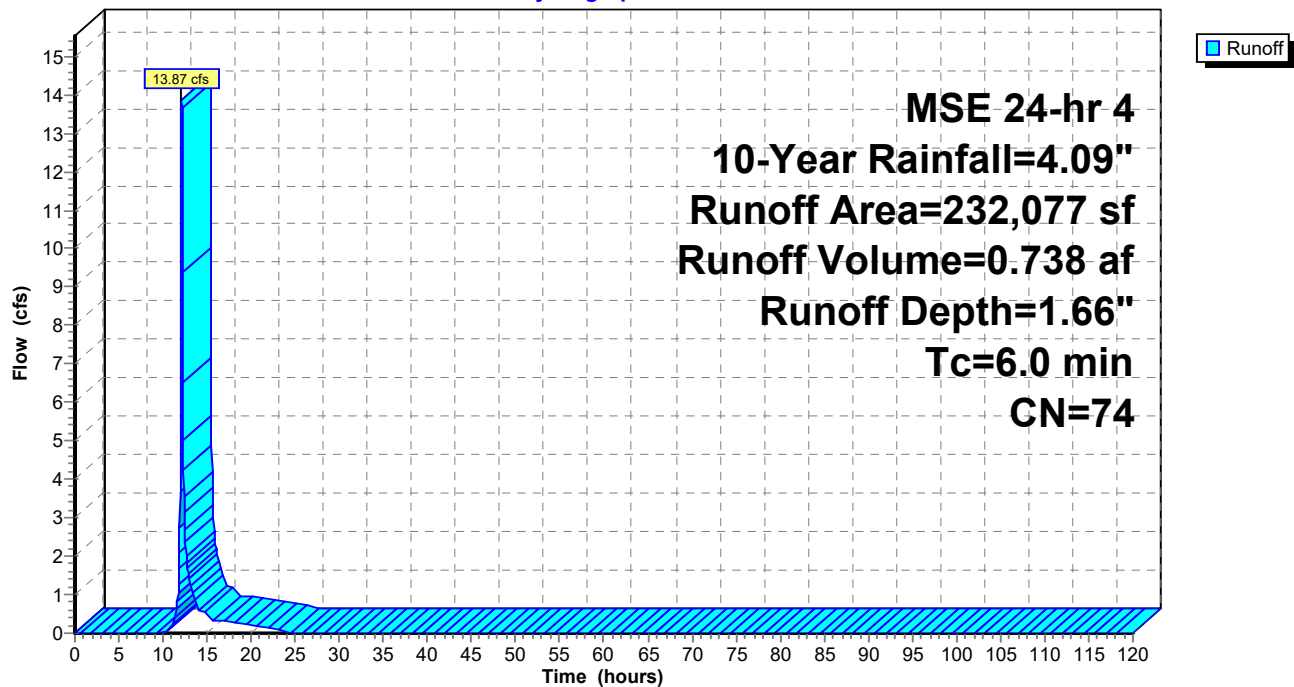
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

Area (sf)	CN	Description
* 230,643	74	Septic area is HSG B, so goes to C. All other greenspace areas deep till, so HSG = C (74)
1,434	98	Paved parking, HSG D
232,077	74	Weighted Average
230,643		99.38% Pervious Area
1,434		0.62% Impervious Area

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

Subcatchment P8: P8

Hydrograph



3230212**MSE 24-hr 4 10-Year Rainfall=4.09"**

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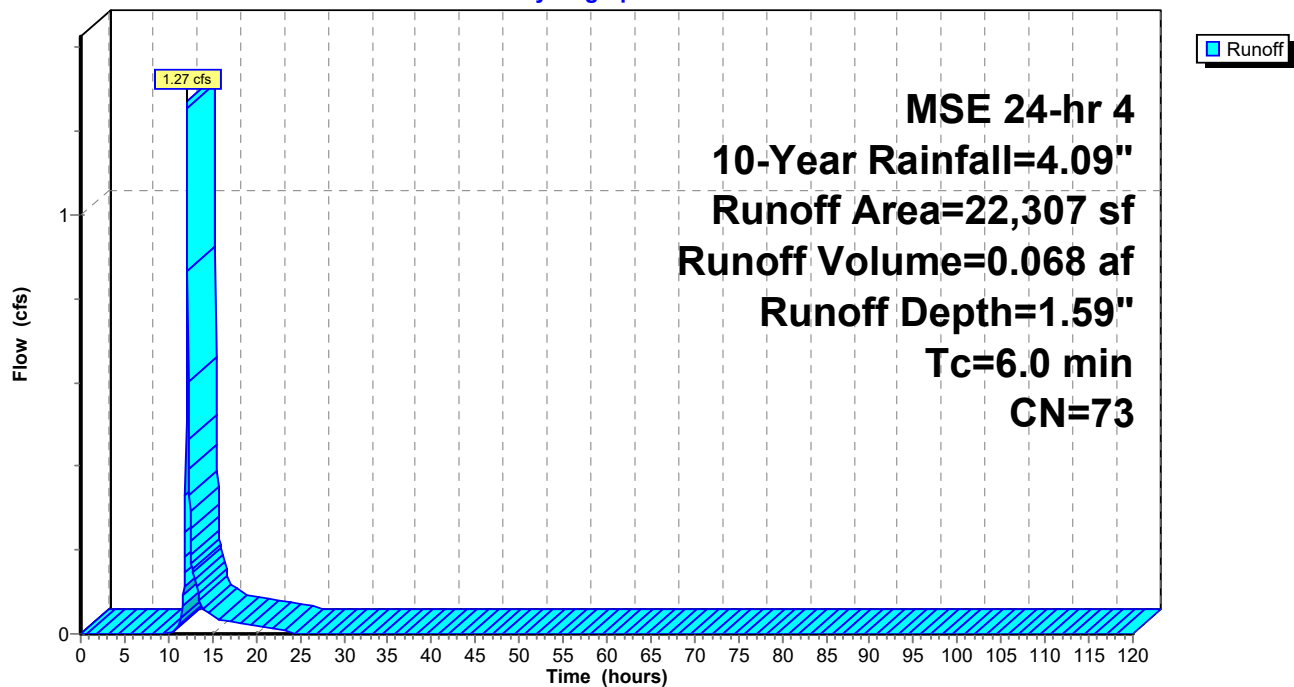
Summary for Subcatchment P8B: P8-Bypass

Runoff = 1.27 cfs @ 12.14 hrs, Volume= 0.068 af, Depth= 1.59"
Routed to Reach P-S : Proposed South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

	Area (sf)	CN	Description
*	22,307	73	HSG B/C (pre-development)
	22,307		100.00% Pervious Area

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

Subcatchment P8B: P8-Bypass**Hydrograph**

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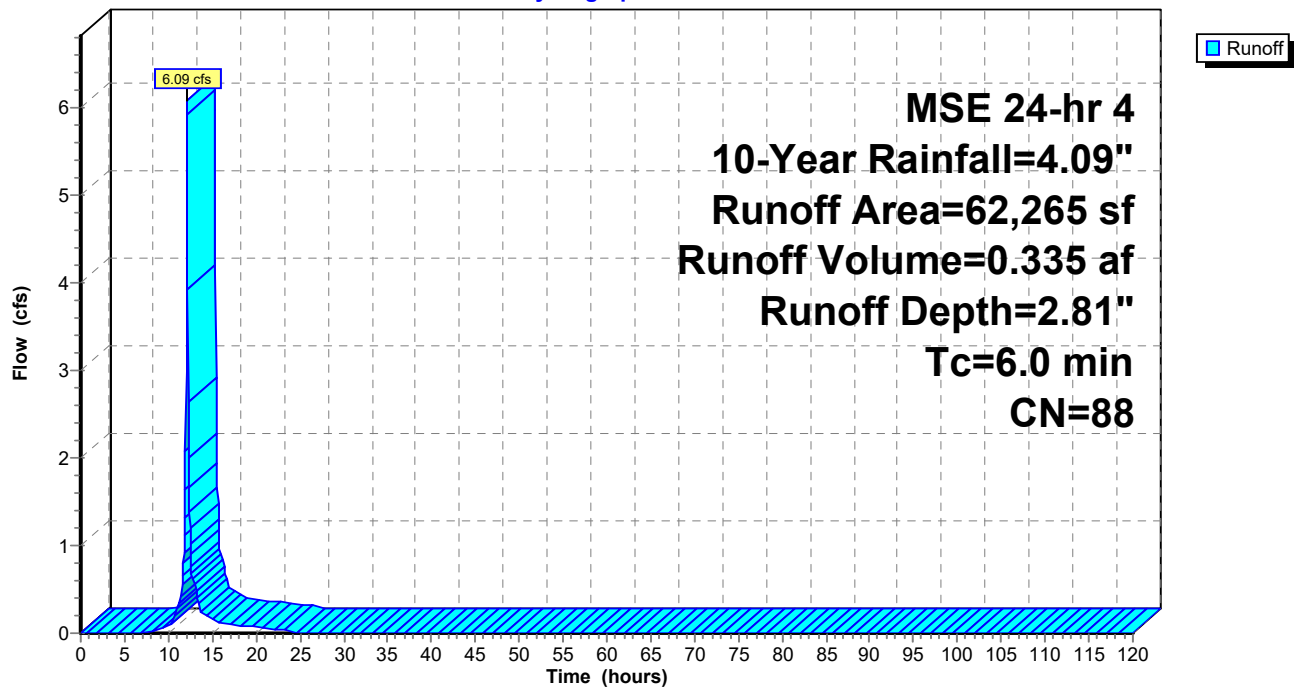
Summary for Subcatchment P9: P9

Runoff = 6.09 cfs @ 12.13 hrs, Volume= 0.335 af, Depth= 2.81"
Routed to Reach P-S : Proposed South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 10-Year Rainfall=4.09"

Area (sf)	CN	Description
34,498	80	>75% Grass cover, Good, HSG D
27,767	98	Paved parking, HSG D
62,265	88	Weighted Average
34,498		55.41% Pervious Area
27,767		44.59% Impervious Area

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

Subcatchment P9: P9**Hydrograph**

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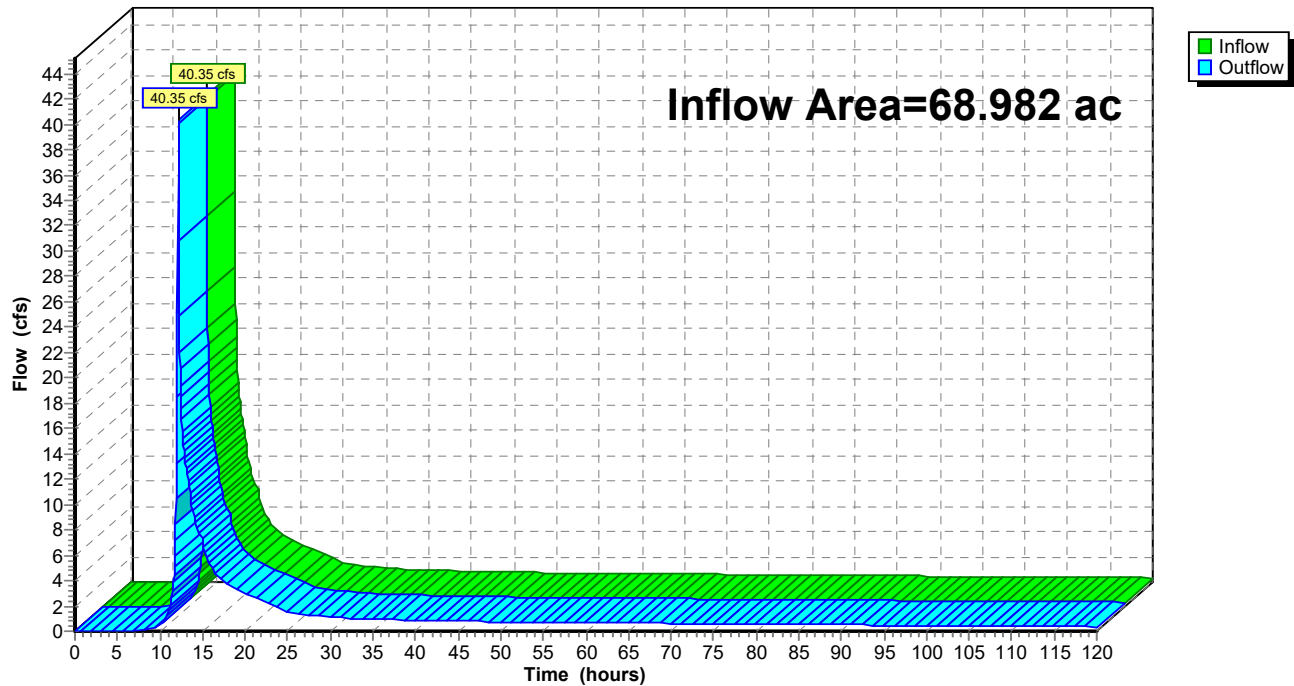
Summary for Reach P: Total After Detention

Inflow Area = 68.982 ac, 54.96% Impervious, Inflow Depth > 2.00" for 10-Year event
Inflow = 40.35 cfs @ 12.14 hrs, Volume= 11.514 af
Outflow = 40.35 cfs @ 12.14 hrs, Volume= 11.514 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P: Total After Detention

Hydrograph



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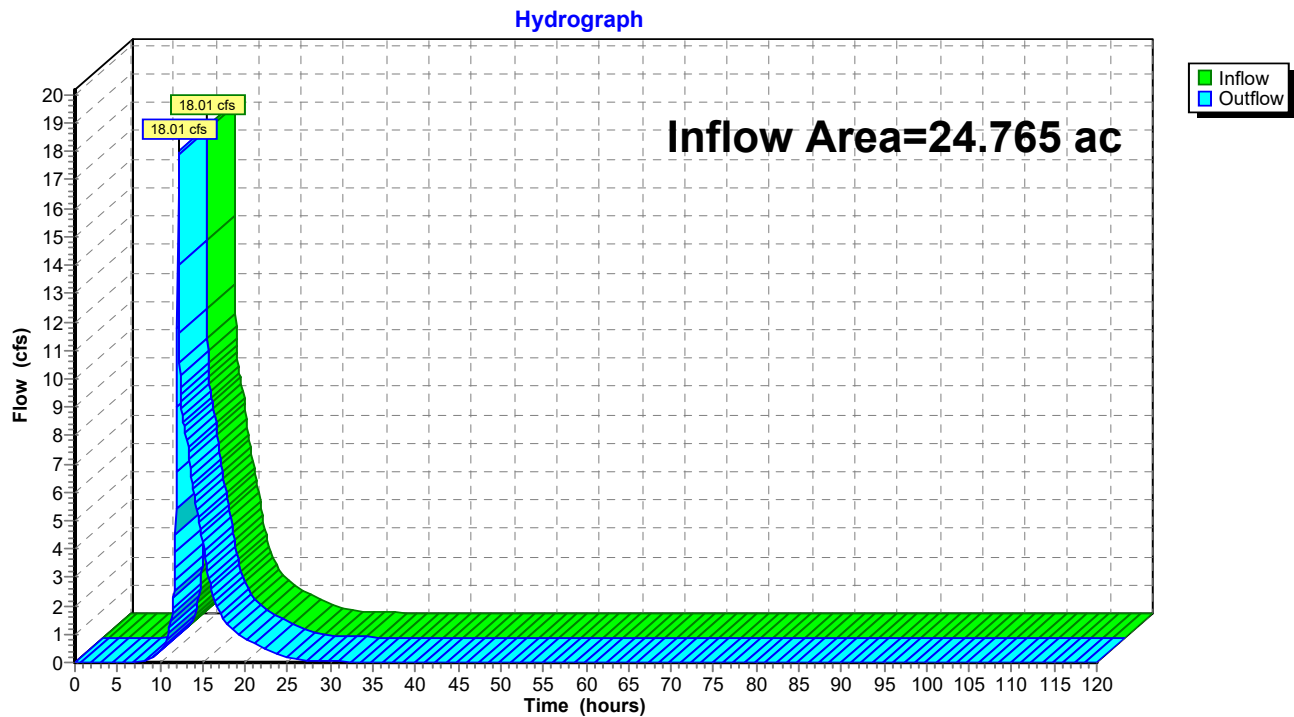
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Summary for Reach P-N: Proposed North

Inflow Area = 24.765 ac, 61.34% Impervious, Inflow Depth = 1.54" for 10-Year event
Inflow = 18.01 cfs @ 12.14 hrs, Volume= 3.182 af
Outflow = 18.01 cfs @ 12.14 hrs, Volume= 3.182 af, Atten= 0%, Lag= 0.0 min
Routed to Reach P : Total After Detention

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P-N: Proposed North



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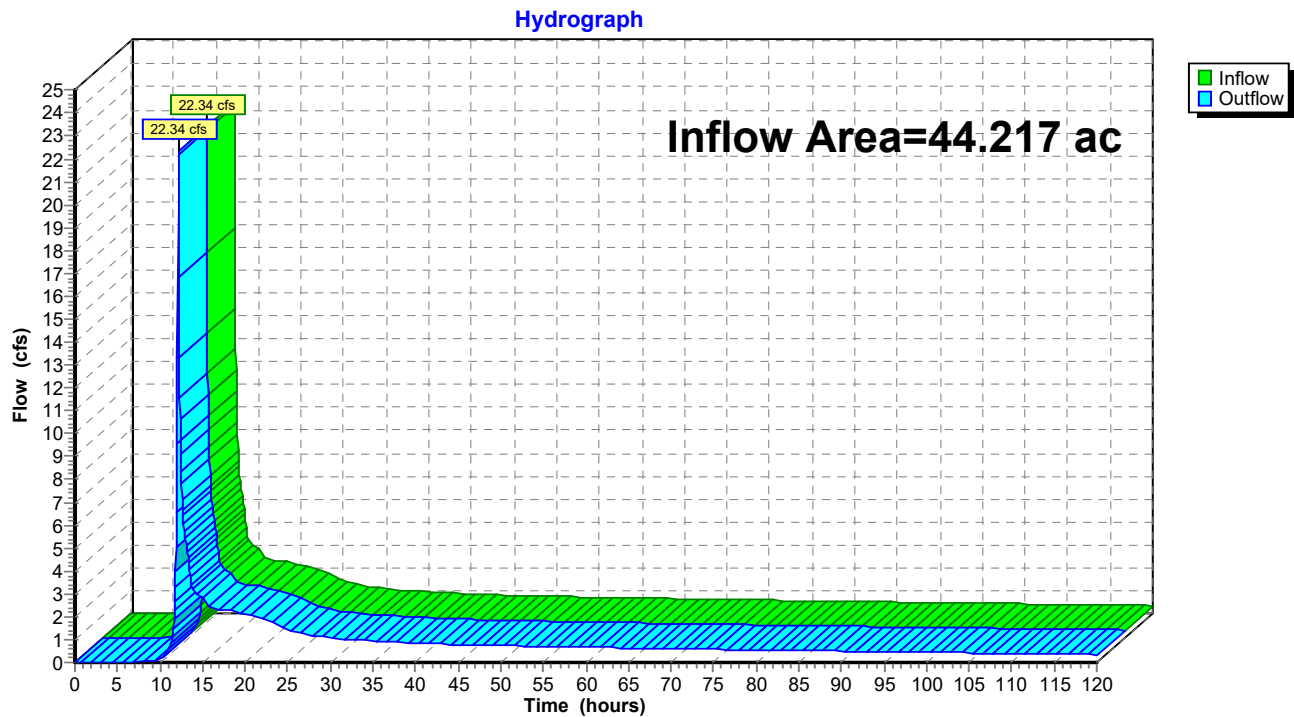
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Summary for Reach P-S: Proposed South

Inflow Area = 44.217 ac, 51.38% Impervious, Inflow Depth > 2.26" for 10-Year event
Inflow = 22.34 cfs @ 12.14 hrs, Volume= 8.332 af
Outflow = 22.34 cfs @ 12.14 hrs, Volume= 8.332 af, Atten= 0%, Lag= 0.0 min
Routed to Reach P : Total After Detention

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P-S: Proposed South



Summary for Pond 1P: Pond 1 (Infiltration Basin)

Inflow Area = 7.813 ac, 66.29% Impervious, Inflow Depth = 3.20" for 10-Year event
 Inflow = 36.66 cfs @ 12.13 hrs, Volume= 2.086 af
 Outflow = 0.72 cfs @ 15.22 hrs, Volume= 2.086 af, Atten= 98%, Lag= 185.3 min
 Discarded = 0.67 cfs @ 15.22 hrs, Volume= 2.062 af
 Primary = 0.05 cfs @ 15.22 hrs, Volume= 0.024 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 911.14' @ 15.22 hrs Surf.Area= 57,531 sf Storage= 63,004 cf

Plug-Flow detention time= 901.3 min calculated for 2.085 af (100% of inflow)
 Center-of-Mass det. time= 901.7 min (1,683.9 - 782.2)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	316,468 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	52,675	0	0
915.00	73,912	316,468	316,468

Device	Routing	Invert	Outlet Devices
#1	Primary	911.00'	18.0" Round Culvert L= 500.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 911.00' / 910.00' S= 0.0020 ' S= 0.0020 ' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf
#2	Device 1	911.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	910.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.67 cfs @ 15.22 hrs HW=911.14' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.67 cfs)

Primary OutFlow Max=0.05 cfs @ 15.22 hrs HW=911.14' (Free Discharge)
 ↑ **1=Culvert** (Barrel Controls 0.05 cfs @ 0.87 fps)
 ↑ **2=Orifice/Grate** (Passes 0.05 cfs of 0.06 cfs potential flow)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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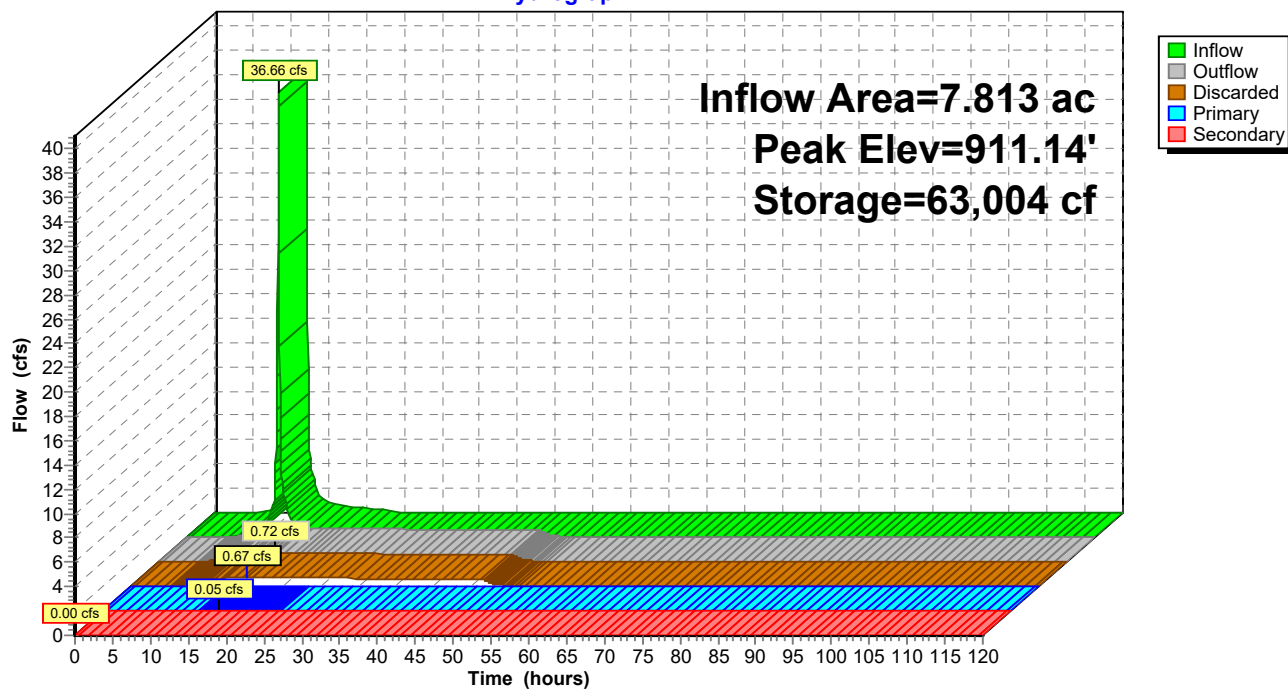
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Pond 1P: Pond 1 (Infiltration Basin)

Hydrograph



Summary for Pond 2P: Pond 2 (Infiltration Basin)

Inflow Area = 3.262 ac, 76.52% Impervious, Inflow Depth = 3.41" for 10-Year event
 Inflow = 15.91 cfs @ 12.13 hrs, Volume= 0.928 af
 Outflow = 1.38 cfs @ 12.91 hrs, Volume= 0.928 af, Atten= 91%, Lag= 46.8 min
 Discarded = 0.16 cfs @ 12.91 hrs, Volume= 0.607 af
 Primary = 1.22 cfs @ 12.91 hrs, Volume= 0.320 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 912.28' @ 12.91 hrs Surf.Area= 13,623 sf Storage= 24,402 cf

Plug-Flow detention time= 911.7 min calculated for 0.928 af (100% of inflow)
 Center-of-Mass det. time= 911.3 min (1,685.1 - 773.8)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	70,950 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	7,800	0	0
915.00	20,580	70,950	70,950

Device	Routing	Invert	Outlet Devices
#1	Primary	911.75'	18.0" Round Culvert L= 100.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 911.75' / 910.00' S= 0.0175 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	911.75'	15.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.50'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	910.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.16 cfs @ 12.91 hrs HW=912.28' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.16 cfs)

Primary OutFlow Max=1.22 cfs @ 12.91 hrs HW=912.28' (Free Discharge)
 ↑ **1=Culvert** (Passes 1.22 cfs of 1.72 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 1.22 cfs @ 2.47 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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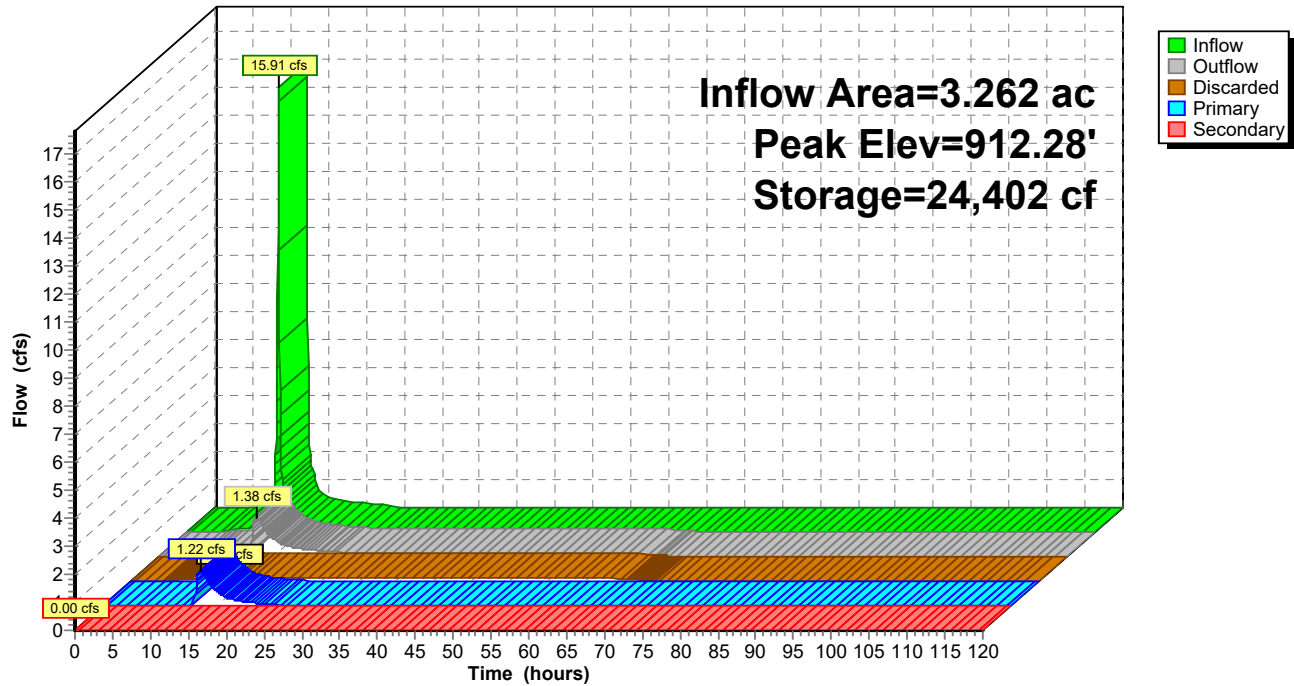
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Pond 2P: Pond 2 (Infiltration Basin)

Hydrograph



Summary for Pond 3P: Pond 3 (Infiltration Basin)

Inflow Area = 3.164 ac, 77.54% Impervious, Inflow Depth = 3.41" for 10-Year event
 Inflow = 15.43 cfs @ 12.13 hrs, Volume= 0.900 af
 Outflow = 1.19 cfs @ 13.08 hrs, Volume= 0.900 af, Atten= 92%, Lag= 57.0 min
 Discarded = 0.18 cfs @ 13.08 hrs, Volume= 0.603 af
 Primary = 1.01 cfs @ 13.08 hrs, Volume= 0.297 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 914.77' @ 13.08 hrs Surf.Area= 15,664 sf Storage= 23,560 cf

Plug-Flow detention time= 738.7 min calculated for 0.899 af (100% of inflow)
 Center-of-Mass det. time= 739.2 min (1,513.1 - 773.8)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	87,998 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	10,993	0	0
918.00	24,206	87,998	87,998

Device	Routing	Invert	Outlet Devices
#1	Primary	914.25'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 914.25' / 913.00' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	914.25'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	916.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	917.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	913.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.18 cfs @ 13.08 hrs HW=914.77' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.18 cfs)

Primary OutFlow Max=1.00 cfs @ 13.08 hrs HW=914.77' (Free Discharge)
 ↑ **1=Culvert** (Passes 1.00 cfs of 1.18 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 1.00 cfs @ 2.45 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=913.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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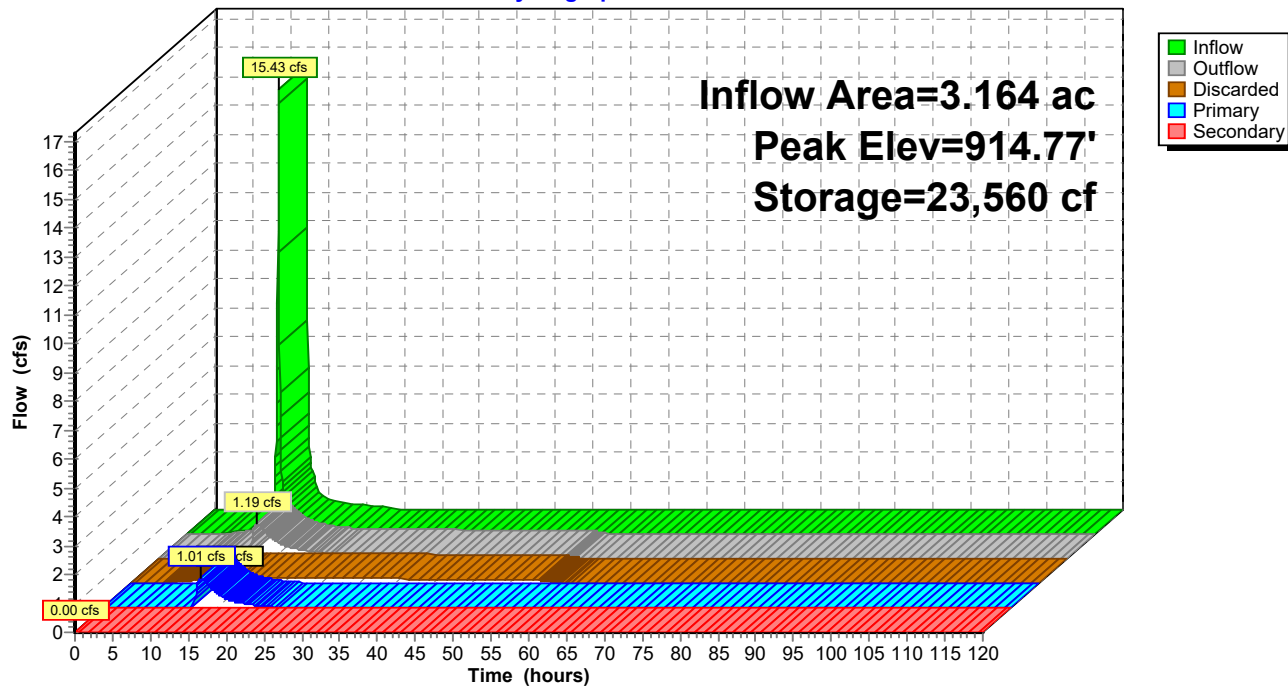
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Pond 3P: Pond 3 (Infiltration Basin)

Hydrograph



Summary for Pond 4P: Pond 4

Inflow Area = 6.104 ac, 82.95% Impervious, Inflow Depth = 3.52" for 10-Year event
 Inflow = 30.27 cfs @ 12.13 hrs, Volume= 1.791 af
 Outflow = 4.71 cfs @ 12.51 hrs, Volume= 1.790 af, Atten= 84%, Lag= 23.2 min
 Primary = 4.71 cfs @ 12.51 hrs, Volume= 1.790 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 915.05' @ 12.51 hrs Surf.Area= 21,015 sf Storage= 36,735 cf

Plug-Flow detention time= 159.2 min calculated for 1.790 af (100% of inflow)
 Center-of-Mass det. time= 158.9 min (927.8 - 769.0)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	111,868 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	14,812	0	0
918.00	29,935	111,868	111,868

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 913.00' / 912.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.50'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	917.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=4.71 cfs @ 12.51 hrs HW=915.05' (Free Discharge)

↑ **1=Culvert** (Passes 4.71 cfs of 8.01 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 4.71 cfs @ 5.99 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=913.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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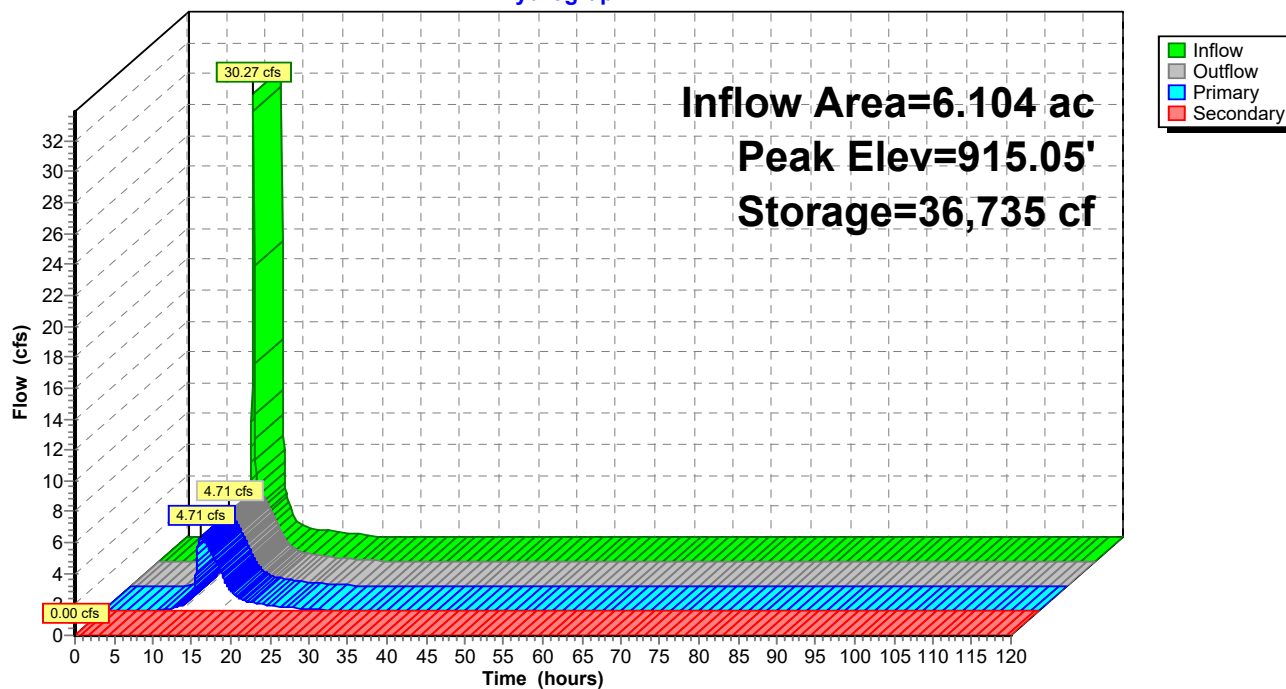
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Pond 4P: Pond 4

Hydrograph



Summary for Pond 5P: Pond 5

Inflow Area = 15.310 ac, 83.90% Impervious, Inflow Depth = 3.52" for 10-Year event
 Inflow = 75.92 cfs @ 12.13 hrs, Volume= 4.491 af
 Outflow = 0.80 cfs @ 19.87 hrs, Volume= 2.710 af, Atten= 99%, Lag= 464.5 min
 Primary = 0.80 cfs @ 19.87 hrs, Volume= 2.710 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 906.46' @ 19.87 hrs Surf.Area= 120,068 sf Storage= 169,171 cf

Plug-Flow detention time= 2,440.5 min calculated for 2.710 af (60% of inflow)
 Center-of-Mass det. time= 2,353.2 min (3,122.2 - 769.0)

Volume	Invert	Avail.Storage	Storage Description
#1	905.00'	631,265 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
905.00	111,357	0	0
910.00	141,149	631,265	631,265

Device	Routing	Invert	Outlet Devices
#1	Primary	905.00'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 905.00' / 904.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	905.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	906.10'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	908.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#5	Secondary	909.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.80 cfs @ 19.87 hrs HW=906.46' (Free Discharge)

↑ **1=Culvert** (Passes 0.80 cfs of 6.43 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.27 cfs @ 5.57 fps)
 ↑ **3=Orifice/Grate** (Orifice Controls 0.53 cfs @ 2.05 fps)
 ↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=905.00' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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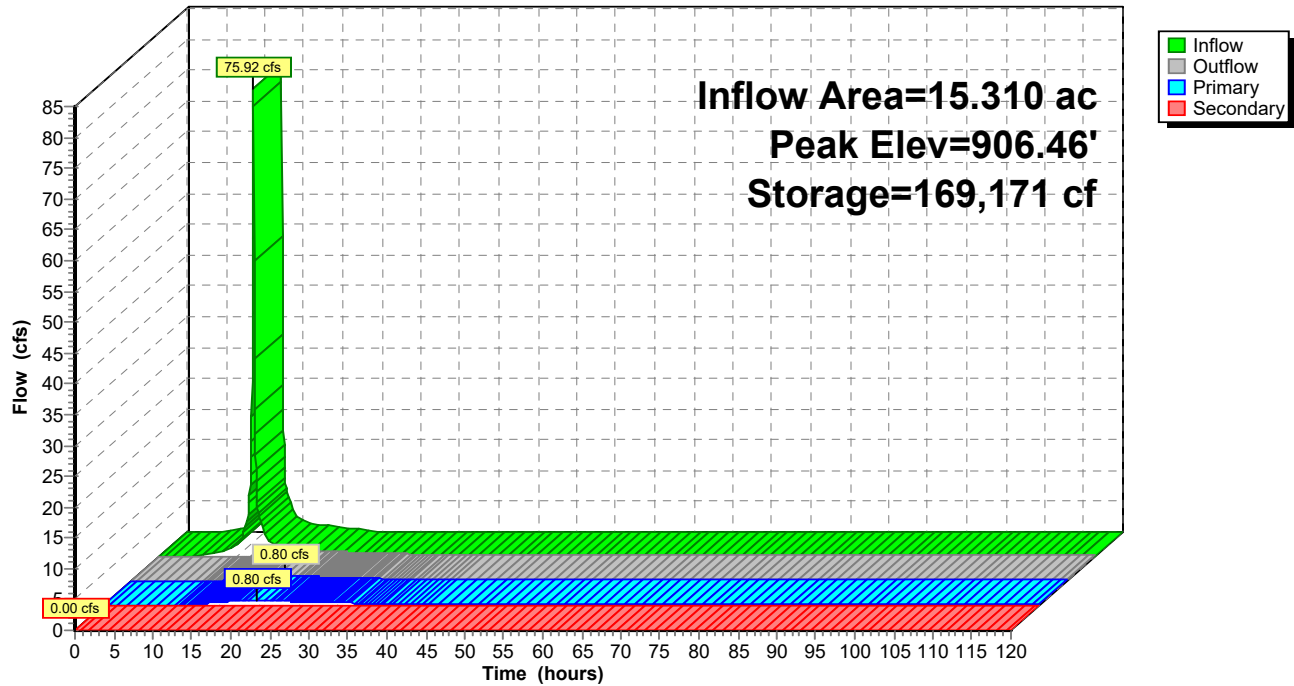
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Pond 5P: Pond 5

Hydrograph



Summary for Pond 6P: Pond 6

Inflow Area = 9.611 ac, 73.07% Impervious, Inflow Depth = 3.31" for 10-Year event
 Inflow = 46.02 cfs @ 12.13 hrs, Volume= 2.649 af
 Outflow = 0.61 cfs @ 18.52 hrs, Volume= 2.379 af, Atten= 99%, Lag= 383.8 min
 Primary = 0.61 cfs @ 18.52 hrs, Volume= 2.379 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 912.32' @ 18.52 hrs Surf.Area= 45,939 sf Storage= 95,161 cf

Plug-Flow detention time= 2,422.5 min calculated for 2.378 af (90% of inflow)
 Center-of-Mass det. time= 2,378.7 min (3,156.9 - 778.2)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	233,518 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	36,103	0	0
915.00	57,304	233,518	233,518

Device	Routing	Invert	Outlet Devices
#1	Primary	910.00'	12.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 910.00' / 909.00' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	910.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	912.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	913.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#5	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.61 cfs @ 18.52 hrs HW=912.32' (Free Discharge)

↑ **1=Culvert** (Passes 0.61 cfs of 3.51 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.35 cfs @ 7.13 fps)
 ↑ **3=Orifice/Grate** (Orifice Controls 0.26 cfs @ 1.93 fps)
 ↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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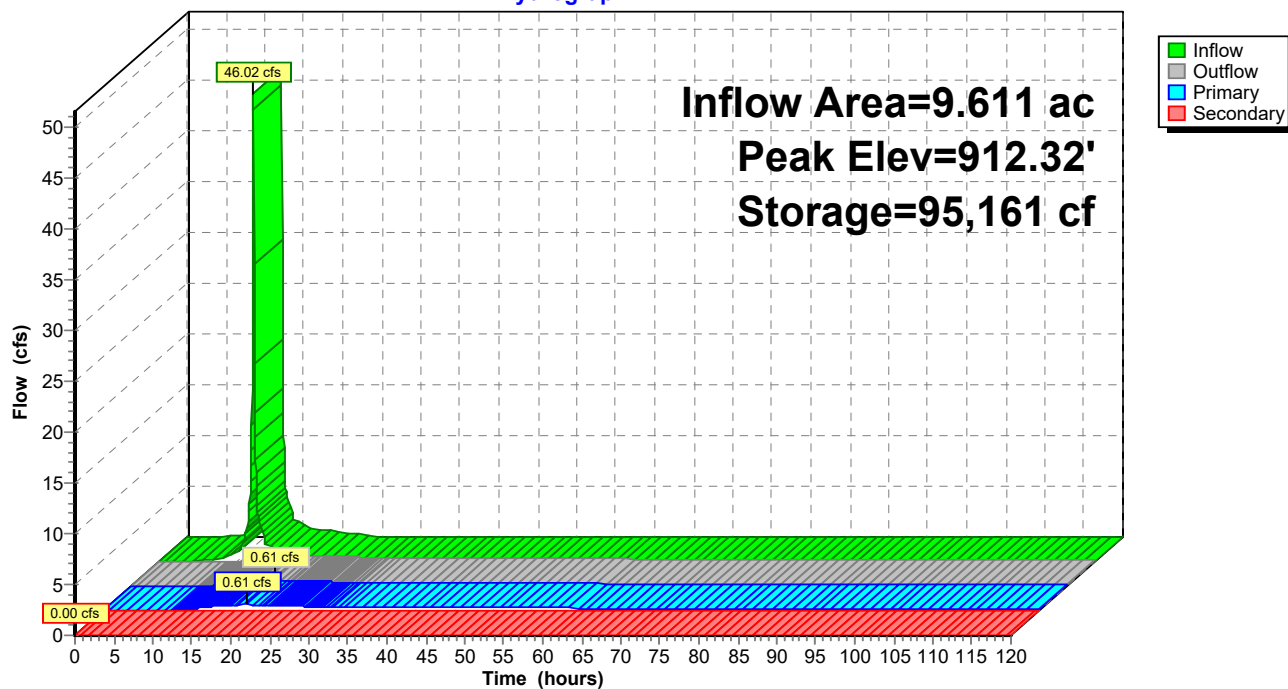
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Pond 6P: Pond 6

Hydrograph



Summary for Pond 7P: Pond 7

Inflow Area = 7.071 ac, 27.23% Impervious, Inflow Depth = 2.54" for 10-Year event
 Inflow = 27.66 cfs @ 12.13 hrs, Volume= 1.496 af
 Outflow = 0.19 cfs @ 22.42 hrs, Volume= 1.202 af, Atten= 99%, Lag= 617.4 min
 Primary = 0.19 cfs @ 22.42 hrs, Volume= 1.202 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 901.80' @ 22.42 hrs Surf.Area= 77,203 sf Storage= 57,299 cf

Plug-Flow detention time= 2,660.7 min calculated for 1.202 af (80% of inflow)
 Center-of-Mass det. time= 2,593.5 min (3,397.8 - 804.3)

Volume	Invert	Avail.Storage	Storage Description
#1	901.00'	257,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
901.00	66,000	0	0
902.00	80,000	73,000	73,000
903.00	93,000	86,500	159,500
904.00	103,000	98,000	257,500

Device	Routing	Invert	Outlet Devices
#1	Primary	901.00'	18.0" Round Culvert L= 20.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 901.00' / 900.50' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	901.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	902.75'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	903.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.19 cfs @ 22.42 hrs HW=901.80' (Free Discharge)

↑ **1=Culvert** (Passes 0.19 cfs of 3.45 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.19 cfs @ 3.96 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=901.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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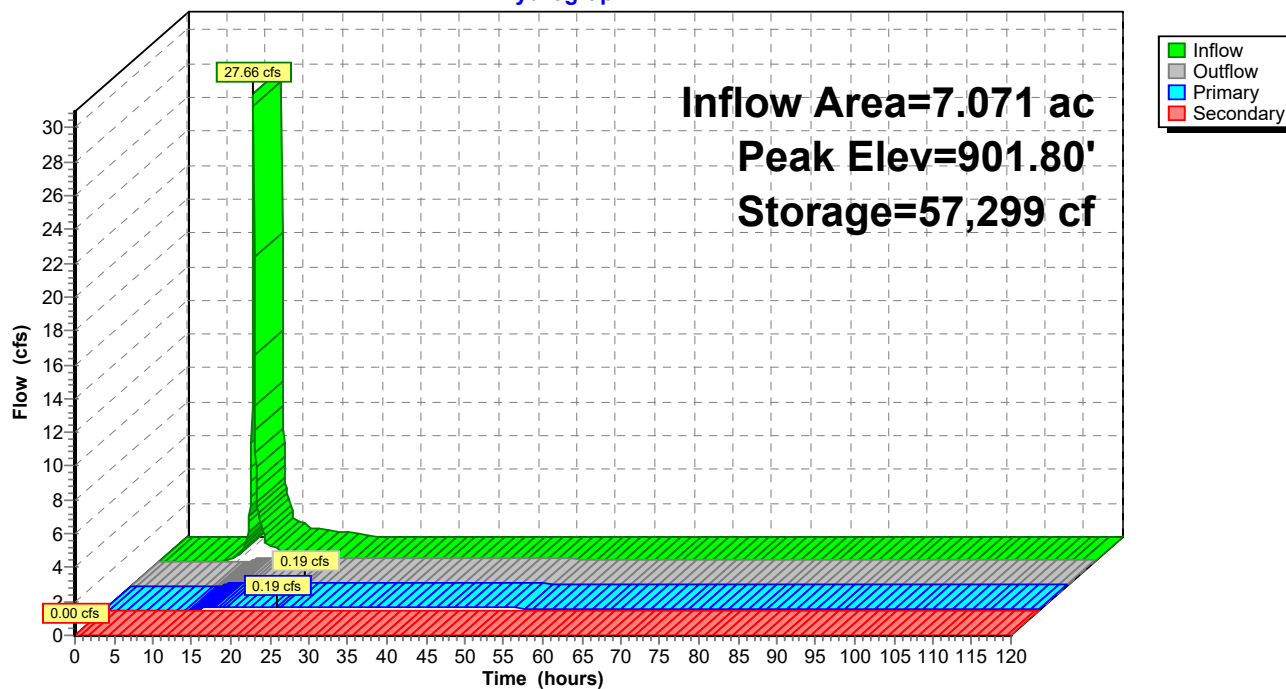
MSE 24-hr 4 10-Year Rainfall=4.09"

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Pond 7P: Pond 7

Hydrograph



Summary for Pond 8P: Pond 8

Inflow Area = 4.955 ac, 5.17% Impervious, Inflow Depth = 2.20" for 10-Year event
 Inflow = 17.00 cfs @ 12.13 hrs, Volume= 0.907 af
 Outflow = 3.74 cfs @ 12.43 hrs, Volume= 0.899 af, Atten= 78%, Lag= 18.1 min
 Primary = 3.74 cfs @ 12.43 hrs, Volume= 0.899 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 902.58' @ 12.43 hrs Surf.Area= 22,198 sf Storage= 18,319 cf

Plug-Flow detention time= 673.9 min calculated for 0.899 af (99% of inflow)
 Center-of-Mass det. time= 670.7 min (1,485.2 - 814.5)

Volume	Invert	Avail.Storage	Storage Description
#1	901.50'	59,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
901.50	11,000	0	0
902.00	17,000	7,000	7,000
903.00	26,000	21,500	28,500
904.00	36,000	31,000	59,500

Device	Routing	Invert	Outlet Devices
#1	Primary	901.50'	18.0" Round Culvert L= 20.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 901.50' / 901.00' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	901.50'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	902.25'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	903.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.74 cfs @ 12.43 hrs HW=902.58' (Free Discharge)

↑ **1=Culvert** (Passes 3.74 cfs of 5.50 cfs potential flow)

↑ **2=Orifice/Grate** (Orifice Controls 0.10 cfs @ 4.80 fps)

↑ **3=Sharp-Crested Rectangular Weir**(Weir Controls 3.63 cfs @ 1.87 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=901.50' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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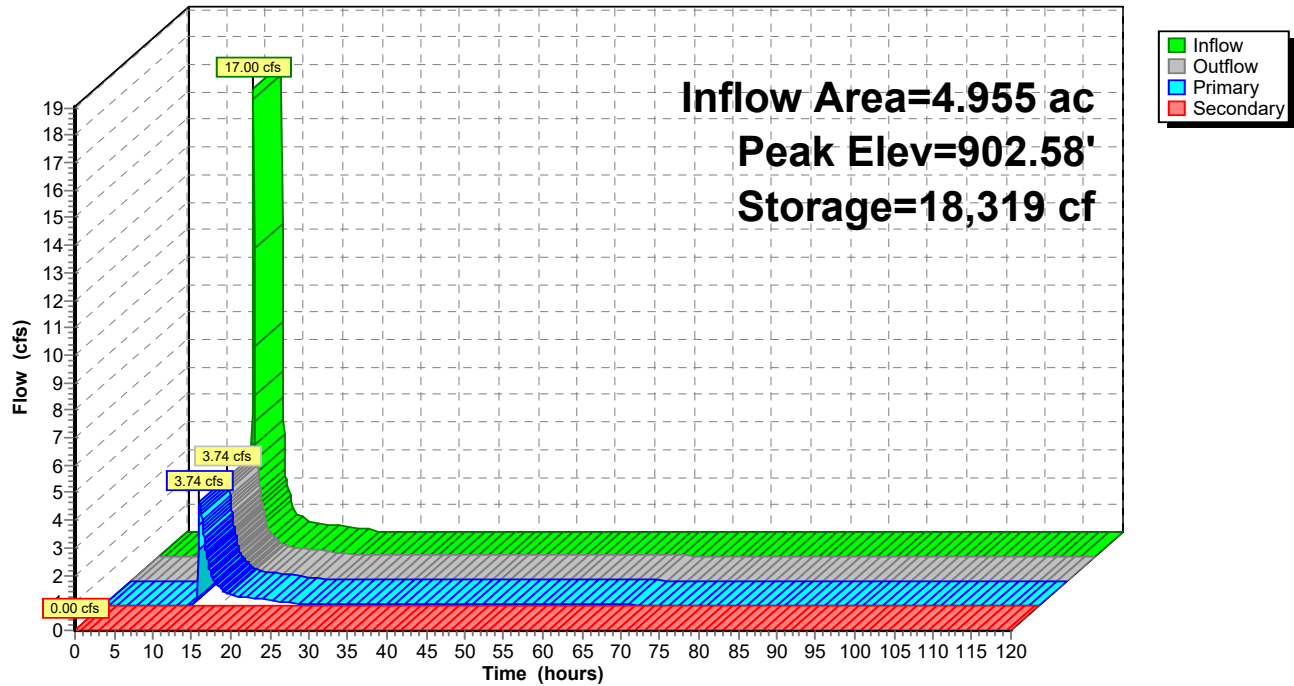
MSE 24-hr 4 10-Year Rainfall=4.09"

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Pond 8P: Pond 8

Hydrograph



3230212**MSE 24-hr 4 100-Year Rainfall=6.66"**

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Summary for Subcatchment P1: P1

Runoff = 63.02 cfs @ 12.13 hrs, Volume= 3.724 af, Depth= 5.72"
 Routed to Pond 1P : Pond 1 (Infiltration Basin)

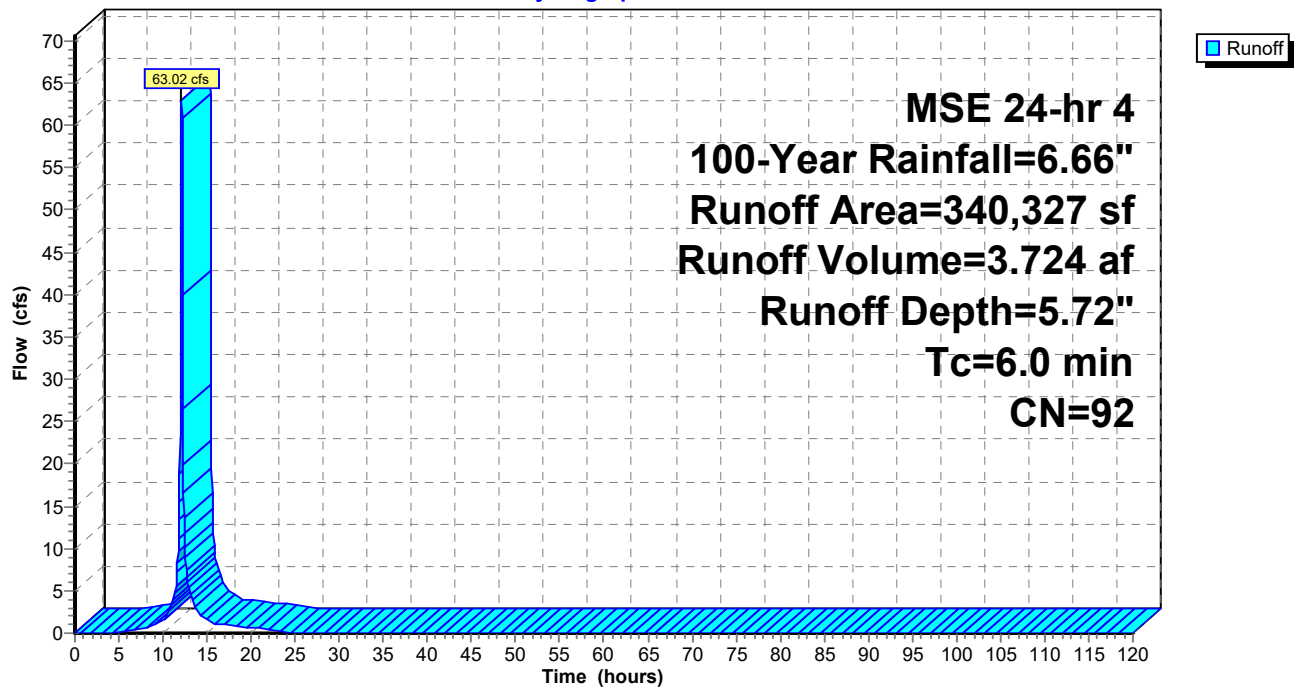
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
114,740	80	>75% Grass cover, Good, HSG D
225,587	98	Roofs, HSG D
340,327	92	Weighted Average
114,740		33.71% Pervious Area
225,587		66.29% Impervious Area

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

Subcatchment P1: P1

Hydrograph



3230212**MSE 24-hr 4 100-Year Rainfall=6.66"**

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Summary for Subcatchment P10: P10

Runoff = 51.91 cfs @ 12.13 hrs, Volume= 2.904 af, Depth= 4.93"
Routed to Pond 7P : Pond 7

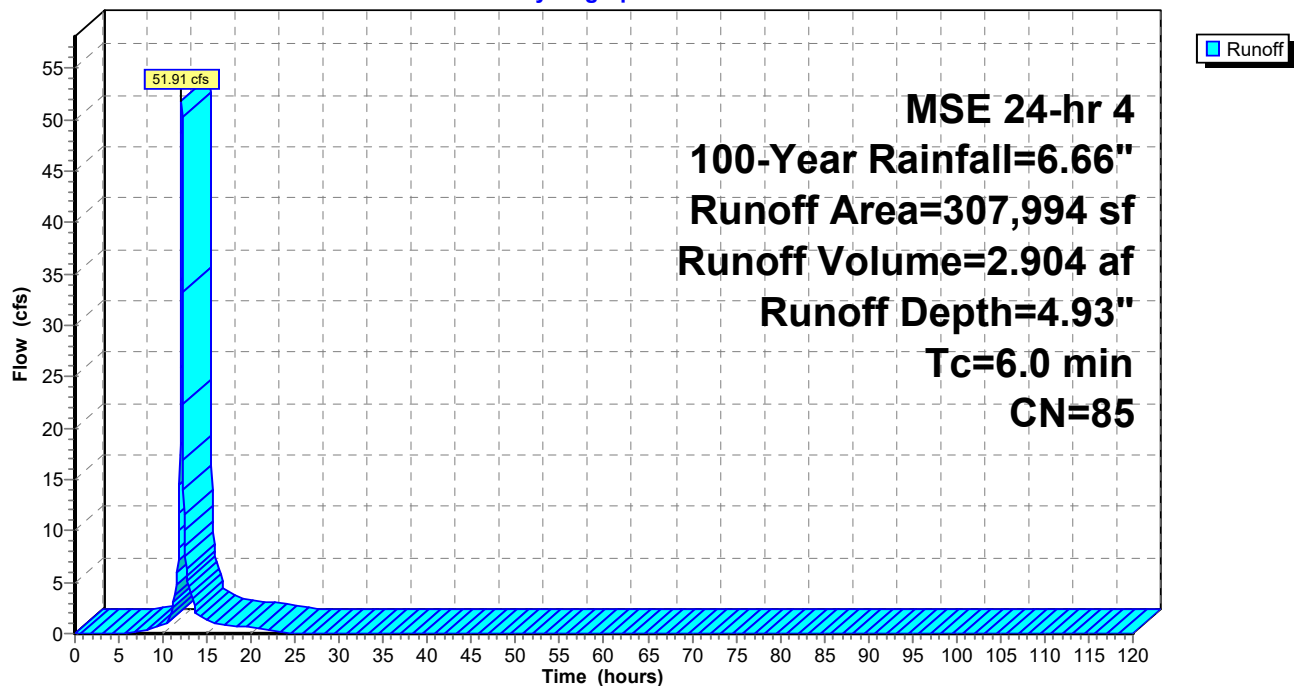
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
224,113	80	>75% Grass cover, Good, HSG D
15,978	98	Paved parking, HSG D
67,903	98	Water Surface, HSG D
307,994	85	Weighted Average
224,113		72.77% Pervious Area
83,881		27.23% Impervious Area

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

Subcatchment P10: P10

Hydrograph



3230212**MSE 24-hr 4 100-Year Rainfall=6.66"**

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Summary for Subcatchment P11: P11

Runoff = 33.84 cfs @ 12.13 hrs, Volume= 1.854 af, Depth= 4.49"
Routed to Pond 8P : Pond 8

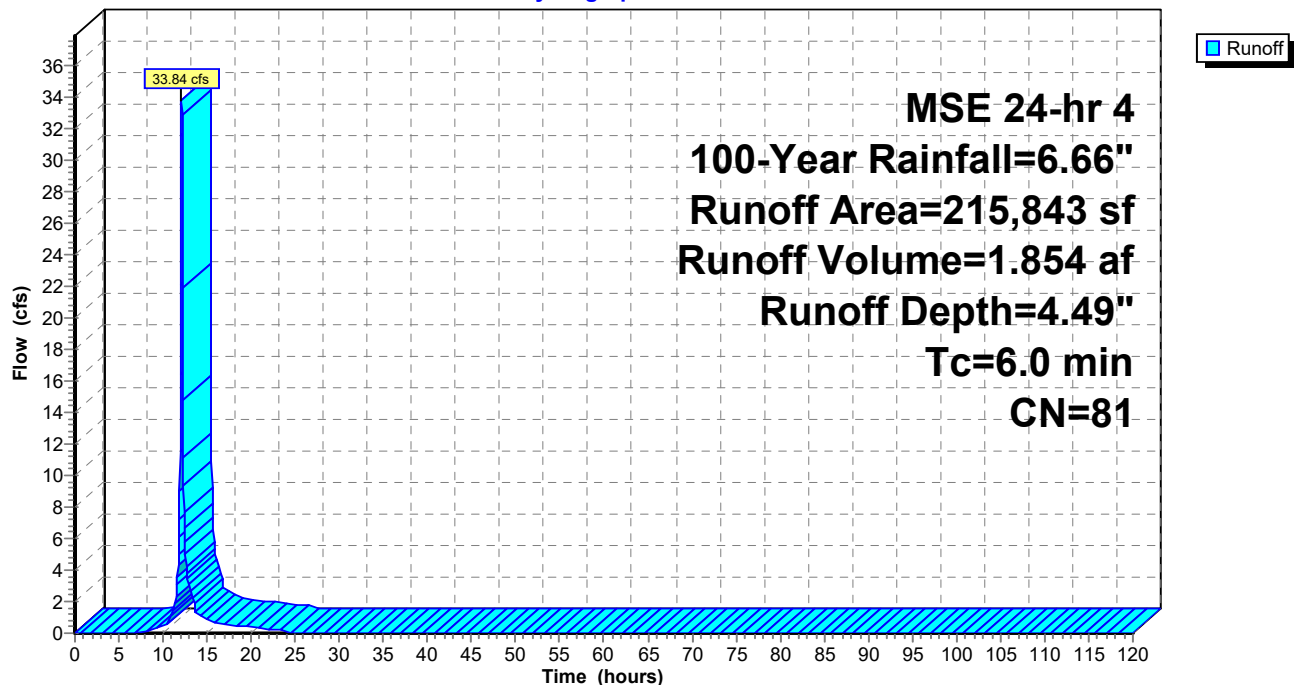
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
204,687	80	>75% Grass cover, Good, HSG D
11,156	98	Water Surface, HSG D
215,843	81	Weighted Average
204,687		94.83% Pervious Area
11,156		5.17% Impervious Area

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

Subcatchment P11: P11

Hydrograph



3230212**MSE 24-hr 4 100-Year Rainfall=6.66"**

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Summary for Subcatchment P2: P2

Runoff = 26.79 cfs @ 12.13 hrs, Volume= 1.617 af, Depth= 5.95"
 Routed to Pond 2P : Pond 2 (Infiltration Basin)

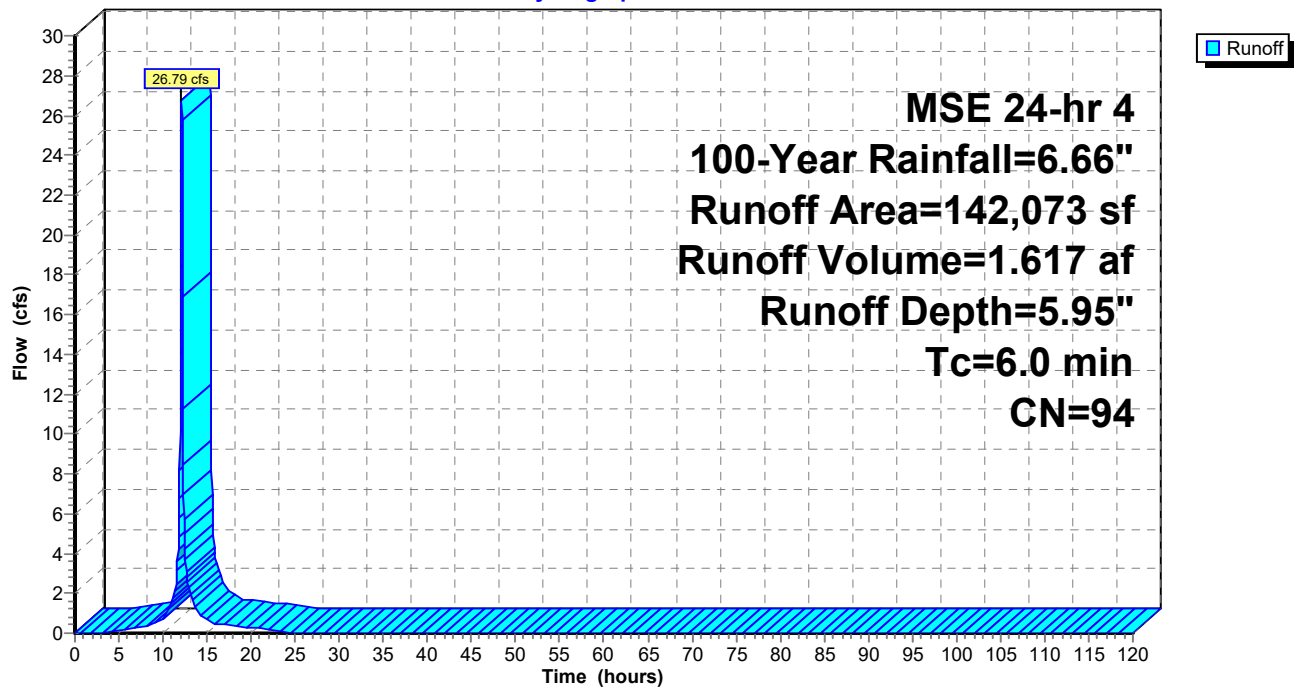
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
33,361	80	>75% Grass cover, Good, HSG D
108,712	98	Roofs, HSG C
142,073	94	Weighted Average
33,361		23.48% Pervious Area
108,712		76.52% Impervious Area

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

Subcatchment P2: P2

Hydrograph



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Summary for Subcatchment P3: P3

Runoff = 26.00 cfs @ 12.13 hrs, Volume= 1.569 af, Depth= 5.95"
Routed to Pond 3P : Pond 3 (Infiltration Basin)

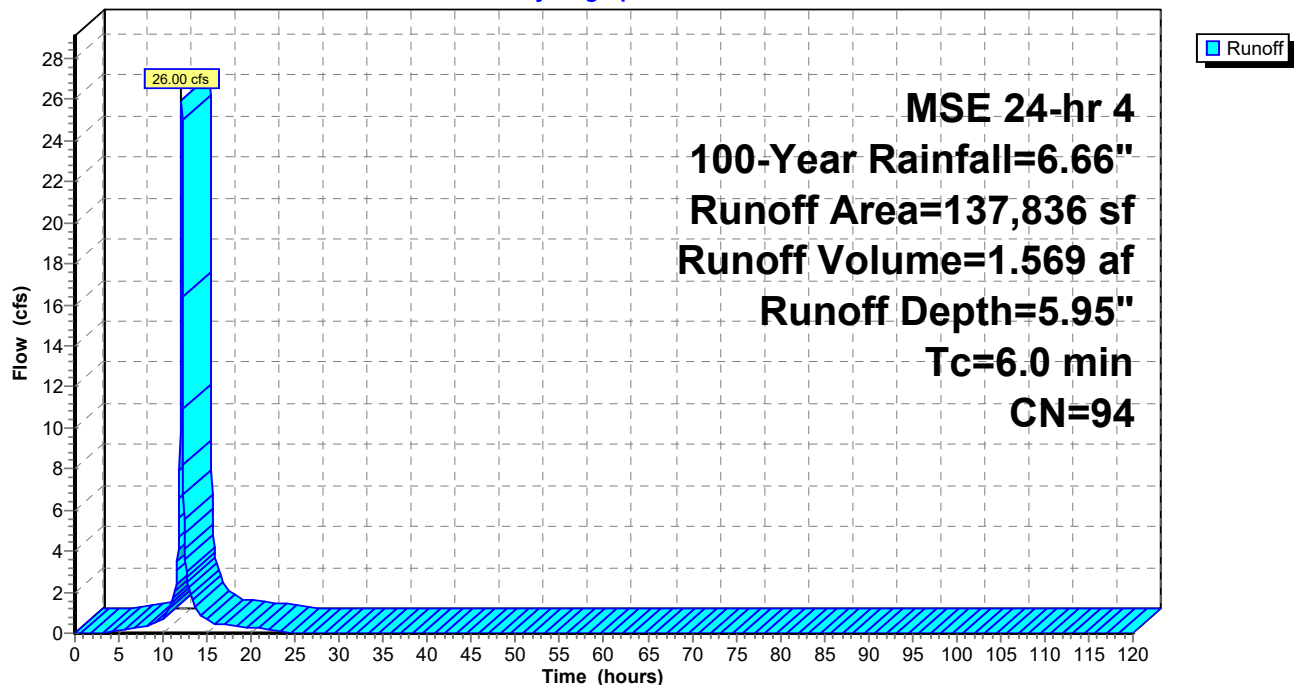
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
30,961	80	>75% Grass cover, Good, HSG D
106,875	98	Roofs, HSG D
137,836	94	Weighted Average
30,961		22.46% Pervious Area
106,875		77.54% Impervious Area

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

Subcatchment P3: P3

Hydrograph



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Summary for Subcatchment P4: P4

Runoff = 50.53 cfs @ 12.13 hrs, Volume= 3.087 af, Depth= 6.07"
Routed to Pond 4P : Pond 4

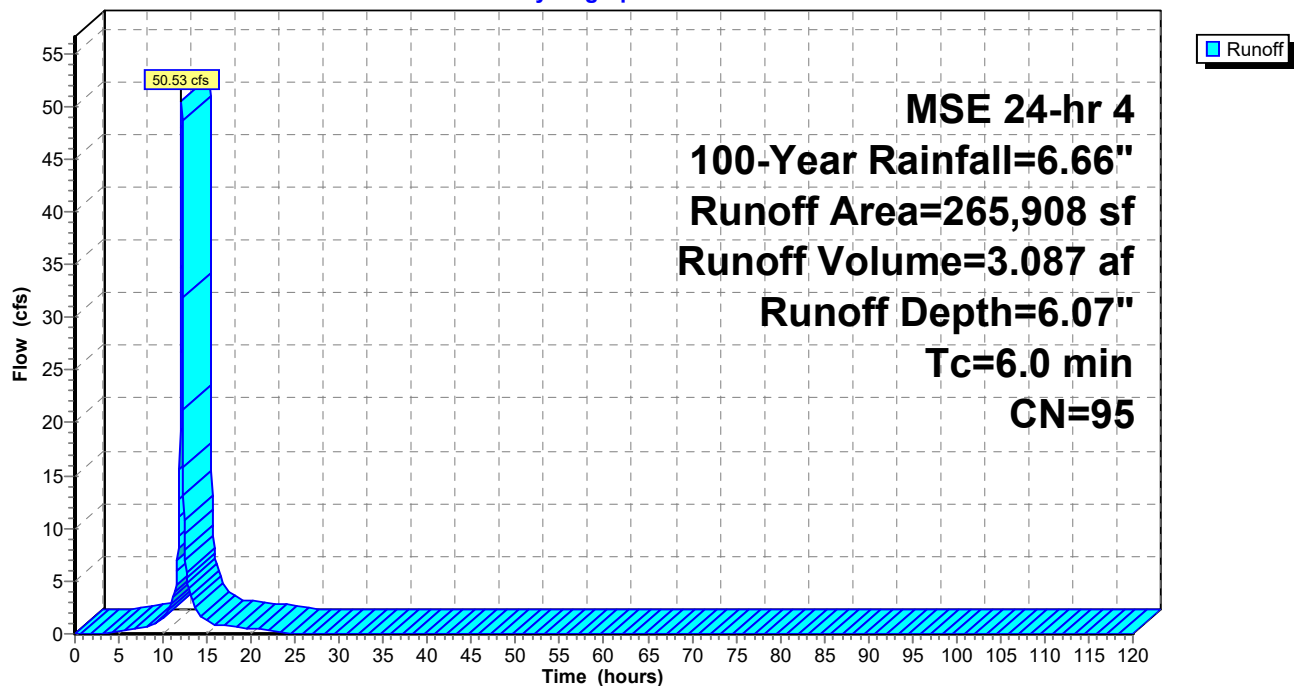
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
45,325	80	>75% Grass cover, Good, HSG D
108,712	98	Roofs, HSG D
97,063	98	Paved parking, HSG D
14,808	98	Water Surface, HSG D
265,908	95	Weighted Average
45,325		17.05% Pervious Area
220,583		82.95% Impervious Area

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

Subcatchment P4: P4

Hydrograph



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Summary for Subcatchment P5: P5

Runoff = 126.73 cfs @ 12.13 hrs, Volume= 7.741 af, Depth= 6.07"
Routed to Pond 5P : Pond 5

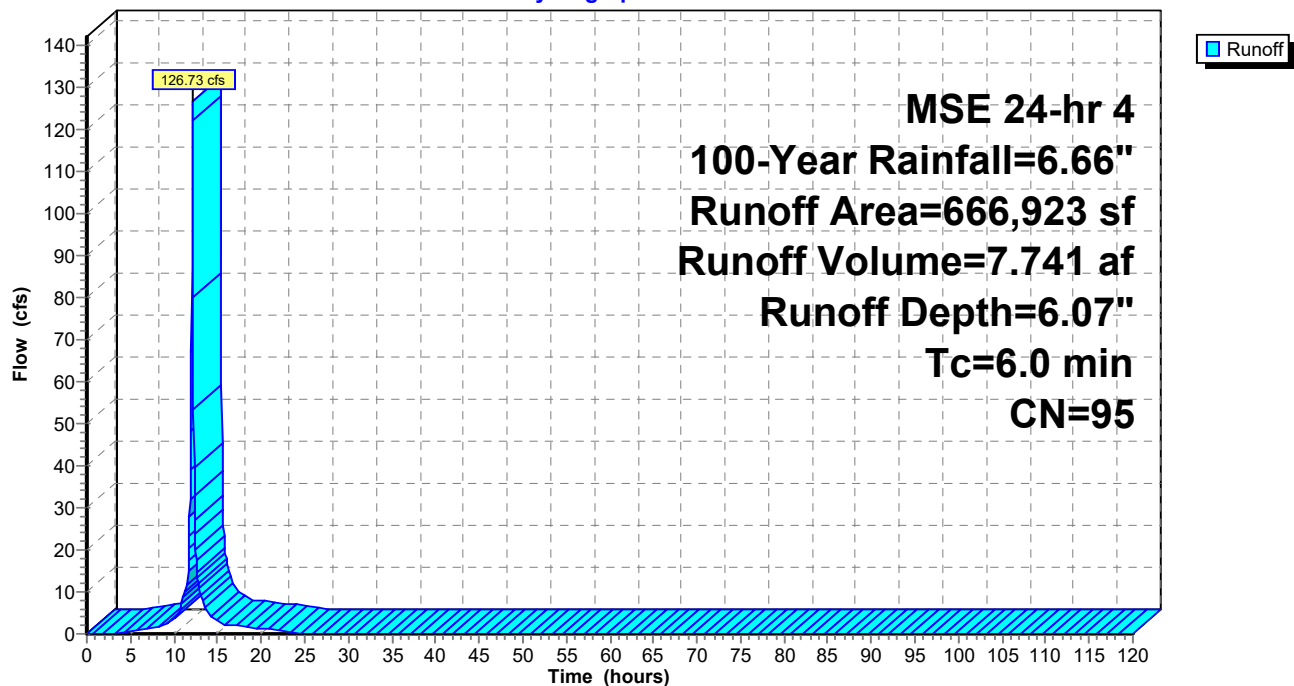
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
107,376	80	>75% Grass cover, Good, HSG D
122,680	98	Roofs, HSG D
325,512	98	Paved parking, HSG D
111,355	98	Water Surface, HSG D
666,923	95	Weighted Average
107,376		16.10% Pervious Area
559,547		83.90% Impervious Area

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

Subcatchment P5: P5

Hydrograph



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Summary for Subcatchment P6: P6

Runoff = 78.28 cfs @ 12.13 hrs, Volume= 4.673 af, Depth= 5.83"
 Routed to Pond 6P : Pond 6

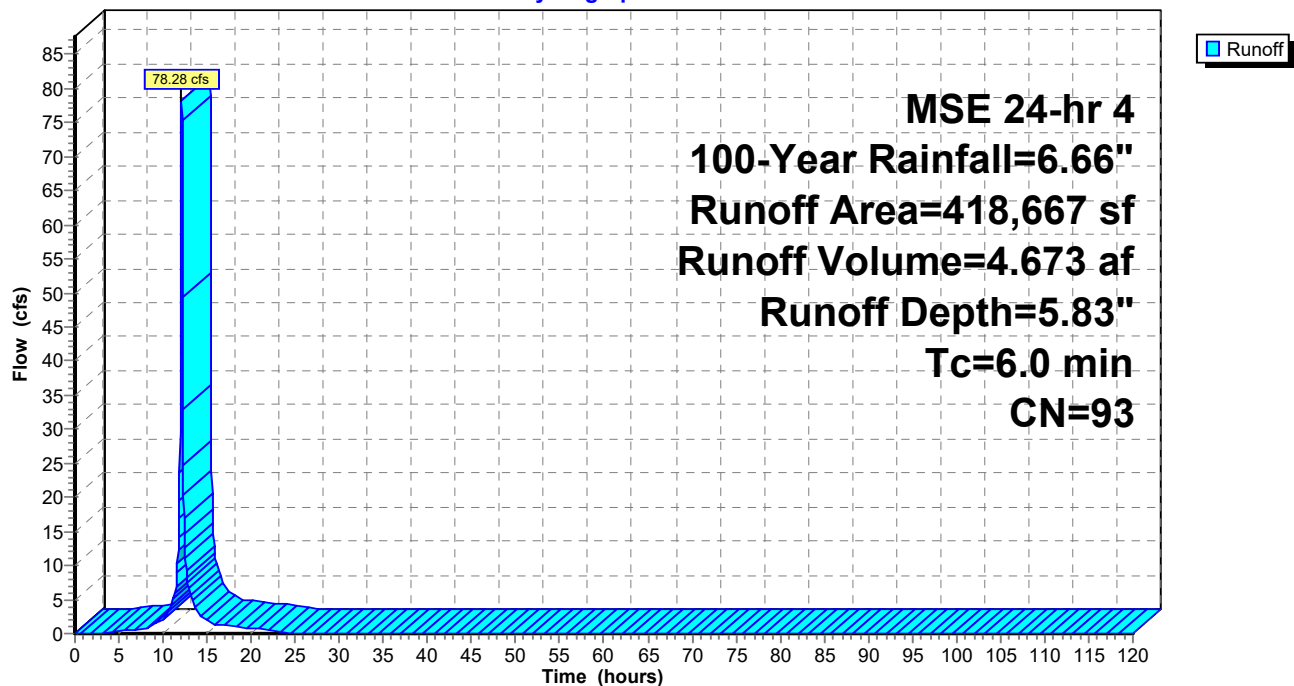
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
112,758	80	>75% Grass cover, Good, HSG D
269,805	98	Paved parking, HSG D
36,104	98	Water Surface, HSG D
418,667	93	Weighted Average
112,758		26.93% Pervious Area
305,909		73.07% Impervious Area

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

Subcatchment P6: P6

Hydrograph



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Summary for Subcatchment P7: P7

Runoff = 14.80 cfs @ 12.13 hrs, Volume= 0.807 af, Depth= 4.38"

Routed to Reach P-N : Proposed North

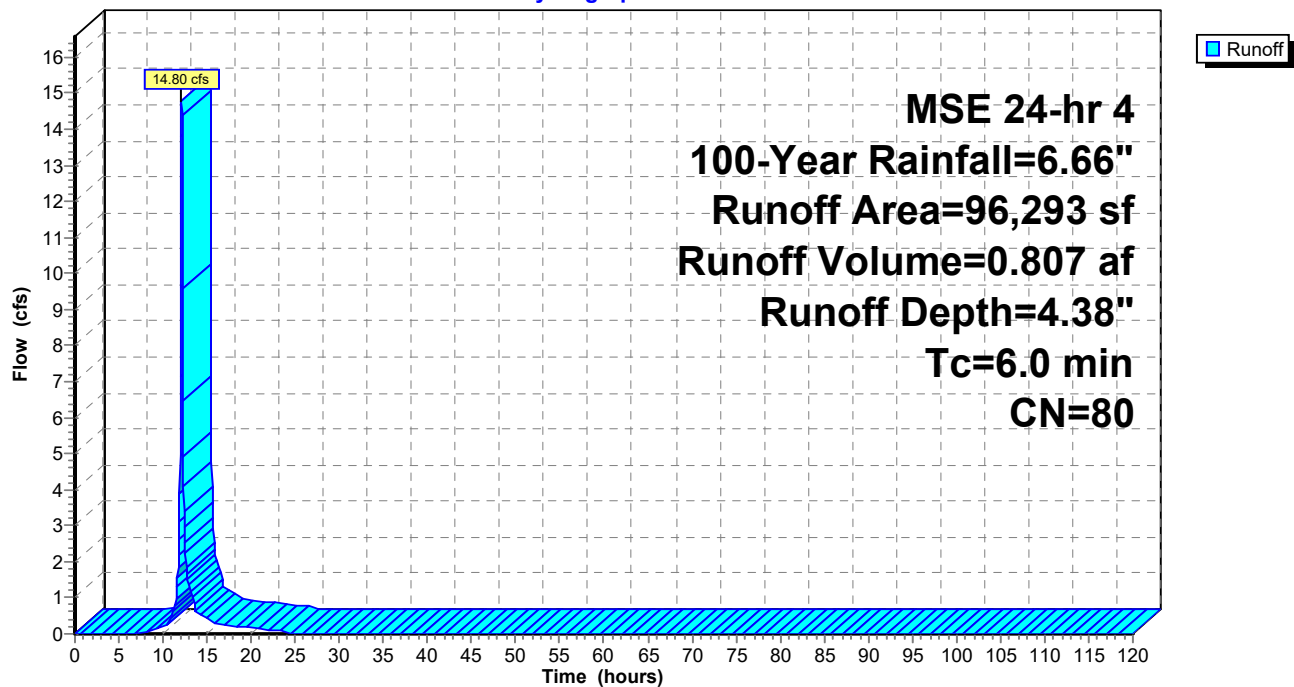
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
96,293	80	>75% Grass cover, Good, HSG D
96,293		100.00% Pervious Area

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

Subcatchment P7: P7

Hydrograph



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Summary for Subcatchment P7B: P7-Bypass

Runoff = 14.19 cfs @ 12.13 hrs, Volume= 0.768 af, Depth= 4.17"
Routed to Reach P-N : Proposed North

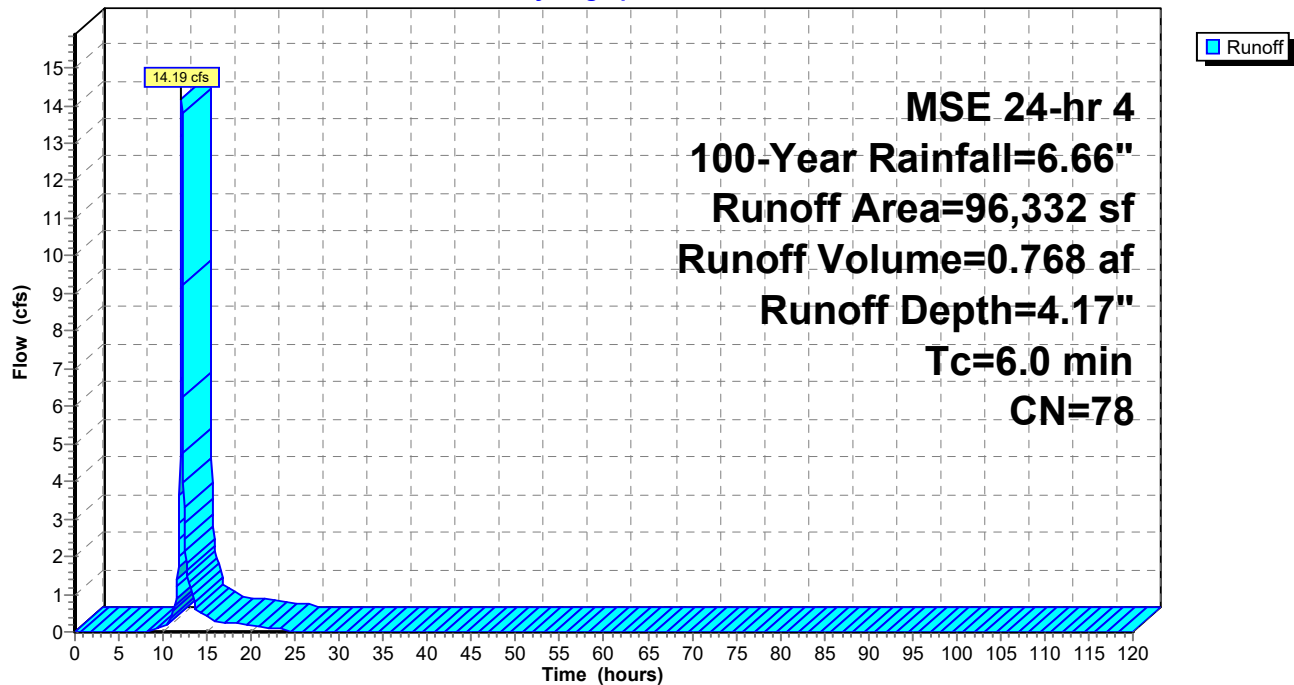
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

	Area (sf)	CN	Description
*	96,332	78	HSG C (pre-development)
	96,332		100.00% Pervious Area

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

Subcatchment P7B: P7-Bypass

Hydrograph



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Summary for Subcatchment P8: P8

Runoff = 31.08 cfs @ 12.13 hrs, Volume= 1.664 af, Depth= 3.75"

Routed to Reach P-S : Proposed South

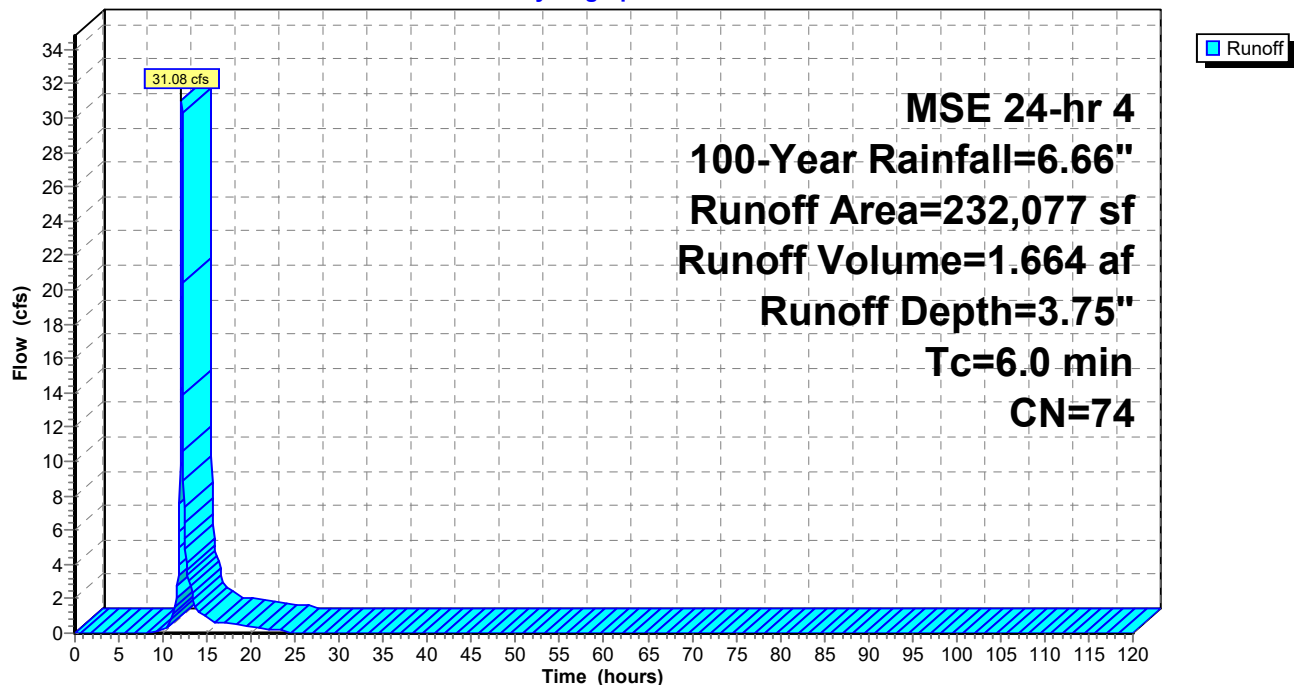
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

	Area (sf)	CN	Description
*	230,643	74	Septic area is HSG B, so goes to C. All other greenspace areas deep till, so HSG = C (74)
	1,434	98	Paved parking, HSG D
	232,077	74	Weighted Average
	230,643		99.38% Pervious Area
	1,434		0.62% Impervious Area

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

Subcatchment P8: P8

Hydrograph



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Summary for Subcatchment P8B: P8-Bypass

Runoff = 2.91 cfs @ 12.13 hrs, Volume= 0.155 af, Depth= 3.64"

Routed to Reach P-S : Proposed South

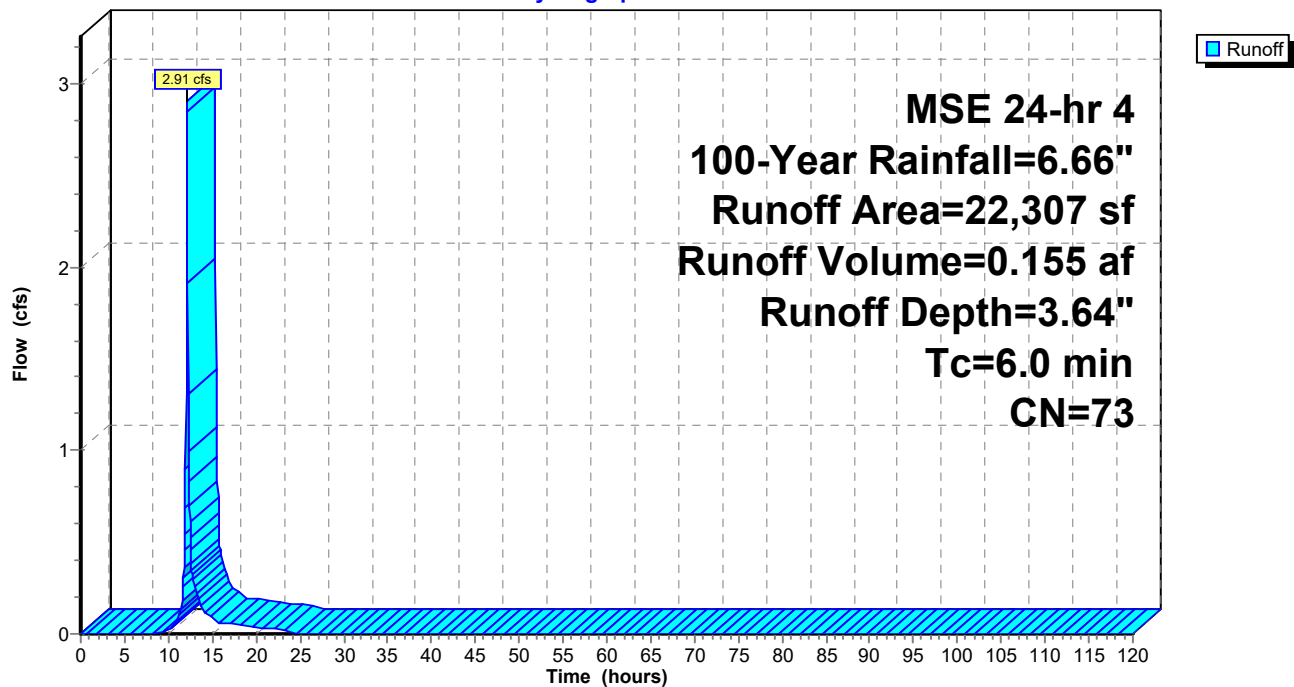
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

	Area (sf)	CN	Description
*	22,307	73	HSG B/C (pre-development)
	22,307		100.00% Pervious Area

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

Subcatchment P8B: P8-Bypass

Hydrograph



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Summary for Subcatchment P9: P9

Runoff = 10.98 cfs @ 12.13 hrs, Volume= 0.627 af, Depth= 5.26"

Routed to Reach P-S : Proposed South

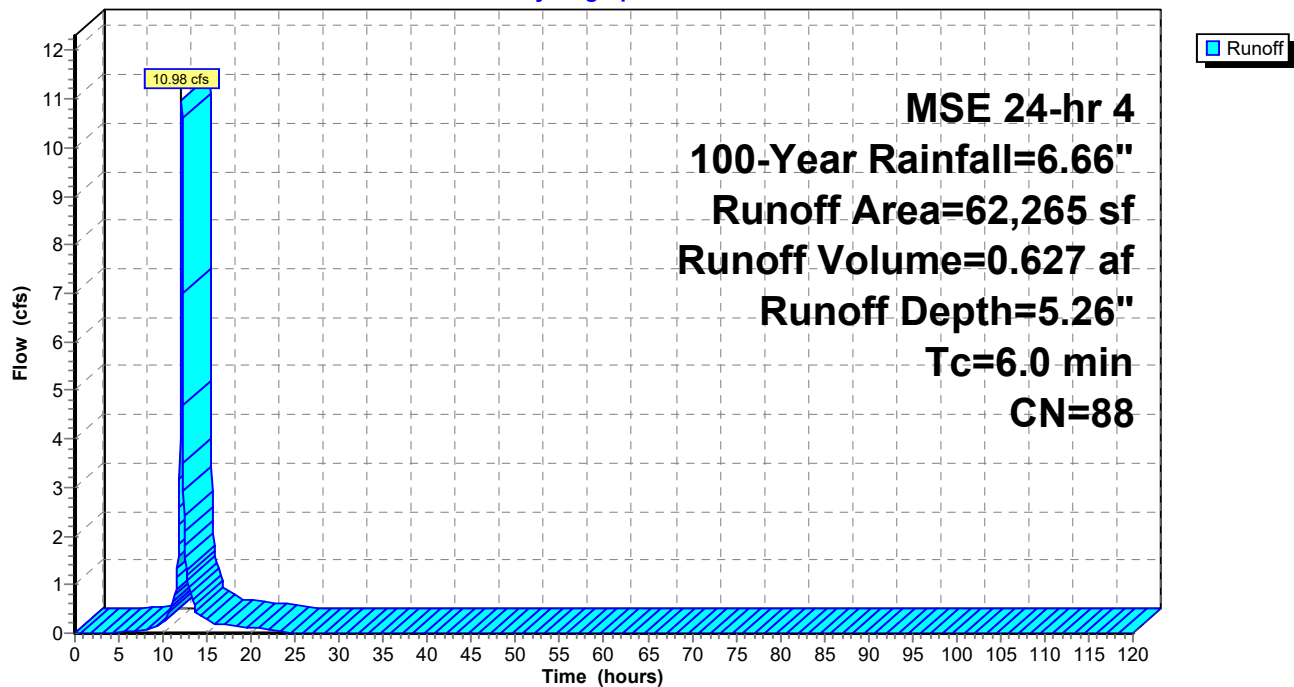
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 100-Year Rainfall=6.66"

Area (sf)	CN	Description
34,498	80	>75% Grass cover, Good, HSG D
27,767	98	Paved parking, HSG D
62,265	88	Weighted Average
34,498		55.41% Pervious Area
27,767		44.59% Impervious Area

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

Subcatchment P9: P9

Hydrograph



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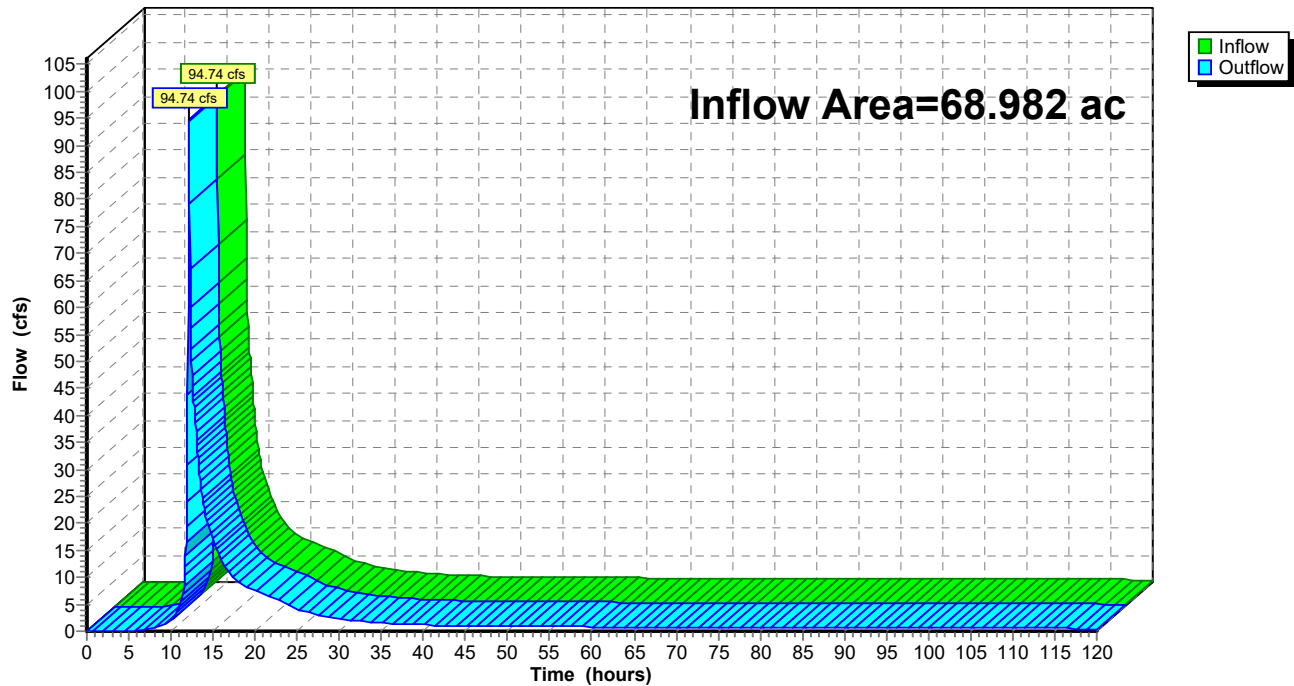
Summary for Reach P: Total After Detention

Inflow Area = 68.982 ac, 54.96% Impervious, Inflow Depth > 4.15" for 100-Year event
Inflow = 94.74 cfs @ 12.14 hrs, Volume= 23.855 af
Outflow = 94.74 cfs @ 12.14 hrs, Volume= 23.855 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P: Total After Detention

Hydrograph



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MSE 24-hr 4 100-Year Rainfall=6.66"

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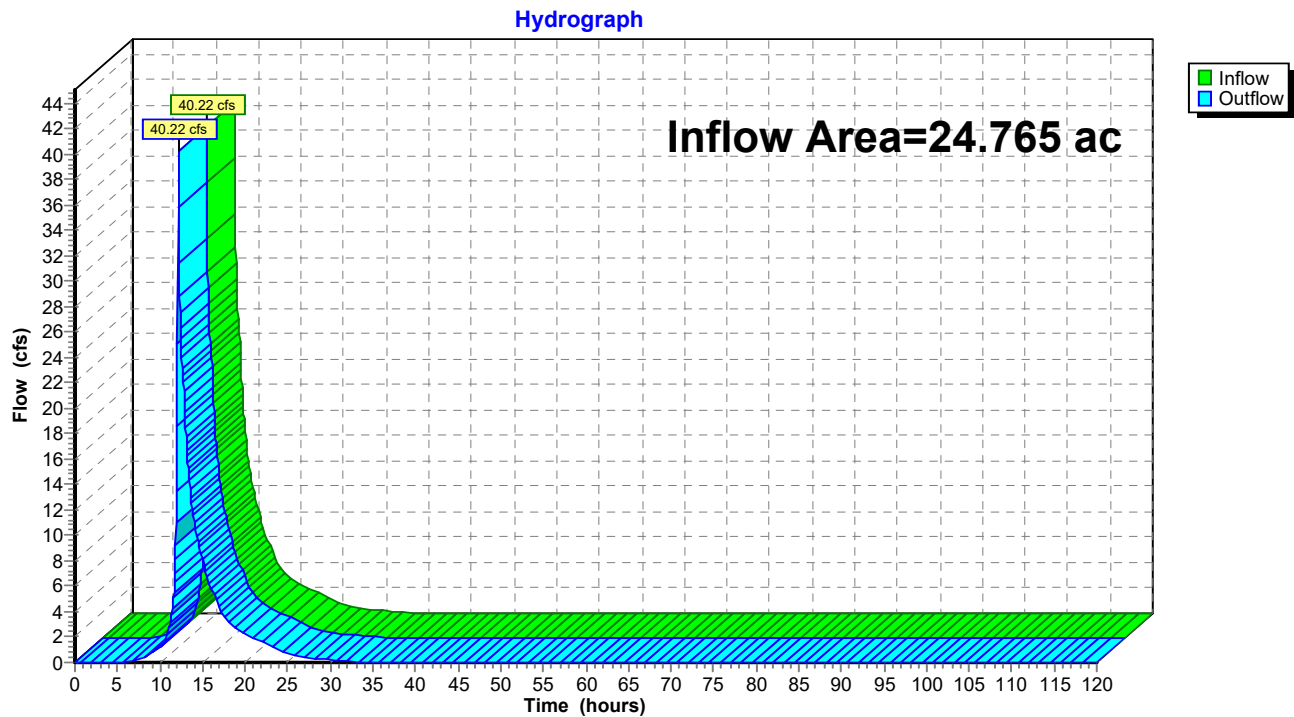
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Summary for Reach P-N: Proposed North

Inflow Area = 24.765 ac, 61.34% Impervious, Inflow Depth = 3.61" for 100-Year event
Inflow = 40.22 cfs @ 12.15 hrs, Volume= 7.446 af
Outflow = 40.22 cfs @ 12.15 hrs, Volume= 7.446 af, Atten= 0%, Lag= 0.0 min
Routed to Reach P : Total After Detention

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P-N: Proposed North



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MSE 24-hr 4 100-Year Rainfall=6.66"

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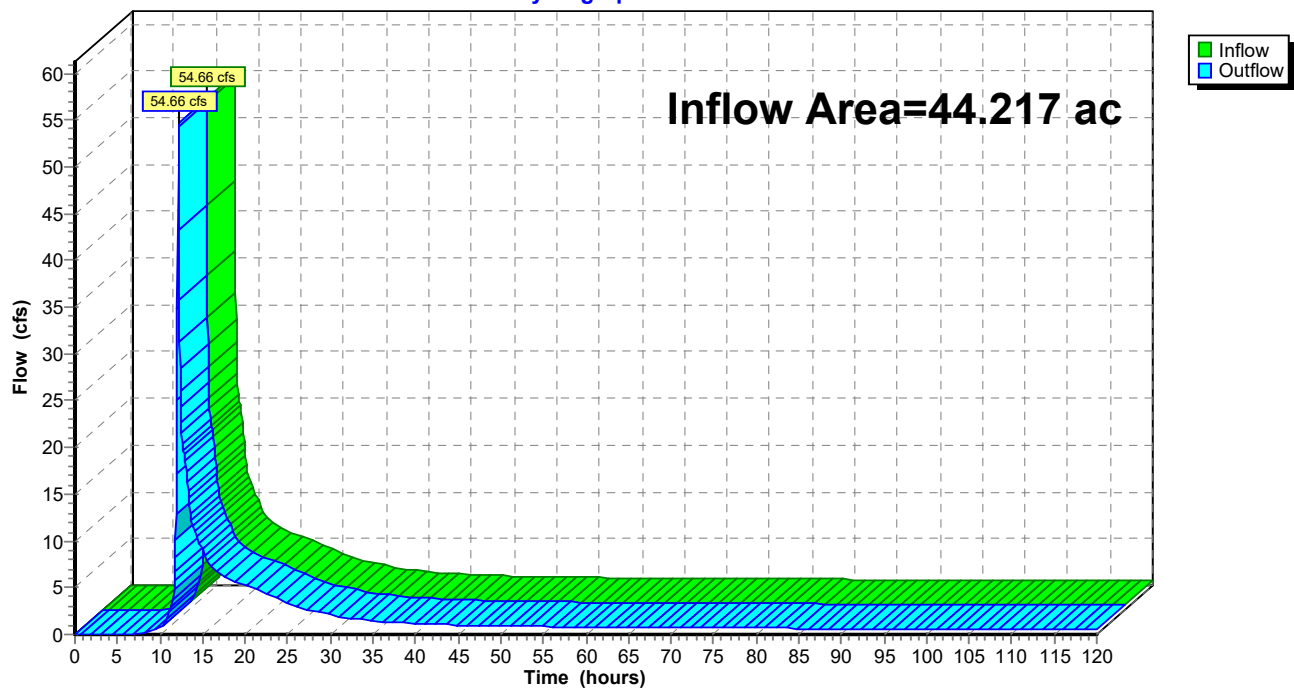
Summary for Reach P-S: Proposed South

Inflow Area = 44.217 ac, 51.38% Impervious, Inflow Depth > 4.45" for 100-Year event
Inflow = 54.66 cfs @ 12.14 hrs, Volume= 16.409 af
Outflow = 54.66 cfs @ 12.14 hrs, Volume= 16.409 af, Atten= 0%, Lag= 0.0 min
Routed to Reach P : Total After Detention

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P-S: Proposed South

Hydrograph



Summary for Pond 1P: Pond 1 (Infiltration Basin)

Inflow Area = 7.813 ac, 66.29% Impervious, Inflow Depth = 5.72" for 100-Year event
 Inflow = 63.02 cfs @ 12.13 hrs, Volume= 3.724 af
 Outflow = 1.52 cfs @ 15.09 hrs, Volume= 3.724 af, Atten= 98%, Lag= 177.5 min
 Discarded = 0.71 cfs @ 15.09 hrs, Volume= 2.829 af
 Primary = 0.81 cfs @ 15.09 hrs, Volume= 0.895 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 911.98' @ 15.09 hrs Surf.Area= 61,090 sf Storage= 112,697 cf

Plug-Flow detention time= 1,001.3 min calculated for 3.724 af (100% of inflow)
 Center-of-Mass det. time= 1,000.9 min (1,770.3 - 769.3)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	316,468 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	52,675	0	0
915.00	73,912	316,468	316,468

Device	Routing	Invert	Outlet Devices
#1	Primary	911.00'	18.0" Round Culvert L= 500.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 911.00' / 910.00' S= 0.0020 ' S= 0.0020 ' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf
#2	Device 1	911.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	910.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.71 cfs @ 15.09 hrs HW=911.98' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.71 cfs)

Primary OutFlow Max=0.81 cfs @ 15.09 hrs HW=911.98' (Free Discharge)
 ↑ **1=Culvert** (Passes 0.81 cfs of 2.38 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.81 cfs @ 4.12 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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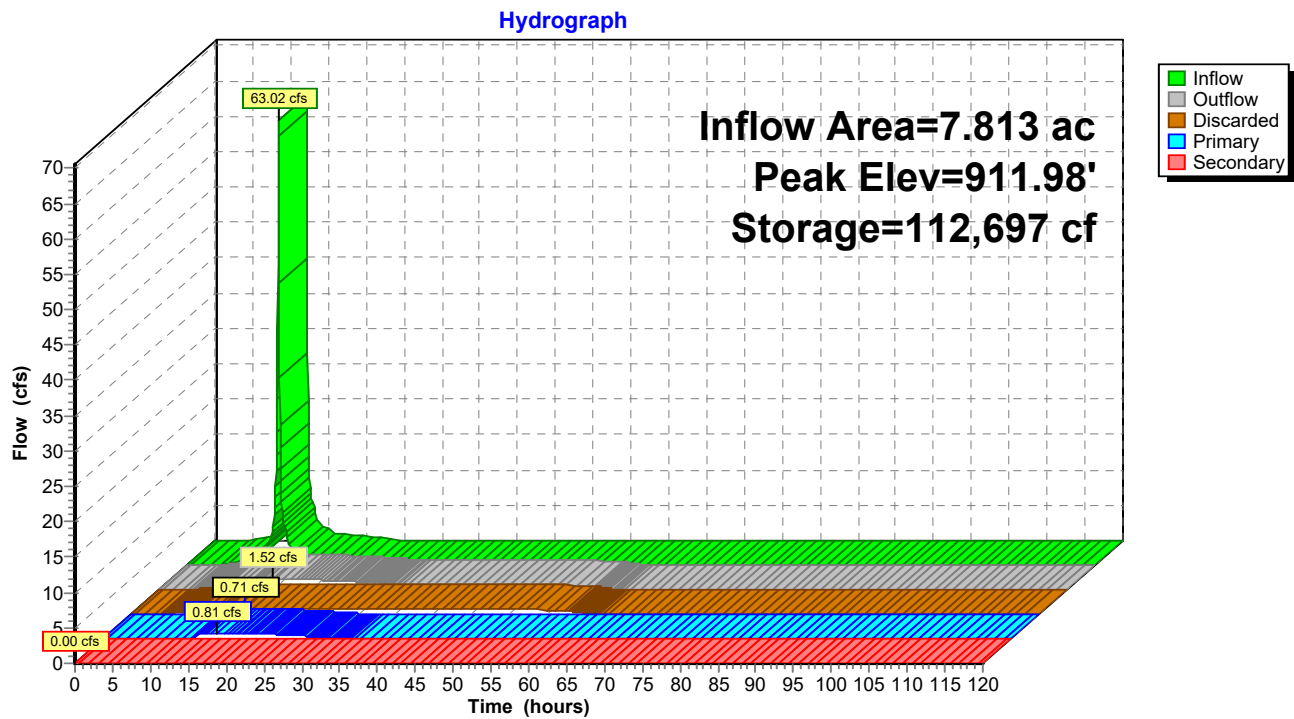
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MSE 24-hr 4 100-Year Rainfall=6.66"

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Pond 1P: Pond 1 (Infiltration Basin)



Summary for Pond 2P: Pond 2 (Infiltration Basin)

Inflow Area = 3.262 ac, 76.52% Impervious, Inflow Depth = 5.95" for 100-Year event
 Inflow = 26.79 cfs @ 12.13 hrs, Volume= 1.617 af
 Outflow = 5.49 cfs @ 12.42 hrs, Volume= 1.617 af, Atten= 80%, Lag= 17.6 min
 Discarded = 0.18 cfs @ 12.42 hrs, Volume= 0.644 af
 Primary = 5.30 cfs @ 12.42 hrs, Volume= 0.973 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 913.18' @ 12.42 hrs Surf.Area= 15,928 sf Storage= 37,729 cf

Plug-Flow detention time= 581.3 min calculated for 1.617 af (100% of inflow)
 Center-of-Mass det. time= 581.0 min (1,343.1 - 762.1)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	70,950 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	7,800	0	0
915.00	20,580	70,950	70,950

Device	Routing	Invert	Outlet Devices
#1	Primary	911.75'	18.0" Round Culvert L= 100.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 911.75' / 910.00' S= 0.0175 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	911.75'	15.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.50'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	910.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.18 cfs @ 12.42 hrs HW=913.18' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.18 cfs)

Primary OutFlow Max=5.30 cfs @ 12.42 hrs HW=913.18' (Free Discharge)
 ↑ **1=Culvert** (Passes 5.30 cfs of 8.83 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 5.30 cfs @ 4.32 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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MSE 24-hr 4 100-Year Rainfall=6.66"

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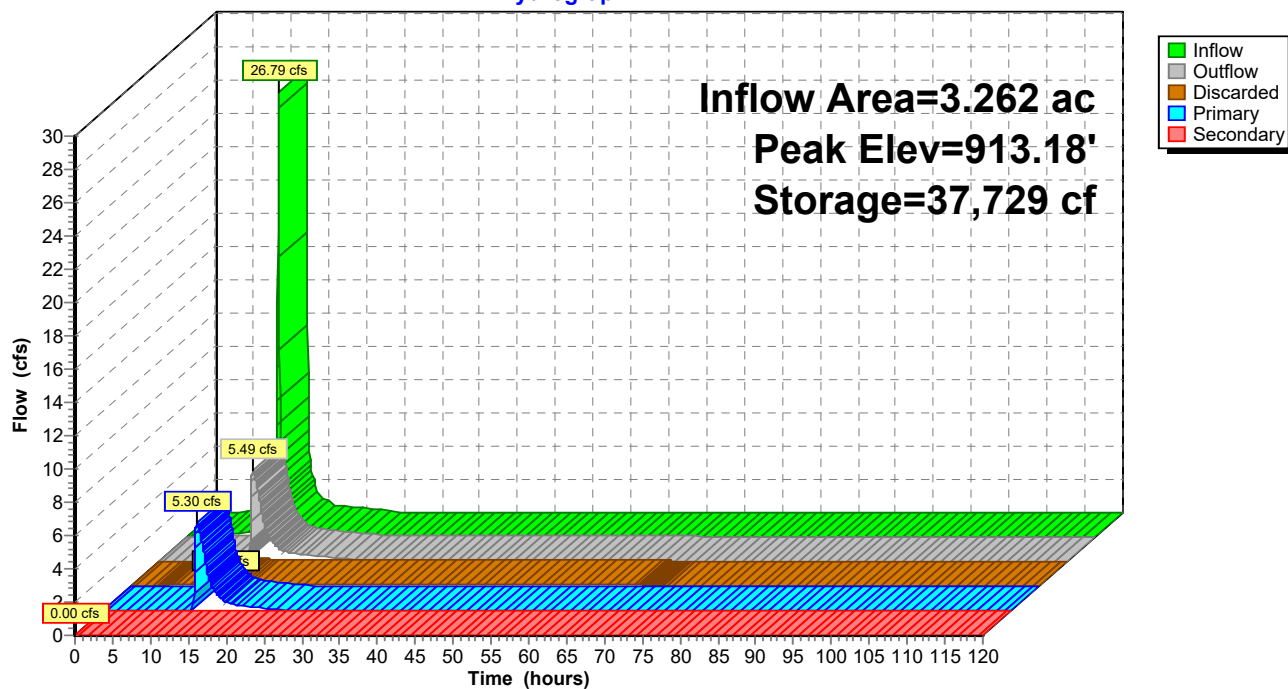
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Pond 2P: Pond 2 (Infiltration Basin)

Hydrograph



Summary for Pond 3P: Pond 3 (Infiltration Basin)

Inflow Area = 3.164 ac, 77.54% Impervious, Inflow Depth = 5.95" for 100-Year event
 Inflow = 26.00 cfs @ 12.13 hrs, Volume= 1.569 af
 Outflow = 3.74 cfs @ 12.54 hrs, Volume= 1.569 af, Atten= 86%, Lag= 24.6 min
 Discarded = 0.21 cfs @ 12.54 hrs, Volume= 0.652 af
 Primary = 3.53 cfs @ 12.54 hrs, Volume= 0.917 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 915.62' @ 12.54 hrs Surf.Area= 17,924 sf Storage= 37,924 cf

Plug-Flow detention time= 494.9 min calculated for 1.569 af (100% of inflow)
 Center-of-Mass det. time= 494.6 min (1,256.7 - 762.1)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	87,998 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	10,993	0	0
918.00	24,206	87,998	87,998

Device	Routing	Invert	Outlet Devices
#1	Primary	914.25'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 914.25' / 913.00' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	914.25'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	916.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	917.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	913.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.21 cfs @ 12.54 hrs HW=915.62' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.21 cfs)

Primary OutFlow Max=3.53 cfs @ 12.54 hrs HW=915.62' (Free Discharge)
 ↑ **1=Culvert** (Passes 3.53 cfs of 6.43 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 3.53 cfs @ 4.50 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=913.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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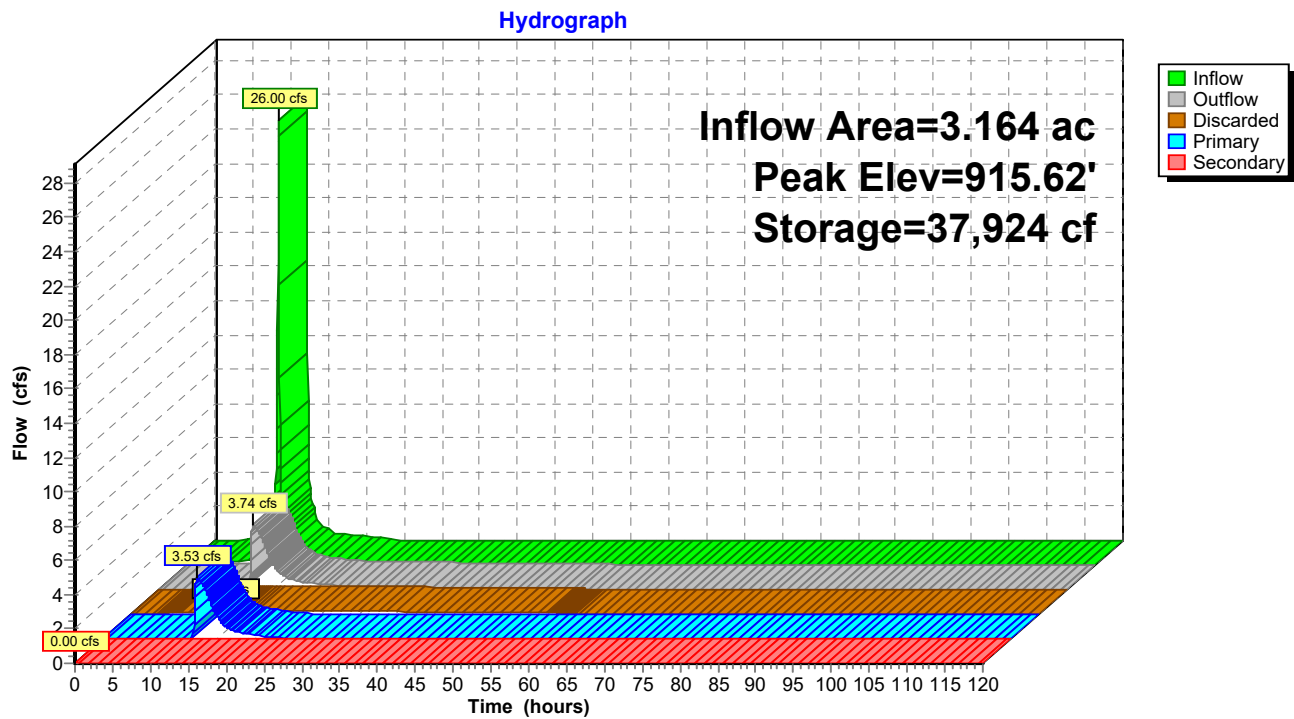
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Pond 3P: Pond 3 (Infiltration Basin)



Summary for Pond 4P: Pond 4

Inflow Area = 6.104 ac, 82.95% Impervious, Inflow Depth = 6.07" for 100-Year event
 Inflow = 50.53 cfs @ 12.13 hrs, Volume= 3.087 af
 Outflow = 10.27 cfs @ 12.42 hrs, Volume= 3.086 af, Atten= 80%, Lag= 17.6 min
 Primary = 10.27 cfs @ 12.42 hrs, Volume= 3.086 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 916.05' @ 12.42 hrs Surf.Area= 24,036 sf Storage= 59,238 cf

Plug-Flow detention time= 139.2 min calculated for 3.086 af (100% of inflow)
 Center-of-Mass det. time= 138.9 min (897.0 - 758.1)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	111,868 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	14,812	0	0
918.00	29,935	111,868	111,868

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 913.00' / 912.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.50'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	917.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=10.27 cfs @ 12.42 hrs HW=916.05' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 10.27 cfs @ 5.81 fps)
 ↑ **2=Orifice/Grate** (Passes < 6.04 cfs potential flow)
 ↑ **3=Sharp-Crested Rectangular Weir**(Passes < 7.81 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=913.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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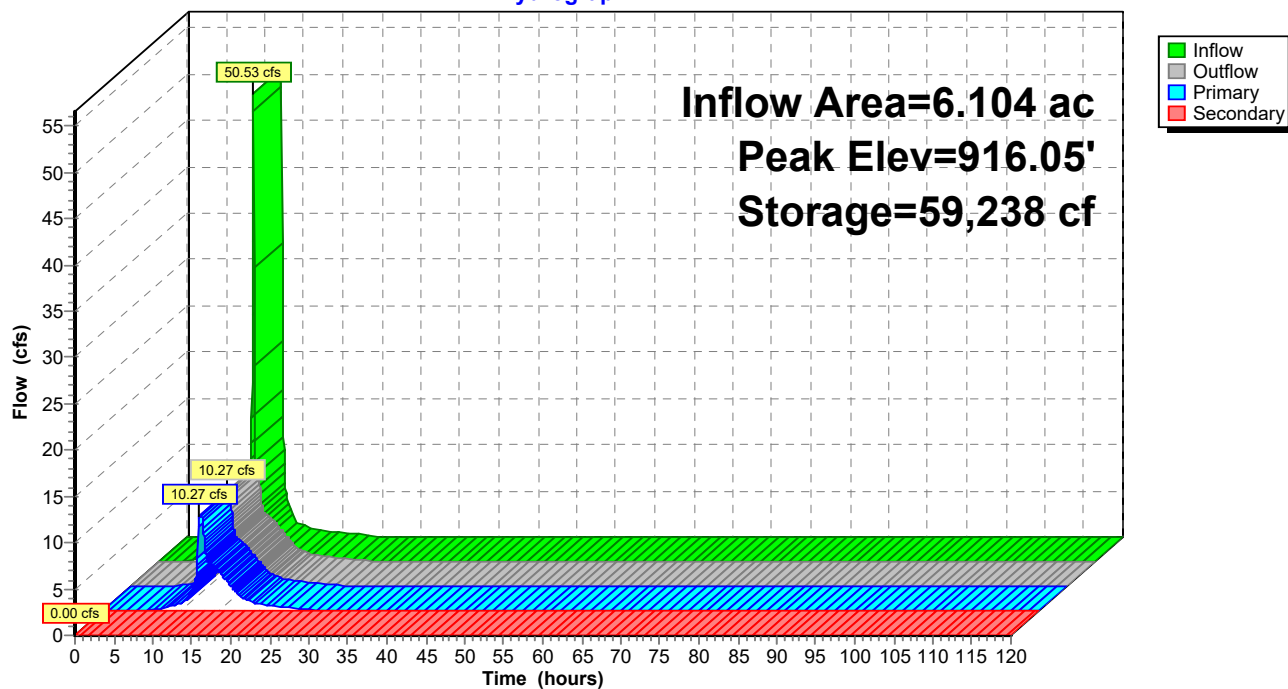
MSE 24-hr 4 100-Year Rainfall=6.66"

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Pond 4P: Pond 4

Hydrograph



Summary for Pond 5P: Pond 5

Inflow Area = 15.310 ac, 83.90% Impervious, Inflow Depth = 6.07" for 100-Year event
 Inflow = 126.73 cfs @ 12.13 hrs, Volume= 7.741 af
 Outflow = 3.27 cfs @ 15.05 hrs, Volume= 5.798 af, Atten= 97%, Lag= 175.7 min
 Primary = 3.27 cfs @ 15.05 hrs, Volume= 5.798 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 907.20' @ 15.05 hrs Surf.Area= 124,461 sf Storage= 259,306 cf

Plug-Flow detention time= 1,502.4 min calculated for 5.796 af (75% of inflow)
 Center-of-Mass det. time= 1,430.9 min (2,189.0 - 758.1)

Volume	Invert	Avail.Storage	Storage Description
#1	905.00'	631,265 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
905.00	111,357	0	0
910.00	141,149	631,265	631,265

Device	Routing	Invert	Outlet Devices
#1	Primary	905.00'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 905.00' / 904.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	905.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	906.10'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	908.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#5	Secondary	909.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.27 cfs @ 15.05 hrs HW=907.20' (Free Discharge)

- ↑ **1=Culvert** (Passes 3.27 cfs of 8.39 cfs potential flow)
- ↑ **2=Orifice/Grate** (Orifice Controls 0.34 cfs @ 6.93 fps)
- ↑ **3=Orifice/Grate** (Orifice Controls 2.93 cfs @ 3.73 fps)
- ↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=905.00' (Free Discharge)

- ↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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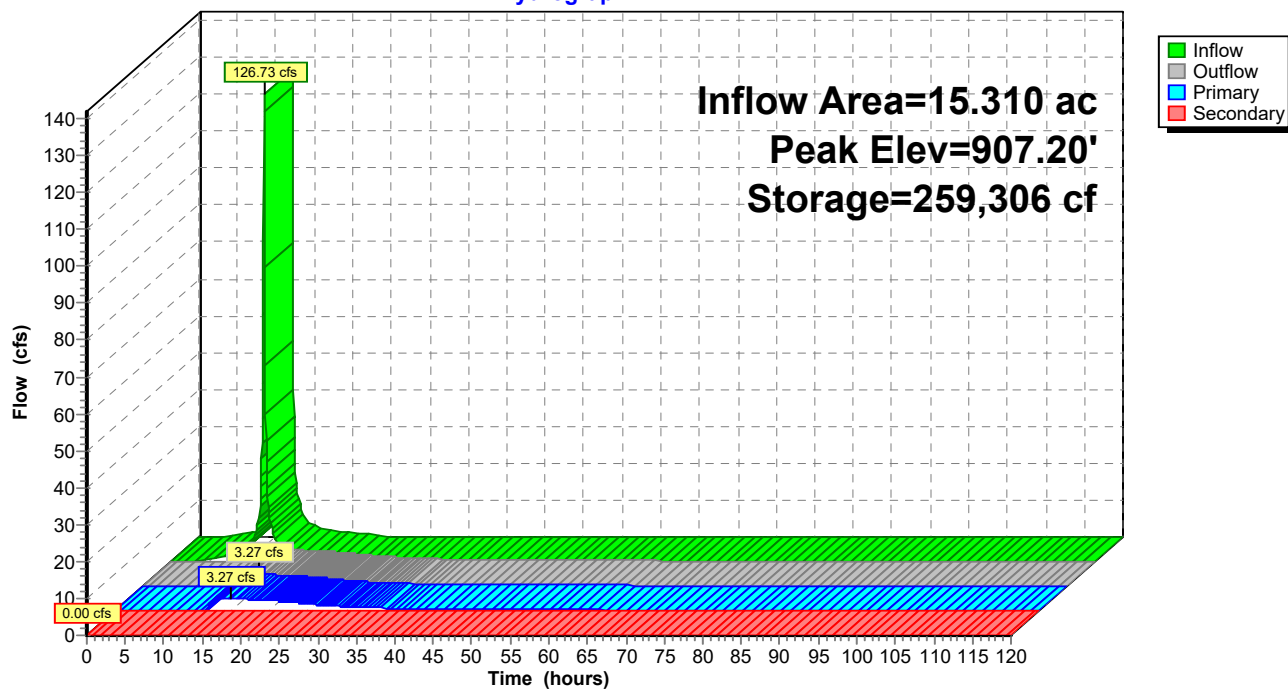
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Pond 5P: Pond 5

Hydrograph



Summary for Pond 6P: Pond 6

Inflow Area = 9.611 ac, 73.07% Impervious, Inflow Depth = 5.83" for 100-Year event
 Inflow = 78.28 cfs @ 12.13 hrs, Volume= 4.673 af
 Outflow = 4.20 cfs @ 13.47 hrs, Volume= 4.315 af, Atten= 95%, Lag= 80.3 min
 Primary = 4.20 cfs @ 13.47 hrs, Volume= 4.315 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 913.33' @ 13.47 hrs Surf.Area= 50,203 sf Storage= 143,495 cf

Plug-Flow detention time= 1,640.9 min calculated for 4.315 af (92% of inflow)
 Center-of-Mass det. time= 1,603.7 min (2,369.6 - 765.9)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	233,518 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	36,103	0	0
915.00	57,304	233,518	233,518

Device	Routing	Invert	Outlet Devices
#1	Primary	910.00'	12.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 910.00' / 909.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	910.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	912.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	913.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#5	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=4.20 cfs @ 13.47 hrs HW=913.33' (Free Discharge)

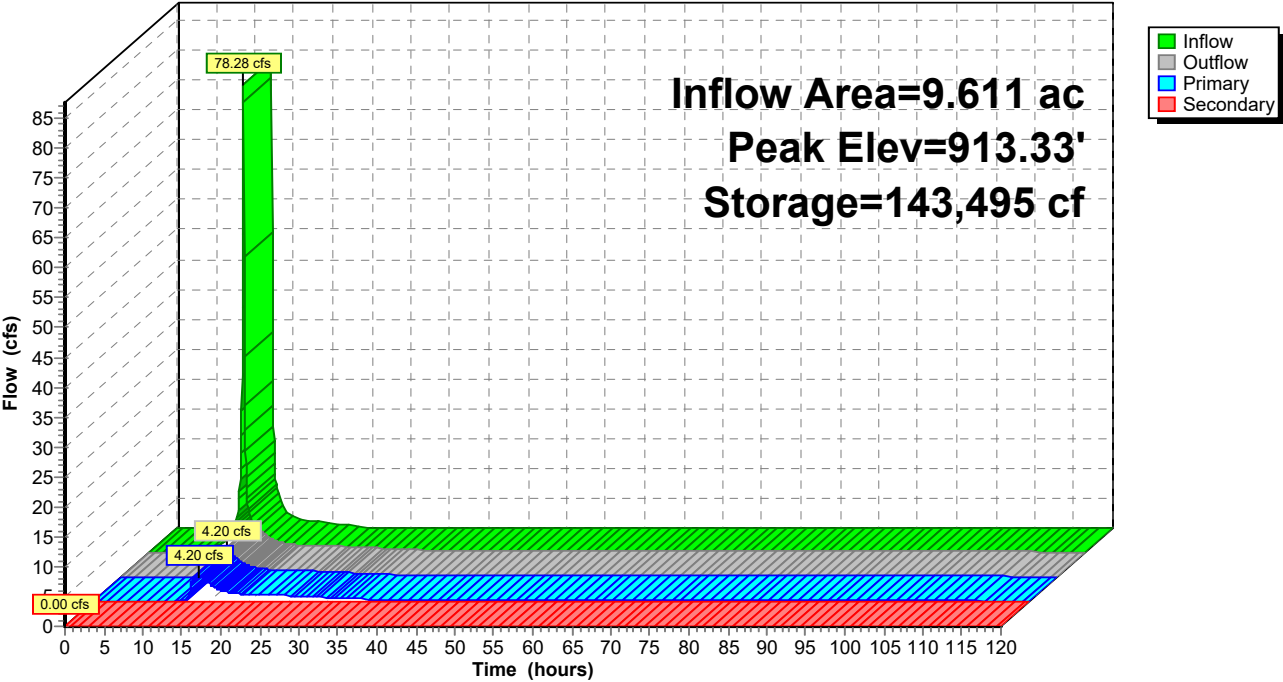
↑ **1=Culvert** (Barrel Controls 4.20 cfs @ 5.35 fps)
 ↑ **2=Orifice/Grate** (Passes < 0.42 cfs potential flow)
 ↑ **3=Orifice/Grate** (Passes < 0.98 cfs potential flow)
 ↑ **4=Sharp-Crested Rectangular Weir** (Passes < 3.60 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 6P: Pond 6

Hydrograph



Summary for Pond 7P: Pond 7

Inflow Area = 7.071 ac, 27.23% Impervious, Inflow Depth = 4.93" for 100-Year event
 Inflow = 51.91 cfs @ 12.13 hrs, Volume= 2.904 af
 Outflow = 0.28 cfs @ 23.02 hrs, Volume= 2.004 af, Atten= 99%, Lag= 653.6 min
 Primary = 0.28 cfs @ 23.02 hrs, Volume= 2.004 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 902.50' @ 23.02 hrs Surf.Area= 86,513 sf Storage= 114,712 cf

Plug-Flow detention time= 2,938.8 min calculated for 2.003 af (69% of inflow)
 Center-of-Mass det. time= 2,860.1 min (3,648.8 - 788.7)

Volume	Invert	Avail.Storage	Storage Description
#1	901.00'	257,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
901.00	66,000	0	0
902.00	80,000	73,000	73,000
903.00	93,000	86,500	159,500
904.00	103,000	98,000	257,500

Device	Routing	Invert	Outlet Devices
#1	Primary	901.00'	18.0" Round Culvert L= 20.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 901.00' / 900.50' S= 0.0250 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	901.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	902.75'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	903.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.28 cfs @ 23.02 hrs HW=902.50' (Free Discharge)

↑ **1=Culvert** (Passes 0.28 cfs of 8.77 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.28 cfs @ 5.65 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=901.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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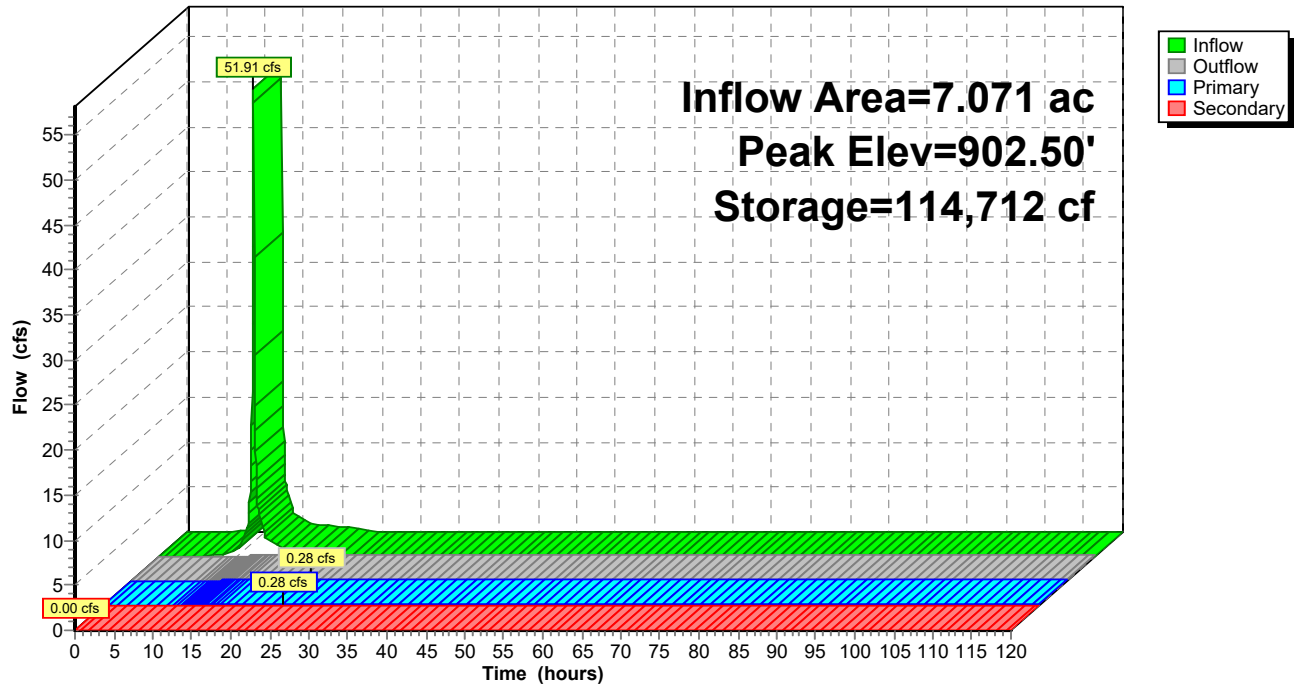
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Pond 7P: Pond 7

Hydrograph



Summary for Pond 8P: Pond 8

Inflow Area = 4.955 ac, 5.17% Impervious, Inflow Depth = 4.49" for 100-Year event
 Inflow = 33.84 cfs @ 12.13 hrs, Volume= 1.854 af
 Outflow = 12.99 cfs @ 12.28 hrs, Volume= 1.846 af, Atten= 62%, Lag= 8.7 min
 Primary = 9.87 cfs @ 12.28 hrs, Volume= 1.783 af
 Routed to Reach P-S : Proposed South
 Secondary = 3.12 cfs @ 12.28 hrs, Volume= 0.063 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 903.16' @ 12.28 hrs Surf.Area= 27,576 sf Storage= 32,721 cf

Plug-Flow detention time= 355.3 min calculated for 1.845 af (100% of inflow)
 Center-of-Mass det. time= 354.7 min (1,152.3 - 797.6)

Volume	Invert	Avail.Storage	Storage Description
#1	901.50'	59,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
901.50	11,000	0	0
902.00	17,000	7,000	7,000
903.00	26,000	21,500	28,500
904.00	36,000	31,000	59,500

Device	Routing	Invert	Outlet Devices
#1	Primary	901.50'	18.0" Round Culvert L= 20.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 901.50' / 901.00' S= 0.0250 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	901.50'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	902.25'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	903.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=9.86 cfs @ 12.28 hrs HW=903.16' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 9.86 cfs @ 6.30 fps)

↑ **2=Orifice/Grate** (Passes < 0.13 cfs potential flow)

↑ **3=Sharp-Crested Rectangular Weir**(Passes < 16.40 cfs potential flow)

Secondary OutFlow Max=3.06 cfs @ 12.28 hrs HW=903.16' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir**(Weir Controls 3.06 cfs @ 0.98 fps)

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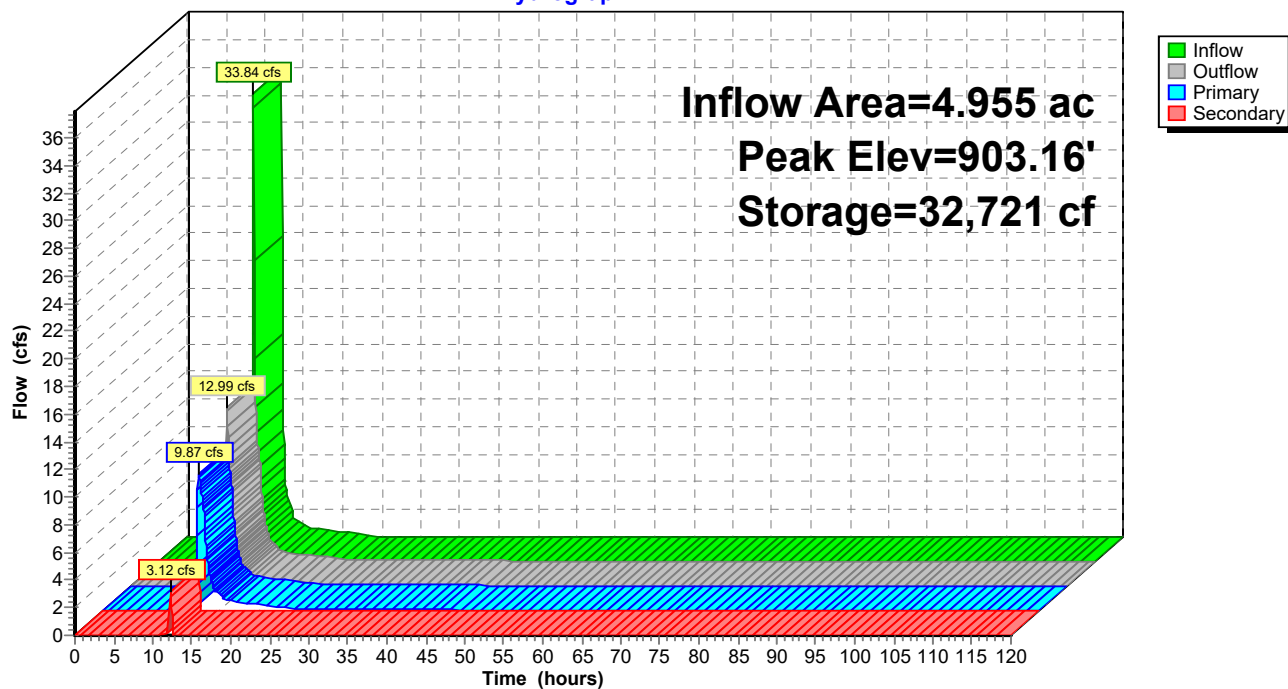
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Pond 8P: Pond 8

Hydrograph



3230212**MSE 24-hr 4 200-Year Rainfall=7.53"**

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Summary for Subcatchment P1: P1

Runoff = 71.85 cfs @ 12.13 hrs, Volume= 4.283 af, Depth= 6.58"
 Routed to Pond 1P : Pond 1 (Infiltration Basin)

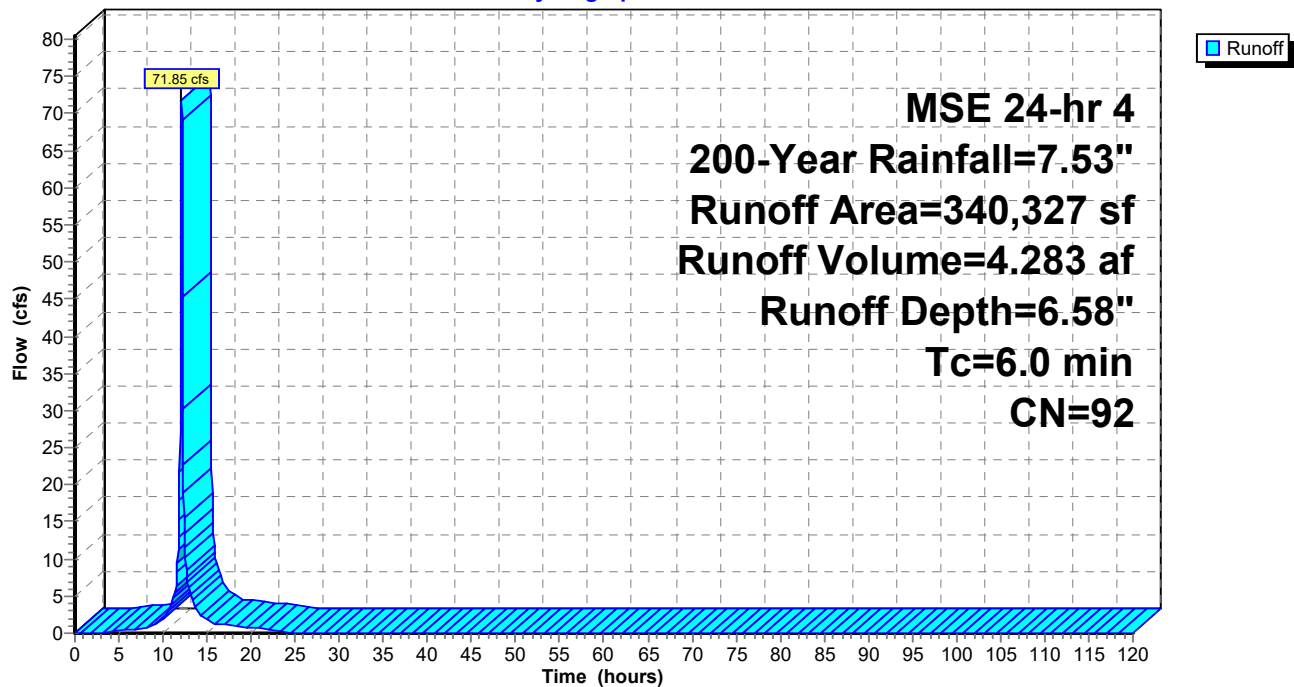
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
114,740	80	>75% Grass cover, Good, HSG D
225,587	98	Roofs, HSG D
340,327	92	Weighted Average
114,740		33.71% Pervious Area
225,587		66.29% Impervious Area

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

Subcatchment P1: P1

Hydrograph



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Summary for Subcatchment P10: P10

Runoff = 60.11 cfs @ 12.13 hrs, Volume= 3.394 af, Depth= 5.76"
 Routed to Pond 7P : Pond 7

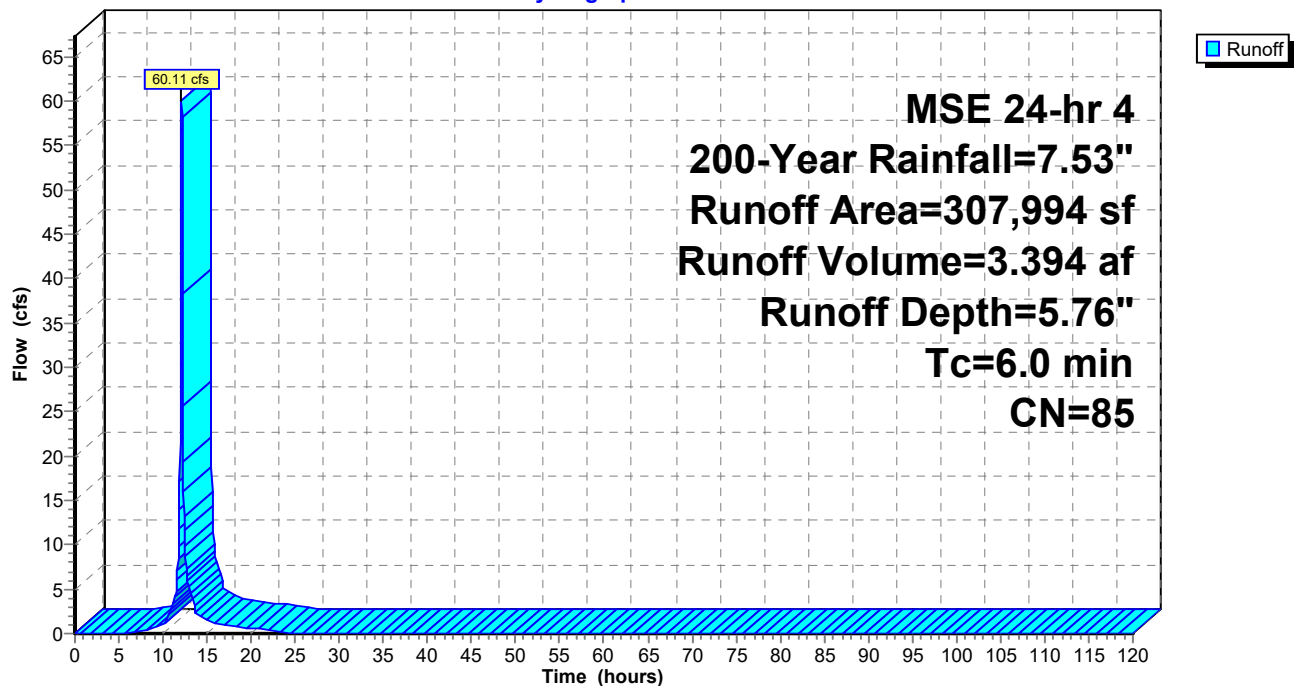
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
224,113	80	>75% Grass cover, Good, HSG D
15,978	98	Paved parking, HSG D
67,903	98	Water Surface, HSG D
307,994	85	Weighted Average
224,113		72.77% Pervious Area
83,881		27.23% Impervious Area

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

Subcatchment P10: P10

Hydrograph



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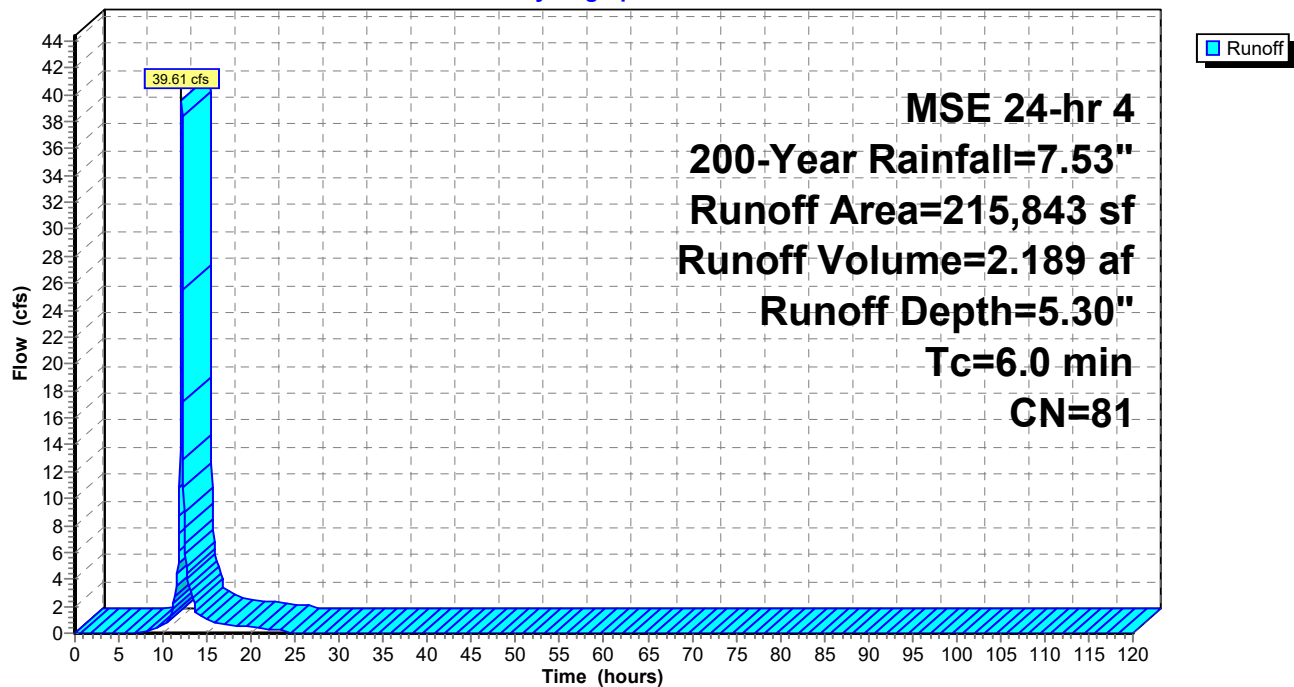
Summary for Subcatchment P11: P11

Runoff = 39.61 cfs @ 12.13 hrs, Volume= 2.189 af, Depth= 5.30"
Routed to Pond 8P : Pond 8

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
204,687	80	>75% Grass cover, Good, HSG D
11,156	98	Water Surface, HSG D
215,843	81	Weighted Average
204,687		94.83% Pervious Area
11,156		5.17% Impervious Area

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

Subcatchment P11: P11**Hydrograph**

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Summary for Subcatchment P2: P2

Runoff = 30.45 cfs @ 12.13 hrs, Volume= 1.852 af, Depth= 6.81"
 Routed to Pond 2P : Pond 2 (Infiltration Basin)

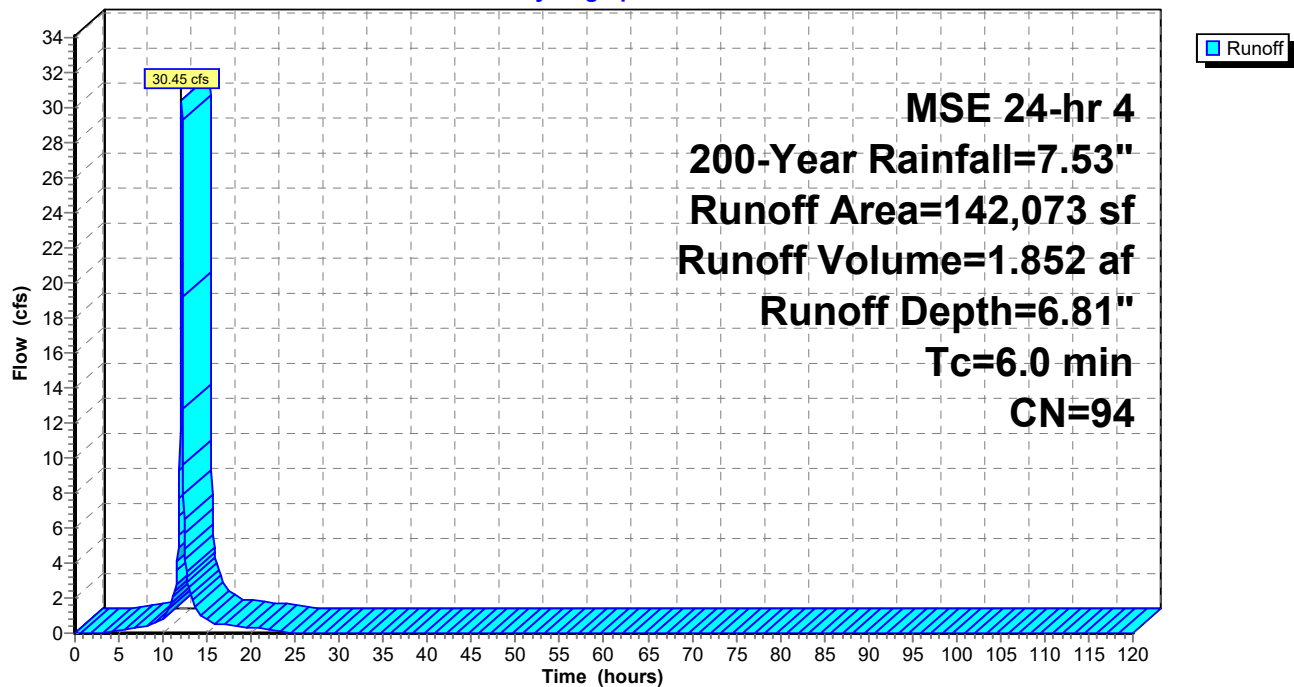
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
33,361	80	>75% Grass cover, Good, HSG D
108,712	98	Roofs, HSG C
142,073	94	Weighted Average
33,361		23.48% Pervious Area
108,712		76.52% Impervious Area

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

Subcatchment P2: P2

Hydrograph



3230212**MSE 24-hr 4 200-Year Rainfall=7.53"**

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Summary for Subcatchment P3: P3

Runoff = 29.54 cfs @ 12.13 hrs, Volume= 1.797 af, Depth= 6.81"
Routed to Pond 3P : Pond 3 (Infiltration Basin)

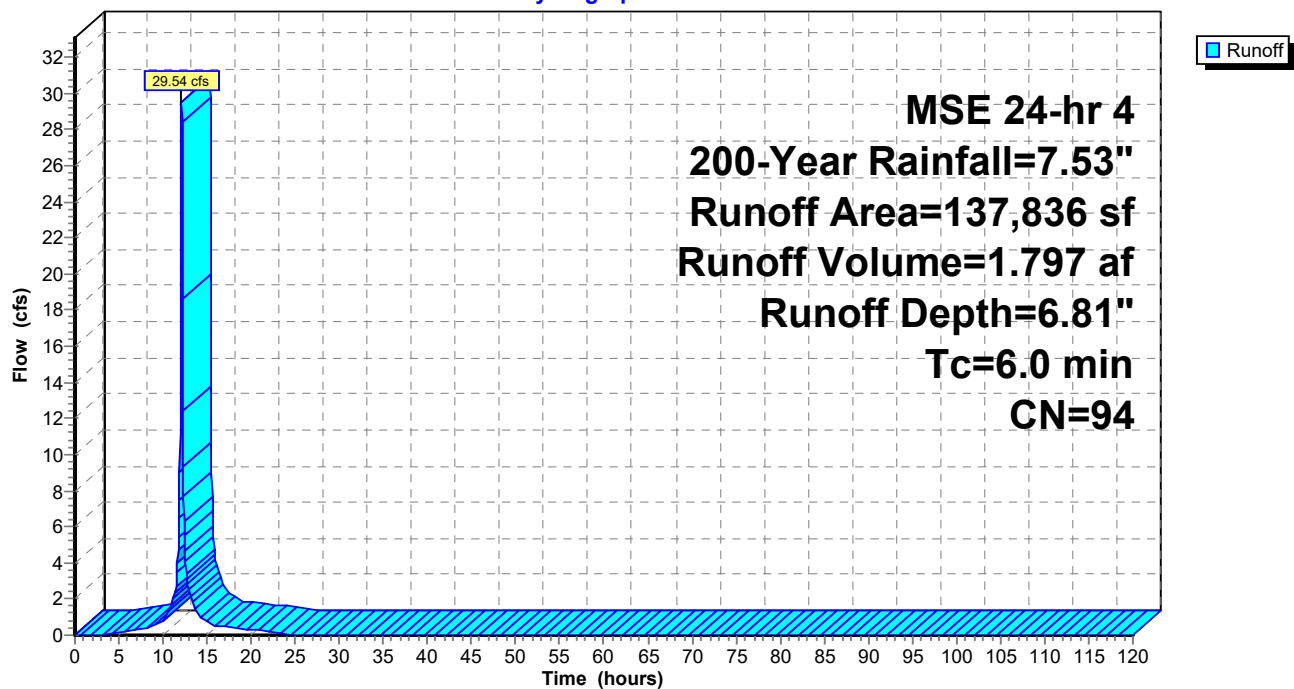
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
30,961	80	>75% Grass cover, Good, HSG D
106,875	98	Roofs, HSG D
137,836	94	Weighted Average
30,961		22.46% Pervious Area
106,875		77.54% Impervious Area

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

Subcatchment P3: P3

Hydrograph



3230212

MSE 24-hr 4 200-Year Rainfall=7.53"

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Summary for Subcatchment P4: P4

Runoff = 57.34 cfs @ 12.13 hrs, Volume= 3.527 af, Depth= 6.93"
Routed to Pond 4P : Pond 4

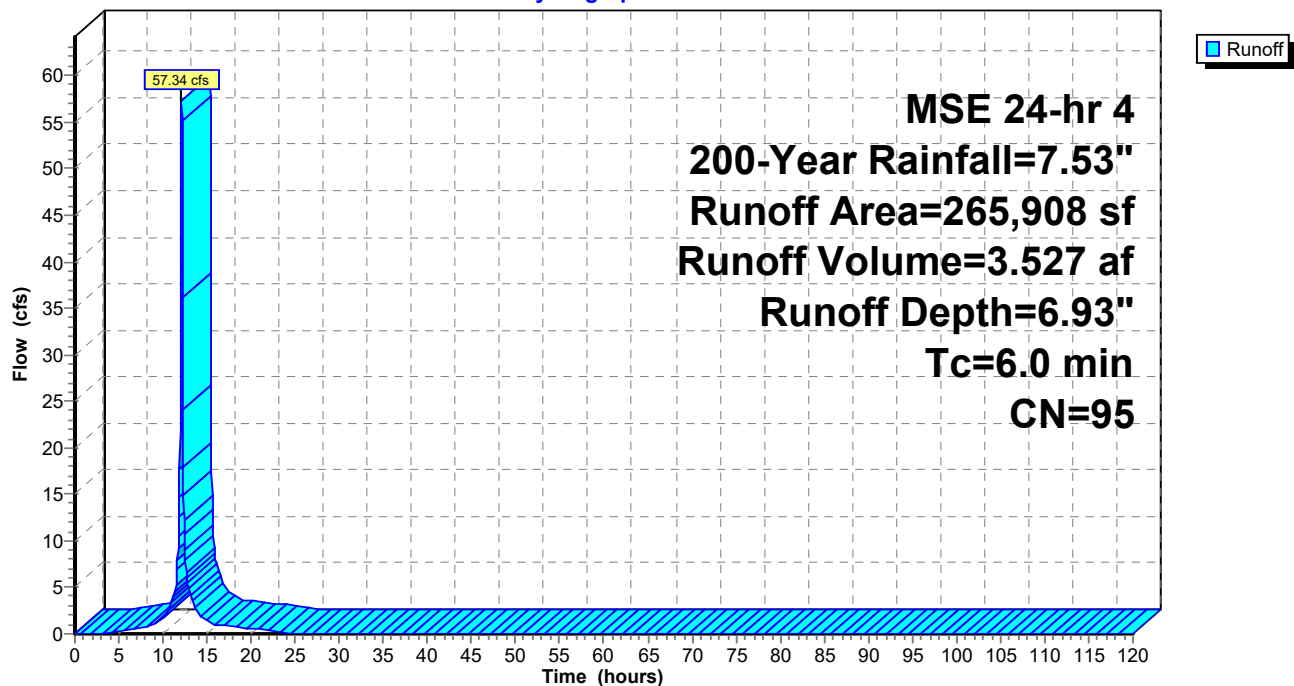
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
45,325	80	>75% Grass cover, Good, HSG D
108,712	98	Roofs, HSG D
97,063	98	Paved parking, HSG D
14,808	98	Water Surface, HSG D
265,908	95	Weighted Average
45,325		17.05% Pervious Area
220,583		82.95% Impervious Area

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

Subcatchment P4: P4

Hydrograph



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Summary for Subcatchment P5: P5

Runoff = 143.81 cfs @ 12.13 hrs, Volume= 8.846 af, Depth= 6.93"
Routed to Pond 5P : Pond 5

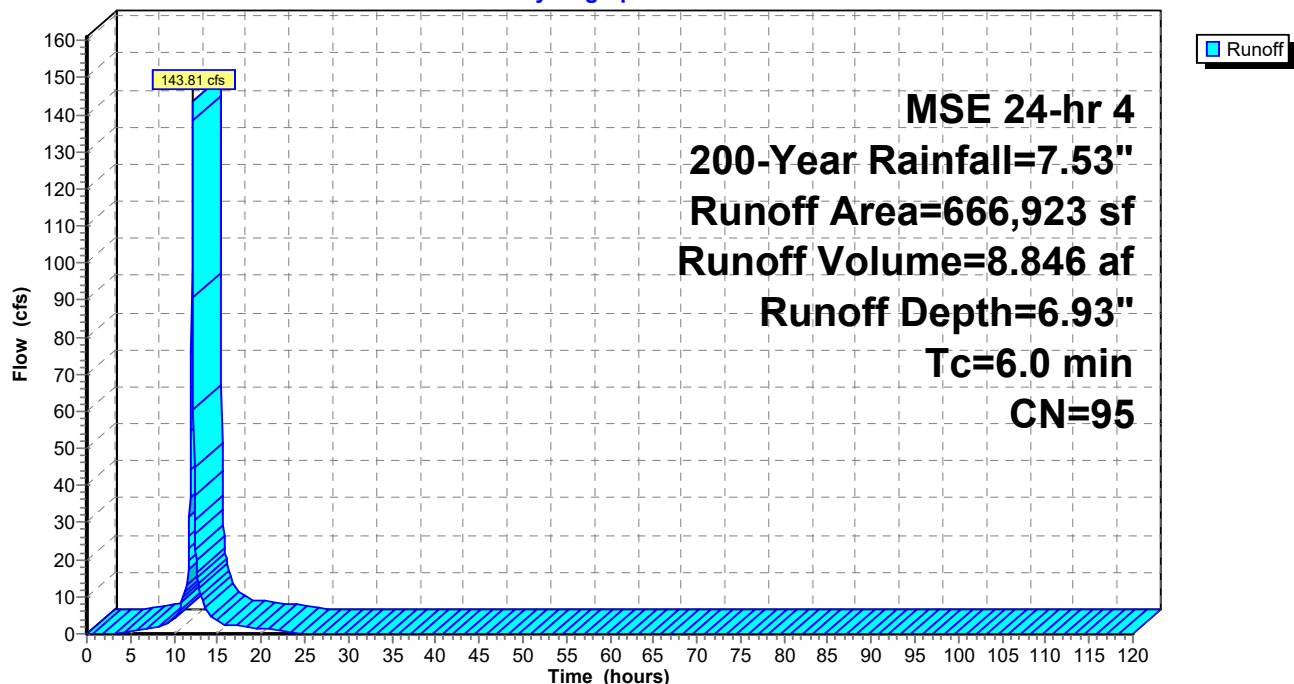
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
107,376	80	>75% Grass cover, Good, HSG D
122,680	98	Roofs, HSG D
325,512	98	Paved parking, HSG D
111,355	98	Water Surface, HSG D
666,923	95	Weighted Average
107,376		16.10% Pervious Area
559,547		83.90% Impervious Area

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

Subcatchment P5: P5

Hydrograph



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Summary for Subcatchment P6: P6

Runoff = 89.10 cfs @ 12.13 hrs, Volume= 5.363 af, Depth= 6.70"
Routed to Pond 6P : Pond 6

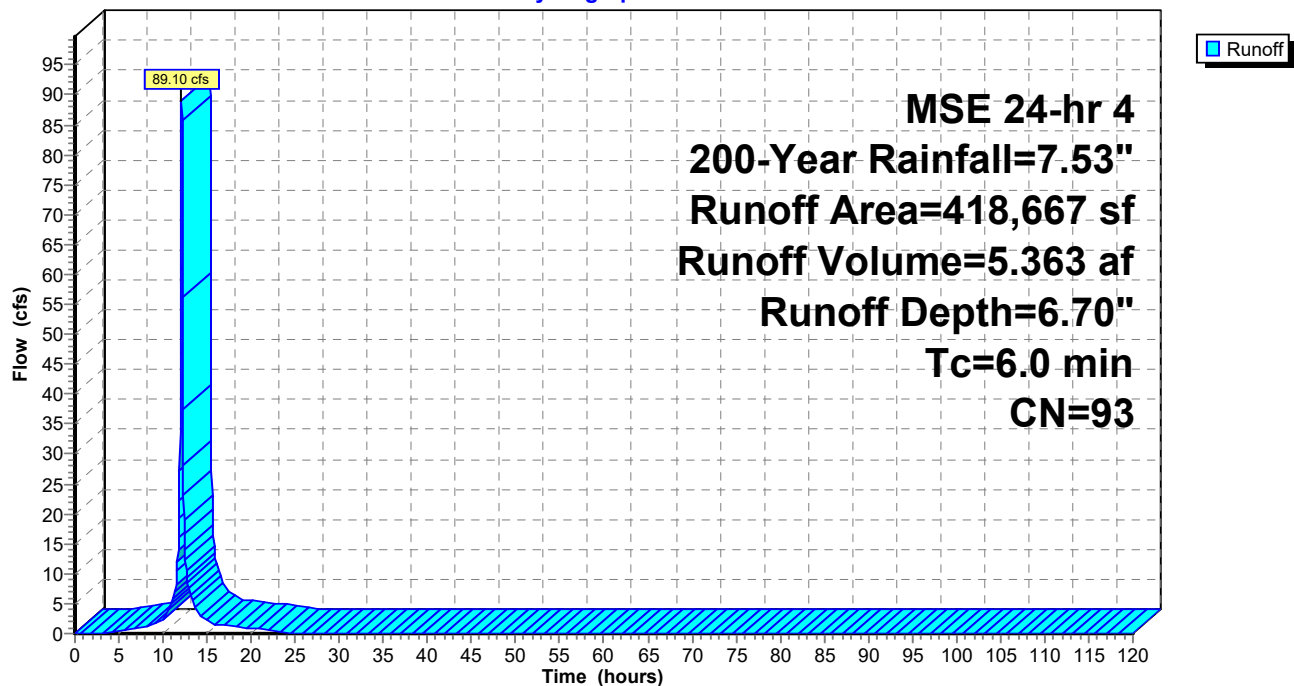
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
112,758	80	>75% Grass cover, Good, HSG D
269,805	98	Paved parking, HSG D
36,104	98	Water Surface, HSG D
418,667	93	Weighted Average
112,758		26.93% Pervious Area
305,909		73.07% Impervious Area

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

Subcatchment P6: P6

Hydrograph



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Summary for Subcatchment P7: P7

Runoff = 17.37 cfs @ 12.13 hrs, Volume= 0.955 af, Depth= 5.19"

Routed to Reach P-N : Proposed North

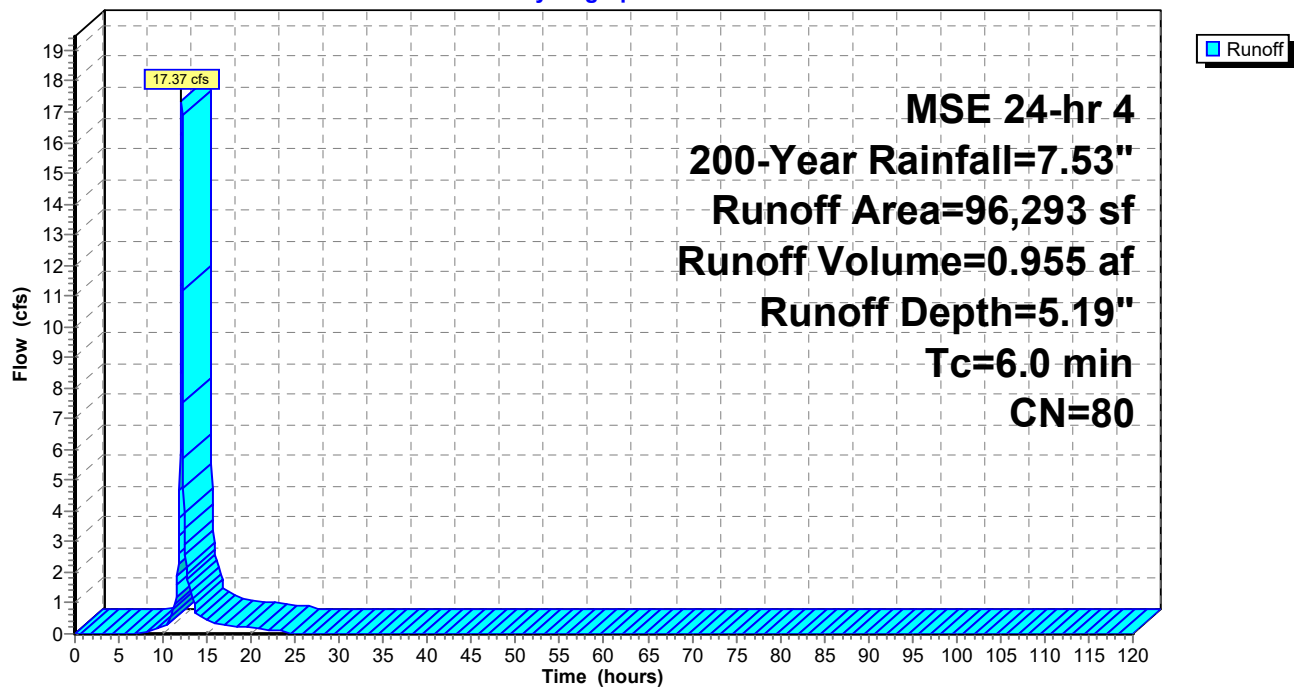
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
96,293	80	>75% Grass cover, Good, HSG D
96,293		100.00% Pervious Area

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

Subcatchment P7: P7

Hydrograph



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Summary for Subcatchment P7B: P7-Bypass

Runoff = 16.75 cfs @ 12.13 hrs, Volume= 0.914 af, Depth= 4.96"
Routed to Reach P-N : Proposed North

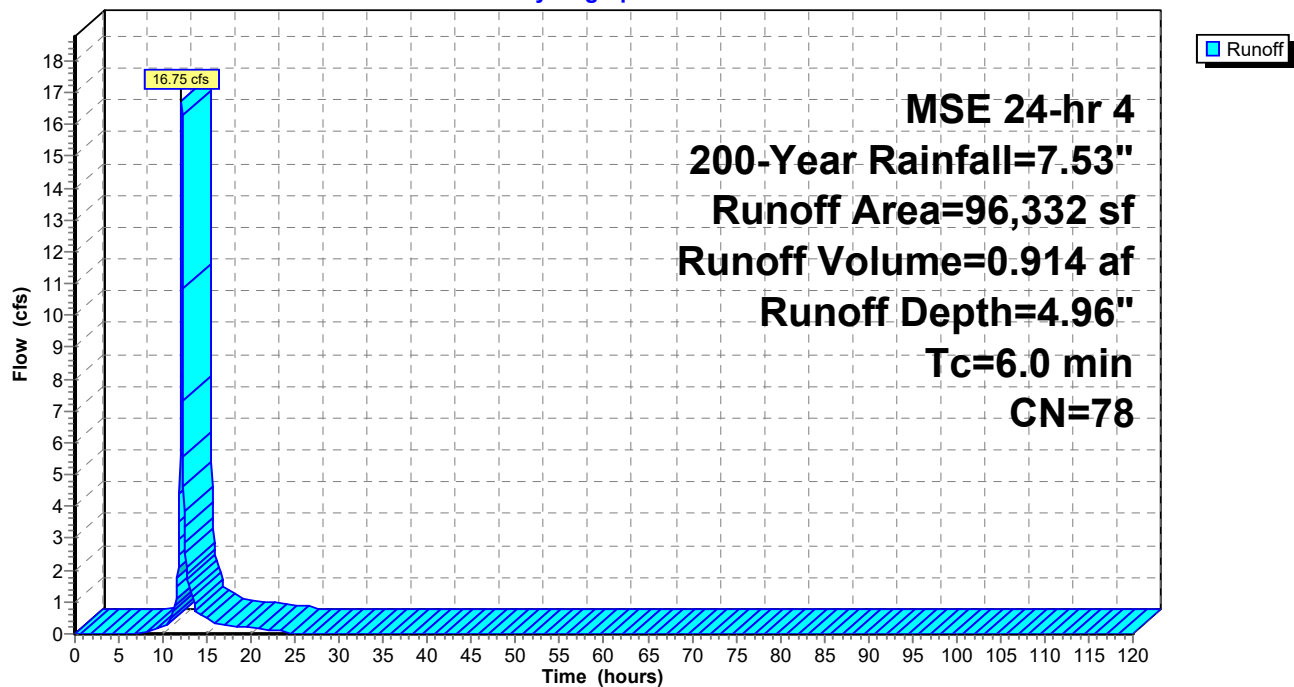
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (sf)	CN	Description
*	96,332	78	HSG C (pre-development)
	96,332		100.00% Pervious Area

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

Subcatchment P7B: P7-Bypass

Hydrograph



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Summary for Subcatchment P8: P8

Runoff = 37.16 cfs @ 12.13 hrs, Volume= 2.001 af, Depth= 4.51"

Routed to Reach P-S : Proposed South

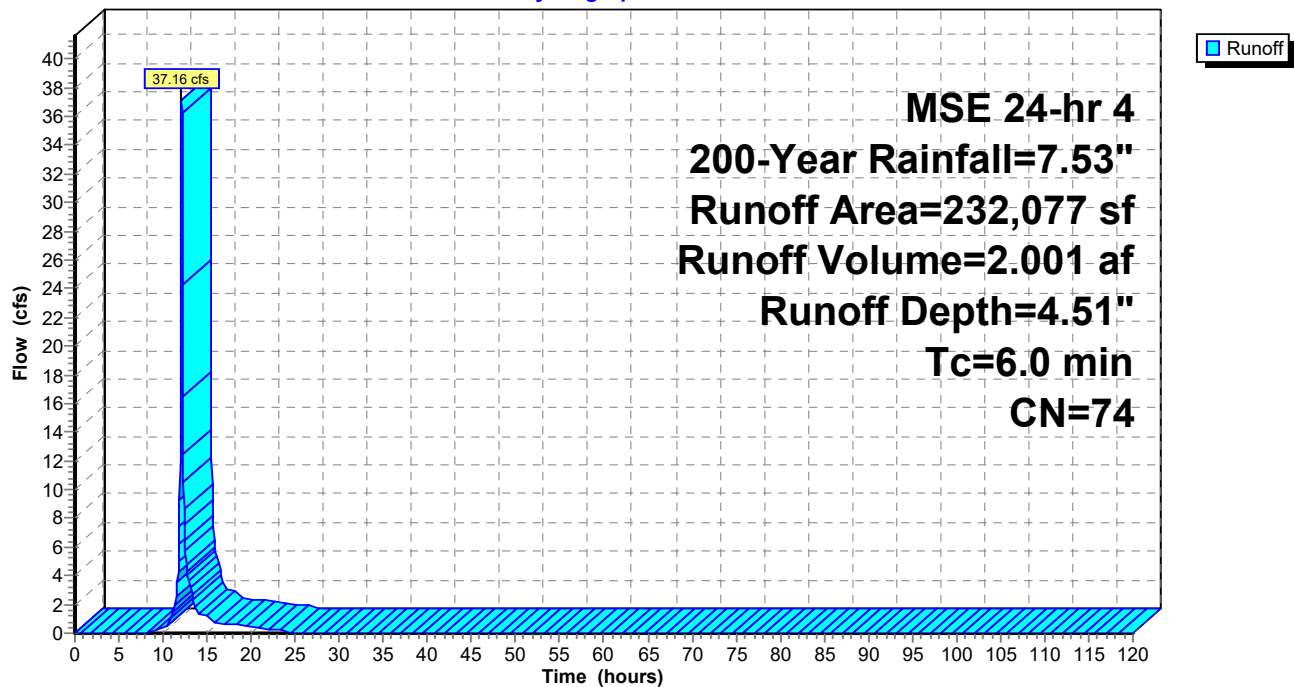
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (sf)	CN	Description
*	230,643	74	Septic area is HSG B, so goes to C. All other greenspace areas deep till, so HSG = C (74)
	1,434	98	Paved parking, HSG D
	232,077	74	Weighted Average
	230,643		99.38% Pervious Area
	1,434		0.62% Impervious Area

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

Subcatchment P8: P8

Hydrograph



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Summary for Subcatchment P8B: P8-Bypass

Runoff = 3.49 cfs @ 12.13 hrs, Volume= 0.188 af, Depth= 4.40"

Routed to Reach P-S : Proposed South

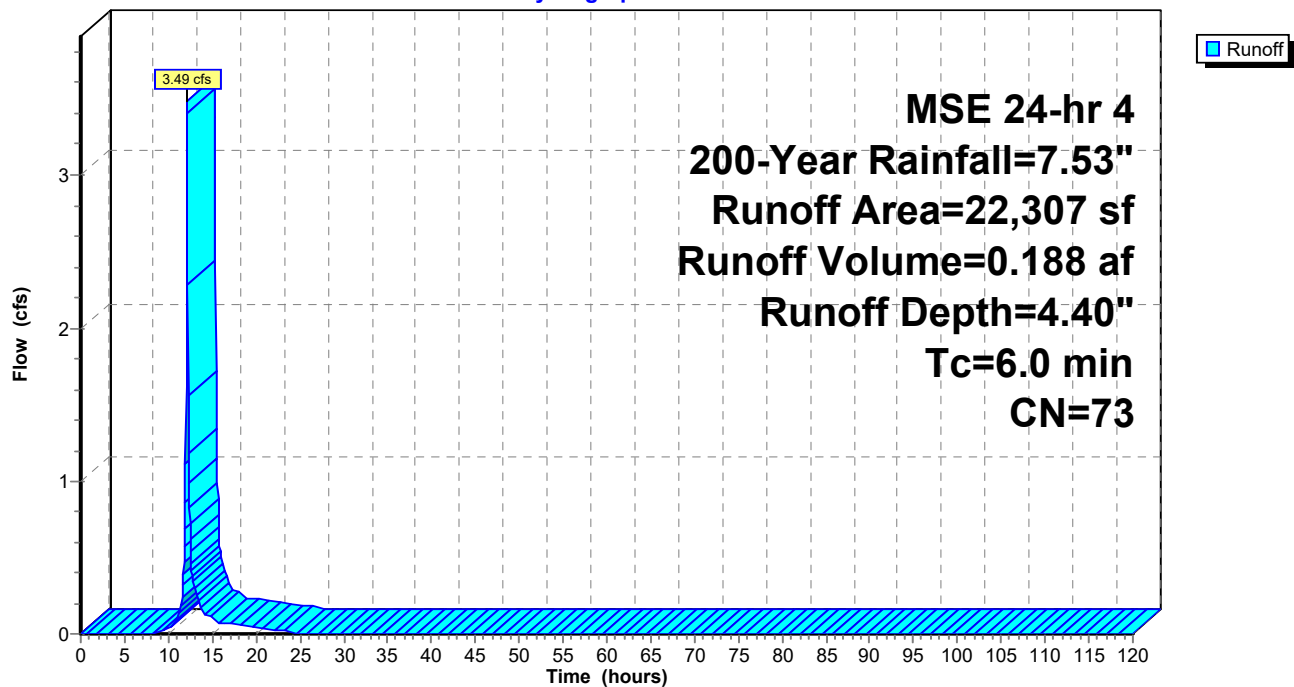
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

	Area (sf)	CN	Description
*	22,307	73	HSG B/C (pre-development)
	22,307		100.00% Pervious Area

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

Subcatchment P8B: P8-Bypass

Hydrograph



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Summary for Subcatchment P9: P9

Runoff = 12.63 cfs @ 12.13 hrs, Volume= 0.728 af, Depth= 6.11"
Routed to Reach P-S : Proposed South

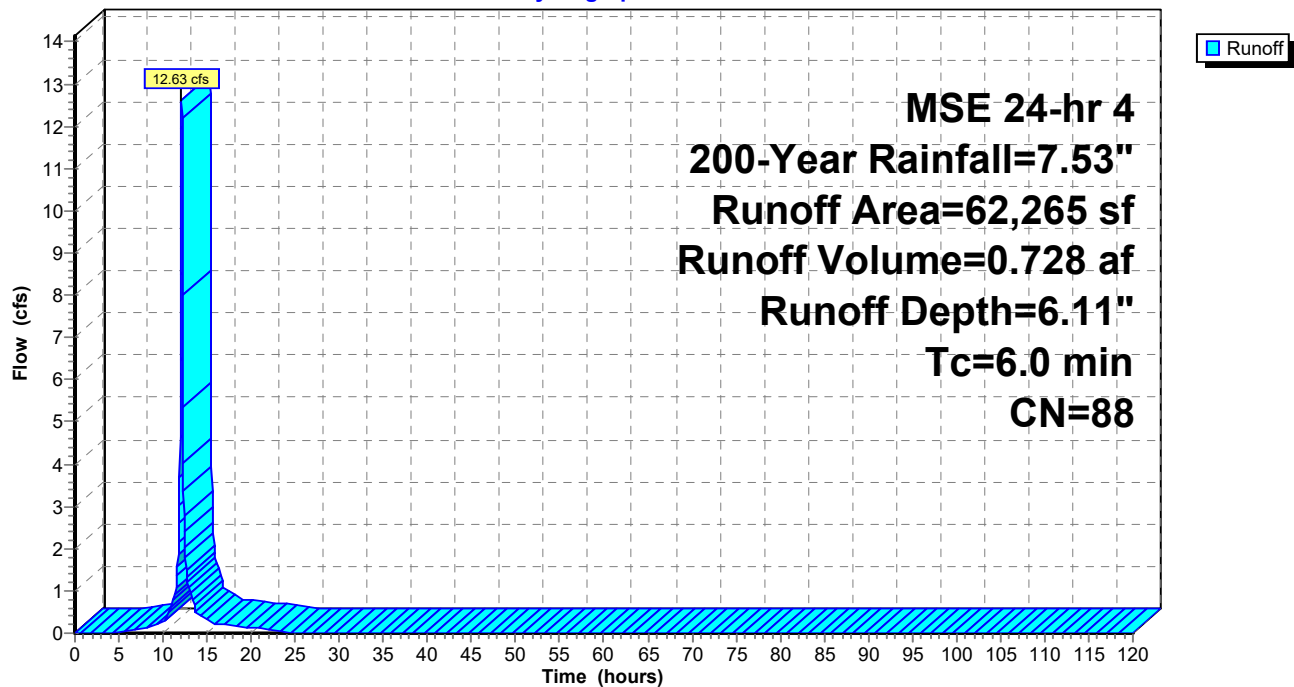
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
MSE 24-hr 4 200-Year Rainfall=7.53"

Area (sf)	CN	Description
34,498	80	>75% Grass cover, Good, HSG D
27,767	98	Paved parking, HSG D
62,265	88	Weighted Average
34,498		55.41% Pervious Area
27,767		44.59% Impervious Area

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

Subcatchment P9: P9

Hydrograph



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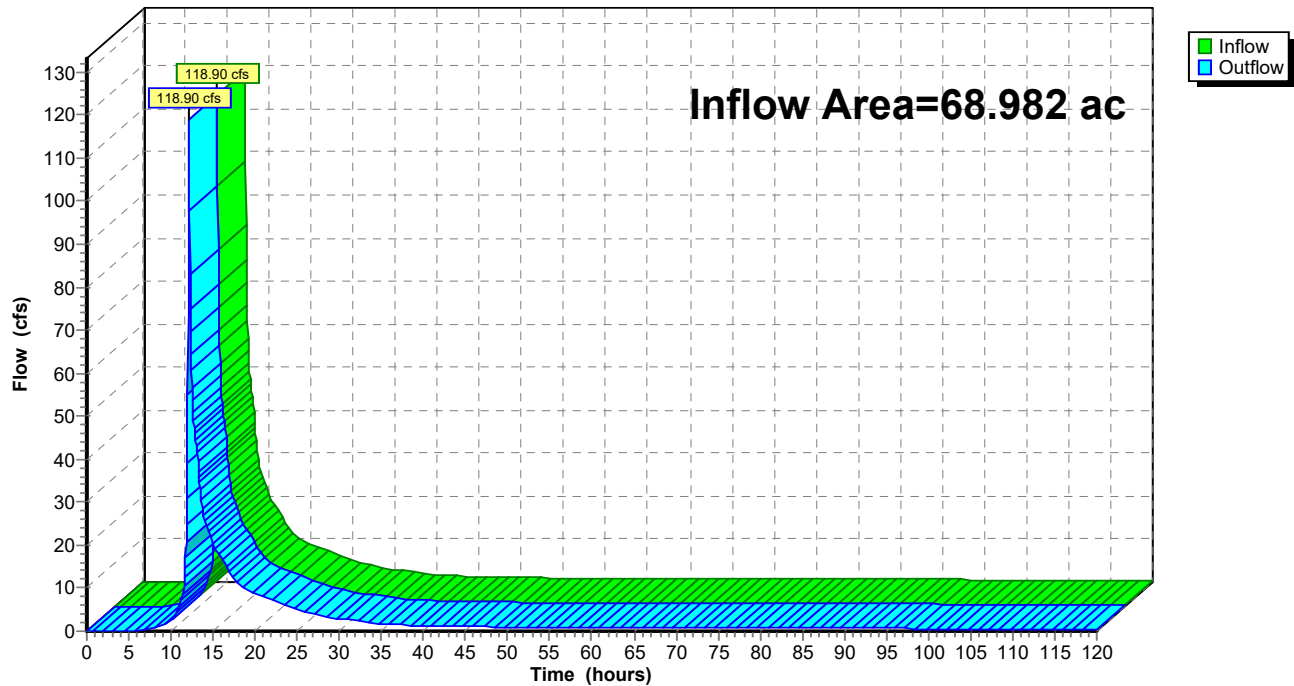
Summary for Reach P: Total After Detention

Inflow Area = 68.982 ac, 54.96% Impervious, Inflow Depth > 4.89" for 200-Year event
Inflow = 118.90 cfs @ 12.15 hrs, Volume= 28.135 af
Outflow = 118.90 cfs @ 12.15 hrs, Volume= 28.135 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P: Total After Detention

Hydrograph



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MSE 24-hr 4 200-Year Rainfall=7.53"

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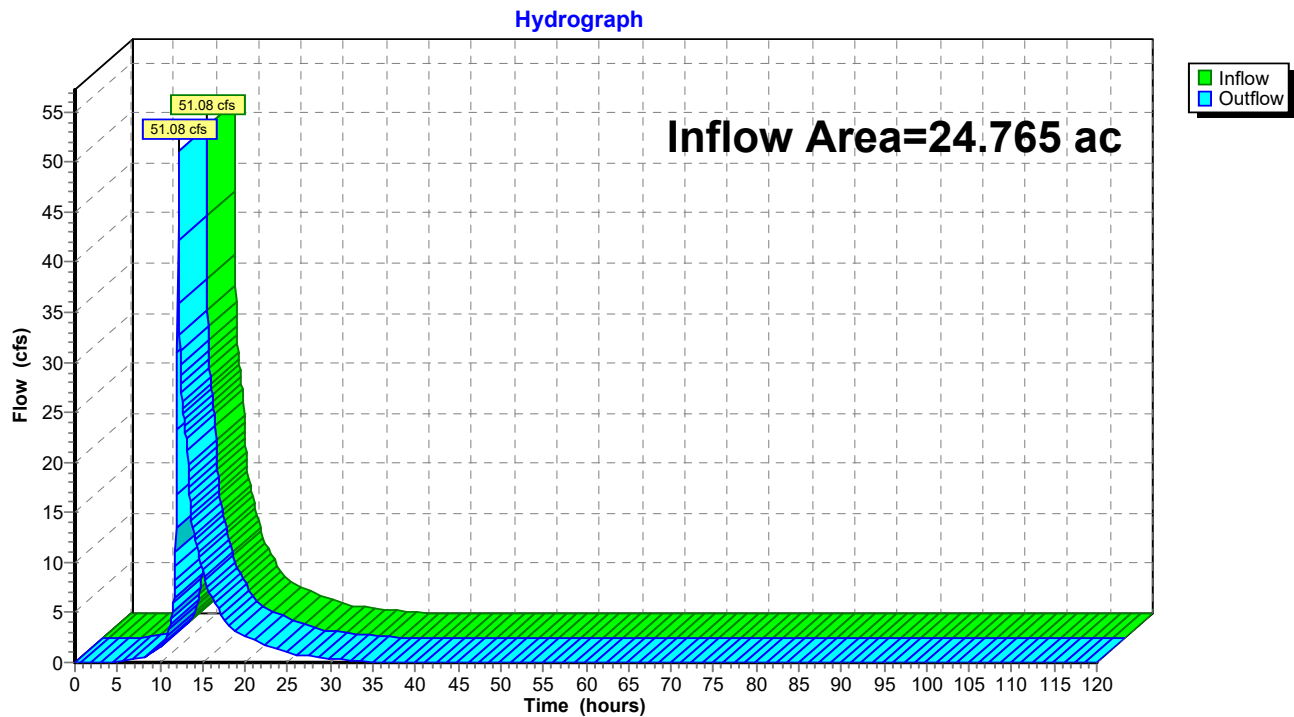
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Summary for Reach P-N: Proposed North

Inflow Area = 24.765 ac, 61.34% Impervious, Inflow Depth = 4.34" for 200-Year event
Inflow = 51.08 cfs @ 12.15 hrs, Volume= 8.952 af
Outflow = 51.08 cfs @ 12.15 hrs, Volume= 8.952 af, Atten= 0%, Lag= 0.0 min
Routed to Reach P : Total After Detention

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P-N: Proposed North



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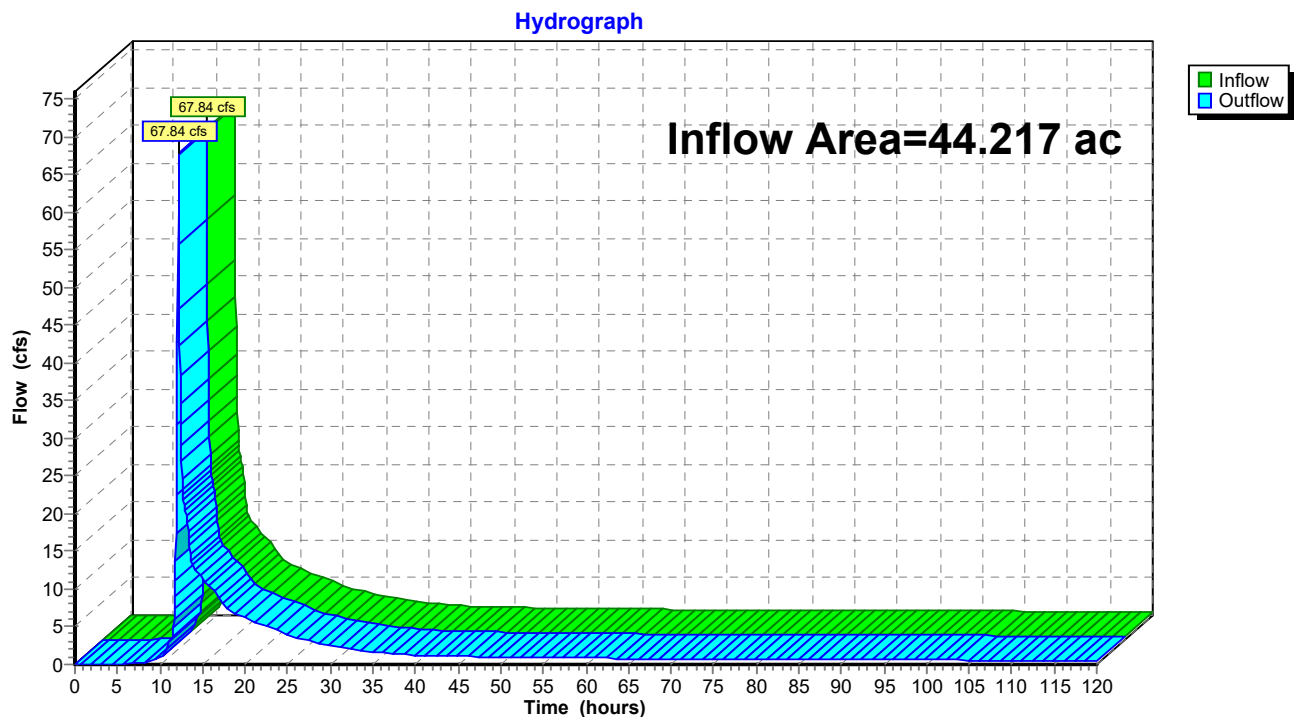
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Summary for Reach P-S: Proposed South

Inflow Area = 44.217 ac, 51.38% Impervious, Inflow Depth > 5.21" for 200-Year event
Inflow = 67.84 cfs @ 12.14 hrs, Volume= 19.183 af
Outflow = 67.84 cfs @ 12.14 hrs, Volume= 19.183 af, Atten= 0%, Lag= 0.0 min
Routed to Reach P : Total After Detention

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

Reach P-S: Proposed South



Summary for Pond 1P: Pond 1 (Infiltration Basin)

Inflow Area = 7.813 ac, 66.29% Impervious, Inflow Depth = 6.58" for 200-Year event
 Inflow = 71.85 cfs @ 12.13 hrs, Volume= 4.283 af
 Outflow = 1.68 cfs @ 15.09 hrs, Volume= 4.283 af, Atten= 98%, Lag= 178.0 min
 Discarded = 0.72 cfs @ 15.09 hrs, Volume= 3.057 af
 Primary = 0.96 cfs @ 15.09 hrs, Volume= 1.226 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 912.28' @ 15.09 hrs Surf.Area= 62,345 sf Storage= 130,927 cf

Plug-Flow detention time= 1,040.3 min calculated for 4.281 af (100% of inflow)
 Center-of-Mass det. time= 1,041.0 min (1,807.3 - 766.4)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	316,468 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	52,675	0	0
915.00	73,912	316,468	316,468

Device	Routing	Invert	Outlet Devices
#1	Primary	911.00'	18.0" Round Culvert L= 500.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 911.00' / 910.00' S= 0.0020 ' S= 0.0020 ' Cc= 0.900 n= 0.013 Concrete pipe, straight & clean, Flow Area= 1.77 sf
#2	Device 1	911.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	910.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.72 cfs @ 15.09 hrs HW=912.28' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.72 cfs)

Primary OutFlow Max=0.96 cfs @ 15.09 hrs HW=912.28' (Free Discharge)
 ↑ **1=Culvert** (Passes 0.96 cfs of 3.69 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.96 cfs @ 4.88 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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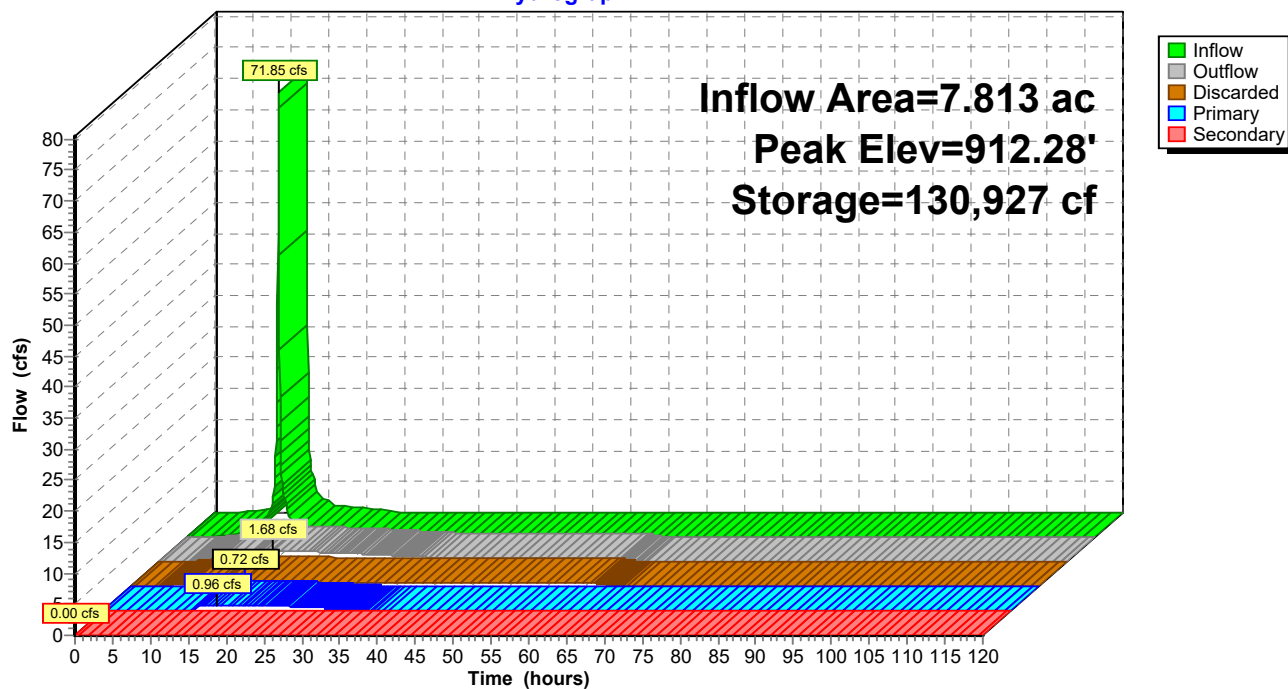
MSE 24-hr 4 200-Year Rainfall=7.53"

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Pond 1P: Pond 1 (Infiltration Basin)

Hydrograph



Summary for Pond 2P: Pond 2 (Infiltration Basin)

Inflow Area = 3.262 ac, 76.52% Impervious, Inflow Depth = 6.81" for 200-Year event
 Inflow = 30.45 cfs @ 12.13 hrs, Volume= 1.852 af
 Outflow = 6.41 cfs @ 12.41 hrs, Volume= 1.852 af, Atten= 79%, Lag= 17.1 min
 Discarded = 0.19 cfs @ 12.41 hrs, Volume= 0.654 af
 Primary = 6.22 cfs @ 12.41 hrs, Volume= 1.198 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 913.48' @ 12.41 hrs Surf.Area= 16,705 sf Storage= 42,684 cf

Plug-Flow detention time= 522.8 min calculated for 1.851 af (100% of inflow)
 Center-of-Mass det. time= 523.8 min (1,283.3 - 759.5)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	70,950 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	7,800	0	0
915.00	20,580	70,950	70,950

Device	Routing	Invert	Outlet Devices
#1	Primary	911.75'	18.0" Round Culvert L= 100.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 911.75' / 910.00' S= 0.0175 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	911.75'	15.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	913.50'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	910.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.19 cfs @ 12.41 hrs HW=913.48' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.19 cfs)

Primary OutFlow Max=6.22 cfs @ 12.41 hrs HW=913.48' (Free Discharge)
 ↑ **1=Culvert** (Passes 6.22 cfs of 10.54 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 6.22 cfs @ 5.07 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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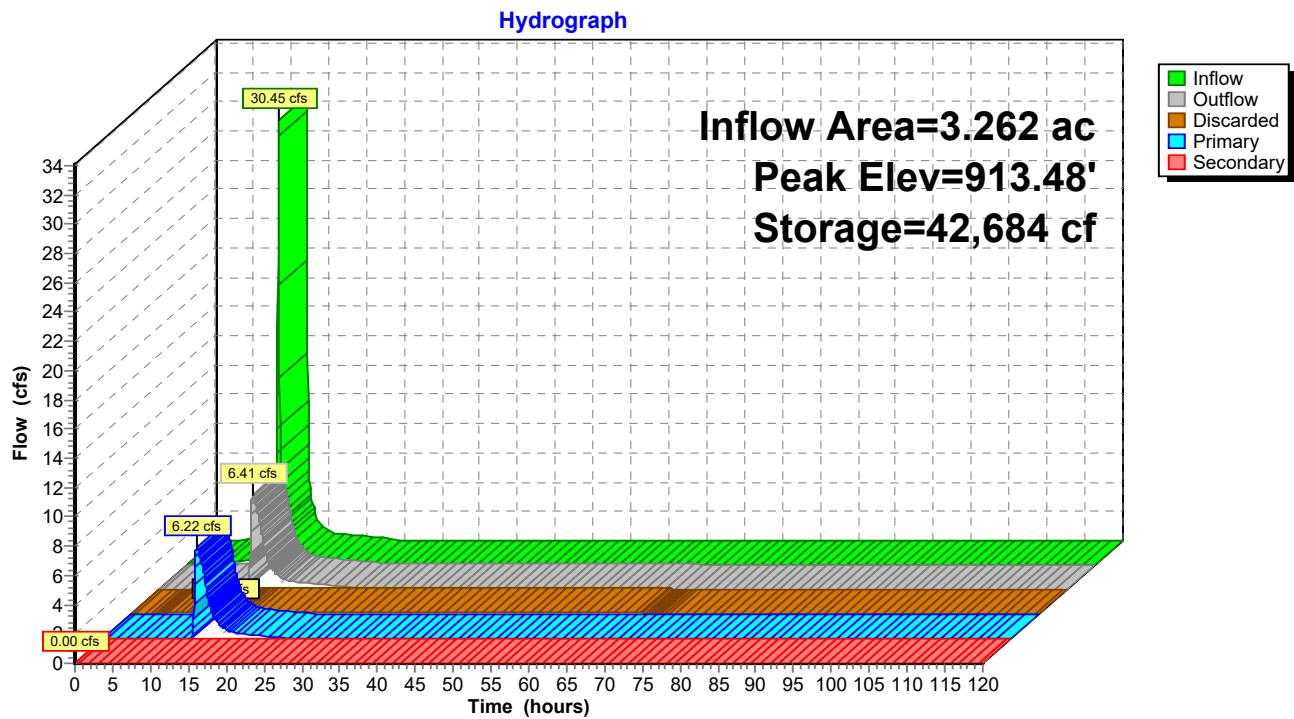
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MSE 24-hr 4 200-Year Rainfall=7.53"

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Pond 2P: Pond 2 (Infiltration Basin)



Summary for Pond 3P: Pond 3 (Infiltration Basin)

Inflow Area = 3.164 ac, 77.54% Impervious, Inflow Depth = 6.81" for 200-Year event
 Inflow = 29.54 cfs @ 12.13 hrs, Volume= 1.797 af
 Outflow = 4.30 cfs @ 12.53 hrs, Volume= 1.797 af, Atten= 85%, Lag= 24.3 min
 Discarded = 0.22 cfs @ 12.53 hrs, Volume= 0.665 af
 Primary = 4.09 cfs @ 12.53 hrs, Volume= 1.132 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 915.92' @ 12.53 hrs Surf.Area= 18,705 sf Storage= 43,335 cf

Plug-Flow detention time= 452.7 min calculated for 1.796 af (100% of inflow)
 Center-of-Mass det. time= 453.4 min (1,212.9 - 759.5)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	87,998 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	10,993	0	0
918.00	24,206	87,998	87,998

Device	Routing	Invert	Outlet Devices
#1	Primary	914.25'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 914.25' / 913.00' S= 0.0063 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	914.25'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	916.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	917.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#5	Discarded	913.00'	0.500 in/hr Exfiltration over Surface area

Discarded OutFlow Max=0.22 cfs @ 12.53 hrs HW=915.92' (Free Discharge)
 ↑ **5=Exfiltration** (Exfiltration Controls 0.22 cfs)

Primary OutFlow Max=4.09 cfs @ 12.53 hrs HW=915.92' (Free Discharge)
 ↑ **1=Culvert** (Passes 4.09 cfs of 8.14 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 4.09 cfs @ 5.20 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=913.00' (Free Discharge)
 ↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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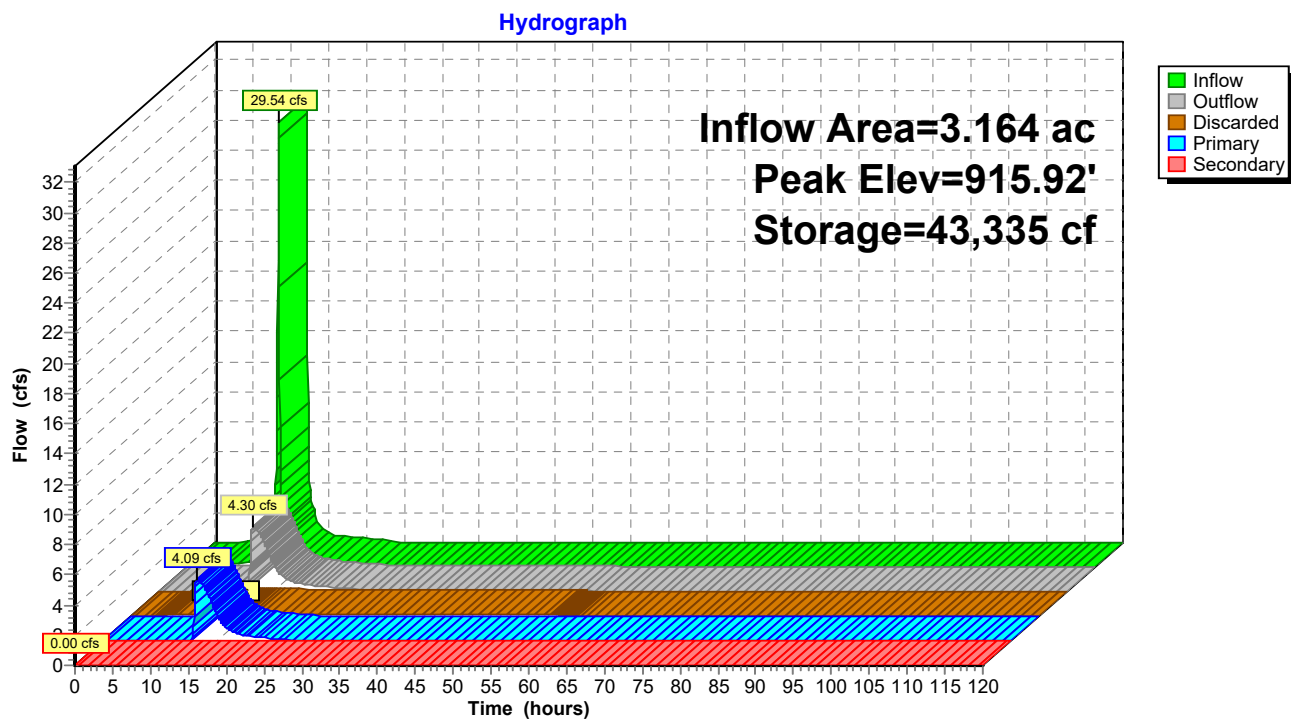
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Pond 3P: Pond 3 (Infiltration Basin)



Summary for Pond 4P: Pond 4

Inflow Area = 6.104 ac, 82.95% Impervious, Inflow Depth = 6.93" for 200-Year event
 Inflow = 57.34 cfs @ 12.13 hrs, Volume= 3.527 af
 Outflow = 10.92 cfs @ 12.44 hrs, Volume= 3.526 af, Atten= 81%, Lag= 18.9 min
 Primary = 10.92 cfs @ 12.44 hrs, Volume= 3.526 af
 Routed to Reach P-N : Proposed North
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-N : Proposed North

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 916.38' @ 12.44 hrs Surf.Area= 25,044 sf Storage= 67,411 cf

Plug-Flow detention time= 132.1 min calculated for 3.525 af (100% of inflow)
 Center-of-Mass det. time= 133.9 min (889.6 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	913.00'	111,868 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
913.00	14,812	0	0
918.00	29,935	111,868	111,868

Device	Routing	Invert	Outlet Devices
#1	Primary	913.00'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 913.00' / 912.00' S= 0.0050 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	913.00'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	915.50'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	917.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=10.92 cfs @ 12.44 hrs HW=916.38' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 10.92 cfs @ 6.18 fps)
 ↑ **2=Orifice/Grate** (Passes < 6.42 cfs potential flow)
 ↑ **3=Sharp-Crested Rectangular Weir**(Passes < 15.77 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=913.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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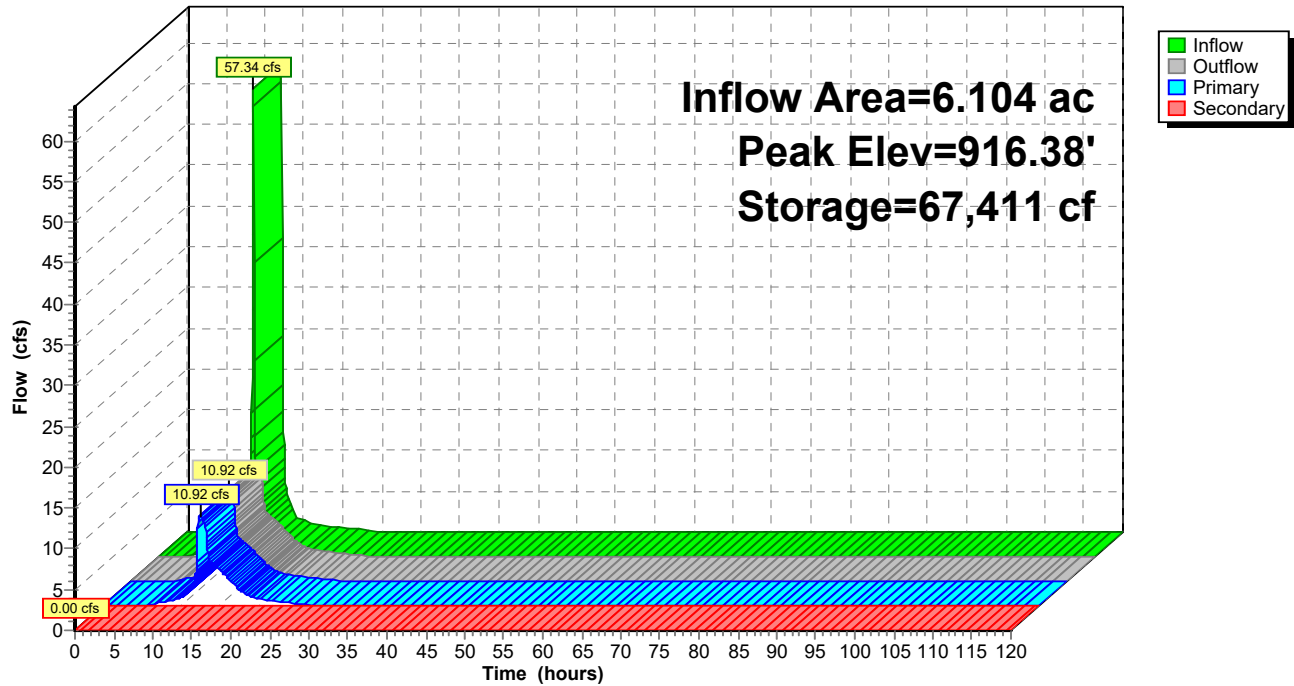
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Pond 4P: Pond 4

Hydrograph



Summary for Pond 5P: Pond 5

Inflow Area = 15.310 ac, 83.90% Impervious, Inflow Depth = 6.93" for 200-Year event
 Inflow = 143.81 cfs @ 12.13 hrs, Volume= 8.846 af
 Outflow = 3.90 cfs @ 15.03 hrs, Volume= 6.866 af, Atten= 97%, Lag= 174.4 min
 Primary = 3.90 cfs @ 15.03 hrs, Volume= 6.866 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 907.47' @ 15.03 hrs Surf.Area= 126,103 sf Storage= 293,842 cf

Plug-Flow detention time= 1,386.4 min calculated for 6.863 af (78% of inflow)
 Center-of-Mass det. time= 1,318.4 min (2,074.0 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	905.00'	631,265 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
905.00	111,357	0	0
910.00	141,149	631,265	631,265

Device	Routing	Invert	Outlet Devices
#1	Primary	905.00'	18.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 905.00' / 904.00' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	905.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	906.10'	12.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	908.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#5	Secondary	909.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.90 cfs @ 15.03 hrs HW=907.47' (Free Discharge)

↑ **1=Culvert** (Passes 3.90 cfs of 9.04 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.36 cfs @ 7.38 fps)
 ↑ **3=Orifice/Grate** (Orifice Controls 3.54 cfs @ 4.50 fps)
 ↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=905.00' (Free Discharge)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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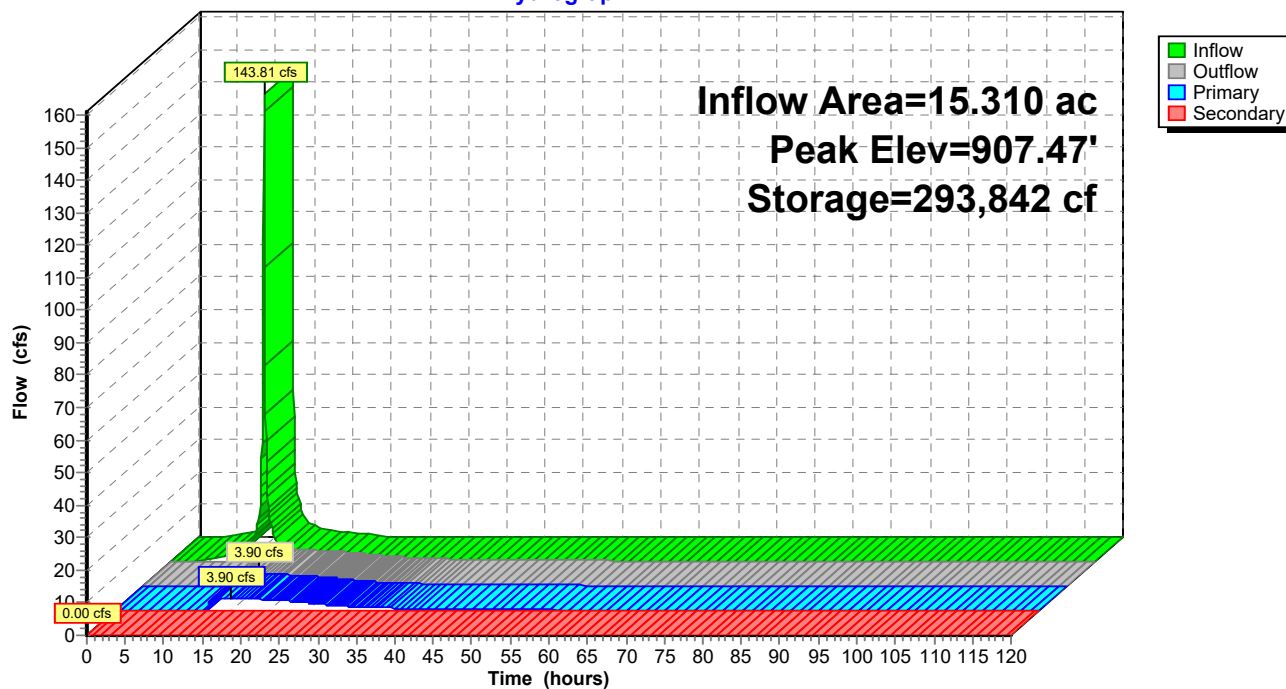
MSE 24-hr 4 200-Year Rainfall=7.53"

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Pond 5P: Pond 5

Hydrograph



Summary for Pond 6P: Pond 6

Inflow Area = 9.611 ac, 73.07% Impervious, Inflow Depth = 6.70" for 200-Year event
 Inflow = 89.10 cfs @ 12.13 hrs, Volume= 5.363 af
 Outflow = 4.43 cfs @ 13.52 hrs, Volume= 4.999 af, Atten= 95%, Lag= 83.5 min
 Primary = 4.43 cfs @ 13.52 hrs, Volume= 4.999 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 913.70' @ 13.52 hrs Surf.Area= 51,805 sf Storage= 162,761 cf

Plug-Flow detention time= 1,458.7 min calculated for 4.999 af (93% of inflow)
 Center-of-Mass det. time= 1,424.7 min (2,187.8 - 763.1)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	233,518 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	36,103	0	0
915.00	57,304	233,518	233,518

Device	Routing	Invert	Outlet Devices
#1	Primary	910.00'	12.0" Round Culvert L= 200.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 910.00' / 909.00' S= 0.0050 ' / Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	910.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	912.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	913.00'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#5	Secondary	914.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=4.43 cfs @ 13.52 hrs HW=913.70' (Free Discharge)

1=Culvert (Barrel Controls 4.43 cfs @ 5.65 fps)
 2=Orifice/Grate (Passes < 0.45 cfs potential flow)
 3=Orifice/Grate (Passes < 1.14 cfs potential flow)
 4=Sharp-Crested Rectangular Weir (Passes < 11.29 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=910.00' (Free Discharge)

5=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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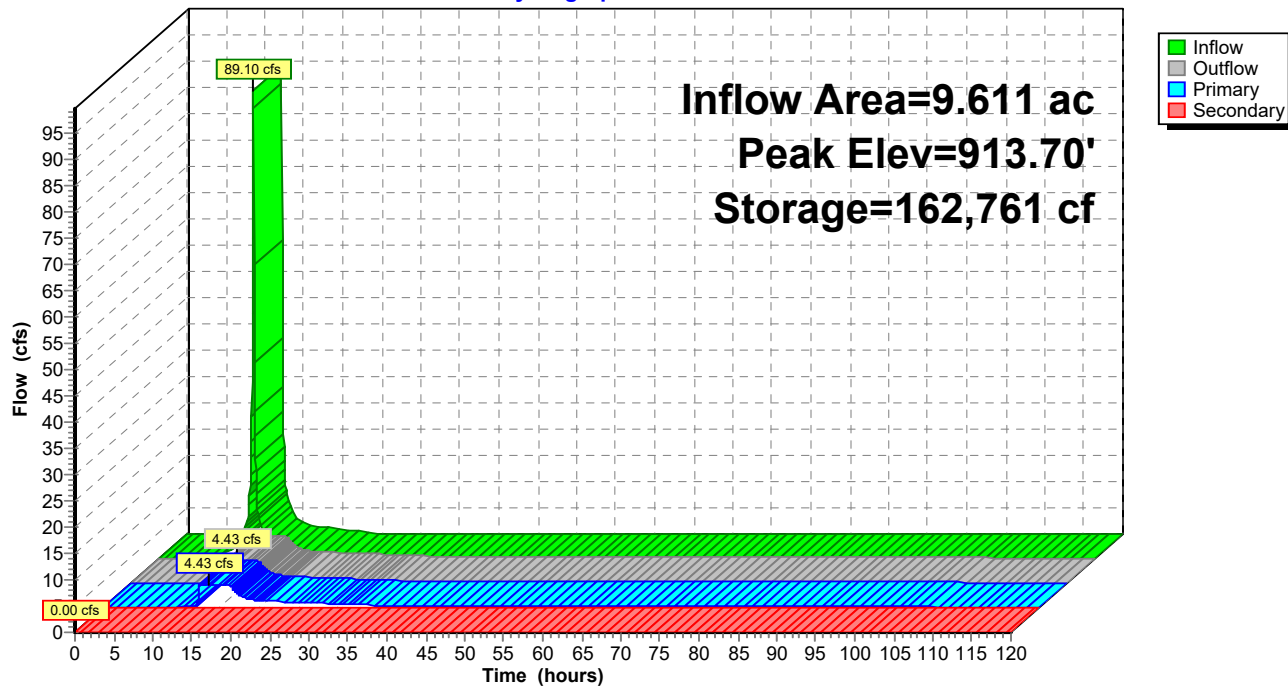
MSE 24-hr 4 200-Year Rainfall=7.53"

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Pond 6P: Pond 6

Hydrograph



Summary for Pond 7P: Pond 7

Inflow Area = 7.071 ac, 27.23% Impervious, Inflow Depth = 5.76" for 200-Year event
 Inflow = 60.11 cfs @ 12.13 hrs, Volume= 3.394 af
 Outflow = 0.30 cfs @ 23.16 hrs, Volume= 2.221 af, Atten= 100%, Lag= 661.9 min
 Primary = 0.30 cfs @ 23.16 hrs, Volume= 2.221 af
 Routed to Reach P-S : Proposed South
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 902.73' @ 23.16 hrs Surf.Area= 89,504 sf Storage= 134,957 cf

Plug-Flow detention time= 2,980.7 min calculated for 2.220 af (65% of inflow)
 Center-of-Mass det. time= 2,899.5 min (3,684.5 - 785.0)

Volume	Invert	Avail.Storage	Storage Description
#1	901.00'	257,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
901.00	66,000	0	0
902.00	80,000	73,000	73,000
903.00	93,000	86,500	159,500
904.00	103,000	98,000	257,500

Device	Routing	Invert	Outlet Devices
#1	Primary	901.00'	18.0" Round Culvert L= 20.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 901.00' / 900.50' S= 0.0250 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	901.00'	3.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	902.75'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	903.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.30 cfs @ 23.16 hrs HW=902.73' (Free Discharge)

↑ **1=Culvert** (Passes 0.30 cfs of 10.34 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.30 cfs @ 6.10 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=901.00' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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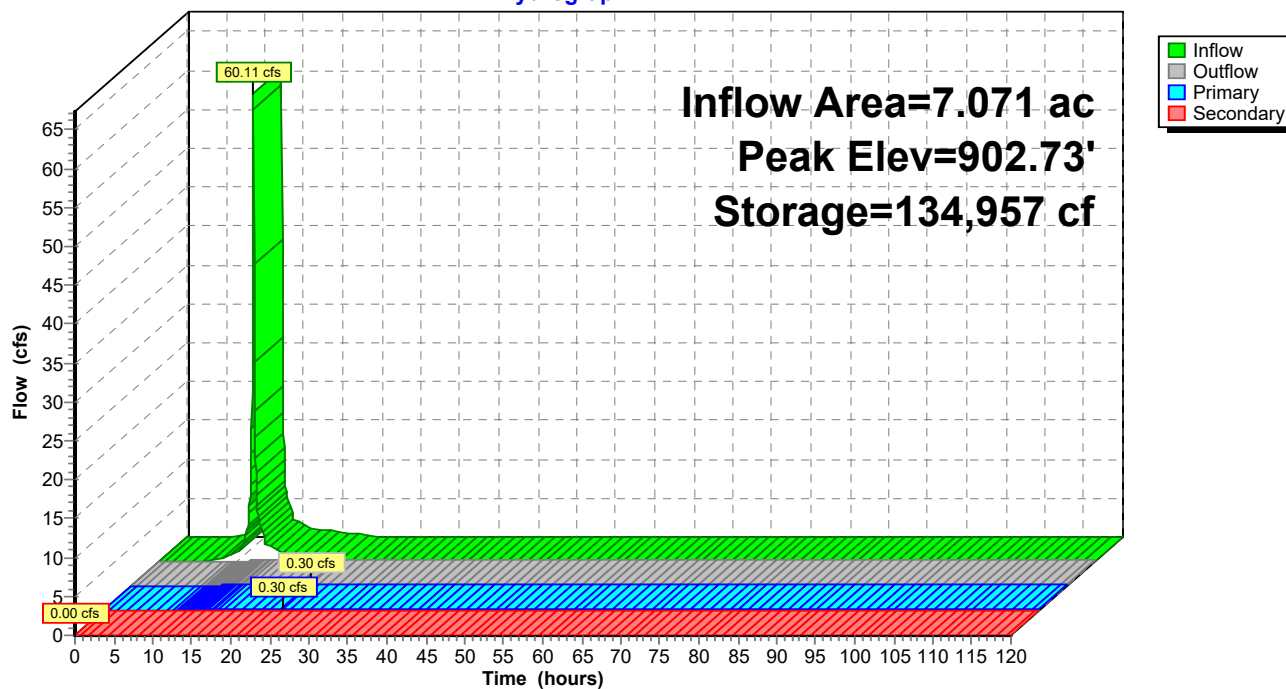
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Pond 7P: Pond 7

Hydrograph



Summary for Pond 8P: Pond 8

Inflow Area = 4.955 ac, 5.17% Impervious, Inflow Depth = 5.30" for 200-Year event
 Inflow = 39.61 cfs @ 12.13 hrs, Volume= 2.189 af
 Outflow = 18.47 cfs @ 12.25 hrs, Volume= 2.180 af, Atten= 53%, Lag= 7.3 min
 Primary = 10.67 cfs @ 12.25 hrs, Volume= 2.001 af
 Routed to Reach P-S : Proposed South
 Secondary = 7.80 cfs @ 12.25 hrs, Volume= 0.180 af
 Routed to Reach P-S : Proposed South

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs
 Peak Elev= 903.29' @ 12.25 hrs Surf.Area= 28,880 sf Storage= 36,404 cf

Plug-Flow detention time= 309.6 min calculated for 2.180 af (100% of inflow)
 Center-of-Mass det. time= 307.3 min (1,100.9 - 793.7)

Volume	Invert	Avail.Storage	Storage Description
#1	901.50'	59,500 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
901.50	11,000	0	0
902.00	17,000	7,000	7,000
903.00	26,000	21,500	28,500
904.00	36,000	31,000	59,500

Device	Routing	Invert	Outlet Devices
#1	Primary	901.50'	18.0" Round Culvert L= 20.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 901.50' / 901.00' S= 0.0250 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	901.50'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	902.25'	6.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	903.00'	20.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=10.67 cfs @ 12.25 hrs HW=903.29' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 10.67 cfs @ 6.40 fps)
 ↑ **2=Orifice/Grate** (Passes < 0.14 cfs potential flow)
 ↑ **3=Sharp-Crested Rectangular Weir** (Passes < 20.02 cfs potential flow)

Secondary OutFlow Max=7.77 cfs @ 12.25 hrs HW=903.29' (Free Discharge)

↑ **4=Broad-Crested Rectangular Weir** (Weir Controls 7.77 cfs @ 1.35 fps)

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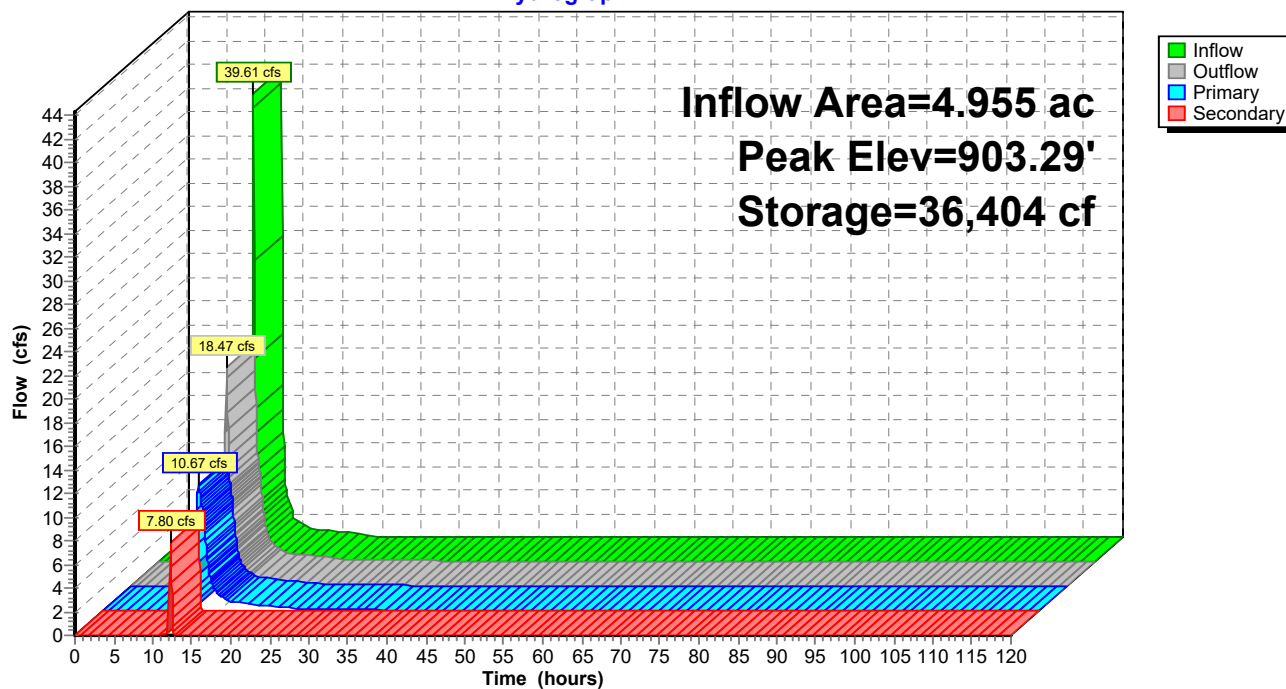
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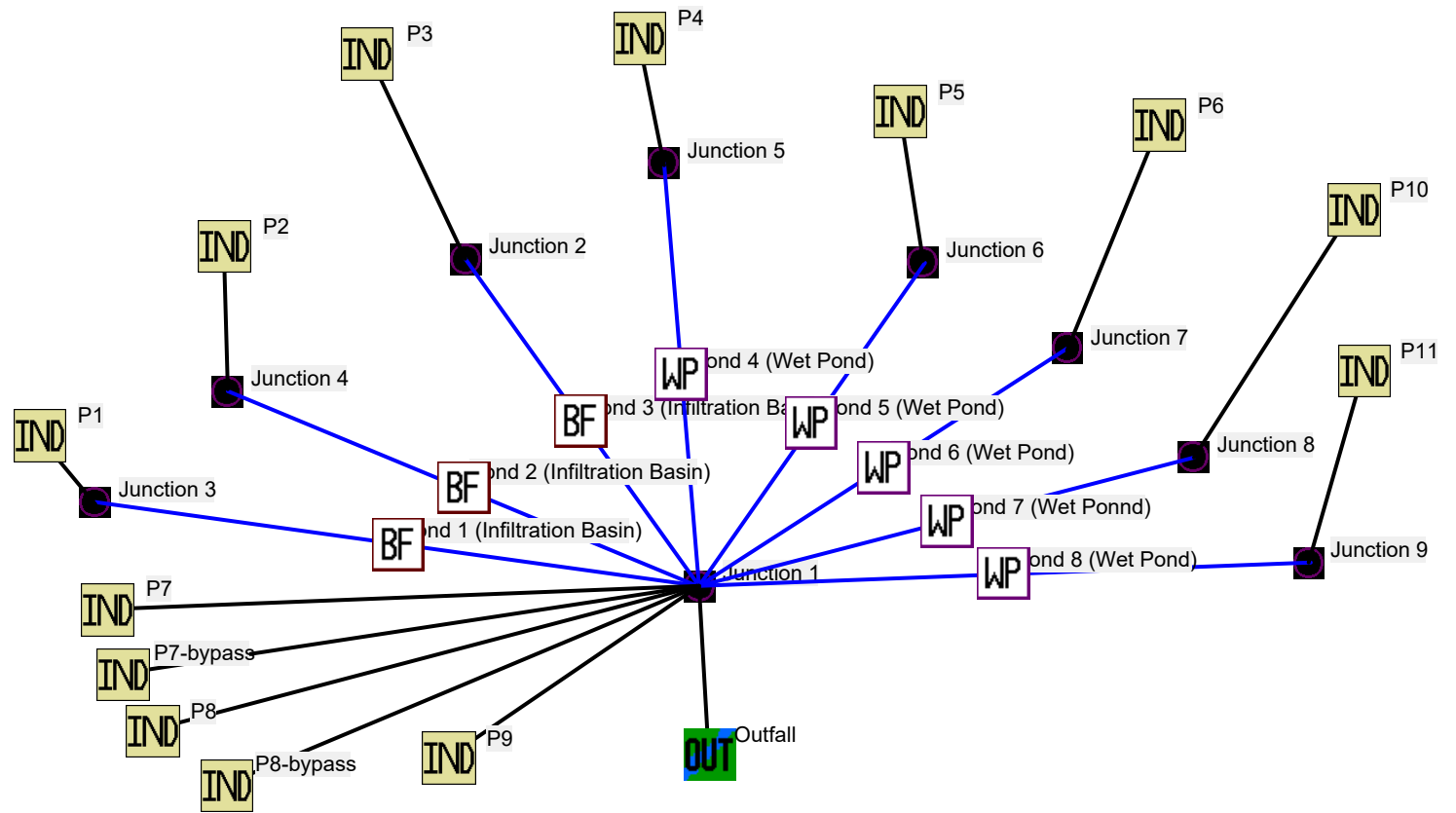
Pond 8P: Pond 8

Hydrograph



APPENDIX D

Water Quality Calculations



Data file name: P:\3230212\Eng Data\Hydrology\SLAMM\3230212.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppd
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 07-26-2024 Time: 07:43:45
Site information:

LU# 1 - Industrial: P7-bypass Total area (ac): 2.211
51 - Small Landscaped Areas 1: 2.211 ac. Normal Silty Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Industrial: P1 Total area (ac): 7.813
1 - Roofs 1: 5.179 ac. Flat Connected Percent of deciduous tree cover = 2%
Percent of coniferous tree cover = 2% Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 2.634 ac. Normal Silty Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Industrial: P2 Total area (ac): 3.262
1 - Roofs 1: 2.496 ac. Flat Connected Percent of deciduous tree cover = 2%
Percent of coniferous tree cover = 2% Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
51 - Small Landscaped Areas 1: 0.766 ac. Normal Silty Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz

LU# 4 - Industrial: P3 Total area (ac): 3.165

1 - Roofs 1: 2.454 ac. Flat Connected Source Area PSD File:
C:\WinSLAMM Files\NURP.cpz

51 - Small Landscaped Areas 1: 0.711 ac. Normal Silty Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz

LU# 5 - Industrial: P4 Total area (ac): 6.105

1 - Roofs 1: 2.496 ac. Flat Connected Percent of deciduous tree cover
= 2% Percent of coniferous tree cover = 2% Source Area PSD File: C:\WinSLAMM
Files\NURP.cpz

13 - Paved Parking 1: 2.228 ac. Disconnected Moderately Compacted Silty
Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

51 - Small Landscaped Areas 1: 1.041 ac. Normal Silty Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz

70 - Water Body Areas: 0.340 ac. Source Area PSD File:

LU# 6 - Industrial: P5 Total area (ac): 15.310

1 - Roofs 1: 2.816 ac. Flat Connected Source Area PSD File:
C:\WinSLAMM Files\NURP.cpz

13 - Paved Parking 1: 7.473 ac. Disconnected Moderately Compacted Silty
Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

51 - Small Landscaped Areas 1: 2.465 ac. Normal Silty Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz

70 - Water Body Areas: 2.556 ac. Source Area PSD File:

LU# 7 - Industrial: P6 Total area (ac): 9.612

13 - Paved Parking 1: 6.194 ac. Disconnected Normal Silty Source Area
PSD File: C:\WinSLAMM Files\NURP.cpz

51 - Small Landscaped Areas 1: 2.589 ac. Normal Silty Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz

70 - Water Body Areas: 0.829 ac. Source Area PSD File:

LU# 8 - Industrial: P7 Total area (ac): 2.211

51 - Small Landscaped Areas 1: 2.211 ac. Normal Silty Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz

LU# 9 - Industrial: P8 Total area (ac): 5.328

13 - Paved Parking 1: 0.033 ac. Disconnected Normal Silty Source Area
PSD File: C:\WinSLAMM Files\NURP.cpz

51 - Small Landscaped Areas 1: 5.295 ac. Normal Silty Source Area PSD
File: C:\WinSLAMM Files\NURP.cpz

LU# 10 - Industrial: P8-bypass Total area (ac): 0.512

2. Invert elevation above datum (ft): 3
 Outlet type: Broad Crested Weir
 1. Weir crest length (ft): 20
 2. Weir crest width (ft): 10
 3. Height of datum to bottom of weir opening: 4
 Outlet type: Surface Discharge Pipe
 1. Surface discharge pipe outlet diameter (ft): 0.5
 2. Pipe invert elevation above datum (ft): 1
 3. Number of surface pipe outlets: 1

Control Practice 2: Biofilter CP# 2 (DS) - Pond 2 (Infiltration Basin)

1. Top area (square feet) = 20580
2. Bottom area (square feet) = 7800
3. Depth (ft): 5
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data

Soil Type Fraction in Eng. Soil

Biofilter Outlet/Discharge Characteristics:

Outlet type: Sharp Crested Weir
 1. Weir length (ft): 6
 2. Invert elevation above datum (ft): 3.5
 Outlet type: Broad Crested Weir
 1. Weir crest length (ft): 20
 2. Weir crest width (ft): 10
 3. Height of datum to bottom of weir opening: 4
 Outlet type: Surface Discharge Pipe
 1. Surface discharge pipe outlet diameter (ft): 1.25
 2. Pipe invert elevation above datum (ft): 1.75
 3. Number of surface pipe outlets: 1

Control Practice 3: Wet Detention Pond CP# 1 (DS) - Pond 4 (Wet Pond)

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 5

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Sharp Crested Weir

1. Sharp crested weir length (ft): 6
2. Sharp crested weir height from invert: 2.5
3. Sharp crested weir invert elevation above datum (ft): 7.5

Outlet type: Orifice 1

1. Orifice diameter (ft): 1
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 9

Pond stage and surface area					
(cfs)	Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow
0.00	0	0.00	0.0000	0.00	
0.00	1	0.01	0.0010	0.00	
0.00	2	0.50	0.0770	0.00	
0.00	3	1.00	0.1040	0.00	
0.00	4	2.00	0.1310	0.00	
0.00	5	3.00	0.1590	0.00	
0.00	6	4.00	0.1880	0.00	
0.00	7	5.00	0.3400	0.00	
0.00	8	6.00	0.4050	0.00	
0.00	9	7.00	0.4720	0.00	
0.00	10	8.00	0.5410	0.00	
0.00	11	9.00	0.6130	0.00	
0.00	12	10.00	0.6870	0.00	

Control Practice 4: Wet Detention Pond CP# 2 (DS) - Pond 5 (Wet Pond)

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 5

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Sharp Crested Weir

1. Sharp crested weir length (ft): 6
2. Sharp crested weir height from invert: 2
3. Sharp crested weir invert elevation above datum (ft): 8

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5

Outlet type: Orifice 2

1. Orifice diameter (ft): 1
2. Number of orifices: 1
3. Invert elevation above datum (ft): 6.1

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 9

Pond stage and surface area

(cfs)	Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow
	0	0.00	0.0000	0.00	
0.00	1	0.01	0.0010	0.00	
0.00	2	0.50	1.9900	0.00	
0.00	3	1.00	2.0510	0.00	
0.00	4	2.00	2.1120	0.00	
0.00	5	3.00	2.1740	0.00	
0.00	6	4.00	2.2360	0.00	
0.00	7	5.00	2.5560	0.00	
0.00	8	6.00	2.6890	0.00	
0.00	9	7.00	2.8230	0.00	
0.00	10	8.00	2.9600	0.00	
0.00	11	9.00	3.0990	0.00	
0.00	12	10.00	3.2400	0.00	

Control Practice 5: Wet Detention Pond CP# 3 (DS) - Pond 6 (Wet Pond)

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 5

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Sharp Crested Weir

1. Sharp crested weir length (ft): 6

2. Sharp crested weir height from invert: 2

3. Sharp crested weir invert elevation above datum (ft): 8

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.25

2. Number of orifices: 1

3. Invert elevation above datum (ft): 5

Outlet type: Orifice 2

1. Orifice diameter (ft): 0.5

2. Number of orifices: 1

3. Invert elevation above datum (ft): 7

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20

2. Weir crest width (ft): 10

3. Height from datum to bottom of weir opening: 9

Pond stage and surface area

(cfs)	Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow
	0	0.00	0.0000	0.00	
0.00	1	0.01	0.0010	0.00	
0.00	2	0.50	0.4400	0.00	
0.00	3	1.00	0.4810	0.00	
0.00	4	2.00	0.5220	0.00	
0.00	5	3.00	0.5640	0.00	
0.00	6	4.00	0.6070	0.00	
0.00	7	5.00	0.8290	0.00	
0.00	8	6.00	0.9220	0.00	
0.00	9	7.00	1.0170	0.00	
0.00	10	8.00	1.1140	0.00	
0.00	11	9.00	1.2140	0.00	

	12	10.00	1.3160	0.00
0.00				

Control Practice 6: Biofilter CP# 3 (DS) - Pond 3 (Infiltration Basin)

1. Top area (square feet) = 24206
2. Bottom area (square feet) = 10993
3. Depth (ft): 5
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.001
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0
 - Soil Data
 - Soil Type Fraction in Eng. Soil
 - Biofilter Outlet/Discharge Characteristics:
 - Outlet type: Sharp Crested Weir
 1. Weir length (ft): 6
 2. Invert elevation above datum (ft): 3
 - Outlet type: Broad Crested Weir
 1. Weir crest length (ft): 20
 2. Weir crest width (ft): 10
 3. Height of datum to bottom of weir opening: 4
 - Outlet type: Surface Discharge Pipe
 1. Surface discharge pipe outlet diameter (ft): 1
 2. Pipe invert elevation above datum (ft): 1.25
 3. Number of surface pipe outlets: 1

Control Practice 7: Wet Detention Pond CP# 4 (DS) - Pond 7 (Wet Pond)

- Particle Size Distribution file name: Not needed - calculated by program
- Initial stage elevation (ft): 3
- Peak to Average Flow Ratio: 3.8
- Maximum flow allowed into pond (cfs): No maximum value entered
- Outlet Characteristics:
- Outlet type: Sharp Crested Weir
 1. Sharp crested weir length (ft): 6
 2. Sharp crested weir height from invert: 1.25
 3. Sharp crested weir invert elevation above datum (ft):

4.75

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.25
2. Number of orifices: 1
3. Invert elevation above datum (ft): 3

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 5

Pond stage and surface area

(cfs)	Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow
	0	0.00	0.0000	0.00	
0.00	1	0.01	0.0010	0.00	
0.00	2	0.50	1.1430	0.00	
0.00	3	1.00	1.1990	0.00	
0.00	4	2.00	1.2560	0.00	
0.00	5	3.00	1.5150	0.00	
0.00	6	4.00	1.8370	0.00	
0.00	7	5.00	2.1350	0.00	
0.00	8	6.00	2.3650	0.00	
0.00					

Control Practice 8: Wet Detention Pond CP# 5 (DS) - Pond 8 (Wet Pond)

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 3

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Sharp Crested Weir

1. Sharp crested weir length (ft): 6
2. Sharp crested weir height from invert: 1.75
3. Sharp crested weir invert elevation above datum (ft):

3.75

Outlet type: Orifice 1

1. Orifice diameter (ft): 0.17
2. Number of orifices: 1
3. Invert elevation above datum (ft): 3

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height from datum to bottom of weir opening: 4.5

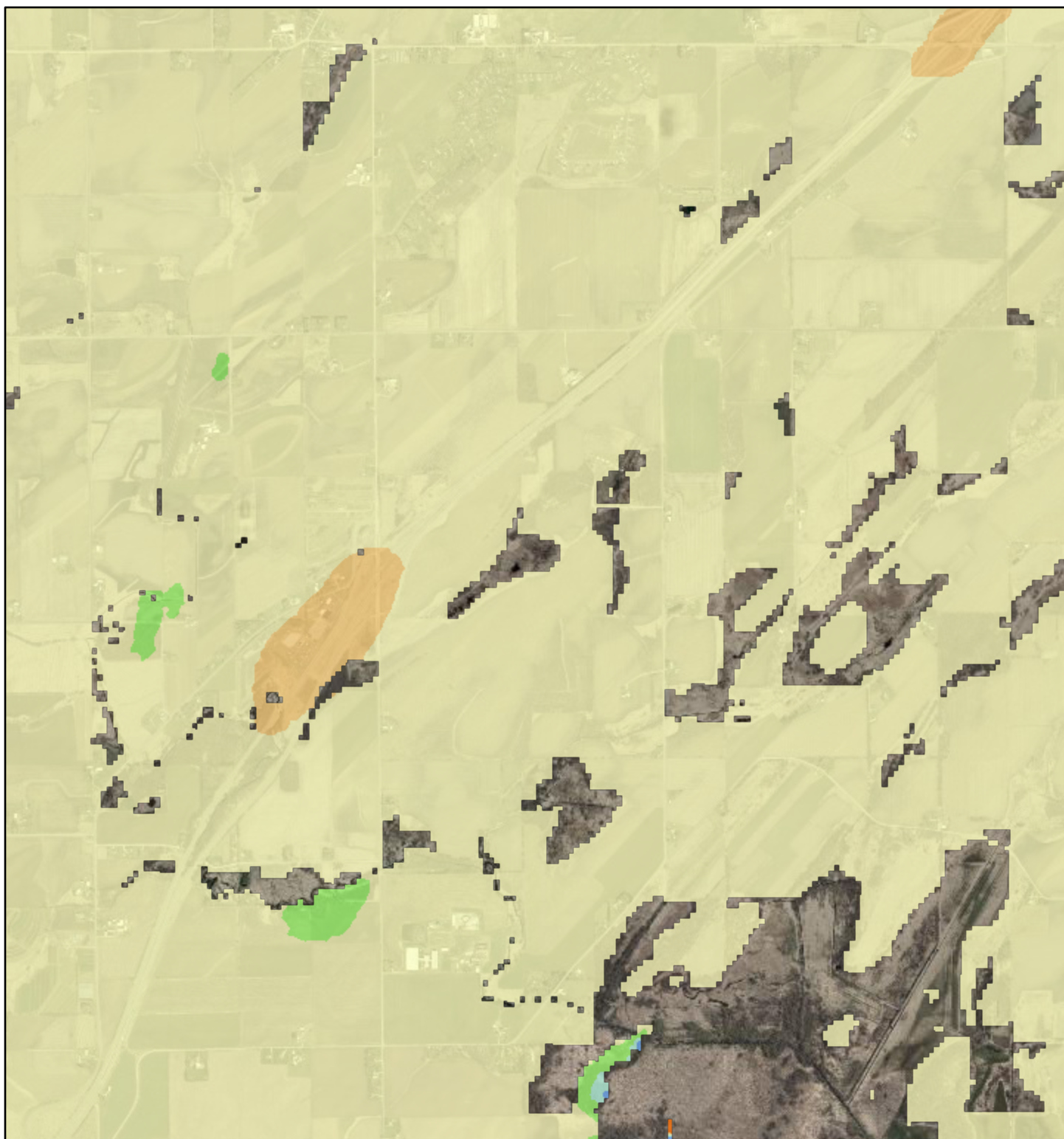
Pond stage and surface area					
	Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow
(cfs)	0	0.00	0.0000	0.00	
0.00	1	0.01	0.0010	0.00	
0.00	2	0.50	0.1170	0.00	
0.00	3	1.00	0.1350	0.00	
0.00	4	2.00	0.1530	0.00	
0.00	5	3.00	0.2530	0.00	
0.00	6	3.50	0.3900	0.00	
0.00	7	4.50	0.5970	0.00	
0.00	8	5.50	0.8260	0.00	

Data file name: P:\3230212\Eng Data\Hydrology\SLAMM\3230212.mdb
WinSLAMM Version 10.5.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppd
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/01/81 Model Run End Date: 12/31/81
Date of run: 07-25-2024 Time of run: 16:58:40
Total Area Modeled (acres): 68.984
Years in Model Run: 1.00

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	2.770E+06	-	98.34	17004	-
Outfall Total with Controls:	1.940E+06	29.96%	17.08	2069	87.83%
Annualized Total After Outfall Controls:	1.946E+06			2075	

. Percent Solids Reduction due to Engineered Media Not Used
. Percent Solids Reduction due to Engineered Media Not Used
. Percent Solids Reduction due to Engineered Media Not Used

Lov-It Groundwater Recharge



7/12/2024, 11:20:29 PM

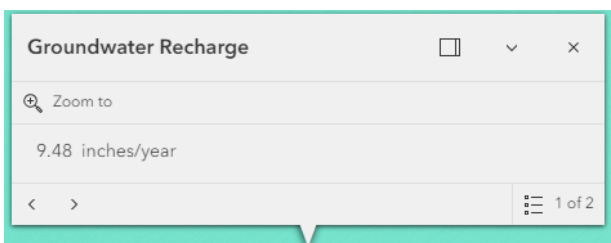
Groundwater Recharge (inches/year)

High : 49.6278

Low : 0



1:31,519
0 0.25 0.5 1 mi
0 0.42 0.85 1.7 km



Data File: P:\3230212\Eng Data\Hydrology\SLAMM\3230212.mdb
Rain File: WisReg - Madison WI 1981.RAN
Date: 07-25-24 Time: 4:58:08 PM
Site Description:

Runoff Volume Total (cf) at the Outfall

	Numb	Start Date	Rain Total (l	Outfall Tota Rv	Total Losse	Calculated Event Peak Flow (cfs)
1	1/1/1981	-	-	-	-	-
2	1/6/1981	-	-	-	-	-
3	1/6/1981	-	-	-	-	-
4	1/15/1981	-	-	-	-	-
5	1/31/1981	-	-	-	-	-
6	2/5/1981	-	-	-	-	-
7	2/6/1981	-	-	-	-	-
8	2/8/1981	-	-	-	-	-
9	2/9/1981	-	-	-	-	-
10	2/10/1981	-	-	-	-	-
11	2/21/1981	-	-	-	-	-
12	2/23/1981	-	-	-	-	-
13	2/27/1981	-	-	-	-	-
14	3/10/1981	-	-	-	-	-
15	3/25/1981	0.07	2570	0.147	0.06	98.7 0.101
16	3/29/1981	0.05	846.9	0.068	0.05	98.7 0.075
17	3/29/1981	0.06	1397	0.093	0.05	98.6 0.139
18	3/29/1981	0.07	4225	0.241	0.05	99 0.073
19	4/3/1981	0.02	381.5	0.076	0.02	99.5 0.037
20	4/3/1981	0.26	14118	0.217	0.2	96.2 0.58
21	4/7/1981	0.71	19733	0.111	0.63	86.4 0.839
22	4/8/1981	0.41	30607	0.298	0.29	95.4 0.821
23	4/10/1981	1.06	44612	0.168	0.88	84 2.425
24	4/12/1981	0.13	22459	0.69	0.04	99.6 0.669
25	4/13/1981	0.32	30763	0.384	0.2	97.1 0.651
26	4/16/1981	0.01	13653	5.452	-0.04	100.1 0.087
27	4/19/1981	0.04	9400	0.938	0	100 0.079
28	4/22/1981	0.01	356.9	0.143	0.01	99.8 0.024
29	4/22/1981	0.02	738.8	0.148	0.02	99.6 0.046
30	4/23/1981	0.05	2056	0.164	0.04	99.1 0.044
31	4/28/1981	0.3	7902	0.105	0.27	93.6 0.761
32	4/28/1981	0.06	7947	0.529	0.03	99.6 0.155
33	4/30/1981	0.02	3708	0.74	0.01	99.9 0.051
34	5/4/1981	0.09	3680	0.163	0.08	98.4 0.078
35	5/10/1981	0.08	3067	0.153	0.07	98.5 0.125
36	5/13/1981	0.01	267.6	0.107	0.01	99.8 0.015
37	5/23/1981	0.02	325.3	0.065	0.02	99.5 0.037
38	5/24/1981	0.1	4475	0.179	0.08	98.3 0.187
39	5/29/1981	0.34	19300	0.227	0.26	95.2 1.01
40	6/2/1981	0.01	365.3	0.146	0.01	99.8 0.021
41	6/3/1981	0.01	555.3	0.222	0.01	99.8 0.019
42	6/8/1981	0.01	145.2	0.058	0.01	99.7 0.014
43	6/8/1981	0.33	10809	0.131	0.29	93.6 0.659
44	6/9/1981	0.07	10263	0.585	0.03	99.7 0.131
45	6/12/1981	0.43	20587	0.191	0.35	93.3 0.662
46	6/15/1981	2.59	206062	0.318	1.77	77.5 4.545
47	6/20/1981	0.34	22580	0.265	0.25	95.7 0.354
48	6/21/1981	0.32	29352	0.366	0.2	97 0.899
49	6/23/1981	0.51	30362	0.238	0.39	93.2 0.895
50	6/25/1981	0.13	20353	0.625	0.05	99.5 0.409
51	6/28/1981	0.24	29977	0.499	0.12	98.5 0.948
52	7/4/1981	0.05	2266	0.181	0.04	99.1 0.104
53	7/11/1981	0.5	13058	0.104	0.45	89.7 1.426
54	7/12/1981	0.14	7588	0.216	0.11	97.9 0.432
55	7/12/1981	0.86	22685	0.105	0.77	83.6 3.458
56	7/13/1981	1.32	67583	0.204	1.05	82.6 3.886
57	7/14/1981	0.12	12676	0.422	0.07	99 0.588
58	7/15/1981	0.07	44868	2.56	-0.11	100.4 0.303
59	7/18/1981	0.12	14346	0.477	0.06	99.2 0.448
60	7/20/1981	0.54	15535	0.115	0.48	89.4 1.571
61	7/20/1981	0.1	27864	1.113	-0.01	100.1 0.442
62	7/23/1981	0.09	12164	0.54	0.04	99.5 0.156
63	7/25/1981	0.24	15140	0.252	0.18	96.8 0.641
64	7/27/1981	0.66	45840	0.277	0.48	92.3 0.628
65	8/2/1981	0.58	25131	0.173	0.48	90.7 0.653
66	8/3/1981	0.04	8820	0.891	0	100 0.135
67	8/5/1981	0.01	6206	2.478	-0.01	100.1 0.06
68	8/7/1981	0.02	3096	0.618	0.01	99.9 0.039
69	8/14/1981	2.09	191257	0.365	1.33	83.1 2.637
70	8/26/1981	0.49	12185	0.099	0.44	89.7 1.198
71	8/26/1981	1.63	65589	0.161	1.37	76.9 1.213
72	8/28/1981	0.62	24967	0.161	0.52	89.7 1.173
73	8/28/1981	0.04	43415	4.334	-0.13	100.3 0.352
74	8/31/1981	0.03	6484	0.863	0	100 0.203
75	8/31/1981	1.52	127921	0.336	1.01	86.1 1.699
76	9/7/1981	0.89	65368	0.293	0.63	90.3 1.69
77	9/11/1981	0.08	20797	1.038	0	100 0.359
78	9/16/1981	0.03	2690	0.358	0.02	99.7 0.043
79	9/21/1981	0.45	23973	0.213	0.35	93.5 0.69
80	9/24/1981	0.9	32960	0.146	0.77	85.1 0.669
81	9/26/1981	0.12	22902	0.762	0.03	99.7 0.32
82	9/28/1981	0.1	6361	0.254	0.07	98.7 0.271
83	9/29/1981	0.16	7651	0.191	0.13	97.4 0.53
84	9/30/1981	0.36	8617	0.096	0.33	92.1 1.429
85	10/1/1981	0.01	18091	7.225	-0.06	100.1 0.144
86	10/4/1981	0.15	9090	0.242	0.11	97.9 0.357
87	10/5/1981	0.04	1527	0.152	0.03	99.2 0.104
88	10/5/1981	0.02	6272	1.252	-0.01	100 0.059
89	10/9/1981	0.14	6715	0.192	0.11	97.7 0.264
90	10/13/1981	1.2	42098	0.14	1.03	80.7 1.335
91	10/15/1981	0.02	22948	4.582	-0.07	100.2 0.222
92	10/17/1981	0.95	27441	0.115	0.84	82.8 1.433
93	10/18/1981	0.06	37936	2.525	-0.09	100.4 0.27
94	10/21/1981	0.06	3632	0.242	0.05	99.2 0.135
95	10/21/1981	0.01	15866	6.336	-0.05	100.1 0.093
96	10/24/1981	0.01	6528	2.807	-0.02	100.1 0.053
97	10/31/1981	0.01	234.6	0.094	0.01	99.8 0.014
98	11/5/1981	0.04	1300	0.13	0.03	99.2 0.054
99	11/15/1981	0.07	2556	0.146	0.06	98.7 0.07
100	11/18/1981	0.05	1046	0.084	0.05	98.8 0.098
101	11/19/1981	0.26	14534	0.223	0.2	96.3 0.16
102	11/23/1981	0.18	8564	0.19	0.15	97.1 0.259
103	11/25/1981	0.89	54041	0.242	0.67	88.9 0.723
104	11/30/1981	0.37	21756	0.235	0.28	94.9 0.291
105	12/3/1981	-	-	-	-	-
106	12/14/1981	-	-	-	-	-
107	12/20/1981	-	-	-	-	-
108	12/26/1981	-	-	-	-	-
109	12/31/1981	-	-	-	-	-
Minimum:	0	0	0.058	-0.13	76.9	0.014
Maximum:	2.59	206062	7.225	1.77	100.4	4.545
Average:	0.26	17800	0.574	0.19	89.9	1.537
Total:		28.81	1.940E+06		21.09	

* Note: NRCS does not recommend using CN method for rains < 0.5 in.
See "PreDevelopment Areas and CN" Help for more info.