Exhibit L – Stormwater Management Report

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Tobacco Valley Solar

County Road & Hoskins Road
Simsbury, CT

PREPARED FOR

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1

Project Summary

Project Description

The Petitioner, DWW Solar II, LLC, is proposing to construct a 26.4 MW solar farm on existing agricultural fields and woodland along with all associated utilities, access paths, fencing, and landscaping to support this use (the Project). When the Project reaches the end of its 25-year life cycle, the improvements constructed as part of this petition will be removed and the agricultural fields will be restored for potential reuse as farmland.

Site Description

The ±289-acre Project Site (Site) is comprised of five parcels in the vicinity of County Road and Hoskins Road (Tax Assessor's IDs G03-403-032, G03-403-012, G03-403-026-32H, G03-403-014, and H05-103-024) in Simsbury, Connecticut (see Figure 1). The parcels are generally bounded by Munnisunk Brook to the north, Bissell Brook to the south, residential properties near Hopmeadow Street (US Route 10\State Route 202) to the east, and residential properties near County Road to the west. Three parcels of the Site are zoned R-40 (Single Family Residence) and two parcels are zoned I-1 (Restricted Industrial). The majority of abutting properties are zoned for residential and are improved with single family houses.

Under existing conditions, much of the Site consists of agricultural farm fields that are bordered by forest or woodlands. There are wetland systems associated with Munnisunk Brook along the northern limits of the Site, Saxton Brook through the central portions of the Site, and Bissell Brook along the southern limits of the Site. Under existing conditions, the majority of the untreated stormwater runoff from the Site flows overland towards these wetlands systems. A small portion of runoff in the northeastern portion of the Site flows overland towards residential properties on Knollwood Circle and Howard Street, where it is ultimately captured and discharged to an unnamed brook.

According to available soil mapping[1] and a soil test pit investigation performed on June 14, 2017, the most of the soils on-site are coarse textured with rapid internal permeability rates

[1] https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

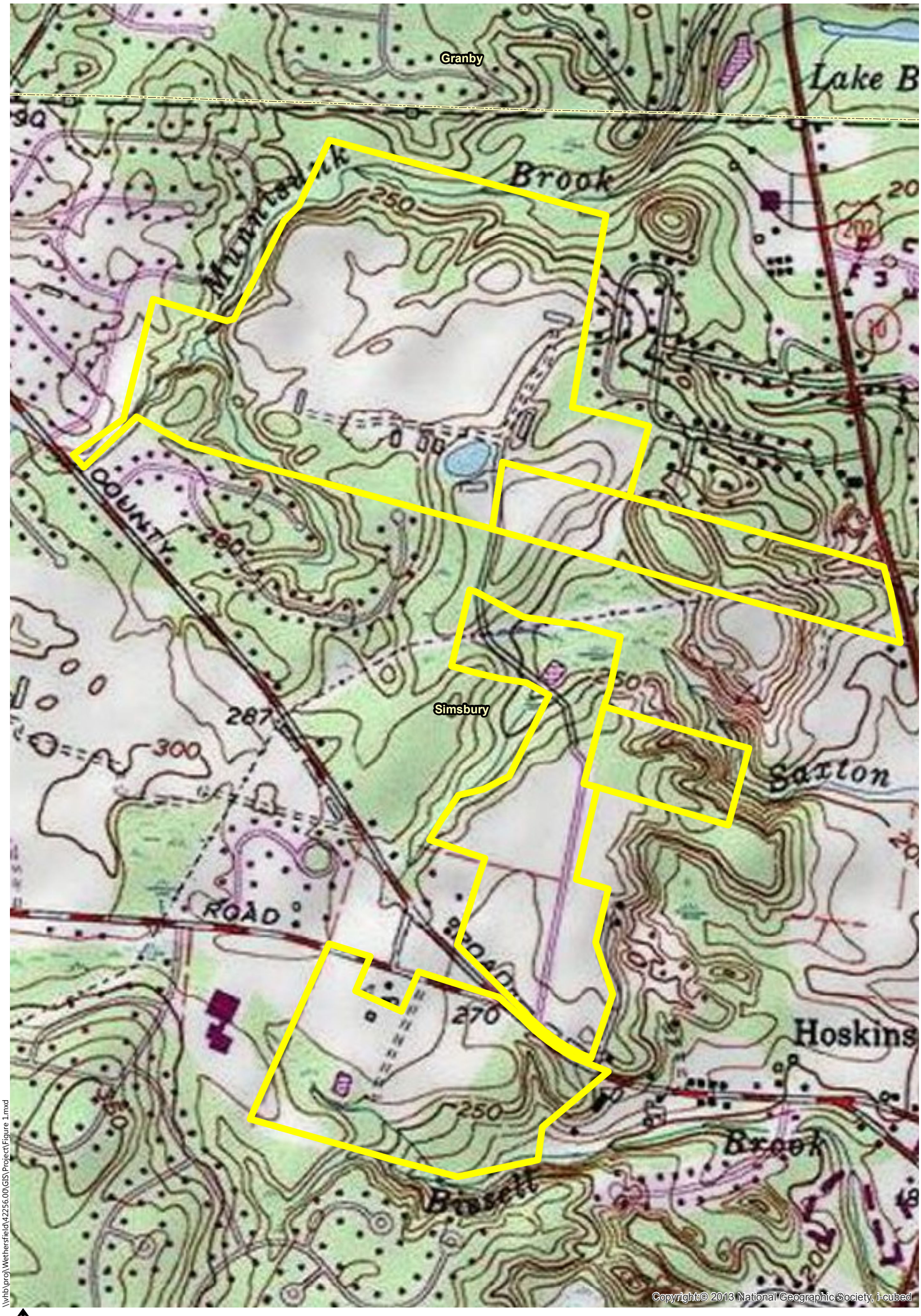
and high infiltration rates. The soil profiles examined in test pits were generally consistent or similar to the named series in the mapped units available on-line[1]. Based on this mapping, on-Site soils belong to the Hydraulic Soil Group "A", indicating that the soils having a high infiltration rate even when thoroughly wet. See Appendix A for test pit and infiltration testing data, and NRCS Web Soil Survey output.

Methodology

The Project was designed to incorporate measures provided in the Connecticut Stormwater Quality Manual (CTDEP 2004). The conclusion of this analysis is that the proposed improvements will not increase the post-development peak runoff rates in comparison to existing pre-development rates at any of the critical design points analyzed and the quality of stormwater runoff leaving the Site will be improved compared to existing.

Figure 1: Site Location Map

June 19, 2017



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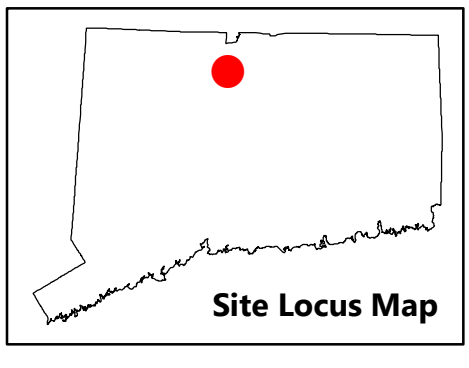

Legend

Project Site

Town Line

Tobacco Valley Solar

Site Location Map

Figure 1
County Road & Hoskins Road
Simsbury, Connecticut

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Existing Drainage Conditions

Summary

Under existing conditions, untreated stormwater runoff from the majority of the Site flows overland towards the wetland systems associated with Munnisunk Brook, Saxton Brook, Bissell Brook, and neighboring properties. A small portion of runoff in the northeastern portion of the Site flows overland to residential properties on Knollwood Circle and Howard Street where it is ultimately captured and discharged to an unnamed brook (See Figure 2). The Site is generally at a higher elevation throughout the agricultural fields and slopes down in all directions to the adjacent wetland systems. While most of the agricultural fields and wetlands are near level to gently sloping there are some steeper slopes between higher elevation farmed upland outwash terraces and valley bottom streams. Most of the Site is occupied by tilled agricultural farm fields with smaller patches covered in grasses and/or brush. Most of the Project Site perimeter is forest or woodland.

Hydrologic Information

For the existing conditions hydrologic analysis, the Site is divided into 10 drainage areas as stormwater runoff flows to five (5) Design Points, which have been identified as Munnisunk Brook (DP-MB), Knollwood Circle (DP-KC), Howard Street (DP-HS), Saxton Brook (DP-SB), and Bissell Brook (DP-BB). Table 1 provides a summary of the existing conditions hydrologic data. Figure 2 illustrates the existing drainage patterns on the Site. Only the areas of the Site that are proposed to be disturbed by construction have been included in this drainage analysis, while portions of the Site unaffected by construction have been excluded.

Drainage Area MB-1 - This ±49-acre area comprises the majority of the large northern parcel (portions of Lot G03-403-032) of the Site consisting mainly of farm field with surrounding dense vegetation. Stormwater in this area flows untreated generally to the north into the adjacent wetlands of Munnisunk Brook (Design Point DP-MB).

Drainage Area MB-2 - This ±13-acre area is located at the southern end of the large northern parcel (portions of Lots G03-403-032 and G03-403-012). Stormwater runoff from this watershed collects at a natural on-Site depression within the wooded area. This depression is large enough to contain and infiltrate a 100-year flood event from the contributing area without drainage leaving the Site under both existing and proposed conditions.

Drainage Area KC-1 - This ±24-acre area is located partly at the southeastern portion of the large northern parcel and the northwestern portion of the smaller northern parcel (portions of Lots G03-403-012 and G03-403-026-32H). Runoff from this watershed flows towards a wetlands system that discharges into the rear yards of residential parcels on Knollwood Circle (Design Point DP-KC).

Drainage Area HS-1- This ±1-acre area is located in the northeastern portion of the smaller northern parcel (portions of Lot G03-403-012). Runoff from this watershed flows towards the rear yards of residential parcels on Howard Street (Design Point DP-HS).

Drainage Area SB-1- This ±8-acre area is located in the southeastern portion of the smaller northern parcel (portions of Lot G03-403-012). Runoff from this watershed flows to the southeast towards Saxton Brook (Design Point DP-SB).

Drainage Area SB-2- This ±15-acre area is located in the northern portion of the central parcel (portion of Lot G03-403-026-32H). Runoff from this watershed generally flows to the north and east towards Saxton Brook (Design Point DP-SB).

Drainage Area SB-3- This ±5-acre area is located in the eastern portion of the central parcel (portions of Lots G03-403-026-32H and G03-403-014). Runoff from this watershed generally flows to the east towards Saxton Brook (Design Point DP-SB).

Drainage Area BB-1- This ±19-acre area comprises the majority of the central parcel of the Site consisting of mainly farm field (portion of Lot G03-403-026-32H). Stormwater in this area flows untreated generally to the south towards the intersection of County Road and Hoskins Road. An existing swale and pipe culvert along the northern edge of the road convey stormwater across the road and into the farm field to the south. Runoff from this area ultimately discharges into Bissell Brook (Design Point DP-BB).

Drainage Area BB-2- This ±6-acre area is located in the southeastern portion of the central parcel (portion of Lot G03-403-026-32H). Runoff from this watershed generally flows to the southeast towards Hoskins Road, where it travels in the gutter of the road until ultimately discharging into Bissell Brook (Design Point DP-BB).

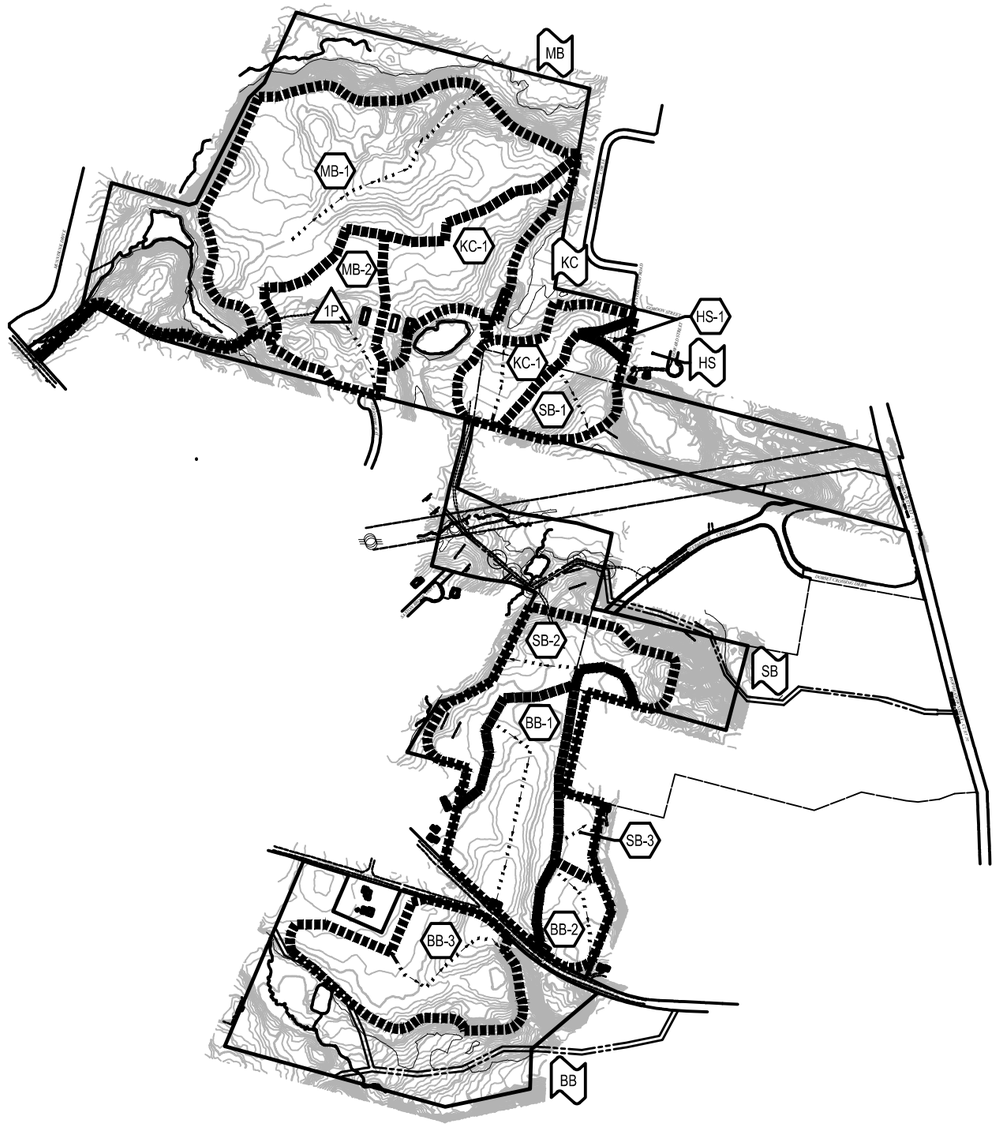
Drainage Area BB-3- This ±20-acre area comprises the majority of the southern parcel of the Site consisting of mainly farm field with surrounding dense vegetation (Lot H05-103-024). Stormwater in this area flows untreated generally to the south and east into the adjacent wetlands of Bissell Brook (Design Point DP-BB).

Table 1 summarizes the key hydrologic parameters for each drainage area used in the existing conditions analysis.

Table 1 Existing Conditions Hydrologic Data

Drainage Area	*Discharge Location*	*Design Point*	*Area (acres)*	*Curve Number*	*Time of Concentration (min)*
MB-1	Munnisunk Brook	DP-MB	49.2	62	28
MB-2	On-Site Depression	DP-MB	13.0	48	25
KC-1	Knollwood Circle wetlands	DP-KC	23.6	67	11
HS-1	Howard Street	DP-HS	0.9	61	5
SB-1	Saxton Brook	DP-SB	7.6	63	7
SB-2	Saxton Brook	DP-SB	14.9	52	9
SB-3	Saxton Brook	DP-SB	5.4	70	10
BB-1	Bissell Brook	DP-BB	19.1	70	30
BB-2	Bissell Brook	DP-BB	5.9	70	17
BB-3	Bissell Brook	DP-BB	19.7	61	16

Figure 2: Existing Drainage Areas



Legend

SYMBOLS

X — DESIGN POINT

X — DRAINAGE AREA DESIGNATION

X — POND

LINETYPES

DRAINAGE AREA BOUNDARY

TIME OF CONCENTRATION FLOW LINE

WETLAND BOUNDARY

0 500 1000Feet

Existing Drainage Areas **Figure 2**

Tobacco Valley Solar 06/29/2017
County Road & Hoskins Road - Simsbury, CT

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Proposed Drainage Conditions

Summary

The Site has been designed to mimic existing topography and drainage patterns to maintain the current hydrologic balance. In the majority of the on-Site areas, the Project proposes to install permanent cool-season grass and legume cover where crops had been grown. Turf forming grasses help stabilize the topsoil from erosion, sequester nutrients and pollutants, and lower runoff rates from the fields to the surrounding discharge points. Mature vegetation has been preserved to the maximum extents practicable. As a result, the proposed Project will have minimal impact to surrounding ecologically sensitive areas.

The only impervious surfaces that exist at the Site today are the tobacco barns, and the only impervious surfaces proposed to be constructed are small concrete pads for utility equipment. No work will be performed within the on-Site wetlands and minimal work will take place within the 100-foot upland review area of the associated wetlands systems. Once operational, vehicular access to the Project will be limited to infrequent maintenance visits. The vegetated buffers between the crushed stone access path and the wetland systems will provide water quality treatment in all portions of the Site.

Hydrologic Information

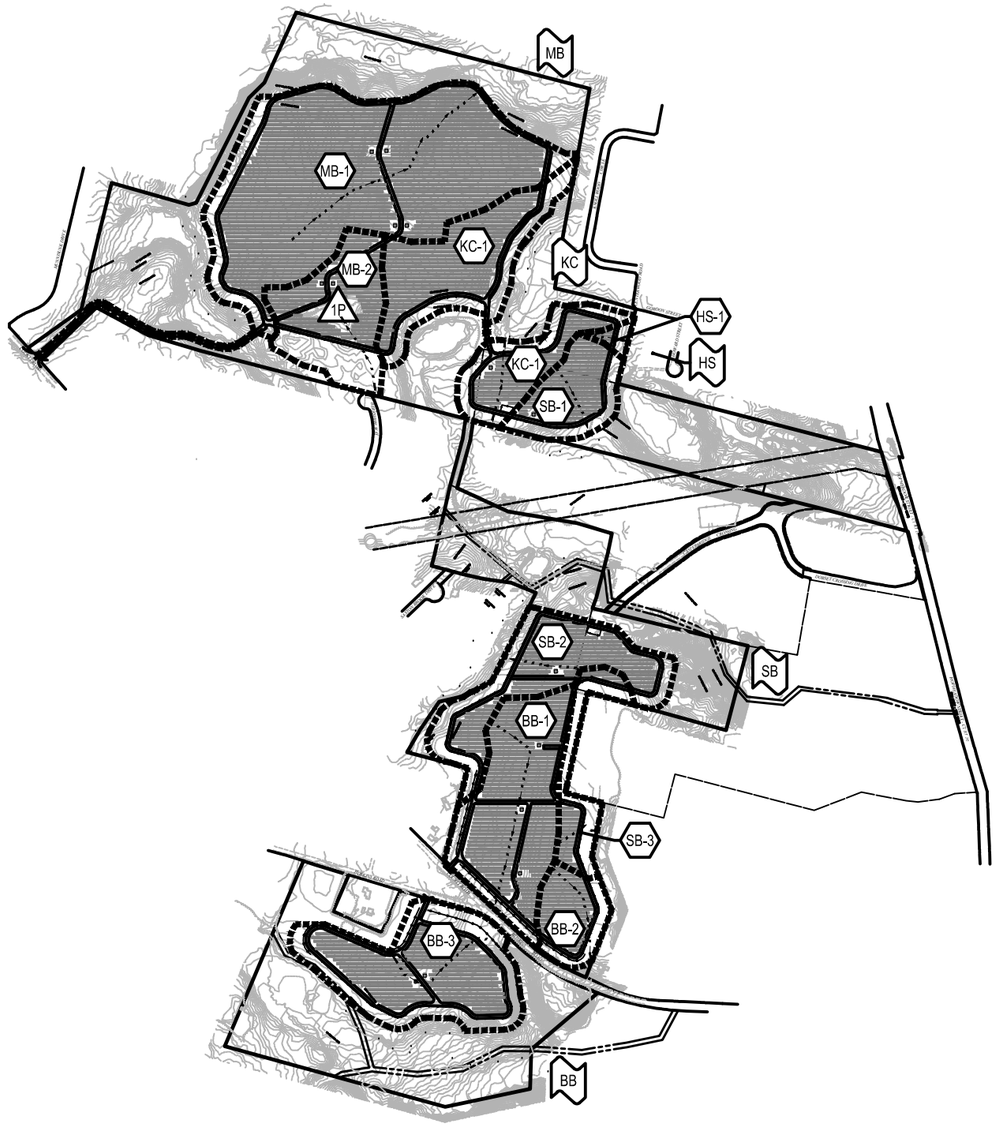
Natural drainage patterns will be maintained throughout the Site so that the proposed hydrologic conditions will closely match existing conditions. The proposed conditions analysis utilized the same 10 drainage areas that contribute to five (5) design points as shown in the proposed conditions area map (see Figure 3).

Table 2 summarizes the key hydrologic parameters for each drainage area used in the proposed conditions analysis. Only the areas of the Site that are proposed to be disturbed by construction have been included in this drainage analysis, while portions of the Site unaffected by construction have been excluded.

Table 2 Proposed Conditions Hydrologic Data

Drainage Area	*Discharge Location*	*Design Point*	*Area (acres)*	*Curve Number*	*Time of Concentration (min)*
MB-1	Munnisunk Brook	DP-MB	49.2	57	27
MB-2	On-Site Depression	DP-MB	12.9	50	20
KC-1	Knollwood Circle wetlands	DP-KC	23.6	51	17
HS-1	Howard Street	DP-HS	0.8	46	9
SB-1	Saxton Brook	DP-SB	7.7	52	13
SB-2	Saxton Brook	DP-SB	14.9	52	15
SB-3	Saxton Brook	DP-SB	5.5	43	18
BB-1	Bissell Brook	DP-BB	19.1	56	44
BB-2	Bissell Brook	DP-BB	5.9	52	27
BB-3	Bissell Brook	DP-BB	19.7	50	24

Figure 3: Proposed Drainage Areas



Legend

SYMBOLS

X — DESIGN POINT

X — DRAINAGE AREA DESIGNATION

X — POND

LINETYPES

DRAINAGE AREA BOUNDARY

TIME OF CONCENTRATION FLOW LINE

WETLAND BOUNDARY

0 500 1000Feet

Proposed Drainage Areas **Figure 3**

Tobacco Valley Solar 06/29/2017
County Road & Hoskins Road - Simsbury, CT

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Hydrologic Analysis

Hydrologic Analysis

The rainfall-runoff was evaluated for the 2-, 10-, 25-, and 100-year storm recurrence. Rainfall volumes used for this analysis were based on the National Weather Service NOAA Hydrometeorological Design Studies Center, Type III, 24—hour storm event for the Site. Rainfall depths were 3.30, 5.32, 6.58, 8.53 inches respectively. Runoff coefficients for the pre- and post- development conditions provided in the tables below were determined using NRCS Technical Release 55 (TR-55) methodology as provided in the HydroCAD reports found in Appendix D.

The results of the pre- and post-development hydrologic models indicate that peak runoff rates from the Site will be reduced at all design points for all design storms without the need for manmade stormwater mitigation (detention) features. It is noted that no hydraulic analysis has been performed because no closed pipe systems are proposed or impacted by the proposed development.

Table 3 presents a summary of the existing and proposed conditions peak discharge rates.

Table 3 Peak Discharge Rates (cfs*)

Design Point	2-year	10-year	25-year	100-year
Design Point MB: Munnisunk Brook				
Existing	12.9	51.5	81.5	132.5
Proposed	6.6	37.9	64.7	112.0
Design Point KC: Knollwood Circle				
Existing	14.7	46.5	69.5	107.6
Proposed	1.0	12.8	25.5	49.8
Design Point HS: Howard Street				
Existing	0.4	1.5	2.5	4.0
Proposed	0.0	0.3	0.7	1.6
Design Point SB: Saxton Brook				
Existing	7.9	36.4	60.1	101.2
Proposed	1.3	15.0	30.3	60.3
Design Point BB: Bissell Brook				
Existing	18.3	58.1	87.9	138.4
Proposed	2.5	21.0	38.8	72.1

* Expressed in cubic feet per second

Floodplain Information / Analysis

Portions of the Site lie within the Federal Emergency Management Agency (FEMA) mapped 1% annual chance flood A/AE flood zones as shown on the FEMA Flood Insurance Rate Maps, Maps No. 09003C0191F and 09003C0193F, dated September 26, 2008 (included in Appendix A). All proposed Site improvements, with the exception of the underground cable routes and a small portion of crushed stone access path, are proposed outside of the limits of any special flood hazard areas. Installation of underground cable or conversion of existing dirt path to crushed stone will not displace any flood storage and the project is not anticipated to have any impacts on mapped special flood hazard areas.

Water Quality Volume

Water Quality Volume (WQV) is based upon the first inch of rainfall, or a 1-inch rainfall event, over the acreage of proposed impervious surfaces for the development. Neither the solar panels nor the concrete equipment pads will be subject to vehicular access nor will they produce any pollutants to stormwater runoff. The crushed stone access paths will be trafficked infrequently and the grassy meadows downstream of the paths will provide residence time of stormwater runoff to remove the small amount of sediment from runoff.

Water Quality Flow

Water Quality Flow (WQF) is a rate of stormwater runoff based upon the first inch of rainfall, or a 1-inch rainfall event. This regulation is generally followed for "flow-through" treatment devices. As the proposed development does not incorporate any "flow-through" water quality treatment devices, WQF is not applicable to this project.

Groundwater Recharge

Groundwater Recharge Volume (GRV) is based upon proposed imperviousness and the Hydrologic Soil Group of underlying soils. The proposed development does not include large spans of impervious coverage and the proposal to replace row crops in dirt with low-planting crops will promote more natural infiltration of stormwater runoff into the ground.

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Stormwater Pollution Control Plan (SWPCP)

Introduction

This Stormwater Pollution Control Plan (SWPCP) has been prepared in accordance with Section 22a-430b of the Connecticut General Statutes and the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, reissued on October 1, 2013. This SWPCP addresses pre- and post-construction issues associated with stormwater management during construction. All actions required by this plan shall be followed by the permittee per the conditions of the General Permit.

This SWPCP contains excerpts taken from the Connecticut General Statutes and the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, reissued on October 1, 2013.

Project Summary

This Stormwater Pollution Control Plan has been developed for the proposed construction of a 26.4 MW solar farm on existing agricultural fields and woodland along with all associated utilities, access paths, fencing, and landscaping to support this use (the Project). When the Project reaches the end of its 25-year life cycle, the

improvements constructed as part of this petition will be removed and the agricultural fields will be restored for potential reuse as farmland.

The majority of the development area is an agricultural farm field that is surrounding by mature trees to the north, south, and west. The limits of disturbance of the project will be generally restricted to the farm field, with some tree clearing required to complete the project.

Existing Conditions

Under existing conditions, untreated stormwater runoff from the majority of the Site flows overland towards the wetland systems associated with Munnisunk Brook, Saxton Brook, Bissell Brook, and neighboring properties. A small portion of runoff in the northeastern portion of the Site flows overland to residential properties on Knollwood Circle and Howard Street where it is ultimately captured and discharged to an unnamed brook (See Figure 2). The Site is generally at a higher elevation throughout the agricultural fields and slopes down in all directions to the adjacent wetland systems. While most of the agricultural fields and wetlands are near level to gently sloping there are some steeper slopes between higher elevation farmed upland outwash terraces and valley bottom streams. Most of the Site is occupied by tilled agricultural farm fields with smaller patches covered in grasses and/or brush. Most of the Project Site perimeter is forest or woodland.

Proposed Conditions

Under proposed conditions, the Site has been designed to mimic existing topography and drainage patterns to maintain the current hydrologic balance. In the majority of the on-Site areas, the Project proposes to install a low cover crop in lieu of row crops to promote more natural infiltration into the soil, absorb pollutants, help stabilize the topsoil from erosion, and result in lower runoff rates from the fields to the surrounding discharge points. Mature vegetation has been preserved to the maximum extents practicable. As a result, the proposed Project will have minimal impact to surrounding ecologically sensitive areas.

The only impervious surfaces that exist at the Site today are the tobacco barns, and the only impervious surfaces proposed to be constructed are small concrete pads for utility equipment. No work will be performed within the on-Site wetlands and minimal work will take place within the 100-foot upland review area of the associated wetlands systems. Vehicular access to the Project will be limited to infrequent maintenance vehicle trips, which will be the only non-sediment pollutant source as a result of the Project. The vegetated buffers between the crushed stone access path and the wetland systems will provide water quality treatment in all portions of the Site.

Estimated Site Area and Total Area to be disturbed during Construction

The total site area is 288.5 acres and the anticipated site area to be disturbed during construction is approximately 156 acres.

Estimated Runoff Coefficients

Only a minor amount of impervious coverage is proposed as part of the project. The significant portion of work is based upon converting existing agricultural fields and woods to low-planting crops and crushed stone access paths for ground cover. As a result of the proposed improvements, it is anticipated that runoff coefficients to all modeled design points will be reduced without the need for engineered stormwater management practices.

Construction Sequencing

All construction activities are expected to begin in the summer of 2018 and completed by the summer of 2020. The general construction sequencing is as follows:

General Notes

1. The site contractor shall be fully responsible to control construction such that sedimentation shall not affect roads/highways and their drainage system, neighboring properties, and regulatory protected areas, whether such sedimentation is caused by water, wind, or direct deposit.
2. Prior to construction, the applicant shall provide the town of Simsbury with the name of contact and 24 hour contact information.
3. Contractor shall adhere to Connecticut DEEP 2002 Guidelines for Erosion and Sediment Control (Guidelines), as amended.
4. Flag the limits of construction necessary to facilitate the preconstruction meeting.
5. Hold pre-construction meeting. (Remember to call before you dig 1-800-922-4455).
6. Notify the town of Simsbury agent, zoning enforcement officer and engineering department, 48 hours prior to commencement of any construction activity.
7. No construction of site improvements may begin until the proper erosion control measures serving the area are in place.

Construction Sequence

1. Install stabilized vehicle construction exits.
2. Prior to installing surface water controls such as temporary diversion swales, inspect existing conditions to ensure discharge locations are stable. If not stable, review discharge conditions with the design engineer and implement additional stabilization measures prior to installing surface water controls.
3. Install perimeter silt fence. Perimeter silt fence shall remain in place until completion of construction. No work shall be allowed downhill of silt fence.
4. Qualified reviewing professional shall perform the plan implementation inspection within the first 30 days of construction activity, in accordance with Section 5(b)(4)(A) of the General Permit.
5. Install erosion and sediment controls in accordance with the E&S plans for the site including silt fence, sediment traps and basins, and diversion channels, with temporary stormwater outlets from basins. Contractor shall install additional sediment trap locations as required

throughout construction to promote settlement and prevent sediment-laden runoff to wetlands or off-site.

6. Complete clearing and grubbing. Install remainder of temporary sediment traps/basins that are to be installed in existing wooded areas.
7. Establish rough grade on the site and install perimeter chain link fence to serve as construction barrier.
8. Install landscaping & loam and seed all disturbed areas as early as practicable.
9. Install perimeter crushed stone access path and walking path.
10. The temporary sediment traps/basins and their associated diversion channels may be removed once all tributary areas upstream of them have been completed and stabilized.
11. After site is stabilized, and after inspection by design engineer or other owner's representative, remove temporary erosion and sediment controls. Entire site shall be checked for and cleaned of sediment as needed.

Erosion and Sedimentation Control Measures

The following erosion and sedimentation controls are for use during the earthwork and construction phases of the project. The following controls are provided as recommendations for the site contractor and do not constitute or replace the final Stormwater Pollution Control Plan that must be fully implemented by the Contractor in compliance with the DEEP General Permit for the discharge of stormwater and dewatering wastewater from construction activities.

Silt Fencing

Silt fence will be installed around the limit of work as shown on the plans. This semi-permeable barrier is made of a synthetic porous fabric. In areas where high runoff velocities or high sediment loads are expected, straw barriers will be installed up-gradient of silt fencing to protect it. The silt fences and straw bale barrier will be replaced as needed when determined by periodic field inspections. Silt fence will also be used as a barrier to exclude potential box or wood turtles from entering the construction area.

Gravel and Construction Entrance/Exit

Temporary crushed-stone construction entrance/exit will be constructed at all access and egress points. A cross slope will be placed in the entrance to direct runoff to a protected catch basin inlet or settling area. If deemed necessary after construction begins, a wash pad may be included to wash off vehicle wheels before leaving the Project Site.

Diversion Channels

Diversion channels will be used to collect runoff from construction areas and discharge to sedimentation basins.

Temporary Sediment Trap/Basin

These stormwater settling basins will be installed at the locations shown on the Sedimentation and Erosion Control Plan plans. Most of the runoff from the on-Site construction area will be diverted into temporary sediment traps or basins. The temporary sediment basin will have an outlet protected against erosion to handle excess stormwater. Additional temporary sediment traps may be needed during construction depending upon the phasing of improvements.

Vegetative Slope Stabilization

Stabilization of open soil surfaces will be implemented within 14 days after grading or construction activities have temporarily or permanently ceased, unless there is sufficient snow cover to prohibit implementation. Vegetative slope stabilization will be used to minimize erosion on slopes of 3:1 or flatter. Annual grasses, such as annual rye, will be used to ensure rapid germination and production of root mass. Permanent stabilization will be completed with the planting of perennial grasses or legumes. Establishment of temporary and permanent vegetative cover may be established by hydro-seeding or sodding. A suitable topsoil, good seedbed preparation, and adequate lime, fertilizer and water will be provided for effective establishment of these vegetative stabilization methods. Mulch will also be used after permanent seeding to protect soil from the raindrop impact and to increase the capacity of the soil to absorb and hold water.

Maintenance

- The contractor or subcontractor will be responsible for implementing each control shown on the Sedimentation and Erosion Control Plan. In accordance with EPA regulations, the contractor must sign a copy of a certification to verify that a plan has been prepared and that permit regulations are understood.

- The contractor will inspect all sediment and erosion control structures periodically and after each rainfall event. Records of the inspections will be prepared and maintained on-Site by the contractor.

- Silt shall be removed from behind barriers if greater than 6-inches deep or more frequently as needed.

- Damaged or deteriorated items will be repaired immediately after identification.
- Sediment that is collected in structures shall be disposed of properly and covered if stored on-site.
- Erosion control structures shall remain in place until all disturbed earth has been securely stabilized. After removal of structures, disturbed areas shall be regraded and stabilized as necessary.

The sedimentation and erosion control plan is included in the project plan set and an Erosion Control Maintenance checklist is included here for quick reference.

Water Quantity and Quality Controls Long Term Maintenance

Refer to Appendix C for Long Term Stormwater Operation & Maintenance Measures.

Site Inspections

Qualified personnel (provided by the permittee) shall inspect disturbed areas of the construction activity that have not been finally stabilized, erosion and sediment control measures, all structural controls, soil stockpile areas, washout areas and locations where vehicles enter or exit the site. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and impacts to the receiving waters. Locations where vehicles enter or exit the site shall also be inspected for evidence of off-site sediment tracking. For storms that end on a weekend, holiday, or other time after normal working hours, an inspection is required within 24 hours only for storms that equal or exceed 0.5 inches. For storms of less than 0.5 inches, an inspection shall occur immediately upon the start of the subsequent normal working hours. Where sites have been temporarily or finally stabilized, such inspection shall be conducted at least once every month for three months. A plan implementation inspection shall be performed within the first 30 days of construction activity, in accordance with Section 5(b)(4)(A) of the General Permit.

Reports

A report shall be prepared and retained as part of the Plan. This report shall summarize: the scope of the inspection; name(s) and qualifications of personnel making the inspection; the date(s) of the inspection; weather conditions including precipitation information; major observations relating to erosion and sediment controls and the implementation of the Plan; a description of the stormwater discharge(s) from the site; and any water quality monitoring performed during the inspection. The

report shall be signed by the permittee or his/her authorized representative in accordance with the "Certification of Documents" section (subsection 5(i)) of this general permit.

The report shall include a statement that, in the judgment of the qualified inspector(s) conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the Plan and permit. If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance. Non-engineered corrective actions (as identified in the Guidelines) shall be implemented on site within 24 hours and incorporated into a revised Plan within three (3) calendar days of the date of inspection unless another schedule is specified in the Guidelines. Engineered corrective actions (as identified in the Guidelines) shall be implemented on site within seven (7) days and incorporated into a revised Plan within ten (10) days of the date of inspection, unless another schedule is specified in the Guidelines or is approved by the commissioner. During the period in which any corrective actions are being developed and have not yet been fully implemented, interim measures shall be implemented to minimize the potential for the discharge of pollutants from the site.

Turbidity Monitoring

Monitoring Frequency

Sampling shall be conducted at least once every month, when there is a discharge of stormwater from the site while construction activity is ongoing, until final stabilization of the drainage area associated with each outfall is achieved.

Samples are only required to be taken during normal working hours. If sampling is discontinued due to the end of normal working hours, it shall be resumed the following morning or the morning of the next working day following a weekend or holiday, as long as the discharge continues.

Sampling may be temporarily suspended any time conditions exist that may reasonably pose a threat to the safety of the person taking the sample. Such conditions may include high winds, lightning, impinging wave or tidal activity, intense rainfall or other hazardous condition. Once the unsafe condition is no longer present, sampling shall resume.

If there is no stormwater discharge during a month, sampling is not required

Sample Collection

All samples shall be collected from discharges resulting from a storm event that occurs at least 24 hours after any previous storm event generating a stormwater discharge. Any sample containing snow or ice melt must be identified on the Stormwater Monitoring Report form. Sampling of snow or ice melt in the absence of a storm event is not a valid sample.

Samples shall be grab samples taken at least three separate times during a storm event and shall be representative of the flow and characteristics of the discharge(s). Samples may be taken manually or

by an in-situ turbidity probe or other automatic sampling device equipped to take individual turbidity readings (i.e. not composite). The first sample shall be taken within the first hour of stormwater discharge from the site. In cases where samples are collected manually and the discharge begins outside of normal working hours, the first sample shall be taken at the start of normal working hours.

Sample Locations

For this project, discharge points will be identified in the field.

All sampling point(s) shall be clearly marked in the field with a flag, stake, or other visible marker.

Turbidity Values

The stormwater discharge turbidity value for each sampling point shall be determined by taking the average of the turbidity values of all samples taken at that sampling point during a given storm.

Stormwater Monitoring Reports

Within thirty (30) days following the end of each month, permittees shall enter the stormwater sampling result(s) on the Stormwater Monitoring Report (SMR) form (available at www.ct.gov/deep/stormwater) and submit it in accordance with the Network Discharge Monitoring Report (NetDMR) outlined in the Permit or, if the permittee has opted out of NetDMR, to the following address:

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: DMR Processing)
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

If there was no discharge during any given monitoring period, the permittee shall submit the form as required with the words "no discharge" entered in place of the monitoring results.

If the permittee monitors any discharge more frequently than required by this general permit, the results of this monitoring shall be included in additional SMRs for the month in which the samples were collected.

If sampling protocols are modified due to the limitations of normal working hours or unsafe conditions, a description of and reason for the modifications shall be included with the SMR.

If the permittee samples a discharge that is representative of two or more substantially identical discharge points, the permittee shall include the names or locations of the other discharge points.

Submittal of NetDMR Opt-Out Requests

All opt-out requests and requests for the NetDMR subscriber form should be sent to the following address or by email at deep.netdmr@ct.gov:
Attn: NetDMR Coordinator
Connecticut Department of Energy and Environmental Protection
79 Elm Street

Termination Requirements

Notice of Termination

At the completion of a construction project registered of this general permit, a Notice of Termination must be filed with the commissioner. A project shall be considered complete after all post-construction measures are installed, cleaned and functioning and the site has been stabilized for at least three months following the cessation of construction activities. A site is considered stabilized when there is no active erosion or sedimentation present and no disturbed areas remain exposed for all phases.

Contractors

Each Contractor and Subcontractor who will perform actions on the site that may reasonably be expected to cause or have the potential to cause pollution of the waters of the State shall sign the certification statement below:

Certification Statement

"I certify under penalty of the law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that, as a Contractor or Subcontractor at the site, I am authorized by this General Permit, and must comply with the terms and conditions of this General Permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for the site."

Signature Date

List of Project Contractors

1. Contractor Name:_____
   Address:_____
   Telephone Number:_____ Fax Number:_____
   Contractor Specialty to be used on this Project:_____
   Contractor's On-site Representative:_____

2. Contractor Name:_____
   Address:_____
   Telephone Number:_____ Fax Number:_____
   Contractor Specialty to be used on this Project:_____
   Contractor's On-site Representative:_____

3. Contractor Name:_____
   Address:_____
   Telephone Number:_____ Fax Number:_____
   Contractor Specialty to be used on this Project:_____
   Contractor's On-site Representative:_____

4. Contractor Name:_____
   Address:_____
   Telephone Number:_____ Fax Number:_____
   Contractor Specialty to be used on this Project:_____
   Contractor's On-site Representative:_____

5. Contractor Name:_____
   Address:_____
   Telephone Number:_____ Fax Number:_____
   Contractor Specialty to be used on this Project:_____
   Contractor's On-site Representative:_____

6. Contractor Name:_____
   Address:_____
   Telephone Number:_____ Fax Number:_____
   Contractor Specialty to be used on this Project:_____
   Contractor's On-site Representative:_____

7. Contractor Name:_____
   Address:_____
   Telephone Number:_____ Fax Number:_____
   Contractor Specialty to be used on this Project:_____
   Contractor's On-site Representative:_____

8. Contractor Name:_____
   Address:_____
   Telephone Number:_____ Fax Number:_____
   Contractor Specialty to be used on this Project:_____
   Contractor's On-site Representative:_____

9. Contractor Name:_____
   Address:_____
   Telephone Number:_____ Fax Number:_____
   Contractor Specialty to be used on this Project:_____
   Contractor's On-site Representative:_____

10. Contractor Name:_____
    Address:_____
    Telephone Number:_____ Fax Number:_____
    Contractor Specialty to be used on this Project:_____
    Contractor's On-site Representative:_____

Reporting and Record Keeping Requirements

The permittee shall retain copies of the SWPCP and all reports required by this General Permit, and records of all data used to complete the registration to be authorized by this General Permit, for a period of at least five (5) years from the date that construction at the site is completed, unless the Commissioner specifies another time period in writing.

The permittee shall retain an updated copy of the SWPCP required by this General Permit at the construction site from the date construction is initiated at the site until the date construction at the site is complete.

Stormwater Pollution Control Plan Permit Drawing

DRAWING TITLE	**NO. OF SHEETS**
Erosion and Sediment Control Plan	6
Grading, Drainage, & Utilities Plan	6
Site Details	2

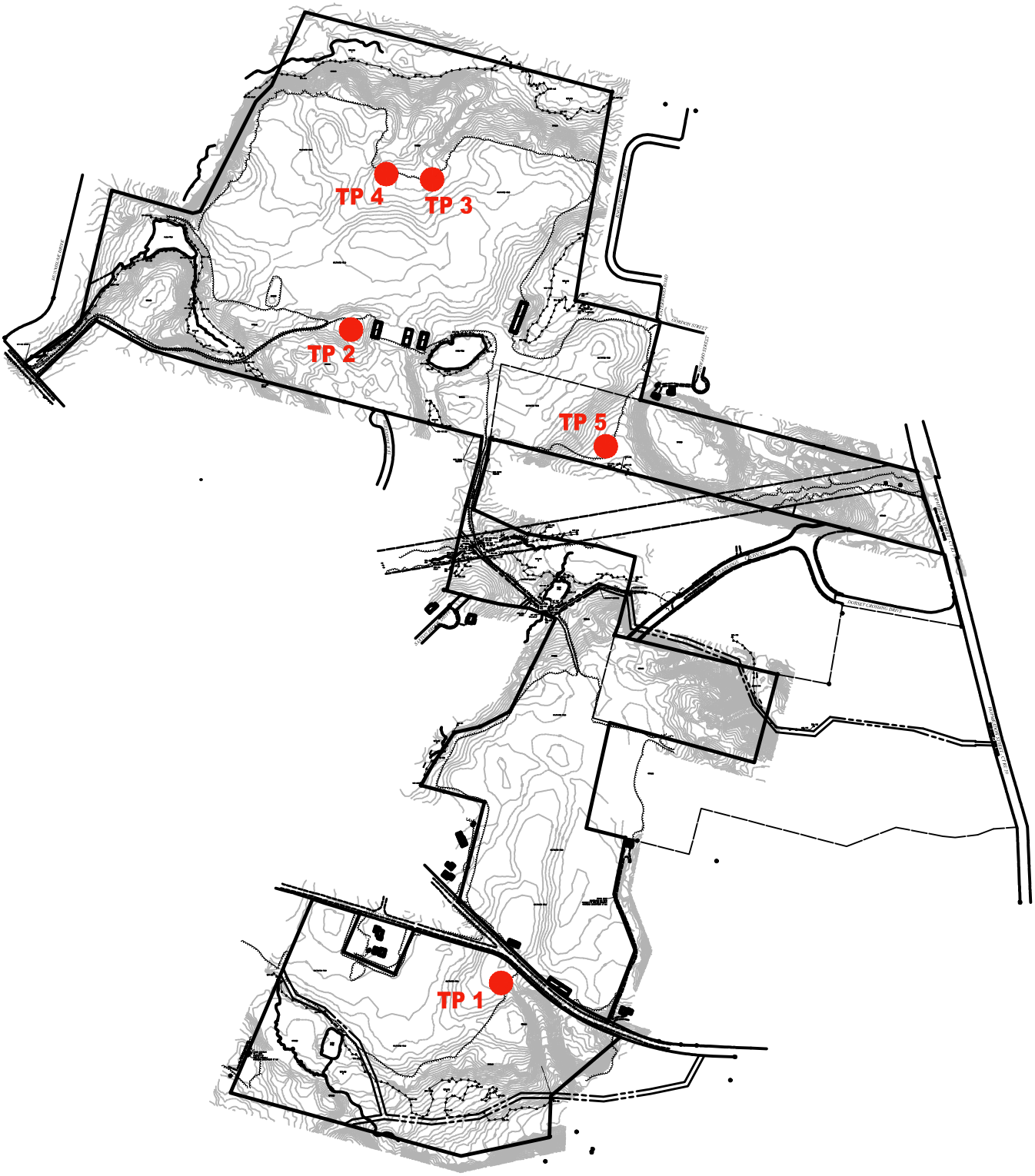
Appendix A:

Test Pit and Infiltration Testing Data

NRCS Soil Survey Information

FEMA Flood Insurance Rate Maps

Test Pit and Infiltration Testing Data


TP 4
TP 3
TP 2
TP 5
TP 1

Tobacco Valley Solar Soil Test Pit Descriptions
Described June 14, 2017
Excavated by 4x4 Volvo Backhoe with extendable boom

Test Pit 1

Ap1	0 to 6 inches	Very dark grayish brown (10YR 3/2) sandy loam, weak medium granular structure, friable, common fine roots (annual rye), clear smooth boundary.
Ap2	6 to 16 inches	Dark brown (10YR 3/3) sandy loam, weak medium subangular blocky structure, friable, common medium roots (trees), abrupt smooth boundary.
Bw	16 to 29 inches	Dark yellowish brown (10YR 4/4) sandy loam, weak medium subangular blocky structure, friable, common fine roots, abrupt smooth boundary.
BC	29 to 42 inches	Dark yellowish brown (10YR 4/4) gravelly loamy fine sand, massive, friable, clear smooth boundary.
2C1	42 to 72 inches	Dark yellowish brown/Brown/Dark brown (10YR 4/4 / 7.5YR 4/4 / 7.5YR 3/3), stratified ¼ inch of less interbedded loamy fine sand/fine sand/loamy sand, common medium 10YR 4/2 apparently depleted zones between contrasting texture plate faces, weak medium geogenic platy structure, very friable, few fine roots, clear smooth boundary.
3C2	72 to 108 inches	Brown (7.5Y 5/3), gravelly coarse sand, single grain, loose.

Test Pit 2

A1	0 to 9 inches	Very dark grayish brown (10YR 3/2) silt loam, moderate and strong medium granular structure, friable, many fine roots, abrupt smooth boundary.
A2	9 to 13 inches	Dark brown (10YR 3/3) cobbly silt loam, weak medium granular structure, friable, many medium roots, abrupt smooth boundary.
Ab	13 to 15 inches	Black (10YR 2/2) Very dark brown, silt loam, massive, friable, few medium roots, abrupt smooth boundary.
Bw1	15 to 26 inches	Brown (7.5YR 4/3) silt loam, weak medium subangular blocky structure, friable, few medium roots, clear smooth boundary.
Bw2	26 to 34 inches	Brown (10YR 4/3) fine sandy loam, weak medium subangular blocky structure, friable, few medium roots, clear smooth boundary.
BC	34 to 72 inches	Brown (10YR 4/3) sandy loam, common medium 7.5YR 4/3 redox concentration and few medium 10YR 4/2 redox depletions, weak medium subangular blocky structure, friable, few medium roots, abrupt smooth boundary.
2C1	72 to 96 inches	(7.5YR 4/3) Brown, sand, single grain, loose. Water at 80 inches.

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Test Pit 3		
A	0 to 5 inches	Very dark grayish brown (10YR 3/2) fine sandy loam, moderate medium granular structure, friable, many fine roots, clear smooth boundary.
Ap	5 to 12 inches	Dark brown (10YR 3/3) loamy fine sand, weak medium subangular blocky structure to massive, friable, few medium roots, abrupt smooth boundary.
Bw	12 to 28 inches	Dark yellowish brown (10YR 4/4) loamy fine sand, weak medium subangular blocky structure, few medium roots, clear smooth boundary.
C1	28 to 65 inches	Yellowish brown (10YR 5/4) loamy sand / fine sand, single grain, loose, few medium roots, clear smooth boundary.
C2	65 to 120 inches	Interbedded Brown (10YR 4/3 / 10YR 5/3) very fine sand and loamy fine sand, massive, breaking to ¼ inch or less geogenic plates, friable, no redox features observed in recovered materials. No groundwater observed.
Test Pit 4		
Ap1	0 to 18 inches	Brown (10YR 4/3), loamy fine sand, weak fine granular structure, very friable, many fine roots, abrupt smooth boundary (sediment).
Ap2	18 to 24 inches	Dark brown (10YR 3/3), sandy loam with 10YR 3/2 and 10YR 4/4 masses, massive, friable, few fine roots, abrupt smooth boundary.
Bw	24 to 44 inches	Brown (7.5YR 4/4) fine sandy loam, weak medium subangular blocky structure, friable, few medium roots, abrupt smooth boundary.
C1	44 to 80 inches	Yellowish brown (10YR 5/4) fine sand, massive, very friable, no roots, clear smooth boundary.
C2	80 to 96 inches	Dark brown (7.5YR 3/4) medium sand, single grain, loose, no roots, clear smooth boundary.
2C3	96 to 112 inches	Dark brown (7.5YR 3/4) very gravelly coarse sand, loose, single grain. No water observed.
Test Pit 5		
CA	0 to 5 inches	Dark yellowish brown (10YR 4/4), loamy fine sand, weak medium subangular blocky structure, friable, many medium roots, clear smooth boundary (slope wash).
C1	5 to 25 inches	Brown (7.5YR 4/4), loamy sand, single grain, loose, few medium roots, abrupt smooth boundary (slope wash).
Ab	25 to 37 inches	Very dark brown (7.5YR 2/2) fine sandy loam, weak medium subangular blocky structure, friable, common medium roots, clear smooth boundary.
Bw1	37 to 50 inches	Brown (10YR 5/3) loamy fine sand, massive, friable, clear smooth boundary.
Bw2	50 to 55 inches	Dark yellowish brown (10YR 4/4) loamy fine sand with common 7.5YR 4/4 concentrations, single grain, loose, no roots, clear smooth boundary.
2C1	55 to 82 inches	Brown (7.5YR 4/4) gravelly coarse sand, single grain, loose, clear smooth boundary.
2C2	82 to 120 inches	Brown (10YR 4/3) gravelly coarse sand, single grain, loose. Water at 90 inches.

Aardvark Permeameter Xcel Version 2010.2											Ksat:	in/hr	Notes
Site:	Tobacco Valley Solar										in/hr	9.1	Presoak 13:20
Date:	06/14/2017	Operator:	Peterson		Test Pit Number:	2					mm/hr	231	
Soil Series:	Tisbury		Soil Horizon:	BC	Test Depth(in) :	40"					cm/hr	23.1	
Diameter of Hole(in):	3		Water Column Height (in):	4		Head Conversion Factor (HCF):							0.67
Boring Conversion Factor (BCF	2.25												

Boring Conversion Factor (BCF) = 5.06/((rad)squared) for Aardvark Reservoir
BCF of 4.25 in auger is 4.5 in diameter boring = 1
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.68
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structureded clay loam soil

F Value (Radcliffe and West, 2000)		Perc min/in to Ksat in/hr		
		Borehole diameter		
Texture		3.5 in	4.25 in	**3.0 in (2.75 Auger)**
F Value	0.069			
Sands		0.107	0.124	**0.09**
Structured loams and clays		0.082	0.096	**0.069**
Unstructured loams and clays		0.048	0.057	**0.04**

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	**Reservoir**	BCF	HCF	**Reservoir**	F value	**Ksat**	**Notes**
2400 hours	2400 hours	Elapsed	Elapsed	Reading	Reading	Change	**Change(min/in)**			**Change**	from table	= F(1/P)	
ti	t+1	(ti+1)-ti	dt/60min/hr	h	h+1	(h+1)-h	dt/dh			**Adjusted**			
		dt				dh				(P*HCF)/BCF			
	initial	next		initial	next		**P**			**Adj P**			
		min	hr	in	in	in	min/in			min/in		in/hr	
8:00	*8:45*	*45*	*0.75*	*14.5*	*14*	*0.5*	*90*	*1.65*	*1.17*	*64*	0.082	0.0771	Example
13:35	*13:36*	*1*	*0.02*	*10.7*	*10*	*0.7*	*1.4*	2.25	0.67	***0***	0.069	**9.8**	
13:36	*13:37*	*1*	*0.02*	*10*	*9.3*	*0.7*	*1.4*	2.25	0.67	***0***	0.069	**9.8**	
13:37	*13:38*	*1*	*0.02*	*9.3*	*8.6*	*0.7*	*1.4*	2.25	0.67	***0***	0.069	**9.8**	
13:38	*13:39*	*1*	*0.02*	*8.6*	*8*	*0.6*	*1.7*	2.25	0.67	***0***	0.069	**8.4**	
13:39	*13:40*	*1*	*0.02*	*8*	*7.3*	*0.7*	*1.4*	2.25	0.67	***0***	0.069	**9.8**	
13:40	*13:41*	*1*	*0.02*	*7.3*	*6.6*	*0.7*	*1.4*	2.25	0.67	***0***	0.069	**9.8**	
13:41	*13:42*	*1*	*0.02*	*6.6*	*5.9*	*0.7*	*1.4*	2.25	0.67	***0***	0.069	**9.8**	
13:42	*13:43*	*1*	*0.02*	*5.9*	*5.3*	*0.6*	*1.7*	2.25	0.67	***0***	0.069	**8.4**	
13:43	*13:44*	*1*	*0.02*	*5.3*	*4.7*	*0.6*	*1.7*	2.25	0.67	***0***	0.069	**8.4**	
STEADY STATE ARITHMETIC AVERAGE (last 4 readings)										**0.5**		######	

Pedon Description

Depth	Horizon	Color	Texture	Structure	Horizon Notes
					Full description of Test Pit 2 provided separately

User is responsible for confirming all Standard Operation Procedures for their area and type of study,
Aardvark Systems International, LLC or third parties do not assume any responsibility for misuse of devices or spreadsheets or calculations

Site Notes:

Aardvark Permeameter Xcel Version 2010.2								Ksat:	in/hr	Notes
Site:	Tobacco Valley Solar							in/hr	3.6	Presoak 13:40
Date:	06/14/2017	Operator:	Kochis	Test Pit Number:	3			mm/hr	91	
Soil Series:	Tisbury	Soil Horizon:	BC	Test Depth(in) :	30"			cm/hr	9.1	
Diameter of Hole(in):	3	Water Column Height (in):	4	Head Conversion Factor (HCF):						0.67
Boring Conversion Factor (BCF	2.25									

Boring Conversion Factor (BCF) = 5.06/((rad)squared) for Aardvark Reservoir
BCF of 4.25 in auger is 4.5 in diameter boring = 1
BCF of 3.25 in auger is 3.5 in diameter boring = 1.65
BCF of a 2.5 in auger is 2.75 in diameter boring = 2.68
Head Conversion Factor (HCF) = Water Column Ht inches / 6 inches, or Htcm/15cm
Example is 3.5in boring with 7 in water column in boring, 0.5 in head drop over 45 minutes in a structureded clay loam soil

F Value (Radcliffe and West, 2000)		Perc min/in to Ksat in/hr		
		Borehole diameter		
Texture		3.5 in	4.25 in	3.0 in (2.75 Auger)
F Value	0.090			
Sands		0.107	0.124	**0.09**
Structured loams and clays		0.082	0.096	**0.069**
Unstructured loams and clays		0.048	0.057	**0.04**

Time T0	Time x	Time	Hours	Reservoir	Reservoir	Reservoir	Reservoir	BCF	HCF	Reservoir	F value	Ksat	Notes
2400 hours	2400 hours	Elapsed	Elapsed	Reading	Reading	Change	Change(min/in)			Change	from table	= F(1/P)	
ti	t+1	(ti+1)-ti	dt/60min/hr	h	h+1	(h+1)-h	dt/dh			Adjusted			
		dt				dh				(P*HCF)/BCF			
	initial	next		initial	next		P			Adj P			
		min	hr	in	in	in	min/in			min/in		in/hr	
8:00	*8:45*	*45*	*0.75*	*14.5*	*14*	*0.5*	*90*	*1.65*	*1.17*	*64*	0.082	0.0771	Example
14:05	*14:10*	*5*	*0.08*	*14.7*	*13.6*	*1.1*	*4.5*	2.25	0.67	***1***	0.090	**4.0**	
14:10	*14:15*	*5*	*0.08*	*13.6*	*12.6*	*1*	*5.0*	2.25	0.67	***1***	0.090	**3.6**	
14:15	*14:20*	*5*	*0.08*	*12.6*	*11.5*	*1.1*	*4.5*	2.25	0.67	***1***	0.090	**4.0**	
14:20	*14:25*	*5*	*0.08*	*11.5*	*10.5*	*1*	*5.0*	2.25	0.67	***1***	0.090	**3.6**	
14:25	*14:30*	*5*	*0.08*	*10.5*	*9.4*	*1.1*	*4.5*	2.25	0.67	***1***	0.090	**4.0**	
14:30	*14:35*	*5*	*0.08*	*9.4*	*8.4*	*1*	*5.0*	2.25	0.67	***1***	0.090	**3.6**	
			0.00			*0*	*#DIV/0!*	2.25	0.67	***#DIV/0!***	0.090	**#DIV/0!**	
			0.00			*0*	*#DIV/0!*	2.25	0.67	***#DIV/0!***	0.090	**#DIV/0!**	
			0.00			*0*	*#DIV/0!*	2.25	0.67	***#DIV/0!***	0.090	**#DIV/0!**	
STEADY STATE ARITHMETIC AVERAGE (last 4 readings)										**#DIV/0!**		**######**	

Pedon Description

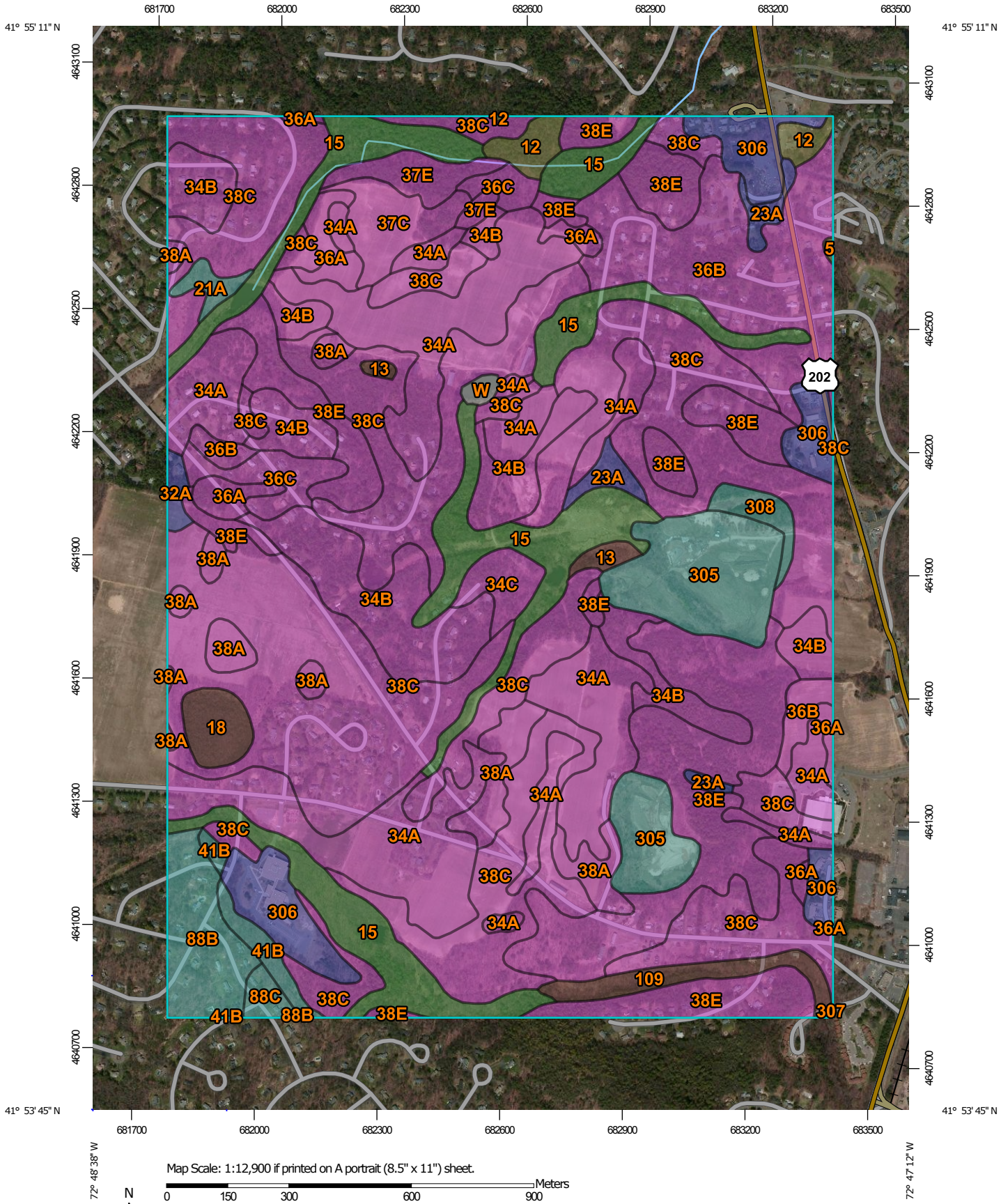
Depth	Horizon	Color	Texture	Structure	Horizon Notes
					Full description of Test Pit 3 provided separately

User is responsible for confirming all Standard Operation Procedures for their area and type of study,
Aardvark Systems International, LLC or third parties do not assume any responsibility for misuse of devices or spreadsheets or calculations

Site Notes:

NRCS Soil Survey Information

Hydrologic Soil Group—State of Connecticut



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: State of Connecticut
Survey Area Data: Version 15, Sep 28, 2016

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

Date(s) aerial images were photographed: Mar 28, 2011—Apr 18, 2011

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

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — State of Connecticut (CT600)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
5	Wilbraham silt loam, 0 to 3 percent slopes	C/D	0.3	0.0%
12	Raypol silt loam	C/D	6.8	0.8%
13	Walpole sandy loam, 0 to 3 percent slopes	B/D	2.7	0.3%
15	Scarboro muck, 0 to 3 percent slopes	A/D	74.8	8.4%
18	Catden and Freetown soils, 0 to 2 percent slopes	B/D	6.7	0.8%
21A	Ninigret and Tisbury soils, 0 to 5 percent slopes	C	2.8	0.3%
23A	Sudbury sandy loam, 0 to 5 percent slopes	B	6.5	0.7%
32A	Haven and Enfield soils, 0 to 3 percent slopes	B	2.1	0.2%
34A	Merrimac fine sandy loam, 0 to 3 percent slopes	A	119.2	13.4%
34B	Merrimac fine sandy loam, 3 to 8 percent slopes	A	64.6	7.3%
34C	Merrimac fine sandy loam, 8 to 15 percent slopes	A	6.2	0.7%
36A	Windsor loamy sand, 0 to 3 percent slopes	A	12.3	1.4%
36B	Windsor loamy sand, 3 to 8 percent slopes	A	54.7	6.2%
36C	Windsor loamy sand, 8 to 15 percent slopes	A	11.1	1.2%
37C	Manchester gravelly sandy loam, 3 to 15 percent slopes	A	10.7	1.2%
37E	Manchester gravelly sandy loam, 15 to 45 percent slopes	A	8.4	0.9%
38A	Hinckley loamy sand, 0 to 3 percent slopes	A	21.4	2.4%
38C	Hinckley loamy sand, 3 to 15 percent slopes	A	266.5	30.1%
38E	Hinckley loamy sand, 15 to 45 percent slopes	A	104.5	11.8%

Hydrologic Soil Group— Summary by Map Unit — State of Connecticut (CT600)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
41B	Ludlow silt loam, 2 to 8 percent slopes, very stony	C	5.0	0.6%
88B	Wethersfield loam, 3 to 8 percent slopes, very stony	C	17.4	2.0%
88C	Wethersfield loam, 8 to 15 percent slopes, very stony	C	2.7	0.3%
109	Fluvaquents-Udifluvents complex, frequently flooded	B/D	8.6	1.0%
305	Udorthents-Pits complex, gravelly	C	37.0	4.2%
306	Udorthents-Urban land complex	B	28.1	3.2%
307	Urban land	D	0.1	0.0%
308	Udorthents, smoothed	C	4.3	0.5%
W	Water		1.3	0.1%
Totals for Area of Interest			**886.5**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

FEMA Flood Insurance Rate Maps

od insurance is available in this community, contact yo
onal Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

NFIP

PANEL 0191F

FIRM

FLOOD INSURANCE RATE MAP

HARTFORD COUNTY, CONNECTICUT (ALL JURISDICTIONS)

PANEL 191 OF 675

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EAST GRANBY, TOWN OF	090025	0191	F
GRANBY, TOWN OF	090125	0191	F
SIMSBURY, TOWN OF	090035	0191	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
09003C0191F

EFFECTIVE DATE:
SEPTEMBER 26, 2008

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

od insurance is available in this community, contact yo
onal Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A	No base flood elevations determined.
ZONE AE	Base flood elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99	Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

od insurance is available in this community, contact yo
onal Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0193F

FIRM

FLOOD INSURANCE RATE MAP

HARTFORD COUNTY, CONNECTICUT (ALL JURISDICTIONS)

PANEL 193 OF 675

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SIMSBURY, TOWN OF	090035	0193	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
09003C0193F

EFFECTIVE DATE:
SEPTEMBER 26, 2008

Federal Emergency Management Agency

od insurance is available in this community, contact yo
onal Flood Insurance Program at (800) 638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

ZONE A	No base flood elevations determined.
ZONE AE	Base flood elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood event.
ZONE A99	Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no base flood elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no base flood elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary

Appendix B:

Erosion and Sedimentation Control Checklist

Construction Best Management Practices - Maintenance/Evaluation Checklist

Tobacco Valley Solar– Simsbury, CT – County Road & Hoskins Road

Best Management Practices – Maintenance/ Evaluation Checklist

Construction Practices

Best Management Practice	Inspection Frequency	Date Inspected	Inspector	Minimum Maintenance and Key Items to Check	Cleaning/Repair Needed ☐yes ☐no (List Items)	Date of Cleaning/Repair	Performed by
Silt Fencing	Once per week or after a 1″ or greater storm event						
Stabilized Construction Exits	Once per week or after a 1″ or greater storm event						
Temporary Sediment Traps/Basins & Diversion Swales	Once per week or after a 1″ or greater storm event						
Vegetated Slope Stabilization	Once per week or after a 1″ or greater storm event						

Stormwater Control Manager _____

Appendix C:

Long Term Stormwater Operation and Maintenance Measures

Project Information

Site

Project Name:	Tobacco Valley Solar
Address or Locus:	County Road & Hoskins Road
City, State & Zip:	Simsbury, CT 06070

Developer

Client Name:	DWW Solar II, LLC
Client Address:	56 Exchange Terrace – Suite 300
Client City, State & Zip:	Providence, RI 02903
Client Telephone No.:	(401) 868-4228
Client Cell Phone:	
Client E-Mail:	akenney@dwwind.com

Site Supervisor

Site Manager Name:	To be determined
Site Manager Address:	
Site Manager City, State & Zip:	
Site Manager Telephone No.:	
Site Manager Cell Phone:	
Site Manager E-Mail:	

Long Term Stormwater Maintenance Measures –

The following maintenance program is proposed to ensure the continued effectiveness of the water quality controls previously described:

Inspection

Inspect vegetated areas semi-annually; grassed meadows should be mowed once per year. Sediment and debris should be removed, at a minimum, once per year.

Vegetated Stormwater Management Devices

The Project includes vegetated areas under the solar panel arrays and around the perimeter access paths that will slow stormwater runoff and assist in the removal of sediment and pollutants.

Vegetated Areas Maintenance

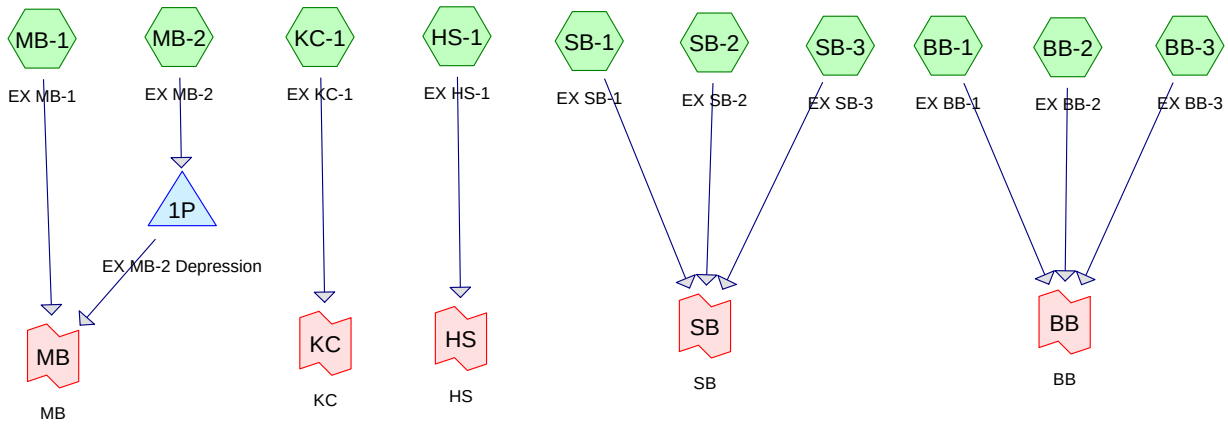
Although not a structural component of the drainage system, the maintenance of vegetated areas will affect the functioning of the long-term stormwater management. This includes the health/density of vegetative cover and activities such as the application and disposal of lawn and garden care products, disposal of leaves and yard trimmings.

- Inspect planted areas on a semi-annual basis and remove any litter.
- Maintain planted areas adjacent to pavement to prevent soil washout.
- Re-seed bare areas; install appropriate erosion control measures when native soil is exposed or erosion channels are forming.
- Plant alternative mixture of grass species in the event of unsuccessful establishment.
- Vegetation within the Project limits should be mowed annually to prevent the establishment of woody species.

Appendix D:

Hydrologic Analysis

HydroCAD Analysis: Existing Conditions



Subcat Reach Pond Link

Routing Diagram for TVS HydroCAD Existing
Prepared by VHB, Printed 6/26/2017

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
10.900	72	Dirt roads, HSG A (BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2, SB-3)
0.600	98	Roofs, HSG A (BB-1, BB-2, KC-1, MB-2)
115.100	70	Row crops, contoured, Poor, HSG A (BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2, SB-3)
32.700	30	Woods, Good, HSG A (BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2)
159.300	**62**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
159.300	HSG A	BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2, SB-3
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
159.300		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
10.900	0.000	0.000	0.000	0.000	10.900	Dirt roads	BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2, SB-3
0.600	0.000	0.000	0.000	0.000	0.600	Roofs	BB-1, BB-2, KC-1, MB-2
115.100	0.000	0.000	0.000	0.000	115.100	Row crops, contoured, Poor	BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2, SB-3
32.700	0.000	0.000	0.000	0.000	32.700	Woods, Good	BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2
159.300	**0.000**	**0.000**	**0.000**	**0.000**	**159.300**	**TOTAL AREA**	

2-Year Storm Event – Existing

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

Subcatchment BB-1: EX BB-1 Runoff Area=19.100 ac 0.52% Impervious Runoff Depth>0.79"
Flow Length=1,400' Slope=0.0100 '/' Tc=30.2 min CN=70 Runoff=10.11 cfs 1.261 af

Subcatchment BB-2: EX BB-2 Runoff Area=5.900 ac 1.69% Impervious Runoff Depth>0.80"
Flow Length=730' Slope=0.0110 '/' Tc=17.0 min CN=70 Runoff=3.95 cfs 0.392 af

Subcatchment BB-3: EX BB-3 Runoff Area=19.700 ac 0.00% Impervious Runoff Depth>0.42"
Flow Length=1,060' Tc=15.7 min CN=61 Runoff=5.52 cfs 0.695 af

Subcatchment HS-1: EX HS-1 Runoff Area=0.900 ac 0.00% Impervious Runoff Depth>0.43"
Flow Length=310' Tc=5.2 min CN=61 Runoff=0.35 cfs 0.032 af

Subcatchment KC-1: EX KC-1 Runoff Area=23.600 ac 1.27% Impervious Runoff Depth>0.66"
Flow Length=530' Slope=0.0190 '/' Tc=10.5 min CN=67 Runoff=14.74 cfs 1.302 af

Subcatchment MB-1: EX MB-1 Runoff Area=49.200 ac 0.00% Impervious Runoff Depth>0.46"
Flow Length=1,630' Tc=27.9 min CN=62 Runoff=12.92 cfs 1.868 af

Subcatchment MB-2: EX MB-2 Runoff Area=13.000 ac 0.77% Impervious Runoff Depth>0.08"
Flow Length=540' Tc=25.2 min CN=48 Runoff=0.19 cfs 0.087 af

Subcatchment SB-1: EX SB-1 Runoff Area=7.600 ac 0.00% Impervious Runoff Depth>0.50"
Flow Length=490' Tc=7.4 min CN=63 Runoff=3.44 cfs 0.316 af

Subcatchment SB-2: EX SB-2 Runoff Area=14.900 ac 0.00% Impervious Runoff Depth>0.16"
Flow Length=480' Slope=0.0250 '/' Tc=8.7 min CN=52 Runoff=0.94 cfs 0.201 af

Subcatchment SB-3: EX SB-3 Runoff Area=5.400 ac 0.00% Impervious Runoff Depth>0.80"
Flow Length=300' Slope=0.0100 '/' Tc=9.8 min CN=70 Runoff=4.40 cfs 0.360 af

Pond 1P: EX MB-2 Depression Peak Elev=270.51' Storage=3,788 cf Inflow=0.19 cfs 0.087 af
Outflow=0.00 cfs 0.000 af

Link BB: BB Inflow=18.27 cfs 2.348 af
Primary=18.27 cfs 2.348 af

Link HS: HS Inflow=0.35 cfs 0.032 af
Primary=0.35 cfs 0.032 af

Link KC: KC Inflow=14.74 cfs 1.302 af
Primary=14.74 cfs 1.302 af

Link MB: MB Inflow=12.92 cfs 1.868 af
Primary=12.92 cfs 1.868 af

Link SB: SB Inflow=7.90 cfs 0.878 af
Primary=7.90 cfs 0.878 af

Total Runoff Area = 159.300 ac Runoff Volume = 6.516 af Average Runoff Depth = 0.49"
99.62% Pervious = 158.700 ac 0.38% Impervious = 0.600 ac

Summary for Subcatchment BB-1: EX BB-1

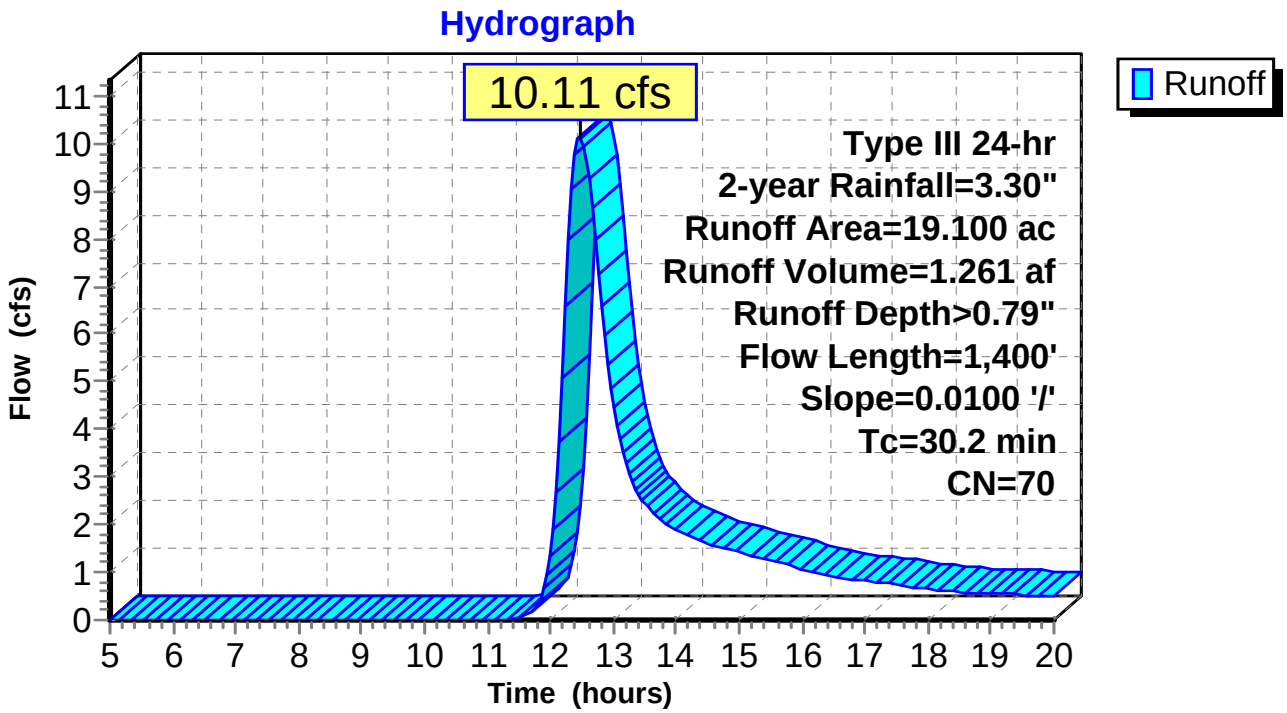
Runoff = 10.11 cfs @ 12.47 hrs, Volume= 1.261 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
1.500	72	Dirt roads, HSG A
17.200	70	Row crops, contoured, Poor, HSG A
0.300	30	Woods, Good, HSG A
19.100	70	Weighted Average
19.000		99.48% Pervious Area
0.100		0.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0100	0.27		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
24.1	1,300	0.0100	0.90		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
30.2	1,400	Total			

Subcatchment BB-1: EX BB-1



Summary for Subcatchment BB-2: EX BB-2

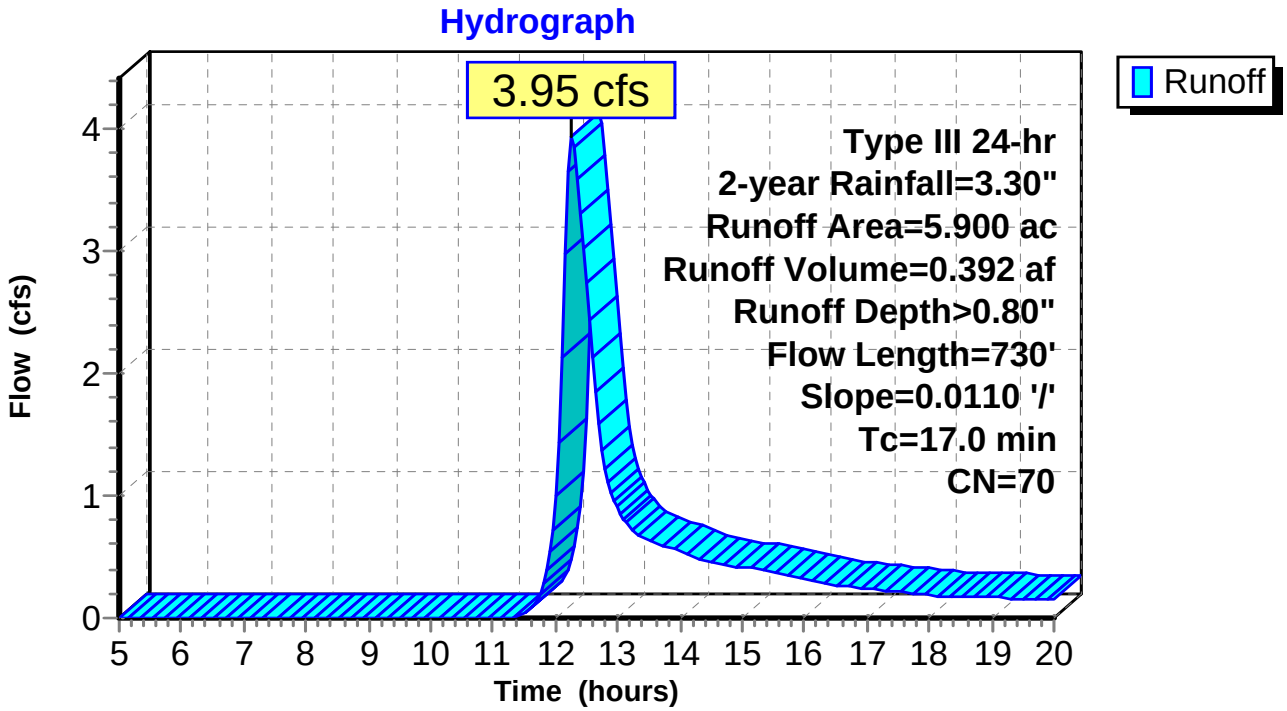
Runoff = 3.95 cfs @ 12.26 hrs, Volume= 0.392 af, Depth> 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.400	72	Dirt roads, HSG A
5.300	70	Row crops, contoured, Poor, HSG A
0.100	30	Woods, Good, HSG A
5.900	70	Weighted Average
5.800		98.31% Pervious Area
0.100		1.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	100	0.0110	0.28		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
11.1	630	0.0110	0.94		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
17.0	730	Total			

Subcatchment BB-2: EX BB-2



Summary for Subcatchment BB-3: EX BB-3

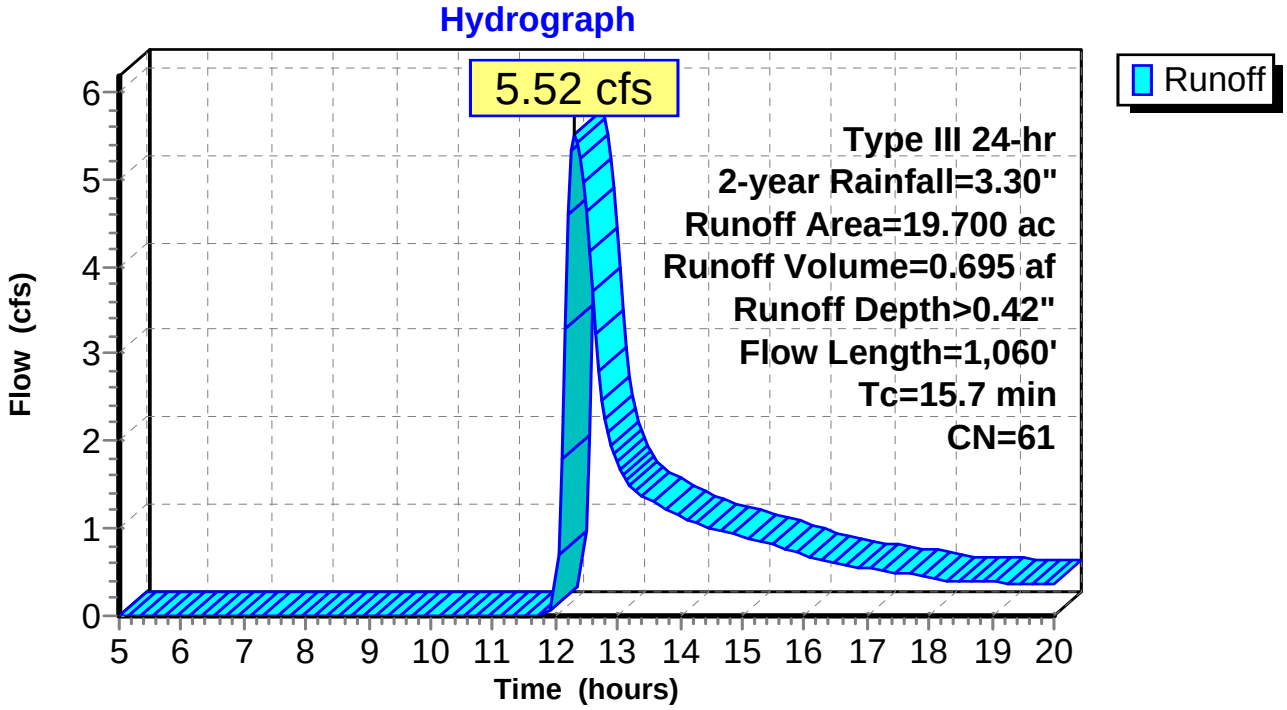
Runoff = 5.52 cfs @ 12.31 hrs, Volume= 0.695 af, Depth> 0.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
1.300	72	Dirt roads, HSG A
13.700	70	Row crops, contoured, Poor, HSG A
4.700	30	Woods, Good, HSG A
19.700	61	Weighted Average
19.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	100	0.0190	0.35		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
10.7	800	0.0190	1.24		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
0.3	160	0.0440	9.20	92.01	**Channel Flow,** Area= 10.0 sf Perim= 12.0' r= 0.83' n= 0.030 Earth, grassed & winding
15.7	1,060	Total			

Subcatchment BB-3: EX BB-3



Summary for Subcatchment HS-1: EX HS-1

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

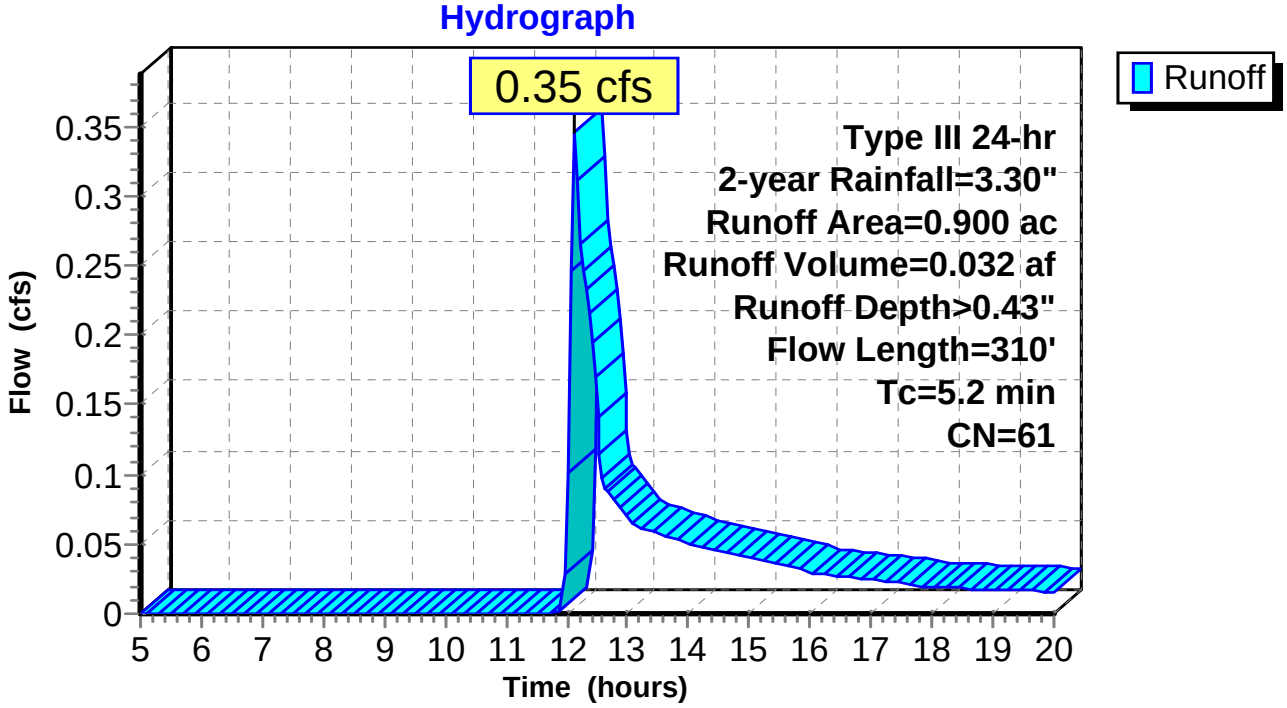
Runoff = 0.35 cfs @ 12.11 hrs, Volume= 0.032 af, Depth> 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.100	72	Dirt roads, HSG A
0.600	70	Row crops, contoured, Poor, HSG A
0.200	30	Woods, Good, HSG A
0.900	61	Weighted Average
0.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	100	0.0550	0.54		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
1.4	180	0.0550	2.11		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
0.7	30	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.2	310	Total			

Subcatchment HS-1: EX HS-1



Summary for Subcatchment KC-1: EX KC-1

Runoff = 14.74 cfs @ 12.17 hrs, Volume= 1.302 af, Depth> 0.66"

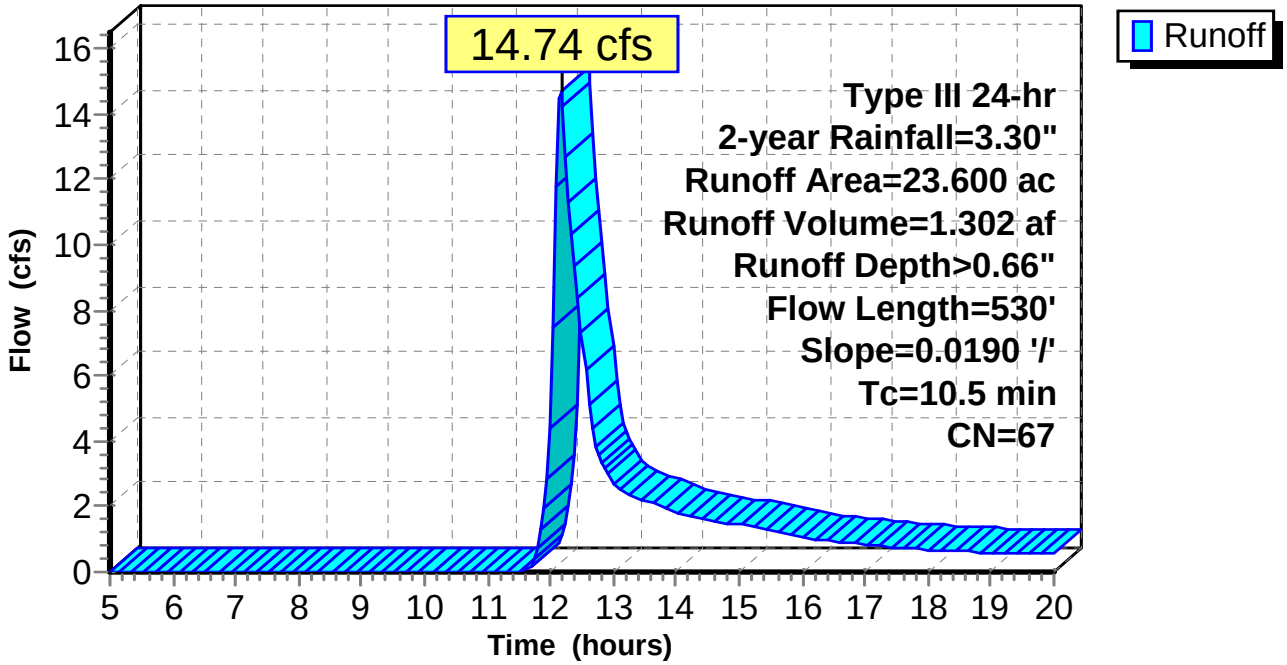
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.300	98	Roofs, HSG A
1.800	72	Dirt roads, HSG A
19.400	70	Row crops, contoured, Poor, HSG A
2.100	30	Woods, Good, HSG A
23.600	67	Weighted Average
23.300		98.73% Pervious Area
0.300		1.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	100	0.0190	0.35		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
5.8	430	0.0190	1.24		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
10.5	530	Total			

Subcatchment KC-1: EX KC-1

Hydrograph



Summary for Subcatchment MB-1: EX MB-1

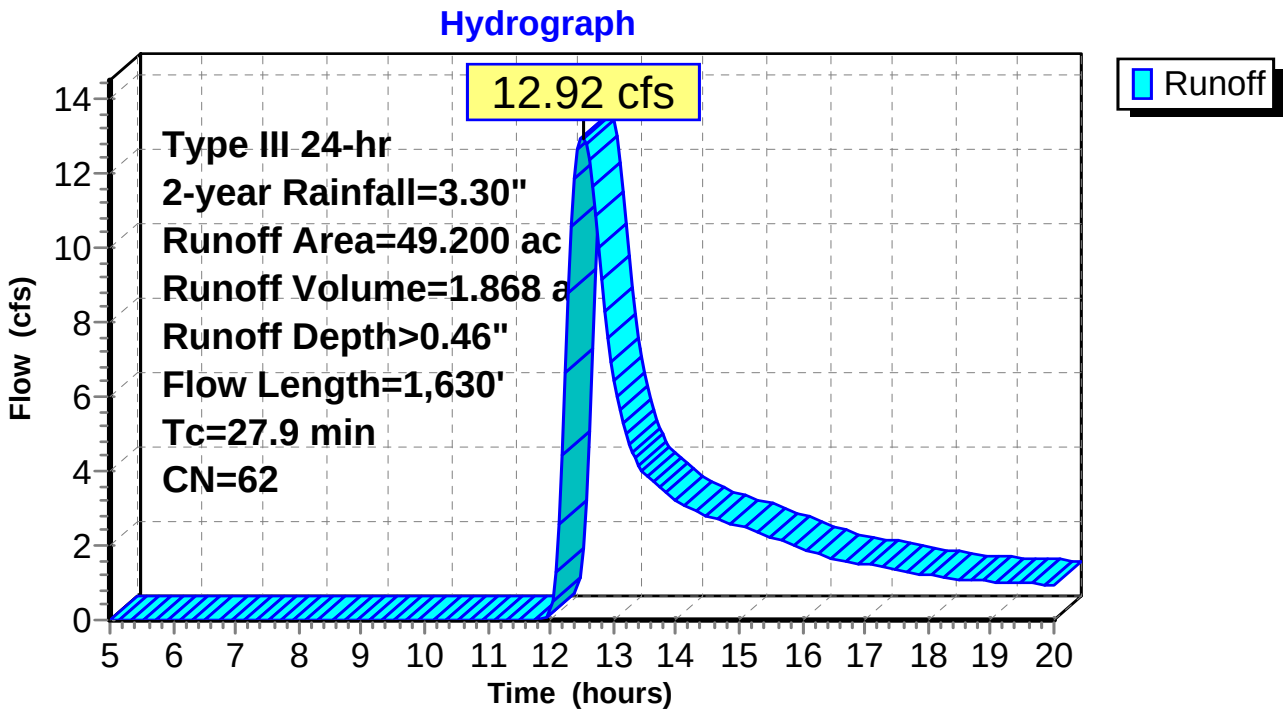
Runoff = 12.92 cfs @ 12.51 hrs, Volume= 1.868 af, Depth> 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
3.000	72	Dirt roads, HSG A
36.100	70	Row crops, contoured, Poor, HSG A
10.100	30	Woods, Good, HSG A
49.200	62	Weighted Average
49.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	100	0.0190	0.35		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
10.7	800	0.0190	1.24		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
12.5	730	0.0380	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.9	1,630	Total			

Subcatchment MB-1: EX MB-1



Summary for Subcatchment MB-2: EX MB-2

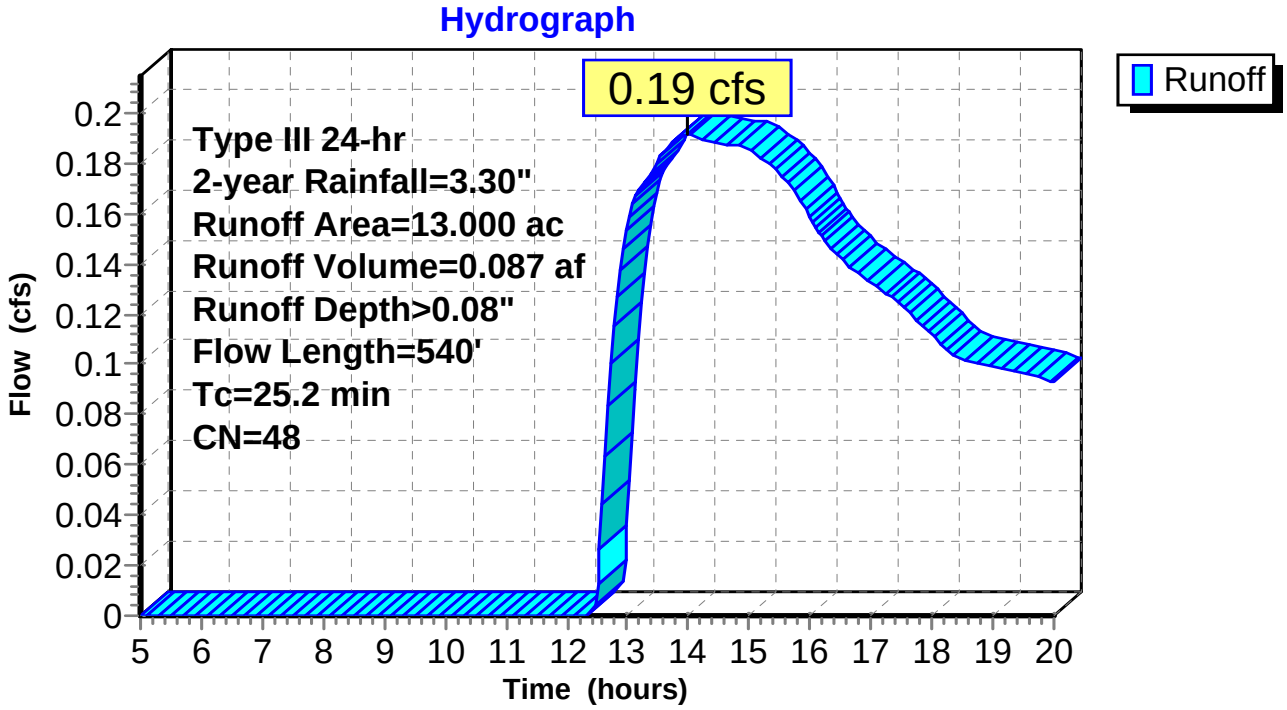
Runoff = 0.19 cfs @ 14.00 hrs, Volume= 0.087 af, Depth> 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.600	72	Dirt roads, HSG A
5.200	70	Row crops, contoured, Poor, HSG A
7.100	30	Woods, Good, HSG A
13.000	48	Weighted Average
12.900		99.23% Pervious Area
0.100		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
7.7	230	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	260	0.0610	1.23		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.2	540	Total			

Subcatchment MB-2: EX MB-2



Summary for Subcatchment SB-1: EX SB-1

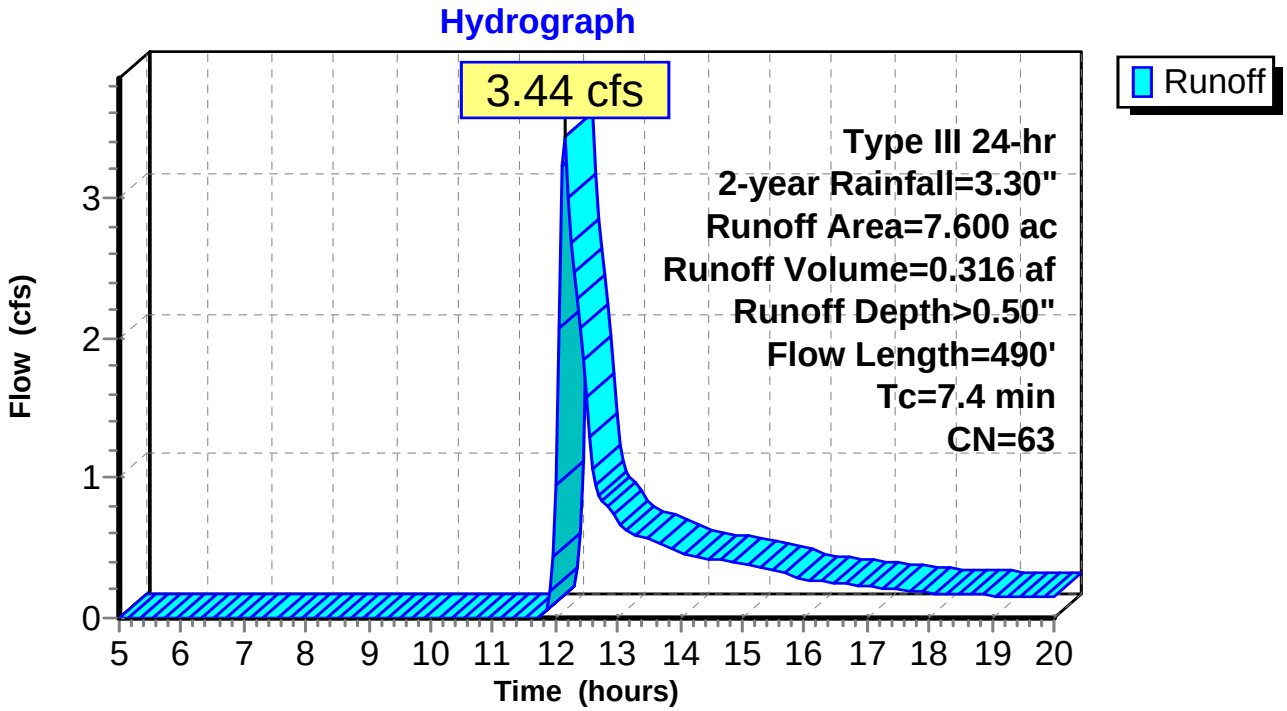
Runoff = 3.44 cfs @ 12.14 hrs, Volume= 0.316 af, Depth> 0.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.500	72	Dirt roads, HSG A
5.800	70	Row crops, contoured, Poor, HSG A
1.300	30	Woods, Good, HSG A
7.600	63	Weighted Average
7.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.0200	0.36		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
1.3	250	0.1180	3.09		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
1.5	140	0.0280	1.51		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
7.4	490	Total			

Subcatchment SB-1: EX SB-1



Summary for Subcatchment SB-2: EX SB-2

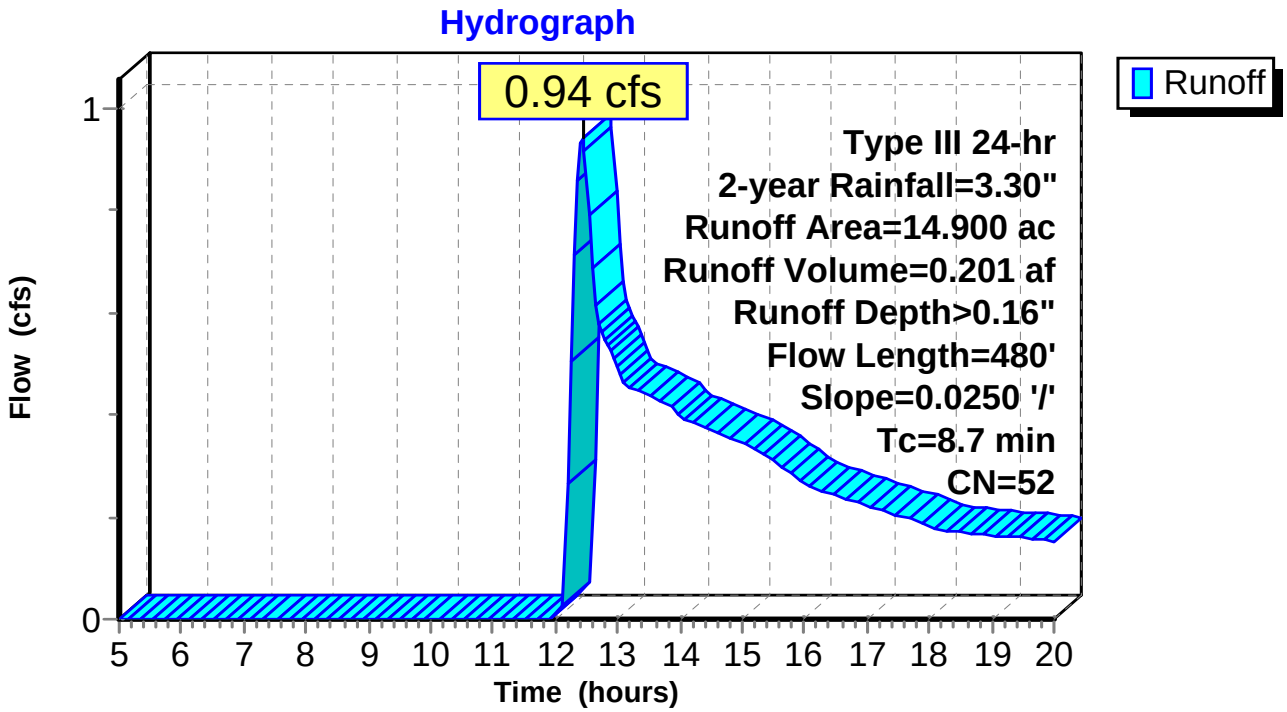
Runoff = 0.94 cfs @ 12.43 hrs, Volume= 0.201 af, Depth> 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
1.100	72	Dirt roads, HSG A
7.000	70	Row crops, contoured, Poor, HSG A
6.800	30	Woods, Good, HSG A
14.900	52	Weighted Average
14.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	100	0.0250	0.39		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
4.5	380	0.0250	1.42		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
8.7	480	Total			

Subcatchment SB-2: EX SB-2



Summary for Subcatchment SB-3: EX SB-3

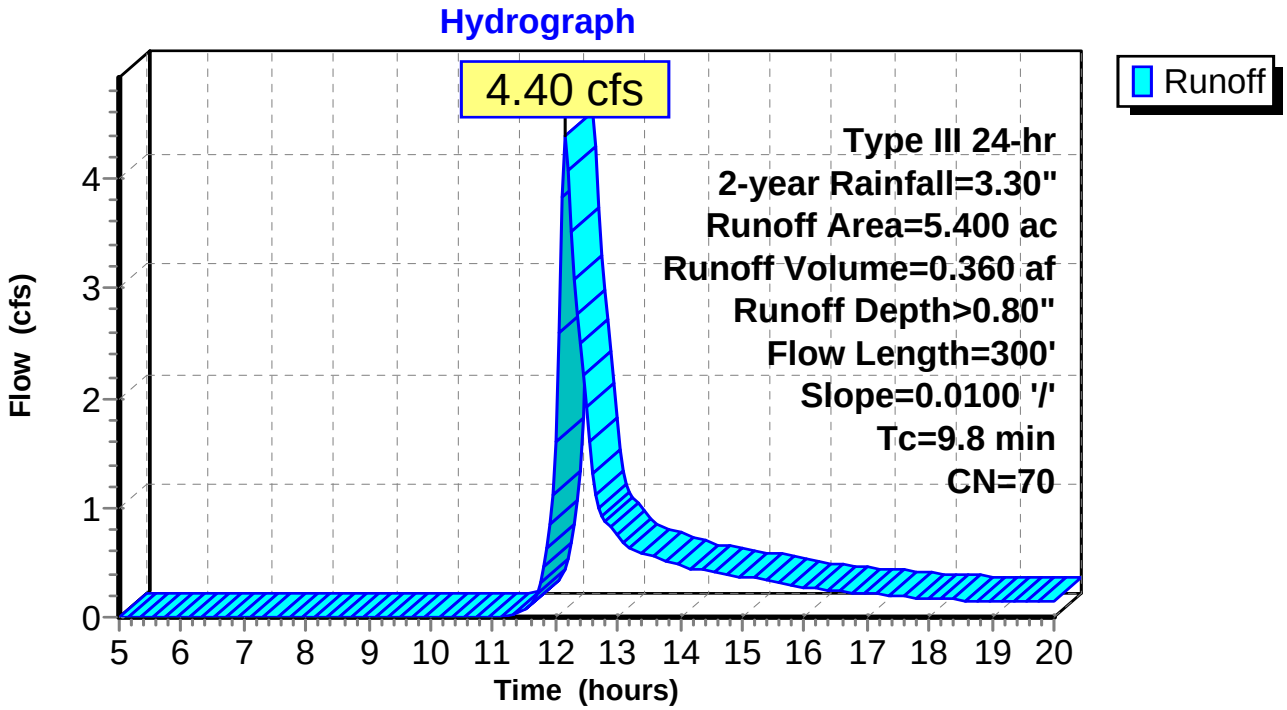
Runoff = 4.40 cfs @ 12.16 hrs, Volume= 0.360 af, Depth> 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.600	72	Dirt roads, HSG A
4.800	70	Row crops, contoured, Poor, HSG A
5.400	70	Weighted Average
5.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0100	0.27		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
3.7	200	0.0100	0.90		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
9.8	300	Total			

Subcatchment SB-3: EX SB-3



Summary for Pond 1P: EX MB-2 Depression

Inflow Area = 13.000 ac, 0.77% Impervious, Inflow Depth > 0.08" for 2-year event
Inflow = 0.19 cfs @ 14.00 hrs, Volume= 0.087 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 270.51' @ 20.00 hrs Surf.Area= 9,125 sf Storage= 3,788 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	270.00'	336,950 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

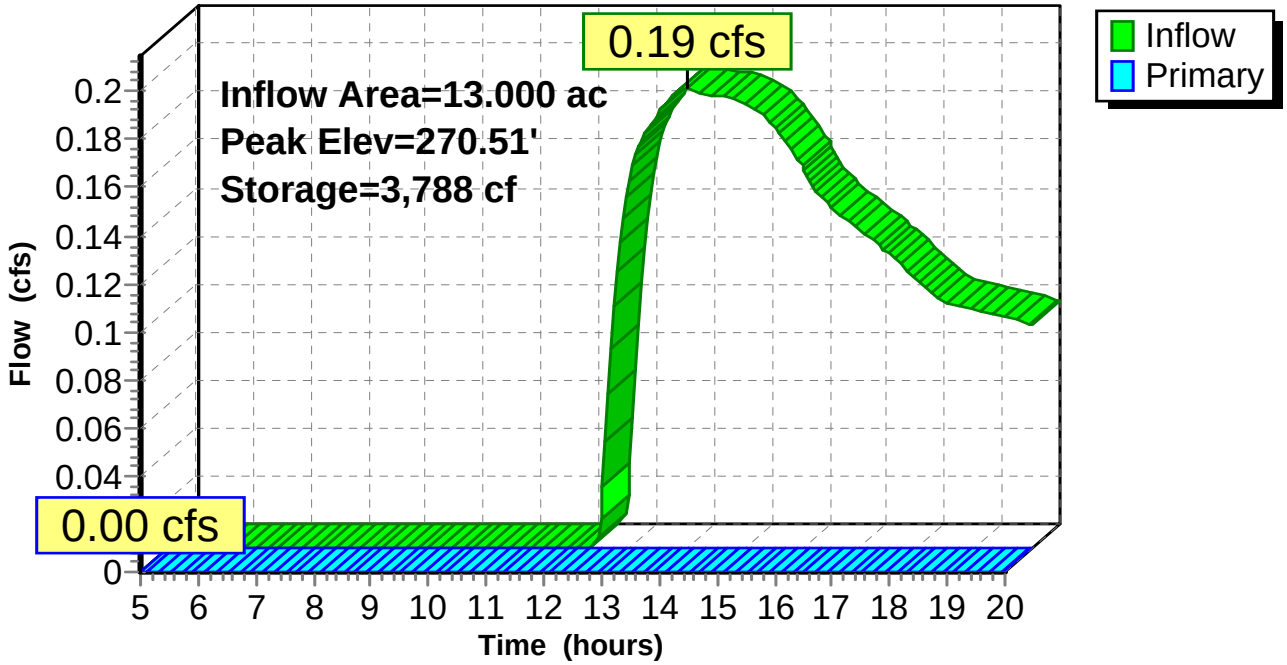
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
270.00	5,650	0	0
272.00	19,200	24,850	24,850
274.00	41,900	61,100	85,950
276.00	62,300	104,200	190,150
278.00	84,500	146,800	336,950

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**40.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=270.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: EX MB-2 Depression

Hydrograph

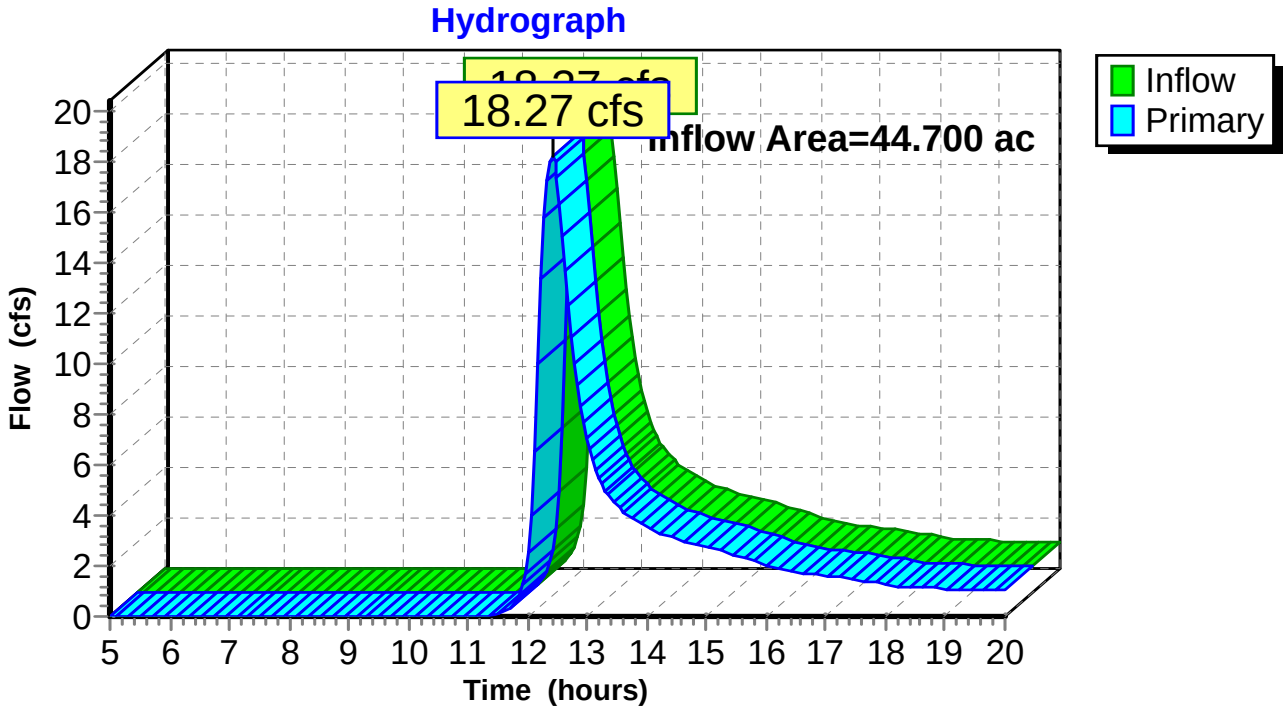


Summary for Link BB: BB

Inflow Area = 44.700 ac, 0.45% Impervious, Inflow Depth > 0.63" for 2-year event
Inflow = 18.27 cfs @ 12.40 hrs, Volume= 2.348 af
Primary = 18.27 cfs @ 12.40 hrs, Volume= 2.348 af, Atten= 0%, Lag= 0.0 min

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

Link BB: BB

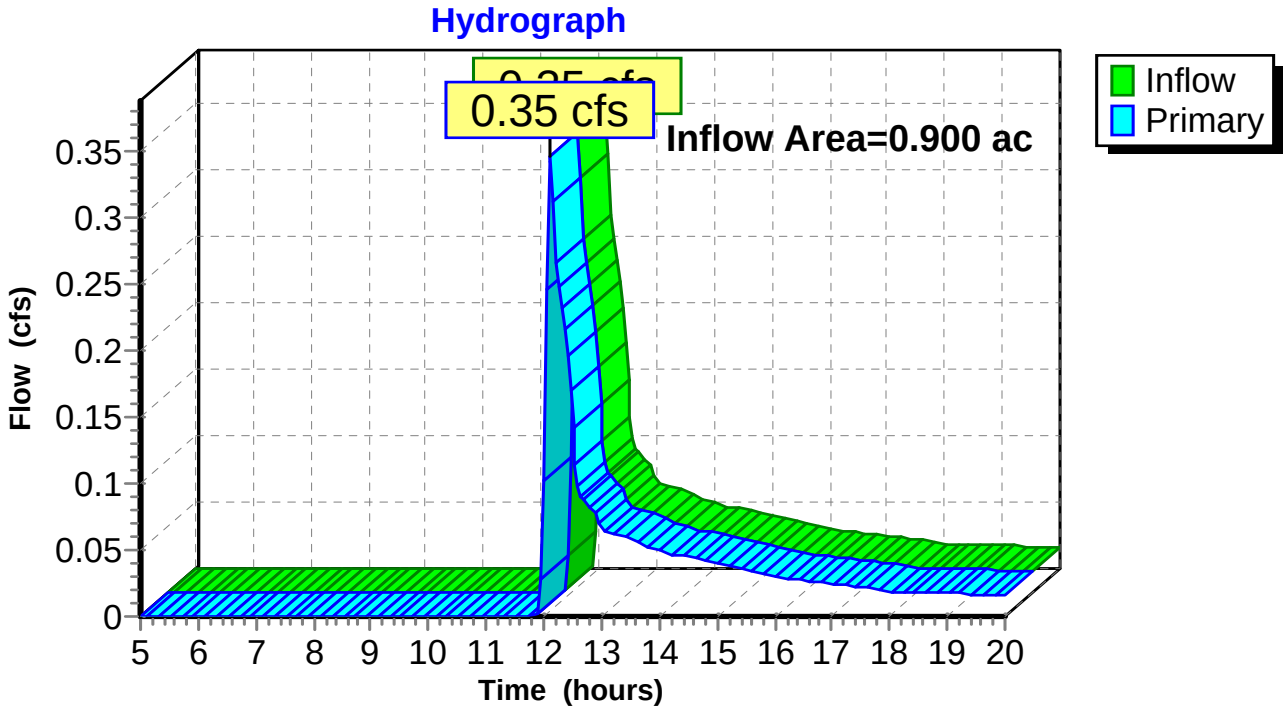


Summary for Link HS: HS

Inflow Area = 0.900 ac, 0.00% Impervious, Inflow Depth > 0.43" for 2-year event
Inflow = 0.35 cfs @ 12.11 hrs, Volume= 0.032 af
Primary = 0.35 cfs @ 12.11 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min

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

Link HS: HS

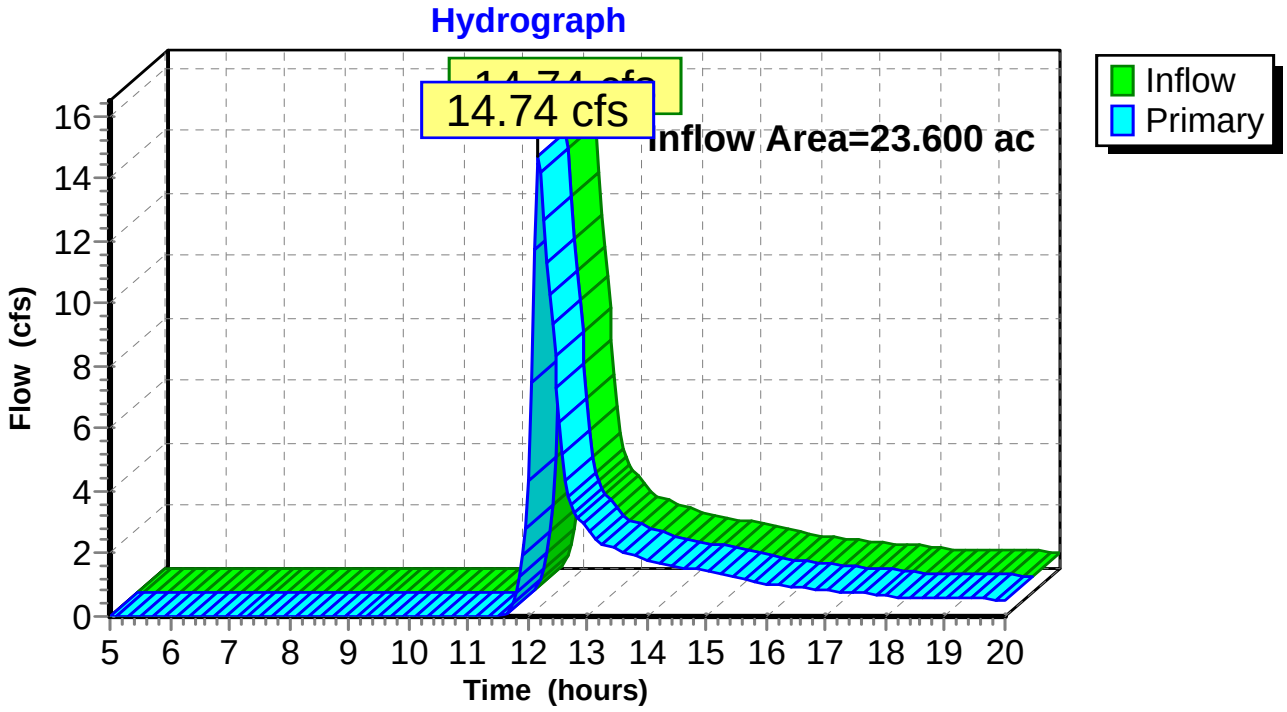


Summary for Link KC: KC

Inflow Area = 23.600 ac, 1.27% Impervious, Inflow Depth > 0.66" for 2-year event
Inflow = 14.74 cfs @ 12.17 hrs, Volume= 1.302 af
Primary = 14.74 cfs @ 12.17 hrs, Volume= 1.302 af, Atten= 0%, Lag= 0.0 min

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

Link KC: KC

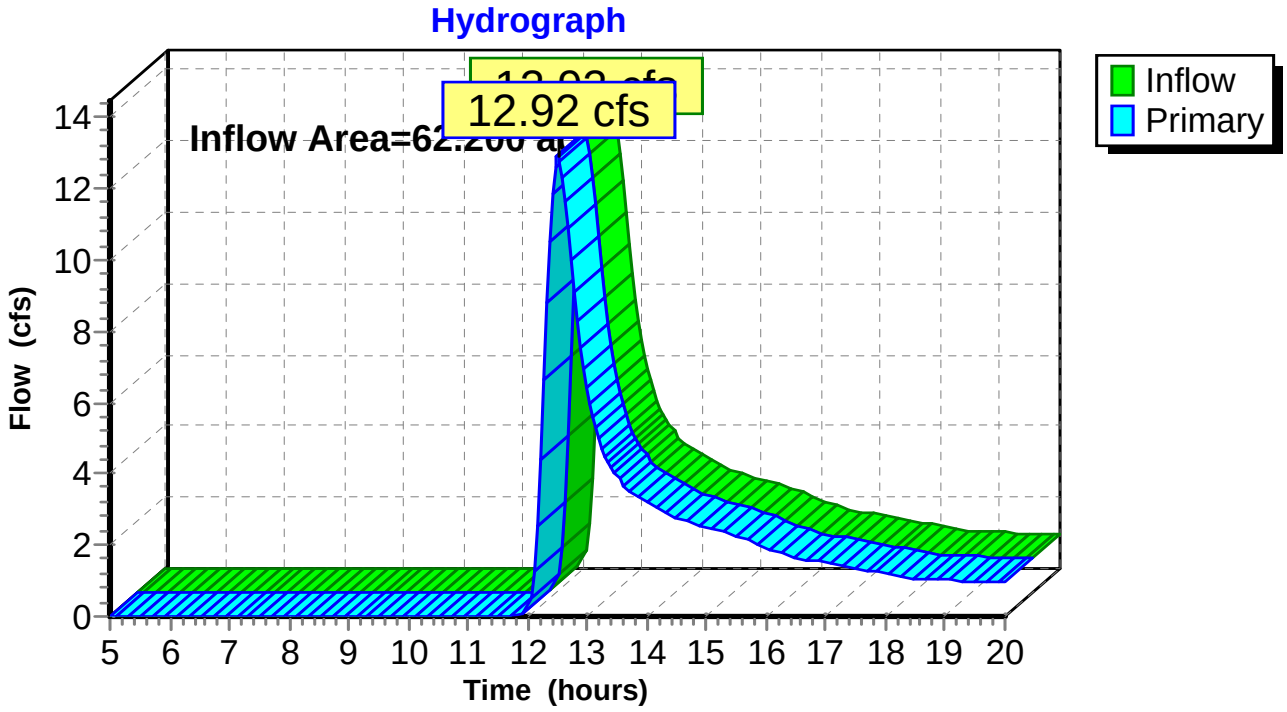


Summary for Link MB: MB

Inflow Area = 62.200 ac, 0.16% Impervious, Inflow Depth > 0.36" for 2-year event
Inflow = 12.92 cfs @ 12.51 hrs, Volume= 1.868 af
Primary = 12.92 cfs @ 12.51 hrs, Volume= 1.868 af, Atten= 0%, Lag= 0.0 min

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

Link MB: MB

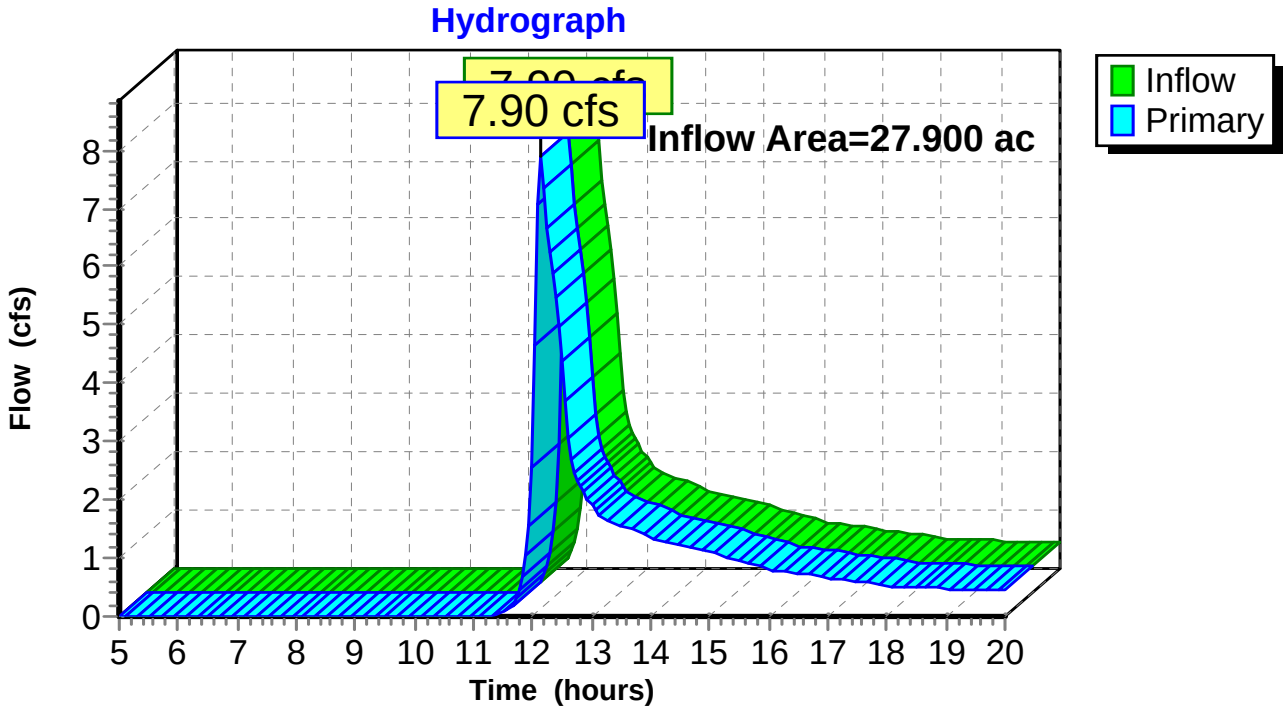


Summary for Link SB: SB

Inflow Area = 27.900 ac, 0.00% Impervious, Inflow Depth > 0.38" for 2-year event
Inflow = 7.90 cfs @ 12.15 hrs, Volume= 0.878 af
Primary = 7.90 cfs @ 12.15 hrs, Volume= 0.878 af, Atten= 0%, Lag= 0.0 min

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

Link SB: SB



10-Year Storm Event – Existing

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

Subcatchment BB-1: EX BB-1 Runoff Area=19.100 ac 0.52% Impervious Runoff Depth>2.08"
Flow Length=1,400' Slope=0.0100 '/' Tc=30.2 min CN=70 Runoff=28.24 cfs 3.312 af

Subcatchment BB-2: EX BB-2 Runoff Area=5.900 ac 1.69% Impervious Runoff Depth>2.09"
Flow Length=730' Slope=0.0110 '/' Tc=17.0 min CN=70 Runoff=11.10 cfs 1.028 af

Subcatchment BB-3: EX BB-3 Runoff Area=19.700 ac 0.00% Impervious Runoff Depth>1.41"
Flow Length=1,060' Tc=15.7 min CN=61 Runoff=24.52 cfs 2.323 af

Subcatchment HS-1: EX HS-1 Runoff Area=0.900 ac 0.00% Impervious Runoff Depth>1.42"
Flow Length=310' Tc=5.2 min CN=61 Runoff=1.54 cfs 0.107 af

Subcatchment KC-1: EX KC-1 Runoff Area=23.600 ac 1.27% Impervious Runoff Depth>1.86"
Flow Length=530' Slope=0.0190 '/' Tc=10.5 min CN=67 Runoff=46.51 cfs 3.658 af

Subcatchment MB-1: EX MB-1 Runoff Area=49.200 ac 0.00% Impervious Runoff Depth>1.48"
Flow Length=1,630' Tc=27.9 min CN=62 Runoff=51.52 cfs 6.056 af

Subcatchment MB-2: EX MB-2 Runoff Area=13.000 ac 0.77% Impervious Runoff Depth>0.61"
Flow Length=540' Tc=25.2 min CN=48 Runoff=4.35 cfs 0.663 af

Subcatchment SB-1: EX SB-1 Runoff Area=7.600 ac 0.00% Impervious Runoff Depth>1.56"
Flow Length=490' Tc=7.4 min CN=63 Runoff=13.58 cfs 0.990 af

Subcatchment SB-2: EX SB-2 Runoff Area=14.900 ac 0.00% Impervious Runoff Depth>0.84"
Flow Length=480' Slope=0.0250 '/' Tc=8.7 min CN=52 Runoff=11.27 cfs 1.044 af

Subcatchment SB-3: EX SB-3 Runoff Area=5.400 ac 0.00% Impervious Runoff Depth>2.10"
Flow Length=300' Slope=0.0100 '/' Tc=9.8 min CN=70 Runoff=12.34 cfs 0.944 af

Pond 1P: EX MB-2 Depression Peak Elev=272.20' Storage=28,834 cf Inflow=4.35 cfs 0.663 af
Outflow=0.00 cfs 0.000 af

Link BB: BB Inflow=58.11 cfs 6.663 af
Primary=58.11 cfs 6.663 af

Link HS: HS Inflow=1.54 cfs 0.107 af
Primary=1.54 cfs 0.107 af

Link KC: KC Inflow=46.51 cfs 3.658 af
Primary=46.51 cfs 3.658 af

Link MB: MB Inflow=51.52 cfs 6.056 af
Primary=51.52 cfs 6.056 af

Link SB: SB Inflow=36.44 cfs 2.978 af
Primary=36.44 cfs 2.978 af

Total Runoff Area = 159.300 ac Runoff Volume = 20.124 af Average Runoff Depth = 1.52"
99.62% Pervious = 158.700 ac 0.38% Impervious = 0.600 ac

Summary for Subcatchment BB-1: EX BB-1

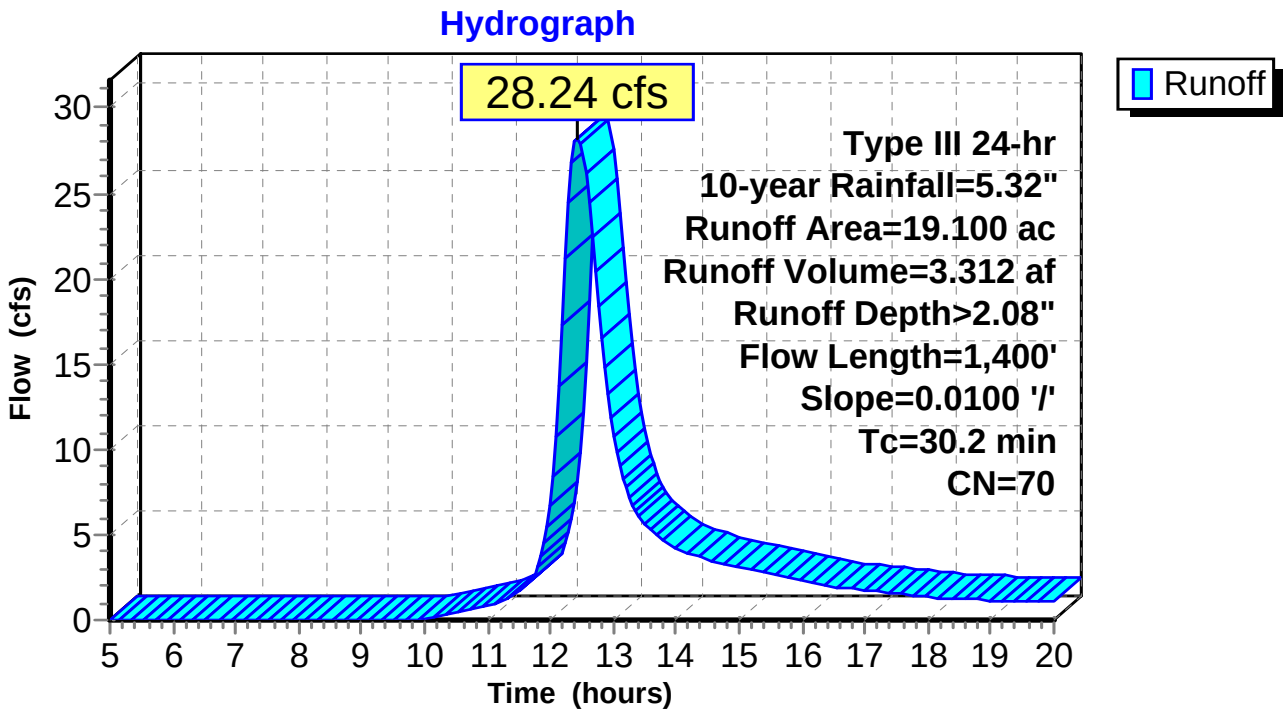
Runoff = 28.24 cfs @ 12.44 hrs, Volume= 3.312 af, Depth> 2.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
1.500	72	Dirt roads, HSG A
17.200	70	Row crops, contoured, Poor, HSG A
0.300	30	Woods, Good, HSG A
19.100	70	Weighted Average
19.000		99.48% Pervious Area
0.100		0.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0100	0.27		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
24.1	1,300	0.0100	0.90		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
30.2	1,400	Total			

Subcatchment BB-1: EX BB-1



Summary for Subcatchment BB-2: EX BB-2

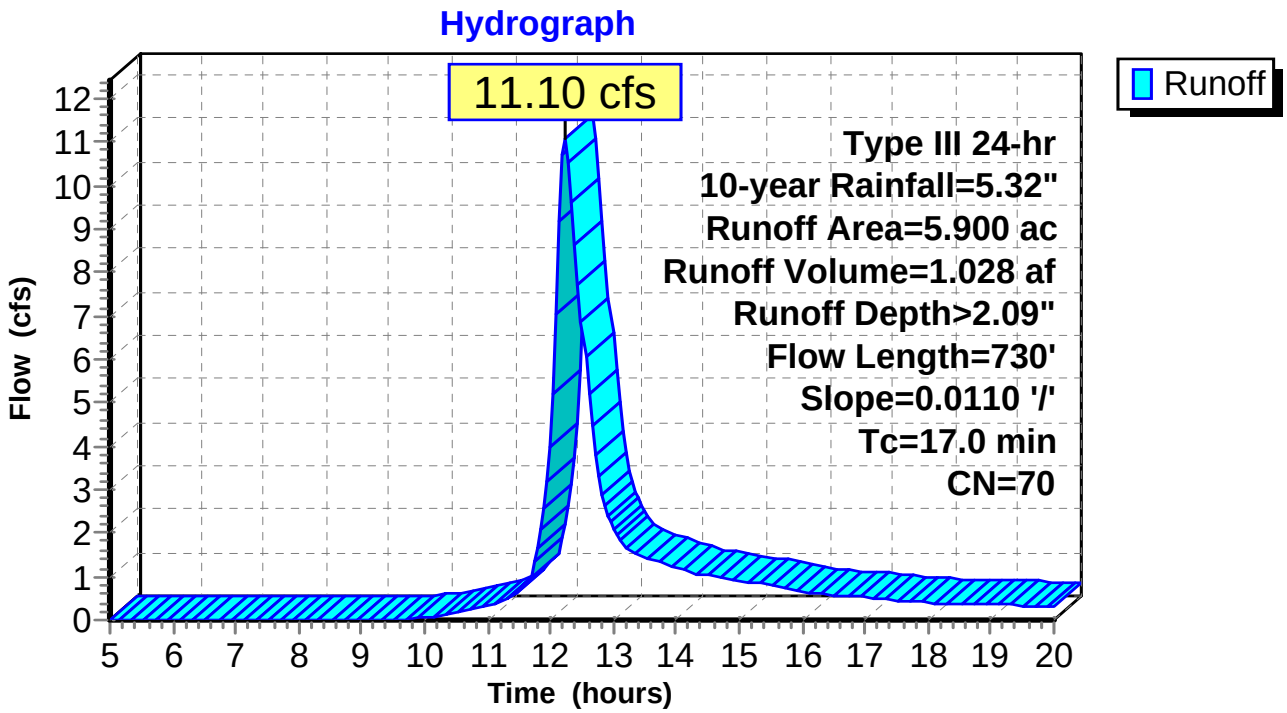
Runoff = 11.10 cfs @ 12.25 hrs, Volume= 1.028 af, Depth> 2.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.400	72	Dirt roads, HSG A
5.300	70	Row crops, contoured, Poor, HSG A
0.100	30	Woods, Good, HSG A
5.900	70	Weighted Average
5.800		98.31% Pervious Area
0.100		1.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	100	0.0110	0.28		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
11.1	630	0.0110	0.94		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
17.0	730	Total			

Subcatchment BB-2: EX BB-2



Summary for Subcatchment BB-3: EX BB-3

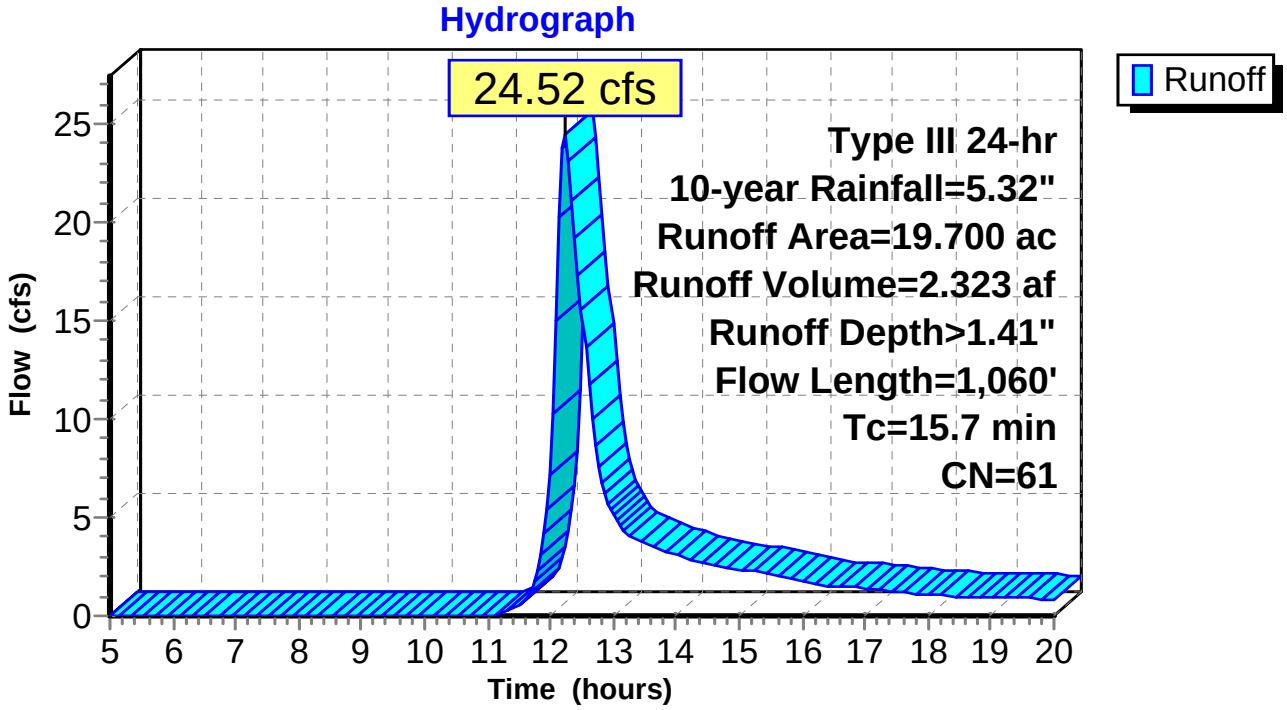
Runoff = 24.52 cfs @ 12.24 hrs, Volume= 2.323 af, Depth> 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
1.300	72	Dirt roads, HSG A
13.700	70	Row crops, contoured, Poor, HSG A
4.700	30	Woods, Good, HSG A
19.700	61	Weighted Average
19.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	100	0.0190	0.35		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
10.7	800	0.0190	1.24		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
0.3	160	0.0440	9.20	92.01	**Channel Flow,** Area= 10.0 sf Perim= 12.0' r= 0.83' n= 0.030 Earth, grassed & winding
15.7	1,060	Total			

Subcatchment BB-3: EX BB-3



Summary for Subcatchment HS-1: EX HS-1

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

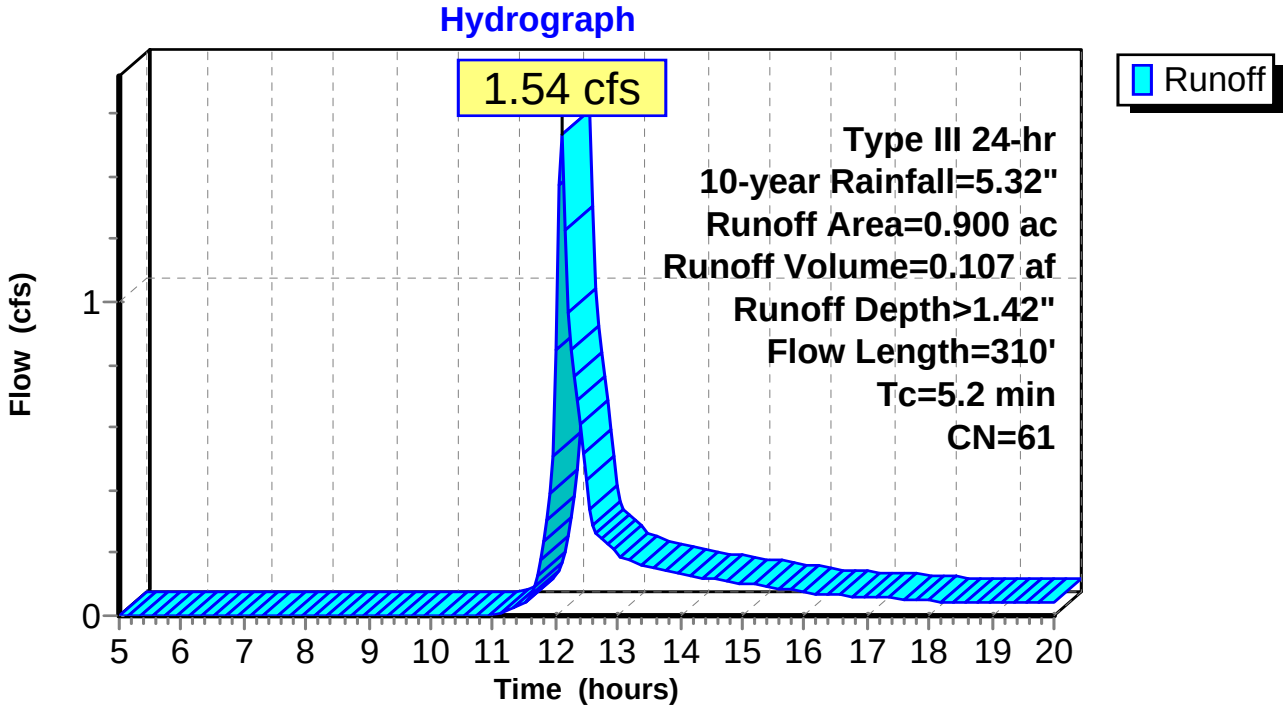
Runoff = 1.54 cfs @ 12.09 hrs, Volume= 0.107 af, Depth> 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.100	72	Dirt roads, HSG A
0.600	70	Row crops, contoured, Poor, HSG A
0.200	30	Woods, Good, HSG A
0.900	61	Weighted Average
0.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	100	0.0550	0.54		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
1.4	180	0.0550	2.11		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
0.7	30	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.2	310	Total			

Subcatchment HS-1: EX HS-1



Summary for Subcatchment KC-1: EX KC-1

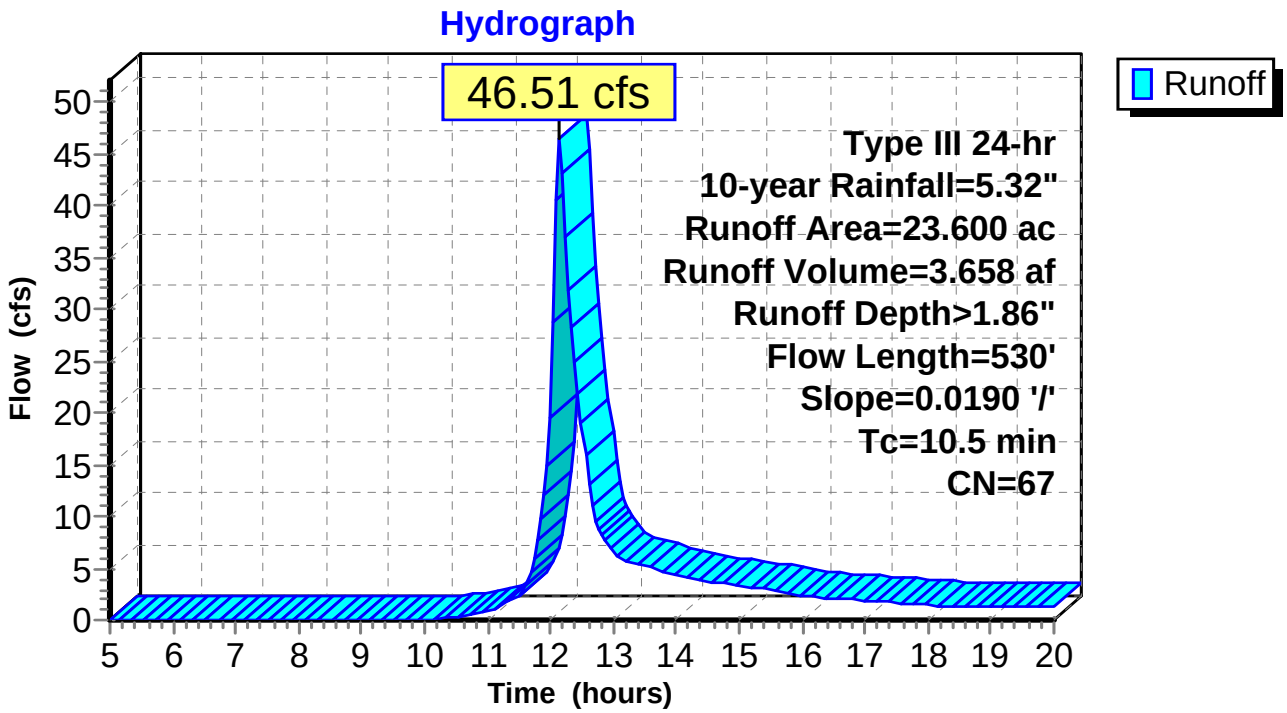
Runoff = 46.51 cfs @ 12.16 hrs, Volume= 3.658 af, Depth> 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.300	98	Roofs, HSG A
1.800	72	Dirt roads, HSG A
19.400	70	Row crops, contoured, Poor, HSG A
2.100	30	Woods, Good, HSG A
23.600	67	Weighted Average
23.300		98.73% Pervious Area
0.300		1.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	100	0.0190	0.35		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
5.8	430	0.0190	1.24		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
10.5	530	Total			

Subcatchment KC-1: EX KC-1



Summary for Subcatchment MB-1: EX MB-1

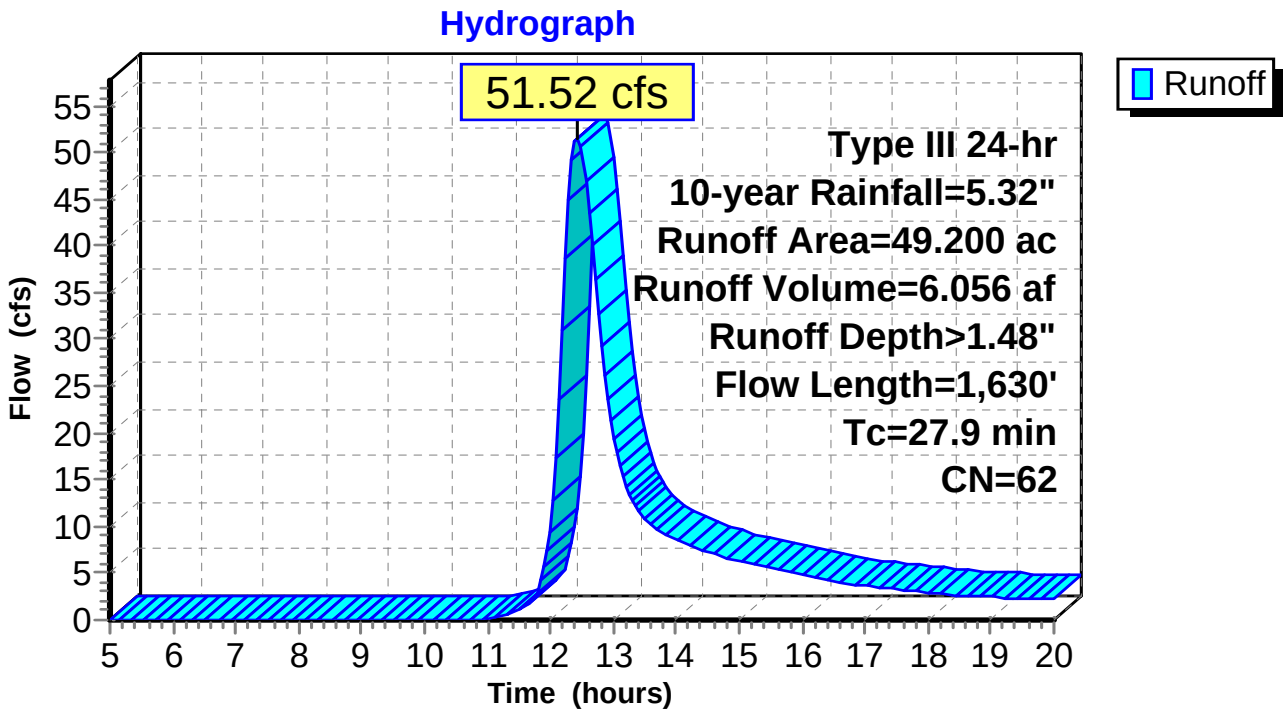
Runoff = 51.52 cfs @ 12.43 hrs, Volume= 6.056 af, Depth> 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
3.000	72	Dirt roads, HSG A
36.100	70	Row crops, contoured, Poor, HSG A
10.100	30	Woods, Good, HSG A
49.200	62	Weighted Average
49.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	100	0.0190	0.35		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
10.7	800	0.0190	1.24		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
12.5	730	0.0380	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.9	1,630	Total			

Subcatchment MB-1: EX MB-1



Summary for Subcatchment MB-2: EX MB-2

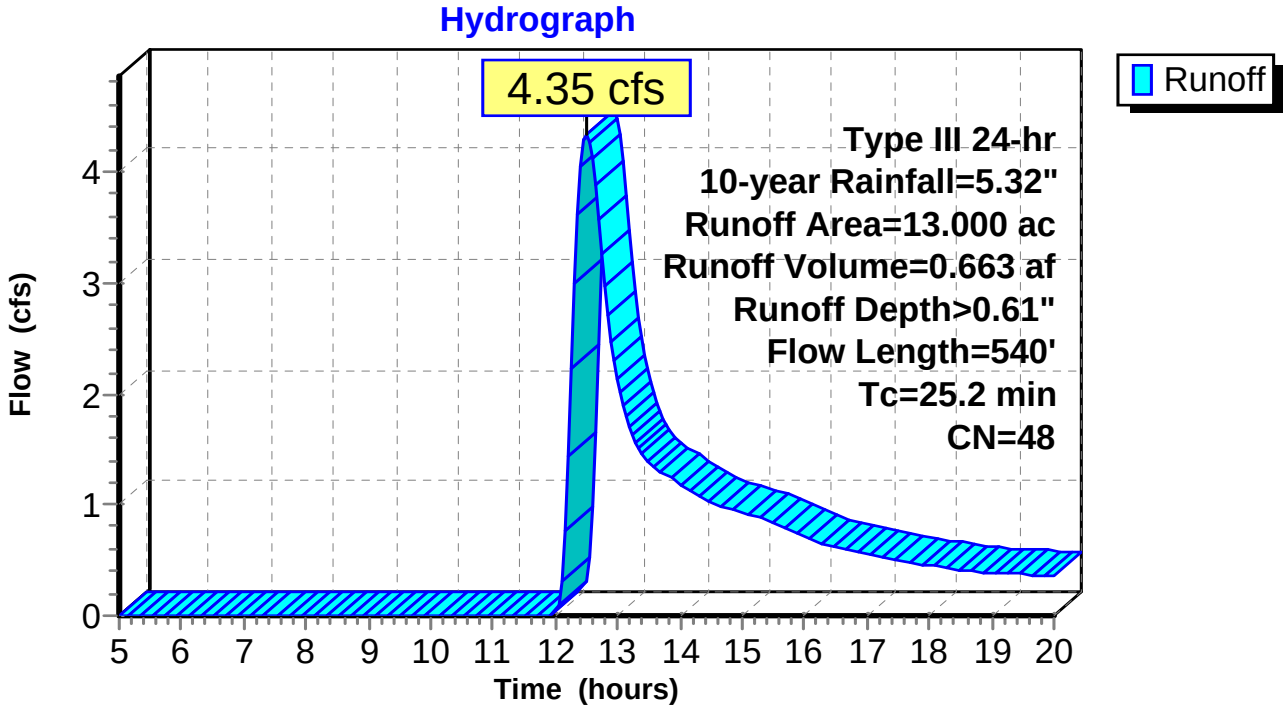
Runoff = 4.35 cfs @ 12.50 hrs, Volume= 0.663 af, Depth> 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.600	72	Dirt roads, HSG A
5.200	70	Row crops, contoured, Poor, HSG A
7.100	30	Woods, Good, HSG A
13.000	48	Weighted Average
12.900		99.23% Pervious Area
0.100		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
7.7	230	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	260	0.0610	1.23		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.2	540	Total			

Subcatchment MB-2: EX MB-2



Summary for Subcatchment SB-1: EX SB-1

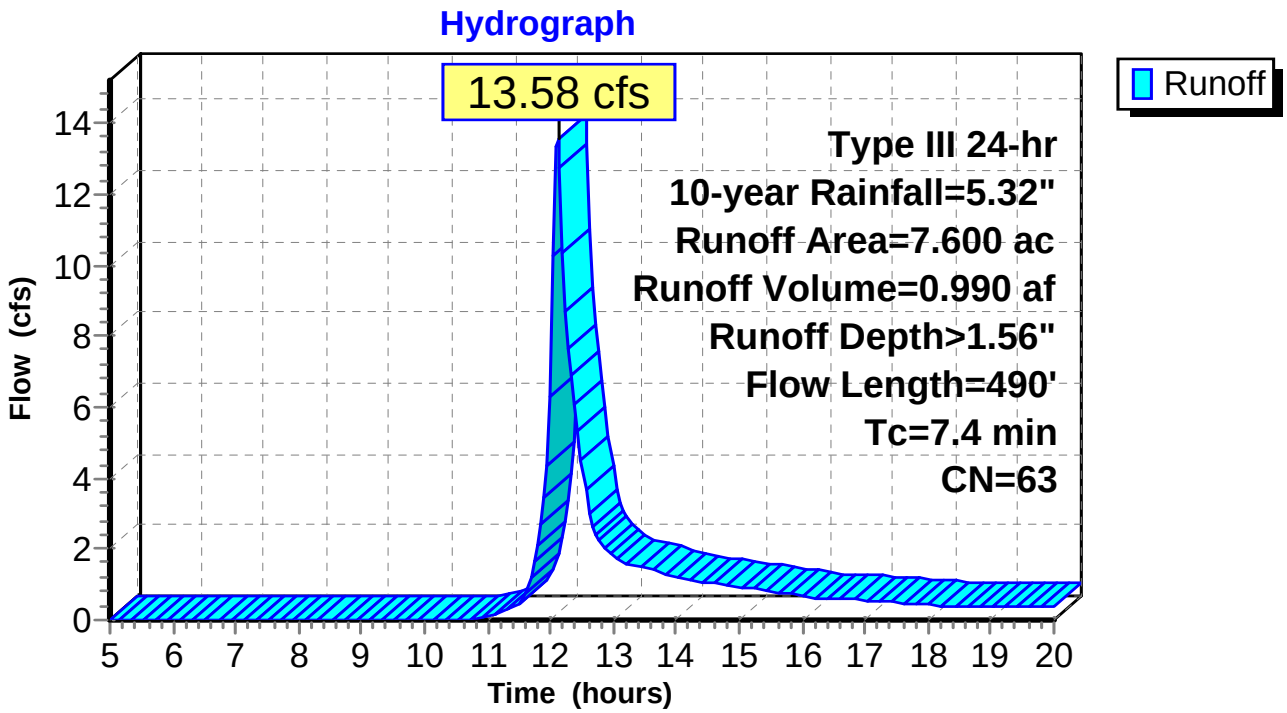
Runoff = 13.58 cfs @ 12.12 hrs, Volume= 0.990 af, Depth> 1.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.500	72	Dirt roads, HSG A
5.800	70	Row crops, contoured, Poor, HSG A
1.300	30	Woods, Good, HSG A
7.600	63	Weighted Average
7.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.0200	0.36		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
1.3	250	0.1180	3.09		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
1.5	140	0.0280	1.51		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
7.4	490	Total			

Subcatchment SB-1: EX SB-1



Summary for Subcatchment SB-2: EX SB-2

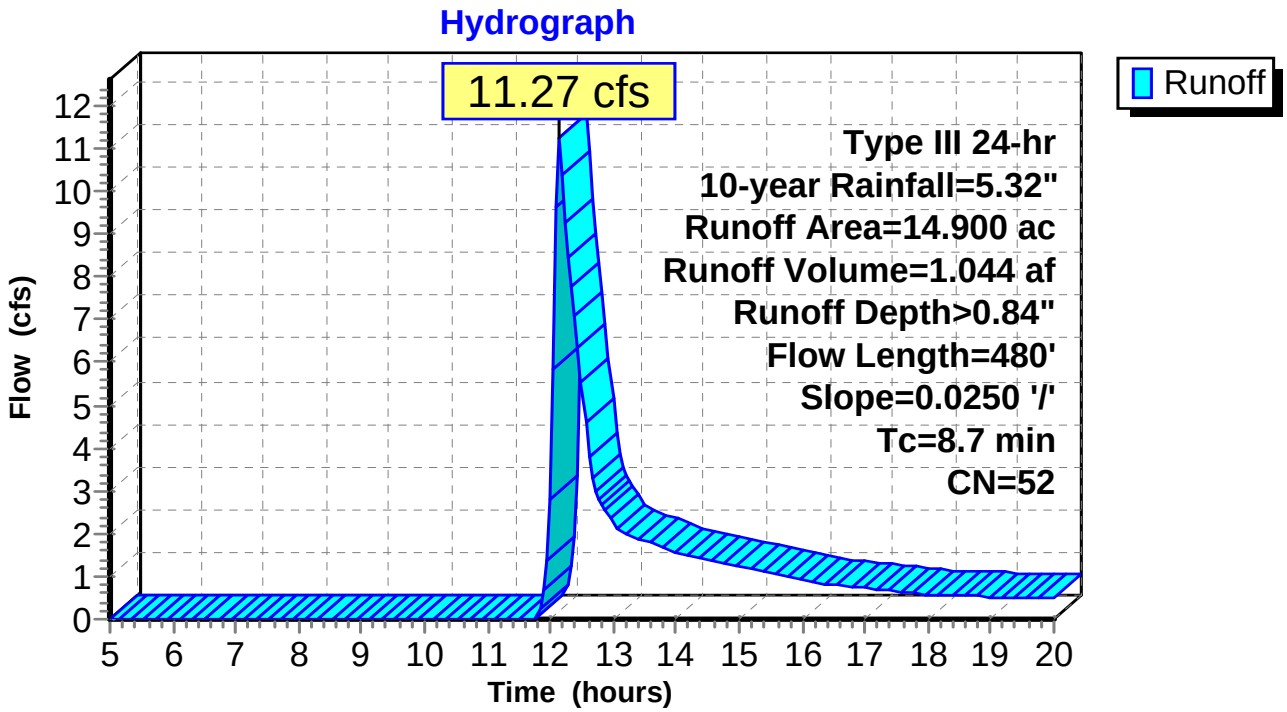
Runoff = 11.27 cfs @ 12.16 hrs, Volume= 1.044 af, Depth> 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
1.100	72	Dirt roads, HSG A
7.000	70	Row crops, contoured, Poor, HSG A
6.800	30	Woods, Good, HSG A
14.900	52	Weighted Average
14.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	100	0.0250	0.39		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
4.5	380	0.0250	1.42		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
8.7	480	Total			

Subcatchment SB-2: EX SB-2



Summary for Subcatchment SB-3: EX SB-3

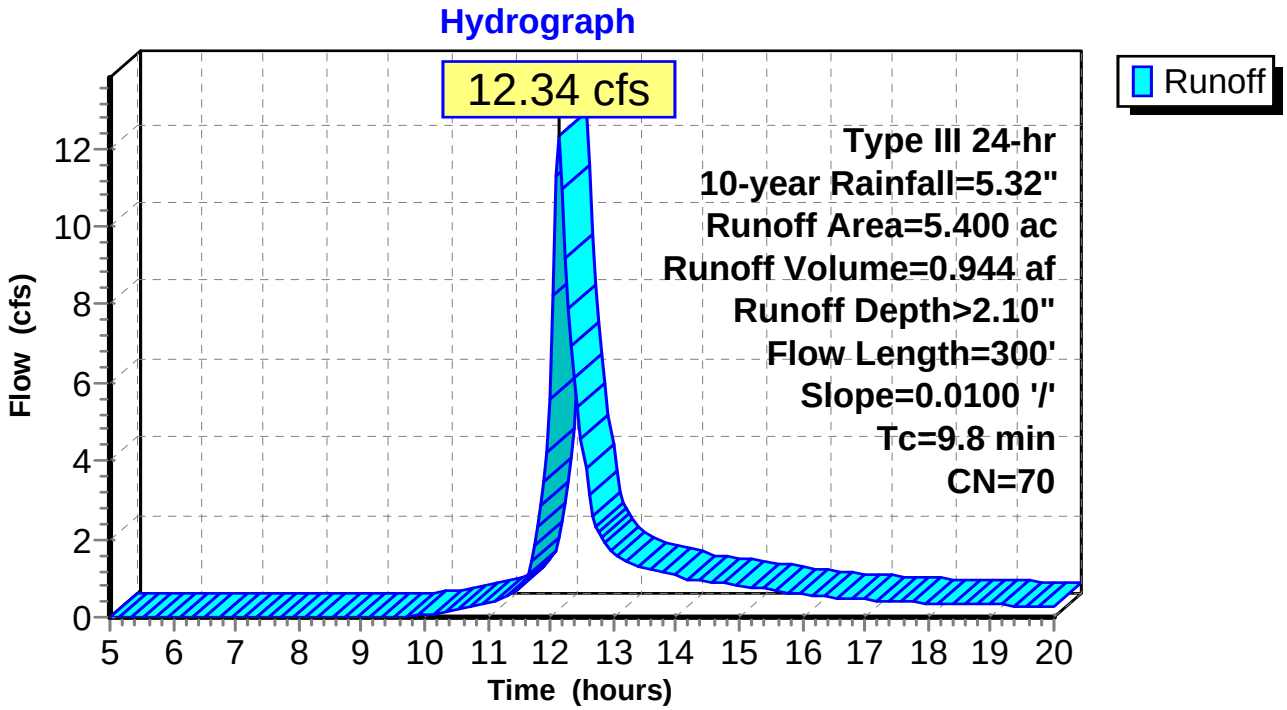
Runoff = 12.34 cfs @ 12.15 hrs, Volume= 0.944 af, Depth> 2.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.600	72	Dirt roads, HSG A
4.800	70	Row crops, contoured, Poor, HSG A
5.400	70	Weighted Average
5.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0100	0.27		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
3.7	200	0.0100	0.90		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
9.8	300	Total			

Subcatchment SB-3: EX SB-3



Summary for Pond 1P: EX MB-2 Depression

Inflow Area = 13.000 ac, 0.77% Impervious, Inflow Depth > 0.61" for 10-year event
Inflow = 4.35 cfs @ 12.50 hrs, Volume= 0.663 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 272.20' @ 20.00 hrs Surf.Area= 21,426 sf Storage= 28,834 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	270.00'	336,950 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

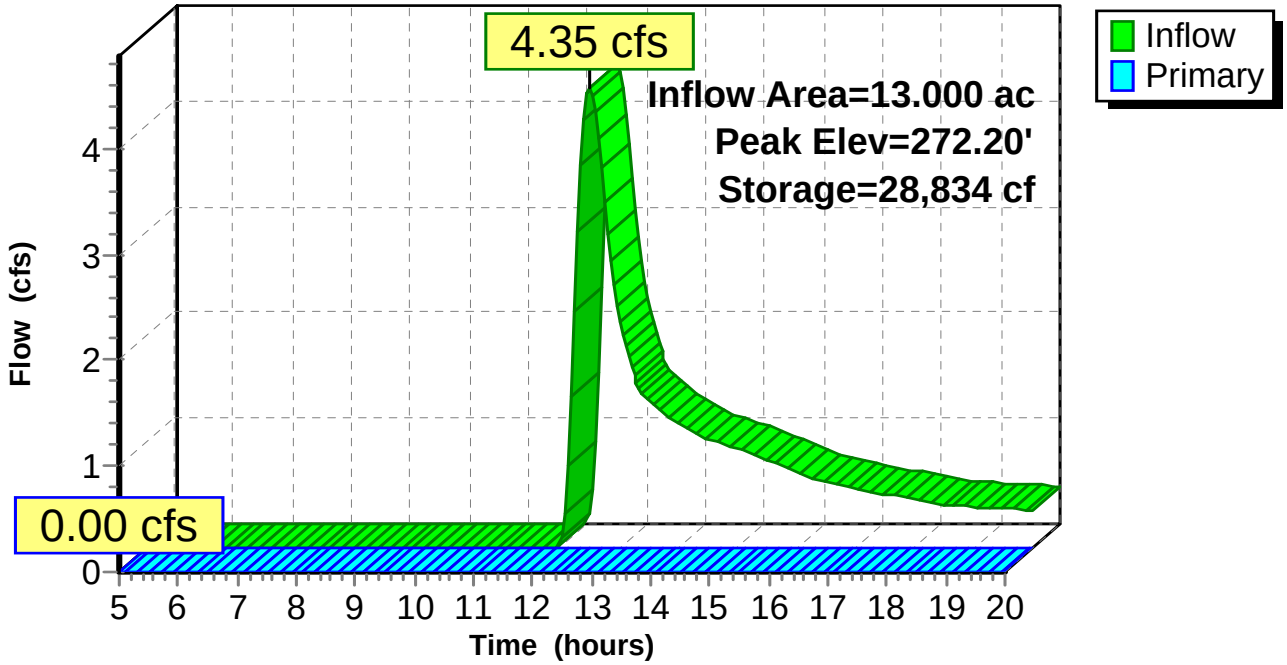
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
270.00	5,650	0	0
272.00	19,200	24,850	24,850
274.00	41,900	61,100	85,950
276.00	62,300	104,200	190,150
278.00	84,500	146,800	336,950

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**40.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=270.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: EX MB-2 Depression

Hydrograph

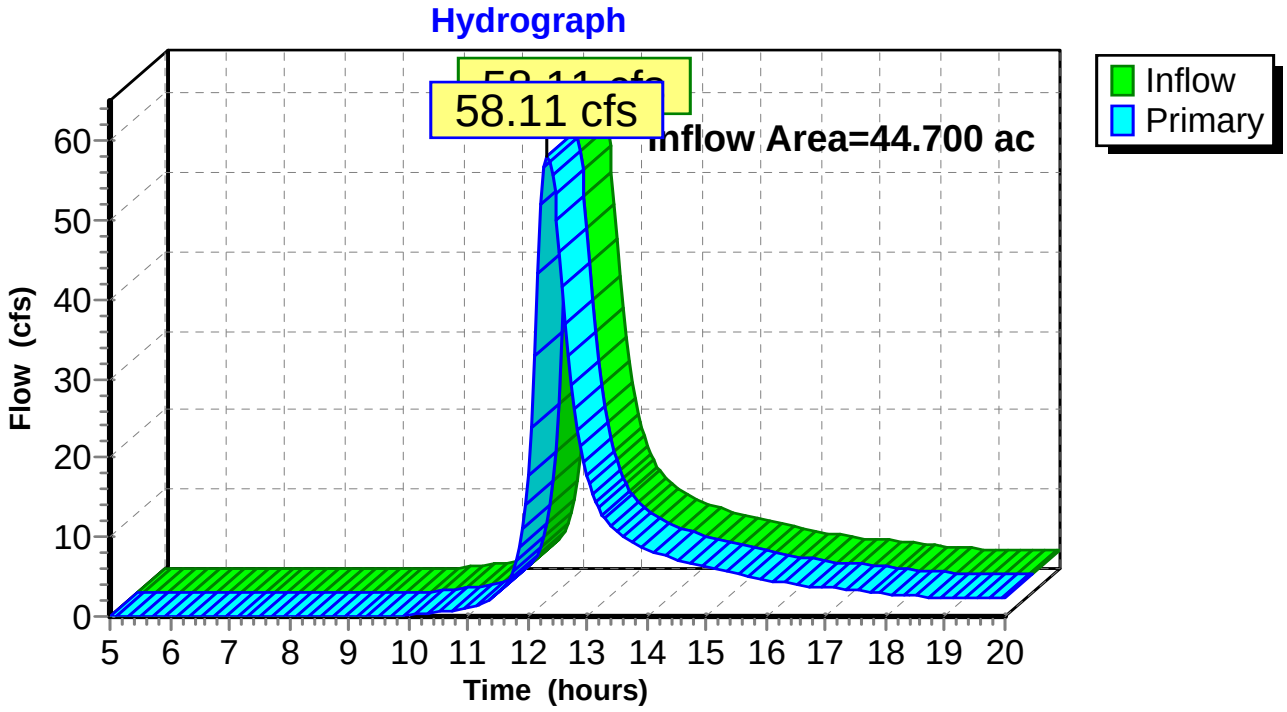


Summary for Link BB: BB

Inflow Area = 44.700 ac, 0.45% Impervious, Inflow Depth > 1.79" for 10-year event
Inflow = 58.11 cfs @ 12.31 hrs, Volume= 6.663 af
Primary = 58.11 cfs @ 12.31 hrs, Volume= 6.663 af, Atten= 0%, Lag= 0.0 min

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

Link BB: BB

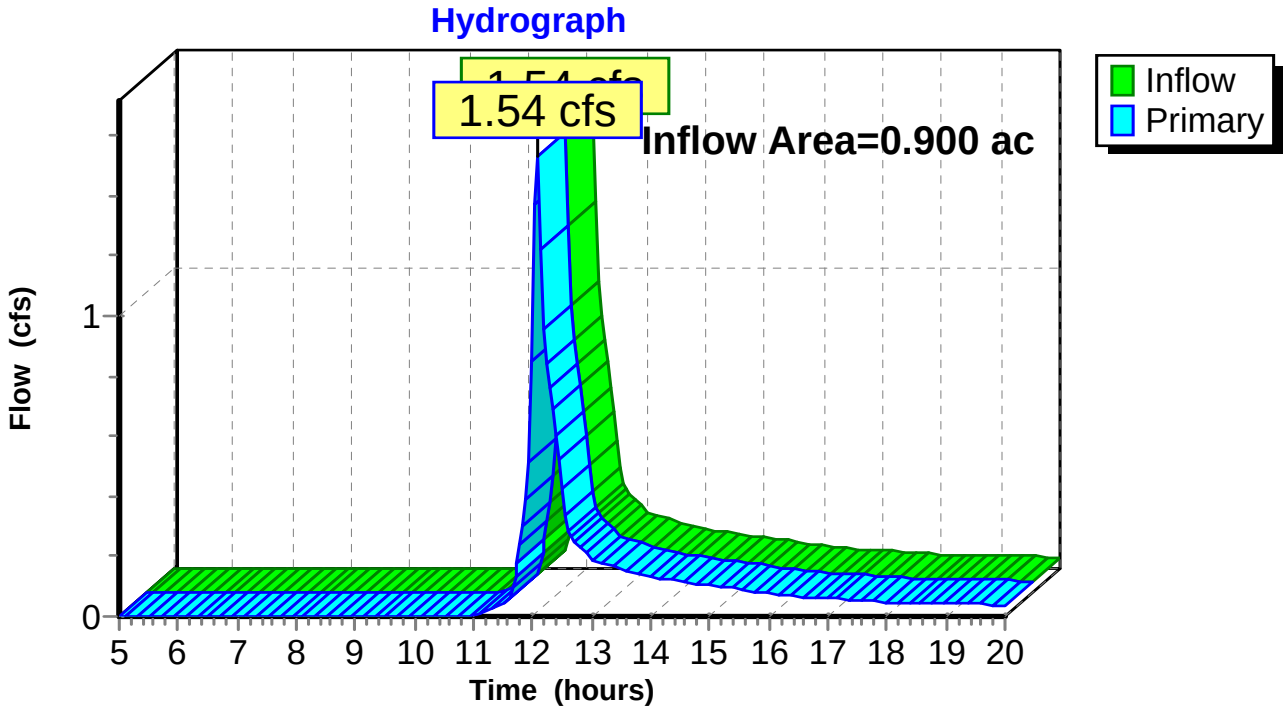


Summary for Link HS: HS

Inflow Area = 0.900 ac, 0.00% Impervious, Inflow Depth > 1.42" for 10-year event
Inflow = 1.54 cfs @ 12.09 hrs, Volume= 0.107 af
Primary = 1.54 cfs @ 12.09 hrs, Volume= 0.107 af, Atten= 0%, Lag= 0.0 min

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

Link HS: HS

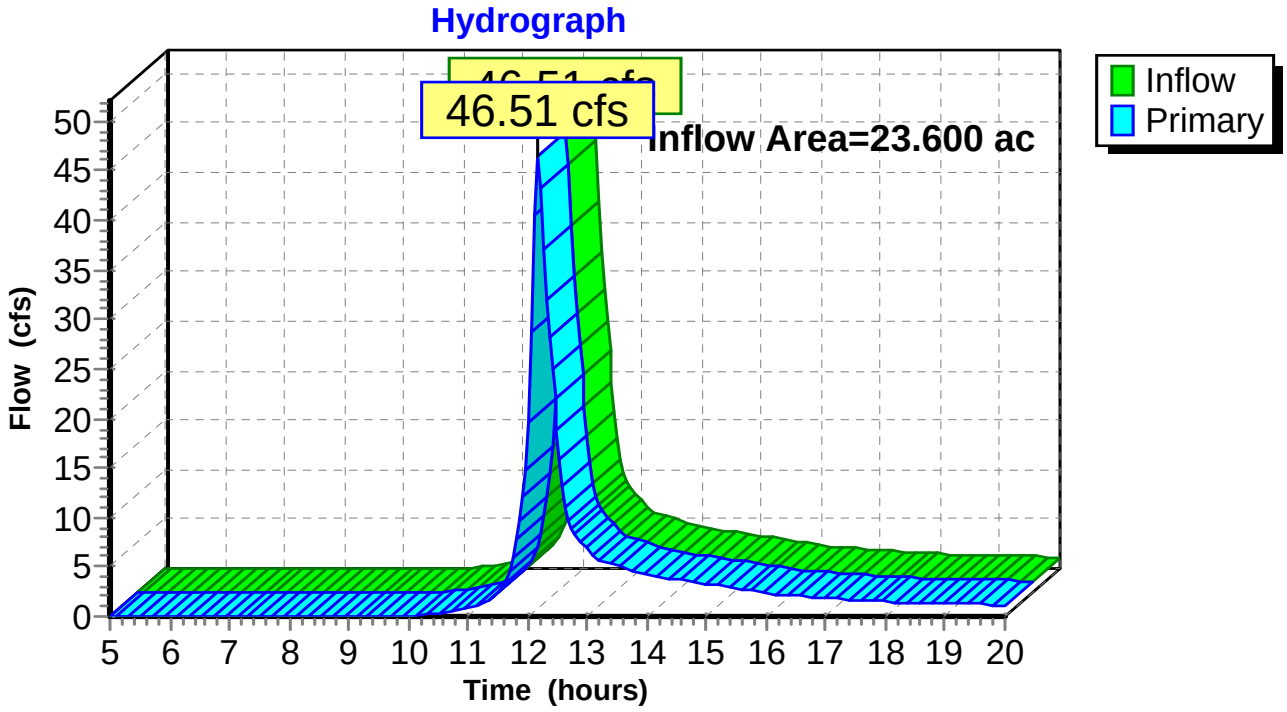


Summary for Link KC: KC

Inflow Area = 23.600 ac, 1.27% Impervious, Inflow Depth > 1.86" for 10-year event
Inflow = 46.51 cfs @ 12.16 hrs, Volume= 3.658 af
Primary = 46.51 cfs @ 12.16 hrs, Volume= 3.658 af, Atten= 0%, Lag= 0.0 min

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

Link KC: KC

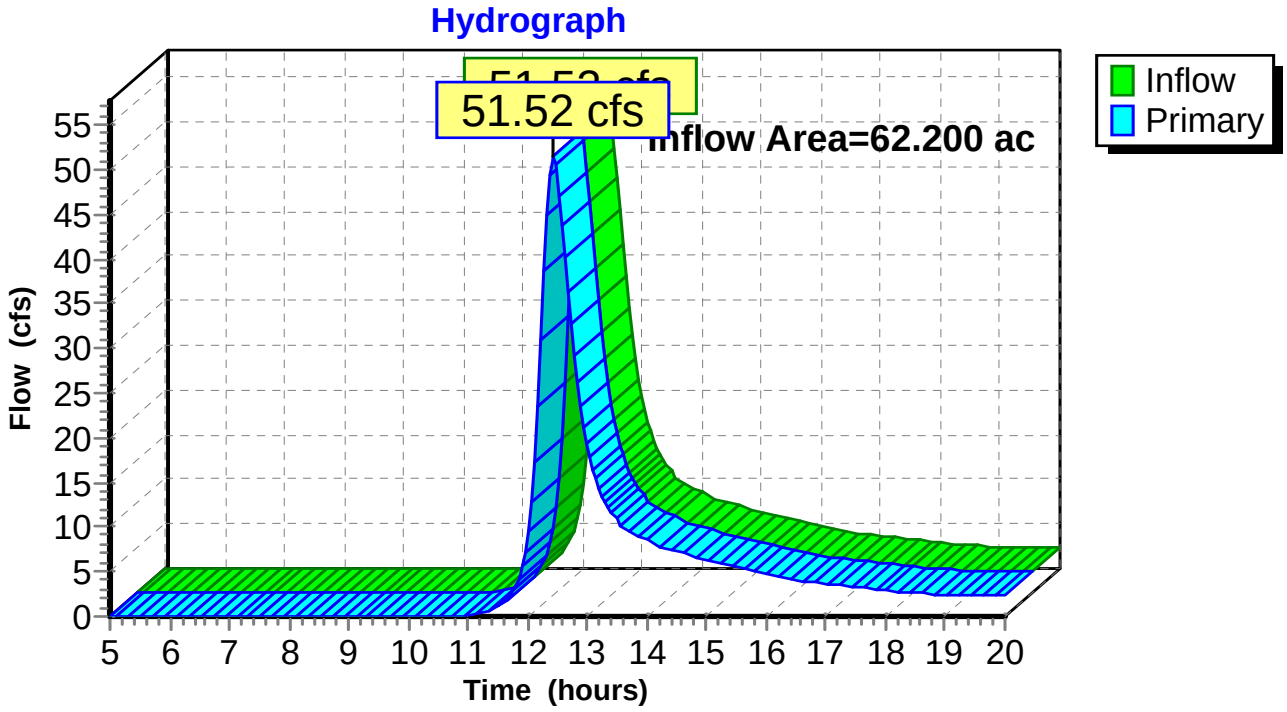


Summary for Link MB: MB

Inflow Area = 62.200 ac, 0.16% Impervious, Inflow Depth > 1.17" for 10-year event
Inflow = 51.52 cfs @ 12.43 hrs, Volume= 6.056 af
Primary = 51.52 cfs @ 12.43 hrs, Volume= 6.056 af, Atten= 0%, Lag= 0.0 min

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

Link MB: MB

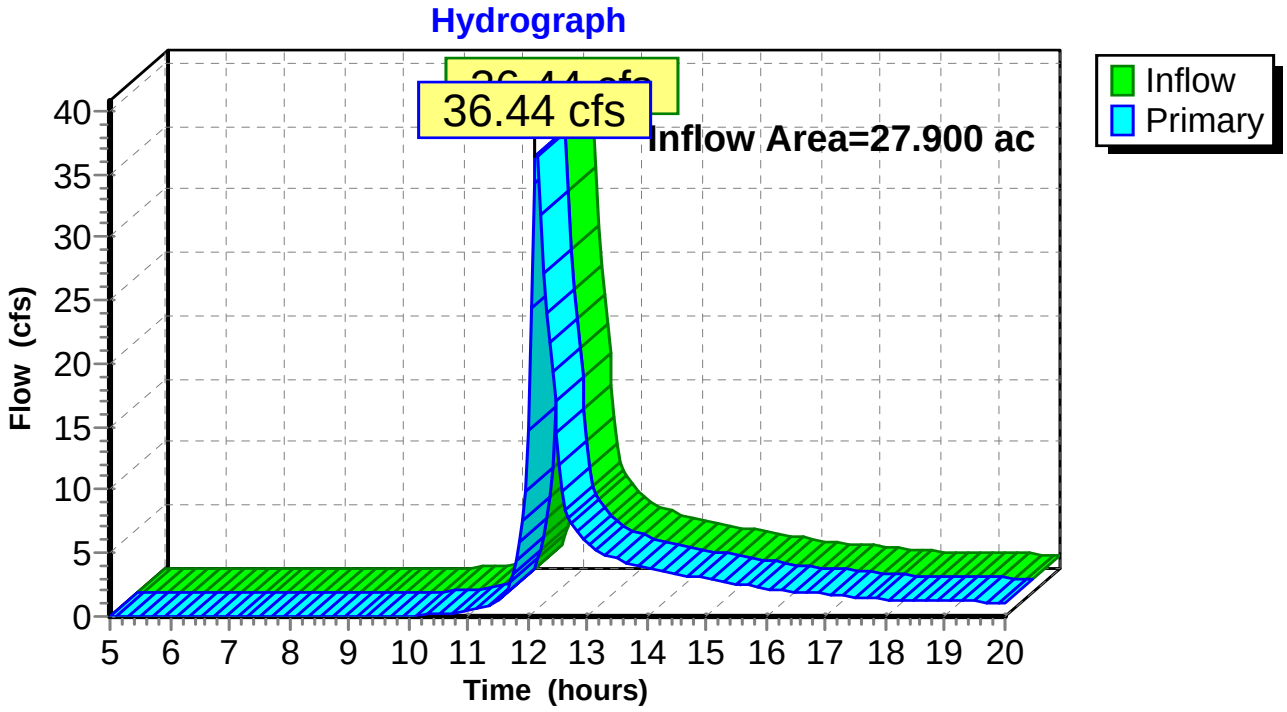


Summary for Link SB: SB

Inflow Area = 27.900 ac, 0.00% Impervious, Inflow Depth > 1.28" for 10-year event
Inflow = 36.44 cfs @ 12.14 hrs, Volume= 2.978 af
Primary = 36.44 cfs @ 12.14 hrs, Volume= 2.978 af, Atten= 0%, Lag= 0.0 min

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

Link SB: SB



25-Year Storm Event- Existing

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

Subcatchment BB-1: EX BB-1 Runoff Area=19.100 ac 0.52% Impervious Runoff Depth>3.01"
Flow Length=1,400' Slope=0.0100 '/' Tc=30.2 min CN=70 Runoff=41.07 cfs 4.793 af

Subcatchment BB-2: EX BB-2 Runoff Area=5.900 ac 1.69% Impervious Runoff Depth>3.03"
Flow Length=730' Slope=0.0110 '/' Tc=17.0 min CN=70 Runoff=16.15 cfs 1.488 af

Subcatchment BB-3: EX BB-3 Runoff Area=19.700 ac 0.00% Impervious Runoff Depth>2.19"
Flow Length=1,060' Tc=15.7 min CN=61 Runoff=39.37 cfs 3.602 af

Subcatchment HS-1: EX HS-1 Runoff Area=0.900 ac 0.00% Impervious Runoff Depth>2.20"
Flow Length=310' Tc=5.2 min CN=61 Runoff=2.46 cfs 0.165 af

Subcatchment KC-1: EX KC-1 Runoff Area=23.600 ac 1.27% Impervious Runoff Depth>2.75"
Flow Length=530' Slope=0.0190 '/' Tc=10.5 min CN=67 Runoff=69.53 cfs 5.403 af

Subcatchment MB-1: EX MB-1 Runoff Area=49.200 ac 0.00% Impervious Runoff Depth>2.27"
Flow Length=1,630' Tc=27.9 min CN=62 Runoff=81.45 cfs 9.312 af

Subcatchment MB-2: EX MB-2 Runoff Area=13.000 ac 0.77% Impervious Runoff Depth>1.12"
Flow Length=540' Tc=25.2 min CN=48 Runoff=9.53 cfs 1.219 af

Subcatchment SB-1: EX SB-1 Runoff Area=7.600 ac 0.00% Impervious Runoff Depth>2.38"
Flow Length=490' Tc=7.4 min CN=63 Runoff=21.22 cfs 1.508 af

Subcatchment SB-2: EX SB-2 Runoff Area=14.900 ac 0.00% Impervious Runoff Depth>1.44"
Flow Length=480' Slope=0.0250 '/' Tc=8.7 min CN=52 Runoff=21.94 cfs 1.792 af

Subcatchment SB-3: EX SB-3 Runoff Area=5.400 ac 0.00% Impervious Runoff Depth>3.03"
Flow Length=300' Slope=0.0100 '/' Tc=9.8 min CN=70 Runoff=17.93 cfs 1.365 af

Pond 1P: EX MB-2 Depression Peak Elev=273.11' Storage=53,030 cf Inflow=9.53 cfs 1.219 af
Outflow=0.00 cfs 0.000 af

Link BB: BB Inflow=87.90 cfs 9.883 af
Primary=87.90 cfs 9.883 af

Link HS: HS Inflow=2.46 cfs 0.165 af
Primary=2.46 cfs 0.165 af

Link KC: KC Inflow=69.53 cfs 5.403 af
Primary=69.53 cfs 5.403 af

Link MB: MB Inflow=81.45 cfs 9.312 af
Primary=81.45 cfs 9.312 af

Link SB: SB Inflow=60.06 cfs 4.665 af
Primary=60.06 cfs 4.665 af

Total Runoff Area = 159.300 ac Runoff Volume = 30.646 af Average Runoff Depth = 2.31"
99.62% Pervious = 158.700 ac 0.38% Impervious = 0.600 ac

Summary for Subcatchment BB-1: EX BB-1

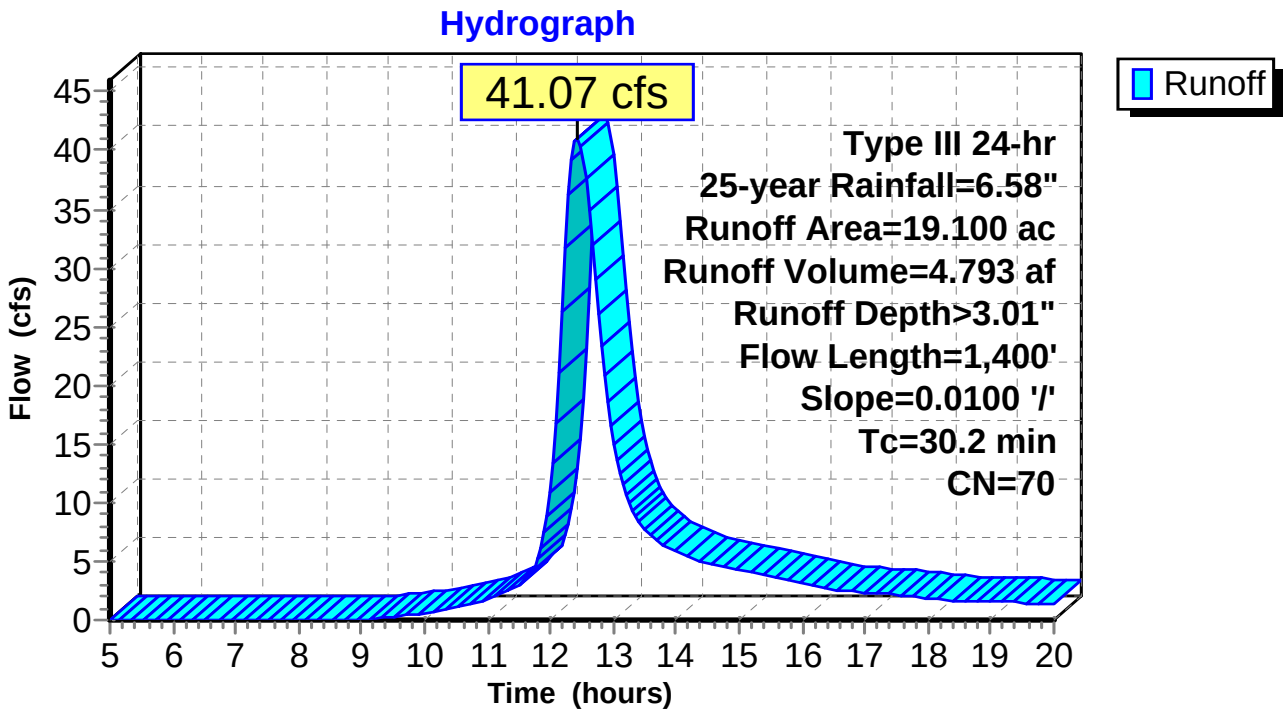
Runoff = 41.07 cfs @ 12.43 hrs, Volume= 4.793 af, Depth> 3.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
1.500	72	Dirt roads, HSG A
17.200	70	Row crops, contoured, Poor, HSG A
0.300	30	Woods, Good, HSG A
19.100	70	Weighted Average
19.000		99.48% Pervious Area
0.100		0.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0100	0.27		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
24.1	1,300	0.0100	0.90		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
30.2	1,400	Total			

Subcatchment BB-1: EX BB-1



Summary for Subcatchment BB-2: EX BB-2

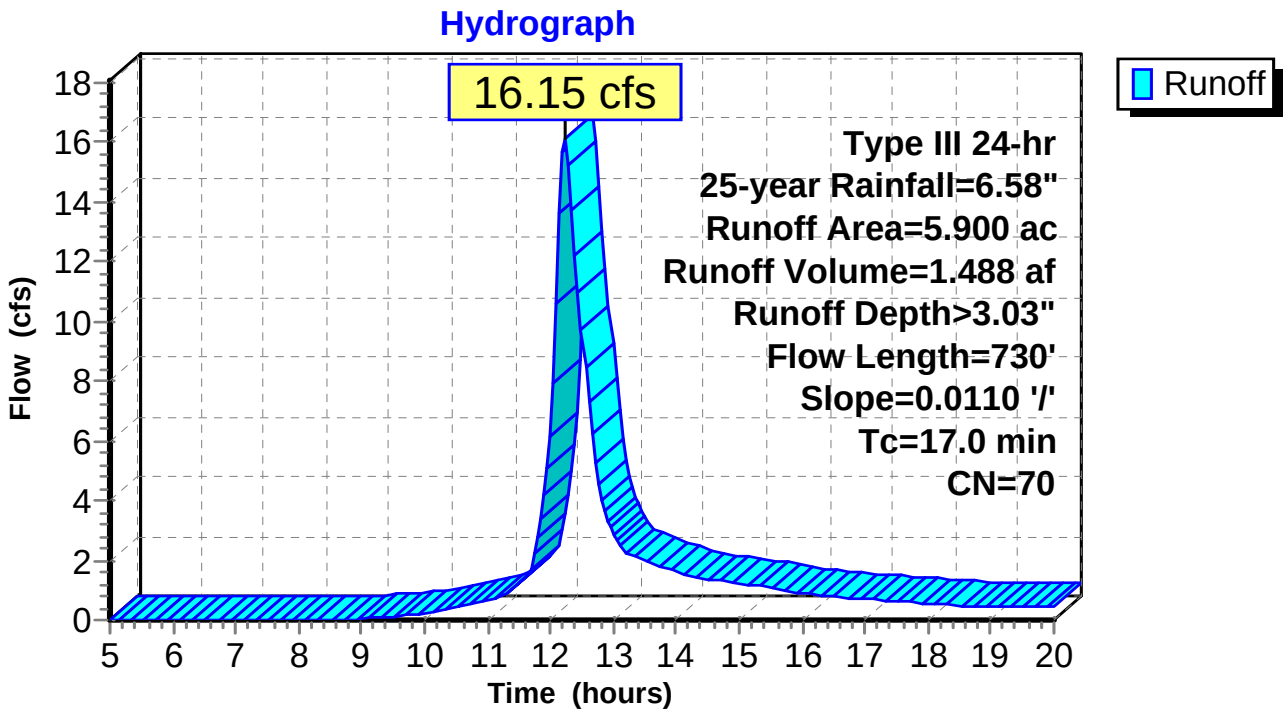
Runoff = 16.15 cfs @ 12.24 hrs, Volume= 1.488 af, Depth> 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.400	72	Dirt roads, HSG A
5.300	70	Row crops, contoured, Poor, HSG A
0.100	30	Woods, Good, HSG A
5.900	70	Weighted Average
5.800		98.31% Pervious Area
0.100		1.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	100	0.0110	0.28		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
11.1	630	0.0110	0.94		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
17.0	730	Total			

Subcatchment BB-2: EX BB-2



Summary for Subcatchment BB-3: EX BB-3

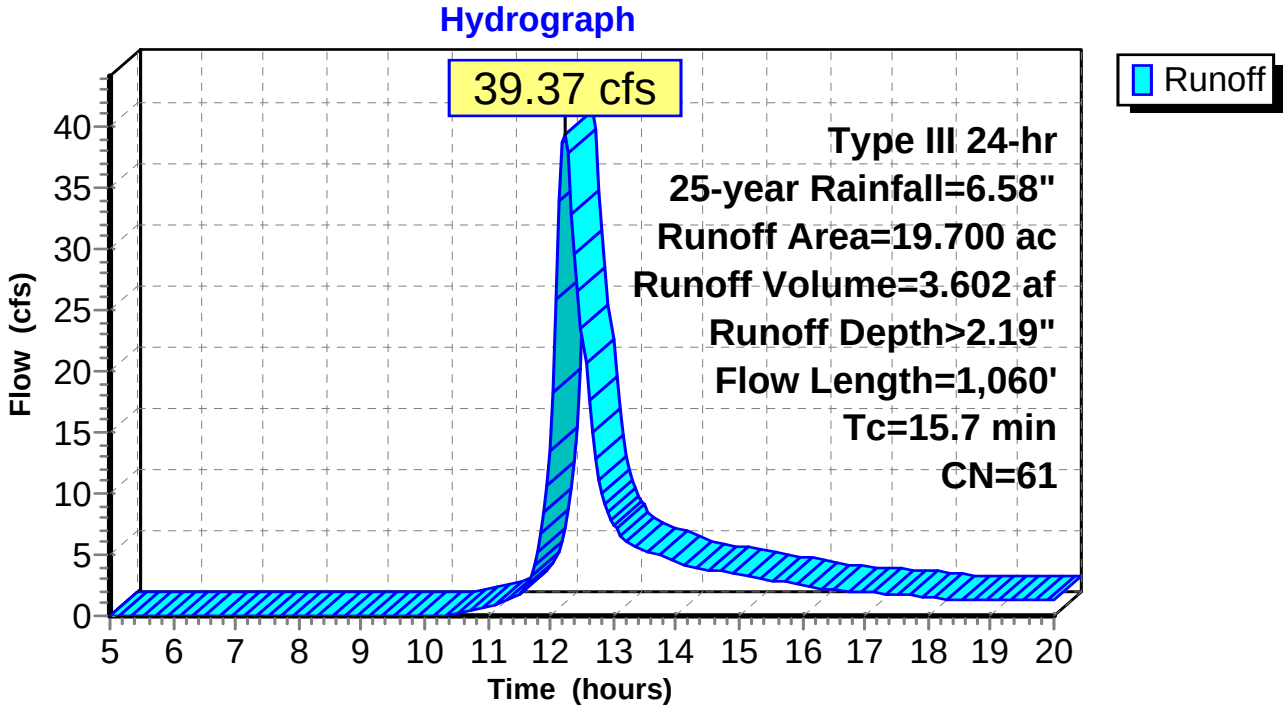
Runoff = 39.37 cfs @ 12.23 hrs, Volume= 3.602 af, Depth> 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
1.300	72	Dirt roads, HSG A
13.700	70	Row crops, contoured, Poor, HSG A
4.700	30	Woods, Good, HSG A
19.700	61	Weighted Average
19.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	100	0.0190	0.35		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
10.7	800	0.0190	1.24		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
0.3	160	0.0440	9.20	92.01	**Channel Flow,** Area= 10.0 sf Perim= 12.0' r= 0.83' n= 0.030 Earth, grassed & winding
15.7	1,060	Total			

Subcatchment BB-3: EX BB-3



Summary for Subcatchment HS-1: EX HS-1

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

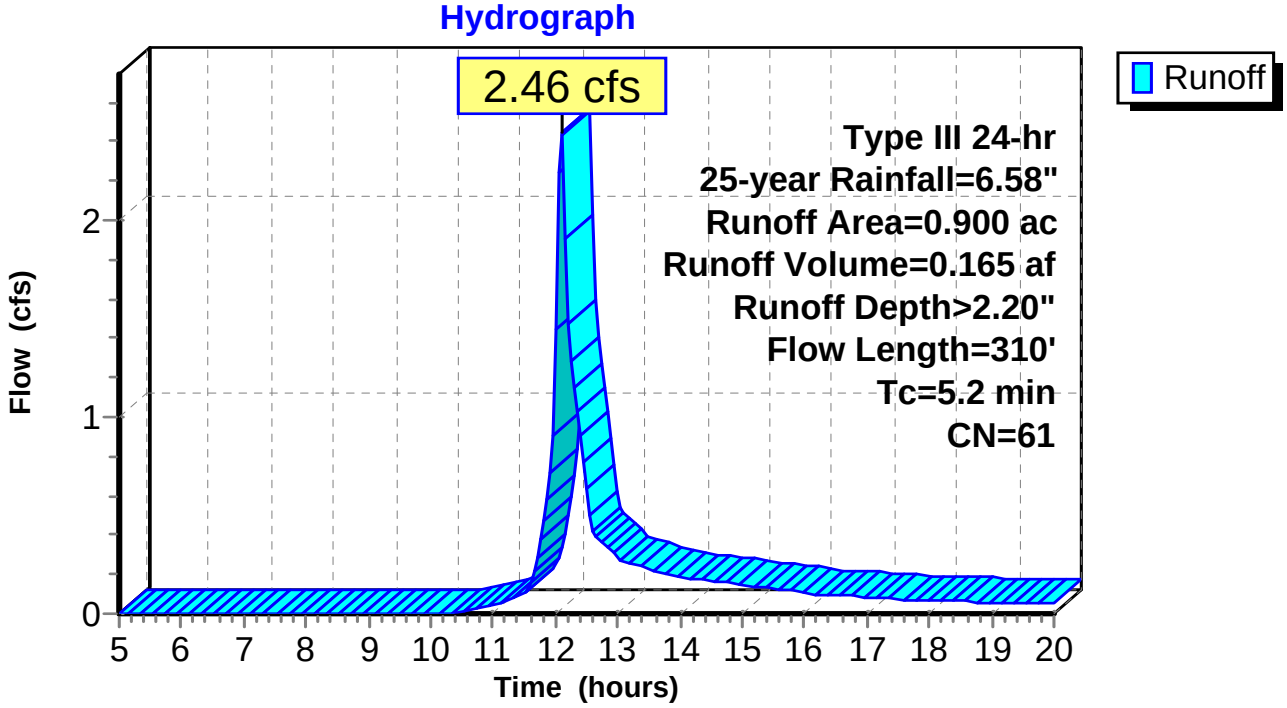
Runoff = 2.46 cfs @ 12.09 hrs, Volume= 0.165 af, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.100	72	Dirt roads, HSG A
0.600	70	Row crops, contoured, Poor, HSG A
0.200	30	Woods, Good, HSG A
0.900	61	Weighted Average
0.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	100	0.0550	0.54		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
1.4	180	0.0550	2.11		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
0.7	30	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.2	310	Total			

Subcatchment HS-1: EX HS-1



Summary for Subcatchment KC-1: EX KC-1

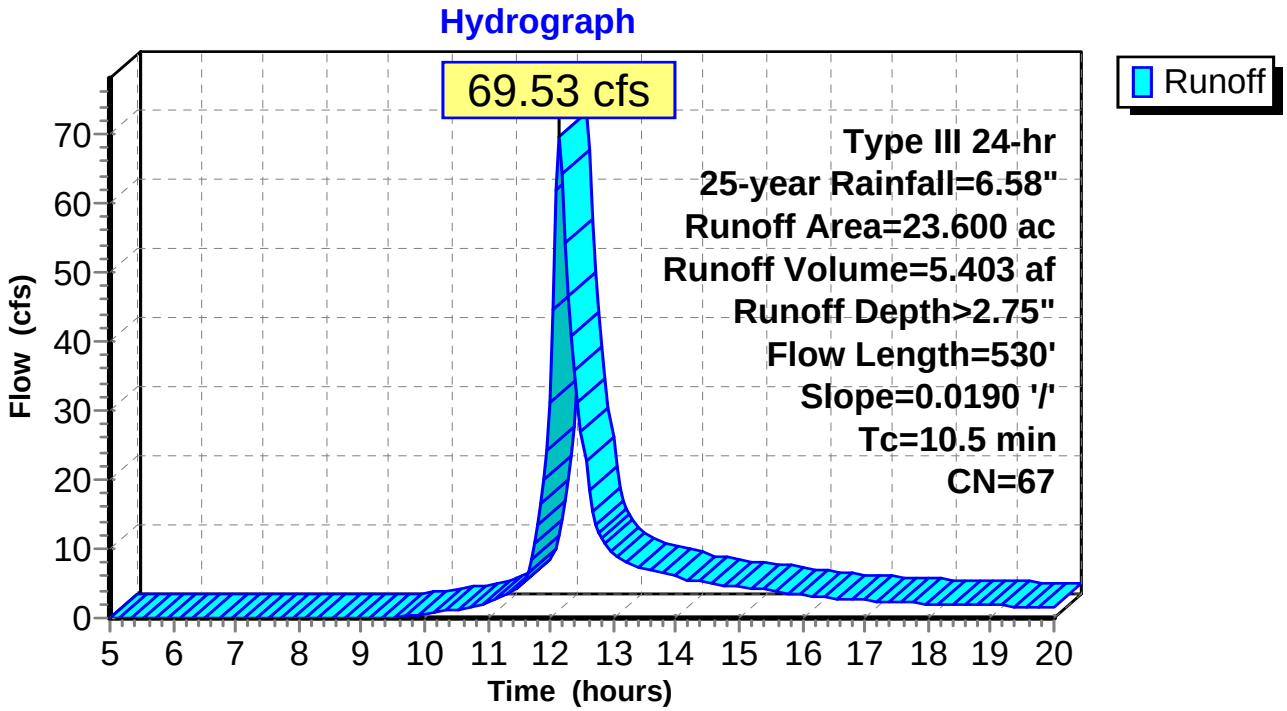
Runoff = 69.53 cfs @ 12.15 hrs, Volume= 5.403 af, Depth> 2.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.300	98	Roofs, HSG A
1.800	72	Dirt roads, HSG A
19.400	70	Row crops, contoured, Poor, HSG A
2.100	30	Woods, Good, HSG A
23.600	67	Weighted Average
23.300		98.73% Pervious Area
0.300		1.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	100	0.0190	0.35		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
5.8	430	0.0190	1.24		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
10.5	530	Total			

Subcatchment KC-1: EX KC-1



Summary for Subcatchment MB-1: EX MB-1

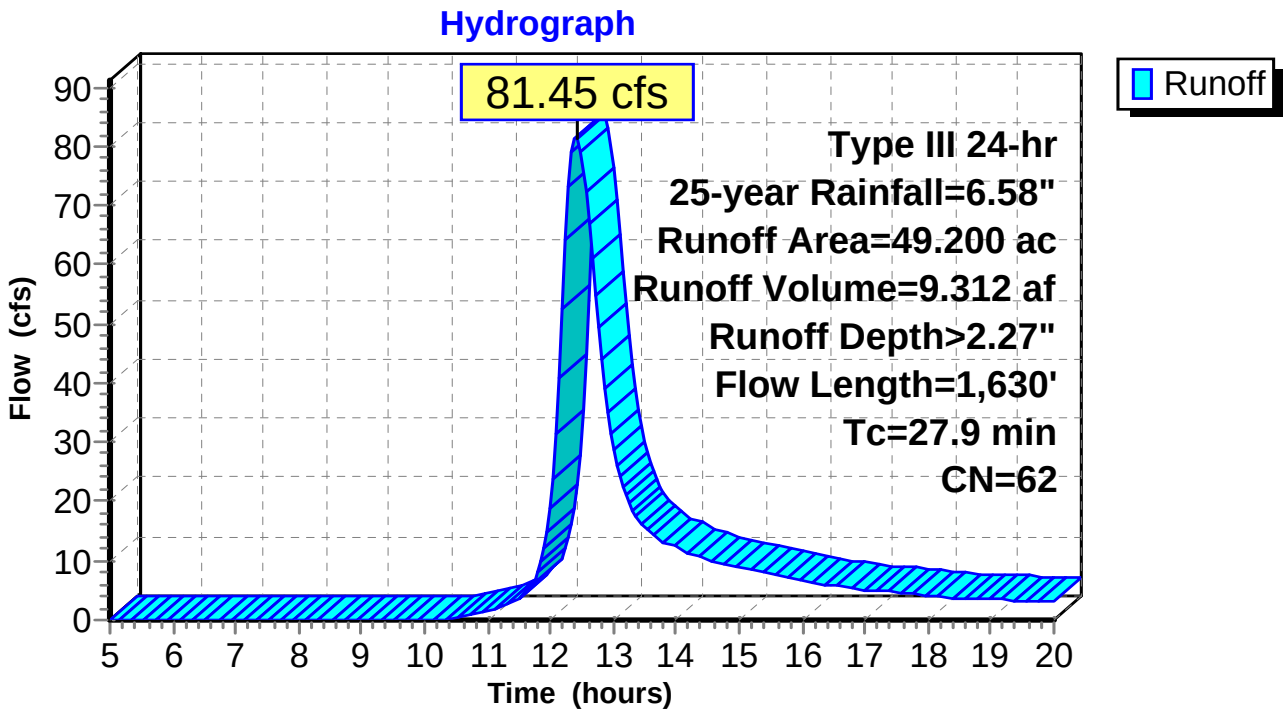
Runoff = 81.45 cfs @ 12.41 hrs, Volume= 9.312 af, Depth> 2.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
3.000	72	Dirt roads, HSG A
36.100	70	Row crops, contoured, Poor, HSG A
10.100	30	Woods, Good, HSG A
49.200	62	Weighted Average
49.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	100	0.0190	0.35		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
10.7	800	0.0190	1.24		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
12.5	730	0.0380	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.9	1,630	Total			

Subcatchment MB-1: EX MB-1



Summary for Subcatchment MB-2: EX MB-2

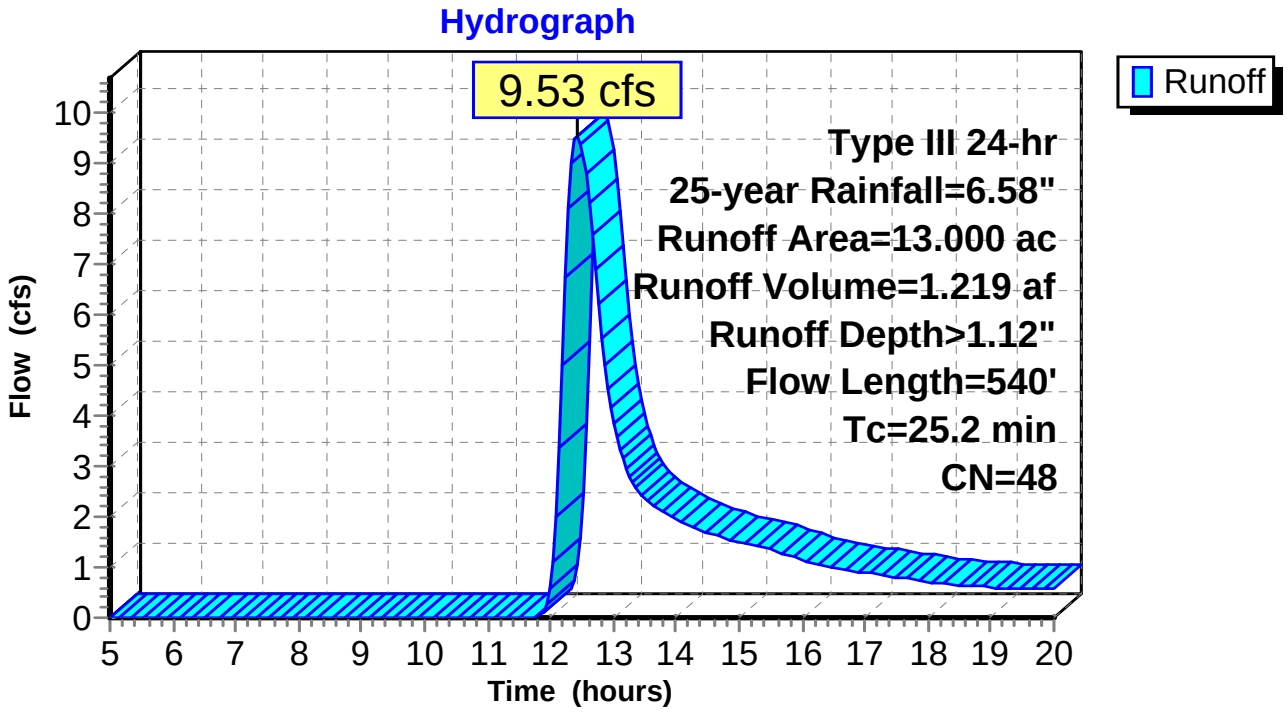
Runoff = 9.53 cfs @ 12.43 hrs, Volume= 1.219 af, Depth> 1.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.600	72	Dirt roads, HSG A
5.200	70	Row crops, contoured, Poor, HSG A
7.100	30	Woods, Good, HSG A
13.000	48	Weighted Average
12.900		99.23% Pervious Area
0.100		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
7.7	230	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	260	0.0610	1.23		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.2	540	Total			

Subcatchment MB-2: EX MB-2



Summary for Subcatchment SB-1: EX SB-1

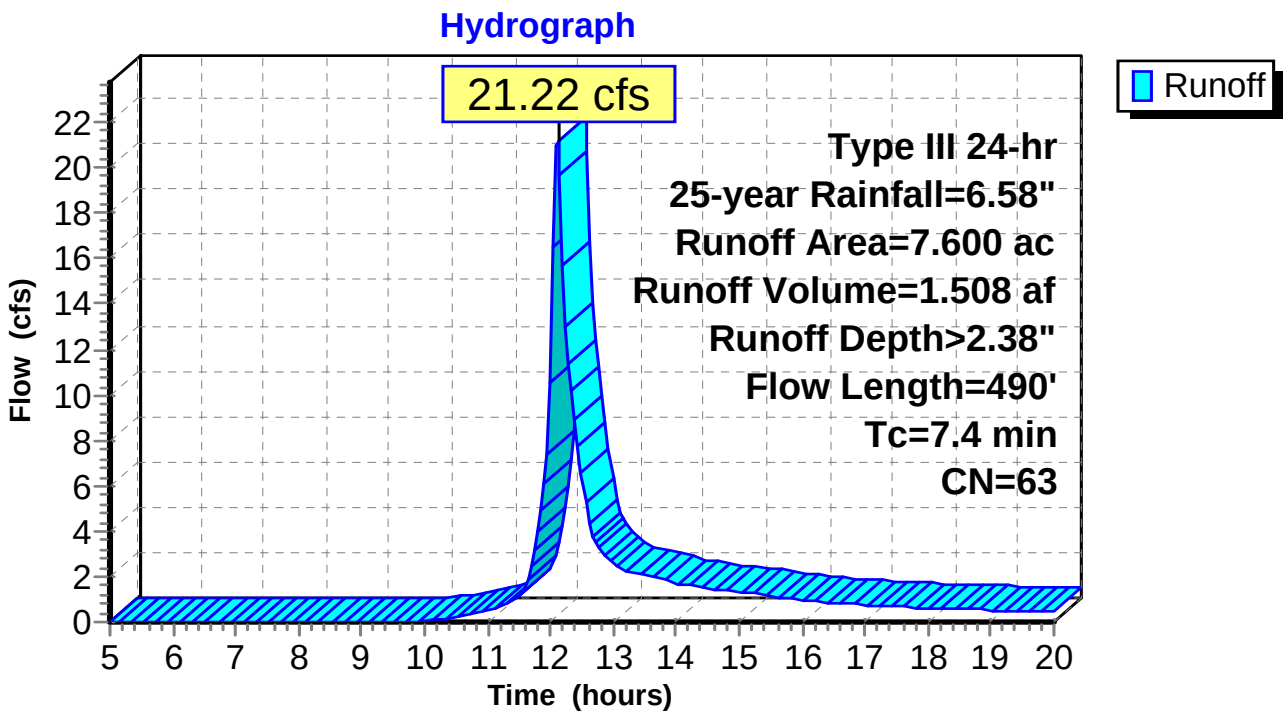
Runoff = 21.22 cfs @ 12.11 hrs, Volume= 1.508 af, Depth> 2.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.500	72	Dirt roads, HSG A
5.800	70	Row crops, contoured, Poor, HSG A
1.300	30	Woods, Good, HSG A
7.600	63	Weighted Average
7.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.0200	0.36		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
1.3	250	0.1180	3.09		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
1.5	140	0.0280	1.51		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
7.4	490	Total			

Subcatchment SB-1: EX SB-1



Summary for Subcatchment SB-2: EX SB-2

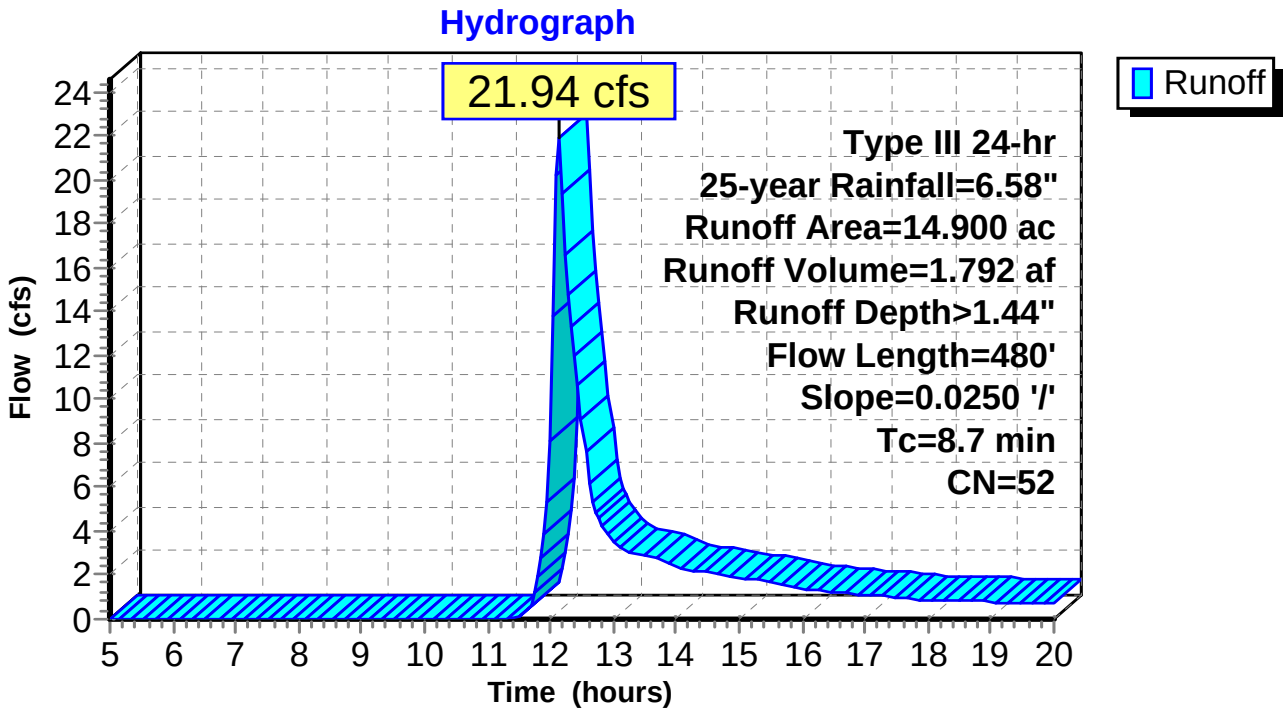
Runoff = 21.94 cfs @ 12.15 hrs, Volume= 1.792 af, Depth> 1.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
1.100	72	Dirt roads, HSG A
7.000	70	Row crops, contoured, Poor, HSG A
6.800	30	Woods, Good, HSG A
14.900	52	Weighted Average
14.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	100	0.0250	0.39		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
4.5	380	0.0250	1.42		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
8.7	480	Total			

Subcatchment SB-2: EX SB-2



Summary for Subcatchment SB-3: EX SB-3

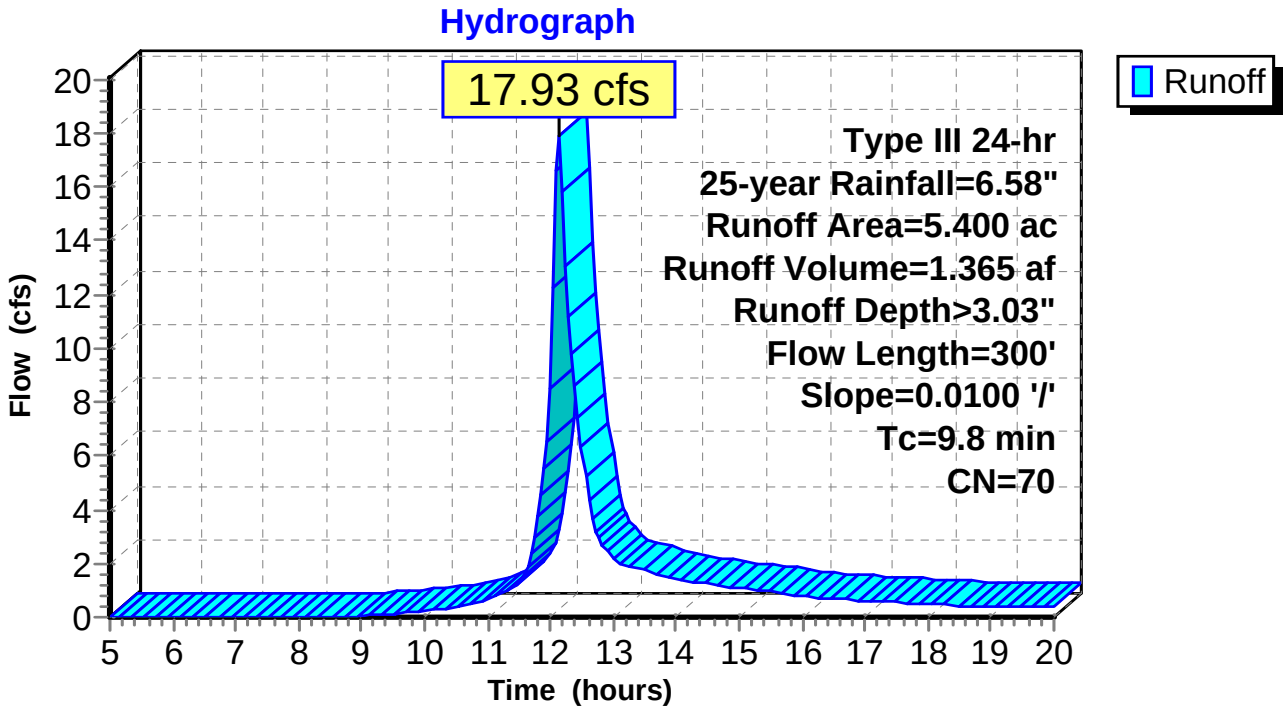
Runoff = 17.93 cfs @ 12.14 hrs, Volume= 1.365 af, Depth> 3.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.600	72	Dirt roads, HSG A
4.800	70	Row crops, contoured, Poor, HSG A
5.400	70	Weighted Average
5.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0100	0.27		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
3.7	200	0.0100	0.90		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
9.8	300	Total			

Subcatchment SB-3: EX SB-3



Summary for Pond 1P: EX MB-2 Depression

Inflow Area = 13.000 ac, 0.77% Impervious, Inflow Depth > 1.12" for 25-year event
Inflow = 9.53 cfs @ 12.43 hrs, Volume= 1.219 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.11' @ 20.00 hrs Surf.Area= 31,754 sf Storage= 53,030 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

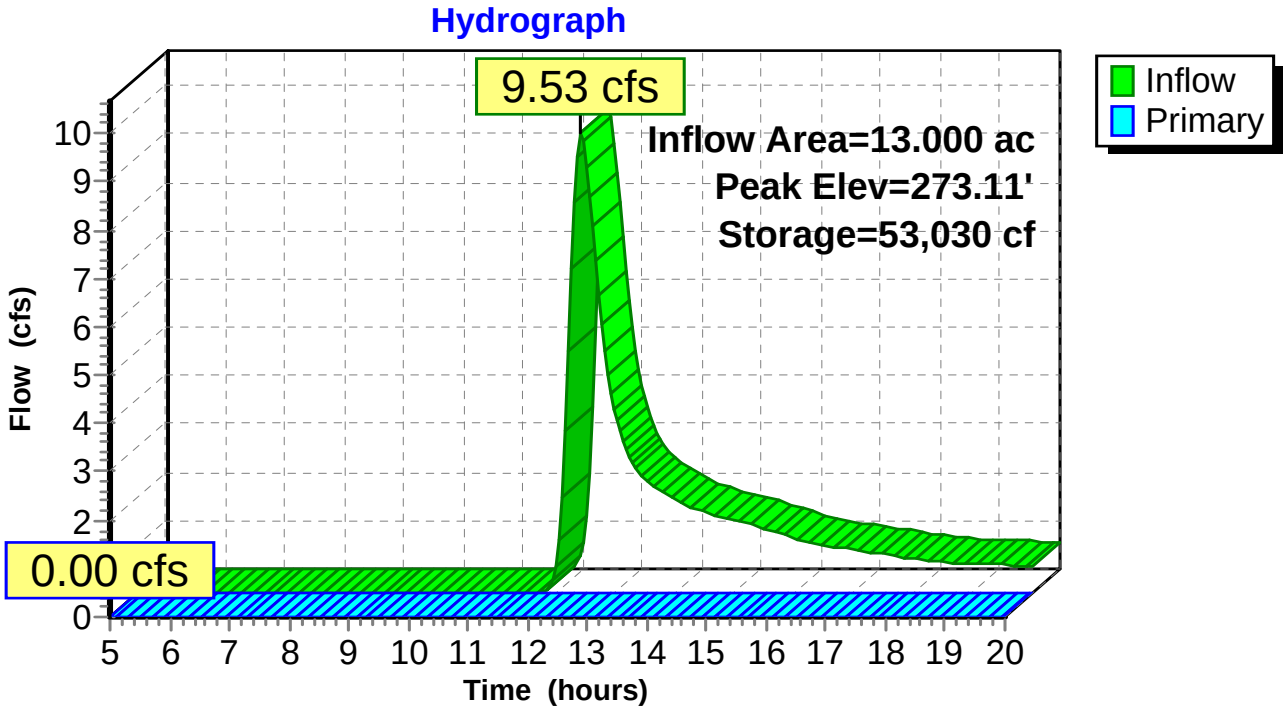
Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	336,950 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
270.00	5,650	0	0
272.00	19,200	24,850	24,850
274.00	41,900	61,100	85,950
276.00	62,300	104,200	190,150
278.00	84,500	146,800	336,950

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**40.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=270.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: EX MB-2 Depression

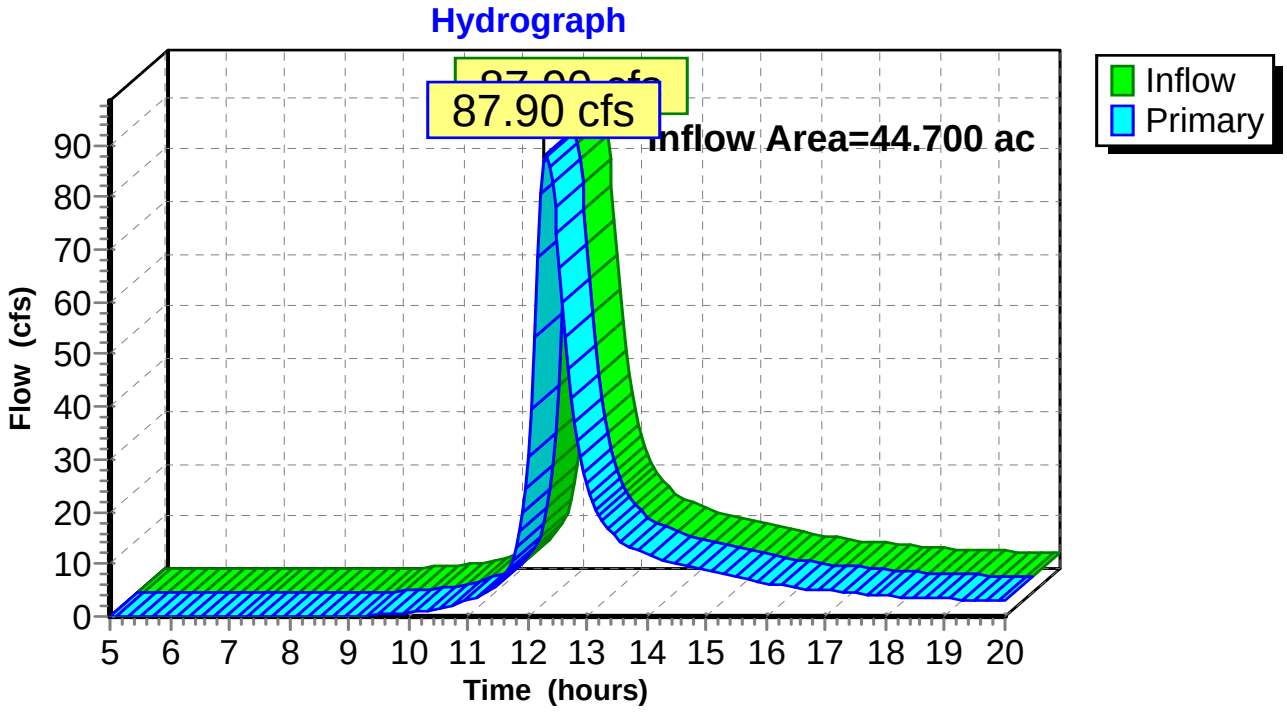


Summary for Link BB: BB

Inflow Area = 44.700 ac, 0.45% Impervious, Inflow Depth > 2.65" for 25-year event
Inflow = 87.90 cfs @ 12.29 hrs, Volume= 9.883 af
Primary = 87.90 cfs @ 12.29 hrs, Volume= 9.883 af, Atten= 0%, Lag= 0.0 min

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

Link BB: BB

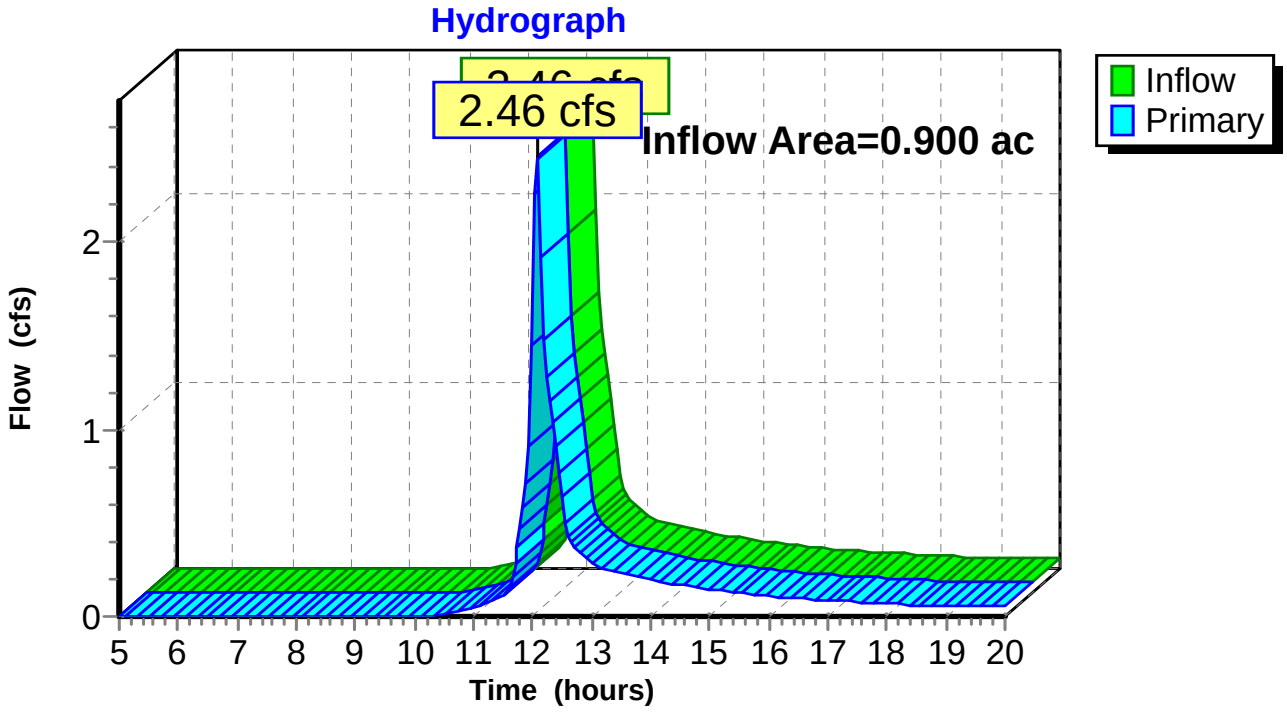


Summary for Link HS: HS

Inflow Area = 0.900 ac, 0.00% Impervious, Inflow Depth > 2.20" for 25-year event
Inflow = 2.46 cfs @ 12.09 hrs, Volume= 0.165 af
Primary = 2.46 cfs @ 12.09 hrs, Volume= 0.165 af, Atten= 0%, Lag= 0.0 min

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

Link HS: HS

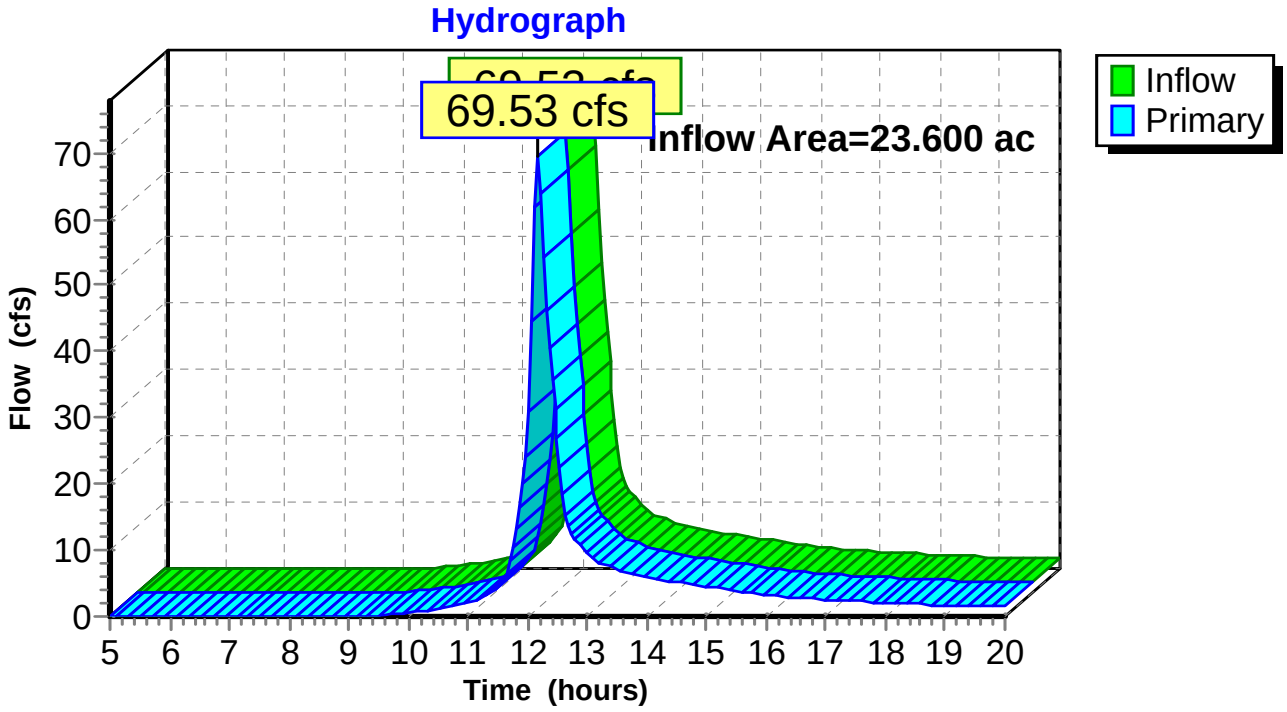


Summary for Link KC: KC

Inflow Area = 23.600 ac, 1.27% Impervious, Inflow Depth > 2.75" for 25-year event
Inflow = 69.53 cfs @ 12.15 hrs, Volume= 5.403 af
Primary = 69.53 cfs @ 12.15 hrs, Volume= 5.403 af, Atten= 0%, Lag= 0.0 min

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

Link KC: KC

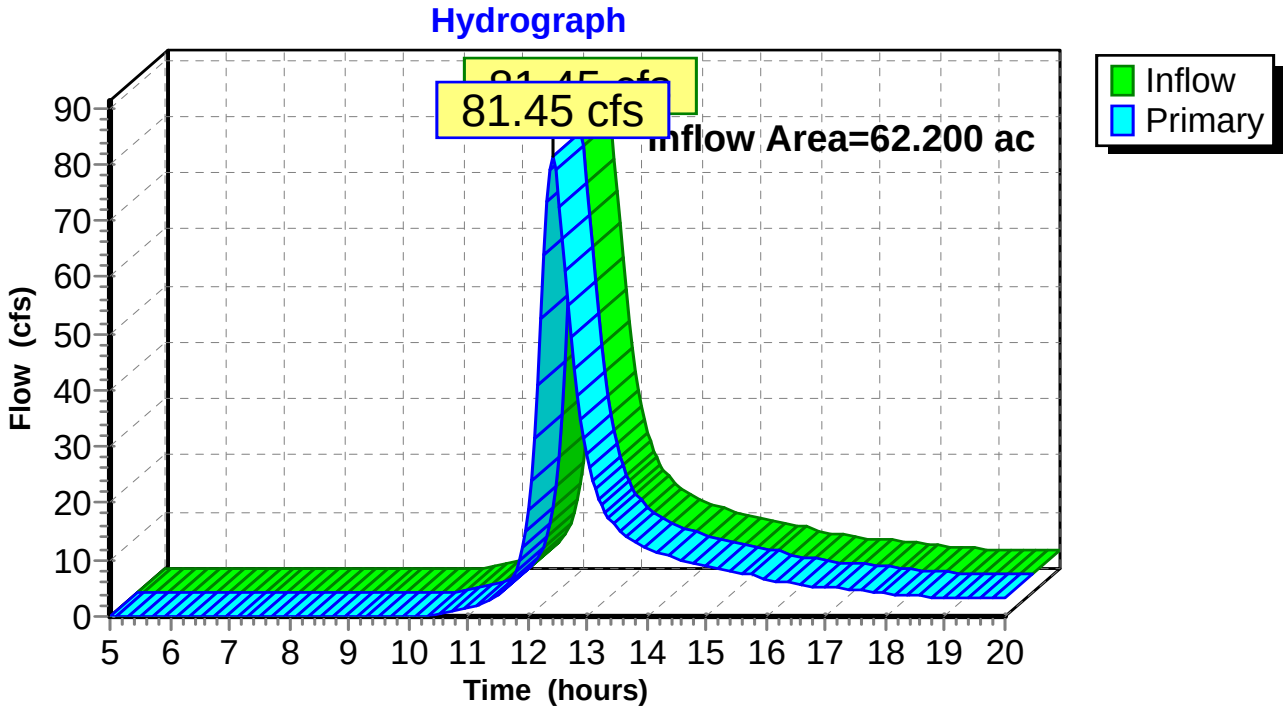


Summary for Link MB: MB

Inflow Area = 62.200 ac, 0.16% Impervious, Inflow Depth > 1.80" for 25-year event
Inflow = 81.45 cfs @ 12.41 hrs, Volume= 9.312 af
Primary = 81.45 cfs @ 12.41 hrs, Volume= 9.312 af, Atten= 0%, Lag= 0.0 min

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

Link MB: MB

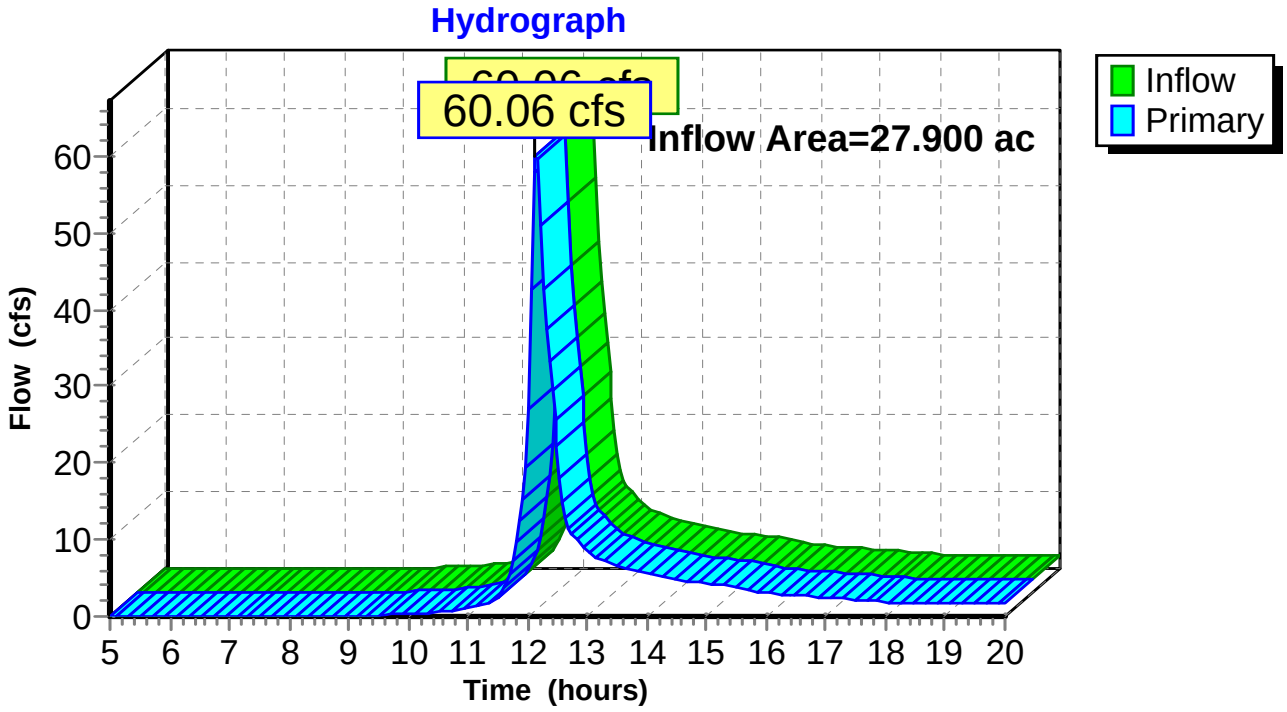


Summary for Link SB: SB

Inflow Area = 27.900 ac, 0.00% Impervious, Inflow Depth > 2.01" for 25-year event
Inflow = 60.06 cfs @ 12.13 hrs, Volume= 4.665 af
Primary = 60.06 cfs @ 12.13 hrs, Volume= 4.665 af, Atten= 0%, Lag= 0.0 min

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

Link SB: SB



100-Year Storm Event – Existing

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

Subcatchment BB-1: EX BB-1 Runoff Area=19.100 ac 0.52% Impervious Runoff Depth>4.56"
Flow Length=1,400' Slope=0.0100 '/' Tc=30.2 min CN=70 Runoff=62.07 cfs 7.260 af

Subcatchment BB-2: EX BB-2 Runoff Area=5.900 ac 1.69% Impervious Runoff Depth>4.58"
Flow Length=730' Slope=0.0110 '/' Tc=17.0 min CN=70 Runoff=24.40 cfs 2.253 af

Subcatchment BB-3: EX BB-3 Runoff Area=19.700 ac 0.00% Impervious Runoff Depth>3.55"
Flow Length=1,060' Tc=15.7 min CN=61 Runoff=65.20 cfs 5.829 af

Subcatchment HS-1: EX HS-1 Runoff Area=0.900 ac 0.00% Impervious Runoff Depth>3.56"
Flow Length=310' Tc=5.2 min CN=61 Runoff=4.03 cfs 0.267 af

Subcatchment KC-1: EX KC-1 Runoff Area=23.600 ac 1.27% Impervious Runoff Depth>4.24"
Flow Length=530' Slope=0.0190 '/' Tc=10.5 min CN=67 Runoff=107.62 cfs 8.347 af

Subcatchment MB-1: EX MB-1 Runoff Area=49.200 ac 0.00% Impervious Runoff Depth>3.65"
Flow Length=1,630' Tc=27.9 min CN=62 Runoff=132.51 cfs 14.953 af

Subcatchment MB-2: EX MB-2 Runoff Area=13.000 ac 0.77% Impervious Runoff Depth>2.11"
Flow Length=540' Tc=25.2 min CN=48 Runoff=19.89 cfs 2.288 af

Subcatchment SB-1: EX SB-1 Runoff Area=7.600 ac 0.00% Impervious Runoff Depth>3.79"
Flow Length=490' Tc=7.4 min CN=63 Runoff=34.14 cfs 2.400 af

Subcatchment SB-2: EX SB-2 Runoff Area=14.900 ac 0.00% Impervious Runoff Depth>2.56"
Flow Length=480' Slope=0.0250 '/' Tc=8.7 min CN=52 Runoff=41.52 cfs 3.177 af

Subcatchment SB-3: EX SB-3 Runoff Area=5.400 ac 0.00% Impervious Runoff Depth>4.59"
Flow Length=300' Slope=0.0100 '/' Tc=9.8 min CN=70 Runoff=27.04 cfs 2.067 af

Pond 1P: EX MB-2 Depression Peak Elev=274.31' Storage=99,599 cf Inflow=19.89 cfs 2.288 af
Outflow=0.00 cfs 0.000 af

Link BB: BB Inflow=138.43 cfs 15.342 af
Primary=138.43 cfs 15.342 af

Link HS: HS Inflow=4.03 cfs 0.267 af
Primary=4.03 cfs 0.267 af

Link KC: KC Inflow=107.62 cfs 8.347 af
Primary=107.62 cfs 8.347 af

Link MB: MB Inflow=132.51 cfs 14.953 af
Primary=132.51 cfs 14.953 af

Link SB: SB Inflow=101.16 cfs 7.644 af
Primary=101.16 cfs 7.644 af

Total Runoff Area = 159.300 ac Runoff Volume = 48.842 af Average Runoff Depth = 3.68"
99.62% Pervious = 158.700 ac 0.38% Impervious = 0.600 ac

Summary for Subcatchment BB-1: EX BB-1

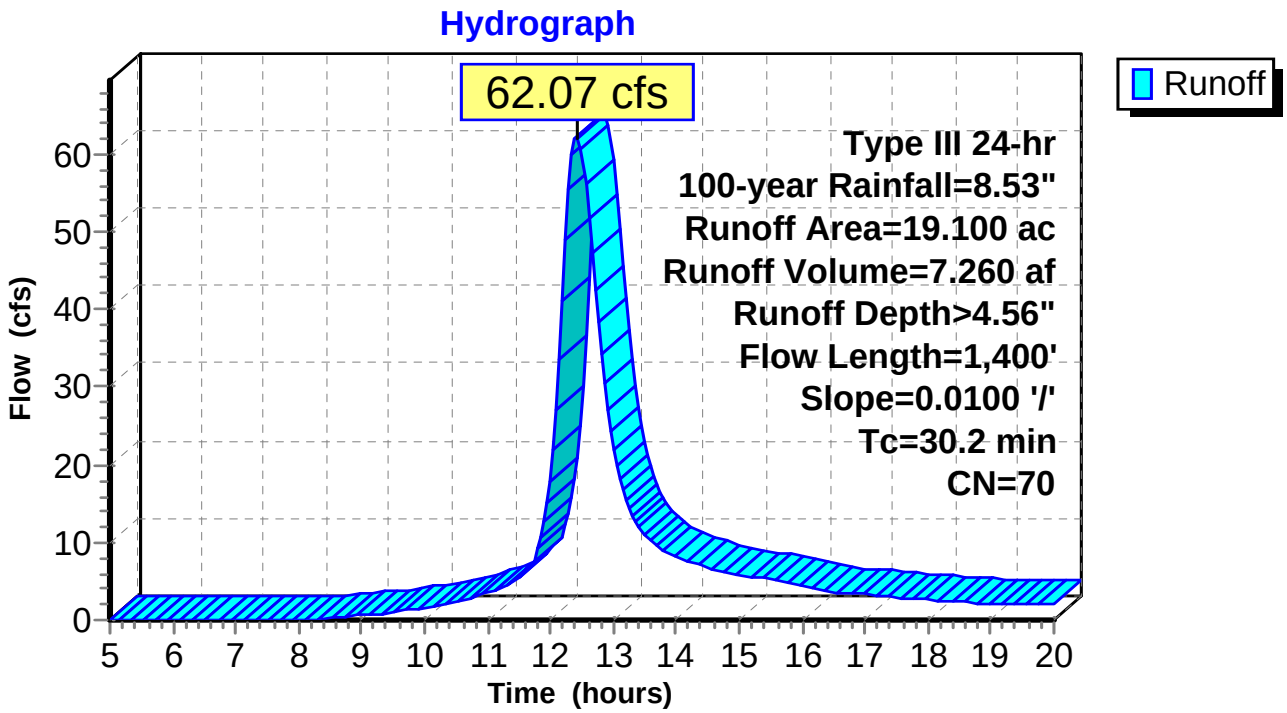
Runoff = 62.07 cfs @ 12.42 hrs, Volume= 7.260 af, Depth> 4.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
1.500	72	Dirt roads, HSG A
17.200	70	Row crops, contoured, Poor, HSG A
0.300	30	Woods, Good, HSG A
19.100	70	Weighted Average
19.000		99.48% Pervious Area
0.100		0.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0100	0.27		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
24.1	1,300	0.0100	0.90		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
30.2	1,400	Total			

Subcatchment BB-1: EX BB-1



Summary for Subcatchment BB-2: EX BB-2

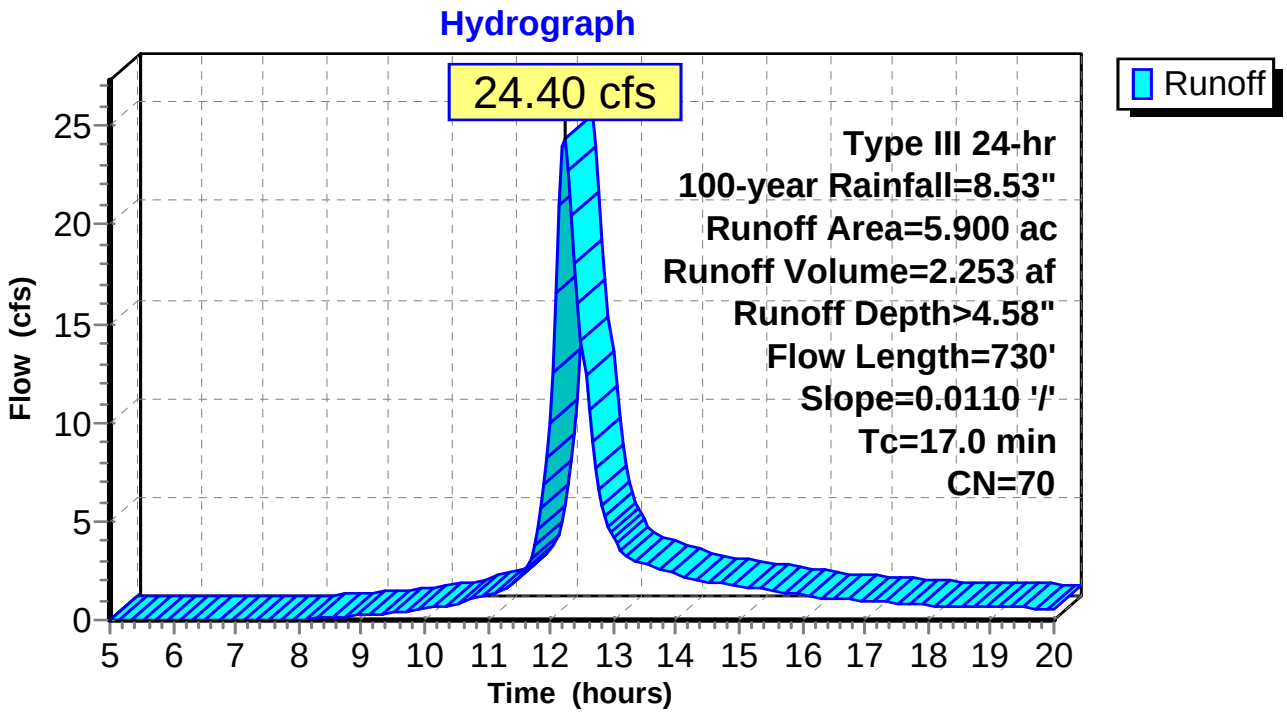
Runoff = 24.40 cfs @ 12.24 hrs, Volume= 2.253 af, Depth> 4.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.400	72	Dirt roads, HSG A
5.300	70	Row crops, contoured, Poor, HSG A
0.100	30	Woods, Good, HSG A
5.900	70	Weighted Average
5.800		98.31% Pervious Area
0.100		1.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	100	0.0110	0.28		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
11.1	630	0.0110	0.94		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
17.0	730	Total			

Subcatchment BB-2: EX BB-2



Summary for Subcatchment BB-3: EX BB-3

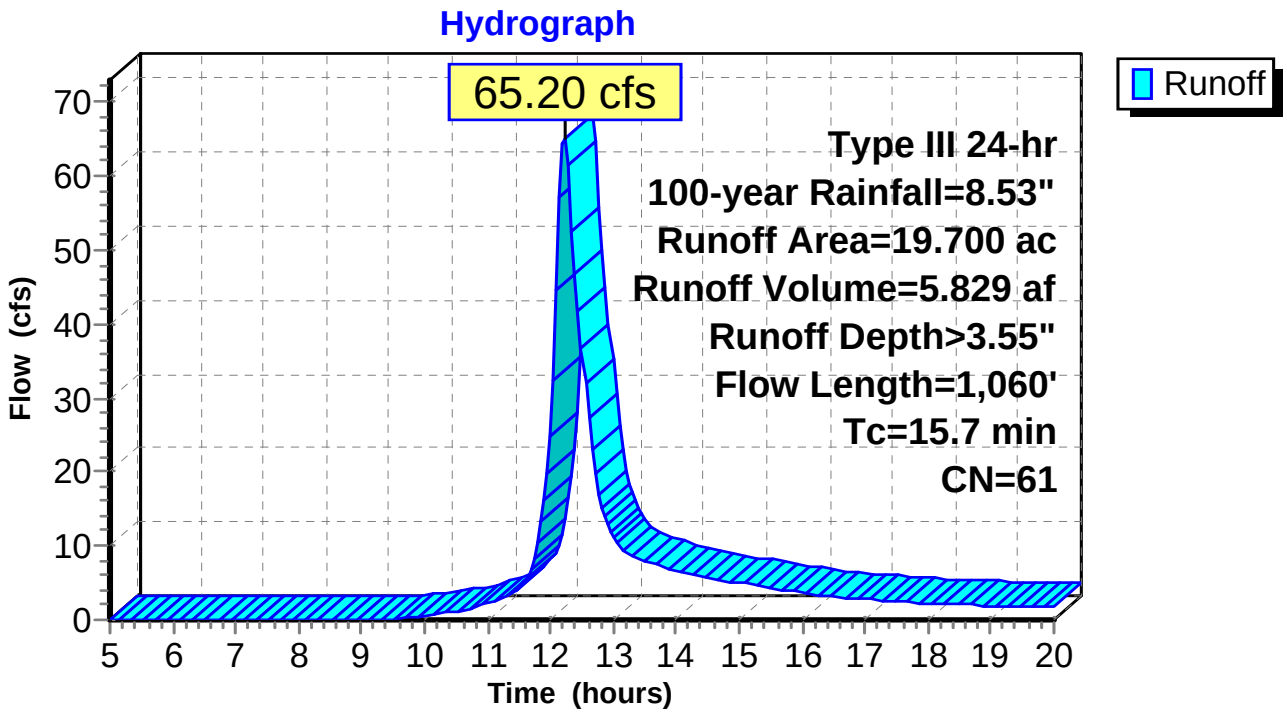
Runoff = 65.20 cfs @ 12.22 hrs, Volume= 5.829 af, Depth> 3.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
1.300	72	Dirt roads, HSG A
13.700	70	Row crops, contoured, Poor, HSG A
4.700	30	Woods, Good, HSG A
19.700	61	Weighted Average
19.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	100	0.0190	0.35		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
10.7	800	0.0190	1.24		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
0.3	160	0.0440	9.20	92.01	**Channel Flow,** Area= 10.0 sf Perim= 12.0' r= 0.83' n= 0.030 Earth, grassed & winding
15.7	1,060	Total			

Subcatchment BB-3: EX BB-3



Summary for Subcatchment HS-1: EX HS-1

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

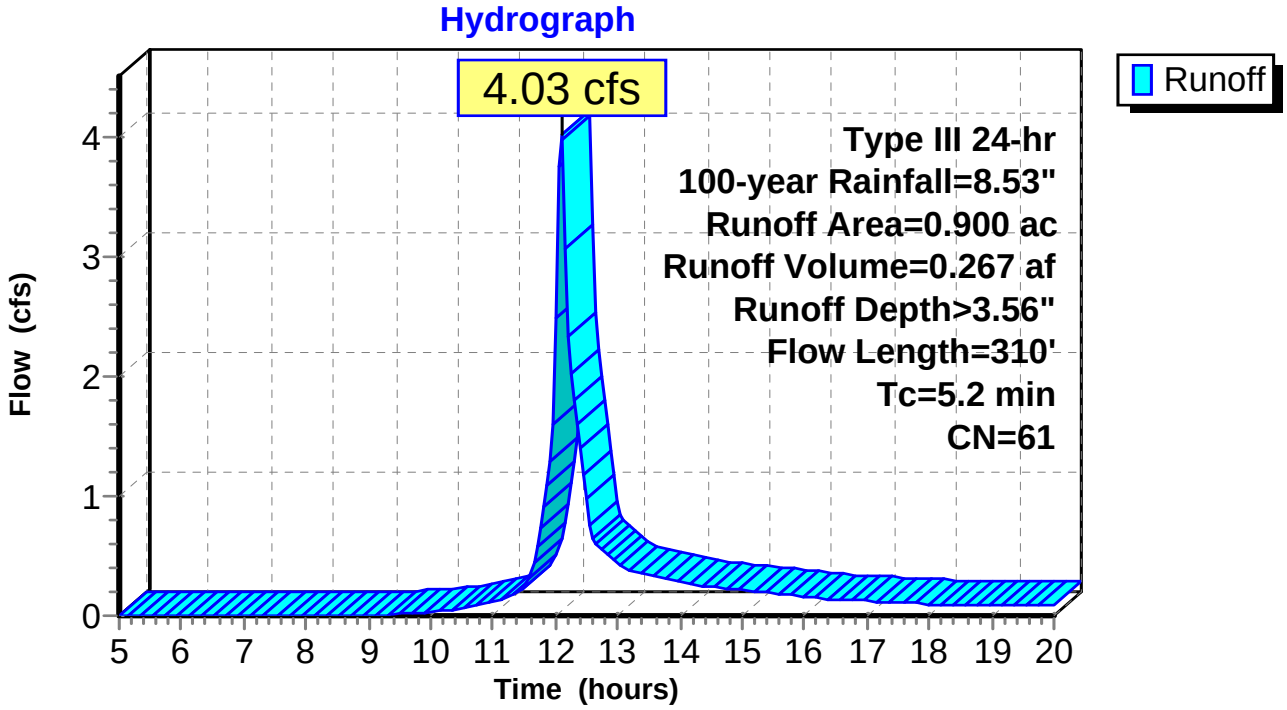
Runoff = 4.03 cfs @ 12.08 hrs, Volume= 0.267 af, Depth> 3.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.100	72	Dirt roads, HSG A
0.600	70	Row crops, contoured, Poor, HSG A
0.200	30	Woods, Good, HSG A
0.900	61	Weighted Average
0.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.1	100	0.0550	0.54		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
1.4	180	0.0550	2.11		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
0.7	30	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
5.2	310	Total			

Subcatchment HS-1: EX HS-1



Summary for Subcatchment KC-1: EX KC-1

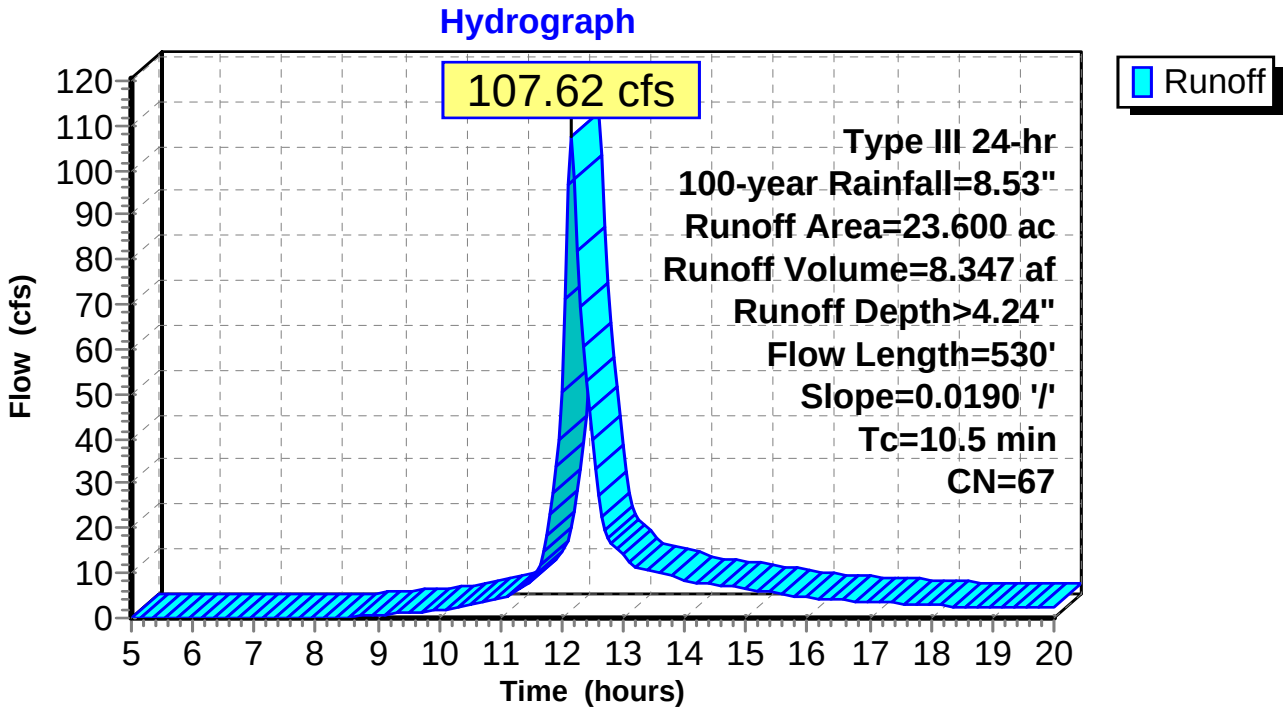
Runoff = 107.62 cfs @ 12.15 hrs, Volume= 8.347 af, Depth> 4.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.300	98	Roofs, HSG A
1.800	72	Dirt roads, HSG A
19.400	70	Row crops, contoured, Poor, HSG A
2.100	30	Woods, Good, HSG A
23.600	67	Weighted Average
23.300		98.73% Pervious Area
0.300		1.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	100	0.0190	0.35		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
5.8	430	0.0190	1.24		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
10.5	530	Total			

Subcatchment KC-1: EX KC-1



Summary for Subcatchment MB-1: EX MB-1

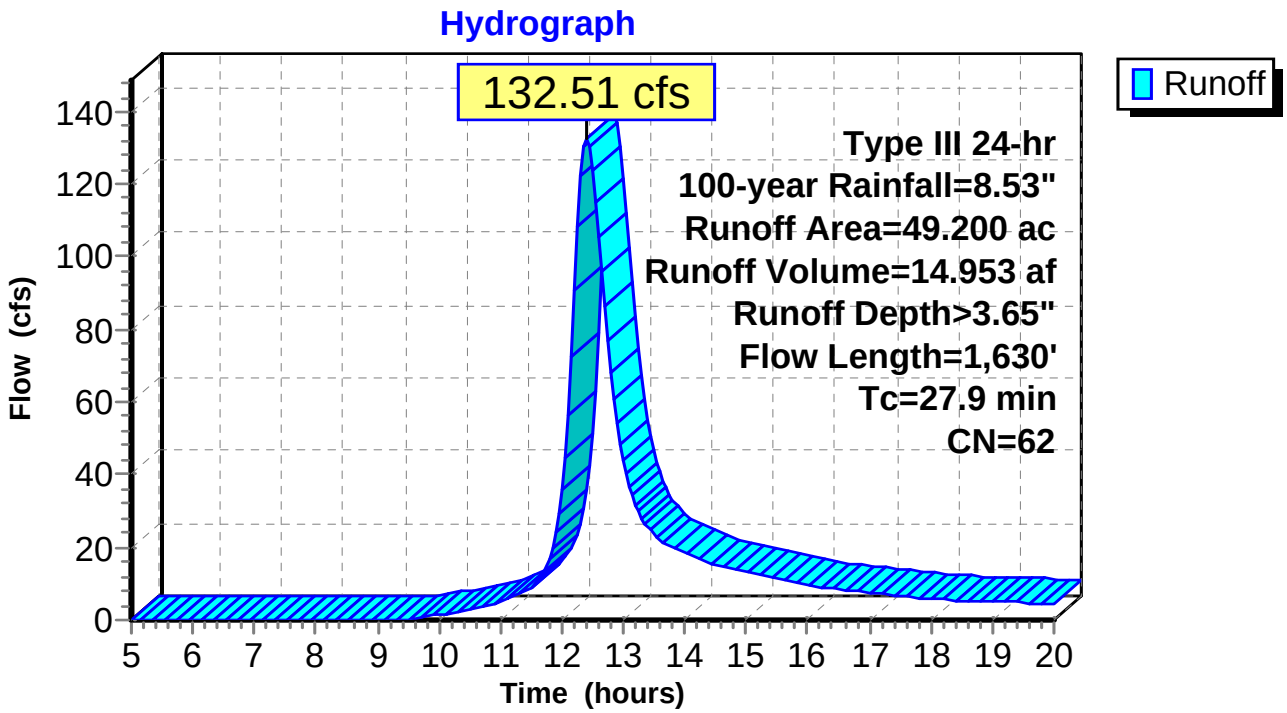
Runoff = 132.51 cfs @ 12.40 hrs, Volume= 14.953 af, Depth> 3.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
3.000	72	Dirt roads, HSG A
36.100	70	Row crops, contoured, Poor, HSG A
10.100	30	Woods, Good, HSG A
49.200	62	Weighted Average
49.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	100	0.0190	0.35		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
10.7	800	0.0190	1.24		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
12.5	730	0.0380	0.97		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
27.9	1,630	Total			

Subcatchment MB-1: EX MB-1



Summary for Subcatchment MB-2: EX MB-2

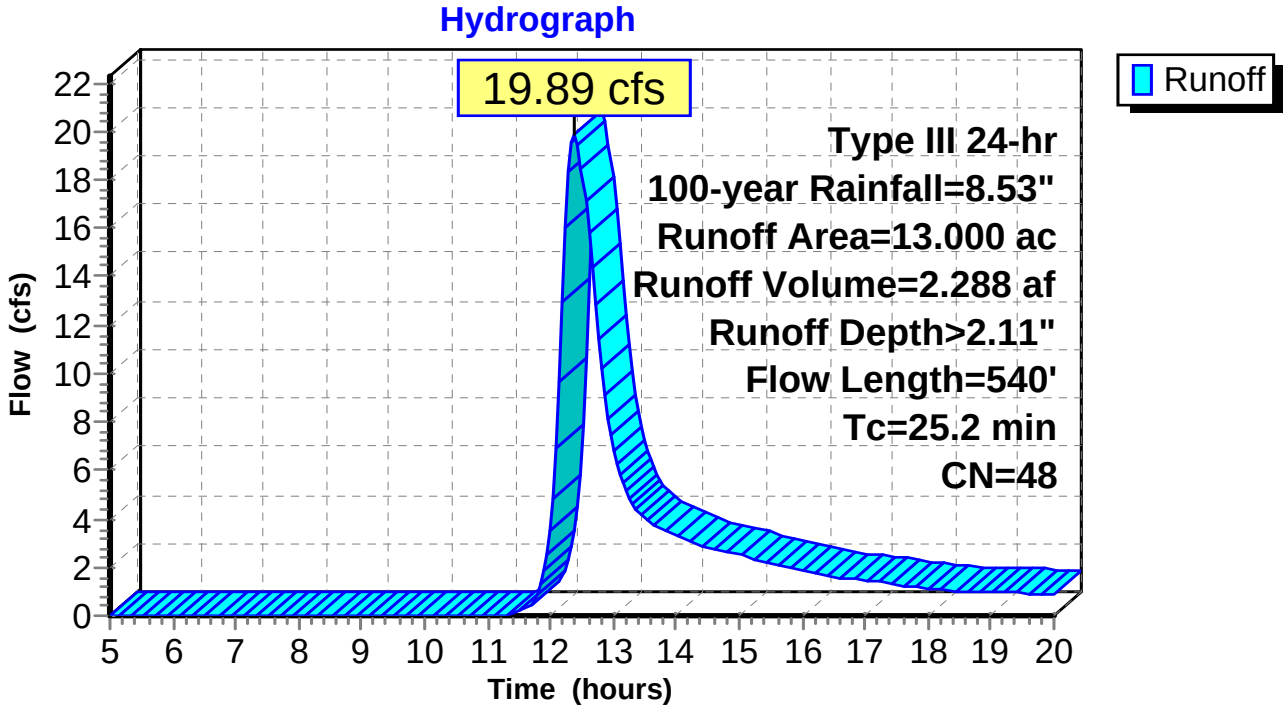
Runoff = 19.89 cfs @ 12.40 hrs, Volume= 2.288 af, Depth> 2.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.600	72	Dirt roads, HSG A
5.200	70	Row crops, contoured, Poor, HSG A
7.100	30	Woods, Good, HSG A
13.000	48	Weighted Average
12.900		99.23% Pervious Area
0.100		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
7.7	230	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.5	260	0.0610	1.23		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.2	540	Total			

Subcatchment MB-2: EX MB-2



Summary for Subcatchment SB-1: EX SB-1

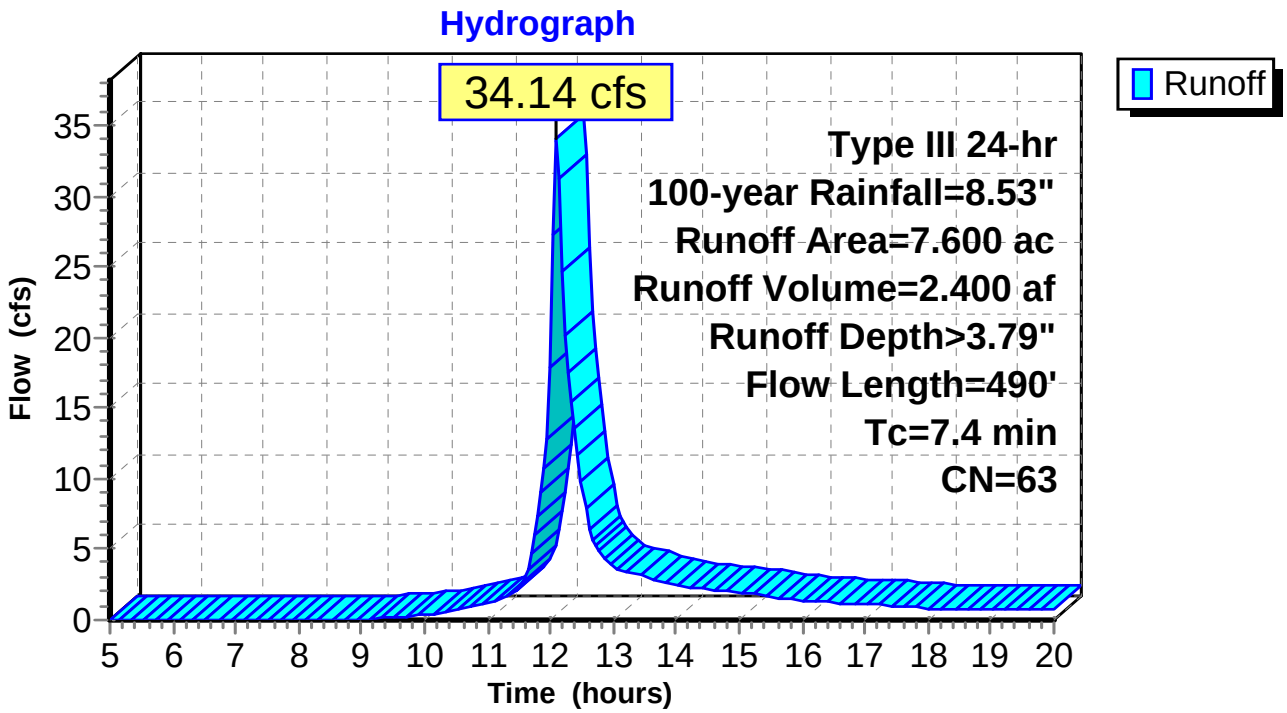
Runoff = 34.14 cfs @ 12.11 hrs, Volume= 2.400 af, Depth> 3.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.500	72	Dirt roads, HSG A
5.800	70	Row crops, contoured, Poor, HSG A
1.300	30	Woods, Good, HSG A
7.600	63	Weighted Average
7.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	100	0.0200	0.36		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
1.3	250	0.1180	3.09		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
1.5	140	0.0280	1.51		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
7.4	490	Total			

Subcatchment SB-1: EX SB-1



Summary for Subcatchment SB-2: EX SB-2

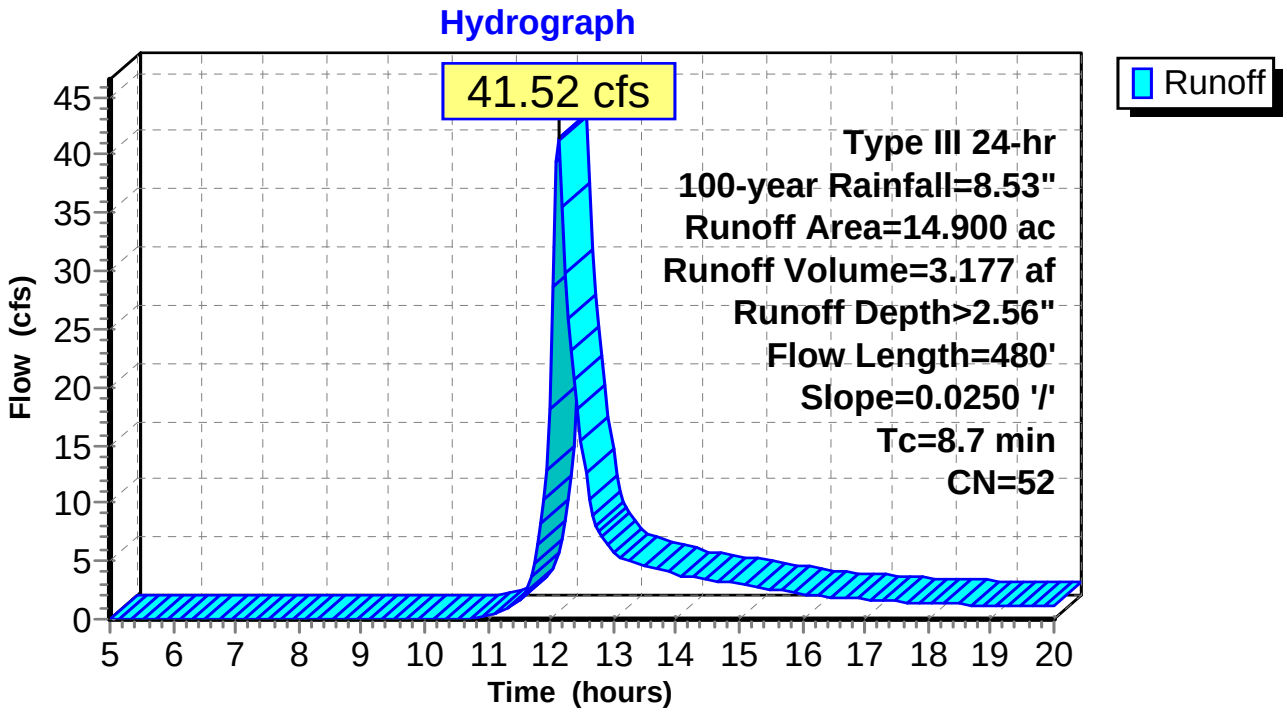
Runoff = 41.52 cfs @ 12.14 hrs, Volume= 3.177 af, Depth> 2.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
1.100	72	Dirt roads, HSG A
7.000	70	Row crops, contoured, Poor, HSG A
6.800	30	Woods, Good, HSG A
14.900	52	Weighted Average
14.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	100	0.0250	0.39		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
4.5	380	0.0250	1.42		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
8.7	480	Total			

Subcatchment SB-2: EX SB-2



Summary for Subcatchment SB-3: EX SB-3

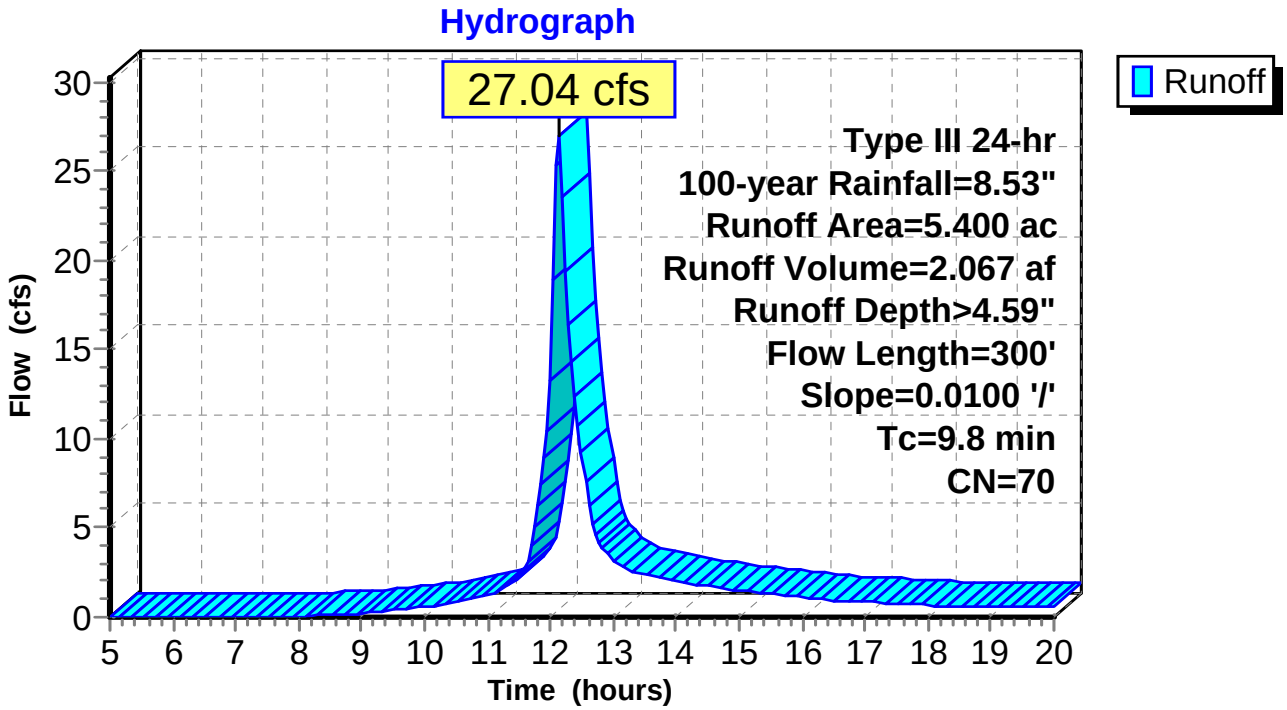
Runoff = 27.04 cfs @ 12.14 hrs, Volume= 2.067 af, Depth> 4.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.600	72	Dirt roads, HSG A
4.800	70	Row crops, contoured, Poor, HSG A
5.400	70	Weighted Average
5.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0100	0.27		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 3.30"
3.7	200	0.0100	0.90		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
9.8	300	Total			

Subcatchment SB-3: EX SB-3



Summary for Pond 1P: EX MB-2 Depression

Inflow Area = 13.000 ac, 0.77% Impervious, Inflow Depth > 2.11" for 100-year event
Inflow = 19.89 cfs @ 12.40 hrs, Volume= 2.288 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 274.31' @ 20.00 hrs Surf.Area= 45,101 sf Storage= 99,599 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

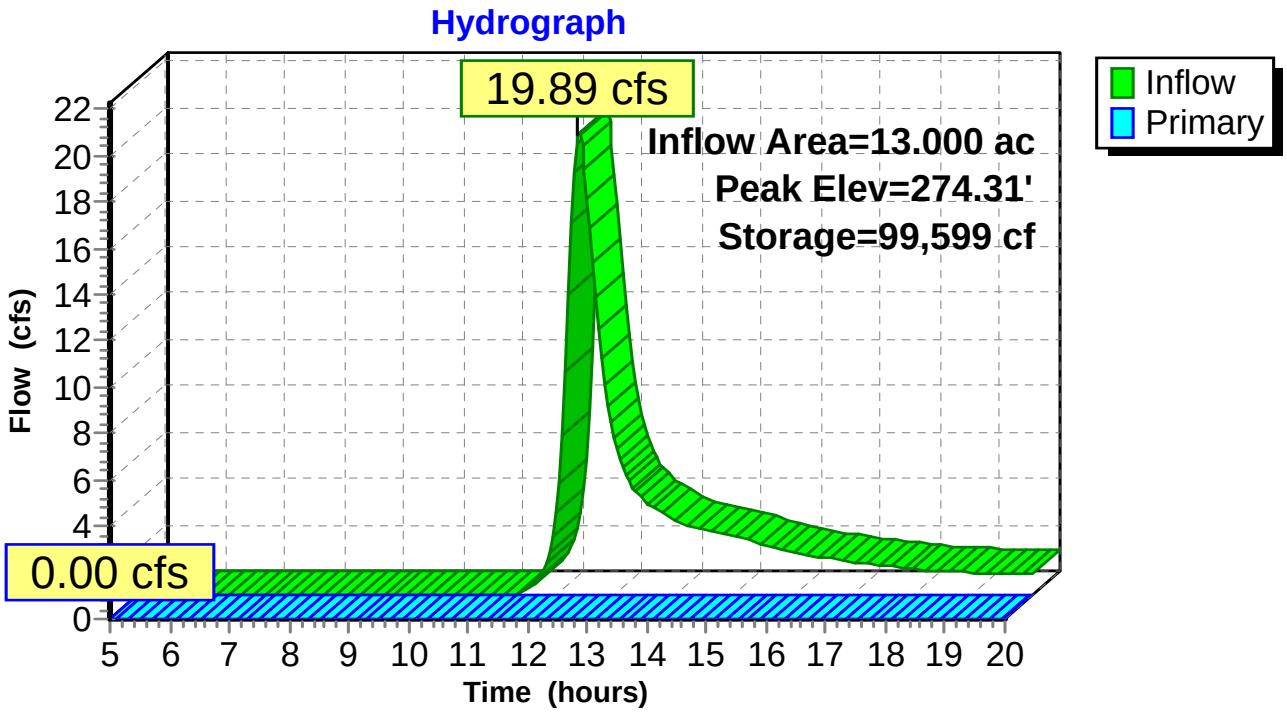
Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	336,950 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
270.00	5,650	0	0
272.00	19,200	24,850	24,850
274.00	41,900	61,100	85,950
276.00	62,300	104,200	190,150
278.00	84,500	146,800	336,950

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**40.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=270.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: EX MB-2 Depression

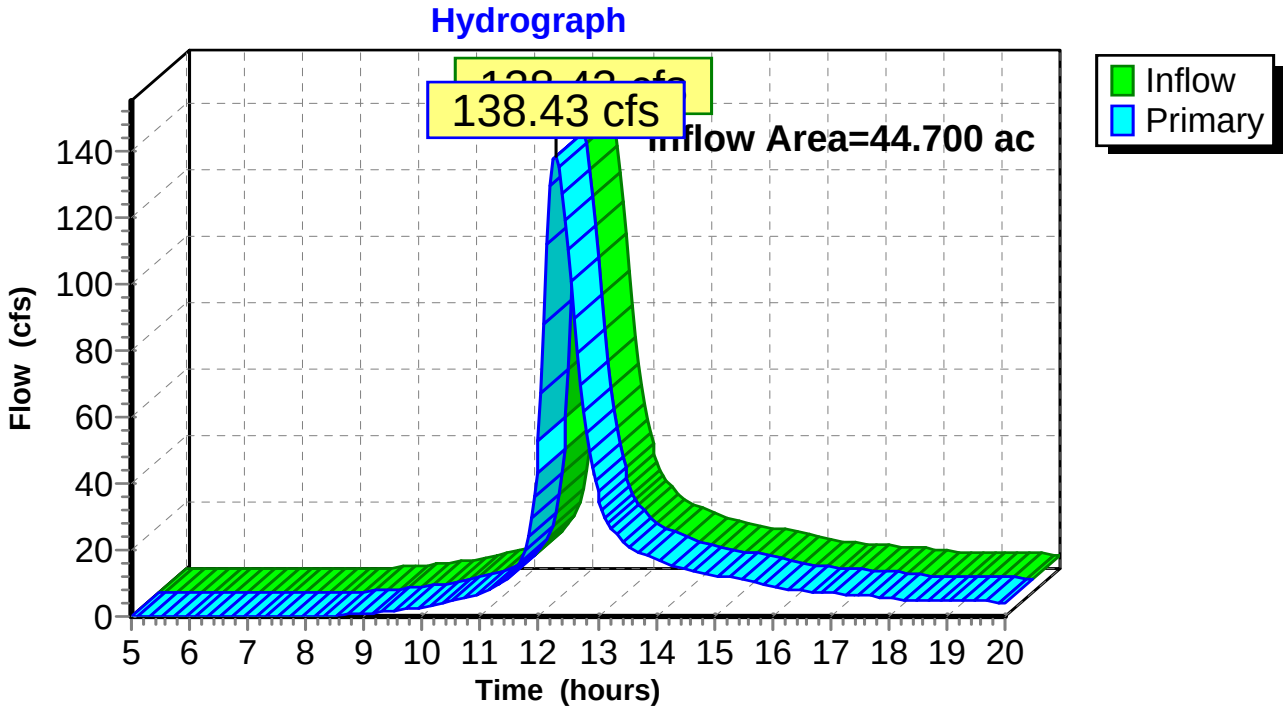


Summary for Link BB: BB

Inflow Area = 44.700 ac, 0.45% Impervious, Inflow Depth > 4.12" for 100-year event
Inflow = 138.43 cfs @ 12.27 hrs, Volume= 15.342 af
Primary = 138.43 cfs @ 12.27 hrs, Volume= 15.342 af, Atten= 0%, Lag= 0.0 min

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

Link BB: BB

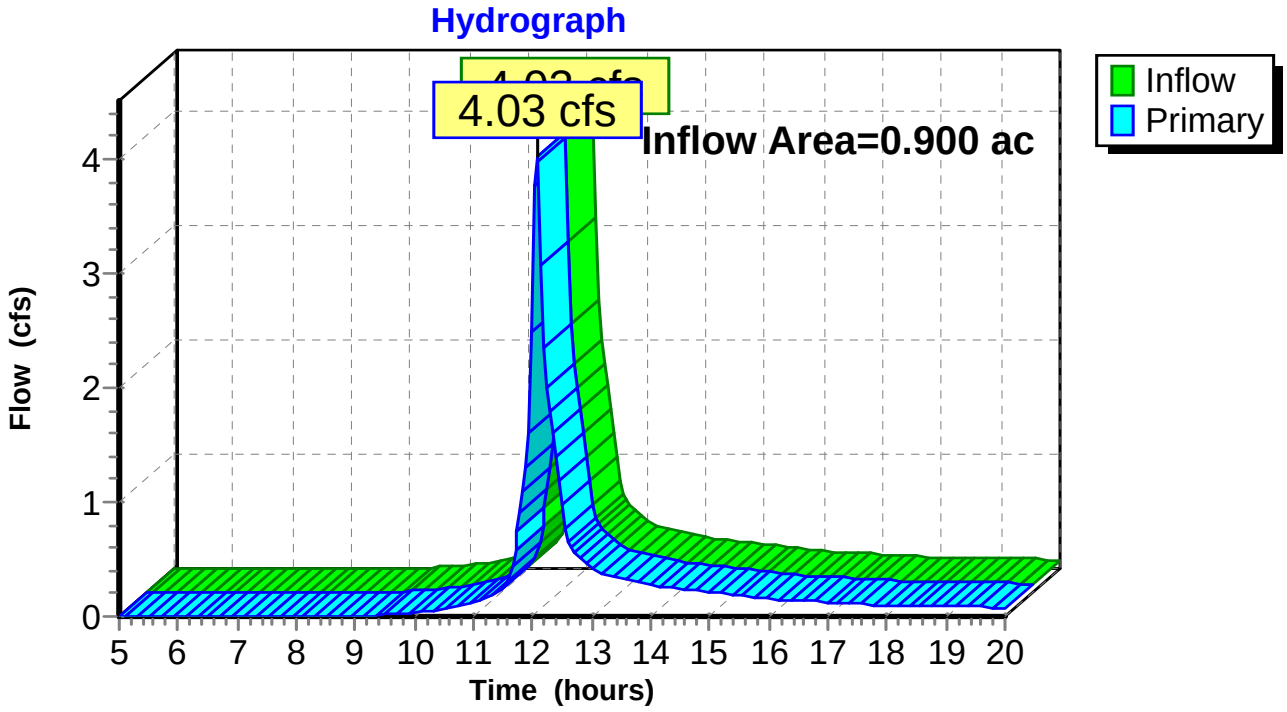


Summary for Link HS: HS

Inflow Area = 0.900 ac, 0.00% Impervious, Inflow Depth > 3.56" for 100-year event
Inflow = 4.03 cfs @ 12.08 hrs, Volume= 0.267 af
Primary = 4.03 cfs @ 12.08 hrs, Volume= 0.267 af, Atten= 0%, Lag= 0.0 min

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

Link HS: HS

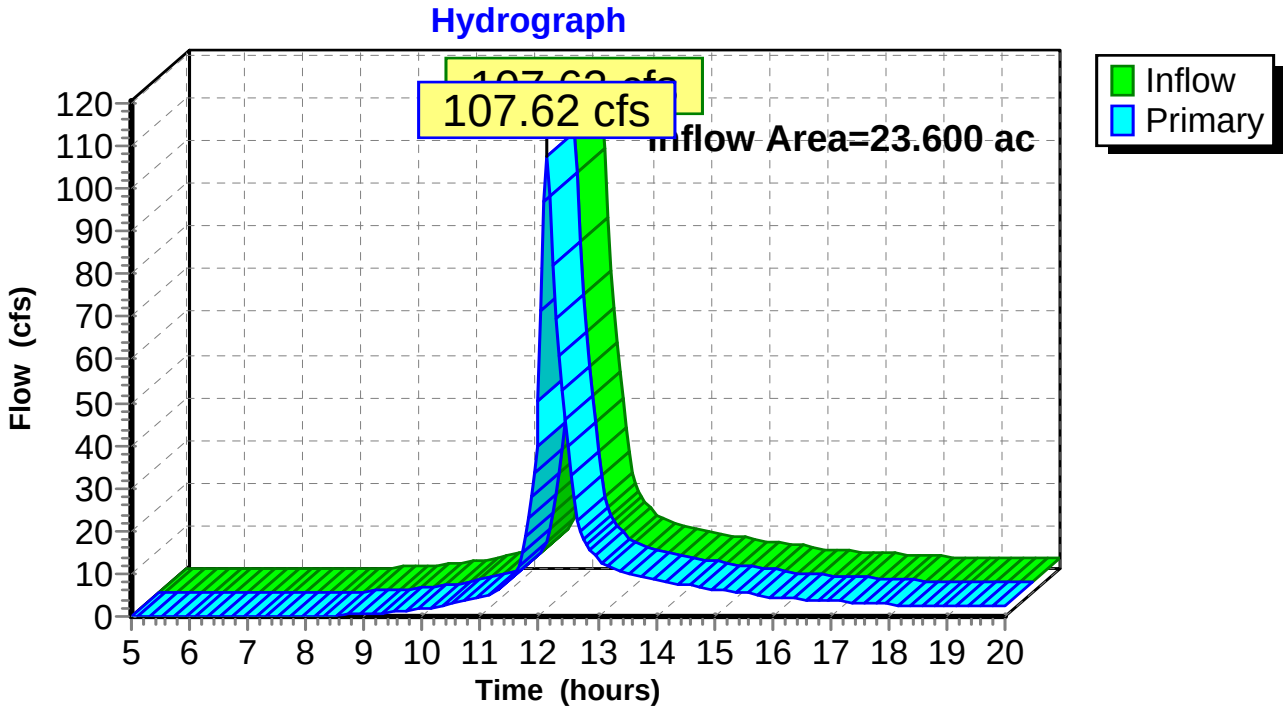


Summary for Link KC: KC

Inflow Area = 23.600 ac, 1.27% Impervious, Inflow Depth > 4.24" for 100-year event
Inflow = 107.62 cfs @ 12.15 hrs, Volume= 8.347 af
Primary = 107.62 cfs @ 12.15 hrs, Volume= 8.347 af, Atten= 0%, Lag= 0.0 min

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

Link KC: KC

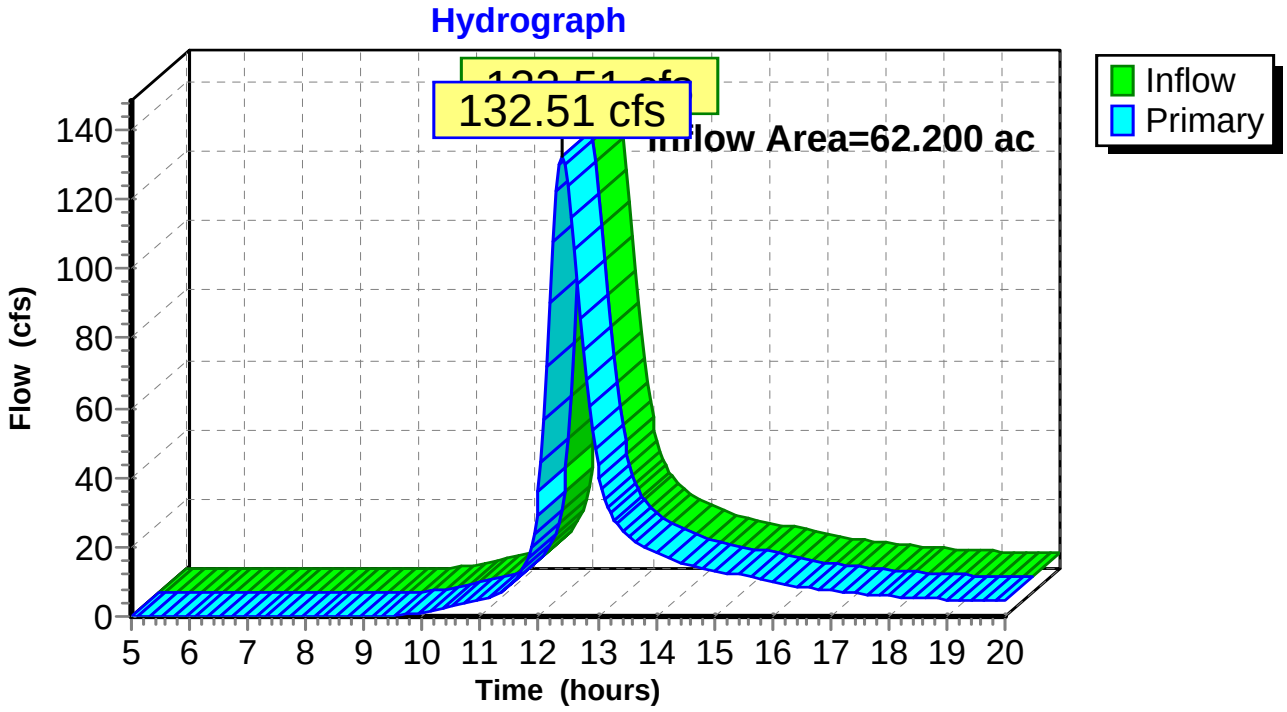


Summary for Link MB: MB

Inflow Area = 62.200 ac, 0.16% Impervious, Inflow Depth > 2.88" for 100-year event
Inflow = 132.51 cfs @ 12.40 hrs, Volume= 14.953 af
Primary = 132.51 cfs @ 12.40 hrs, Volume= 14.953 af, Atten= 0%, Lag= 0.0 min

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

Link MB: MB

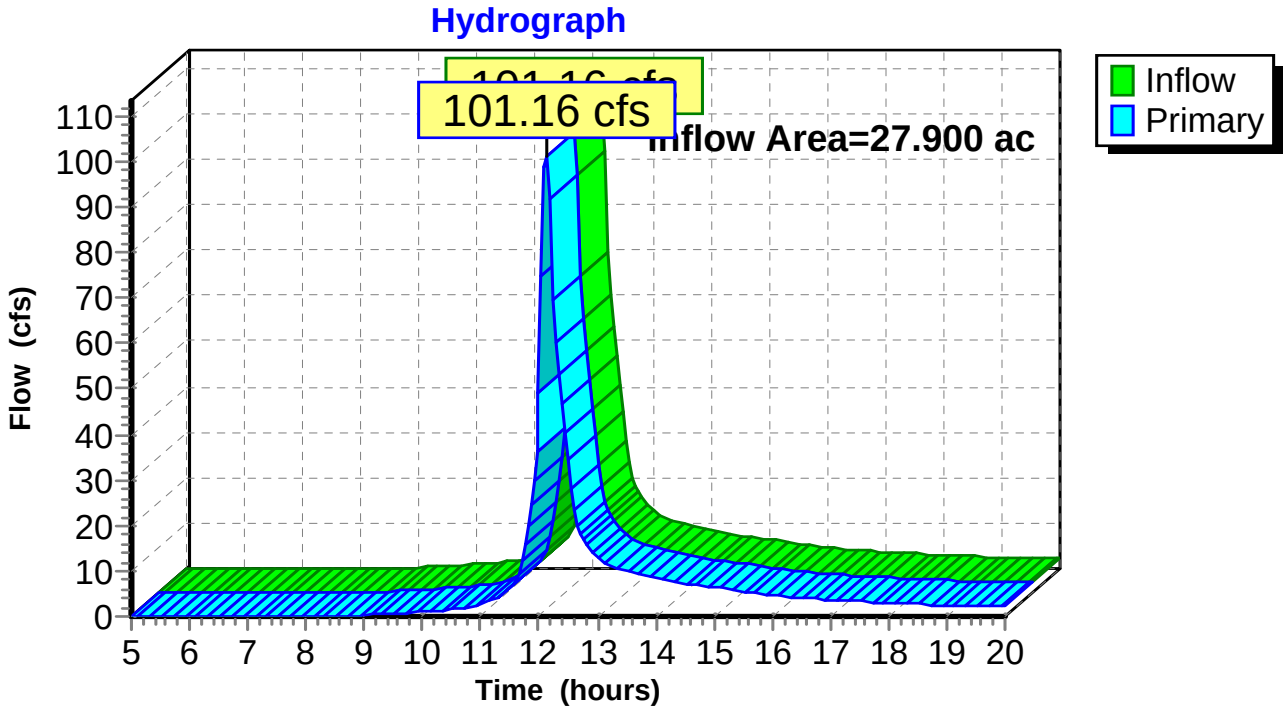


Summary for Link SB: SB

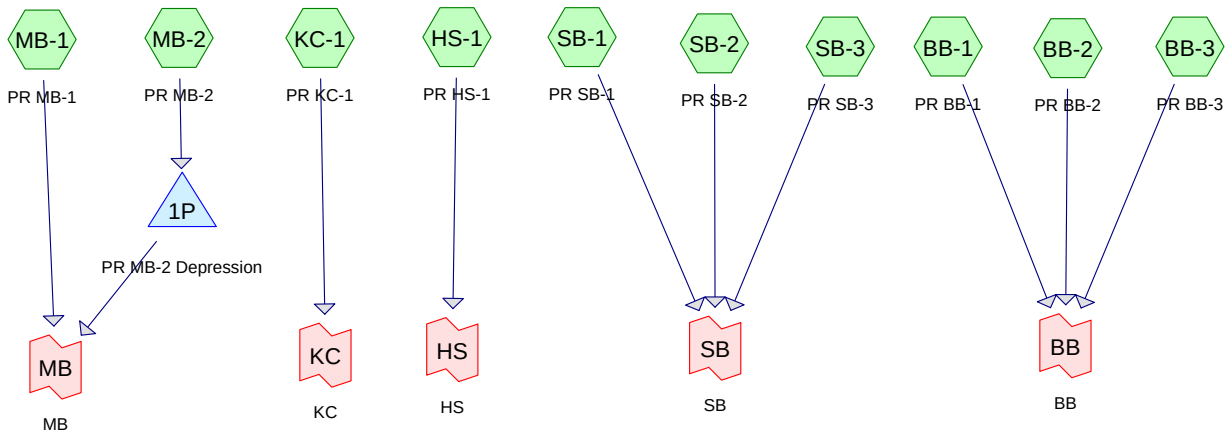
Inflow Area = 27.900 ac, 0.00% Impervious, Inflow Depth > 3.29" for 100-year event
Inflow = 101.16 cfs @ 12.13 hrs, Volume= 7.644 af
Primary = 101.16 cfs @ 12.13 hrs, Volume= 7.644 af, Atten= 0%, Lag= 0.0 min

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

Link SB: SB



HydroCAD Analysis: Proposed Conditions



Subcat Reach Pond Link

Routing Diagram for TVS HydroCAD Proposed
Prepared by VHB, Printed 6/26/2017

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.900	72	Dirt roads, HSG A (BB-1, BB-3, MB-1, MB-2, SB-2)
10.200	76	Gravel roads, HSG A (BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2, SB-3)
112.100	58	Legumes, straight row, Good, HSG A (BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2, SB-3)
31.300	30	Meadow, non-grazed, HSG A (BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2, SB-3)
0.200	98	Roofs, HSG A (BB-1, BB-2)
3.600	30	Woods, Good, HSG A (BB-1, KC-1, MB-2)
159.300	**53**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
159.300	HSG A	BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2, SB-3
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
159.300		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.900	0.000	0.000	0.000	0.000	1.900	Dirt roads	BB-1, BB-3, MB-1, MB-2, SB-2
10.200	0.000	0.000	0.000	0.000	10.200	Gravel roads	BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2, SB-3
112.100	0.000	0.000	0.000	0.000	112.100	Legumes, straight row, Good	BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2, SB-3
31.300	0.000	0.000	0.000	0.000	31.300	Meadow, non-grazed	BB-1, BB-2, BB-3, HS-1, KC-1, MB-1, MB-2, SB-1, SB-2, SB-3
0.200	0.000	0.000	0.000	0.000	0.200	Roofs	BB-1, BB-2
3.600	0.000	0.000	0.000	0.000	3.600	Woods, Good	BB-1, KC-1, MB-2
159.300	**0.000**	**0.000**	**0.000**	**0.000**	**159.300**	**TOTAL AREA**	

2-Year Storm Event – Proposed

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

Subcatchment BB-1: PR BB-1 Runoff Area=19.100 ac 0.52% Impervious Runoff Depth>0.26"
Flow Length=1,400' Slope=0.0100 '/' Tc=43.7 min CN=56 Runoff=1.75 cfs 0.410 af

Subcatchment BB-2: PR BB-2 Runoff Area=5.900 ac 1.69% Impervious Runoff Depth>0.16"
Flow Length=730' Slope=0.0110 '/' Tc=26.6 min CN=52 Runoff=0.28 cfs 0.078 af

Subcatchment BB-3: PR BB-3 Runoff Area=19.700 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=1,060' Tc=23.9 min CN=50 Runoff=0.51 cfs 0.192 af

Subcatchment HS-1: PR HS-1 Runoff Area=0.800 ac 0.00% Impervious Runoff Depth>0.05"
Flow Length=310' Slope=0.0550 '/' Tc=8.5 min CN=46 Runoff=0.01 cfs 0.003 af

Subcatchment KC-1: PR KC-1 Runoff Area=23.600 ac 0.00% Impervious Runoff Depth>0.14"
Flow Length=530' Slope=0.0190 '/' Tc=17.2 min CN=51 Runoff=0.97 cfs 0.273 af

Subcatchment MB-1: PR MB-1 Runoff Area=49.200 ac 0.00% Impervious Runoff Depth>0.29"
Flow Length=1,000' Slope=0.0160 '/' Tc=27.4 min CN=57 Runoff=6.56 cfs 1.190 af

Subcatchment MB-2: PR MB-2 Runoff Area=12.900 ac 0.00% Impervious Runoff Depth>0.12"
Flow Length=540' Tc=20.1 min CN=50 Runoff=0.35 cfs 0.127 af

Subcatchment SB-1: PR SB-1 Runoff Area=7.700 ac 0.00% Impervious Runoff Depth>0.16"
Flow Length=490' Tc=13.3 min CN=52 Runoff=0.46 cfs 0.104 af

Subcatchment SB-2: PR SB-2 Runoff Area=14.900 ac 0.00% Impervious Runoff Depth>0.16"
Flow Length=480' Slope=0.0250 '/' Tc=14.5 min CN=52 Runoff=0.87 cfs 0.200 af

Subcatchment SB-3: PR SB-3 Runoff Area=5.500 ac 0.00% Impervious Runoff Depth>0.02"
Flow Length=300' Slope=0.0100 '/' Tc=17.5 min CN=43 Runoff=0.02 cfs 0.008 af

Pond 1P: PR MB-2 Depression Peak Elev=270.69' Storage=5,499 cf Inflow=0.35 cfs 0.127 af
Outflow=0.00 cfs 0.000 af

Link BB: BB Inflow=2.51 cfs 0.681 af
Primary=2.51 cfs 0.681 af

Link HS: HS Inflow=0.01 cfs 0.003 af
Primary=0.01 cfs 0.003 af

Link KC: KC Inflow=0.97 cfs 0.273 af
Primary=0.97 cfs 0.273 af

Link MB: MB Inflow=6.56 cfs 1.190 af
Primary=6.56 cfs 1.190 af

Link SB: SB Inflow=1.32 cfs 0.312 af
Primary=1.32 cfs 0.312 af

Total Runoff Area = 159.300 ac Runoff Volume = 2.586 af Average Runoff Depth = 0.19"
99.87% Pervious = 159.100 ac 0.13% Impervious = 0.200 ac

Summary for Subcatchment BB-1: PR BB-1

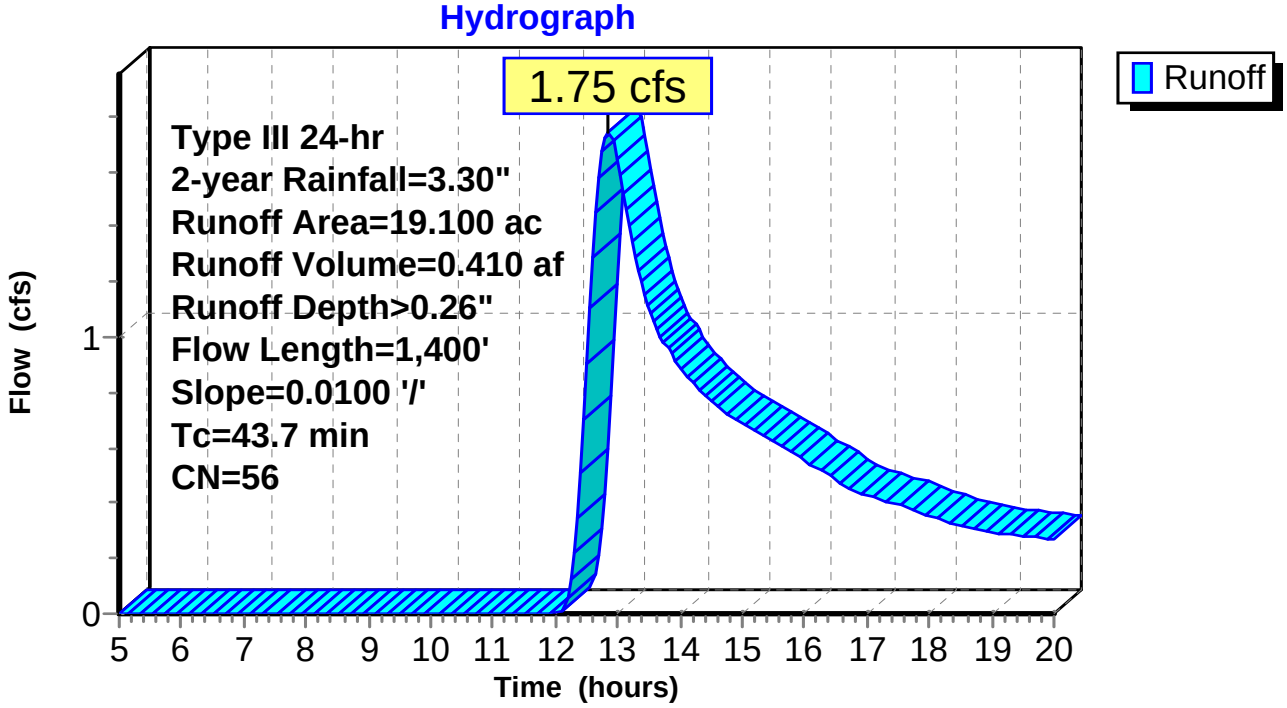
Runoff = 1.75 cfs @ 12.85 hrs, Volume= 0.410 af, Depth> 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.900	76	Gravel roads, HSG A
0.600	72	Dirt roads, HSG A
15.400	58	Legumes, straight row, Good, HSG A
2.000	30	Meadow, non-grazed, HSG A
0.100	30	Woods, Good, HSG A
19.100	56	Weighted Average
19.000		99.48% Pervious Area
0.100		0.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
31.0	1,300	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
43.7	1,400	Total			

Subcatchment BB-1: PR BB-1



Summary for Subcatchment BB-2: PR BB-2

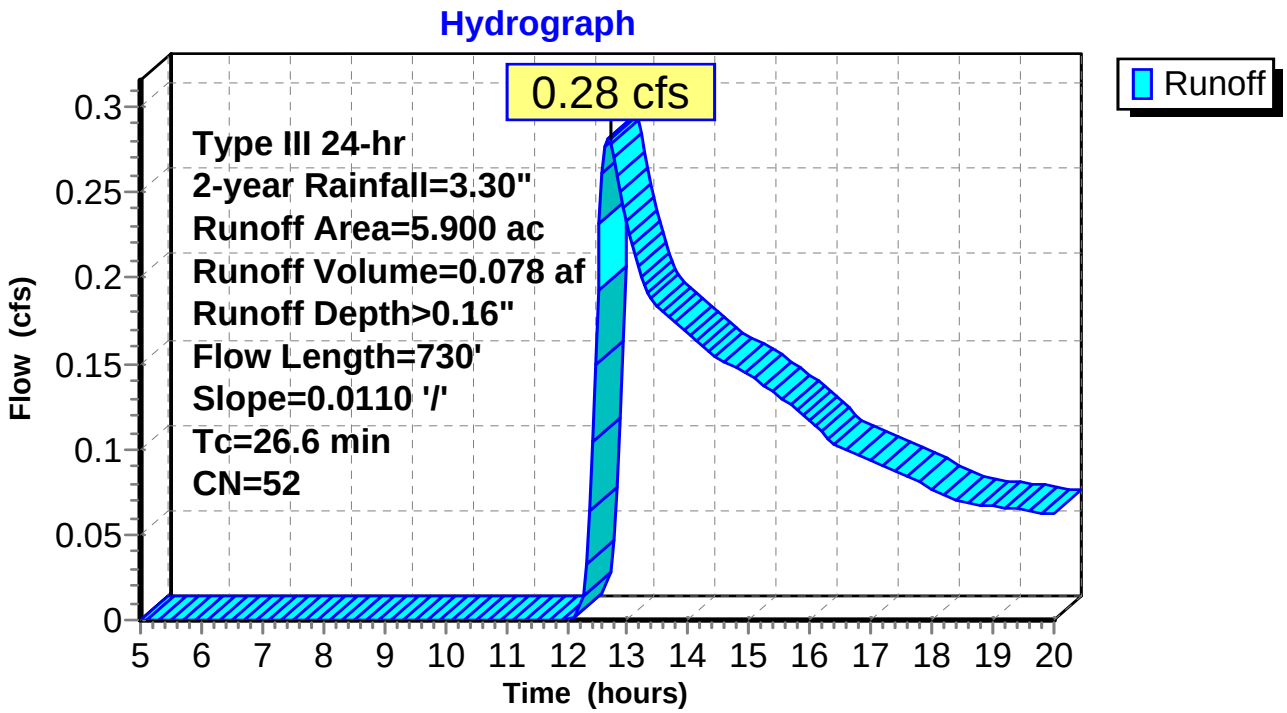
Runoff = 0.28 cfs @ 12.70 hrs, Volume= 0.078 af, Depth> 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.400	76	Gravel roads, HSG A
3.800	58	Legumes, straight row, Good, HSG A
1.600	30	Meadow, non-grazed, HSG A
5.900	52	Weighted Average
5.800		98.31% Pervious Area
0.100		1.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	100	0.0110	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
14.3	630	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
26.6	730	Total			

Subcatchment BB-2: PR BB-2



Summary for Subcatchment BB-3: PR BB-3

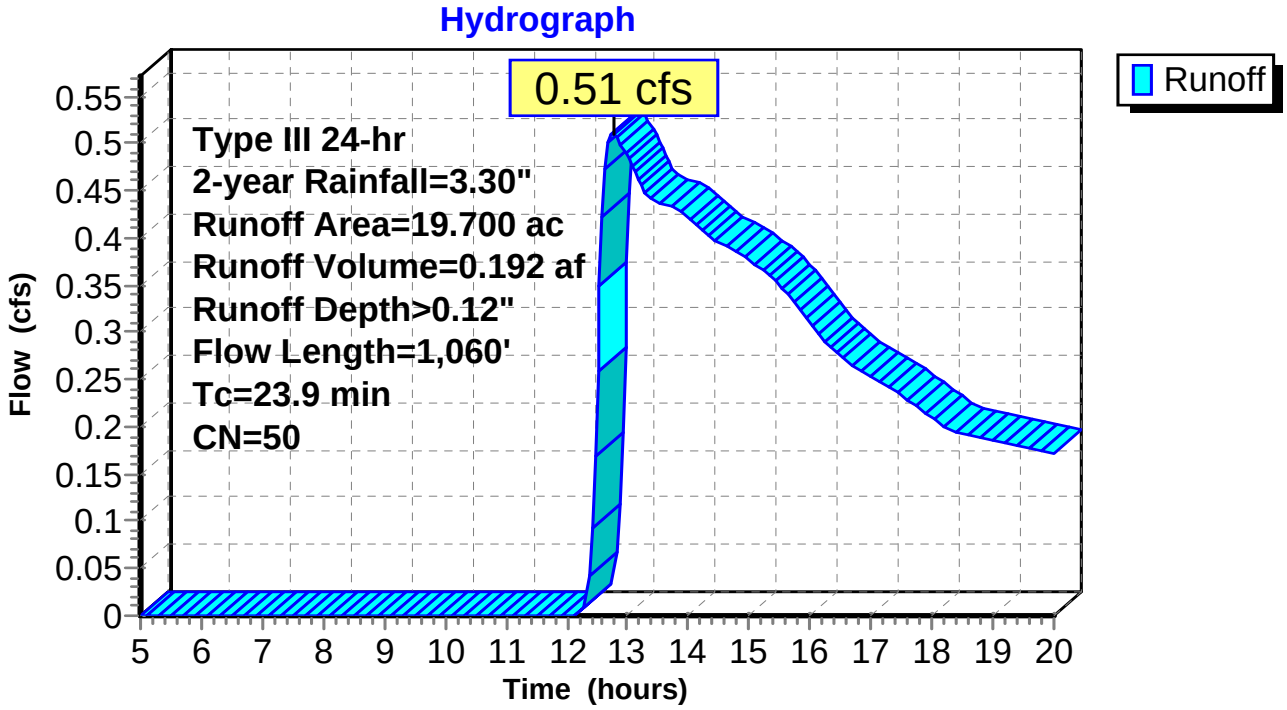
Runoff = 0.51 cfs @ 12.77 hrs, Volume= 0.192 af, Depth> 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
1.700	76	Gravel roads, HSG A
0.200	72	Dirt roads, HSG A
11.000	58	Legumes, straight row, Good, HSG A
6.800	30	Meadow, non-grazed, HSG A
19.700	50	Weighted Average
19.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0190	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
13.8	800	0.0190	0.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	160	0.0440	9.20	92.01	**Channel Flow,** Area= 10.0 sf Perim= 12.0' r= 0.83' n= 0.030 Earth, grassed & winding
23.9	1,060	Total			

Subcatchment BB-3: PR BB-3



Summary for Subcatchment HS-1: PR HS-1

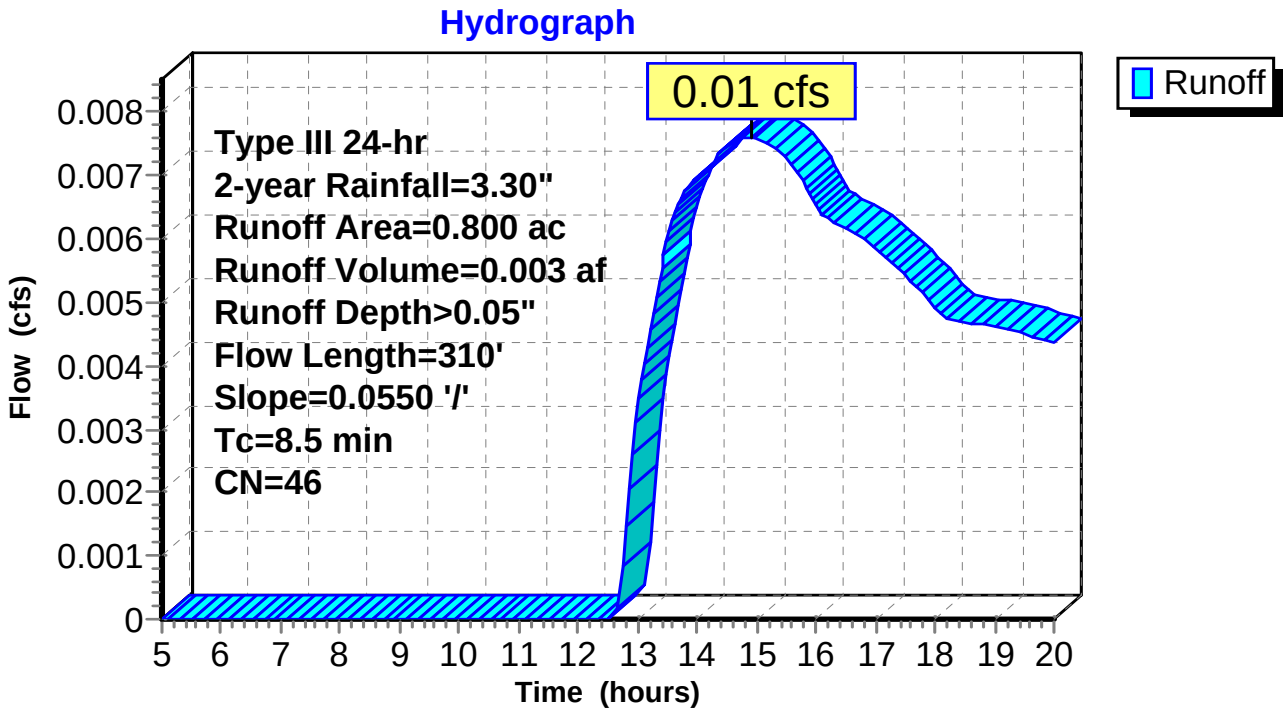
Runoff = 0.01 cfs @ 14.89 hrs, Volume= 0.003 af, Depth> 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.100	76	Gravel roads, HSG A
0.300	58	Legumes, straight row, Good, HSG A
0.400	30	Meadow, non-grazed, HSG A
0.800	46	Weighted Average
0.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0550	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.1	210	0.0550	1.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	310	Total			

Subcatchment HS-1: PR HS-1



Summary for Subcatchment KC-1: PR KC-1

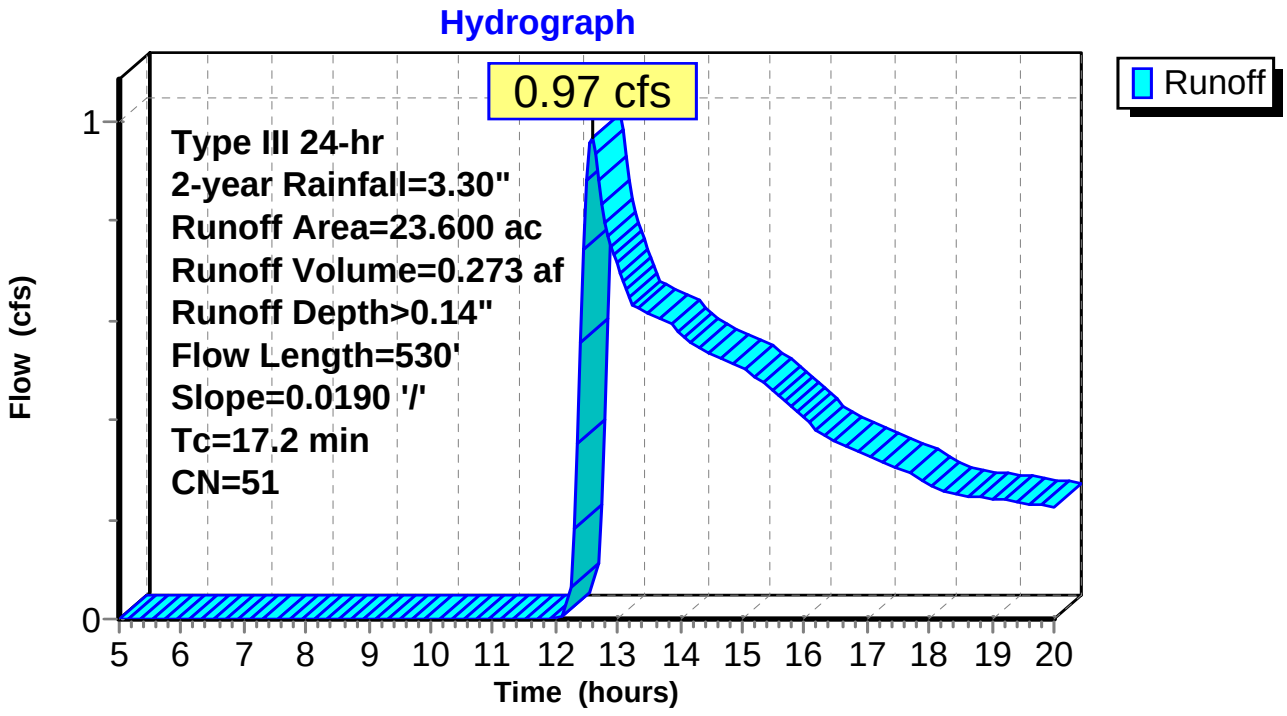
Runoff = 0.97 cfs @ 12.59 hrs, Volume= 0.273 af, Depth> 0.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
1.800	76	Gravel roads, HSG A
14.800	58	Legumes, straight row, Good, HSG A
6.100	30	Meadow, non-grazed, HSG A
0.900	30	Woods, Good, HSG A
23.600	51	Weighted Average
23.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0190	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
7.4	430	0.0190	0.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.2	530	Total			

Subcatchment KC-1: PR KC-1



Summary for Subcatchment MB-1: PR MB-1

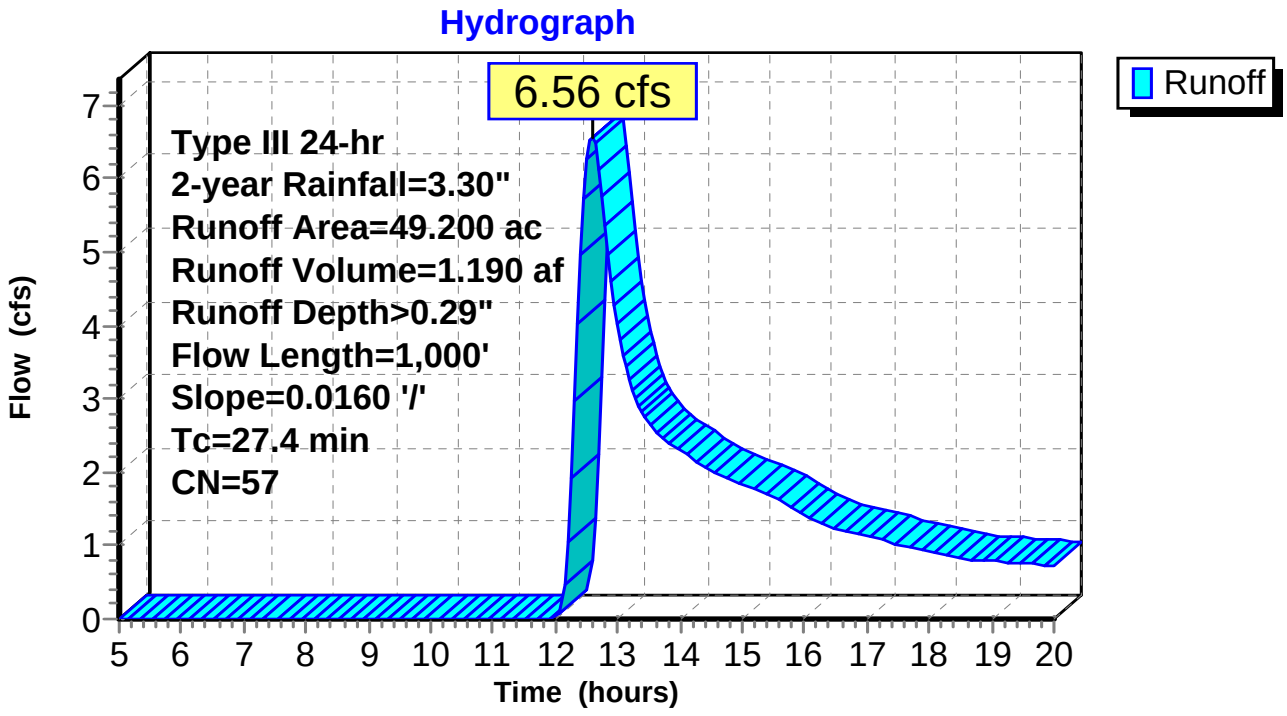
Runoff = 6.56 cfs @ 12.59 hrs, Volume= 1.190 af, Depth> 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
2.700	76	Gravel roads, HSG A
0.400	72	Dirt roads, HSG A
42.400	58	Legumes, straight row, Good, HSG A
3.700	30	Meadow, non-grazed, HSG A
49.200	57	Weighted Average
49.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0160	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
16.9	900	0.0160	0.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	1,000	Total			

Subcatchment MB-1: PR MB-1



Summary for Subcatchment MB-2: PR MB-2

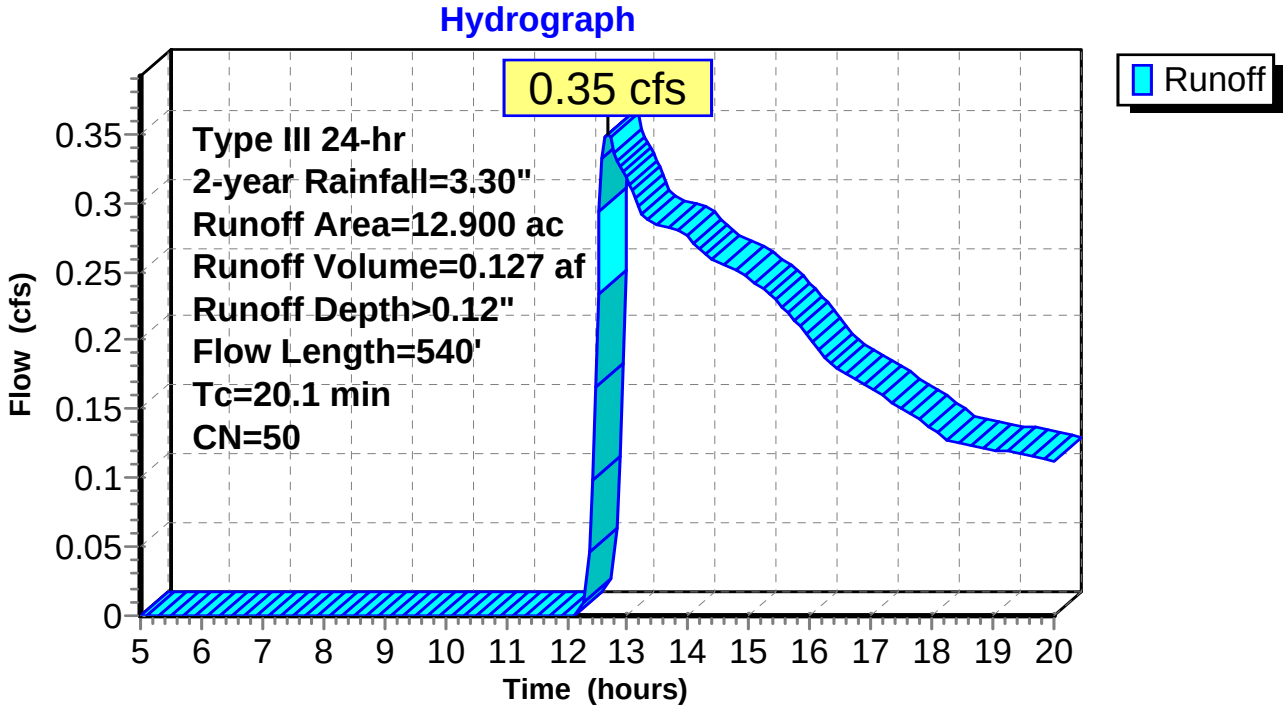
Runoff = 0.35 cfs @ 12.69 hrs, Volume= 0.127 af, Depth> 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.300	76	Gravel roads, HSG A
0.500	72	Dirt roads, HSG A
8.200	58	Legumes, straight row, Good, HSG A
1.300	30	Meadow, non-grazed, HSG A
2.600	30	Woods, Good, HSG A
12.900	50	Weighted Average
12.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0170	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	130	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.8	360	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.1	540	Total			

Subcatchment MB-2: PR MB-2



Summary for Subcatchment SB-1: PR SB-1

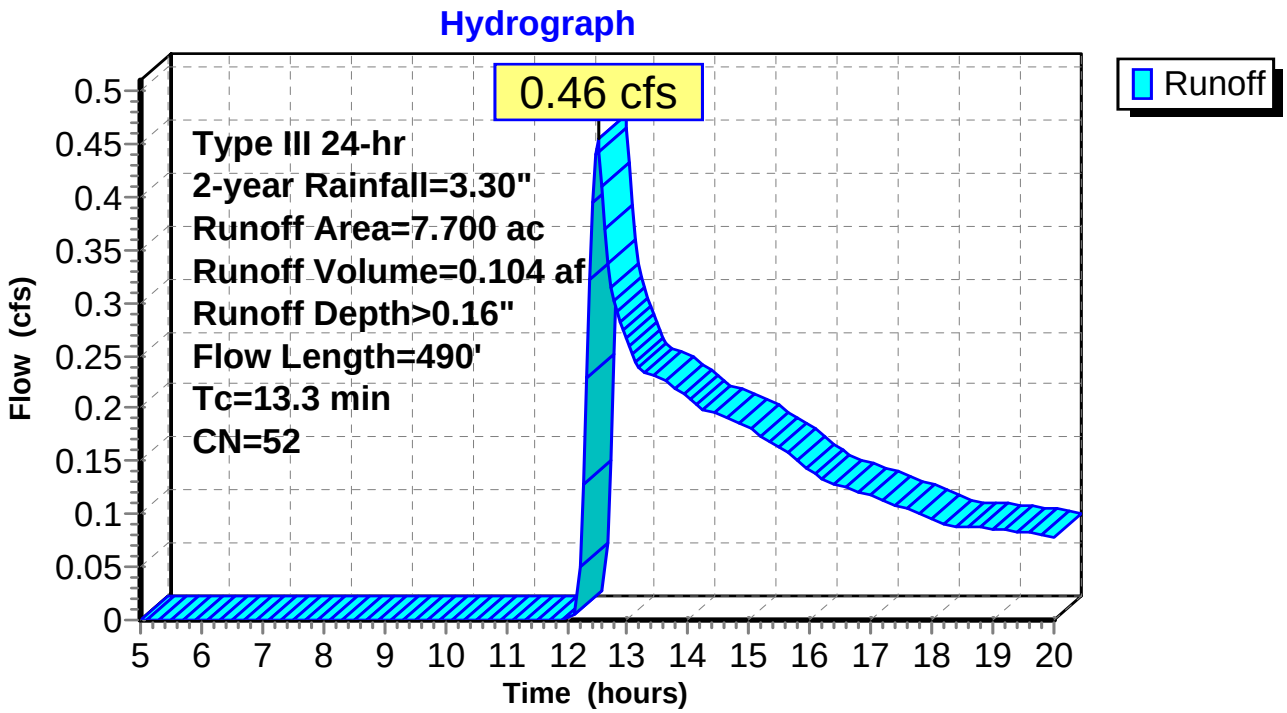
Runoff = 0.46 cfs @ 12.50 hrs, Volume= 0.104 af, Depth> 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.500	76	Gravel roads, HSG A
5.100	58	Legumes, straight row, Good, HSG A
2.100	30	Meadow, non-grazed, HSG A
7.700	52	Weighted Average
7.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.7	250	0.1180	2.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.0	140	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	490	Total			

Subcatchment SB-1: PR SB-1



Summary for Subcatchment SB-2: PR SB-2

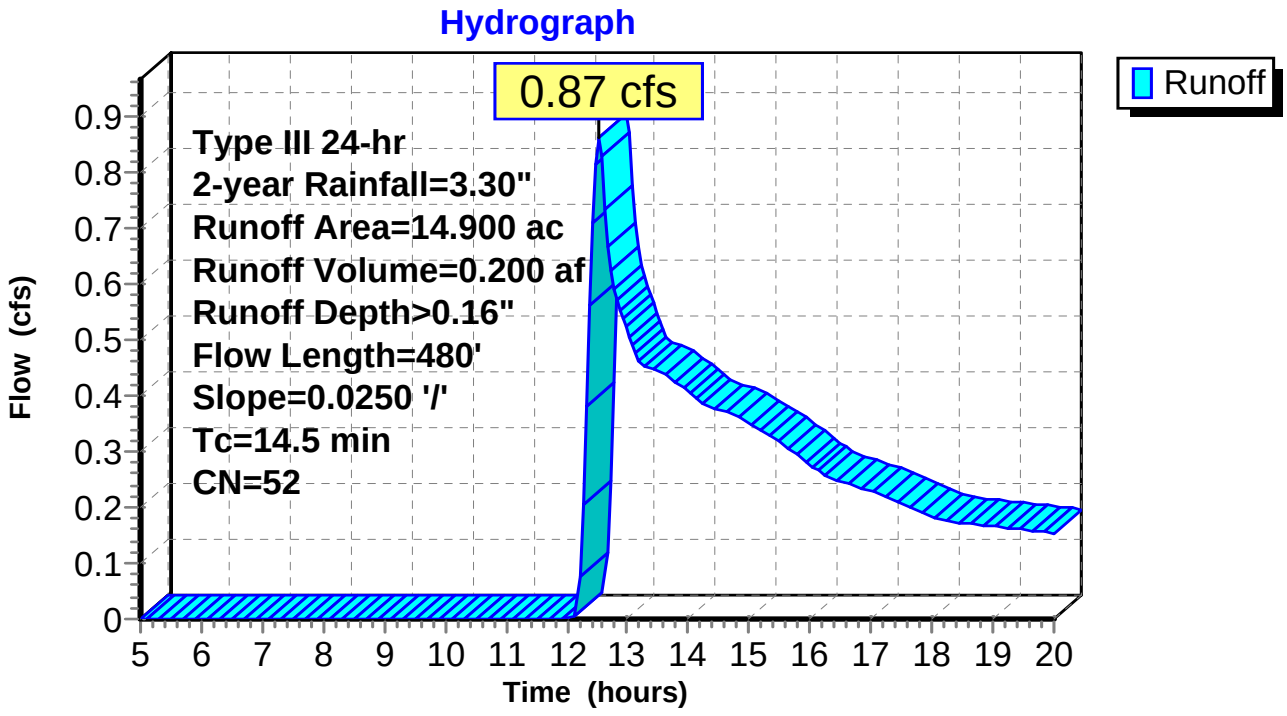
Runoff = 0.87 cfs @ 12.52 hrs, Volume= 0.200 af, Depth> 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
1.300	76	Gravel roads, HSG A
0.200	72	Dirt roads, HSG A
9.400	58	Legumes, straight row, Good, HSG A
4.000	30	Meadow, non-grazed, HSG A
14.900	52	Weighted Average
14.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.7	380	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.5	480	Total			

Subcatchment SB-2: PR SB-2



Summary for Subcatchment SB-3: PR SB-3

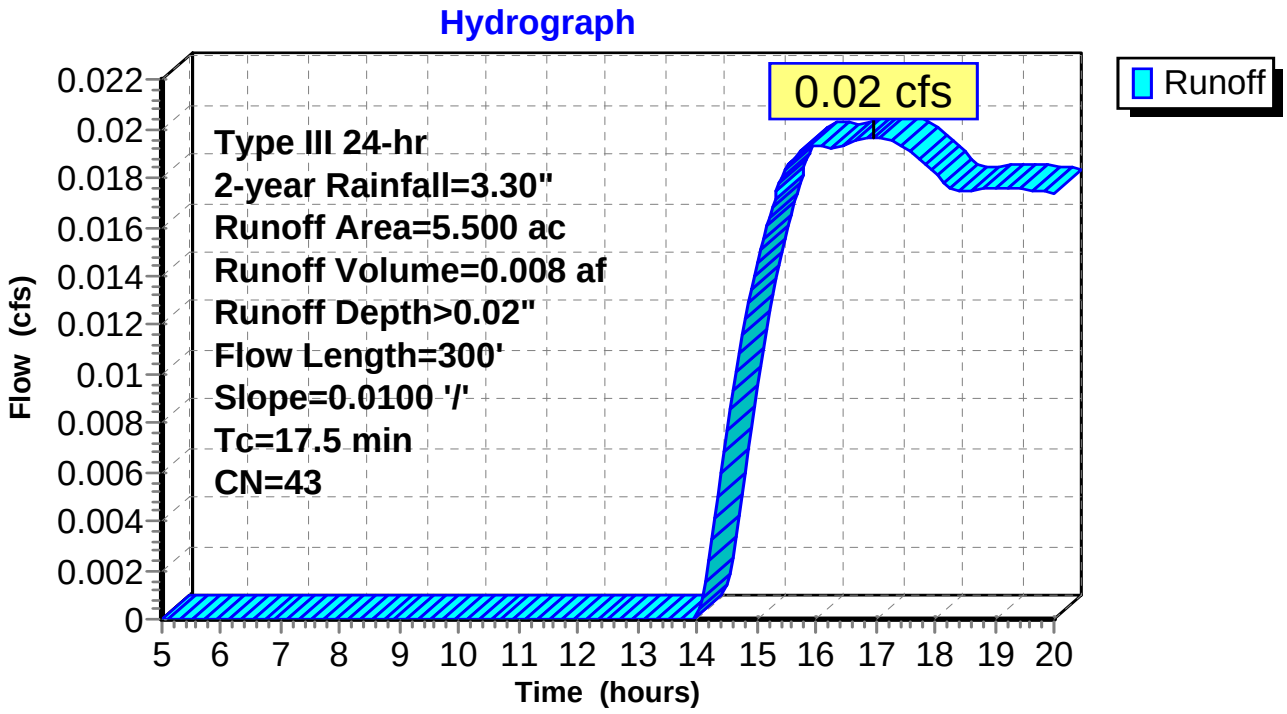
Runoff = 0.02 cfs @ 16.95 hrs, Volume= 0.008 af, Depth> 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.500	76	Gravel roads, HSG A
1.700	58	Legumes, straight row, Good, HSG A
3.300	30	Meadow, non-grazed, HSG A
5.500	43	Weighted Average
5.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
4.8	200	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	300	Total			

Subcatchment SB-3: PR SB-3



Summary for Pond 1P: PR MB-2 Depression

Inflow Area = 12.900 ac, 0.00% Impervious, Inflow Depth > 0.12" for 2-year event
Inflow = 0.35 cfs @ 12.69 hrs, Volume= 0.127 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 270.69' @ 20.00 hrs Surf.Area= 10,316 sf Storage= 5,499 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

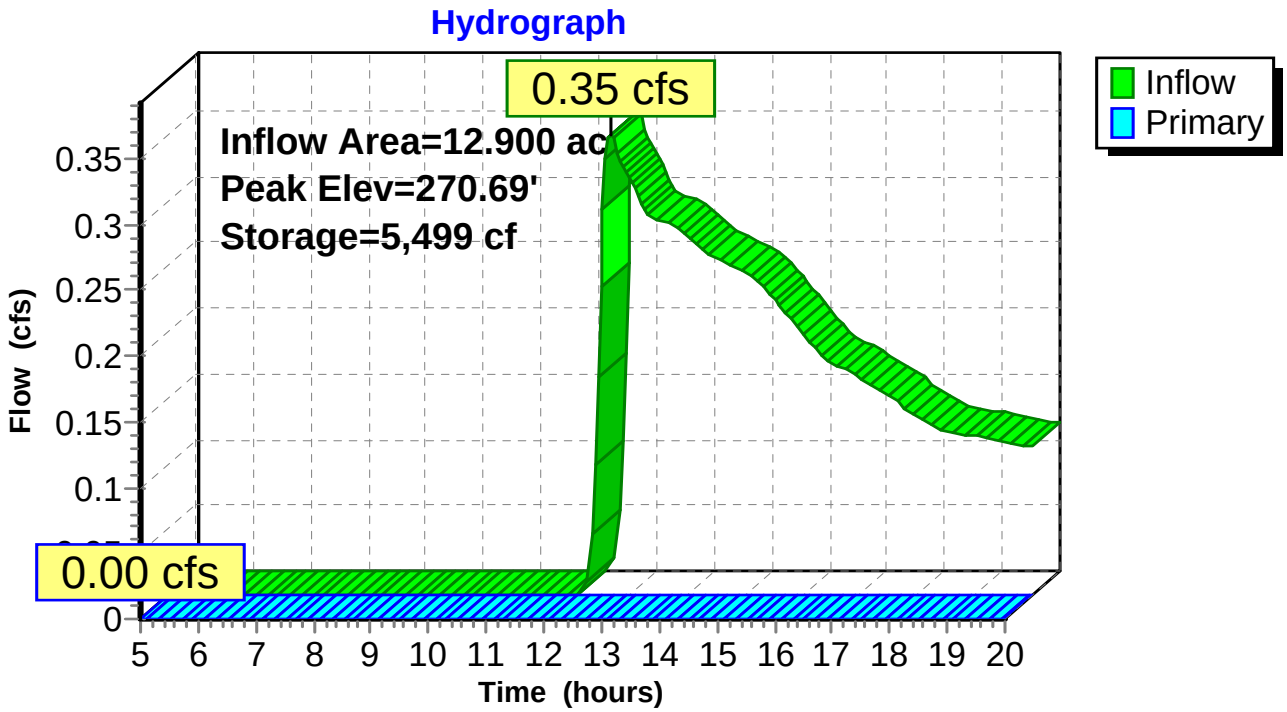
Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	336,950 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
270.00	5,650	0	0
272.00	19,200	24,850	24,850
274.00	41,900	61,100	85,950
276.00	62,300	104,200	190,150
278.00	84,500	146,800	336,950

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**40.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=270.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: PR MB-2 Depression

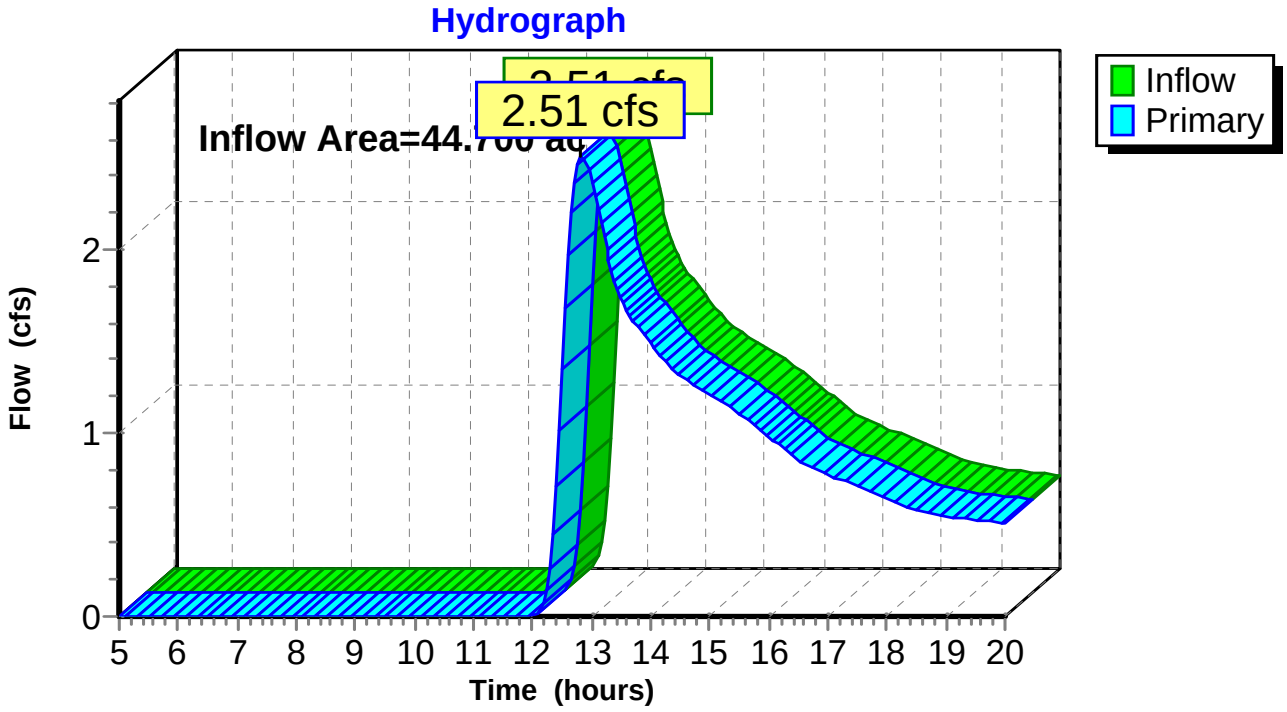


Summary for Link BB: BB

Inflow Area = 44.700 ac, 0.45% Impervious, Inflow Depth > 0.18" for 2-year event
Inflow = 2.51 cfs @ 12.83 hrs, Volume= 0.681 af
Primary = 2.51 cfs @ 12.83 hrs, Volume= 0.681 af, Atten= 0%, Lag= 0.0 min

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

Link BB: BB

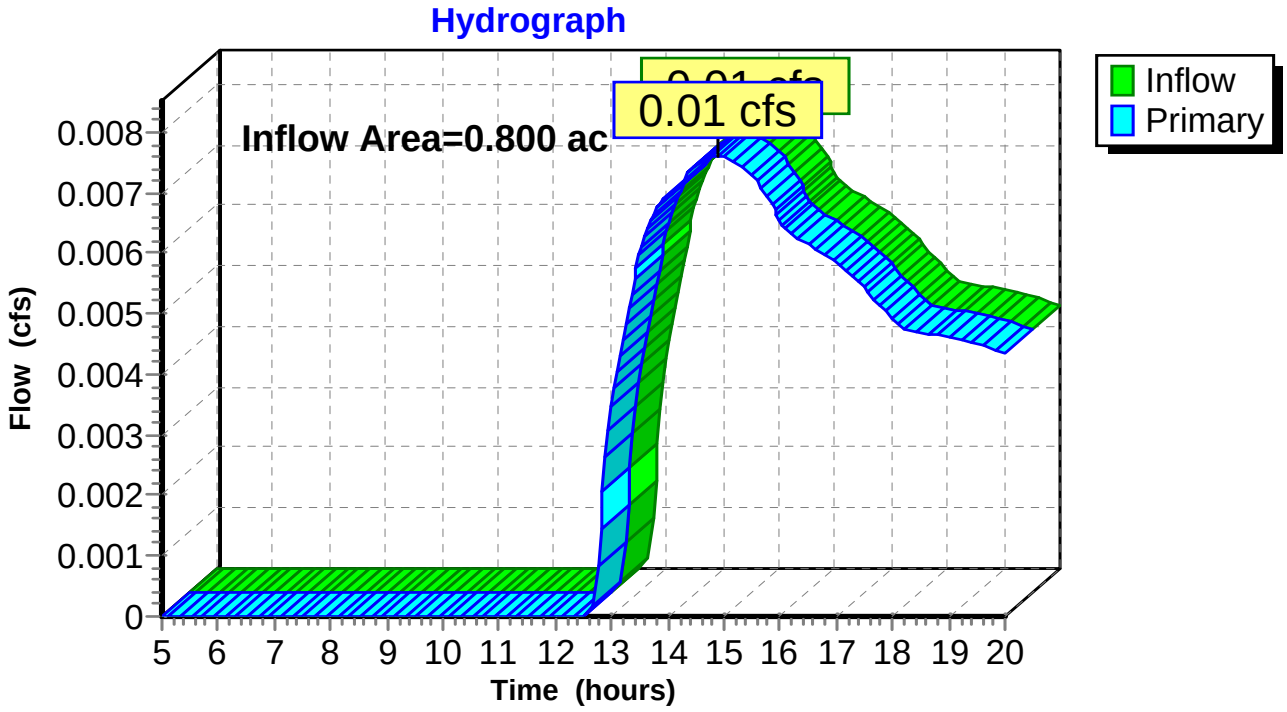


Summary for Link HS: HS

Inflow Area = 0.800 ac, 0.00% Impervious, Inflow Depth > 0.05" for 2-year event
Inflow = 0.01 cfs @ 14.89 hrs, Volume= 0.003 af
Primary = 0.01 cfs @ 14.89 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

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

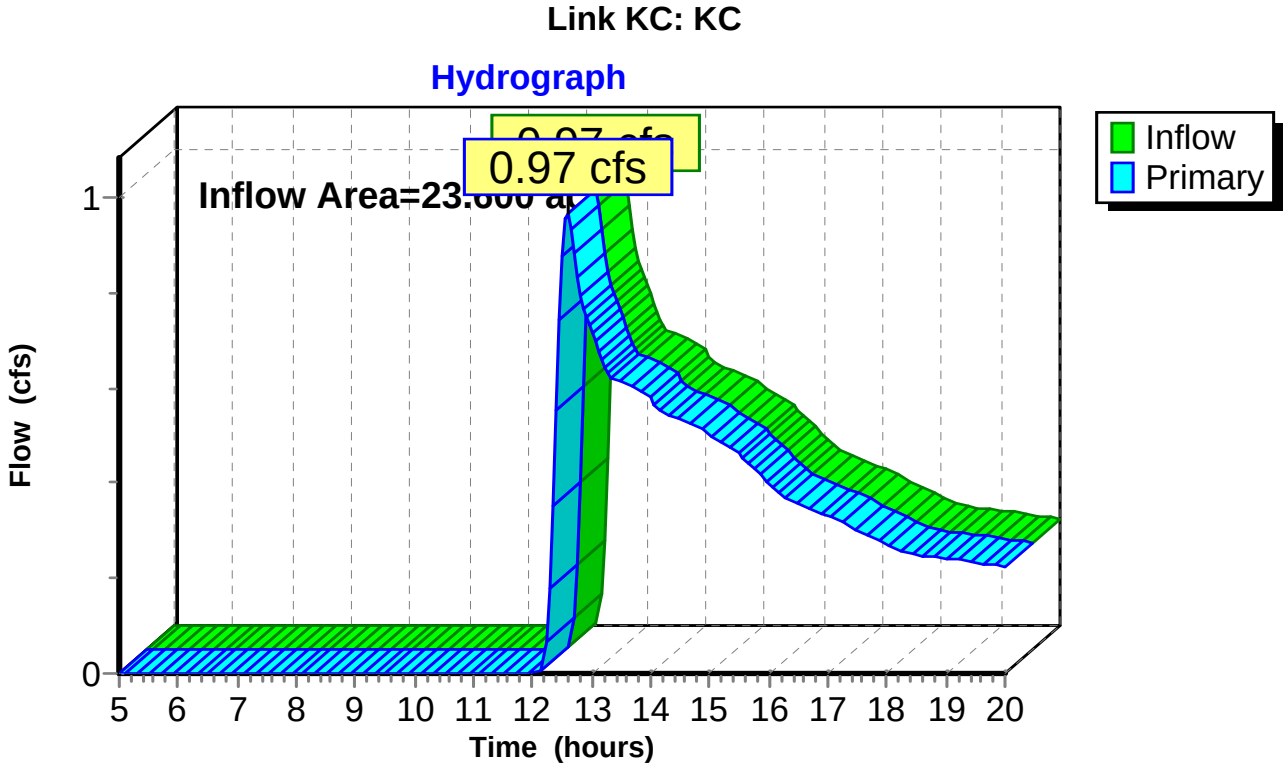
Link HS: HS



Summary for Link KC: KC

Inflow Area = 23.600 ac, 0.00% Impervious, Inflow Depth > 0.14" for 2-year event
Inflow = 0.97 cfs @ 12.59 hrs, Volume= 0.273 af
Primary = 0.97 cfs @ 12.59 hrs, Volume= 0.273 af, Atten= 0%, Lag= 0.0 min

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

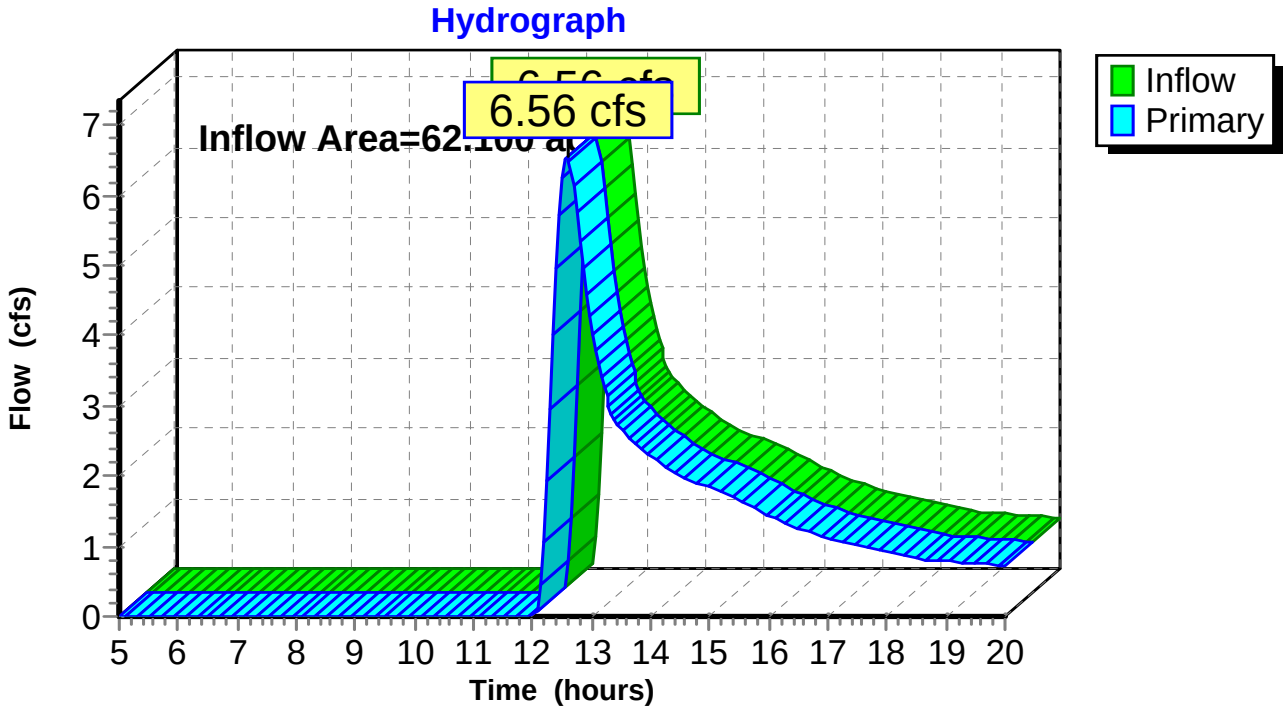


Summary for Link MB: MB

Inflow Area = 62.100 ac, 0.00% Impervious, Inflow Depth > 0.23" for 2-year event
Inflow = 6.56 cfs @ 12.59 hrs, Volume= 1.190 af
Primary = 6.56 cfs @ 12.59 hrs, Volume= 1.190 af, Atten= 0%, Lag= 0.0 min

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

Link MB: MB

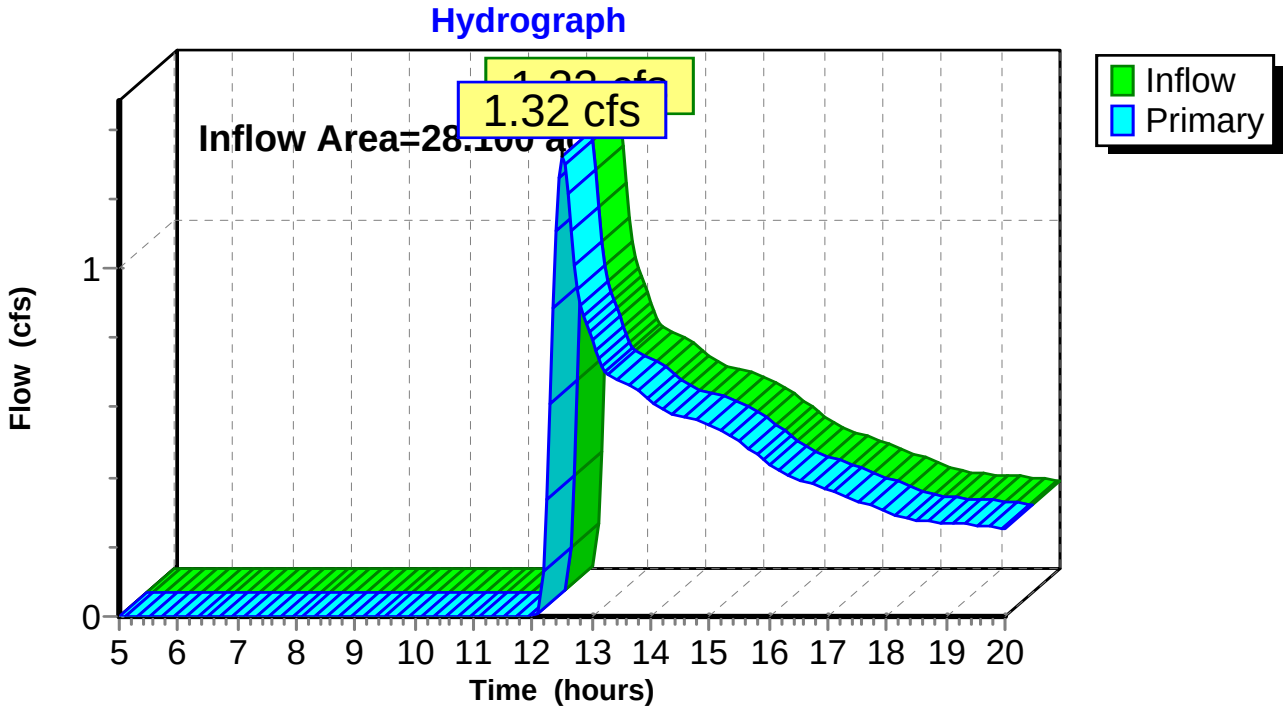


Summary for Link SB: SB

Inflow Area = 28.100 ac, 0.00% Impervious, Inflow Depth > 0.13" for 2-year event
Inflow = 1.32 cfs @ 12.51 hrs, Volume= 0.312 af
Primary = 1.32 cfs @ 12.51 hrs, Volume= 0.312 af, Atten= 0%, Lag= 0.0 min

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

Link SB: SB



10-Year Storm Event- Proposed

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

Subcatchment BB-1: PR BB-1 Runoff Area=19.100 ac 0.52% Impervious Runoff Depth>1.06"
Flow Length=1,400' Slope=0.0100 '/' Tc=43.7 min CN=56 Runoff=10.93 cfs 1.694 af

Subcatchment BB-2: PR BB-2 Runoff Area=5.900 ac 1.69% Impervious Runoff Depth>0.83"
Flow Length=730' Slope=0.0110 '/' Tc=26.6 min CN=52 Runoff=3.03 cfs 0.409 af

Subcatchment BB-3: PR BB-3 Runoff Area=19.700 ac 0.00% Impervious Runoff Depth>0.72"
Flow Length=1,060' Tc=23.9 min CN=50 Runoff=8.54 cfs 1.182 af

Subcatchment HS-1: PR HS-1 Runoff Area=0.800 ac 0.00% Impervious Runoff Depth>0.52"
Flow Length=310' Slope=0.0550 '/' Tc=8.5 min CN=46 Runoff=0.26 cfs 0.034 af

Subcatchment KC-1: PR KC-1 Runoff Area=23.600 ac 0.00% Impervious Runoff Depth>0.78"
Flow Length=530' Slope=0.0190 '/' Tc=17.2 min CN=51 Runoff=12.76 cfs 1.532 af

Subcatchment MB-1: PR MB-1 Runoff Area=49.200 ac 0.00% Impervious Runoff Depth>1.14"
Flow Length=1,000' Slope=0.0160 '/' Tc=27.4 min CN=57 Runoff=37.90 cfs 4.667 af

Subcatchment MB-2: PR MB-2 Runoff Area=12.900 ac 0.00% Impervious Runoff Depth>0.72"
Flow Length=540' Tc=20.1 min CN=50 Runoff=5.91 cfs 0.776 af

Subcatchment SB-1: PR SB-1 Runoff Area=7.700 ac 0.00% Impervious Runoff Depth>0.84"
Flow Length=490' Tc=13.3 min CN=52 Runoff=5.02 cfs 0.538 af

Subcatchment SB-2: PR SB-2 Runoff Area=14.900 ac 0.00% Impervious Runoff Depth>0.84"
Flow Length=480' Slope=0.0250 '/' Tc=14.5 min CN=52 Runoff=9.49 cfs 1.040 af

Subcatchment SB-3: PR SB-3 Runoff Area=5.500 ac 0.00% Impervious Runoff Depth>0.37"
Flow Length=300' Slope=0.0100 '/' Tc=17.5 min CN=43 Runoff=0.94 cfs 0.172 af

Pond 1P: PR MB-2 Depression Peak Elev=272.41' Storage=33,749 cf Inflow=5.91 cfs 0.776 af
Outflow=0.00 cfs 0.000 af

Link BB: BB Inflow=20.99 cfs 3.285 af
Primary=20.99 cfs 3.285 af

Link HS: HS Inflow=0.26 cfs 0.034 af
Primary=0.26 cfs 0.034 af

Link KC: KC Inflow=12.76 cfs 1.532 af
Primary=12.76 cfs 1.532 af

Link MB: MB Inflow=37.90 cfs 4.667 af
Primary=37.90 cfs 4.667 af

Link SB: SB Inflow=14.95 cfs 1.750 af
Primary=14.95 cfs 1.750 af

Total Runoff Area = 159.300 ac Runoff Volume = 12.043 af Average Runoff Depth = 0.91"
99.87% Pervious = 159.100 ac 0.13% Impervious = 0.200 ac

Summary for Subcatchment BB-1: PR BB-1

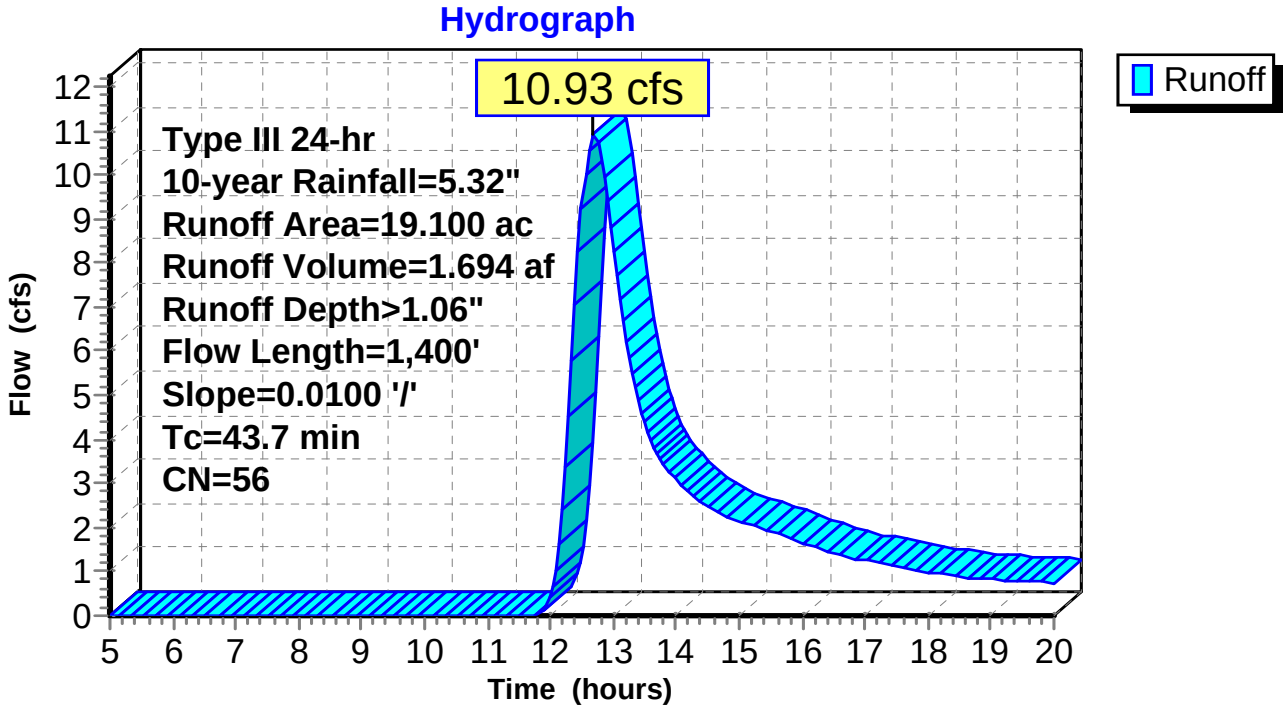
Runoff = 10.93 cfs @ 12.69 hrs, Volume= 1.694 af, Depth> 1.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.900	76	Gravel roads, HSG A
0.600	72	Dirt roads, HSG A
15.400	58	Legumes, straight row, Good, HSG A
2.000	30	Meadow, non-grazed, HSG A
0.100	30	Woods, Good, HSG A
19.100	56	Weighted Average
19.000		99.48% Pervious Area
0.100		0.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
31.0	1,300	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
43.7	1,400	Total			

Subcatchment BB-1: PR BB-1



Summary for Subcatchment BB-2: PR BB-2

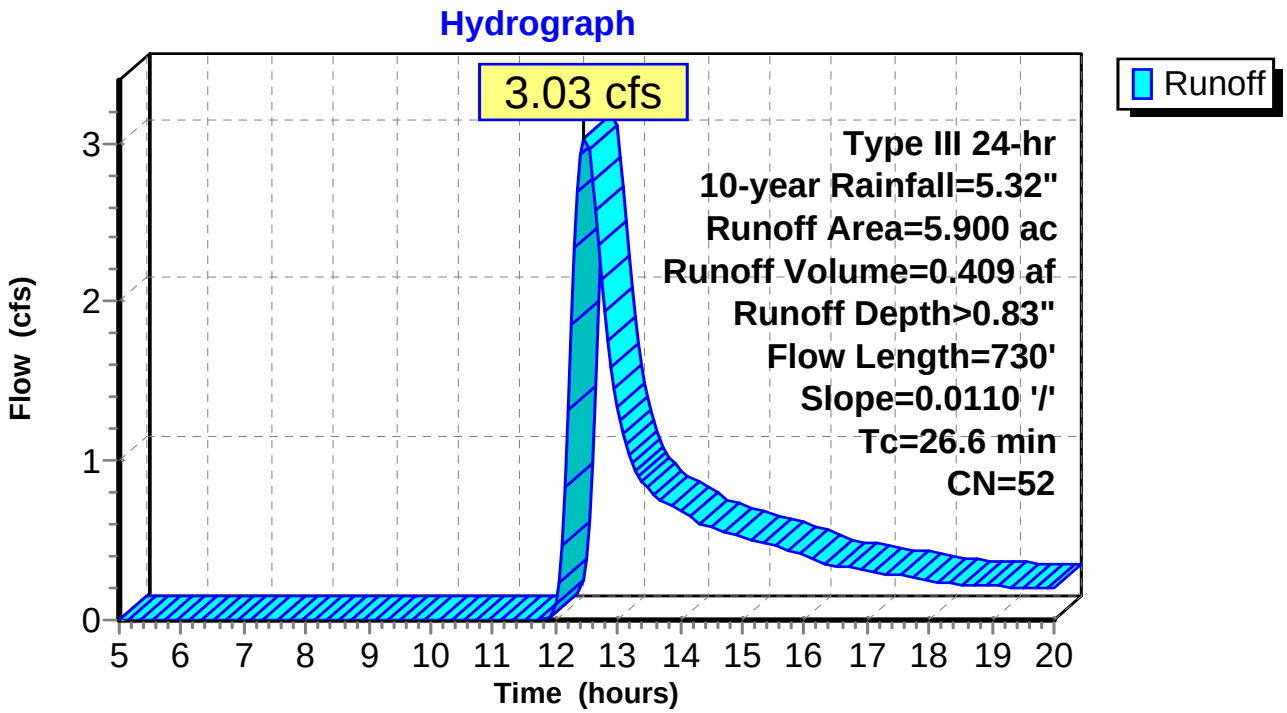
Runoff = 3.03 cfs @ 12.47 hrs, Volume= 0.409 af, Depth> 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.400	76	Gravel roads, HSG A
3.800	58	Legumes, straight row, Good, HSG A
1.600	30	Meadow, non-grazed, HSG A
5.900	52	Weighted Average
5.800		98.31% Pervious Area
0.100		1.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	100	0.0110	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
14.3	630	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
26.6	730	Total			

Subcatchment BB-2: PR BB-2



Summary for Subcatchment BB-3: PR BB-3

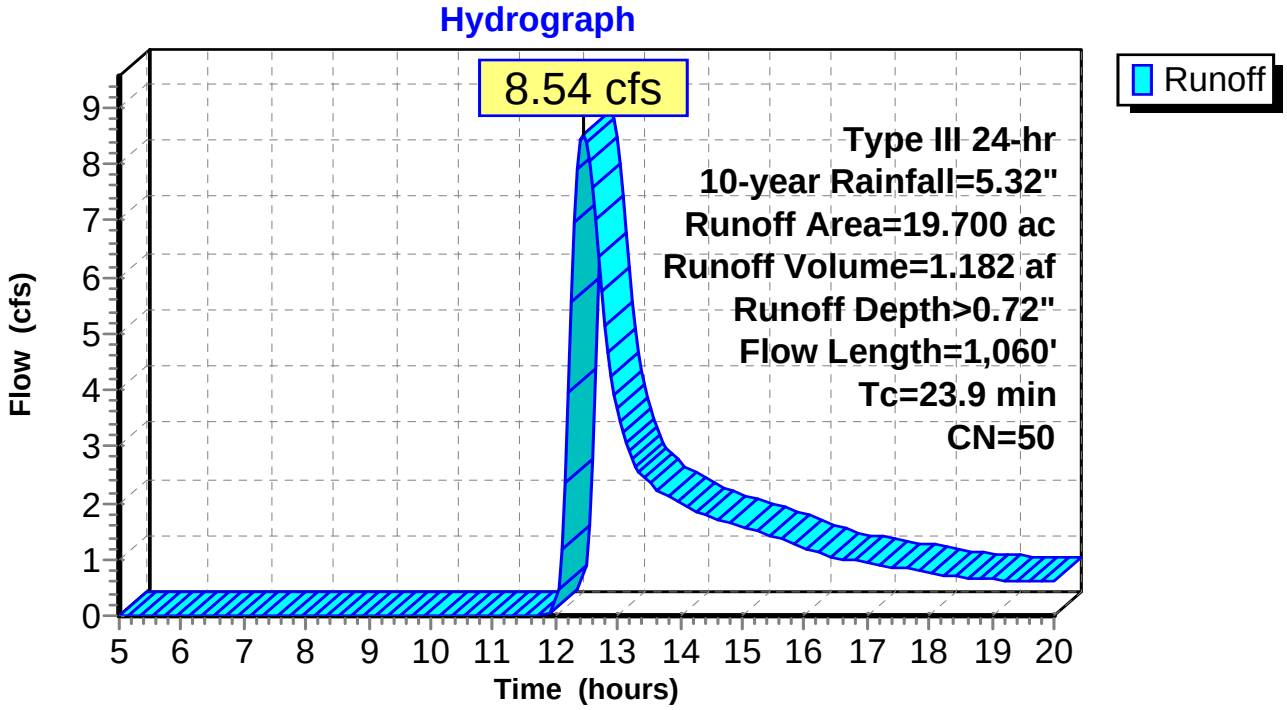
Runoff = 8.54 cfs @ 12.45 hrs, Volume= 1.182 af, Depth> 0.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
1.700	76	Gravel roads, HSG A
0.200	72	Dirt roads, HSG A
11.000	58	Legumes, straight row, Good, HSG A
6.800	30	Meadow, non-grazed, HSG A
19.700	50	Weighted Average
19.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0190	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
13.8	800	0.0190	0.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	160	0.0440	9.20	92.01	**Channel Flow,** Area= 10.0 sf Perim= 12.0' r= 0.83' n= 0.030 Earth, grassed & winding
23.9	1,060	Total			

Subcatchment BB-3: PR BB-3



Summary for Subcatchment HS-1: PR HS-1

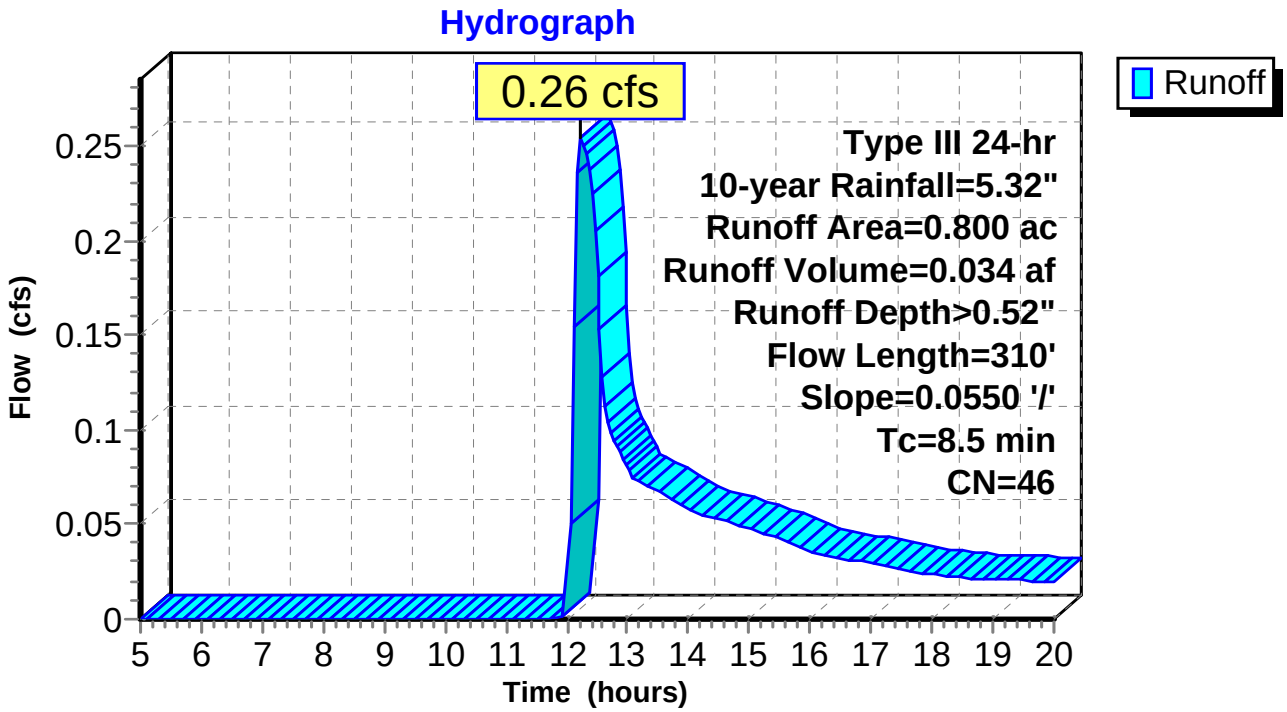
Runoff = 0.26 cfs @ 12.21 hrs, Volume= 0.034 af, Depth> 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.100	76	Gravel roads, HSG A
0.300	58	Legumes, straight row, Good, HSG A
0.400	30	Meadow, non-grazed, HSG A
0.800	46	Weighted Average
0.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0550	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.1	210	0.0550	1.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	310	Total			

Subcatchment HS-1: PR HS-1



Summary for Subcatchment KC-1: PR KC-1

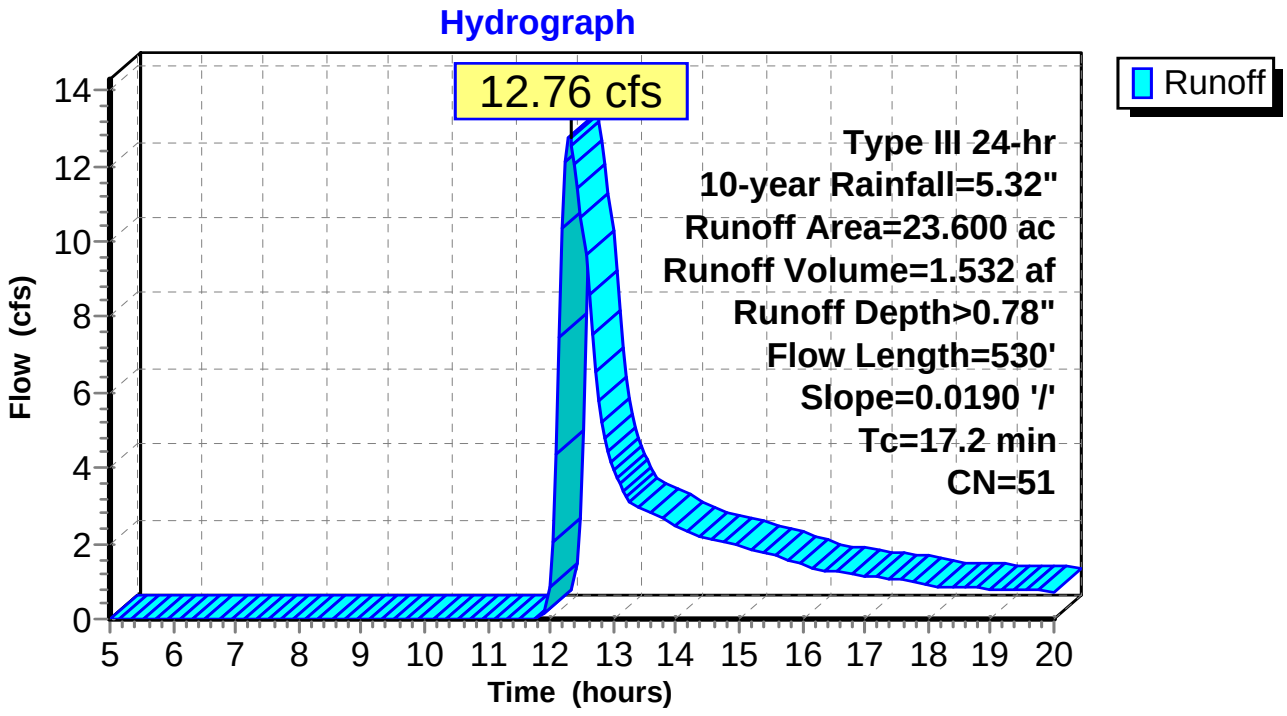
Runoff = 12.76 cfs @ 12.31 hrs, Volume= 1.532 af, Depth> 0.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
1.800	76	Gravel roads, HSG A
14.800	58	Legumes, straight row, Good, HSG A
6.100	30	Meadow, non-grazed, HSG A
0.900	30	Woods, Good, HSG A
23.600	51	Weighted Average
23.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0190	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
7.4	430	0.0190	0.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.2	530	Total			

Subcatchment KC-1: PR KC-1



Summary for Subcatchment MB-1: PR MB-1

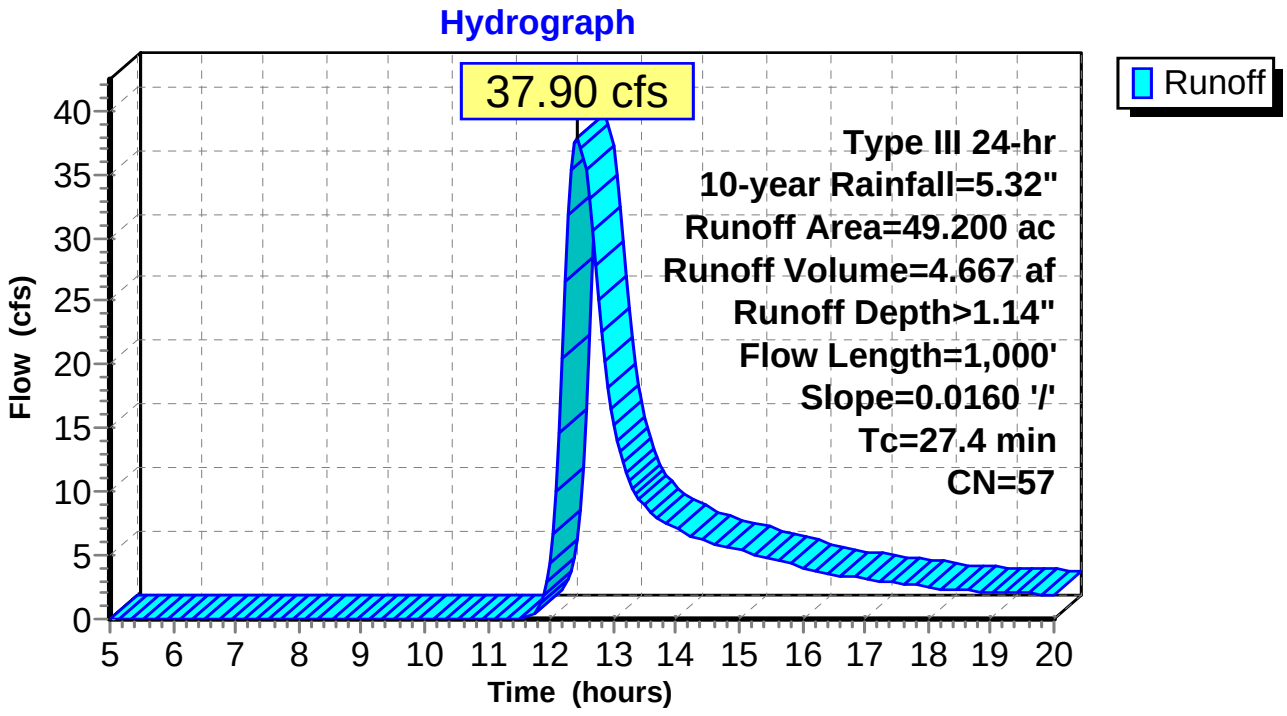
Runoff = 37.90 cfs @ 12.44 hrs, Volume= 4.667 af, Depth> 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
2.700	76	Gravel roads, HSG A
0.400	72	Dirt roads, HSG A
42.400	58	Legumes, straight row, Good, HSG A
3.700	30	Meadow, non-grazed, HSG A
49.200	57	Weighted Average
49.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0160	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
16.9	900	0.0160	0.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	1,000	Total			

Subcatchment MB-1: PR MB-1



Summary for Subcatchment MB-2: PR MB-2

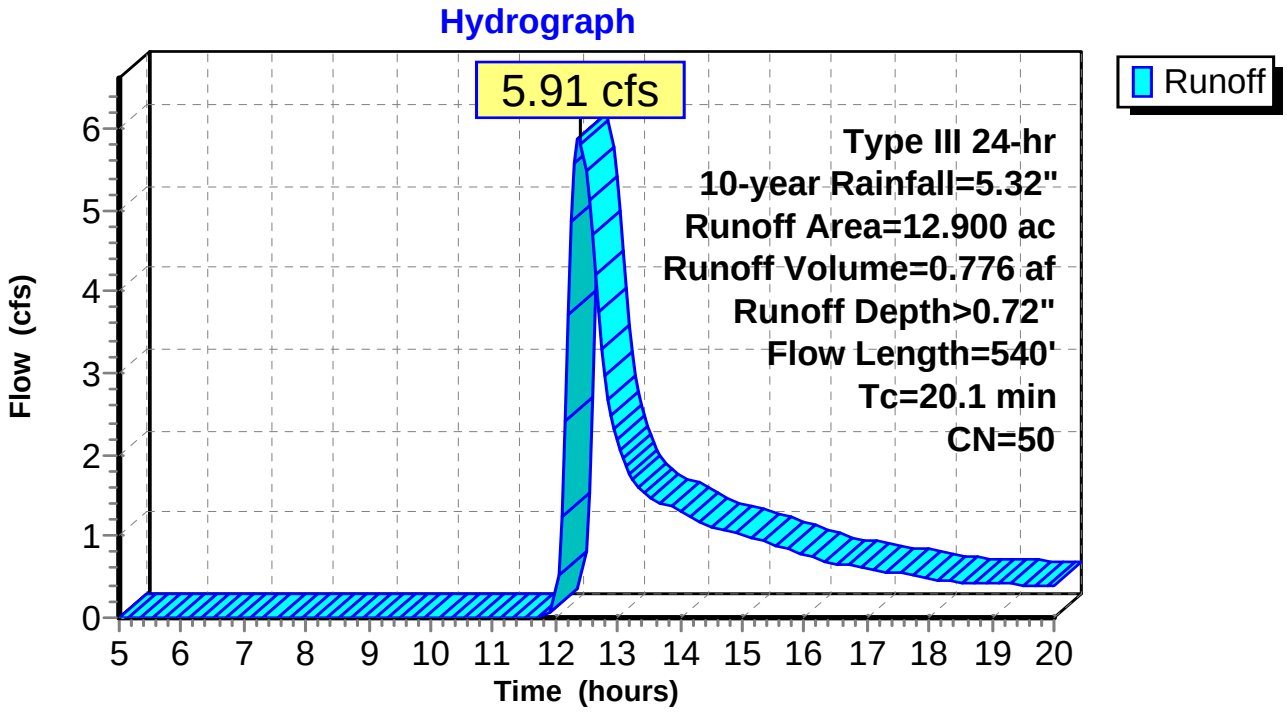
Runoff = 5.91 cfs @ 12.38 hrs, Volume= 0.776 af, Depth> 0.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.300	76	Gravel roads, HSG A
0.500	72	Dirt roads, HSG A
8.200	58	Legumes, straight row, Good, HSG A
1.300	30	Meadow, non-grazed, HSG A
2.600	30	Woods, Good, HSG A
12.900	50	Weighted Average
12.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0170	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	130	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.8	360	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.1	540	Total			

Subcatchment MB-2: PR MB-2



Summary for Subcatchment SB-1: PR SB-1

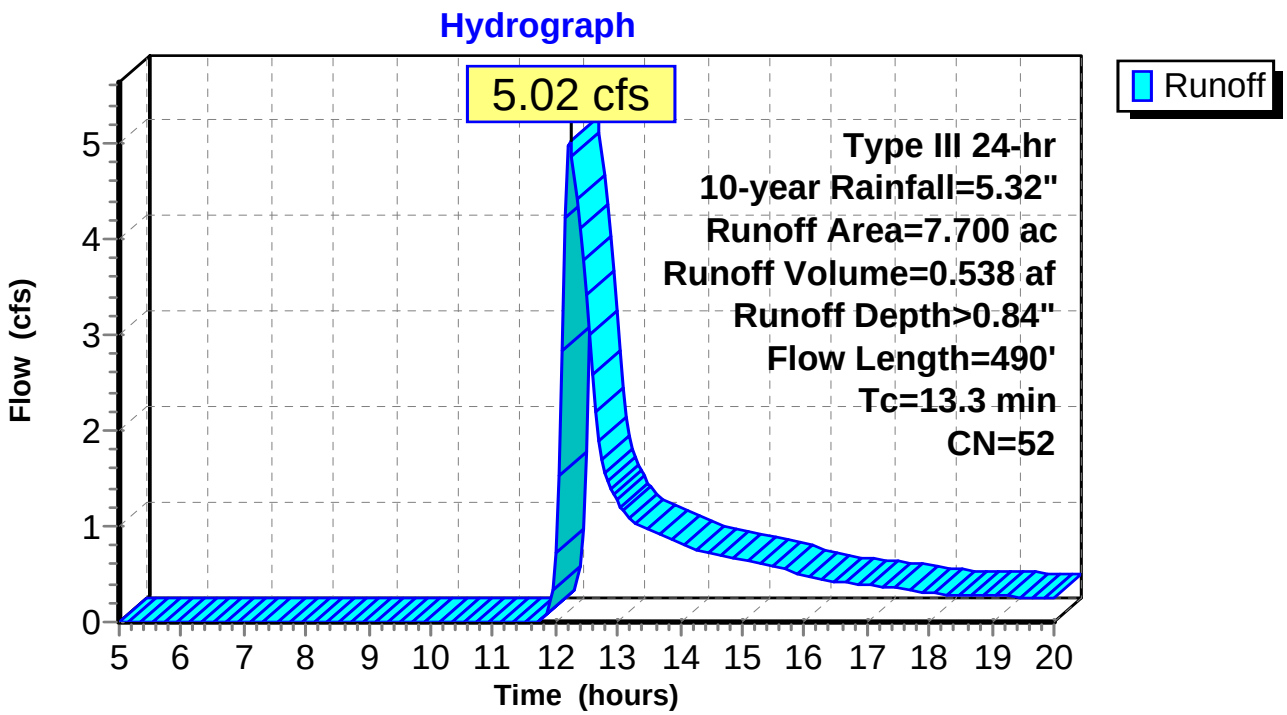
Runoff = 5.02 cfs @ 12.23 hrs, Volume= 0.538 af, Depth> 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.500	76	Gravel roads, HSG A
5.100	58	Legumes, straight row, Good, HSG A
2.100	30	Meadow, non-grazed, HSG A
7.700	52	Weighted Average
7.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.7	250	0.1180	2.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.0	140	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	490	Total			

Subcatchment SB-1: PR SB-1



Summary for Subcatchment SB-2: PR SB-2

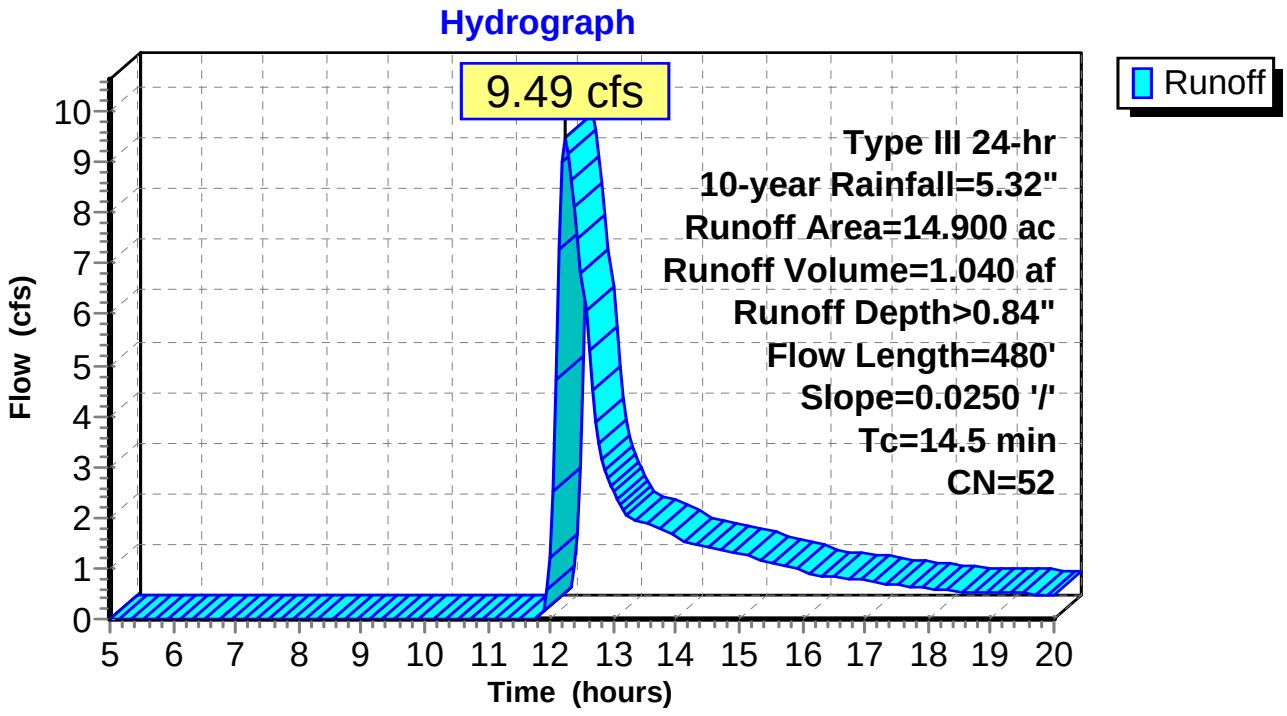
Runoff = 9.49 cfs @ 12.26 hrs, Volume= 1.040 af, Depth> 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
1.300	76	Gravel roads, HSG A
0.200	72	Dirt roads, HSG A
9.400	58	Legumes, straight row, Good, HSG A
4.000	30	Meadow, non-grazed, HSG A
14.900	52	Weighted Average
14.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.7	380	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.5	480	Total			

Subcatchment SB-2: PR SB-2



Summary for Subcatchment SB-3: PR SB-3

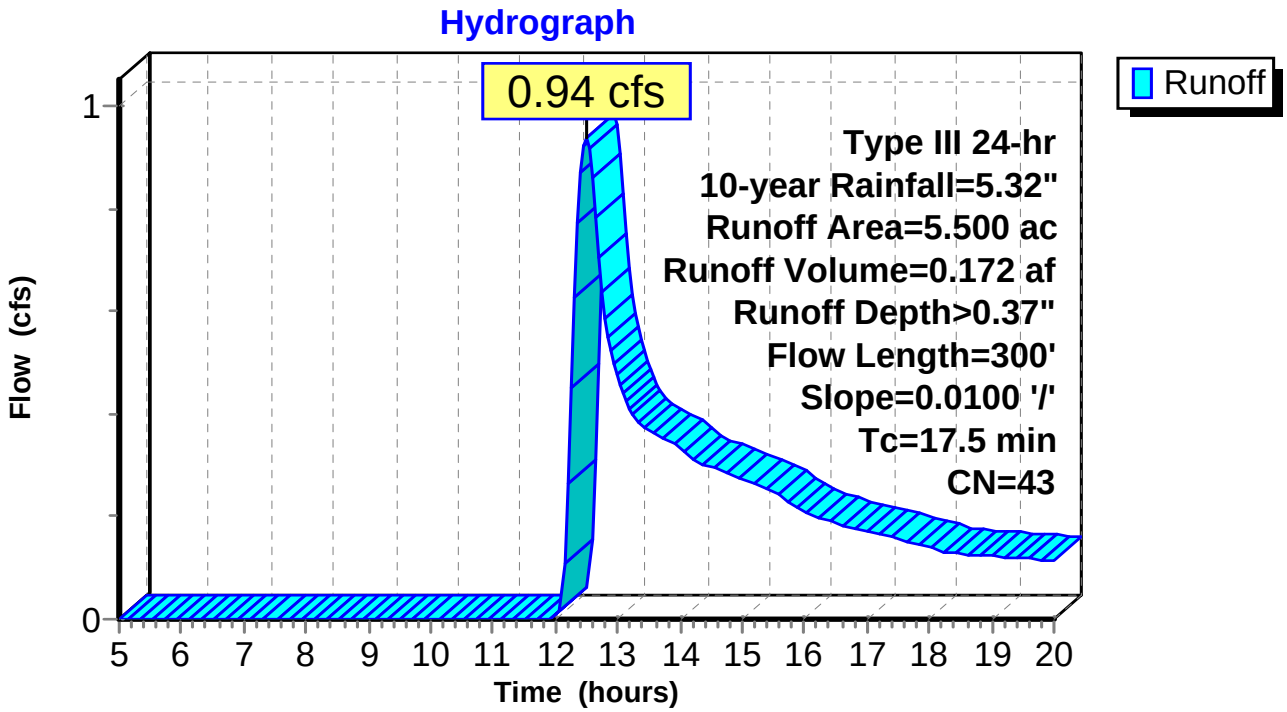
Runoff = 0.94 cfs @ 12.49 hrs, Volume= 0.172 af, Depth> 0.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=5.32"

Area (ac)	CN	Description
0.500	76	Gravel roads, HSG A
1.700	58	Legumes, straight row, Good, HSG A
3.300	30	Meadow, non-grazed, HSG A
5.500	43	Weighted Average
5.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
4.8	200	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	300	Total			

Subcatchment SB-3: PR SB-3



Summary for Pond 1P: PR MB-2 Depression

Inflow Area = 12.900 ac, 0.00% Impervious, Inflow Depth > 0.72" for 10-year event
Inflow = 5.91 cfs @ 12.38 hrs, Volume= 0.776 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 272.41' @ 20.00 hrs Surf.Area= 23,888 sf Storage= 33,749 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

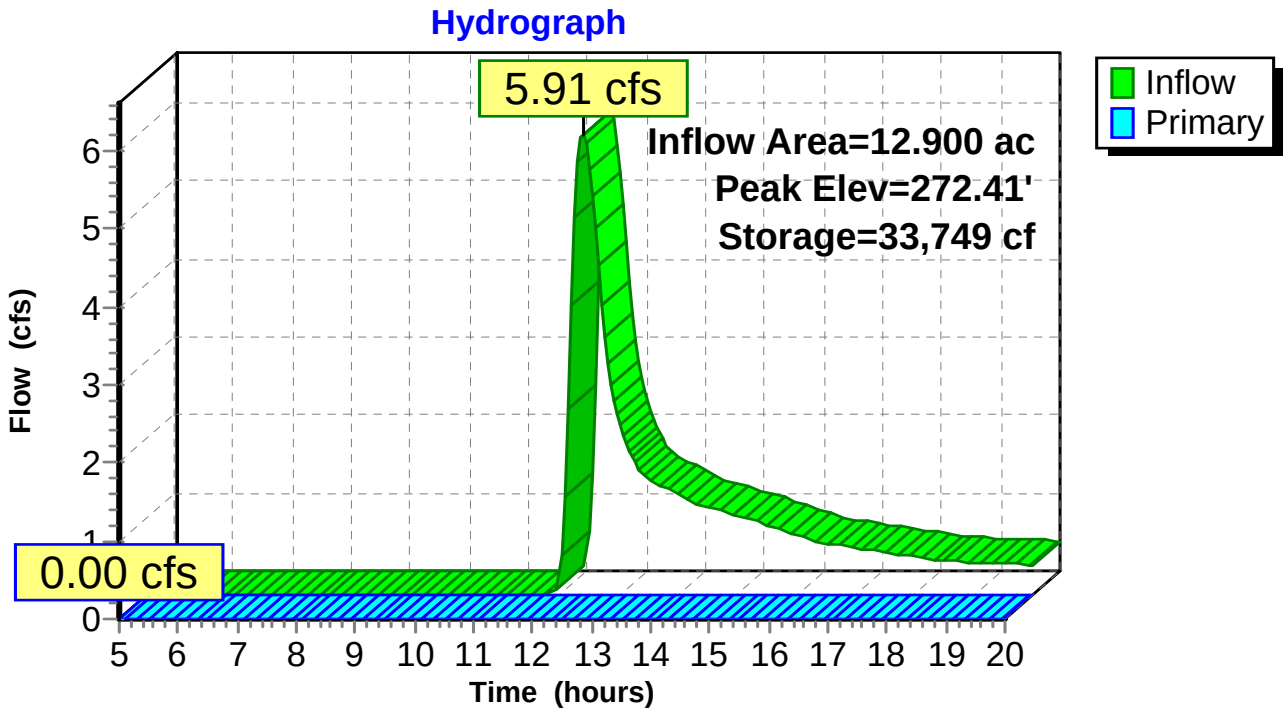
Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	336,950 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
270.00	5,650	0	0
272.00	19,200	24,850	24,850
274.00	41,900	61,100	85,950
276.00	62,300	104,200	190,150
278.00	84,500	146,800	336,950

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**40.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=270.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: PR MB-2 Depression

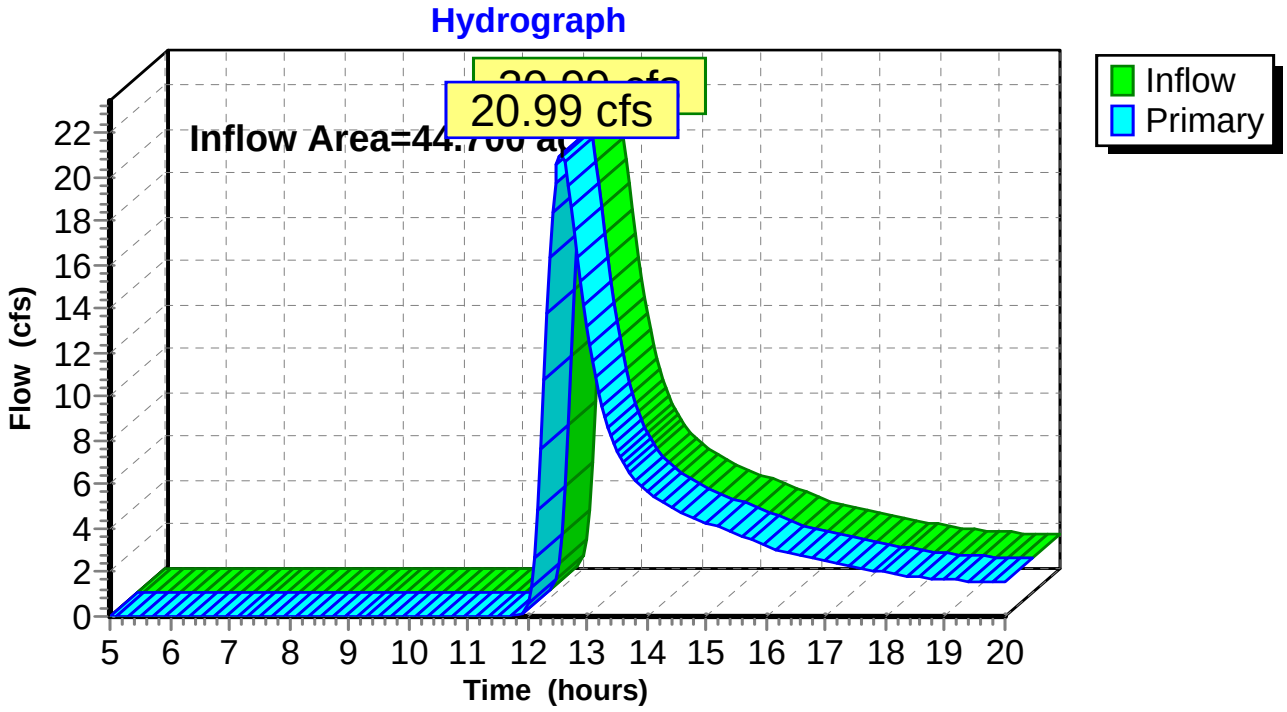


Summary for Link BB: BB

Inflow Area = 44.700 ac, 0.45% Impervious, Inflow Depth > 0.88" for 10-year event
Inflow = 20.99 cfs @ 12.57 hrs, Volume= 3.285 af
Primary = 20.99 cfs @ 12.57 hrs, Volume= 3.285 af, Atten= 0%, Lag= 0.0 min

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

Link BB: BB

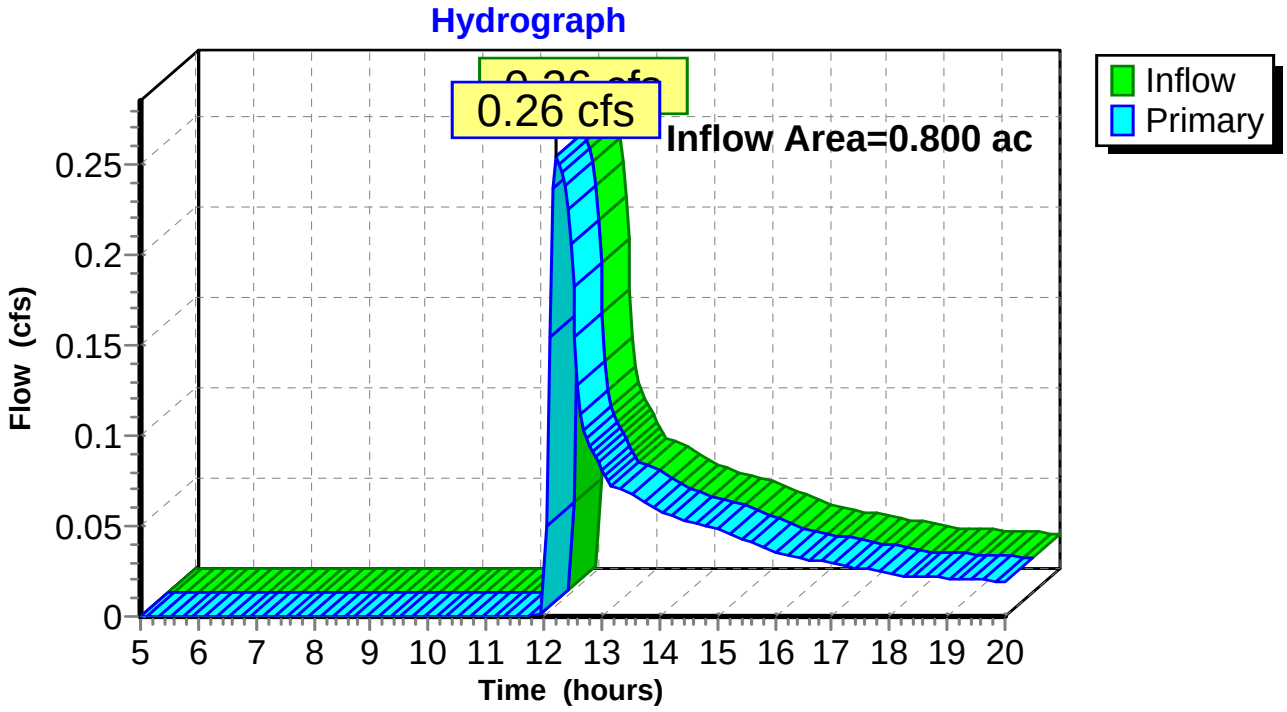


Summary for Link HS: HS

Inflow Area = 0.800 ac, 0.00% Impervious, Inflow Depth > 0.52" for 10-year event
Inflow = 0.26 cfs @ 12.21 hrs, Volume= 0.034 af
Primary = 0.26 cfs @ 12.21 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

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

Link HS: HS

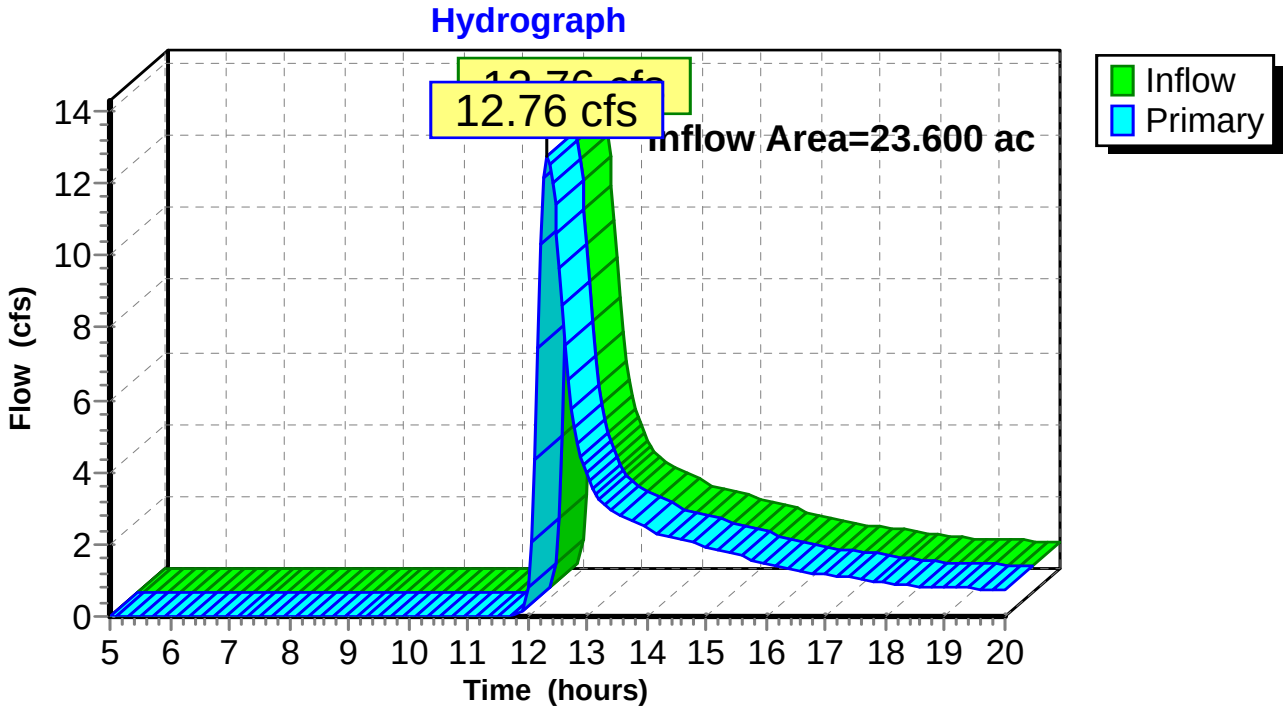


Summary for Link KC: KC

Inflow Area = 23.600 ac, 0.00% Impervious, Inflow Depth > 0.78" for 10-year event
Inflow = 12.76 cfs @ 12.31 hrs, Volume= 1.532 af
Primary = 12.76 cfs @ 12.31 hrs, Volume= 1.532 af, Atten= 0%, Lag= 0.0 min

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

Link KC: KC

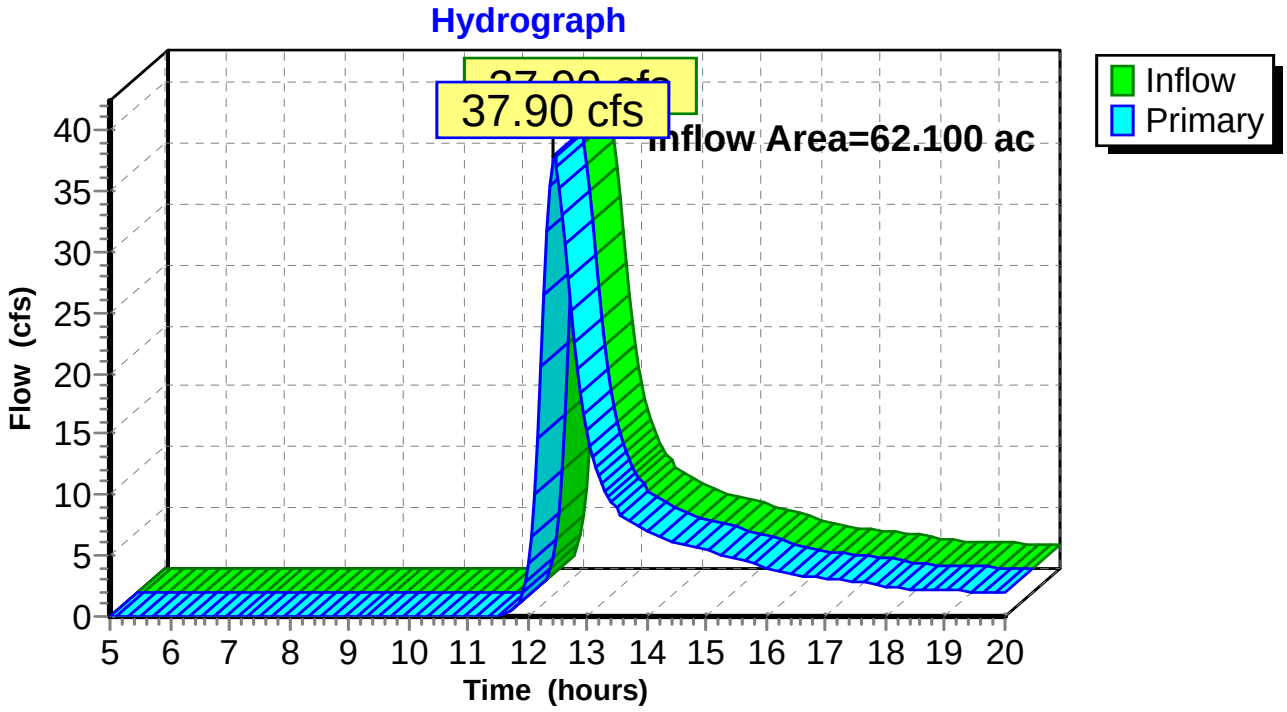


Summary for Link MB: MB

Inflow Area = 62.100 ac, 0.00% Impervious, Inflow Depth > 0.90" for 10-year event
Inflow = 37.90 cfs @ 12.44 hrs, Volume= 4.667 af
Primary = 37.90 cfs @ 12.44 hrs, Volume= 4.667 af, Atten= 0%, Lag= 0.0 min

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

Link MB: MB

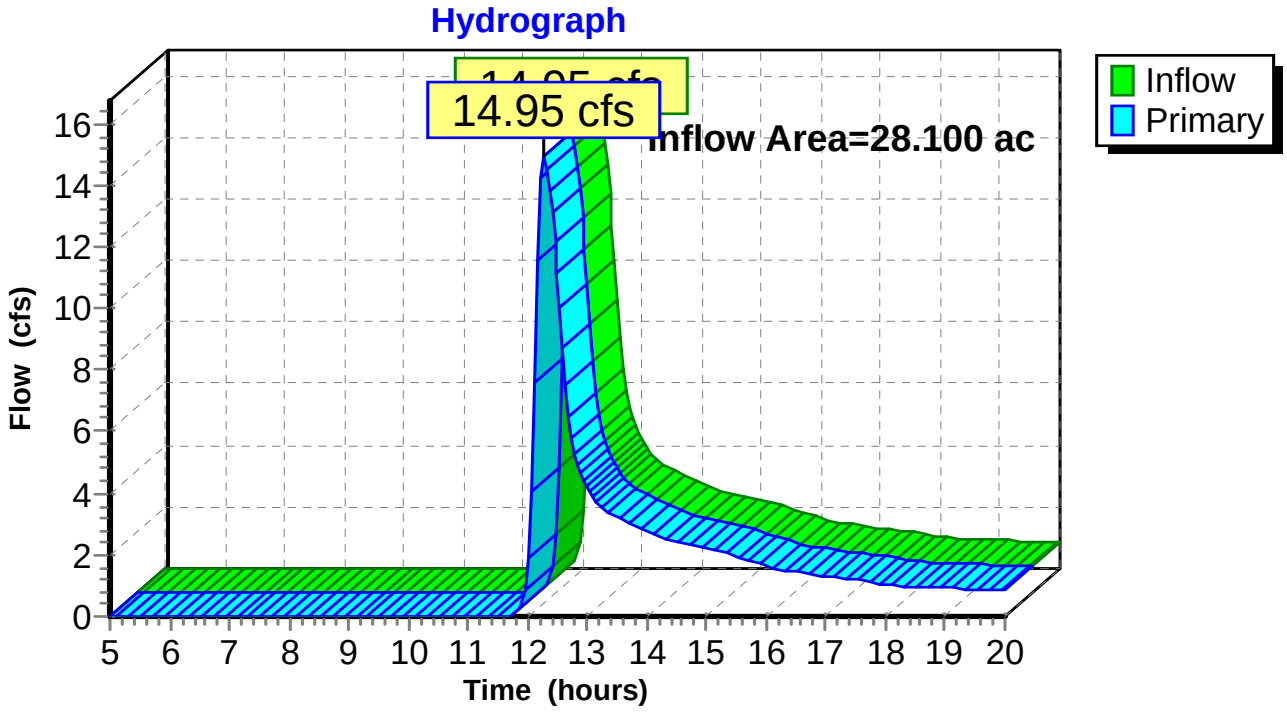


Summary for Link SB: SB

Inflow Area = 28.100 ac, 0.00% Impervious, Inflow Depth > 0.75" for 10-year event
Inflow = 14.95 cfs @ 12.26 hrs, Volume= 1.750 af
Primary = 14.95 cfs @ 12.26 hrs, Volume= 1.750 af, Atten= 0%, Lag= 0.0 min

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

Link SB: SB



25-Year Storm Event- Proposed

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

Subcatchment BB-1: PR BB-1 Runoff Area=19.100 ac 0.52% Impervious Runoff Depth>1.74"
Flow Length=1,400' Slope=0.0100 '/' Tc=43.7 min CN=56 Runoff=18.98 cfs 2.769 af

Subcatchment BB-2: PR BB-2 Runoff Area=5.900 ac 1.69% Impervious Runoff Depth>1.43"
Flow Length=730' Slope=0.0110 '/' Tc=26.6 min CN=52 Runoff=5.80 cfs 0.703 af

Subcatchment BB-3: PR BB-3 Runoff Area=19.700 ac 0.00% Impervious Runoff Depth>1.28"
Flow Length=1,060' Tc=23.9 min CN=50 Runoff=17.44 cfs 2.095 af

Subcatchment HS-1: PR HS-1 Runoff Area=0.800 ac 0.00% Impervious Runoff Depth>0.99"
Flow Length=310' Slope=0.0550 '/' Tc=8.5 min CN=46 Runoff=0.70 cfs 0.066 af

Subcatchment KC-1: PR KC-1 Runoff Area=23.600 ac 0.00% Impervious Runoff Depth>1.36"
Flow Length=530' Slope=0.0190 '/' Tc=17.2 min CN=51 Runoff=25.52 cfs 2.671 af

Subcatchment MB-1: PR MB-1 Runoff Area=49.200 ac 0.00% Impervious Runoff Depth>1.84"
Flow Length=1,000' Slope=0.0160 '/' Tc=27.4 min CN=57 Runoff=64.70 cfs 7.533 af

Subcatchment MB-2: PR MB-2 Runoff Area=12.900 ac 0.00% Impervious Runoff Depth>1.28"
Flow Length=540' Tc=20.1 min CN=50 Runoff=12.19 cfs 1.375 af

Subcatchment SB-1: PR SB-1 Runoff Area=7.700 ac 0.00% Impervious Runoff Depth>1.44"
Flow Length=490' Tc=13.3 min CN=52 Runoff=9.91 cfs 0.924 af

Subcatchment SB-2: PR SB-2 Runoff Area=14.900 ac 0.00% Impervious Runoff Depth>1.44"
Flow Length=480' Slope=0.0250 '/' Tc=14.5 min CN=52 Runoff=18.46 cfs 1.786 af

Subcatchment SB-3: PR SB-3 Runoff Area=5.500 ac 0.00% Impervious Runoff Depth>0.78"
Flow Length=300' Slope=0.0100 '/' Tc=17.5 min CN=43 Runoff=2.63 cfs 0.357 af

Pond 1P: PR MB-2 Depression Peak Elev=273.31' Storage=59,820 cf Inflow=12.19 cfs 1.375 af
Outflow=0.00 cfs 0.000 af

Link BB: BB Inflow=38.79 cfs 5.566 af
Primary=38.79 cfs 5.566 af

Link HS: HS Inflow=0.70 cfs 0.066 af
Primary=0.70 cfs 0.066 af

Link KC: KC Inflow=25.52 cfs 2.671 af
Primary=25.52 cfs 2.671 af

Link MB: MB Inflow=64.70 cfs 7.533 af
Primary=64.70 cfs 7.533 af

Link SB: SB Inflow=30.31 cfs 3.067 af
Primary=30.31 cfs 3.067 af

Total Runoff Area = 159.300 ac Runoff Volume = 20.277 af Average Runoff Depth = 1.53"
99.87% Pervious = 159.100 ac 0.13% Impervious = 0.200 ac

Summary for Subcatchment BB-1: PR BB-1

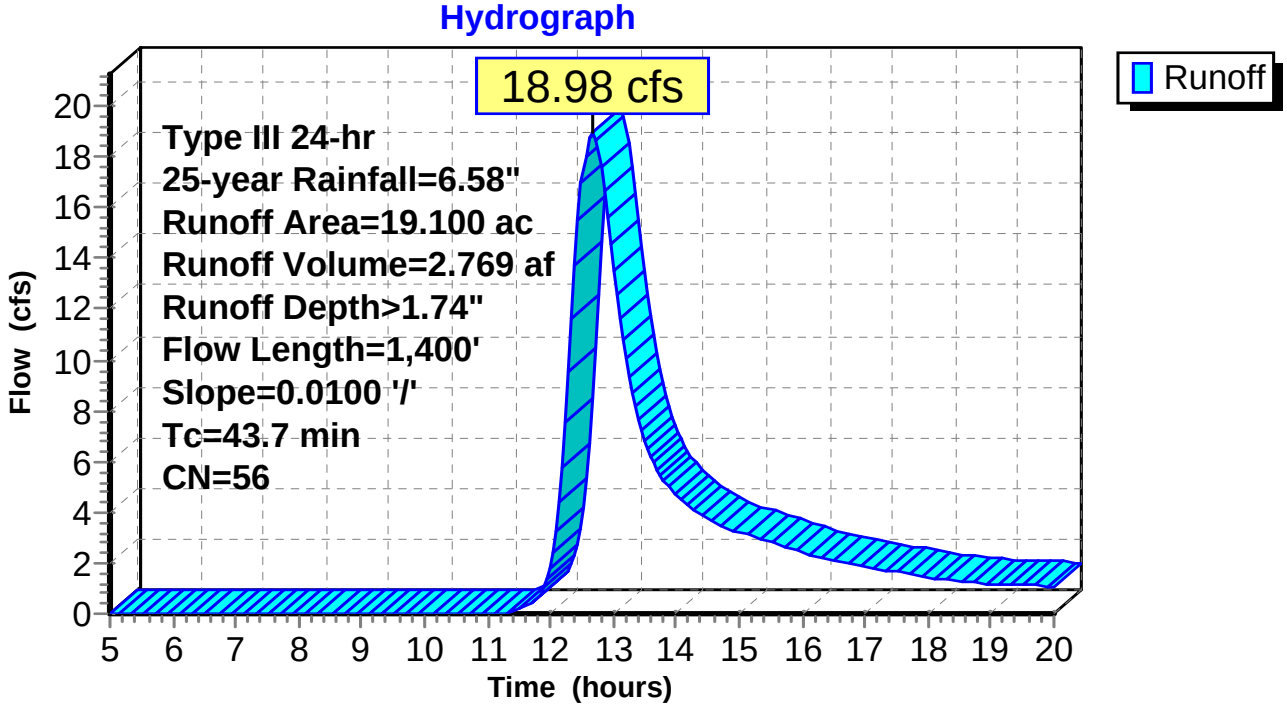
Runoff = 18.98 cfs @ 12.66 hrs, Volume= 2.769 af, Depth> 1.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.900	76	Gravel roads, HSG A
0.600	72	Dirt roads, HSG A
15.400	58	Legumes, straight row, Good, HSG A
2.000	30	Meadow, non-grazed, HSG A
0.100	30	Woods, Good, HSG A
19.100	56	Weighted Average
19.000		99.48% Pervious Area
0.100		0.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
31.0	1,300	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
43.7	1,400	Total			

Subcatchment BB-1: PR BB-1



Summary for Subcatchment BB-2: PR BB-2

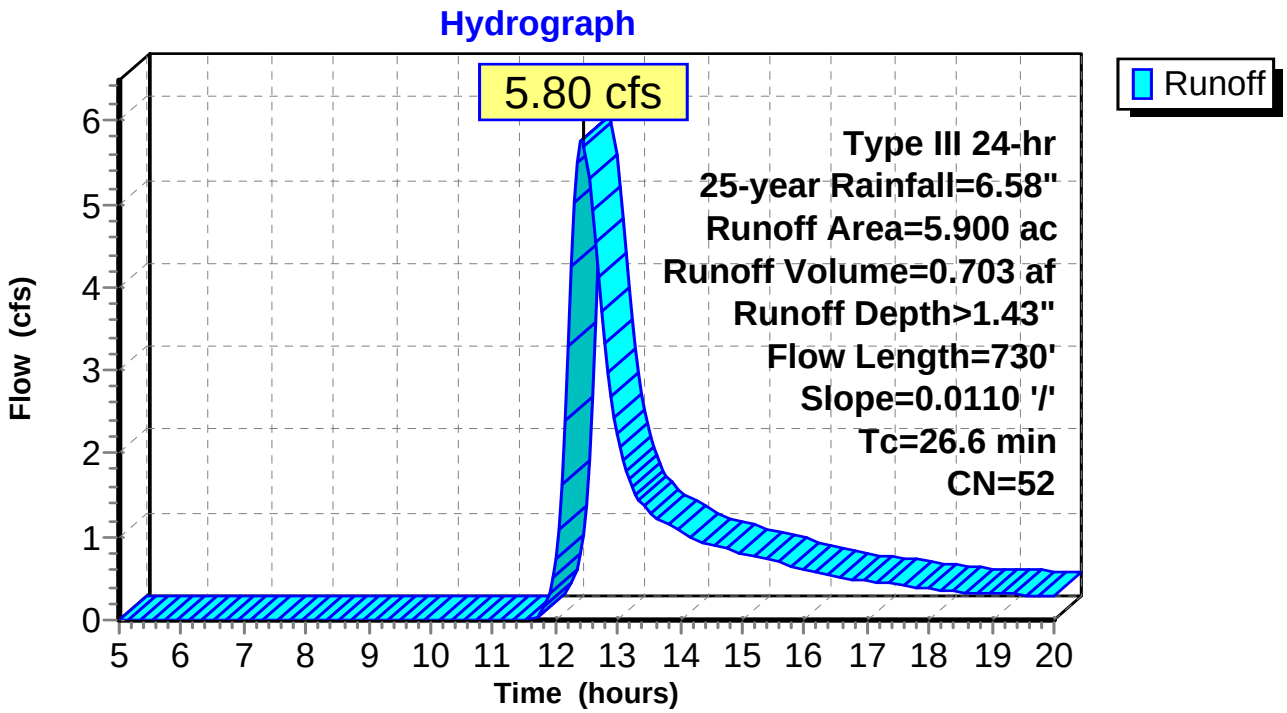
Runoff = 5.80 cfs @ 12.43 hrs, Volume= 0.703 af, Depth> 1.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.400	76	Gravel roads, HSG A
3.800	58	Legumes, straight row, Good, HSG A
1.600	30	Meadow, non-grazed, HSG A
5.900	52	Weighted Average
5.800		98.31% Pervious Area
0.100		1.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	100	0.0110	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
14.3	630	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
26.6	730	Total			

Subcatchment BB-2: PR BB-2



Summary for Subcatchment BB-3: PR BB-3

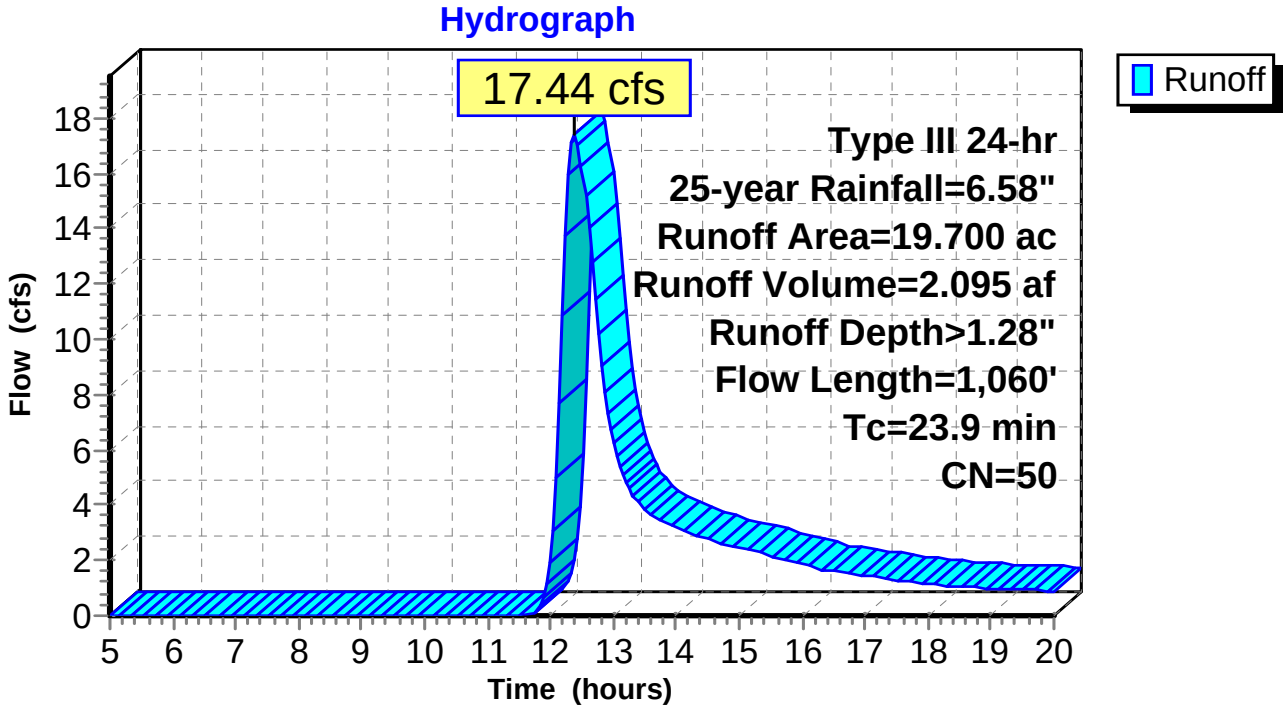
Runoff = 17.44 cfs @ 12.40 hrs, Volume= 2.095 af, Depth> 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
1.700	76	Gravel roads, HSG A
0.200	72	Dirt roads, HSG A
11.000	58	Legumes, straight row, Good, HSG A
6.800	30	Meadow, non-grazed, HSG A
19.700	50	Weighted Average
19.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0190	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
13.8	800	0.0190	0.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	160	0.0440	9.20	92.01	**Channel Flow,** Area= 10.0 sf Perim= 12.0' r= 0.83' n= 0.030 Earth, grassed & winding
23.9	1,060	Total			

Subcatchment BB-3: PR BB-3



Summary for Subcatchment HS-1: PR HS-1

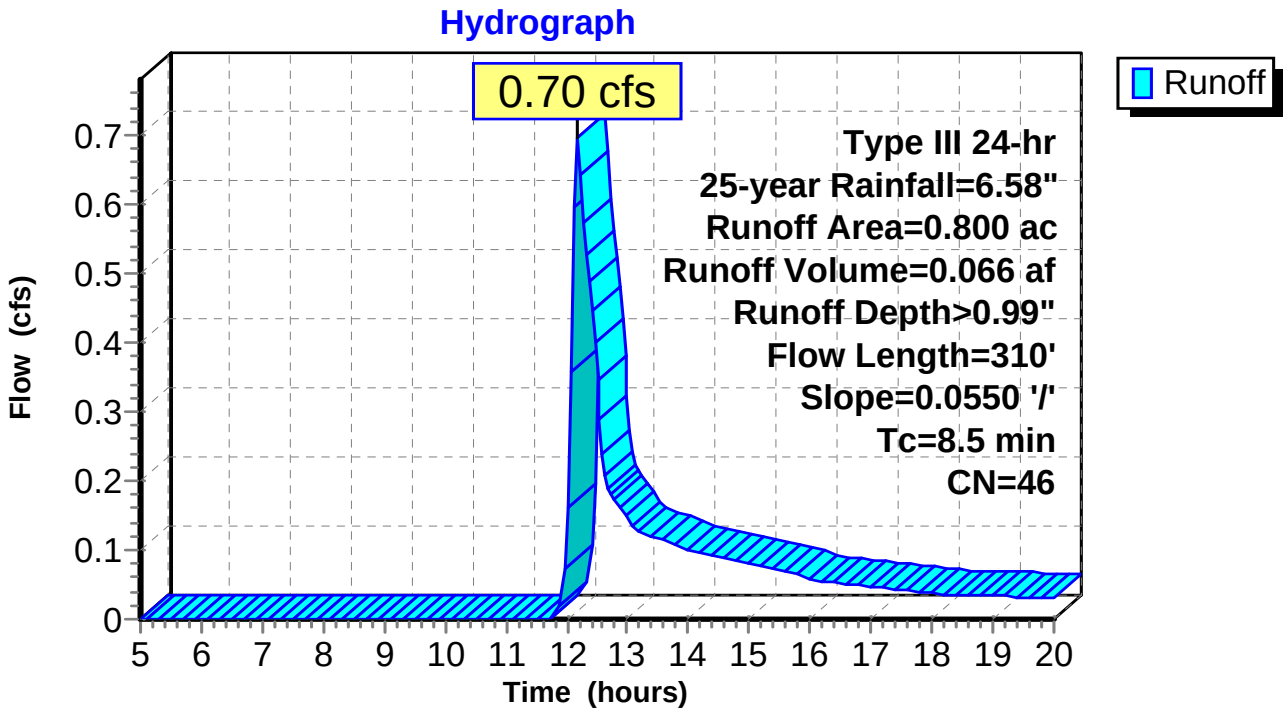
Runoff = 0.70 cfs @ 12.16 hrs, Volume= 0.066 af, Depth> 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.100	76	Gravel roads, HSG A
0.300	58	Legumes, straight row, Good, HSG A
0.400	30	Meadow, non-grazed, HSG A
0.800	46	Weighted Average
0.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0550	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.1	210	0.0550	1.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	310	Total			

Subcatchment HS-1: PR HS-1



Summary for Subcatchment KC-1: PR KC-1

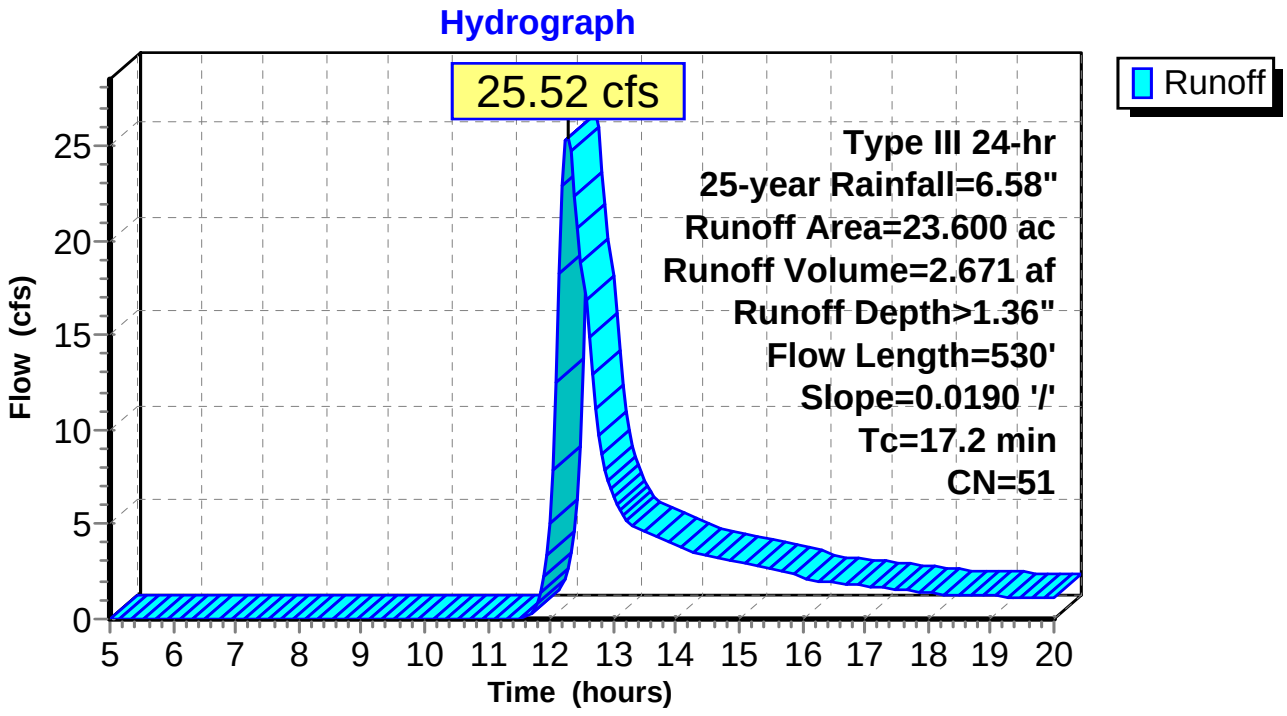
Runoff = 25.52 cfs @ 12.28 hrs, Volume= 2.671 af, Depth> 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
1.800	76	Gravel roads, HSG A
14.800	58	Legumes, straight row, Good, HSG A
6.100	30	Meadow, non-grazed, HSG A
0.900	30	Woods, Good, HSG A
23.600	51	Weighted Average
23.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0190	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
7.4	430	0.0190	0.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.2	530	Total			

Subcatchment KC-1: PR KC-1



Summary for Subcatchment MB-1: PR MB-1

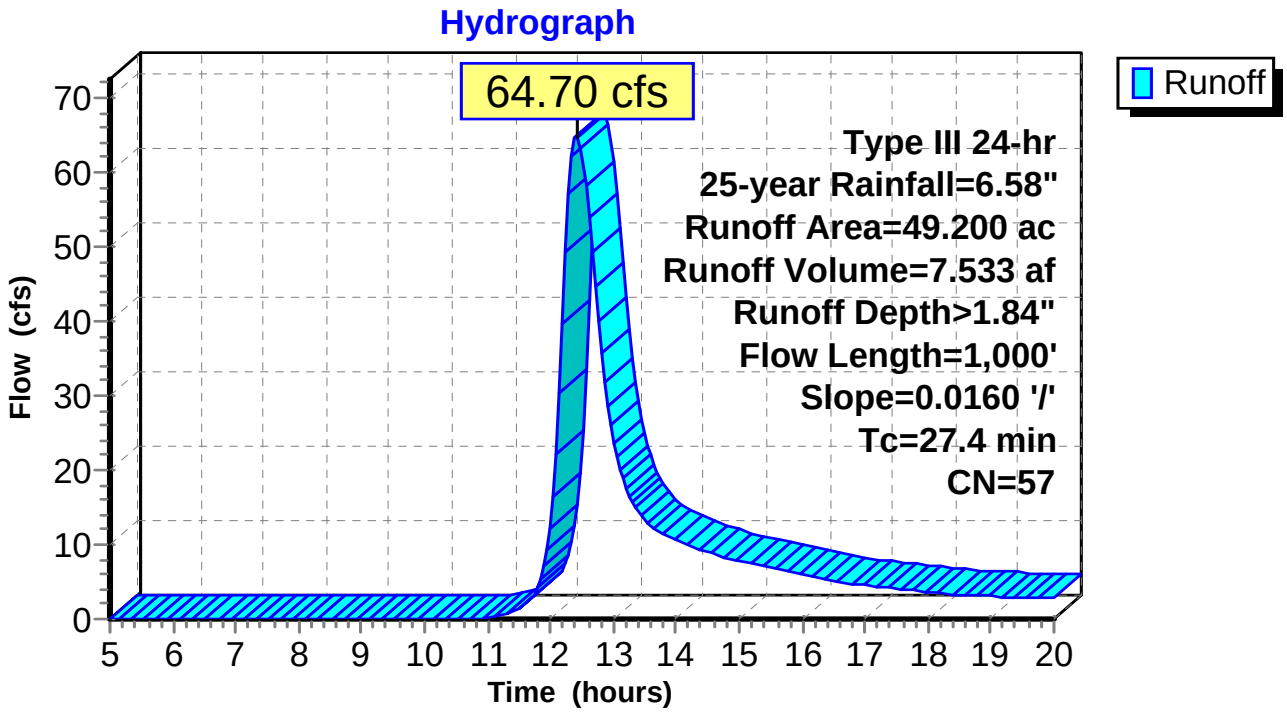
Runoff = 64.70 cfs @ 12.42 hrs, Volume= 7.533 af, Depth> 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
2.700	76	Gravel roads, HSG A
0.400	72	Dirt roads, HSG A
42.400	58	Legumes, straight row, Good, HSG A
3.700	30	Meadow, non-grazed, HSG A
49.200	57	Weighted Average
49.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0160	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
16.9	900	0.0160	0.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	1,000	Total			

Subcatchment MB-1: PR MB-1



Summary for Subcatchment MB-2: PR MB-2

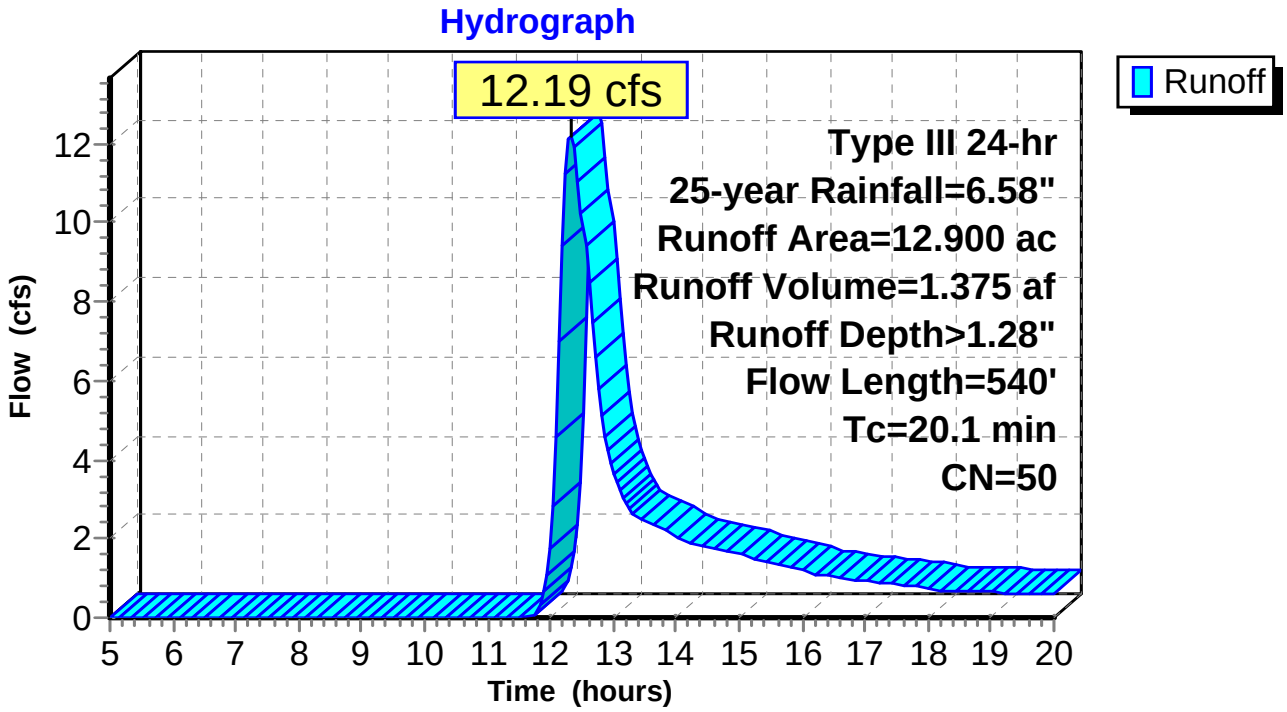
Runoff = 12.19 cfs @ 12.33 hrs, Volume= 1.375 af, Depth> 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.300	76	Gravel roads, HSG A
0.500	72	Dirt roads, HSG A
8.200	58	Legumes, straight row, Good, HSG A
1.300	30	Meadow, non-grazed, HSG A
2.600	30	Woods, Good, HSG A
12.900	50	Weighted Average
12.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0170	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	130	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.8	360	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.1	540	Total			

Subcatchment MB-2: PR MB-2



Summary for Subcatchment SB-1: PR SB-1

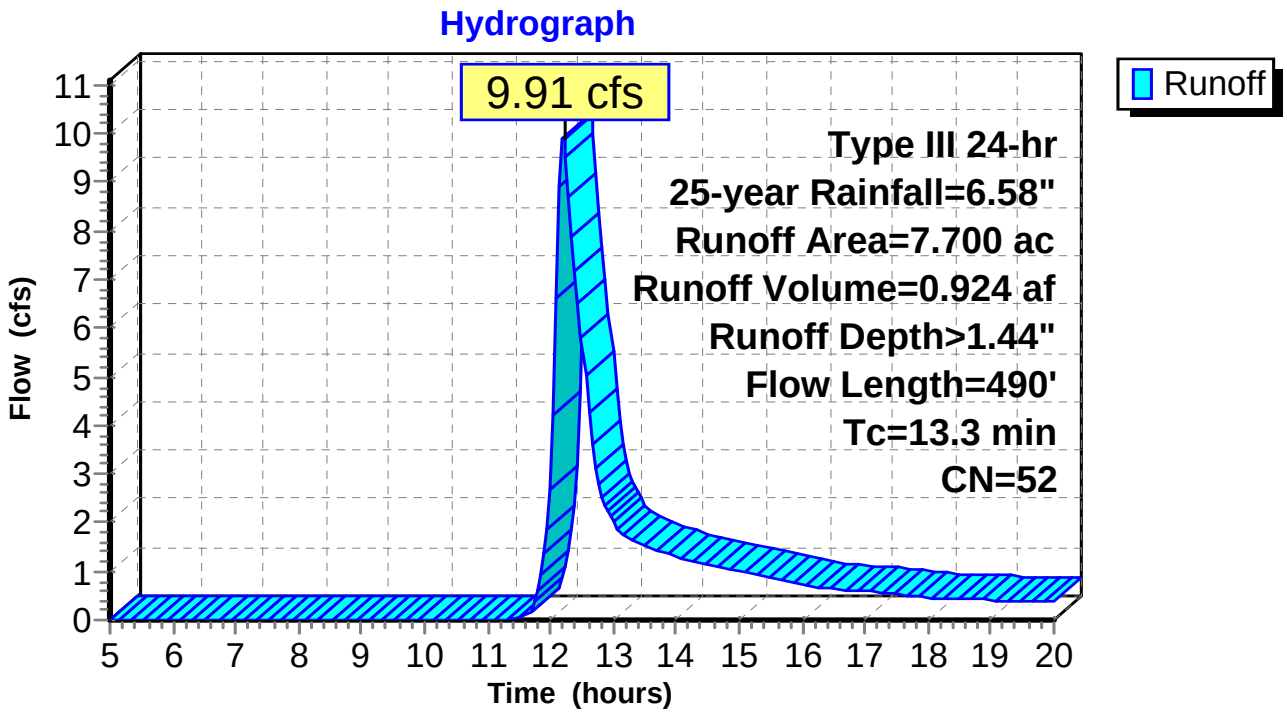
Runoff = 9.91 cfs @ 12.21 hrs, Volume= 0.924 af, Depth> 1.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.500	76	Gravel roads, HSG A
5.100	58	Legumes, straight row, Good, HSG A
2.100	30	Meadow, non-grazed, HSG A
7.700	52	Weighted Average
7.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.7	250	0.1180	2.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.0	140	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	490	Total			

Subcatchment SB-1: PR SB-1



Summary for Subcatchment SB-2: PR SB-2

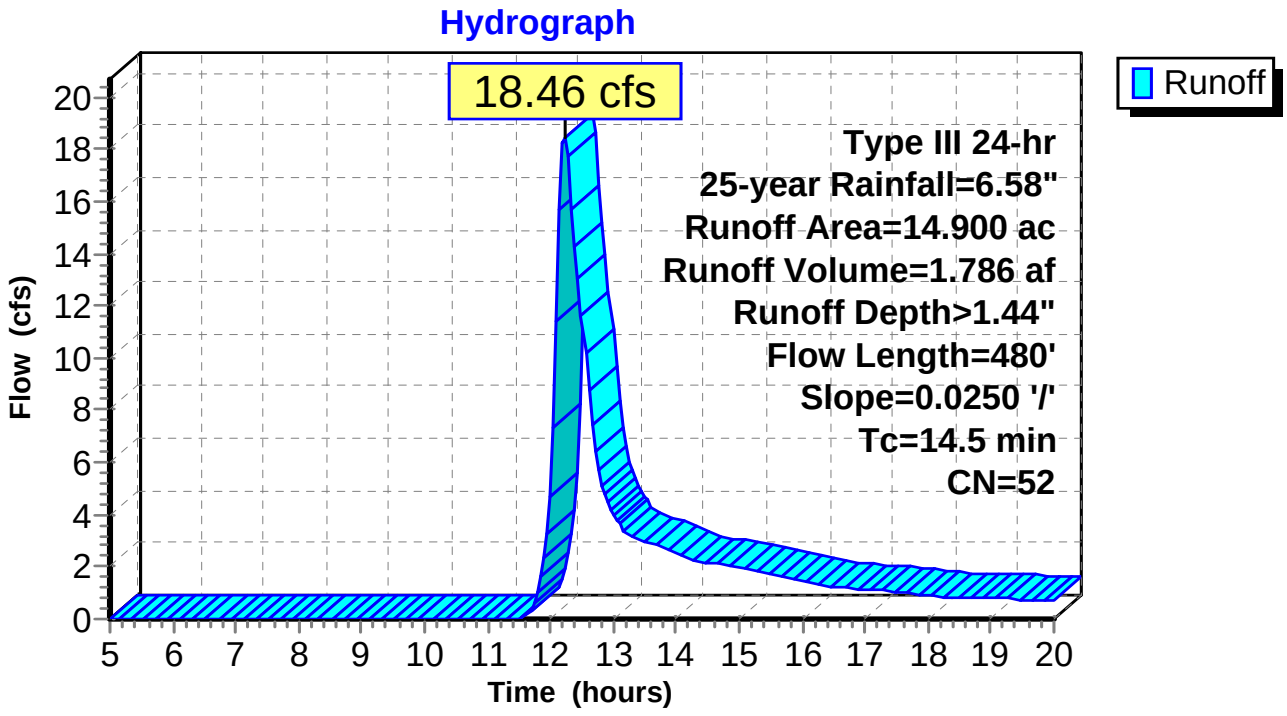
Runoff = 18.46 cfs @ 12.23 hrs, Volume= 1.786 af, Depth> 1.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
1.300	76	Gravel roads, HSG A
0.200	72	Dirt roads, HSG A
9.400	58	Legumes, straight row, Good, HSG A
4.000	30	Meadow, non-grazed, HSG A
14.900	52	Weighted Average
14.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.7	380	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.5	480	Total			

Subcatchment SB-2: PR SB-2



Summary for Subcatchment SB-3: PR SB-3

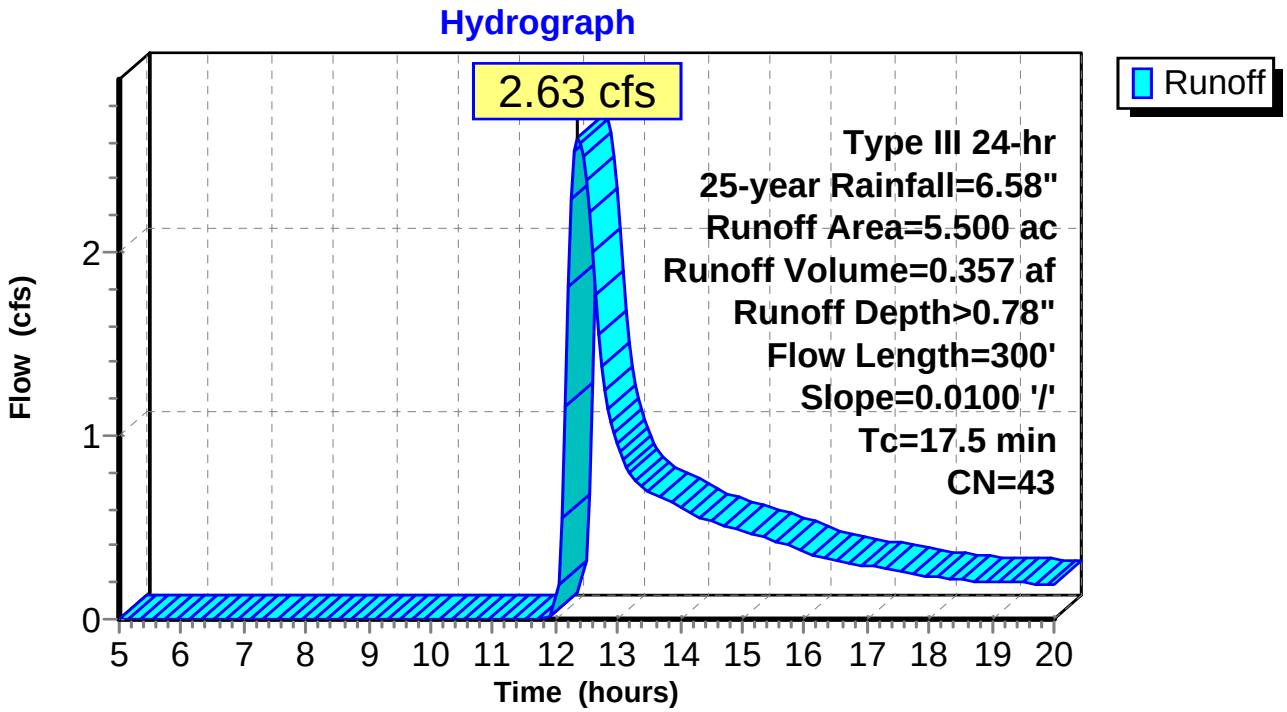
Runoff = 2.63 cfs @ 12.36 hrs, Volume= 0.357 af, Depth> 0.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=6.58"

Area (ac)	CN	Description
0.500	76	Gravel roads, HSG A
1.700	58	Legumes, straight row, Good, HSG A
3.300	30	Meadow, non-grazed, HSG A
5.500	43	Weighted Average
5.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
4.8	200	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	300	Total			

Subcatchment SB-3: PR SB-3



Summary for Pond 1P: PR MB-2 Depression

Inflow Area = 12.900 ac, 0.00% Impervious, Inflow Depth > 1.28" for 25-year event
Inflow = 12.19 cfs @ 12.33 hrs, Volume= 1.375 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 273.31' @ 20.00 hrs Surf.Area= 34,095 sf Storage= 59,820 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

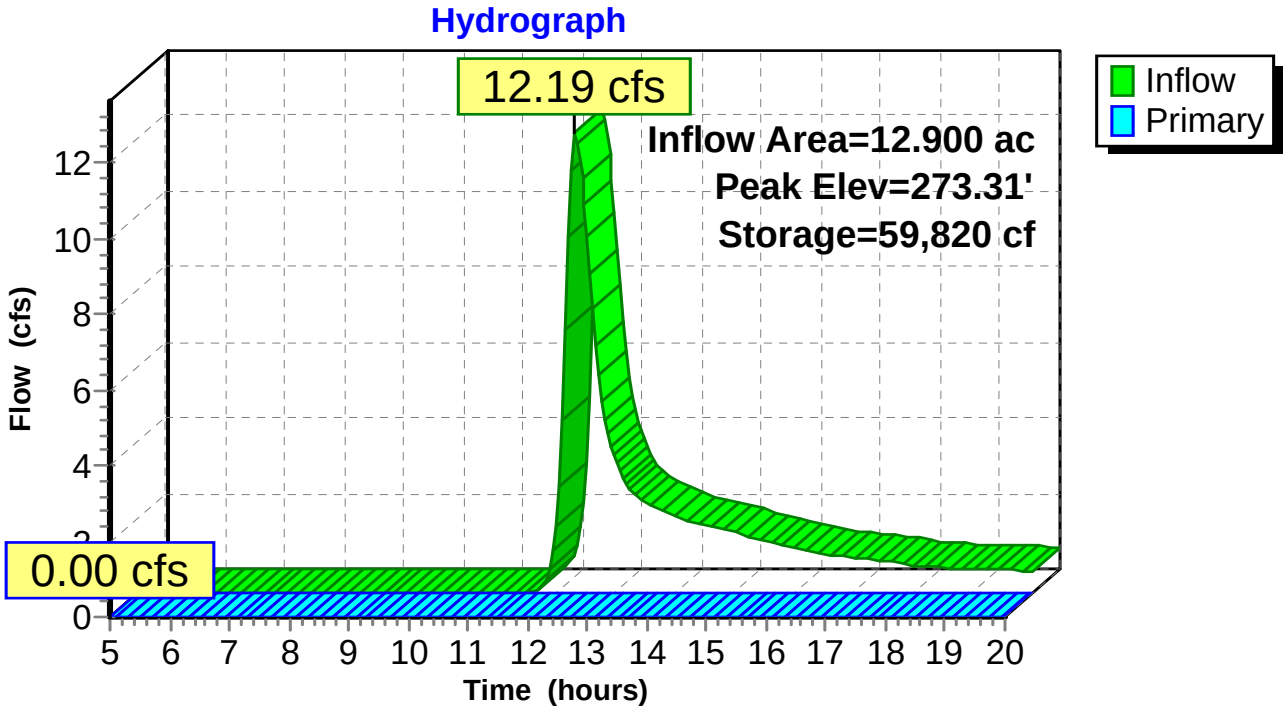
Volume	Invert	Avail.Storage	Storage Description
#1	270.00'	336,950 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
270.00	5,650	0	0
272.00	19,200	24,850	24,850
274.00	41,900	61,100	85,950
276.00	62,300	104,200	190,150
278.00	84,500	146,800	336,950

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**40.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=270.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: PR MB-2 Depression

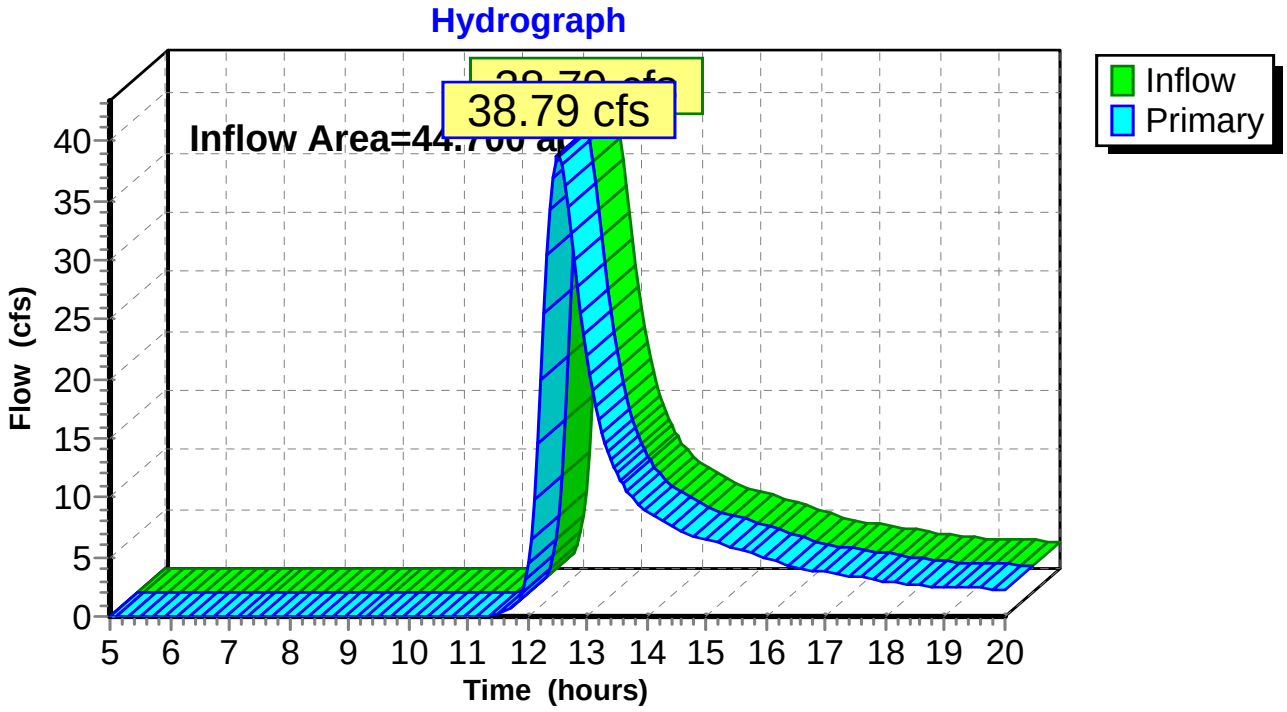


Summary for Link BB: BB

Inflow Area = 44.700 ac, 0.45% Impervious, Inflow Depth > 1.49" for 25-year event
Inflow = 38.79 cfs @ 12.51 hrs, Volume= 5.566 af
Primary = 38.79 cfs @ 12.51 hrs, Volume= 5.566 af, Atten= 0%, Lag= 0.0 min

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

Link BB: BB

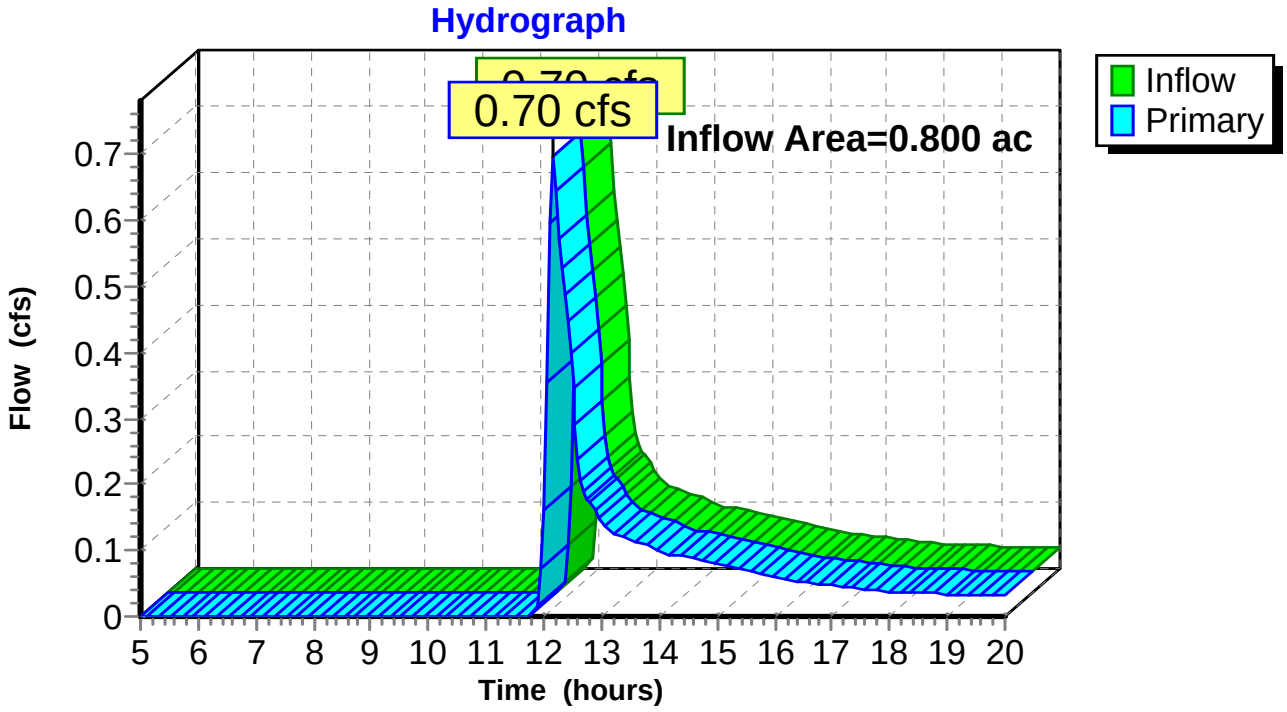


Summary for Link HS: HS

Inflow Area = 0.800 ac, 0.00% Impervious, Inflow Depth > 0.99" for 25-year event
Inflow = 0.70 cfs @ 12.16 hrs, Volume= 0.066 af
Primary = 0.70 cfs @ 12.16 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min

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

Link HS: HS

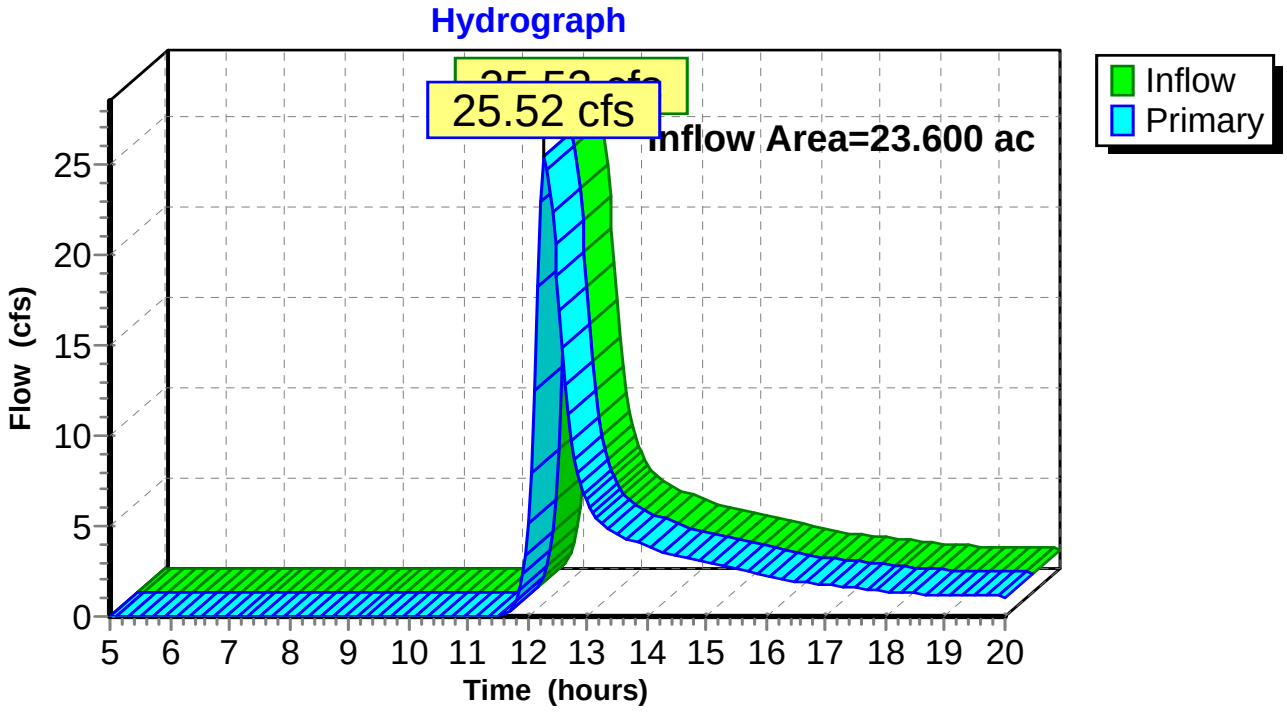


Summary for Link KC: KC

Inflow Area = 23.600 ac, 0.00% Impervious, Inflow Depth > 1.36" for 25-year event
Inflow = 25.52 cfs @ 12.28 hrs, Volume= 2.671 af
Primary = 25.52 cfs @ 12.28 hrs, Volume= 2.671 af, Atten= 0%, Lag= 0.0 min

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

Link KC: KC

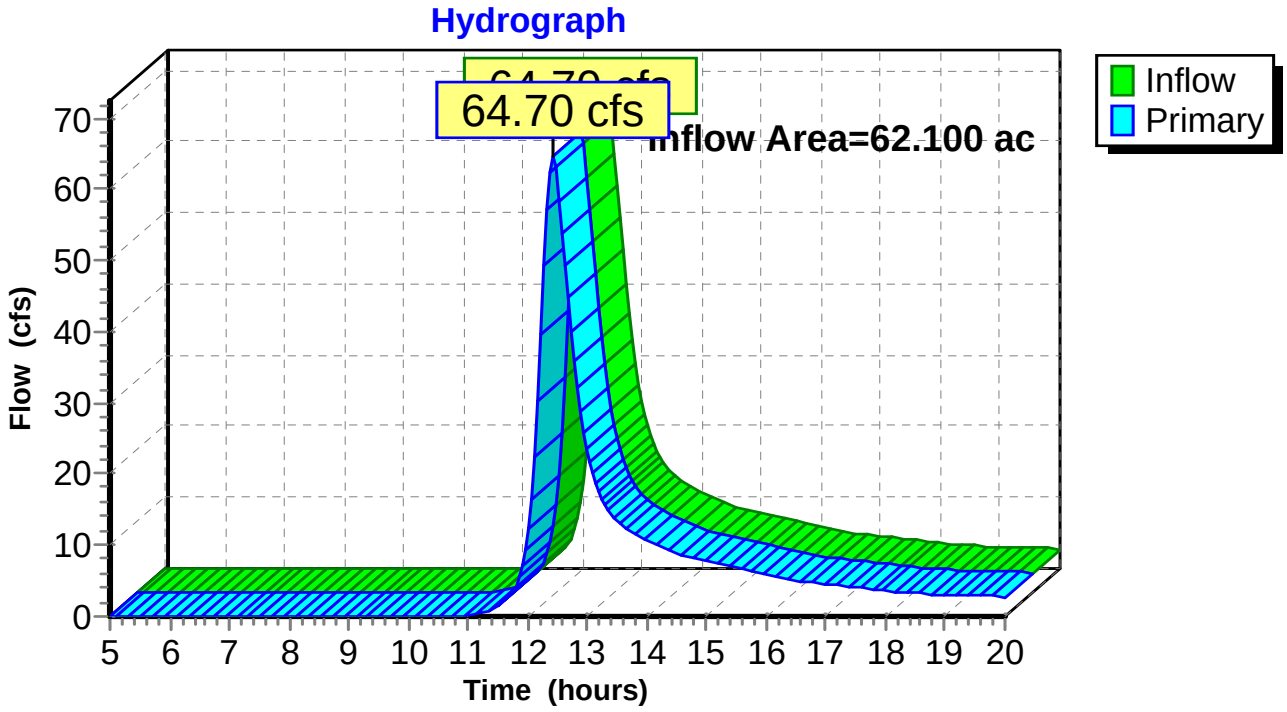


Summary for Link MB: MB

Inflow Area = 62.100 ac, 0.00% Impervious, Inflow Depth > 1.46" for 25-year event
Inflow = 64.70 cfs @ 12.42 hrs, Volume= 7.533 af
Primary = 64.70 cfs @ 12.42 hrs, Volume= 7.533 af, Atten= 0%, Lag= 0.0 min

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

Link MB: MB

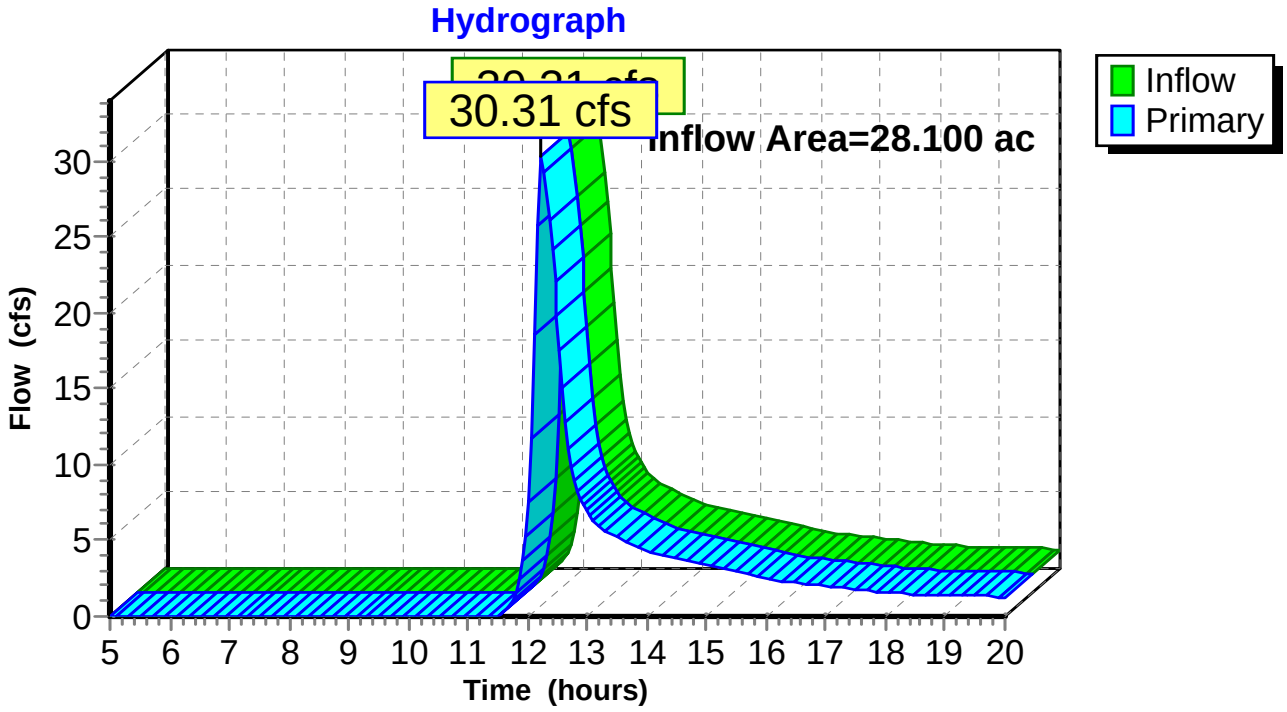


Summary for Link SB: SB

Inflow Area = 28.100 ac, 0.00% Impervious, Inflow Depth > 1.31" for 25-year event
Inflow = 30.31 cfs @ 12.23 hrs, Volume= 3.067 af
Primary = 30.31 cfs @ 12.23 hrs, Volume= 3.067 af, Atten= 0%, Lag= 0.0 min

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

Link SB: SB



100-Year Storm Event – Proposed

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

Subcatchment BB-1: PR BB-1 Runoff Area=19.100 ac 0.52% Impervious Runoff Depth>2.95"
Flow Length=1,400' Slope=0.0100 '/' Tc=43.7 min CN=56 Runoff=33.37 cfs 4.702 af

Subcatchment BB-2: PR BB-2 Runoff Area=5.900 ac 1.69% Impervious Runoff Depth>2.54"
Flow Length=730' Slope=0.0110 '/' Tc=26.6 min CN=52 Runoff=10.95 cfs 1.248 af

Subcatchment BB-3: PR BB-3 Runoff Area=19.700 ac 0.00% Impervious Runoff Depth>2.33"
Flow Length=1,060' Tc=23.9 min CN=50 Runoff=34.53 cfs 3.818 af

Subcatchment HS-1: PR HS-1 Runoff Area=0.800 ac 0.00% Impervious Runoff Depth>1.92"
Flow Length=310' Slope=0.0550 '/' Tc=8.5 min CN=46 Runoff=1.59 cfs 0.128 af

Subcatchment KC-1: PR KC-1 Runoff Area=23.600 ac 0.00% Impervious Runoff Depth>2.44"
Flow Length=530' Slope=0.0190 '/' Tc=17.2 min CN=51 Runoff=49.77 cfs 4.800 af

Subcatchment MB-1: PR MB-1 Runoff Area=49.200 ac 0.00% Impervious Runoff Depth>3.09"
Flow Length=1,000' Slope=0.0160 '/' Tc=27.4 min CN=57 Runoff=112.02 cfs 12.653 af

Subcatchment MB-2: PR MB-2 Runoff Area=12.900 ac 0.00% Impervious Runoff Depth>2.33"
Flow Length=540' Tc=20.1 min CN=50 Runoff=24.25 cfs 2.505 af

Subcatchment SB-1: PR SB-1 Runoff Area=7.700 ac 0.00% Impervious Runoff Depth>2.55"
Flow Length=490' Tc=13.3 min CN=52 Runoff=18.81 cfs 1.638 af

Subcatchment SB-2: PR SB-2 Runoff Area=14.900 ac 0.00% Impervious Runoff Depth>2.55"
Flow Length=480' Slope=0.0250 '/' Tc=14.5 min CN=52 Runoff=35.33 cfs 3.169 af

Subcatchment SB-3: PR SB-3 Runoff Area=5.500 ac 0.00% Impervious Runoff Depth>1.61"
Flow Length=300' Slope=0.0100 '/' Tc=17.5 min CN=43 Runoff=6.78 cfs 0.736 af

Pond 1P: PR MB-2 Depression Peak Elev=274.52' Storage=109,024 cf Inflow=24.25 cfs 2.505 af
Outflow=0.00 cfs 0.000 af

Link BB: BB Inflow=72.10 cfs 9.769 af
Primary=72.10 cfs 9.769 af

Link HS: HS Inflow=1.59 cfs 0.128 af
Primary=1.59 cfs 0.128 af

Link KC: KC Inflow=49.77 cfs 4.800 af
Primary=49.77 cfs 4.800 af

Link MB: MB Inflow=112.02 cfs 12.653 af
Primary=112.02 cfs 12.653 af

Link SB: SB Inflow=60.25 cfs 5.543 af
Primary=60.25 cfs 5.543 af

Total Runoff Area = 159.300 ac Runoff Volume = 35.398 af Average Runoff Depth = 2.67"
99.87% Pervious = 159.100 ac 0.13% Impervious = 0.200 ac

Summary for Subcatchment BB-1: PR BB-1

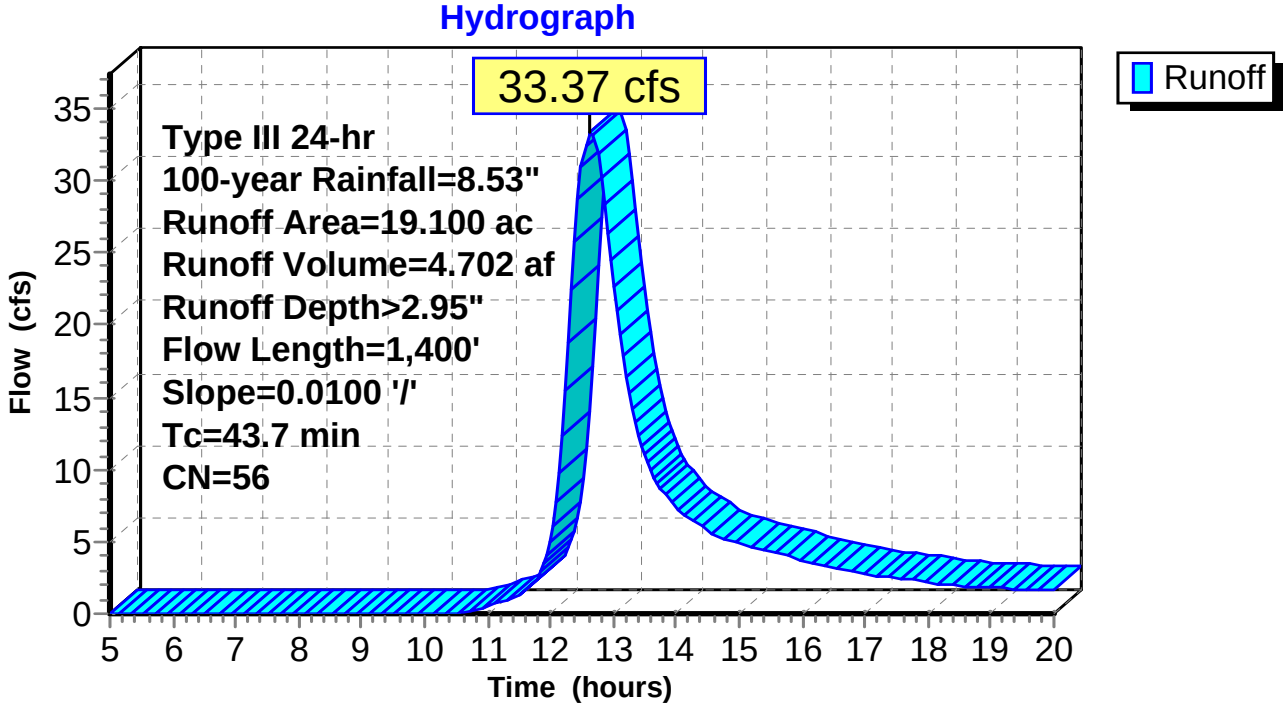
Runoff = 33.37 cfs @ 12.63 hrs, Volume= 4.702 af, Depth> 2.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.900	76	Gravel roads, HSG A
0.600	72	Dirt roads, HSG A
15.400	58	Legumes, straight row, Good, HSG A
2.000	30	Meadow, non-grazed, HSG A
0.100	30	Woods, Good, HSG A
19.100	56	Weighted Average
19.000		99.48% Pervious Area
0.100		0.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
31.0	1,300	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
43.7	1,400	Total			

Subcatchment BB-1: PR BB-1



Summary for Subcatchment BB-2: PR BB-2

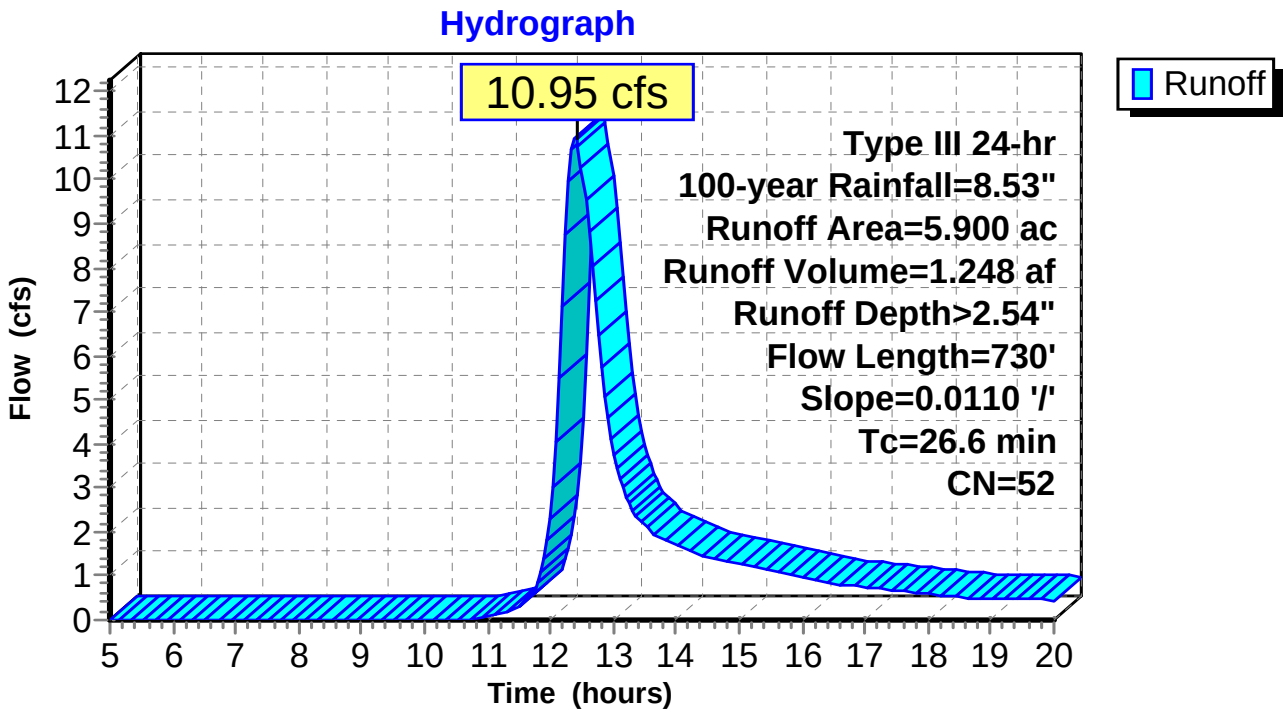
Runoff = 10.95 cfs @ 12.40 hrs, Volume= 1.248 af, Depth> 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.100	98	Roofs, HSG A
0.400	76	Gravel roads, HSG A
3.800	58	Legumes, straight row, Good, HSG A
1.600	30	Meadow, non-grazed, HSG A
5.900	52	Weighted Average
5.800		98.31% Pervious Area
0.100		1.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	100	0.0110	0.14		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
14.3	630	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
26.6	730	Total			

Subcatchment BB-2: PR BB-2



Summary for Subcatchment BB-3: PR BB-3

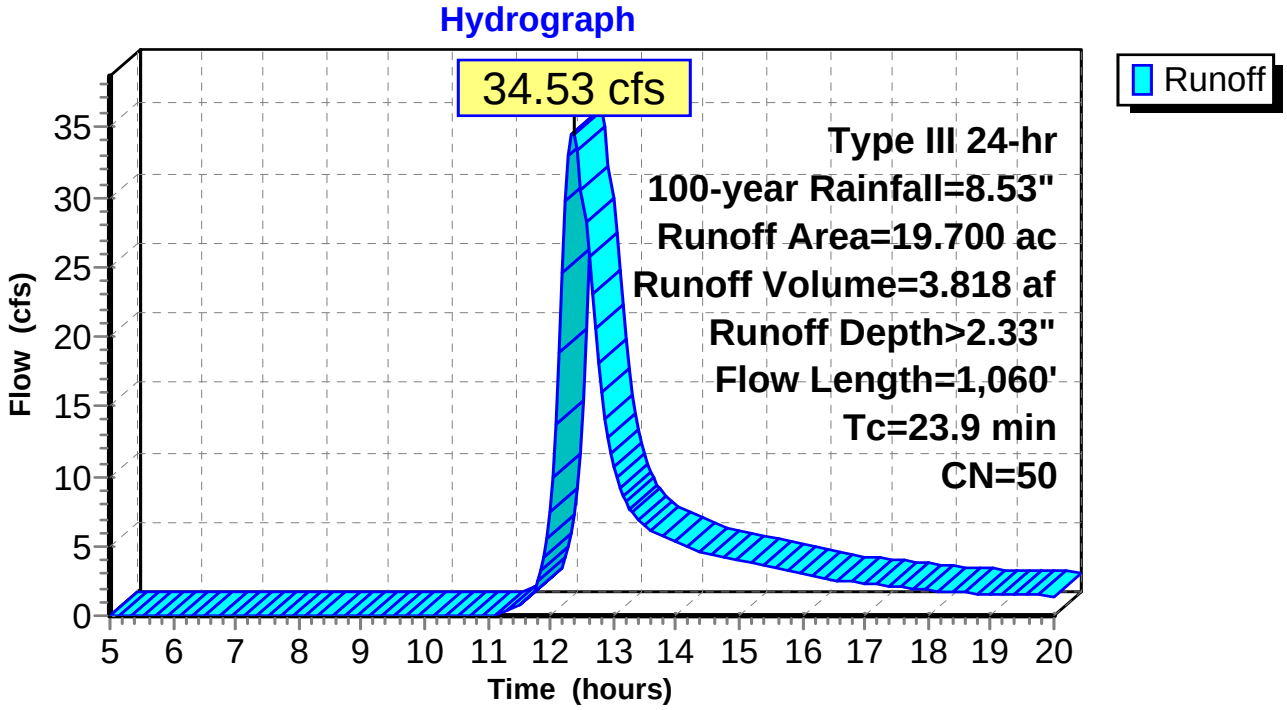
Runoff = 34.53 cfs @ 12.37 hrs, Volume= 3.818 af, Depth> 2.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
1.700	76	Gravel roads, HSG A
0.200	72	Dirt roads, HSG A
11.000	58	Legumes, straight row, Good, HSG A
6.800	30	Meadow, non-grazed, HSG A
19.700	50	Weighted Average
19.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0190	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
13.8	800	0.0190	0.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.3	160	0.0440	9.20	92.01	**Channel Flow,** Area= 10.0 sf Perim= 12.0' r= 0.83' n= 0.030 Earth, grassed & winding
23.9	1,060	Total			

Subcatchment BB-3: PR BB-3



Summary for Subcatchment HS-1: PR HS-1

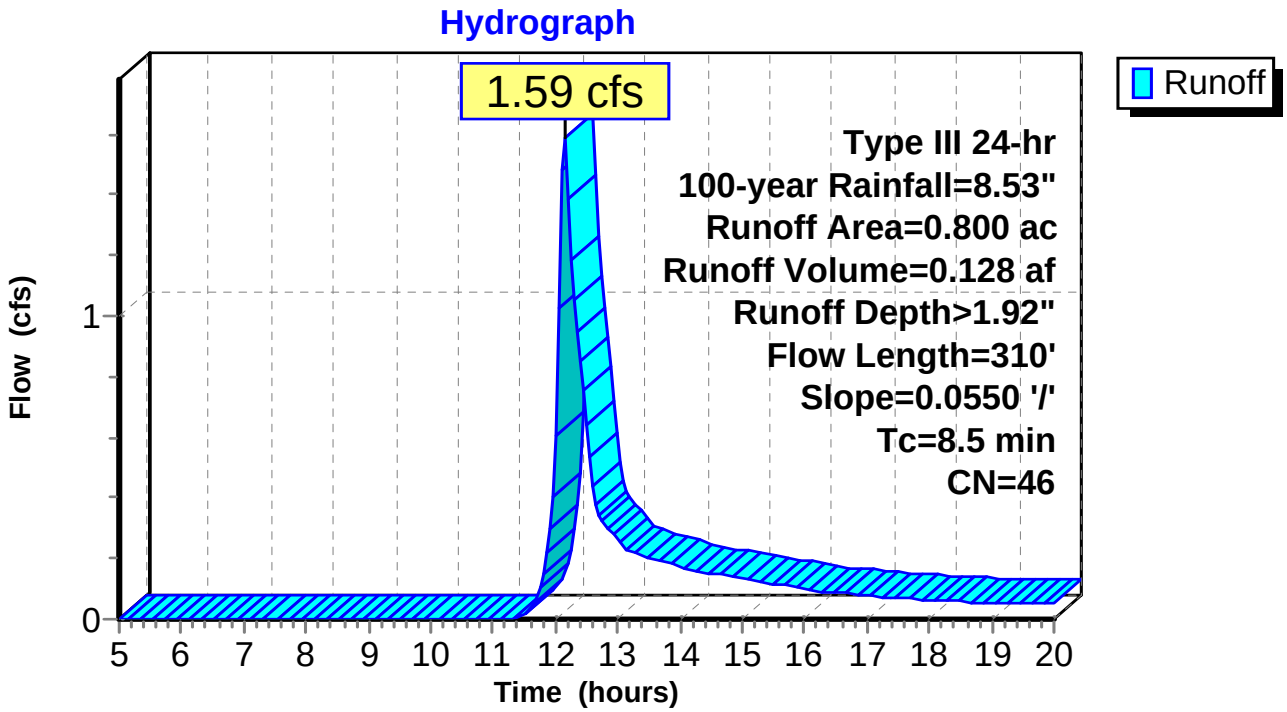
Runoff = 1.59 cfs @ 12.14 hrs, Volume= 0.128 af, Depth> 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.100	76	Gravel roads, HSG A
0.300	58	Legumes, straight row, Good, HSG A
0.400	30	Meadow, non-grazed, HSG A
0.800	46	Weighted Average
0.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0550	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.1	210	0.0550	1.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	310	Total			

Subcatchment HS-1: PR HS-1



Summary for Subcatchment KC-1: PR KC-1

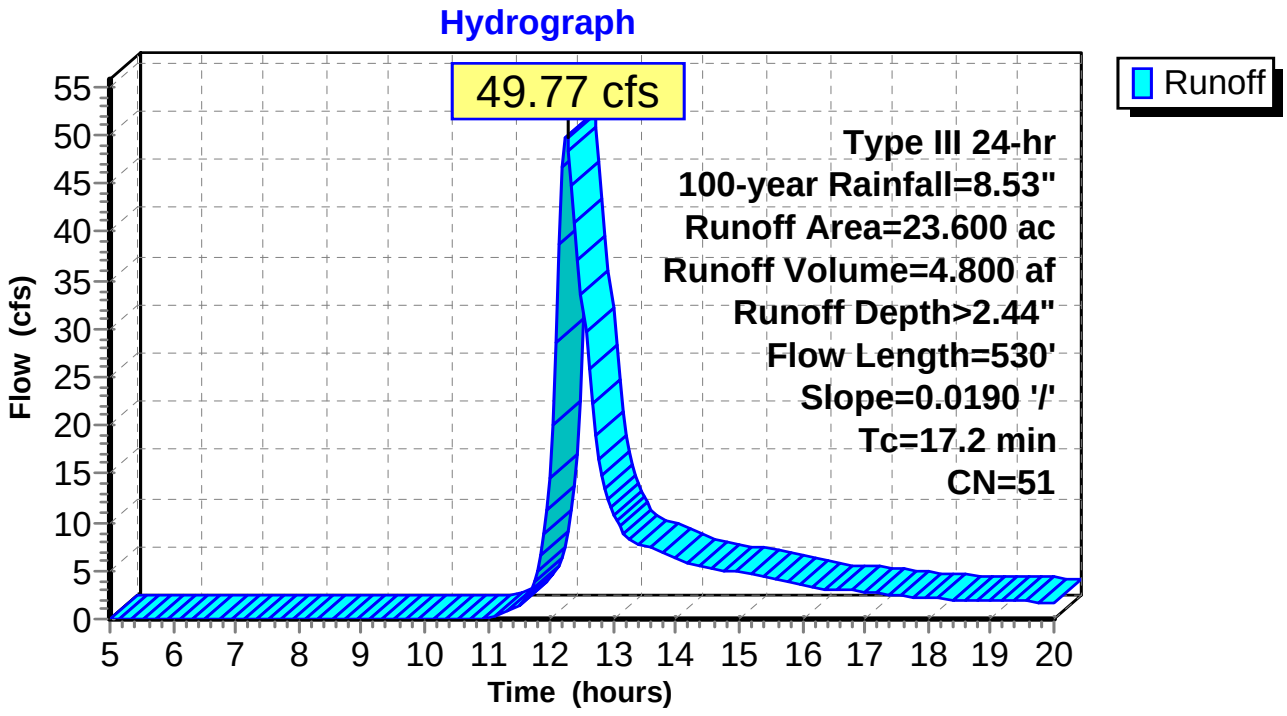
Runoff = 49.77 cfs @ 12.26 hrs, Volume= 4.800 af, Depth> 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
1.800	76	Gravel roads, HSG A
14.800	58	Legumes, straight row, Good, HSG A
6.100	30	Meadow, non-grazed, HSG A
0.900	30	Woods, Good, HSG A
23.600	51	Weighted Average
23.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0190	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
7.4	430	0.0190	0.96		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.2	530	Total			

Subcatchment KC-1: PR KC-1



Summary for Subcatchment MB-1: PR MB-1

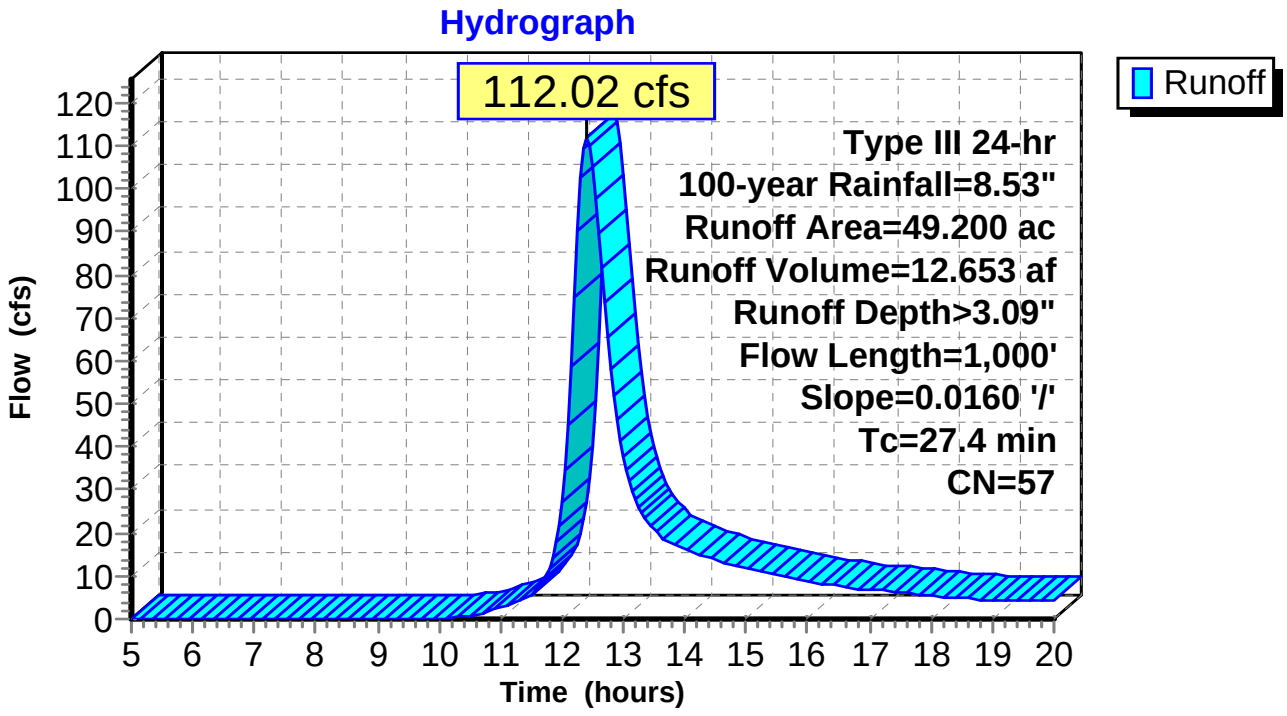
Runoff = 112.02 cfs @ 12.40 hrs, Volume= 12.653 af, Depth> 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
2.700	76	Gravel roads, HSG A
0.400	72	Dirt roads, HSG A
42.400	58	Legumes, straight row, Good, HSG A
3.700	30	Meadow, non-grazed, HSG A
49.200	57	Weighted Average
49.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0160	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
16.9	900	0.0160	0.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	1,000	Total			

Subcatchment MB-1: PR MB-1



Summary for Subcatchment MB-2: PR MB-2

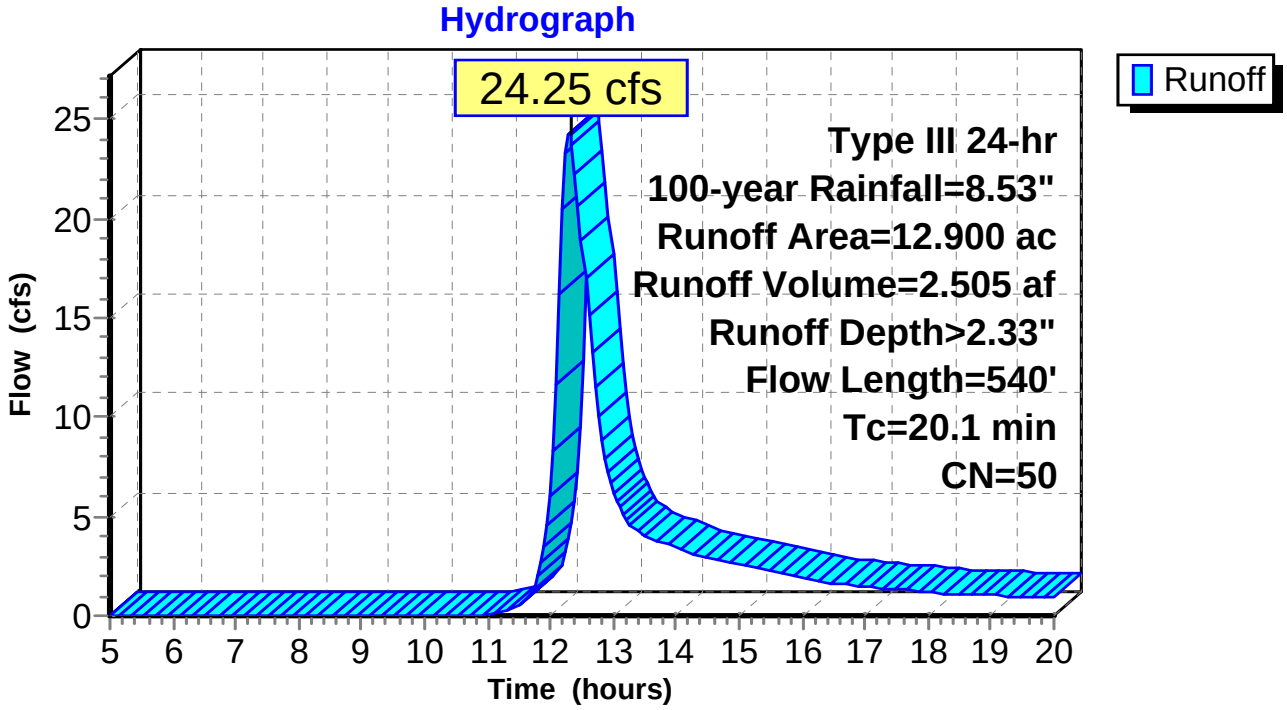
Runoff = 24.25 cfs @ 12.31 hrs, Volume= 2.505 af, Depth> 2.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.300	76	Gravel roads, HSG A
0.500	72	Dirt roads, HSG A
8.200	58	Legumes, straight row, Good, HSG A
1.300	30	Meadow, non-grazed, HSG A
2.600	30	Woods, Good, HSG A
12.900	50	Weighted Average
12.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0170	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	130	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.8	360	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.1	540	Total			

Subcatchment MB-2: PR MB-2



Summary for Subcatchment SB-1: PR SB-1

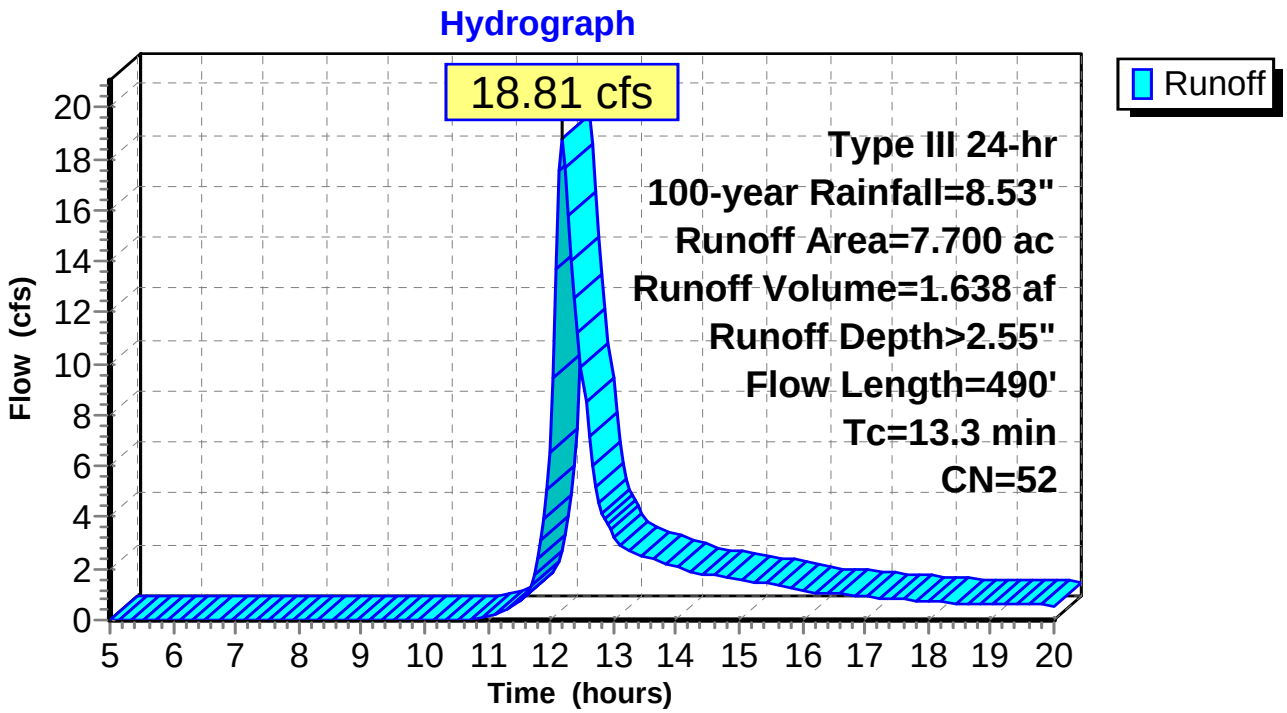
Runoff = 18.81 cfs @ 12.20 hrs, Volume= 1.638 af, Depth> 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.500	76	Gravel roads, HSG A
5.100	58	Legumes, straight row, Good, HSG A
2.100	30	Meadow, non-grazed, HSG A
7.700	52	Weighted Average
7.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	100	0.0200	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.7	250	0.1180	2.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.0	140	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	490	Total			

Subcatchment SB-1: PR SB-1



Summary for Subcatchment SB-2: PR SB-2

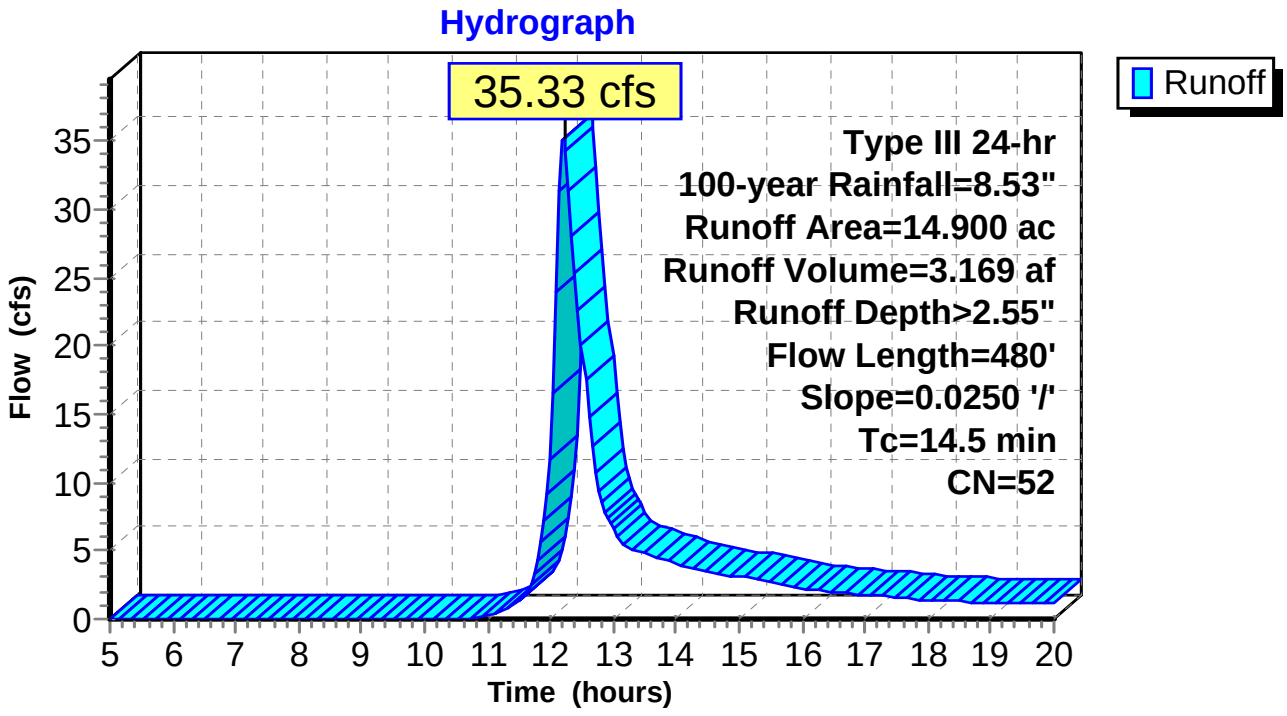
Runoff = 35.33 cfs @ 12.22 hrs, Volume= 3.169 af, Depth> 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
1.300	76	Gravel roads, HSG A
0.200	72	Dirt roads, HSG A
9.400	58	Legumes, straight row, Good, HSG A
4.000	30	Meadow, non-grazed, HSG A
14.900	52	Weighted Average
14.900		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0250	0.19		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.7	380	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.5	480	Total			

Subcatchment SB-2: PR SB-2



Summary for Subcatchment SB-3: PR SB-3

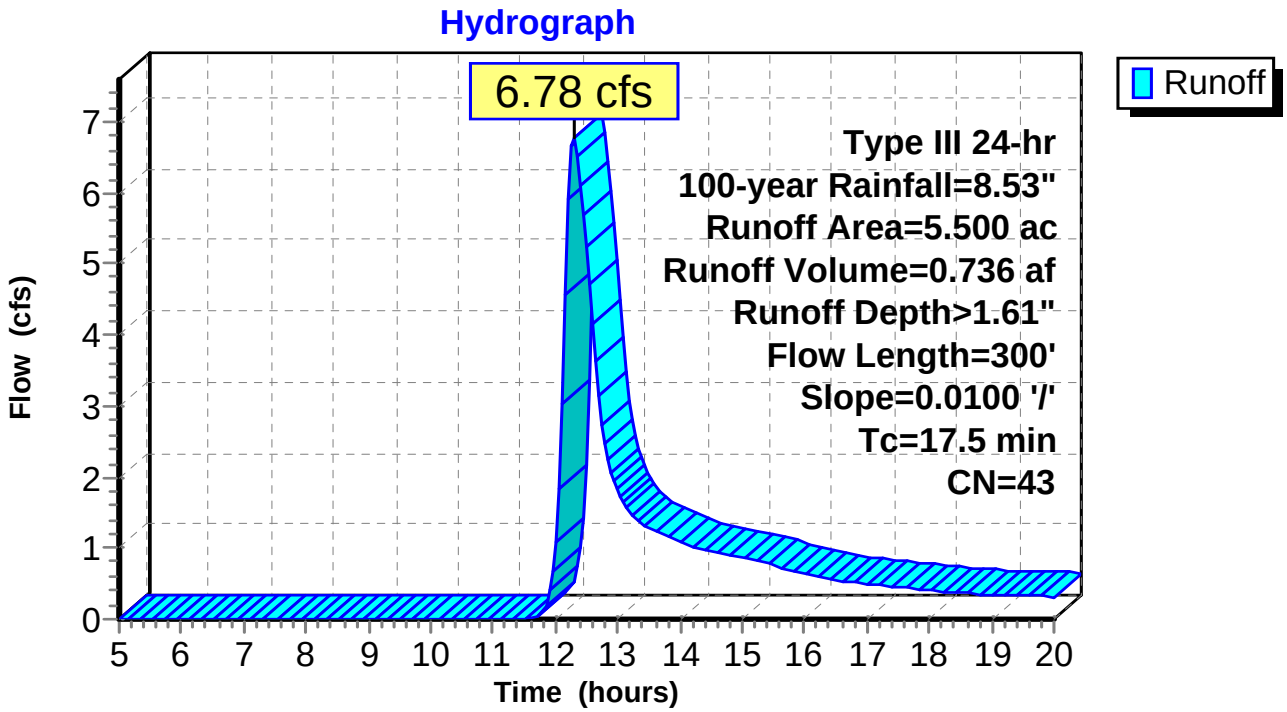
Runoff = 6.78 cfs @ 12.29 hrs, Volume= 0.736 af, Depth> 1.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.53"

Area (ac)	CN	Description
0.500	76	Gravel roads, HSG A
1.700	58	Legumes, straight row, Good, HSG A
3.300	30	Meadow, non-grazed, HSG A
5.500	43	Weighted Average
5.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	100	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
4.8	200	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	300	Total			

Subcatchment SB-3: PR SB-3



Summary for Pond 1P: PR MB-2 Depression

Inflow Area = 12.900 ac, 0.00% Impervious, Inflow Depth > 2.33" for 100-year event
Inflow = 24.25 cfs @ 12.31 hrs, Volume= 2.505 af
Outflow = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 274.52' @ 20.00 hrs Surf.Area= 47,184 sf Storage= 109,024 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	270.00'	336,950 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

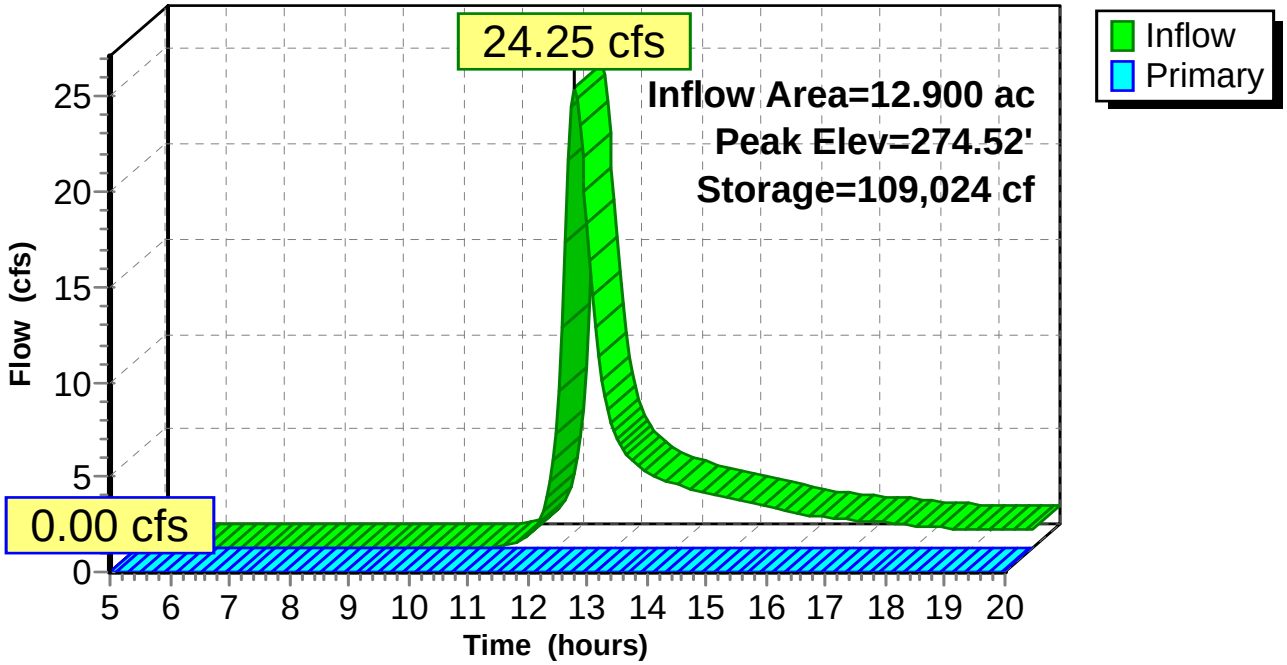
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
270.00	5,650	0	0
272.00	19,200	24,850	24,850
274.00	41,900	61,100	85,950
276.00	62,300	104,200	190,150
278.00	84,500	146,800	336,950

Device	Routing	Invert	Outlet Devices
#1	Primary	278.00'	**40.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=270.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 1P: PR MB-2 Depression

Hydrograph

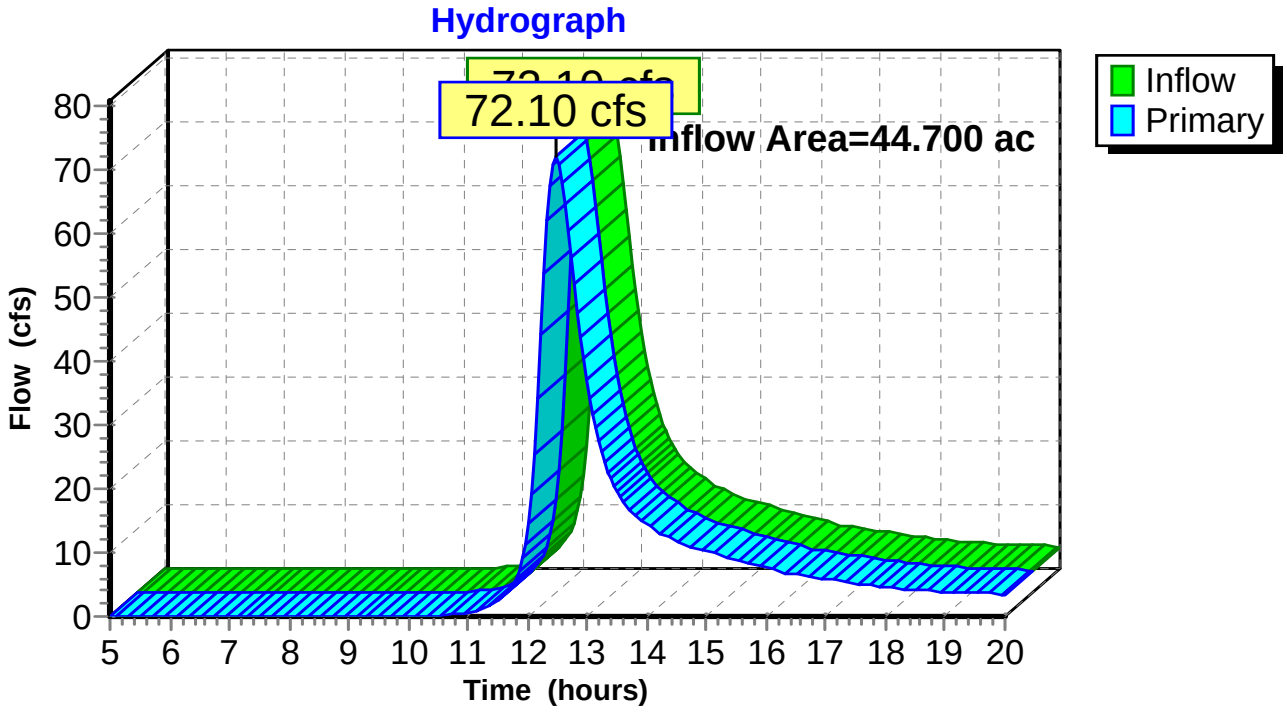


Summary for Link BB: BB

Inflow Area = 44.700 ac, 0.45% Impervious, Inflow Depth > 2.62" for 100-year event
Inflow = 72.10 cfs @ 12.46 hrs, Volume= 9.769 af
Primary = 72.10 cfs @ 12.46 hrs, Volume= 9.769 af, Atten= 0%, Lag= 0.0 min

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

Link BB: BB

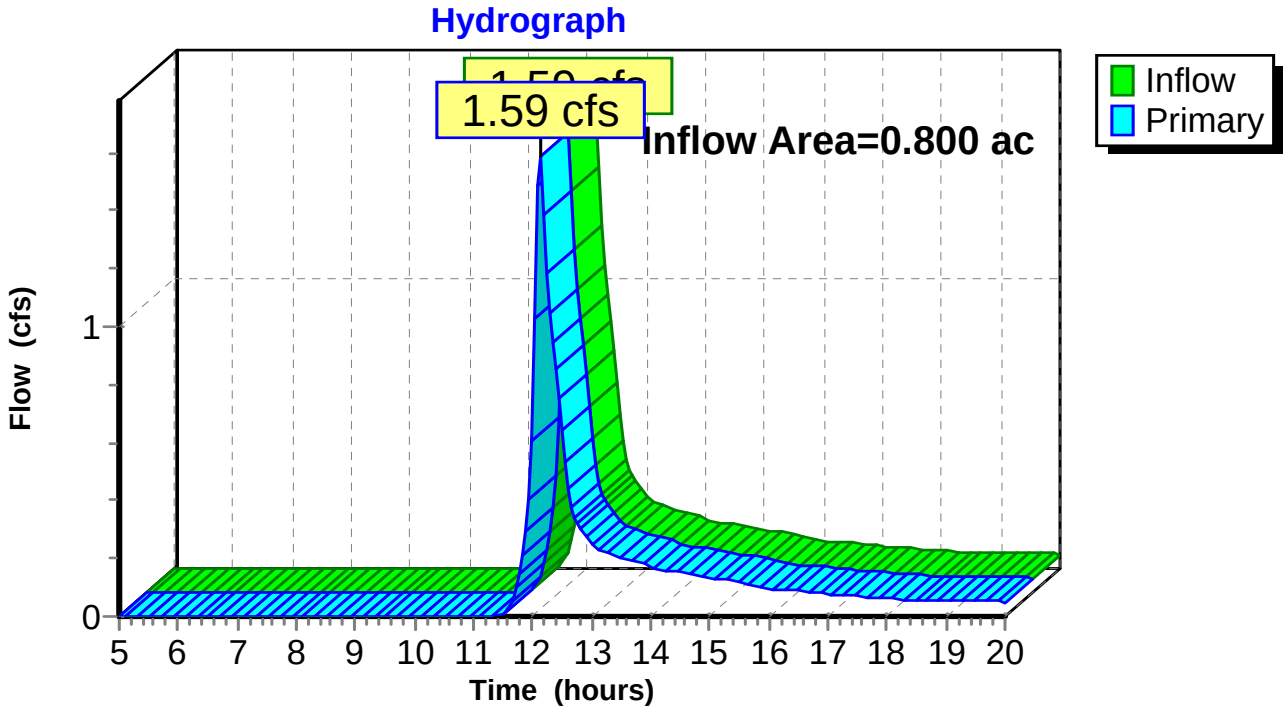


Summary for Link HS: HS

Inflow Area = 0.800 ac, 0.00% Impervious, Inflow Depth > 1.92" for 100-year event
Inflow = 1.59 cfs @ 12.14 hrs, Volume= 0.128 af
Primary = 1.59 cfs @ 12.14 hrs, Volume= 0.128 af, Atten= 0%, Lag= 0.0 min

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

Link HS: HS

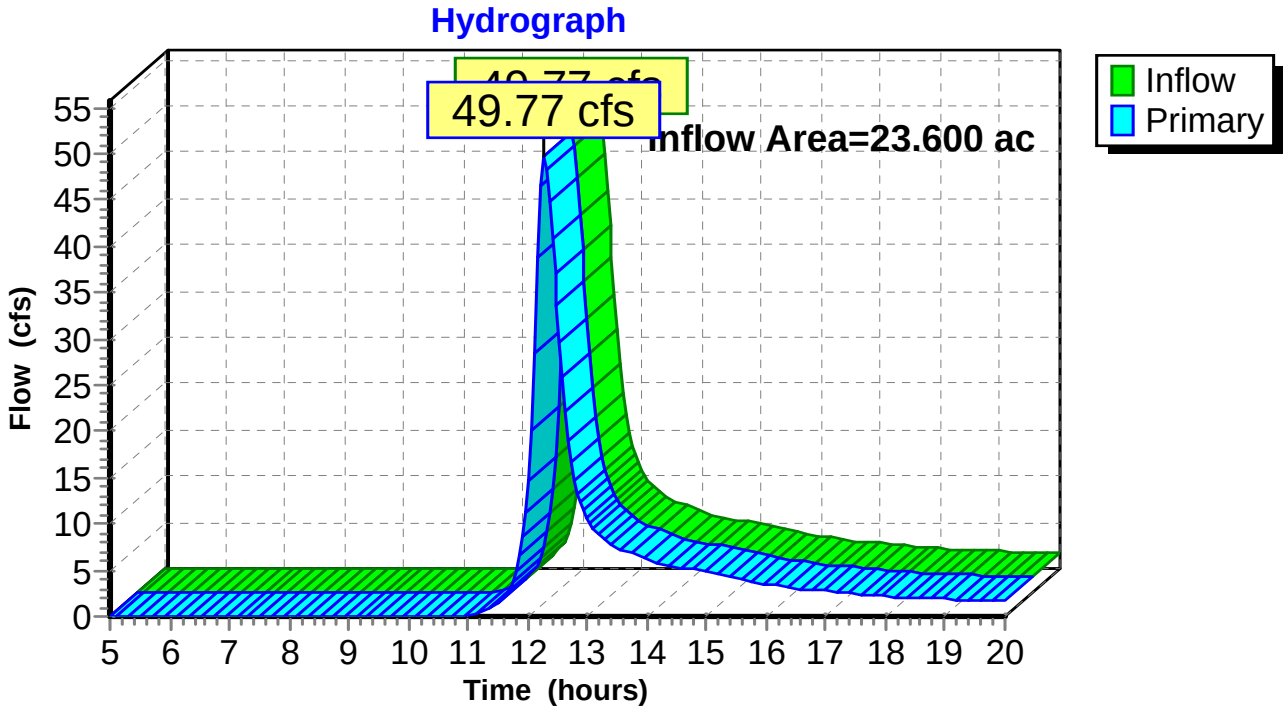


Summary for Link KC: KC

Inflow Area = 23.600 ac, 0.00% Impervious, Inflow Depth > 2.44" for 100-year event
Inflow = 49.77 cfs @ 12.26 hrs, Volume= 4.800 af
Primary = 49.77 cfs @ 12.26 hrs, Volume= 4.800 af, Atten= 0%, Lag= 0.0 min

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

Link KC: KC

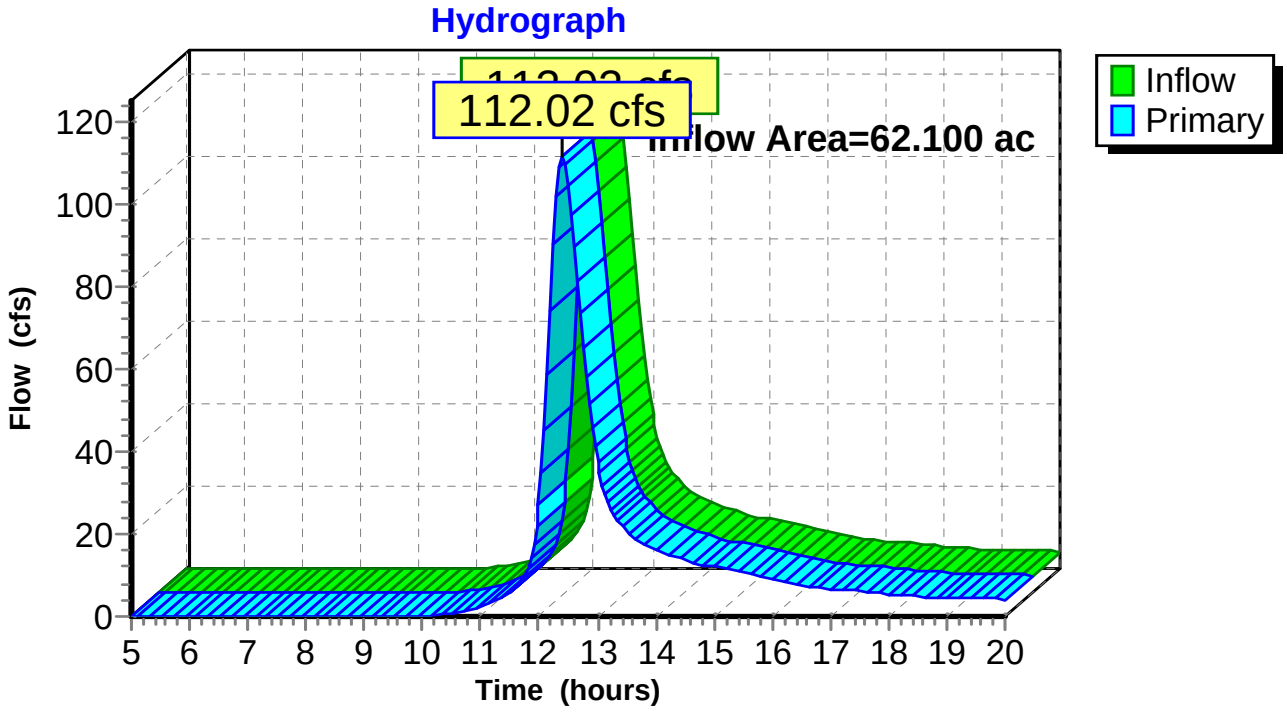


Summary for Link MB: MB

Inflow Area = 62.100 ac, 0.00% Impervious, Inflow Depth > 2.45" for 100-year event
Inflow = 112.02 cfs @ 12.40 hrs, Volume= 12.653 af
Primary = 112.02 cfs @ 12.40 hrs, Volume= 12.653 af, Atten= 0%, Lag= 0.0 min

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

Link MB: MB



Summary for Link SB: SB

Inflow Area = 28.100 ac, 0.00% Impervious, Inflow Depth > 2.37" for 100-year event
Inflow = 60.25 cfs @ 12.22 hrs, Volume= 5.543 af
Primary = 60.25 cfs @ 12.22 hrs, Volume= 5.543 af, Atten= 0%, Lag= 0.0 min

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

Link SB: SB