

Lake Country Lutheran

Campus Drive & Willow Drive
Village of Hartland,
Waukesha County, Wisconsin

Preliminary

Storm Water Management Plan

Prepared For:
Neumann Developments, Inc.

Prepared By:



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Introduction

Lake Country Lutheran is a proposed residential development located between Campus Drive and Willow Drive, east of Lake Country Lutheran High School. The proposed development is comprised of 47 single-family condominium buildings situated along a private road system that connects to the public drive and Campus Drive and a private cul-de-sac that also connects to the public drive (Proposed Development Conditions). Six multi-family buildings (134-units total) and associated drives, parking, garages, sidewalks and amenity areas are located south of the public drive (Future Development Conditions). The development is laid out to reduce impact to the existing woodlands to the largest extent practicable. The primary objective of the storm water management plan for the Lake Country Lutheran development is to follow existing drainage patterns and keep the site internally drained while managing development runoff and providing water quality control prior to discharging to existing kettles, per Village and WDNR requirements.

Owner

The owner and responsible entity for the storm water management practices is:

Neumann Developments, Inc.
N27W24025 Paul Court, Suite 100
Pewaukee, WI 53072
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Property Description

The 53.4-acre property is identified as tax key HAV0423981, described as being part of the SW ¼ & SE ¼ of Section 34, Town 8 North, Range 18 East, in the Village of Hartland, Waukesha County, Wisconsin.

Design Requirements

The following design standards have been used to develop the storm water management plan for Lake Country Lutheran.

- Wisconsin Department of Natural Resources (WDNR) Technical Standards, NR 151 and NR 216.
- Village of Hartland Municipal Code Chapter 76 & Erosion Control and Stormwater Management Requirements

The proposed development is located on an internally drained site which produces no discharge (except in the extreme 100-year FROZEN condition). The proposed stormwater management plan will continue as an internally drained site and reduce FROZEN 100-year runoff rates, as compared to the existing site.

Analysis Overview

Existing and post development storm water runoff conditions for Lake Country Lutheran have been analyzed for: runoff volume, peak volume, discharge, detention area storage capacity required, outlet structures and storm sewer system requirements. The software package used for modeling and analysis was HydroCAD version 10.00 by HydroCAD Software Solutions. HydroCAD uses NRCS methods to

generate runoff and pond routing hydrographs. HydroCAD’s capabilities include: modeling simple or complex drainage basins, combining hydrographs to determine runoff and storage requirements, analyzing interconnected detention basins and detention basin and outlet structure sizing.

The computer model analyzed the one, two, ten, and one hundred-year, FROZEN one hundred-year storm events. NRCS MSE3 rainfall distribution is used. The necessary hydrographs were generated to determine the storm water runoff rates, depths, and volumes for pre and post development conditions. This information is used to calculate detention basin size and outlet requirements.

Run-off curve numbers for the onsite and off-site areas were determined using the requirements outlined in the NRCS TR-55 Manual. The existing soils on the site are Type B: Casco-Rodman Complex (CrD, CrE), Hochheim Loam (HmB2, HmC2, HmD2), Hochheim Soils (HoD3), Dodge Silt Loam (DdB) and Juneau silt loam (JuA). Please refer to the attached soils map for additional information.

The post development analysis runoff curve numbers are assigned based on TR-55 standards, and by calculating composite curve numbers per TR-55 standards, as applicable.

The rainfall depths for the 24-hour duration storm are:

Rainfall Depths for 24-Hour Storm Duration			
(NOAA Atlas 14 - Waukesha)			
1 year	2 year	10 year	100 year
2.40 inches	2.70 inches	3.81 inches	6.18 inches

The following describes the curve numbers assigned for composite calculations:

Curve Numbers:	Impervious Area (Rooftop, Pavement, Sidewalk, Etc.),	CN = 98
	Open Space: Type “B” Soil,	CN = 61
	Woods: Type “B” Soil,	CN = 55
	Cropland: Type “B” Soil,	CN = 69

Existing Site Description & Drainage Summary

Description

The subject site is primarily woodlands with an asphalt trail running east west through the center of the site, connecting Campus Drive and Willow Drive. The site also contains a walking trail meandering throughout the site. As such, the storm water analysis modeled the existing areas as woods and open space with some impervious area accounting for the existing asphalt trail and offsite impervious run on from the single-family lots along Willow Drive, Gail Court and Hickory Court. An existing infiltration basin is located in the northwest corner of the development site, which overtops and spills into the subject site during the FROZEN 100-year storm event.

Existing Drainage Areas

The site is broken down into seventeen (17) drainage areas based on the kettles located throughout the site, as illustrated on the Existing Drainage Map and generally described as:

- E-1:** Comprised of 15.48 acres, drainage area E-1 receives runoff from onsite woodland and trail area and offsite cropland and residential area. E-1 drains directly to Kettle 1.
- E-2:** Drainage area E-2 is located southwest of drainage area E-1 and receives runoff from onsite woodland area and the existing asphalt trail, 5.43 acres. This drainage area overland flows to Kettle 2.
- E-3:** Onsite woodland and existing asphalt trail makes up the 1.59 acre drainage area that is E-3. E-3 overland flows to Kettle 3.
- E-4:** This small drainage area, 0.37 acres, is in the west central portion of the site and comprised of onsite woodland area. This area overland flows to Kettle 4 prior to discharging to E-2.
- E-5:** Drainage area E-5 is located in the central portion of the site south of the asphalt trail and made up of 6.18 acres of onsite woodland, open space and asphalt trail. Runoff overland flows to Kettle 5 prior to discharging through a 15” RCP culvert to Kettle 3.
- E-6:** This 2.78 acre drainage area is located along the western limits of the property and is primarily onsite woodland area that overland flows to Kettle 6.
- E-10:** Comprised of 1.92 acres of onsite woodland area and offsite rear-yard run-on, this drainage area overland flows to Kettle 10.
- E-11:** This small 0.73 acre onsite drainage area is comprised of primarily woodland area that drains to Kettle 11.
- E-12:** Drainage area E-12 is located along the northern portion of the Willow Drive connection and consists of 2.90 acres of onsite woodland area and asphalt trail, as well as offsite roadway & residential run-on. This area is tributary to Kettle 12, which also receives outflow from Kettle 13.
- E-13:** Located along the southern portion of the Willow Drive connection, drainage area is comprised of 1.01 acres of onsite woodland area and offsite rear yard run-on, that drains to Kettle 13 prior to discharging through two 24” RCP culverts to Kettle 12.
- E-14:** Drainage area E-14, 8.13 acres, consist of onsite woodland area and the northern portion of the S.T.H. 16 R.O.W. that drains to Kettle 14 via ditch and overland flow.
- E-15:** Drainage area E-15 is located to the east of the subject property and comprised of 0.87 acres of offsite rear yard and woodland area that overland flows to Kettle 15, discharging toward the proposed development site in the FROZEN 100-year condition.
- E-16:** Located in the southwest corner of the site, drainage area E-16 consists of 1.62 acres of onsite woodland area that drains to Kettle 16.
- E-17:** Drainage area E-17 consists of 4.30 acres of onsite open space, woodland area and walking trail. This drainage area is located in the southwest corner of the site and overland flows to Kettle 17.
- E-18:** Drainage area E-18 is approximately 5.99 acres and is located along the west side of the site. This area is comprised of Drainage Areas C and D from the Lake County Lutheran High School Stormwater Management Plan dated July 28, 2008. Runoff from this area is directed to the Existing Infiltration Basin located near the northwest corner of the site.
- E-19:** Small drainage area, approximately 0.10 acres, located along the west side of the site. This area is part of Drainage Area G from the Lake County Lutheran High School Stormwater Management Plan. Drainage from this area is tributary to an Existing Wet Detention Pond located on the school campus.
- E-20:** In the northwest corner of the subject site, drainage area E-20 is comprised of 4.81 acres of onsite woodland area, walking trail and some open space. This area receives runoff via overland flow and discharge from the Existing Infiltration Basin in the 100-year FROZEN condition.

The following table provides a detailed breakdown of the land use characteristics of each area, refer to the existing drainage map provided in Appendix 2:

Pre-Developed Condition								
Lot Coverage	E-1	E-2	E-3	E-4	E-5	E-6	E-10	E-11
	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)
Open Space "B" (CN=61)	0.00	0.38	0.19	0.02	0.08	0.00	0.00	0.00
Woods "B" (CN=55)	11.95	4.96	1.28	0.35	6.10	2.78	1.47	0.73
Cropland "B" (CN=69)	0.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/2 ac Residential (CN=70)	2.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/4 ac Residential (CN=75)	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.00
LCL Report Area C (CN=78)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Impervious (CN=98)	0.00	0.09	0.12	0.00	0.00	0.00	0.00	0.00
Sub-Total (ac)	15.48	5.43	1.59	0.37	6.18	2.78	1.92	0.73
<i>Composite CN</i>	58	56	59	55	55	55	60	55

Pre-Developed Condition									
Lot Coverage	E-12	E-13	E-14	E-15	E-16	E-17	E-18	E-19	E-20
	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)
Open Space "B" (CN=61)	0.27	0.00	2.60	0.09	0.00	0.00	0.62	0.06	0.11
Woods "B" (CN=55)	1.45	0.76	4.65	0.48	1.62	4.30	0.85	0.00	4.70
Cropland "B" (CN=69)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/2 ac Residential (CN=70)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/4 ac Residential (CN=75)	1.07	0.25	0.05	0.29	0.00	0.00	0.00	0.00	0.00
LCL Report Area C (CN=78)	0.00	0.00	0.00	0.00	0.00	0.00	4.29	0.00	0.00
Impervious (CN=98)	0.11	0.00	0.83	0.01	0.00	0.00	0.23	0.04	0.00
Sub-Total (ac)	2.90	1.01	8.13	0.87	1.62	4.30	5.99	0.10	4.81
<i>Composite CN</i>	65	60	61	63	55	55	74	76	55

Post-Development Site Description & Drainage Summary

Description

The proposed Lake Country Lutheran development is a 47 single-family condominium unit residential subdivision along a private street system to the north (Proposed Development Conditions) and to the south are six multi-family buildings (totaling 138 units) and associated drives, parking, garages, sidewalks and amenity areas (Future Development Conditions). The layout of the condominium units, multifamily building and streets was intentional and designed to maximize the amount of wooded area that can be preserved through this development. The development areas drain to proposed basins for the primary means of storm water management and water quality prior to discharging to the existing kettles.

Proposed Drainage Areas

The post-development site is divided in to seventeen (17) drainage areas, as illustrated on the Proposed Drainage Map and generally described as:

P-1: Comprised of 11.90 acres, drainage area P-1 receives runoff from onsite rear-yard drainage, woodland and trail areas and offsite cropland and residential area. Pond 20 discharges to drainage area P-1. P-1 drains directly to existing Kettle 1

P-2: Drainage area P-2 consists of 2.03 acres of condominium rear yard runoff, condo amenity area and woodland areas. The runoff overland flows to existing Kettle 2.

P-3: 0.87 acres, this small drainage area receives runoff from condo rear-yard runoff, woodland area and Pond 5 discharge, and flows to existing Kettle 3.

P-5: Drainage area P-5 accounts for 7.17 acres of multi-family area runoff, which drains to Pond 5 via storm sewer, curb and gutter, swales and overland flow.

P-10: P-10 included 1.85 acres of area and encompasses the existing drainage area E-10 except in the proposed condition a small portion of rear yard runoff is included and overland flows to existing Kettle 10.

P-11: The eastern single-family condo cul-de-sac makes up the 3.12 acre drainage area, P-11. Runoff is comprised of roof, driveway, yard, road and open space and is tributary to Pond 11 via swales, overland flow, curb & gutter and storm sewer. Kettle 2 overtops to drainage area P-11 in the proposed condition.

P-12: P-12 is comprised of single-family condo rear yard runoff, existing asphalt trail and offsite roadway & residential area. This 2.94 acre drainage area also receives discharge from Kettle 13 and is managed by existing Kettle 12.

P-18: Drainage area P-18 is approximately 5.85 acres and is located along the west side of the site. This area is comprised of Drainage Areas C and D from the Lake County Lutheran High School Stormwater Management Plan dated July 28, 2008. Runoff from this area is directed to the Existing Infiltration Basin located near the northwest corner of the site.

P-19: Small drainage area, approximately 0.10 acres, located along the west side of the site. This area is part of Drainage Area G from the Lake County Lutheran High School Stormwater Management Plan. Drainage from this area is tributary to an Existing Wet Detention Pond located on the school campus.

P-20: Drainage area P-20 is located in the northwest corner of the development and consists of 9.67 acres of single-family condominium runoff. Discharge drains to Pond 20 via overland flow, swales, curb & gutter and storm sewer. The existing infiltration basin discharges to drainage area P-20 in the FROZEN 100-year condition.

Post-Developed Condition										
Lot Coverage	P-1 (acres)	P-2 (acres)	P-3 (acres)	P-5 (acres)	P-10 (acres)	P-11 (acres)	P-12 (acres)	P-18 (acres)	P-19 (acres)	P-20 (acres)
Open Space "B" (CN=61)	0.54	0.57	0.26	0.88	0.08	1.04	0.65	0.76	0.06	4.36
Woods "B" (CN=55)	8.01	1.33	0.56	5.56	1.31	1.00	1.01	0.38	0.00	1.63
Cropland "B" (CN=69)	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25
Water (CN=98)	0.00	0.00	0.00	0.08	0.00	0.08	0.00	0.00	0.00	0.16
1/2 ac Residential (CN=70)	2.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1/4 ac Residential (CN=75)	0.00	0.00	0.00	0.00	0.45	0.00	1.07	0.00	0.00	0.00
LCL Report Area C (CN=78)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.29	0.00	0.00
Impervious (CN=98)	0.08	0.13	0.05	0.65	0.01	1.00	0.21	0.42	0.04	3.27
Sub-Total (ac)	11.90	2.03	0.87	7.17	1.85	3.12	2.94	5.85	0.10	9.67
<i>Composite CN</i>	60	59	59	60	60	72	67	76	76	73

Future Drainage Areas

The future development site is divided in to fifteen (15) drainage areas, as illustrated on the Future Drainage Map and generally described as:

F-5: Drainage area F-5 accounts for 11.78 acres of multi-family area runoff, which drains to Pond 5 via storm sewer, curb and gutter, swales and overland flow.

F-16: Drainage area F-16 is located along the southern property line. Multifamily sidewalk, open space and woodland area comprises this 1.61 acre drainage area tributary, via overland flow, to existing Kettle 16.

F-17: F-17 includes 3.57 acres of area and is located in the southwest corner of the site and receives runoff from multifamily garage roof, woodland area and open space; discharging via overland flow to proposed Kettle 17. Kettle 17 storage area is slightly altered by associated grading with the multifamily development, however the remainder of the kettle remains unchanged.

F-18: Drainage area F-18 is approximately 5.86 acres and is located along the west side of the site. This area is comprised of Drainage Areas C and D from the Lake County Lutheran High School Stormwater Management Plan dated July 28, 2008. Runoff from this area is directed to the Existing Infiltration Basin located near the northwest corner of the site.

F-19: Small drainage area, approximately 0.10 acres, located along the west side of the site. This area is part of Drainage Area G from the Lake County Lutheran High School Stormwater Management Plan. Drainage from this area is tributary to an Existing Wet Detention Pond located on the school campus.

F-20: Drainage area F-20 is located in the northwest corner of the development and consists of 9.68 acres of single-family condominium runoff. Discharge drains to Pond 20 via overland flow, swales, curb & gutter and storm sewer. The existing infiltration basin discharges to drainage area F-20 in the FROZEN 100-year condition.

The following table describes the lot coverage breakdown for each drainage area which was used to develop the composite curve numbers:

Future Condition						
Lot Coverage	F-5	F-16	F-17	F-18	F-19	F-20
	(acres)	(acres)	(acres)	(acres)	(acres)	(acres)
Open Space "B" (CN=61)	3.72	0.39	0.15	0.78	0.04	4.48
Woods "B" (CN=55)	1.61	1.11	3.31	0.27	0.00	1.44
Cropland "B" (CN=69)	0.00	0.00	0.00	0.00	0.00	0.25
Water (CN=98)	0.30	0.00	0.00	0.00	0.00	0.16
1/2 ac Residential (CN=70)	0.00	0.00	0.00	0.00	0.00	0.00
1/4 ac Residential (CN=75)	0.00	0.00	0.00	0.00	0.00	0.00
LCL Report Area C (CN=78)	0.00	0.00	0.00	4.29	0.00	0.00
Impervious (CN=98)	6.15	0.11	0.11	0.52	0.06	3.35
Sub-Total (ac)	11.78	1.61	3.57	5.86	0.10	9.68
<i>Composite CN</i>	80	59	57	76	83	74

Descriptions & Summaries of Storm Water Practices

Pond 5 Summary

Pond 5 is a large basin located south of the public drive. It receives runoff from drainage area P-5 via storm sewer, curb & gutter, grass swales and overland flow. This basin discharges through an 18-inch reinforce concrete culvert pipe to Kettle 3. The emergency overflow spillway is a low point in the public drive near the southeast corner of the pond. The north and east portions of Pond 5 (including the outlet control and emergency overflow spillway) will be constructed during the first phase of construction (Proposed Development Conditions) to manage runoff from the proposed public drive. Pond 5 will be expanded during the second phase of development to accommodate Future Development Conditions (includes the construction of six multi-family buildings and associated drives, parking, garages, sidewalks and amenity areas).

The following describes this basin:

- “Top” of Berm = 987.0
- Overflow = 985.6
- NWL = 981.0
- Bottom = 976.0
- 18-inch RCP culvert I.E. = 981.0

Proposed Development Conditions:

- 100-yr FROZEN = 984.04
- 100-yr = 982.40
- 10-yr = 981.63
- 2-yr = 981.29
- 1-yr = 981.20

Future Development Conditions:

- 100-yr FROZEN = 985.47
- 100-yr = 984.36
- 10-yr = 982.71
- 2-yr = 982.02
- 1-yr = 981.85

Pond 11 Summary

This wet pond is located near the center of the development, northwest of the single-family condominium development. Inflow to this pond is primarily from drainage area P-11 with some discharge from Kettle 2 in large storm events. Pond 11 discharges via a 12-inch reinforce concrete culvert pipe to Kettle 1. The emergency overflow spillway is on the northern side of the pond and overflows to Kettle 1.

The following describes this wet pond:

- Top of Berm = 969.0
- Overflow = 968.0
- NWL = 964.0
- Bottom = 959.0
- 12-inch RCP culvert I.E. = 964.0

Proposed Development Conditions:

- 100-yr FROZEN = 968.34
- 100-yr = 965.91
- 10-yr = 964.83
- 2-yr = 964.46
- 1-yr = 964.37

Future Development Conditions:

- 100-yr FROZEN = 968.47
- 100-yr = 967.25
- 10-yr = 964.83
- 2-yr = 964.46
- 1-yr = 964.37

Pond 20 Summary

Pond 20 is located in the northern portion of the site. Pond 20 receives discharge from drainage area P-20, and the existing infiltration basin during the frozen 100-year storm event. This basin discharges through a 12-inch reinforce concrete culvert pipe to Kettle 1. The emergency overflow route is in the southeast corner of the basin and directed towards Kettle 1.

The following describes this basin:

- Top of Berm = 994.25
- Overflow = 993.25
- NWL = 989.0
- Bottom = 984.0
- 12-inch RCP culvert I.E. = 989.0

Proposed Development Conditions:

- 100-yr FROZEN = 993.90
- 100-yr = 993.08
- 10-yr = 990.55
- 2-yr = 989.77
- 1-yr = 989.61

Future Development Conditions:

- 100-yr FROZEN = 993.84
- 100-yr = 993.21
- 10-yr = 990.65
- 2-yr = 989.81
- 1-yr = 989.65

Kettle Peak Water Elevations

The table below summarizes the storm water peak elevations for the kettles throughout the site.

		Storm Event	Existing	Proposed	Future			Storm Event	Existing	Proposed	Future
Kettle 1	Spillway-975 Bottom-944	1-yr	944.98	947.31	947.42	Kettle 12	Spillway-963 Bottom-956	1-yr	956.87	956.96	956.96
		2-yr	945.53	948.15	948.26			2-yr	957.07	957.16	957.16
		10-yr	947.63	951.09	951.21			10-yr	957.81	957.92	957.92
		100-yr	951.74	956.41	958.71			100-yr	959.25	959.38	959.38
		FROZEN	963.76	966.20	966.78			FROZEN	964.60	964.57	964.16
Kettle 2	Spillway-973.7 Bottom-966	1-yr	966.85	966.64	968.34	Kettle 13	Spillway-966 Bottom-959.4	1-yr	959.56	959.56	959.56
		2-yr	967.16	966.84	969.57			2-yr	959.59	959.59	959.59
		10-yr	968.44	967.57	972.78			10-yr	959.69	959.69	959.69
		100-yr	972.48	972.04	974.43			100-yr	959.88	959.88	959.88
		FROZEN	975.06	974.70	974.91			FROZEN	964.60	964.57	964.16
Kettle 3	Spillway-976 Bottom-972	1-yr	972.53	973.04	976.06	Kettle 14	Spillway-961.3 Bottom-955	1-yr	955.92	955.92	956.00
		2-yr	972.95	973.53	976.12			2-yr	956.36	956.36	956.42
		10-yr	974.57	975.32	976.33			10-yr	958.01	958.01	957.98
		100-yr	976.16	976.26	976.50			100-yr	961.28	961.28	961.03
		FROZEN	976.48	976.49	976.57			FROZEN	964.60	964.57	964.16
Kettle 4	Spillway-1008.5 Bottom-1007	1-yr	1007.01	N/A	N/A	Kettle 15	Spillway-972.5 Bottom-970	1-yr	970.19	970.19	970.19
		2-yr	1007.05					2-yr	970.32	970.32	970.32
		10-yr	1007.34					10-yr	970.88	970.88	970.88
		100-yr	1007.92					100-yr	971.90	971.90	971.90
		FROZEN	1008.61					FROZEN	972.67	972.67	972.67
Kettle 5	Spillway-985.1 Bottom-982.5	1-yr	982.67	N/A	N/A	Kettle 16	Spillway-1007 Bottom-1005	1-yr	1005.01	1005.01	1005.04
		2-yr	982.73					2-yr	1005.03	1005.03	1005.10
		10-yr	982.96					10-yr	1005.32	1005.32	1005.47
		100-yr	983.45					100-yr	1007.01	1007.01	1007.01
		FROZEN	984.88					FROZEN	1007.52	1007.52	1007.53
Kettle 6	Spillway-1012.7 Bottom-1011	1-yr	1011.01	1011.01	N/A	Kettle 17	Spillway-1012 Bottom-1011	1-yr	1011.09	1011.09	1011.13
		2-yr	1011.02	1011.02				2-yr	1011.21	1011.21	1011.24
		10-yr	1011.22	1011.22				10-yr	1011.62	1011.62	1011.62
		100-yr	1011.81	1011.81				100-yr	1012.09	1012.09	1012.08
		FROZEN	1012.90	1012.90				FROZEN	1012.43	1012.43	1012.43
Kettle 10	Spillway-964.5 Bottom-953	1-yr	954.45	954.42	954.42	Kettle 20	Spillway-995.5 Bottom-992	1-yr	992.02	N/A	N/A
		2-yr	954.85	954.82	954.82			2-yr	992.10		
		10-yr	956.00	955.96	955.96			10-yr	992.51		
		100-yr	957.85	957.77	957.77			100-yr	993.27		
		FROZEN	964.60	964.57	964.16			FROZEN	995.21		
Kettle 11	Spillway-980.5 Bottom-979	1-yr	979.04	N/A	N/A	Kettle 20	Spillway-995.5 Bottom-992	1-yr	992.02	N/A	N/A
		2-yr	979.14					2-yr	992.10		
		10-yr	979.57					10-yr	992.51		
		100-yr	980.31					100-yr	993.27		
		FROZEN	980.69					FROZEN	995.21		

Water Quality (Total Suspended Solids Reduction) & Infiltration

WinSLAMM © Version 10.4.1 is utilized to calculate the total suspended solids (TSS) loadings for the drainage areas and reductions produced by the storm water facilities to ensure adequate water quality is achieved prior to discharging to existing kettles. WDNR’s Technical Standard 1003, Infiltration Basin, requires pretreatment practices for residential developments be designed to achieve at least 60 percent total suspended solids removal from stormwater runoff prior to discharging to an infiltration practice. The results of the WinSLAMM analyses indicate that the proposed ponds will remove approximately 67.7 percent of TSS from runoff under Proposed Development Conditions and 66.5 percent of TSS under Future Development Conditions. Detailed computations are included in Appendix 5.

The development will provide infiltration where soil and subsurface conditions permit, per WDNR and Village code requirements. Based on the soils, the existing kettles will continue to be the primary

infiltration practices for the site. The proposed development will remain internally drained with zero discharge released.

Frozen Ground (CN=98) 100-year

The proposed storm water model has been analyzed to view the extreme scenario of a 100-year storm event during frozen ground conditions. To portray the frozen ground, each drainage area was assigned a runoff curve number of 98, equal to the impervious runoff curve number. The overflow spillway and berm elevations of the proposed storm water practices are designed to carry the frozen ground 100-year overflow in a manner that protects the development. Please note Kettles 10 & 12, which connect to the rear yards along Hickory Court are improved in the proposed and future 100-year FROZEN conditions and the proposed development area 100-year FROZEN runoff remains on-site. Refer to Appendix 4 for the proposed 100-year frozen ground HydroCAD modeling.

Conclusion

The storm water management plan for this proposed development remains internally drained and meets Village and WDNR requirements; the results described above are supported by the calculations provided in the attachments. A storm water maintenance agreement will be created and executed for this development to ensure that the storm water practices and drainage measures function as intended in perpetuity.

APPENDIX 1

Soils Map & Geotechnical Report



Legend

- Parcels (Click for details)
- Plats (Click for details)
- Retired Parcels (Click for details)
- Retired Plats (Click for details)
- Soils
- Municipal Boundary_2K
- FacilitySites_2K_Labels
- Lots_2K
 - Lot
 - Outlot
- SimultaneousConveyance_2K
 - Assessor Plat
 - CSM
 - Condominium
 - Subdivision
- Cartoline_2K
 - <all other values>
 - EA-Easement_Line
 - PL-DA
 - PL-Extended_Tie_line
 - PL-Meander_Line
 - PL-Note
 - PL-Tie
 - PL-Tie_Line
- Road Centerlines_2K
- Railroad_2K
- TaxParcel_2K
- Waterbodies_2K_Labels
- Waterlines_2K_Labels



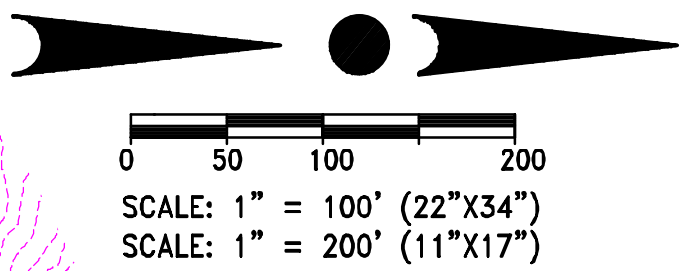
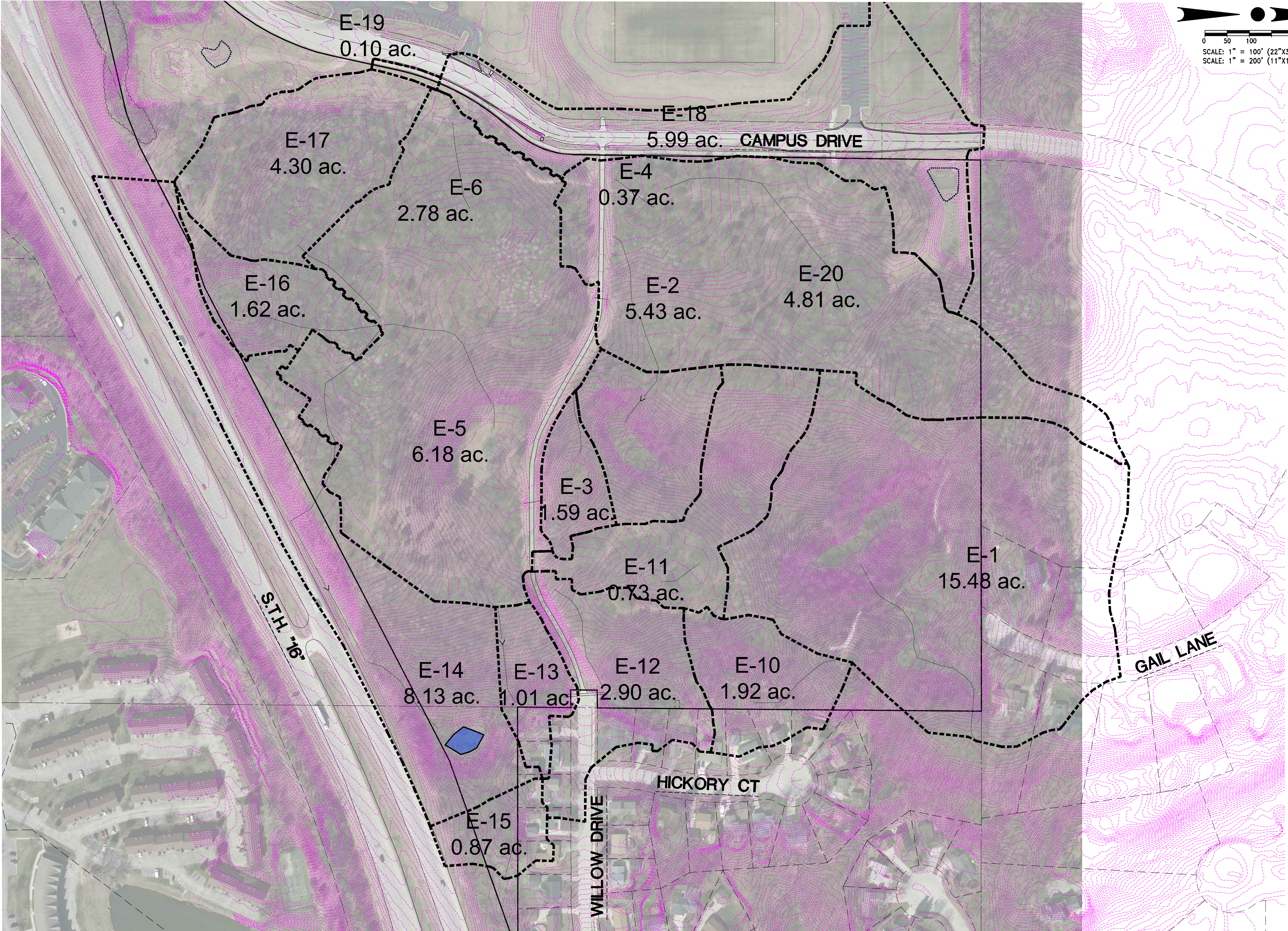
Notes

0 606.22 Feet

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APPENDIX 2

Existing, Proposed,
and Future Drainage Area Maps



WISCONSIN

JOSHUA D. PUDELKO

E-39420

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PROJECT:
LAKE COUNTRY LUTHERAN
LAKE COUNTRY LUTHERAN LAND
VILLAGE OF HARTLAND, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

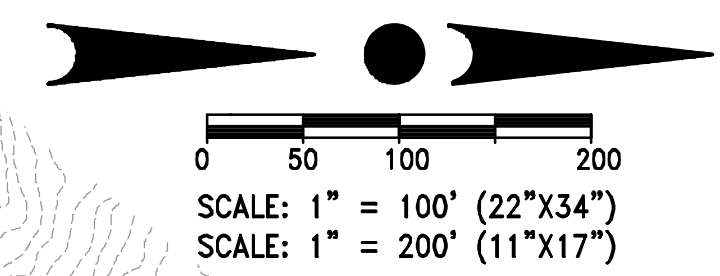
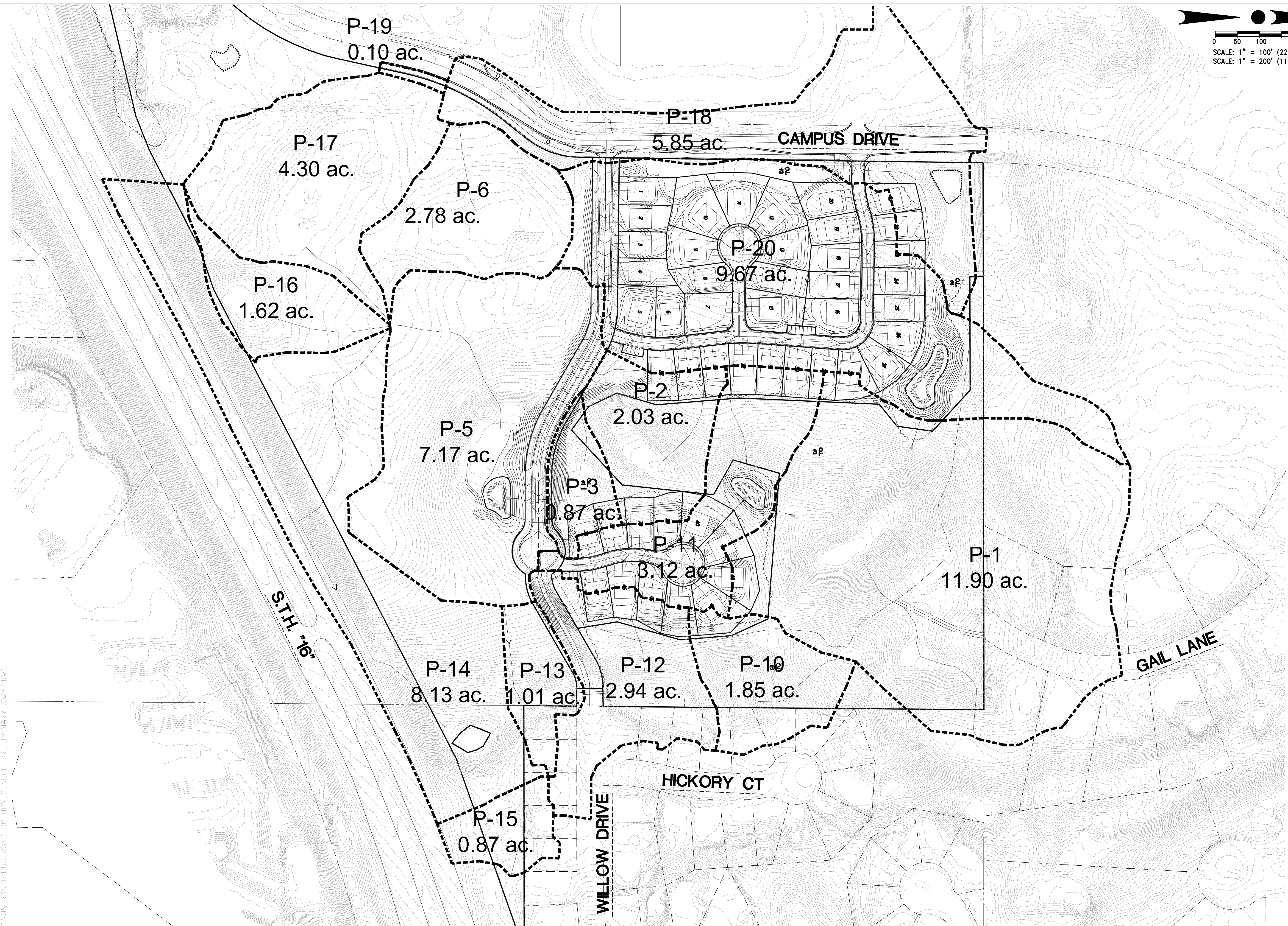
REVISION HISTORY		
DATE	DESCRIPTION	
07/02/20	PRELIMINARY SUBMITTAL	

DATE:
JULY 2, 2020

JOB NUMBER:
19023-953

DESCRIPTION:
EXISTING
DRAINAGE
AREA MAP

SHEET
E-DA



PROJECT:
LAKE COUNTRY LUTHERN
LAKE COUNTRY LUTHERAN LAND
VILLAGE OF HARTLAND, WISCONSIN
BY: NEUMANN DEVELOPMENTS, INC.
N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

[illegible]

DATE:
JULY 2, 2020

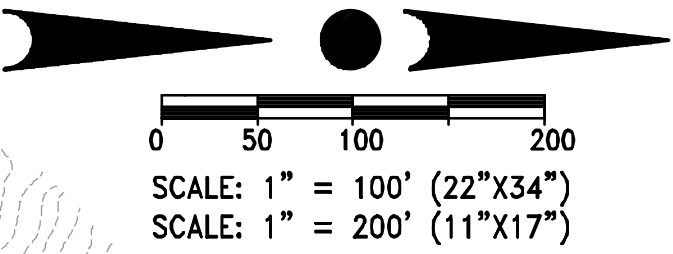
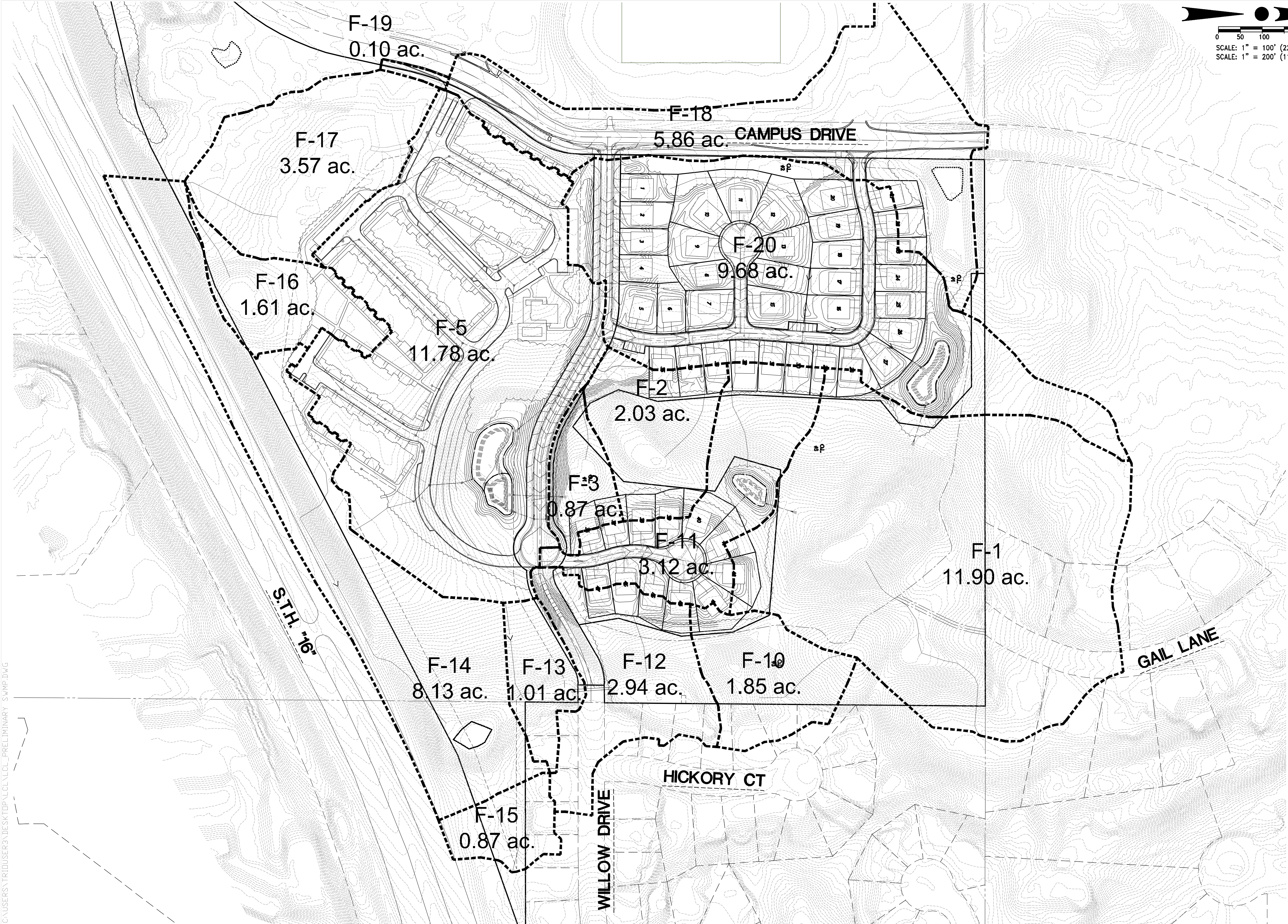
JOB NUMBER:
19023-953

DESCRIPTION:

**PROPOSED
DRAINAGE
AREA MAP**

SHEET

P-DA



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LAKE COUNTRY LUTHERN
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VILLAGE OF HARTLAND, WISCONSIN
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N27W24025 PAUL COURT, SUITE 100
PEWAUKEE, WI 53072

REVISION HISTORY		
DATE	DESCRIPTION	
07/02/20	PRELIMINARY SUBMITTAL	

DATE:
JULY 2, 2020

JOB NUMBER:
19023-953

DESCRIPTION:
FUTURE
DRAINAGE
AREA MAP

SHEET

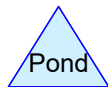
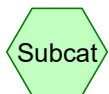
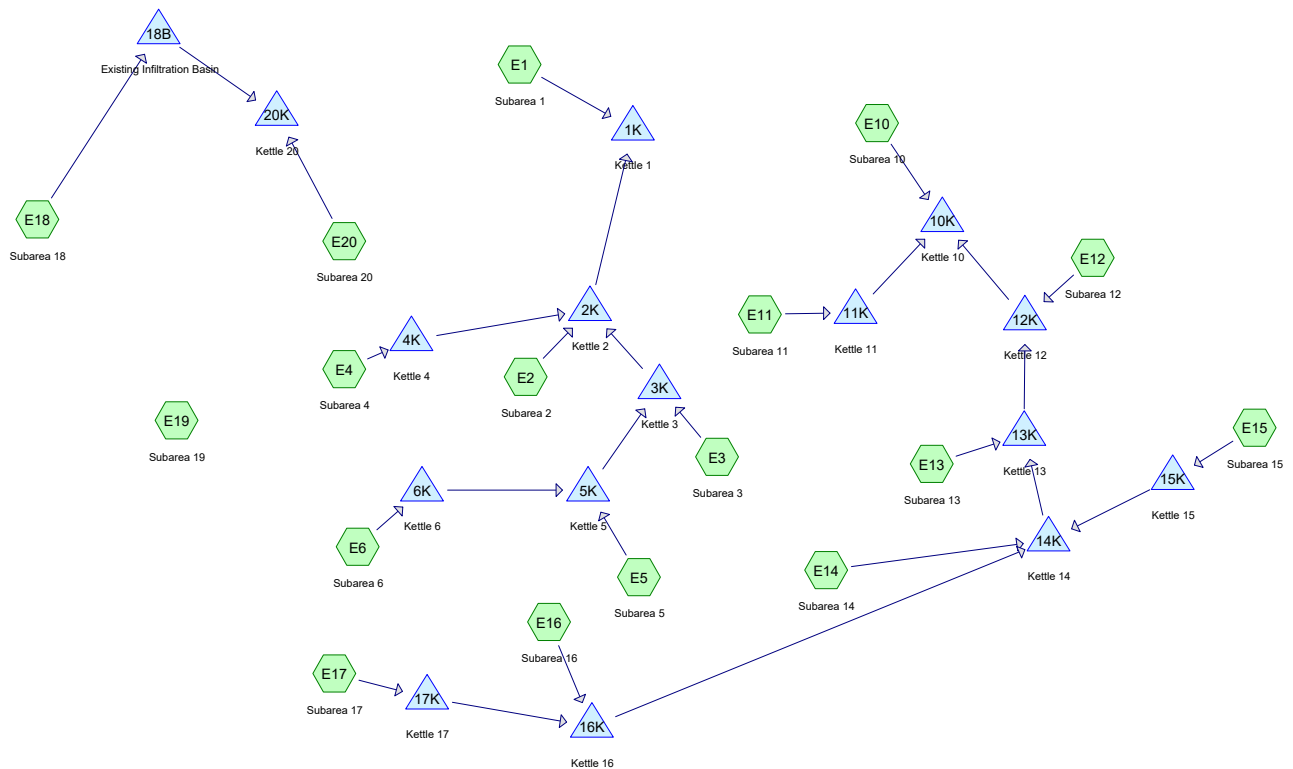
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APPENDIX 3

HydroCAD Modeling

Existing Conditions

HydroCAD Modeling



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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.570	70	1/2 acre lots (E1)
2.110	75	1/4 acre lots (E10, E12, E13, E14, E15)
4.290	78	Area C from LCL High School Report (E18)
0.960	69	cropland (E1)
4.420	61	grass (E12, E14, E15, E18, E19, E2, E20, E3, E4, E5)
1.430	98	impervious (E12, E14, E15, E18, E19, E2, E3)
48.430	55	woods (E1, E10, E11, E12, E13, E14, E15, E16, E17, E18, E2, E20, E3, E4, E5, E6)
64.210	59	TOTAL AREA

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentE1: Subarea 1	Runoff Area=15.480 ac 0.00% Impervious Runoff Depth>0.11"
Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=58	Runoff=0.44 cfs 0.141 af
SubcatchmentE10: Subarea 10	Runoff Area=1.920 ac 0.00% Impervious Runoff Depth>0.15"
Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=60	Runoff=0.10 cfs 0.023 af
SubcatchmentE11: Subarea 11	Runoff Area=0.730 ac 0.00% Impervious Runoff Depth>0.06"
Flow Length=100' Slope=0.0300 '/' Tc=34.6 min CN=55	Runoff=0.01 cfs 0.004 af
SubcatchmentE12: Subarea 12	Runoff Area=2.900 ac 3.79% Impervious Runoff Depth>0.26"
Flow Length=255' Slope=0.1100 '/' Tc=43.5 min CN=65	Runoff=0.34 cfs 0.063 af
SubcatchmentE13: Subarea 13	Runoff Area=1.010 ac 0.00% Impervious Runoff Depth>0.15"
Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=60	Runoff=0.05 cfs 0.012 af
SubcatchmentE14: Subarea 14	Runoff Area=8.130 ac 10.21% Impervious Runoff Depth>0.16"
Flow Length=1,110' Tc=104.8 min CN=61	Runoff=0.32 cfs 0.110 af
SubcatchmentE15: Subarea 15	Runoff Area=0.870 ac 1.15% Impervious Runoff Depth>0.21"
Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=63	Runoff=0.11 cfs 0.015 af
SubcatchmentE16: Subarea 16	Runoff Area=1.620 ac 0.00% Impervious Runoff Depth>0.06"
Flow Length=270' Slope=0.0400 '/' Tc=68.3 min CN=55	Runoff=0.02 cfs 0.009 af
SubcatchmentE17: Subarea 17	Runoff Area=4.300 ac 0.00% Impervious Runoff Depth>0.06"
Flow Length=250' Slope=0.0300 '/' Tc=72.0 min CN=55	Runoff=0.05 cfs 0.023 af
SubcatchmentE18: Subarea 18	Runoff Area=5.990 ac 3.84% Impervious Runoff Depth>0.55"
Tc=42.8 min CN=74	Runoff=2.07 cfs 0.275 af
SubcatchmentE19: Subarea 19	Runoff Area=0.100 ac 40.00% Impervious Runoff Depth>0.63"
Tc=6.0 min CN=76	Runoff=0.11 cfs 0.005 af
SubcatchmentE2: Subarea 2	Runoff Area=5.430 ac 1.66% Impervious Runoff Depth>0.08"
Flow Length=470' Slope=0.0800 '/' Tc=58.3 min CN=56	Runoff=0.09 cfs 0.035 af
SubcatchmentE20: Subarea 20	Runoff Area=4.810 ac 0.00% Impervious Runoff Depth>0.06"
Flow Length=525' Slope=0.0300 '/' Tc=87.6 min CN=55	Runoff=0.06 cfs 0.025 af
SubcatchmentE3: Subarea 3	Runoff Area=1.590 ac 7.55% Impervious Runoff Depth>0.13"
Flow Length=150' Slope=0.1300 '/' Tc=26.6 min CN=59	Runoff=0.07 cfs 0.017 af
SubcatchmentE4: Subarea 4	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth>0.06"
Flow Length=110' Slope=0.0300 '/' Tc=37.4 min CN=55	Runoff=0.01 cfs 0.002 af
SubcatchmentE5: Subarea 5	Runoff Area=6.180 ac 0.00% Impervious Runoff Depth>0.06"
Flow Length=400' Slope=0.0900 '/' Tc=54.8 min CN=55	Runoff=0.08 cfs 0.033 af

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MSE 24-hr 3 1 yr Rainfall=2.40"

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SubcatchmentE6: Subarea 6Runoff Area=2.780 ac 0.00% Impervious Runoff Depth>0.06"
Flow Length=200' Slope=0.0500 '/' Tc=49.1 min CN=55 Runoff=0.04 cfs 0.015 af**Pond 1K: Kettle 1**Peak Elev=944.98' Storage=4,774 cf Inflow=0.44 cfs 0.141 af
Outflow=0.04 cfs 0.031 af**Pond 2K: Kettle 2**Peak Elev=966.85' Storage=1,051 cf Inflow=0.09 cfs 0.035 af
Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af**Pond 3K: Kettle 3**Peak Elev=972.53' Storage=1,277 cf Inflow=0.10 cfs 0.044 af
Discarded=0.02 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.015 af**Pond 4K: Kettle 4**Peak Elev=1,007.01' Storage=8 cf Inflow=0.01 cfs 0.002 af
Discarded=0.00 cfs 0.002 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.002 af**Pond 5K: Kettle 5**Peak Elev=982.67' Storage=107 cf Inflow=0.08 cfs 0.033 af
Discarded=0.01 cfs 0.005 af Primary=0.07 cfs 0.027 af Outflow=0.08 cfs 0.032 af**Pond 6K: Kettle 6**Peak Elev=1,011.01' Storage=58 cf Inflow=0.04 cfs 0.015 af
Discarded=0.03 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.015 af**Pond 10K: Kettle 10**Peak Elev=954.45' Storage=796 cf Inflow=0.10 cfs 0.023 af
Discarded=0.01 cfs 0.005 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.005 af**Pond 11K: Kettle 11**Peak Elev=979.04' Storage=34 cf Inflow=0.01 cfs 0.004 af
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.004 af**Pond 12K: Kettle 12**Peak Elev=956.87' Storage=2,156 cf Inflow=0.39 cfs 0.073 af
Discarded=0.03 cfs 0.026 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.026 af**Pond 13K: Kettle 13**Peak Elev=959.56' Storage=27 cf Inflow=0.05 cfs 0.012 af
Discarded=0.00 cfs 0.001 af Primary=0.05 cfs 0.011 af Outflow=0.05 cfs 0.012 af**Pond 14K: Kettle 14**Peak Elev=955.92' Storage=3,700 cf Inflow=0.32 cfs 0.110 af
Discarded=0.03 cfs 0.025 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.025 af**Pond 15K: Kettle 15**Peak Elev=970.19' Storage=331 cf Inflow=0.11 cfs 0.015 af
Discarded=0.01 cfs 0.010 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.010 af**Pond 16K: Kettle 16**Peak Elev=1,005.01' Storage=32 cf Inflow=0.02 cfs 0.009 af
Discarded=0.02 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.008 af**Pond 17K: Kettle 17**Peak Elev=1,011.09' Storage=299 cf Inflow=0.05 cfs 0.023 af
Discarded=0.02 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.018 af**Pond 18B: Existing Infiltration Basin**Peak Elev=990.18' Storage=5,986 cf Inflow=2.07 cfs 0.275 af
Discarded=0.32 cfs 0.246 af Primary=0.00 cfs 0.000 af Outflow=0.32 cfs 0.246 af**Pond 20K: Kettle 20**Peak Elev=992.02' Storage=149 cf Inflow=0.06 cfs 0.025 af
Outflow=0.04 cfs 0.025 af

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Total Runoff Area = 64.210 ac Runoff Volume = 0.807 af Average Runoff Depth = 0.15"
97.77% Pervious = 62.780 ac 2.23% Impervious = 1.430 ac

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentE1: Subarea 1	Runoff Area=15.480 ac 0.00% Impervious Runoff Depth>0.18"
Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=58	Runoff=0.91 cfs 0.235 af
SubcatchmentE10: Subarea 10	Runoff Area=1.920 ac 0.00% Impervious Runoff Depth>0.23"
Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=60	Runoff=0.20 cfs 0.037 af
SubcatchmentE11: Subarea 11	Runoff Area=0.730 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=100' Slope=0.0300 '/' Tc=34.6 min CN=55	Runoff=0.03 cfs 0.007 af
SubcatchmentE12: Subarea 12	Runoff Area=2.900 ac 3.79% Impervious Runoff Depth>0.37"
Flow Length=255' Slope=0.1100 '/' Tc=43.5 min CN=65	Runoff=0.56 cfs 0.090 af
SubcatchmentE13: Subarea 13	Runoff Area=1.010 ac 0.00% Impervious Runoff Depth>0.23"
Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=60	Runoff=0.10 cfs 0.019 af
SubcatchmentE14: Subarea 14	Runoff Area=8.130 ac 10.21% Impervious Runoff Depth>0.25"
Flow Length=1,110' Tc=104.8 min CN=61	Runoff=0.55 cfs 0.171 af
SubcatchmentE15: Subarea 15	Runoff Area=0.870 ac 1.15% Impervious Runoff Depth>0.31"
Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=63	Runoff=0.20 cfs 0.023 af
SubcatchmentE16: Subarea 16	Runoff Area=1.620 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=270' Slope=0.0400 '/' Tc=68.3 min CN=55	Runoff=0.05 cfs 0.016 af
SubcatchmentE17: Subarea 17	Runoff Area=4.300 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=250' Slope=0.0300 '/' Tc=72.0 min CN=55	Runoff=0.12 cfs 0.043 af
SubcatchmentE18: Subarea 18	Runoff Area=5.990 ac 3.84% Impervious Runoff Depth>0.72"
Tc=42.8 min CN=74	Runoff=2.82 cfs 0.360 af
SubcatchmentE19: Subarea 19	Runoff Area=0.100 ac 40.00% Impervious Runoff Depth>0.82"
Tc=6.0 min CN=76	Runoff=0.14 cfs 0.007 af
SubcatchmentE2: Subarea 2	Runoff Area=5.430 ac 1.66% Impervious Runoff Depth>0.14"
Flow Length=470' Slope=0.0800 '/' Tc=58.3 min CN=56	Runoff=0.21 cfs 0.063 af
SubcatchmentE20: Subarea 20	Runoff Area=4.810 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=525' Slope=0.0300 '/' Tc=87.6 min CN=55	Runoff=0.13 cfs 0.048 af
SubcatchmentE3: Subarea 3	Runoff Area=1.590 ac 7.55% Impervious Runoff Depth>0.21"
Flow Length=150' Slope=0.1300 '/' Tc=26.6 min CN=59	Runoff=0.15 cfs 0.027 af
SubcatchmentE4: Subarea 4	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=110' Slope=0.0300 '/' Tc=37.4 min CN=55	Runoff=0.01 cfs 0.004 af
SubcatchmentE5: Subarea 5	Runoff Area=6.180 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=400' Slope=0.0900 '/' Tc=54.8 min CN=55	Runoff=0.19 cfs 0.062 af

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MSE 24-hr 3 2 yr Rainfall=2.70"

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SubcatchmentE6: Subarea 6Runoff Area=2.780 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=200' Slope=0.0500 '/' Tc=49.1 min CN=55 Runoff=0.09 cfs 0.028 af**Pond 1K: Kettle 1**Peak Elev=945.53' Storage=8,544 cf Inflow=0.91 cfs 0.235 af
Outflow=0.05 cfs 0.039 af**Pond 2K: Kettle 2**Peak Elev=967.16' Storage=2,029 cf Inflow=0.21 cfs 0.063 af
Discarded=0.02 cfs 0.017 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.017 af**Pond 3K: Kettle 3**Peak Elev=972.95' Storage=2,702 cf Inflow=0.23 cfs 0.081 af
Discarded=0.02 cfs 0.020 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.020 af**Pond 4K: Kettle 4**Peak Elev=1,007.05' Storage=43 cf Inflow=0.01 cfs 0.004 af
Discarded=0.00 cfs 0.004 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.004 af**Pond 5K: Kettle 5**Peak Elev=982.73' Storage=222 cf Inflow=0.19 cfs 0.062 af
Discarded=0.01 cfs 0.007 af Primary=0.16 cfs 0.054 af Outflow=0.18 cfs 0.061 af**Pond 6K: Kettle 6**Peak Elev=1,011.02' Storage=176 cf Inflow=0.09 cfs 0.028 af
Discarded=0.06 cfs 0.028 af Primary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.028 af**Pond 10K: Kettle 10**Peak Elev=954.85' Storage=1,299 cf Inflow=0.20 cfs 0.037 af
Discarded=0.01 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.007 af**Pond 11K: Kettle 11**Peak Elev=979.14' Storage=127 cf Inflow=0.03 cfs 0.007 af
Discarded=0.01 cfs 0.005 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.005 af**Pond 12K: Kettle 12**Peak Elev=957.07' Storage=3,334 cf Inflow=0.66 cfs 0.108 af
Discarded=0.04 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.035 af**Pond 13K: Kettle 13**Peak Elev=959.59' Storage=39 cf Inflow=0.10 cfs 0.019 af
Discarded=0.00 cfs 0.001 af Primary=0.10 cfs 0.018 af Outflow=0.10 cfs 0.019 af**Pond 14K: Kettle 14**Peak Elev=956.36' Storage=6,116 cf Inflow=0.55 cfs 0.171 af
Discarded=0.04 cfs 0.030 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.030 af**Pond 15K: Kettle 15**Peak Elev=970.32' Storage=590 cf Inflow=0.20 cfs 0.023 af
Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af**Pond 16K: Kettle 16**Peak Elev=1,005.03' Storage=130 cf Inflow=0.05 cfs 0.016 af
Discarded=0.03 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.016 af**Pond 17K: Kettle 17**Peak Elev=1,011.21' Storage=856 cf Inflow=0.12 cfs 0.043 af
Discarded=0.03 cfs 0.026 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.026 af**Pond 18B: Existing Infiltration Basin**Peak Elev=990.44' Storage=8,560 cf Inflow=2.82 cfs 0.360 af
Discarded=0.34 cfs 0.299 af Primary=0.00 cfs 0.000 af Outflow=0.34 cfs 0.299 af**Pond 20K: Kettle 20**Peak Elev=992.10' Storage=715 cf Inflow=0.13 cfs 0.048 af
Outflow=0.04 cfs 0.038 af

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Total Runoff Area = 64.210 ac Runoff Volume = 1.241 af Average Runoff Depth = 0.23"
97.77% Pervious = 62.780 ac 2.23% Impervious = 1.430 ac

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentE1: Subarea 1	Runoff Area=15.480 ac 0.00% Impervious Runoff Depth>0.58"
Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=58	Runoff=4.28 cfs 0.743 af
SubcatchmentE10: Subarea 10	Runoff Area=1.920 ac 0.00% Impervious Runoff Depth>0.67"
Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=60	Runoff=0.82 cfs 0.107 af
SubcatchmentE11: Subarea 11	Runoff Area=0.730 ac 0.00% Impervious Runoff Depth>0.45"
Flow Length=100' Slope=0.0300 '/' Tc=34.6 min CN=55	Runoff=0.18 cfs 0.028 af
SubcatchmentE12: Subarea 12	Runoff Area=2.900 ac 3.79% Impervious Runoff Depth>0.92"
Flow Length=255' Slope=0.1100 '/' Tc=43.5 min CN=65	Runoff=1.67 cfs 0.221 af
SubcatchmentE13: Subarea 13	Runoff Area=1.010 ac 0.00% Impervious Runoff Depth>0.67"
Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=60	Runoff=0.44 cfs 0.056 af
SubcatchmentE14: Subarea 14	Runoff Area=8.130 ac 10.21% Impervious Runoff Depth>0.70"
Flow Length=1,110' Tc=104.8 min CN=61	Runoff=1.87 cfs 0.477 af
SubcatchmentE15: Subarea 15	Runoff Area=0.870 ac 1.15% Impervious Runoff Depth>0.81"
Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=63	Runoff=0.71 cfs 0.059 af
SubcatchmentE16: Subarea 16	Runoff Area=1.620 ac 0.00% Impervious Runoff Depth>0.45"
Flow Length=270' Slope=0.0400 '/' Tc=68.3 min CN=55	Runoff=0.27 cfs 0.061 af
SubcatchmentE17: Subarea 17	Runoff Area=4.300 ac 0.00% Impervious Runoff Depth>0.45"
Flow Length=250' Slope=0.0300 '/' Tc=72.0 min CN=55	Runoff=0.70 cfs 0.161 af
SubcatchmentE18: Subarea 18	Runoff Area=5.990 ac 3.84% Impervious Runoff Depth>1.45"
Tc=42.8 min CN=74	Runoff=6.12 cfs 0.725 af
SubcatchmentE19: Subarea 19	Runoff Area=0.100 ac 40.00% Impervious Runoff Depth>1.59"
Tc=6.0 min CN=76	Runoff=0.29 cfs 0.013 af
SubcatchmentE2: Subarea 2	Runoff Area=5.430 ac 1.66% Impervious Runoff Depth>0.49"
Flow Length=470' Slope=0.0800 '/' Tc=58.3 min CN=56	Runoff=1.13 cfs 0.222 af
SubcatchmentE20: Subarea 20	Runoff Area=4.810 ac 0.00% Impervious Runoff Depth>0.45"
Flow Length=525' Slope=0.0300 '/' Tc=87.6 min CN=55	Runoff=0.69 cfs 0.180 af
SubcatchmentE3: Subarea 3	Runoff Area=1.590 ac 7.55% Impervious Runoff Depth>0.62"
Flow Length=150' Slope=0.1300 '/' Tc=26.6 min CN=59	Runoff=0.73 cfs 0.083 af
SubcatchmentE4: Subarea 4	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth>0.45"
Flow Length=110' Slope=0.0300 '/' Tc=37.4 min CN=55	Runoff=0.09 cfs 0.014 af
SubcatchmentE5: Subarea 5	Runoff Area=6.180 ac 0.00% Impervious Runoff Depth>0.45"
Flow Length=400' Slope=0.0900 '/' Tc=54.8 min CN=55	Runoff=1.18 cfs 0.233 af

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SubcatchmentE6: Subarea 6Runoff Area=2.780 ac 0.00% Impervious Runoff Depth>0.45"
Flow Length=200' Slope=0.0500 '/' Tc=49.1 min CN=55 Runoff=0.56 cfs 0.105 af**Pond 1K: Kettle 1**Peak Elev=947.63' Storage=29,289 cf Inflow=4.28 cfs 0.743 af
Outflow=0.08 cfs 0.071 af**Pond 2K: Kettle 2**Peak Elev=968.44' Storage=8,256 cf Inflow=1.13 cfs 0.222 af
Discarded=0.04 cfs 0.033 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.033 af**Pond 3K: Kettle 3**Peak Elev=974.57' Storage=11,366 cf Inflow=1.07 cfs 0.298 af
Discarded=0.04 cfs 0.037 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.037 af**Pond 4K: Kettle 4**Peak Elev=1,007.34' Storage=352 cf Inflow=0.09 cfs 0.014 af
Discarded=0.01 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.007 af**Pond 5K: Kettle 5**Peak Elev=982.96' Storage=1,338 cf Inflow=1.18 cfs 0.233 af
Discarded=0.05 cfs 0.016 af Primary=0.85 cfs 0.216 af Outflow=0.90 cfs 0.231 af**Pond 6K: Kettle 6**Peak Elev=1,011.22' Storage=2,410 cf Inflow=0.56 cfs 0.105 af
Discarded=0.07 cfs 0.065 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.065 af**Pond 10K: Kettle 10**Peak Elev=956.00' Storage=3,912 cf Inflow=0.82 cfs 0.107 af
Discarded=0.02 cfs 0.017 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.017 af**Pond 11K: Kettle 11**Peak Elev=979.57' Storage=787 cf Inflow=0.18 cfs 0.028 af
Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af**Pond 12K: Kettle 12**Peak Elev=957.81' Storage=9,661 cf Inflow=2.09 cfs 0.275 af
Discarded=0.06 cfs 0.056 af Primary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.056 af**Pond 13K: Kettle 13**Peak Elev=959.69' Storage=101 cf Inflow=0.44 cfs 0.056 af
Discarded=0.00 cfs 0.002 af Primary=0.42 cfs 0.054 af Outflow=0.43 cfs 0.056 af**Pond 14K: Kettle 14**Peak Elev=958.01' Storage=18,609 cf Inflow=1.87 cfs 0.477 af
Discarded=0.06 cfs 0.050 af Primary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.050 af**Pond 15K: Kettle 15**Peak Elev=970.88' Storage=1,942 cf Inflow=0.71 cfs 0.059 af
Discarded=0.02 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.016 af**Pond 16K: Kettle 16**Peak Elev=1,005.32' Storage=1,562 cf Inflow=0.27 cfs 0.061 af
Discarded=0.03 cfs 0.029 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.029 af**Pond 17K: Kettle 17**Peak Elev=1,011.62' Storage=4,530 cf Inflow=0.70 cfs 0.161 af
Discarded=0.07 cfs 0.064 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.064 af**Pond 18B: Existing Infiltration Basin**Peak Elev=991.46' Storage=20,519 cf Inflow=6.12 cfs 0.725 af
Discarded=0.45 cfs 0.409 af Primary=0.00 cfs 0.000 af Outflow=0.45 cfs 0.409 af**Pond 20K: Kettle 20**Peak Elev=992.51' Storage=5,026 cf Inflow=0.69 cfs 0.180 af
Outflow=0.08 cfs 0.071 af

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Total Runoff Area = 64.210 ac Runoff Volume = 3.489 af Average Runoff Depth = 0.65"
97.77% Pervious = 62.780 ac 2.23% Impervious = 1.430 ac

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentE1: Subarea 1	Runoff Area=15.480 ac 0.00% Impervious Runoff Depth>1.86"
Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=58	Runoff=17.15 cfs 2.398 af
SubcatchmentE10: Subarea 10	Runoff Area=1.920 ac 0.00% Impervious Runoff Depth>2.03"
Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=60	Runoff=2.99 cfs 0.325 af
SubcatchmentE11: Subarea 11	Runoff Area=0.730 ac 0.00% Impervious Runoff Depth>1.62"
Flow Length=100' Slope=0.0300 '/' Tc=34.6 min CN=55	Runoff=0.88 cfs 0.098 af
SubcatchmentE12: Subarea 12	Runoff Area=2.900 ac 3.79% Impervious Runoff Depth>2.47"
Flow Length=255' Slope=0.1100 '/' Tc=43.5 min CN=65	Runoff=5.02 cfs 0.598 af
SubcatchmentE13: Subarea 13	Runoff Area=1.010 ac 0.00% Impervious Runoff Depth>2.03"
Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=60	Runoff=1.59 cfs 0.171 af
SubcatchmentE14: Subarea 14	Runoff Area=8.130 ac 10.21% Impervious Runoff Depth>2.10"
Flow Length=1,110' Tc=104.8 min CN=61	Runoff=6.34 cfs 1.421 af
SubcatchmentE15: Subarea 15	Runoff Area=0.870 ac 1.15% Impervious Runoff Depth>2.30"
Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=63	Runoff=2.27 cfs 0.167 af
SubcatchmentE16: Subarea 16	Runoff Area=1.620 ac 0.00% Impervious Runoff Depth>1.61"
Flow Length=270' Slope=0.0400 '/' Tc=68.3 min CN=55	Runoff=1.25 cfs 0.217 af
SubcatchmentE17: Subarea 17	Runoff Area=4.300 ac 0.00% Impervious Runoff Depth>1.61"
Flow Length=250' Slope=0.0300 '/' Tc=72.0 min CN=55	Runoff=3.20 cfs 0.576 af
SubcatchmentE18: Subarea 18	Runoff Area=5.990 ac 3.84% Impervious Runoff Depth>3.33"
Tc=42.8 min CN=74	Runoff=14.45 cfs 1.660 af
SubcatchmentE19: Subarea 19	Runoff Area=0.100 ac 40.00% Impervious Runoff Depth>3.53"
Tc=6.0 min CN=76	Runoff=0.63 cfs 0.029 af
SubcatchmentE2: Subarea 2	Runoff Area=5.430 ac 1.66% Impervious Runoff Depth>1.69"
Flow Length=470' Slope=0.0800 '/' Tc=58.3 min CN=56	Runoff=4.95 cfs 0.766 af
SubcatchmentE20: Subarea 20	Runoff Area=4.810 ac 0.00% Impervious Runoff Depth>1.60"
Flow Length=525' Slope=0.0300 '/' Tc=87.6 min CN=55	Runoff=3.09 cfs 0.642 af
SubcatchmentE3: Subarea 3	Runoff Area=1.590 ac 7.55% Impervious Runoff Depth>1.95"
Flow Length=150' Slope=0.1300 '/' Tc=26.6 min CN=59	Runoff=2.82 cfs 0.258 af
SubcatchmentE4: Subarea 4	Runoff Area=0.370 ac 0.00% Impervious Runoff Depth>1.62"
Flow Length=110' Slope=0.0300 '/' Tc=37.4 min CN=55	Runoff=0.42 cfs 0.050 af
SubcatchmentE5: Subarea 5	Runoff Area=6.180 ac 0.00% Impervious Runoff Depth>1.61"
Flow Length=400' Slope=0.0900 '/' Tc=54.8 min CN=55	Runoff=5.53 cfs 0.830 af

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SubcatchmentE6: Subarea 6

Runoff Area=2.780 ac 0.00% Impervious Runoff Depth>1.61"
 Flow Length=200' Slope=0.0500 '/' Tc=49.1 min CN=55 Runoff=2.68 cfs 0.374 af

Pond 1K: Kettle 1

Peak Elev=951.74' Storage=98,187 cf Inflow=17.15 cfs 2.398 af
 Outflow=0.17 cfs 0.144 af

Pond 2K: Kettle 2

Peak Elev=972.48' Storage=49,849 cf Inflow=4.95 cfs 1.230 af
 Discarded=0.11 cfs 0.086 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.086 af

Pond 3K: Kettle 3

Peak Elev=976.16' Storage=24,357 cf Inflow=4.35 cfs 1.053 af
 Discarded=0.07 cfs 0.061 af Primary=2.39 cfs 0.465 af Outflow=2.46 cfs 0.525 af

Pond 4K: Kettle 4

Peak Elev=1,007.92' Storage=1,580 cf Inflow=0.42 cfs 0.050 af
 Discarded=0.02 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.016 af

Pond 5K: Kettle 5

Peak Elev=983.45' Storage=7,110 cf Inflow=5.53 cfs 0.830 af
 Discarded=0.08 cfs 0.032 af Primary=3.70 cfs 0.795 af Outflow=3.79 cfs 0.827 af

Pond 6K: Kettle 6

Peak Elev=1,011.81' Storage=12,024 cf Inflow=2.68 cfs 0.374 af
 Discarded=0.12 cfs 0.110 af Primary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.110 af

Pond 10K: Kettle 10

Peak Elev=957.85' Storage=12,616 cf Inflow=2.99 cfs 0.325 af
 Discarded=0.04 cfs 0.036 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.036 af

Pond 11K: Kettle 11

Peak Elev=980.31' Storage=3,257 cf Inflow=0.88 cfs 0.098 af
 Discarded=0.03 cfs 0.027 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.027 af

Pond 12K: Kettle 12

Peak Elev=959.25' Storage=29,213 cf Inflow=6.56 cfs 0.766 af
 Discarded=0.11 cfs 0.097 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.097 af

Pond 13K: Kettle 13

Peak Elev=959.88' Storage=329 cf Inflow=1.59 cfs 0.171 af
 Discarded=0.01 cfs 0.003 af Primary=1.54 cfs 0.168 af Outflow=1.55 cfs 0.171 af

Pond 14K: Kettle 14

Peak Elev=961.28' Storage=57,953 cf Inflow=6.34 cfs 1.425 af
 Discarded=0.12 cfs 0.095 af Primary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.095 af

Pond 15K: Kettle 15

Peak Elev=971.90' Storage=6,014 cf Inflow=2.27 cfs 0.167 af
 Discarded=0.03 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.031 af

Pond 16K: Kettle 16

Peak Elev=1,007.01' Storage=15,507 cf Inflow=1.38 cfs 0.414 af
 Discarded=0.07 cfs 0.058 af Primary=0.04 cfs 0.005 af Outflow=0.10 cfs 0.063 af

Pond 17K: Kettle 17

Peak Elev=1,012.09' Storage=13,197 cf Inflow=3.20 cfs 0.576 af
 Discarded=0.14 cfs 0.124 af Primary=0.96 cfs 0.197 af Outflow=1.10 cfs 0.321 af

Pond 18B: Existing Infiltration Basin

Peak Elev=993.53' Storage=52,479 cf Inflow=14.45 cfs 1.660 af
 Discarded=0.70 cfs 0.655 af Primary=0.00 cfs 0.000 af Outflow=0.70 cfs 0.655 af

Pond 20K: Kettle 20

Peak Elev=993.27' Storage=21,804 cf Inflow=3.09 cfs 0.642 af
 Outflow=0.17 cfs 0.149 af

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Total Runoff Area = 64.210 ac Runoff Volume = 10.580 af Average Runoff Depth = 1.98"
97.77% Pervious = 62.780 ac 2.23% Impervious = 1.430 ac

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment E1: Subarea 1

Runoff = 17.15 cfs @ 12.76 hrs, Volume= 2.398 af, Depth> 1.86"

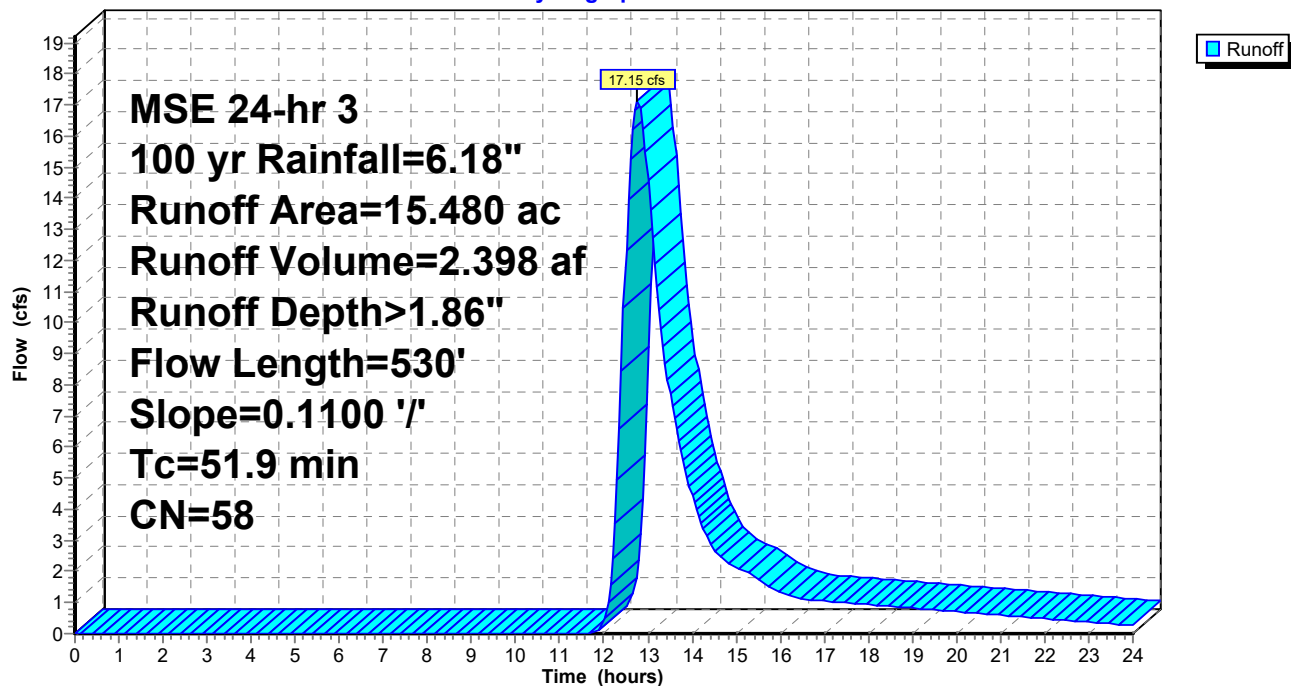
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	11.950	55	woods
	2.570	70	1/2 acre lots
*	0.960	69	cropland
	15.480	58	Weighted Average
	15.480		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.6	300	0.1100	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
2.3	230	0.1100	1.66		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
51.9	530	Total			

Subcatchment E1: Subarea 1

Hydrograph



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Summary for Subcatchment E10: Subarea 10

Runoff = 2.99 cfs @ 12.54 hrs, Volume= 0.325 af, Depth> 2.03"

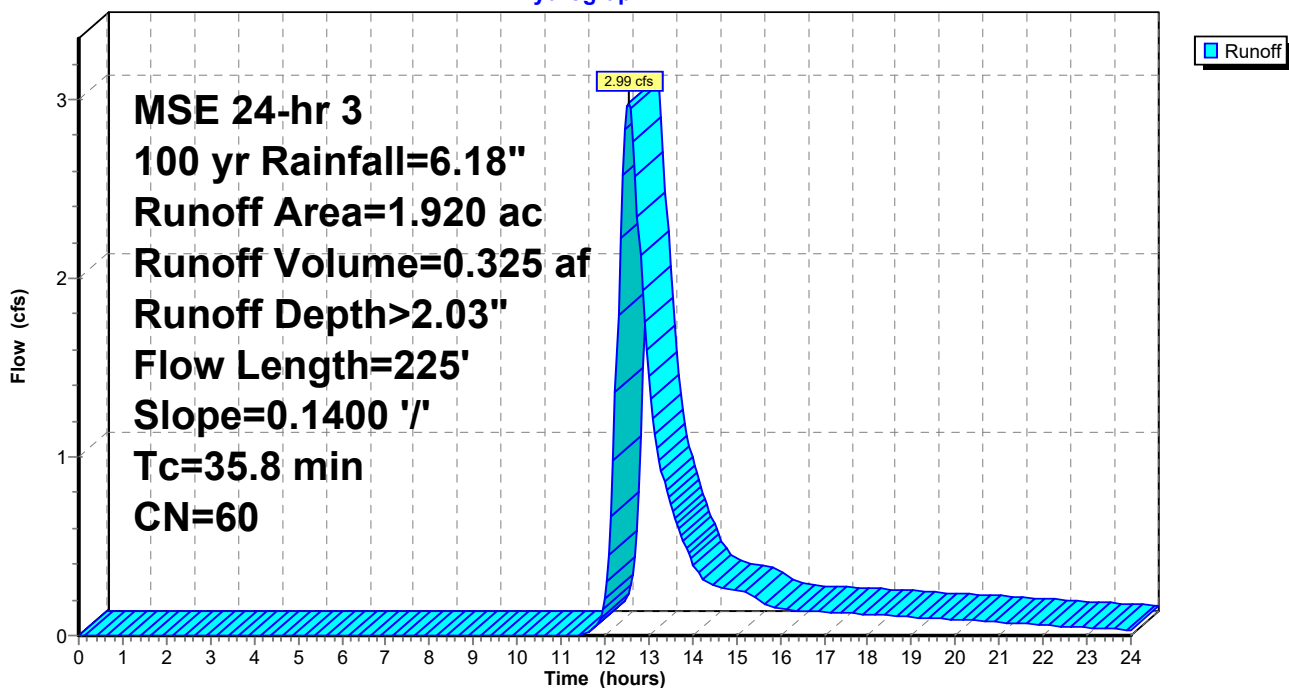
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.470	55	woods
* 0.450	75	1/4 acre lots
1.920	60	Weighted Average
1.920		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.8	225	0.1400	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment E10: Subarea 10

Hydrograph



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Summary for Subcatchment E11: Subarea 11

Runoff = 0.88 cfs @ 12.54 hrs, Volume= 0.098 af, Depth> 1.62"

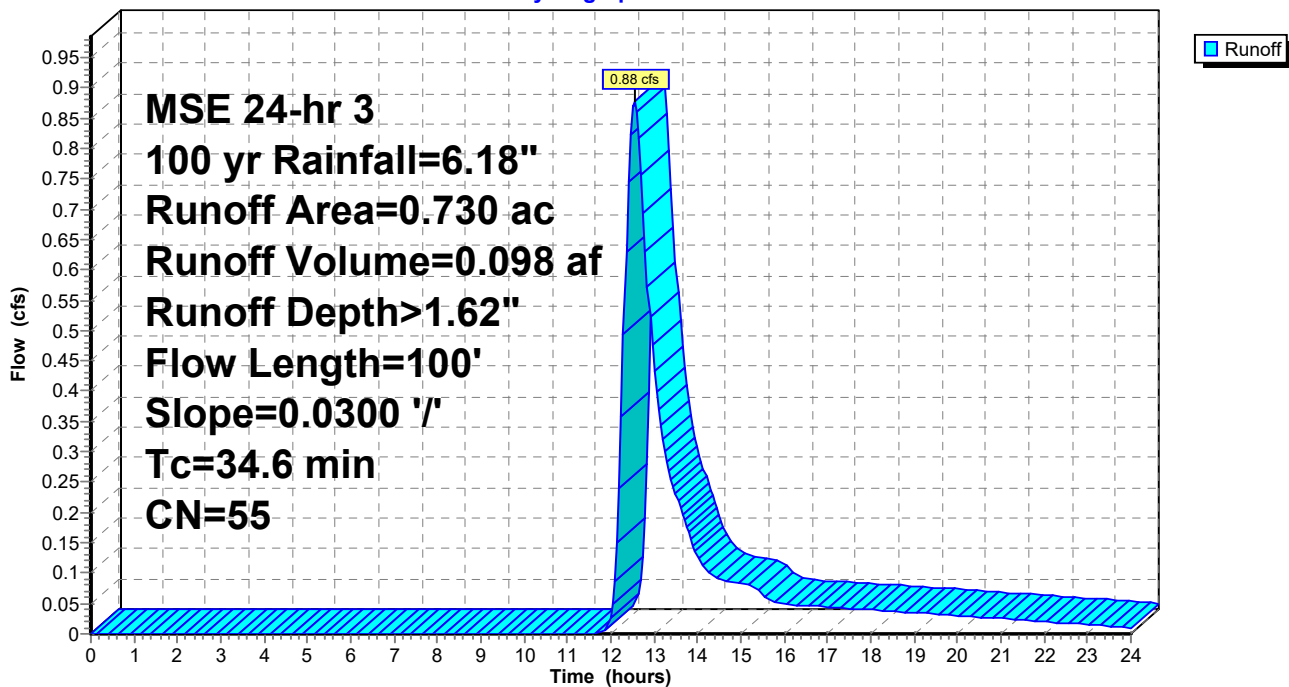
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.730	55	woods
0.730		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.6	100	0.0300	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment E11: Subarea 11

Hydrograph



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Summary for Subcatchment E12: Subarea 12

Runoff = 5.02 cfs @ 12.63 hrs, Volume= 0.598 af, Depth> 2.47"

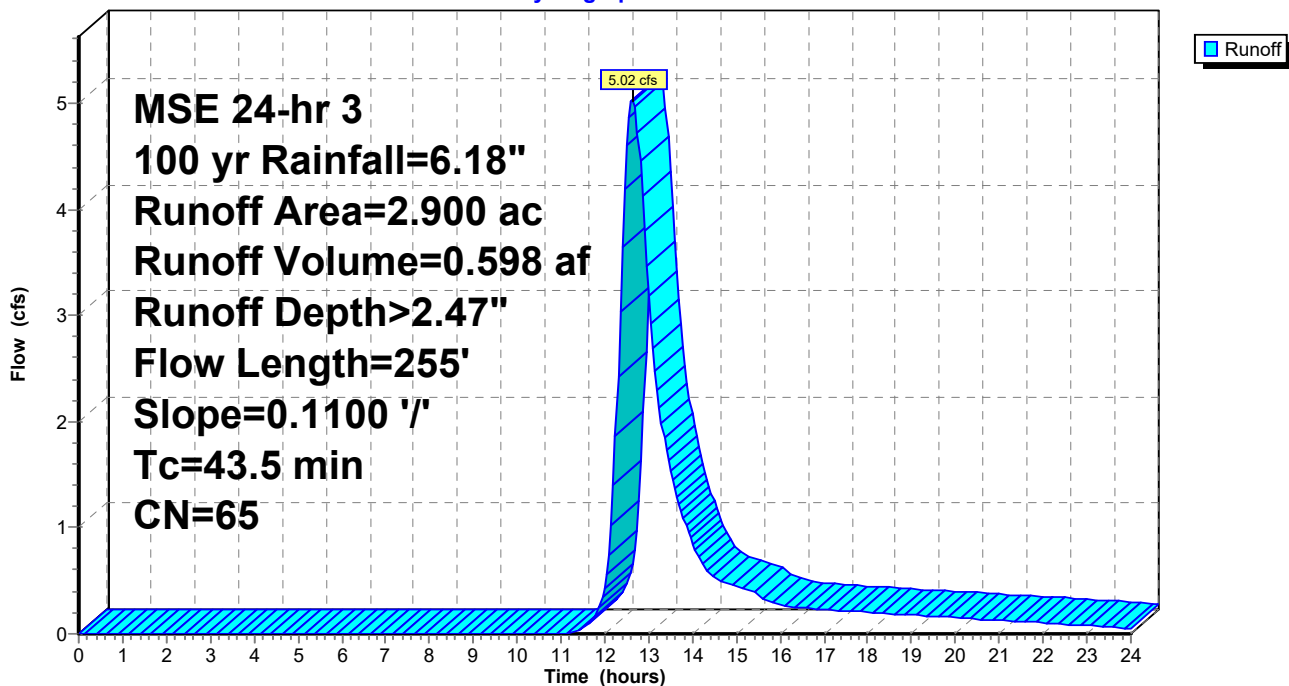
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.450	55	woods
* 0.270	61	grass
* 0.110	98	impervious
1.070	75	1/4 acre lots
2.900	65	Weighted Average
2.790		96.21% Pervious Area
0.110		3.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
43.5	255	0.1100	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment E12: Subarea 12

Hydrograph



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Summary for Subcatchment E13: Subarea 13

Runoff = 1.59 cfs @ 12.53 hrs, Volume= 0.171 af, Depth> 2.03"

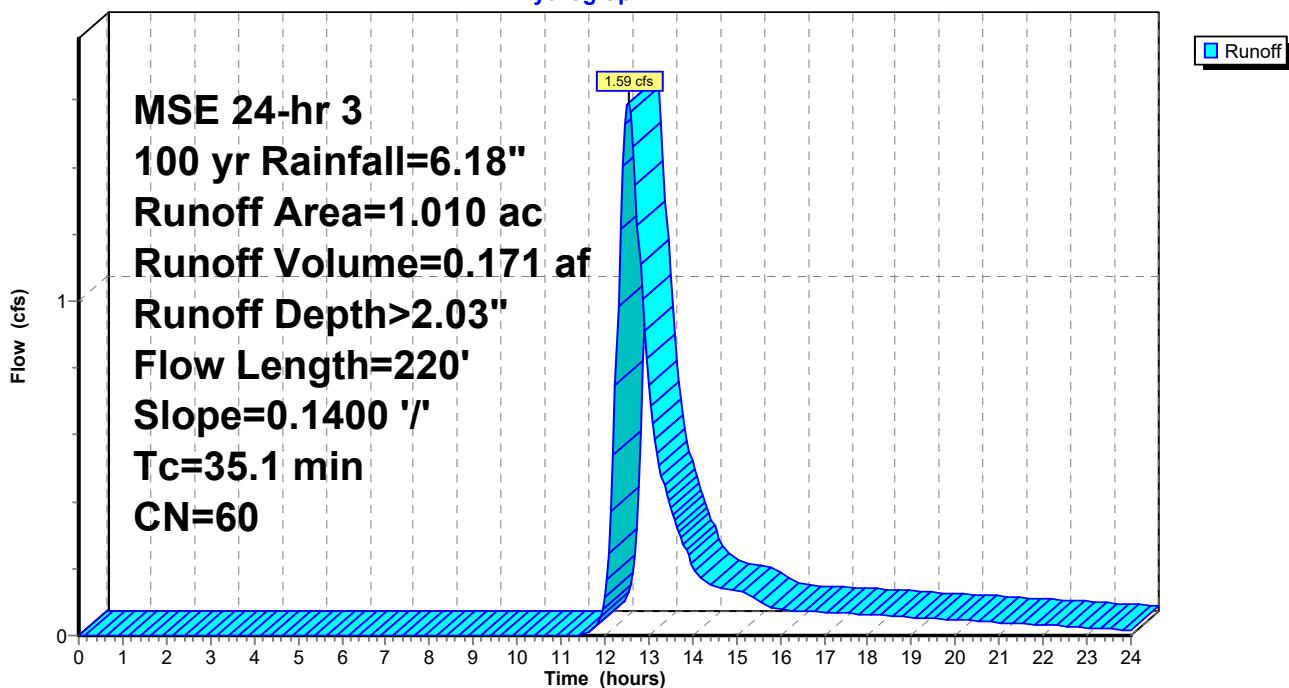
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.760	55	woods
0.250	75	1/4 acre lots
1.010	60	Weighted Average
1.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.1	220	0.1400	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment E13: Subarea 13

Hydrograph



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Summary for Subcatchment E14: Subarea 14

Runoff = 6.34 cfs @ 13.48 hrs, Volume= 1.421 af, Depth> 2.10"

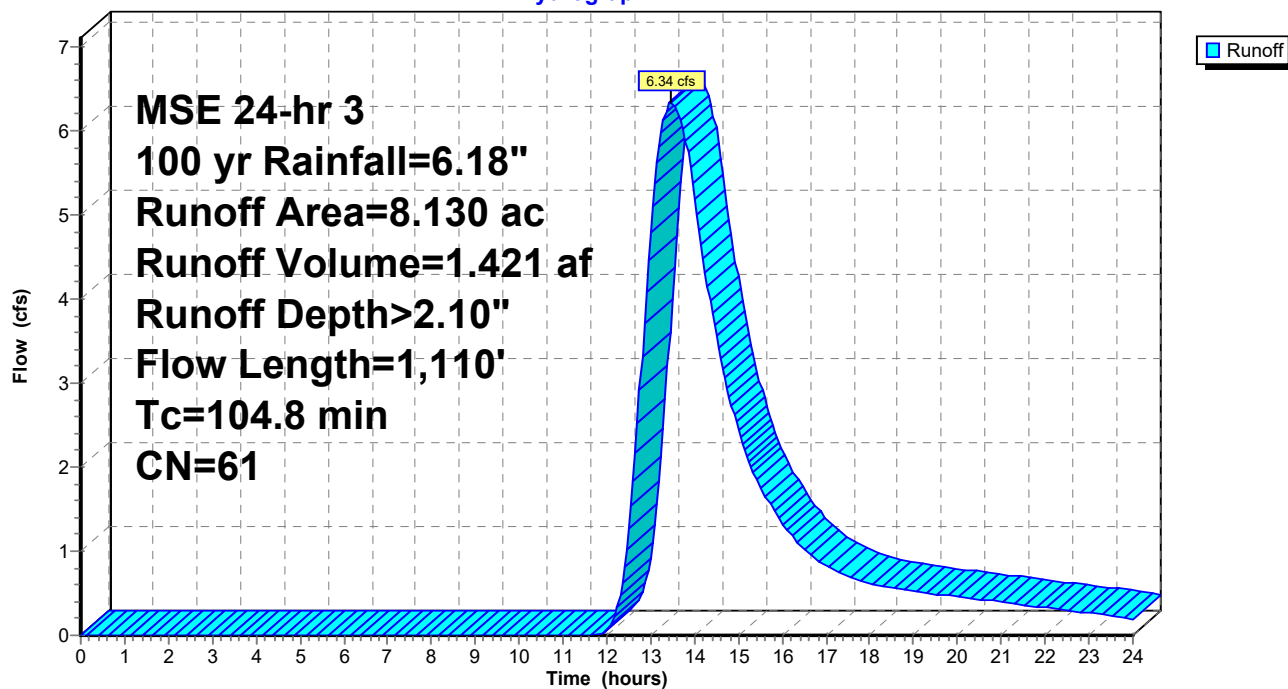
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.650	55	woods
* 2.600	61	grass
* 0.830	98	impervious
* 0.050	75	1/4 acre lots
8.130	61	Weighted Average
7.300		89.79% Pervious Area
0.830		10.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
98.0	300	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
4.0	170	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	55	0.3800	9.92		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
2.7	585	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
104.8	1,110	Total			

Subcatchment E14: Subarea 14

Hydrograph



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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment E15: Subarea 15

Runoff = 2.27 cfs @ 12.29 hrs, Volume= 0.167 af, Depth> 2.30"

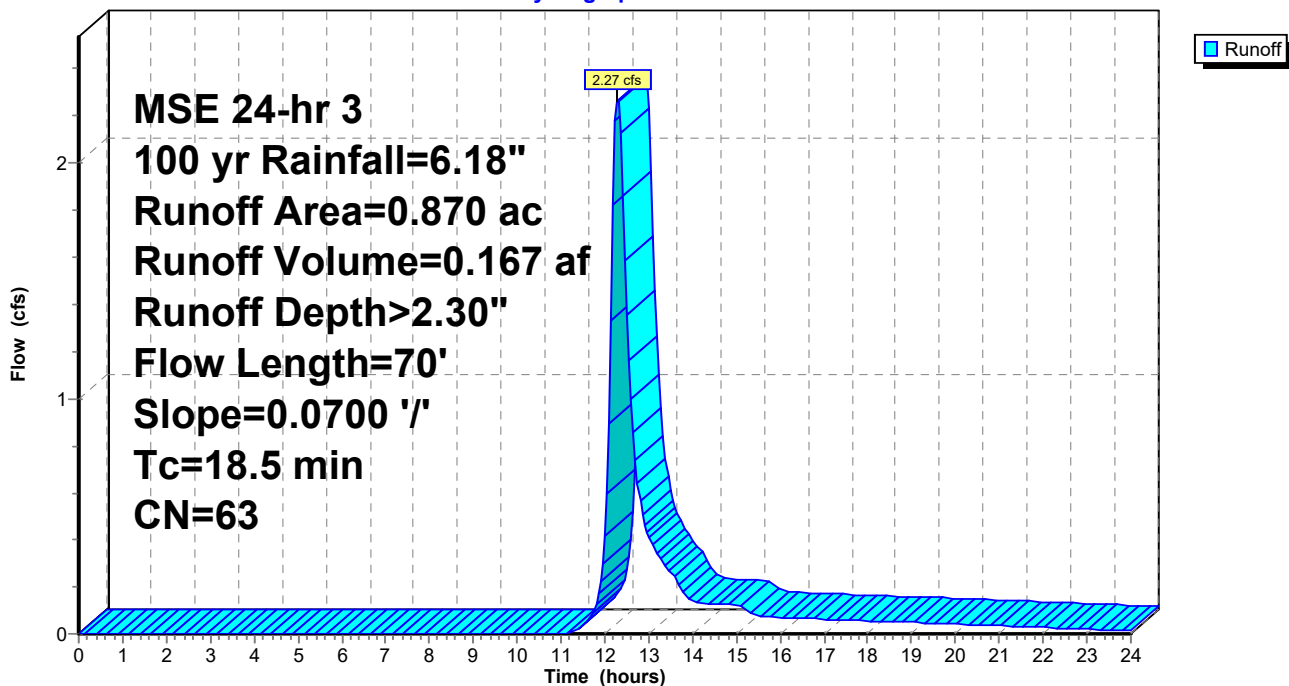
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.480	55	woods
*	0.090	61	grass
*	0.010	98	impervious
*	0.290	75	1/4 acre lots
	0.870	63	Weighted Average
	0.860		98.85% Pervious Area
	0.010		1.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	70	0.0700	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment E15: Subarea 15

Hydrograph



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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment E16: Subarea 16

Runoff = 1.25 cfs @ 13.02 hrs, Volume= 0.217 af, Depth> 1.61"

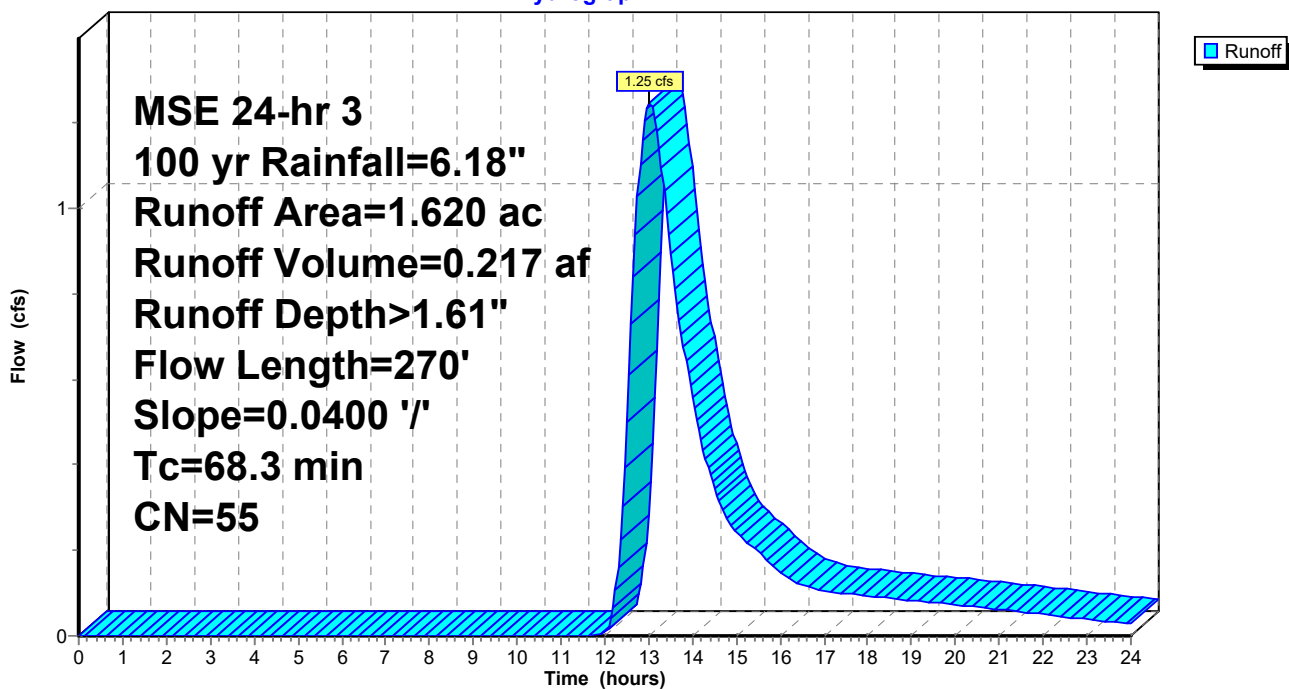
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.620	55	woods
1.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
68.3	270	0.0400	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment E16: Subarea 16

Hydrograph



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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment E17: Subarea 17

Runoff = 3.20 cfs @ 13.07 hrs, Volume= 0.576 af, Depth> 1.61"

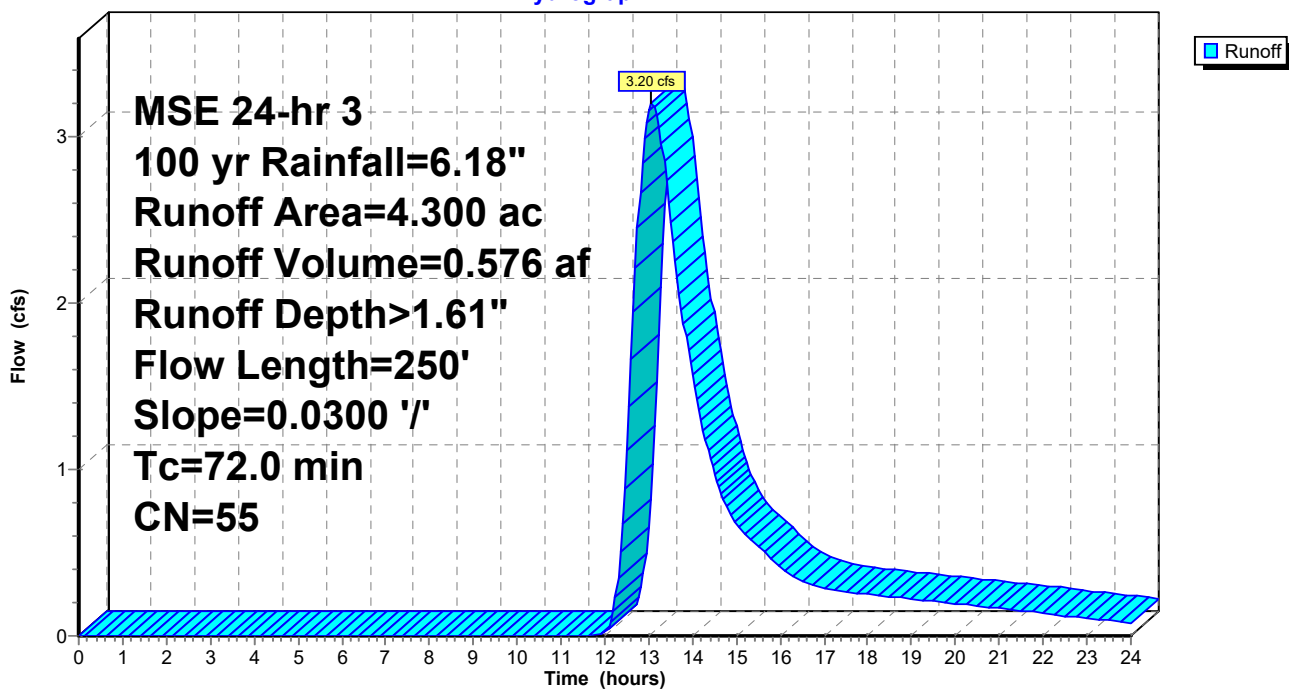
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.300	55	woods
4.300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
72.0	250	0.0300	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment E17: Subarea 17

Hydrograph



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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment E18: Subarea 18

Runoff = 14.45 cfs @ 12.60 hrs, Volume= 1.660 af, Depth> 3.33"

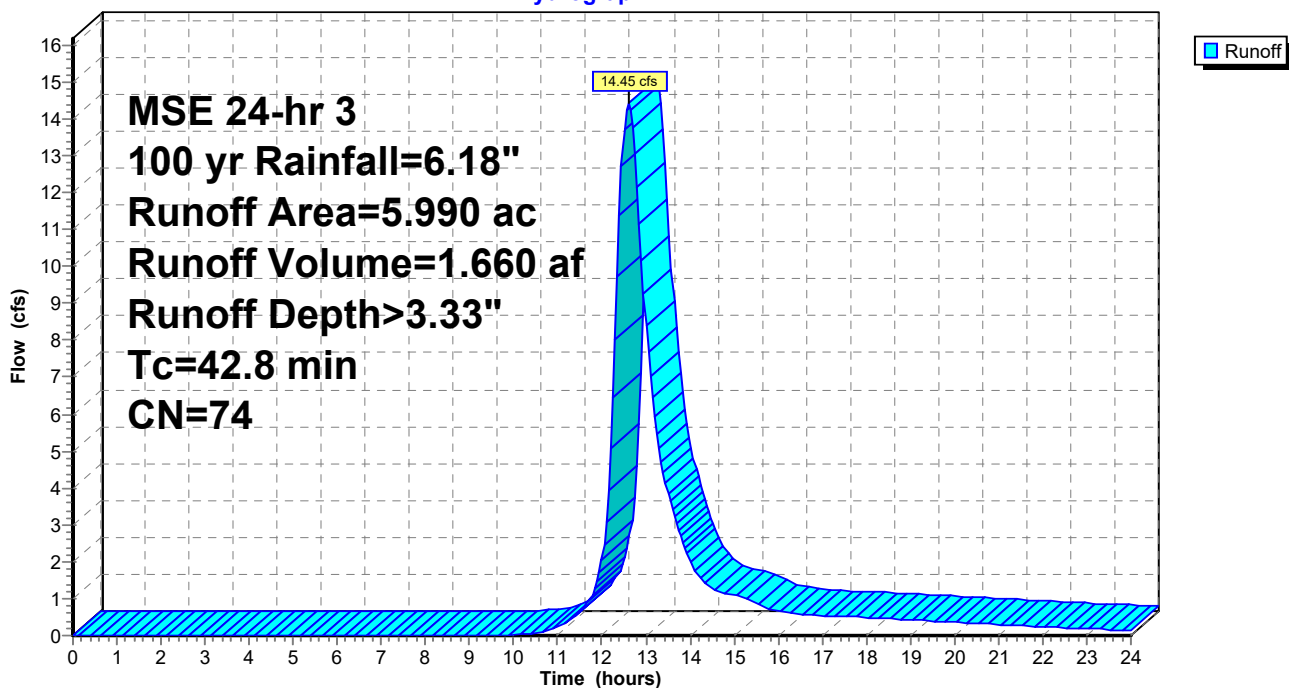
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.290	78	Area C from LCL High School Report
* 0.850	55	woods
* 0.620	61	grass
* 0.230	98	impervious
5.990	74	Weighted Average
5.760		96.16% Pervious Area
0.230		3.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.8					Direct Entry, LCL High School Report

Subcatchment E18: Subarea 18

Hydrograph



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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment E19: Subarea 19

Runoff = 0.63 cfs @ 12.13 hrs, Volume= 0.029 af, Depth> 3.53"

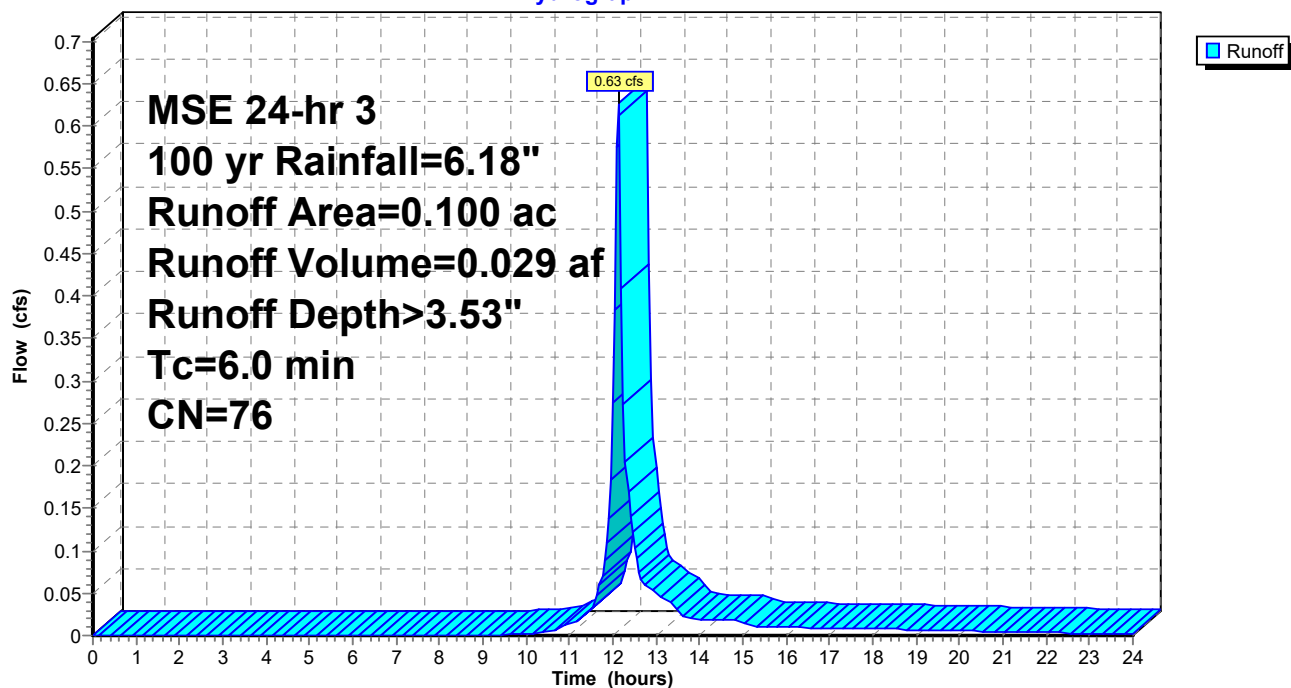
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.060	61	grass
*	0.040	98	impervious
	0.100	76	Weighted Average
	0.060		60.00% Pervious Area
	0.040		40.00% Impervious Area

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

Subcatchment E19: Subarea 19

Hydrograph



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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment E2: Subarea 2

Runoff = 4.95 cfs @ 12.88 hrs, Volume= 0.766 af, Depth> 1.69"

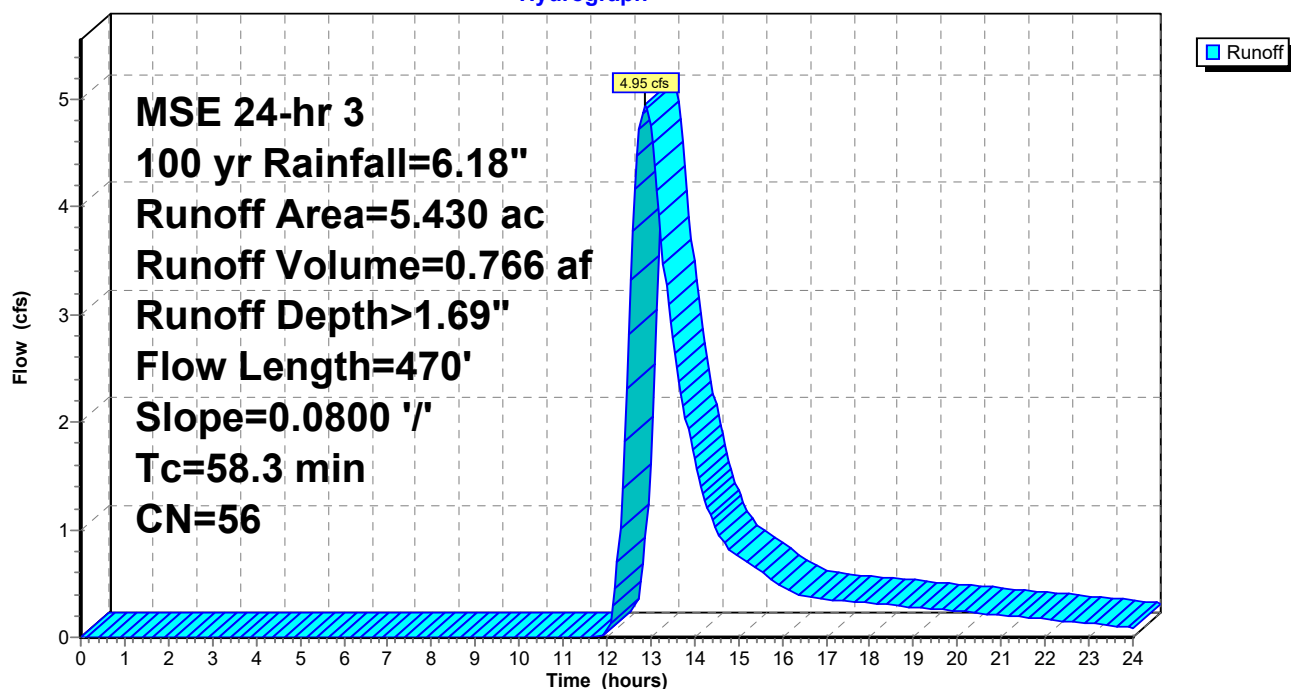
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.960	55	woods
* 0.380	61	grass
* 0.090	98	impervious
5.430	56	Weighted Average
5.340		98.34% Pervious Area
0.090		1.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	300	0.0800	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
2.0	170	0.0800	1.41		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
58.3	470	Total			

Subcatchment E2: Subarea 2

Hydrograph



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Summary for Subcatchment E20: Subarea 20

Runoff = 3.09 cfs @ 13.32 hrs, Volume= 0.642 af, Depth> 1.60"

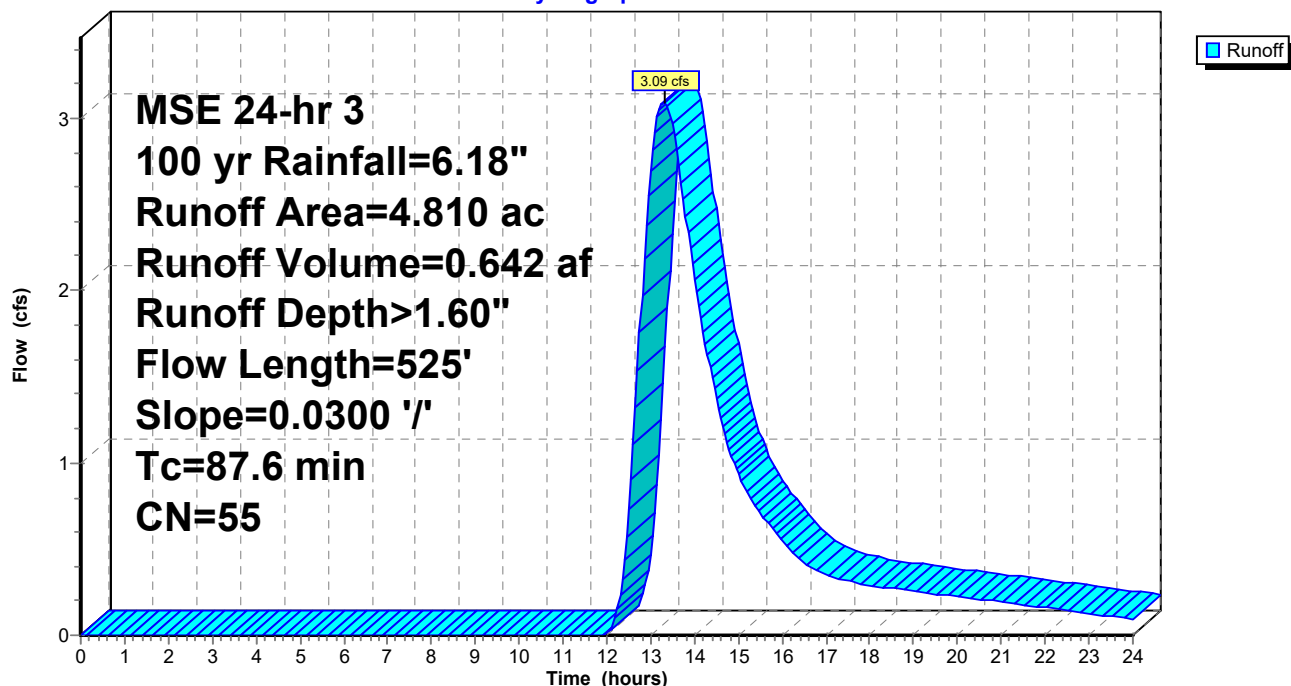
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.700	55	woods
* 0.110	61	grass
4.810	55	Weighted Average
4.810		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
83.3	300	0.0300	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
4.3	225	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
87.6	525	Total			

Subcatchment E20: Subarea 20

Hydrograph



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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment E3: Subarea 3

Runoff = 2.82 cfs @ 12.41 hrs, Volume= 0.258 af, Depth> 1.95"

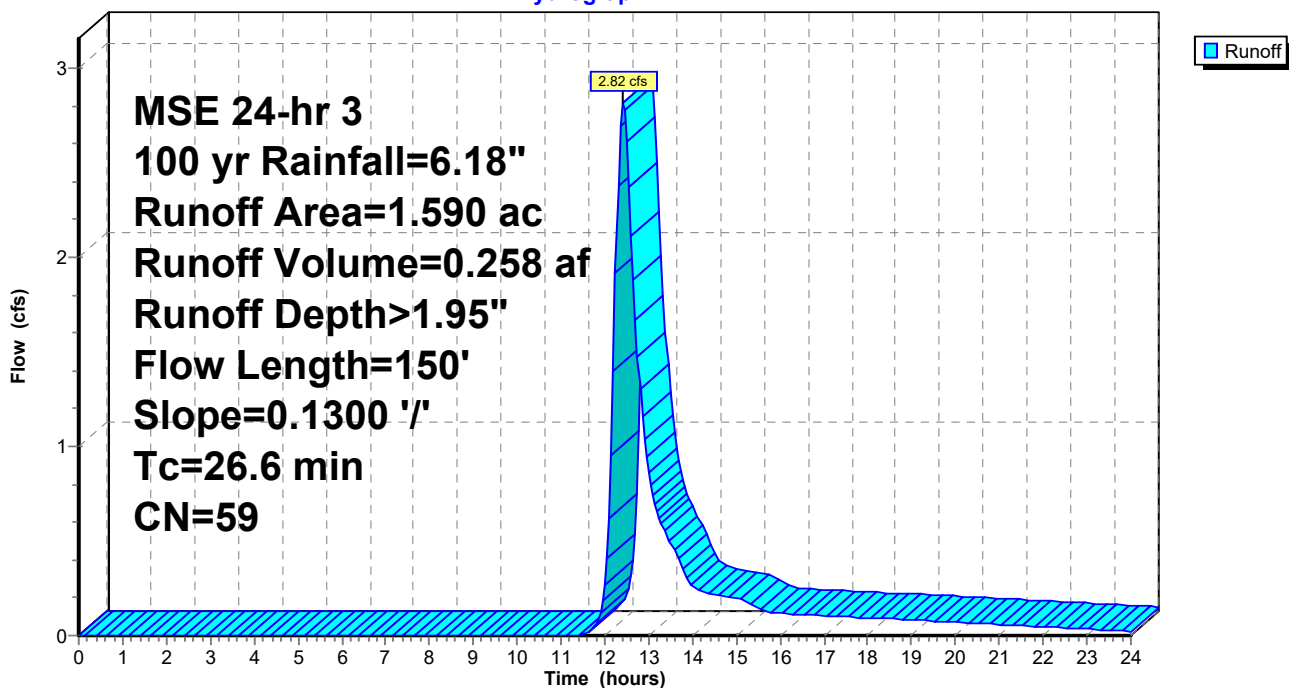
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.280	55	woods
* 0.190	61	grass
* 0.120	98	impervious
1.590	59	Weighted Average
1.470		92.45% Pervious Area
0.120		7.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.6	150	0.1300	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment E3: Subarea 3

Hydrograph



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Summary for Subcatchment E4: Subarea 4

Runoff = 0.42 cfs @ 12.58 hrs, Volume= 0.050 af, Depth> 1.62"

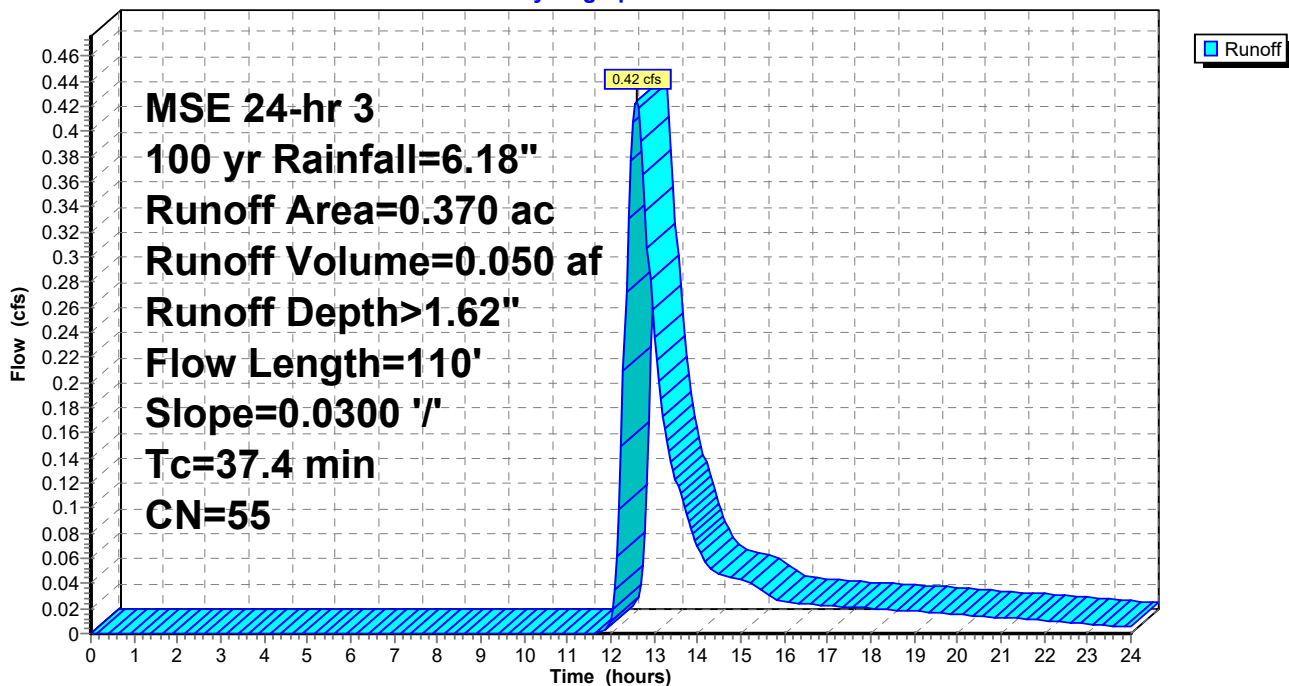
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.350	55	woods
* 0.020	61	grass
0.370	55	Weighted Average
0.370		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.4	110	0.0300	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment E4: Subarea 4

Hydrograph



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Summary for Subcatchment E5: Subarea 5

Runoff = 5.53 cfs @ 12.84 hrs, Volume= 0.830 af, Depth> 1.61"

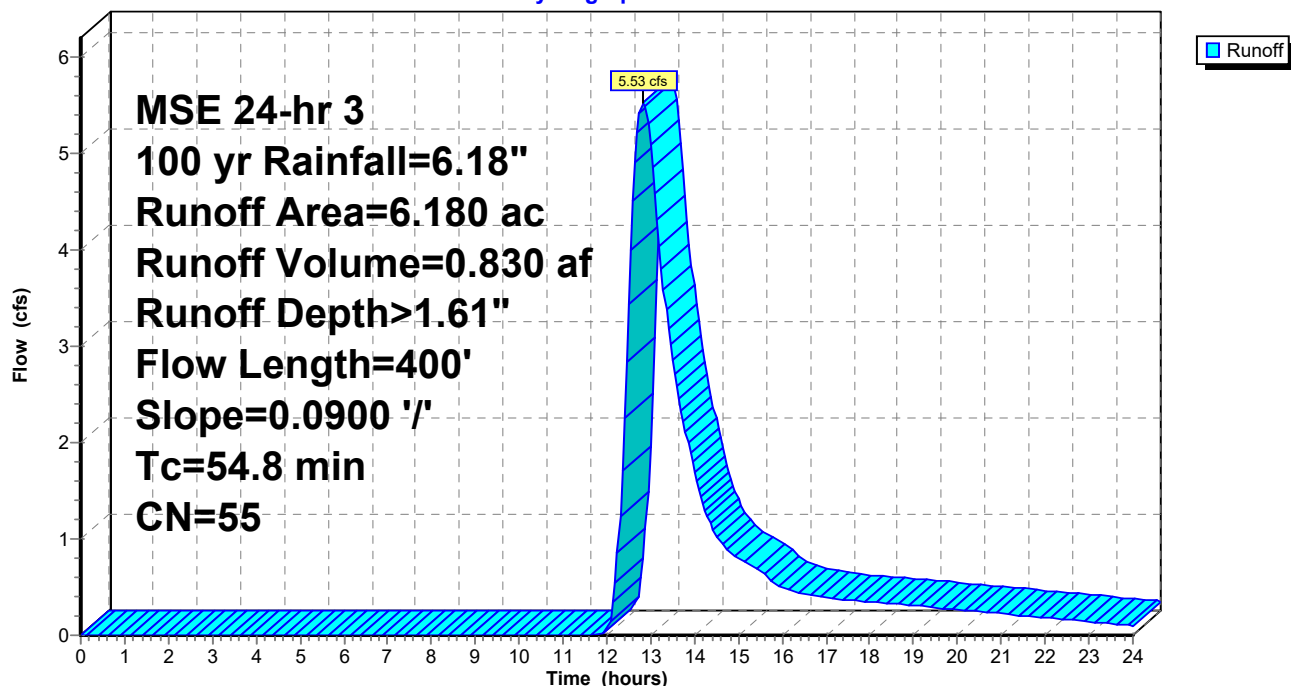
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 6.100	55	woods
* 0.080	61	grass
6.180	55	Weighted Average
6.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
53.7	300	0.0900	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
1.1	100	0.0900	1.50		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
54.8	400	Total			

Subcatchment E5: Subarea 5

Hydrograph



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Summary for Subcatchment E6: Subarea 6

Runoff = 2.68 cfs @ 12.74 hrs, Volume= 0.374 af, Depth> 1.61"

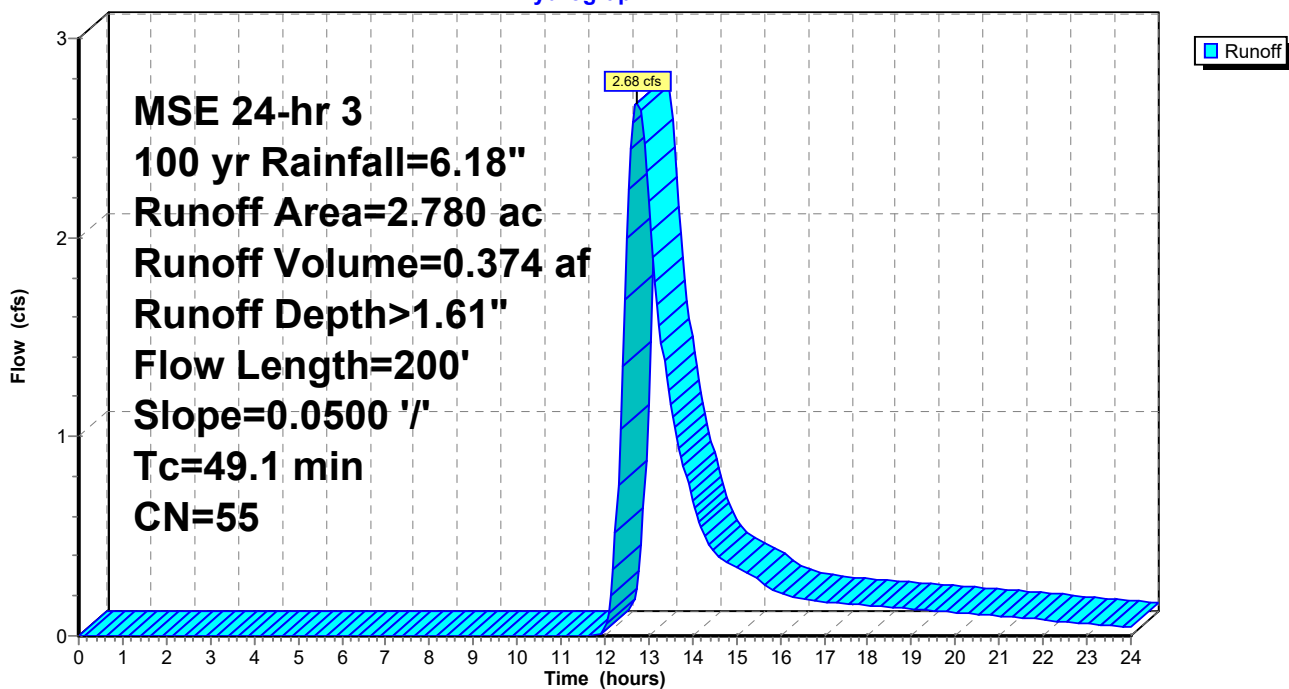
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 2.780	55	woods
2.780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.1	200	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment E6: Subarea 6

Hydrograph



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Summary for Pond 1K: Kettle 1

Inflow Area = 31.830 ac, 0.66% Impervious, Inflow Depth > 0.90" for 100 yr event
 Inflow = 17.15 cfs @ 12.76 hrs, Volume= 2.398 af
 Outflow = 0.17 cfs @ 24.00 hrs, Volume= 0.144 af, Atten= 99%, Lag= 674.1 min
 Discarded = 0.17 cfs @ 24.00 hrs, Volume= 0.144 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 951.74' @ 24.00 hrs Surf.Area= 21,286 sf Storage= 98,187 cf

Plug-Flow detention time= 376.3 min calculated for 0.144 af (6% of inflow)
 Center-of-Mass det. time= 244.4 min (1,115.0 - 870.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	944.00'	560,290 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
944.00	3,750	0	0	3,750
945.00	6,195	4,922	4,922	6,208
946.00	8,685	7,405	12,327	8,716
947.00	10,780	9,714	22,040	10,840
948.00	13,055	11,899	33,940	13,148
949.00	15,305	14,165	48,105	15,437
950.00	17,415	16,349	64,453	17,595
951.00	19,655	18,524	82,977	19,886
952.00	21,865	20,750	103,727	22,155
953.00	24,185	23,015	126,743	24,536
954.00	26,545	25,356	152,098	26,963
955.00	28,985	27,756	179,854	29,473
956.00	31,540	30,254	210,108	32,101
957.00	34,135	32,829	242,937	34,775
958.00	36,900	35,509	278,445	37,619
959.00	39,930	38,405	316,851	40,728
960.00	43,170	41,539	358,390	44,047
961.00	46,620	44,884	403,274	47,578
962.00	50,260	48,429	451,703	51,301
963.00	54,345	52,289	503,992	55,465
964.00	58,275	56,299	560,290	59,484

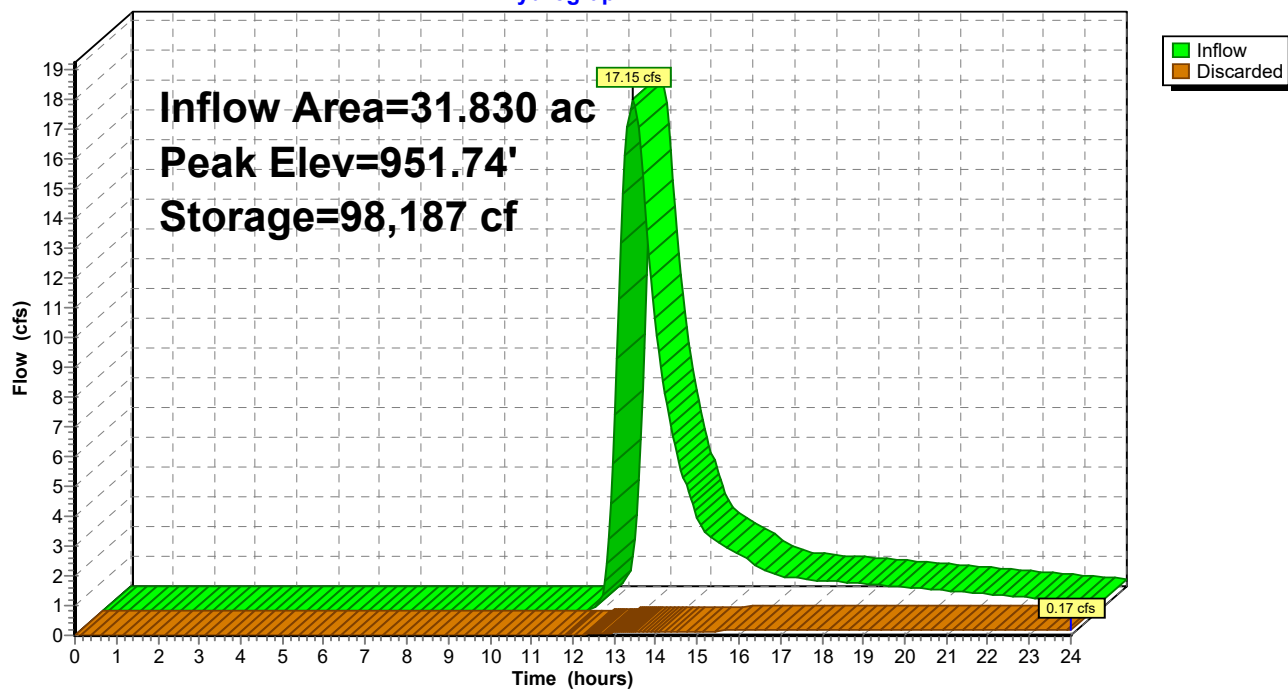
Device	Routing	Invert	Outlet Devices	
#1	Discarded	944.00'	0.240 in/hr Exfiltration over Wetted area	
			Conductivity to Groundwater Elevation = 934.00' Phase-In= 0.01'	

Discarded OutFlow Max=0.17 cfs @ 24.00 hrs HW=951.74' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.17 cfs)

Pond 1K: Kettle 1

Hydrograph



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Stage-Discharge for Pond 1K: Kettle 1

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
944.00	0.00	954.40	0.23
944.20	0.02	954.60	0.23
944.40	0.03	954.80	0.24
944.60	0.03	955.00	0.24
944.80	0.03	955.20	0.25
945.00	0.04	955.40	0.26
945.20	0.04	955.60	0.26
945.40	0.04	955.80	0.27
945.60	0.05	956.00	0.27
945.80	0.05	956.20	0.28
946.00	0.05	956.40	0.28
946.20	0.06	956.60	0.29
946.40	0.06	956.80	0.29
946.60	0.06	957.00	0.30
946.80	0.07	957.20	0.30
947.00	0.07	957.40	0.31
947.20	0.08	957.60	0.32
947.40	0.08	957.80	0.32
947.60	0.08	958.00	0.33
947.80	0.09	958.20	0.33
948.00	0.09	958.40	0.34
948.20	0.09	958.60	0.35
948.40	0.10	958.80	0.35
948.60	0.10	959.00	0.36
948.80	0.11	959.20	0.37
949.00	0.11	959.40	0.37
949.20	0.11	959.60	0.38
949.40	0.12	959.80	0.39
949.60	0.12	960.00	0.39
949.80	0.13	960.20	0.40
950.00	0.13	960.40	0.41
950.20	0.13	960.60	0.41
950.40	0.14	960.80	0.42
950.60	0.14	961.00	0.43
950.80	0.15	961.20	0.43
951.00	0.15	961.40	0.44
951.20	0.15	961.60	0.45
951.40	0.16	961.80	0.46
951.60	0.16	962.00	0.46
951.80	0.17	962.20	0.47
952.00	0.17	962.40	0.48
952.20	0.18	962.60	0.49
952.40	0.18	962.80	0.50
952.60	0.19	963.00	0.50
952.80	0.19	963.20	0.51
953.00	0.20	963.40	0.52
953.20	0.20	963.60	0.53
953.40	0.20	963.80	0.54
953.60	0.21	964.00	0.54
953.80	0.21		
954.00	0.22		
954.20	0.22		

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Summary for Pond 2K: Kettle 2

Inflow Area = 16.350 ac, 1.28% Impervious, Inflow Depth > 0.90" for 100 yr event
 Inflow = 4.95 cfs @ 12.88 hrs, Volume= 1.230 af
 Outflow = 0.11 cfs @ 24.00 hrs, Volume= 0.086 af, Atten= 98%, Lag= 667.1 min
 Discarded = 0.11 cfs @ 24.00 hrs, Volume= 0.086 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 972.48' @ 24.00 hrs Surf.Area= 14,943 sf Storage= 49,849 cf

Plug-Flow detention time= 384.0 min calculated for 0.085 af (7% of inflow)
 Center-of-Mass det. time= 210.8 min (1,133.5 - 922.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	966.00'	96,797 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
966.00	285	0	0	285
967.00	3,190	1,476	1,476	3,193
968.00	5,410	4,251	5,728	5,425
969.00	7,210	6,288	12,016	7,247
970.00	9,215	8,192	20,208	9,277
971.00	11,370	10,274	30,482	11,462
972.00	13,630	12,483	42,965	13,756
973.00	16,420	15,003	57,968	16,580
974.00	19,360	17,870	75,838	19,558
975.00	22,600	20,959	96,797	22,838

Device	Routing	Invert	Outlet Devices
#1	Discarded	966.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 956.00' Phase-In= 0.01'
#2	Primary	973.70'	5.0' 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

Discarded OutFlow Max=0.11 cfs @ 24.00 hrs HW=972.48' (Free Discharge)

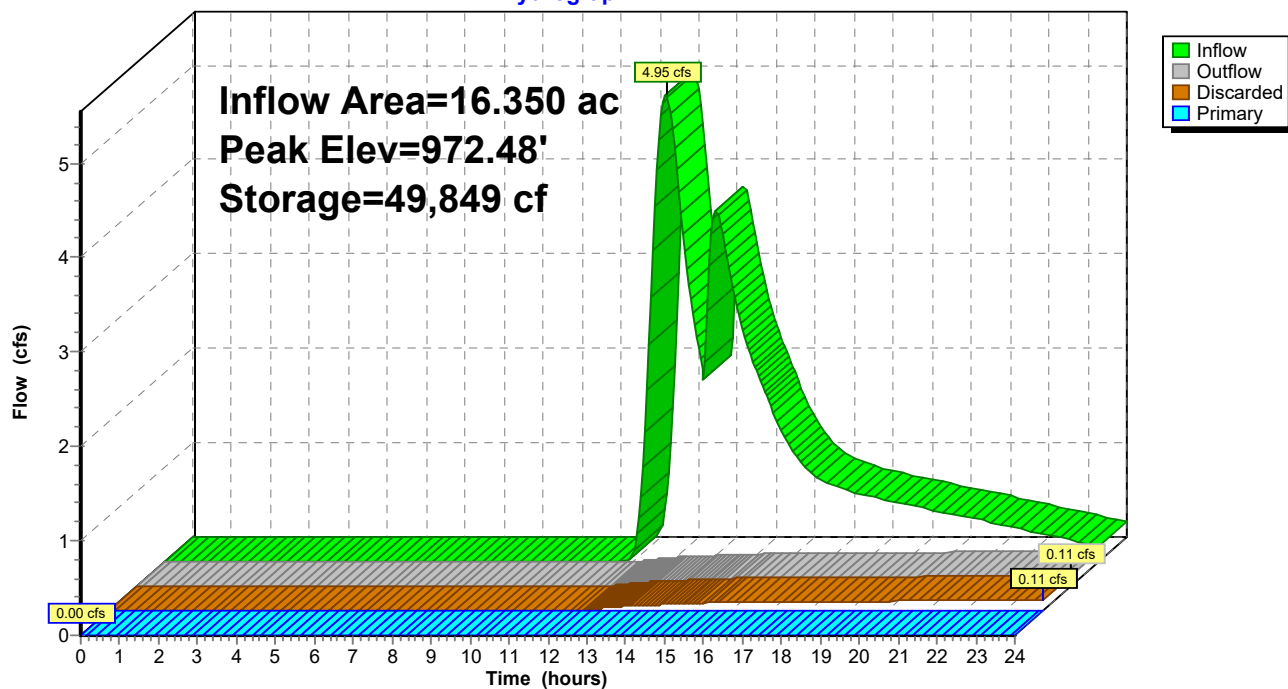
↑ **1=Exfiltration** (Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=966.00' TW=944.00' (Dynamic Tailwater)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2K: Kettle 2

Hydrograph



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Stage-Discharge for Pond 2K: Kettle 2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
966.00	0.00	0.00	0.00	971.20	0.08	0.08	0.00
966.10	0.00	0.00	0.00	971.30	0.08	0.08	0.00
966.20	0.00	0.00	0.00	971.40	0.09	0.09	0.00
966.30	0.00	0.00	0.00	971.50	0.09	0.09	0.00
966.40	0.01	0.01	0.00	971.60	0.09	0.09	0.00
966.50	0.01	0.01	0.00	971.70	0.09	0.09	0.00
966.60	0.01	0.01	0.00	971.80	0.09	0.09	0.00
966.70	0.01	0.01	0.00	971.90	0.09	0.09	0.00
966.80	0.01	0.01	0.00	972.00	0.10	0.10	0.00
966.90	0.02	0.02	0.00	972.10	0.10	0.10	0.00
967.00	0.02	0.02	0.00	972.20	0.10	0.10	0.00
967.10	0.02	0.02	0.00	972.30	0.10	0.10	0.00
967.20	0.02	0.02	0.00	972.40	0.11	0.11	0.00
967.30	0.02	0.02	0.00	972.50	0.11	0.11	0.00
967.40	0.02	0.02	0.00	972.60	0.11	0.11	0.00
967.50	0.03	0.03	0.00	972.70	0.11	0.11	0.00
967.60	0.03	0.03	0.00	972.80	0.11	0.11	0.00
967.70	0.03	0.03	0.00	972.90	0.12	0.12	0.00
967.80	0.03	0.03	0.00	973.00	0.12	0.12	0.00
967.90	0.03	0.03	0.00	973.10	0.12	0.12	0.00
968.00	0.03	0.03	0.00	973.20	0.12	0.12	0.00
968.10	0.03	0.03	0.00	973.30	0.13	0.13	0.00
968.20	0.04	0.04	0.00	973.40	0.13	0.13	0.00
968.30	0.04	0.04	0.00	973.50	0.13	0.13	0.00
968.40	0.04	0.04	0.00	973.60	0.13	0.13	0.00
968.50	0.04	0.04	0.00	973.70	0.14	0.14	0.00
968.60	0.04	0.04	0.00	973.80	0.53	0.14	0.39
968.70	0.04	0.04	0.00	973.90	1.25	0.14	1.11
968.80	0.04	0.04	0.00	974.00	2.22	0.14	2.07
968.90	0.04	0.04	0.00	974.10	3.38	0.15	3.24
969.00	0.05	0.05	0.00	974.20	4.80	0.15	4.65
969.10	0.05	0.05	0.00	974.30	6.42	0.15	6.27
969.20	0.05	0.05	0.00	974.40	8.04	0.15	7.89
969.30	0.05	0.05	0.00	974.50	9.78	0.16	9.62
969.40	0.05	0.05	0.00	974.60	11.62	0.16	11.46
969.50	0.05	0.05	0.00	974.70	13.56	0.16	13.40
969.60	0.06	0.06	0.00	974.80	15.65	0.16	15.49
969.70	0.06	0.06	0.00	974.90	17.85	0.17	17.68
969.80	0.06	0.06	0.00	975.00	20.03	0.17	19.86
969.90	0.06	0.06	0.00				
970.00	0.06	0.06	0.00				
970.10	0.06	0.06	0.00				
970.20	0.06	0.06	0.00				
970.30	0.07	0.07	0.00				
970.40	0.07	0.07	0.00				
970.50	0.07	0.07	0.00				
970.60	0.07	0.07	0.00				
970.70	0.07	0.07	0.00				
970.80	0.07	0.07	0.00				
970.90	0.08	0.08	0.00				
971.00	0.08	0.08	0.00				
971.10	0.08	0.08	0.00				

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Summary for Pond 3K: Kettle 3

Inflow Area = 10.550 ac, 1.14% Impervious, Inflow Depth > 1.20" for 100 yr event
 Inflow = 4.35 cfs @ 13.16 hrs, Volume= 1.053 af
 Outflow = 2.46 cfs @ 14.24 hrs, Volume= 0.525 af, Atten= 43%, Lag= 64.6 min
 Discarded = 0.07 cfs @ 14.24 hrs, Volume= 0.061 af
 Primary = 2.39 cfs @ 14.24 hrs, Volume= 0.465 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 976.16' @ 14.24 hrs Surf.Area= 9,746 sf Storage= 24,357 cf

Plug-Flow detention time= 223.0 min calculated for 0.525 af (50% of inflow)

Center-of-Mass det. time= 116.3 min (1,005.0 - 888.7)

Volume	Invert	Avail.Storage	Storage Description
#1	972.00'	46,349 cf	Custom Stage Data (Conic) Listed below (Recalc)

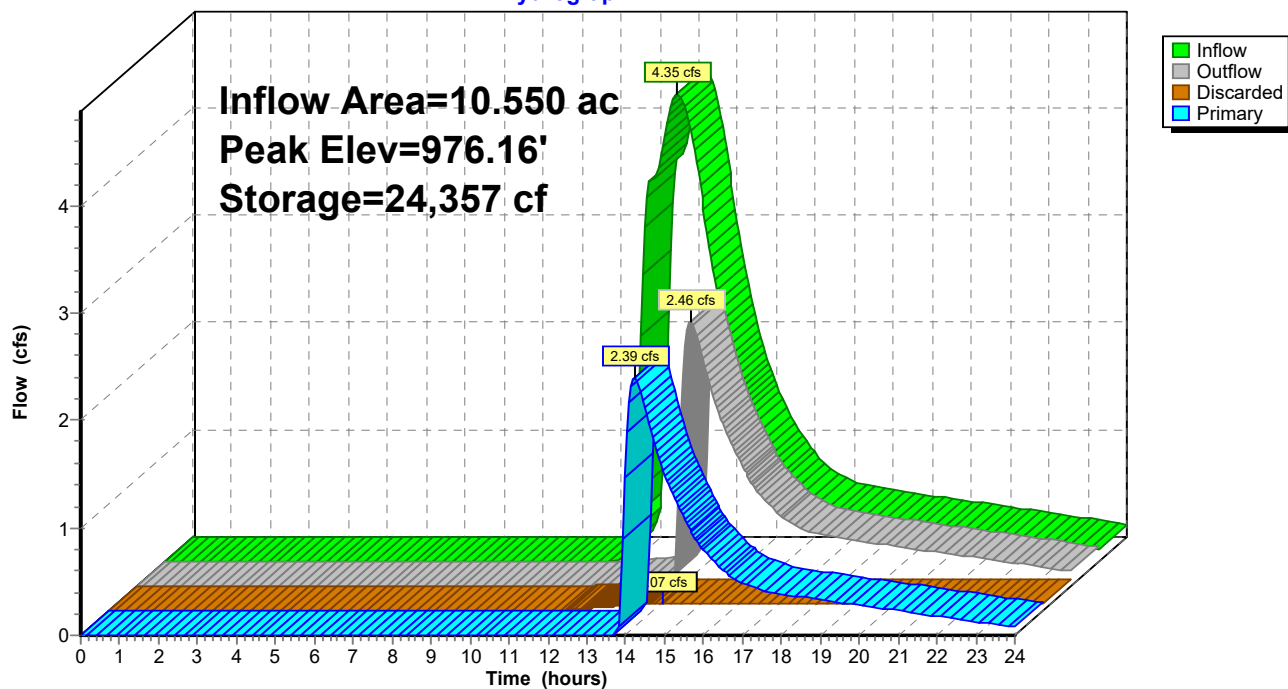
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
972.00	1,920	0	0	1,920
973.00	4,020	2,906	2,906	4,029
974.00	5,770	4,869	7,775	5,796
975.00	7,510	6,621	14,396	7,560
976.00	9,385	8,430	22,826	9,463
977.00	11,750	10,545	33,371	11,855
978.00	14,245	12,977	46,349	14,383

Device	Routing	Invert	Outlet Devices
#1	Discarded	972.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 962.00' Phase-In= 0.01'
#2	Primary	976.00'	15.0' 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

Discarded OutFlow Max=0.07 cfs @ 14.24 hrs HW=976.16' (Free Discharge)↑**1=Exfiltration** (Controls 0.07 cfs)**Primary OutFlow** Max=2.39 cfs @ 14.24 hrs HW=976.16' TW=970.33' (Dynamic Tailwater)↑**2=Broad-Crested Rectangular Weir**(Weir Controls 2.39 cfs @ 1.00 fps)

Pond 3K: Kettle 3

Hydrograph



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Stage-Discharge for Pond 3K: Kettle 3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
972.00	0.00	0.00	0.00	977.20	53.13	0.09	53.04
972.10	0.01	0.01	0.00	977.30	59.67	0.09	59.59
972.20	0.01	0.01	0.00	977.40	66.43	0.09	66.34
972.30	0.01	0.01	0.00	977.50	73.26	0.09	73.16
972.40	0.02	0.02	0.00	977.60	80.24	0.09	80.14
972.50	0.02	0.02	0.00	977.70	87.87	0.10	87.77
972.60	0.02	0.02	0.00	977.80	95.73	0.10	95.63
972.70	0.02	0.02	0.00	977.90	103.81	0.10	103.71
972.80	0.02	0.02	0.00	978.00	112.11	0.10	112.01
972.90	0.02	0.02	0.00				
973.00	0.02	0.02	0.00				
973.10	0.03	0.03	0.00				
973.20	0.03	0.03	0.00				
973.30	0.03	0.03	0.00				
973.40	0.03	0.03	0.00				
973.50	0.03	0.03	0.00				
973.60	0.03	0.03	0.00				
973.70	0.03	0.03	0.00				
973.80	0.03	0.03	0.00				
973.90	0.03	0.03	0.00				
974.00	0.04	0.04	0.00				
974.10	0.04	0.04	0.00				
974.20	0.04	0.04	0.00				
974.30	0.04	0.04	0.00				
974.40	0.04	0.04	0.00				
974.50	0.04	0.04	0.00				
974.60	0.04	0.04	0.00				
974.70	0.05	0.05	0.00				
974.80	0.05	0.05	0.00				
974.90	0.05	0.05	0.00				
975.00	0.05	0.05	0.00				
975.10	0.05	0.05	0.00				
975.20	0.05	0.05	0.00				
975.30	0.05	0.05	0.00				
975.40	0.06	0.06	0.00				
975.50	0.06	0.06	0.00				
975.60	0.06	0.06	0.00				
975.70	0.06	0.06	0.00				
975.80	0.06	0.06	0.00				
975.90	0.06	0.06	0.00				
976.00	0.06	0.06	0.00				
976.10	1.25	0.07	1.18				
976.20	3.41	0.07	3.34				
976.30	6.29	0.07	6.22				
976.40	9.79	0.07	9.71				
976.50	14.02	0.07	13.95				
976.60	18.90	0.07	18.82				
976.70	23.75	0.08	23.68				
976.80	28.95	0.08	28.87				
976.90	34.47	0.08	34.39				
977.00	40.28	0.08	40.20				
977.10	46.55	0.08	46.46				

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Summary for Pond 4K: Kettle 4

Inflow Area = 0.370 ac, 0.00% Impervious, Inflow Depth > 1.62" for 100 yr event
 Inflow = 0.42 cfs @ 12.58 hrs, Volume= 0.050 af
 Outflow = 0.02 cfs @ 19.23 hrs, Volume= 0.016 af, Atten= 96%, Lag= 398.6 min
 Discarded = 0.02 cfs @ 19.23 hrs, Volume= 0.016 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,007.92' @ 19.23 hrs Surf.Area= 2,943 sf Storage= 1,580 cf

Plug-Flow detention time= 351.4 min calculated for 0.016 af (32% of inflow)
 Center-of-Mass det. time= 236.7 min (1,101.4 - 864.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,007.00'	6,875 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,007.00	750	0	0	750
1,008.00	3,220	1,841	1,841	3,224
1,009.00	7,100	5,034	6,875	7,113

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,007.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 997.00' Phase-In= 0.01'
#2	Primary	1,008.50'	10.0' 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

Discarded OutFlow Max=0.02 cfs @ 19.23 hrs HW=1,007.92' (Free Discharge)

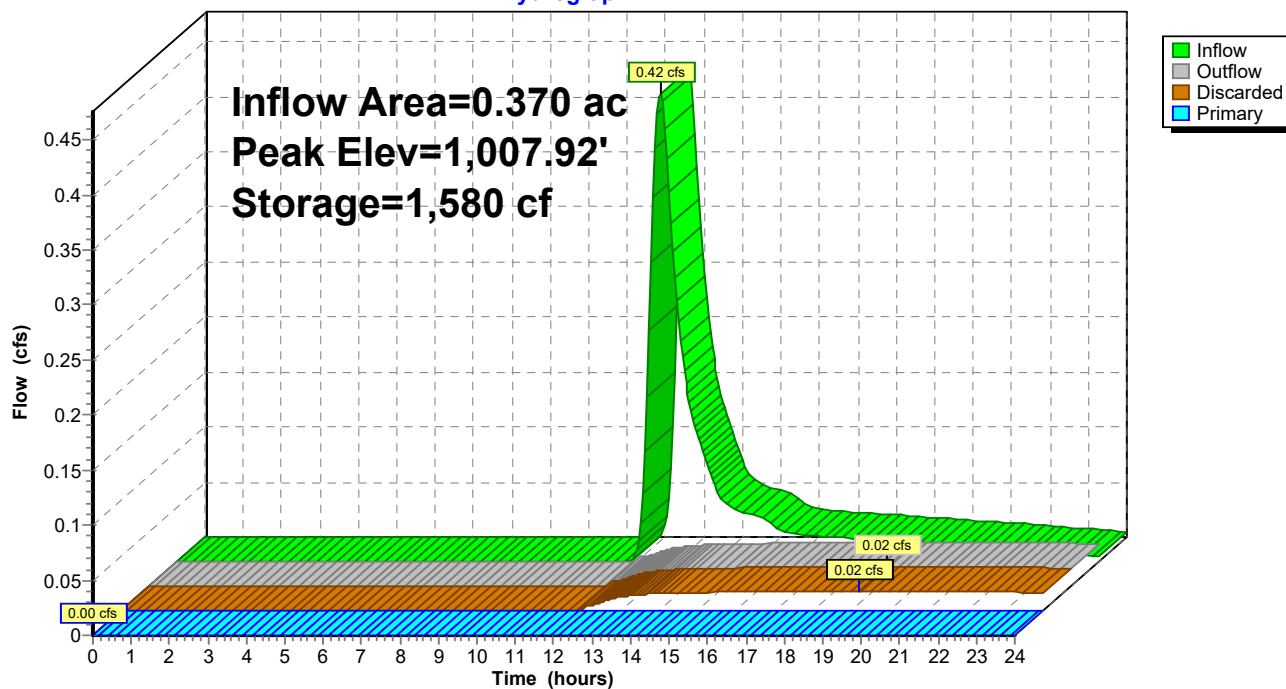
↑**1=Exfiltration** (Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,007.00' TW=966.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 4K: Kettle 4

Hydrograph



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Stage-Discharge for Pond 4K: Kettle 4

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
1,007.00	0.00	0.00	0.00	1,008.04	0.02	0.02	0.00
1,007.02	0.00	0.00	0.00	1,008.06	0.02	0.02	0.00
1,007.04	0.00	0.00	0.00	1,008.08	0.02	0.02	0.00
1,007.06	0.00	0.00	0.00	1,008.10	0.02	0.02	0.00
1,007.08	0.00	0.00	0.00	1,008.12	0.02	0.02	0.00
1,007.10	0.01	0.01	0.00	1,008.14	0.02	0.02	0.00
1,007.12	0.01	0.01	0.00	1,008.16	0.02	0.02	0.00
1,007.14	0.01	0.01	0.00	1,008.18	0.02	0.02	0.00
1,007.16	0.01	0.01	0.00	1,008.20	0.02	0.02	0.00
1,007.18	0.01	0.01	0.00	1,008.22	0.02	0.02	0.00
1,007.20	0.01	0.01	0.00	1,008.24	0.02	0.02	0.00
1,007.22	0.01	0.01	0.00	1,008.26	0.02	0.02	0.00
1,007.24	0.01	0.01	0.00	1,008.28	0.02	0.02	0.00
1,007.26	0.01	0.01	0.00	1,008.30	0.03	0.03	0.00
1,007.28	0.01	0.01	0.00	1,008.32	0.03	0.03	0.00
1,007.30	0.01	0.01	0.00	1,008.34	0.03	0.03	0.00
1,007.32	0.01	0.01	0.00	1,008.36	0.03	0.03	0.00
1,007.34	0.01	0.01	0.00	1,008.38	0.03	0.03	0.00
1,007.36	0.01	0.01	0.00	1,008.40	0.03	0.03	0.00
1,007.38	0.01	0.01	0.00	1,008.42	0.03	0.03	0.00
1,007.40	0.01	0.01	0.00	1,008.44	0.03	0.03	0.00
1,007.42	0.01	0.01	0.00	1,008.46	0.03	0.03	0.00
1,007.44	0.01	0.01	0.00	1,008.48	0.03	0.03	0.00
1,007.46	0.01	0.01	0.00	1,008.50	0.03	0.03	0.00
1,007.48	0.01	0.01	0.00	1,008.52	0.10	0.03	0.07
1,007.50	0.01	0.01	0.00	1,008.54	0.23	0.03	0.20
1,007.52	0.01	0.01	0.00	1,008.56	0.40	0.03	0.37
1,007.54	0.01	0.01	0.00	1,008.58	0.60	0.03	0.56
1,007.56	0.01	0.01	0.00	1,008.60	0.82	0.03	0.79
1,007.58	0.01	0.01	0.00	1,008.62	1.07	0.03	1.04
1,007.60	0.01	0.01	0.00	1,008.64	1.34	0.03	1.30
1,007.62	0.01	0.01	0.00	1,008.66	1.63	0.03	1.59
1,007.64	0.01	0.01	0.00	1,008.68	1.94	0.03	1.90
1,007.66	0.01	0.01	0.00	1,008.70	2.26	0.03	2.23
1,007.68	0.01	0.01	0.00	1,008.72	2.61	0.04	2.58
1,007.70	0.01	0.01	0.00	1,008.74	2.98	0.04	2.94
1,007.72	0.01	0.01	0.00	1,008.76	3.37	0.04	3.33
1,007.74	0.01	0.01	0.00	1,008.78	3.77	0.04	3.73
1,007.76	0.01	0.01	0.00	1,008.80	4.19	0.04	4.15
1,007.78	0.01	0.01	0.00	1,008.82	4.62	0.04	4.58
1,007.80	0.02	0.02	0.00	1,008.84	5.07	0.04	5.03
1,007.82	0.02	0.02	0.00	1,008.86	5.54	0.04	5.50
1,007.84	0.02	0.02	0.00	1,008.88	6.02	0.04	5.98
1,007.86	0.02	0.02	0.00	1,008.90	6.52	0.04	6.48
1,007.88	0.02	0.02	0.00	1,008.92	7.05	0.04	7.01
1,007.90	0.02	0.02	0.00	1,008.94	7.59	0.04	7.55
1,007.92	0.02	0.02	0.00	1,008.96	8.16	0.04	8.12
1,007.94	0.02	0.02	0.00	1,008.98	8.74	0.04	8.70
1,007.96	0.02	0.02	0.00	1,009.00	9.34	0.04	9.30
1,007.98	0.02	0.02	0.00				
1,008.00	0.02	0.02	0.00				
1,008.02	0.02	0.02	0.00				

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Summary for Pond 5K: Kettle 5

Inflow Area = 8.960 ac, 0.00% Impervious, Inflow Depth > 1.11" for 100 yr event
 Inflow = 5.53 cfs @ 12.84 hrs, Volume= 0.830 af
 Outflow = 3.79 cfs @ 13.25 hrs, Volume= 0.827 af, Atten= 32%, Lag= 25.2 min
 Discarded = 0.08 cfs @ 13.25 hrs, Volume= 0.032 af
 Primary = 3.70 cfs @ 13.25 hrs, Volume= 0.795 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 983.45' @ 13.25 hrs Surf.Area= 14,366 sf Storage= 7,110 cf

Plug-Flow detention time= 27.5 min calculated for 0.825 af (99% of inflow)
 Center-of-Mass det. time= 25.4 min (904.7 - 879.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	982.50'	80,797 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
982.50	50	0	0	50	
983.00	9,605	1,725	1,725	9,605	
984.00	21,410	15,118	16,843	21,418	
985.00	33,125	27,055	43,898	33,148	
986.00	40,805	36,898	80,797	40,858	

Device	Routing	Invert	Outlet Devices		
#1	Discarded	982.50'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 972.50' Phase-In= 0.01'		
#2	Primary	982.57'	15.0" Round Culvert L= 48.4' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 982.57' / 980.88' S= 0.0349 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf		
#3	Primary	985.10'	10.0' 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		

Discarded OutFlow Max=0.08 cfs @ 13.25 hrs HW=983.45' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.08 cfs)

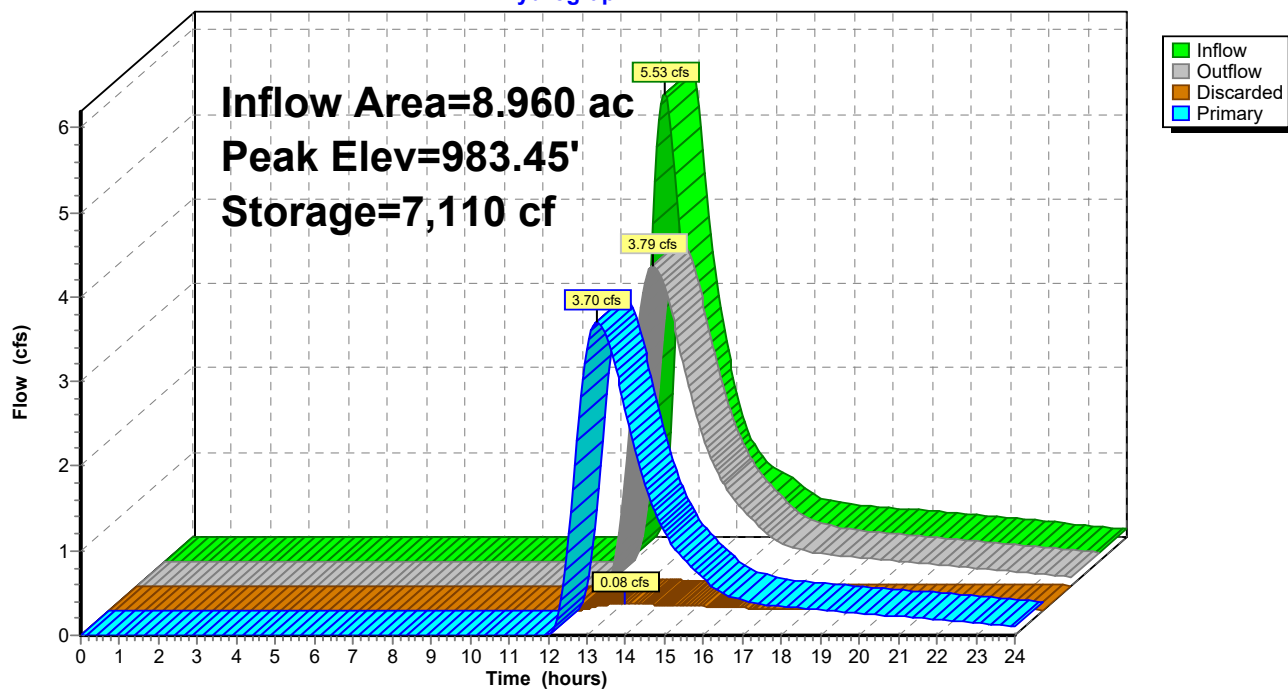
Primary OutFlow Max=3.70 cfs @ 13.25 hrs HW=983.45' TW=975.01' (Dynamic Tailwater)

↑ **2=Culvert** (Inlet Controls 3.70 cfs @ 4.00 fps)

↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 5K: Kettle 5

Hydrograph



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MSE 24-hr 3 100 yr Rainfall=6.18"

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Stage-Discharge for Pond 5K: Kettle 5

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
982.50	0.00	0.00	0.00	985.10	10.41	0.21	10.19
982.55	0.00	0.00	0.00	985.15	10.82	0.22	10.61
982.60	0.01	0.00	0.01	985.20	11.46	0.22	11.25
982.65	0.05	0.01	0.04	985.25	12.26	0.22	12.03
982.70	0.11	0.01	0.10	985.30	13.17	0.22	12.94
982.75	0.21	0.02	0.20	985.35	14.20	0.23	13.98
982.80	0.34	0.02	0.32	985.40	15.35	0.23	15.12
982.85	0.49	0.03	0.46	985.45	16.59	0.23	16.36
982.90	0.67	0.04	0.63	985.50	17.93	0.24	17.69
982.95	0.87	0.04	0.83	985.55	19.41	0.24	19.17
983.00	1.10	0.05	1.04	985.60	21.00	0.24	20.75
983.05	1.34	0.06	1.28	985.65	22.69	0.25	22.44
983.10	1.59	0.06	1.53	985.70	24.49	0.25	24.24
983.15	1.87	0.06	1.81	985.75	26.19	0.25	25.94
983.20	2.16	0.07	2.09	985.80	27.96	0.25	27.70
983.25	2.46	0.07	2.39	985.85	29.78	0.26	29.52
983.30	2.78	0.07	2.71	985.90	31.66	0.26	31.40
983.35	3.10	0.08	3.03	985.95	33.58	0.26	33.32
983.40	3.43	0.08	3.35	986.00	35.56	0.27	35.30
983.45	3.77	0.08	3.69				
983.50	4.11	0.09	4.02				
983.55	4.44	0.09	4.35				
983.60	4.77	0.09	4.67				
983.65	5.08	0.10	4.98				
983.70	5.38	0.10	5.28				
983.75	5.65	0.11	5.55				
983.80	5.88	0.11	5.77				
983.85	6.09	0.11	5.98				
983.90	6.32	0.12	6.20				
983.95	6.54	0.12	6.42				
984.00	6.75	0.13	6.63				
984.05	6.96	0.13	6.83				
984.10	7.16	0.13	7.03				
984.15	7.36	0.14	7.22				
984.20	7.55	0.14	7.40				
984.25	7.73	0.15	7.59				
984.30	7.91	0.15	7.76				
984.35	8.09	0.15	7.94				
984.40	8.26	0.16	8.11				
984.45	8.44	0.16	8.27				
984.50	8.60	0.16	8.44				
984.55	8.77	0.17	8.60				
984.60	8.93	0.17	8.75				
984.65	9.09	0.18	8.91				
984.70	9.24	0.18	9.06				
984.75	9.40	0.18	9.21				
984.80	9.55	0.19	9.36				
984.85	9.70	0.19	9.50				
984.90	9.84	0.20	9.64				
984.95	9.99	0.20	9.78				
985.00	10.13	0.21	9.92				
985.05	10.27	0.21	10.06				

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Summary for Pond 6K: Kettle 6

Inflow Area = 2.780 ac, 0.00% Impervious, Inflow Depth > 1.61" for 100 yr event
 Inflow = 2.68 cfs @ 12.74 hrs, Volume= 0.374 af
 Outflow = 0.12 cfs @ 19.97 hrs, Volume= 0.110 af, Atten= 96%, Lag= 433.4 min
 Discarded = 0.12 cfs @ 19.97 hrs, Volume= 0.110 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,011.81' @ 19.97 hrs Surf.Area= 20,262 sf Storage= 12,024 cf

Plug-Flow detention time= 343.5 min calculated for 0.110 af (29% of inflow)
 Center-of-Mass det. time= 226.3 min (1,100.9 - 874.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.00'	47,595 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,011.00	9,905	0	0	9,905
1,012.00	23,150	16,066	16,066	23,158
1,013.00	40,730	31,529	47,595	40,749

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,011.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1,001.00' Phase-In= 0.01'
#2	Primary	1,012.70'	8.0' 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

Discarded OutFlow Max=0.12 cfs @ 19.97 hrs HW=1,011.81' (Free Discharge)

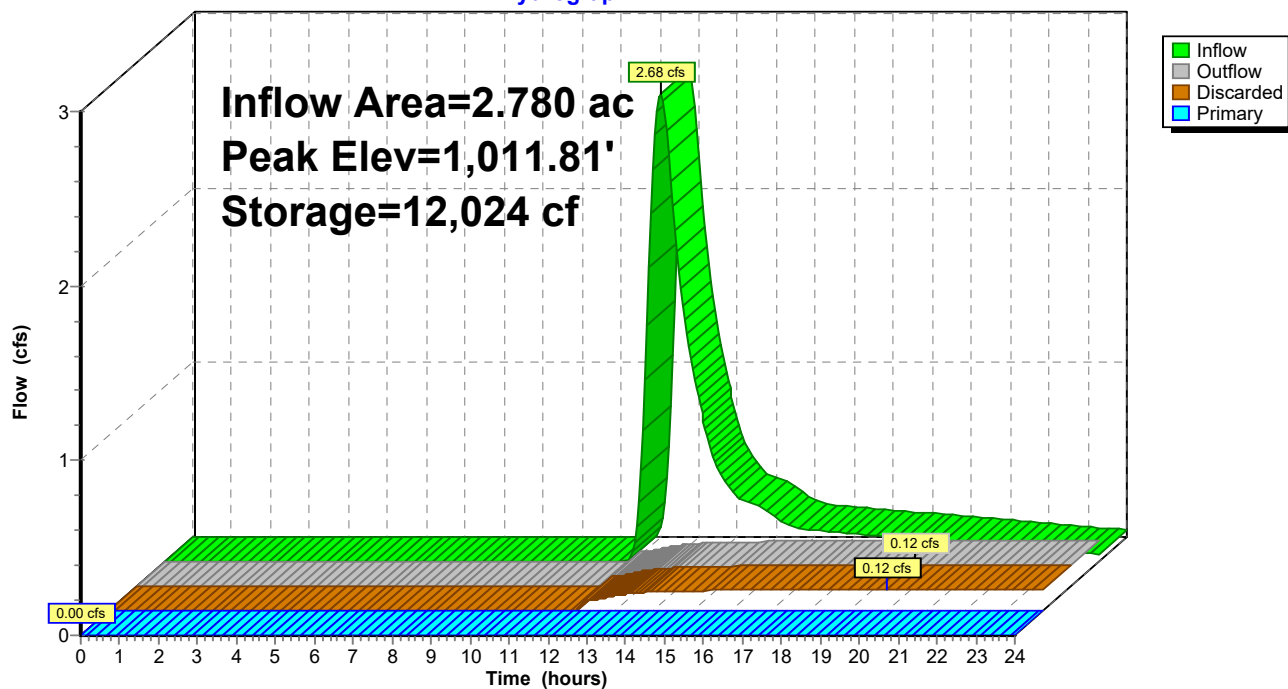
↑**1=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,011.00' TW=982.50' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 6K: Kettle 6

Hydrograph



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Stage-Discharge for Pond 6K: Kettle 6

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
1,011.00	0.00	0.00	0.00	1,012.04	0.14	0.14	0.00
1,011.02	0.06	0.06	0.00	1,012.06	0.14	0.14	0.00
1,011.04	0.06	0.06	0.00	1,012.08	0.15	0.15	0.00
1,011.06	0.06	0.06	0.00	1,012.10	0.15	0.15	0.00
1,011.08	0.06	0.06	0.00	1,012.12	0.15	0.15	0.00
1,011.10	0.06	0.06	0.00	1,012.14	0.15	0.15	0.00
1,011.12	0.06	0.06	0.00	1,012.16	0.15	0.15	0.00
1,011.14	0.06	0.06	0.00	1,012.18	0.16	0.16	0.00
1,011.16	0.07	0.07	0.00	1,012.20	0.16	0.16	0.00
1,011.18	0.07	0.07	0.00	1,012.22	0.16	0.16	0.00
1,011.20	0.07	0.07	0.00	1,012.24	0.16	0.16	0.00
1,011.22	0.07	0.07	0.00	1,012.26	0.16	0.16	0.00
1,011.24	0.07	0.07	0.00	1,012.28	0.17	0.17	0.00
1,011.26	0.07	0.07	0.00	1,012.30	0.17	0.17	0.00
1,011.28	0.07	0.07	0.00	1,012.32	0.17	0.17	0.00
1,011.30	0.08	0.08	0.00	1,012.34	0.17	0.17	0.00
1,011.32	0.08	0.08	0.00	1,012.36	0.17	0.17	0.00
1,011.34	0.08	0.08	0.00	1,012.38	0.18	0.18	0.00
1,011.36	0.08	0.08	0.00	1,012.40	0.18	0.18	0.00
1,011.38	0.08	0.08	0.00	1,012.42	0.18	0.18	0.00
1,011.40	0.08	0.08	0.00	1,012.44	0.18	0.18	0.00
1,011.42	0.09	0.09	0.00	1,012.46	0.19	0.19	0.00
1,011.44	0.09	0.09	0.00	1,012.48	0.19	0.19	0.00
1,011.46	0.09	0.09	0.00	1,012.50	0.19	0.19	0.00
1,011.48	0.09	0.09	0.00	1,012.52	0.19	0.19	0.00
1,011.50	0.09	0.09	0.00	1,012.54	0.19	0.19	0.00
1,011.52	0.09	0.09	0.00	1,012.56	0.20	0.20	0.00
1,011.54	0.09	0.09	0.00	1,012.58	0.20	0.20	0.00
1,011.56	0.10	0.10	0.00	1,012.60	0.20	0.20	0.00
1,011.58	0.10	0.10	0.00	1,012.62	0.20	0.20	0.00
1,011.60	0.10	0.10	0.00	1,012.64	0.21	0.21	0.00
1,011.62	0.10	0.10	0.00	1,012.66	0.21	0.21	0.00
1,011.64	0.10	0.10	0.00	1,012.68	0.21	0.21	0.00
1,011.66	0.11	0.11	0.00	1,012.70	0.21	0.21	0.00
1,011.68	0.11	0.11	0.00	1,012.72	0.27	0.22	0.06
1,011.70	0.11	0.11	0.00	1,012.74	0.38	0.22	0.16
1,011.72	0.11	0.11	0.00	1,012.76	0.51	0.22	0.29
1,011.74	0.11	0.11	0.00	1,012.78	0.67	0.22	0.45
1,011.76	0.11	0.11	0.00	1,012.80	0.86	0.23	0.63
1,011.78	0.12	0.12	0.00	1,012.82	1.06	0.23	0.83
1,011.80	0.12	0.12	0.00	1,012.84	1.27	0.23	1.04
1,011.82	0.12	0.12	0.00	1,012.86	1.51	0.23	1.27
1,011.84	0.12	0.12	0.00	1,012.88	1.76	0.24	1.52
1,011.86	0.12	0.12	0.00	1,012.90	2.02	0.24	1.78
1,011.88	0.13	0.13	0.00	1,012.92	2.30	0.24	2.06
1,011.90	0.13	0.13	0.00	1,012.94	2.60	0.24	2.36
1,011.92	0.13	0.13	0.00	1,012.96	2.91	0.25	2.66
1,011.94	0.13	0.13	0.00	1,012.98	3.23	0.25	2.98
1,011.96	0.13	0.13	0.00	1,013.00	3.57	0.25	3.32
1,011.98	0.14	0.14	0.00				
1,012.00	0.14	0.14	0.00				
1,012.02	0.14	0.14	0.00				

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Summary for Pond 10K: Kettle 10

Inflow Area = 21.480 ac, 4.42% Impervious, Inflow Depth > 0.18" for 100 yr event
 Inflow = 2.99 cfs @ 12.54 hrs, Volume= 0.325 af
 Outflow = 0.04 cfs @ 23.28 hrs, Volume= 0.036 af, Atten= 99%, Lag= 644.7 min
 Discarded = 0.04 cfs @ 23.28 hrs, Volume= 0.036 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 957.85' @ 23.28 hrs Surf.Area= 6,156 sf Storage= 12,616 cf

Plug-Flow detention time= 374.5 min calculated for 0.036 af (11% of inflow)

Center-of-Mass det. time= 255.6 min (1,108.7 - 853.1)

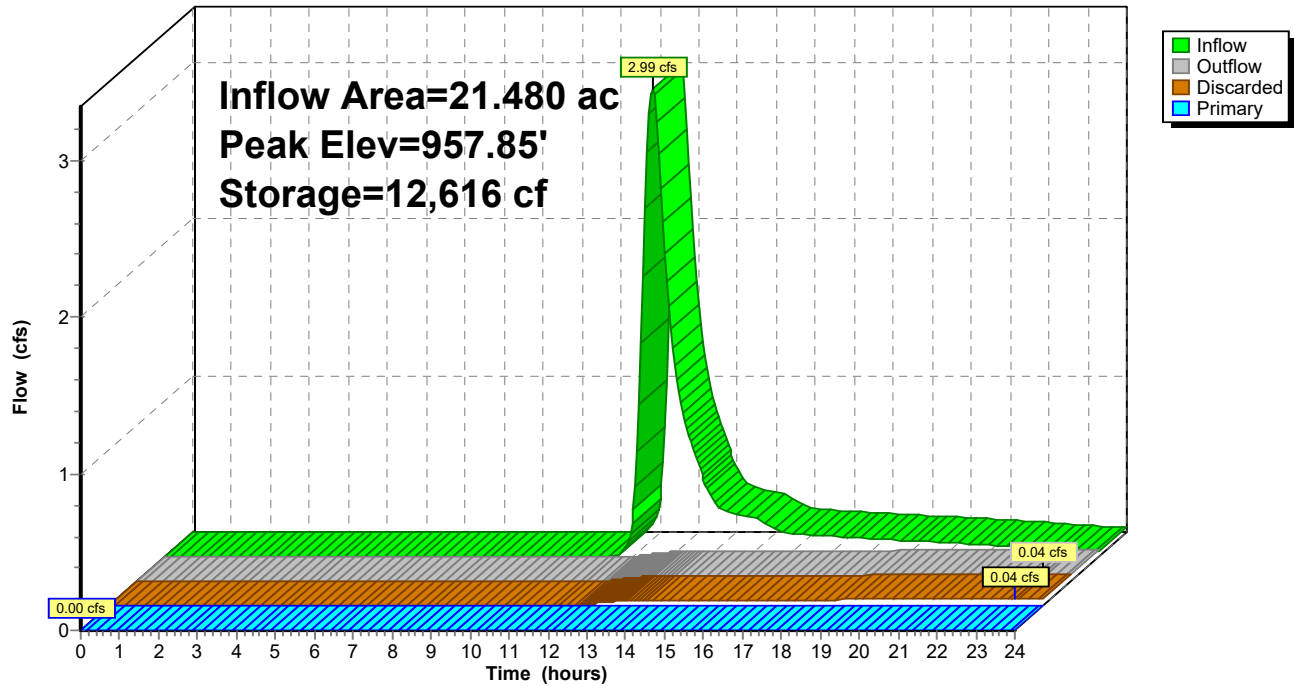
Volume	Invert	Avail.Storage	Storage Description		
#1	953.00'	105,225 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
953.00	170	0	0	170	
954.00	700	405	405	705	
955.00	1,590	1,115	1,520	1,602	
956.00	3,290	2,389	3,909	3,311	
957.00	4,855	4,047	7,956	4,892	
958.00	6,405	5,612	13,568	6,465	
959.00	8,045	7,209	20,778	8,132	
960.00	9,695	8,857	29,635	9,815	
961.00	11,530	10,599	40,234	11,686	
962.00	13,595	12,548	52,783	13,789	
963.00	15,870	14,718	67,500	16,104	
964.00	19,025	17,424	84,924	19,294	
965.00	21,605	20,301	105,225	21,923	

Device	Routing	Invert	Outlet Devices
#1	Discarded	953.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 943.00' Phase-In= 0.01'
#2	Primary	964.50'	15.0' 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

Discarded OutFlow Max=0.04 cfs @ 23.28 hrs HW=957.85' (Free Discharge)↑ **1=Exfiltration** (Controls 0.04 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=953.00' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 10K: Kettle 10

Hydrograph



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Stage-Discharge for Pond 10K: Kettle 10

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
953.00	0.00	0.00	0.00	960.80	0.08	0.08	0.00
953.15	0.00	0.00	0.00	960.95	0.08	0.08	0.00
953.30	0.00	0.00	0.00	961.10	0.08	0.08	0.00
953.45	0.00	0.00	0.00	961.25	0.09	0.09	0.00
953.60	0.00	0.00	0.00	961.40	0.09	0.09	0.00
953.75	0.00	0.00	0.00	961.55	0.09	0.09	0.00
953.90	0.00	0.00	0.00	961.70	0.09	0.09	0.00
954.05	0.00	0.00	0.00	961.85	0.10	0.10	0.00
954.20	0.01	0.01	0.00	962.00	0.10	0.10	0.00
954.35	0.01	0.01	0.00	962.15	0.10	0.10	0.00
954.50	0.01	0.01	0.00	962.30	0.10	0.10	0.00
954.65	0.01	0.01	0.00	962.45	0.11	0.11	0.00
954.80	0.01	0.01	0.00	962.60	0.11	0.11	0.00
954.95	0.01	0.01	0.00	962.75	0.11	0.11	0.00
955.10	0.01	0.01	0.00	962.90	0.11	0.11	0.00
955.25	0.01	0.01	0.00	963.05	0.12	0.12	0.00
955.40	0.01	0.01	0.00	963.20	0.12	0.12	0.00
955.55	0.01	0.01	0.00	963.35	0.12	0.12	0.00
955.70	0.02	0.02	0.00	963.50	0.13	0.13	0.00
955.85	0.02	0.02	0.00	963.65	0.13	0.13	0.00
956.00	0.02	0.02	0.00	963.80	0.14	0.14	0.00
956.15	0.02	0.02	0.00	963.95	0.14	0.14	0.00
956.30	0.02	0.02	0.00	964.10	0.14	0.14	0.00
956.45	0.02	0.02	0.00	964.25	0.15	0.15	0.00
956.60	0.03	0.03	0.00	964.40	0.15	0.15	0.00
956.75	0.03	0.03	0.00	964.55	0.57	0.15	0.42
956.90	0.03	0.03	0.00	964.70	3.50	0.16	3.34
957.05	0.03	0.03	0.00	964.85	8.06	0.16	7.90
957.20	0.03	0.03	0.00	965.00	14.11	0.16	13.95
957.35	0.03	0.03	0.00				
957.50	0.04	0.04	0.00				
957.65	0.04	0.04	0.00				
957.80	0.04	0.04	0.00				
957.95	0.04	0.04	0.00				
958.10	0.04	0.04	0.00				
958.25	0.05	0.05	0.00				
958.40	0.05	0.05	0.00				
958.55	0.05	0.05	0.00				
958.70	0.05	0.05	0.00				
958.85	0.05	0.05	0.00				
959.00	0.05	0.05	0.00				
959.15	0.06	0.06	0.00				
959.30	0.06	0.06	0.00				
959.45	0.06	0.06	0.00				
959.60	0.06	0.06	0.00				
959.75	0.06	0.06	0.00				
959.90	0.07	0.07	0.00				
960.05	0.07	0.07	0.00				
960.20	0.07	0.07	0.00				
960.35	0.07	0.07	0.00				
960.50	0.07	0.07	0.00				
960.65	0.08	0.08	0.00				

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Summary for Pond 11K: Kettle 11

Inflow Area = 0.730 ac, 0.00% Impervious, Inflow Depth > 1.62" for 100 yr event
 Inflow = 0.88 cfs @ 12.54 hrs, Volume= 0.098 af
 Outflow = 0.03 cfs @ 20.16 hrs, Volume= 0.027 af, Atten= 97%, Lag= 457.4 min
 Discarded = 0.03 cfs @ 20.16 hrs, Volume= 0.027 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 980.31' @ 20.16 hrs Surf.Area= 4,944 sf Storage= 3,257 cf

Plug-Flow detention time= 359.8 min calculated for 0.027 af (27% of inflow)
 Center-of-Mass det. time= 243.3 min (1,105.7 - 862.4)

Volume	Invert	Avail.Storage	Storage Description
#1	979.00'	8,105 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
979.00	805	0	0	805
980.00	3,445	1,972	1,972	3,450
981.00	9,295	6,133	8,105	9,306

Device	Routing	Invert	Outlet Devices
#1	Discarded	979.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 969.00' Phase-In= 0.01'
#2	Primary	980.50'	15.0' 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

Discarded OutFlow Max=0.03 cfs @ 20.16 hrs HW=980.31' (Free Discharge)

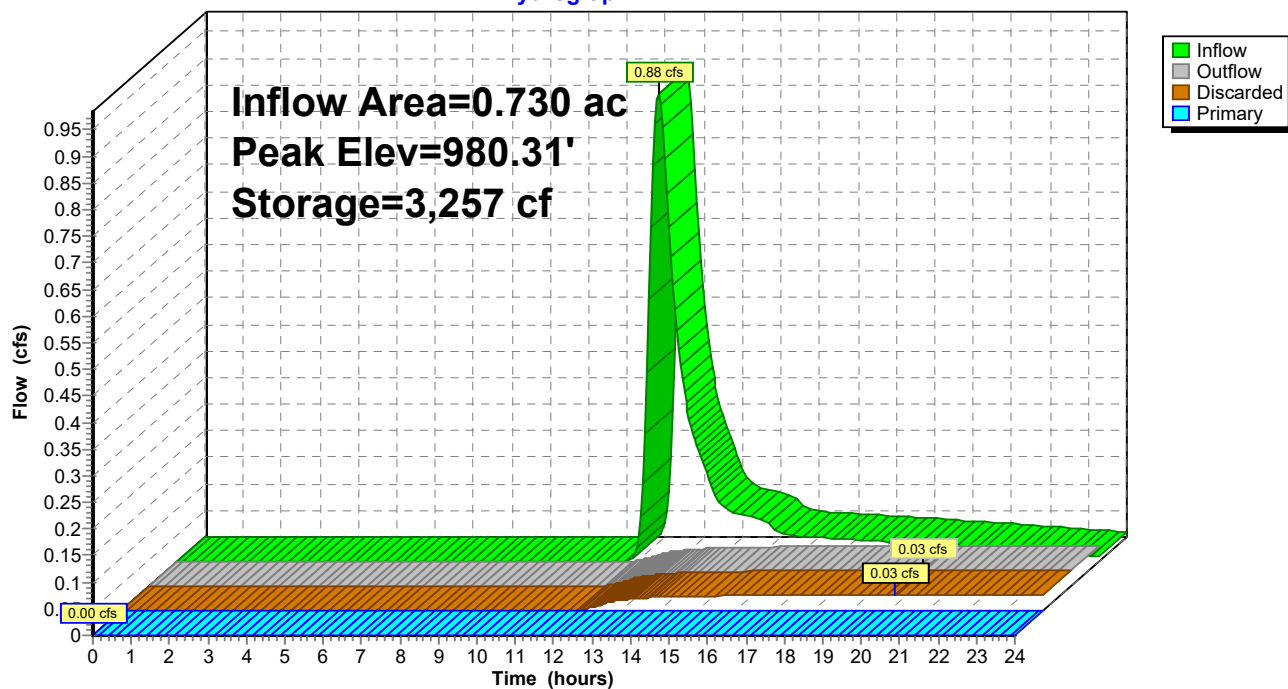
↑**1=Exfiltration** (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=979.00' TW=953.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 11K: Kettle 11

Hydrograph



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Stage-Discharge for Pond 11K: Kettle 11

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
979.00	0.00	0.00	0.00	980.04	0.02	0.02	0.00
979.02	0.00	0.00	0.00	980.06	0.02	0.02	0.00
979.04	0.00	0.00	0.00	980.08	0.02	0.02	0.00
979.06	0.01	0.01	0.00	980.10	0.02	0.02	0.00
979.08	0.01	0.01	0.00	980.12	0.02	0.02	0.00
979.10	0.01	0.01	0.00	980.14	0.02	0.02	0.00
979.12	0.01	0.01	0.00	980.16	0.02	0.02	0.00
979.14	0.01	0.01	0.00	980.18	0.03	0.03	0.00
979.16	0.01	0.01	0.00	980.20	0.03	0.03	0.00
979.18	0.01	0.01	0.00	980.22	0.03	0.03	0.00
979.20	0.01	0.01	0.00	980.24	0.03	0.03	0.00
979.22	0.01	0.01	0.00	980.26	0.03	0.03	0.00
979.24	0.01	0.01	0.00	980.28	0.03	0.03	0.00
979.26	0.01	0.01	0.00	980.30	0.03	0.03	0.00
979.28	0.01	0.01	0.00	980.32	0.03	0.03	0.00
979.30	0.01	0.01	0.00	980.34	0.03	0.03	0.00
979.32	0.01	0.01	0.00	980.36	0.03	0.03	0.00
979.34	0.01	0.01	0.00	980.38	0.03	0.03	0.00
979.36	0.01	0.01	0.00	980.40	0.03	0.03	0.00
979.38	0.01	0.01	0.00	980.42	0.03	0.03	0.00
979.40	0.01	0.01	0.00	980.44	0.03	0.03	0.00
979.42	0.01	0.01	0.00	980.46	0.03	0.03	0.00
979.44	0.01	0.01	0.00	980.48	0.04	0.04	0.00
979.46	0.01	0.01	0.00	980.50	0.04	0.04	0.00
979.48	0.01	0.01	0.00	980.52	0.14	0.04	0.11
979.50	0.01	0.01	0.00	980.54	0.34	0.04	0.30
979.52	0.01	0.01	0.00	980.56	0.59	0.04	0.55
979.54	0.01	0.01	0.00	980.58	0.88	0.04	0.85
979.56	0.01	0.01	0.00	980.60	1.22	0.04	1.18
979.58	0.01	0.01	0.00	980.62	1.59	0.04	1.55
979.60	0.01	0.01	0.00	980.64	2.00	0.04	1.96
979.62	0.01	0.01	0.00	980.66	2.43	0.04	2.39
979.64	0.01	0.01	0.00	980.68	2.89	0.04	2.85
979.66	0.01	0.01	0.00	980.70	3.38	0.04	3.34
979.68	0.01	0.01	0.00	980.72	3.91	0.04	3.86
979.70	0.01	0.01	0.00	980.74	4.46	0.04	4.42
979.72	0.01	0.01	0.00	980.76	5.04	0.05	4.99
979.74	0.02	0.02	0.00	980.78	5.64	0.05	5.60
979.76	0.02	0.02	0.00	980.80	6.27	0.05	6.22
979.78	0.02	0.02	0.00	980.82	6.92	0.05	6.88
979.80	0.02	0.02	0.00	980.84	7.60	0.05	7.55
979.82	0.02	0.02	0.00	980.86	8.30	0.05	8.25
979.84	0.02	0.02	0.00	980.88	9.02	0.05	8.97
979.86	0.02	0.02	0.00	980.90	9.77	0.05	9.71
979.88	0.02	0.02	0.00	980.92	10.56	0.05	10.51
979.90	0.02	0.02	0.00	980.94	11.38	0.05	11.33
979.92	0.02	0.02	0.00	980.96	12.23	0.05	12.18
979.94	0.02	0.02	0.00	980.98	13.10	0.05	13.05
979.96	0.02	0.02	0.00	981.00	14.00	0.06	13.95
979.98	0.02	0.02	0.00				
980.00	0.02	0.02	0.00				
980.02	0.02	0.02	0.00				

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Summary for Pond 12K: Kettle 12

Inflow Area = 18.830 ac, 5.05% Impervious, Inflow Depth > 0.49" for 100 yr event
 Inflow = 6.56 cfs @ 12.62 hrs, Volume= 0.766 af
 Outflow = 0.11 cfs @ 22.85 hrs, Volume= 0.097 af, Atten= 98%, Lag= 613.9 min
 Discarded = 0.11 cfs @ 22.85 hrs, Volume= 0.097 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 959.25' @ 22.85 hrs Surf.Area= 16,383 sf Storage= 29,213 cf

Plug-Flow detention time= 366.9 min calculated for 0.097 af (13% of inflow)
 Center-of-Mass det. time= 251.7 min (1,103.2 - 851.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	956.00'	246,697 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
956.00	495	0	0	495
957.00	6,410	2,895	2,895	6,413
958.00	11,490	8,827	11,723	11,504
959.00	15,695	13,538	25,261	15,729
960.00	18,580	17,117	42,378	18,651
961.00	21,310	19,929	62,307	21,426
962.00	23,950	22,617	84,925	24,120
963.00	26,775	25,349	110,274	27,000
964.00	30,155	28,448	138,722	30,433
965.00	34,835	32,467	171,189	35,156
966.00	37,955	36,384	207,573	38,349
967.00	40,304	39,124	246,697	40,800

Device	Routing	Invert	Outlet Devices
#1	Discarded	956.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 946.00' Phase-In= 0.01'
#2	Primary	963.00'	15.0' 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

Discarded OutFlow Max=0.11 cfs @ 22.85 hrs HW=959.25' (Free Discharge)

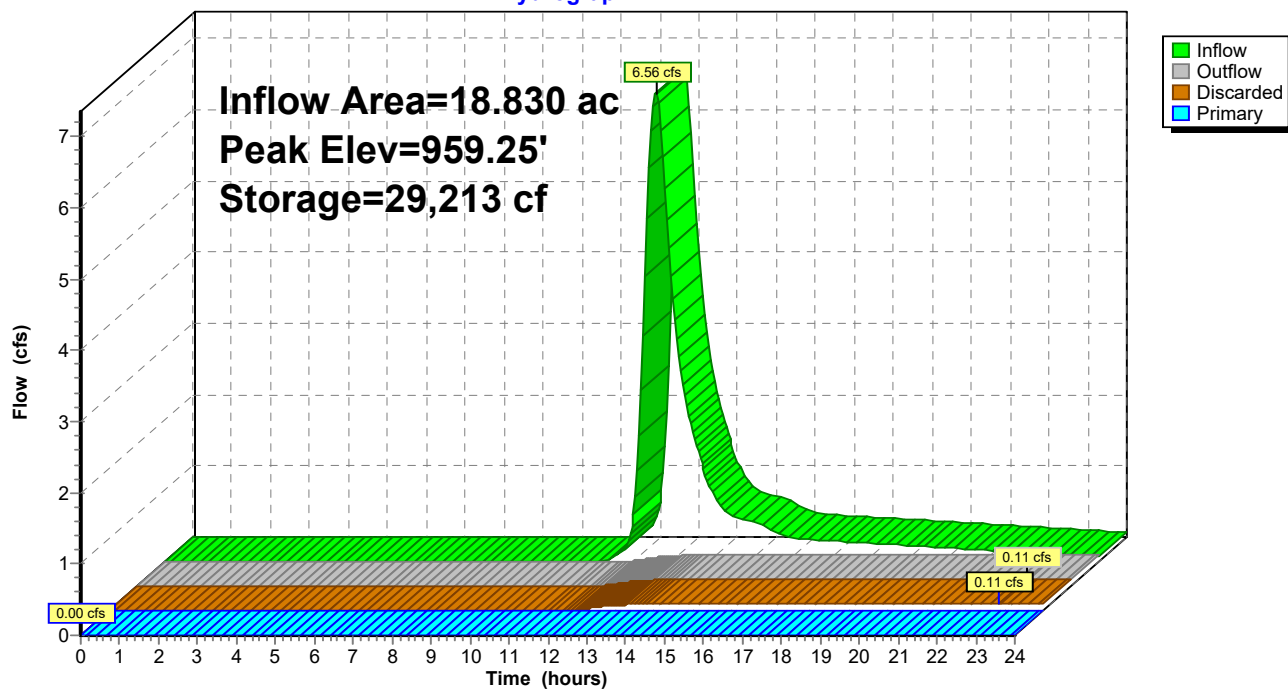
↑ **1=Exfiltration** (Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=956.00' TW=953.00' (Dynamic Tailwater)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 12K: Kettle 12

Hydrograph



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Stage-Discharge for Pond 12K: Kettle 12

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
956.00	0.00	0.00	0.00	963.80	29.10	0.23	28.87
956.15	0.01	0.01	0.00	963.95	37.49	0.23	37.26
956.30	0.01	0.01	0.00	964.10	46.70	0.24	46.46
956.45	0.01	0.01	0.00	964.25	56.53	0.24	56.29
956.60	0.02	0.02	0.00	964.40	66.59	0.25	66.34
956.75	0.02	0.02	0.00	964.55	76.89	0.25	76.63
956.90	0.03	0.03	0.00	964.70	88.04	0.26	87.77
957.05	0.04	0.04	0.00	964.85	99.91	0.27	99.64
957.20	0.04	0.04	0.00	965.00	112.28	0.27	112.01
957.35	0.05	0.05	0.00	965.15	125.12	0.28	124.84
957.50	0.05	0.05	0.00	965.30	138.41	0.28	138.13
957.65	0.06	0.06	0.00	965.45	152.15	0.29	151.86
957.80	0.06	0.06	0.00	965.60	166.31	0.29	166.02
957.95	0.07	0.07	0.00	965.75	180.89	0.30	180.59
958.10	0.07	0.07	0.00	965.90	195.87	0.30	195.57
958.25	0.08	0.08	0.00	966.05	211.24	0.31	210.93
958.40	0.08	0.08	0.00	966.20	226.99	0.31	226.68
958.55	0.09	0.09	0.00	966.35	243.12	0.32	242.81
958.70	0.09	0.09	0.00	966.50	259.62	0.32	259.30
958.85	0.09	0.09	0.00	966.65	276.47	0.32	276.14
959.00	0.10	0.10	0.00	966.80	293.67	0.33	293.34
959.15	0.10	0.10	0.00	966.95	311.21	0.33	310.88
959.30	0.11	0.11	0.00				
959.45	0.11	0.11	0.00				
959.60	0.11	0.11	0.00				
959.75	0.12	0.12	0.00				
959.90	0.12	0.12	0.00				
960.05	0.13	0.13	0.00				
960.20	0.13	0.13	0.00				
960.35	0.13	0.13	0.00				
960.50	0.14	0.14	0.00				
960.65	0.14	0.14	0.00				
960.80	0.14	0.14	0.00				
960.95	0.15	0.15	0.00				
961.10	0.15	0.15	0.00				
961.25	0.16	0.16	0.00				
961.40	0.16	0.16	0.00				
961.55	0.16	0.16	0.00				
961.70	0.17	0.17	0.00				
961.85	0.17	0.17	0.00				
962.00	0.17	0.17	0.00				
962.15	0.18	0.18	0.00				
962.30	0.18	0.18	0.00				
962.45	0.19	0.19	0.00				
962.60	0.19	0.19	0.00				
962.75	0.19	0.19	0.00				
962.90	0.20	0.20	0.00				
963.05	0.62	0.20	0.42				
963.20	3.55	0.21	3.34				
963.35	8.11	0.21	7.90				
963.50	14.16	0.22	13.95				
963.65	21.43	0.22	21.20				

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Summary for Pond 13K: Kettle 13

Inflow Area = 15.930 ac, 5.27% Impervious, Inflow Depth > 0.13" for 100 yr event
 Inflow = 1.59 cfs @ 12.53 hrs, Volume= 0.171 af
 Outflow = 1.55 cfs @ 12.59 hrs, Volume= 0.171 af, Atten= 2%, Lag= 3.9 min
 Discarded = 0.01 cfs @ 12.59 hrs, Volume= 0.003 af
 Primary = 1.54 cfs @ 12.59 hrs, Volume= 0.168 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 959.88' @ 12.59 hrs Surf.Area= 1,729 sf Storage= 329 cf

Plug-Flow detention time= 5.0 min calculated for 0.170 af (100% of inflow)
 Center-of-Mass det. time= 3.6 min (856.1 - 852.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	959.40'	55,187 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
959.40	50	0	0	50	
960.00	2,560	594	594	2,561	
961.00	4,110	3,305	3,898	4,124	
962.00	5,850	4,954	8,853	5,882	
963.00	7,130	6,479	15,332	7,193	
964.00	8,425	7,768	23,101	8,525	
965.00	9,765	9,087	32,187	9,907	
966.00	11,570	10,655	42,842	11,749	
967.00	13,137	12,345	55,187	13,365	

Device	Routing	Invert	Outlet Devices
#1	Discarded	959.40'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 949.00' Phase-In= 0.01'
#2	Primary	959.48'	24.0" Round Culvert X 2.00 L= 92.5' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 959.48' / 958.97' S= 0.0055 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#3	Primary	966.00'	15.0' 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

Discarded OutFlow Max=0.01 cfs @ 12.59 hrs HW=959.88' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.01 cfs)

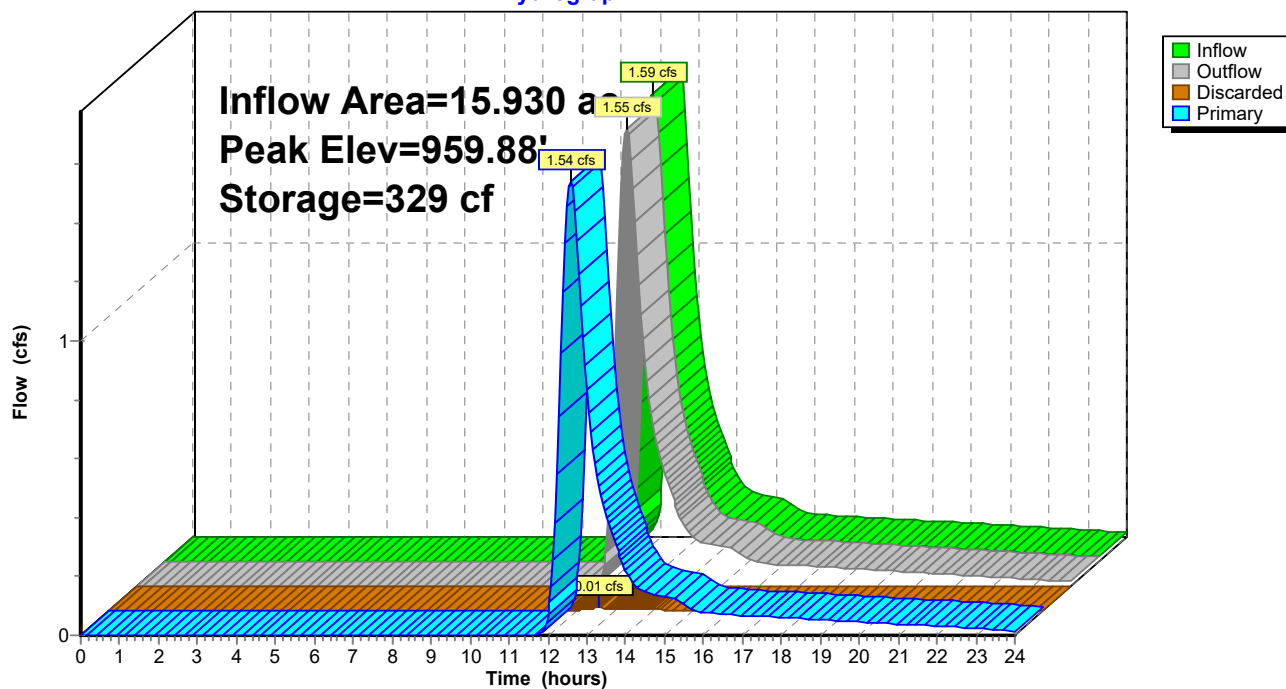
Primary OutFlow Max=1.54 cfs @ 12.59 hrs HW=959.88' TW=957.58' (Dynamic Tailwater)

↑ **2=Culvert** (Barrel Controls 1.54 cfs @ 2.65 fps)

↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 13K: Kettle 13

Hydrograph



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Stage-Discharge for Pond 13K: Kettle 13

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
959.40	0.00	0.00	0.00	964.60	62.70	0.07	62.63
959.50	0.00	0.00	0.00	964.70	63.55	0.07	63.49
959.60	0.13	0.00	0.13	964.80	64.40	0.07	64.33
959.70	0.47	0.00	0.46	964.90	65.24	0.07	65.17
959.80	1.01	0.01	1.00	965.00	66.06	0.07	65.99
959.90	1.75	0.01	1.74	965.10	66.88	0.07	66.80
960.00	2.67	0.01	2.66	965.20	67.68	0.07	67.61
960.10	3.76	0.02	3.75	965.30	68.48	0.07	68.40
960.20	5.00	0.02	4.98	965.40	69.26	0.08	69.19
960.30	6.38	0.02	6.36	965.50	70.04	0.08	69.96
960.40	7.88	0.02	7.86	965.60	70.81	0.08	70.73
960.50	9.49	0.02	9.48	965.70	71.57	0.08	71.49
960.60	11.21	0.02	11.18	965.80	72.33	0.08	72.24
960.70	13.00	0.02	12.98	965.90	73.07	0.08	72.99
960.80	14.86	0.02	14.84	966.00	73.81	0.09	73.72
960.90	16.78	0.02	16.76	966.10	75.72	0.09	75.63
961.00	18.74	0.02	18.72	966.20	78.60	0.09	78.52
961.10	20.73	0.03	20.70	966.30	82.20	0.09	82.11
961.20	22.72	0.03	22.69	966.40	86.40	0.09	86.31
961.30	24.70	0.03	24.68	966.50	91.34	0.09	91.25
961.40	26.66	0.03	26.63	966.60	96.91	0.09	96.82
961.50	28.55	0.03	28.52	966.70	102.46	0.09	102.36
961.60	30.37	0.03	30.34	966.80	108.34	0.10	108.24
961.70	32.07	0.03	32.04	966.90	114.53	0.10	114.44
961.80	33.61	0.03	33.58	967.00	121.02	0.10	120.92
961.90	34.93	0.04	34.89				
962.00	35.92	0.04	35.89				
962.10	36.34	0.04	36.30				
962.20	36.50	0.04	36.46				
962.30	37.95	0.04	37.91				
962.40	39.35	0.04	39.31				
962.50	40.70	0.04	40.66				
962.60	42.01	0.04	41.97				
962.70	43.28	0.04	43.24				
962.80	44.51	0.05	44.47				
962.90	45.71	0.05	45.67				
963.00	46.88	0.05	46.84				
963.10	48.02	0.05	47.98				
963.20	49.14	0.05	49.09				
963.30	50.23	0.05	50.18				
963.40	51.29	0.05	51.24				
963.50	52.34	0.05	52.29				
963.60	53.36	0.05	53.31				
963.70	54.37	0.05	54.31				
963.80	55.36	0.06	55.30				
963.90	56.33	0.06	56.27				
964.00	57.28	0.06	57.22				
964.10	58.22	0.06	58.16				
964.20	59.14	0.06	59.08				
964.30	60.05	0.06	59.99				
964.40	60.94	0.06	60.88				
964.50	61.83	0.06	61.76				

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Summary for Pond 14K: Kettle 14

Inflow Area = 14.920 ac, 5.63% Impervious, Inflow Depth > 1.15" for 100 yr event
 Inflow = 6.34 cfs @ 13.48 hrs, Volume= 1.425 af
 Outflow = 0.12 cfs @ 24.00 hrs, Volume= 0.095 af, Atten= 98%, Lag= 631.1 min
 Discarded = 0.12 cfs @ 24.00 hrs, Volume= 0.095 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 961.28' @ 24.00 hrs Surf.Area= 15,554 sf Storage= 57,953 cf

Plug-Flow detention time= 371.1 min calculated for 0.095 af (7% of inflow)
 Center-of-Mass det. time= 220.4 min (1,130.3 - 909.8)

Volume	Invert	Avail.Storage	Storage Description	
#1	955.00'	69,834 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
955.00	3,070	0	0	3,070
956.00	5,250	4,112	4,112	5,262
957.00	7,260	6,228	10,339	7,291
958.00	9,090	8,158	18,497	9,149
959.00	10,725	9,896	28,394	10,821
960.00	12,545	11,623	40,017	12,681
961.00	14,795	13,655	53,671	14,969
962.00	17,570	16,163	69,834	17,780

Device	Routing	Invert	Outlet Devices
#1	Discarded	955.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 945.00' Phase-In= 0.01'
#2	Primary	961.30'	15.0' 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

Discarded OutFlow Max=0.12 cfs @ 24.00 hrs HW=961.28' (Free Discharge)

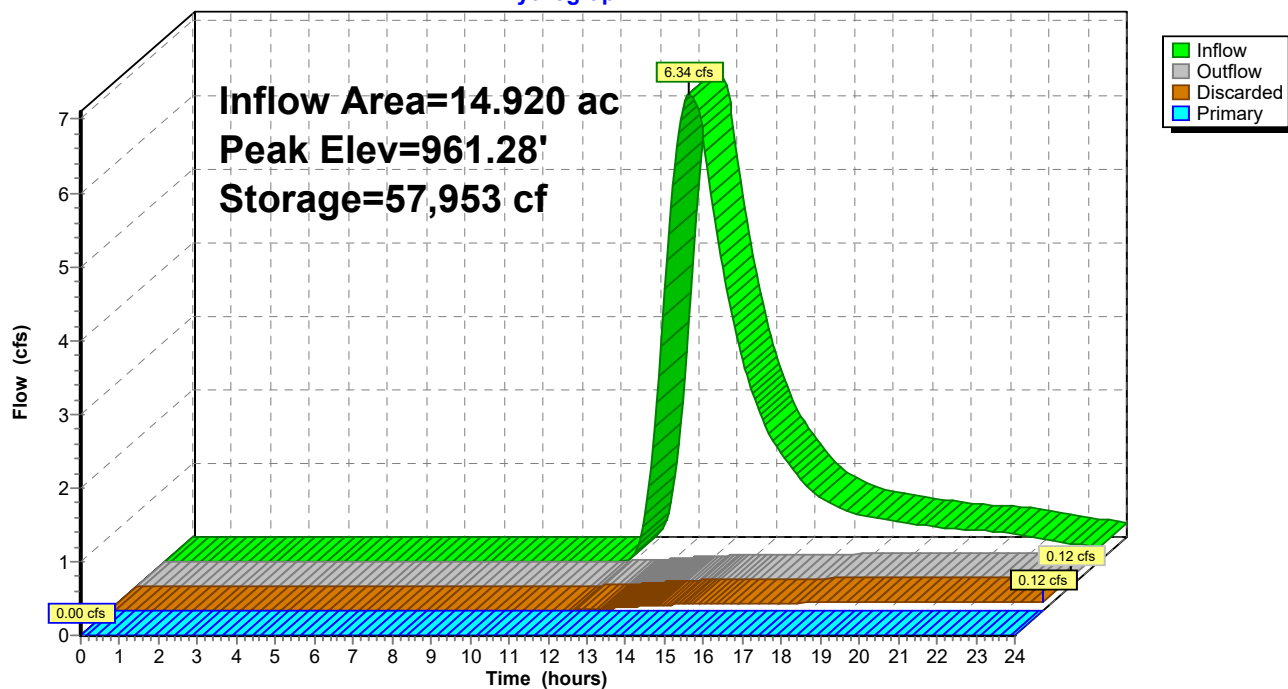
↑**1=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=955.00' TW=959.40' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 14K: Kettle 14

Hydrograph



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Stage-Discharge for Pond 14K: Kettle 14

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
955.00	0.00	0.00	0.00	960.20	0.09	0.09	0.00
955.10	0.02	0.02	0.00	960.30	0.10	0.10	0.00
955.20	0.02	0.02	0.00	960.40	0.10	0.10	0.00
955.30	0.02	0.02	0.00	960.50	0.10	0.10	0.00
955.40	0.02	0.02	0.00	960.60	0.10	0.10	0.00
955.50	0.02	0.02	0.00	960.70	0.10	0.10	0.00
955.60	0.03	0.03	0.00	960.80	0.11	0.11	0.00
955.70	0.03	0.03	0.00	960.90	0.11	0.11	0.00
955.80	0.03	0.03	0.00	961.00	0.11	0.11	0.00
955.90	0.03	0.03	0.00	961.10	0.11	0.11	0.00
956.00	0.03	0.03	0.00	961.20	0.11	0.11	0.00
956.10	0.03	0.03	0.00	961.30	0.12	0.12	0.00
956.20	0.03	0.03	0.00	961.40	1.30	0.12	1.18
956.30	0.04	0.04	0.00	961.50	3.46	0.12	3.34
956.40	0.04	0.04	0.00	961.60	6.35	0.12	6.22
956.50	0.04	0.04	0.00	961.70	9.84	0.13	9.71
956.60	0.04	0.04	0.00	961.80	14.08	0.13	13.95
956.70	0.04	0.04	0.00	961.90	18.95	0.13	18.82
956.80	0.04	0.04	0.00	962.00	23.81	0.13	23.68
956.90	0.04	0.04	0.00				
957.00	0.05	0.05	0.00				
957.10	0.05	0.05	0.00				
957.20	0.05	0.05	0.00				
957.30	0.05	0.05	0.00				
957.40	0.05	0.05	0.00				
957.50	0.05	0.05	0.00				
957.60	0.05	0.05	0.00				
957.70	0.06	0.06	0.00				
957.80	0.06	0.06	0.00				
957.90	0.06	0.06	0.00				
958.00	0.06	0.06	0.00				
958.10	0.06	0.06	0.00				
958.20	0.06	0.06	0.00				
958.30	0.06	0.06	0.00				
958.40	0.07	0.07	0.00				
958.50	0.07	0.07	0.00				
958.60	0.07	0.07	0.00				
958.70	0.07	0.07	0.00				
958.80	0.07	0.07	0.00				
958.90	0.07	0.07	0.00				
959.00	0.07	0.07	0.00				
959.10	0.08	0.08	0.00				
959.20	0.08	0.08	0.00				
959.30	0.08	0.08	0.00				
959.40	0.08	0.08	0.00				
959.50	0.08	0.08	0.00				
959.60	0.08	0.08	0.00				
959.70	0.09	0.09	0.00				
959.80	0.09	0.09	0.00				
959.90	0.09	0.09	0.00				
960.00	0.09	0.09	0.00				
960.10	0.09	0.09	0.00				

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Summary for Pond 15K: Kettle 15

Inflow Area = 0.870 ac, 1.15% Impervious, Inflow Depth > 2.30" for 100 yr event
 Inflow = 2.27 cfs @ 12.29 hrs, Volume= 0.167 af
 Outflow = 0.03 cfs @ 21.23 hrs, Volume= 0.031 af, Atten= 99%, Lag= 536.2 min
 Discarded = 0.03 cfs @ 21.23 hrs, Volume= 0.031 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 971.90' @ 21.23 hrs Surf.Area= 5,308 sf Storage= 6,014 cf

Plug-Flow detention time= 366.6 min calculated for 0.031 af (19% of inflow)

Center-of-Mass det. time= 259.7 min (1,092.4 - 832.7)

Volume	Invert	Avail.Storage	Storage Description
#1	970.00'	13,842 cf	Custom Stage Data (Conic) Listed below (Recalc)

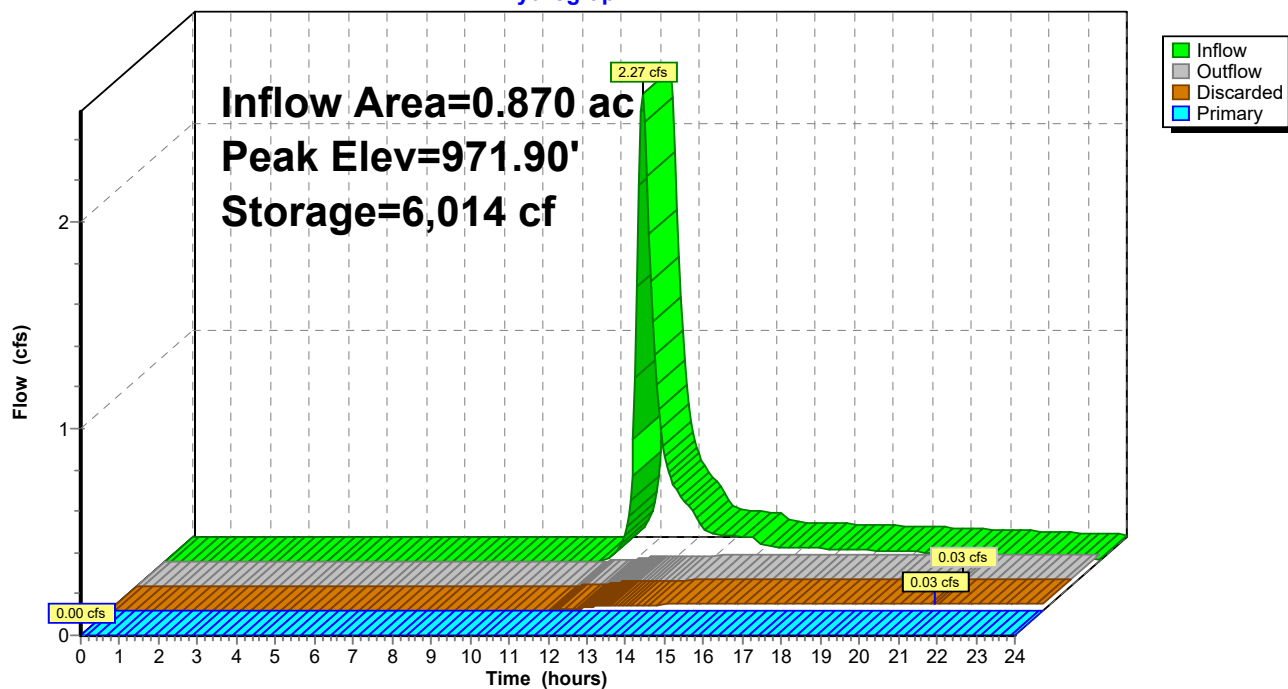
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
970.00	1,620	0	0	1,620
971.00	3,050	2,298	2,298	3,060
972.00	5,595	4,259	6,556	5,615
973.00	9,120	7,286	13,842	9,153

Device	Routing	Invert	Outlet Devices
#1	Discarded	970.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 960.00' Phase-In= 0.01'
#2	Primary	972.50'	15.0' 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

Discarded OutFlow Max=0.03 cfs @ 21.23 hrs HW=971.90' (Free Discharge)↑**1=Exfiltration** (Controls 0.03 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=970.00' TW=955.00' (Dynamic Tailwater)↑**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond 15K: Kettle 15

Hydrograph



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Stage-Discharge for Pond 15K: Kettle 15

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
970.00	0.00	0.00	0.00	972.60	1.23	0.05	1.18
970.05	0.01	0.01	0.00	972.65	2.22	0.05	2.17
970.10	0.01	0.01	0.00	972.70	3.39	0.05	3.34
970.15	0.01	0.01	0.00	972.75	4.75	0.05	4.70
970.20	0.01	0.01	0.00	972.80	6.28	0.05	6.22
970.25	0.01	0.01	0.00	972.85	7.95	0.05	7.90
970.30	0.01	0.01	0.00	972.90	9.77	0.06	9.71
970.35	0.01	0.01	0.00	972.95	11.81	0.06	11.75
970.40	0.01	0.01	0.00	973.00	14.01	0.06	13.95
970.45	0.01	0.01	0.00				
970.50	0.01	0.01	0.00				
970.55	0.01	0.01	0.00				
970.60	0.01	0.01	0.00				
970.65	0.01	0.01	0.00				
970.70	0.02	0.02	0.00				
970.75	0.02	0.02	0.00				
970.80	0.02	0.02	0.00				
970.85	0.02	0.02	0.00				
970.90	0.02	0.02	0.00				
970.95	0.02	0.02	0.00				
971.00	0.02	0.02	0.00				
971.05	0.02	0.02	0.00				
971.10	0.02	0.02	0.00				
971.15	0.02	0.02	0.00				
971.20	0.02	0.02	0.00				
971.25	0.02	0.02	0.00				
971.30	0.02	0.02	0.00				
971.35	0.02	0.02	0.00				
971.40	0.02	0.02	0.00				
971.45	0.02	0.02	0.00				
971.50	0.03	0.03	0.00				
971.55	0.03	0.03	0.00				
971.60	0.03	0.03	0.00				
971.65	0.03	0.03	0.00				
971.70	0.03	0.03	0.00				
971.75	0.03	0.03	0.00				
971.80	0.03	0.03	0.00				
971.85	0.03	0.03	0.00				
971.90	0.03	0.03	0.00				
971.95	0.03	0.03	0.00				
972.00	0.03	0.03	0.00				
972.05	0.04	0.04	0.00				
972.10	0.04	0.04	0.00				
972.15	0.04	0.04	0.00				
972.20	0.04	0.04	0.00				
972.25	0.04	0.04	0.00				
972.30	0.04	0.04	0.00				
972.35	0.04	0.04	0.00				
972.40	0.04	0.04	0.00				
972.45	0.04	0.04	0.00				
972.50	0.05	0.05	0.00				
972.55	0.46	0.05	0.42				

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Summary for Pond 16K: Kettle 16

Inflow Area = 5.920 ac, 0.00% Impervious, Inflow Depth > 0.84" for 100 yr event
 Inflow = 1.38 cfs @ 14.23 hrs, Volume= 0.414 af
 Outflow = 0.10 cfs @ 21.38 hrs, Volume= 0.063 af, Atten= 92%, Lag= 428.9 min
 Discarded = 0.07 cfs @ 21.38 hrs, Volume= 0.058 af
 Primary = 0.04 cfs @ 21.38 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,007.01' @ 21.38 hrs Surf.Area= 10,650 sf Storage= 15,507 cf

Plug-Flow detention time= 364.5 min calculated for 0.063 af (15% of inflow)
 Center-of-Mass det. time= 211.7 min (1,134.0 - 922.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	1,005.00'	41,902 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,005.00	4,400	0	0	4,400
1,006.00	8,010	6,116	6,116	8,021
1,007.00	10,625	9,287	15,402	10,658
1,008.00	13,320	11,947	27,349	13,380
1,009.00	15,820	14,552	41,902	15,917

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,005.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 995.00' Phase-In= 0.01'
#2	Primary	1,007.00'	15.0' 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

Discarded OutFlow Max=0.07 cfs @ 21.38 hrs HW=1,007.01' (Free Discharge)

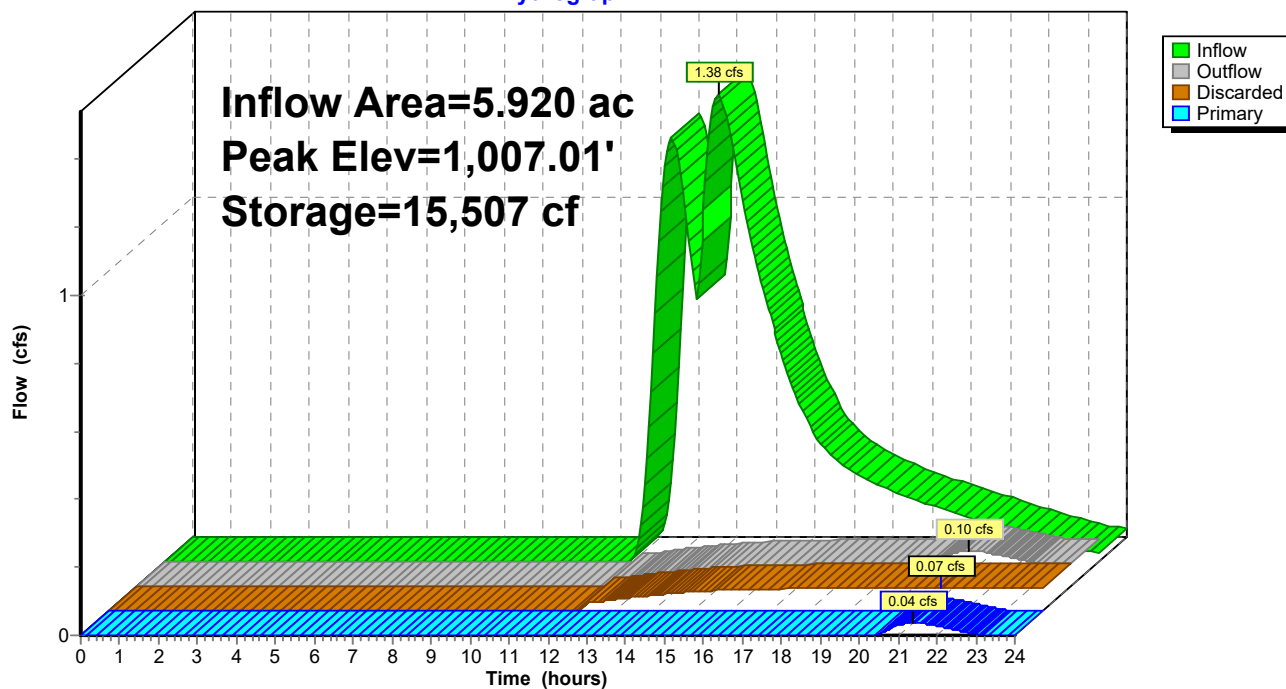
↑ **1=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=0.04 cfs @ 21.38 hrs HW=1,007.01' TW=961.17' (Dynamic Tailwater)

↑ **2=Broad-Crested Rectangular Weir**(Weir Controls 0.04 cfs @ 0.25 fps)

Pond 16K: Kettle 16

Hydrograph



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Stage-Discharge for Pond 16K: Kettle 16

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
1,005.00	0.00	0.00	0.00	1,007.60	18.90	0.08	18.82
1,005.05	0.03	0.03	0.00	1,007.65	21.29	0.08	21.20
1,005.10	0.03	0.03	0.00	1,007.70	23.76	0.08	23.68
1,005.15	0.03	0.03	0.00	1,007.75	26.32	0.08	26.23
1,005.20	0.03	0.03	0.00	1,007.80	28.96	0.08	28.87
1,005.25	0.03	0.03	0.00	1,007.85	31.68	0.09	31.59
1,005.30	0.03	0.03	0.00	1,007.90	34.47	0.09	34.39
1,005.35	0.03	0.03	0.00	1,007.95	37.35	0.09	37.26
1,005.40	0.03	0.03	0.00	1,008.00	40.29	0.09	40.20
1,005.45	0.03	0.03	0.00	1,008.05	43.38	0.09	43.29
1,005.50	0.04	0.04	0.00	1,008.10	46.56	0.09	46.46
1,005.55	0.04	0.04	0.00	1,008.15	49.81	0.09	49.71
1,005.60	0.04	0.04	0.00	1,008.20	53.13	0.09	53.04
1,005.65	0.04	0.04	0.00	1,008.25	56.38	0.09	56.29
1,005.70	0.04	0.04	0.00	1,008.30	59.68	0.10	59.59
1,005.75	0.04	0.04	0.00	1,008.35	63.03	0.10	62.94
1,005.80	0.04	0.04	0.00	1,008.40	66.44	0.10	66.34
1,005.85	0.04	0.04	0.00	1,008.45	69.83	0.10	69.73
1,005.90	0.05	0.05	0.00	1,008.50	73.26	0.10	73.16
1,005.95	0.05	0.05	0.00	1,008.55	76.73	0.10	76.63
1,006.00	0.05	0.05	0.00	1,008.60	80.25	0.10	80.14
1,006.05	0.05	0.05	0.00	1,008.65	84.03	0.10	83.93
1,006.10	0.05	0.05	0.00	1,008.70	87.88	0.10	87.77
1,006.15	0.05	0.05	0.00	1,008.75	91.78	0.10	91.68
1,006.20	0.05	0.05	0.00	1,008.80	95.74	0.11	95.63
1,006.25	0.05	0.05	0.00	1,008.85	99.75	0.11	99.64
1,006.30	0.05	0.05	0.00	1,008.90	103.82	0.11	103.71
1,006.35	0.05	0.05	0.00	1,008.95	107.94	0.11	107.83
1,006.40	0.06	0.06	0.00	1,009.00	112.12	0.11	112.01
1,006.45	0.06	0.06	0.00				
1,006.50	0.06	0.06	0.00				
1,006.55	0.06	0.06	0.00				
1,006.60	0.06	0.06	0.00				
1,006.65	0.06	0.06	0.00				
1,006.70	0.06	0.06	0.00				
1,006.75	0.06	0.06	0.00				
1,006.80	0.06	0.06	0.00				
1,006.85	0.06	0.06	0.00				
1,006.90	0.07	0.07	0.00				
1,006.95	0.07	0.07	0.00				
1,007.00	0.07	0.07	0.00				
1,007.05	0.49	0.07	0.42				
1,007.10	1.25	0.07	1.18				
1,007.15	2.24	0.07	2.17				
1,007.20	3.41	0.07	3.34				
1,007.25	4.77	0.07	4.70				
1,007.30	6.30	0.07	6.22				
1,007.35	7.97	0.07	7.90				
1,007.40	9.79	0.08	9.71				
1,007.45	11.83	0.08	11.75				
1,007.50	14.03	0.08	13.95				
1,007.55	16.38	0.08	16.31				

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Summary for Pond 17K: Kettle 17

Inflow Area = 4.300 ac, 0.00% Impervious, Inflow Depth > 1.61" for 100 yr event
 Inflow = 3.20 cfs @ 13.07 hrs, Volume= 0.576 af
 Outflow = 1.10 cfs @ 14.37 hrs, Volume= 0.321 af, Atten= 66%, Lag= 78.0 min
 Discarded = 0.14 cfs @ 14.37 hrs, Volume= 0.124 af
 Primary = 0.96 cfs @ 14.37 hrs, Volume= 0.197 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,012.09' @ 14.37 hrs Surf.Area= 24,000 sf Storage= 13,197 cf

Plug-Flow detention time= 221.2 min calculated for 0.321 af (56% of inflow)
 Center-of-Mass det. time= 120.4 min (1,014.2 - 893.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.00'	41,610 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,011.00	2,770	0	0	2,770
1,012.00	22,770	11,161	11,161	22,773
1,013.00	38,840	30,450	41,610	38,855

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,011.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1,001.00' Phase-In= 0.01'
#2	Primary	1,012.00'	15.0' 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

Discarded OutFlow Max=0.14 cfs @ 14.37 hrs HW=1,012.09' (Free Discharge)

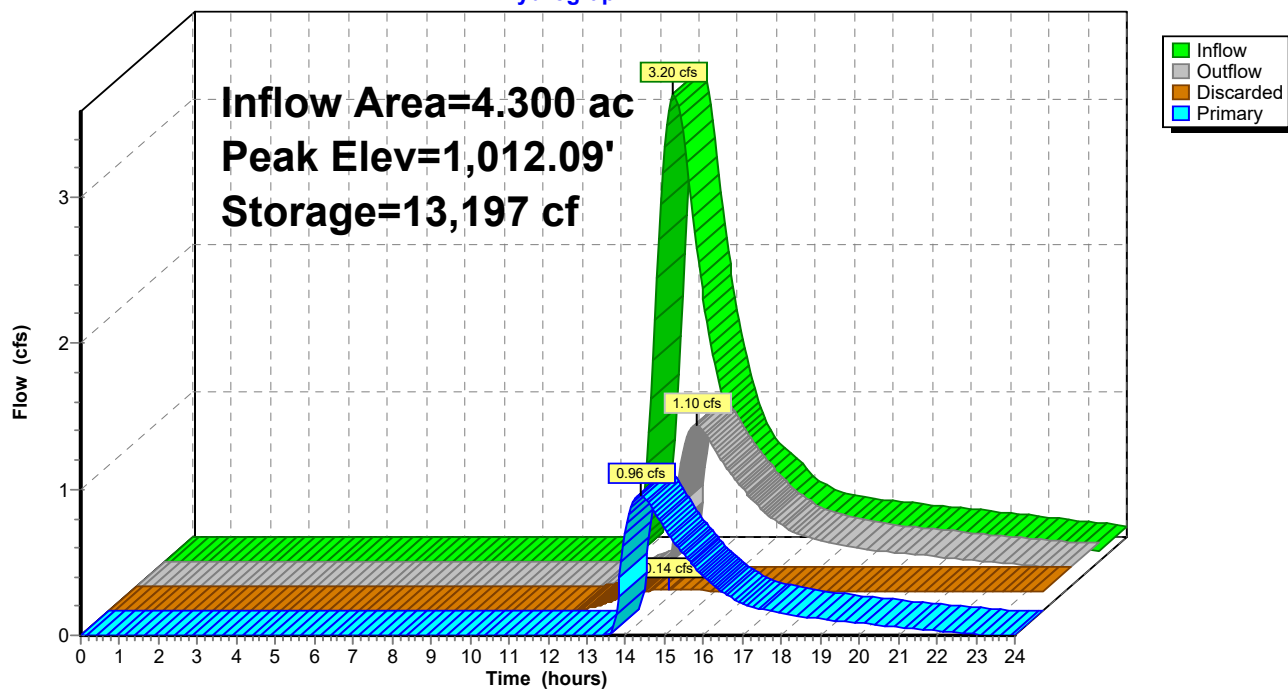
↑**1=Exfiltration** (Controls 0.14 cfs)

Primary OutFlow Max=0.96 cfs @ 14.37 hrs HW=1,012.09' TW=1,006.14' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir**(Weir Controls 0.96 cfs @ 0.73 fps)

Pond 17K: Kettle 17

Hydrograph



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Stage-Discharge for Pond 17K: Kettle 17

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
1,011.00	0.00	0.00	0.00	1,012.04	0.43	0.14	0.30
1,011.02	0.02	0.02	0.00	1,012.06	0.69	0.14	0.55
1,011.04	0.02	0.02	0.00	1,012.08	0.98	0.14	0.85
1,011.06	0.02	0.02	0.00	1,012.10	1.32	0.14	1.18
1,011.08	0.02	0.02	0.00	1,012.12	1.70	0.14	1.55
1,011.10	0.02	0.02	0.00	1,012.14	2.10	0.15	1.96
1,011.12	0.02	0.02	0.00	1,012.16	2.54	0.15	2.39
1,011.14	0.02	0.02	0.00	1,012.18	3.00	0.15	2.85
1,011.16	0.03	0.03	0.00	1,012.20	3.49	0.15	3.34
1,011.18	0.03	0.03	0.00	1,012.22	4.02	0.15	3.86
1,011.20	0.03	0.03	0.00	1,012.24	4.57	0.15	4.42
1,011.22	0.03	0.03	0.00	1,012.26	5.15	0.16	4.99
1,011.24	0.03	0.03	0.00	1,012.28	5.75	0.16	5.60
1,011.26	0.03	0.03	0.00	1,012.30	6.38	0.16	6.22
1,011.28	0.04	0.04	0.00	1,012.32	7.04	0.16	6.88
1,011.30	0.04	0.04	0.00	1,012.34	7.72	0.16	7.55
1,011.32	0.04	0.04	0.00	1,012.36	8.42	0.17	8.25
1,011.34	0.04	0.04	0.00	1,012.38	9.14	0.17	8.97
1,011.36	0.04	0.04	0.00	1,012.40	9.89	0.17	9.71
1,011.38	0.05	0.05	0.00	1,012.42	10.68	0.17	10.51
1,011.40	0.05	0.05	0.00	1,012.44	11.50	0.17	11.33
1,011.42	0.05	0.05	0.00	1,012.46	12.35	0.18	12.18
1,011.44	0.05	0.05	0.00	1,012.48	13.23	0.18	13.05
1,011.46	0.05	0.05	0.00	1,012.50	14.13	0.18	13.95
1,011.48	0.06	0.06	0.00	1,012.52	15.05	0.18	14.87
1,011.50	0.06	0.06	0.00	1,012.54	16.01	0.19	15.82
1,011.52	0.06	0.06	0.00	1,012.56	16.98	0.19	16.80
1,011.54	0.06	0.06	0.00	1,012.58	17.99	0.19	17.80
1,011.56	0.07	0.07	0.00	1,012.60	19.01	0.19	18.82
1,011.58	0.07	0.07	0.00	1,012.62	19.96	0.19	19.76
1,011.60	0.07	0.07	0.00	1,012.64	20.92	0.20	20.72
1,011.62	0.07	0.07	0.00	1,012.66	21.89	0.20	21.69
1,011.64	0.08	0.08	0.00	1,012.68	22.88	0.20	22.68
1,011.66	0.08	0.08	0.00	1,012.70	23.88	0.20	23.68
1,011.68	0.08	0.08	0.00	1,012.72	24.89	0.20	24.69
1,011.70	0.08	0.08	0.00	1,012.74	25.92	0.21	25.71
1,011.72	0.09	0.09	0.00	1,012.76	26.96	0.21	26.75
1,011.74	0.09	0.09	0.00	1,012.78	28.02	0.21	27.81
1,011.76	0.09	0.09	0.00	1,012.80	29.09	0.21	28.87
1,011.78	0.10	0.10	0.00	1,012.82	30.17	0.22	29.95
1,011.80	0.10	0.10	0.00	1,012.84	31.26	0.22	31.04
1,011.82	0.10	0.10	0.00	1,012.86	32.37	0.22	32.14
1,011.84	0.11	0.11	0.00	1,012.88	33.48	0.22	33.26
1,011.86	0.11	0.11	0.00	1,012.90	34.61	0.23	34.39
1,011.88	0.11	0.11	0.00	1,012.92	35.75	0.23	35.53
1,011.90	0.12	0.12	0.00	1,012.94	36.91	0.23	36.68
1,011.92	0.12	0.12	0.00	1,012.96	38.07	0.23	37.84
1,011.94	0.12	0.12	0.00	1,012.98	39.25	0.24	39.01
1,011.96	0.13	0.13	0.00	1,013.00	40.44	0.24	40.20
1,011.98	0.13	0.13	0.00				
1,012.00	0.13	0.13	0.00				
1,012.02	0.24	0.13	0.11				

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Summary for Pond 18B: Existing Infiltration Basin

Inflow Area = 5.990 ac, 3.84% Impervious, Inflow Depth > 3.33" for 100 yr event
 Inflow = 14.45 cfs @ 12.60 hrs, Volume= 1.660 af
 Outflow = 0.70 cfs @ 15.86 hrs, Volume= 0.655 af, Atten= 95%, Lag= 195.5 min
 Discarded = 0.70 cfs @ 15.86 hrs, Volume= 0.655 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 993.53' @ 15.86 hrs Surf.Area= 18,222 sf Storage= 52,479 cf

Plug-Flow detention time= 340.1 min calculated for 0.655 af (39% of inflow)
 Center-of-Mass det. time= 247.1 min (1,082.6 - 835.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	989.00'	83,684 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
989.00	600	0	0	600
990.00	9,570	4,189	4,189	9,573
991.00	11,810	10,670	14,859	11,842
992.00	14,165	12,970	27,829	14,232
993.00	16,675	15,403	43,232	16,780
994.00	19,650	18,142	61,374	19,793
995.00	25,080	22,310	83,684	25,249

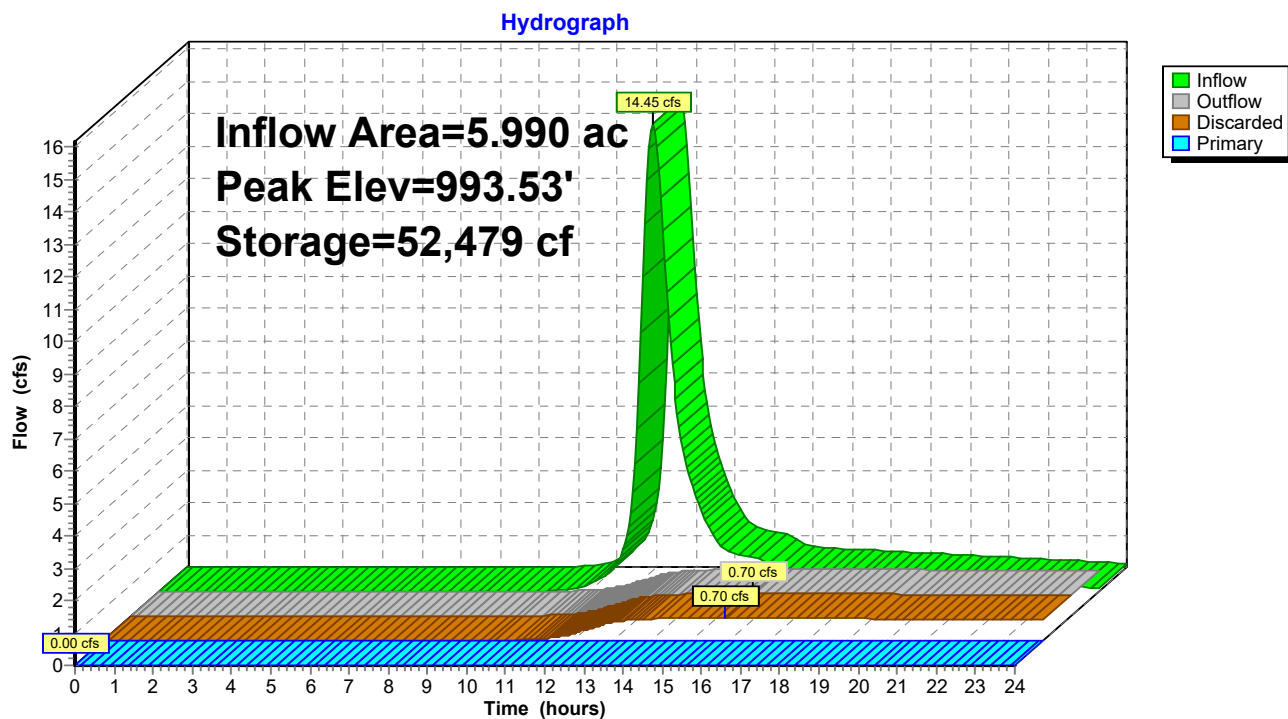
Device	Routing	Invert	Outlet Devices
#1	Discarded	989.00'	1.300 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 979.00'
#2	Primary	994.65'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.70 cfs @ 15.86 hrs HW=993.53' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.70 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=989.00' TW=992.00' (Dynamic Tailwater)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 18B: Existing Infiltration Basin

Existing_010

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Stage-Discharge for Pond 18B: Existing Infiltration Basin

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
989.00	0.00	0.00	0.00	994.20	0.80	0.80	0.00
989.10	0.03	0.03	0.00	994.30	0.82	0.82	0.00
989.20	0.05	0.05	0.00	994.40	0.85	0.85	0.00
989.30	0.07	0.07	0.00	994.50	0.87	0.87	0.00
989.40	0.09	0.09	0.00	994.60	0.89	0.89	0.00
989.50	0.12	0.12	0.00	994.70	1.33	0.91	0.42
989.60	0.14	0.14	0.00	994.80	3.11	0.94	2.17
989.70	0.18	0.18	0.00	994.90	5.66	0.96	4.70
989.80	0.22	0.22	0.00	995.00	8.88	0.98	7.90
989.90	0.26	0.26	0.00				
990.00	0.30	0.30	0.00				
990.10	0.31	0.31	0.00				
990.20	0.32	0.32	0.00				
990.30	0.33	0.33	0.00				
990.40	0.34	0.34	0.00				
990.50	0.35	0.35	0.00				
990.60	0.36	0.36	0.00				
990.70	0.37	0.37	0.00				
990.80	0.38	0.38	0.00				
990.90	0.39	0.39	0.00				
991.00	0.40	0.40	0.00				
991.10	0.41	0.41	0.00				
991.20	0.42	0.42	0.00				
991.30	0.43	0.43	0.00				
991.40	0.44	0.44	0.00				
991.50	0.45	0.45	0.00				
991.60	0.46	0.46	0.00				
991.70	0.47	0.47	0.00				
991.80	0.48	0.48	0.00				
991.90	0.49	0.49	0.00				
992.00	0.51	0.51	0.00				
992.10	0.52	0.52	0.00				
992.20	0.53	0.53	0.00				
992.30	0.54	0.54	0.00				
992.40	0.55	0.55	0.00				
992.50	0.56	0.56	0.00				
992.60	0.57	0.57	0.00				
992.70	0.59	0.59	0.00				
992.80	0.60	0.60	0.00				
992.90	0.61	0.61	0.00				
993.00	0.62	0.62	0.00				
993.10	0.64	0.64	0.00				
993.20	0.65	0.65	0.00				
993.30	0.66	0.66	0.00				
993.40	0.68	0.68	0.00				
993.50	0.69	0.69	0.00				
993.60	0.70	0.70	0.00				
993.70	0.72	0.72	0.00				
993.80	0.73	0.73	0.00				
993.90	0.75	0.75	0.00				
994.00	0.76	0.76	0.00				
994.10	0.78	0.78	0.00				

Existing_010

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Summary for Pond 20K: Kettle 20

Inflow Area = 10.800 ac, 2.13% Impervious, Inflow Depth > 0.71" for 100 yr event
 Inflow = 3.09 cfs @ 13.32 hrs, Volume= 0.642 af
 Outflow = 0.17 cfs @ 21.65 hrs, Volume= 0.149 af, Atten= 94%, Lag= 499.7 min
 Discarded = 0.17 cfs @ 21.65 hrs, Volume= 0.149 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 993.27' @ 21.65 hrs Surf.Area= 28,649 sf Storage= 21,804 cf

Plug-Flow detention time= 343.5 min calculated for 0.149 af (23% of inflow)
 Center-of-Mass det. time= 212.8 min (1,119.2 - 906.4)

Volume	Invert	Avail.Storage	Storage Description
#1	992.00'	94,734 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
992.00	6,330	0	0	6,330
993.00	24,655	14,493	14,493	24,660
994.00	40,640	32,316	46,809	40,657
995.00	55,600	47,925	94,734	55,638

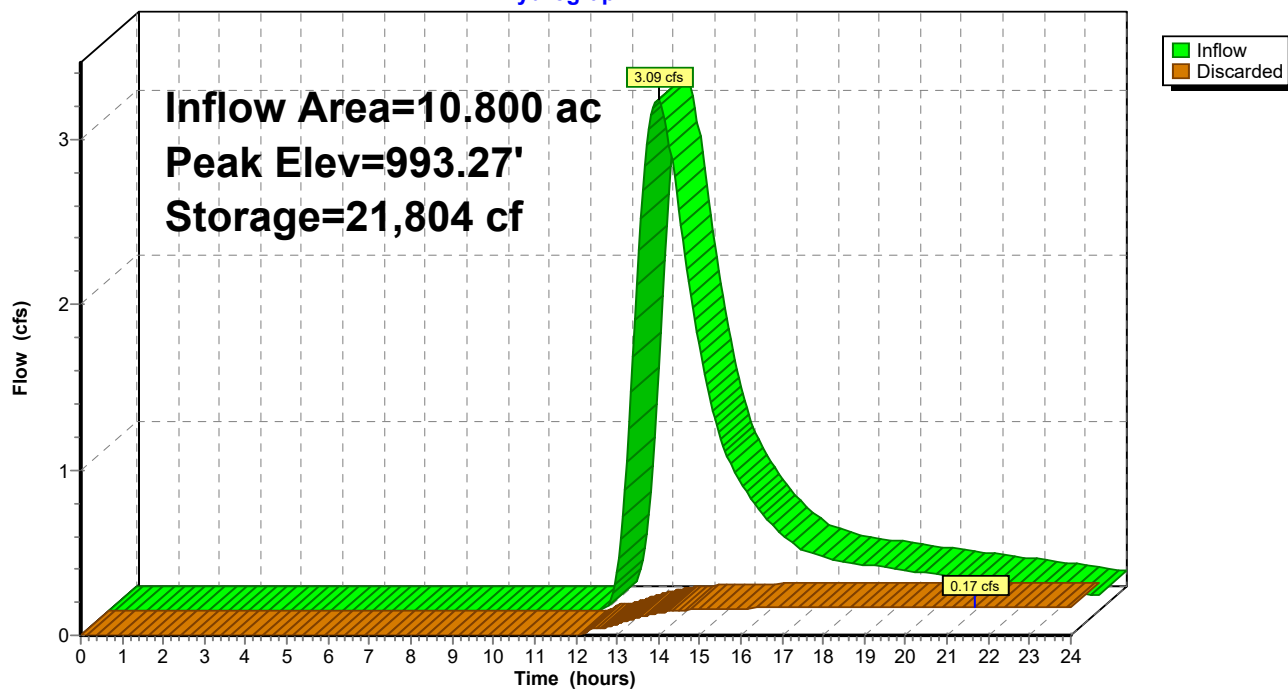
Device	Routing	Invert	Outlet Devices
#1	Discarded	992.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 982.00' Phase-In= 0.01'

Discarded OutFlow Max=0.17 cfs @ 21.65 hrs HW=993.27' (Free Discharge)

↑1=Exfiltration (Controls 0.17 cfs)

Pond 20K: Kettle 20

Hydrograph



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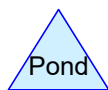
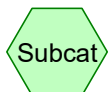
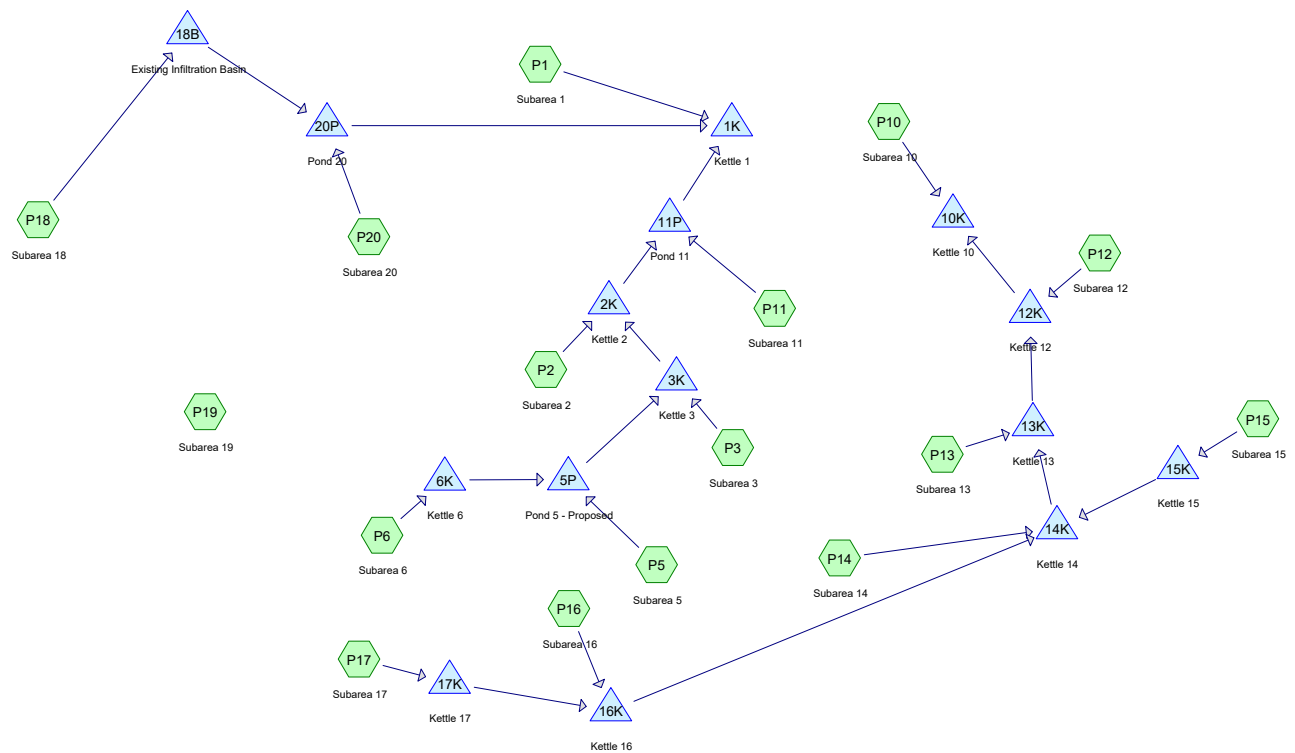
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Stage-Discharge for Pond 20K: Kettle 20

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
992.00	0.00	993.04	0.15	994.08	0.26
992.02	0.04	993.06	0.15	994.10	0.26
992.04	0.04	993.08	0.15	994.12	0.26
992.06	0.04	993.10	0.15	994.14	0.26
992.08	0.04	993.12	0.16	994.16	0.27
992.10	0.04	993.14	0.16	994.18	0.27
992.12	0.04	993.16	0.16	994.20	0.27
992.14	0.05	993.18	0.16	994.22	0.27
992.16	0.05	993.20	0.16	994.24	0.27
992.18	0.05	993.22	0.17	994.26	0.28
992.20	0.05	993.24	0.17	994.28	0.28
992.22	0.05	993.26	0.17	994.30	0.28
992.24	0.05	993.28	0.17	994.32	0.28
992.26	0.06	993.30	0.17	994.34	0.28
992.28	0.06	993.32	0.18	994.36	0.29
992.30	0.06	993.34	0.18	994.38	0.29
992.32	0.06	993.36	0.18	994.40	0.29
992.34	0.06	993.38	0.18	994.42	0.29
992.36	0.07	993.40	0.18	994.44	0.30
992.38	0.07	993.42	0.19	994.46	0.30
992.40	0.07	993.44	0.19	994.48	0.30
992.42	0.07	993.46	0.19	994.50	0.30
992.44	0.07	993.48	0.19	994.52	0.30
992.46	0.08	993.50	0.19	994.54	0.31
992.48	0.08	993.52	0.20	994.56	0.31
992.50	0.08	993.54	0.20	994.58	0.31
992.52	0.08	993.56	0.20	994.60	0.31
992.54	0.08	993.58	0.20	994.62	0.31
992.56	0.09	993.60	0.20	994.64	0.32
992.58	0.09	993.62	0.21	994.66	0.32
992.60	0.09	993.64	0.21	994.68	0.32
992.62	0.09	993.66	0.21	994.70	0.32
992.64	0.10	993.68	0.21	994.72	0.33
992.66	0.10	993.70	0.22	994.74	0.33
992.68	0.10	993.72	0.22	994.76	0.33
992.70	0.10	993.74	0.22	994.78	0.33
992.72	0.11	993.76	0.22	994.80	0.33
992.74	0.11	993.78	0.22	994.82	0.34
992.76	0.11	993.80	0.23	994.84	0.34
992.78	0.11	993.82	0.23	994.86	0.34
992.80	0.12	993.84	0.23	994.88	0.34
992.82	0.12	993.86	0.23	994.90	0.35
992.84	0.12	993.88	0.24	994.92	0.35
992.86	0.12	993.90	0.24	994.94	0.35
992.88	0.13	993.92	0.24	994.96	0.35
992.90	0.13	993.94	0.24	994.98	0.36
992.92	0.13	993.96	0.25	995.00	0.36
992.94	0.14	993.98	0.25		
992.96	0.14	994.00	0.25		
992.98	0.14	994.02	0.25		
993.00	0.14	994.04	0.25		
993.02	0.15	994.06	0.26		

Proposed Conditions

HydroCAD Modeling



Routing Diagram for Proposed_010
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.570	70	1/2 acre lots (P1)
2.110	75	1/4 acre lots (P10, P12, P13, P14, P15)
4.290	78	Area C from LCL High School Report (P18)
0.950	69	cropland (P1, P20)
11.890	61	grass (P1, P10, P11, P12, P14, P15, P18, P19, P2, P20, P3, P5)
6.700	98	impervious (P1, P10, P11, P12, P14, P15, P18, P19, P2, P20, P3, P5)
0.320	98	water (P11, P20, P5)
35.380	55	woods (P1, P10, P11, P12, P13, P14, P15, P16, P17, P18, P2, P20, P3, P5, P6)
64.210	64	TOTAL AREA

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentP1: Subarea 1	Runoff Area=11.900 ac 0.67% Impervious Runoff Depth>0.15" Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=60 Runoff=0.53 cfs 0.144 af
SubcatchmentP10: Subarea 10	Runoff Area=1.850 ac 0.54% Impervious Runoff Depth>0.15" Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=60 Runoff=0.10 cfs 0.023 af
SubcatchmentP11: Subarea 11	Runoff Area=3.120 ac 34.62% Impervious Runoff Depth>0.48" Flow Length=220' Tc=39.8 min CN=72 Runoff=0.93 cfs 0.124 af
SubcatchmentP12: Subarea 12	Runoff Area=2.940 ac 7.14% Impervious Runoff Depth>0.31" Flow Length=190' Slope=0.1300 '/' Tc=29.4 min CN=67 Runoff=0.58 cfs 0.077 af
SubcatchmentP13: Subarea 13	Runoff Area=1.010 ac 0.00% Impervious Runoff Depth>0.15" Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=60 Runoff=0.05 cfs 0.012 af
SubcatchmentP14: Subarea 14	Runoff Area=8.130 ac 10.21% Impervious Runoff Depth>0.16" Flow Length=1,110' Tc=104.8 min CN=61 Runoff=0.32 cfs 0.110 af
SubcatchmentP15: Subarea 15	Runoff Area=0.870 ac 1.15% Impervious Runoff Depth>0.21" Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=63 Runoff=0.11 cfs 0.015 af
SubcatchmentP16: Subarea 16	Runoff Area=1.620 ac 0.00% Impervious Runoff Depth>0.06" Flow Length=270' Slope=0.0400 '/' Tc=68.3 min CN=55 Runoff=0.02 cfs 0.009 af
SubcatchmentP17: Subarea 17	Runoff Area=4.300 ac 0.00% Impervious Runoff Depth>0.06" Flow Length=250' Slope=0.0300 '/' Tc=72.0 min CN=55 Runoff=0.05 cfs 0.023 af
SubcatchmentP18: Subarea 18	Runoff Area=5.850 ac 7.18% Impervious Runoff Depth>0.63" Tc=42.8 min CN=76 Runoff=2.41 cfs 0.308 af
SubcatchmentP19: Subarea 19	Runoff Area=0.100 ac 40.00% Impervious Runoff Depth>0.63" Tc=6.0 min CN=76 Runoff=0.11 cfs 0.005 af
SubcatchmentP2: Subarea 2	Runoff Area=2.030 ac 6.40% Impervious Runoff Depth>0.13" Flow Length=240' Tc=42.4 min CN=59 Runoff=0.08 cfs 0.021 af
SubcatchmentP20: Subarea 20	Runoff Area=9.670 ac 35.47% Impervious Runoff Depth>0.51" Flow Length=905' Slope=0.0300 '/' Tc=86.0 min CN=73 Runoff=1.91 cfs 0.409 af
SubcatchmentP3: Subarea 3	Runoff Area=0.870 ac 5.75% Impervious Runoff Depth>0.13" Flow Length=140' Tc=23.0 min CN=59 Runoff=0.04 cfs 0.009 af
SubcatchmentP5: Subarea 5	Runoff Area=7.170 ac 10.18% Impervious Runoff Depth>0.15" Flow Length=400' Slope=0.1000 '/' Tc=52.6 min CN=60 Runoff=0.32 cfs 0.087 af
SubcatchmentP6: Subarea 6	Runoff Area=2.780 ac 0.00% Impervious Runoff Depth>0.06" Flow Length=200' Slope=0.0500 '/' Tc=49.1 min CN=55 Runoff=0.04 cfs 0.015 af

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Pond 1K: Kettle 1	Peak Elev=947.31' Storage=25,453 cf Inflow=2.11 cfs 0.646 af Outflow=0.08 cfs 0.062 af
Pond 2K: Kettle 2	Peak Elev=966.64' Storage=590 cf Inflow=0.08 cfs 0.021 af Discarded=0.01 cfs 0.009 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.009 af
Pond 3K: Kettle 3	Peak Elev=973.04' Storage=3,065 cf Inflow=0.24 cfs 0.090 af Discarded=0.02 cfs 0.020 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.020 af
Pond 5P: Pond 5 - Proposed	Peak Elev=981.20' Storage=789 cf Inflow=0.32 cfs 0.087 af Outflow=0.22 cfs 0.081 af
Pond 6K: Kettle 6	Peak Elev=1,011.01' Storage=58 cf Inflow=0.04 cfs 0.015 af Discarded=0.03 cfs 0.015 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.015 af
Pond 10K: Kettle 10	Peak Elev=954.42' Storage=765 cf Inflow=0.10 cfs 0.023 af Discarded=0.01 cfs 0.005 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.005 af
Pond 11P: Pond 11	Peak Elev=964.37' Storage=1,375 cf Inflow=0.93 cfs 0.124 af Outflow=0.54 cfs 0.117 af
Pond 12K: Kettle 12	Peak Elev=956.96' Storage=2,629 cf Inflow=0.59 cfs 0.088 af Discarded=0.03 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.031 af
Pond 13K: Kettle 13	Peak Elev=959.56' Storage=27 cf Inflow=0.05 cfs 0.012 af Discarded=0.00 cfs 0.001 af Primary=0.05 cfs 0.011 af Outflow=0.05 cfs 0.012 af
Pond 14K: Kettle 14	Peak Elev=955.92' Storage=3,700 cf Inflow=0.32 cfs 0.110 af Discarded=0.03 cfs 0.025 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.025 af
Pond 15K: Kettle 15	Peak Elev=970.19' Storage=331 cf Inflow=0.11 cfs 0.015 af Discarded=0.01 cfs 0.010 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.010 af
Pond 16K: Kettle 16	Peak Elev=1,005.01' Storage=32 cf Inflow=0.02 cfs 0.009 af Discarded=0.02 cfs 0.008 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.008 af
Pond 17K: Kettle 17	Peak Elev=1,011.09' Storage=299 cf Inflow=0.05 cfs 0.023 af Discarded=0.02 cfs 0.018 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.018 af
Pond 18B: Existing Infiltration Basin	Peak Elev=990.29' Storage=7,075 cf Inflow=2.41 cfs 0.308 af Discarded=0.33 cfs 0.270 af Primary=0.00 cfs 0.000 af Outflow=0.33 cfs 0.270 af
Pond 20P: Pond 20	Peak Elev=989.61' Storage=4,494 cf Inflow=1.91 cfs 0.409 af Outflow=1.35 cfs 0.385 af

Total Runoff Area = 64.210 ac Runoff Volume = 1.391 af Average Runoff Depth = 0.26"
89.07% Pervious = 57.190 ac 10.93% Impervious = 7.020 ac

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentP1: Subarea 1	Runoff Area=11.900 ac 0.67% Impervious Runoff Depth>0.23" Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=60 Runoff=1.01 cfs 0.228 af
SubcatchmentP10: Subarea 10	Runoff Area=1.850 ac 0.54% Impervious Runoff Depth>0.23" Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=60 Runoff=0.19 cfs 0.036 af
SubcatchmentP11: Subarea 11	Runoff Area=3.120 ac 34.62% Impervious Runoff Depth>0.63" Flow Length=220' Tc=39.8 min CN=72 Runoff=1.31 cfs 0.165 af
SubcatchmentP12: Subarea 12	Runoff Area=2.940 ac 7.14% Impervious Runoff Depth>0.44" Flow Length=190' Slope=0.1300 '/' Tc=29.4 min CN=67 Runoff=0.90 cfs 0.108 af
SubcatchmentP13: Subarea 13	Runoff Area=1.010 ac 0.00% Impervious Runoff Depth>0.23" Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=60 Runoff=0.10 cfs 0.019 af
SubcatchmentP14: Subarea 14	Runoff Area=8.130 ac 10.21% Impervious Runoff Depth>0.25" Flow Length=1,110' Tc=104.8 min CN=61 Runoff=0.55 cfs 0.171 af
SubcatchmentP15: Subarea 15	Runoff Area=0.870 ac 1.15% Impervious Runoff Depth>0.31" Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=63 Runoff=0.20 cfs 0.023 af
SubcatchmentP16: Subarea 16	Runoff Area=1.620 ac 0.00% Impervious Runoff Depth>0.12" Flow Length=270' Slope=0.0400 '/' Tc=68.3 min CN=55 Runoff=0.05 cfs 0.016 af
SubcatchmentP17: Subarea 17	Runoff Area=4.300 ac 0.00% Impervious Runoff Depth>0.12" Flow Length=250' Slope=0.0300 '/' Tc=72.0 min CN=55 Runoff=0.12 cfs 0.043 af
SubcatchmentP18: Subarea 18	Runoff Area=5.850 ac 7.18% Impervious Runoff Depth>0.81" Tc=42.8 min CN=76 Runoff=3.21 cfs 0.397 af
SubcatchmentP19: Subarea 19	Runoff Area=0.100 ac 40.00% Impervious Runoff Depth>0.82" Tc=6.0 min CN=76 Runoff=0.14 cfs 0.007 af
SubcatchmentP2: Subarea 2	Runoff Area=2.030 ac 6.40% Impervious Runoff Depth>0.21" Flow Length=240' Tc=42.4 min CN=59 Runoff=0.16 cfs 0.035 af
SubcatchmentP20: Subarea 20	Runoff Area=9.670 ac 35.47% Impervious Runoff Depth>0.67" Flow Length=905' Slope=0.0300 '/' Tc=86.0 min CN=73 Runoff=2.62 cfs 0.540 af
SubcatchmentP3: Subarea 3	Runoff Area=0.870 ac 5.75% Impervious Runoff Depth>0.21" Flow Length=140' Tc=23.0 min CN=59 Runoff=0.09 cfs 0.015 af
SubcatchmentP5: Subarea 5	Runoff Area=7.170 ac 10.18% Impervious Runoff Depth>0.23" Flow Length=400' Slope=0.1000 '/' Tc=52.6 min CN=60 Runoff=0.61 cfs 0.138 af
SubcatchmentP6: Subarea 6	Runoff Area=2.780 ac 0.00% Impervious Runoff Depth>0.12" Flow Length=200' Slope=0.0500 '/' Tc=49.1 min CN=55 Runoff=0.09 cfs 0.028 af

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Pond 1K: Kettle 1	Peak Elev=948.15' Storage=35,921 cf Inflow=3.10 cfs 0.900 af Outflow=0.09 cfs 0.075 af
Pond 2K: Kettle 2	Peak Elev=966.84' Storage=1,020 cf Inflow=0.16 cfs 0.035 af Discarded=0.01 cfs 0.012 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.012 af
Pond 3K: Kettle 3	Peak Elev=973.53' Storage=5,256 cf Inflow=0.47 cfs 0.146 af Discarded=0.03 cfs 0.025 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.025 af
Pond 5P: Pond 5 - Proposed	Peak Elev=981.29' Storage=1,148 cf Inflow=0.61 cfs 0.138 af Outflow=0.43 cfs 0.130 af
Pond 6K: Kettle 6	Peak Elev=1,011.02' Storage=176 cf Inflow=0.09 cfs 0.028 af Discarded=0.06 cfs 0.028 af Primary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.028 af
Pond 10K: Kettle 10	Peak Elev=954.82' Storage=1,248 cf Inflow=0.19 cfs 0.036 af Discarded=0.01 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.007 af
Pond 11P: Pond 11	Peak Elev=964.46' Storage=1,751 cf Inflow=1.31 cfs 0.165 af Outflow=0.82 cfs 0.158 af
Pond 12K: Kettle 12	Peak Elev=957.16' Storage=3,985 cf Inflow=0.96 cfs 0.126 af Discarded=0.04 cfs 0.038 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.038 af
Pond 13K: Kettle 13	Peak Elev=959.59' Storage=39 cf Inflow=0.10 cfs 0.019 af Discarded=0.00 cfs 0.001 af Primary=0.10 cfs 0.018 af Outflow=0.10 cfs 0.019 af
Pond 14K: Kettle 14	Peak Elev=956.36' Storage=6,116 cf Inflow=0.55 cfs 0.171 af Discarded=0.04 cfs 0.030 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.030 af
Pond 15K: Kettle 15	Peak Elev=970.32' Storage=590 cf Inflow=0.20 cfs 0.023 af Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af
Pond 16K: Kettle 16	Peak Elev=1,005.03' Storage=130 cf Inflow=0.05 cfs 0.016 af Discarded=0.03 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.016 af
Pond 17K: Kettle 17	Peak Elev=1,011.21' Storage=856 cf Inflow=0.12 cfs 0.043 af Discarded=0.03 cfs 0.026 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.026 af
Pond 18B: Existing Infiltration Basin	Peak Elev=990.56' Storage=9,840 cf Inflow=3.21 cfs 0.397 af Discarded=0.35 cfs 0.316 af Primary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.316 af
Pond 20P: Pond 20	Peak Elev=989.77' Storage=5,645 cf Inflow=2.62 cfs 0.540 af Outflow=1.92 cfs 0.514 af

Total Runoff Area = 64.210 ac Runoff Volume = 1.969 af Average Runoff Depth = 0.37"
89.07% Pervious = 57.190 ac 10.93% Impervious = 7.020 ac

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentP1: Subarea 1	Runoff Area=11.900 ac 0.67% Impervious Runoff Depth>0.67" Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=60 Runoff=4.02 cfs 0.660 af
SubcatchmentP10: Subarea 10	Runoff Area=1.850 ac 0.54% Impervious Runoff Depth>0.67" Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=60 Runoff=0.79 cfs 0.103 af
SubcatchmentP11: Subarea 11	Runoff Area=3.120 ac 34.62% Impervious Runoff Depth>1.32" Flow Length=220' Tc=39.8 min CN=72 Runoff=3.00 cfs 0.344 af
SubcatchmentP12: Subarea 12	Runoff Area=2.940 ac 7.14% Impervious Runoff Depth>1.03" Flow Length=190' Slope=0.1300 '/' Tc=29.4 min CN=67 Runoff=2.49 cfs 0.252 af
SubcatchmentP13: Subarea 13	Runoff Area=1.010 ac 0.00% Impervious Runoff Depth>0.67" Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=60 Runoff=0.44 cfs 0.056 af
SubcatchmentP14: Subarea 14	Runoff Area=8.130 ac 10.21% Impervious Runoff Depth>0.70" Flow Length=1,110' Tc=104.8 min CN=61 Runoff=1.87 cfs 0.477 af
SubcatchmentP15: Subarea 15	Runoff Area=0.870 ac 1.15% Impervious Runoff Depth>0.81" Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=63 Runoff=0.71 cfs 0.059 af
SubcatchmentP16: Subarea 16	Runoff Area=1.620 ac 0.00% Impervious Runoff Depth>0.45" Flow Length=270' Slope=0.0400 '/' Tc=68.3 min CN=55 Runoff=0.27 cfs 0.061 af
SubcatchmentP17: Subarea 17	Runoff Area=4.300 ac 0.00% Impervious Runoff Depth>0.45" Flow Length=250' Slope=0.0300 '/' Tc=72.0 min CN=55 Runoff=0.70 cfs 0.161 af
SubcatchmentP18: Subarea 18	Runoff Area=5.850 ac 7.18% Impervious Runoff Depth>1.59" Tc=42.8 min CN=76 Runoff=6.61 cfs 0.774 af
SubcatchmentP19: Subarea 19	Runoff Area=0.100 ac 40.00% Impervious Runoff Depth>1.59" Tc=6.0 min CN=76 Runoff=0.29 cfs 0.013 af
SubcatchmentP2: Subarea 2	Runoff Area=2.030 ac 6.40% Impervious Runoff Depth>0.62" Flow Length=240' Tc=42.4 min CN=59 Runoff=0.71 cfs 0.105 af
SubcatchmentP20: Subarea 20	Runoff Area=9.670 ac 35.47% Impervious Runoff Depth>1.38" Flow Length=905' Slope=0.0300 '/' Tc=86.0 min CN=73 Runoff=5.79 cfs 1.111 af
SubcatchmentP3: Subarea 3	Runoff Area=0.870 ac 5.75% Impervious Runoff Depth>0.62" Flow Length=140' Tc=23.0 min CN=59 Runoff=0.43 cfs 0.045 af
SubcatchmentP5: Subarea 5	Runoff Area=7.170 ac 10.18% Impervious Runoff Depth>0.67" Flow Length=400' Slope=0.1000 '/' Tc=52.6 min CN=60 Runoff=2.41 cfs 0.398 af
SubcatchmentP6: Subarea 6	Runoff Area=2.780 ac 0.00% Impervious Runoff Depth>0.45" Flow Length=200' Slope=0.0500 '/' Tc=49.1 min CN=55 Runoff=0.56 cfs 0.105 af

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Pond 1K: Kettle 1	Peak Elev=951.09' Storage=84,806 cf Inflow=7.98 cfs 2.072 af Outflow=0.15 cfs 0.125 af
Pond 2K: Kettle 2	Peak Elev=967.57' Storage=3,604 cf Inflow=0.71 cfs 0.105 af Discarded=0.03 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.023 af
Pond 3K: Kettle 3	Peak Elev=975.32' Storage=16,896 cf Inflow=2.05 cfs 0.433 af Discarded=0.05 cfs 0.045 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.045 af
Pond 5P: Pond 5 - Proposed	Peak Elev=981.63' Storage=2,847 cf Inflow=2.41 cfs 0.398 af Outflow=1.92 cfs 0.388 af
Pond 6K: Kettle 6	Peak Elev=1,011.22' Storage=2,410 cf Inflow=0.56 cfs 0.105 af Discarded=0.07 cfs 0.065 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.065 af
Pond 10K: Kettle 10	Peak Elev=955.96' Storage=3,764 cf Inflow=0.79 cfs 0.103 af Discarded=0.02 cfs 0.017 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.017 af
Pond 11P: Pond 11	Peak Elev=964.83' Storage=3,285 cf Inflow=3.00 cfs 0.344 af Outflow=2.16 cfs 0.336 af
Pond 12K: Kettle 12	Peak Elev=957.92' Storage=10,814 cf Inflow=2.82 cfs 0.306 af Discarded=0.07 cfs 0.061 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.061 af
Pond 13K: Kettle 13	Peak Elev=959.69' Storage=101 cf Inflow=0.44 cfs 0.056 af Discarded=0.00 cfs 0.002 af Primary=0.42 cfs 0.054 af Outflow=0.43 cfs 0.056 af
Pond 14K: Kettle 14	Peak Elev=958.01' Storage=18,609 cf Inflow=1.87 cfs 0.477 af Discarded=0.06 cfs 0.050 af Primary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.050 af
Pond 15K: Kettle 15	Peak Elev=970.88' Storage=1,942 cf Inflow=0.71 cfs 0.059 af Discarded=0.02 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.016 af
Pond 16K: Kettle 16	Peak Elev=1,005.32' Storage=1,562 cf Inflow=0.27 cfs 0.061 af Discarded=0.03 cfs 0.029 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.029 af
Pond 17K: Kettle 17	Peak Elev=1,011.62' Storage=4,530 cf Inflow=0.70 cfs 0.161 af Discarded=0.07 cfs 0.064 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.064 af
Pond 18B: Existing Infiltration Basin	Peak Elev=991.59' Storage=22,282 cf Inflow=6.61 cfs 0.774 af Discarded=0.46 cfs 0.424 af Primary=0.00 cfs 0.000 af Outflow=0.46 cfs 0.424 af
Pond 20P: Pond 20	Peak Elev=990.55' Storage=12,048 cf Inflow=5.79 cfs 1.111 af Outflow=3.78 cfs 1.076 af

Total Runoff Area = 64.210 ac Runoff Volume = 4.725 af Average Runoff Depth = 0.88"
89.07% Pervious = 57.190 ac 10.93% Impervious = 7.020 ac

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentP1: Subarea 1	Runoff Area=11.900 ac 0.67% Impervious Runoff Depth>2.03" Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=60 Runoff=14.65 cfs 2.012 af
SubcatchmentP10: Subarea 10	Runoff Area=1.850 ac 0.54% Impervious Runoff Depth>2.03" Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=60 Runoff=2.88 cfs 0.313 af
SubcatchmentP11: Subarea 11	Runoff Area=3.120 ac 34.62% Impervious Runoff Depth>3.13" Flow Length=220' Tc=39.8 min CN=72 Runoff=7.38 cfs 0.814 af
SubcatchmentP12: Subarea 12	Runoff Area=2.940 ac 7.14% Impervious Runoff Depth>2.66" Flow Length=190' Slope=0.1300 '/' Tc=29.4 min CN=67 Runoff=6.99 cfs 0.652 af
SubcatchmentP13: Subarea 13	Runoff Area=1.010 ac 0.00% Impervious Runoff Depth>2.03" Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=60 Runoff=1.59 cfs 0.171 af
SubcatchmentP14: Subarea 14	Runoff Area=8.130 ac 10.21% Impervious Runoff Depth>2.10" Flow Length=1,110' Tc=104.8 min CN=61 Runoff=6.34 cfs 1.421 af
SubcatchmentP15: Subarea 15	Runoff Area=0.870 ac 1.15% Impervious Runoff Depth>2.30" Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=63 Runoff=2.27 cfs 0.167 af
SubcatchmentP16: Subarea 16	Runoff Area=1.620 ac 0.00% Impervious Runoff Depth>1.61" Flow Length=270' Slope=0.0400 '/' Tc=68.3 min CN=55 Runoff=1.25 cfs 0.217 af
SubcatchmentP17: Subarea 17	Runoff Area=4.300 ac 0.00% Impervious Runoff Depth>1.61" Flow Length=250' Slope=0.0300 '/' Tc=72.0 min CN=55 Runoff=3.20 cfs 0.576 af
SubcatchmentP18: Subarea 18	Runoff Area=5.850 ac 7.18% Impervious Runoff Depth>3.52" Tc=42.8 min CN=76 Runoff=14.97 cfs 1.718 af
SubcatchmentP19: Subarea 19	Runoff Area=0.100 ac 40.00% Impervious Runoff Depth>3.53" Tc=6.0 min CN=76 Runoff=0.63 cfs 0.029 af
SubcatchmentP2: Subarea 2	Runoff Area=2.030 ac 6.40% Impervious Runoff Depth>1.95" Flow Length=240' Tc=42.4 min CN=59 Runoff=2.70 cfs 0.329 af
SubcatchmentP20: Subarea 20	Runoff Area=9.670 ac 35.47% Impervious Runoff Depth>3.21" Flow Length=905' Slope=0.0300 '/' Tc=86.0 min CN=73 Runoff=14.02 cfs 2.587 af
SubcatchmentP3: Subarea 3	Runoff Area=0.870 ac 5.75% Impervious Runoff Depth>1.95" Flow Length=140' Tc=23.0 min CN=59 Runoff=1.67 cfs 0.141 af
SubcatchmentP5: Subarea 5	Runoff Area=7.170 ac 10.18% Impervious Runoff Depth>2.03" Flow Length=400' Slope=0.1000 '/' Tc=52.6 min CN=60 Runoff=8.74 cfs 1.212 af
SubcatchmentP6: Subarea 6	Runoff Area=2.780 ac 0.00% Impervious Runoff Depth>1.61" Flow Length=200' Slope=0.0500 '/' Tc=49.1 min CN=55 Runoff=2.68 cfs 0.374 af

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Pond 1K: Kettle 1	Peak Elev=956.41' Storage=223,149 cf Inflow=22.59 cfs 5.354 af Outflow=0.28 cfs 0.231 af
Pond 2K: Kettle 2	Peak Elev=972.04' Storage=43,508 cf Inflow=5.81 cfs 1.077 af Discarded=0.10 cfs 0.078 af Primary=0.00 cfs 0.000 af Outflow=0.10 cfs 0.078 af
Pond 3K: Kettle 3	Peak Elev=976.26' Storage=25,364 cf Inflow=7.30 cfs 1.339 af Discarded=0.07 cfs 0.062 af Primary=5.06 cfs 0.748 af Outflow=5.13 cfs 0.810 af
Pond 5P: Pond 5 - Proposed	Peak Elev=982.40' Storage=8,417 cf Inflow=8.74 cfs 1.212 af Outflow=6.92 cfs 1.197 af
Pond 6K: Kettle 6	Peak Elev=1,011.81' Storage=12,024 cf Inflow=2.68 cfs 0.374 af Discarded=0.12 cfs 0.110 af Primary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.110 af
Pond 10K: Kettle 10	Peak Elev=957.77' Storage=12,135 cf Inflow=2.88 cfs 0.313 af Discarded=0.04 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.035 af
Pond 11P: Pond 11	Peak Elev=965.91' Storage=8,639 cf Inflow=7.38 cfs 0.814 af Outflow=4.49 cfs 0.802 af
Pond 12K: Kettle 12	Peak Elev=959.38' Storage=31,386 cf Inflow=8.31 cfs 0.820 af Discarded=0.11 cfs 0.102 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.102 af
Pond 13K: Kettle 13	Peak Elev=959.88' Storage=329 cf Inflow=1.59 cfs 0.171 af Discarded=0.01 cfs 0.003 af Primary=1.54 cfs 0.168 af Outflow=1.55 cfs 0.171 af
Pond 14K: Kettle 14	Peak Elev=961.28' Storage=57,953 cf Inflow=6.34 cfs 1.425 af Discarded=0.12 cfs 0.095 af Primary=0.00 cfs 0.000 af Outflow=0.12 cfs 0.095 af
Pond 15K: Kettle 15	Peak Elev=971.90' Storage=6,014 cf Inflow=2.27 cfs 0.167 af Discarded=0.03 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.031 af
Pond 16K: Kettle 16	Peak Elev=1,007.01' Storage=15,507 cf Inflow=1.38 cfs 0.414 af Discarded=0.07 cfs 0.058 af Primary=0.04 cfs 0.005 af Outflow=0.10 cfs 0.063 af
Pond 17K: Kettle 17	Peak Elev=1,012.09' Storage=13,197 cf Inflow=3.20 cfs 0.576 af Discarded=0.14 cfs 0.124 af Primary=0.96 cfs 0.197 af Outflow=1.10 cfs 0.321 af
Pond 18B: Existing Infiltration Basin	Peak Elev=993.65' Storage=54,603 cf Inflow=14.97 cfs 1.718 af Discarded=0.71 cfs 0.674 af Primary=0.00 cfs 0.000 af Outflow=0.71 cfs 0.674 af
Pond 20P: Pond 20	Peak Elev=993.08' Storage=40,266 cf Inflow=14.02 cfs 2.587 af Outflow=6.12 cfs 2.540 af

Total Runoff Area = 64.210 ac Runoff Volume = 12.734 af Average Runoff Depth = 2.38"
89.07% Pervious = 57.190 ac 10.93% Impervious = 7.020 ac

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment P1: Subarea 1

Runoff = 14.65 cfs @ 12.76 hrs, Volume= 2.012 af, Depth> 2.03"

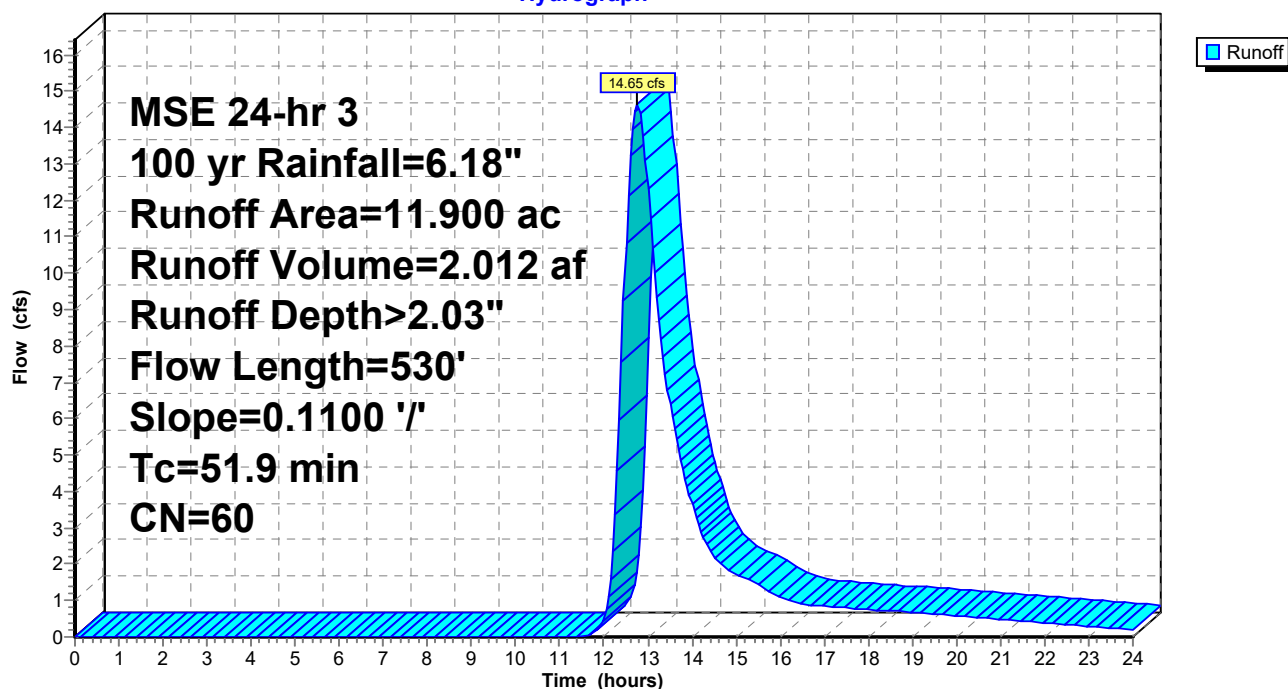
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	8.010	55	woods
	2.570	70	1/2 acre lots
*	0.700	69	cropland
*	0.540	61	grass
*	0.080	98	impervious
	11.900	60	Weighted Average
	11.820		99.33% Pervious Area
	0.080		0.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.6	300	0.1100	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
2.3	230	0.1100	1.66		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
51.9	530	Total			

Subcatchment P1: Subarea 1

Hydrograph



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Summary for Subcatchment P10: Subarea 10

Runoff = 2.88 cfs @ 12.54 hrs, Volume= 0.313 af, Depth> 2.03"

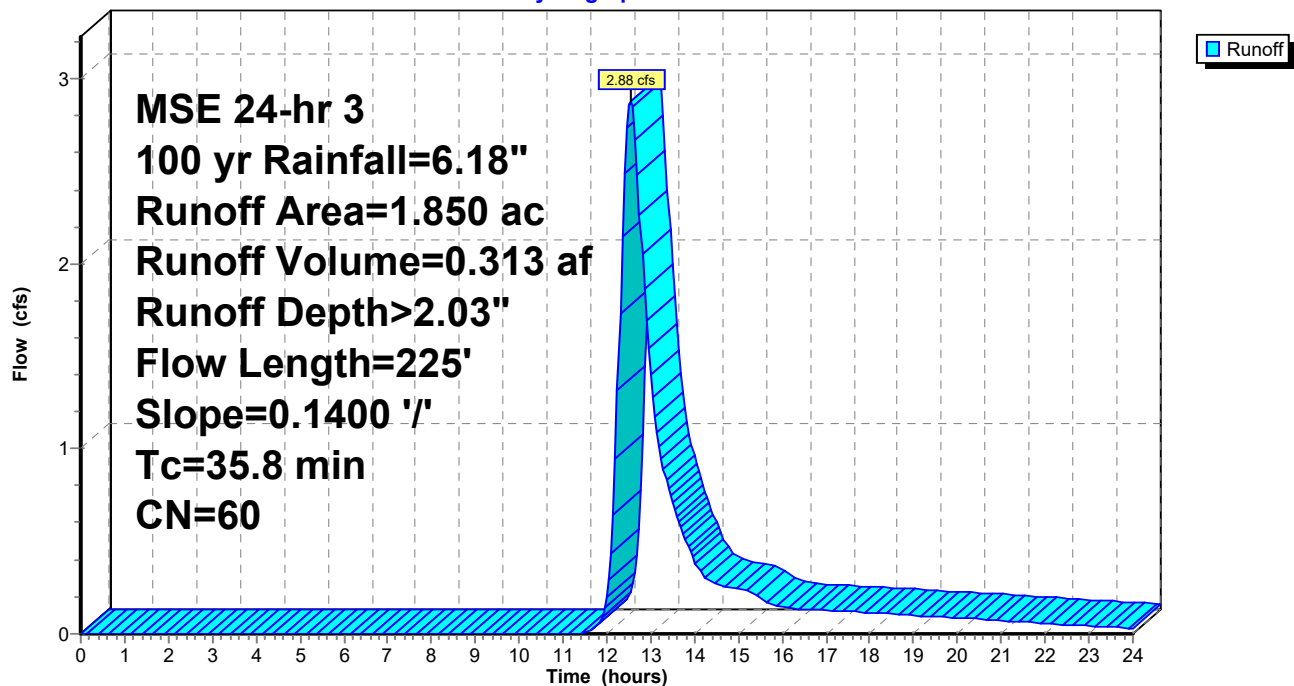
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.310	55	woods
* 0.450	75	1/4 acre lots
* 0.080	61	grass
* 0.010	98	impervious
1.850	60	Weighted Average
1.840		99.46% Pervious Area
0.010		0.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.8	225	0.1400	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment P10: Subarea 10

Hydrograph



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Summary for Subcatchment P11: Subarea 11

Runoff = 7.38 cfs @ 12.56 hrs, Volume= 0.814 af, Depth> 3.13"

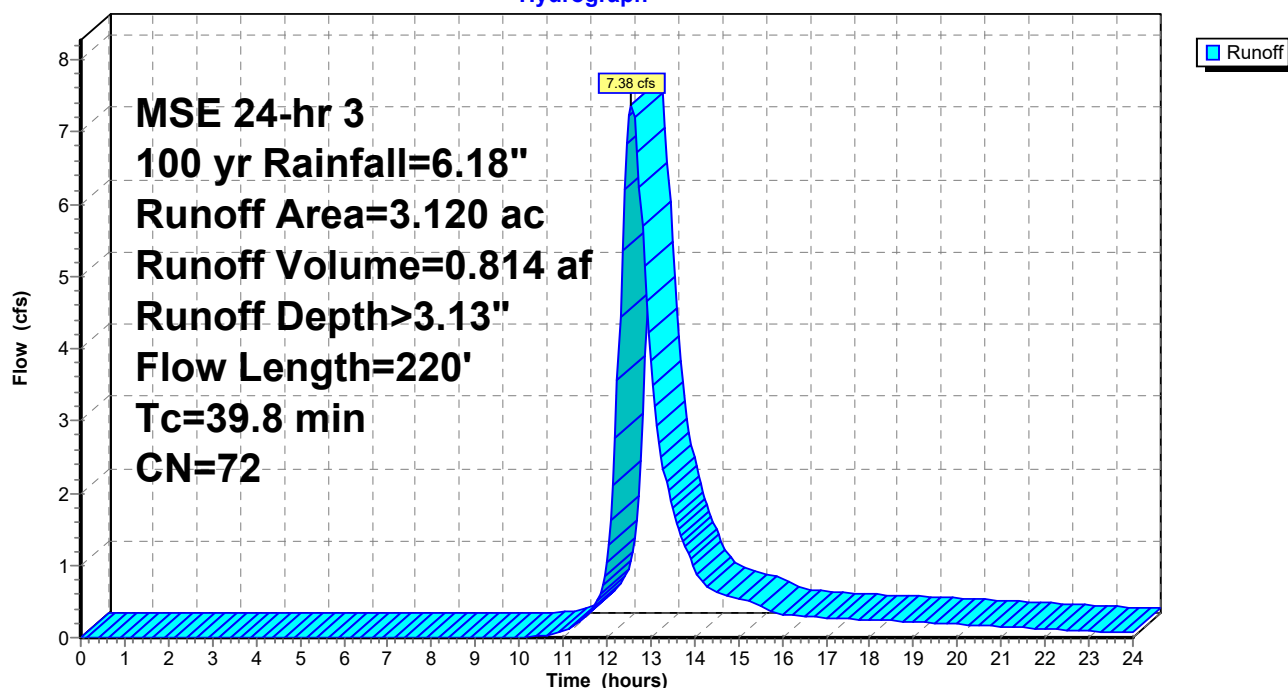
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.000	55	woods
* 1.040	61	grass
* 0.080	98	water
* 1.000	98	impervious
3.120	72	Weighted Average
2.040		65.38% Pervious Area
1.080		34.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	35	0.0300	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
17.9	80	0.1000	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
16.2	105	0.2200	0.11		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
39.8	220	Total			

Subcatchment P11: Subarea 11

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Summary for Subcatchment P12: Subarea 12

Runoff = 6.99 cfs @ 12.43 hrs, Volume= 0.652 af, Depth> 2.66"

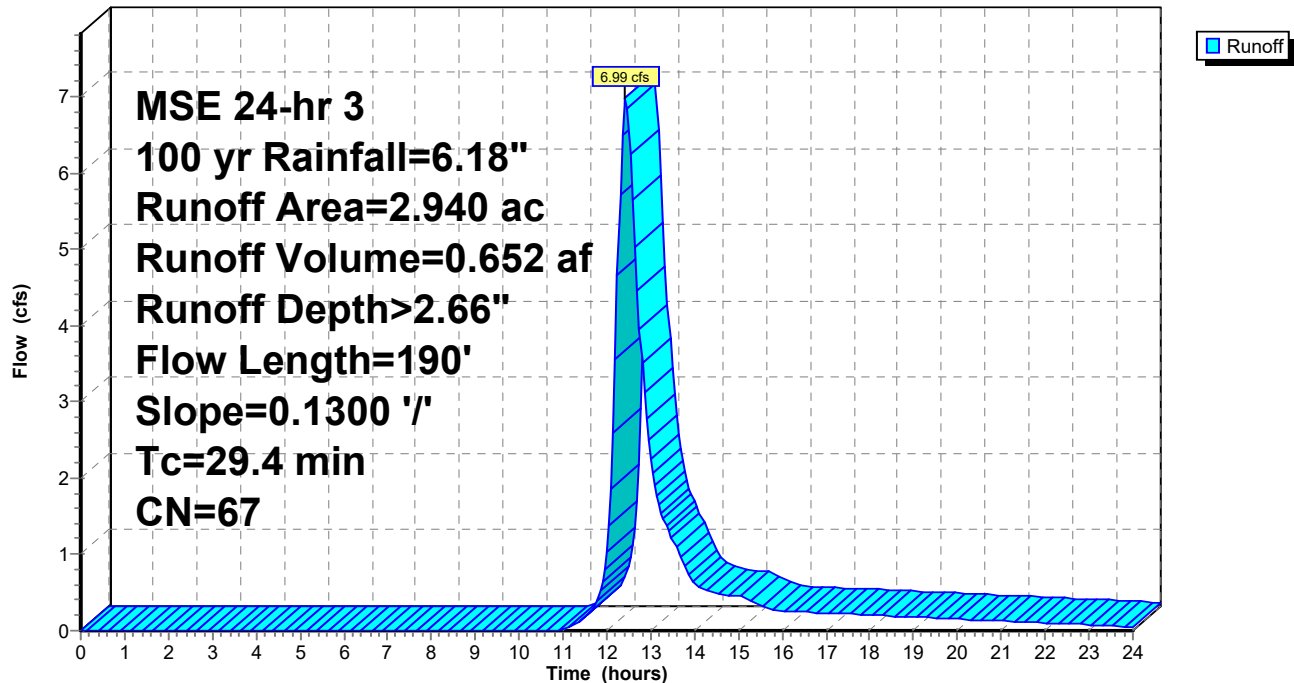
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.010	55	woods
* 0.650	61	grass
* 0.210	98	impervious
1.070	75	1/4 acre lots
2.940	67	Weighted Average
2.730		92.86% Pervious Area
0.210		7.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1300	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
25.2	140	0.1300	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
29.4	190	Total			

Subcatchment P12: Subarea 12

Hydrograph



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Summary for Subcatchment P13: Subarea 13

Runoff = 1.59 cfs @ 12.53 hrs, Volume= 0.171 af, Depth> 2.03"

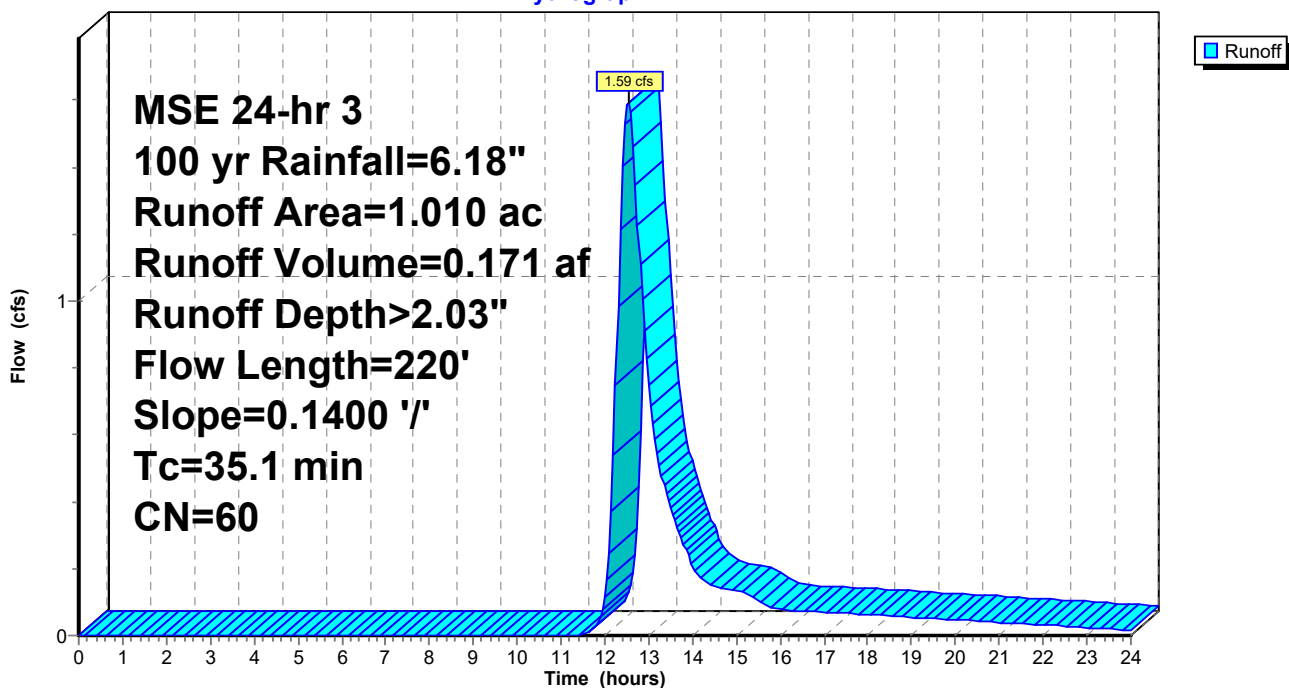
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.760	55	woods
0.250	75	1/4 acre lots
1.010	60	Weighted Average
1.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.1	220	0.1400	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment P13: Subarea 13

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Summary for Subcatchment P14: Subarea 14

Runoff = 6.34 cfs @ 13.48 hrs, Volume= 1.421 af, Depth> 2.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.650	55	woods
* 2.600	61	grass
* 0.830	98	impervious
* 0.050	75	1/4 acre lots
8.130	61	Weighted Average
7.300		89.79% Pervious Area
0.830		10.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
98.0	300	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
4.0	170	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	55	0.3800	9.92		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
2.7	585	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
104.8	1,110	Total			

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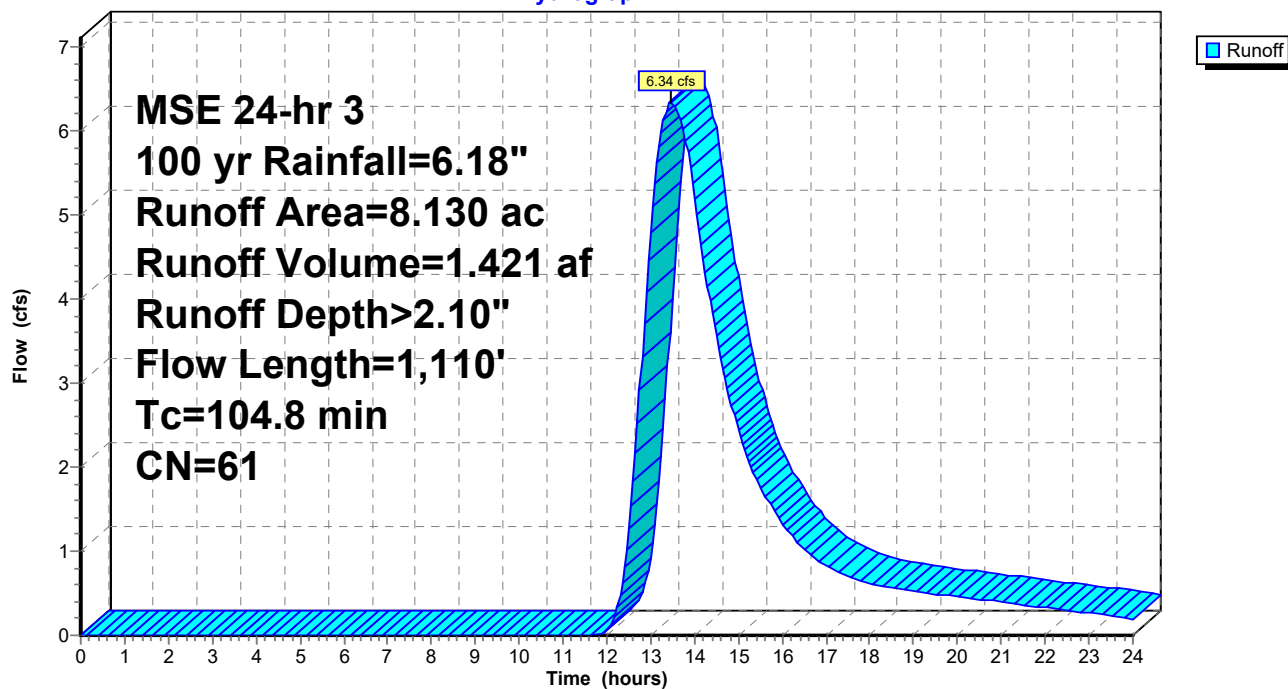
MSE 24-hr 3 100 yr Rainfall=6.18"

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Subcatchment P14: Subarea 14

Hydrograph



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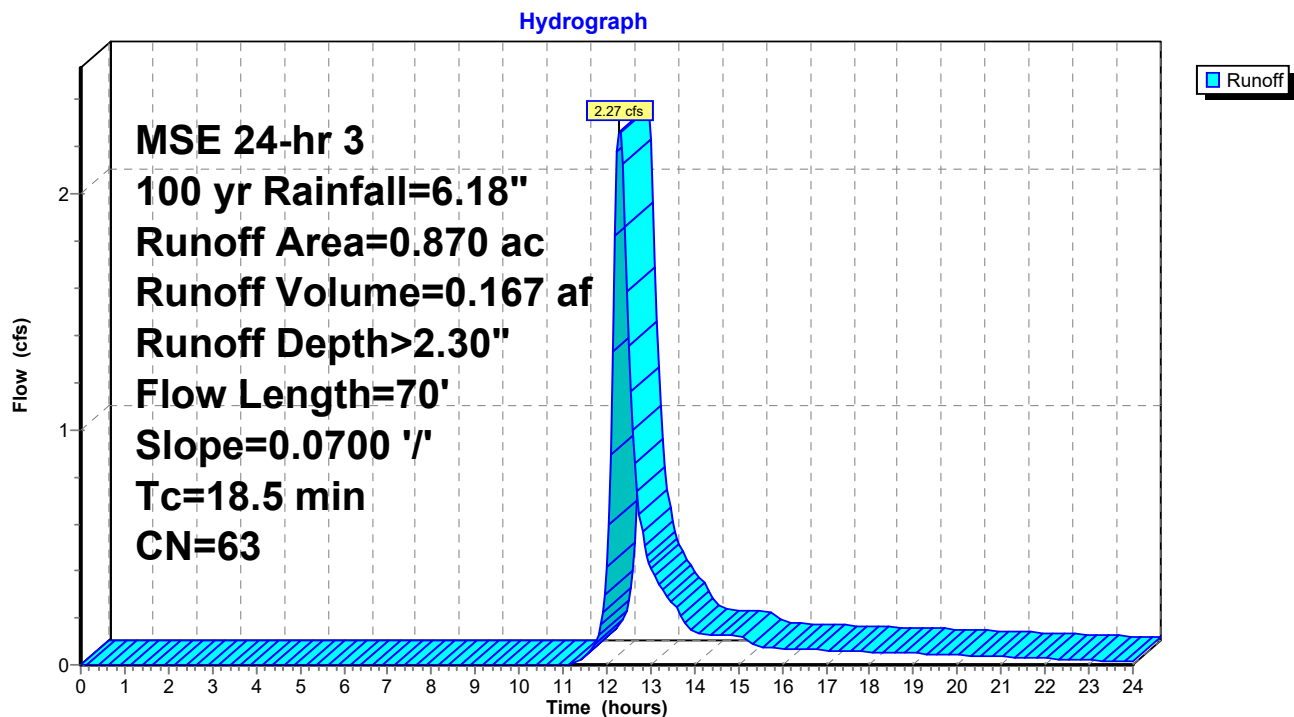
Summary for Subcatchment P15: Subarea 15

Runoff = 2.27 cfs @ 12.29 hrs, Volume= 0.167 af, Depth> 2.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.480	55	woods
* 0.090	61	grass
* 0.010	98	impervious
* 0.290	75	1/4 acre lots
0.870	63	Weighted Average
0.860		98.85% Pervious Area
0.010		1.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	70	0.0700	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment P15: Subarea 15

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Summary for Subcatchment P16: Subarea 16

Runoff = 1.25 cfs @ 13.02 hrs, Volume= 0.217 af, Depth> 1.61"

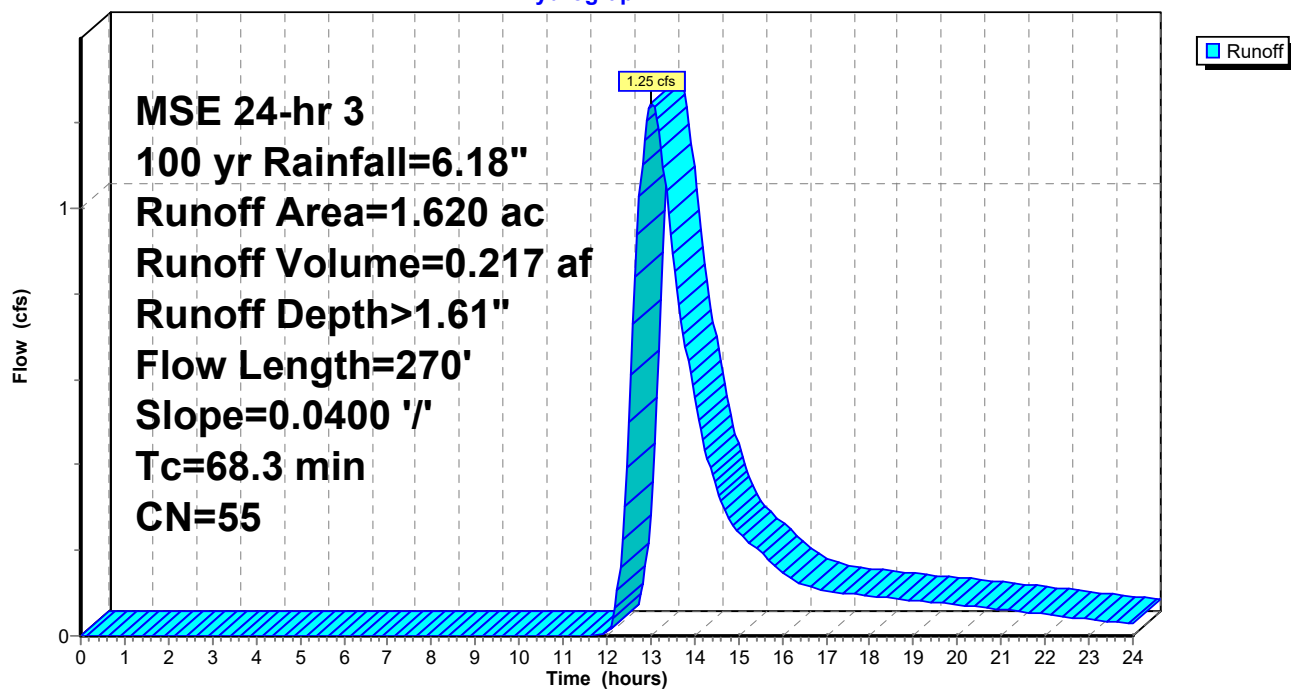
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.620	55	woods
1.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
68.3	270	0.0400	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment P16: Subarea 16

Hydrograph



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Summary for Subcatchment P17: Subarea 17

Runoff = 3.20 cfs @ 13.07 hrs, Volume= 0.576 af, Depth> 1.61"

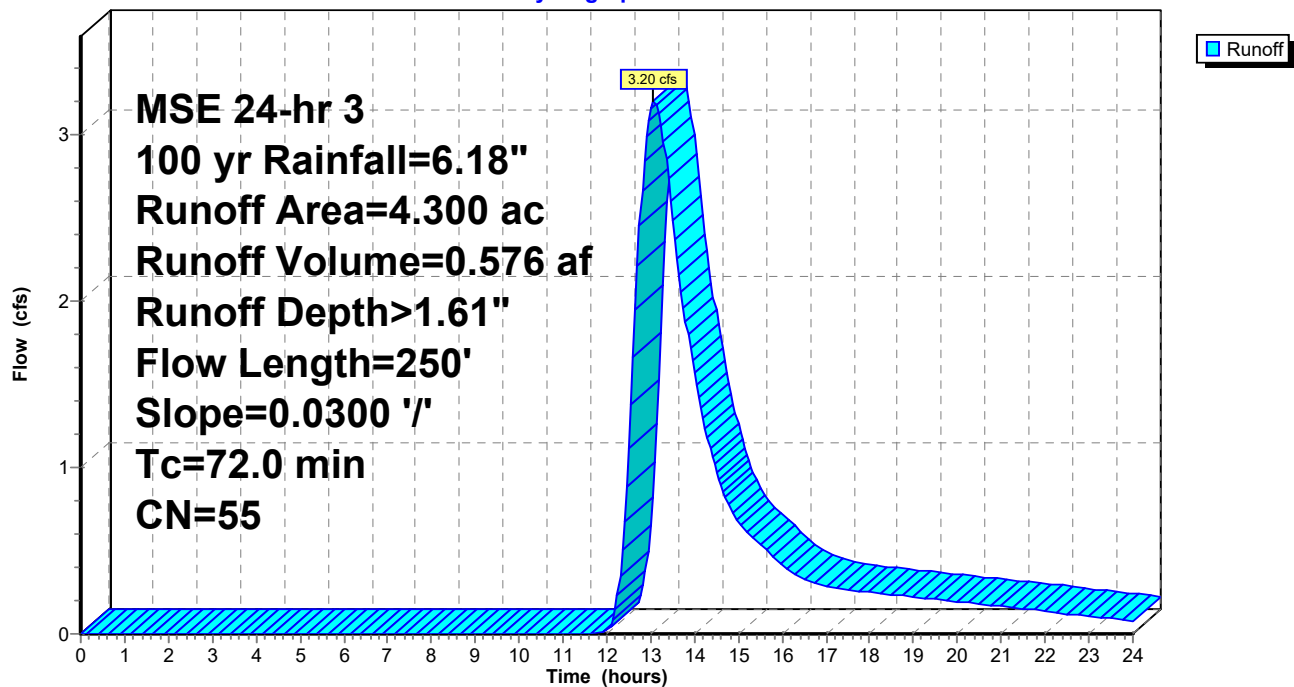
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.300	55	woods
4.300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
72.0	250	0.0300	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment P17: Subarea 17

Hydrograph



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Summary for Subcatchment P18: Subarea 18

Runoff = 14.97 cfs @ 12.60 hrs, Volume= 1.718 af, Depth> 3.52"

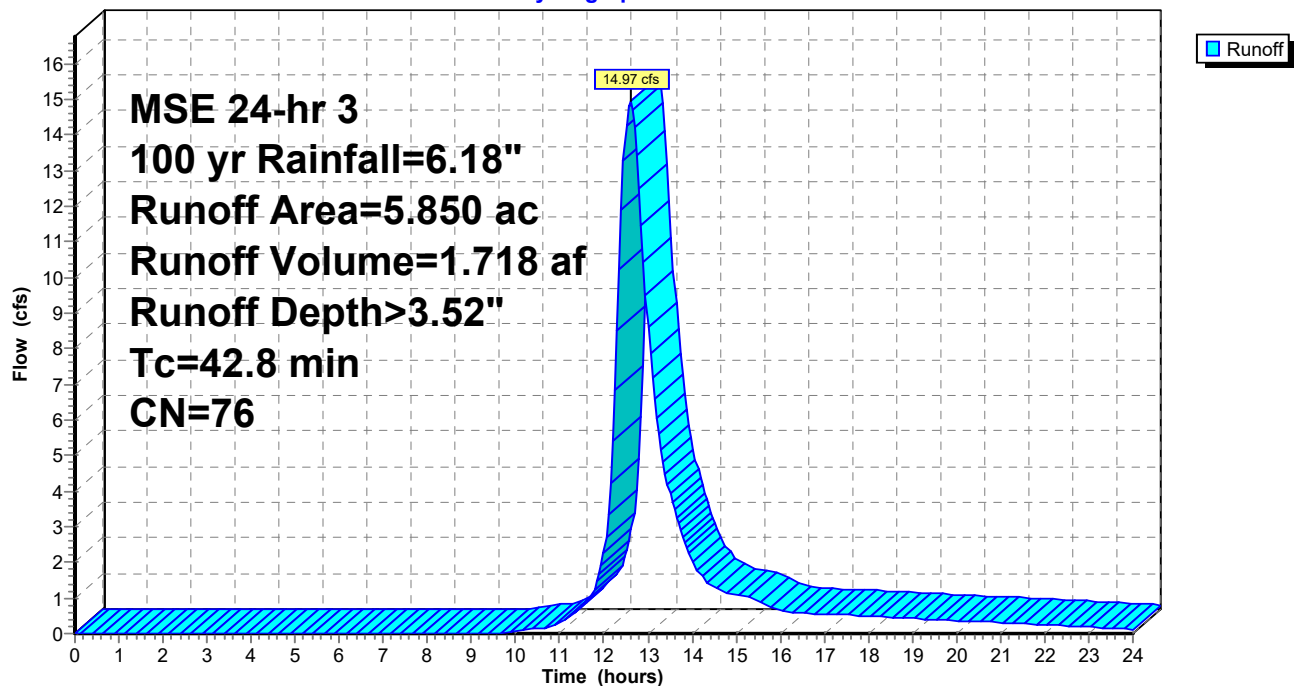
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.290	78	Area C from LCL High School Report
* 0.380	55	woods
* 0.760	61	grass
* 0.420	98	impervious
5.850	76	Weighted Average
5.430		92.82% Pervious Area
0.420		7.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.8					Direct Entry, LCL High School Report

Subcatchment P18: Subarea 18

Hydrograph



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Summary for Subcatchment P19: Subarea 19

Runoff = 0.63 cfs @ 12.13 hrs, Volume= 0.029 af, Depth> 3.53"

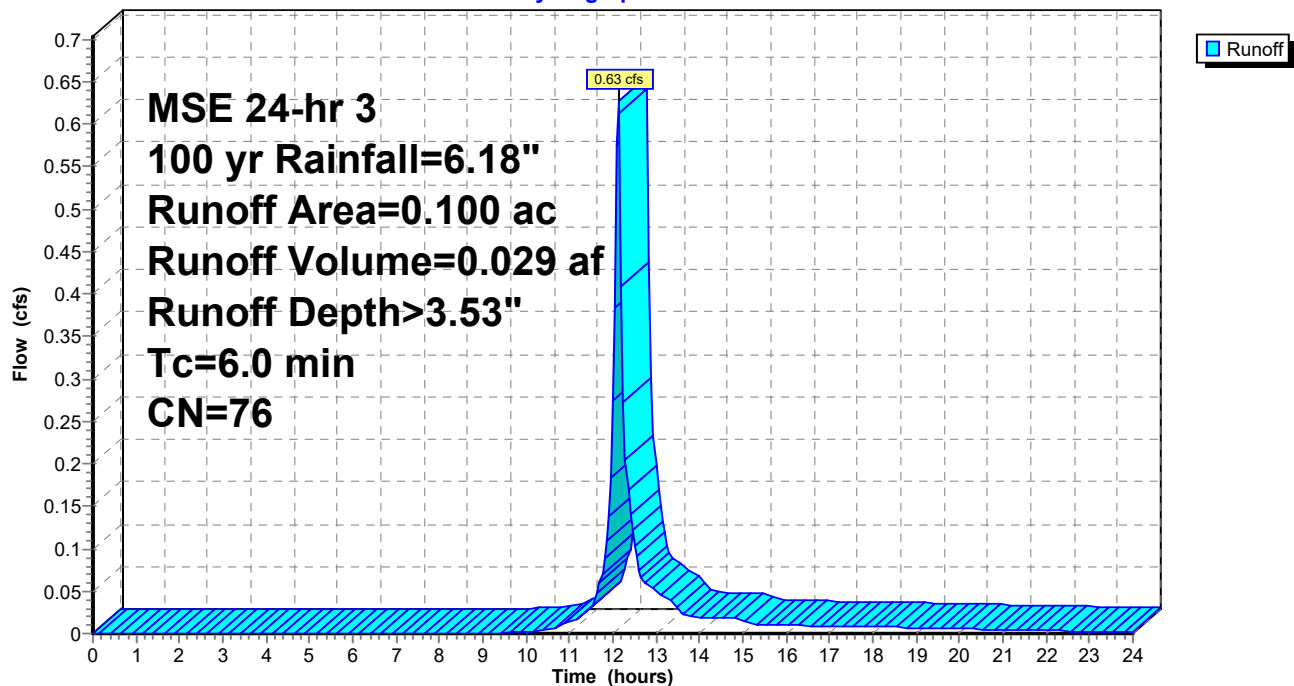
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.060	61	grass
*	0.040	98	impervious
	0.100	76	Weighted Average
	0.060		60.00% Pervious Area
	0.040		40.00% Impervious Area

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

Subcatchment P19: Subarea 19

Hydrograph



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Summary for Subcatchment P2: Subarea 2

Runoff = 2.70 cfs @ 12.64 hrs, Volume= 0.329 af, Depth> 1.95"

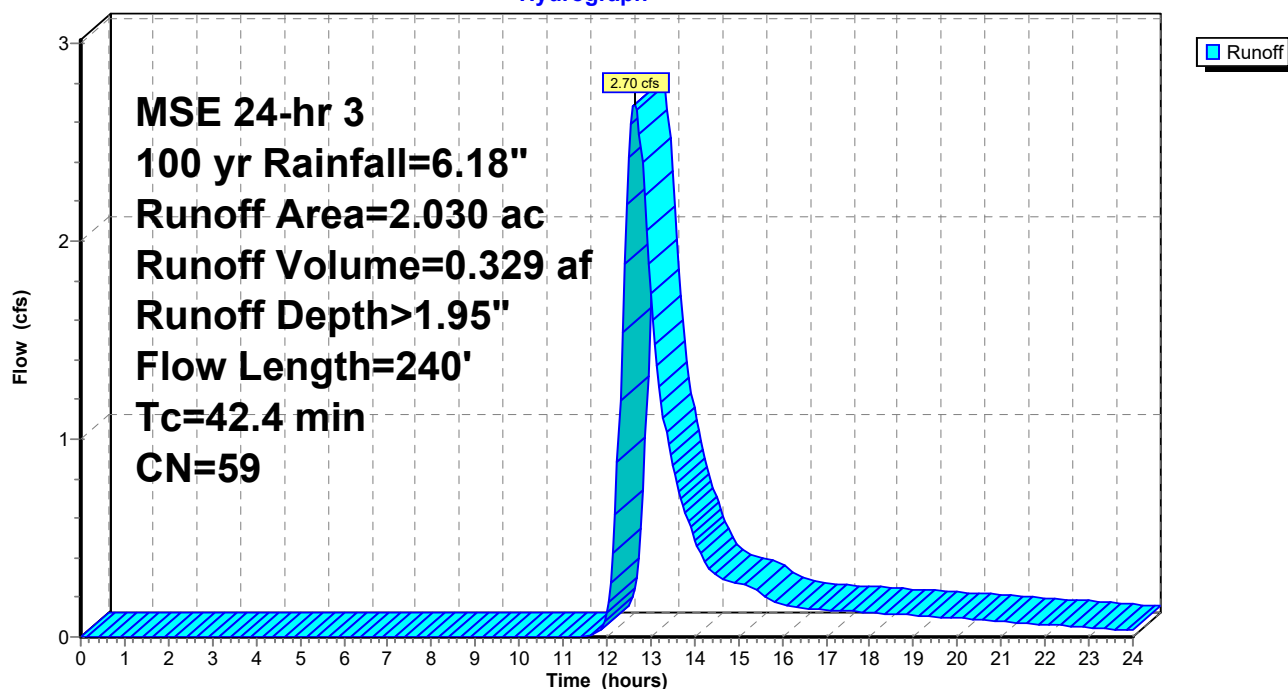
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.330	55	woods
* 0.570	61	grass
* 0.130	98	impervious
2.030	59	Weighted Average
1.900		93.60% Pervious Area
0.130		6.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0600	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
15.1	50	0.0600	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
21.6	140	0.1900	0.11		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
42.4	240	Total			

Subcatchment P2: Subarea 2

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Summary for Subcatchment P20: Subarea 20

Runoff = 14.02 cfs @ 13.18 hrs, Volume= 2.587 af, Depth> 3.21"

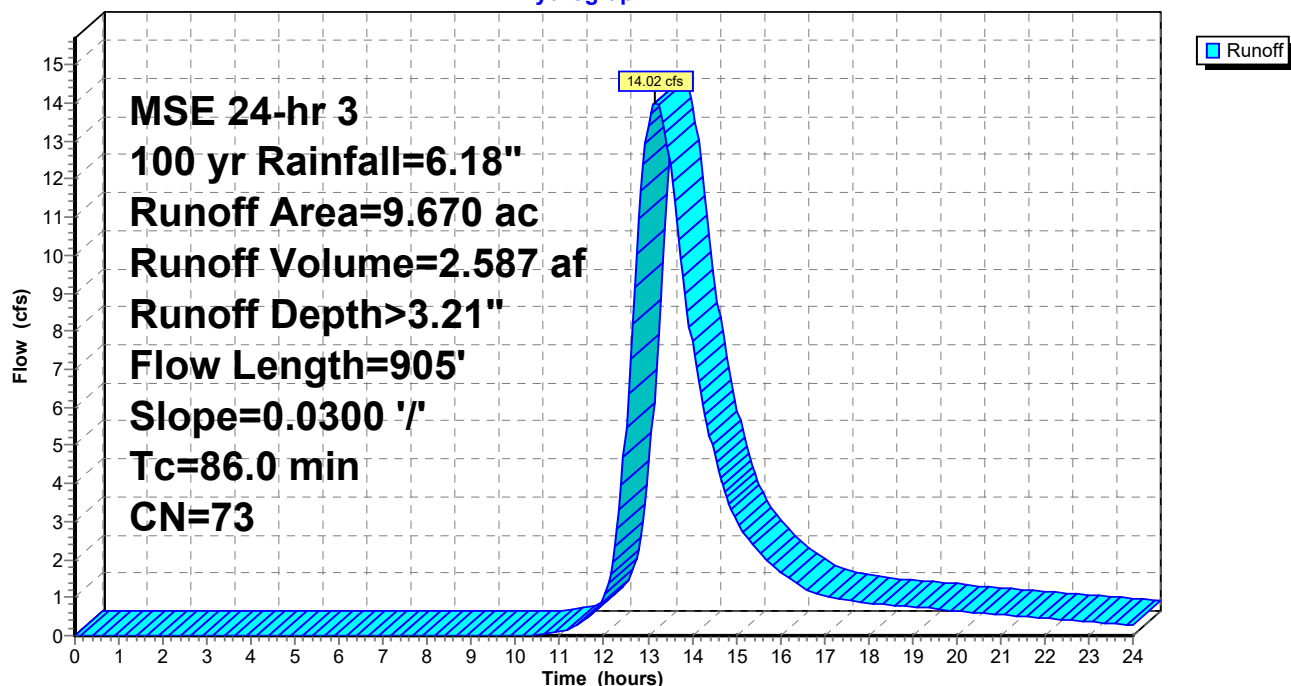
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.630	55	woods
* 4.360	61	grass
* 0.160	98	water
* 3.270	98	impervious
* 0.250	69	cropland
9.670	73	Weighted Average
6.240		64.53% Pervious Area
3.430		35.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
83.3	300	0.0300	0.06		Sheet Flow,
					Woods: Dense underbrush n= 0.800 P2= 2.70"
1.6	270	0.0300	2.79		Shallow Concentrated Flow,
					Unpaved Kv= 16.1 fps
1.1	335		5.00		Direct Entry,
86.0	905	Total			

Subcatchment P20: Subarea 20

Hydrograph



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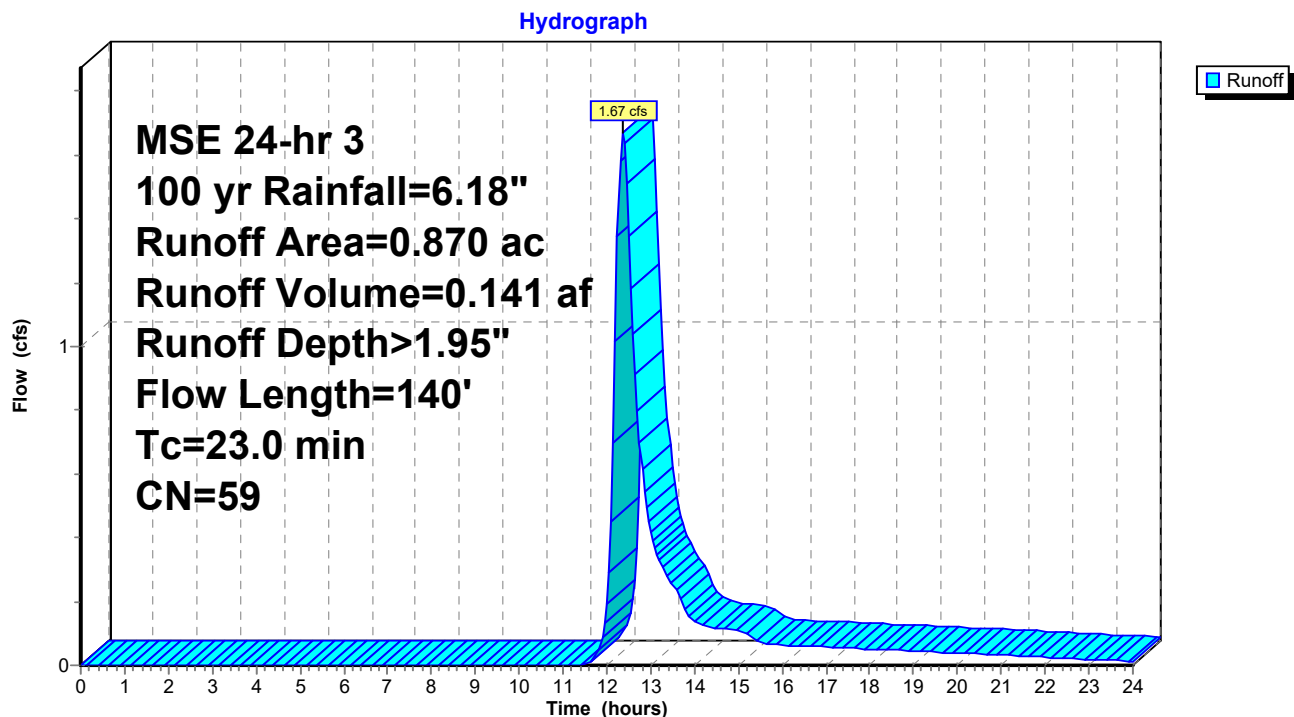
Summary for Subcatchment P3: Subarea 3

Runoff = 1.67 cfs @ 12.36 hrs, Volume= 0.141 af, Depth> 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.560	55	woods
* 0.260	61	grass
* 0.050	98	impervious
0.870	59	Weighted Average
0.820		94.25% Pervious Area
0.050		5.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	10	0.0500	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
21.3	130	0.1700	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
23.0	140	Total			

Subcatchment P3: Subarea 3

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Summary for Subcatchment P5: Subarea 5

Runoff = 8.74 cfs @ 12.78 hrs, Volume= 1.212 af, Depth> 2.03"

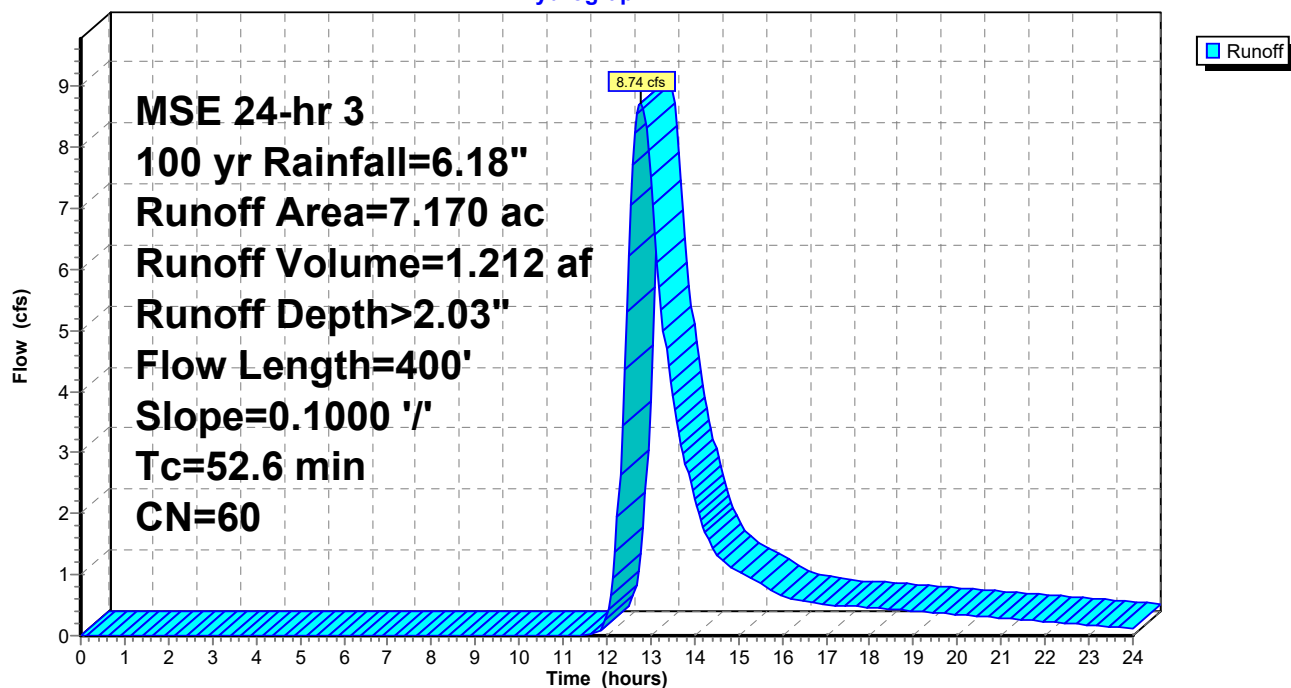
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 5.560	55	woods
* 0.880	61	grass
* 0.080	98	water
* 0.650	98	impervious
7.170	60	Weighted Average
6.440		89.82% Pervious Area
0.730		10.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.5	300	0.1000	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
1.1	100	0.1000	1.58		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
52.6	400	Total			

Subcatchment P5: Subarea 5

Hydrograph



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Summary for Subcatchment P6: Subarea 6

Runoff = 2.68 cfs @ 12.74 hrs, Volume= 0.374 af, Depth> 1.61"

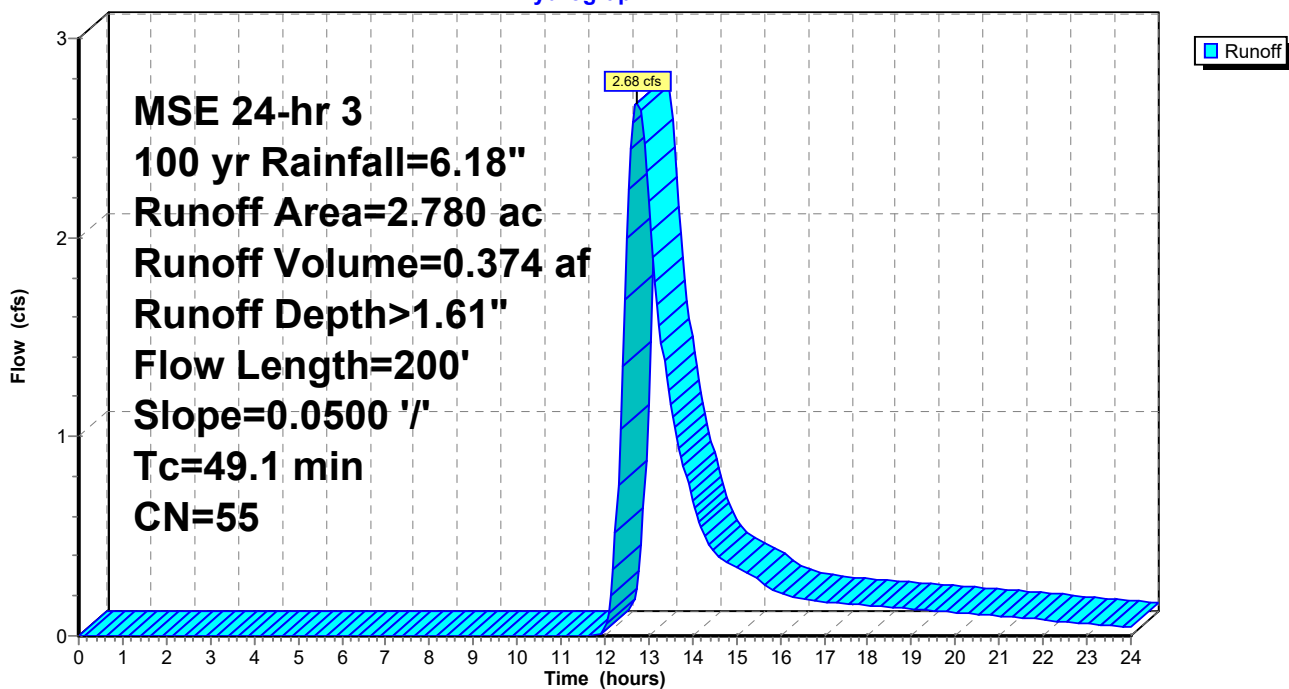
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 2.780	55	woods
2.780		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.1	200	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment P6: Subarea 6

Hydrograph



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Summary for Pond 1K: Kettle 1

Inflow Area = 43.390 ac, 13.64% Impervious, Inflow Depth > 1.48" for 100 yr event
 Inflow = 22.59 cfs @ 12.82 hrs, Volume= 5.354 af
 Outflow = 0.28 cfs @ 24.00 hrs, Volume= 0.231 af, Atten= 99%, Lag= 671.0 min
 Discarded = 0.28 cfs @ 24.00 hrs, Volume= 0.231 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 956.41' @ 24.00 hrs Surf.Area= 32,583 sf Storage= 223,149 cf

Plug-Flow detention time= 391.0 min calculated for 0.231 af (4% of inflow)
 Center-of-Mass det. time= 224.3 min (1,128.3 - 904.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	944.00'	560,290 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
944.00	3,750	0	0	3,750
945.00	6,195	4,922	4,922	6,208
946.00	8,685	7,405	12,327	8,716
947.00	10,780	9,714	22,040	10,840
948.00	13,055	11,899	33,940	13,148
949.00	15,305	14,165	48,105	15,437
950.00	17,415	16,349	64,453	17,595
951.00	19,655	18,524	82,977	19,886
952.00	21,865	20,750	103,727	22,155
953.00	24,185	23,015	126,743	24,536
954.00	26,545	25,356	152,098	26,963
955.00	28,985	27,756	179,854	29,473
956.00	31,540	30,254	210,108	32,101
957.00	34,135	32,829	242,937	34,775
958.00	36,900	35,509	278,445	37,619
959.00	39,930	38,405	316,851	40,728
960.00	43,170	41,539	358,390	44,047
961.00	46,620	44,884	403,274	47,578
962.00	50,260	48,429	451,703	51,301
963.00	54,345	52,289	503,992	55,465
964.00	58,275	56,299	560,290	59,484

Device	Routing	Invert	Outlet Devices
#1	Discarded	944.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 934.00'

Discarded OutFlow Max=0.28 cfs @ 24.00 hrs HW=956.41' (Free Discharge)

↑1=Exfiltration (Controls 0.28 cfs)

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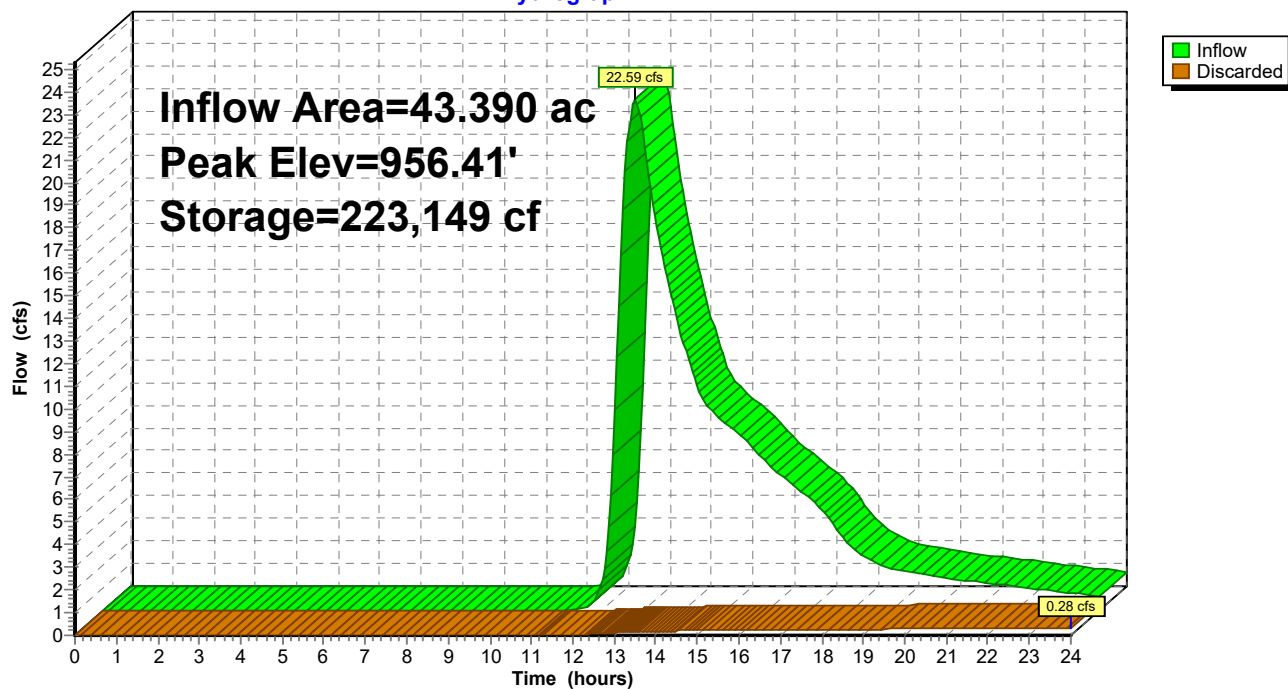
MSE 24-hr 3 100 yr Rainfall=6.18"

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Pond 1K: Kettle 1

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Stage-Discharge for Pond 1K: Kettle 1

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
944.00	0.00	954.40	0.23
944.20	0.02	954.60	0.23
944.40	0.03	954.80	0.24
944.60	0.03	955.00	0.24
944.80	0.03	955.20	0.25
945.00	0.04	955.40	0.26
945.20	0.04	955.60	0.26
945.40	0.04	955.80	0.27
945.60	0.05	956.00	0.27
945.80	0.05	956.20	0.28
946.00	0.05	956.40	0.28
946.20	0.06	956.60	0.29
946.40	0.06	956.80	0.29
946.60	0.06	957.00	0.30
946.80	0.07	957.20	0.30
947.00	0.07	957.40	0.31
947.20	0.08	957.60	0.32
947.40	0.08	957.80	0.32
947.60	0.08	958.00	0.33
947.80	0.09	958.20	0.33
948.00	0.09	958.40	0.34
948.20	0.09	958.60	0.35
948.40	0.10	958.80	0.35
948.60	0.10	959.00	0.36
948.80	0.11	959.20	0.37
949.00	0.11	959.40	0.37
949.20	0.11	959.60	0.38
949.40	0.12	959.80	0.39
949.60	0.12	960.00	0.39
949.80	0.13	960.20	0.40
950.00	0.13	960.40	0.41
950.20	0.13	960.60	0.41
950.40	0.14	960.80	0.42
950.60	0.14	961.00	0.43
950.80	0.15	961.20	0.43
951.00	0.15	961.40	0.44
951.20	0.15	961.60	0.45
951.40	0.16	961.80	0.46
951.60	0.16	962.00	0.46
951.80	0.17	962.20	0.47
952.00	0.17	962.40	0.48
952.20	0.18	962.60	0.49
952.40	0.18	962.80	0.50
952.60	0.19	963.00	0.50
952.80	0.19	963.20	0.51
953.00	0.20	963.40	0.52
953.20	0.20	963.60	0.53
953.40	0.20	963.80	0.54
953.60	0.21	964.00	0.54
953.80	0.21		
954.00	0.22		
954.20	0.22		

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Summary for Pond 2K: Kettle 2

Inflow Area = 12.850 ac, 7.08% Impervious, Inflow Depth > 1.01" for 100 yr event
 Inflow = 5.81 cfs @ 13.63 hrs, Volume= 1.077 af
 Outflow = 0.10 cfs @ 24.00 hrs, Volume= 0.078 af, Atten= 98%, Lag= 622.5 min
 Discarded = 0.10 cfs @ 24.00 hrs, Volume= 0.078 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 972.04' @ 24.00 hrs Surf.Area= 13,736 sf Storage= 43,508 cf

Plug-Flow detention time= 386.4 min calculated for 0.078 af (7% of inflow)
 Center-of-Mass det. time= 208.6 min (1,133.1 - 924.4)

Volume	Invert	Avail.Storage	Storage Description
#1	966.00'	96,797 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
966.00	285	0	0	285
967.00	3,190	1,476	1,476	3,193
968.00	5,410	4,251	5,728	5,425
969.00	7,210	6,288	12,016	7,247
970.00	9,215	8,192	20,208	9,277
971.00	11,370	10,274	30,482	11,462
972.00	13,630	12,483	42,965	13,756
973.00	16,420	15,003	57,968	16,580
974.00	19,360	17,870	75,838	19,558
975.00	22,600	20,959	96,797	22,838

Device	Routing	Invert	Outlet Devices
#1	Discarded	966.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 956.00' Phase-In= 0.01'
#2	Primary	973.70'	5.0' 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

Discarded OutFlow Max=0.10 cfs @ 24.00 hrs HW=972.04' (Free Discharge)
 ↑1=Exfiltration (Controls 0.10 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=966.00' TW=964.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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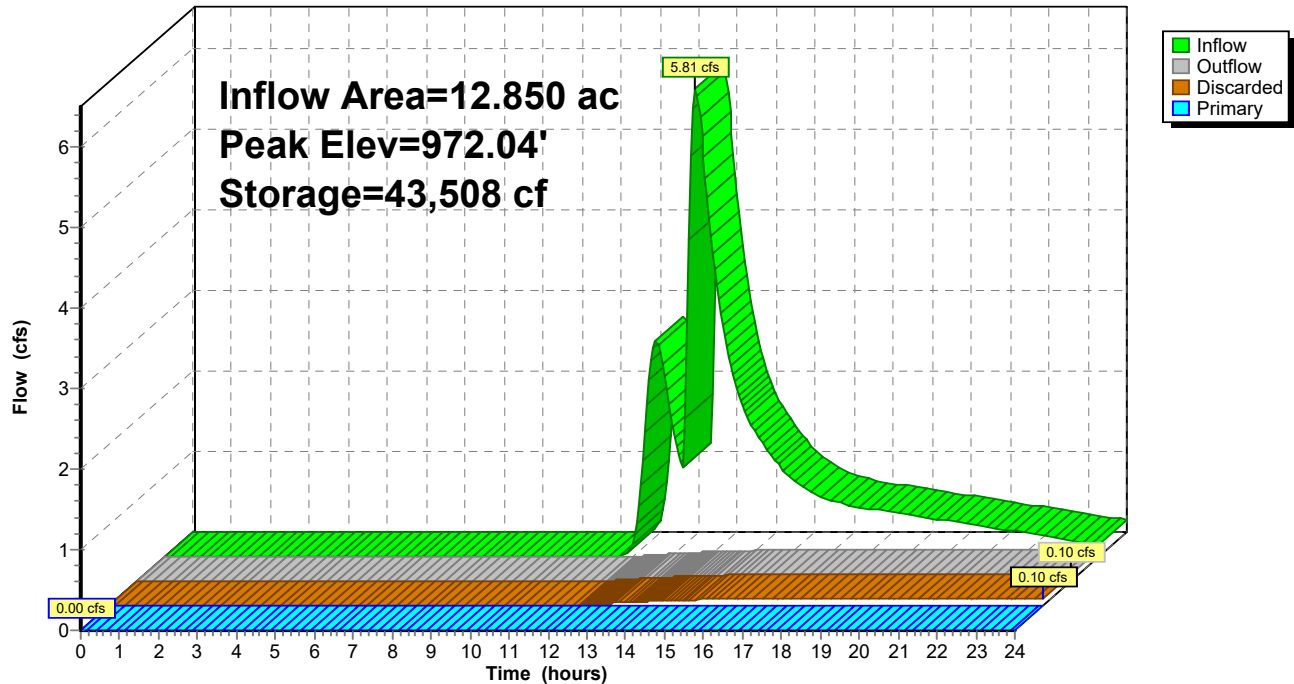
MSE 24-hr 3 100 yr Rainfall=6.18"

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Pond 2K: Kettle 2

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Stage-Discharge for Pond 2K: Kettle 2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
966.00	0.00	0.00	0.00	971.20	0.08	0.08	0.00
966.10	0.00	0.00	0.00	971.30	0.08	0.08	0.00
966.20	0.00	0.00	0.00	971.40	0.09	0.09	0.00
966.30	0.00	0.00	0.00	971.50	0.09	0.09	0.00
966.40	0.01	0.01	0.00	971.60	0.09	0.09	0.00
966.50	0.01	0.01	0.00	971.70	0.09	0.09	0.00
966.60	0.01	0.01	0.00	971.80	0.09	0.09	0.00
966.70	0.01	0.01	0.00	971.90	0.09	0.09	0.00
966.80	0.01	0.01	0.00	972.00	0.10	0.10	0.00
966.90	0.02	0.02	0.00	972.10	0.10	0.10	0.00
967.00	0.02	0.02	0.00	972.20	0.10	0.10	0.00
967.10	0.02	0.02	0.00	972.30	0.10	0.10	0.00
967.20	0.02	0.02	0.00	972.40	0.11	0.11	0.00
967.30	0.02	0.02	0.00	972.50	0.11	0.11	0.00
967.40	0.02	0.02	0.00	972.60	0.11	0.11	0.00
967.50	0.03	0.03	0.00	972.70	0.11	0.11	0.00
967.60	0.03	0.03	0.00	972.80	0.11	0.11	0.00
967.70	0.03	0.03	0.00	972.90	0.12	0.12	0.00
967.80	0.03	0.03	0.00	973.00	0.12	0.12	0.00
967.90	0.03	0.03	0.00	973.10	0.12	0.12	0.00
968.00	0.03	0.03	0.00	973.20	0.12	0.12	0.00
968.10	0.03	0.03	0.00	973.30	0.13	0.13	0.00
968.20	0.04	0.04	0.00	973.40	0.13	0.13	0.00
968.30	0.04	0.04	0.00	973.50	0.13	0.13	0.00
968.40	0.04	0.04	0.00	973.60	0.13	0.13	0.00
968.50	0.04	0.04	0.00	973.70	0.14	0.14	0.00
968.60	0.04	0.04	0.00	973.80	0.53	0.14	0.39
968.70	0.04	0.04	0.00	973.90	1.25	0.14	1.11
968.80	0.04	0.04	0.00	974.00	2.22	0.14	2.07
968.90	0.04	0.04	0.00	974.10	3.38	0.15	3.24
969.00	0.05	0.05	0.00	974.20	4.80	0.15	4.65
969.10	0.05	0.05	0.00	974.30	6.42	0.15	6.27
969.20	0.05	0.05	0.00	974.40	8.04	0.15	7.89
969.30	0.05	0.05	0.00	974.50	9.78	0.16	9.62
969.40	0.05	0.05	0.00	974.60	11.62	0.16	11.46
969.50	0.05	0.05	0.00	974.70	13.56	0.16	13.40
969.60	0.06	0.06	0.00	974.80	15.65	0.16	15.49
969.70	0.06	0.06	0.00	974.90	17.85	0.17	17.68
969.80	0.06	0.06	0.00	975.00	20.03	0.17	19.86
969.90	0.06	0.06	0.00				
970.00	0.06	0.06	0.00				
970.10	0.06	0.06	0.00				
970.20	0.06	0.06	0.00				
970.30	0.07	0.07	0.00				
970.40	0.07	0.07	0.00				
970.50	0.07	0.07	0.00				
970.60	0.07	0.07	0.00				
970.70	0.07	0.07	0.00				
970.80	0.07	0.07	0.00				
970.90	0.08	0.08	0.00				
971.00	0.08	0.08	0.00				
971.10	0.08	0.08	0.00				

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Summary for Pond 3K: Kettle 3

Inflow Area = 10.820 ac, 7.21% Impervious, Inflow Depth > 1.48" for 100 yr event
 Inflow = 7.30 cfs @ 13.04 hrs, Volume= 1.339 af
 Outflow = 5.13 cfs @ 13.64 hrs, Volume= 0.810 af, Atten= 30%, Lag= 36.1 min
 Discarded = 0.07 cfs @ 13.64 hrs, Volume= 0.062 af
 Primary = 5.06 cfs @ 13.64 hrs, Volume= 0.748 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 976.26' @ 13.64 hrs Surf.Area= 9,979 sf Storage= 25,364 cf

Plug-Flow detention time= 175.0 min calculated for 0.810 af (61% of inflow)

Center-of-Mass det. time= 80.7 min (963.5 - 882.8)

Volume	Invert	Avail.Storage	Storage Description	
#1	972.00'	46,349 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
972.00	1,920	0	0	1,920
973.00	4,020	2,906	2,906	4,029
974.00	5,770	4,869	7,775	5,796
975.00	7,510	6,621	14,396	7,560
976.00	9,385	8,430	22,826	9,463
977.00	11,750	10,545	33,371	11,855
978.00	14,245	12,977	46,349	14,383

Device	Routing	Invert	Outlet Devices
#1	Discarded	972.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 962.00' Phase-In= 0.01'
#2	Primary	976.00'	15.0' 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

Discarded OutFlow Max=0.07 cfs @ 13.64 hrs HW=976.26' (Free Discharge)↑**1=Exfiltration** (Controls 0.07 cfs)**Primary OutFlow** Max=5.05 cfs @ 13.64 hrs HW=976.26' TW=969.03' (Dynamic Tailwater)↑**2=Broad-Crested Rectangular Weir**(Weir Controls 5.05 cfs @ 1.29 fps)

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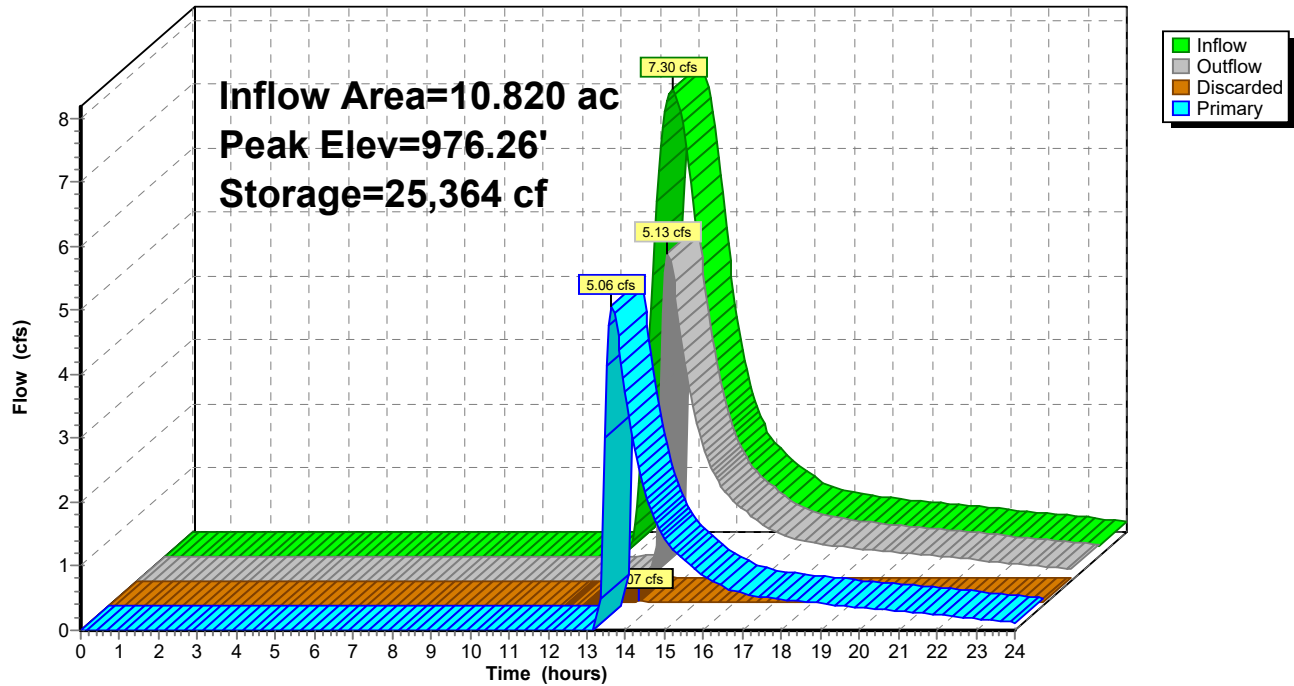
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Pond 3K: Kettle 3

Hydrograph



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Stage-Discharge for Pond 3K: Kettle 3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
972.00	0.00	0.00	0.00	977.20	53.13	0.09	53.04
972.10	0.01	0.01	0.00	977.30	59.67	0.09	59.59
972.20	0.01	0.01	0.00	977.40	66.43	0.09	66.34
972.30	0.01	0.01	0.00	977.50	73.26	0.09	73.16
972.40	0.02	0.02	0.00	977.60	80.24	0.09	80.14
972.50	0.02	0.02	0.00	977.70	87.87	0.10	87.77
972.60	0.02	0.02	0.00	977.80	95.73	0.10	95.63
972.70	0.02	0.02	0.00	977.90	103.81	0.10	103.71
972.80	0.02	0.02	0.00	978.00	112.11	0.10	112.01
972.90	0.02	0.02	0.00				
973.00	0.02	0.02	0.00				
973.10	0.03	0.03	0.00				
973.20	0.03	0.03	0.00				
973.30	0.03	0.03	0.00				
973.40	0.03	0.03	0.00				
973.50	0.03	0.03	0.00				
973.60	0.03	0.03	0.00				
973.70	0.03	0.03	0.00				
973.80	0.03	0.03	0.00				
973.90	0.03	0.03	0.00				
974.00	0.04	0.04	0.00				
974.10	0.04	0.04	0.00				
974.20	0.04	0.04	0.00				
974.30	0.04	0.04	0.00				
974.40	0.04	0.04	0.00				
974.50	0.04	0.04	0.00				
974.60	0.04	0.04	0.00				
974.70	0.05	0.05	0.00				
974.80	0.05	0.05	0.00				
974.90	0.05	0.05	0.00				
975.00	0.05	0.05	0.00				
975.10	0.05	0.05	0.00				
975.20	0.05	0.05	0.00				
975.30	0.05	0.05	0.00				
975.40	0.06	0.06	0.00				
975.50	0.06	0.06	0.00				
975.60	0.06	0.06	0.00				
975.70	0.06	0.06	0.00				
975.80	0.06	0.06	0.00				
975.90	0.06	0.06	0.00				
976.00	0.06	0.06	0.00				
976.10	1.25	0.07	1.18				
976.20	3.41	0.07	3.34				
976.30	6.29	0.07	6.22				
976.40	9.79	0.07	9.71				
976.50	14.02	0.07	13.95				
976.60	18.90	0.07	18.82				
976.70	23.75	0.08	23.68				
976.80	28.95	0.08	28.87				
976.90	34.47	0.08	34.39				
977.00	40.28	0.08	40.20				
977.10	46.55	0.08	46.46				

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Summary for Pond 5P: Pond 5 - Proposed

Inflow Area = 9.950 ac, 7.34% Impervious, Inflow Depth > 1.46" for 100 yr event
 Inflow = 8.74 cfs @ 12.78 hrs, Volume= 1.212 af
 Outflow = 6.92 cfs @ 13.07 hrs, Volume= 1.197 af, Atten= 21%, Lag= 17.1 min
 Primary = 6.92 cfs @ 13.07 hrs, Volume= 1.197 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 982.40' @ 13.07 hrs Surf.Area= 10,168 sf Storage= 8,417 cf

Plug-Flow detention time= 26.6 min calculated for 1.197 af (99% of inflow)
 Center-of-Mass det. time= 19.9 min (887.3 - 867.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	981.00'	130,622 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
981.00	3,603	0	0	3,603
982.00	6,692	5,068	5,068	6,702
983.00	16,738	11,338	16,406	16,755
984.00	23,545	20,045	36,451	23,581
985.00	29,037	26,243	62,694	29,103
986.00	33,837	31,406	94,101	33,943
987.00	39,273	36,521	130,622	39,421

Device	Routing	Invert	Outlet Devices
#1	Primary	981.00'	18.0" Round Culvert L= 115.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 981.00' / 976.50' S= 0.0391 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	985.64'	15.0' 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=6.91 cfs @ 13.07 hrs HW=982.40' TW=975.18' (Dynamic Tailwater)

1=Culvert (Inlet Controls 6.91 cfs @ 4.03 fps)
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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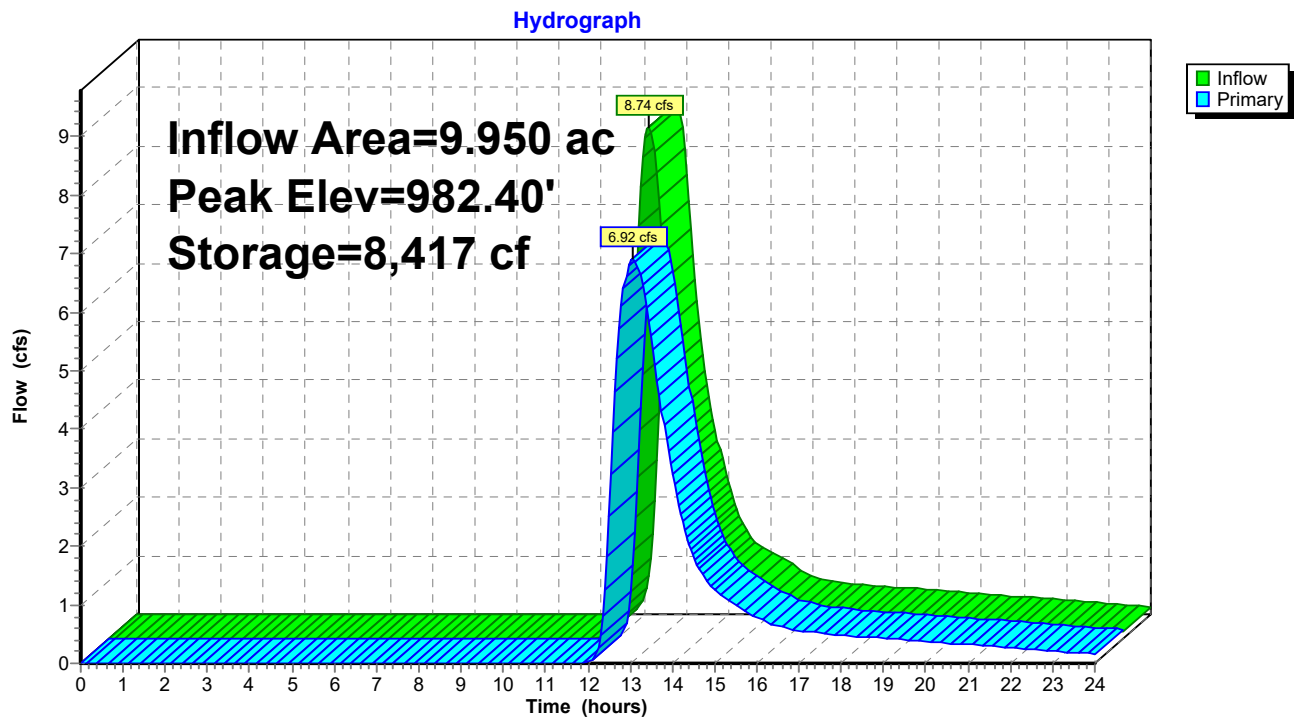
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Pond 5P: Pond 5 - Proposed



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Stage-Discharge for Pond 5P: Pond 5 - Proposed

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
981.00	0.00	983.08	9.81	985.16	15.71
981.04	0.01	983.12	9.96	985.20	15.80
981.08	0.04	983.16	10.10	985.24	15.90
981.12	0.08	983.20	10.25	985.28	15.99
981.16	0.14	983.24	10.39	985.32	16.08
981.20	0.21	983.28	10.52	985.36	16.17
981.24	0.30	983.32	10.66	985.40	16.26
981.28	0.41	983.36	10.80	985.44	16.34
981.32	0.53	983.40	10.93	985.48	16.43
981.36	0.67	983.44	11.06	985.52	16.52
981.40	0.81	983.48	11.19	985.56	16.61
981.44	0.98	983.52	11.32	985.60	16.70
981.48	1.15	983.56	11.45	985.64	16.78
981.52	1.34	983.60	11.57	985.68	17.17
981.56	1.53	983.64	11.70	985.72	17.80
981.60	1.74	983.68	11.82	985.76	18.59
981.64	1.96	983.72	11.94	985.80	19.51
981.68	2.19	983.76	12.06	985.84	20.55
981.72	2.42	983.80	12.18	985.88	21.71
981.76	2.67	983.84	12.30	985.92	22.97
981.80	2.92	983.88	12.42	985.96	24.33
981.84	3.18	983.92	12.53	986.00	25.79
981.88	3.44	983.96	12.65	986.04	27.34
981.92	3.71	984.00	12.76	986.08	29.04
981.96	3.98	984.04	12.88	986.12	30.84
982.00	4.26	984.08	12.99	986.16	32.74
982.04	4.54	984.12	13.10	986.20	34.75
982.08	4.82	984.16	13.21	986.24	36.85
982.12	5.10	984.20	13.32	986.28	38.83
982.16	5.38	984.24	13.43	986.32	40.87
982.20	5.65	984.28	13.53	986.36	42.96
982.24	5.92	984.32	13.64	986.40	45.10
982.28	6.19	984.36	13.75	986.44	47.30
982.32	6.44	984.40	13.85	986.48	49.55
982.36	6.69	984.44	13.96	986.52	51.84
982.40	6.92	984.48	14.06	986.56	54.19
982.44	7.12	984.52	14.16	986.60	56.58
982.48	7.30	984.56	14.26	986.64	59.02
982.52	7.47	984.60	14.36	986.68	61.56
982.56	7.66	984.64	14.46	986.72	64.16
982.60	7.84	984.68	14.56	986.76	66.80
982.64	8.03	984.72	14.66	986.80	69.50
982.68	8.21	984.76	14.76	986.84	72.24
982.72	8.38	984.80	14.86	986.88	74.90
982.76	8.55	984.84	14.96	986.92	77.61
982.80	8.72	984.88	15.05	986.96	80.34
982.84	8.88	984.92	15.15	987.00	83.11
982.88	9.04	984.96	15.24		
982.92	9.20	985.00	15.34		
982.96	9.36	985.04	15.43		
983.00	9.51	985.08	15.53		
983.04	9.66	985.12	15.62		

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Summary for Pond 6K: Kettle 6

Inflow Area = 2.780 ac, 0.00% Impervious, Inflow Depth > 1.61" for 100 yr event
 Inflow = 2.68 cfs @ 12.74 hrs, Volume= 0.374 af
 Outflow = 0.12 cfs @ 19.97 hrs, Volume= 0.110 af, Atten= 96%, Lag= 433.4 min
 Discarded = 0.12 cfs @ 19.97 hrs, Volume= 0.110 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,011.81' @ 19.97 hrs Surf.Area= 20,262 sf Storage= 12,024 cf

Plug-Flow detention time= 343.5 min calculated for 0.110 af (29% of inflow)
 Center-of-Mass det. time= 226.3 min (1,100.9 - 874.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.00'	47,595 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,011.00	9,905	0	0	9,905
1,012.00	23,150	16,066	16,066	23,158
1,013.00	40,730	31,529	47,595	40,749

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,011.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1,001.00' Phase-In= 0.01'
#2	Primary	1,012.70'	8.0' 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

Discarded OutFlow Max=0.12 cfs @ 19.97 hrs HW=1,011.81' (Free Discharge)

↑**1=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=1,011.00' TW=981.00' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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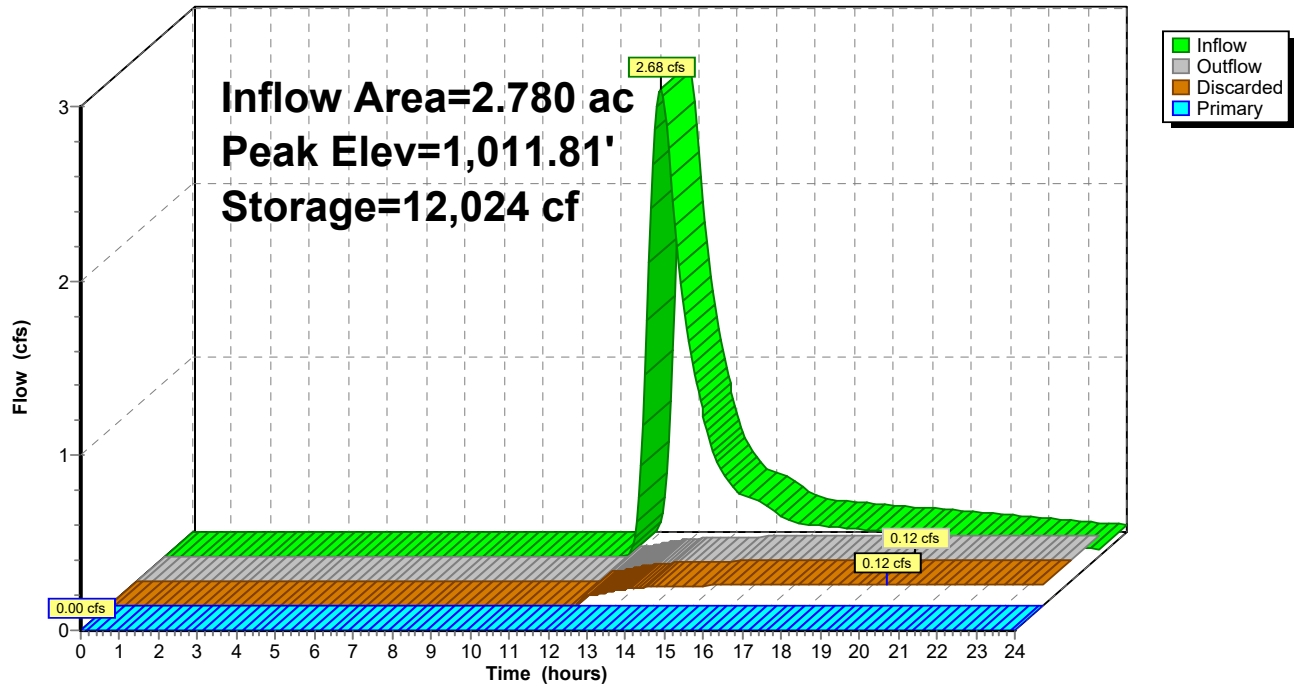
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Pond 6K: Kettle 6

Hydrograph



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Stage-Discharge for Pond 6K: Kettle 6

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
1,011.00	0.00	0.00	0.00	1,012.04	0.14	0.14	0.00
1,011.02	0.06	0.06	0.00	1,012.06	0.14	0.14	0.00
1,011.04	0.06	0.06	0.00	1,012.08	0.15	0.15	0.00
1,011.06	0.06	0.06	0.00	1,012.10	0.15	0.15	0.00
1,011.08	0.06	0.06	0.00	1,012.12	0.15	0.15	0.00
1,011.10	0.06	0.06	0.00	1,012.14	0.15	0.15	0.00
1,011.12	0.06	0.06	0.00	1,012.16	0.15	0.15	0.00
1,011.14	0.06	0.06	0.00	1,012.18	0.16	0.16	0.00
1,011.16	0.07	0.07	0.00	1,012.20	0.16	0.16	0.00
1,011.18	0.07	0.07	0.00	1,012.22	0.16	0.16	0.00
1,011.20	0.07	0.07	0.00	1,012.24	0.16	0.16	0.00
1,011.22	0.07	0.07	0.00	1,012.26	0.16	0.16	0.00
1,011.24	0.07	0.07	0.00	1,012.28	0.17	0.17	0.00
1,011.26	0.07	0.07	0.00	1,012.30	0.17	0.17	0.00
1,011.28	0.07	0.07	0.00	1,012.32	0.17	0.17	0.00
1,011.30	0.08	0.08	0.00	1,012.34	0.17	0.17	0.00
1,011.32	0.08	0.08	0.00	1,012.36	0.17	0.17	0.00
1,011.34	0.08	0.08	0.00	1,012.38	0.18	0.18	0.00
1,011.36	0.08	0.08	0.00	1,012.40	0.18	0.18	0.00
1,011.38	0.08	0.08	0.00	1,012.42	0.18	0.18	0.00
1,011.40	0.08	0.08	0.00	1,012.44	0.18	0.18	0.00
1,011.42	0.09	0.09	0.00	1,012.46	0.19	0.19	0.00
1,011.44	0.09	0.09	0.00	1,012.48	0.19	0.19	0.00
1,011.46	0.09	0.09	0.00	1,012.50	0.19	0.19	0.00
1,011.48	0.09	0.09	0.00	1,012.52	0.19	0.19	0.00
1,011.50	0.09	0.09	0.00	1,012.54	0.19	0.19	0.00
1,011.52	0.09	0.09	0.00	1,012.56	0.20	0.20	0.00
1,011.54	0.09	0.09	0.00	1,012.58	0.20	0.20	0.00
1,011.56	0.10	0.10	0.00	1,012.60	0.20	0.20	0.00
1,011.58	0.10	0.10	0.00	1,012.62	0.20	0.20	0.00
1,011.60	0.10	0.10	0.00	1,012.64	0.21	0.21	0.00
1,011.62	0.10	0.10	0.00	1,012.66	0.21	0.21	0.00
1,011.64	0.10	0.10	0.00	1,012.68	0.21	0.21	0.00
1,011.66	0.11	0.11	0.00	1,012.70	0.21	0.21	0.00
1,011.68	0.11	0.11	0.00	1,012.72	0.27	0.22	0.06
1,011.70	0.11	0.11	0.00	1,012.74	0.38	0.22	0.16
1,011.72	0.11	0.11	0.00	1,012.76	0.51	0.22	0.29
1,011.74	0.11	0.11	0.00	1,012.78	0.67	0.22	0.45
1,011.76	0.11	0.11	0.00	1,012.80	0.86	0.23	0.63
1,011.78	0.12	0.12	0.00	1,012.82	1.06	0.23	0.83
1,011.80	0.12	0.12	0.00	1,012.84	1.27	0.23	1.04
1,011.82	0.12	0.12	0.00	1,012.86	1.51	0.23	1.27
1,011.84	0.12	0.12	0.00	1,012.88	1.76	0.24	1.52
1,011.86	0.12	0.12	0.00	1,012.90	2.02	0.24	1.78
1,011.88	0.13	0.13	0.00	1,012.92	2.30	0.24	2.06
1,011.90	0.13	0.13	0.00	1,012.94	2.60	0.24	2.36
1,011.92	0.13	0.13	0.00	1,012.96	2.91	0.25	2.66
1,011.94	0.13	0.13	0.00	1,012.98	3.23	0.25	2.98
1,011.96	0.13	0.13	0.00	1,013.00	3.57	0.25	3.32
1,011.98	0.14	0.14	0.00				
1,012.00	0.14	0.14	0.00				
1,012.02	0.14	0.14	0.00				

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Summary for Pond 10K: Kettle 10

Inflow Area = 20.720 ac, 5.12% Impervious, Inflow Depth > 0.18" for 100 yr event
 Inflow = 2.88 cfs @ 12.54 hrs, Volume= 0.313 af
 Outflow = 0.04 cfs @ 23.25 hrs, Volume= 0.035 af, Atten= 99%, Lag= 642.5 min
 Discarded = 0.04 cfs @ 23.25 hrs, Volume= 0.035 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 957.77' @ 23.25 hrs Surf.Area= 6,029 sf Storage= 12,135 cf

Plug-Flow detention time= 374.3 min calculated for 0.035 af (11% of inflow)

Center-of-Mass det. time= 255.5 min (1,108.6 - 853.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	953.00'	105,225 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
953.00	170	0	0	170
954.00	700	405	405	705
955.00	1,590	1,115	1,520	1,602
956.00	3,290	2,389	3,909	3,311
957.00	4,855	4,047	7,956	4,892
958.00	6,405	5,612	13,568	6,465
959.00	8,045	7,209	20,778	8,132
960.00	9,695	8,857	29,635	9,815
961.00	11,530	10,599	40,234	11,686
962.00	13,595	12,548	52,783	13,789
963.00	15,870	14,718	67,500	16,104
964.00	19,025	17,424	84,924	19,294
965.00	21,605	20,301	105,225	21,923

Device	Routing	Invert	Outlet Devices
#1	Discarded	953.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 943.00' Phase-In= 0.01'
#2	Primary	964.50'	15.0' 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

Discarded OutFlow Max=0.04 cfs @ 23.25 hrs HW=957.77' (Free Discharge)↑ **1=Exfiltration** (Controls 0.04 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=953.00' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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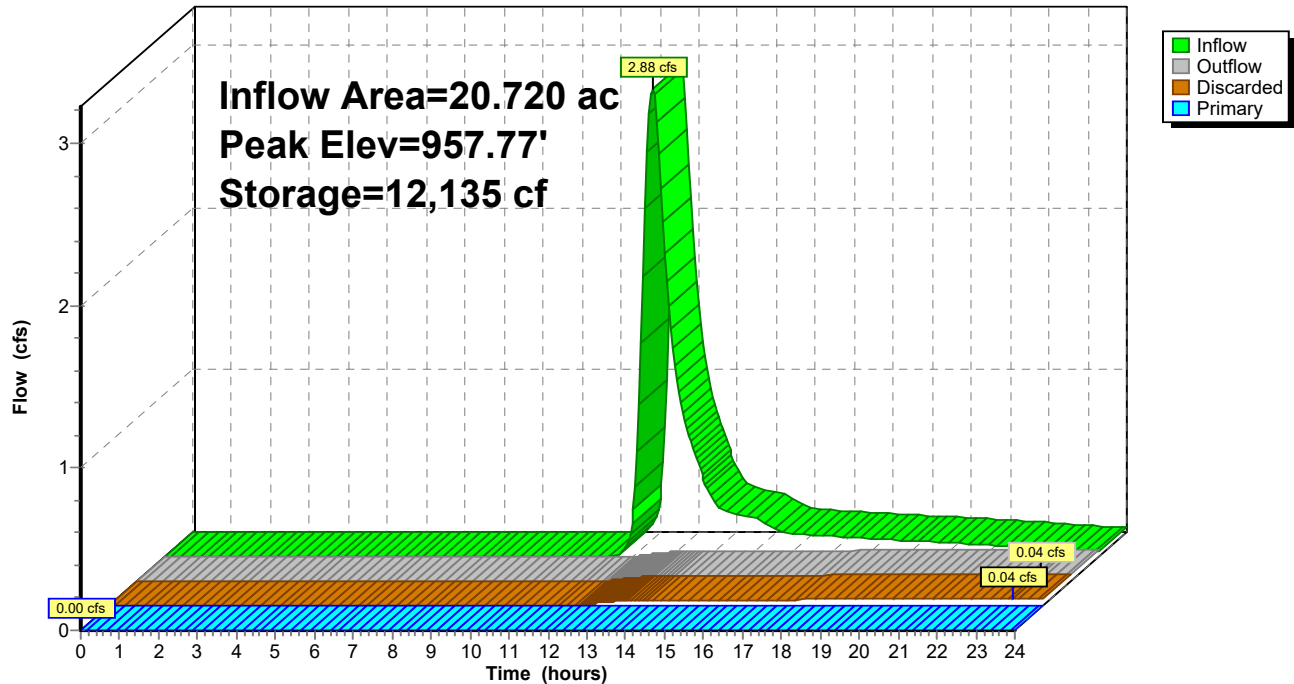
MSE 24-hr 3 100 yr Rainfall=6.18"

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Pond 10K: Kettle 10

Hydrograph



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Stage-Discharge for Pond 10K: Kettle 10

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
953.00	0.00	0.00	0.00	960.80	0.08	0.08	0.00
953.15	0.00	0.00	0.00	960.95	0.08	0.08	0.00
953.30	0.00	0.00	0.00	961.10	0.08	0.08	0.00
953.45	0.00	0.00	0.00	961.25	0.09	0.09	0.00
953.60	0.00	0.00	0.00	961.40	0.09	0.09	0.00
953.75	0.00	0.00	0.00	961.55	0.09	0.09	0.00
953.90	0.00	0.00	0.00	961.70	0.09	0.09	0.00
954.05	0.00	0.00	0.00	961.85	0.10	0.10	0.00
954.20	0.01	0.01	0.00	962.00	0.10	0.10	0.00
954.35	0.01	0.01	0.00	962.15	0.10	0.10	0.00
954.50	0.01	0.01	0.00	962.30	0.10	0.10	0.00
954.65	0.01	0.01	0.00	962.45	0.11	0.11	0.00
954.80	0.01	0.01	0.00	962.60	0.11	0.11	0.00
954.95	0.01	0.01	0.00	962.75	0.11	0.11	0.00
955.10	0.01	0.01	0.00	962.90	0.11	0.11	0.00
955.25	0.01	0.01	0.00	963.05	0.12	0.12	0.00
955.40	0.01	0.01	0.00	963.20	0.12	0.12	0.00
955.55	0.01	0.01	0.00	963.35	0.12	0.12	0.00
955.70	0.02	0.02	0.00	963.50	0.13	0.13	0.00
955.85	0.02	0.02	0.00	963.65	0.13	0.13	0.00
956.00	0.02	0.02	0.00	963.80	0.14	0.14	0.00
956.15	0.02	0.02	0.00	963.95	0.14	0.14	0.00
956.30	0.02	0.02	0.00	964.10	0.14	0.14	0.00
956.45	0.02	0.02	0.00	964.25	0.15	0.15	0.00
956.60	0.03	0.03	0.00	964.40	0.15	0.15	0.00
956.75	0.03	0.03	0.00	964.55	0.57	0.15	0.42
956.90	0.03	0.03	0.00	964.70	3.50	0.16	3.34
957.05	0.03	0.03	0.00	964.85	8.06	0.16	7.90
957.20	0.03	0.03	0.00	965.00	14.11	0.16	13.95
957.35	0.03	0.03	0.00				
957.50	0.04	0.04	0.00				
957.65	0.04	0.04	0.00				
957.80	0.04	0.04	0.00				
957.95	0.04	0.04	0.00				
958.10	0.04	0.04	0.00				
958.25	0.05	0.05	0.00				
958.40	0.05	0.05	0.00				
958.55	0.05	0.05	0.00				
958.70	0.05	0.05	0.00				
958.85	0.05	0.05	0.00				
959.00	0.05	0.05	0.00				
959.15	0.06	0.06	0.00				
959.30	0.06	0.06	0.00				
959.45	0.06	0.06	0.00				
959.60	0.06	0.06	0.00				
959.75	0.06	0.06	0.00				
959.90	0.07	0.07	0.00				
960.05	0.07	0.07	0.00				
960.20	0.07	0.07	0.00				
960.35	0.07	0.07	0.00				
960.50	0.07	0.07	0.00				
960.65	0.08	0.08	0.00				

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Summary for Pond 11P: Pond 11

Inflow Area = 15.970 ac, 12.46% Impervious, Inflow Depth > 0.61" for 100 yr event
 Inflow = 7.38 cfs @ 12.56 hrs, Volume= 0.814 af
 Outflow = 4.49 cfs @ 12.92 hrs, Volume= 0.802 af, Atten= 39%, Lag= 21.4 min
 Primary = 4.49 cfs @ 12.92 hrs, Volume= 0.802 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 965.91' @ 12.92 hrs Surf.Area= 5,555 sf Storage= 8,639 cf

Plug-Flow detention time= 35.8 min calculated for 0.802 af (99% of inflow)
 Center-of-Mass det. time= 27.9 min (864.0 - 836.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	964.00'	32,230 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
964.00	3,560	0	0	3,560
965.00	4,560	4,050	4,050	4,585
966.00	5,660	5,100	9,150	5,714
967.00	6,895	6,267	15,417	6,980
968.00	8,290	7,582	22,999	8,409
969.00	10,205	9,231	32,230	10,354

Device	Routing	Invert	Outlet Devices
#1	Primary	964.00'	12.0" Round Culvert L= 65.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 964.00' / 962.00' S= 0.0308 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Primary	968.00'	15.0' 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=4.49 cfs @ 12.92 hrs HW=965.91' TW=948.68' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 4.49 cfs @ 5.71 fps)
 — **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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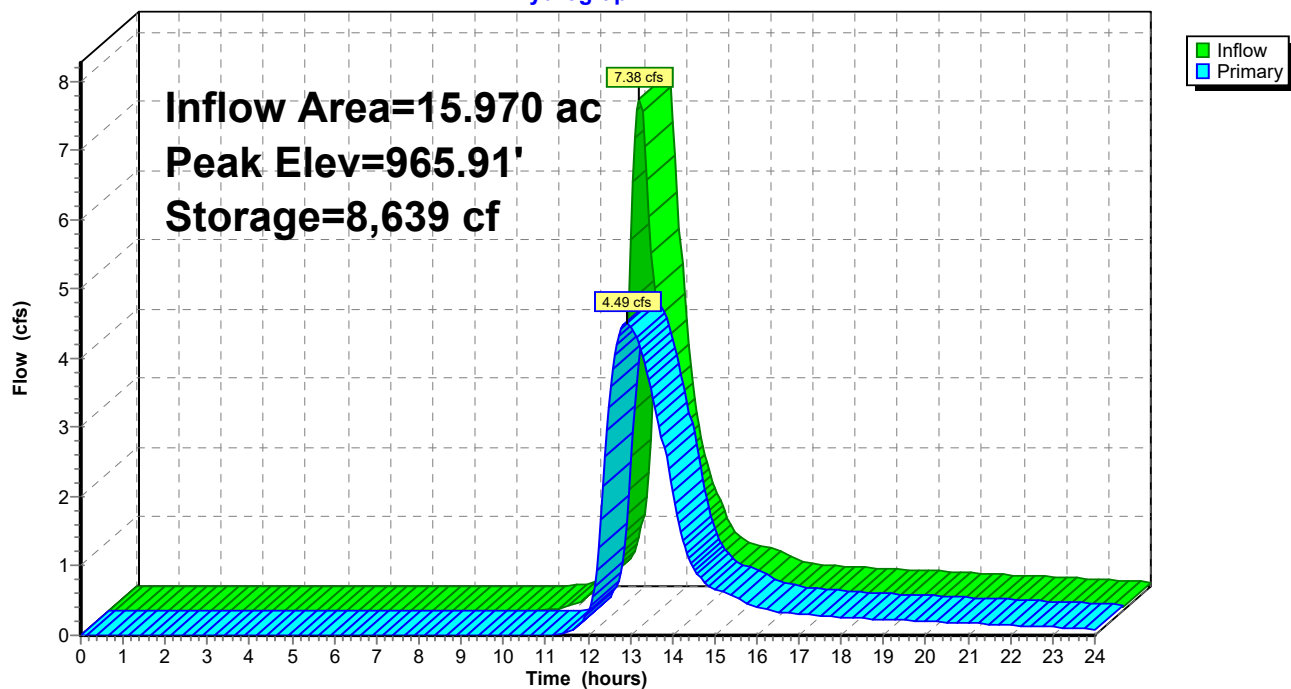
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Pond 11P: Pond 11

Hydrograph



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Stage-Discharge for Pond 11P: Pond 11

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
964.00	0.00	966.60	5.48
964.05	0.01	966.65	5.55
964.10	0.04	966.70	5.61
964.15	0.10	966.75	5.67
964.20	0.17	966.80	5.74
964.25	0.26	966.85	5.80
964.30	0.37	966.90	5.86
964.35	0.49	966.95	5.92
964.40	0.63	967.00	5.98
964.45	0.78	967.05	6.04
964.50	0.95	967.10	6.10
964.55	1.12	967.15	6.16
964.60	1.30	967.20	6.21
964.65	1.48	967.25	6.27
964.70	1.67	967.30	6.33
964.75	1.86	967.35	6.38
964.80	2.05	967.40	6.44
964.85	2.23	967.45	6.50
964.90	2.40	967.50	6.55
964.95	2.56	967.55	6.60
965.00	2.67	967.60	6.66
965.05	2.80	967.65	6.71
965.10	2.93	967.70	6.76
965.15	3.05	967.75	6.82
965.20	3.16	967.80	6.87
965.25	3.28	967.85	6.92
965.30	3.38	967.90	6.97
965.35	3.49	967.95	7.02
965.40	3.59	968.00	7.07
965.45	3.69	968.05	7.54
965.50	3.78	968.10	8.36
965.55	3.88	968.15	9.39
965.60	3.97	968.20	10.61
965.65	4.06	968.25	12.02
965.70	4.14	968.30	13.60
965.75	4.23	968.35	15.32
965.80	4.31	968.40	17.18
965.85	4.39	968.45	19.27
965.90	4.47	968.50	21.51
965.95	4.55	968.55	23.92
966.00	4.63	968.60	26.48
966.05	4.71	968.65	28.91
966.10	4.78	968.70	31.43
966.15	4.86	968.75	34.03
966.20	4.93	968.80	36.71
966.25	5.00	968.85	39.48
966.30	5.07	968.90	42.32
966.35	5.14	968.95	45.24
966.40	5.21	969.00	48.22
966.45	5.28		
966.50	5.35		
966.55	5.41		

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Summary for Pond 12K: Kettle 12

Inflow Area = 18.870 ac, 5.56% Impervious, Inflow Depth > 0.52" for 100 yr event
 Inflow = 8.31 cfs @ 12.46 hrs, Volume= 0.820 af
 Outflow = 0.11 cfs @ 22.71 hrs, Volume= 0.102 af, Atten= 99%, Lag= 615.2 min
 Discarded = 0.11 cfs @ 22.71 hrs, Volume= 0.102 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 959.38' @ 22.71 hrs Surf.Area= 16,756 sf Storage= 31,386 cf

Plug-Flow detention time= 371.3 min calculated for 0.102 af (12% of inflow)
 Center-of-Mass det. time= 258.2 min (1,097.3 - 839.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	956.00'	246,697 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
956.00	495	0	0	495
957.00	6,410	2,895	2,895	6,413
958.00	11,490	8,827	11,723	11,504
959.00	15,695	13,538	25,261	15,729
960.00	18,580	17,117	42,378	18,651
961.00	21,310	19,929	62,307	21,426
962.00	23,950	22,617	84,925	24,120
963.00	26,775	25,349	110,274	27,000
964.00	30,155	28,448	138,722	30,433
965.00	34,835	32,467	171,189	35,156
966.00	37,955	36,384	207,573	38,349
967.00	40,304	39,124	246,697	40,800

Device	Routing	Invert	Outlet Devices
#1	Discarded	956.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 946.00' Phase-In= 0.01'
#2	Primary	963.00'	15.0' 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

Discarded OutFlow Max=0.11 cfs @ 22.71 hrs HW=959.38' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=956.00' TW=953.00' (Dynamic Tailwater)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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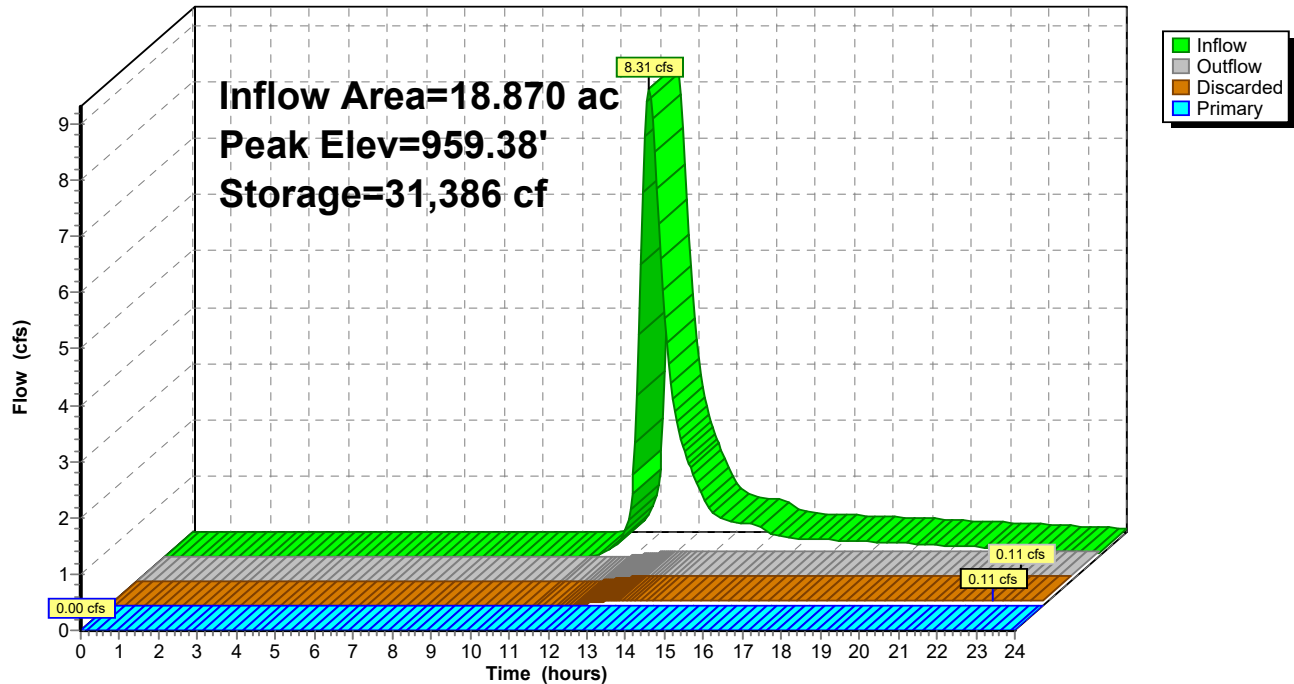
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Pond 12K: Kettle 12

Hydrograph



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Stage-Discharge for Pond 12K: Kettle 12

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
956.00	0.00	0.00	0.00	963.80	29.10	0.23	28.87
956.15	0.01	0.01	0.00	963.95	37.49	0.23	37.26
956.30	0.01	0.01	0.00	964.10	46.70	0.24	46.46
956.45	0.01	0.01	0.00	964.25	56.53	0.24	56.29
956.60	0.02	0.02	0.00	964.40	66.59	0.25	66.34
956.75	0.02	0.02	0.00	964.55	76.89	0.25	76.63
956.90	0.03	0.03	0.00	964.70	88.04	0.26	87.77
957.05	0.04	0.04	0.00	964.85	99.91	0.27	99.64
957.20	0.04	0.04	0.00	965.00	112.28	0.27	112.01
957.35	0.05	0.05	0.00	965.15	125.12	0.28	124.84
957.50	0.05	0.05	0.00	965.30	138.41	0.28	138.13
957.65	0.06	0.06	0.00	965.45	152.15	0.29	151.86
957.80	0.06	0.06	0.00	965.60	166.31	0.29	166.02
957.95	0.07	0.07	0.00	965.75	180.89	0.30	180.59
958.10	0.07	0.07	0.00	965.90	195.87	0.30	195.57
958.25	0.08	0.08	0.00	966.05	211.24	0.31	210.93
958.40	0.08	0.08	0.00	966.20	226.99	0.31	226.68
958.55	0.09	0.09	0.00	966.35	243.12	0.32	242.81
958.70	0.09	0.09	0.00	966.50	259.62	0.32	259.30
958.85	0.09	0.09	0.00	966.65	276.47	0.32	276.14
959.00	0.10	0.10	0.00	966.80	293.67	0.33	293.34
959.15	0.10	0.10	0.00	966.95	311.21	0.33	310.88
959.30	0.11	0.11	0.00				
959.45	0.11	0.11	0.00				
959.60	0.11	0.11	0.00				
959.75	0.12	0.12	0.00				
959.90	0.12	0.12	0.00				
960.05	0.13	0.13	0.00				
960.20	0.13	0.13	0.00				
960.35	0.13	0.13	0.00				
960.50	0.14	0.14	0.00				
960.65	0.14	0.14	0.00				
960.80	0.14	0.14	0.00				
960.95	0.15	0.15	0.00				
961.10	0.15	0.15	0.00				
961.25	0.16	0.16	0.00				
961.40	0.16	0.16	0.00				
961.55	0.16	0.16	0.00				
961.70	0.17	0.17	0.00				
961.85	0.17	0.17	0.00				
962.00	0.17	0.17	0.00				
962.15	0.18	0.18	0.00				
962.30	0.18	0.18	0.00				
962.45	0.19	0.19	0.00				
962.60	0.19	0.19	0.00				
962.75	0.19	0.19	0.00				
962.90	0.20	0.20	0.00				
963.05	0.62	0.20	0.42				
963.20	3.55	0.21	3.34				
963.35	8.11	0.21	7.90				
963.50	14.16	0.22	13.95				
963.65	21.43	0.22	21.20				

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Summary for Pond 13K: Kettle 13

Inflow Area = 15.930 ac, 5.27% Impervious, Inflow Depth > 0.13" for 100 yr event
 Inflow = 1.59 cfs @ 12.53 hrs, Volume= 0.171 af
 Outflow = 1.55 cfs @ 12.59 hrs, Volume= 0.171 af, Atten= 2%, Lag= 3.9 min
 Discarded = 0.01 cfs @ 12.59 hrs, Volume= 0.003 af
 Primary = 1.54 cfs @ 12.59 hrs, Volume= 0.168 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 959.88' @ 12.59 hrs Surf.Area= 1,729 sf Storage= 329 cf

Plug-Flow detention time= 5.3 min calculated for 0.171 af (100% of inflow)

Center-of-Mass det. time= 3.7 min (856.2 - 852.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	959.40'	55,187 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
959.40	50	0	0	50	
960.00	2,560	594	594	2,561	
961.00	4,110	3,305	3,898	4,124	
962.00	5,850	4,954	8,853	5,882	
963.00	7,130	6,479	15,332	7,193	
964.00	8,425	7,768	23,101	8,525	
965.00	9,765	9,087	32,187	9,907	
966.00	11,570	10,655	42,842	11,749	
967.00	13,137	12,345	55,187	13,365	

Device	Routing	Invert	Outlet Devices
#1	Discarded	959.40'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 949.00' Phase-In= 0.01'
#2	Primary	959.48'	24.0" Round Culvert X 2.00 L= 92.5' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 959.48' / 958.97' S= 0.0055 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#3	Primary	966.00'	15.0' 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

Discarded OutFlow Max=0.01 cfs @ 12.59 hrs HW=959.88' (Free Discharge)↑ **1=Exfiltration** (Controls 0.01 cfs)**Primary OutFlow** Max=1.54 cfs @ 12.59 hrs HW=959.88' TW=958.06' (Dynamic Tailwater)↑ **2=Culvert** (Barrel Controls 1.54 cfs @ 2.65 fps)↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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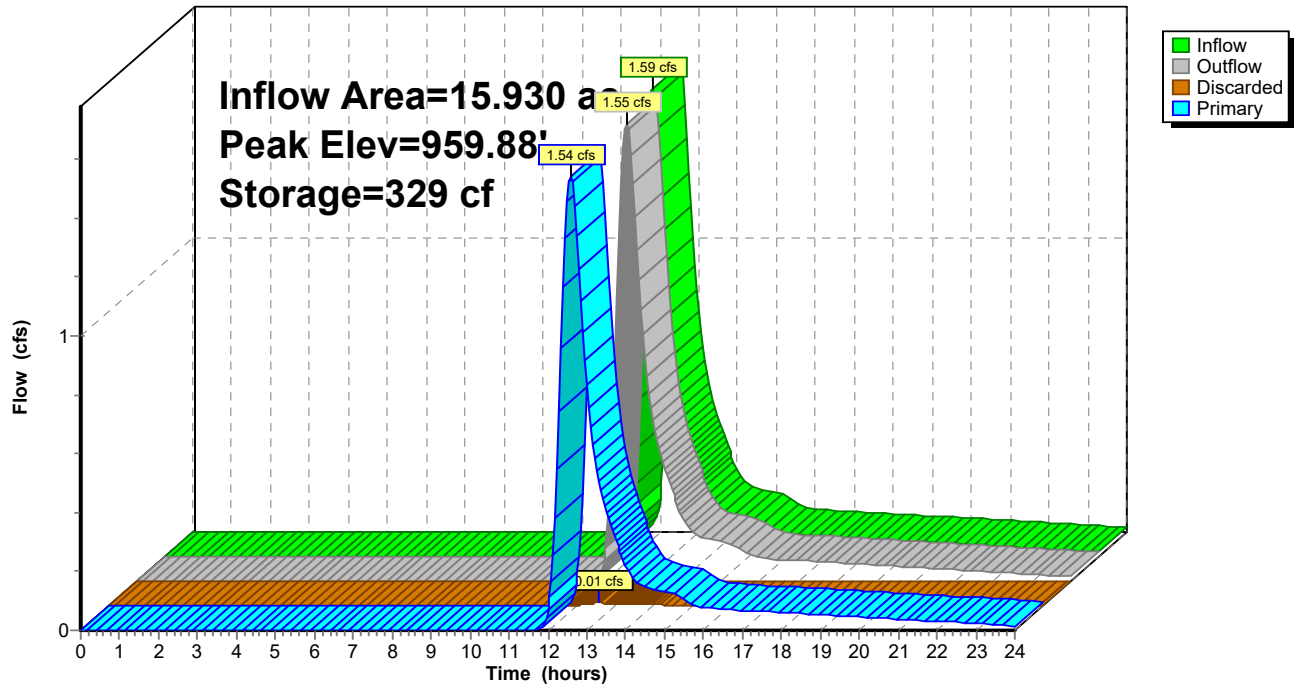
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Pond 13K: Kettle 13

Hydrograph



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Stage-Discharge for Pond 13K: Kettle 13

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
959.40	0.00	0.00	0.00	964.60	62.70	0.07	62.63
959.50	0.00	0.00	0.00	964.70	63.55	0.07	63.49
959.60	0.13	0.00	0.13	964.80	64.40	0.07	64.33
959.70	0.47	0.00	0.46	964.90	65.24	0.07	65.17
959.80	1.01	0.01	1.00	965.00	66.06	0.07	65.99
959.90	1.75	0.01	1.74	965.10	66.88	0.07	66.80
960.00	2.67	0.01	2.66	965.20	67.68	0.07	67.61
960.10	3.76	0.02	3.75	965.30	68.48	0.07	68.40
960.20	5.00	0.02	4.98	965.40	69.26	0.08	69.19
960.30	6.38	0.02	6.36	965.50	70.04	0.08	69.96
960.40	7.88	0.02	7.86	965.60	70.81	0.08	70.73
960.50	9.49	0.02	9.48	965.70	71.57	0.08	71.49
960.60	11.21	0.02	11.18	965.80	72.33	0.08	72.24
960.70	13.00	0.02	12.98	965.90	73.07	0.08	72.99
960.80	14.86	0.02	14.84	966.00	73.81	0.09	73.72
960.90	16.78	0.02	16.76	966.10	75.72	0.09	75.63
961.00	18.74	0.02	18.72	966.20	78.60	0.09	78.52
961.10	20.73	0.03	20.70	966.30	82.20	0.09	82.11
961.20	22.72	0.03	22.69	966.40	86.40	0.09	86.31
961.30	24.70	0.03	24.68	966.50	91.34	0.09	91.25
961.40	26.66	0.03	26.63	966.60	96.91	0.09	96.82
961.50	28.55	0.03	28.52	966.70	102.46	0.09	102.36
961.60	30.37	0.03	30.34	966.80	108.34	0.10	108.24
961.70	32.07	0.03	32.04	966.90	114.53	0.10	114.44
961.80	33.61	0.03	33.58	967.00	121.02	0.10	120.92
961.90	34.93	0.04	34.89				
962.00	35.92	0.04	35.89				
962.10	36.34	0.04	36.30				
962.20	36.50	0.04	36.46				
962.30	37.95	0.04	37.91				
962.40	39.35	0.04	39.31				
962.50	40.70	0.04	40.66				
962.60	42.01	0.04	41.97				
962.70	43.28	0.04	43.24				
962.80	44.51	0.05	44.47				
962.90	45.71	0.05	45.67				
963.00	46.88	0.05	46.84				
963.10	48.02	0.05	47.98				
963.20	49.14	0.05	49.09				
963.30	50.23	0.05	50.18				
963.40	51.29	0.05	51.24				
963.50	52.34	0.05	52.29				
963.60	53.36	0.05	53.31				
963.70	54.37	0.05	54.31				
963.80	55.36	0.06	55.30				
963.90	56.33	0.06	56.27				
964.00	57.28	0.06	57.22				
964.10	58.22	0.06	58.16				
964.20	59.14	0.06	59.08				
964.30	60.05	0.06	59.99				
964.40	60.94	0.06	60.88				
964.50	61.83	0.06	61.76				

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Summary for Pond 14K: Kettle 14

Inflow Area = 14.920 ac, 5.63% Impervious, Inflow Depth > 1.15" for 100 yr event
 Inflow = 6.34 cfs @ 13.48 hrs, Volume= 1.425 af
 Outflow = 0.12 cfs @ 24.00 hrs, Volume= 0.095 af, Atten= 98%, Lag= 631.1 min
 Discarded = 0.12 cfs @ 24.00 hrs, Volume= 0.095 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 961.28' @ 24.00 hrs Surf.Area= 15,554 sf Storage= 57,953 cf

Plug-Flow detention time= 371.1 min calculated for 0.095 af (7% of inflow)
 Center-of-Mass det. time= 220.4 min (1,130.3 - 909.8)

Volume	Invert	Avail.Storage	Storage Description	
#1	955.00'	69,834 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
955.00	3,070	0	0	3,070
956.00	5,250	4,112	4,112	5,262
957.00	7,260	6,228	10,339	7,291
958.00	9,090	8,158	18,497	9,149
959.00	10,725	9,896	28,394	10,821
960.00	12,545	11,623	40,017	12,681
961.00	14,795	13,655	53,671	14,969
962.00	17,570	16,163	69,834	17,780

Device	Routing	Invert	Outlet Devices
#1	Discarded	955.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 945.00' Phase-In= 0.01'
#2	Primary	961.30'	15.0' 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

Discarded OutFlow Max=0.12 cfs @ 24.00 hrs HW=961.28' (Free Discharge)

↑**1=Exfiltration** (Controls 0.12 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=955.00' TW=959.40' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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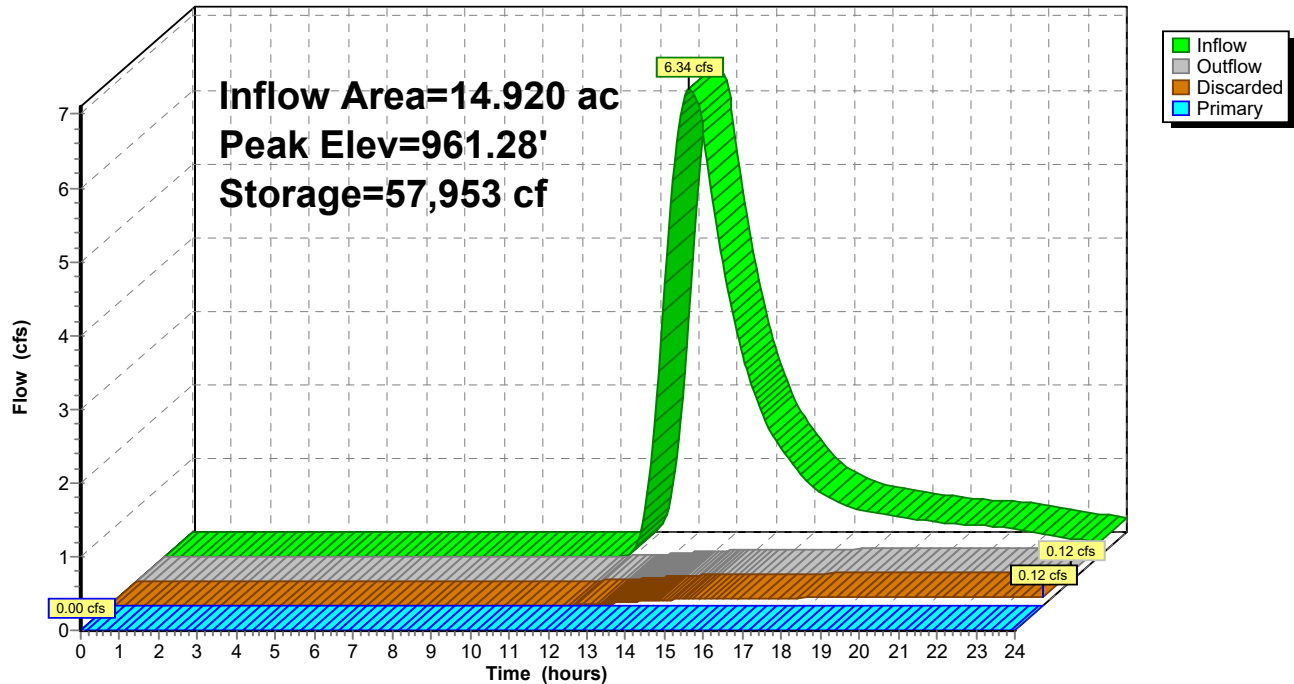
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Pond 14K: Kettle 14

Hydrograph



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Stage-Discharge for Pond 14K: Kettle 14

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
955.00	0.00	0.00	0.00	960.20	0.09	0.09	0.00
955.10	0.02	0.02	0.00	960.30	0.10	0.10	0.00
955.20	0.02	0.02	0.00	960.40	0.10	0.10	0.00
955.30	0.02	0.02	0.00	960.50	0.10	0.10	0.00
955.40	0.02	0.02	0.00	960.60	0.10	0.10	0.00
955.50	0.02	0.02	0.00	960.70	0.10	0.10	0.00
955.60	0.03	0.03	0.00	960.80	0.11	0.11	0.00
955.70	0.03	0.03	0.00	960.90	0.11	0.11	0.00
955.80	0.03	0.03	0.00	961.00	0.11	0.11	0.00
955.90	0.03	0.03	0.00	961.10	0.11	0.11	0.00
956.00	0.03	0.03	0.00	961.20	0.11	0.11	0.00
956.10	0.03	0.03	0.00	961.30	0.12	0.12	0.00
956.20	0.03	0.03	0.00	961.40	1.30	0.12	1.18
956.30	0.04	0.04	0.00	961.50	3.46	0.12	3.34
956.40	0.04	0.04	0.00	961.60	6.35	0.12	6.22
956.50	0.04	0.04	0.00	961.70	9.84	0.13	9.71
956.60	0.04	0.04	0.00	961.80	14.08	0.13	13.95
956.70	0.04	0.04	0.00	961.90	18.95	0.13	18.82
956.80	0.04	0.04	0.00	962.00	23.81	0.13	23.68
956.90	0.04	0.04	0.00				
957.00	0.05	0.05	0.00				
957.10	0.05	0.05	0.00				
957.20	0.05	0.05	0.00				
957.30	0.05	0.05	0.00				
957.40	0.05	0.05	0.00				
957.50	0.05	0.05	0.00				
957.60	0.05	0.05	0.00				
957.70	0.06	0.06	0.00				
957.80	0.06	0.06	0.00				
957.90	0.06	0.06	0.00				
958.00	0.06	0.06	0.00				
958.10	0.06	0.06	0.00				
958.20	0.06	0.06	0.00				
958.30	0.06	0.06	0.00				
958.40	0.07	0.07	0.00				
958.50	0.07	0.07	0.00				
958.60	0.07	0.07	0.00				
958.70	0.07	0.07	0.00				
958.80	0.07	0.07	0.00				
958.90	0.07	0.07	0.00				
959.00	0.07	0.07	0.00				
959.10	0.08	0.08	0.00				
959.20	0.08	0.08	0.00				
959.30	0.08	0.08	0.00				
959.40	0.08	0.08	0.00				
959.50	0.08	0.08	0.00				
959.60	0.08	0.08	0.00				
959.70	0.09	0.09	0.00				
959.80	0.09	0.09	0.00				
959.90	0.09	0.09	0.00				
960.00	0.09	0.09	0.00				
960.10	0.09	0.09	0.00				

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Summary for Pond 15K: Kettle 15

Inflow Area = 0.870 ac, 1.15% Impervious, Inflow Depth > 2.30" for 100 yr event
 Inflow = 2.27 cfs @ 12.29 hrs, Volume= 0.167 af
 Outflow = 0.03 cfs @ 21.23 hrs, Volume= 0.031 af, Atten= 99%, Lag= 536.2 min
 Discarded = 0.03 cfs @ 21.23 hrs, Volume= 0.031 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 971.90' @ 21.23 hrs Surf.Area= 5,308 sf Storage= 6,014 cf

Plug-Flow detention time= 366.6 min calculated for 0.031 af (19% of inflow)

Center-of-Mass det. time= 259.7 min (1,092.4 - 832.7)

Volume	Invert	Avail.Storage	Storage Description
#1	970.00'	13,842 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
970.00	1,620	0	0	1,620
971.00	3,050	2,298	2,298	3,060
972.00	5,595	4,259	6,556	5,615
973.00	9,120	7,286	13,842	9,153

Device	Routing	Invert	Outlet Devices
#1	Discarded	970.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 960.00' Phase-In= 0.01'
#2	Primary	972.50'	15.0' 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

Discarded OutFlow Max=0.03 cfs @ 21.23 hrs HW=971.90' (Free Discharge)↑**1=Exfiltration** (Controls 0.03 cfs)**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=970.00' TW=955.00' (Dynamic Tailwater)↑**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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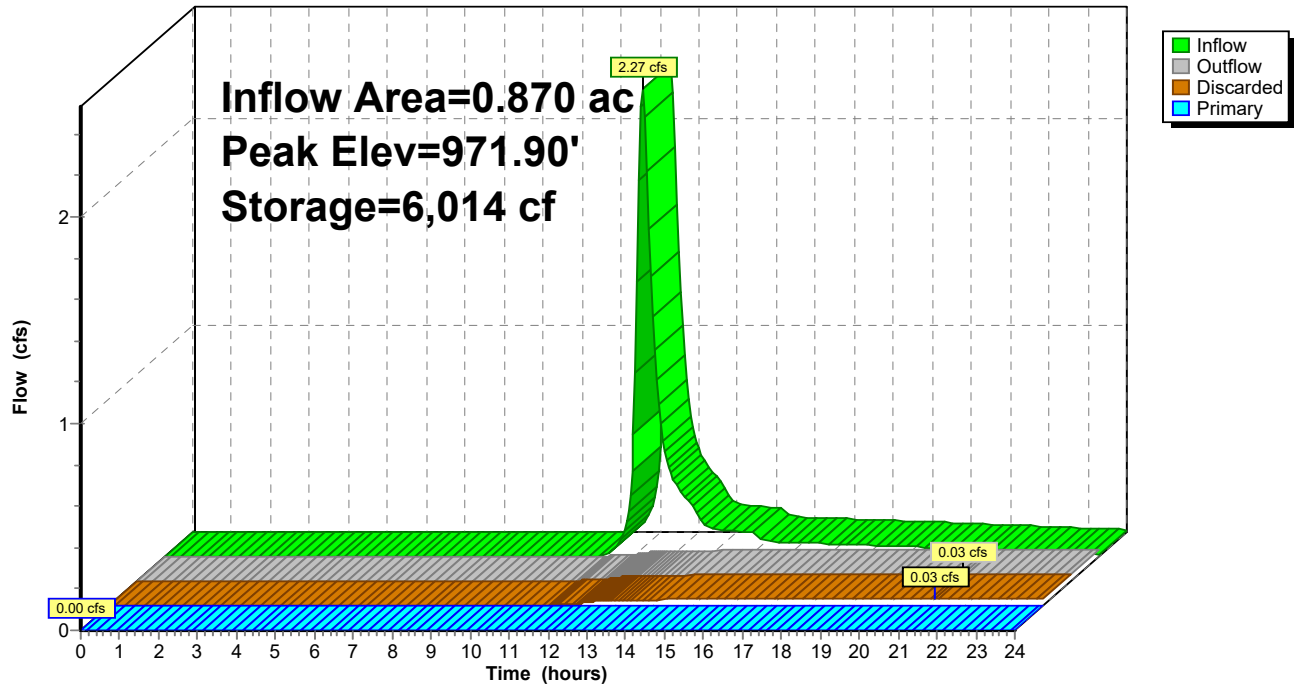
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Pond 15K: Kettle 15

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Stage-Discharge for Pond 15K: Kettle 15

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
970.00	0.00	0.00	0.00	972.60	1.23	0.05	1.18
970.05	0.01	0.01	0.00	972.65	2.22	0.05	2.17
970.10	0.01	0.01	0.00	972.70	3.39	0.05	3.34
970.15	0.01	0.01	0.00	972.75	4.75	0.05	4.70
970.20	0.01	0.01	0.00	972.80	6.28	0.05	6.22
970.25	0.01	0.01	0.00	972.85	7.95	0.05	7.90
970.30	0.01	0.01	0.00	972.90	9.77	0.06	9.71
970.35	0.01	0.01	0.00	972.95	11.81	0.06	11.75
970.40	0.01	0.01	0.00	973.00	14.01	0.06	13.95
970.45	0.01	0.01	0.00				
970.50	0.01	0.01	0.00				
970.55	0.01	0.01	0.00				
970.60	0.01	0.01	0.00				
970.65	0.01	0.01	0.00				
970.70	0.02	0.02	0.00				
970.75	0.02	0.02	0.00				
970.80	0.02	0.02	0.00				
970.85	0.02	0.02	0.00				
970.90	0.02	0.02	0.00				
970.95	0.02	0.02	0.00				
971.00	0.02	0.02	0.00				
971.05	0.02	0.02	0.00				
971.10	0.02	0.02	0.00				
971.15	0.02	0.02	0.00				
971.20	0.02	0.02	0.00				
971.25	0.02	0.02	0.00				
971.30	0.02	0.02	0.00				
971.35	0.02	0.02	0.00				
971.40	0.02	0.02	0.00				
971.45	0.02	0.02	0.00				
971.50	0.03	0.03	0.00				
971.55	0.03	0.03	0.00				
971.60	0.03	0.03	0.00				
971.65	0.03	0.03	0.00				
971.70	0.03	0.03	0.00				
971.75	0.03	0.03	0.00				
971.80	0.03	0.03	0.00				
971.85	0.03	0.03	0.00				
971.90	0.03	0.03	0.00				
971.95	0.03	0.03	0.00				
972.00	0.03	0.03	0.00				
972.05	0.04	0.04	0.00				
972.10	0.04	0.04	0.00				
972.15	0.04	0.04	0.00				
972.20	0.04	0.04	0.00				
972.25	0.04	0.04	0.00				
972.30	0.04	0.04	0.00				
972.35	0.04	0.04	0.00				
972.40	0.04	0.04	0.00				
972.45	0.04	0.04	0.00				
972.50	0.05	0.05	0.00				
972.55	0.46	0.05	0.42				

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Summary for Pond 16K: Kettle 16

Inflow Area = 5.920 ac, 0.00% Impervious, Inflow Depth > 0.84" for 100 yr event
 Inflow = 1.38 cfs @ 14.23 hrs, Volume= 0.414 af
 Outflow = 0.10 cfs @ 21.38 hrs, Volume= 0.063 af, Atten= 92%, Lag= 428.9 min
 Discarded = 0.07 cfs @ 21.38 hrs, Volume= 0.058 af
 Primary = 0.04 cfs @ 21.38 hrs, Volume= 0.005 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,007.01' @ 21.38 hrs Surf.Area= 10,650 sf Storage= 15,507 cf

Plug-Flow detention time= 364.5 min calculated for 0.063 af (15% of inflow)
 Center-of-Mass det. time= 211.7 min (1,134.0 - 922.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	1,005.00'	41,902 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,005.00	4,400	0	0	4,400
1,006.00	8,010	6,116	6,116	8,021
1,007.00	10,625	9,287	15,402	10,658
1,008.00	13,320	11,947	27,349	13,380
1,009.00	15,820	14,552	41,902	15,917

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,005.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 995.00' Phase-In= 0.01'
#2	Primary	1,007.00'	15.0' 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

Discarded OutFlow Max=0.07 cfs @ 21.38 hrs HW=1,007.01' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=0.04 cfs @ 21.38 hrs HW=1,007.01' TW=961.17' (Dynamic Tailwater)

↑ **2=Broad-Crested Rectangular Weir**(Weir Controls 0.04 cfs @ 0.25 fps)

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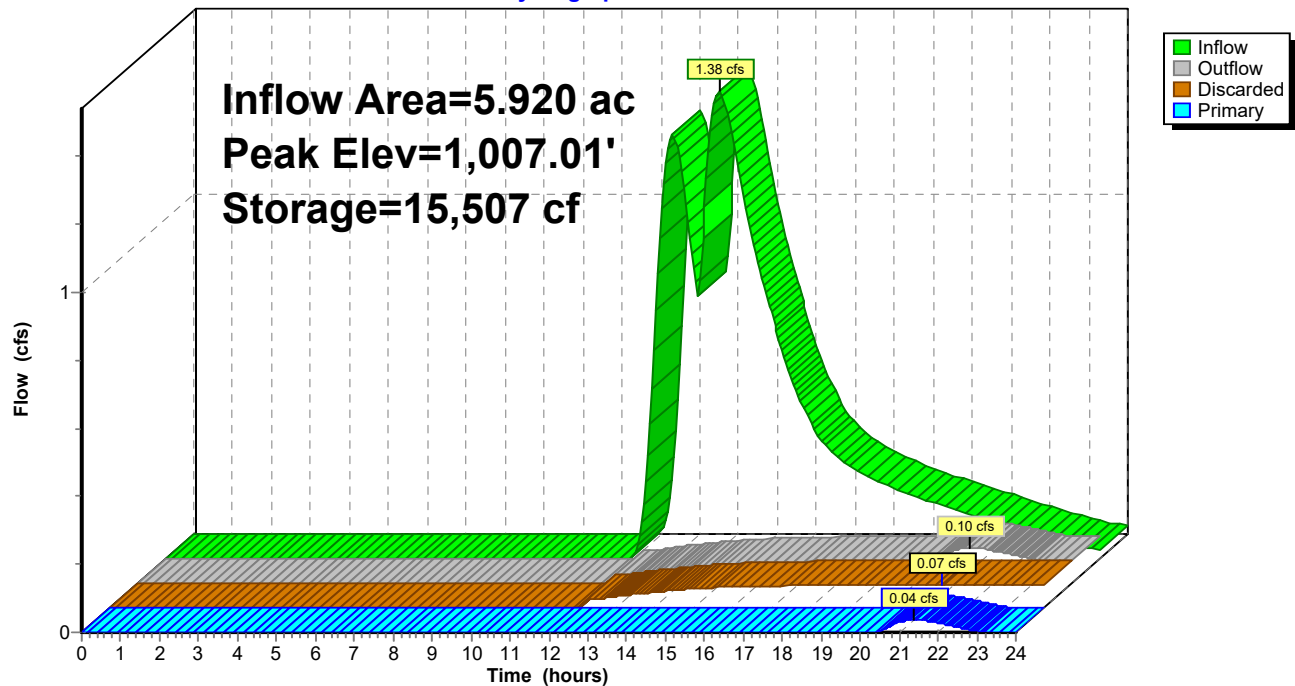
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Pond 16K: Kettle 16

Hydrograph



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Stage-Discharge for Pond 16K: Kettle 16

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
1,005.00	0.00	0.00	0.00	1,007.60	18.90	0.08	18.82
1,005.05	0.03	0.03	0.00	1,007.65	21.29	0.08	21.20
1,005.10	0.03	0.03	0.00	1,007.70	23.76	0.08	23.68
1,005.15	0.03	0.03	0.00	1,007.75	26.32	0.08	26.23
1,005.20	0.03	0.03	0.00	1,007.80	28.96	0.08	28.87
1,005.25	0.03	0.03	0.00	1,007.85	31.68	0.09	31.59
1,005.30	0.03	0.03	0.00	1,007.90	34.47	0.09	34.39
1,005.35	0.03	0.03	0.00	1,007.95	37.35	0.09	37.26
1,005.40	0.03	0.03	0.00	1,008.00	40.29	0.09	40.20
1,005.45	0.03	0.03	0.00	1,008.05	43.38	0.09	43.29
1,005.50	0.04	0.04	0.00	1,008.10	46.56	0.09	46.46
1,005.55	0.04	0.04	0.00	1,008.15	49.81	0.09	49.71
1,005.60	0.04	0.04	0.00	1,008.20	53.13	0.09	53.04
1,005.65	0.04	0.04	0.00	1,008.25	56.38	0.09	56.29
1,005.70	0.04	0.04	0.00	1,008.30	59.68	0.10	59.59
1,005.75	0.04	0.04	0.00	1,008.35	63.03	0.10	62.94
1,005.80	0.04	0.04	0.00	1,008.40	66.44	0.10	66.34
1,005.85	0.04	0.04	0.00	1,008.45	69.83	0.10	69.73
1,005.90	0.05	0.05	0.00	1,008.50	73.26	0.10	73.16
1,005.95	0.05	0.05	0.00	1,008.55	76.73	0.10	76.63
1,006.00	0.05	0.05	0.00	1,008.60	80.25	0.10	80.14
1,006.05	0.05	0.05	0.00	1,008.65	84.03	0.10	83.93
1,006.10	0.05	0.05	0.00	1,008.70	87.88	0.10	87.77
1,006.15	0.05	0.05	0.00	1,008.75	91.78	0.10	91.68
1,006.20	0.05	0.05	0.00	1,008.80	95.74	0.11	95.63
1,006.25	0.05	0.05	0.00	1,008.85	99.75	0.11	99.64
1,006.30	0.05	0.05	0.00	1,008.90	103.82	0.11	103.71
1,006.35	0.05	0.05	0.00	1,008.95	107.94	0.11	107.83
1,006.40	0.06	0.06	0.00	1,009.00	112.12	0.11	112.01
1,006.45	0.06	0.06	0.00				
1,006.50	0.06	0.06	0.00				
1,006.55	0.06	0.06	0.00				
1,006.60	0.06	0.06	0.00				
1,006.65	0.06	0.06	0.00				
1,006.70	0.06	0.06	0.00				
1,006.75	0.06	0.06	0.00				
1,006.80	0.06	0.06	0.00				
1,006.85	0.06	0.06	0.00				
1,006.90	0.07	0.07	0.00				
1,006.95	0.07	0.07	0.00				
1,007.00	0.07	0.07	0.00				
1,007.05	0.49	0.07	0.42				
1,007.10	1.25	0.07	1.18				
1,007.15	2.24	0.07	2.17				
1,007.20	3.41	0.07	3.34				
1,007.25	4.77	0.07	4.70				
1,007.30	6.30	0.07	6.22				
1,007.35	7.97	0.07	7.90				
1,007.40	9.79	0.08	9.71				
1,007.45	11.83	0.08	11.75				
1,007.50	14.03	0.08	13.95				
1,007.55	16.38	0.08	16.31				

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Summary for Pond 17K: Kettle 17

Inflow Area = 4.300 ac, 0.00% Impervious, Inflow Depth > 1.61" for 100 yr event
 Inflow = 3.20 cfs @ 13.07 hrs, Volume= 0.576 af
 Outflow = 1.10 cfs @ 14.37 hrs, Volume= 0.321 af, Atten= 66%, Lag= 78.0 min
 Discarded = 0.14 cfs @ 14.37 hrs, Volume= 0.124 af
 Primary = 0.96 cfs @ 14.37 hrs, Volume= 0.197 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,012.09' @ 14.37 hrs Surf.Area= 24,000 sf Storage= 13,197 cf

Plug-Flow detention time= 221.2 min calculated for 0.321 af (56% of inflow)
 Center-of-Mass det. time= 120.4 min (1,014.2 - 893.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.00'	41,610 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,011.00	2,770	0	0	2,770
1,012.00	22,770	11,161	11,161	22,773
1,013.00	38,840	30,450	41,610	38,855

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,011.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1,001.00' Phase-In= 0.01'
#2	Primary	1,012.00'	15.0' 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

Discarded OutFlow Max=0.14 cfs @ 14.37 hrs HW=1,012.09' (Free Discharge)

↑**1=Exfiltration** (Controls 0.14 cfs)

Primary OutFlow Max=0.96 cfs @ 14.37 hrs HW=1,012.09' TW=1,006.14' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir**(Weir Controls 0.96 cfs @ 0.73 fps)

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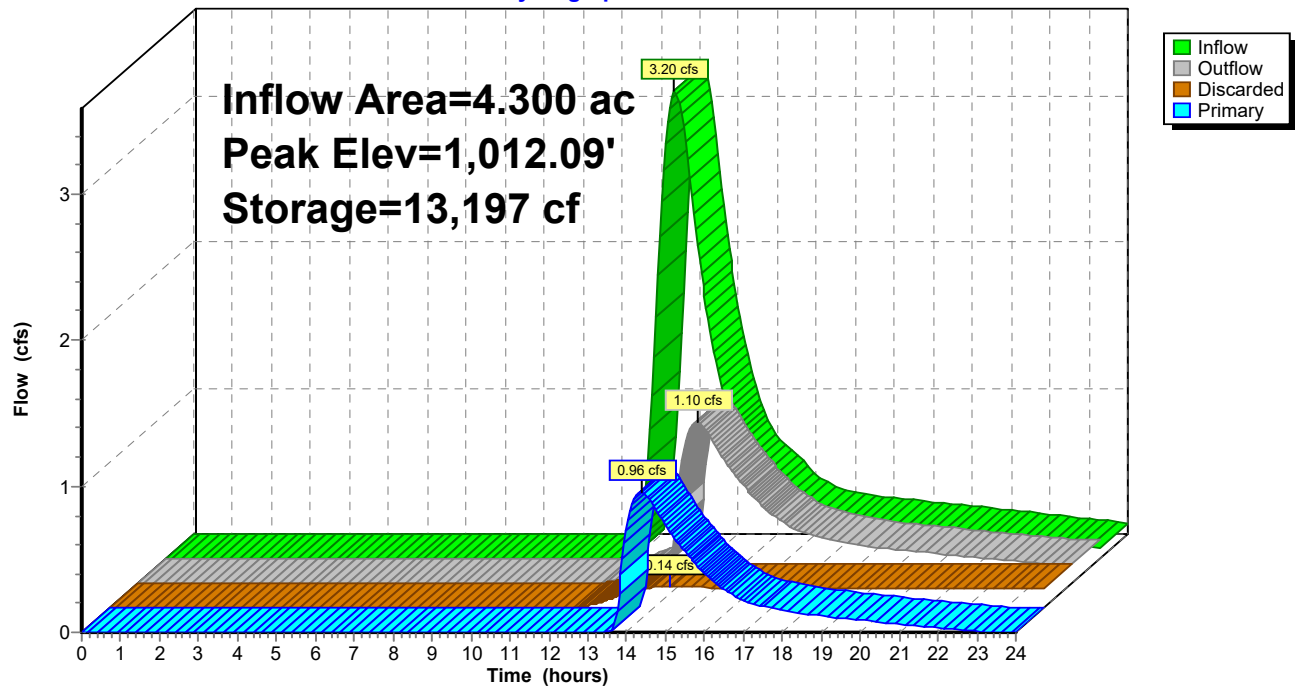
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Pond 17K: Kettle 17

Hydrograph



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Stage-Discharge for Pond 17K: Kettle 17

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
1,011.00	0.00	0.00	0.00	1,012.04	0.43	0.14	0.30
1,011.02	0.02	0.02	0.00	1,012.06	0.69	0.14	0.55
1,011.04	0.02	0.02	0.00	1,012.08	0.98	0.14	0.85
1,011.06	0.02	0.02	0.00	1,012.10	1.32	0.14	1.18
1,011.08	0.02	0.02	0.00	1,012.12	1.70	0.14	1.55
1,011.10	0.02	0.02	0.00	1,012.14	2.10	0.15	1.96
1,011.12	0.02	0.02	0.00	1,012.16	2.54	0.15	2.39
1,011.14	0.02	0.02	0.00	1,012.18	3.00	0.15	2.85
1,011.16	0.03	0.03	0.00	1,012.20	3.49	0.15	3.34
1,011.18	0.03	0.03	0.00	1,012.22	4.02	0.15	3.86
1,011.20	0.03	0.03	0.00	1,012.24	4.57	0.15	4.42
1,011.22	0.03	0.03	0.00	1,012.26	5.15	0.16	4.99
1,011.24	0.03	0.03	0.00	1,012.28	5.75	0.16	5.60
1,011.26	0.03	0.03	0.00	1,012.30	6.38	0.16	6.22
1,011.28	0.04	0.04	0.00	1,012.32	7.04	0.16	6.88
1,011.30	0.04	0.04	0.00	1,012.34	7.72	0.16	7.55
1,011.32	0.04	0.04	0.00	1,012.36	8.42	0.17	8.25
1,011.34	0.04	0.04	0.00	1,012.38	9.14	0.17	8.97
1,011.36	0.04	0.04	0.00	1,012.40	9.89	0.17	9.71
1,011.38	0.05	0.05	0.00	1,012.42	10.68	0.17	10.51
1,011.40	0.05	0.05	0.00	1,012.44	11.50	0.17	11.33
1,011.42	0.05	0.05	0.00	1,012.46	12.35	0.18	12.18
1,011.44	0.05	0.05	0.00	1,012.48	13.23	0.18	13.05
1,011.46	0.05	0.05	0.00	1,012.50	14.13	0.18	13.95
1,011.48	0.06	0.06	0.00	1,012.52	15.05	0.18	14.87
1,011.50	0.06	0.06	0.00	1,012.54	16.01	0.19	15.82
1,011.52	0.06	0.06	0.00	1,012.56	16.98	0.19	16.80
1,011.54	0.06	0.06	0.00	1,012.58	17.99	0.19	17.80
1,011.56	0.07	0.07	0.00	1,012.60	19.01	0.19	18.82
1,011.58	0.07	0.07	0.00	1,012.62	19.96	0.19	19.76
1,011.60	0.07	0.07	0.00	1,012.64	20.92	0.20	20.72
1,011.62	0.07	0.07	0.00	1,012.66	21.89	0.20	21.69
1,011.64	0.08	0.08	0.00	1,012.68	22.88	0.20	22.68
1,011.66	0.08	0.08	0.00	1,012.70	23.88	0.20	23.68
1,011.68	0.08	0.08	0.00	1,012.72	24.89	0.20	24.69
1,011.70	0.08	0.08	0.00	1,012.74	25.92	0.21	25.71
1,011.72	0.09	0.09	0.00	1,012.76	26.96	0.21	26.75
1,011.74	0.09	0.09	0.00	1,012.78	28.02	0.21	27.81
1,011.76	0.09	0.09	0.00	1,012.80	29.09	0.21	28.87
1,011.78	0.10	0.10	0.00	1,012.82	30.17	0.22	29.95
1,011.80	0.10	0.10	0.00	1,012.84	31.26	0.22	31.04
1,011.82	0.10	0.10	0.00	1,012.86	32.37	0.22	32.14
1,011.84	0.11	0.11	0.00	1,012.88	33.48	0.22	33.26
1,011.86	0.11	0.11	0.00	1,012.90	34.61	0.23	34.39
1,011.88	0.11	0.11	0.00	1,012.92	35.75	0.23	35.53
1,011.90	0.12	0.12	0.00	1,012.94	36.91	0.23	36.68
1,011.92	0.12	0.12	0.00	1,012.96	38.07	0.23	37.84
1,011.94	0.12	0.12	0.00	1,012.98	39.25	0.24	39.01
1,011.96	0.13	0.13	0.00	1,013.00	40.44	0.24	40.20
1,011.98	0.13	0.13	0.00				
1,012.00	0.13	0.13	0.00				
1,012.02	0.24	0.13	0.11				

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Summary for Pond 18B: Existing Infiltration Basin

Inflow Area = 5.850 ac, 7.18% Impervious, Inflow Depth > 3.52" for 100 yr event
 Inflow = 14.97 cfs @ 12.60 hrs, Volume= 1.718 af
 Outflow = 0.71 cfs @ 15.82 hrs, Volume= 0.674 af, Atten= 95%, Lag= 193.5 min
 Discarded = 0.71 cfs @ 15.82 hrs, Volume= 0.674 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 993.65' @ 15.82 hrs Surf.Area= 18,568 sf Storage= 54,603 cf

Plug-Flow detention time= 340.1 min calculated for 0.674 af (39% of inflow)
 Center-of-Mass det. time= 247.8 min (1,080.1 - 832.3)

Volume	Invert	Avail.Storage	Storage Description	
#1	989.00'	83,684 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
989.00	600	0	0	600
990.00	9,570	4,189	4,189	9,573
991.00	11,810	10,670	14,859	11,842
992.00	14,165	12,970	27,829	14,232
993.00	16,675	15,403	43,232	16,780
994.00	19,650	18,142	61,374	19,793
995.00	25,080	22,310	83,684	25,249

Device	Routing	Invert	Outlet Devices
#1	Discarded	989.00'	1.300 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 979.00'
#2	Primary	994.65'	15.0' 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

Discarded OutFlow Max=0.71 cfs @ 15.82 hrs HW=993.65' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.71 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=989.00' TW=989.00' (Dynamic Tailwater)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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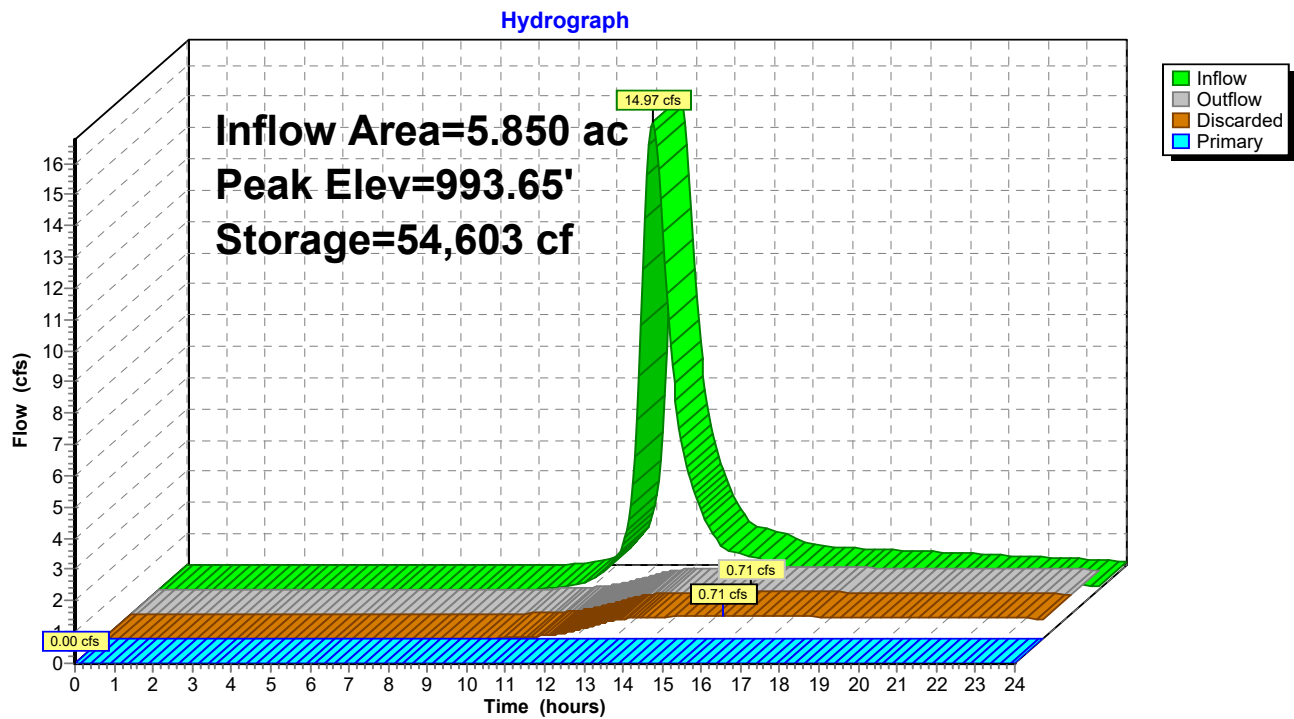
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Pond 18B: Existing Infiltration Basin



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Stage-Discharge for Pond 18B: Existing Infiltration Basin

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
989.00	0.00	0.00	0.00	994.20	0.80	0.80	0.00
989.10	0.03	0.03	0.00	994.30	0.82	0.82	0.00
989.20	0.05	0.05	0.00	994.40	0.85	0.85	0.00
989.30	0.07	0.07	0.00	994.50	0.87	0.87	0.00
989.40	0.09	0.09	0.00	994.60	0.89	0.89	0.00
989.50	0.12	0.12	0.00	994.70	1.33	0.91	0.42
989.60	0.14	0.14	0.00	994.80	3.11	0.94	2.17
989.70	0.18	0.18	0.00	994.90	5.66	0.96	4.70
989.80	0.22	0.22	0.00	995.00	8.88	0.98	7.90
989.90	0.26	0.26	0.00				
990.00	0.30	0.30	0.00				
990.10	0.31	0.31	0.00				
990.20	0.32	0.32	0.00				
990.30	0.33	0.33	0.00				
990.40	0.34	0.34	0.00				
990.50	0.35	0.35	0.00				
990.60	0.36	0.36	0.00				
990.70	0.37	0.37	0.00				
990.80	0.38	0.38	0.00				
990.90	0.39	0.39	0.00				
991.00	0.40	0.40	0.00				
991.10	0.41	0.41	0.00				
991.20	0.42	0.42	0.00				
991.30	0.43	0.43	0.00				
991.40	0.44	0.44	0.00				
991.50	0.45	0.45	0.00				
991.60	0.46	0.46	0.00				
991.70	0.47	0.47	0.00				
991.80	0.48	0.48	0.00				
991.90	0.49	0.49	0.00				
992.00	0.51	0.51	0.00				
992.10	0.52	0.52	0.00				
992.20	0.53	0.53	0.00				
992.30	0.54	0.54	0.00				
992.40	0.55	0.55	0.00				
992.50	0.56	0.56	0.00				
992.60	0.57	0.57	0.00				
992.70	0.59	0.59	0.00				
992.80	0.60	0.60	0.00				
992.90	0.61	0.61	0.00				
993.00	0.62	0.62	0.00				
993.10	0.64	0.64	0.00				
993.20	0.65	0.65	0.00				
993.30	0.66	0.66	0.00				
993.40	0.68	0.68	0.00				
993.50	0.69	0.69	0.00				
993.60	0.70	0.70	0.00				
993.70	0.72	0.72	0.00				
993.80	0.73	0.73	0.00				
993.90	0.75	0.75	0.00				
994.00	0.76	0.76	0.00				
994.10	0.78	0.78	0.00				

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Summary for Pond 20P: Pond 20

Inflow Area = 15.520 ac, 24.81% Impervious, Inflow Depth > 2.00" for 100 yr event
 Inflow = 14.02 cfs @ 13.18 hrs, Volume= 2.587 af
 Outflow = 6.12 cfs @ 14.25 hrs, Volume= 2.540 af, Atten= 56%, Lag= 64.0 min
 Primary = 6.12 cfs @ 14.25 hrs, Volume= 2.540 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 993.08' @ 14.25 hrs Surf.Area= 13,928 sf Storage= 40,266 cf

Plug-Flow detention time= 81.5 min calculated for 2.540 af (98% of inflow)
 Center-of-Mass det. time= 71.9 min (946.0 - 874.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	989.00'	58,314 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
989.00	7,075	0	0	7,075
990.00	7,850	7,459	7,459	7,908
991.00	9,485	8,655	16,114	9,576
992.00	11,475	10,464	26,578	11,599
993.00	13,730	12,586	39,164	13,889
994.00	16,310	15,002	54,165	16,505
994.25	16,880	4,149	58,314	17,086

Device	Routing	Invert	Outlet Devices
#1	Primary	989.00'	12.0" Round Culvert L= 90.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 989.00' / 988.00' S= 0.0111 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Primary	993.25'	15.0' 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=6.12 cfs @ 14.25 hrs HW=993.08' TW=952.54' (Dynamic Tailwater)

1=Culvert (Barrel Controls 6.12 cfs @ 7.79 fps)
 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

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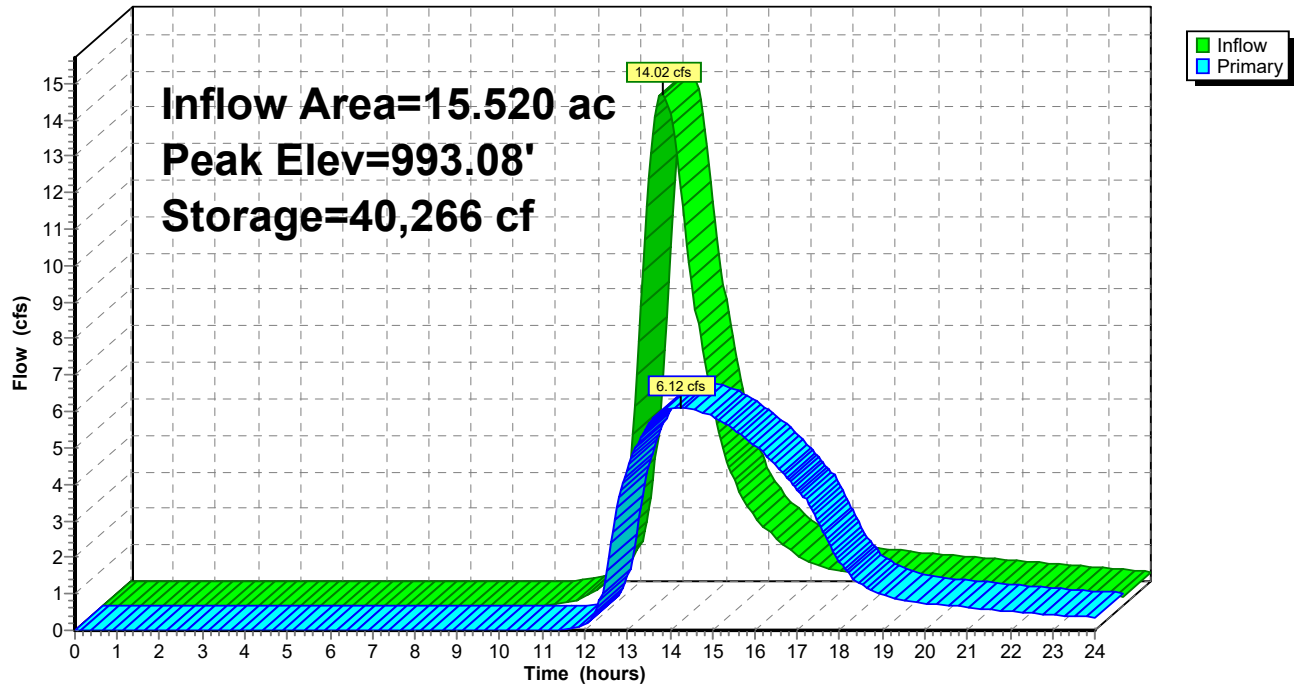
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Pond 20P: Pond 20

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MSE 24-hr 3 100 yr Rainfall=6.18"

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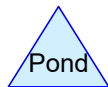
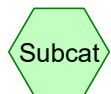
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Stage-Discharge for Pond 20P: Pond 20

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
989.00	0.00	991.08	4.37	993.16	6.18
989.04	0.01	991.12	4.41	993.20	6.21
989.08	0.03	991.16	4.45	993.24	6.24
989.12	0.06	991.20	4.49	993.28	6.46
989.16	0.11	991.24	4.54	993.32	6.99
989.20	0.17	991.28	4.58	993.36	7.69
989.24	0.24	991.32	4.62	993.40	8.53
989.28	0.32	991.36	4.66	993.44	9.48
989.32	0.42	991.40	4.69	993.48	10.55
989.36	0.52	991.44	4.73	993.52	11.73
989.40	0.63	991.48	4.77	993.56	13.02
989.44	0.75	991.52	4.81	993.60	14.40
989.48	0.88	991.56	4.85	993.64	15.87
989.52	1.01	991.60	4.89	993.68	17.47
989.56	1.15	991.64	4.92	993.72	19.19
989.60	1.30	991.68	4.96	993.76	21.02
989.64	1.45	991.72	5.00	993.80	22.94
989.68	1.60	991.76	5.03	993.84	24.97
989.72	1.75	991.80	5.07	993.88	26.94
989.76	1.90	991.84	5.11	993.92	28.90
989.80	2.05	991.88	5.14	993.96	30.93
989.84	2.20	991.92	5.18	994.00	33.01
989.88	2.34	991.96	5.21	994.04	35.14
989.92	2.47	992.00	5.25	994.08	37.32
989.96	2.58	992.04	5.28	994.12	39.56
990.00	2.67	992.08	5.32	994.16	41.84
990.04	2.78	992.12	5.35	994.20	44.17
990.08	2.88	992.16	5.39	994.24	46.54
990.12	2.98	992.20	5.42		
990.16	3.07	992.24	5.45		
990.20	3.16	992.28	5.49		
990.24	3.25	992.32	5.52		
990.28	3.34	992.36	5.55		
990.32	3.42	992.40	5.59		
990.36	3.51	992.44	5.62		
990.40	3.59	992.48	5.65		
990.44	3.64	992.52	5.69		
990.48	3.69	992.56	5.72		
990.52	3.74	992.60	5.75		
990.56	3.78	992.64	5.78		
990.60	3.83	992.68	5.81		
990.64	3.88	992.72	5.84		
990.68	3.93	992.76	5.88		
990.72	3.97	992.80	5.91		
990.76	4.02	992.84	5.94		
990.80	4.07	992.88	5.97		
990.84	4.11	992.92	6.00		
990.88	4.16	992.96	6.03		
990.92	4.20	993.00	6.06		
990.96	4.24	993.04	6.09		
991.00	4.29	993.08	6.12		
991.04	4.33	993.12	6.15		

Future Conditions

HydroCAD Modeling



Routing Diagram for Future_010

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.570	70	1/2 acre lots (F1)
2.110	75	1/4 acre lots (F10, F12, F13, F14, F15)
4.290	78	Area C from LCL High School Report (F18)
0.950	69	cropland (F1, F20)
15.530	61	grass (F1, F10, F11, F12, F14, F15, F16, F17, F18, F19, F2, F20, F3, F5)
12.670	98	impervious (F1, F10, F11, F12, F14, F15, F16, F17, F18, F19, F2, F20, F3, F5)
0.540	98	water (F11, F20, F5)
25.550	55	woods (F1, F10, F11, F12, F13, F14, F15, F16, F17, F18, F2, F20, F3, F5)
64.210	68	TOTAL AREA

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentF1: Subarea 1	Runoff Area=11.900 ac 0.67% Impervious Runoff Depth>0.15" Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=60 Runoff=0.53 cfs 0.144 af
SubcatchmentF10: Subarea 10	Runoff Area=1.850 ac 0.54% Impervious Runoff Depth>0.15" Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=60 Runoff=0.10 cfs 0.023 af
SubcatchmentF11: Subarea 11	Runoff Area=3.120 ac 34.62% Impervious Runoff Depth>0.48" Flow Length=220' Tc=39.8 min CN=72 Runoff=0.93 cfs 0.124 af
SubcatchmentF12: Subarea 12	Runoff Area=2.940 ac 7.14% Impervious Runoff Depth>0.31" Flow Length=190' Slope=0.1300 '/' Tc=29.4 min CN=67 Runoff=0.58 cfs 0.077 af
SubcatchmentF13: Subarea 13	Runoff Area=1.010 ac 0.00% Impervious Runoff Depth>0.15" Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=60 Runoff=0.05 cfs 0.012 af
SubcatchmentF14: Subarea 14	Runoff Area=7.020 ac 12.54% Impervious Runoff Depth>0.21" Flow Length=895' Tc=76.0 min CN=63 Runoff=0.45 cfs 0.122 af
SubcatchmentF15: Subarea 15	Runoff Area=0.870 ac 1.15% Impervious Runoff Depth>0.21" Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=63 Runoff=0.11 cfs 0.015 af
SubcatchmentF16: Subarea 16	Runoff Area=1.610 ac 6.83% Impervious Runoff Depth>0.13" Flow Length=205' Slope=0.0800 '/' Tc=41.5 min CN=59 Runoff=0.06 cfs 0.017 af
SubcatchmentF17: Subarea 17	Runoff Area=3.570 ac 3.08% Impervious Runoff Depth>0.09" Flow Length=225' Slope=0.0600 '/' Tc=50.2 min CN=57 Runoff=0.08 cfs 0.028 af
SubcatchmentF18: Subarea 18	Runoff Area=5.860 ac 8.87% Impervious Runoff Depth>0.63" Tc=42.8 min CN=76 Runoff=2.41 cfs 0.309 af
SubcatchmentF19: Subarea 19	Runoff Area=0.100 ac 60.00% Impervious Runoff Depth>0.98" Tc=6.0 min CN=83 Runoff=0.18 cfs 0.008 af
SubcatchmentF2: Subarea 2	Runoff Area=2.030 ac 6.40% Impervious Runoff Depth>0.13" Flow Length=240' Tc=42.4 min CN=59 Runoff=0.08 cfs 0.021 af
SubcatchmentF20: Subarea 20	Runoff Area=9.680 ac 36.26% Impervious Runoff Depth>0.55" Flow Length=905' Slope=0.0300 '/' Tc=86.0 min CN=74 Runoff=2.09 cfs 0.440 af
SubcatchmentF3: Subarea 3	Runoff Area=0.870 ac 5.75% Impervious Runoff Depth>0.13" Flow Length=140' Tc=23.0 min CN=59 Runoff=0.04 cfs 0.009 af
SubcatchmentF5: Subarea 5	Runoff Area=11.780 ac 54.75% Impervious Runoff Depth>0.82" Flow Length=300' Slope=0.0500 '/' Tc=39.5 min CN=80 Runoff=7.00 cfs 0.802 af
Pond 1K: Kettle 1	Peak Elev=947.42' Storage=26,732 cf Inflow=2.27 cfs 0.677 af Outflow=0.08 cfs 0.063 af

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Pond 2K: Kettle 2	Peak Elev=968.34' Storage=7,680 cf Inflow=0.56 cfs 0.199 af Discarded=0.04 cfs 0.022 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.022 af
Pond 3K: Kettle 3	Peak Elev=976.06' Storage=23,385 cf Inflow=3.27 cfs 0.762 af Discarded=0.07 cfs 0.057 af Primary=0.54 cfs 0.177 af Outflow=0.60 cfs 0.234 af
Pond 5P: Pond 5	Peak Elev=981.85' Storage=12,151 cf Inflow=7.00 cfs 0.802 af Outflow=3.24 cfs 0.753 af
Pond 10K: Kettle 10	Peak Elev=954.42' Storage=765 cf Inflow=0.10 cfs 0.023 af Discarded=0.01 cfs 0.005 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.005 af
Pond 11P: Pond 11	Peak Elev=964.37' Storage=1,375 cf Inflow=0.93 cfs 0.124 af Outflow=0.54 cfs 0.117 af
Pond 12K: Kettle 12	Peak Elev=956.96' Storage=2,629 cf Inflow=0.59 cfs 0.088 af Discarded=0.03 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.031 af
Pond 13K: Kettle 13	Peak Elev=959.56' Storage=27 cf Inflow=0.05 cfs 0.012 af Discarded=0.00 cfs 0.001 af Primary=0.05 cfs 0.011 af Outflow=0.05 cfs 0.012 af
Pond 14K: Kettle 14	Peak Elev=956.00' Storage=4,124 cf Inflow=0.45 cfs 0.122 af Discarded=0.03 cfs 0.027 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.027 af
Pond 15K: Kettle 15	Peak Elev=970.19' Storage=331 cf Inflow=0.11 cfs 0.015 af Discarded=0.01 cfs 0.010 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.010 af
Pond 16K: Kettle 16	Peak Elev=1,005.04' Storage=173 cf Inflow=0.06 cfs 0.017 af Discarded=0.03 cfs 0.017 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.017 af
Pond 17K: Kettle 17	Peak Elev=1,011.13' Storage=440 cf Inflow=0.08 cfs 0.028 af Discarded=0.02 cfs 0.021 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.021 af
Pond 18B: Existing Infiltration Basin	Peak Elev=990.29' Storage=7,089 cf Inflow=2.41 cfs 0.309 af Discarded=0.33 cfs 0.270 af Primary=0.00 cfs 0.000 af Outflow=0.33 cfs 0.270 af
Pond 20P: Pond 20	Peak Elev=989.65' Storage=4,789 cf Inflow=2.09 cfs 0.440 af Outflow=1.50 cfs 0.415 af

Total Runoff Area = 64.210 ac Runoff Volume = 2.151 af Average Runoff Depth = 0.40"
79.43% Pervious = 51.000 ac 20.57% Impervious = 13.210 ac

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MSE 24-hr 3 2 yr Rainfall=2.70"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentF1: Subarea 1	Runoff Area=11.900 ac 0.67% Impervious Runoff Depth>0.23" Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=60 Runoff=1.01 cfs 0.228 af
SubcatchmentF10: Subarea 10	Runoff Area=1.850 ac 0.54% Impervious Runoff Depth>0.23" Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=60 Runoff=0.19 cfs 0.036 af
SubcatchmentF11: Subarea 11	Runoff Area=3.120 ac 34.62% Impervious Runoff Depth>0.63" Flow Length=220' Tc=39.8 min CN=72 Runoff=1.31 cfs 0.165 af
SubcatchmentF12: Subarea 12	Runoff Area=2.940 ac 7.14% Impervious Runoff Depth>0.44" Flow Length=190' Slope=0.1300 '/' Tc=29.4 min CN=67 Runoff=0.90 cfs 0.108 af
SubcatchmentF13: Subarea 13	Runoff Area=1.010 ac 0.00% Impervious Runoff Depth>0.23" Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=60 Runoff=0.10 cfs 0.019 af
SubcatchmentF14: Subarea 14	Runoff Area=7.020 ac 12.54% Impervious Runoff Depth>0.31" Flow Length=895' Tc=76.0 min CN=63 Runoff=0.75 cfs 0.181 af
SubcatchmentF15: Subarea 15	Runoff Area=0.870 ac 1.15% Impervious Runoff Depth>0.31" Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=63 Runoff=0.20 cfs 0.023 af
SubcatchmentF16: Subarea 16	Runoff Area=1.610 ac 6.83% Impervious Runoff Depth>0.21" Flow Length=205' Slope=0.0800 '/' Tc=41.5 min CN=59 Runoff=0.13 cfs 0.028 af
SubcatchmentF17: Subarea 17	Runoff Area=3.570 ac 3.08% Impervious Runoff Depth>0.16" Flow Length=225' Slope=0.0600 '/' Tc=50.2 min CN=57 Runoff=0.18 cfs 0.048 af
SubcatchmentF18: Subarea 18	Runoff Area=5.860 ac 8.87% Impervious Runoff Depth>0.81" Tc=42.8 min CN=76 Runoff=3.22 cfs 0.398 af
SubcatchmentF19: Subarea 19	Runoff Area=0.100 ac 60.00% Impervious Runoff Depth>1.21" Tc=6.0 min CN=83 Runoff=0.22 cfs 0.010 af
SubcatchmentF2: Subarea 2	Runoff Area=2.030 ac 6.40% Impervious Runoff Depth>0.21" Flow Length=240' Tc=42.4 min CN=59 Runoff=0.16 cfs 0.035 af
SubcatchmentF20: Subarea 20	Runoff Area=9.680 ac 36.26% Impervious Runoff Depth>0.72" Flow Length=905' Slope=0.0300 '/' Tc=86.0 min CN=74 Runoff=2.84 cfs 0.577 af
SubcatchmentF3: Subarea 3	Runoff Area=0.870 ac 5.75% Impervious Runoff Depth>0.21" Flow Length=140' Tc=23.0 min CN=59 Runoff=0.09 cfs 0.015 af
SubcatchmentF5: Subarea 5	Runoff Area=11.780 ac 54.75% Impervious Runoff Depth>1.03" Flow Length=300' Slope=0.0500 '/' Tc=39.5 min CN=80 Runoff=8.94 cfs 1.007 af
Pond 1K: Kettle 1	Peak Elev=948.26' Storage=37,422 cf Inflow=3.28 cfs 0.936 af Outflow=0.10 cfs 0.077 af

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Pond 2K: Kettle 2	Peak Elev=969.57' Storage=16,478 cf Inflow=1.57 cfs 0.416 af Discarded=0.05 cfs 0.038 af Primary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.038 af
Pond 3K: Kettle 3	Peak Elev=976.12' Storage=23,953 cf Inflow=4.45 cfs 0.969 af Discarded=0.07 cfs 0.059 af Primary=1.52 cfs 0.381 af Outflow=1.59 cfs 0.440 af
Pond 5P: Pond 5	Peak Elev=982.02' Storage=14,884 cf Inflow=8.94 cfs 1.007 af Outflow=4.40 cfs 0.954 af
Pond 10K: Kettle 10	Peak Elev=954.82' Storage=1,248 cf Inflow=0.19 cfs 0.036 af Discarded=0.01 cfs 0.007 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.007 af
Pond 11P: Pond 11	Peak Elev=964.46' Storage=1,751 cf Inflow=1.31 cfs 0.165 af Outflow=0.82 cfs 0.158 af
Pond 12K: Kettle 12	Peak Elev=957.16' Storage=3,985 cf Inflow=0.96 cfs 0.126 af Discarded=0.04 cfs 0.038 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.038 af
Pond 13K: Kettle 13	Peak Elev=959.59' Storage=39 cf Inflow=0.10 cfs 0.019 af Discarded=0.00 cfs 0.001 af Primary=0.10 cfs 0.018 af Outflow=0.10 cfs 0.019 af
Pond 14K: Kettle 14	Peak Elev=956.42' Storage=6,498 cf Inflow=0.75 cfs 0.181 af Discarded=0.04 cfs 0.032 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.032 af
Pond 15K: Kettle 15	Peak Elev=970.32' Storage=590 cf Inflow=0.20 cfs 0.023 af Discarded=0.01 cfs 0.011 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.011 af
Pond 16K: Kettle 16	Peak Elev=1,005.10' Storage=476 cf Inflow=0.13 cfs 0.028 af Discarded=0.03 cfs 0.025 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.025 af
Pond 17K: Kettle 17	Peak Elev=1,011.24' Storage=1,007 cf Inflow=0.18 cfs 0.048 af Discarded=0.03 cfs 0.029 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.029 af
Pond 18B: Existing Infiltration Basin	Peak Elev=990.56' Storage=9,860 cf Inflow=3.22 cfs 0.398 af Discarded=0.35 cfs 0.316 af Primary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.316 af
Pond 20P: Pond 20	Peak Elev=989.81' Storage=5,992 cf Inflow=2.84 cfs 0.577 af Outflow=2.09 cfs 0.550 af

Total Runoff Area = 64.210 ac Runoff Volume = 2.878 af Average Runoff Depth = 0.54"
79.43% Pervious = 51.000 ac 20.57% Impervious = 13.210 ac

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MSE 24-hr 3 10 yr Rainfall=3.81"

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentF1: Subarea 1	Runoff Area=11.900 ac 0.67% Impervious Runoff Depth>0.67" Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=60 Runoff=4.02 cfs 0.660 af
SubcatchmentF10: Subarea 10	Runoff Area=1.850 ac 0.54% Impervious Runoff Depth>0.67" Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=60 Runoff=0.79 cfs 0.103 af
SubcatchmentF11: Subarea 11	Runoff Area=3.120 ac 34.62% Impervious Runoff Depth>1.32" Flow Length=220' Tc=39.8 min CN=72 Runoff=3.00 cfs 0.344 af
SubcatchmentF12: Subarea 12	Runoff Area=2.940 ac 7.14% Impervious Runoff Depth>1.03" Flow Length=190' Slope=0.1300 '/' Tc=29.4 min CN=67 Runoff=2.49 cfs 0.252 af
SubcatchmentF13: Subarea 13	Runoff Area=1.010 ac 0.00% Impervious Runoff Depth>0.67" Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=60 Runoff=0.44 cfs 0.056 af
SubcatchmentF14: Subarea 14	Runoff Area=7.020 ac 12.54% Impervious Runoff Depth>0.81" Flow Length=895' Tc=76.0 min CN=63 Runoff=2.39 cfs 0.472 af
SubcatchmentF15: Subarea 15	Runoff Area=0.870 ac 1.15% Impervious Runoff Depth>0.81" Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=63 Runoff=0.71 cfs 0.059 af
SubcatchmentF16: Subarea 16	Runoff Area=1.610 ac 6.83% Impervious Runoff Depth>0.62" Flow Length=205' Slope=0.0800 '/' Tc=41.5 min CN=59 Runoff=0.57 cfs 0.083 af
SubcatchmentF17: Subarea 17	Runoff Area=3.570 ac 3.08% Impervious Runoff Depth>0.53" Flow Length=225' Slope=0.0600 '/' Tc=50.2 min CN=57 Runoff=0.91 cfs 0.159 af
SubcatchmentF18: Subarea 18	Runoff Area=5.860 ac 8.87% Impervious Runoff Depth>1.59" Tc=42.8 min CN=76 Runoff=6.62 cfs 0.776 af
SubcatchmentF19: Subarea 19	Runoff Area=0.100 ac 60.00% Impervious Runoff Depth>2.12" Tc=6.0 min CN=83 Runoff=0.38 cfs 0.018 af
SubcatchmentF2: Subarea 2	Runoff Area=2.030 ac 6.40% Impervious Runoff Depth>0.62" Flow Length=240' Tc=42.4 min CN=59 Runoff=0.71 cfs 0.105 af
SubcatchmentF20: Subarea 20	Runoff Area=9.680 ac 36.26% Impervious Runoff Depth>1.44" Flow Length=905' Slope=0.0300 '/' Tc=86.0 min CN=74 Runoff=6.11 cfs 1.164 af
SubcatchmentF3: Subarea 3	Runoff Area=0.870 ac 5.75% Impervious Runoff Depth>0.62" Flow Length=140' Tc=23.0 min CN=59 Runoff=0.43 cfs 0.045 af
SubcatchmentF5: Subarea 5	Runoff Area=11.780 ac 54.75% Impervious Runoff Depth>1.88" Flow Length=300' Slope=0.0500 '/' Tc=39.5 min CN=80 Runoff=16.79 cfs 1.845 af
Pond 1K: Kettle 1	Peak Elev=951.21' Storage=87,059 cf Inflow=8.16 cfs 2.125 af Outflow=0.15 cfs 0.126 af

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Pond 2K: Kettle 2	Peak Elev=972.78' Storage=54,387 cf Inflow=7.60 cfs 1.337 af Discarded=0.11 cfs 0.088 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.088 af
Pond 3K: Kettle 3	Peak Elev=976.33' Storage=26,074 cf Inflow=8.47 cfs 1.825 af Discarded=0.07 cfs 0.063 af Primary=7.30 cfs 1.232 af Outflow=7.37 cfs 1.294 af
Pond 5P: Pond 5	Peak Elev=982.71' Storage=26,915 cf Inflow=16.79 cfs 1.845 af Outflow=8.32 cfs 1.780 af
Pond 10K: Kettle 10	Peak Elev=955.96' Storage=3,764 cf Inflow=0.79 cfs 0.103 af Discarded=0.02 cfs 0.017 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.017 af
Pond 11P: Pond 11	Peak Elev=964.83' Storage=3,285 cf Inflow=3.00 cfs 0.344 af Outflow=2.16 cfs 0.336 af
Pond 12K: Kettle 12	Peak Elev=957.92' Storage=10,814 cf Inflow=2.82 cfs 0.306 af Discarded=0.07 cfs 0.061 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.061 af
Pond 13K: Kettle 13	Peak Elev=959.69' Storage=101 cf Inflow=0.44 cfs 0.056 af Discarded=0.00 cfs 0.002 af Primary=0.42 cfs 0.054 af Outflow=0.43 cfs 0.056 af
Pond 14K: Kettle 14	Peak Elev=957.98' Storage=18,320 cf Inflow=2.39 cfs 0.472 af Discarded=0.06 cfs 0.052 af Primary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.052 af
Pond 15K: Kettle 15	Peak Elev=970.88' Storage=1,942 cf Inflow=0.71 cfs 0.059 af Discarded=0.02 cfs 0.016 af Primary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.016 af
Pond 16K: Kettle 16	Peak Elev=1,005.47' Storage=2,408 cf Inflow=0.57 cfs 0.083 af Discarded=0.03 cfs 0.032 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.032 af
Pond 17K: Kettle 17	Peak Elev=1,011.62' Storage=4,464 cf Inflow=0.91 cfs 0.159 af Discarded=0.07 cfs 0.066 af Primary=0.00 cfs 0.000 af Outflow=0.07 cfs 0.066 af
Pond 18B: Existing Infiltration Basin	Peak Elev=991.60' Storage=22,326 cf Inflow=6.62 cfs 0.776 af Discarded=0.46 cfs 0.425 af Primary=0.00 cfs 0.000 af Outflow=0.46 cfs 0.425 af
Pond 20P: Pond 20	Peak Elev=990.65' Storage=12,913 cf Inflow=6.11 cfs 1.164 af Outflow=3.89 cfs 1.129 af

Total Runoff Area = 64.210 ac Runoff Volume = 6.142 af Average Runoff Depth = 1.15"
79.43% Pervious = 51.000 ac 20.57% Impervious = 13.210 ac

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Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentF1: Subarea 1	Runoff Area=11.900 ac 0.67% Impervious Runoff Depth>2.03" Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=60 Runoff=14.65 cfs 2.012 af
SubcatchmentF10: Subarea 10	Runoff Area=1.850 ac 0.54% Impervious Runoff Depth>2.03" Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=60 Runoff=2.88 cfs 0.313 af
SubcatchmentF11: Subarea 11	Runoff Area=3.120 ac 34.62% Impervious Runoff Depth>3.13" Flow Length=220' Tc=39.8 min CN=72 Runoff=7.38 cfs 0.814 af
SubcatchmentF12: Subarea 12	Runoff Area=2.940 ac 7.14% Impervious Runoff Depth>2.66" Flow Length=190' Slope=0.1300 '/' Tc=29.4 min CN=67 Runoff=6.99 cfs 0.652 af
SubcatchmentF13: Subarea 13	Runoff Area=1.010 ac 0.00% Impervious Runoff Depth>2.03" Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=60 Runoff=1.59 cfs 0.171 af
SubcatchmentF14: Subarea 14	Runoff Area=7.020 ac 12.54% Impervious Runoff Depth>2.28" Flow Length=895' Tc=76.0 min CN=63 Runoff=7.67 cfs 1.336 af
SubcatchmentF15: Subarea 15	Runoff Area=0.870 ac 1.15% Impervious Runoff Depth>2.30" Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=63 Runoff=2.27 cfs 0.167 af
SubcatchmentF16: Subarea 16	Runoff Area=1.610 ac 6.83% Impervious Runoff Depth>1.95" Flow Length=205' Slope=0.0800 '/' Tc=41.5 min CN=59 Runoff=2.18 cfs 0.261 af
SubcatchmentF17: Subarea 17	Runoff Area=3.570 ac 3.08% Impervious Runoff Depth>1.78" Flow Length=225' Slope=0.0600 '/' Tc=50.2 min CN=57 Runoff=3.82 cfs 0.528 af
SubcatchmentF18: Subarea 18	Runoff Area=5.860 ac 8.87% Impervious Runoff Depth>3.52" Tc=42.8 min CN=76 Runoff=14.99 cfs 1.721 af
SubcatchmentF19: Subarea 19	Runoff Area=0.100 ac 60.00% Impervious Runoff Depth>4.26" Tc=6.0 min CN=83 Runoff=0.74 cfs 0.035 af
SubcatchmentF2: Subarea 2	Runoff Area=2.030 ac 6.40% Impervious Runoff Depth>1.95" Flow Length=240' Tc=42.4 min CN=59 Runoff=2.70 cfs 0.329 af
SubcatchmentF20: Subarea 20	Runoff Area=9.680 ac 36.26% Impervious Runoff Depth>3.31" Flow Length=905' Slope=0.0300 '/' Tc=86.0 min CN=74 Runoff=14.49 cfs 2.669 af
SubcatchmentF3: Subarea 3	Runoff Area=0.870 ac 5.75% Impervious Runoff Depth>1.95" Flow Length=140' Tc=23.0 min CN=59 Runoff=1.67 cfs 0.141 af
SubcatchmentF5: Subarea 5	Runoff Area=11.780 ac 54.75% Impervious Runoff Depth>3.93" Flow Length=300' Slope=0.0500 '/' Tc=39.5 min CN=80 Runoff=35.22 cfs 3.861 af
Pond 1K: Kettle 1	Peak Elev=958.71' Storage=305,287 cf Inflow=22.67 cfs 7.280 af Outflow=0.35 cfs 0.270 af

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Pond 2K: Kettle 2	Peak Elev=974.43' Storage=84,426 cf Inflow=15.51 cfs 3.644 af Discarded=0.15 cfs 0.128 af Primary=8.38 cfs 1.863 af Outflow=8.53 cfs 1.991 af
Pond 3K: Kettle 3	Peak Elev=976.50' Storage=27,818 cf Inflow=14.12 cfs 3.917 af Discarded=0.07 cfs 0.068 af Primary=14.02 cfs 3.315 af Outflow=14.09 cfs 3.383 af
Pond 5P: Pond 5	Peak Elev=984.36' Storage=63,408 cf Inflow=35.22 cfs 3.861 af Outflow=13.76 cfs 3.776 af
Pond 10K: Kettle 10	Peak Elev=957.77' Storage=12,135 cf Inflow=2.88 cfs 0.313 af Discarded=0.04 cfs 0.035 af Primary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.035 af
Pond 11P: Pond 11	Peak Elev=967.25' Storage=17,176 cf Inflow=8.93 cfs 2.677 af Outflow=6.27 cfs 2.647 af
Pond 12K: Kettle 12	Peak Elev=959.38' Storage=31,386 cf Inflow=8.31 cfs 0.820 af Discarded=0.11 cfs 0.102 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.102 af
Pond 13K: Kettle 13	Peak Elev=959.88' Storage=329 cf Inflow=1.59 cfs 0.171 af Discarded=0.01 cfs 0.003 af Primary=1.54 cfs 0.168 af Outflow=1.55 cfs 0.171 af
Pond 14K: Kettle 14	Peak Elev=961.03' Storage=54,190 cf Inflow=7.67 cfs 1.339 af Discarded=0.11 cfs 0.094 af Primary=0.00 cfs 0.000 af Outflow=0.11 cfs 0.094 af
Pond 15K: Kettle 15	Peak Elev=971.90' Storage=6,014 cf Inflow=2.27 cfs 0.167 af Discarded=0.03 cfs 0.031 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.031 af
Pond 16K: Kettle 16	Peak Elev=1,007.01' Storage=15,484 cf Inflow=2.18 cfs 0.413 af Discarded=0.07 cfs 0.061 af Primary=0.03 cfs 0.003 af Outflow=0.09 cfs 0.064 af
Pond 17K: Kettle 17	Peak Elev=1,012.08' Storage=12,933 cf Inflow=3.82 cfs 0.528 af Discarded=0.14 cfs 0.126 af Primary=0.78 cfs 0.152 af Outflow=0.92 cfs 0.279 af
Pond 18B: Existing Infiltration Basin	Peak Elev=993.65' Storage=54,703 cf Inflow=14.99 cfs 1.721 af Discarded=0.71 cfs 0.675 af Primary=0.00 cfs 0.000 af Outflow=0.71 cfs 0.675 af
Pond 20P: Pond 20	Peak Elev=993.21' Storage=42,152 cf Inflow=14.49 cfs 2.669 af Outflow=6.22 cfs 2.621 af

Total Runoff Area = 64.210 ac Runoff Volume = 15.012 af Average Runoff Depth = 2.81"
79.43% Pervious = 51.000 ac 20.57% Impervious = 13.210 ac

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Summary for Subcatchment F1: Subarea 1

Runoff = 14.65 cfs @ 12.76 hrs, Volume= 2.012 af, Depth> 2.03"

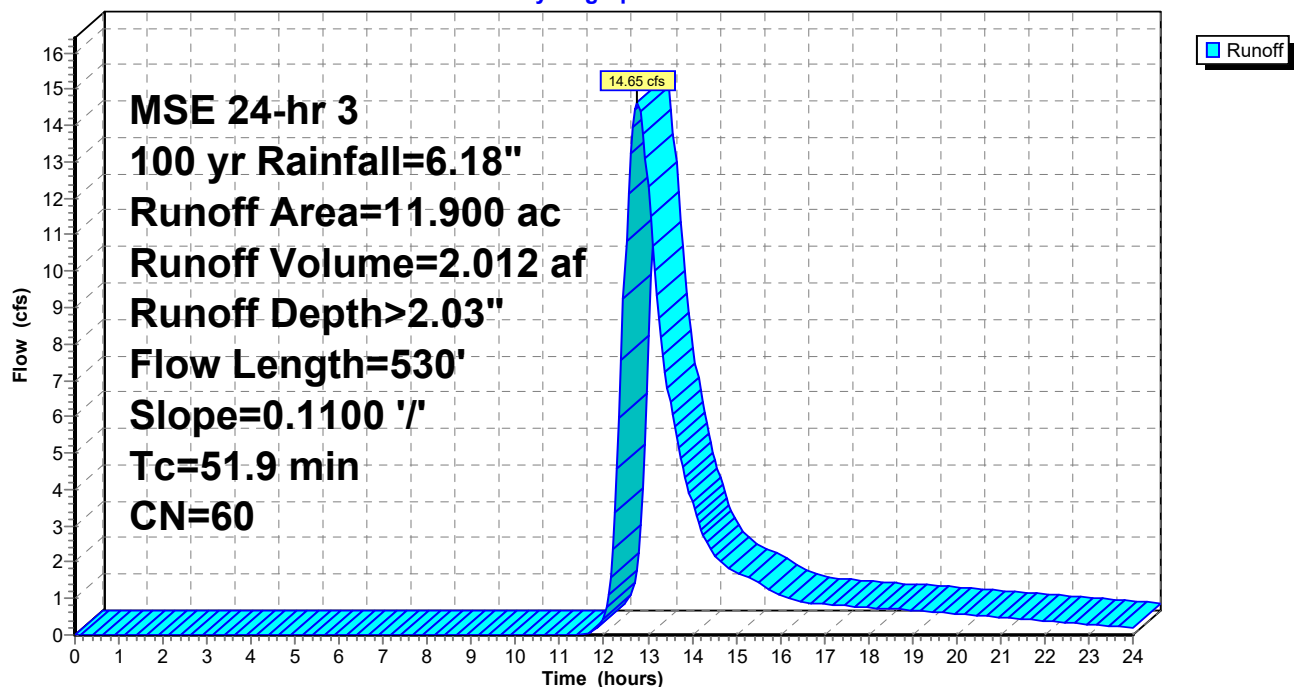
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	8.010	55	woods
	2.570	70	1/2 acre lots
*	0.700	69	cropland
*	0.540	61	grass
*	0.080	98	impervious
	11.900	60	Weighted Average
	11.820		99.33% Pervious Area
	0.080		0.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.6	300	0.1100	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
2.3	230	0.1100	1.66		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
51.9	530	Total			

Subcatchment F1: Subarea 1

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Summary for Subcatchment F10: Subarea 10

Runoff = 2.88 cfs @ 12.54 hrs, Volume= 0.313 af, Depth> 2.03"

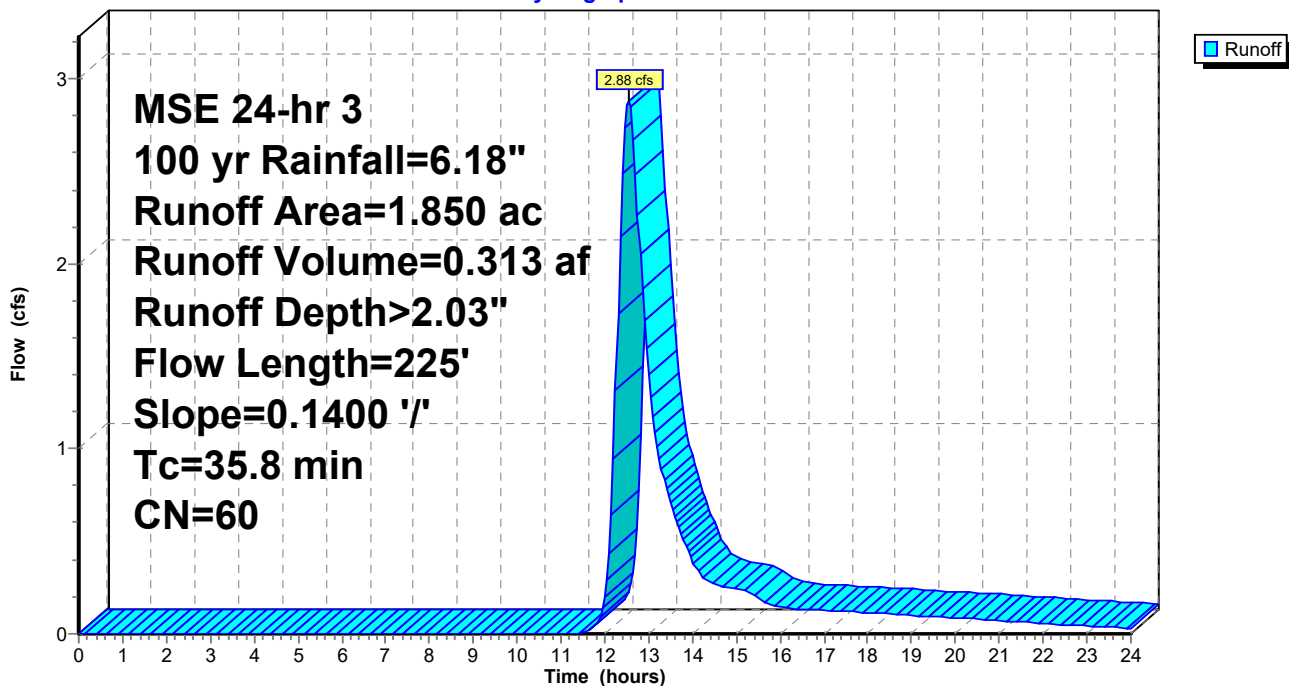
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	1.310	55	woods
*	0.450	75	1/4 acre lots
*	0.080	61	grass
*	0.010	98	impervious
	1.850	60	Weighted Average
	1.840		99.46% Pervious Area
	0.010		0.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.8	225	0.1400	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment F10: Subarea 10

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Summary for Subcatchment F11: Subarea 11

Runoff = 7.38 cfs @ 12.56 hrs, Volume= 0.814 af, Depth> 3.13"

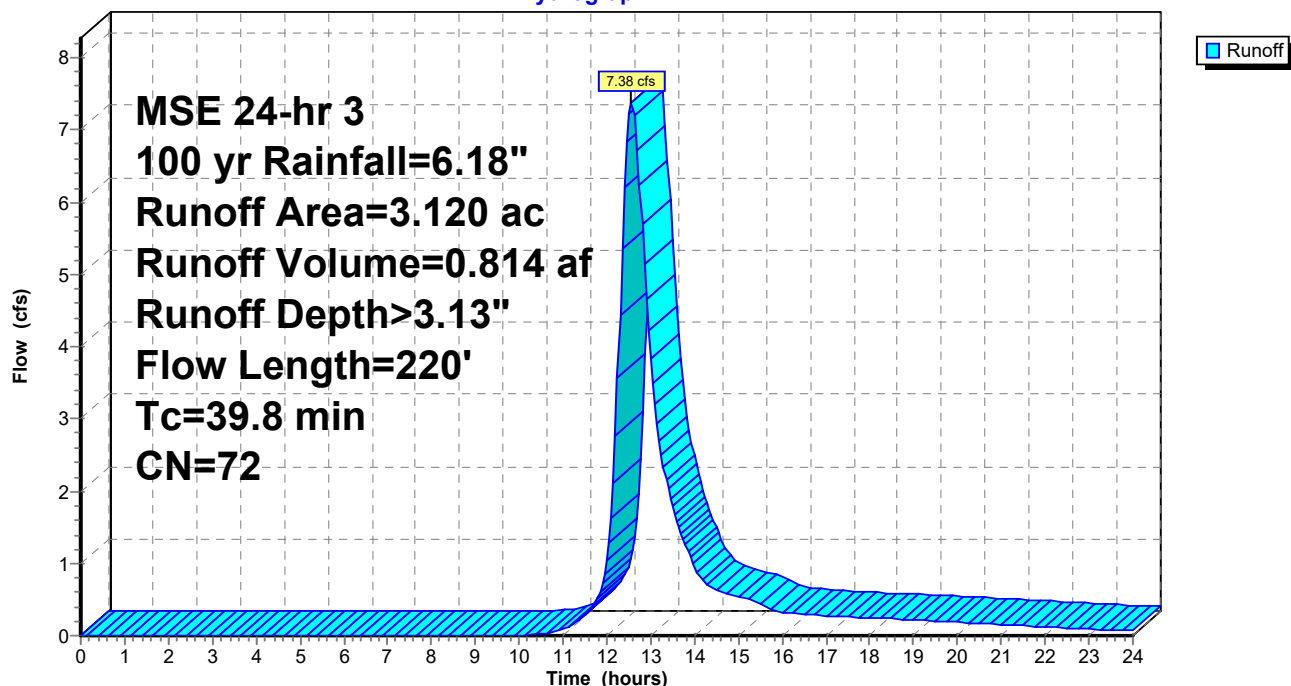
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.000	55	woods
* 1.040	61	grass
* 0.080	98	water
* 1.000	98	impervious
3.120	72	Weighted Average
2.040		65.38% Pervious Area
1.080		34.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	35	0.0300	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
17.9	80	0.1000	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
16.2	105	0.2200	0.11		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
39.8	220	Total			

Subcatchment F11: Subarea 11

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Summary for Subcatchment F12: Subarea 12

Runoff = 6.99 cfs @ 12.43 hrs, Volume= 0.652 af, Depth> 2.66"

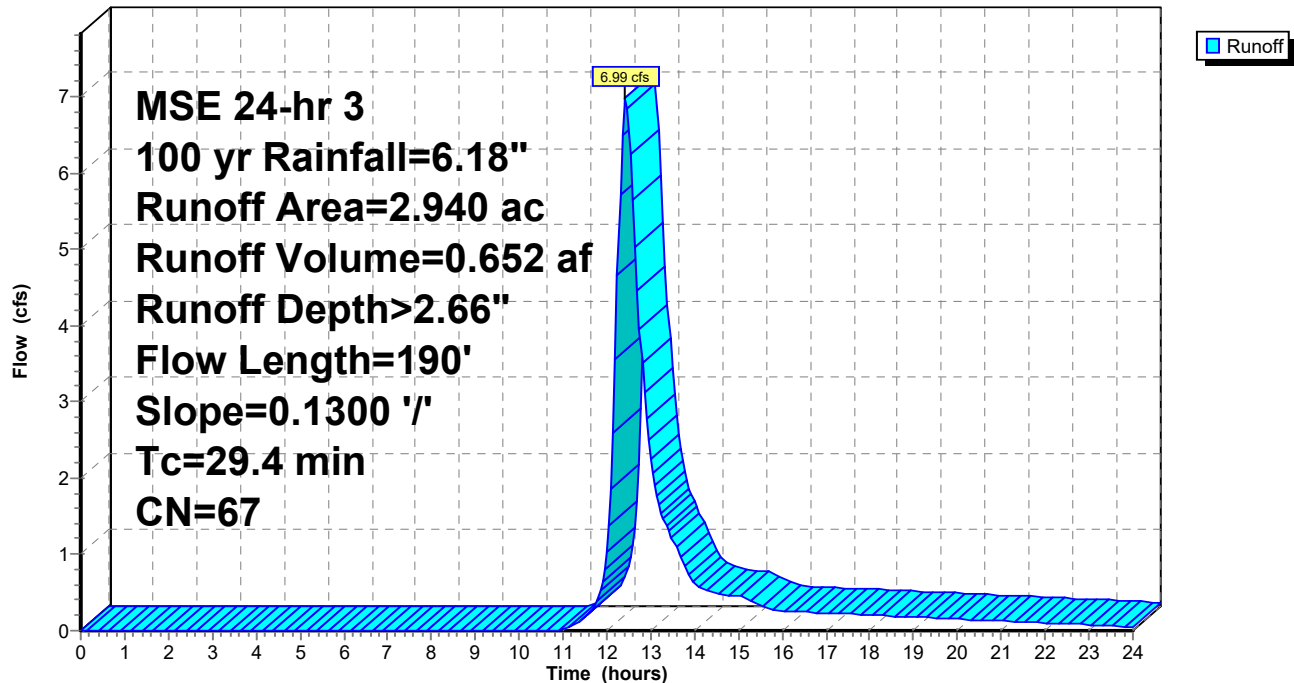
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.010	55	woods
* 0.650	61	grass
* 0.210	98	impervious
1.070	75	1/4 acre lots
2.940	67	Weighted Average
2.730		92.86% Pervious Area
0.210		7.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1300	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
25.2	140	0.1300	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
29.4	190	Total			

Subcatchment F12: Subarea 12

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Summary for Subcatchment F13: Subarea 13

Runoff = 1.59 cfs @ 12.53 hrs, Volume= 0.171 af, Depth> 2.03"

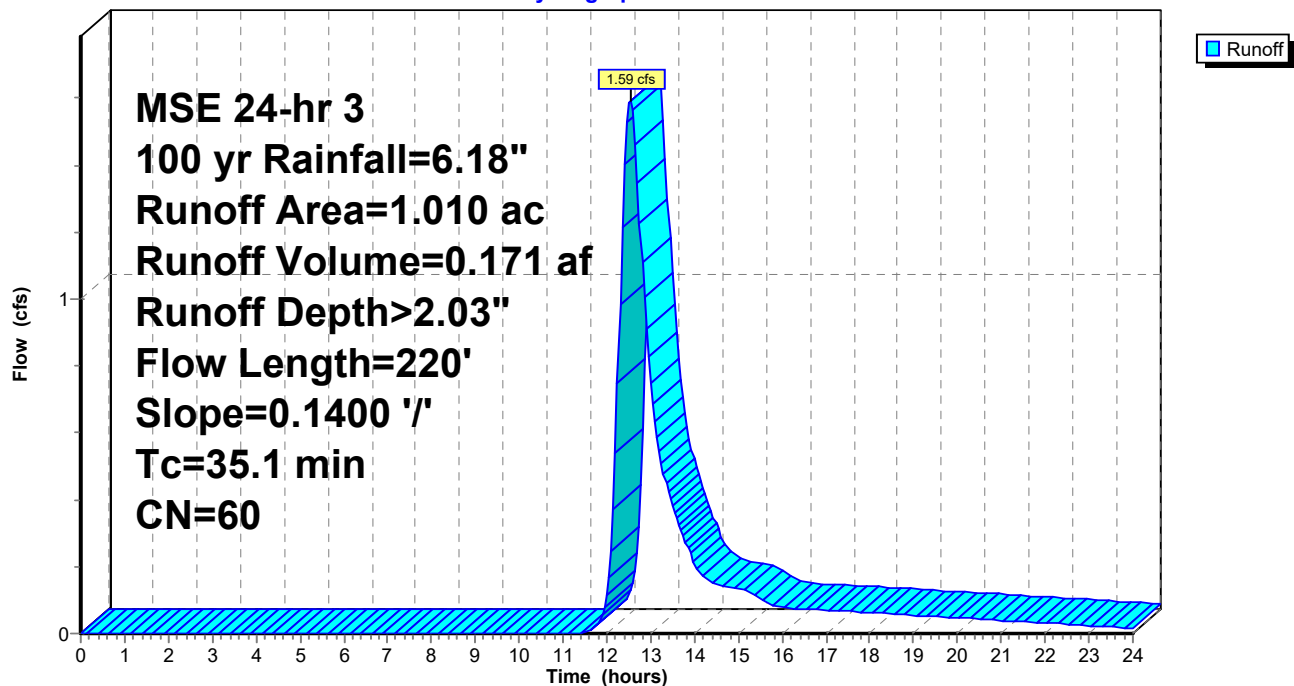
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.760	55	woods
0.250	75	1/4 acre lots
1.010	60	Weighted Average
1.010		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.1	220	0.1400	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment F13: Subarea 13

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Summary for Subcatchment F14: Subarea 14

Runoff = 7.67 cfs @ 13.09 hrs, Volume= 1.336 af, Depth> 2.28"

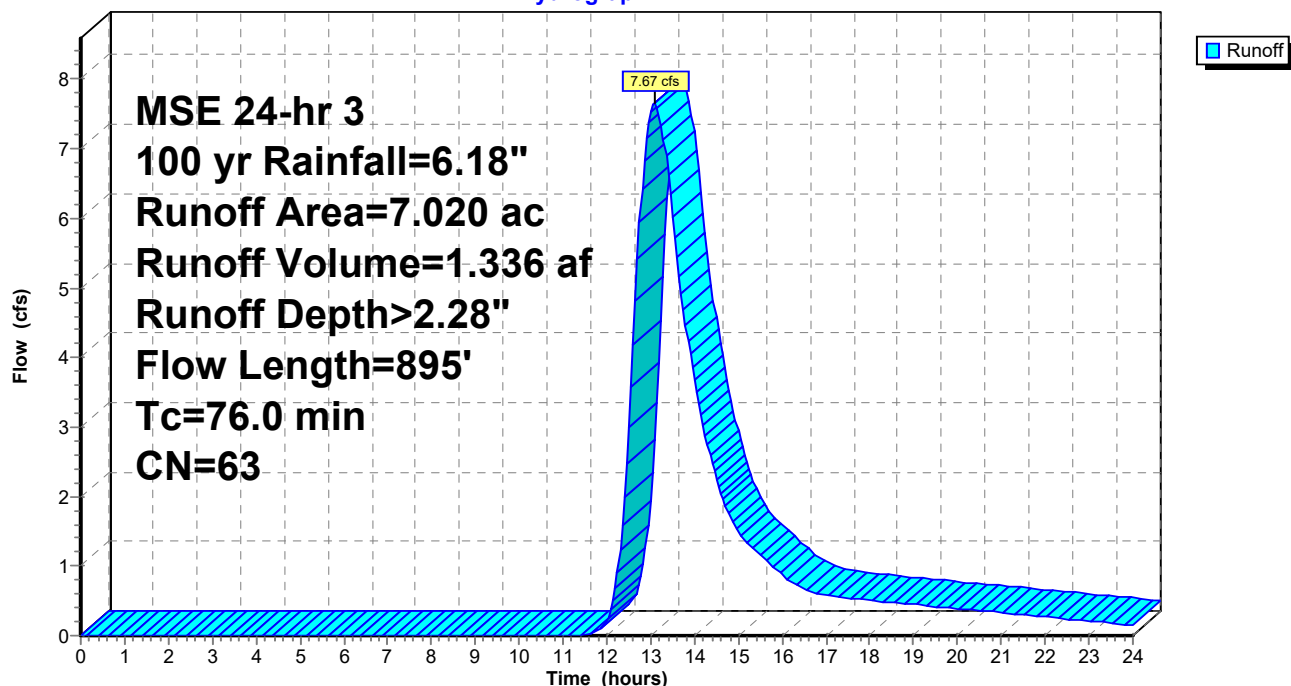
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 3.350	55	woods
* 2.740	61	grass
* 0.880	98	impervious
* 0.050	75	1/4 acre lots
7.020	63	Weighted Average
6.140		87.46% Pervious Area
0.880		12.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
73.2	255	0.0300	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
0.1	55	0.3800	9.92		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
2.7	585	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
76.0	895	Total			

Subcatchment F14: Subarea 14

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Summary for Subcatchment F15: Subarea 15

Runoff = 2.27 cfs @ 12.29 hrs, Volume= 0.167 af, Depth> 2.30"

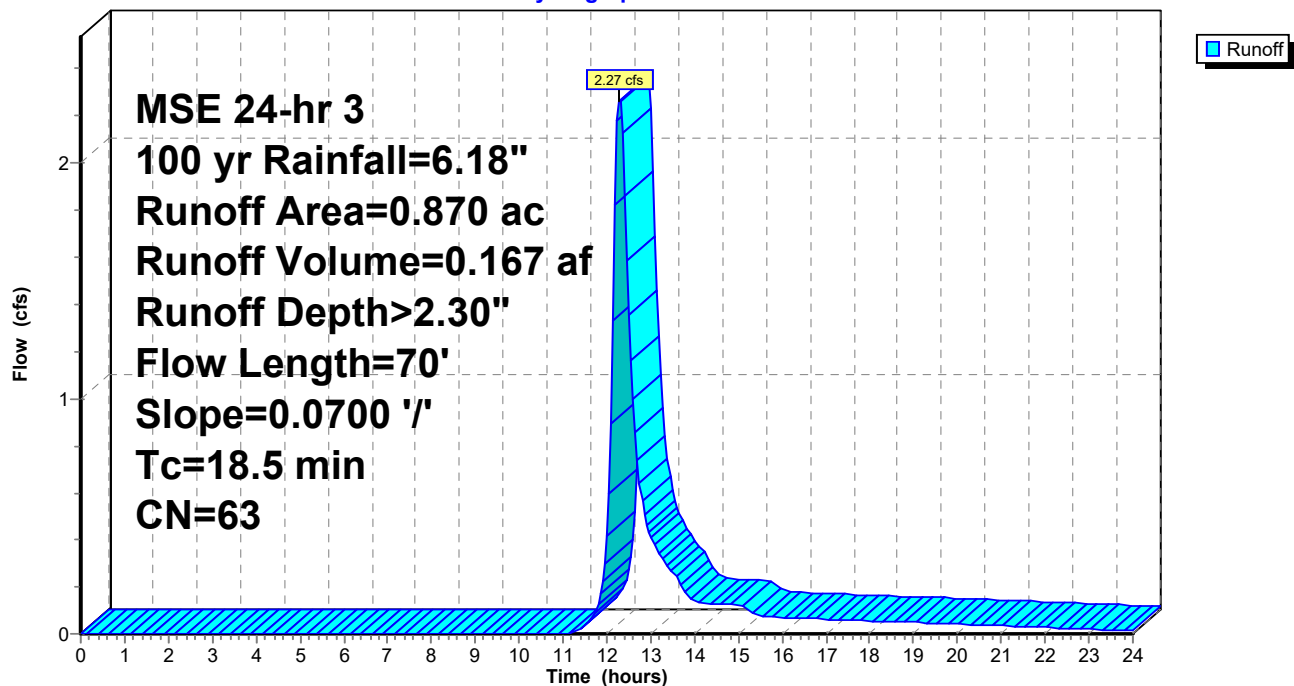
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.480	55	woods
* 0.090	61	grass
* 0.010	98	impervious
* 0.290	75	1/4 acre lots
0.870	63	Weighted Average
0.860		98.85% Pervious Area
0.010		1.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	70	0.0700	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment F15: Subarea 15

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Summary for Subcatchment F16: Subarea 16

Runoff = 2.18 cfs @ 12.62 hrs, Volume= 0.261 af, Depth> 1.95"

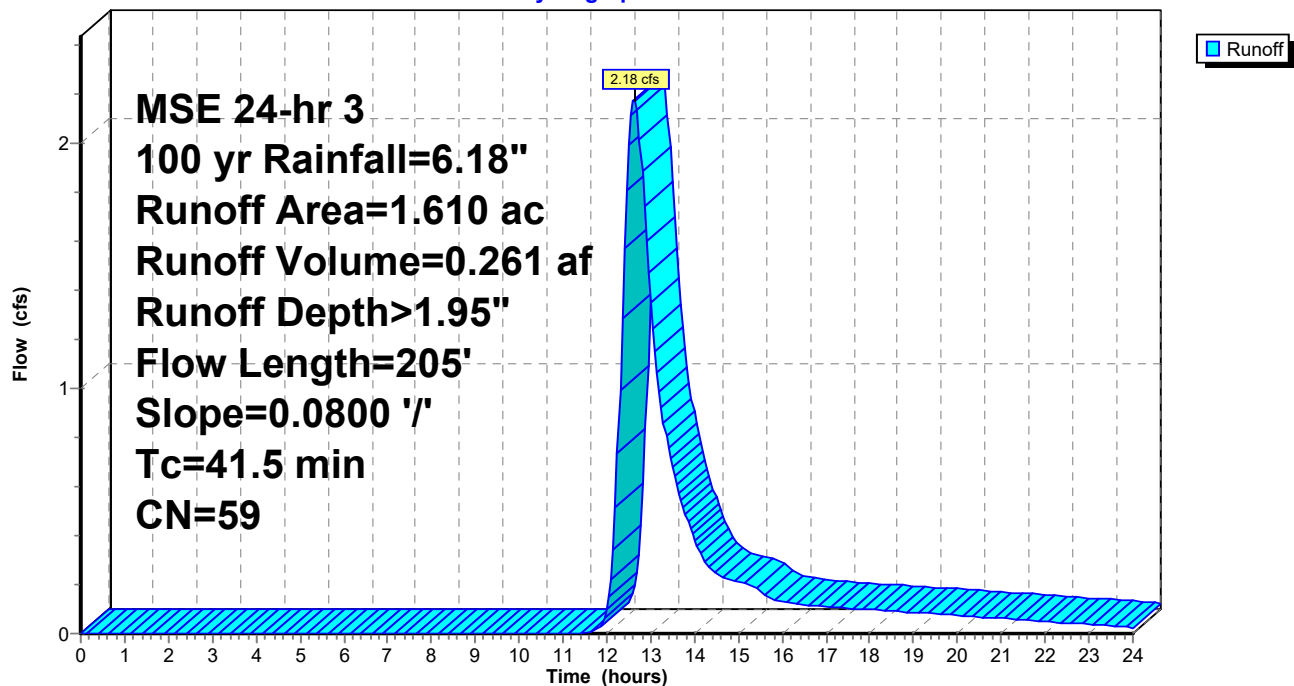
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	1.110	55	woods
*	0.390	61	grass
*	0.110	98	impervious
	1.610	59	Weighted Average
	1.500		93.17% Pervious Area
	0.110		6.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	205	0.0800	0.08		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment F16: Subarea 16

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Summary for Subcatchment F17: Subarea 17

Runoff = 3.82 cfs @ 12.76 hrs, Volume= 0.528 af, Depth> 1.78"

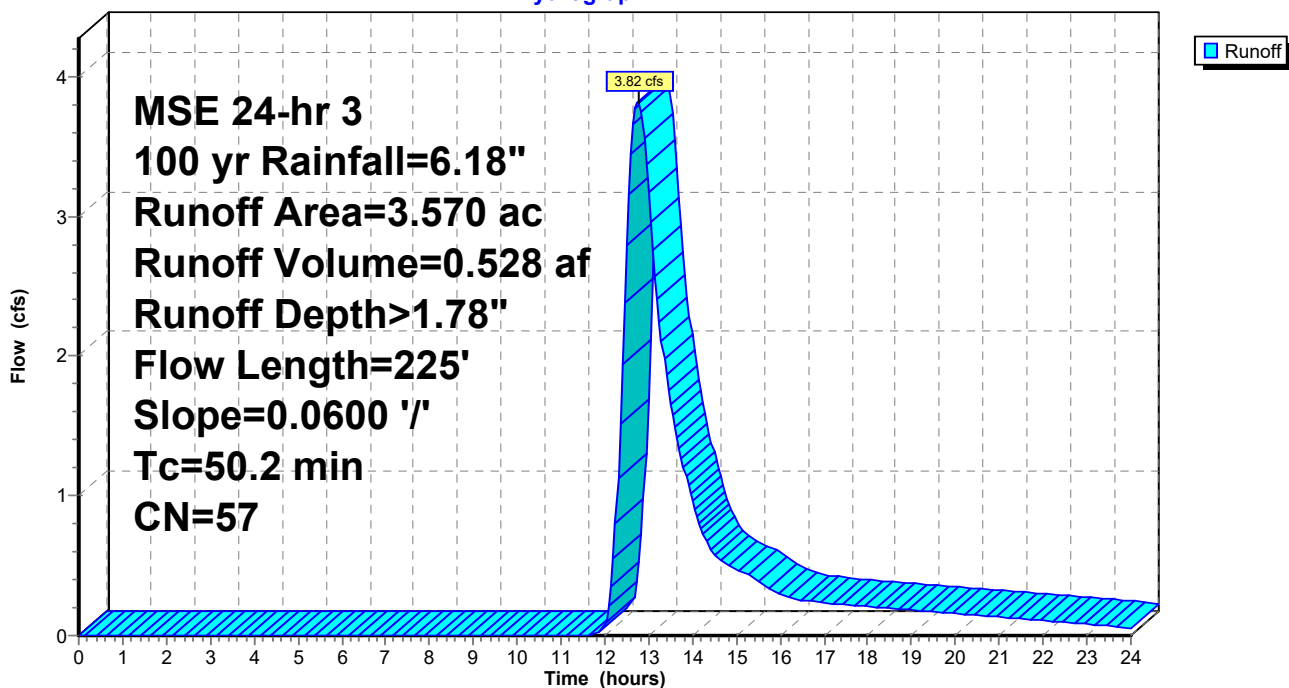
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	3.310	55	woods
*	0.150	61	grass
*	0.110	98	impervious
	3.570	57	Weighted Average
	3.460		96.92% Pervious Area
	0.110		3.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	225	0.0600	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Subcatchment F17: Subarea 17

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Summary for Subcatchment F18: Subarea 18

Runoff = 14.99 cfs @ 12.60 hrs, Volume= 1.721 af, Depth> 3.52"

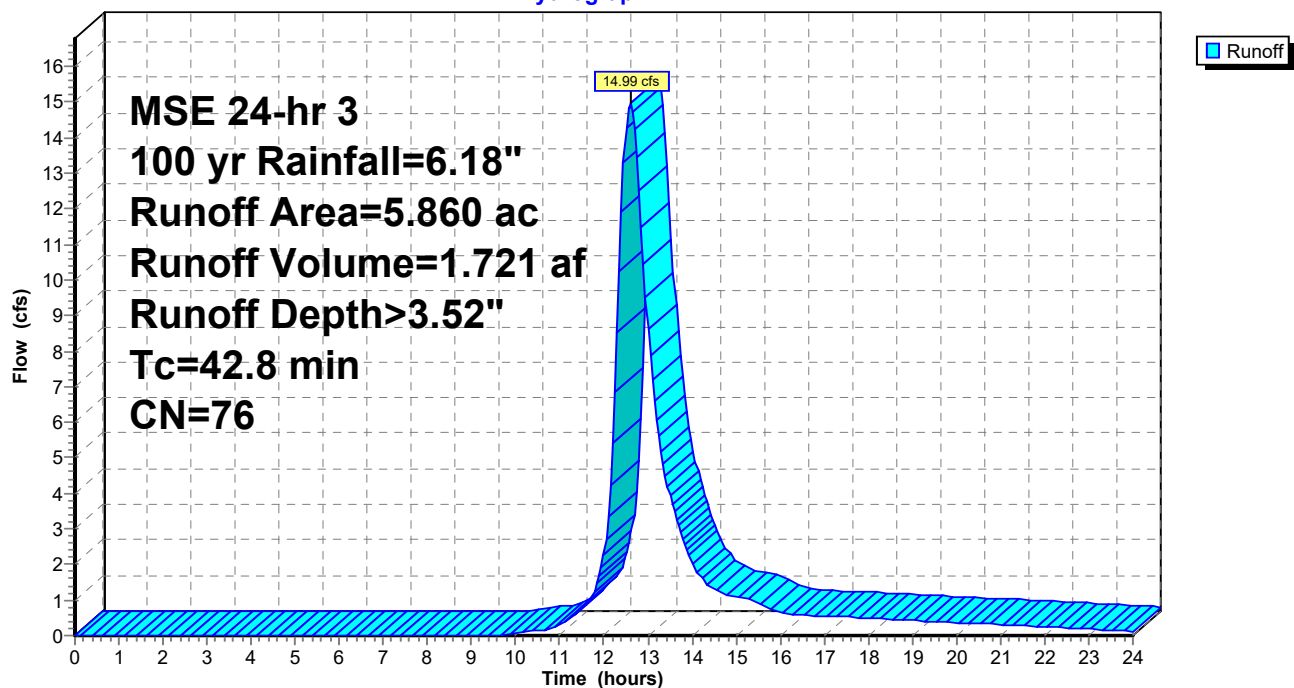
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.290	78	Area C from LCL High School Report
* 0.270	55	woods
* 0.780	61	grass
* 0.520	98	impervious
5.860	76	Weighted Average
5.340		91.13% Pervious Area
0.520		8.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.8					Direct Entry, LCL High School Report

Subcatchment F18: Subarea 18

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Summary for Subcatchment F19: Subarea 19

Runoff = 0.74 cfs @ 12.13 hrs, Volume= 0.035 af, Depth> 4.26"

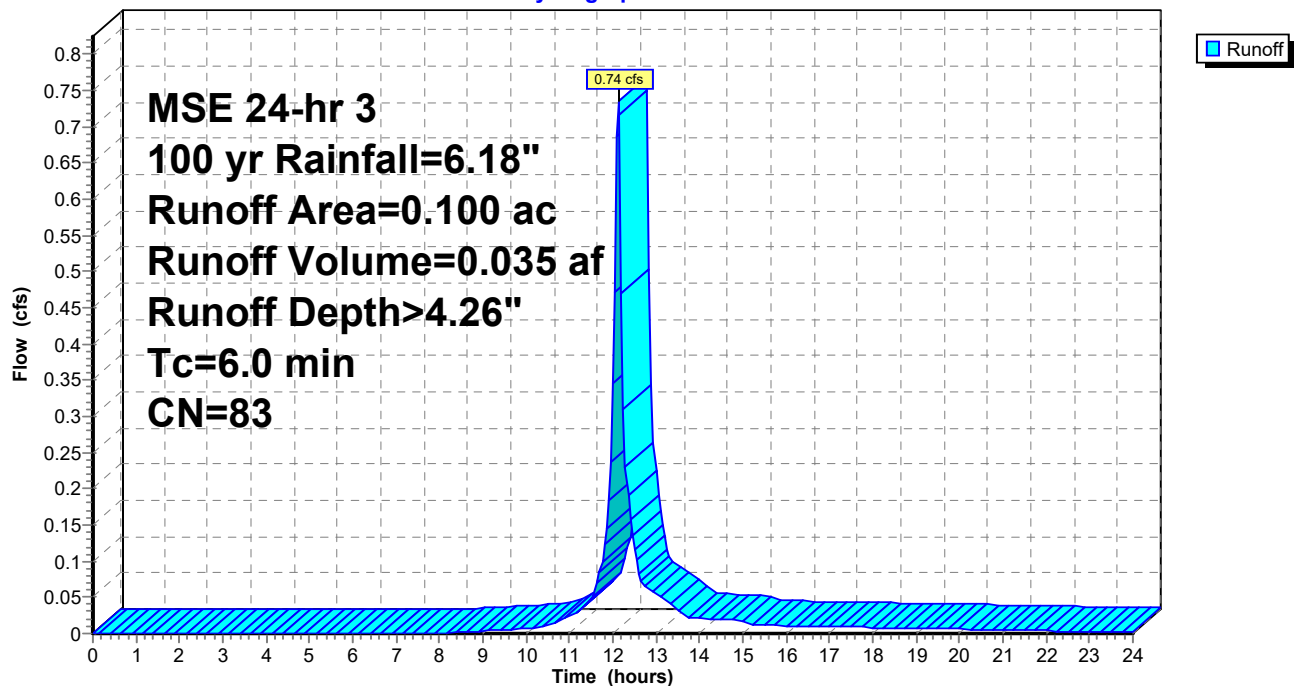
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.040	61	grass
*	0.060	98	impervious
	0.100	83	Weighted Average
	0.040		40.00% Pervious Area
	0.060		60.00% Impervious Area

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

Subcatchment F19: Subarea 19

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Summary for Subcatchment F2: Subarea 2

Runoff = 2.70 cfs @ 12.64 hrs, Volume= 0.329 af, Depth> 1.95"

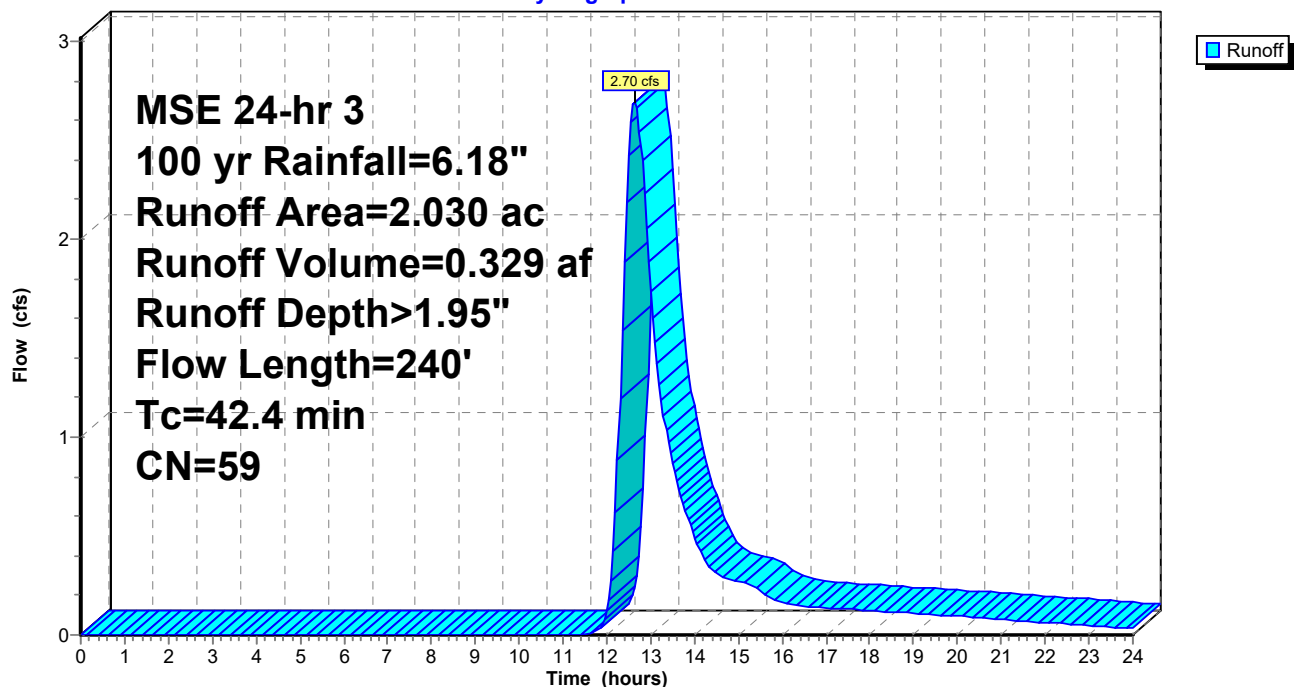
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.330	55	woods
* 0.570	61	grass
* 0.130	98	impervious
2.030	59	Weighted Average
1.900		93.60% Pervious Area
0.130		6.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0600	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
15.1	50	0.0600	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
21.6	140	0.1900	0.11		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
42.4	240	Total			

Subcatchment F2: Subarea 2

Hydrograph



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Summary for Subcatchment F20: Subarea 20

Runoff = 14.49 cfs @ 13.17 hrs, Volume= 2.669 af, Depth> 3.31"

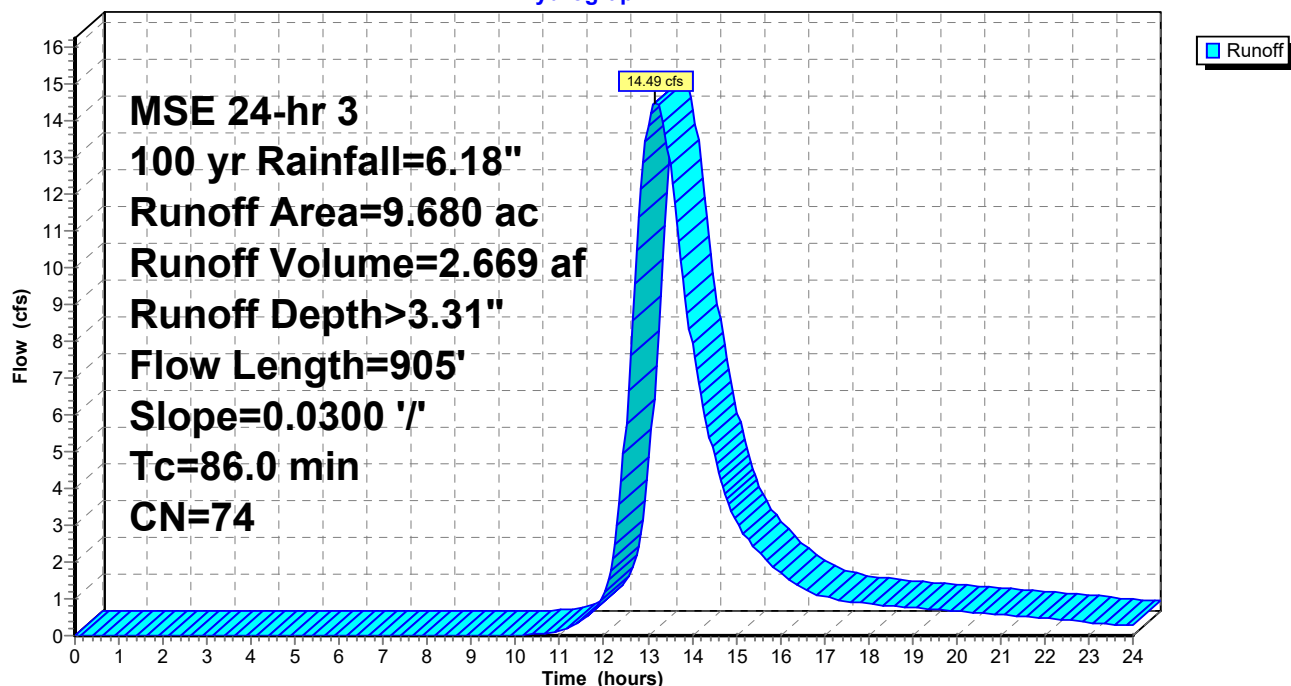
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.440	55	woods
* 4.480	61	grass
* 0.160	98	water
* 3.350	98	impervious
* 0.250	69	cropland
9.680	74	Weighted Average
6.170		63.74% Pervious Area
3.510		36.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
83.3	300	0.0300	0.06		Sheet Flow,
					Woods: Dense underbrush n= 0.800 P2= 2.70"
1.6	270	0.0300	2.79		Shallow Concentrated Flow,
					Unpaved Kv= 16.1 fps
1.1	335		5.00		Direct Entry,
86.0	905	Total			

Subcatchment F20: Subarea 20

Hydrograph



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MSE 24-hr 3 100 yr Rainfall=6.18"

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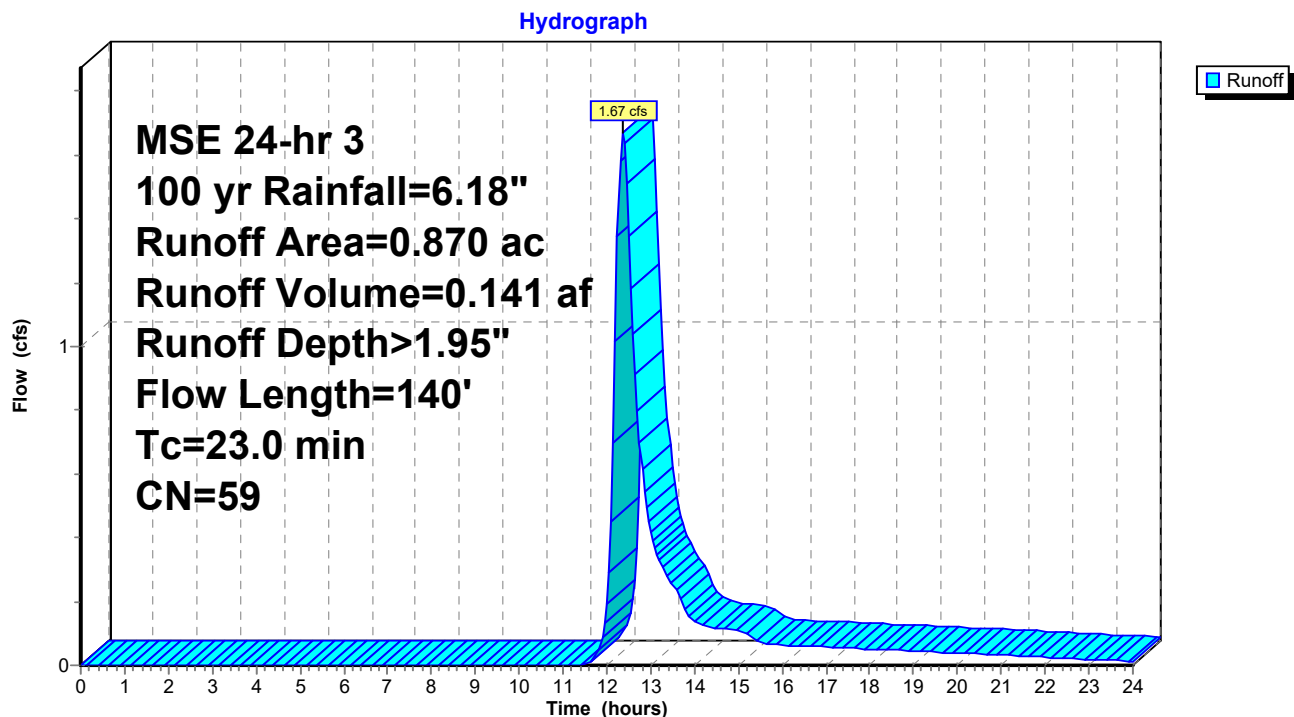
Summary for Subcatchment F3: Subarea 3

Runoff = 1.67 cfs @ 12.36 hrs, Volume= 0.141 af, Depth> 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.560	55	woods
* 0.260	61	grass
* 0.050	98	impervious
0.870	59	Weighted Average
0.820		94.25% Pervious Area
0.050		5.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	10	0.0500	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
21.3	130	0.1700	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
23.0	140	Total			

Subcatchment F3: Subarea 3

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment F5: Subarea 5

Runoff = 35.22 cfs @ 12.54 hrs, Volume= 3.861 af, Depth> 3.93"

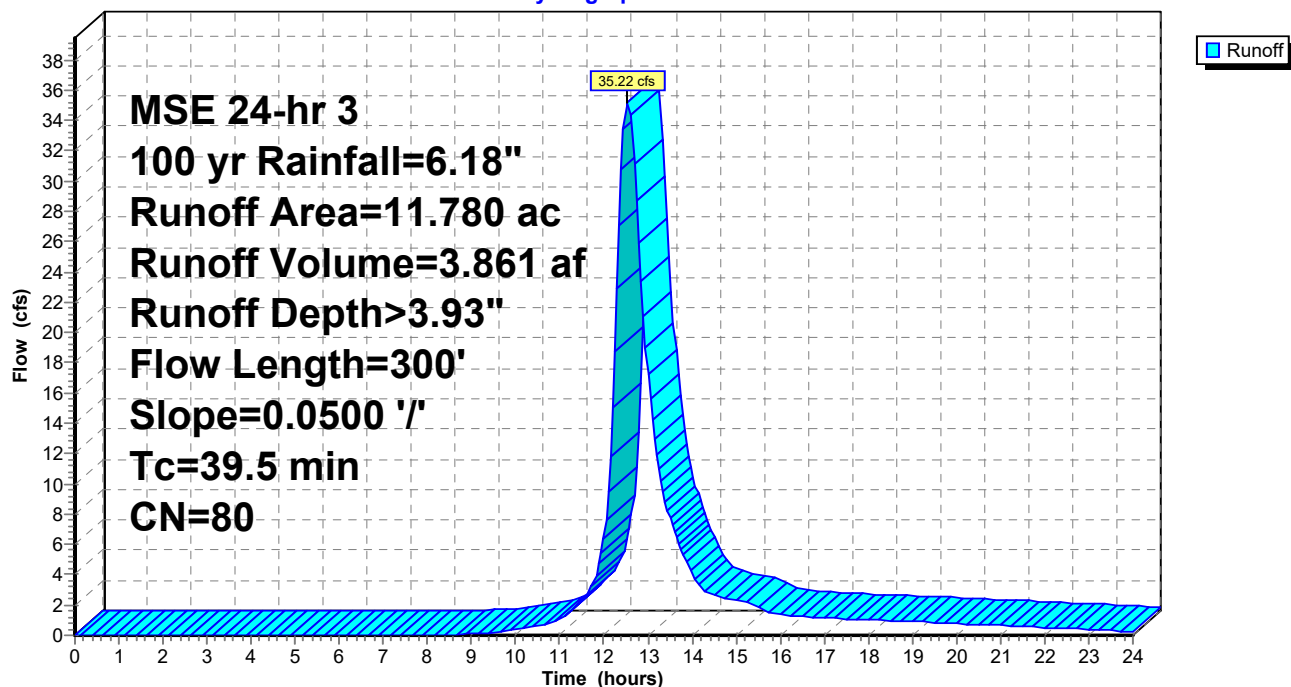
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.610	55	woods
* 3.720	61	grass
* 0.300	98	water
* 6.150	98	impervious
11.780	80	Weighted Average
5.330		45.25% Pervious Area
6.450		54.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.0	150	0.0500	0.06		Sheet Flow,
					Woods: Dense underbrush n= 0.800 P2= 2.70"
0.5	150		5.00		Direct Entry,
39.5	300	Total			

Subcatchment F5: Subarea 5

Hydrograph



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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Pond 1K: Kettle 1

Inflow Area = 45.240 ac, 26.13% Impervious, Inflow Depth > 1.93" for 100 yr event
 Inflow = 22.67 cfs @ 12.82 hrs, Volume= 7.280 af
 Outflow = 0.35 cfs @ 24.00 hrs, Volume= 0.270 af, Atten= 98%, Lag= 671.0 min
 Discarded = 0.35 cfs @ 24.00 hrs, Volume= 0.270 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 958.71' @ 24.00 hrs Surf.Area= 39,030 sf Storage= 305,287 cf

Plug-Flow detention time= 402.2 min calculated for 0.270 af (4% of inflow)
 Center-of-Mass det. time= 204.1 min (1,140.6 - 936.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	944.00'	560,290 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
944.00	3,750	0	0	3,750
945.00	6,195	4,922	4,922	6,208
946.00	8,685	7,405	12,327	8,716
947.00	10,780	9,714	22,040	10,840
948.00	13,055	11,899	33,940	13,148
949.00	15,305	14,165	48,105	15,437
950.00	17,415	16,349	64,453	17,595
951.00	19,655	18,524	82,977	19,886
952.00	21,865	20,750	103,727	22,155
953.00	24,185	23,015	126,743	24,536
954.00	26,545	25,356	152,098	26,963
955.00	28,985	27,756	179,854	29,473
956.00	31,540	30,254	210,108	32,101
957.00	34,135	32,829	242,937	34,775
958.00	36,900	35,509	278,445	37,619
959.00	39,930	38,405	316,851	40,728
960.00	43,170	41,539	358,390	44,047
961.00	46,620	44,884	403,274	47,578
962.00	50,260	48,429	451,703	51,301
963.00	54,345	52,289	503,992	55,465
964.00	58,275	56,299	560,290	59,484

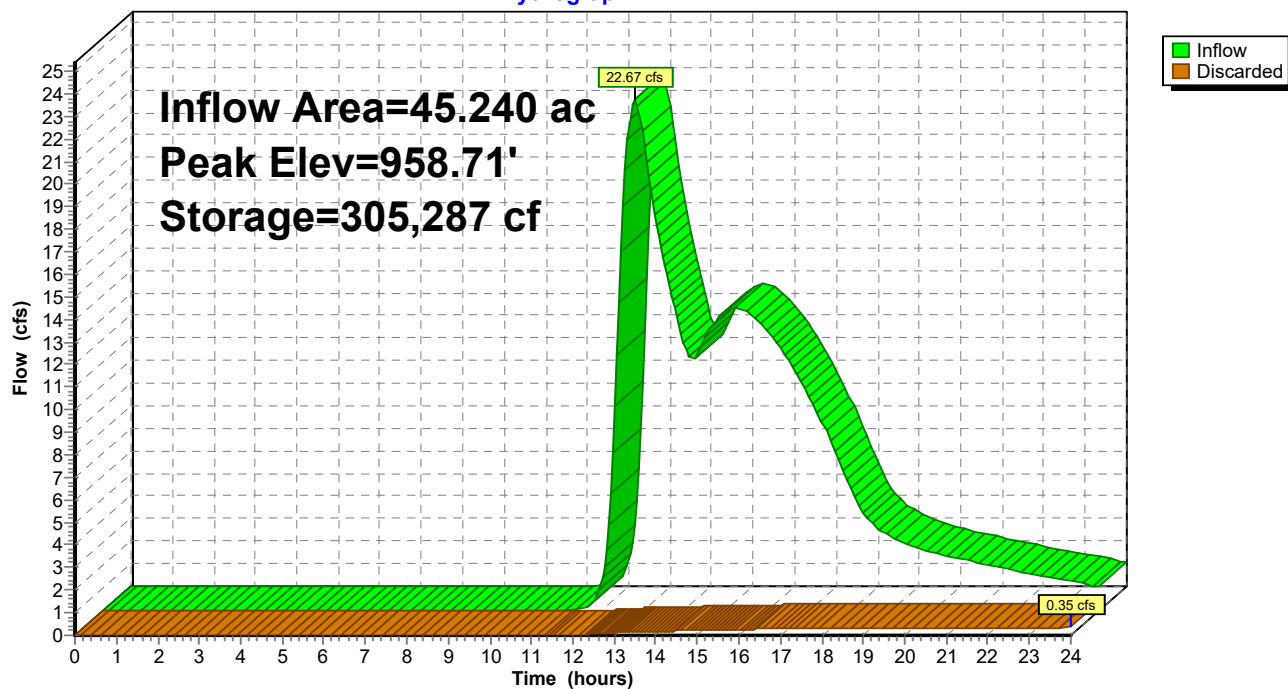
Device	Routing	Invert	Outlet Devices
#1	Discarded	944.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 934.00' Phase-In= 0.01'

Discarded OutFlow Max=0.35 cfs @ 24.00 hrs HW=958.71' (Free Discharge)

↑1=Exfiltration (Controls 0.35 cfs)

Pond 1K: Kettle 1

Hydrograph



Stage-Discharge for Pond 1K: Kettle 1

Elevation (feet)	Discarded (cfs)	Elevation (feet)	Discarded (cfs)
944.00	0.00	954.40	0.23
944.20	0.02	954.60	0.23
944.40	0.03	954.80	0.24
944.60	0.03	955.00	0.24
944.80	0.03	955.20	0.25
945.00	0.04	955.40	0.26
945.20	0.04	955.60	0.26
945.40	0.04	955.80	0.27
945.60	0.05	956.00	0.27
945.80	0.05	956.20	0.28
946.00	0.05	956.40	0.28
946.20	0.06	956.60	0.29
946.40	0.06	956.80	0.29
946.60	0.06	957.00	0.30
946.80	0.07	957.20	0.30
947.00	0.07	957.40	0.31
947.20	0.08	957.60	0.32
947.40	0.08	957.80	0.32
947.60	0.08	958.00	0.33
947.80	0.09	958.20	0.33
948.00	0.09	958.40	0.34
948.20	0.09	958.60	0.35
948.40	0.10	958.80	0.35
948.60	0.10	959.00	0.36
948.80	0.11	959.20	0.37
949.00	0.11	959.40	0.37
949.20	0.11	959.60	0.38
949.40	0.12	959.80	0.39
949.60	0.12	960.00	0.39
949.80	0.13	960.20	0.40
950.00	0.13	960.40	0.41
950.20	0.13	960.60	0.41
950.40	0.14	960.80	0.42
950.60	0.14	961.00	0.43
950.80	0.15	961.20	0.43
951.00	0.15	961.40	0.44
951.20	0.15	961.60	0.45
951.40	0.16	961.80	0.46
951.60	0.16	962.00	0.46
951.80	0.17	962.20	0.47
952.00	0.17	962.40	0.48
952.20	0.18	962.60	0.49
952.40	0.18	962.80	0.50
952.60	0.19	963.00	0.50
952.80	0.19	963.20	0.51
953.00	0.20	963.40	0.52
953.20	0.20	963.60	0.53
953.40	0.20	963.80	0.54
953.60	0.21	964.00	0.54
953.80	0.21		
954.00	0.22		
954.20	0.22		

Summary for Pond 2K: Kettle 2

Inflow Area = 14.680 ac, 45.16% Impervious, Inflow Depth > 2.98" for 100 yr event
 Inflow = 15.51 cfs @ 13.05 hrs, Volume= 3.644 af
 Outflow = 8.53 cfs @ 14.86 hrs, Volume= 1.991 af, Atten= 45%, Lag= 109.1 min
 Discarded = 0.15 cfs @ 14.86 hrs, Volume= 0.128 af
 Primary = 8.38 cfs @ 14.86 hrs, Volume= 1.863 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 974.43' @ 14.86 hrs Surf.Area= 20,718 sf Storage= 84,426 cf

Plug-Flow detention time= 197.4 min calculated for 1.987 af (55% of inflow)
 Center-of-Mass det. time= 107.5 min (1,008.0 - 900.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	966.00'	96,797 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
966.00	285	0	0	285
967.00	3,190	1,476	1,476	3,193
968.00	5,410	4,251	5,728	5,425
969.00	7,210	6,288	12,016	7,247
970.00	9,215	8,192	20,208	9,277
971.00	11,370	10,274	30,482	11,462
972.00	13,630	12,483	42,965	13,756
973.00	16,420	15,003	57,968	16,580
974.00	19,360	17,870	75,838	19,558
975.00	22,600	20,959	96,797	22,838

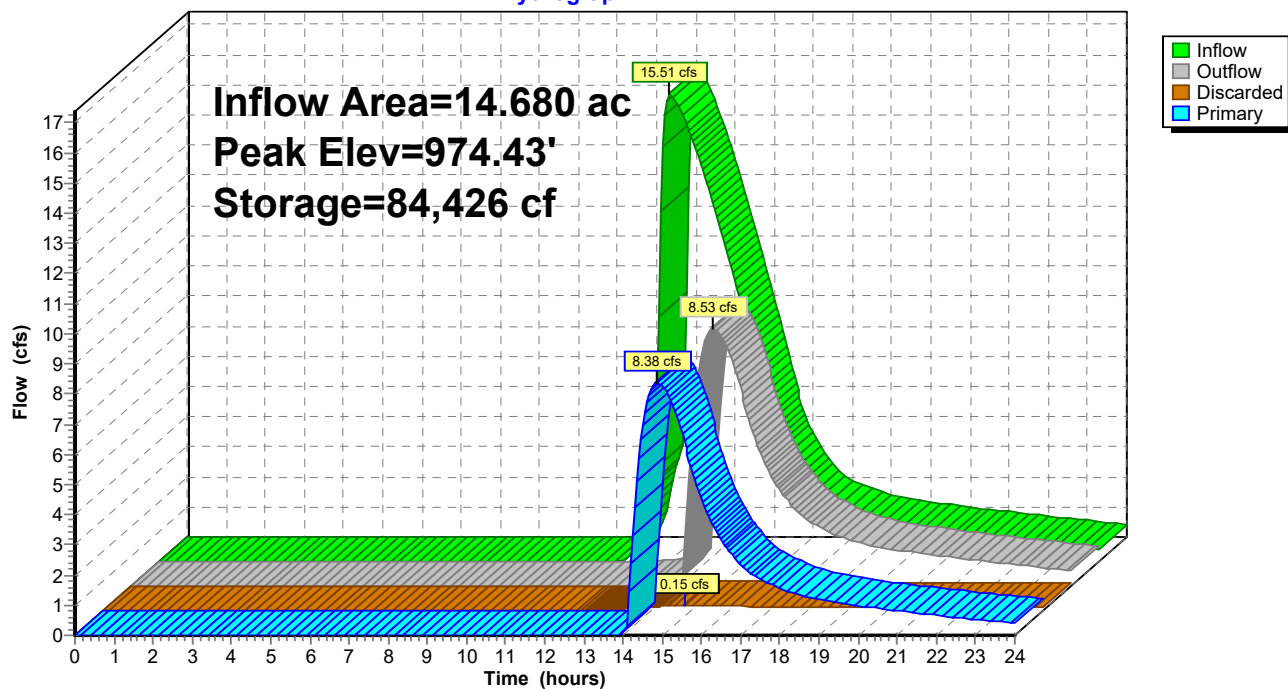
Device	Routing	Invert	Outlet Devices
#1	Discarded	966.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 956.00' Phase-In= 0.01'
#2	Primary	973.70'	5.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.15 cfs @ 14.86 hrs HW=974.43' (Free Discharge)
 ↑1=Exfiltration (Controls 0.15 cfs)

Primary OutFlow Max=8.37 cfs @ 14.86 hrs HW=974.43' TW=966.38' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir (Weir Controls 8.37 cfs @ 2.30 fps)

Pond 2K: Kettle 2

Hydrograph



Stage-Discharge for Pond 2K: Kettle 2

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
966.00	0.00	0.00	0.00	971.20	0.08	0.08	0.00
966.10	0.00	0.00	0.00	971.30	0.08	0.08	0.00
966.20	0.00	0.00	0.00	971.40	0.09	0.09	0.00
966.30	0.00	0.00	0.00	971.50	0.09	0.09	0.00
966.40	0.01	0.01	0.00	971.60	0.09	0.09	0.00
966.50	0.01	0.01	0.00	971.70	0.09	0.09	0.00
966.60	0.01	0.01	0.00	971.80	0.09	0.09	0.00
966.70	0.01	0.01	0.00	971.90	0.09	0.09	0.00
966.80	0.01	0.01	0.00	972.00	0.10	0.10	0.00
966.90	0.02	0.02	0.00	972.10	0.10	0.10	0.00
967.00	0.02	0.02	0.00	972.20	0.10	0.10	0.00
967.10	0.02	0.02	0.00	972.30	0.10	0.10	0.00
967.20	0.02	0.02	0.00	972.40	0.11	0.11	0.00
967.30	0.02	0.02	0.00	972.50	0.11	0.11	0.00
967.40	0.02	0.02	0.00	972.60	0.11	0.11	0.00
967.50	0.03	0.03	0.00	972.70	0.11	0.11	0.00
967.60	0.03	0.03	0.00	972.80	0.11	0.11	0.00
967.70	0.03	0.03	0.00	972.90	0.12	0.12	0.00
967.80	0.03	0.03	0.00	973.00	0.12	0.12	0.00
967.90	0.03	0.03	0.00	973.10	0.12	0.12	0.00
968.00	0.03	0.03	0.00	973.20	0.12	0.12	0.00
968.10	0.03	0.03	0.00	973.30	0.13	0.13	0.00
968.20	0.04	0.04	0.00	973.40	0.13	0.13	0.00
968.30	0.04	0.04	0.00	973.50	0.13	0.13	0.00
968.40	0.04	0.04	0.00	973.60	0.13	0.13	0.00
968.50	0.04	0.04	0.00	973.70	0.14	0.14	0.00
968.60	0.04	0.04	0.00	973.80	0.53	0.14	0.39
968.70	0.04	0.04	0.00	973.90	1.25	0.14	1.11
968.80	0.04	0.04	0.00	974.00	2.22	0.14	2.07
968.90	0.04	0.04	0.00	974.10	3.38	0.15	3.24
969.00	0.05	0.05	0.00	974.20	4.80	0.15	4.65
969.10	0.05	0.05	0.00	974.30	6.42	0.15	6.27
969.20	0.05	0.05	0.00	974.40	8.04	0.15	7.89
969.30	0.05	0.05	0.00	974.50	9.78	0.16	9.62
969.40	0.05	0.05	0.00	974.60	11.62	0.16	11.46
969.50	0.05	0.05	0.00	974.70	13.56	0.16	13.40
969.60	0.06	0.06	0.00	974.80	15.65	0.16	15.49
969.70	0.06	0.06	0.00	974.90	17.85	0.17	17.68
969.80	0.06	0.06	0.00	975.00	20.03	0.17	19.86
969.90	0.06	0.06	0.00				
970.00	0.06	0.06	0.00				
970.10	0.06	0.06	0.00				
970.20	0.06	0.06	0.00				
970.30	0.07	0.07	0.00				
970.40	0.07	0.07	0.00				
970.50	0.07	0.07	0.00				
970.60	0.07	0.07	0.00				
970.70	0.07	0.07	0.00				
970.80	0.07	0.07	0.00				
970.90	0.08	0.08	0.00				
971.00	0.08	0.08	0.00				
971.10	0.08	0.08	0.00				

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Summary for Pond 3K: Kettle 3

Inflow Area = 12.650 ac, 51.38% Impervious, Inflow Depth > 3.72" for 100 yr event
 Inflow = 14.12 cfs @ 13.07 hrs, Volume= 3.917 af
 Outflow = 14.09 cfs @ 13.17 hrs, Volume= 3.383 af, Atten= 0%, Lag= 5.6 min
 Discarded = 0.07 cfs @ 13.17 hrs, Volume= 0.068 af
 Primary = 14.02 cfs @ 13.17 hrs, Volume= 3.315 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 976.50' @ 13.17 hrs Surf.Area= 10,538 sf Storage= 27,818 cf

Plug-Flow detention time= 76.5 min calculated for 3.383 af (86% of inflow)
 Center-of-Mass det. time= 28.1 min (907.7 - 879.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	972.00'	46,349 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
972.00	1,920	0	0	1,920
973.00	4,020	2,906	2,906	4,029
974.00	5,770	4,869	7,775	5,796
975.00	7,510	6,621	14,396	7,560
976.00	9,385	8,430	22,826	9,463
977.00	11,750	10,545	33,371	11,855
978.00	14,245	12,977	46,349	14,383

Device	Routing	Invert	Outlet Devices
#1	Discarded	972.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 962.00' Phase-In= 0.01'
#2	Primary	976.00'	15.0' 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

Discarded OutFlow Max=0.07 cfs @ 13.17 hrs HW=976.50' (Free Discharge)

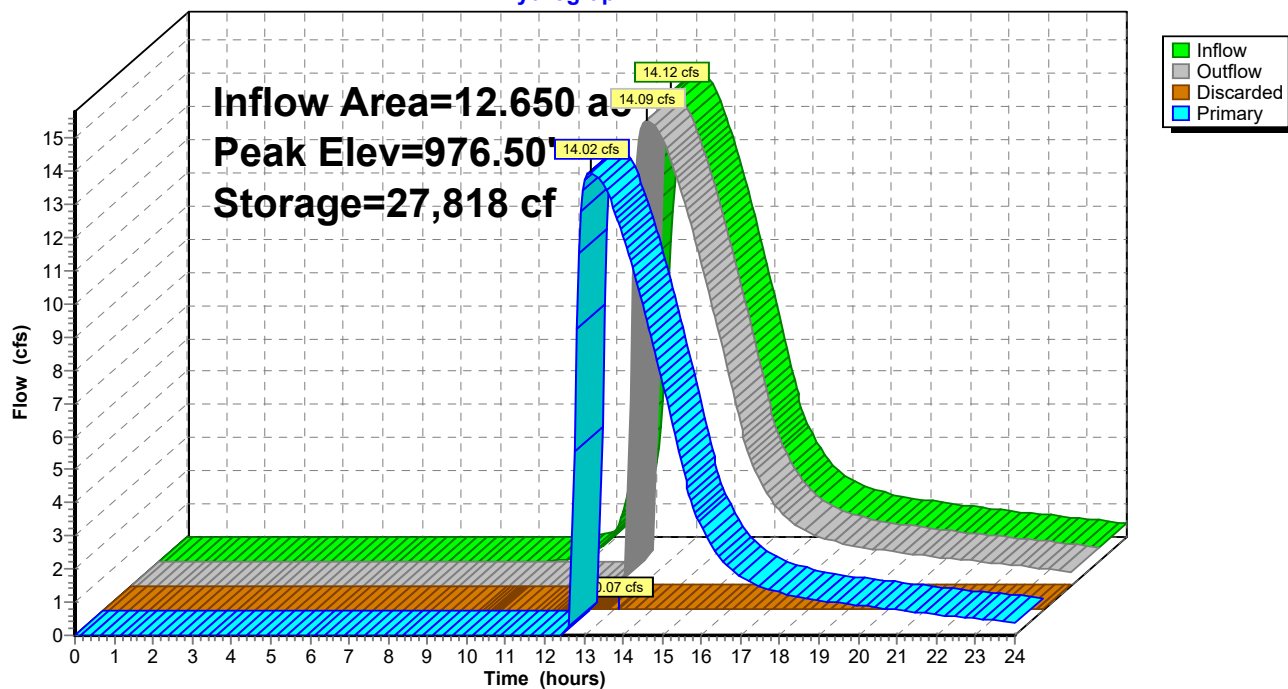
↑ **1=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=14.01 cfs @ 13.17 hrs HW=976.50' TW=970.62' (Dynamic Tailwater)

↑ **2=Broad-Crested Rectangular Weir**(Weir Controls 14.01 cfs @ 1.86 fps)

Pond 3K: Kettle 3

Hydrograph



Stage-Discharge for Pond 3K: Kettle 3

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
972.00	0.00	0.00	0.00	977.20	53.13	0.09	53.04
972.10	0.01	0.01	0.00	977.30	59.67	0.09	59.59
972.20	0.01	0.01	0.00	977.40	66.43	0.09	66.34
972.30	0.01	0.01	0.00	977.50	73.26	0.09	73.16
972.40	0.02	0.02	0.00	977.60	80.24	0.09	80.14
972.50	0.02	0.02	0.00	977.70	87.87	0.10	87.77
972.60	0.02	0.02	0.00	977.80	95.73	0.10	95.63
972.70	0.02	0.02	0.00	977.90	103.81	0.10	103.71
972.80	0.02	0.02	0.00	978.00	112.11	0.10	112.01
972.90	0.02	0.02	0.00				
973.00	0.02	0.02	0.00				
973.10	0.03	0.03	0.00				
973.20	0.03	0.03	0.00				
973.30	0.03	0.03	0.00				
973.40	0.03	0.03	0.00				
973.50	0.03	0.03	0.00				
973.60	0.03	0.03	0.00				
973.70	0.03	0.03	0.00				
973.80	0.03	0.03	0.00				
973.90	0.03	0.03	0.00				
974.00	0.04	0.04	0.00				
974.10	0.04	0.04	0.00				
974.20	0.04	0.04	0.00				
974.30	0.04	0.04	0.00				
974.40	0.04	0.04	0.00				
974.50	0.04	0.04	0.00				
974.60	0.04	0.04	0.00				
974.70	0.05	0.05	0.00				
974.80	0.05	0.05	0.00				
974.90	0.05	0.05	0.00				
975.00	0.05	0.05	0.00				
975.10	0.05	0.05	0.00				
975.20	0.05	0.05	0.00				
975.30	0.05	0.05	0.00				
975.40	0.06	0.06	0.00				
975.50	0.06	0.06	0.00				
975.60	0.06	0.06	0.00				
975.70	0.06	0.06	0.00				
975.80	0.06	0.06	0.00				
975.90	0.06	0.06	0.00				
976.00	0.06	0.06	0.00				
976.10	1.25	0.07	1.18				
976.20	3.41	0.07	3.34				
976.30	6.29	0.07	6.22				
976.40	9.79	0.07	9.71				
976.50	14.02	0.07	13.95				
976.60	18.90	0.07	18.82				
976.70	23.75	0.08	23.68				
976.80	28.95	0.08	28.87				
976.90	34.47	0.08	34.39				
977.00	40.28	0.08	40.20				
977.10	46.55	0.08	46.46				

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Pond 5P: Pond 5

Inflow Area = 11.780 ac, 54.75% Impervious, Inflow Depth > 3.93" for 100 yr event
 Inflow = 35.22 cfs @ 12.54 hrs, Volume= 3.861 af
 Outflow = 13.76 cfs @ 13.12 hrs, Volume= 3.776 af, Atten= 61%, Lag= 34.6 min
 Primary = 13.76 cfs @ 13.12 hrs, Volume= 3.776 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 984.36' @ 13.12 hrs Surf.Area= 25,572 sf Storage= 63,408 cf

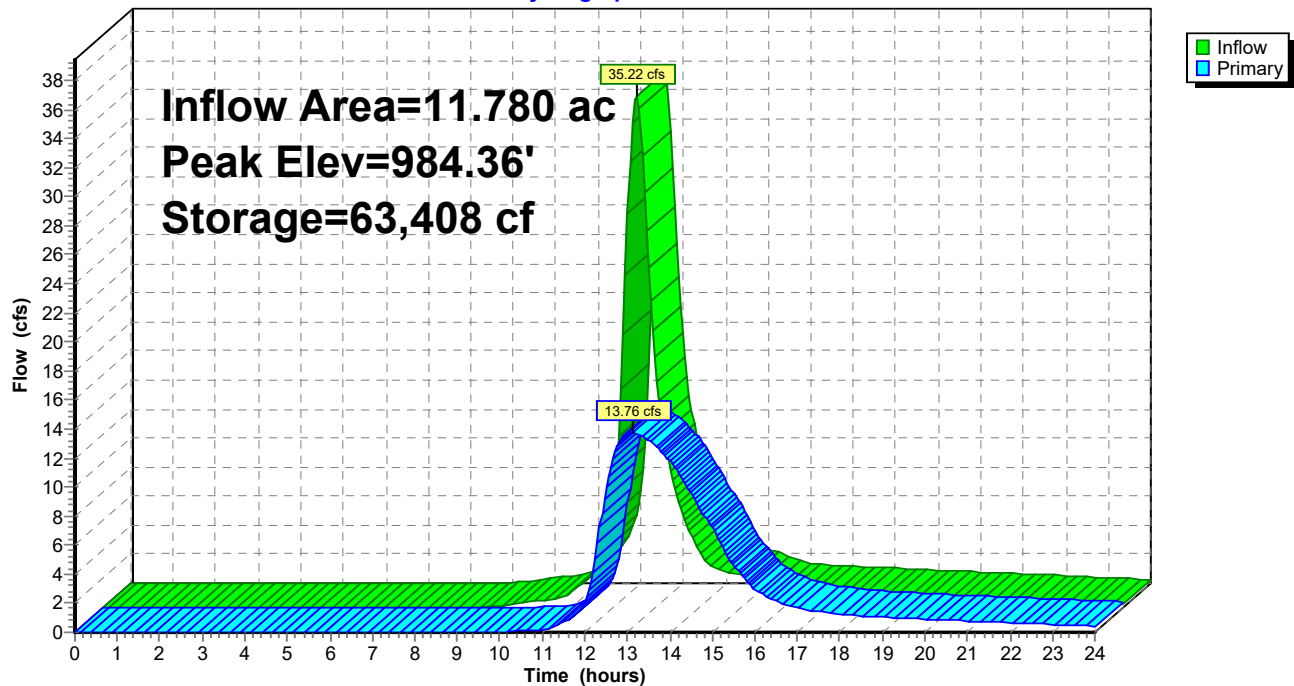
Plug-Flow detention time= 70.3 min calculated for 3.776 af (98% of inflow)
 Center-of-Mass det. time= 58.3 min (880.9 - 822.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	981.00'	146,952 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
981.00	12,915	0	0	12,915
982.00	16,253	14,552	14,552	16,280
983.00	19,824	18,009	32,561	19,883
984.00	23,940	21,850	54,411	24,032
985.00	28,560	26,216	80,627	28,687
986.00	33,500	30,997	111,624	33,667
987.00	37,188	35,328	146,952	37,414

Device	Routing	Invert	Outlet Devices
#1	Primary	981.00'	18.0" Round Culvert L= 115.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 981.00' / 976.50' S= 0.0391 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	985.64'	15.0' 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=13.75 cfs @ 13.12 hrs HW=984.36' TW=976.50' (Dynamic Tailwater)

1=Culvert (Inlet Controls 13.75 cfs @ 7.78 fps)
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 5P: Pond 5**Hydrograph**

Stage-Discharge for Pond 5P: Pond 5

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
981.00	0.00	983.08	9.81	985.16	15.71
981.04	0.01	983.12	9.96	985.20	15.80
981.08	0.04	983.16	10.10	985.24	15.90
981.12	0.08	983.20	10.25	985.28	15.99
981.16	0.14	983.24	10.39	985.32	16.08
981.20	0.21	983.28	10.52	985.36	16.17
981.24	0.30	983.32	10.66	985.40	16.26
981.28	0.41	983.36	10.80	985.44	16.34
981.32	0.53	983.40	10.93	985.48	16.43
981.36	0.67	983.44	11.06	985.52	16.52
981.40	0.81	983.48	11.19	985.56	16.61
981.44	0.98	983.52	11.32	985.60	16.70
981.48	1.15	983.56	11.45	985.64	16.78
981.52	1.34	983.60	11.57	985.68	17.17
981.56	1.53	983.64	11.70	985.72	17.80
981.60	1.74	983.68	11.82	985.76	18.59
981.64	1.96	983.72	11.94	985.80	19.51
981.68	2.19	983.76	12.06	985.84	20.55
981.72	2.42	983.80	12.18	985.88	21.71
981.76	2.67	983.84	12.30	985.92	22.97
981.80	2.92	983.88	12.42	985.96	24.33
981.84	3.18	983.92	12.53	986.00	25.79
981.88	3.44	983.96	12.65	986.04	27.34
981.92	3.71	984.00	12.76	986.08	29.04
981.96	3.98	984.04	12.88	986.12	30.84
982.00	4.26	984.08	12.99	986.16	32.74
982.04	4.54	984.12	13.10	986.20	34.75
982.08	4.82	984.16	13.21	986.24	36.85
982.12	5.10	984.20	13.32	986.28	38.83
982.16	5.38	984.24	13.43	986.32	40.87
982.20	5.65	984.28	13.53	986.36	42.96
982.24	5.92	984.32	13.64	986.40	45.10
982.28	6.19	984.36	13.75	986.44	47.30
982.32	6.44	984.40	13.85	986.48	49.55
982.36	6.69	984.44	13.96	986.52	51.84
982.40	6.92	984.48	14.06	986.56	54.19
982.44	7.12	984.52	14.16	986.60	56.58
982.48	7.30	984.56	14.26	986.64	59.02
982.52	7.47	984.60	14.36	986.68	61.56
982.56	7.66	984.64	14.46	986.72	64.16
982.60	7.84	984.68	14.56	986.76	66.80
982.64	8.03	984.72	14.66	986.80	69.50
982.68	8.21	984.76	14.76	986.84	72.24
982.72	8.38	984.80	14.86	986.88	74.90
982.76	8.55	984.84	14.96	986.92	77.61
982.80	8.72	984.88	15.05	986.96	80.34
982.84	8.88	984.92	15.15	987.00	83.11
982.88	9.04	984.96	15.24		
982.92	9.20	985.00	15.34		
982.96	9.36	985.04	15.43		
983.00	9.51	985.08	15.53		
983.04	9.66	985.12	15.62		

Summary for Pond 10K: Kettle 10

Inflow Area = 18.870 ac, 7.05% Impervious, Inflow Depth > 0.20" for 100 yr event
 Inflow = 2.88 cfs @ 12.54 hrs, Volume= 0.313 af
 Outflow = 0.04 cfs @ 23.25 hrs, Volume= 0.035 af, Atten= 99%, Lag= 642.5 min
 Discarded = 0.04 cfs @ 23.25 hrs, Volume= 0.035 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Peak Elev= 957.77' @ 23.25 hrs Surf.Area= 6,029 sf Storage= 12,135 cf

Plug-Flow detention time= 374.3 min calculated for 0.035 af (11% of inflow)

Center-of-Mass det. time= 255.5 min (1,108.6 - 853.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	953.00'	105,225 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
953.00	170	0	0	170	
954.00	700	405	405	705	
955.00	1,590	1,115	1,520	1,602	
956.00	3,290	2,389	3,909	3,311	
957.00	4,855	4,047	7,956	4,892	
958.00	6,405	5,612	13,568	6,465	
959.00	8,045	7,209	20,778	8,132	
960.00	9,695	8,857	29,635	9,815	
961.00	11,530	10,599	40,234	11,686	
962.00	13,595	12,548	52,783	13,789	
963.00	15,870	14,718	67,500	16,104	
964.00	19,025	17,424	84,924	19,294	
965.00	21,605	20,301	105,225	21,923	

Device	Routing	Invert	Outlet Devices
#1	Discarded	953.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 943.00' Phase-In= 0.01'
#2	Primary	964.50'	15.0' 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

Discarded OutFlow Max=0.04 cfs @ 23.25 hrs HW=957.77' (Free Discharge)

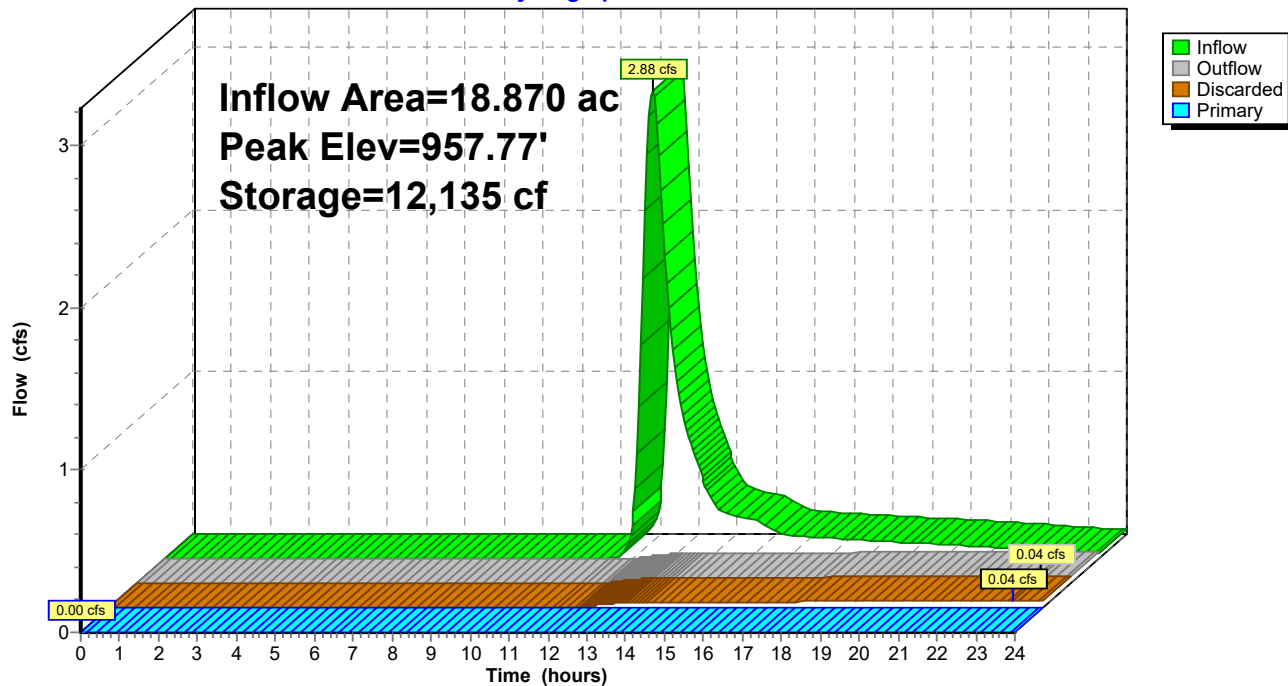
↑ **1=Exfiltration** (Controls 0.04 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=953.00' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 10K: Kettle 10

Hydrograph



Stage-Discharge for Pond 10K: Kettle 10

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
953.00	0.00	0.00	0.00	960.80	0.08	0.08	0.00
953.15	0.00	0.00	0.00	960.95	0.08	0.08	0.00
953.30	0.00	0.00	0.00	961.10	0.08	0.08	0.00
953.45	0.00	0.00	0.00	961.25	0.09	0.09	0.00
953.60	0.00	0.00	0.00	961.40	0.09	0.09	0.00
953.75	0.00	0.00	0.00	961.55	0.09	0.09	0.00
953.90	0.00	0.00	0.00	961.70	0.09	0.09	0.00
954.05	0.00	0.00	0.00	961.85	0.10	0.10	0.00
954.20	0.01	0.01	0.00	962.00	0.10	0.10	0.00
954.35	0.01	0.01	0.00	962.15	0.10	0.10	0.00
954.50	0.01	0.01	0.00	962.30	0.10	0.10	0.00
954.65	0.01	0.01	0.00	962.45	0.11	0.11	0.00
954.80	0.01	0.01	0.00	962.60	0.11	0.11	0.00
954.95	0.01	0.01	0.00	962.75	0.11	0.11	0.00
955.10	0.01	0.01	0.00	962.90	0.11	0.11	0.00
955.25	0.01	0.01	0.00	963.05	0.12	0.12	0.00
955.40	0.01	0.01	0.00	963.20	0.12	0.12	0.00
955.55	0.01	0.01	0.00	963.35	0.12	0.12	0.00
955.70	0.02	0.02	0.00	963.50	0.13	0.13	0.00
955.85	0.02	0.02	0.00	963.65	0.13	0.13	0.00
956.00	0.02	0.02	0.00	963.80	0.14	0.14	0.00
956.15	0.02	0.02	0.00	963.95	0.14	0.14	0.00
956.30	0.02	0.02	0.00	964.10	0.14	0.14	0.00
956.45	0.02	0.02	0.00	964.25	0.15	0.15	0.00
956.60	0.03	0.03	0.00	964.40	0.15	0.15	0.00
956.75	0.03	0.03	0.00	964.55	0.57	0.15	0.42
956.90	0.03	0.03	0.00	964.70	3.50	0.16	3.34
957.05	0.03	0.03	0.00	964.85	8.06	0.16	7.90
957.20	0.03	0.03	0.00	965.00	14.11	0.16	13.95
957.35	0.03	0.03	0.00				
957.50	0.04	0.04	0.00				
957.65	0.04	0.04	0.00				
957.80	0.04	0.04	0.00				
957.95	0.04	0.04	0.00				
958.10	0.04	0.04	0.00				
958.25	0.05	0.05	0.00				
958.40	0.05	0.05	0.00				
958.55	0.05	0.05	0.00				
958.70	0.05	0.05	0.00				
958.85	0.05	0.05	0.00				
959.00	0.05	0.05	0.00				
959.15	0.06	0.06	0.00				
959.30	0.06	0.06	0.00				
959.45	0.06	0.06	0.00				
959.60	0.06	0.06	0.00				
959.75	0.06	0.06	0.00				
959.90	0.07	0.07	0.00				
960.05	0.07	0.07	0.00				
960.20	0.07	0.07	0.00				
960.35	0.07	0.07	0.00				
960.50	0.07	0.07	0.00				
960.65	0.08	0.08	0.00				

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Pond 11P: Pond 11

Inflow Area = 17.800 ac, 43.31% Impervious, Inflow Depth > 1.80" for 100 yr event
 Inflow = 8.93 cfs @ 14.86 hrs, Volume= 2.677 af
 Outflow = 6.27 cfs @ 15.67 hrs, Volume= 2.647 af, Atten= 30%, Lag= 49.1 min
 Primary = 6.27 cfs @ 15.67 hrs, Volume= 2.647 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 967.25' @ 15.67 hrs Surf.Area= 7,230 sf Storage= 17,176 cf

Plug-Flow detention time= 34.3 min calculated for 2.641 af (99% of inflow)
 Center-of-Mass det. time= 28.9 min (979.7 - 950.8)

Volume	Invert	Avail.Storage	Storage Description	
#1	964.00'	32,230 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
964.00	3,560	0	0	3,560
965.00	4,560	4,050	4,050	4,585
966.00	5,660	5,100	9,150	5,714
967.00	6,895	6,267	15,417	6,980
968.00	8,290	7,582	22,999	8,409
969.00	10,205	9,231	32,230	10,354

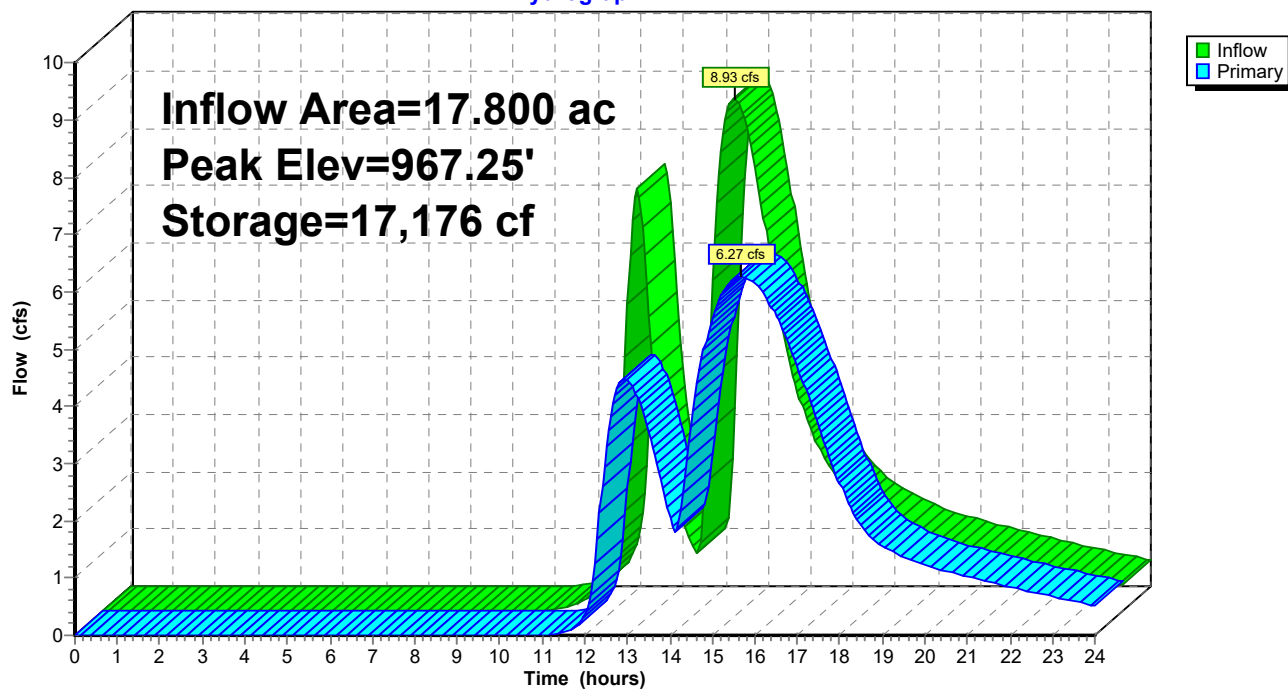
Device	Routing	Invert	Outlet Devices
#1	Primary	964.00'	12.0" Round Culvert L= 65.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 964.00' / 962.00' S= 0.0308 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Primary	968.00'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir 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=6.27 cfs @ 15.67 hrs HW=967.25' TW=955.07' (Dynamic Tailwater)

1=Culvert (Inlet Controls 6.27 cfs @ 7.98 fps)
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 11P: Pond 11

Hydrograph



Stage-Discharge for Pond 11P: Pond 11

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
964.00	0.00	966.60	5.48
964.05	0.01	966.65	5.55
964.10	0.04	966.70	5.61
964.15	0.10	966.75	5.67
964.20	0.17	966.80	5.74
964.25	0.26	966.85	5.80
964.30	0.37	966.90	5.86
964.35	0.49	966.95	5.92
964.40	0.63	967.00	5.98
964.45	0.78	967.05	6.04
964.50	0.95	967.10	6.10
964.55	1.12	967.15	6.16
964.60	1.30	967.20	6.21
964.65	1.48	967.25	6.27
964.70	1.67	967.30	6.33
964.75	1.86	967.35	6.38
964.80	2.05	967.40	6.44
964.85	2.23	967.45	6.50
964.90	2.40	967.50	6.55
964.95	2.56	967.55	6.60
965.00	2.67	967.60	6.66
965.05	2.80	967.65	6.71
965.10	2.93	967.70	6.76
965.15	3.05	967.75	6.82
965.20	3.16	967.80	6.87
965.25	3.28	967.85	6.92
965.30	3.38	967.90	6.97
965.35	3.49	967.95	7.02
965.40	3.59	968.00	7.07
965.45	3.69	968.05	7.54
965.50	3.78	968.10	8.36
965.55	3.88	968.15	9.39
965.60	3.97	968.20	10.61
965.65	4.06	968.25	12.02
965.70	4.14	968.30	13.60
965.75	4.23	968.35	15.32
965.80	4.31	968.40	17.18
965.85	4.39	968.45	19.27
965.90	4.47	968.50	21.51
965.95	4.55	968.55	23.92
966.00	4.63	968.60	26.48
966.05	4.71	968.65	28.91
966.10	4.78	968.70	31.43
966.15	4.86	968.75	34.03
966.20	4.93	968.80	36.71
966.25	5.00	968.85	39.48
966.30	5.07	968.90	42.32
966.35	5.14	968.95	45.24
966.40	5.21	969.00	48.22
966.45	5.28		
966.50	5.35		
966.55	5.41		

Summary for Pond 12K: Kettle 12

Inflow Area = 17.020 ac, 7.76% Impervious, Inflow Depth > 0.58" for 100 yr event
 Inflow = 8.31 cfs @ 12.46 hrs, Volume= 0.820 af
 Outflow = 0.11 cfs @ 22.71 hrs, Volume= 0.102 af, Atten= 99%, Lag= 615.2 min
 Discarded = 0.11 cfs @ 22.71 hrs, Volume= 0.102 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 959.38' @ 22.71 hrs Surf.Area= 16,756 sf Storage= 31,386 cf

Plug-Flow detention time= 371.3 min calculated for 0.102 af (12% of inflow)
 Center-of-Mass det. time= 258.2 min (1,097.3 - 839.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	956.00'	246,697 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
956.00	495	0	0	495
957.00	6,410	2,895	2,895	6,413
958.00	11,490	8,827	11,723	11,504
959.00	15,695	13,538	25,261	15,729
960.00	18,580	17,117	42,378	18,651
961.00	21,310	19,929	62,307	21,426
962.00	23,950	22,617	84,925	24,120
963.00	26,775	25,349	110,274	27,000
964.00	30,155	28,448	138,722	30,433
965.00	34,835	32,467	171,189	35,156
966.00	37,955	36,384	207,573	38,349
967.00	40,304	39,124	246,697	40,800

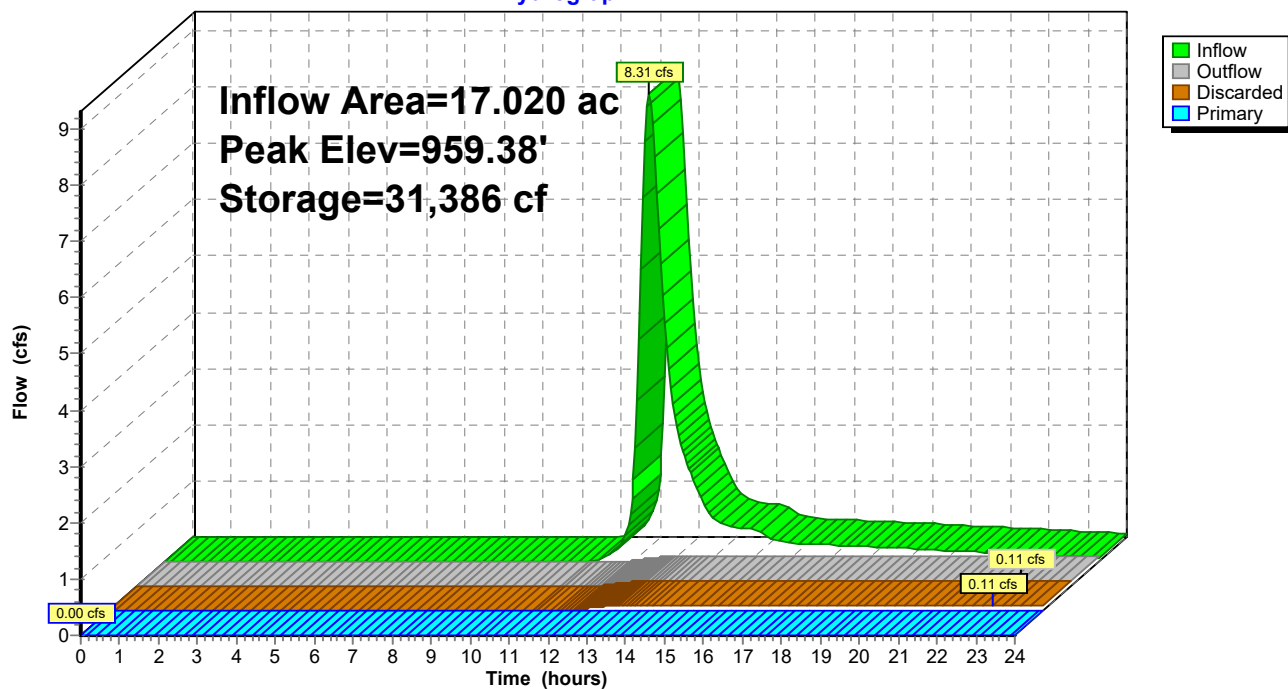
Device	Routing	Invert	Outlet Devices
#1	Discarded	956.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 946.00' Phase-In= 0.01'
#2	Primary	963.00'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.11 cfs @ 22.71 hrs HW=959.38' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=956.00' TW=953.00' (Dynamic Tailwater)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 12K: Kettle 12**Hydrograph**

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Stage-Discharge for Pond 12K: Kettle 12

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
956.00	0.00	0.00	0.00	963.80	29.10	0.23	28.87
956.15	0.01	0.01	0.00	963.95	37.49	0.23	37.26
956.30	0.01	0.01	0.00	964.10	46.70	0.24	46.46
956.45	0.01	0.01	0.00	964.25	56.53	0.24	56.29
956.60	0.02	0.02	0.00	964.40	66.59	0.25	66.34
956.75	0.02	0.02	0.00	964.55	76.89	0.25	76.63
956.90	0.03	0.03	0.00	964.70	88.04	0.26	87.77
957.05	0.04	0.04	0.00	964.85	99.91	0.27	99.64
957.20	0.04	0.04	0.00	965.00	112.28	0.27	112.01
957.35	0.05	0.05	0.00	965.15	125.12	0.28	124.84
957.50	0.05	0.05	0.00	965.30	138.41	0.28	138.13
957.65	0.06	0.06	0.00	965.45	152.15	0.29	151.86
957.80	0.06	0.06	0.00	965.60	166.31	0.29	166.02
957.95	0.07	0.07	0.00	965.75	180.89	0.30	180.59
958.10	0.07	0.07	0.00	965.90	195.87	0.30	195.57
958.25	0.08	0.08	0.00	966.05	211.24	0.31	210.93
958.40	0.08	0.08	0.00	966.20	226.99	0.31	226.68
958.55	0.09	0.09	0.00	966.35	243.12	0.32	242.81
958.70	0.09	0.09	0.00	966.50	259.62	0.32	259.30
958.85	0.09	0.09	0.00	966.65	276.47	0.32	276.14
959.00	0.10	0.10	0.00	966.80	293.67	0.33	293.34
959.15	0.10	0.10	0.00	966.95	311.21	0.33	310.88
959.30	0.11	0.11	0.00				
959.45	0.11	0.11	0.00				
959.60	0.11	0.11	0.00				
959.75	0.12	0.12	0.00				
959.90	0.12	0.12	0.00				
960.05	0.13	0.13	0.00				
960.20	0.13	0.13	0.00				
960.35	0.13	0.13	0.00				
960.50	0.14	0.14	0.00				
960.65	0.14	0.14	0.00				
960.80	0.14	0.14	0.00				
960.95	0.15	0.15	0.00				
961.10	0.15	0.15	0.00				
961.25	0.16	0.16	0.00				
961.40	0.16	0.16	0.00				
961.55	0.16	0.16	0.00				
961.70	0.17	0.17	0.00				
961.85	0.17	0.17	0.00				
962.00	0.17	0.17	0.00				
962.15	0.18	0.18	0.00				
962.30	0.18	0.18	0.00				
962.45	0.19	0.19	0.00				
962.60	0.19	0.19	0.00				
962.75	0.19	0.19	0.00				
962.90	0.20	0.20	0.00				
963.05	0.62	0.20	0.42				
963.20	3.55	0.21	3.34				
963.35	8.11	0.21	7.90				
963.50	14.16	0.22	13.95				
963.65	21.43	0.22	21.20				

Summary for Pond 13K: Kettle 13

Inflow Area = 14.080 ac, 7.88% Impervious, Inflow Depth > 0.15" for 100 yr event
 Inflow = 1.59 cfs @ 12.53 hrs, Volume= 0.171 af
 Outflow = 1.55 cfs @ 12.59 hrs, Volume= 0.171 af, Atten= 2%, Lag= 3.9 min
 Discarded = 0.01 cfs @ 12.59 hrs, Volume= 0.003 af
 Primary = 1.54 cfs @ 12.59 hrs, Volume= 0.168 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 959.88' @ 12.59 hrs Surf.Area= 1,729 sf Storage= 329 cf

Plug-Flow detention time= 5.3 min calculated for 0.171 af (100% of inflow)
 Center-of-Mass det. time= 3.7 min (856.2 - 852.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	959.40'	55,187 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
959.40	50	0	0	50	
960.00	2,560	594	594	2,561	
961.00	4,110	3,305	3,898	4,124	
962.00	5,850	4,954	8,853	5,882	
963.00	7,130	6,479	15,332	7,193	
964.00	8,425	7,768	23,101	8,525	
965.00	9,765	9,087	32,187	9,907	
966.00	11,570	10,655	42,842	11,749	
967.00	13,137	12,345	55,187	13,365	

Device	Routing	Invert	Outlet Devices
#1	Discarded	959.40'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 949.00' Phase-In= 0.01'
#2	Primary	959.48'	24.0" Round Culvert X 2.00 L= 92.5' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 959.48' / 958.97' S= 0.0055 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#3	Primary	966.00'	15.0' 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

Discarded OutFlow Max=0.01 cfs @ 12.59 hrs HW=959.88' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.01 cfs)

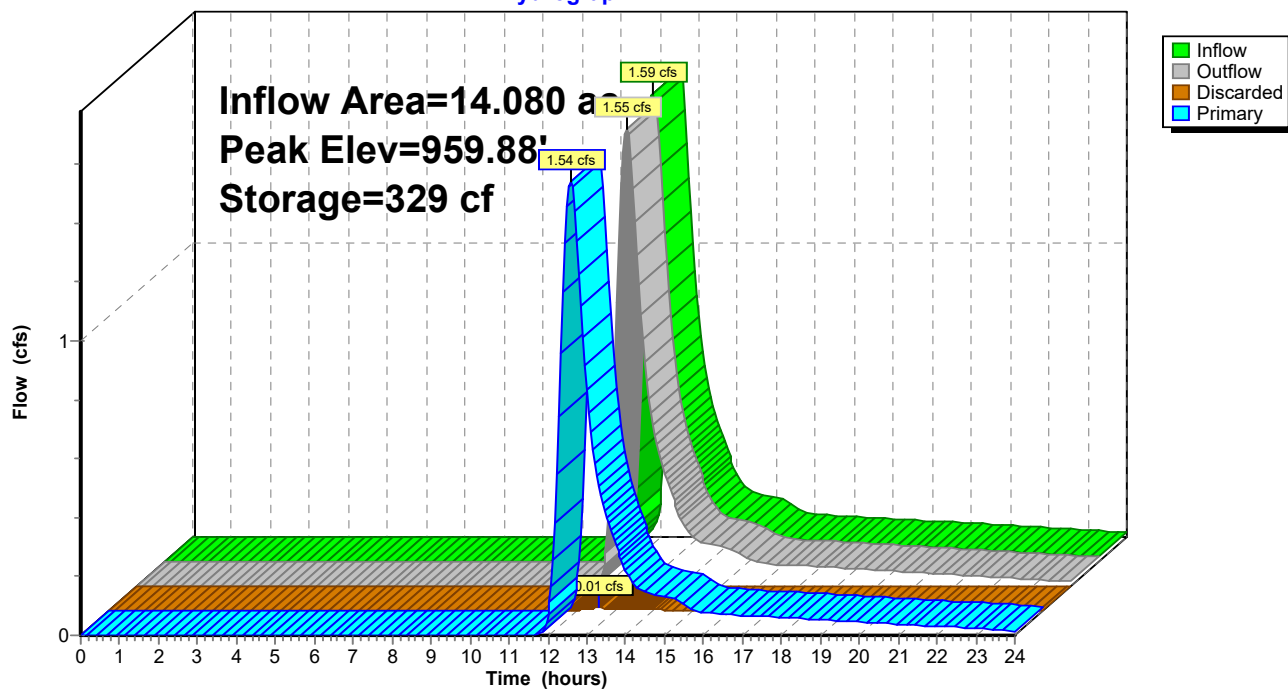
Primary OutFlow Max=1.54 cfs @ 12.59 hrs HW=959.88' TW=958.06' (Dynamic Tailwater)

↑ **2=Culvert** (Barrel Controls 1.54 cfs @ 2.65 fps)

↑ **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 13K: Kettle 13

Hydrograph



Stage-Discharge for Pond 13K: Kettle 13

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
959.40	0.00	0.00	0.00	964.60	62.70	0.07	62.63
959.50	0.00	0.00	0.00	964.70	63.55	0.07	63.49
959.60	0.13	0.00	0.13	964.80	64.40	0.07	64.33
959.70	0.47	0.00	0.46	964.90	65.24	0.07	65.17
959.80	1.01	0.01	1.00	965.00	66.06	0.07	65.99
959.90	1.75	0.01	1.74	965.10	66.88	0.07	66.80
960.00	2.67	0.01	2.66	965.20	67.68	0.07	67.61
960.10	3.76	0.02	3.75	965.30	68.48	0.07	68.40
960.20	5.00	0.02	4.98	965.40	69.26	0.08	69.19
960.30	6.38	0.02	6.36	965.50	70.04	0.08	69.96
960.40	7.88	0.02	7.86	965.60	70.81	0.08	70.73
960.50	9.49	0.02	9.48	965.70	71.57	0.08	71.49
960.60	11.21	0.02	11.18	965.80	72.33	0.08	72.24
960.70	13.00	0.02	12.98	965.90	73.07	0.08	72.99
960.80	14.86	0.02	14.84	966.00	73.81	0.09	73.72
960.90	16.78	0.02	16.76	966.10	75.72	0.09	75.63
961.00	18.74	0.02	18.72	966.20	78.60	0.09	78.52
961.10	20.73	0.03	20.70	966.30	82.20	0.09	82.11
961.20	22.72	0.03	22.69	966.40	86.40	0.09	86.31
961.30	24.70	0.03	24.68	966.50	91.34	0.09	91.25
961.40	26.66	0.03	26.63	966.60	96.91	0.09	96.82
961.50	28.55	0.03	28.52	966.70	102.46	0.09	102.36
961.60	30.37	0.03	30.34	966.80	108.34	0.10	108.24
961.70	32.07	0.03	32.04	966.90	114.53	0.10	114.44
961.80	33.61	0.03	33.58	967.00	121.02	0.10	120.92
961.90	34.93	0.04	34.89				
962.00	35.92	0.04	35.89				
962.10	36.34	0.04	36.30				
962.20	36.50	0.04	36.46				
962.30	37.95	0.04	37.91				
962.40	39.35	0.04	39.31				
962.50	40.70	0.04	40.66				
962.60	42.01	0.04	41.97				
962.70	43.28	0.04	43.24				
962.80	44.51	0.05	44.47				
962.90	45.71	0.05	45.67				
963.00	46.88	0.05	46.84				
963.10	48.02	0.05	47.98				
963.20	49.14	0.05	49.09				
963.30	50.23	0.05	50.18				
963.40	51.29	0.05	51.24				
963.50	52.34	0.05	52.29				
963.60	53.36	0.05	53.31				
963.70	54.37	0.05	54.31				
963.80	55.36	0.06	55.30				
963.90	56.33	0.06	56.27				
964.00	57.28	0.06	57.22				
964.10	58.22	0.06	58.16				
964.20	59.14	0.06	59.08				
964.30	60.05	0.06	59.99				
964.40	60.94	0.06	60.88				
964.50	61.83	0.06	61.76				

Summary for Pond 14K: Kettle 14

Inflow Area = 13.070 ac, 8.49% Impervious, Inflow Depth > 1.23" for 100 yr event
 Inflow = 7.67 cfs @ 13.09 hrs, Volume= 1.339 af
 Outflow = 0.11 cfs @ 24.00 hrs, Volume= 0.094 af, Atten= 99%, Lag= 654.5 min
 Discarded = 0.11 cfs @ 24.00 hrs, Volume= 0.094 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 961.03' @ 24.00 hrs Surf.Area= 14,888 sf Storage= 54,190 cf

Plug-Flow detention time= 372.6 min calculated for 0.094 af (7% of inflow)
 Center-of-Mass det. time= 236.2 min (1,118.9 - 882.7)

Volume	Invert	Avail.Storage	Storage Description	
#1	955.00'	69,834 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
955.00	3,070	0	0	3,070
956.00	5,250	4,112	4,112	5,262
957.00	7,260	6,228	10,339	7,291
958.00	9,090	8,158	18,497	9,149
959.00	10,725	9,896	28,394	10,821
960.00	12,545	11,623	40,017	12,681
961.00	14,795	13,655	53,671	14,969
962.00	17,570	16,163	69,834	17,780

Device	Routing	Invert	Outlet Devices
#1	Discarded	955.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 945.00' Phase-In= 0.01'
#2	Primary	961.30'	15.0' 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

Discarded OutFlow Max=0.11 cfs @ 24.00 hrs HW=961.03' (Free Discharge)

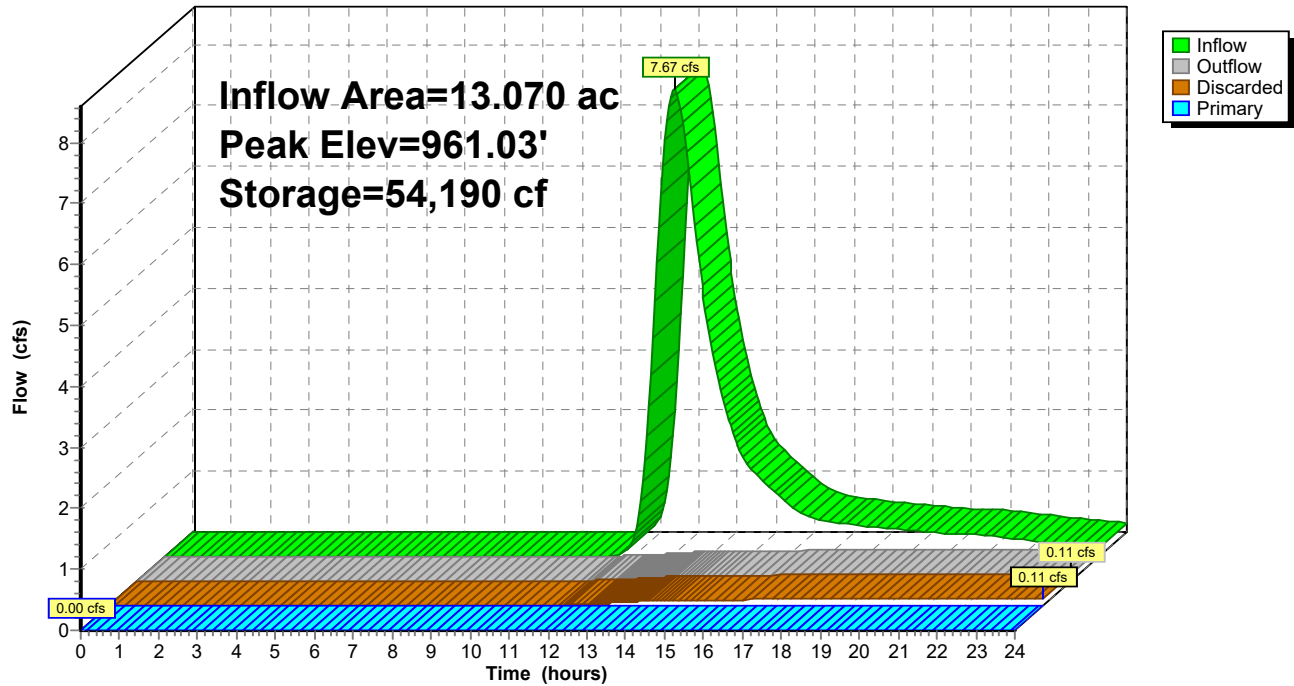
↑1=Exfiltration (Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=955.00' TW=959.40' (Dynamic Tailwater)

↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 14K: Kettle 14

Hydrograph



Stage-Discharge for Pond 14K: Kettle 14

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
955.00	0.00	0.00	0.00	960.20	0.09	0.09	0.00
955.10	0.02	0.02	0.00	960.30	0.10	0.10	0.00
955.20	0.02	0.02	0.00	960.40	0.10	0.10	0.00
955.30	0.02	0.02	0.00	960.50	0.10	0.10	0.00
955.40	0.02	0.02	0.00	960.60	0.10	0.10	0.00
955.50	0.02	0.02	0.00	960.70	0.10	0.10	0.00
955.60	0.03	0.03	0.00	960.80	0.11	0.11	0.00
955.70	0.03	0.03	0.00	960.90	0.11	0.11	0.00
955.80	0.03	0.03	0.00	961.00	0.11	0.11	0.00
955.90	0.03	0.03	0.00	961.10	0.11	0.11	0.00
956.00	0.03	0.03	0.00	961.20	0.11	0.11	0.00
956.10	0.03	0.03	0.00	961.30	0.12	0.12	0.00
956.20	0.03	0.03	0.00	961.40	1.30	0.12	1.18
956.30	0.04	0.04	0.00	961.50	3.46	0.12	3.34
956.40	0.04	0.04	0.00	961.60	6.35	0.12	6.22
956.50	0.04	0.04	0.00	961.70	9.84	0.13	9.71
956.60	0.04	0.04	0.00	961.80	14.08	0.13	13.95
956.70	0.04	0.04	0.00	961.90	18.95	0.13	18.82
956.80	0.04	0.04	0.00	962.00	23.81	0.13	23.68
956.90	0.04	0.04	0.00				
957.00	0.05	0.05	0.00				
957.10	0.05	0.05	0.00				
957.20	0.05	0.05	0.00				
957.30	0.05	0.05	0.00				
957.40	0.05	0.05	0.00				
957.50	0.05	0.05	0.00				
957.60	0.05	0.05	0.00				
957.70	0.06	0.06	0.00				
957.80	0.06	0.06	0.00				
957.90	0.06	0.06	0.00				
958.00	0.06	0.06	0.00				
958.10	0.06	0.06	0.00				
958.20	0.06	0.06	0.00				
958.30	0.06	0.06	0.00				
958.40	0.07	0.07	0.00				
958.50	0.07	0.07	0.00				
958.60	0.07	0.07	0.00				
958.70	0.07	0.07	0.00				
958.80	0.07	0.07	0.00				
958.90	0.07	0.07	0.00				
959.00	0.07	0.07	0.00				
959.10	0.08	0.08	0.00				
959.20	0.08	0.08	0.00				
959.30	0.08	0.08	0.00				
959.40	0.08	0.08	0.00				
959.50	0.08	0.08	0.00				
959.60	0.08	0.08	0.00				
959.70	0.09	0.09	0.00				
959.80	0.09	0.09	0.00				
959.90	0.09	0.09	0.00				
960.00	0.09	0.09	0.00				
960.10	0.09	0.09	0.00				

Summary for Pond 15K: Kettle 15

Inflow Area = 0.870 ac, 1.15% Impervious, Inflow Depth > 2.30" for 100 yr event
 Inflow = 2.27 cfs @ 12.29 hrs, Volume= 0.167 af
 Outflow = 0.03 cfs @ 21.23 hrs, Volume= 0.031 af, Atten= 99%, Lag= 536.2 min
 Discarded = 0.03 cfs @ 21.23 hrs, Volume= 0.031 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 971.90' @ 21.23 hrs Surf.Area= 5,308 sf Storage= 6,014 cf

Plug-Flow detention time= 366.6 min calculated for 0.031 af (19% of inflow)
 Center-of-Mass det. time= 259.7 min (1,092.4 - 832.7)

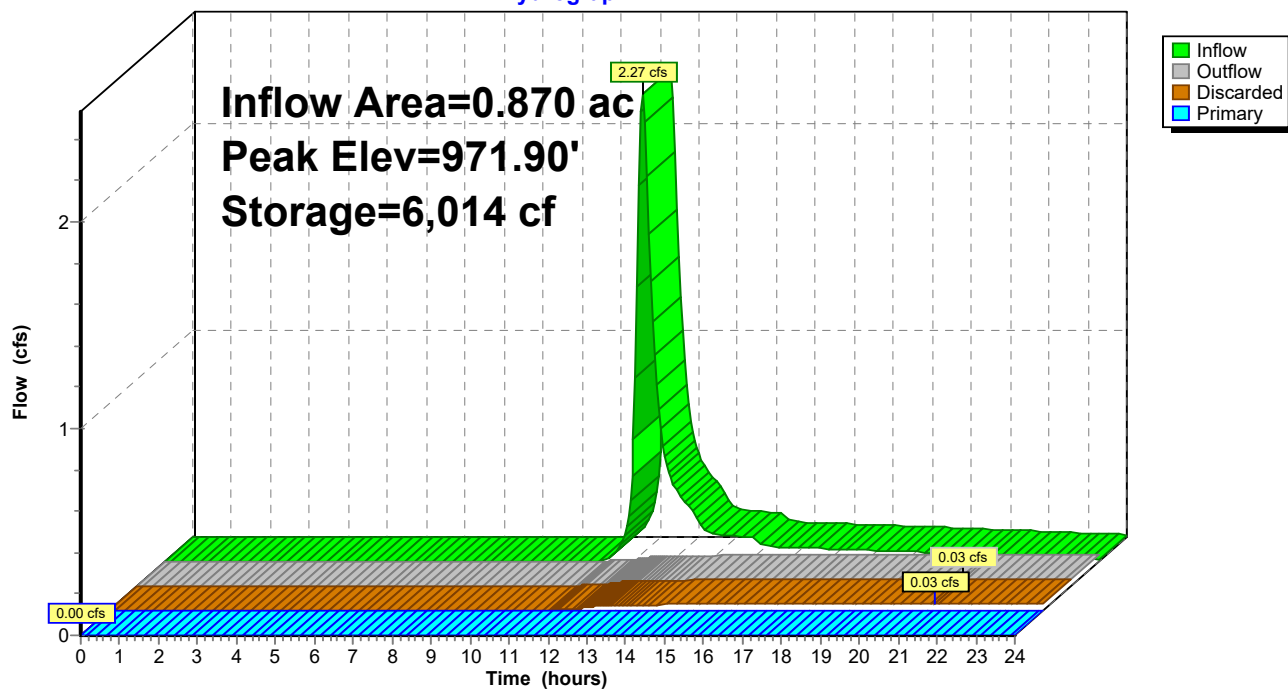
Volume	Invert	Avail.Storage	Storage Description
#1	970.00'	13,842 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
970.00	1,620	0	0	1,620
971.00	3,050	2,298	2,298	3,060
972.00	5,595	4,259	6,556	5,615
973.00	9,120	7,286	13,842	9,153

Device	Routing	Invert	Outlet Devices
#1	Discarded	970.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 960.00' Phase-In= 0.01'
#2	Primary	972.50'	15.0' 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

Discarded OutFlow Max=0.03 cfs @ 21.23 hrs HW=971.90' (Free Discharge)
 ↑1=Exfiltration (Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=970.00' TW=955.00' (Dynamic Tailwater)
 ↑2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 15K: Kettle 15**Hydrograph**

Stage-Discharge for Pond 15K: Kettle 15

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
970.00	0.00	0.00	0.00	972.60	1.23	0.05	1.18
970.05	0.01	0.01	0.00	972.65	2.22	0.05	2.17
970.10	0.01	0.01	0.00	972.70	3.39	0.05	3.34
970.15	0.01	0.01	0.00	972.75	4.75	0.05	4.70
970.20	0.01	0.01	0.00	972.80	6.28	0.05	6.22
970.25	0.01	0.01	0.00	972.85	7.95	0.05	7.90
970.30	0.01	0.01	0.00	972.90	9.77	0.06	9.71
970.35	0.01	0.01	0.00	972.95	11.81	0.06	11.75
970.40	0.01	0.01	0.00	973.00	14.01	0.06	13.95
970.45	0.01	0.01	0.00				
970.50	0.01	0.01	0.00				
970.55	0.01	0.01	0.00				
970.60	0.01	0.01	0.00				
970.65	0.01	0.01	0.00				
970.70	0.02	0.02	0.00				
970.75	0.02	0.02	0.00				
970.80	0.02	0.02	0.00				
970.85	0.02	0.02	0.00				
970.90	0.02	0.02	0.00				
970.95	0.02	0.02	0.00				
971.00	0.02	0.02	0.00				
971.05	0.02	0.02	0.00				
971.10	0.02	0.02	0.00				
971.15	0.02	0.02	0.00				
971.20	0.02	0.02	0.00				
971.25	0.02	0.02	0.00				
971.30	0.02	0.02	0.00				
971.35	0.02	0.02	0.00				
971.40	0.02	0.02	0.00				
971.45	0.02	0.02	0.00				
971.50	0.03	0.03	0.00				
971.55	0.03	0.03	0.00				
971.60	0.03	0.03	0.00				
971.65	0.03	0.03	0.00				
971.70	0.03	0.03	0.00				
971.75	0.03	0.03	0.00				
971.80	0.03	0.03	0.00				
971.85	0.03	0.03	0.00				
971.90	0.03	0.03	0.00				
971.95	0.03	0.03	0.00				
972.00	0.03	0.03	0.00				
972.05	0.04	0.04	0.00				
972.10	0.04	0.04	0.00				
972.15	0.04	0.04	0.00				
972.20	0.04	0.04	0.00				
972.25	0.04	0.04	0.00				
972.30	0.04	0.04	0.00				
972.35	0.04	0.04	0.00				
972.40	0.04	0.04	0.00				
972.45	0.04	0.04	0.00				
972.50	0.05	0.05	0.00				
972.55	0.46	0.05	0.42				

Summary for Pond 16K: Kettle 16

Inflow Area = 5.180 ac, 4.25% Impervious, Inflow Depth > 0.96" for 100 yr event
 Inflow = 2.18 cfs @ 12.62 hrs, Volume= 0.413 af
 Outflow = 0.09 cfs @ 20.97 hrs, Volume= 0.064 af, Atten= 96%, Lag= 501.0 min
 Discarded = 0.07 cfs @ 20.97 hrs, Volume= 0.061 af
 Primary = 0.03 cfs @ 20.97 hrs, Volume= 0.003 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,007.01' @ 20.97 hrs Surf.Area= 10,645 sf Storage= 15,484 cf

Plug-Flow detention time= 368.7 min calculated for 0.064 af (15% of inflow)
 Center-of-Mass det. time= 228.9 min (1,115.1 - 886.2)

Volume	Invert	Avail.Storage	Storage Description	
#1	1,005.00'	41,902 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,005.00	4,400	0	0	4,400
1,006.00	8,010	6,116	6,116	8,021
1,007.00	10,625	9,287	15,402	10,658
1,008.00	13,320	11,947	27,349	13,380
1,009.00	15,820	14,552	41,902	15,917

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,005.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 995.00' Phase-In= 0.01'
#2	Primary	1,007.00'	15.0' 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

Discarded OutFlow Max=0.07 cfs @ 20.97 hrs HW=1,007.01' (Free Discharge)

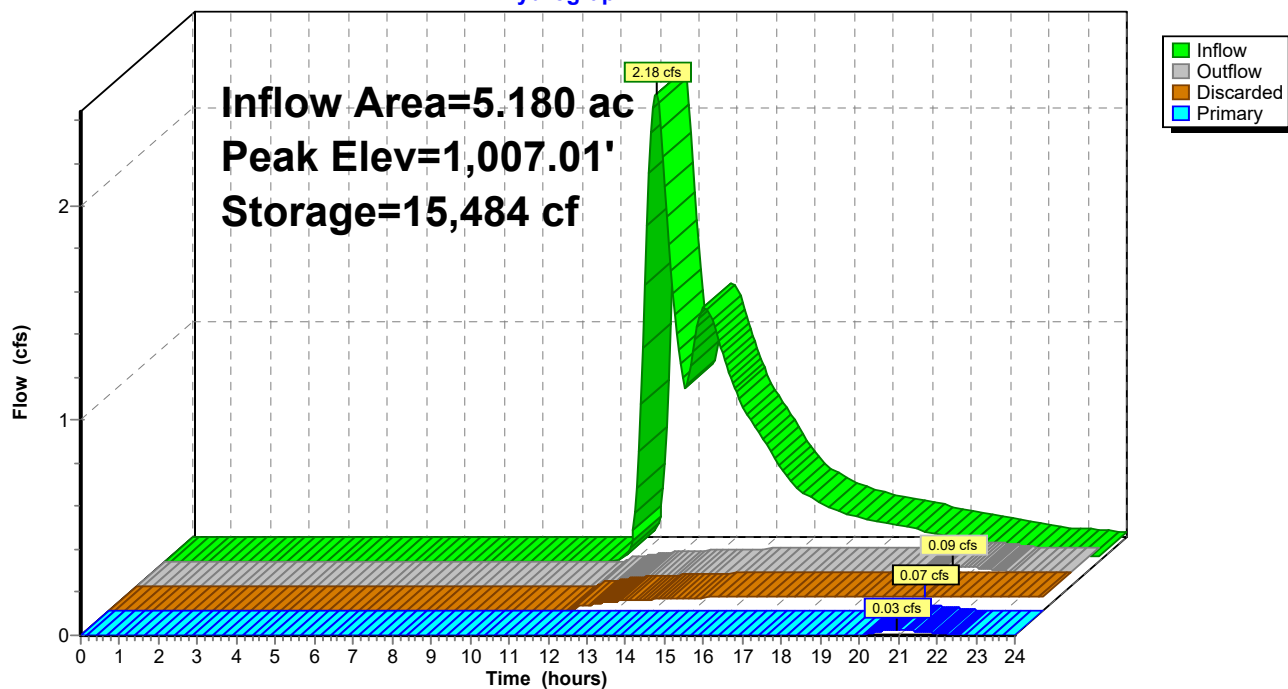
↑ **1=Exfiltration** (Controls 0.07 cfs)

Primary OutFlow Max=0.03 cfs @ 20.97 hrs HW=1,007.01' TW=960.93' (Dynamic Tailwater)

↑ **2=Broad-Crested Rectangular Weir**(Weir Controls 0.03 cfs @ 0.22 fps)

Pond 16K: Kettle 16

Hydrograph



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MSE 24-hr 3 100 yr Rainfall=6.18"

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Stage-Discharge for Pond 16K: Kettle 16

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
1,005.00	0.00	0.00	0.00	1,007.60	18.90	0.08	18.82
1,005.05	0.03	0.03	0.00	1,007.65	21.29	0.08	21.20
1,005.10	0.03	0.03	0.00	1,007.70	23.76	0.08	23.68
1,005.15	0.03	0.03	0.00	1,007.75	26.32	0.08	26.23
1,005.20	0.03	0.03	0.00	1,007.80	28.96	0.08	28.87
1,005.25	0.03	0.03	0.00	1,007.85	31.68	0.09	31.59
1,005.30	0.03	0.03	0.00	1,007.90	34.47	0.09	34.39
1,005.35	0.03	0.03	0.00	1,007.95	37.35	0.09	37.26
1,005.40	0.03	0.03	0.00	1,008.00	40.29	0.09	40.20
1,005.45	0.03	0.03	0.00	1,008.05	43.38	0.09	43.29
1,005.50	0.04	0.04	0.00	1,008.10	46.56	0.09	46.46
1,005.55	0.04	0.04	0.00	1,008.15	49.81	0.09	49.71
1,005.60	0.04	0.04	0.00	1,008.20	53.13	0.09	53.04
1,005.65	0.04	0.04	0.00	1,008.25	56.38	0.09	56.29
1,005.70	0.04	0.04	0.00	1,008.30	59.68	0.10	59.59
1,005.75	0.04	0.04	0.00	1,008.35	63.03	0.10	62.94
1,005.80	0.04	0.04	0.00	1,008.40	66.44	0.10	66.34
1,005.85	0.04	0.04	0.00	1,008.45	69.83	0.10	69.73
1,005.90	0.05	0.05	0.00	1,008.50	73.26	0.10	73.16
1,005.95	0.05	0.05	0.00	1,008.55	76.73	0.10	76.63
1,006.00	0.05	0.05	0.00	1,008.60	80.25	0.10	80.14
1,006.05	0.05	0.05	0.00	1,008.65	84.03	0.10	83.93
1,006.10	0.05	0.05	0.00	1,008.70	87.88	0.10	87.77
1,006.15	0.05	0.05	0.00	1,008.75	91.78	0.10	91.68
1,006.20	0.05	0.05	0.00	1,008.80	95.74	0.11	95.63
1,006.25	0.05	0.05	0.00	1,008.85	99.75	0.11	99.64
1,006.30	0.05	0.05	0.00	1,008.90	103.82	0.11	103.71
1,006.35	0.05	0.05	0.00	1,008.95	107.94	0.11	107.83
1,006.40	0.06	0.06	0.00	1,009.00	112.12	0.11	112.01
1,006.45	0.06	0.06	0.00				
1,006.50	0.06	0.06	0.00				
1,006.55	0.06	0.06	0.00				
1,006.60	0.06	0.06	0.00				
1,006.65	0.06	0.06	0.00				
1,006.70	0.06	0.06	0.00				
1,006.75	0.06	0.06	0.00				
1,006.80	0.06	0.06	0.00				
1,006.85	0.06	0.06	0.00				
1,006.90	0.07	0.07	0.00				
1,006.95	0.07	0.07	0.00				
1,007.00	0.07	0.07	0.00				
1,007.05	0.49	0.07	0.42				
1,007.10	1.25	0.07	1.18				
1,007.15	2.24	0.07	2.17				
1,007.20	3.41	0.07	3.34				
1,007.25	4.77	0.07	4.70				
1,007.30	6.30	0.07	6.22				
1,007.35	7.97	0.07	7.90				
1,007.40	9.79	0.08	9.71				
1,007.45	11.83	0.08	11.75				
1,007.50	14.03	0.08	13.95				
1,007.55	16.38	0.08	16.31				

Summary for Pond 17K: Kettle 17

Inflow Area = 3.570 ac, 3.08% Impervious, Inflow Depth > 1.78" for 100 yr event
 Inflow = 3.82 cfs @ 12.76 hrs, Volume= 0.528 af
 Outflow = 0.92 cfs @ 14.04 hrs, Volume= 0.279 af, Atten= 76%, Lag= 76.8 min
 Discarded = 0.14 cfs @ 14.04 hrs, Volume= 0.126 af
 Primary = 0.78 cfs @ 14.04 hrs, Volume= 0.152 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 1,012.08' @ 14.04 hrs Surf.Area= 23,842 sf Storage= 12,933 cf

Plug-Flow detention time= 235.7 min calculated for 0.278 af (53% of inflow)
 Center-of-Mass det. time= 135.4 min (1,006.6 - 871.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.00'	41,610 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,011.00	2,770	0	0	2,770
1,012.00	22,770	11,161	11,161	22,773
1,013.00	38,840	30,450	41,610	38,855

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,011.00'	0.240 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 1,001.00' Phase-In= 0.01'
#2	Primary	1,012.00'	15.0' 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

Discarded OutFlow Max=0.14 cfs @ 14.04 hrs HW=1,012.08' (Free Discharge)

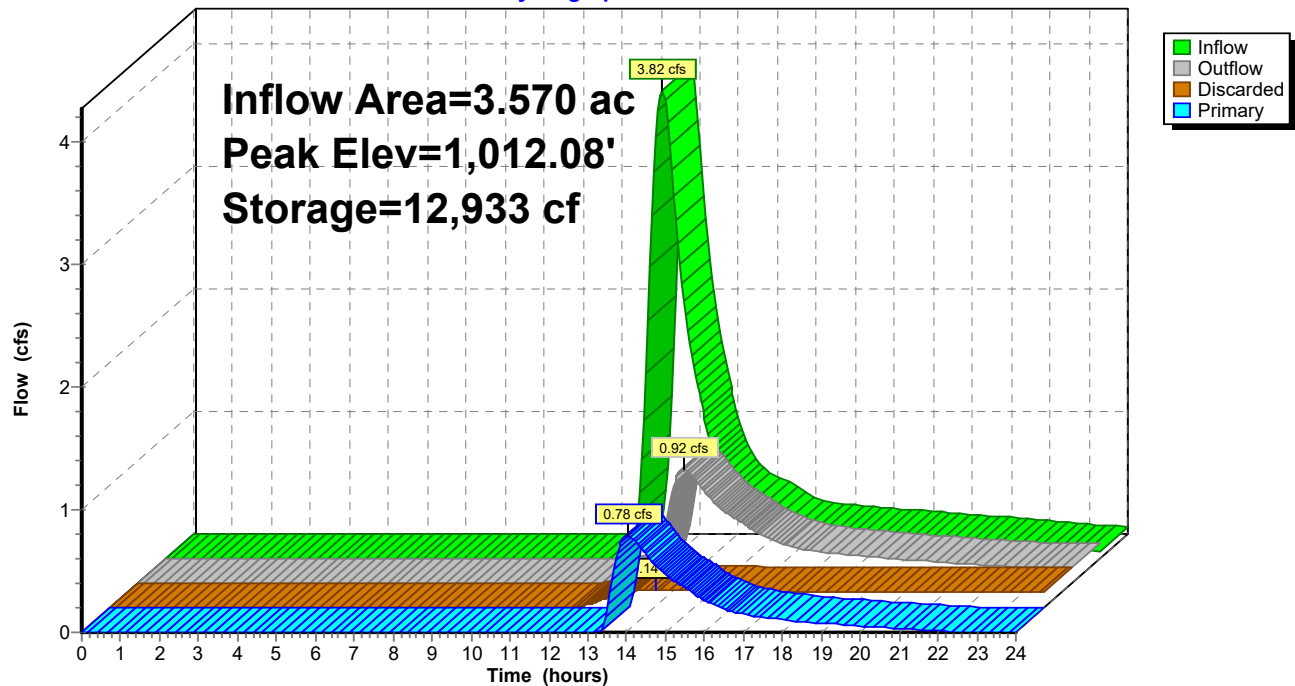
↑**1=Exfiltration** (Controls 0.14 cfs)

Primary OutFlow Max=0.78 cfs @ 14.04 hrs HW=1,012.08' TW=1,006.30' (Dynamic Tailwater)

↑**2=Broad-Crested Rectangular Weir**(Weir Controls 0.78 cfs @ 0.69 fps)

Pond 17K: Kettle 17

Hydrograph



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MSE 24-hr 3 100 yr Rainfall=6.18"

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Stage-Discharge for Pond 17K: Kettle 17

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
1,011.00	0.00	0.00	0.00	1,012.04	0.43	0.14	0.30
1,011.02	0.02	0.02	0.00	1,012.06	0.69	0.14	0.55
1,011.04	0.02	0.02	0.00	1,012.08	0.98	0.14	0.85
1,011.06	0.02	0.02	0.00	1,012.10	1.32	0.14	1.18
1,011.08	0.02	0.02	0.00	1,012.12	1.70	0.14	1.55
1,011.10	0.02	0.02	0.00	1,012.14	2.10	0.15	1.96
1,011.12	0.02	0.02	0.00	1,012.16	2.54	0.15	2.39
1,011.14	0.02	0.02	0.00	1,012.18	3.00	0.15	2.85
1,011.16	0.03	0.03	0.00	1,012.20	3.49	0.15	3.34
1,011.18	0.03	0.03	0.00	1,012.22	4.02	0.15	3.86
1,011.20	0.03	0.03	0.00	1,012.24	4.57	0.15	4.42
1,011.22	0.03	0.03	0.00	1,012.26	5.15	0.16	4.99
1,011.24	0.03	0.03	0.00	1,012.28	5.75	0.16	5.60
1,011.26	0.03	0.03	0.00	1,012.30	6.38	0.16	6.22
1,011.28	0.04	0.04	0.00	1,012.32	7.04	0.16	6.88
1,011.30	0.04	0.04	0.00	1,012.34	7.72	0.16	7.55
1,011.32	0.04	0.04	0.00	1,012.36	8.42	0.17	8.25
1,011.34	0.04	0.04	0.00	1,012.38	9.14	0.17	8.97
1,011.36	0.04	0.04	0.00	1,012.40	9.89	0.17	9.71
1,011.38	0.05	0.05	0.00	1,012.42	10.68	0.17	10.51
1,011.40	0.05	0.05	0.00	1,012.44	11.50	0.17	11.33
1,011.42	0.05	0.05	0.00	1,012.46	12.35	0.18	12.18
1,011.44	0.05	0.05	0.00	1,012.48	13.23	0.18	13.05
1,011.46	0.05	0.05	0.00	1,012.50	14.13	0.18	13.95
1,011.48	0.06	0.06	0.00	1,012.52	15.05	0.18	14.87
1,011.50	0.06	0.06	0.00	1,012.54	16.01	0.19	15.82
1,011.52	0.06	0.06	0.00	1,012.56	16.98	0.19	16.80
1,011.54	0.06	0.06	0.00	1,012.58	17.99	0.19	17.80
1,011.56	0.07	0.07	0.00	1,012.60	19.01	0.19	18.82
1,011.58	0.07	0.07	0.00	1,012.62	19.96	0.19	19.76
1,011.60	0.07	0.07	0.00	1,012.64	20.92	0.20	20.72
1,011.62	0.07	0.07	0.00	1,012.66	21.89	0.20	21.69
1,011.64	0.08	0.08	0.00	1,012.68	22.88	0.20	22.68
1,011.66	0.08	0.08	0.00	1,012.70	23.88	0.20	23.68
1,011.68	0.08	0.08	0.00	1,012.72	24.89	0.20	24.69
1,011.70	0.08	0.08	0.00	1,012.74	25.92	0.21	25.71
1,011.72	0.09	0.09	0.00	1,012.76	26.96	0.21	26.75
1,011.74	0.09	0.09	0.00	1,012.78	28.02	0.21	27.81
1,011.76	0.09	0.09	0.00	1,012.80	29.09	0.21	28.87
1,011.78	0.10	0.10	0.00	1,012.82	30.17	0.22	29.95
1,011.80	0.10	0.10	0.00	1,012.84	31.26	0.22	31.04
1,011.82	0.10	0.10	0.00	1,012.86	32.37	0.22	32.14
1,011.84	0.11	0.11	0.00	1,012.88	33.48	0.22	33.26
1,011.86	0.11	0.11	0.00	1,012.90	34.61	0.23	34.39
1,011.88	0.11	0.11	0.00	1,012.92	35.75	0.23	35.53
1,011.90	0.12	0.12	0.00	1,012.94	36.91	0.23	36.68
1,011.92	0.12	0.12	0.00	1,012.96	38.07	0.23	37.84
1,011.94	0.12	0.12	0.00	1,012.98	39.25	0.24	39.01
1,011.96	0.13	0.13	0.00	1,013.00	40.44	0.24	40.20
1,011.98	0.13	0.13	0.00				
1,012.00	0.13	0.13	0.00				
1,012.02	0.24	0.13	0.11				

Summary for Pond 18B: Existing Infiltration Basin

Inflow Area = 5.860 ac, 8.87% Impervious, Inflow Depth > 3.52" for 100 yr event
 Inflow = 14.99 cfs @ 12.60 hrs, Volume= 1.721 af
 Outflow = 0.71 cfs @ 15.82 hrs, Volume= 0.675 af, Atten= 95%, Lag= 193.6 min
 Discarded = 0.71 cfs @ 15.82 hrs, Volume= 0.675 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 993.65' @ 15.82 hrs Surf.Area= 18,584 sf Storage= 54,703 cf

Plug-Flow detention time= 339.4 min calculated for 0.673 af (39% of inflow)
 Center-of-Mass det. time= 247.8 min (1,080.1 - 832.3)

Volume	Invert	Avail.Storage	Storage Description
#1	989.00'	83,684 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
989.00	600	0	0	600
990.00	9,570	4,189	4,189	9,573
991.00	11,810	10,670	14,859	11,842
992.00	14,165	12,970	27,829	14,232
993.00	16,675	15,403	43,232	16,780
994.00	19,650	18,142	61,374	19,793
995.00	25,080	22,310	83,684	25,249

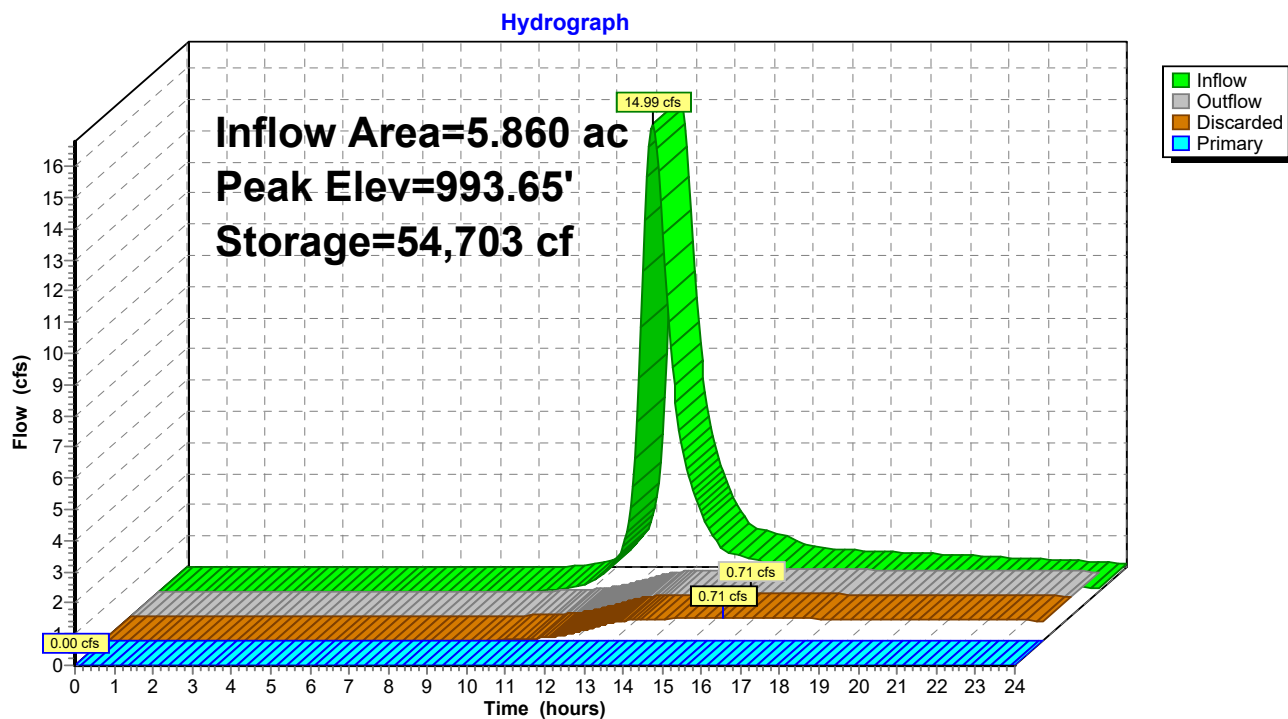
Device	Routing	Invert	Outlet Devices
#1	Discarded	989.00'	1.300 in/hr Exfiltration over Wetted area Conductivity to Groundwater Elevation = 979.00'
#2	Primary	994.65'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.71 cfs @ 15.82 hrs HW=993.65' (Free Discharge)

↑ **1=Exfiltration** (Controls 0.71 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=989.00' TW=989.00' (Dynamic Tailwater)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 18B: Existing Infiltration Basin

Stage-Discharge for Pond 18B: Existing Infiltration Basin

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
989.00	0.00	0.00	0.00	994.20	0.80	0.80	0.00
989.10	0.03	0.03	0.00	994.30	0.82	0.82	0.00
989.20	0.05	0.05	0.00	994.40	0.85	0.85	0.00
989.30	0.07	0.07	0.00	994.50	0.87	0.87	0.00
989.40	0.09	0.09	0.00	994.60	0.89	0.89	0.00
989.50	0.12	0.12	0.00	994.70	1.33	0.91	0.42
989.60	0.14	0.14	0.00	994.80	3.11	0.94	2.17
989.70	0.18	0.18	0.00	994.90	5.66	0.96	4.70
989.80	0.22	0.22	0.00	995.00	8.88	0.98	7.90
989.90	0.26	0.26	0.00				
990.00	0.30	0.30	0.00				
990.10	0.31	0.31	0.00				
990.20	0.32	0.32	0.00				
990.30	0.33	0.33	0.00				
990.40	0.34	0.34	0.00				
990.50	0.35	0.35	0.00				
990.60	0.36	0.36	0.00				
990.70	0.37	0.37	0.00				
990.80	0.38	0.38	0.00				
990.90	0.39	0.39	0.00				
991.00	0.40	0.40	0.00				
991.10	0.41	0.41	0.00				
991.20	0.42	0.42	0.00				
991.30	0.43	0.43	0.00				
991.40	0.44	0.44	0.00				
991.50	0.45	0.45	0.00				
991.60	0.46	0.46	0.00				
991.70	0.47	0.47	0.00				
991.80	0.48	0.48	0.00				
991.90	0.49	0.49	0.00				
992.00	0.51	0.51	0.00				
992.10	0.52	0.52	0.00				
992.20	0.53	0.53	0.00				
992.30	0.54	0.54	0.00				
992.40	0.55	0.55	0.00				
992.50	0.56	0.56	0.00				
992.60	0.57	0.57	0.00				
992.70	0.59	0.59	0.00				
992.80	0.60	0.60	0.00				
992.90	0.61	0.61	0.00				
993.00	0.62	0.62	0.00				
993.10	0.64	0.64	0.00				
993.20	0.65	0.65	0.00				
993.30	0.66	0.66	0.00				
993.40	0.68	0.68	0.00				
993.50	0.69	0.69	0.00				
993.60	0.70	0.70	0.00				
993.70	0.72	0.72	0.00				
993.80	0.73	0.73	0.00				
993.90	0.75	0.75	0.00				
994.00	0.76	0.76	0.00				
994.10	0.78	0.78	0.00				

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Pond 20P: Pond 20

Inflow Area = 15.540 ac, 25.93% Impervious, Inflow Depth > 2.06" for 100 yr event
 Inflow = 14.49 cfs @ 13.17 hrs, Volume= 2.669 af
 Outflow = 6.22 cfs @ 14.25 hrs, Volume= 2.621 af, Atten= 57%, Lag= 65.0 min
 Primary = 6.22 cfs @ 14.25 hrs, Volume= 2.621 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
 Peak Elev= 993.21' @ 14.25 hrs Surf.Area= 14,262 sf Storage= 42,152 cf

Plug-Flow detention time= 83.3 min calculated for 2.616 af (98% of inflow)
 Center-of-Mass det. time= 74.0 min (946.5 - 872.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	989.00'	58,314 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
989.00	7,075	0	0	7,075
990.00	7,850	7,459	7,459	7,908
991.00	9,485	8,655	16,114	9,576
992.00	11,475	10,464	26,578	11,599
993.00	13,730	12,586	39,164	13,889
994.00	16,310	15,002	54,165	16,505
994.25	16,880	4,149	58,314	17,086

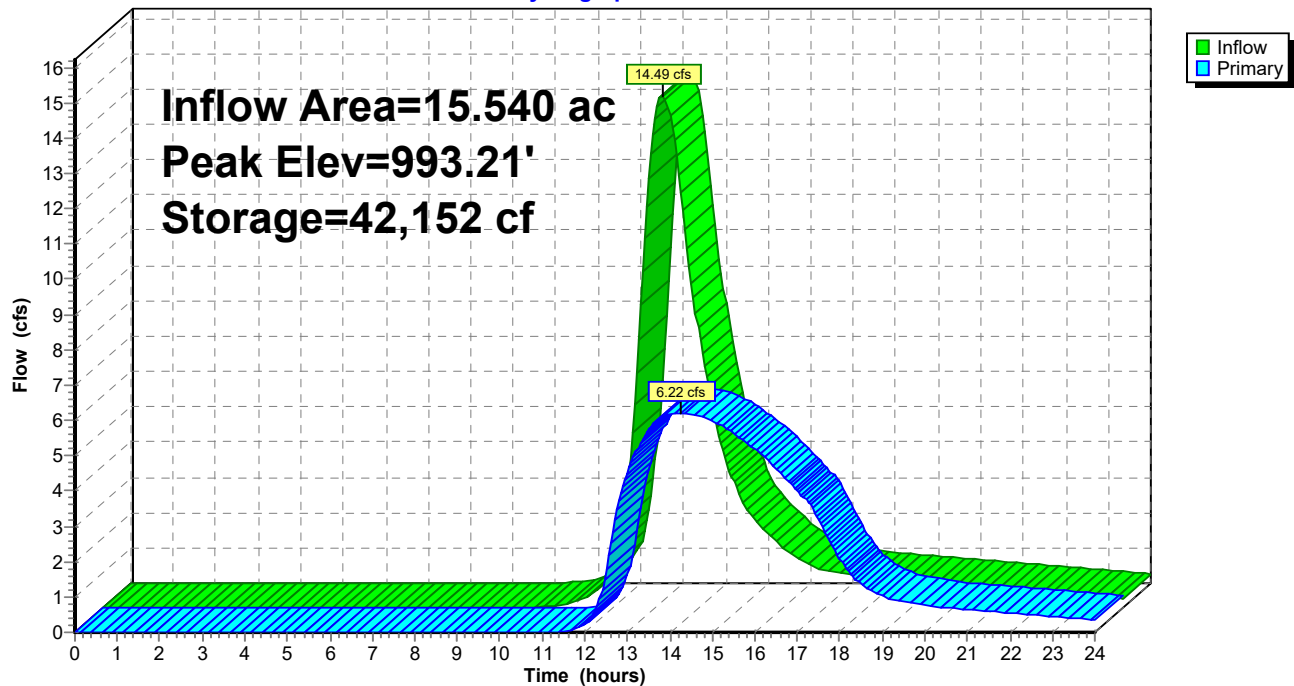
Device	Routing	Invert	Outlet Devices
#1	Primary	989.00'	12.0" Round Culvert L= 90.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 989.00' / 988.00' S= 0.0111 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Primary	993.25'	15.0' long x 10.0' breadth Broad-Crested Rectangular Weir 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=6.22 cfs @ 14.25 hrs HW=993.21' TW=952.60' (Dynamic Tailwater)

1=Culvert (Barrel Controls 6.22 cfs @ 7.92 fps)
2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Pond 20P: Pond 20

Hydrograph



Stage-Discharge for Pond 20P: Pond 20

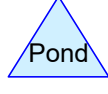
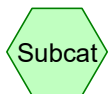
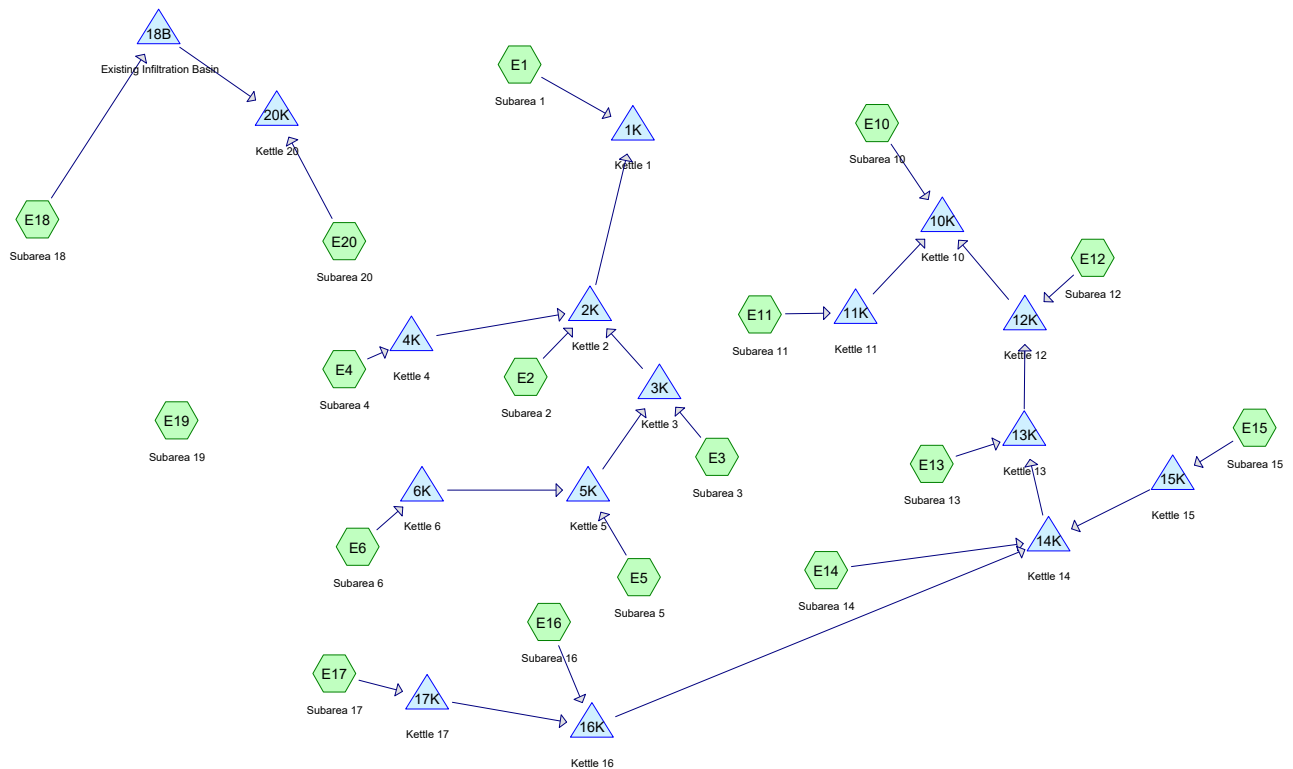
Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
989.00	0.00	991.08	4.37	993.16	6.18
989.04	0.01	991.12	4.41	993.20	6.21
989.08	0.03	991.16	4.45	993.24	6.24
989.12	0.06	991.20	4.49	993.28	6.46
989.16	0.11	991.24	4.54	993.32	6.99
989.20	0.17	991.28	4.58	993.36	7.69
989.24	0.24	991.32	4.62	993.40	8.53
989.28	0.32	991.36	4.66	993.44	9.48
989.32	0.42	991.40	4.69	993.48	10.55
989.36	0.52	991.44	4.73	993.52	11.73
989.40	0.63	991.48	4.77	993.56	13.02
989.44	0.75	991.52	4.81	993.60	14.40
989.48	0.88	991.56	4.85	993.64	15.87
989.52	1.01	991.60	4.89	993.68	17.47
989.56	1.15	991.64	4.92	993.72	19.19
989.60	1.30	991.68	4.96	993.76	21.02
989.64	1.45	991.72	5.00	993.80	22.94
989.68	1.60	991.76	5.03	993.84	24.97
989.72	1.75	991.80	5.07	993.88	26.94
989.76	1.90	991.84	5.11	993.92	28.90
989.80	2.05	991.88	5.14	993.96	30.93
989.84	2.20	991.92	5.18	994.00	33.01
989.88	2.34	991.96	5.21	994.04	35.14
989.92	2.47	992.00	5.25	994.08	37.32
989.96	2.58	992.04	5.28	994.12	39.56
990.00	2.67	992.08	5.32	994.16	41.84
990.04	2.78	992.12	5.35	994.20	44.17
990.08	2.88	992.16	5.39	994.24	46.54
990.12	2.98	992.20	5.42		
990.16	3.07	992.24	5.45		
990.20	3.16	992.28	5.49		
990.24	3.25	992.32	5.52		
990.28	3.34	992.36	5.55		
990.32	3.42	992.40	5.59		
990.36	3.51	992.44	5.62		
990.40	3.59	992.48	5.65		
990.44	3.64	992.52	5.69		
990.48	3.69	992.56	5.72		
990.52	3.74	992.60	5.75		
990.56	3.78	992.64	5.78		
990.60	3.83	992.68	5.81		
990.64	3.88	992.72	5.84		
990.68	3.93	992.76	5.88		
990.72	3.97	992.80	5.91		
990.76	4.02	992.84	5.94		
990.80	4.07	992.88	5.97		
990.84	4.11	992.92	6.00		
990.88	4.16	992.96	6.03		
990.92	4.20	993.00	6.06		
990.96	4.24	993.04	6.09		
991.00	4.29	993.08	6.12		
991.04	4.33	993.12	6.15		

APPENDIX 4

Frozen Ground (CN=98)
100-yr HydroCAD Modeling

Existing Frozen Conditions

HydroCAD Modeling



Routing Diagram for Existing_FROZEN_010

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.570	98	1/2 acre lots (E1)
2.110	98	1/4 acre lots (E10, E12, E13, E14, E15)
4.290	98	Area C from LCL High School Report (E18)
0.960	98	cropland (E1)
4.420	98	grass (E12, E14, E15, E18, E19, E2, E20, E3, E4, E5)
1.430	98	impervious (E12, E14, E15, E18, E19, E2, E3)
48.430	98	woods (E1, E10, E11, E12, E13, E14, E15, E16, E17, E18, E2, E20, E3, E4, E5, E6)
64.210	98	TOTAL AREA

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Time span=0.00-24.00 hrs, dt=0.0010 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentE1: Subarea 1	Runoff Area=15.480 ac 100.00% Impervious Runoff Depth>5.92" Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=98 Runoff=52.90 cfs 7.642 af
SubcatchmentE10: Subarea 10	Runoff Area=1.920 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=98 Runoff=8.19 cfs 0.949 af
SubcatchmentE11: Subarea 11	Runoff Area=0.730 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=100' Slope=0.0300 '/' Tc=34.6 min CN=98 Runoff=3.17 cfs 0.361 af
SubcatchmentE12: Subarea 12	Runoff Area=2.900 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=255' Slope=0.1100 '/' Tc=43.5 min CN=98 Runoff=11.05 cfs 1.433 af
SubcatchmentE13: Subarea 13	Runoff Area=1.010 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=98 Runoff=4.35 cfs 0.499 af
SubcatchmentE14: Subarea 14	Runoff Area=8.130 ac 100.00% Impervious Runoff Depth>5.90" Flow Length=1,110' Tc=104.8 min CN=98 Runoff=17.38 cfs 3.995 af
SubcatchmentE15: Subarea 15	Runoff Area=0.870 ac 100.00% Impervious Runoff Depth>5.94" Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=98 Runoff=5.27 cfs 0.430 af
SubcatchmentE16: Subarea 16	Runoff Area=1.620 ac 100.00% Impervious Runoff Depth>5.92" Flow Length=270' Slope=0.0400 '/' Tc=68.3 min CN=98 Runoff=4.63 cfs 0.799 af
SubcatchmentE17: Subarea 17	Runoff Area=4.300 ac 100.00% Impervious Runoff Depth>5.91" Flow Length=250' Slope=0.0300 '/' Tc=72.0 min CN=98 Runoff=11.89 cfs 2.119 af
SubcatchmentE18: Subarea 18	Runoff Area=5.990 ac 100.00% Impervious Runoff Depth>5.93" Tc=42.8 min CN=98 Runoff=23.03 cfs 2.959 af
SubcatchmentE19: Subarea 19	Runoff Area=0.100 ac 100.00% Impervious Runoff Depth>5.94" Tc=6.0 min CN=98 Runoff=0.92 cfs 0.050 af
SubcatchmentE2: Subarea 2	Runoff Area=5.430 ac 100.00% Impervious Runoff Depth>5.92" Flow Length=470' Slope=0.0800 '/' Tc=58.3 min CN=98 Runoff=17.27 cfs 2.679 af
SubcatchmentE20: Subarea 20	Runoff Area=4.810 ac 100.00% Impervious Runoff Depth>5.91" Flow Length=525' Slope=0.0300 '/' Tc=87.6 min CN=98 Runoff=11.67 cfs 2.367 af
SubcatchmentE3: Subarea 3	Runoff Area=1.590 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=150' Slope=0.1300 '/' Tc=26.6 min CN=98 Runoff=8.00 cfs 0.786 af
SubcatchmentE4: Subarea 4	Runoff Area=0.370 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=110' Slope=0.0300 '/' Tc=37.4 min CN=98 Runoff=1.54 cfs 0.183 af
SubcatchmentE5: Subarea 5	Runoff Area=6.180 ac 100.00% Impervious Runoff Depth>5.92" Flow Length=400' Slope=0.0900 '/' Tc=54.8 min CN=98 Runoff=20.44 cfs 3.050 af

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SubcatchmentE6: Subarea 6Runoff Area=2.780 ac 100.00% Impervious Runoff Depth>5.93"
Flow Length=200' Slope=0.0500 '/' Tc=49.1 min CN=98 Runoff=9.84 cfs 1.373 af**Pond 1K: Kettle 1**Peak Elev=963.76' Storage=546,484 cf Inflow=58.91 cfs 12.546 af
Outflow=0.00 cfs 0.000 af**Pond 2K: Kettle 2**Peak Elev=975.06' Storage=98,070 cf Inflow=29.78 cfs 6.577 af
Outflow=21.12 cfs 4.903 af**Pond 3K: Kettle 3**Peak Elev=976.48' Storage=27,576 cf Inflow=13.35 cfs 4.339 af
Outflow=12.98 cfs 3.804 af**Pond 4K: Kettle 4**Peak Elev=1,008.61' Storage=4,458 cf Inflow=1.54 cfs 0.183 af
Outflow=0.94 cfs 0.093 af**Pond 5K: Kettle 5**Peak Elev=984.88' Storage=39,878 cf Inflow=20.44 cfs 3.563 af
Outflow=9.58 cfs 3.552 af**Pond 6K: Kettle 6**Peak Elev=1,012.90' Storage=43,794 cf Inflow=9.84 cfs 1.373 af
Outflow=1.84 cfs 0.513 af**Pond 10K: Kettle 10**Peak Elev=964.60' Storage=96,776 cf Inflow=15.09 cfs 2.560 af
Outflow=1.17 cfs 0.344 af**Pond 11K: Kettle 11**Peak Elev=980.69' Storage=5,527 cf Inflow=3.17 cfs 0.361 af
Outflow=2.99 cfs 0.261 af**Pond 12K: Kettle 12**Peak Elev=964.60' Storage=157,609 cf Inflow=26.19 cfs 4.959 af
Outflow=14.40 cfs 1.350 af**Pond 13K: Kettle 13**Peak Elev=964.60' Storage=28,395 cf Inflow=26.87 cfs 4.176 af
Outflow=21.72 cfs 3.527 af**Pond 14K: Kettle 14**Peak Elev=964.60' Storage=122,656 cf Inflow=32.78 cfs 6.486 af
Outflow=25.73 cfs 3.677 af**Pond 15K: Kettle 15**Peak Elev=972.67' Storage=11,032 cf Inflow=5.27 cfs 0.430 af
Outflow=2.58 cfs 0.205 af**Pond 16K: Kettle 16**Peak Elev=1,007.52' Storage=21,329 cf Inflow=15.22 cfs 2.648 af
Outflow=15.07 cfs 2.286 af**Pond 17K: Kettle 17**Peak Elev=1,012.43' Storage=22,354 cf Inflow=11.89 cfs 2.119 af
Outflow=11.00 cfs 1.849 af**Pond 18B: Existing Infiltration Basin**Peak Elev=994.97' Storage=83,049 cf Inflow=23.03 cfs 2.959 af
Primary=7.03 cfs 0.423 af Secondary=2.73 cfs 0.711 af Outflow=9.75 cfs 1.134 af**Pond 20K: Kettle 20**Peak Elev=995.46' Storage=121,558 cf Inflow=18.67 cfs 2.791 af
Outflow=0.00 cfs 0.000 af

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Total Runoff Area = 64.210 ac Runoff Volume = 31.674 af Average Runoff Depth = 5.92"
0.00% Pervious = 0.000 ac 100.00% Impervious = 64.210 ac

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Summary for Subcatchment E1: Subarea 1

Runoff = 52.90 cfs @ 12.69 hrs, Volume= 7.642 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 11.950	98	woods
* 2.570	98	1/2 acre lots
* 0.960	98	cropland
15.480	98	Weighted Average
15.480		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.6	300	0.1100	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
2.3	230	0.1100	1.66		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
51.9	530	Total			

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Summary for Subcatchment E10: Subarea 10

Runoff = 8.19 cfs @ 12.45 hrs, Volume= 0.949 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.470	98	woods
* 0.450	98	1/4 acre lots
1.920	98	Weighted Average
1.920		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.8	225	0.1400	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment E11: Subarea 11

Runoff = 3.17 cfs @ 12.46 hrs, Volume= 0.361 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.730	98	woods
0.730		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.6	100	0.0300	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment E12: Subarea 12

Runoff = 11.05 cfs @ 12.57 hrs, Volume= 1.433 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.450	98	woods
* 0.270	98	grass
* 0.110	98	impervious
* 1.070	98	1/4 acre lots
2.900	98	Weighted Average
2.900		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
43.5	255	0.1100	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment E13: Subarea 13

Runoff = 4.35 cfs @ 12.44 hrs, Volume= 0.499 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.760	98	woods
*	0.250	98	1/4 acre lots
	1.010	98	Weighted Average
	1.010		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.1	220	0.1400	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment E14: Subarea 14

Runoff = 17.38 cfs @ 13.39 hrs, Volume= 3.995 af, Depth> 5.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.650	98	woods
* 2.600	98	grass
* 0.830	98	impervious
* 0.050	98	1/4 acre lots
8.130	98	Weighted Average
8.130		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
98.0	300	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
4.0	170	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	55	0.3800	9.92		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
2.7	585	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
104.8	1,110	Total			

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment E15: Subarea 15

Runoff = 5.27 cfs @ 12.27 hrs, Volume= 0.430 af, Depth> 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.480	98	woods
* 0.090	98	grass
* 0.010	98	impervious
* 0.290	98	1/4 acre lots
0.870	98	Weighted Average
0.870		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	70	0.0700	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment E16: Subarea 16

Runoff = 4.63 cfs @ 12.90 hrs, Volume= 0.799 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.620	98	woods
1.620		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
68.3	270	0.0400	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment E17: Subarea 17

Runoff = 11.89 cfs @ 12.88 hrs, Volume= 2.119 af, Depth> 5.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.300	98	woods
4.300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
72.0	250	0.0300	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment E18: Subarea 18

Runoff = 23.03 cfs @ 12.56 hrs, Volume= 2.959 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	4.290	98	Area C from LCL High School Report
*	0.850	98	woods
*	0.620	98	grass
*	0.230	98	impervious
	5.990	98	Weighted Average
	5.990		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.8					Direct Entry, LCL High School Report

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Summary for Subcatchment E19: Subarea 19

Runoff = 0.92 cfs @ 12.13 hrs, Volume= 0.050 af, Depth> 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.060	98	grass
*	0.040	98	impervious
	0.100	98	Weighted Average
	0.100		100.00% Impervious Area

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

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Subcatchment E2: Subarea 2

Runoff = 17.27 cfs @ 12.76 hrs, Volume= 2.679 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.960	98	woods
* 0.380	98	grass
* 0.090	98	impervious
5.430	98	Weighted Average
5.430		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
56.3	300	0.0800	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
2.0	170	0.0800	1.41		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
58.3	470	Total			

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Summary for Subcatchment E20: Subarea 20

Runoff = 11.67 cfs @ 13.14 hrs, Volume= 2.367 af, Depth> 5.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.700	98	woods
* 0.110	98	grass
4.810	98	Weighted Average
4.810		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
83.3	300	0.0300	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
4.3	225	0.0300	0.87		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
87.6	525	Total			

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Summary for Subcatchment E3: Subarea 3

Runoff = 8.00 cfs @ 12.36 hrs, Volume= 0.786 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.280	98	woods
* 0.190	98	grass
* 0.120	98	impervious
1.590	98	Weighted Average
1.590		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.6	150	0.1300	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment E4: Subarea 4

Runoff = 1.54 cfs @ 12.51 hrs, Volume= 0.183 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.350	98	woods
* 0.020	98	grass
0.370	98	Weighted Average
0.370		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
37.4	110	0.0300	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment E5: Subarea 5

Runoff = 20.44 cfs @ 12.73 hrs, Volume= 3.050 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 6.100	98	woods
* 0.080	98	grass
6.180	98	Weighted Average
6.180		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
53.7	300	0.0900	0.09		Sheet Flow,
					Woods: Dense underbrush n= 0.800 P2= 2.70"
1.1	100	0.0900	1.50		Shallow Concentrated Flow,
					Woodland Kv= 5.0 fps
54.8	400	Total			

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Summary for Subcatchment E6: Subarea 6

Runoff = 9.84 cfs @ 12.60 hrs, Volume= 1.373 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 2.780	98	woods
2.780		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.1	200	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Pond 1K: Kettle 1

Inflow Area = 31.830 ac, 100.00% Impervious, Inflow Depth > 4.73" for 100 yr event
 Inflow = 58.91 cfs @ 12.86 hrs, Volume= 12.546 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 963.76' @ 24.00 hrs Surf.Area= 57,324 sf Storage= 546,484 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description	
#1	944.00'	1,029,702 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
944.00	3,750	0	0	3,750
945.00	6,195	4,922	4,922	6,208
946.00	8,685	7,405	12,327	8,716
947.00	10,780	9,714	22,040	10,840
948.00	13,055	11,899	33,940	13,148
949.00	15,305	14,165	48,105	15,437
950.00	17,415	16,349	64,453	17,595
951.00	19,655	18,524	82,977	19,886
952.00	21,865	20,750	103,727	22,155
953.00	24,185	23,015	126,743	24,536
954.00	26,545	25,356	152,098	26,963
955.00	28,985	27,756	179,854	29,473
956.00	31,540	30,254	210,108	32,101
957.00	34,135	32,829	242,937	34,775
958.00	36,900	35,509	278,445	37,619
959.00	39,930	38,405	316,851	40,728
960.00	43,170	41,539	358,390	44,047
961.00	46,620	44,884	403,274	47,578
962.00	50,260	48,429	451,703	51,301
963.00	54,345	52,289	503,992	55,465
964.00	58,275	56,299	560,290	59,484
965.00	64,568	61,395	621,685	65,838
970.00	99,920	408,017	1,029,702	101,550

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Summary for Pond 2K: Kettle 2

Inflow Area = 16.350 ac, 100.00% Impervious, Inflow Depth > 4.83" for 100 yr event
 Inflow = 29.78 cfs @ 12.76 hrs, Volume= 6.577 af
 Outflow = 21.12 cfs @ 13.27 hrs, Volume= 4.903 af, Atten= 29%, Lag= 30.4 min
 Primary = 21.12 cfs @ 13.27 hrs, Volume= 4.903 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 975.06' @ 13.27 hrs Surf.Area= 22,785 sf Storage= 98,070 cf

Plug-Flow detention time= 145.0 min calculated for 4.903 af (75% of inflow)
 Center-of-Mass det. time= 73.1 min (919.5 - 846.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	966.00'	121,085 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
966.00	285	0	0	285	
967.00	3,190	1,476	1,476	3,193	
968.00	5,410	4,251	5,728	5,425	
969.00	7,210	6,288	12,016	7,247	
970.00	9,215	8,192	20,208	9,277	
971.00	11,370	10,274	30,482	11,462	
972.00	13,630	12,483	42,965	13,756	
973.00	16,420	15,003	57,968	16,580	
974.00	19,360	17,870	75,838	19,558	
975.00	22,600	20,959	96,797	22,838	
976.00	26,015	24,287	121,085	26,297	

Device	Routing	Invert	Outlet Devices									
#1	Primary	973.70'	5.0' 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=21.12 cfs @ 13.27 hrs HW=975.06' TW=957.50' (Dynamic Tailwater)

↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 21.12 cfs @ 3.11 fps)

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Summary for Pond 3K: Kettle 3

Inflow Area = 10.550 ac, 100.00% Impervious, Inflow Depth > 4.93" for 100 yr event
 Inflow = 13.35 cfs @ 12.41 hrs, Volume= 4.339 af
 Outflow = 12.98 cfs @ 12.50 hrs, Volume= 3.804 af, Atten= 3%, Lag= 5.0 min
 Primary = 12.98 cfs @ 12.50 hrs, Volume= 3.804 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 976.48' @ 12.50 hrs Surf.Area= 10,483 sf Storage= 27,576 cf

Plug-Flow detention time= 94.7 min calculated for 3.804 af (88% of inflow)
 Center-of-Mass det. time= 47.2 min (886.3 - 839.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	972.00'	46,349 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
972.00	1,920	0	0	1,920
973.00	4,020	2,906	2,906	4,029
974.00	5,770	4,869	7,775	5,796
975.00	7,510	6,621	14,396	7,560
976.00	9,385	8,430	22,826	9,463
977.00	11,750	10,545	33,371	11,855
978.00	14,245	12,977	46,349	14,383

Device	Routing	Invert	Outlet Devices									
#1	Primary	976.00'	15.0' 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=12.98 cfs @ 12.50 hrs HW=976.48' TW=972.76' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 12.98 cfs @ 1.81 fps)

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Summary for Pond 4K: Kettle 4

Inflow Area = 0.370 ac, 100.00% Impervious, Inflow Depth > 5.93" for 100 yr event
 Inflow = 1.54 cfs @ 12.51 hrs, Volume= 0.183 af
 Outflow = 0.94 cfs @ 12.82 hrs, Volume= 0.093 af, Atten= 39%, Lag= 18.7 min
 Primary = 0.94 cfs @ 12.82 hrs, Volume= 0.093 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 1,008.61' @ 12.82 hrs Surf.Area= 5,418 sf Storage= 4,458 cf

Plug-Flow detention time= 203.6 min calculated for 0.093 af (51% of inflow)
 Center-of-Mass det. time= 107.9 min (878.2 - 770.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,007.00'	6,875 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,007.00	750	0	0	750
1,008.00	3,220	1,841	1,841	3,224
1,009.00	7,100	5,034	6,875	7,113

Device	Routing	Invert	Outlet Devices
#1	Primary	1,008.50'	10.0' 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=0.94 cfs @ 12.82 hrs HW=1,008.61' TW=974.47' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 0.94 cfs @ 0.84 fps)

Summary for Pond 5K: Kettle 5

Inflow Area = 8.960 ac, 100.00% Impervious, Inflow Depth > 4.77" for 100 yr event
 Inflow = 20.44 cfs @ 12.73 hrs, Volume= 3.563 af
 Outflow = 9.58 cfs @ 13.44 hrs, Volume= 3.552 af, Atten= 53%, Lag= 42.9 min
 Primary = 9.58 cfs @ 13.44 hrs, Volume= 3.552 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 984.88' @ 13.44 hrs Surf.Area= 31,529 sf Storage= 39,878 cf

Plug-Flow detention time= 45.9 min calculated for 3.552 af (100% of inflow)
 Center-of-Mass det. time= 44.1 min (856.5 - 812.3)

Volume	Invert	Avail.Storage	Storage Description
#1	982.50'	80,797 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
982.50	50	0	0	50
983.00	9,605	1,725	1,725	9,605
984.00	21,410	15,118	16,843	21,418
985.00	33,125	27,055	43,898	33,148
986.00	40,805	36,898	80,797	40,858

Device	Routing	Invert	Outlet Devices
#1	Primary	982.57'	15.0" Round Culvert L= 48.4' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 982.57' / 980.88' S= 0.0349 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#2	Primary	985.10'	10.0' 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=9.58 cfs @ 13.44 hrs HW=984.88' TW=976.42' (Dynamic Tailwater)

↑ **1=Culvert** (Inlet Controls 9.58 cfs @ 7.80 fps)
 — **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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Summary for Pond 6K: Kettle 6

Inflow Area = 2.780 ac, 100.00% Impervious, Inflow Depth > 5.93" for 100 yr event
 Inflow = 9.84 cfs @ 12.60 hrs, Volume= 1.373 af
 Outflow = 1.84 cfs @ 13.83 hrs, Volume= 0.513 af, Atten= 81%, Lag= 73.3 min
 Primary = 1.84 cfs @ 13.83 hrs, Volume= 0.513 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 1,012.90' @ 13.83 hrs Surf.Area= 38,837 sf Storage= 43,794 cf

Plug-Flow detention time= 315.4 min calculated for 0.513 af (37% of inflow)
 Center-of-Mass det. time= 190.8 min (971.4 - 780.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.00'	47,595 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,011.00	9,905	0	0	9,905
1,012.00	23,150	16,066	16,066	23,158
1,013.00	40,730	31,529	47,595	40,749

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.70'	8.0' 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=1.84 cfs @ 13.83 hrs HW=1,012.90' TW=984.81' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 1.84 cfs @ 1.13 fps)

Summary for Pond 10K: Kettle 10

Inflow Area = 21.480 ac, 100.00% Impervious, Inflow Depth > 1.43" for 100 yr event
 Inflow = 15.09 cfs @ 14.41 hrs, Volume= 2.560 af
 Outflow = 1.17 cfs @ 22.26 hrs, Volume= 0.344 af, Atten= 92%, Lag= 471.0 min
 Primary = 1.17 cfs @ 22.26 hrs, Volume= 0.344 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 964.60' @ 22.26 hrs Surf.Area= 20,551 sf Storage= 96,776 cf

Plug-Flow detention time= 680.6 min calculated for 0.344 af (13% of inflow)
 Center-of-Mass det. time= 431.7 min (1,323.4 - 891.7)

Volume	Invert	Avail.Storage	Storage Description		
#1	953.00'	105,225 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
953.00	170	0	0	170	
954.00	700	405	405	705	
955.00	1,590	1,115	1,520	1,602	
956.00	3,290	2,389	3,909	3,311	
957.00	4,855	4,047	7,956	4,892	
958.00	6,405	5,612	13,568	6,465	
959.00	8,045	7,209	20,778	8,132	
960.00	9,695	8,857	29,635	9,815	
961.00	11,530	10,599	40,234	11,686	
962.00	13,595	12,548	52,783	13,789	
963.00	15,870	14,718	67,500	16,104	
964.00	19,025	17,424	84,924	19,294	
965.00	21,605	20,301	105,225	21,923	

Device	Routing	Invert	Outlet Devices									
#1	Primary	964.50'	15.0' 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=1.16 cfs @ 22.26 hrs HW=964.60' (Free Discharge)

↑1=**Broad-Crested Rectangular Weir**(Weir Controls 1.16 cfs @ 0.78 fps)

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Summary for Pond 11K: Kettle 11

Inflow Area = 0.730 ac, 100.00% Impervious, Inflow Depth > 5.93" for 100 yr event
 Inflow = 3.17 cfs @ 12.46 hrs, Volume= 0.361 af
 Outflow = 2.99 cfs @ 12.56 hrs, Volume= 0.261 af, Atten= 6%, Lag= 6.1 min
 Primary = 2.99 cfs @ 12.56 hrs, Volume= 0.261 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 980.69' @ 12.56 hrs Surf.Area= 7,149 sf Storage= 5,527 cf

Plug-Flow detention time= 135.9 min calculated for 0.261 af (72% of inflow)
 Center-of-Mass det. time= 68.1 min (835.9 - 767.8)

Volume	Invert	Avail.Storage	Storage Description
#1	979.00'	8,105 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
979.00	805	0	0	805
980.00	3,445	1,972	1,972	3,450
981.00	9,295	6,133	8,105	9,306

Device	Routing	Invert	Outlet Devices
#1	Primary	980.50'	15.0' 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=2.99 cfs @ 12.56 hrs HW=980.69' TW=959.29' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 2.99 cfs @ 1.07 fps)

Summary for Pond 12K: Kettle 12

Inflow Area = 18.830 ac, 100.00% Impervious, Inflow Depth > 3.16" for 100 yr event
 Inflow = 26.19 cfs @ 13.14 hrs, Volume= 4.959 af
 Outflow = 14.40 cfs @ 14.41 hrs, Volume= 1.350 af, Atten= 45%, Lag= 76.5 min
 Primary = 14.40 cfs @ 14.41 hrs, Volume= 1.350 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 964.60' @ 22.19 hrs Surf.Area= 32,918 sf Storage= 157,609 cf

Plug-Flow detention time= 284.8 min calculated for 1.350 af (27% of inflow)
 Center-of-Mass det. time= 133.4 min (988.8 - 855.4)

Volume	Invert	Avail.Storage	Storage Description
#1	956.00'	246,697 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
956.00	495	0	0	495
957.00	6,410	2,895	2,895	6,413
958.00	11,490	8,827	11,723	11,504
959.00	15,695	13,538	25,261	15,729
960.00	18,580	17,117	42,378	18,651
961.00	21,310	19,929	62,307	21,426
962.00	23,950	22,617	84,925	24,120
963.00	26,775	25,349	110,274	27,000
964.00	30,155	28,448	138,722	30,433
965.00	34,835	32,467	171,189	35,156
966.00	37,955	36,384	207,573	38,349
967.00	40,304	39,124	246,697	40,800

Device	Routing	Invert	Outlet Devices
#1	Primary	963.00'	15.0' 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=14.40 cfs @ 14.41 hrs HW=963.51' TW=963.00' (Dynamic Tailwater)

↑1=**Broad-Crested Rectangular Weir**(Weir Controls 14.40 cfs @ 1.88 fps)

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Summary for Pond 13K: Kettle 13

Inflow Area = 15.930 ac, 100.00% Impervious, Inflow Depth > 3.15" for 100 yr event
 Inflow = 26.87 cfs @ 13.15 hrs, Volume= 4.176 af
 Outflow = 21.72 cfs @ 13.16 hrs, Volume= 3.527 af, Atten= 19%, Lag= 0.6 min
 Primary = 21.72 cfs @ 13.16 hrs, Volume= 3.527 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 964.60' @ 22.12 hrs Surf.Area= 9,218 sf Storage= 28,395 cf

Plug-Flow detention time= 61.3 min calculated for 3.527 af (84% of inflow)
 Center-of-Mass det. time= 5.4 min (887.8 - 882.4)

Volume	Invert	Avail.Storage	Storage Description		
#1	959.40'	55,187 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
959.40	50	0	0	50	
960.00	2,560	594	594	2,561	
961.00	4,110	3,305	3,898	4,124	
962.00	5,850	4,954	8,853	5,882	
963.00	7,130	6,479	15,332	7,193	
964.00	8,425	7,768	23,101	8,525	
965.00	9,765	9,087	32,187	9,907	
966.00	11,570	10,655	42,842	11,749	
967.00	13,137	12,345	55,187	13,365	

Device	Routing	Invert	Outlet Devices
#1	Primary	959.48'	24.0" Round Culvert X 2.00 L= 92.5' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 959.48' / 958.97' S= 0.0055 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Primary	966.00'	15.0' 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=21.61 cfs @ 13.16 hrs HW=961.83' TW=961.39' (Dynamic Tailwater)

↑ **1=Culvert** (Outlet Controls 21.61 cfs @ 3.69 fps)
 — **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 14K: Kettle 14

Inflow Area = 14.920 ac, 100.00% Impervious, Inflow Depth > 5.22" for 100 yr event
 Inflow = 32.78 cfs @ 13.18 hrs, Volume= 6.486 af
 Outflow = 25.73 cfs @ 13.16 hrs, Volume= 3.677 af, Atten= 22%, Lag= 0.0 min
 Primary = 25.73 cfs @ 13.16 hrs, Volume= 3.677 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 964.60' @ 22.23 hrs Surf.Area= 23,085 sf Storage= 122,656 cf

Plug-Flow detention time= 141.6 min calculated for 3.677 af (57% of inflow)
 Center-of-Mass det. time= 52.2 min (897.9 - 845.7)

Volume	Invert	Avail.Storage	Storage Description
#1	955.00'	184,779 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
955.00	3,070	0	0	3,070
956.00	5,250	4,112	4,112	5,262
957.00	7,260	6,228	10,339	7,291
958.00	9,090	8,158	18,497	9,149
959.00	10,725	9,896	28,394	10,821
960.00	12,545	11,623	40,017	12,681
961.00	14,795	13,655	53,671	14,969
962.00	17,570	16,163	69,834	17,780
963.00	19,708	18,629	88,463	19,972
965.00	23,972	43,610	132,073	24,363
967.00	28,808	52,706	184,779	29,334

Device	Routing	Invert	Outlet Devices
#1	Primary	961.30'	15.0' 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=25.64 cfs @ 13.16 hrs HW=962.17' TW=961.83' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 25.64 cfs @ 1.96 fps)

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Summary for Pond 15K: Kettle 15

Inflow Area = 0.870 ac, 100.00% Impervious, Inflow Depth > 5.94" for 100 yr event
 Inflow = 5.27 cfs @ 12.27 hrs, Volume= 0.430 af
 Outflow = 2.58 cfs @ 12.50 hrs, Volume= 0.205 af, Atten= 51%, Lag= 14.0 min
 Primary = 2.58 cfs @ 12.50 hrs, Volume= 0.205 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 972.67' @ 12.50 hrs Surf.Area= 7,857 sf Storage= 11,032 cf

Plug-Flow detention time= 211.5 min calculated for 0.205 af (48% of inflow)
 Center-of-Mass det. time= 112.1 min (865.6 - 753.5)

Volume	Invert	Avail.Storage	Storage Description	
#1	970.00'	13,842 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
970.00	1,620	0	0	1,620
971.00	3,050	2,298	2,298	3,060
972.00	5,595	4,259	6,556	5,615
973.00	9,120	7,286	13,842	9,153

Device	Routing	Invert	Outlet Devices									
#1	Primary	972.50'	15.0' 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=2.58 cfs @ 12.50 hrs HW=972.67' TW=959.44' (Dynamic Tailwater)

↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 2.58 cfs @ 1.02 fps)

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Summary for Pond 16K: Kettle 16

Inflow Area = 5.920 ac, 100.00% Impervious, Inflow Depth > 5.37" for 100 yr event
 Inflow = 15.22 cfs @ 13.06 hrs, Volume= 2.648 af
 Outflow = 15.07 cfs @ 13.14 hrs, Volume= 2.286 af, Atten= 1%, Lag= 4.8 min
 Primary = 15.07 cfs @ 13.14 hrs, Volume= 2.286 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 1,007.52' @ 13.14 hrs Surf.Area= 12,000 sf Storage= 21,329 cf

Plug-Flow detention time= 80.6 min calculated for 2.286 af (86% of inflow)
 Center-of-Mass det. time= 33.6 min (873.6 - 840.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,005.00'	41,902 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,005.00	4,400	0	0	4,400
1,006.00	8,010	6,116	6,116	8,021
1,007.00	10,625	9,287	15,402	10,658
1,008.00	13,320	11,947	27,349	13,380
1,009.00	15,820	14,552	41,902	15,917

Device	Routing	Invert	Outlet Devices
#1	Primary	1,007.00'	15.0' 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=15.07 cfs @ 13.14 hrs HW=1,007.52' TW=962.14' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 15.07 cfs @ 1.92 fps)

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Summary for Pond 17K: Kettle 17

Inflow Area = 4.300 ac, 100.00% Impervious, Inflow Depth > 5.91" for 100 yr event
 Inflow = 11.89 cfs @ 12.88 hrs, Volume= 2.119 af
 Outflow = 11.00 cfs @ 13.13 hrs, Volume= 1.849 af, Atten= 7%, Lag= 15.2 min
 Primary = 11.00 cfs @ 13.13 hrs, Volume= 1.849 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 1,012.43' @ 13.13 hrs Surf.Area= 29,188 sf Storage= 22,354 cf

Plug-Flow detention time= 103.7 min calculated for 1.849 af (87% of inflow)
 Center-of-Mass det. time= 57.6 min (858.4 - 800.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.00'	41,610 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,011.00	2,770	0	0	2,770
1,012.00	22,770	11,161	11,161	22,773
1,013.00	38,840	30,450	41,610	38,855

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	15.0' 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=11.00 cfs @ 13.13 hrs HW=1,012.43' TW=1,007.52' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 11.00 cfs @ 1.70 fps)

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Summary for Pond 18B: Existing Infiltration Basin

Inflow Area = 5.990 ac, 100.00% Impervious, Inflow Depth > 5.93" for 100 yr event
 Inflow = 23.03 cfs @ 12.56 hrs, Volume= 2.959 af
 Outflow = 9.75 cfs @ 13.11 hrs, Volume= 1.134 af, Atten= 58%, Lag= 33.2 min
 Primary = 7.03 cfs @ 13.11 hrs, Volume= 0.423 af
 Secondary = 2.73 cfs @ 13.11 hrs, Volume= 0.711 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 994.97' @ 13.11 hrs Surf.Area= 24,934 sf Storage= 83,049 cf

Plug-Flow detention time= 265.6 min calculated for 1.134 af (38% of inflow)
 Center-of-Mass det. time= 144.3 min (919.3 - 775.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	989.00'	111,738 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
989.00	600	0	0	600
990.00	9,570	4,189	4,189	9,573
991.00	11,810	10,670	14,859	11,842
992.00	14,165	12,970	27,829	14,232
993.00	16,675	15,403	43,232	16,780
994.00	19,650	18,142	61,374	19,793
995.00	25,080	22,310	83,684	25,249
996.00	31,138	28,054	111,738	31,336

Device	Routing	Invert	Outlet Devices
#1	Primary	994.65'	15.0' 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
#2	Secondary	994.80'	15.0' 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=7.03 cfs @ 13.11 hrs HW=994.97' TW=994.03' (Dynamic Tailwater)

↑1=**Broad-Crested Rectangular Weir**(Weir Controls 7.03 cfs @ 1.44 fps)

Secondary OutFlow Max=2.73 cfs @ 13.11 hrs HW=994.97' (Free Discharge)

↑2=**Broad-Crested Rectangular Weir**(Weir Controls 2.73 cfs @ 1.04 fps)

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Summary for Pond 20K: Kettle 20

Inflow Area = 10.800 ac, 100.00% Impervious, Inflow Depth > 3.10" for 100 yr event
 Inflow = 18.67 cfs @ 13.12 hrs, Volume= 2.791 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.0010 hrs
 Peak Elev= 995.46' @ 24.00 hrs Surf.Area= 62,230 sf Storage= 121,558 cf

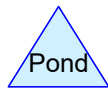
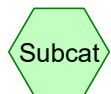
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)

Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description	
#1	992.00'	157,706 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
992.00	6,330	0	0	6,330
993.00	24,655	14,493	14,493	24,660
994.00	40,640	32,316	46,809	40,657
995.00	55,600	47,925	94,734	55,638
996.00	70,643	62,972	157,706	70,707

Proposed Frozen Conditions

HydroCAD Modeling



Routing Diagram for Proposed_FROZEN_010

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.570	98	1/2 acre lots (P1)
2.110	98	1/4 acre lots (P10, P12, P13, P14, P15)
4.290	98	Area C from LCL High School Report (P18)
0.950	98	cropland (P1, P20)
11.890	98	grass (P1, P10, P11, P12, P14, P15, P18, P19, P2, P20, P3, P5)
6.700	98	impervious (P1, P10, P11, P12, P14, P15, P18, P19, P2, P20, P3, P5)
0.320	98	water (P11, P20, P5)
35.380	98	woods (P1, P10, P11, P12, P13, P14, P15, P16, P17, P18, P2, P20, P3, P5, P6)
64.210	98	TOTAL AREA

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Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentP1: Subarea 1	Runoff Area=11.900 ac 100.00% Impervious Runoff Depth>5.92" Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=98 Runoff=40.67 cfs 5.875 af
SubcatchmentP10: Subarea 10	Runoff Area=1.850 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=98 Runoff=7.89 cfs 0.914 af
SubcatchmentP11: Subarea 11	Runoff Area=3.120 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=220' Tc=39.8 min CN=98 Runoff=12.57 cfs 1.542 af
SubcatchmentP12: Subarea 12	Runoff Area=2.940 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=190' Slope=0.1300 '/' Tc=29.4 min CN=98 Runoff=14.02 cfs 1.454 af
SubcatchmentP13: Subarea 13	Runoff Area=1.010 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=98 Runoff=4.35 cfs 0.499 af
SubcatchmentP14: Subarea 14	Runoff Area=8.130 ac 100.00% Impervious Runoff Depth>5.90" Flow Length=1,110' Tc=104.8 min CN=98 Runoff=17.38 cfs 3.995 af
SubcatchmentP15: Subarea 15	Runoff Area=0.870 ac 100.00% Impervious Runoff Depth>5.94" Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=98 Runoff=5.27 cfs 0.430 af
SubcatchmentP16: Subarea 16	Runoff Area=1.620 ac 100.00% Impervious Runoff Depth>5.92" Flow Length=270' Slope=0.0400 '/' Tc=68.3 min CN=98 Runoff=4.63 cfs 0.799 af
SubcatchmentP17: Subarea 17	Runoff Area=4.300 ac 100.00% Impervious Runoff Depth>5.91" Flow Length=250' Slope=0.0300 '/' Tc=72.0 min CN=98 Runoff=11.89 cfs 2.119 af
SubcatchmentP18: Subarea 18	Runoff Area=5.850 ac 100.00% Impervious Runoff Depth>5.93" Tc=42.8 min CN=98 Runoff=22.49 cfs 2.890 af
SubcatchmentP19: Subarea 19	Runoff Area=0.100 ac 100.00% Impervious Runoff Depth>5.94" Tc=6.0 min CN=98 Runoff=0.92 cfs 0.050 af
SubcatchmentP2: Subarea 2	Runoff Area=2.030 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=240' Tc=42.4 min CN=98 Runoff=7.84 cfs 1.003 af
SubcatchmentP20: Subarea 20	Runoff Area=9.670 ac 100.00% Impervious Runoff Depth>5.91" Flow Length=905' Slope=0.0300 '/' Tc=86.0 min CN=98 Runoff=23.75 cfs 4.760 af
SubcatchmentP3: Subarea 3	Runoff Area=0.870 ac 100.00% Impervious Runoff Depth>5.94" Flow Length=140' Tc=23.0 min CN=98 Runoff=4.73 cfs 0.430 af
SubcatchmentP5: Subarea 5	Runoff Area=7.170 ac 100.00% Impervious Runoff Depth>5.92" Flow Length=400' Slope=0.1000 '/' Tc=52.6 min CN=98 Runoff=24.35 cfs 3.539 af
SubcatchmentP6: Subarea 6	Runoff Area=2.780 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=200' Slope=0.0500 '/' Tc=49.1 min CN=98 Runoff=9.84 cfs 1.373 af

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Pond 1K: Kettle 1	Peak Elev=966.20' Storage=703,927 cf Inflow=52.93 cfs 16.160 af Outflow=0.00 cfs 0.000 af
Pond 2K: Kettle 2	Peak Elev=974.70' Storage=90,168 cf Inflow=20.23 cfs 4.927 af Outflow=13.40 cfs 3.261 af
Pond 3K: Kettle 3	Peak Elev=976.49' Storage=27,692 cf Inflow=13.49 cfs 4.458 af Outflow=13.47 cfs 3.924 af
Pond 5P.: Pond 5 - Proposed	Peak Elev=984.04' Storage=37,482 cf Inflow=24.35 cfs 4.052 af Outflow=12.89 cfs 4.028 af
Pond 6K: Kettle 6	Peak Elev=1,012.90' Storage=43,794 cf Inflow=9.84 cfs 1.373 af Outflow=1.84 cfs 0.513 af
Pond 10K: Kettle 10	Peak Elev=964.57' Storage=96,178 cf Inflow=15.04 cfs 2.311 af Outflow=0.69 cfs 0.103 af
Pond 11P: Pond 11	Peak Elev=968.34' Storage=25,912 cf Inflow=15.01 cfs 4.803 af Outflow=14.92 cfs 4.562 af
Pond 12K: Kettle 12	Peak Elev=964.57' Storage=156,651 cf Inflow=23.52 cfs 4.993 af Outflow=14.58 cfs 1.397 af
Pond 13K: Kettle 13	Peak Elev=964.57' Storage=28,121 cf Inflow=25.92 cfs 4.185 af Outflow=20.83 cfs 3.540 af
Pond 14K: Kettle 14	Peak Elev=964.57' Storage=121,974 cf Inflow=32.78 cfs 6.486 af Outflow=24.78 cfs 3.686 af
Pond 15K: Kettle 15	Peak Elev=972.67' Storage=11,032 cf Inflow=5.27 cfs 0.430 af Outflow=2.58 cfs 0.205 af
Pond 16K: Kettle 16	Peak Elev=1,007.52' Storage=21,329 cf Inflow=15.22 cfs 2.648 af Outflow=15.07 cfs 2.286 af
Pond 17K: Kettle 17	Peak Elev=1,012.43' Storage=22,354 cf Inflow=11.89 cfs 2.119 af Outflow=11.00 cfs 1.849 af
Pond 18B: Existing Infiltration Basin	Peak Elev=994.96' Storage=82,648 cf Inflow=22.49 cfs 2.890 af Primary=6.50 cfs 1.029 af Secondary=2.36 cfs 0.118 af Outflow=8.85 cfs 1.147 af
Pond 20P: Pond 20	Peak Elev=993.90' Storage=52,522 cf Inflow=30.11 cfs 5.789 af Outflow=27.83 cfs 5.723 af

Total Runoff Area = 64.210 ac Runoff Volume = 31.672 af Average Runoff Depth = 5.92"
0.00% Pervious = 0.000 ac 100.00% Impervious = 64.210 ac

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Summary for Subcatchment P1: Subarea 1

Runoff = 40.67 cfs @ 12.69 hrs, Volume= 5.875 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 8.010	98	woods
* 2.570	98	1/2 acre lots
* 0.700	98	cropland
* 0.540	98	grass
* 0.080	98	impervious
11.900	98	Weighted Average
11.900		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.6	300	0.1100	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
2.3	230	0.1100	1.66		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
51.9	530	Total			

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Summary for Subcatchment P10: Subarea 10

Runoff = 7.89 cfs @ 12.45 hrs, Volume= 0.914 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.310	98	woods
* 0.450	98	1/4 acre lots
* 0.080	98	grass
* 0.010	98	impervious
1.850	98	Weighted Average
1.850		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.8	225	0.1400	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment P11: Subarea 11

Runoff = 12.57 cfs @ 12.52 hrs, Volume= 1.542 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.000	98	woods
* 1.040	98	grass
* 0.080	98	water
* 1.000	98	impervious
3.120	98	Weighted Average
3.120		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	35	0.0300	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
17.9	80	0.1000	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
16.2	105	0.2200	0.11		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
39.8	220	Total			

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Summary for Subcatchment P12: Subarea 12

Runoff = 14.02 cfs @ 12.38 hrs, Volume= 1.454 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.010	98	woods
* 0.650	98	grass
* 0.210	98	impervious
* 1.070	98	1/4 acre lots
2.940	98	Weighted Average
2.940		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1300	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
25.2	140	0.1300	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
29.4	190	Total			

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Summary for Subcatchment P13: Subarea 13

Runoff = 4.35 cfs @ 12.44 hrs, Volume= 0.499 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.760	98	woods
* 0.250	98	1/4 acre lots
1.010	98	Weighted Average
1.010		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.1	220	0.1400	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment P14: Subarea 14

Runoff = 17.38 cfs @ 13.39 hrs, Volume= 3.995 af, Depth> 5.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.650	98	woods
* 2.600	98	grass
* 0.830	98	impervious
* 0.050	98	1/4 acre lots
8.130	98	Weighted Average
8.130		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
98.0	300	0.0200	0.05		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
4.0	170	0.0200	0.71		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
0.1	55	0.3800	9.92		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
2.7	585	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
104.8	1,110	Total			

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Summary for Subcatchment P15: Subarea 15

Runoff = 5.27 cfs @ 12.27 hrs, Volume= 0.430 af, Depth> 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.480	98	woods
* 0.090	98	grass
* 0.010	98	impervious
* 0.290	98	1/4 acre lots
0.870	98	Weighted Average
0.870		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	70	0.0700	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment P16: Subarea 16

Runoff = 4.63 cfs @ 12.90 hrs, Volume= 0.799 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.620	98	woods
1.620		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
68.3	270	0.0400	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment P17: Subarea 17

Runoff = 11.89 cfs @ 12.88 hrs, Volume= 2.119 af, Depth> 5.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 4.300	98	woods
4.300		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
72.0	250	0.0300	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment P18: Subarea 18

Runoff = 22.49 cfs @ 12.56 hrs, Volume= 2.890 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	4.290	98	Area C from LCL High School Report
*	0.380	98	woods
*	0.760	98	grass
*	0.420	98	impervious
	5.850	98	Weighted Average
	5.850		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.8					Direct Entry, LCL High School Report

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Summary for Subcatchment P19: Subarea 19

Runoff = 0.92 cfs @ 12.13 hrs, Volume= 0.050 af, Depth> 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.060	98	grass
*	0.040	98	impervious
	0.100	98	Weighted Average
	0.100		100.00% Impervious Area

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

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Summary for Subcatchment P2: Subarea 2

Runoff = 7.84 cfs @ 12.58 hrs, Volume= 1.003 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.330	98	woods
* 0.570	98	grass
* 0.130	98	impervious
2.030	98	Weighted Average
2.030		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0600	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
15.1	50	0.0600	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
21.6	140	0.1900	0.11		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
42.4	240	Total			

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Summary for Subcatchment P20: Subarea 20

Runoff = 23.75 cfs @ 13.09 hrs, Volume= 4.760 af, Depth> 5.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.630	98	woods
* 4.360	98	grass
* 0.160	98	water
* 3.270	98	impervious
* 0.250	98	cropland
9.670	98	Weighted Average
9.670		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
83.3	300	0.0300	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
1.6	270	0.0300	2.79		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.1	335		5.00		Direct Entry,
86.0	905	Total			

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Summary for Subcatchment P3: Subarea 3

Runoff = 4.73 cfs @ 12.32 hrs, Volume= 0.430 af, Depth> 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.560	98	woods
* 0.260	98	grass
* 0.050	98	impervious
0.870	98	Weighted Average
0.870		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	10	0.0500	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
21.3	130	0.1700	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
23.0	140	Total			

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Summary for Subcatchment P5: Subarea 5

Runoff = 24.35 cfs @ 12.68 hrs, Volume= 3.539 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 5.560	98	woods
* 0.880	98	grass
* 0.080	98	water
* 0.650	98	impervious
7.170	98	Weighted Average
7.170		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
51.5	300	0.1000	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
1.1	100	0.1000	1.58		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
52.6	400	Total			

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Summary for Subcatchment P6: Subarea 6

Runoff = 9.84 cfs @ 12.60 hrs, Volume= 1.373 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 2.780	98	woods
2.780		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.1	200	0.0500	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Pond 1K: Kettle 1

Inflow Area = 43.390 ac, 100.00% Impervious, Inflow Depth > 4.47" for 100 yr event
 Inflow = 52.93 cfs @ 13.23 hrs, Volume= 16.160 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 966.20' @ 24.00 hrs Surf.Area= 72,364 sf Storage= 703,927 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description	
#1	944.00'	1,029,702 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
944.00	3,750	0	0	3,750
945.00	6,195	4,922	4,922	6,208
946.00	8,685	7,405	12,327	8,716
947.00	10,780	9,714	22,040	10,840
948.00	13,055	11,899	33,940	13,148
949.00	15,305	14,165	48,105	15,437
950.00	17,415	16,349	64,453	17,595
951.00	19,655	18,524	82,977	19,886
952.00	21,865	20,750	103,727	22,155
953.00	24,185	23,015	126,743	24,536
954.00	26,545	25,356	152,098	26,963
955.00	28,985	27,756	179,854	29,473
956.00	31,540	30,254	210,108	32,101
957.00	34,135	32,829	242,937	34,775
958.00	36,900	35,509	278,445	37,619
959.00	39,930	38,405	316,851	40,728
960.00	43,170	41,539	358,390	44,047
961.00	46,620	44,884	403,274	47,578
962.00	50,260	48,429	451,703	51,301
963.00	54,345	52,289	503,992	55,465
964.00	58,275	56,299	560,290	59,484
965.00	64,568	61,395	621,685	65,838
970.00	99,920	408,017	1,029,702	101,550

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Summary for Pond 2K: Kettle 2

Inflow Area = 12.850 ac, 100.00% Impervious, Inflow Depth > 4.60" for 100 yr event
 Inflow = 20.23 cfs @ 12.58 hrs, Volume= 4.927 af
 Outflow = 13.40 cfs @ 13.89 hrs, Volume= 3.261 af, Atten= 34%, Lag= 78.6 min
 Primary = 13.40 cfs @ 13.89 hrs, Volume= 3.261 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 974.70' @ 13.89 hrs Surf.Area= 21,602 sf Storage= 90,168 cf

Plug-Flow detention time= 166.6 min calculated for 3.261 af (66% of inflow)
 Center-of-Mass det. time= 86.0 min (939.9 - 853.9)

Volume	Invert	Avail.Storage	Storage Description		
#1	966.00'	121,085 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
966.00	285	0	0	285	
967.00	3,190	1,476	1,476	3,193	
968.00	5,410	4,251	5,728	5,425	
969.00	7,210	6,288	12,016	7,247	
970.00	9,215	8,192	20,208	9,277	
971.00	11,370	10,274	30,482	11,462	
972.00	13,630	12,483	42,965	13,756	
973.00	16,420	15,003	57,968	16,580	
974.00	19,360	17,870	75,838	19,558	
975.00	22,600	20,959	96,797	22,838	
976.00	26,015	24,287	121,085	26,297	

Device	Routing	Invert	Outlet Devices									
#1	Primary	973.70'	5.0' 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=13.40 cfs @ 13.89 hrs HW=974.70' TW=968.34' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 13.40 cfs @ 2.68 fps)

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Summary for Pond 3K: Kettle 3

Inflow Area = 10.820 ac, 100.00% Impervious, Inflow Depth > 4.94" for 100 yr event
 Inflow = 13.49 cfs @ 13.15 hrs, Volume= 4.458 af
 Outflow = 13.47 cfs @ 13.22 hrs, Volume= 3.924 af, Atten= 0%, Lag= 3.9 min
 Primary = 13.47 cfs @ 13.22 hrs, Volume= 3.924 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 976.49' @ 13.22 hrs Surf.Area= 10,509 sf Storage= 27,692 cf

Plug-Flow detention time= 90.8 min calculated for 3.924 af (88% of inflow)
 Center-of-Mass det. time= 43.7 min (874.1 - 830.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	972.00'	46,349 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
972.00	1,920	0	0	1,920
973.00	4,020	2,906	2,906	4,029
974.00	5,770	4,869	7,775	5,796
975.00	7,510	6,621	14,396	7,560
976.00	9,385	8,430	22,826	9,463
977.00	11,750	10,545	33,371	11,855
978.00	14,245	12,977	46,349	14,383

Device	Routing	Invert	Outlet Devices									
#1	Primary	976.00'	15.0' 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=13.47 cfs @ 13.22 hrs HW=976.49' TW=974.33' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 13.47 cfs @ 1.83 fps)

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Summary for Pond 5P.: Pond 5 - Proposed

Inflow Area = 9.950 ac, 100.00% Impervious, Inflow Depth > 4.89" for 100 yr event
 Inflow = 24.35 cfs @ 12.68 hrs, Volume= 4.052 af
 Outflow = 12.89 cfs @ 13.25 hrs, Volume= 4.028 af, Atten= 47%, Lag= 34.2 min
 Primary = 12.89 cfs @ 13.25 hrs, Volume= 4.028 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 984.04' @ 13.25 hrs Surf.Area= 23,772 sf Storage= 37,482 cf

Plug-Flow detention time= 34.4 min calculated for 4.028 af (99% of inflow)
 Center-of-Mass det. time= 30.8 min (838.2 - 807.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	981.00'	130,622 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
981.00	3,603	0	0	3,603
982.00	6,692	5,068	5,068	6,702
983.00	16,738	11,338	16,406	16,755
984.00	23,545	20,045	36,451	23,581
985.00	29,037	26,243	62,694	29,103
986.00	33,837	31,406	94,101	33,943
987.00	39,273	36,521	130,622	39,421

Device	Routing	Invert	Outlet Devices
#1	Primary	981.00'	18.0" Round Culvert L= 115.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 981.00' / 976.50' S= 0.0391 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	985.64'	15.0' 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=12.89 cfs @ 13.25 hrs HW=984.04' TW=976.49' (Dynamic Tailwater)

1=Culvert (Inlet Controls 12.89 cfs @ 7.29 fps)
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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Summary for Pond 6K: Kettle 6

Inflow Area = 2.780 ac, 100.00% Impervious, Inflow Depth > 5.93" for 100 yr event
 Inflow = 9.84 cfs @ 12.60 hrs, Volume= 1.373 af
 Outflow = 1.84 cfs @ 13.83 hrs, Volume= 0.513 af, Atten= 81%, Lag= 73.3 min
 Primary = 1.84 cfs @ 13.83 hrs, Volume= 0.513 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 1,012.90' @ 13.83 hrs Surf.Area= 38,837 sf Storage= 43,794 cf

Plug-Flow detention time= 315.4 min calculated for 0.513 af (37% of inflow)
 Center-of-Mass det. time= 190.8 min (971.4 - 780.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.00'	47,595 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,011.00	9,905	0	0	9,905
1,012.00	23,150	16,066	16,066	23,158
1,013.00	40,730	31,529	47,595	40,749

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.70'	8.0' 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=1.84 cfs @ 13.83 hrs HW=1,012.90' TW=983.77' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 1.84 cfs @ 1.13 fps)

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Summary for Pond 10K: Kettle 10

Inflow Area = 20.720 ac, 100.00% Impervious, Inflow Depth > 1.34" for 100 yr event
 Inflow = 15.04 cfs @ 14.46 hrs, Volume= 2.311 af
 Outflow = 0.69 cfs @ 23.93 hrs, Volume= 0.103 af, Atten= 95%, Lag= 568.3 min
 Primary = 0.69 cfs @ 23.93 hrs, Volume= 0.103 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 964.57' @ 23.93 hrs Surf.Area= 20,475 sf Storage= 96,178 cf

Plug-Flow detention time= 893.0 min calculated for 0.103 af (4% of inflow)
 Center-of-Mass det. time= 510.0 min (1,379.5 - 869.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	953.00'	105,225 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
953.00	170	0	0	170	
954.00	700	405	405	705	
955.00	1,590	1,115	1,520	1,602	
956.00	3,290	2,389	3,909	3,311	
957.00	4,855	4,047	7,956	4,892	
958.00	6,405	5,612	13,568	6,465	
959.00	8,045	7,209	20,778	8,132	
960.00	9,695	8,857	29,635	9,815	
961.00	11,530	10,599	40,234	11,686	
962.00	13,595	12,548	52,783	13,789	
963.00	15,870	14,718	67,500	16,104	
964.00	19,025	17,424	84,924	19,294	
965.00	21,605	20,301	105,225	21,923	

Device	Routing	Invert	Outlet Devices									
#1	Primary	964.50'	15.0' 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=0.69 cfs @ 23.93 hrs HW=964.57' (Free Discharge)

↑1=**Broad-Crested Rectangular Weir**(Weir Controls 0.69 cfs @ 0.66 fps)

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Summary for Pond 11P: Pond 11

Inflow Area = 15.970 ac, 100.00% Impervious, Inflow Depth > 3.61" for 100 yr event
 Inflow = 15.01 cfs @ 13.75 hrs, Volume= 4.803 af
 Outflow = 14.92 cfs @ 13.86 hrs, Volume= 4.562 af, Atten= 1%, Lag= 6.4 min
 Primary = 14.92 cfs @ 13.86 hrs, Volume= 4.562 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 968.34' @ 13.86 hrs Surf.Area= 8,916 sf Storage= 25,912 cf

Plug-Flow detention time= 45.7 min calculated for 4.562 af (95% of inflow)
 Center-of-Mass det. time= 21.9 min (908.1 - 886.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	964.00'	32,230 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
964.00	3,560	0	0	3,560
965.00	4,560	4,050	4,050	4,585
966.00	5,660	5,100	9,150	5,714
967.00	6,895	6,267	15,417	6,980
968.00	8,290	7,582	22,999	8,409
969.00	10,205	9,231	32,230	10,354

Device	Routing	Invert	Outlet Devices
#1	Primary	964.00'	12.0" Round Culvert L= 65.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 964.00' / 962.00' S= 0.0308 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Primary	968.00'	15.0' 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=14.91 cfs @ 13.86 hrs HW=968.34' TW=960.26' (Dynamic Tailwater)

1=Culvert (Inlet Controls 7.41 cfs @ 9.43 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 7.51 cfs @ 1.48 fps)

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Summary for Pond 12K: Kettle 12

Inflow Area = 18.870 ac, 100.00% Impervious, Inflow Depth > 3.18" for 100 yr event
 Inflow = 23.52 cfs @ 13.15 hrs, Volume= 4.993 af
 Outflow = 14.58 cfs @ 14.46 hrs, Volume= 1.397 af, Atten= 38%, Lag= 78.9 min
 Primary = 14.58 cfs @ 14.46 hrs, Volume= 1.397 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 964.57' @ 23.94 hrs Surf.Area= 32,781 sf Storage= 156,651 cf

Plug-Flow detention time= 238.0 min calculated for 1.397 af (28% of inflow)
 Center-of-Mass det. time= 90.1 min (935.5 - 845.4)

Volume	Invert	Avail.Storage	Storage Description
#1	956.00'	246,697 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
956.00	495	0	0	495
957.00	6,410	2,895	2,895	6,413
958.00	11,490	8,827	11,723	11,504
959.00	15,695	13,538	25,261	15,729
960.00	18,580	17,117	42,378	18,651
961.00	21,310	19,929	62,307	21,426
962.00	23,950	22,617	84,925	24,120
963.00	26,775	25,349	110,274	27,000
964.00	30,155	28,448	138,722	30,433
965.00	34,835	32,467	171,189	35,156
966.00	37,955	36,384	207,573	38,349
967.00	40,304	39,124	246,697	40,800

Device	Routing	Invert	Outlet Devices
#1	Primary	963.00'	15.0' 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=14.58 cfs @ 14.46 hrs HW=963.51' TW=962.59' (Dynamic Tailwater)

↑1=**Broad-Crested Rectangular Weir**(Weir Controls 14.58 cfs @ 1.89 fps)

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Summary for Pond 13K: Kettle 13

Inflow Area = 15.930 ac, 100.00% Impervious, Inflow Depth > 3.15" for 100 yr event
 Inflow = 25.92 cfs @ 13.15 hrs, Volume= 4.185 af
 Outflow = 20.83 cfs @ 13.16 hrs, Volume= 3.540 af, Atten= 20%, Lag= 0.3 min
 Primary = 20.83 cfs @ 13.16 hrs, Volume= 3.540 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 964.57' @ 23.90 hrs Surf.Area= 9,178 sf Storage= 28,121 cf

Plug-Flow detention time= 53.4 min calculated for 3.540 af (85% of inflow)
 Center-of-Mass det. time= 2.1 min (879.1 - 877.1)

Volume	Invert	Avail.Storage	Storage Description		
#1	959.40'	55,187 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
959.40	50	0	0	50	
960.00	2,560	594	594	2,561	
961.00	4,110	3,305	3,898	4,124	
962.00	5,850	4,954	8,853	5,882	
963.00	7,130	6,479	15,332	7,193	
964.00	8,425	7,768	23,101	8,525	
965.00	9,765	9,087	32,187	9,907	
966.00	11,570	10,655	42,842	11,749	
967.00	13,137	12,345	55,187	13,365	

Device	Routing	Invert	Outlet Devices
#1	Primary	959.48'	24.0" Round Culvert X 2.00 L= 92.5' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 959.48' / 958.97' S= 0.0055 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Primary	966.00'	15.0' 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=20.73 cfs @ 13.16 hrs HW=961.92' TW=961.53' (Dynamic Tailwater)

↑ **1=Culvert** (Outlet Controls 20.73 cfs @ 3.44 fps)
 — **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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Summary for Pond 14K: Kettle 14

Inflow Area = 14.920 ac, 100.00% Impervious, Inflow Depth > 5.22" for 100 yr event
 Inflow = 32.78 cfs @ 13.18 hrs, Volume= 6.486 af
 Outflow = 24.78 cfs @ 13.16 hrs, Volume= 3.686 af, Atten= 24%, Lag= 0.0 min
 Primary = 24.78 cfs @ 13.16 hrs, Volume= 3.686 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 964.57' @ 23.90 hrs Surf.Area= 23,020 sf Storage= 121,974 cf

Plug-Flow detention time= 135.3 min calculated for 3.686 af (57% of inflow)
 Center-of-Mass det. time= 46.1 min (891.8 - 845.7)

Volume	Invert	Avail.Storage	Storage Description
#1	955.00'	184,779 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
955.00	3,070	0	0	3,070
956.00	5,250	4,112	4,112	5,262
957.00	7,260	6,228	10,339	7,291
958.00	9,090	8,158	18,497	9,149
959.00	10,725	9,896	28,394	10,821
960.00	12,545	11,623	40,017	12,681
961.00	14,795	13,655	53,671	14,969
962.00	17,570	16,163	69,834	17,780
963.00	19,708	18,629	88,463	19,972
965.00	23,972	43,610	132,073	24,363
967.00	28,808	52,706	184,779	29,334

Device	Routing	Invert	Outlet Devices
#1	Primary	961.30'	15.0' 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=24.68 cfs @ 13.16 hrs HW=962.20' TW=961.93' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 24.68 cfs @ 1.83 fps)

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Summary for Pond 15K: Kettle 15

Inflow Area = 0.870 ac, 100.00% Impervious, Inflow Depth > 5.94" for 100 yr event
 Inflow = 5.27 cfs @ 12.27 hrs, Volume= 0.430 af
 Outflow = 2.58 cfs @ 12.50 hrs, Volume= 0.205 af, Atten= 51%, Lag= 14.0 min
 Primary = 2.58 cfs @ 12.50 hrs, Volume= 0.205 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 972.67' @ 12.50 hrs Surf.Area= 7,857 sf Storage= 11,032 cf

Plug-Flow detention time= 211.5 min calculated for 0.205 af (48% of inflow)
 Center-of-Mass det. time= 112.1 min (865.6 - 753.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	970.00'	13,842 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
970.00	1,620	0	0	1,620	
971.00	3,050	2,298	2,298	3,060	
972.00	5,595	4,259	6,556	5,615	
973.00	9,120	7,286	13,842	9,153	

Device	Routing	Invert	Outlet Devices									
#1	Primary	972.50'	15.0' 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=2.58 cfs @ 12.50 hrs HW=972.67' TW=959.44' (Dynamic Tailwater)

↑1=**Broad-Crested Rectangular Weir**(Weir Controls 2.58 cfs @ 1.02 fps)

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Summary for Pond 16K: Kettle 16

Inflow Area = 5.920 ac, 100.00% Impervious, Inflow Depth > 5.37" for 100 yr event
 Inflow = 15.22 cfs @ 13.06 hrs, Volume= 2.648 af
 Outflow = 15.07 cfs @ 13.14 hrs, Volume= 2.286 af, Atten= 1%, Lag= 4.8 min
 Primary = 15.07 cfs @ 13.14 hrs, Volume= 2.286 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 1,007.52' @ 13.14 hrs Surf.Area= 12,000 sf Storage= 21,329 cf

Plug-Flow detention time= 80.6 min calculated for 2.286 af (86% of inflow)
 Center-of-Mass det. time= 33.6 min (873.6 - 840.0)

Volume	Invert	Avail.Storage	Storage Description	
#1	1,005.00'	41,902 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,005.00	4,400	0	0	4,400
1,006.00	8,010	6,116	6,116	8,021
1,007.00	10,625	9,287	15,402	10,658
1,008.00	13,320	11,947	27,349	13,380
1,009.00	15,820	14,552	41,902	15,917

Device	Routing	Invert	Outlet Devices								
#1	Primary	1,007.00'	15.0' 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=15.07 cfs @ 13.14 hrs HW=1,007.52' TW=962.17' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 15.07 cfs @ 1.92 fps)

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Summary for Pond 17K: Kettle 17

Inflow Area = 4.300 ac, 100.00% Impervious, Inflow Depth > 5.91" for 100 yr event
 Inflow = 11.89 cfs @ 12.88 hrs, Volume= 2.119 af
 Outflow = 11.00 cfs @ 13.13 hrs, Volume= 1.849 af, Atten= 7%, Lag= 15.2 min
 Primary = 11.00 cfs @ 13.13 hrs, Volume= 1.849 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 1,012.43' @ 13.13 hrs Surf.Area= 29,188 sf Storage= 22,354 cf

Plug-Flow detention time= 103.7 min calculated for 1.849 af (87% of inflow)
 Center-of-Mass det. time= 57.6 min (858.4 - 800.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.00'	41,610 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,011.00	2,770	0	0	2,770
1,012.00	22,770	11,161	11,161	22,773
1,013.00	38,840	30,450	41,610	38,855

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	15.0' 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=11.00 cfs @ 13.13 hrs HW=1,012.43' TW=1,007.52' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 11.00 cfs @ 1.70 fps)

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Summary for Pond 18B: Existing Infiltration Basin

Inflow Area = 5.850 ac, 100.00% Impervious, Inflow Depth > 5.93" for 100 yr event
 Inflow = 22.49 cfs @ 12.56 hrs, Volume= 2.890 af
 Outflow = 8.85 cfs @ 13.15 hrs, Volume= 1.147 af, Atten= 61%, Lag= 35.6 min
 Primary = 6.50 cfs @ 13.15 hrs, Volume= 1.029 af
 Secondary = 2.36 cfs @ 13.15 hrs, Volume= 0.118 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 994.96' @ 13.15 hrs Surf.Area= 24,841 sf Storage= 82,648 cf

Plug-Flow detention time= 261.9 min calculated for 1.147 af (40% of inflow)
 Center-of-Mass det. time= 143.9 min (918.9 - 775.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	989.00'	111,738 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
989.00	600	0	0	600
990.00	9,570	4,189	4,189	9,573
991.00	11,810	10,670	14,859	11,842
992.00	14,165	12,970	27,829	14,232
993.00	16,675	15,403	43,232	16,780
994.00	19,650	18,142	61,374	19,793
995.00	25,080	22,310	83,684	25,249
996.00	31,138	28,054	111,738	31,336

Device	Routing	Invert	Outlet Devices
#1	Primary	994.65'	15.0' 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
#2	Secondary	994.80'	15.0' 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=6.50 cfs @ 13.15 hrs HW=994.96' TW=993.77' (Dynamic Tailwater)

↑ **1=Broad-Crested Rectangular Weir** (Weir Controls 6.50 cfs @ 1.40 fps)

Secondary OutFlow Max=2.36 cfs @ 13.15 hrs HW=994.96' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 2.36 cfs @ 0.99 fps)

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Summary for Pond 20P: Pond 20

Inflow Area = 15.520 ac, 100.00% Impervious, Inflow Depth > 4.48" for 100 yr event
 Inflow = 30.11 cfs @ 13.11 hrs, Volume= 5.789 af
 Outflow = 27.83 cfs @ 13.33 hrs, Volume= 5.723 af, Atten= 8%, Lag= 13.5 min
 Primary = 27.83 cfs @ 13.33 hrs, Volume= 5.723 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 993.90' @ 13.33 hrs Surf.Area= 16,038 sf Storage= 52,522 cf

Plug-Flow detention time= 63.0 min calculated for 5.723 af (99% of inflow)
 Center-of-Mass det. time= 56.5 min (890.6 - 834.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	989.00'	58,314 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
989.00	7,075	0	0	7,075
990.00	7,850	7,459	7,459	7,908
991.00	9,485	8,655	16,114	9,576
992.00	11,475	10,464	26,578	11,599
993.00	13,730	12,586	39,164	13,889
994.00	16,310	15,002	54,165	16,505
994.25	16,880	4,149	58,314	17,086

Device	Routing	Invert	Outlet Devices
#1	Primary	989.00'	12.0" Round Culvert L= 90.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 989.00' / 988.00' S= 0.0111 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Primary	993.25'	15.0' 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

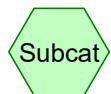
Primary OutFlow Max=27.83 cfs @ 13.33 hrs HW=993.90' TW=958.02' (Dynamic Tailwater)

1=Culvert (Barrel Controls 6.71 cfs @ 8.54 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 21.13 cfs @ 2.17 fps)

Future Frozen Conditions

HydroCAD Modeling



Reach



Link

Routing Diagram for Future_FROZEN_010

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.570	98	1/2 acre lots (F1)
2.110	98	1/4 acre lots (F10, F12, F13, F14, F15)
4.290	98	Area C from LCL High School Report (F18)
0.950	98	cropland (F1, F20)
15.530	98	grass (F1, F10, F11, F12, F14, F15, F16, F17, F18, F19, F2, F20, F3, F5)
12.670	98	impervious (F1, F10, F11, F12, F14, F15, F16, F17, F18, F19, F2, F20, F3, F5)
0.540	98	water (F11, F20, F5)
25.550	98	woods (F1, F10, F11, F12, F13, F14, F15, F16, F17, F18, F2, F20, F3, F5)
64.210	98	TOTAL AREA

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Time span=0.00-24.00 hrs, dt=0.001 hrs, 24001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentF1: Subarea 1	Runoff Area=11.900 ac 100.00% Impervious Runoff Depth>5.92" Flow Length=530' Slope=0.1100 '/' Tc=51.9 min CN=98 Runoff=40.67 cfs 5.875 af
SubcatchmentF10: Subarea 10	Runoff Area=1.850 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=225' Slope=0.1400 '/' Tc=35.8 min CN=98 Runoff=7.89 cfs 0.914 af
SubcatchmentF11: Subarea 11	Runoff Area=3.120 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=220' Tc=39.8 min CN=98 Runoff=12.57 cfs 1.542 af
SubcatchmentF12: Subarea 12	Runoff Area=2.940 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=190' Slope=0.1300 '/' Tc=29.4 min CN=98 Runoff=14.02 cfs 1.454 af
SubcatchmentF13: Subarea 13	Runoff Area=1.010 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=220' Slope=0.1400 '/' Tc=35.1 min CN=98 Runoff=4.35 cfs 0.499 af
SubcatchmentF14: Subarea 14	Runoff Area=7.020 ac 100.00% Impervious Runoff Depth>5.91" Flow Length=895' Tc=76.0 min CN=98 Runoff=18.70 cfs 3.459 af
SubcatchmentF15: Subarea 15	Runoff Area=0.870 ac 100.00% Impervious Runoff Depth>5.94" Flow Length=70' Slope=0.0700 '/' Tc=18.5 min CN=98 Runoff=5.27 cfs 0.430 af
SubcatchmentF16: Subarea 16	Runoff Area=1.610 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=205' Slope=0.0800 '/' Tc=41.5 min CN=98 Runoff=6.31 cfs 0.795 af
SubcatchmentF17: Subarea 17	Runoff Area=3.570 ac 100.00% Impervious Runoff Depth>5.92" Flow Length=225' Slope=0.0600 '/' Tc=50.2 min CN=98 Runoff=12.47 cfs 1.763 af
SubcatchmentF18: Subarea 18	Runoff Area=5.860 ac 100.00% Impervious Runoff Depth>5.93" Tc=42.8 min CN=98 Runoff=22.53 cfs 2.895 af
SubcatchmentF19: Subarea 19	Runoff Area=0.100 ac 100.00% Impervious Runoff Depth>5.94" Tc=6.0 min CN=98 Runoff=0.92 cfs 0.050 af
SubcatchmentF2: Subarea 2	Runoff Area=2.030 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=240' Tc=42.4 min CN=98 Runoff=7.84 cfs 1.003 af
SubcatchmentF20: Subarea 20	Runoff Area=9.680 ac 100.00% Impervious Runoff Depth>5.91" Flow Length=905' Slope=0.0300 '/' Tc=86.0 min CN=98 Runoff=23.78 cfs 4.765 af
SubcatchmentF3: Subarea 3	Runoff Area=0.870 ac 100.00% Impervious Runoff Depth>5.94" Flow Length=140' Tc=23.0 min CN=98 Runoff=4.73 cfs 0.430 af
SubcatchmentF5: Subarea 5	Runoff Area=11.780 ac 100.00% Impervious Runoff Depth>5.93" Flow Length=300' Slope=0.0500 '/' Tc=39.5 min CN=98 Runoff=47.67 cfs 5.820 af
Pond 1K: Kettle 1	Peak Elev=967.11' Storage=772,207 cf Inflow=65.61 cfs 17.727 af Outflow=0.00 cfs 0.000 af

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Pond 2K: Kettle 2	Peak Elev=974.91' Storage=94,798 cf Inflow=24.05 cfs 6.628 af Outflow=17.92 cfs 4.956 af
Pond 3K: Kettle 3	Peak Elev=976.57' Storage=28,509 cf Inflow=17.13 cfs 6.161 af Outflow=17.12 cfs 5.625 af
Pond 5P: Pond 5	Peak Elev=985.47' Storage=94,676 cf Inflow=47.67 cfs 5.820 af Outflow=16.42 cfs 5.731 af
Pond 10K: Kettle 10	Peak Elev=964.16' Storage=87,944 cf Inflow=10.60 cfs 2.019 af Outflow=0.00 cfs 0.000 af
Pond 11P: Pond 11	Peak Elev=968.47' Storage=27,135 cf Inflow=20.37 cfs 6.498 af Outflow=20.32 cfs 6.121 af
Pond 12K: Kettle 12	Peak Elev=964.16' Storage=143,515 cf Inflow=27.32 cfs 4.399 af Outflow=10.09 cfs 1.105 af
Pond 13K: Kettle 13	Peak Elev=964.16' Storage=24,440 cf Inflow=28.80 cfs 3.507 af Outflow=23.27 cfs 2.946 af
Pond 14K: Kettle 14	Peak Elev=964.16' Storage=112,651 cf Inflow=34.83 cfs 5.594 af Outflow=27.01 cfs 3.008 af
Pond 15K: Kettle 15	Peak Elev=972.67' Storage=11,032 cf Inflow=5.27 cfs 0.430 af Outflow=2.58 cfs 0.205 af
Pond 16K: Kettle 16	Peak Elev=1,007.53' Storage=21,438 cf Inflow=15.80 cfs 2.290 af Outflow=15.50 cfs 1.930 af
Pond 17K: Kettle 17	Peak Elev=1,012.43' Storage=22,300 cf Inflow=12.47 cfs 1.763 af Outflow=10.92 cfs 1.495 af
Pond 18B: Existing Infiltration Basin	Peak Elev=994.96' Storage=82,677 cf Inflow=22.53 cfs 2.895 af Primary=6.54 cfs 1.032 af Secondary=2.38 cfs 0.119 af Outflow=8.92 cfs 1.152 af
Pond 20P: Pond 20	Peak Elev=993.90' Storage=52,542 cf Inflow=30.19 cfs 5.798 af Outflow=27.90 cfs 5.732 af

Total Runoff Area = 64.210 ac Runoff Volume = 31.694 af Average Runoff Depth = 5.92"
0.00% Pervious = 0.000 ac 100.00% Impervious = 64.210 ac

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Summary for Subcatchment F1: Subarea 1

Runoff = 40.67 cfs @ 12.69 hrs, Volume= 5.875 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 8.010	98	woods
* 2.570	98	1/2 acre lots
* 0.700	98	cropland
* 0.540	98	grass
* 0.080	98	impervious
11.900	98	Weighted Average
11.900		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
49.6	300	0.1100	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
2.3	230	0.1100	1.66		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
51.9	530	Total			

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Summary for Subcatchment F10: Subarea 10

Runoff = 7.89 cfs @ 12.45 hrs, Volume= 0.914 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.310	98	woods
* 0.450	98	1/4 acre lots
* 0.080	98	grass
* 0.010	98	impervious
1.850	98	Weighted Average
1.850		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.8	225	0.1400	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Summary for Subcatchment F11: Subarea 11

Runoff = 12.57 cfs @ 12.52 hrs, Volume= 1.542 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.000	98	woods
* 1.040	98	grass
* 0.080	98	water
* 1.000	98	impervious
3.120	98	Weighted Average
3.120		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	35	0.0300	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
17.9	80	0.1000	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
16.2	105	0.2200	0.11		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
39.8	220	Total			

Summary for Subcatchment F12: Subarea 12

Runoff = 14.02 cfs @ 12.38 hrs, Volume= 1.454 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.010	98	woods
* 0.650	98	grass
* 0.210	98	impervious
* 1.070	98	1/4 acre lots
2.940	98	Weighted Average
2.940		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	50	0.1300	0.20		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
25.2	140	0.1300	0.09		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
29.4	190	Total			

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Summary for Subcatchment F13: Subarea 13

Runoff = 4.35 cfs @ 12.44 hrs, Volume= 0.499 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	0.760	98	woods
*	0.250	98	1/4 acre lots
	1.010	98	Weighted Average
	1.010		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
35.1	220	0.1400	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Summary for Subcatchment F14: Subarea 14

Runoff = 18.70 cfs @ 12.92 hrs, Volume= 3.459 af, Depth> 5.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 3.350	98	woods
* 2.740	98	grass
* 0.880	98	impervious
* 0.050	98	1/4 acre lots
7.020	98	Weighted Average
7.020		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
73.2	255	0.0300	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
0.1	55	0.3800	9.92		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
2.7	585	0.0500	3.60		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
76.0	895	Total			

Summary for Subcatchment F15: Subarea 15

Runoff = 5.27 cfs @ 12.27 hrs, Volume= 0.430 af, Depth> 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.480	98	woods
* 0.090	98	grass
* 0.010	98	impervious
* 0.290	98	1/4 acre lots
0.870	98	Weighted Average
0.870		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	70	0.0700	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment F16: Subarea 16

Runoff = 6.31 cfs @ 12.54 hrs, Volume= 0.795 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.110	98	woods
* 0.390	98	grass
* 0.110	98	impervious
1.610	98	Weighted Average
1.610		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.5	205	0.0800	0.08		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

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Summary for Subcatchment F17: Subarea 17

Runoff = 12.47 cfs @ 12.66 hrs, Volume= 1.763 af, Depth> 5.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 3.310	98	woods
* 0.150	98	grass
* 0.110	98	impervious
3.570	98	Weighted Average
3.570		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	225	0.0600	0.07		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"

Summary for Subcatchment F18: Subarea 18

Runoff = 22.53 cfs @ 12.56 hrs, Volume= 2.895 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

	Area (ac)	CN	Description
*	4.290	98	Area C from LCL High School Report
*	0.270	98	woods
*	0.780	98	grass
*	0.520	98	impervious
	5.860	98	Weighted Average
	5.860		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.8					Direct Entry, LCL High School Report

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Summary for Subcatchment F19: Subarea 19

Runoff = 0.92 cfs @ 12.13 hrs, Volume= 0.050 af, Depth> 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.040	98	grass
* 0.060	98	impervious
0.100	98	Weighted Average
0.100		100.00% Impervious Area

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

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Summary for Subcatchment F2: Subarea 2

Runoff = 7.84 cfs @ 12.58 hrs, Volume= 1.003 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.330	98	woods
* 0.570	98	grass
* 0.130	98	impervious
2.030	98	Weighted Average
2.030		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.7	50	0.0600	0.14		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
15.1	50	0.0600	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
21.6	140	0.1900	0.11		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
42.4	240	Total			

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Summary for Subcatchment F20: Subarea 20

Runoff = 23.78 cfs @ 13.09 hrs, Volume= 4.765 af, Depth> 5.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.440	98	woods
* 4.480	98	grass
* 0.160	98	water
* 3.350	98	impervious
* 0.250	98	cropland
9.680	98	Weighted Average
9.680		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
83.3	300	0.0300	0.06		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
1.6	270	0.0300	2.79		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
1.1	335		5.00		Direct Entry,
86.0	905	Total			

Summary for Subcatchment F3: Subarea 3

Runoff = 4.73 cfs @ 12.32 hrs, Volume= 0.430 af, Depth> 5.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 0.560	98	woods
* 0.260	98	grass
* 0.050	98	impervious
0.870	98	Weighted Average
0.870		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	10	0.0500	0.10		Sheet Flow, Grass: Dense n= 0.240 P2= 2.70"
21.3	130	0.1700	0.10		Sheet Flow, Woods: Dense underbrush n= 0.800 P2= 2.70"
23.0	140	Total			

Summary for Subcatchment F5: Subarea 5

Runoff = 47.67 cfs @ 12.51 hrs, Volume= 5.820 af, Depth> 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
MSE 24-hr 3 100 yr Rainfall=6.18"

Area (ac)	CN	Description
* 1.610	98	woods
* 3.720	98	grass
* 0.300	98	water
* 6.150	98	impervious
11.780	98	Weighted Average
11.780		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.0	150	0.0500	0.06		Sheet Flow,
					Woods: Dense underbrush n= 0.800 P2= 2.70"
0.5	150		5.00		Direct Entry,
39.5	300	Total			

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Summary for Pond 1K: Kettle 1

Inflow Area = 45.240 ac, 100.00% Impervious, Inflow Depth > 4.70" for 100 yr event
 Inflow = 65.61 cfs @ 13.26 hrs, Volume= 17.727 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 967.11' @ 24.00 hrs Surf.Area= 78,529 sf Storage= 772,207 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description	
#1	944.00'	1,029,702 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
944.00	3,750	0	0	3,750
945.00	6,195	4,922	4,922	6,208
946.00	8,685	7,405	12,327	8,716
947.00	10,780	9,714	22,040	10,840
948.00	13,055	11,899	33,940	13,148
949.00	15,305	14,165	48,105	15,437
950.00	17,415	16,349	64,453	17,595
951.00	19,655	18,524	82,977	19,886
952.00	21,865	20,750	103,727	22,155
953.00	24,185	23,015	126,743	24,536
954.00	26,545	25,356	152,098	26,963
955.00	28,985	27,756	179,854	29,473
956.00	31,540	30,254	210,108	32,101
957.00	34,135	32,829	242,937	34,775
958.00	36,900	35,509	278,445	37,619
959.00	39,930	38,405	316,851	40,728
960.00	43,170	41,539	358,390	44,047
961.00	46,620	44,884	403,274	47,578
962.00	50,260	48,429	451,703	51,301
963.00	54,345	52,289	503,992	55,465
964.00	58,275	56,299	560,290	59,484
965.00	64,568	61,395	621,685	65,838
970.00	99,920	408,017	1,029,702	101,550

Summary for Pond 2K: Kettle 2

Inflow Area = 14.680 ac, 100.00% Impervious, Inflow Depth > 5.42" for 100 yr event
 Inflow = 24.05 cfs @ 12.62 hrs, Volume= 6.628 af
 Outflow = 17.92 cfs @ 13.59 hrs, Volume= 4.956 af, Atten= 26%, Lag= 58.0 min
 Primary = 17.92 cfs @ 13.59 hrs, Volume= 4.956 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 974.91' @ 13.59 hrs Surf.Area= 22,301 sf Storage= 94,798 cf

Plug-Flow detention time= 134.5 min calculated for 4.956 af (75% of inflow)
 Center-of-Mass det. time= 68.8 min (924.5 - 855.8)

Volume	Invert	Avail.Storage	Storage Description
#1	966.00'	121,085 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
966.00	285	0	0	285
967.00	3,190	1,476	1,476	3,193
968.00	5,410	4,251	5,728	5,425
969.00	7,210	6,288	12,016	7,247
970.00	9,215	8,192	20,208	9,277
971.00	11,370	10,274	30,482	11,462
972.00	13,630	12,483	42,965	13,756
973.00	16,420	15,003	57,968	16,580
974.00	19,360	17,870	75,838	19,558
975.00	22,600	20,959	96,797	22,838
976.00	26,015	24,287	121,085	26,297

Device	Routing	Invert	Outlet Devices
#1	Primary	973.70'	5.0' 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=17.92 cfs @ 13.59 hrs HW=974.91' TW=968.47' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 17.92 cfs @ 2.96 fps)

Summary for Pond 3K: Kettle 3

Inflow Area = 12.650 ac, 100.00% Impervious, Inflow Depth > 5.84" for 100 yr event
 Inflow = 17.13 cfs @ 13.00 hrs, Volume= 6.161 af
 Outflow = 17.12 cfs @ 13.05 hrs, Volume= 5.625 af, Atten= 0%, Lag= 3.1 min
 Primary = 17.12 cfs @ 13.05 hrs, Volume= 5.625 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 976.57' @ 13.05 hrs Surf.Area= 10,692 sf Storage= 28,509 cf

Plug-Flow detention time= 70.0 min calculated for 5.625 af (91% of inflow)
 Center-of-Mass det. time= 34.9 min (870.2 - 835.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	972.00'	46,349 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
972.00	1,920	0	0	1,920
973.00	4,020	2,906	2,906	4,029
974.00	5,770	4,869	7,775	5,796
975.00	7,510	6,621	14,396	7,560
976.00	9,385	8,430	22,826	9,463
977.00	11,750	10,545	33,371	11,855
978.00	14,245	12,977	46,349	14,383

Device	Routing	Invert	Outlet Devices									
#1	Primary	976.00'	15.0' 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=17.12 cfs @ 13.05 hrs HW=976.57' TW=974.67' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 17.12 cfs @ 2.01 fps)

Summary for Pond 5P: Pond 5

Inflow Area = 11.780 ac, 100.00% Impervious, Inflow Depth > 5.93" for 100 yr event
 Inflow = 47.67 cfs @ 12.51 hrs, Volume= 5.820 af
 Outflow = 16.42 cfs @ 13.13 hrs, Volume= 5.731 af, Atten= 66%, Lag= 37.3 min
 Primary = 16.42 cfs @ 13.13 hrs, Volume= 5.731 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 985.47' @ 13.13 hrs Surf.Area= 30,848 sf Storage= 94,676 cf

Plug-Flow detention time= 78.3 min calculated for 5.731 af (98% of inflow)
 Center-of-Mass det. time= 69.1 min (841.2 - 772.1)

Volume	Invert	Avail.Storage	Storage Description
#1	981.00'	146,952 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
981.00	12,915	0	0	12,915
982.00	16,253	14,552	14,552	16,280
983.00	19,824	18,009	32,561	19,883
984.00	23,940	21,850	54,411	24,032
985.00	28,560	26,216	80,627	28,687
986.00	33,500	30,997	111,624	33,667
987.00	37,188	35,328	146,952	37,414

Device	Routing	Invert	Outlet Devices
#1	Primary	981.00'	18.0" Round Culvert L= 115.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 981.00' / 976.50' S= 0.0391 ' / Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Primary	985.64'	15.0' 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=16.42 cfs @ 13.13 hrs HW=985.47' TW=976.57' (Dynamic Tailwater)

1=Culvert (Inlet Controls 16.42 cfs @ 9.29 fps)
 2=Broad-Crested Rectangular Weir(Controls 0.00 cfs)

Summary for Pond 10K: Kettle 10

Inflow Area = 18.870 ac, 100.00% Impervious, Inflow Depth > 1.28" for 100 yr event
 Inflow = 10.60 cfs @ 14.25 hrs, Volume= 2.019 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 964.16' @ 24.00 hrs Surf.Area= 19,419 sf Storage= 87,944 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description		
#1	953.00'	105,225 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
953.00	170	0	0	170	
954.00	700	405	405	705	
955.00	1,590	1,115	1,520	1,602	
956.00	3,290	2,389	3,909	3,311	
957.00	4,855	4,047	7,956	4,892	
958.00	6,405	5,612	13,568	6,465	
959.00	8,045	7,209	20,778	8,132	
960.00	9,695	8,857	29,635	9,815	
961.00	11,530	10,599	40,234	11,686	
962.00	13,595	12,548	52,783	13,789	
963.00	15,870	14,718	67,500	16,104	
964.00	19,025	17,424	84,924	19,294	
965.00	21,605	20,301	105,225	21,923	

Device	Routing	Invert	Outlet Devices									
#1	Primary	964.50'	15.0' 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=0.00 cfs @ 0.00 hrs HW=953.00' (Free Discharge)

↑1=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond 11P: Pond 11

Inflow Area = 17.800 ac, 100.00% Impervious, Inflow Depth > 4.38" for 100 yr event
 Inflow = 20.37 cfs @ 13.41 hrs, Volume= 6.498 af
 Outflow = 20.32 cfs @ 13.48 hrs, Volume= 6.121 af, Atten= 0%, Lag= 4.2 min
 Primary = 20.32 cfs @ 13.48 hrs, Volume= 6.121 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 968.47' @ 13.48 hrs Surf.Area= 9,173 sf Storage= 27,135 cf

Plug-Flow detention time= 44.1 min calculated for 6.121 af (94% of inflow)
 Center-of-Mass det. time= 18.4 min (906.8 - 888.4)

Volume	Invert	Avail.Storage	Storage Description	
#1	964.00'	32,230 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
964.00	3,560	0	0	3,560
965.00	4,560	4,050	4,050	4,585
966.00	5,660	5,100	9,150	5,714
967.00	6,895	6,267	15,417	6,980
968.00	8,290	7,582	22,999	8,409
969.00	10,205	9,231	32,230	10,354

Device	Routing	Invert	Outlet Devices
#1	Primary	964.00'	12.0" Round Culvert L= 65.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 964.00' / 962.00' S= 0.0308 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Primary	968.00'	15.0' 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=20.32 cfs @ 13.48 hrs HW=968.47' TW=959.19' (Dynamic Tailwater)

1=Culvert (Inlet Controls 7.54 cfs @ 9.60 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 12.78 cfs @ 1.80 fps)

Summary for Pond 12K: Kettle 12

Inflow Area = 17.020 ac, 100.00% Impervious, Inflow Depth > 3.10" for 100 yr event
 Inflow = 27.32 cfs @ 12.94 hrs, Volume= 4.399 af
 Outflow = 10.09 cfs @ 14.26 hrs, Volume= 1.105 af, Atten= 63%, Lag= 79.6 min
 Primary = 10.09 cfs @ 14.26 hrs, Volume= 1.105 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 964.16' @ 24.00 hrs Surf.Area= 30,868 sf Storage= 143,515 cf

Plug-Flow detention time= 222.3 min calculated for 1.105 af (25% of inflow)
 Center-of-Mass det. time= 76.3 min (900.9 - 824.6)

Volume	Invert	Avail.Storage	Storage Description
#1	956.00'	246,697 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
956.00	495	0	0	495
957.00	6,410	2,895	2,895	6,413
958.00	11,490	8,827	11,723	11,504
959.00	15,695	13,538	25,261	15,729
960.00	18,580	17,117	42,378	18,651
961.00	21,310	19,929	62,307	21,426
962.00	23,950	22,617	84,925	24,120
963.00	26,775	25,349	110,274	27,000
964.00	30,155	28,448	138,722	30,433
965.00	34,835	32,467	171,189	35,156
966.00	37,955	36,384	207,573	38,349
967.00	40,304	39,124	246,697	40,800

Device	Routing	Invert	Outlet Devices
#1	Primary	963.00'	15.0' 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=10.09 cfs @ 14.26 hrs HW=963.41' TW=961.91' (Dynamic Tailwater)

↑1=**Broad-Crested Rectangular Weir**(Weir Controls 10.09 cfs @ 1.64 fps)

Summary for Pond 13K: Kettle 13

Inflow Area = 14.080 ac, 100.00% Impervious, Inflow Depth > 2.99" for 100 yr event
 Inflow = 28.80 cfs @ 12.94 hrs, Volume= 3.507 af
 Outflow = 23.27 cfs @ 12.96 hrs, Volume= 2.946 af, Atten= 19%, Lag= 1.2 min
 Primary = 23.27 cfs @ 12.96 hrs, Volume= 2.946 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 964.16' @ 24.00 hrs Surf.Area= 8,629 sf Storage= 24,440 cf

Plug-Flow detention time= 50.4 min calculated for 2.946 af (84% of inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description		
#1	959.40'	55,187 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
959.40	50	0	0	50	
960.00	2,560	594	594	2,561	
961.00	4,110	3,305	3,898	4,124	
962.00	5,850	4,954	8,853	5,882	
963.00	7,130	6,479	15,332	7,193	
964.00	8,425	7,768	23,101	8,525	
965.00	9,765	9,087	32,187	9,907	
966.00	11,570	10,655	42,842	11,749	
967.00	13,137	12,345	55,187	13,365	

Device	Routing	Invert	Outlet Devices
#1	Primary	959.48'	24.0" Round Culvert X 2.00 L= 92.5' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 959.48' / 958.97' S= 0.0055 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Primary	966.00'	15.0' 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=23.17 cfs @ 12.96 hrs HW=961.87' TW=961.37' (Dynamic Tailwater)

1=Culvert (Outlet Controls 23.17 cfs @ 3.90 fps)
 2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Pond 14K: Kettle 14

Inflow Area = 13.070 ac, 100.00% Impervious, Inflow Depth > 5.14" for 100 yr event
 Inflow = 34.83 cfs @ 12.87 hrs, Volume= 5.594 af
 Outflow = 27.01 cfs @ 12.95 hrs, Volume= 3.008 af, Atten= 22%, Lag= 4.6 min
 Primary = 27.01 cfs @ 12.95 hrs, Volume= 3.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 964.16' @ 24.00 hrs Surf.Area= 22,124 sf Storage= 112,651 cf

Plug-Flow detention time= 136.4 min calculated for 3.008 af (54% of inflow)
 Center-of-Mass det. time= 45.2 min (869.8 - 824.6)

Volume	Invert	Avail.Storage	Storage Description
#1	955.00'	184,779 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
955.00	3,070	0	0	3,070
956.00	5,250	4,112	4,112	5,262
957.00	7,260	6,228	10,339	7,291
958.00	9,090	8,158	18,497	9,149
959.00	10,725	9,896	28,394	10,821
960.00	12,545	11,623	40,017	12,681
961.00	14,795	13,655	53,671	14,969
962.00	17,570	16,163	69,834	17,780
963.00	19,708	18,629	88,463	19,972
965.00	23,972	43,610	132,073	24,363
967.00	28,808	52,706	184,779	29,334

Device	Routing	Invert	Outlet Devices
#1	Primary	961.30'	15.0' 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=26.92 cfs @ 12.95 hrs HW=962.20' TW=961.83' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 26.92 cfs @ 2.00 fps)

Summary for Pond 15K: Kettle 15

Inflow Area = 0.870 ac, 100.00% Impervious, Inflow Depth > 5.94" for 100 yr event
 Inflow = 5.27 cfs @ 12.27 hrs, Volume= 0.430 af
 Outflow = 2.58 cfs @ 12.50 hrs, Volume= 0.205 af, Atten= 51%, Lag= 14.0 min
 Primary = 2.58 cfs @ 12.50 hrs, Volume= 0.205 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 972.67' @ 12.50 hrs Surf.Area= 7,857 sf Storage= 11,032 cf

Plug-Flow detention time= 211.5 min calculated for 0.205 af (48% of inflow)
 Center-of-Mass det. time= 112.1 min (865.6 - 753.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	970.00'	13,842 cf	Custom Stage Data (Conic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
970.00	1,620	0	0	1,620	
971.00	3,050	2,298	2,298	3,060	
972.00	5,595	4,259	6,556	5,615	
973.00	9,120	7,286	13,842	9,153	

Device	Routing	Invert	Outlet Devices									
#1	Primary	972.50'	15.0' 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=2.58 cfs @ 12.50 hrs HW=972.67' TW=959.97' (Dynamic Tailwater)

↑1=**Broad-Crested Rectangular Weir**(Weir Controls 2.58 cfs @ 1.02 fps)

Summary for Pond 16K: Kettle 16

Inflow Area = 5.180 ac, 100.00% Impervious, Inflow Depth > 5.31" for 100 yr event
 Inflow = 15.80 cfs @ 12.73 hrs, Volume= 2.290 af
 Outflow = 15.50 cfs @ 12.81 hrs, Volume= 1.930 af, Atten= 2%, Lag= 5.0 min
 Primary = 15.50 cfs @ 12.81 hrs, Volume= 1.930 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 1,007.53' @ 12.81 hrs Surf.Area= 12,024 sf Storage= 21,438 cf

Plug-Flow detention time= 89.3 min calculated for 1.930 af (84% of inflow)
 Center-of-Mass det. time= 37.3 min (856.9 - 819.6)

Volume	Invert	Avail.Storage	Storage Description	
#1	1,005.00'	41,902 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,005.00	4,400	0	0	4,400
1,006.00	8,010	6,116	6,116	8,021
1,007.00	10,625	9,287	15,402	10,658
1,008.00	13,320	11,947	27,349	13,380
1,009.00	15,820	14,552	41,902	15,917

Device	Routing	Invert	Outlet Devices									
#1	Primary	1,007.00'	15.0' 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=15.50 cfs @ 12.81 hrs HW=1,007.53' TW=961.94' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 15.50 cfs @ 1.94 fps)

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MSE 24-hr 3 100 yr Rainfall=6.18"

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Summary for Pond 17K: Kettle 17

Inflow Area = 3.570 ac, 100.00% Impervious, Inflow Depth > 5.92" for 100 yr event
 Inflow = 12.47 cfs @ 12.66 hrs, Volume= 1.763 af
 Outflow = 10.92 cfs @ 12.85 hrs, Volume= 1.495 af, Atten= 12%, Lag= 11.3 min
 Primary = 10.92 cfs @ 12.85 hrs, Volume= 1.495 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 1,012.43' @ 12.85 hrs Surf.Area= 29,159 sf Storage= 22,300 cf

Plug-Flow detention time= 113.6 min calculated for 1.495 af (85% of inflow)
 Center-of-Mass det. time= 62.4 min (844.0 - 781.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,011.00'	41,610 cf	Custom Stage Data (Conic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,011.00	2,770	0	0	2,770
1,012.00	22,770	11,161	11,161	22,773
1,013.00	38,840	30,450	41,610	38,855

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	15.0' 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 @ 12.85 hrs HW=1,012.43' TW=1,007.53' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 10.92 cfs @ 1.69 fps)

Summary for Pond 18B: Existing Infiltration Basin

Inflow Area = 5.860 ac, 100.00% Impervious, Inflow Depth > 5.93" for 100 yr event
 Inflow = 22.53 cfs @ 12.56 hrs, Volume= 2.895 af
 Outflow = 8.92 cfs @ 13.14 hrs, Volume= 1.152 af, Atten= 60%, Lag= 35.4 min
 Primary = 6.54 cfs @ 13.14 hrs, Volume= 1.032 af
 Secondary = 2.38 cfs @ 13.14 hrs, Volume= 0.119 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 994.96' @ 13.14 hrs Surf.Area= 24,848 sf Storage= 82,677 cf

Plug-Flow detention time= 261.3 min calculated for 1.152 af (40% of inflow)
 Center-of-Mass det. time= 143.5 min (918.5 - 775.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	989.00'	83,684 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
989.00	600	0	0	600
990.00	9,570	4,189	4,189	9,573
991.00	11,810	10,670	14,859	11,842
992.00	14,165	12,970	27,829	14,232
993.00	16,675	15,403	43,232	16,780
994.00	19,650	18,142	61,374	19,793
995.00	25,080	22,310	83,684	25,249

Device	Routing	Invert	Outlet Devices
#1	Primary	994.65'	15.0' 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
#2	Secondary	994.80'	15.0' 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=6.54 cfs @ 13.14 hrs HW=994.96' TW=993.77' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 6.54 cfs @ 1.41 fps)

Secondary OutFlow Max=2.38 cfs @ 13.14 hrs HW=994.96' (Free Discharge)
 ↑2=**Broad-Crested Rectangular Weir**(Weir Controls 2.38 cfs @ 0.99 fps)

Summary for Pond 20P: Pond 20

Inflow Area = 15.540 ac, 100.00% Impervious, Inflow Depth > 4.48" for 100 yr event
 Inflow = 30.19 cfs @ 13.10 hrs, Volume= 5.798 af
 Outflow = 27.90 cfs @ 13.33 hrs, Volume= 5.732 af, Atten= 8%, Lag= 13.5 min
 Primary = 27.90 cfs @ 13.33 hrs, Volume= 5.732 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.001 hrs
 Peak Elev= 993.90' @ 13.33 hrs Surf.Area= 16,041 sf Storage= 52,542 cf

Plug-Flow detention time= 63.0 min calculated for 5.731 af (99% of inflow)
 Center-of-Mass det. time= 56.5 min (890.5 - 834.1)

Volume	Invert	Avail.Storage	Storage Description	
#1	989.00'	58,314 cf	Custom Stage Data (Conic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
989.00	7,075	0	0	7,075
990.00	7,850	7,459	7,459	7,908
991.00	9,485	8,655	16,114	9,576
992.00	11,475	10,464	26,578	11,599
993.00	13,730	12,586	39,164	13,889
994.00	16,310	15,002	54,165	16,505
994.25	16,880	4,149	58,314	17,086

Device	Routing	Invert	Outlet Devices
#1	Primary	989.00'	12.0" Round Culvert L= 90.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 989.00' / 988.00' S= 0.0111 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Primary	993.25'	15.0' 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=27.90 cfs @ 13.33 hrs HW=993.90' TW=958.33' (Dynamic Tailwater)

1=Culvert (Barrel Controls 6.71 cfs @ 8.54 fps)

2=Broad-Crested Rectangular Weir (Weir Controls 21.19 cfs @ 2.17 fps)

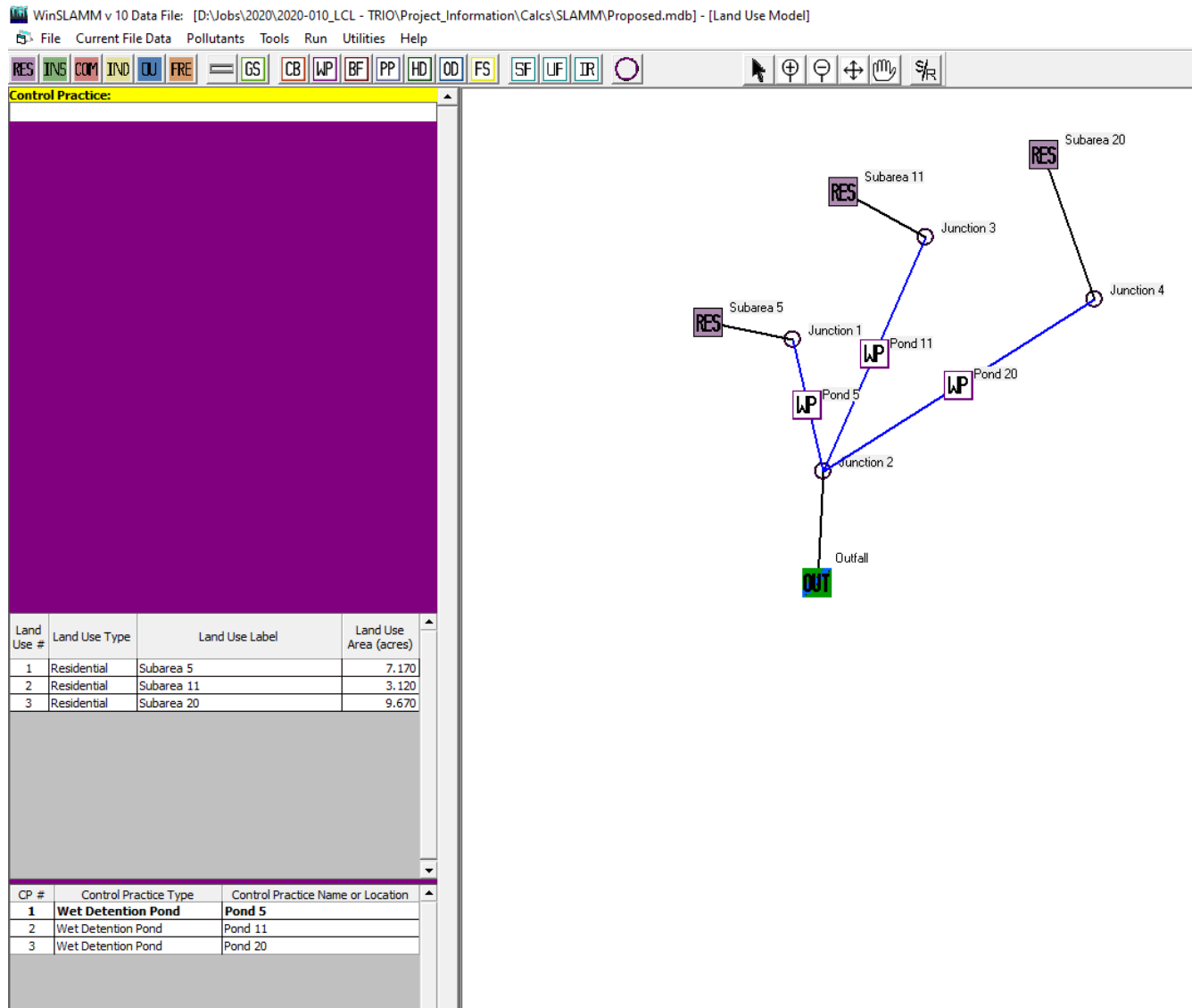
APPENDIX 5

WinSLAMM Modeling

Proposed Conditions

WinSLAMM Modeling

WinSLAMM – Proposed Conditions



SLAMM for Windows Version 10.4.1

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Data file name: D:\Jobs\2020\2020-010_LCL - TRIO\Project_Information\Calcs\SLAMM\Proposed.mdb

Data file description:

Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.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.ppdxd

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

Start of Winter Season: 12/06 End of Winter Season: 03/28

Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69

Date of run: 06-30-2020 Time of run: 21:20:29

Total Area Modeled (acres): 19.960

Years in Model Run: 0.99

	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:	549836	-	107.0	3674	-
Outfall Total with Controls:	550434	-0.11%	34.54	1187	67.69%
Annualized Total After Outfall Controls:	558079			1203	

Data file name: D:\Jobs\2020\2020-010_LCL - TRIO\Project_Information\Calcs\SLAMM\Proposed.mdb
 WinSLAMM Version 10.4.1
 Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.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.ppdx
 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: 01/05/69 Study period ending date: 12/31/69
 Start of Winter Season: 12/06 End of Winter Season: 03/28
 Date: 06-30-2020 Time: 21:20:40
 Site information:

LU# 1 - Residential: Subarea 5 Total area (ac): 7.170
 31 - Sidewalks 1: 0.160 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.490 ac. Smooth Street Length = 0.289 curb-mi Street Width (assuming two curb-
 mi per street mile) = 27.97578 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 0.880 ac. Normal Silty Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 5.560 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.080 ac. Source Area PSD File:

LU# 2 - Residential: Subarea 11 Total area (ac): 3.120
 1 - Roofs 1: 0.450 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 13 - Paved Parking 1: 0.200 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 0.350 ac. Smooth Street Length = 0.206 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.03398 ft

Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 1.040 ac. Normal Silty Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 1.000 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.080 ac. Source Area PSD File:
 LU# 3 - Residential: Subarea 20 Total area (ac): 9.670
 1 - Roofs 1: 1.540 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 13 - Paved Parking 1: 0.500 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.160 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 1.070 ac. Smooth Street Length = 0.631 curb-mi Street Width (assuming two curb-
 mi per street mile) = 27.9794 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 4.360 ac. Normal Silty Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 1.630 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 58 - Undeveloped Areas 2: 0.250 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.160 ac. Source Area PSD File:

 Control Practice 1: Wet Detention Pond CP# 1 (DS) - Pond 5
 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: Orifice 1
 1. Orifice diameter (ft): 1.5
 2. Number of orifices: 1
 3. Invert elevation above datum (ft): 5
 Outlet type: Broad Crested Weir
 1. Weir crest length (ft): 15
 2. Weir crest width (ft): 10
 3. Height from datum to bottom of weir opening: 9.64
 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	0.0100	0.00	0.00
2	1.00	0.0200	0.00	0.00
3	2.00	0.0250	0.00	0.00
4	3.00	0.0300	0.00	0.00
5	4.00	0.0400	0.00	0.00
6	5.00	0.0800	0.00	0.00
7	6.00	0.1500	0.00	0.00
8	7.00	0.3800	0.00	0.00
9	8.00	0.5400	0.00	0.00
10	9.00	0.6700	0.00	0.00
11	10.00	0.7800	0.00	0.00
12	11.00	0.9000	0.00	0.00

Control Practice 2: Wet Detention Pond CP# 2 (DS) - Pond 11

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: 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): 15

2. Weir crest width (ft): 10

3. Height from datum to bottom of weir opening: 9

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	0.0100	0.00	0.00
2	1.00	0.0150	0.00	0.00
3	2.00	0.0200	0.00	0.00
4	3.00	0.0300	0.00	0.00
5	4.00	0.0350	0.00	0.00
6	5.00	0.0800	0.00	0.00
7	6.00	0.1000	0.00	0.00

8	7.00	0.1300	0.00	0.00
9	8.00	0.1600	0.00	0.00
10	9.00	0.1900	0.00	0.00
11	10.00	0.2300	0.00	0.00

Control Practice 3: Wet Detention Pond CP# 3 (DS) - Pond 20

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: 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): 15

2. Weir crest width (ft): 10

3. Height from datum to bottom of weir opening: 9.25

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	0.0300	0.00	0.00
2	1.00	0.0400	0.00	0.00
3	2.00	0.0500	0.00	0.00
4	3.00	0.0700	0.00	0.00
5	4.00	0.0800	0.00	0.00
6	5.00	0.1600	0.00	0.00
7	6.00	0.1800	0.00	0.00
8	7.00	0.2200	0.00	0.00
9	8.00	0.2600	0.00	0.00
10	9.00	0.3200	0.00	0.00
11	10.00	0.3700	0.00	0.00
12	10.25	0.3900	0.00	0.00

Future Conditions

WinSLAMM Modeling

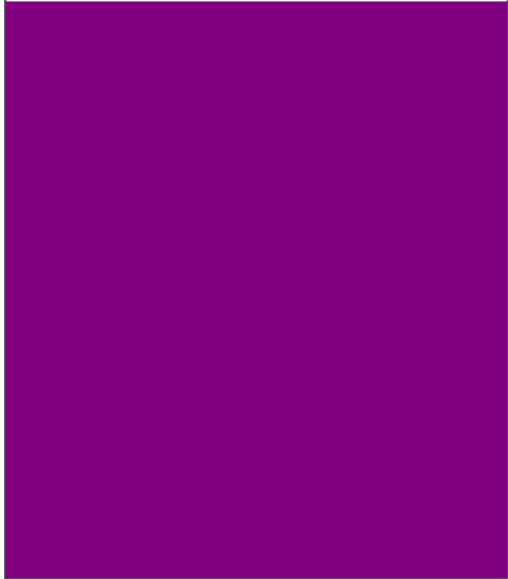
WinSLAMM – Future Conditions

WinSLAMM v 10 Data File: [D:\Jobs\2020\2020-010_LCL - TRIO\Project_Information\Calcs\SLAMM\Future.mdb] - [Land Use Model]

File Current File Data Pollutants Tools Run Utilities Help

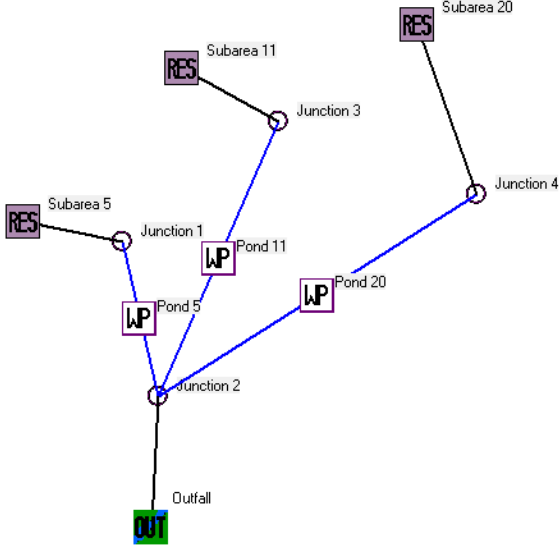
RES INS COM IND OU FRE = GS CB WP BF PP HD OD FS SF UF IR

Control Practice:



Land Use #	Land Use Type	Land Use Label	Land Use Area (acres)
1	Residential	Subarea 5	11.780
2	Residential	Subarea 11	3.120
3	Residential	Subarea 20	9.680

CP #	Control Practice Type	Control Practice Name or Location
1	Wet Detention Pond	Pond 5
2	Wet Detention Pond	Pond 11
3	Wet Detention Pond	Pond 20



SLAMM for Windows Version 10.4.1

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Data file name: D:\Jobs\2020\2020-010_LCL - TRIO\Project_Information\Calcs\SLAMM\Future.mdb

Data file description:

Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.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.ppdxd

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

Start of Winter Season: 12/06 End of Winter Season: 03/28

Model Run Start Date: 01/05/69 Model Run End Date: 12/31/69

Date of run: 06-30-2020 Time of run: 21:16:49

Total Area Modeled (acres): 24.580

Years in Model Run: 0.99

	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:	1.068E+06	-	106.9	7128	-
Outfall Total with Controls:	1.069E+06	-0.09%	35.76	2387	66.51%
Annualized Total After Outfall Controls:	1.084E+06			2420	

Data file name: D:\Jobs\2020\2020-010_LCL - TRIO\Project_Information\Calcs\SLAMM\Future.mdb
 WinSLAMM Version 10.4.1
 Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Milwaukee WI 1969.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: 01/05/69 Study period ending date: 12/31/69
 Start of Winter Season: 12/06 End of Winter Season: 03/28
 Date: 06-30-2020 Time: 21:17:14
 Site information:

LU# 1 - Residential: Subarea 5 Total area (ac): 11.780
 1 - Roofs 1: 2.450 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 13 - Paved Parking 1: 0.140 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 1.060 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 2.500 ac. Smooth Street Length = 1.473 curb-mi Street Width (assuming two curb-
 mi per street mile) = 28.00407 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 51 - Small Landscaped Areas 1: 3.720 ac. Normal Silty Source Area PSD File: C:\WinSLAMM
 Files\NURP.cpz
 57 - Undeveloped Areas 1: 1.610 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.300 ac. Source Area PSD File:

LU# 2 - Residential: Subarea 11 Total area (ac): 3.120
 1 - Roofs 1: 0.450 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 13 - Paved Parking 1: 0.200 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

37 - Streets 1: 0.350 ac. Smooth Street Length = 0.206 curb-mi Street Width (assuming two curb-mi per street mile) = 28.03398 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 51 - Small Landscaped Areas 1: 1.040 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 57 - Undeveloped Areas 1: 1.000 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.080 ac. Source Area PSD File:
 LU# 3 - Residential: Subarea 20 Total area (ac): 9.680
 1 - Roofs 1: 1.610 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 13 - Paved Parking 1: 0.500 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 31 - Sidewalks 1: 0.170 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 37 - Streets 1: 1.070 ac. Smooth Street Length = 0.631 curb-mi Street Width (assuming two curb-mi per street mile) = 27.9794 ft
 Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 51 - Small Landscaped Areas 1: 4.480 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 57 - Undeveloped Areas 1: 1.440 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 58 - Undeveloped Areas 2: 0.250 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
 70 - Water Body Areas: 0.160 ac. Source Area PSD File:

 Control Practice 1: Wet Detention Pond CP# 1 (DS) - Pond 5
 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: Orifice 1
 1. Orifice diameter (ft): 1.5
 2. Number of orifices: 1
 3. Invert elevation above datum (ft): 5
 Outlet type: Broad Crested Weir
 1. Weir crest length (ft): 15
 2. Weir crest width (ft): 10
 3. Height from datum to bottom of weir opening: 9.64
 Pond stage and surface area
 Entry Stage Pond Area Natural Seepage Other Outflow

Number	(ft)	(acres)	(in/hr)	(cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.1100	0.00	0.00
2	1.00	0.1300	0.00	0.00
3	2.00	0.1500	0.00	0.00
4	3.00	0.1700	0.00	0.00
5	4.00	0.1900	0.00	0.00
6	5.00	0.3000	0.00	0.00
7	6.00	0.3700	0.00	0.00
8	7.00	0.4600	0.00	0.00
9	8.00	0.5500	0.00	0.00
10	9.00	0.6600	0.00	0.00
11	10.00	0.7700	0.00	0.00
12	11.00	0.8500	0.00	0.00

Control Practice 2: Wet Detention Pond CP# 2 (DS) - Pond 11

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: 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): 15

2. Weir crest width (ft): 10

3. Height from datum to bottom of weir opening: 9

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	0.0100	0.00	0.00
2	1.00	0.0150	0.00	0.00
3	2.00	0.0200	0.00	0.00
4	3.00	0.0300	0.00	0.00
5	4.00	0.0350	0.00	0.00

6	5.00	0.0800	0.00	0.00
7	6.00	0.1000	0.00	0.00
8	7.00	0.1300	0.00	0.00
9	8.00	0.1600	0.00	0.00
10	9.00	0.1900	0.00	0.00
11	10.00	0.2300	0.00	0.00

Control Practice 3: Wet Detention Pond CP# 3 (DS) - Pond 20

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: 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): 15

2. Weir crest width (ft): 10

3. Height from datum to bottom of weir opening: 9.25

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	0.0300	0.00	0.00
2	1.00	0.0400	0.00	0.00
3	2.00	0.0500	0.00	0.00
4	3.00	0.0700	0.00	0.00
5	4.00	0.0800	0.00	0.00
6	5.00	0.1600	0.00	0.00
7	6.00	0.1800	0.00	0.00
8	7.00	0.2200	0.00	0.00
9	8.00	0.2600	0.00	0.00
10	9.00	0.3200	0.00	0.00
11	10.00	0.3700	0.00	0.00
12	10.25	0.3900	0.00	0.00