

Drainage Analysis & Mitigation

for

***33 Elm Street
Franklin, MA***

Date: November 13, 2025

Prepared By:
*Guerriere & Halnon, Inc.
55 West Central Street
Franklin, MA. 02038*



11/13/2025

Prepared for:
*George D. Iverson Trust
24 Glider Rd
Bourne, MA 02532*



**Guerriere &
Halnon, Inc.**
ENGINEERING & LAND SURVEYING

Drainage Analysis & Mitigation
33 Elm Street
Franklin, MA

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Guerriere & Halnon, Inc.

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F4686

November 13, 2025

Franklin Zoning Board of Appeals
355 East Central Street
Franklin, MA 02038
Attn: Bruce Hunchard, Chair

RE: *Drainage analysis and mitigation – 33 Elm St*

Dear Members of the Board:

On behalf of our client, the George D. Iverson Trust, Guerriere & Halnon, Inc. has prepared the following information to address comments and concerns regarding drainage and impacts on the immediate abutting properties from the development of 33 Elm Street.

NARRATIVE

The project development area is 18,992 +/- sf. (0.44 +/-Ac.) The project area is a currently existing vacant, wooded parcel located on Elm St. The property is abutted by #31 and #35 Elm St, two residential lots with single family homes. The site does not lie within a FEMA flood zone or the Franklin water resource district. While this project is not subject to the Massachusetts Stormwater Management Standards set forth in the Massachusetts Stormwater Handbook, a pre-development and post-development stormwater analysis has been performed to determine the potential impacts to #31 and #35 Elm St in accordance with Stormwater Management Standard #2 and relevant portions of local Franklin bylaw § 300-11 (A)(3). That is to say this analysis ensures that post-development conditions do not increase the peak flow rate nor the volume of stormwater flow to #31 or #35 Elm St.

While this analysis shows that the pre and post conditions already did not increase flow nor volume to the abutting properties, revisions have been made for additional mitigation. Fine grading and additional spot shots have been added to the back yard to more clearly show that flow coming from the wooded back-half of the property is intercepted and directed around the house. Fine grading elements have also been added to the driveway to now show a gutterline and a 2% cross slope that prevents stormwater flow from the draining off of the driveway towards the west and #35 Elm St. A swale has been added along the limit of work on the east side to further ensure flow to be directed away from #31 Elm St and the proposed landscape easement for the benefit of #31 Elm St. Roof drain infiltrators connected to the downspouts have been added to the side yards in the form of Cultec Contactor 100HD chambers units surrounded by 18" of ¾"-2" crushed stone. The emergency overflow outlet pipes from these infiltrators are directed towards the centerline of the lot. The foundation drain outlet has also been revised to discharge towards the centerline of the lot.

PROJECT DESCRIPTION

The Applicant is proposing to construct a 2,152 +/- sf single family home and associated driveway, utilities, and grading. Drainage infrastructure associated with the new development will also be constructed.

DESCRIPTION OF EXISTING DRAINAGE

The pre-developed site drains principally from north-east to south/south-west to north, with EX-2 containing approximately 36,722 SF of woodland draining overland and flowing across the project parcel from the north-east to the south-west to an abutting property - #35 Elm St (AP-35). EX-3 contains 923 SF of contributing area, consisting entirely of woodland, flows south/south-east overland from this site to an abutting property - #31 Elm St (AP-31). EX-1 contains approximately 19,371 SF, composed entirely of woodland, that flows south towards Elm St. These hydrologic areas are shown on the Pre-Development Watershed Plan attached to this report and are denoted as EX-1 through EX-3. See the tables below showing the existing, undeveloped peak rate flows and volumes draining to #31 Elm St and #35 Elm St. The peak flow rates are represented by the “inflow” column and volumes are represented by the “storage” column.

Events for Pond AP-31: #31 Elm St

Event	Inflow (cfs)	Elevation (feet)	Storage (acre-feet)
2-Year	0.00	0.00	0.000
10-Year	0.00	0.00	0.000
25-Year	0.00	0.00	0.000
100-Year	0.00	0.00	0.001

Events for Pond AP-35: #35 Elm St

Event	Inflow (cfs)	Elevation (feet)	Storage (acre-feet)
2-Year	0.00	0.00	0.000
10-Year	0.00	0.00	0.001
25-Year	0.01	0.00	0.009
100-Year	0.05	0.00	0.034

DESCRIPTION OF PROPOSED DRAINAGE

The proposed drainage system to manage stormwater from the proposed development consists of swales and two separate Cultec Contactor 100HD chamber systems with infiltration. Stormwater from the area to be developed (area within the proposed treeline) is largely directed towards Elm Street. Of the approximately 18,992 SF to be developed, 523 SF is within a subcatchment (PR-2) that drains towards #35 Elm St and 87 SF is within a subcatchment (PR-3) that drains towards #31 Elm St. All other flows that drain towards #31 and #35 Elm St are from existing undeveloped and unaltered areas.

In the Post-Development condition, four hydrologic areas were considered. These watershed areas consider the building, driveway, grassed areas, and drainage facilities proposed to be constructed. These hydrologic areas are shown on the Post-Development Watershed Plan attached to this report and are denoted as PR-1 through PR-4.

PR-1 contains approximately 42,340 square feet of contributing area and includes the land which drains directly to AP-1 (Elm St) via swaling that directs flow around either side of the house to either the driveway or further swaling before ultimately reaching Elm St.

PR-2 contains approximately 2,091 square feet of contributing area and includes the land which drains directly to AP-35 (#35 Elm St) via over land flow.

PR-3 contains approximately 697 square feet of contributing area and includes the land which drains directly to AP-31 (#31 Elm St) via over land flow.

PR-4 contains approximately 11,325 square feet of contributing area and includes the land which drains directly to AP-35 (#35 Elm St), via over land flow.

For a more conservative approach to this analysis, the minimum Time of Concentration (Tc) of 6.0 minutes was used. Longer calculated Tc values would only result in even lesser flow rates.

See the tables below showing the proposed, post-development peak rate flows and volumes draining to #31 Elm St and #35 Elm St. The peak flow rates are represented by the “inflow” column and volumes are represented by the “storage” column.

Events for Pond AP-31: #31 Elm St

Event	Inflow (cfs)	Elevation (feet)	Storage (acre-feet)
2-Year	0.00	0.00	0.000
10-Year	0.00	0.00	0.000
25-Year	0.00	0.00	0.000
100-Year	0.00	0.00	0.001

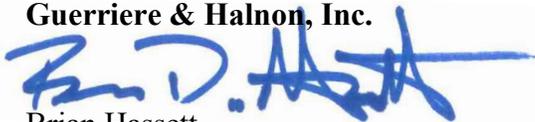
Events for Pond AP-35: #35 Elm St

Event	Inflow (cfs)	Elevation (feet)	Storage (acre-feet)
2-Year	0.00	0.00	0.000
10-Year	0.00	0.00	0.001
25-Year	0.00	0.00	0.004
100-Year	0.02	0.00	0.014

By comparing the “inflow” peak flow rates and the “storage” volumes in the pre-development and post development conditions, it can be seen that all post-development flows and volumes are equal to or lesser than the existing pre-development.

Sincerely,

Guerriere & Halnon, Inc.



Brian Hassett

Project Engineer



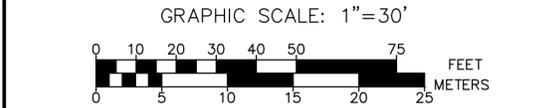
OWNER/APPLICANT
 GEORGE D. IVERSON TRUST
 24 GILDER ROAD
 BOURNE, MA 02532

DEED BOOK 7913 PAGE 522
 PLAN No. 401 OF 1960 PLAN Bk. 3807 PAGE 100
 A.M. 214 LOT 111

**PRE-DEVELOPMENT
 WATERSHED PLAN
 33 ELM STREET
 FRANKLIN, MASSACHUSETTS**

NOVEMBER 12, 2024

DATE	REVISION DESCRIPTION



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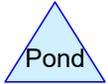
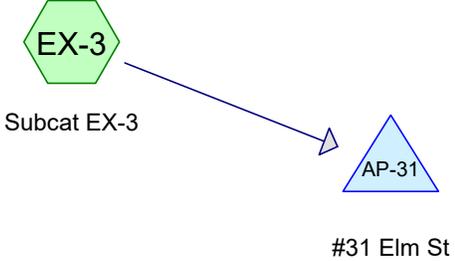
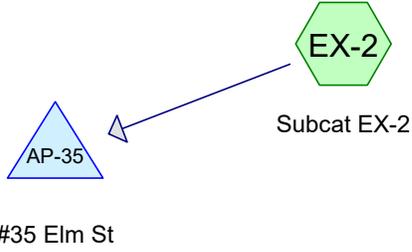
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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	NOAA10 24-hr	D	Default	24.00	1	3.37	2
2	10-Year	NOAA10 24-hr	D	Default	24.00	1	5.26	2
3	25-Year	NOAA10 24-hr	D	Default	24.00	1	6.44	2
4	100-Year	NOAA10 24-hr	D	Default	24.00	1	8.26	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.000	0	, HSG A (EX-3)
0.864	30	Woods, Good, HSG A (EX-2, EX-3)
0.864	30	TOTAL AREA

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Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.864	HSG A	EX-2, EX-3
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.864		TOTAL AREA

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.000	0.000		EX-3
0.864	0.000	0.000	0.000	0.000	0.864	Woods, Good	EX-2, EX-3
0.864	0.000	0.000	0.000	0.000	0.864	TOTAL AREA	

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-2: Subcat EX-2

Runoff Area=36,722 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=387' Tc=11.9 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment EX-3: Subcat EX-3

Runoff Area=0.021 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=84' Tc=8.0 min CN=30 Runoff=0.00 cfs 0.000 af

Pond AP-31: #31 Elm St

Peak Elev=0.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond AP-35: #35 Elm St

Peak Elev=0.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 0.864 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
100.00% Pervious = 0.864 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment EX-2: Subcat EX-2

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond AP-35 : #35 Elm St

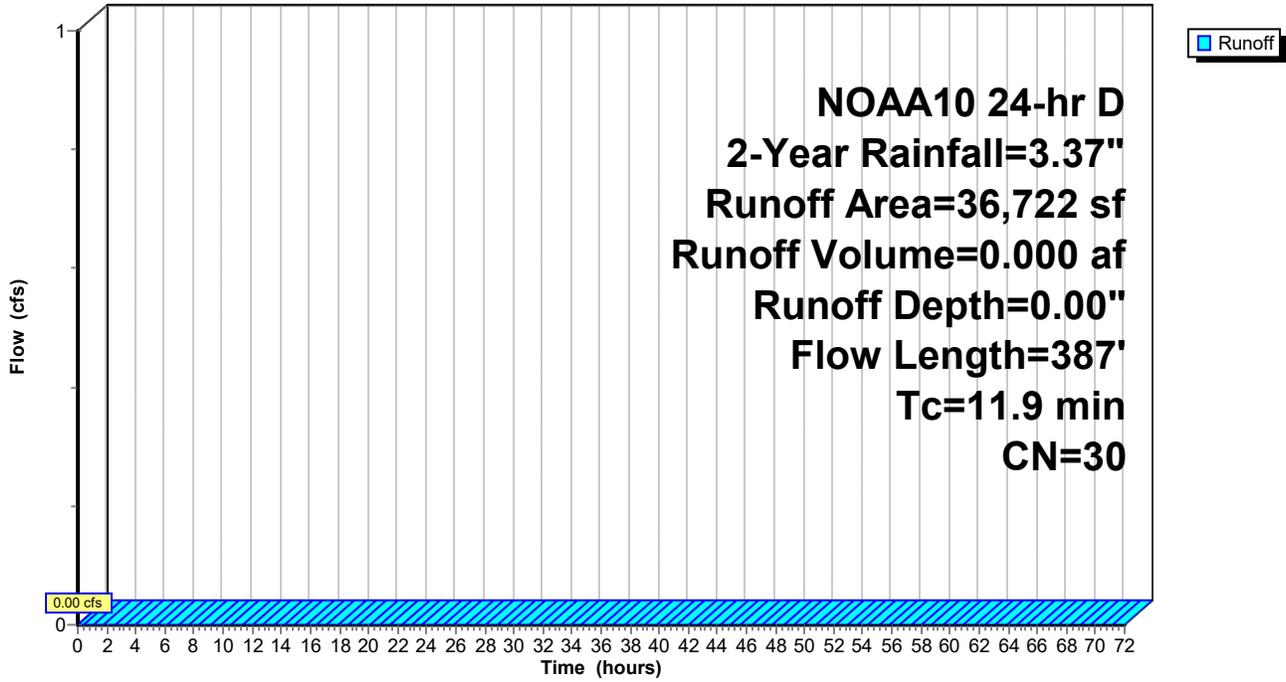
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 2-Year Rainfall=3.37"

Area (sf)	CN	Description
14,091	30	Woods, Good, HSG A
22,631	30	Woods, Good, HSG A
36,722	30	Weighted Average
36,722		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1100	0.14		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.37"
0.3	26	0.0948	1.54		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
0.1	25	0.5873	3.83		Shallow Concentrated Flow, C-D
					Woodland Kv= 5.0 fps
2.1	93	0.0216	0.73		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
3.3	193	0.0389	0.99		Shallow Concentrated Flow, E-F
					Woodland Kv= 5.0 fps
11.9	387	Total			

Subcatchment EX-2: Subcat EX-2

Hydrograph



Summary for Subcatchment EX-3: Subcat EX-3

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond AP-31 : #31 Elm St

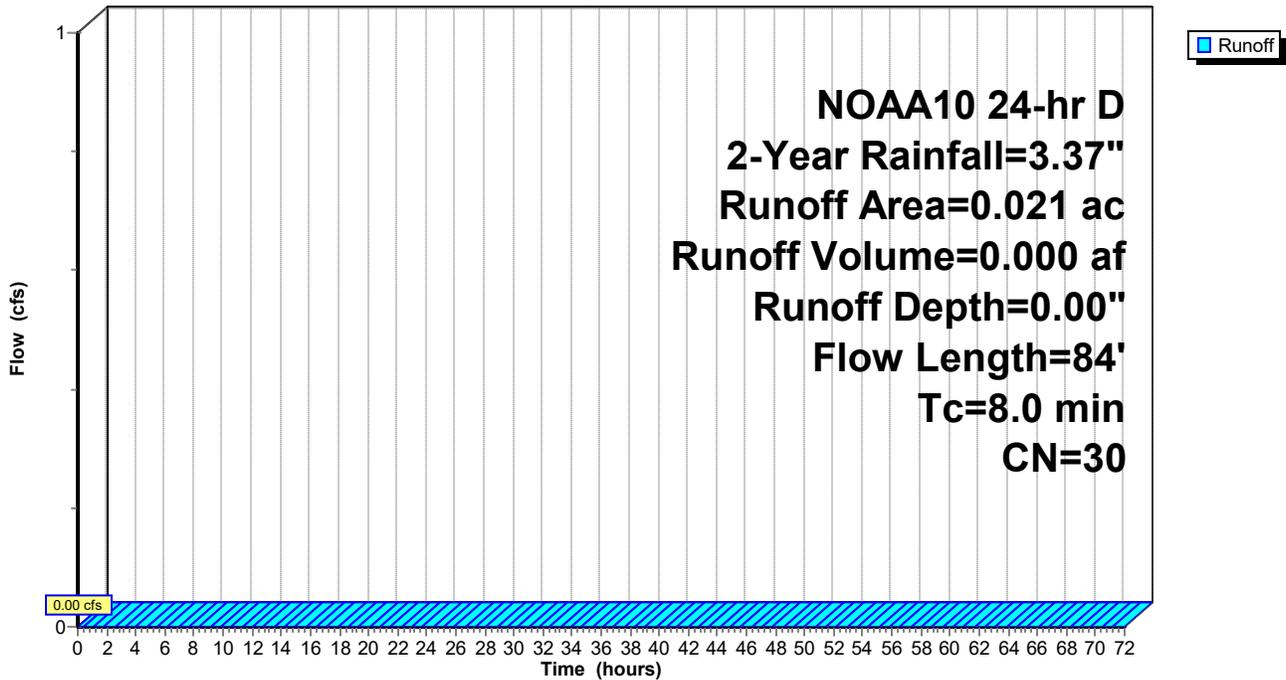
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 2-Year Rainfall=3.37"

Area (ac)	CN	Description
* 0.000	0	, HSG A
0.021	30	Woods, Good, HSG A
0.021	30	Weighted Average
0.021		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.37"
0.3	34	0.1942	2.20		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
8.0	84	Total			

Subcatchment EX-3: Subcat EX-3

Hydrograph



Summary for Pond AP-31: #31 Elm St

Inflow Area = 0.021 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

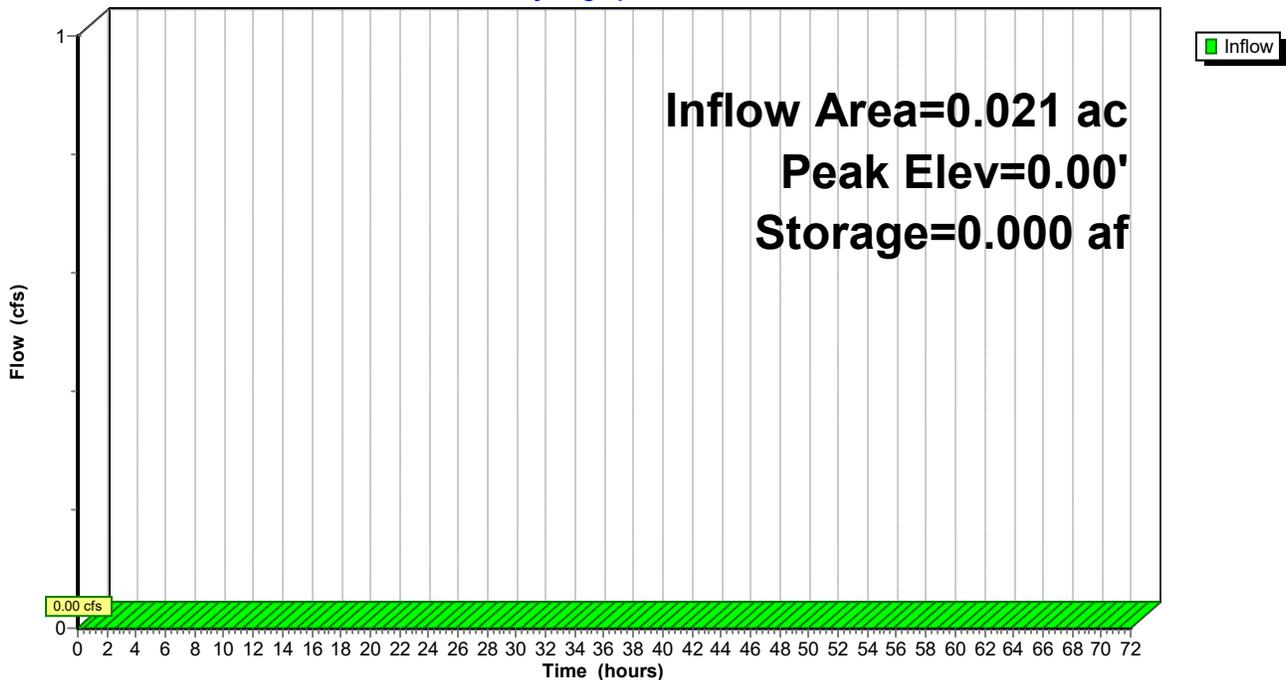
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 0.00 hrs Surf.Area= 9,999.000 ac Storage= 0.000 af

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

Volume	Invert	Avail.Storage	Storage Description
#1	0.00	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-31: #31 Elm St

Hydrograph



Summary for Pond AP-35: #35 Elm St

Inflow Area = 0.843 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

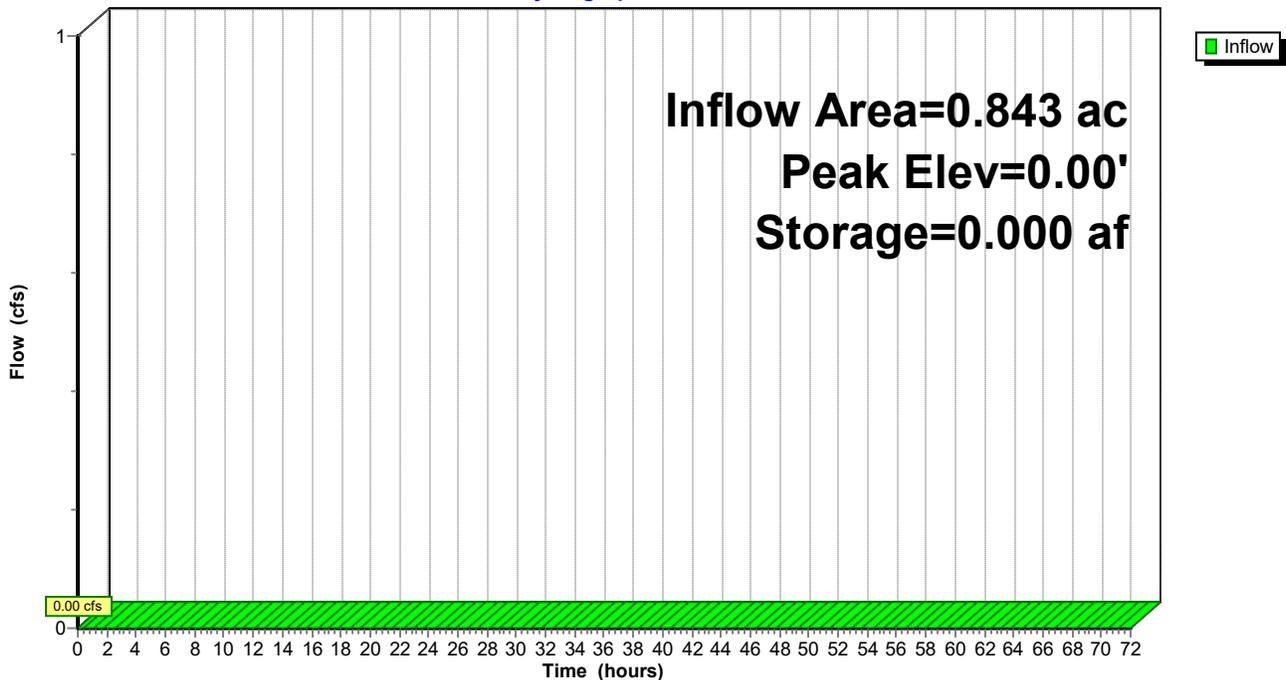
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 0.00 hrs Surf.Area= 9,999.000 ac Storage= 0.000 af

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

Volume	Invert	Avail.Storage	Storage Description
#1	0.00	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-35: #35 Elm St

Hydrograph



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-2: Subcat EX-2

Runoff Area=36,722 sf 0.00% Impervious Runoff Depth=0.01"
Flow Length=387' Tc=11.9 min CN=30 Runoff=0.00 cfs 0.001 af

Subcatchment EX-3: Subcat EX-3

Runoff Area=0.021 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=84' Tc=8.0 min CN=30 Runoff=0.00 cfs 0.000 af

Pond AP-31: #31 Elm St

Peak Elev=0.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond AP-35: #35 Elm St

Peak Elev=0.00' Storage=0.001 af Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 0.864 ac Runoff Volume = 0.001 af Average Runoff Depth = 0.01"
100.00% Pervious = 0.864 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment EX-2: Subcat EX-2

Runoff = 0.00 cfs @ 22.89 hrs, Volume= 0.001 af, Depth= 0.01"
 Routed to Pond AP-35 : #35 Elm St

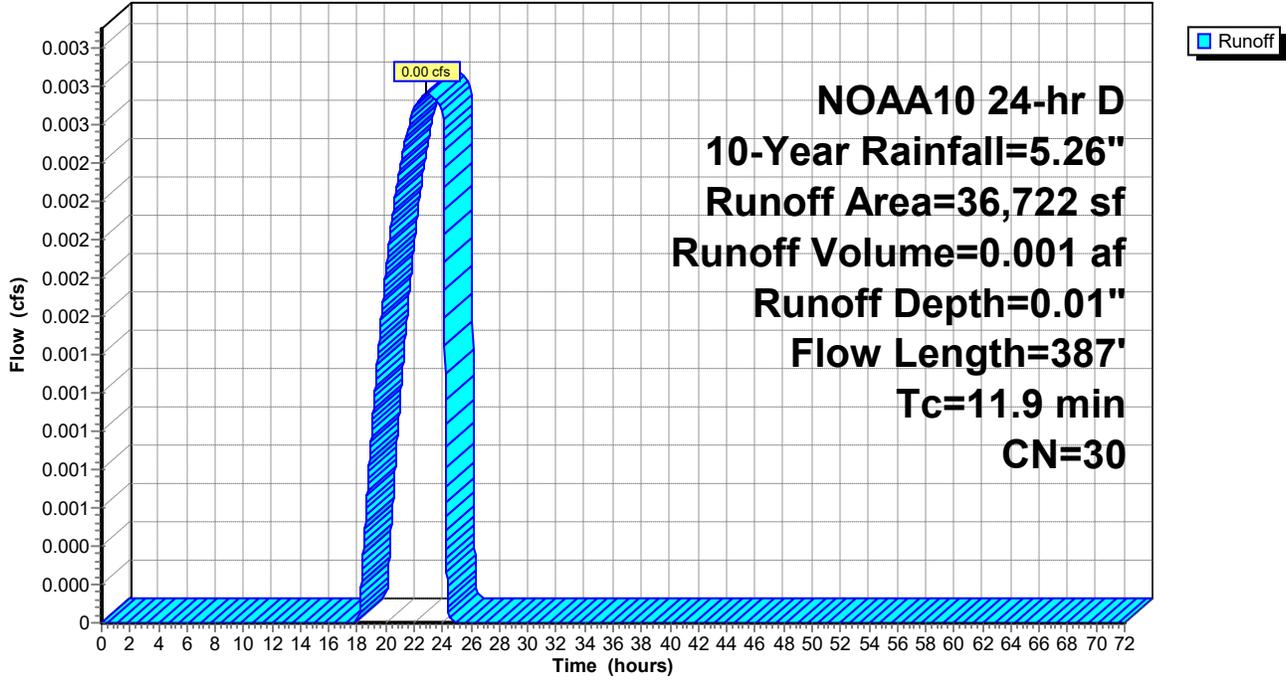
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 10-Year Rainfall=5.26"

Area (sf)	CN	Description
14,091	30	Woods, Good, HSG A
22,631	30	Woods, Good, HSG A
36,722	30	Weighted Average
36,722		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1100	0.14		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.37"
0.3	26	0.0948	1.54		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
0.1	25	0.5873	3.83		Shallow Concentrated Flow, C-D Woodland Kv= 5.0 fps
2.1	93	0.0216	0.73		Shallow Concentrated Flow, D-E Woodland Kv= 5.0 fps
3.3	193	0.0389	0.99		Shallow Concentrated Flow, E-F Woodland Kv= 5.0 fps
11.9	387	Total			

Subcatchment EX-2: Subcat EX-2

Hydrograph



Summary for Subcatchment EX-3: Subcat EX-3

Runoff = 0.00 cfs @ 22.87 hrs, Volume= 0.000 af, Depth= 0.01"
 Routed to Pond AP-31 : #31 Elm St

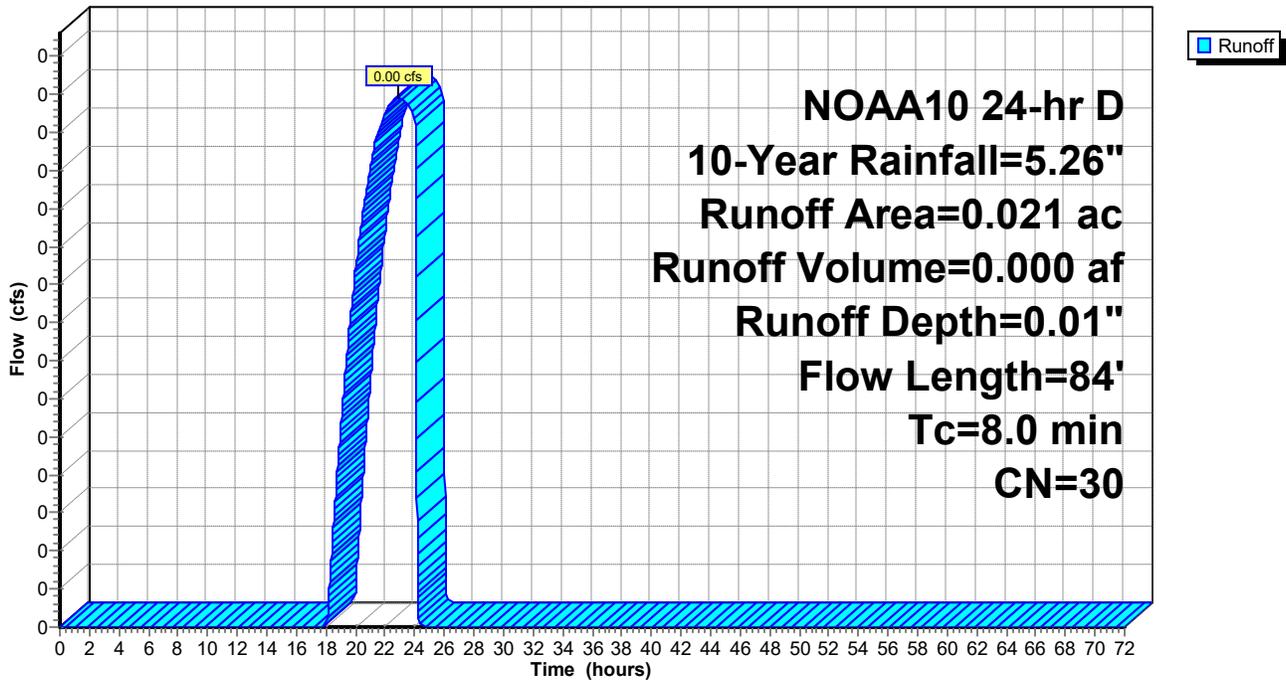
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 10-Year Rainfall=5.26"

Area (ac)	CN	Description
* 0.000	0	, HSG A
0.021	30	Woods, Good, HSG A
0.021	30	Weighted Average
0.021		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0600	0.11		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.37"
0.3	34	0.1942	2.20		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
8.0	84	Total			

Subcatchment EX-3: Subcat EX-3

Hydrograph



Summary for Pond AP-31: #31 Elm St

Inflow Area = 0.021 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-Year event
 Inflow = 0.00 cfs @ 22.87 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

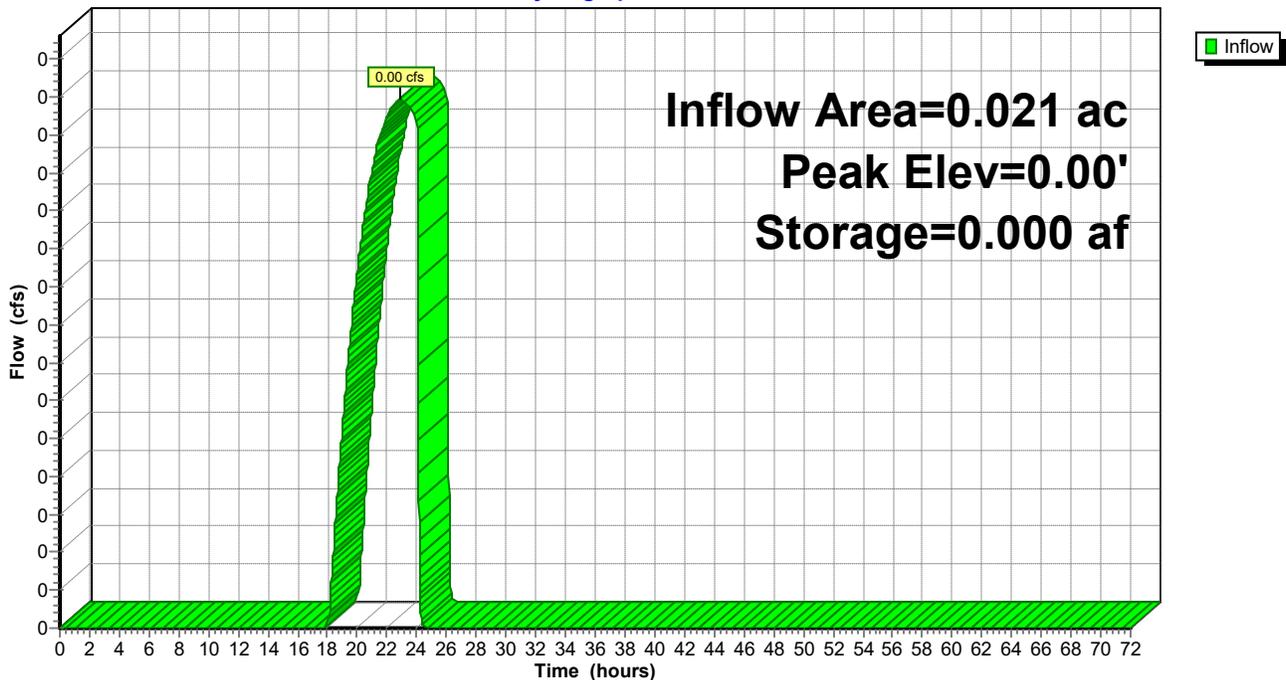
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 24.45 hrs Surf.Area= 9,999.000 ac Storage= 0.000 af

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	0.00'	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-31: #31 Elm St

Hydrograph



Summary for Pond AP-35: #35 Elm St

Inflow Area = 0.843 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-Year event
 Inflow = 0.00 cfs @ 22.89 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

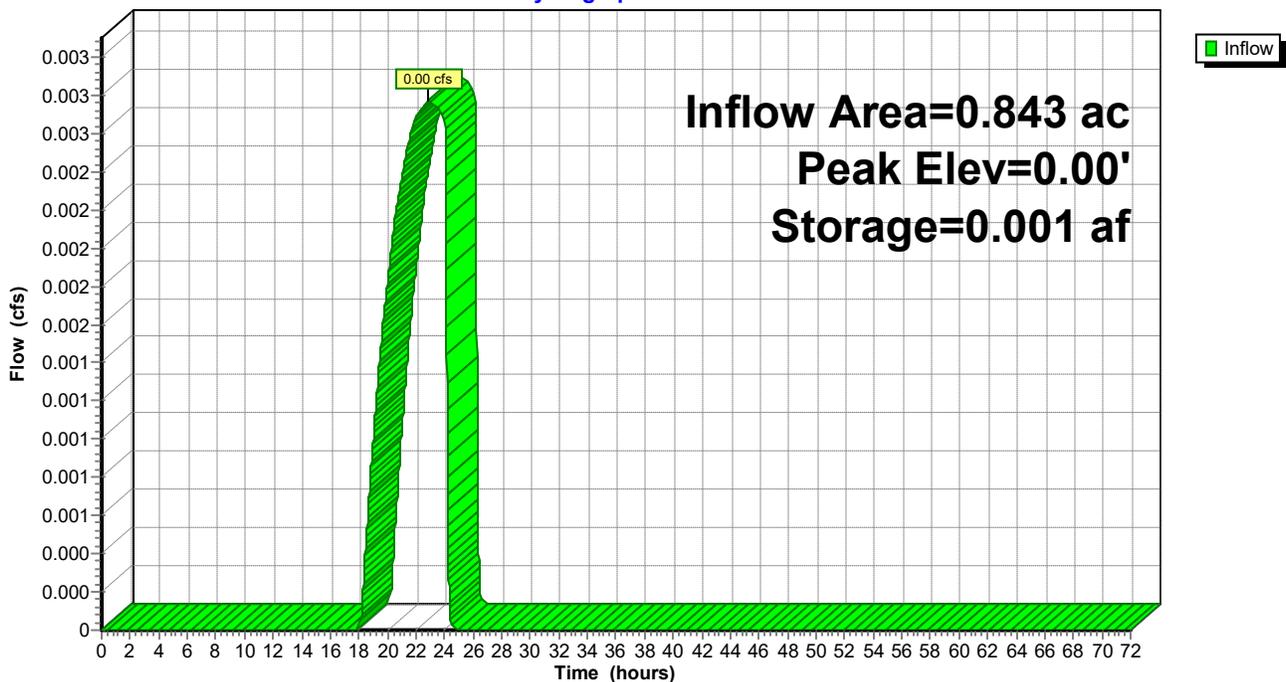
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 24.68 hrs Surf.Area= 9,999.000 ac Storage= 0.001 af

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	0.00'	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-35: #35 Elm St

Hydrograph



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-2: Subcat EX-2

Runoff Area=36,722 sf 0.00% Impervious Runoff Depth=0.13"
Flow Length=387' Tc=11.9 min CN=30 Runoff=0.01 cfs 0.009 af

Subcatchment EX-3: Subcat EX-3

Runoff Area=0.021 ac 0.00% Impervious Runoff Depth=0.13"
Flow Length=84' Tc=8.0 min CN=30 Runoff=0.00 cfs 0.000 af

Pond AP-31: #31 Elm St

Peak Elev=0.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond AP-35: #35 Elm St

Peak Elev=0.00' Storage=0.009 af Inflow=0.01 cfs 0.009 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 0.864 ac Runoff Volume = 0.009 af Average Runoff Depth = 0.13"
100.00% Pervious = 0.864 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment EX-2: Subcat EX-2

Runoff = 0.01 cfs @ 19.66 hrs, Volume= 0.009 af, Depth= 0.13"
 Routed to Pond AP-35 : #35 Elm St

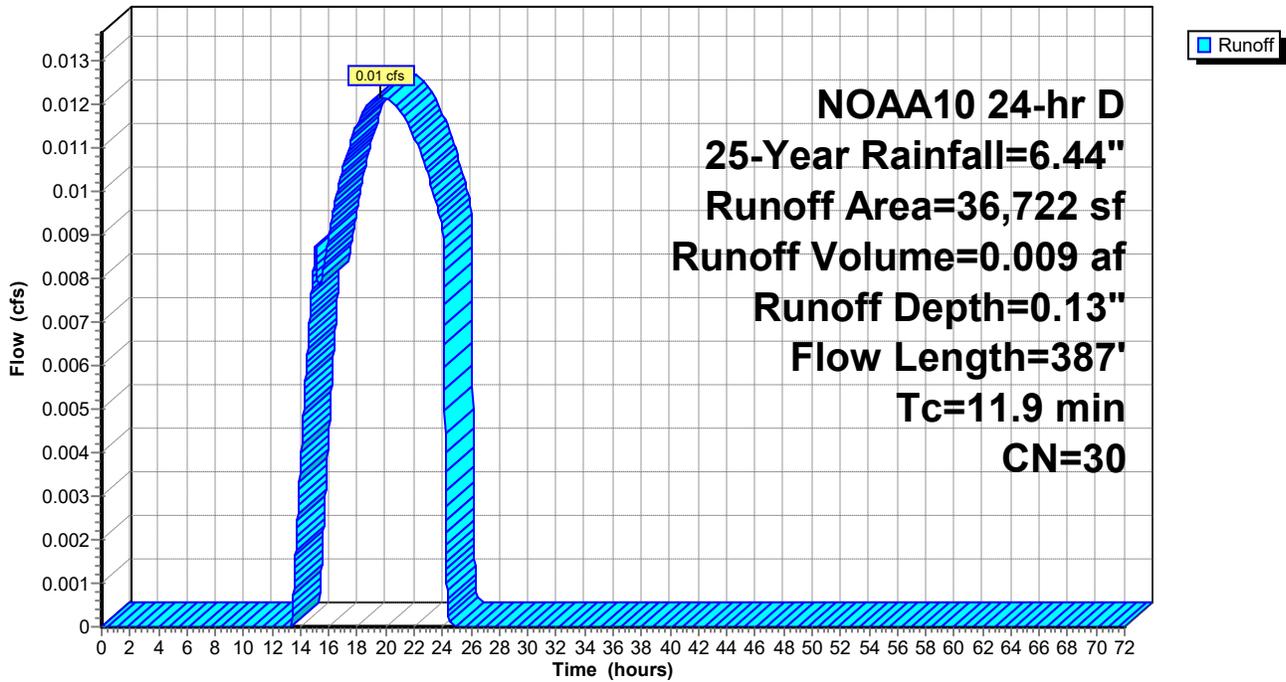
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 25-Year Rainfall=6.44"

Area (sf)	CN	Description
14,091	30	Woods, Good, HSG A
22,631	30	Woods, Good, HSG A
36,722	30	Weighted Average
36,722		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1100	0.14		Sheet Flow, A-B Woods: Light underbrush n= 0.400 P2= 3.37"
0.3	26	0.0948	1.54		Shallow Concentrated Flow, B-C Woodland Kv= 5.0 fps
0.1	25	0.5873	3.83		Shallow Concentrated Flow, C-D Woodland Kv= 5.0 fps
2.1	93	0.0216	0.73		Shallow Concentrated Flow, D-E Woodland Kv= 5.0 fps
3.3	193	0.0389	0.99		Shallow Concentrated Flow, E-F Woodland Kv= 5.0 fps
11.9	387	Total			

Subcatchment EX-2: Subcat EX-2

Hydrograph



Summary for Pond AP-31: #31 Elm St

Inflow Area = 0.021 ac, 0.00% Impervious, Inflow Depth = 0.13" for 25-Year event
 Inflow = 0.00 cfs @ 19.94 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

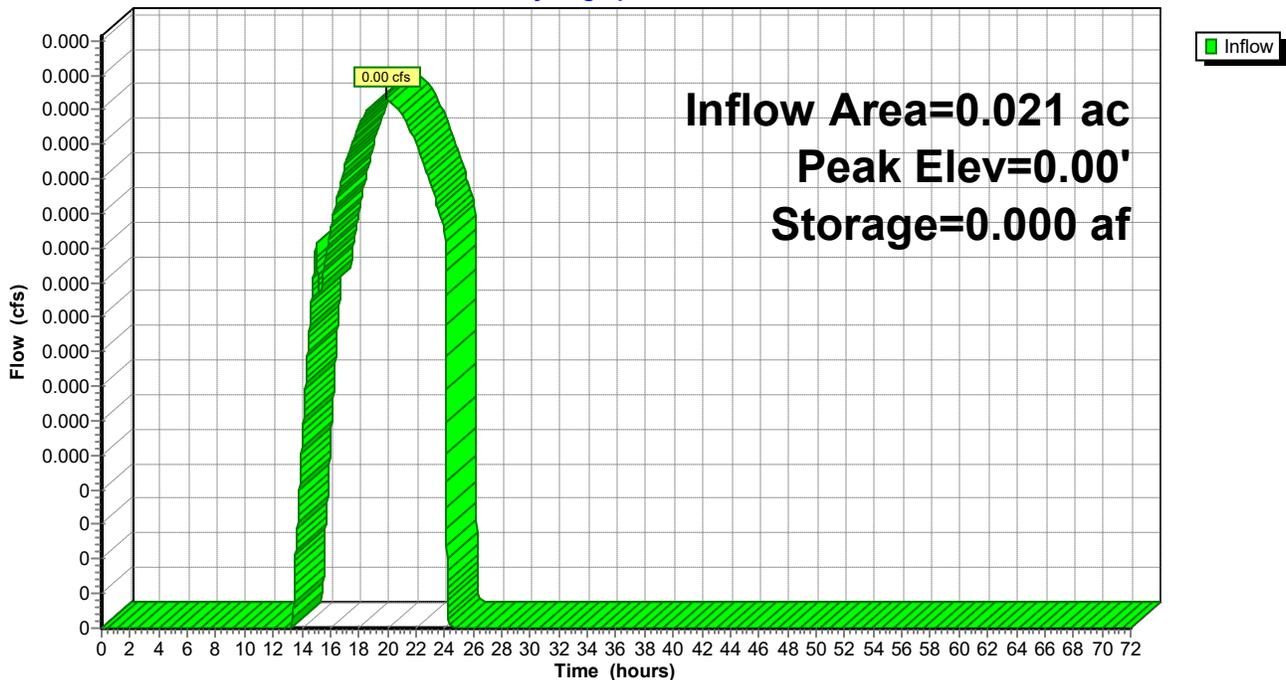
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 24.45 hrs Surf.Area= 9,999.000 ac Storage= 0.000 af

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	0.00'	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-31: #31 Elm St

Hydrograph



Summary for Pond AP-35: #35 Elm St

Inflow Area = 0.843 ac, 0.00% Impervious, Inflow Depth = 0.13" for 25-Year event
 Inflow = 0.01 cfs @ 19.66 hrs, Volume= 0.009 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

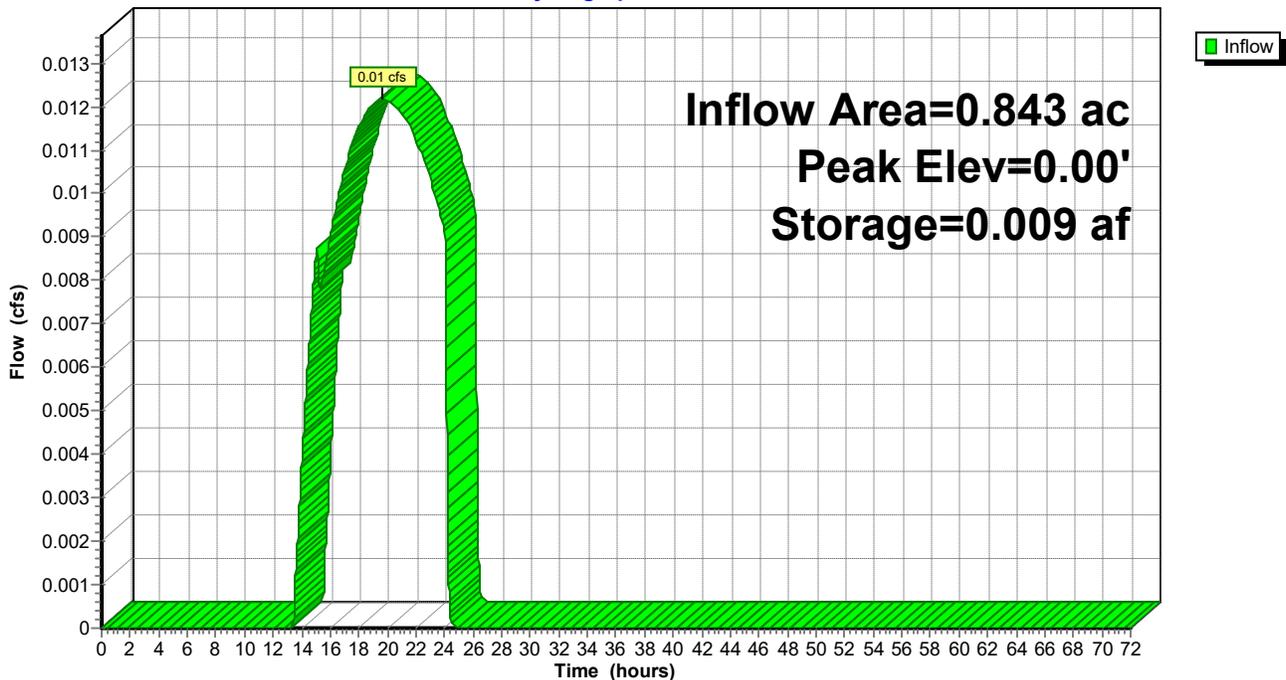
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 24.68 hrs Surf.Area= 9,999.000 ac Storage= 0.009 af

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	0.00	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-35: #35 Elm St

Hydrograph



Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment EX-2: Subcat EX-2

Runoff Area=36,722 sf 0.00% Impervious Runoff Depth=0.48"
Flow Length=387' Tc=11.9 min CN=30 Runoff=0.05 cfs 0.034 af

Subcatchment EX-3: Subcat EX-3

Runoff Area=0.021 ac 0.00% Impervious Runoff Depth=0.48"
Flow Length=84' Tc=8.0 min CN=30 Runoff=0.00 cfs 0.001 af

Pond AP-31: #31 Elm St

Peak Elev=0.00' Storage=0.001 af Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.000 af

Pond AP-35: #35 Elm St

Peak Elev=0.00' Storage=0.034 af Inflow=0.05 cfs 0.034 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 0.864 ac Runoff Volume = 0.035 af Average Runoff Depth = 0.48"
100.00% Pervious = 0.864 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment EX-2: Subcat EX-2

Runoff = 0.05 cfs @ 12.44 hrs, Volume= 0.034 af, Depth= 0.48"
 Routed to Pond AP-35 : #35 Elm St

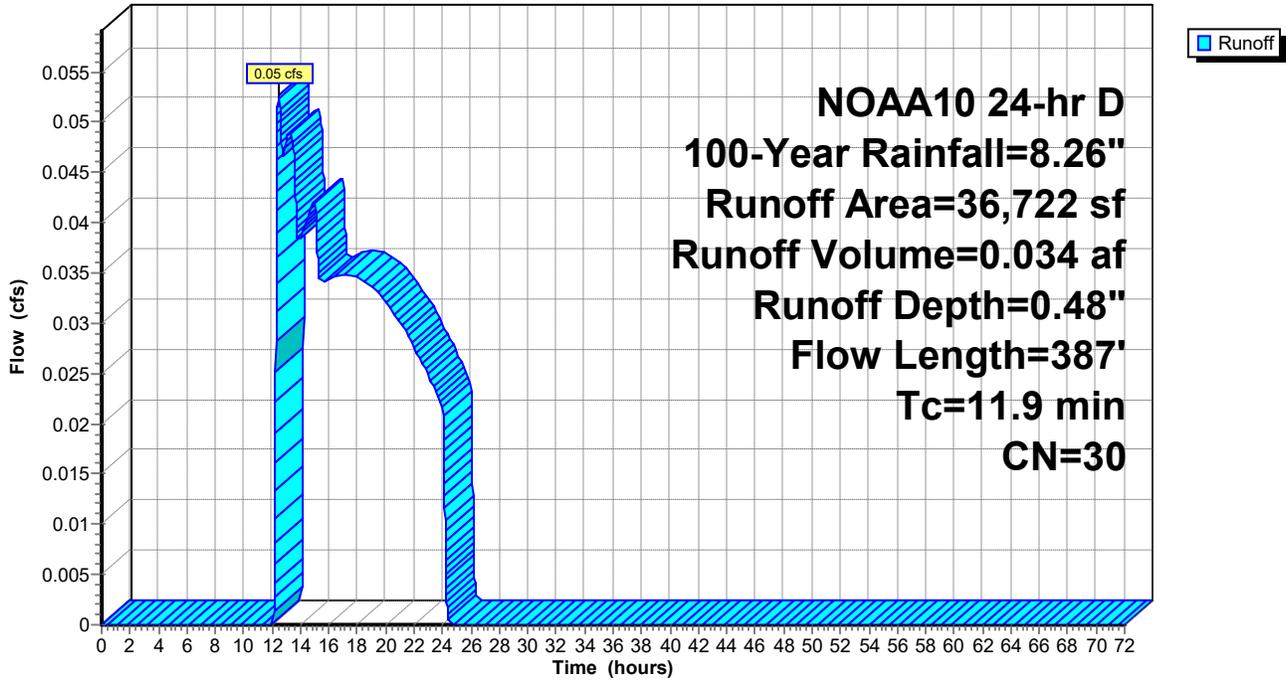
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 100-Year Rainfall=8.26"

Area (sf)	CN	Description
14,091	30	Woods, Good, HSG A
22,631	30	Woods, Good, HSG A
36,722	30	Weighted Average
36,722		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	50	0.1100	0.14		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.37"
0.3	26	0.0948	1.54		Shallow Concentrated Flow, B-C
					Woodland Kv= 5.0 fps
0.1	25	0.5873	3.83		Shallow Concentrated Flow, C-D
					Woodland Kv= 5.0 fps
2.1	93	0.0216	0.73		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
3.3	193	0.0389	0.99		Shallow Concentrated Flow, E-F
					Woodland Kv= 5.0 fps
11.9	387	Total			

Subcatchment EX-2: Subcat EX-2

Hydrograph



Summary for Pond AP-31: #31 Elm St

Inflow Area = 0.021 ac, 0.00% Impervious, Inflow Depth = 0.48" for 100-Year event
 Inflow = 0.00 cfs @ 12.37 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

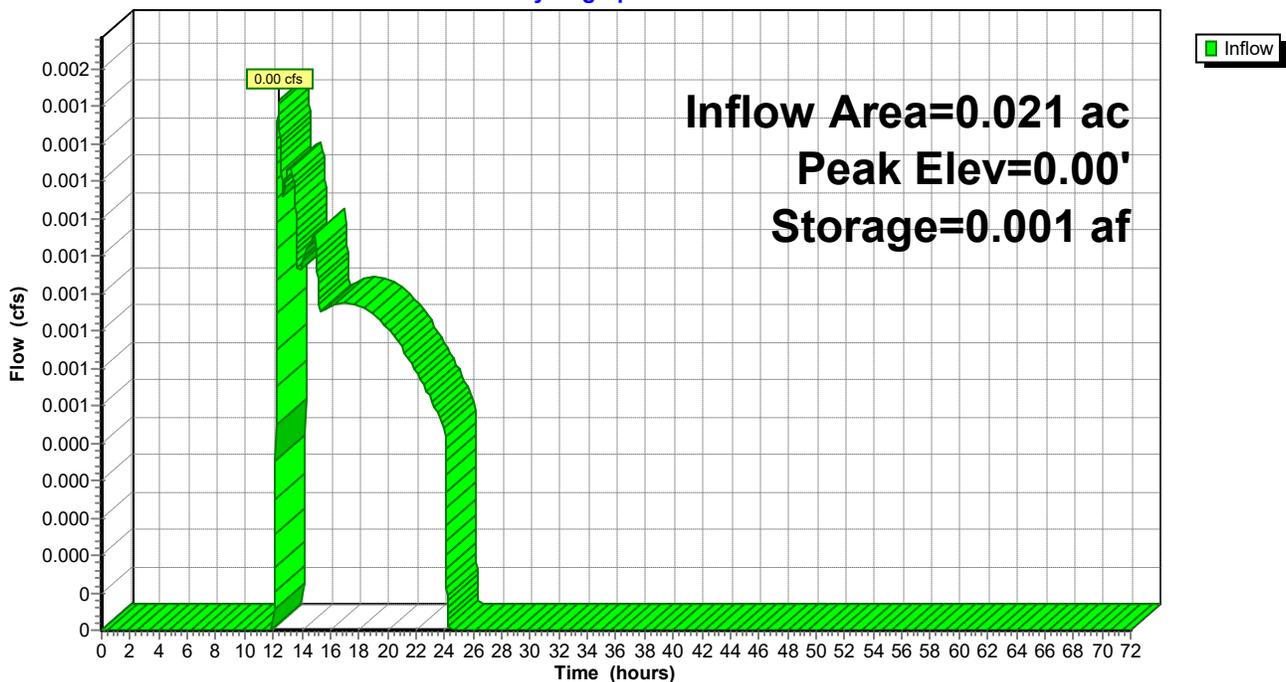
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 24.45 hrs Surf.Area= 9,999.000 ac Storage= 0.001 af

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	0.00'	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-31: #31 Elm St

Hydrograph



Summary for Pond AP-35: #35 Elm St

Inflow Area = 0.843 ac, 0.00% Impervious, Inflow Depth = 0.48" for 100-Year event
 Inflow = 0.05 cfs @ 12.44 hrs, Volume= 0.034 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

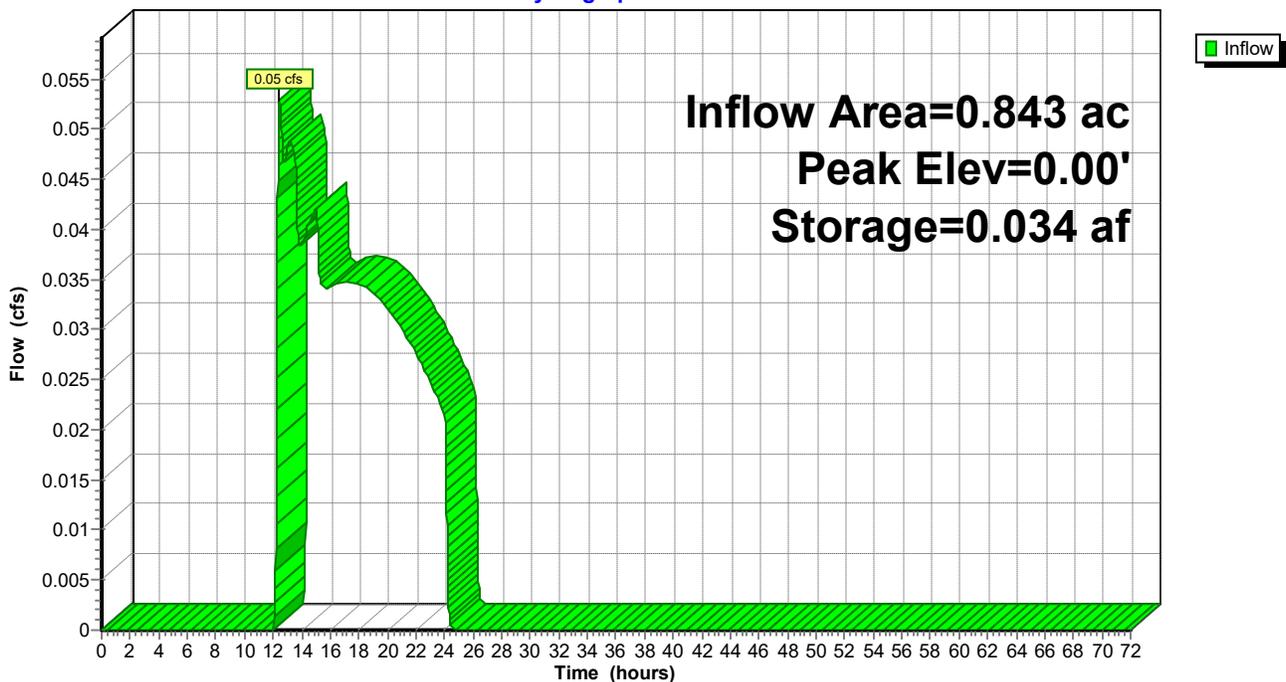
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 24.68 hrs Surf.Area= 9,999.000 ac Storage= 0.034 af

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	0.00	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-35: #35 Elm St

Hydrograph



Events for Subcatchment EX-2: Subcat EX-2

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2-Year	3.37	0.00	0.000	0.00
10-Year	5.26	0.00	0.001	0.01
25-Year	6.44	0.01	0.009	0.13
100-Year	8.26	0.05	0.034	0.48

Events for Subcatchment EX-3: Subcat EX-3

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2-Year	3.37	0.00	0.000	0.00
10-Year	5.26	0.00	0.000	0.01
25-Year	6.44	0.00	0.000	0.13
100-Year	8.26	0.00	0.001	0.48

Events for Pond AP-31: #31 Elm St

Event	Inflow (cfs)	Elevation (feet)	Storage (acre-feet)
2-Year	0.00	0.00	0.000
10-Year	0.00	0.00	0.000
25-Year	0.00	0.00	0.000
100-Year	0.00	0.00	0.001

Events for Pond AP-35: #35 Elm St

Event	Inflow (cfs)	Elevation (feet)	Storage (acre-feet)
2-Year	0.00	0.00	0.000
10-Year	0.00	0.00	0.001
25-Year	0.01	0.00	0.009
100-Year	0.05	0.00	0.034

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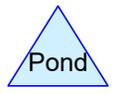
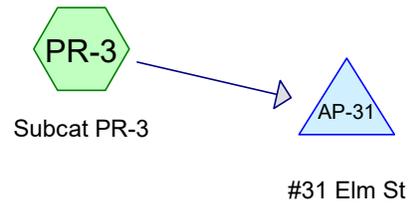
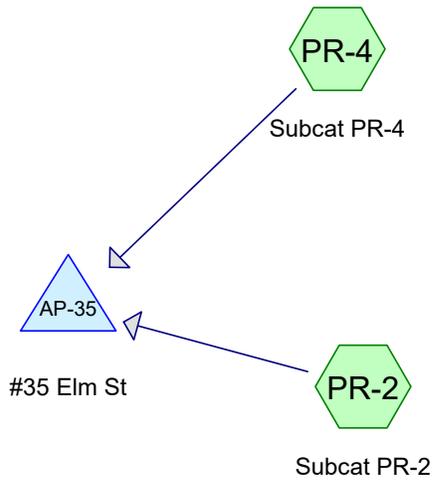
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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-Year	NOAA10 24-hr	D	Default	24.00	1	3.37	2
2	10-Year	NOAA10 24-hr	D	Default	24.00	1	5.26	2
3	25-Year	NOAA10 24-hr	D	Default	24.00	1	6.44	2
4	100-Year	NOAA10 24-hr	D	Default	24.00	1	8.26	2

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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.014	39	>75% Grass cover, Good, HSG A (PR-2, PR-3)
0.322	30	Woods, Good, HSG A (PR-2, PR-3, PR-4)
0.336	30	TOTAL AREA

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Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.336	HSG A	PR-2, PR-3, PR-4
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
0.000	Other	
0.336		TOTAL AREA

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.014	0.000	0.000	0.000	0.000	0.014	>75% Grass cover, Good	PR-2, PR-3
0.322	0.000	0.000	0.000	0.000	0.322	Woods, Good	PR-2, PR-3, PR-4
0.336	0.000	0.000	0.000	0.000	0.336	TOTAL AREA	

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NOAA10 24-hr D 2-Year Rainfall=3.37"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PR-2: Subcat PR-2 Runoff Area=0.060 ac 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment PR-3: Subcat PR-3 Runoff Area=0.016 ac 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=31 Runoff=0.00 cfs 0.000 af

Subcatchment PR-4: Subcat PR-4 Runoff Area=0.260 ac 0.00% Impervious Runoff Depth=0.00"
Tc=12.0 min CN=30 Runoff=0.00 cfs 0.000 af

Pond AP-31: #31 Elm St Peak Elev=0.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond AP-35: #35 Elm St Peak Elev=0.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 0.336 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
100.00% Pervious = 0.336 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment PR-2: Subcat PR-2

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond AP-35 : #35 Elm St

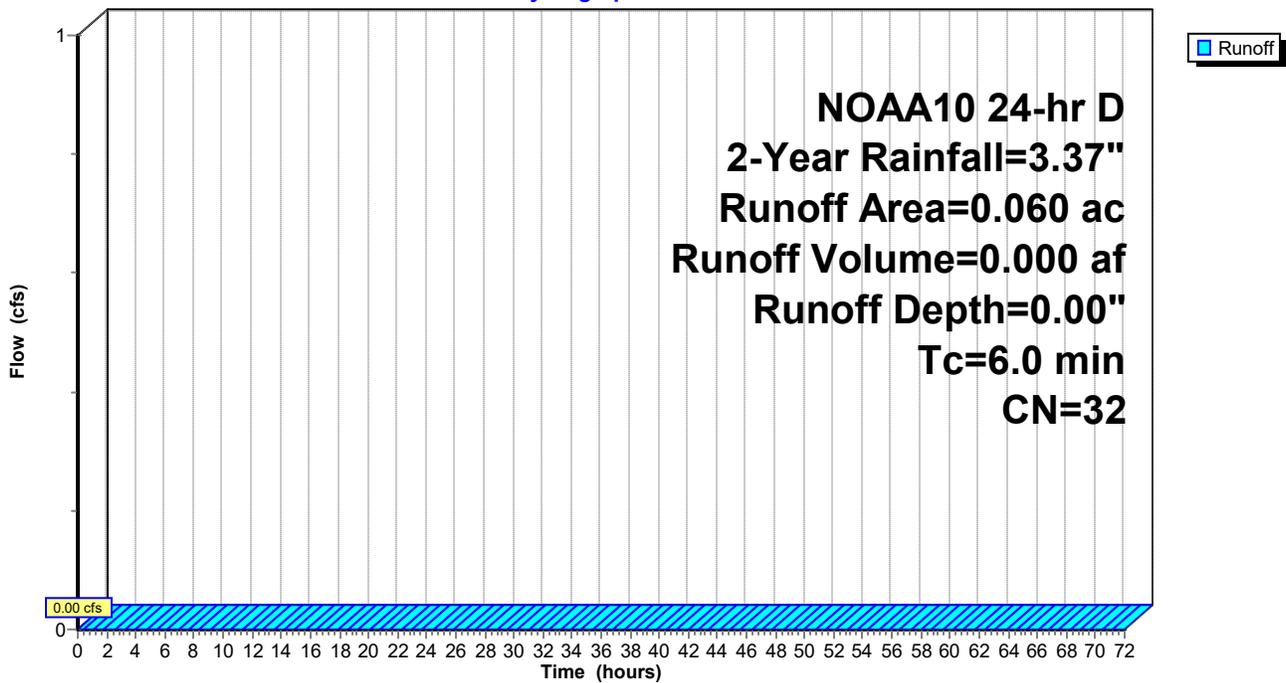
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 2-Year Rainfall=3.37"

Area (ac)	CN	Description
0.012	39	>75% Grass cover, Good, HSG A
0.048	30	Woods, Good, HSG A
0.060	32	Weighted Average
0.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, 6 MINUTE MINIMUM

Subcatchment PR-2: Subcat PR-2

Hydrograph



Summary for Subcatchment PR-3: Subcat PR-3

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond AP-31 : #31 Elm St

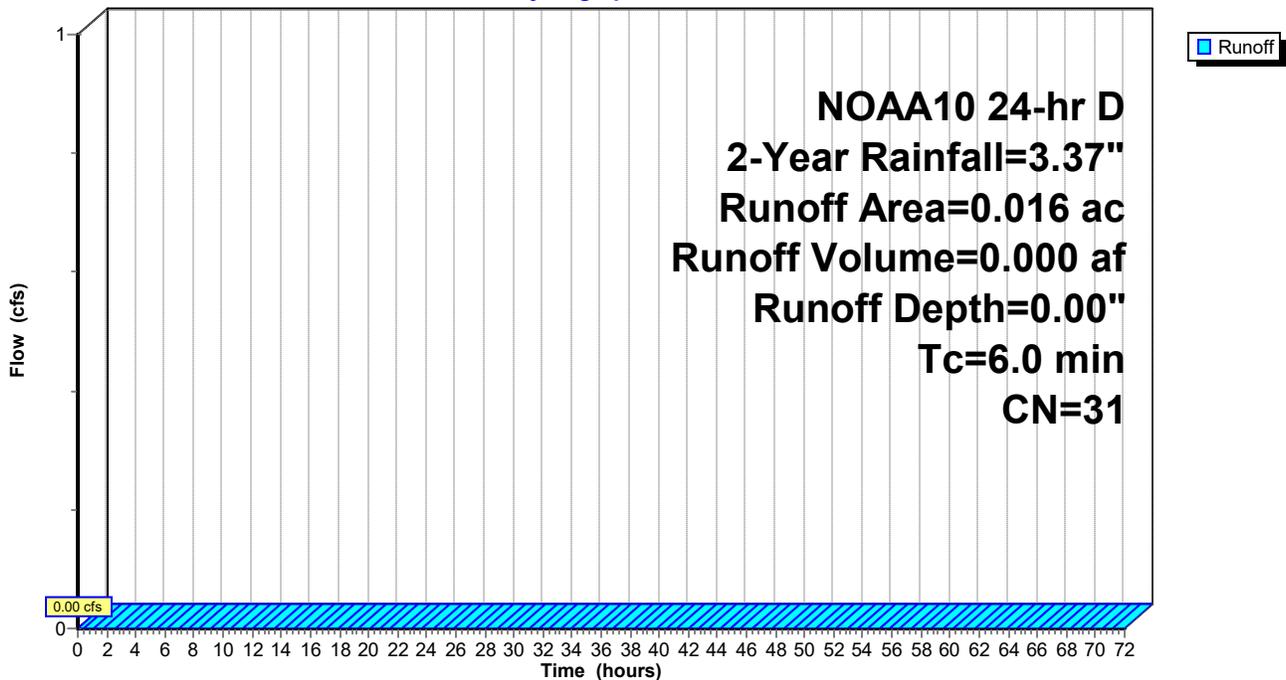
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 2-Year Rainfall=3.37"

Area (ac)	CN	Description
0.014	30	Woods, Good, HSG A
0.000	39	>75% Grass cover, Good, HSG A
0.002	39	>75% Grass cover, Good, HSG A
0.016	31	Weighted Average
0.016		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, 6 MINUTE MINIMUM

Subcatchment PR-3: Subcat PR-3

Hydrograph



Summary for Subcatchment PR-4: Subcat PR-4

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond AP-35 : #35 Elm St

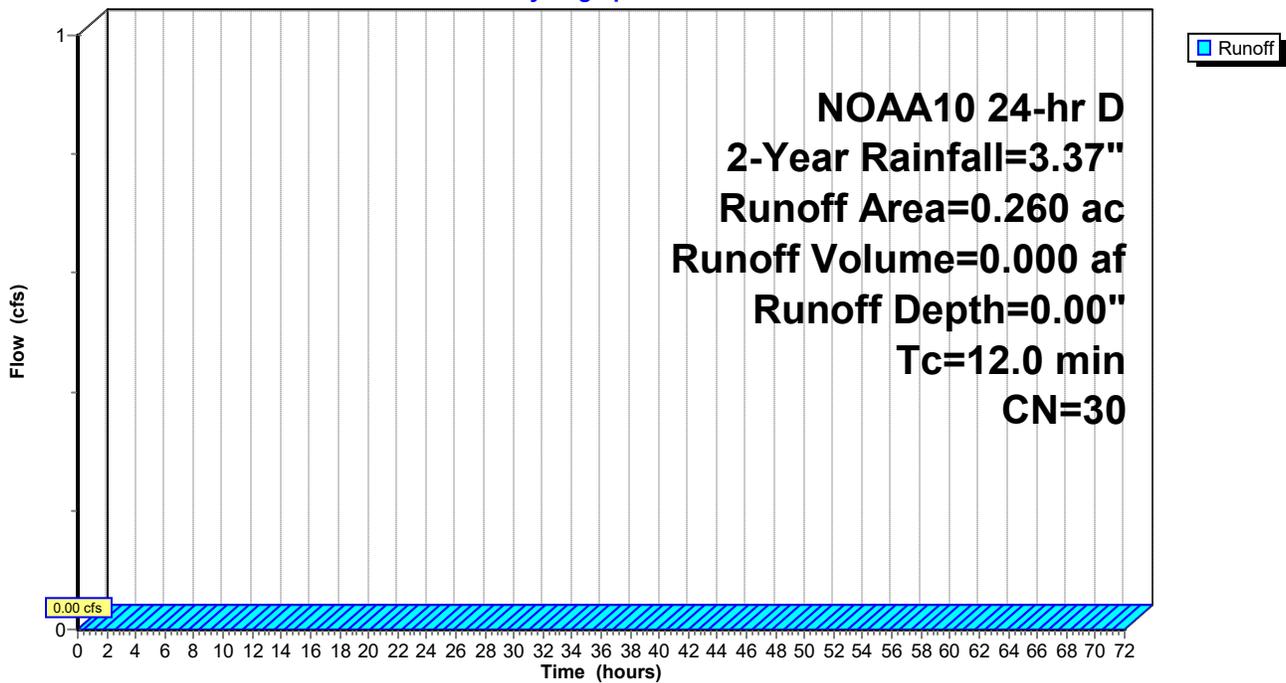
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 2-Year Rainfall=3.37"

Area (ac)	CN	Description
0.199	30	Woods, Good, HSG A
0.061	30	Woods, Good, HSG A
0.260	30	Weighted Average
0.260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry, 6 MINUTE MINIMUM

Subcatchment PR-4: Subcat PR-4

Hydrograph



Summary for Pond AP-31: #31 Elm St

Inflow Area = 0.016 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

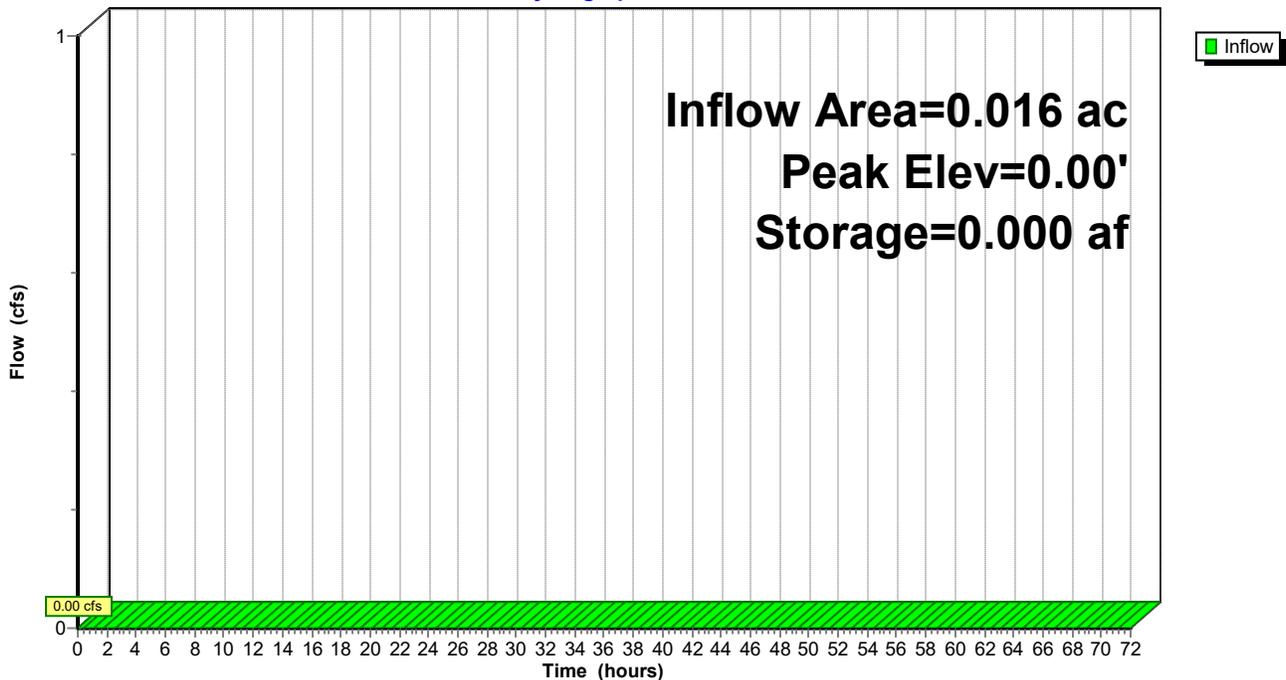
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 0.00 hrs Surf.Area= 9,999.000 ac Storage= 0.000 af

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

Volume	Invert	Avail.Storage	Storage Description
#1	0.00	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-31: #31 Elm St

Hydrograph



Summary for Pond AP-35: #35 Elm St

Inflow Area = 0.321 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

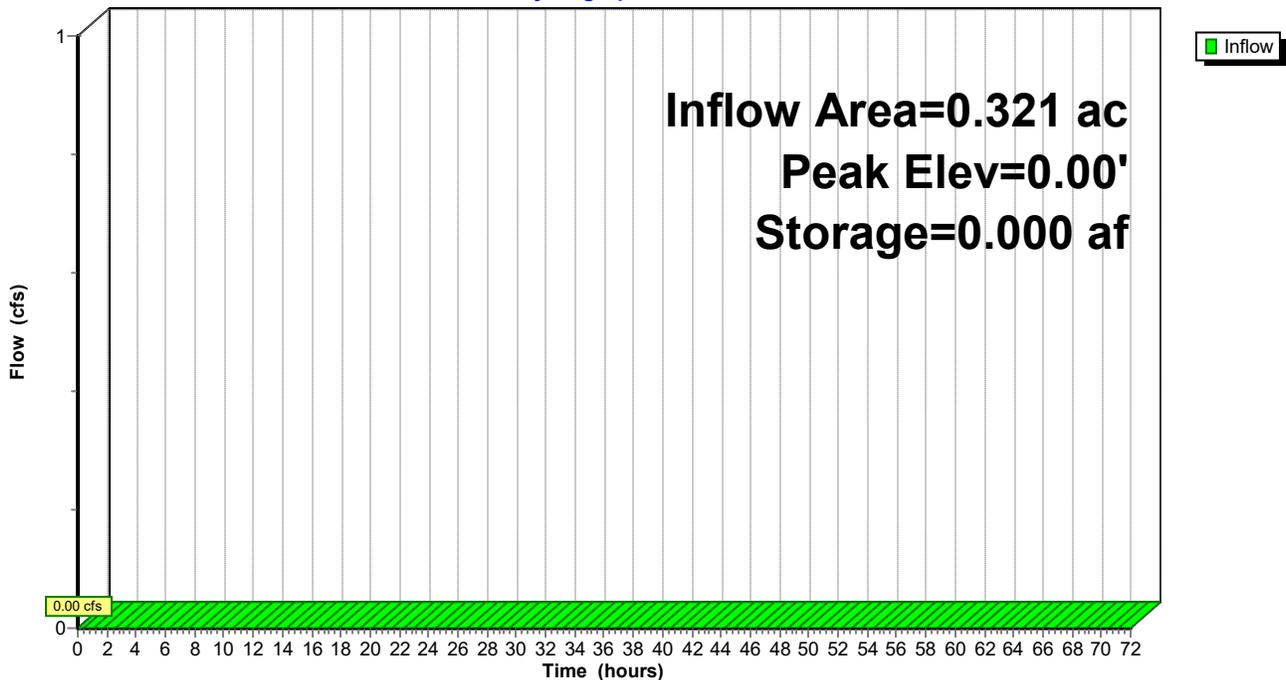
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 0.00 hrs Surf.Area= 9,999.000 ac Storage= 0.000 af

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

Volume	Invert	Avail.Storage	Storage Description
#1	0.00	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-35: #35 Elm St

Hydrograph



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NOAA10 24-hr D 10-Year Rainfall=5.26"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PR-2: Subcat PR-2 Runoff Area=0.060 ac 0.00% Impervious Runoff Depth=0.05"
Tc=6.0 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment PR-3: Subcat PR-3 Runoff Area=0.016 ac 0.00% Impervious Runoff Depth=0.03"
Tc=6.0 min CN=31 Runoff=0.00 cfs 0.000 af

Subcatchment PR-4: Subcat PR-4 Runoff Area=0.260 ac 0.00% Impervious Runoff Depth=0.01"
Tc=12.0 min CN=30 Runoff=0.00 cfs 0.000 af

Pond AP-31: #31 Elm St Peak Elev=0.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond AP-35: #35 Elm St Peak Elev=0.00' Storage=0.001 af Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 0.336 ac Runoff Volume = 0.001 af Average Runoff Depth = 0.02"
100.00% Pervious = 0.336 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment PR-3: Subcat PR-3

Runoff = 0.00 cfs @ 21.85 hrs, Volume= 0.000 af, Depth= 0.03"
 Routed to Pond AP-31 : #31 Elm St

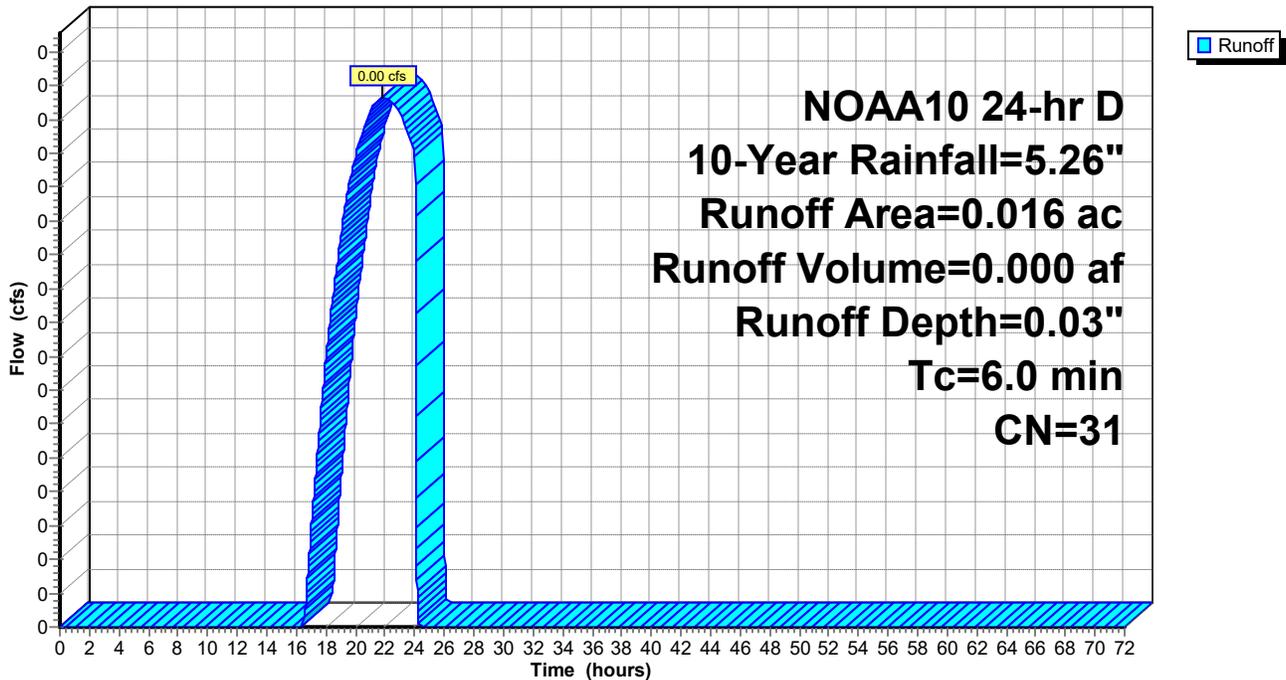
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 10-Year Rainfall=5.26"

Area (ac)	CN	Description
0.014	30	Woods, Good, HSG A
0.000	39	>75% Grass cover, Good, HSG A
0.002	39	>75% Grass cover, Good, HSG A
0.016	31	Weighted Average
0.016		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, 6 MINUTE MINIMUM

Subcatchment PR-3: Subcat PR-3

Hydrograph



Summary for Subcatchment PR-4: Subcat PR-4

Runoff = 0.00 cfs @ 22.92 hrs, Volume= 0.000 af, Depth= 0.01"
 Routed to Pond AP-35 : #35 Elm St

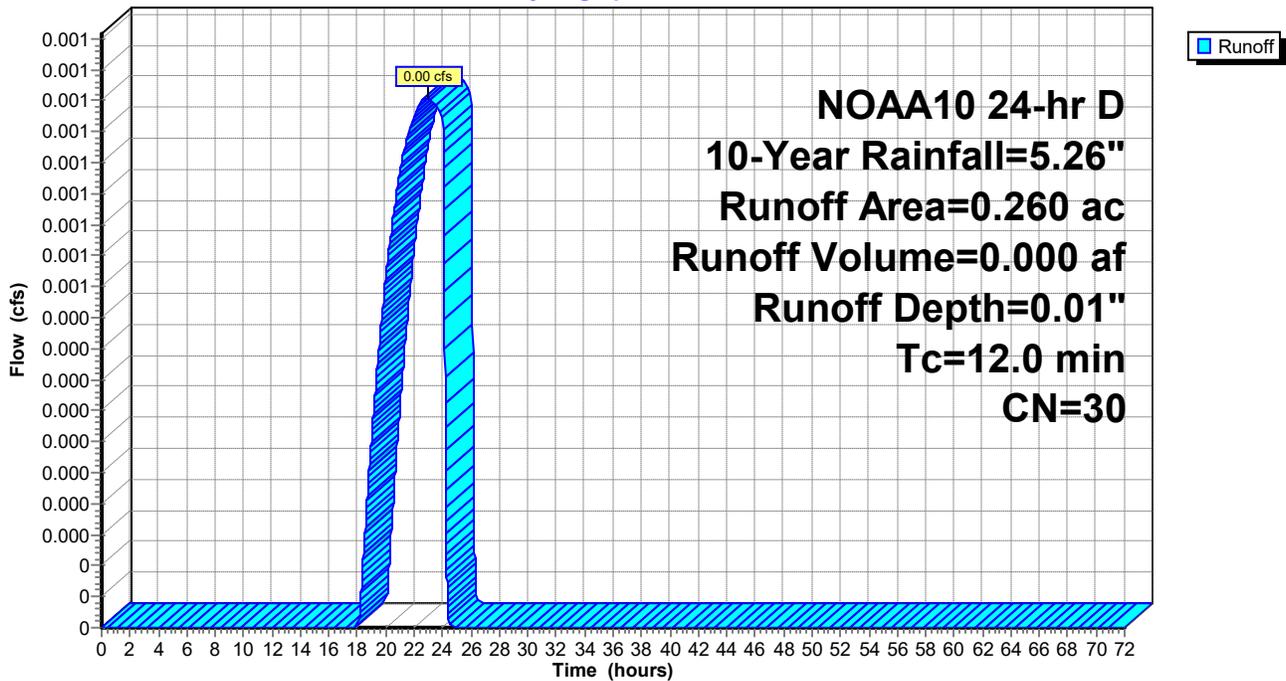
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 10-Year Rainfall=5.26"

Area (ac)	CN	Description
0.199	30	Woods, Good, HSG A
0.061	30	Woods, Good, HSG A
0.260	30	Weighted Average
0.260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry, 6 MINUTE MINIMUM

Subcatchment PR-4: Subcat PR-4

Hydrograph



Summary for Pond AP-31: #31 Elm St

Inflow Area = 0.016 ac, 0.00% Impervious, Inflow Depth = 0.03" for 10-Year event
 Inflow = 0.00 cfs @ 21.85 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

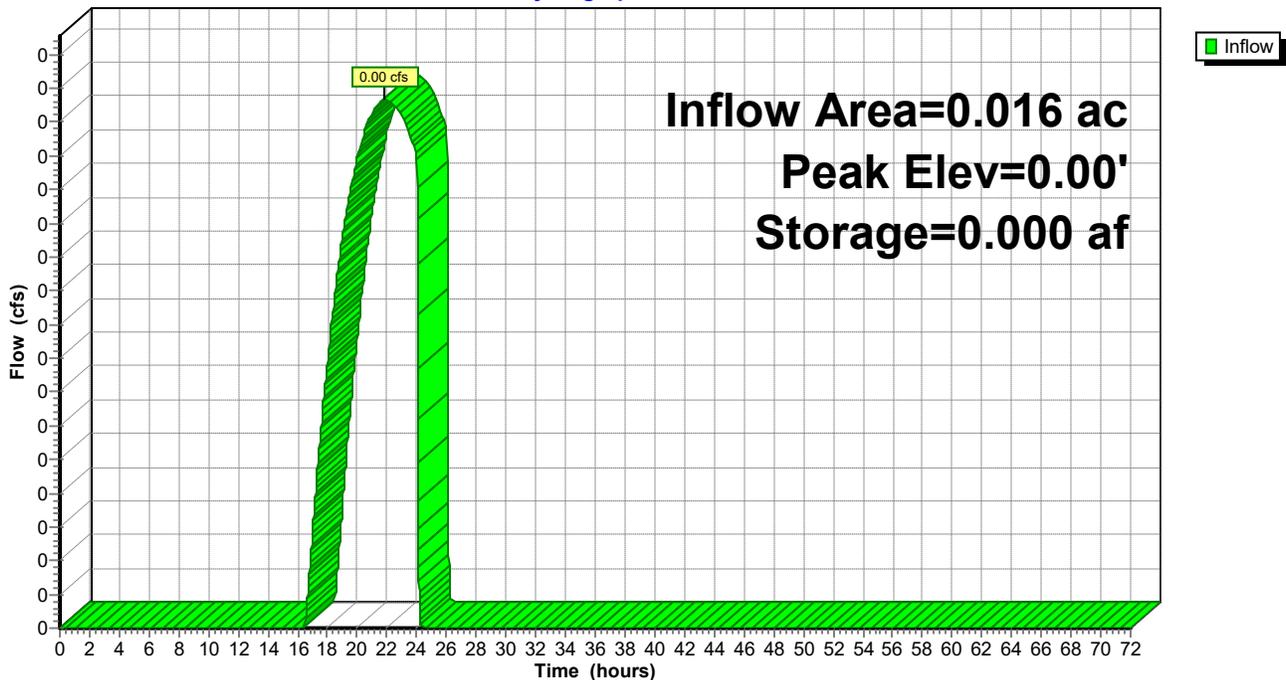
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 24.34 hrs Surf.Area= 9,999.000 ac Storage= 0.000 af

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	0.00'	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-31: #31 Elm St

Hydrograph



Summary for Pond AP-35: #35 Elm St

Inflow Area = 0.321 ac, 0.00% Impervious, Inflow Depth = 0.02" for 10-Year event
 Inflow = 0.00 cfs @ 22.63 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

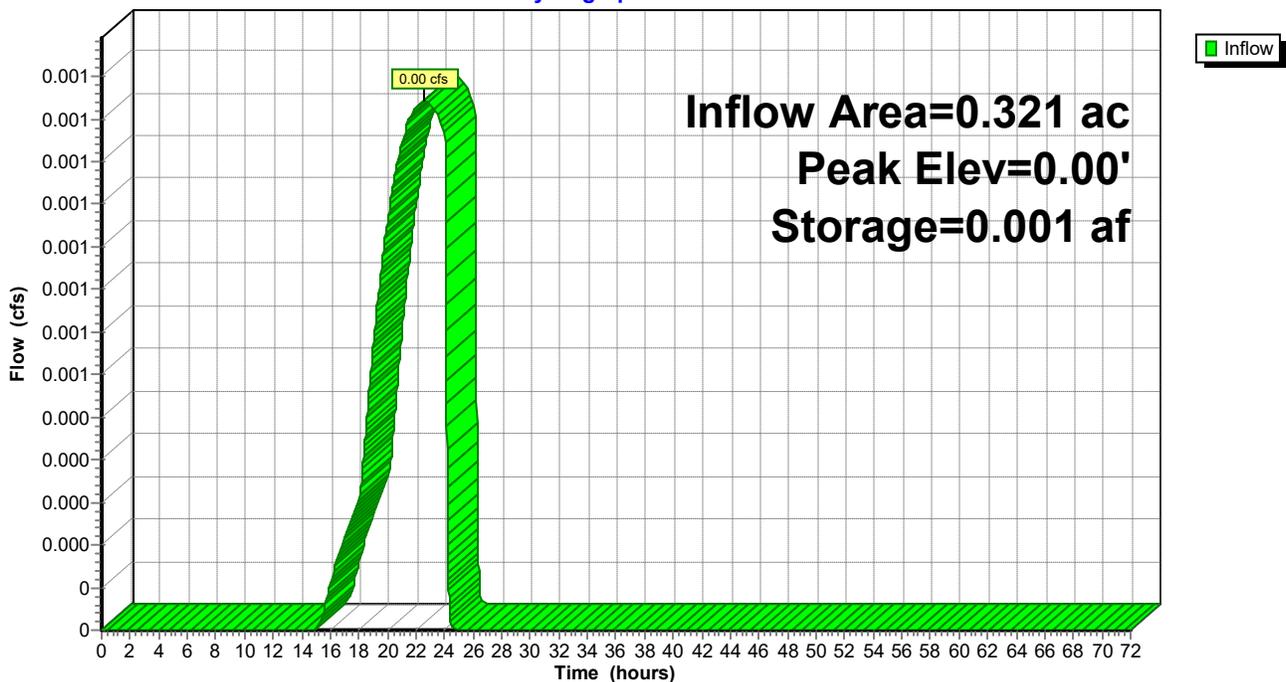
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 24.68 hrs Surf.Area= 9,999.000 ac Storage= 0.001 af

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	0.00	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-35: #35 Elm St

Hydrograph



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NOAA10 24-hr D 25-Year Rainfall=6.44"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PR-2: Subcat PR-2 Runoff Area=0.060 ac 0.00% Impervious Runoff Depth=0.20"
Tc=6.0 min CN=32 Runoff=0.00 cfs 0.001 af

Subcatchment PR-3: Subcat PR-3 Runoff Area=0.016 ac 0.00% Impervious Runoff Depth=0.16"
Tc=6.0 min CN=31 Runoff=0.00 cfs 0.000 af

Subcatchment PR-4: Subcat PR-4 Runoff Area=0.260 ac 0.00% Impervious Runoff Depth=0.13"
Tc=12.0 min CN=30 Runoff=0.00 cfs 0.003 af

Pond AP-31: #31 Elm St Peak Elev=0.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond AP-35: #35 Elm St Peak Elev=0.00' Storage=0.004 af Inflow=0.00 cfs 0.004 af
Outflow=0.00 cfs 0.000 af

Total Runoff Area = 0.336 ac Runoff Volume = 0.004 af Average Runoff Depth = 0.14"
100.00% Pervious = 0.336 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment PR-4: Subcat PR-4

Runoff = 0.00 cfs @ 19.67 hrs, Volume= 0.003 af, Depth= 0.13"
 Routed to Pond AP-35 : #35 Elm St

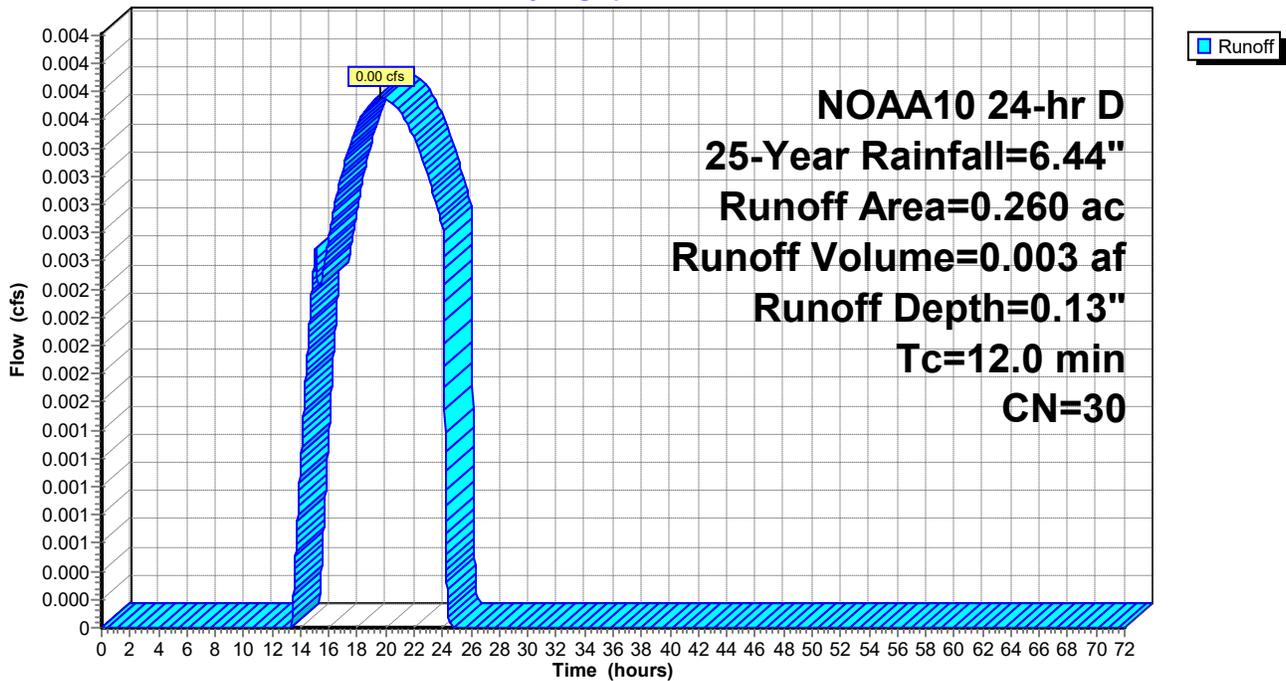
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 25-Year Rainfall=6.44"

Area (ac)	CN	Description
0.199	30	Woods, Good, HSG A
0.061	30	Woods, Good, HSG A
0.260	30	Weighted Average
0.260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry, 6 MINUTE MINIMUM

Subcatchment PR-4: Subcat PR-4

Hydrograph



Summary for Pond AP-31: #31 Elm St

Inflow Area = 0.016 ac, 0.00% Impervious, Inflow Depth = 0.16" for 25-Year event
 Inflow = 0.00 cfs @ 18.94 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

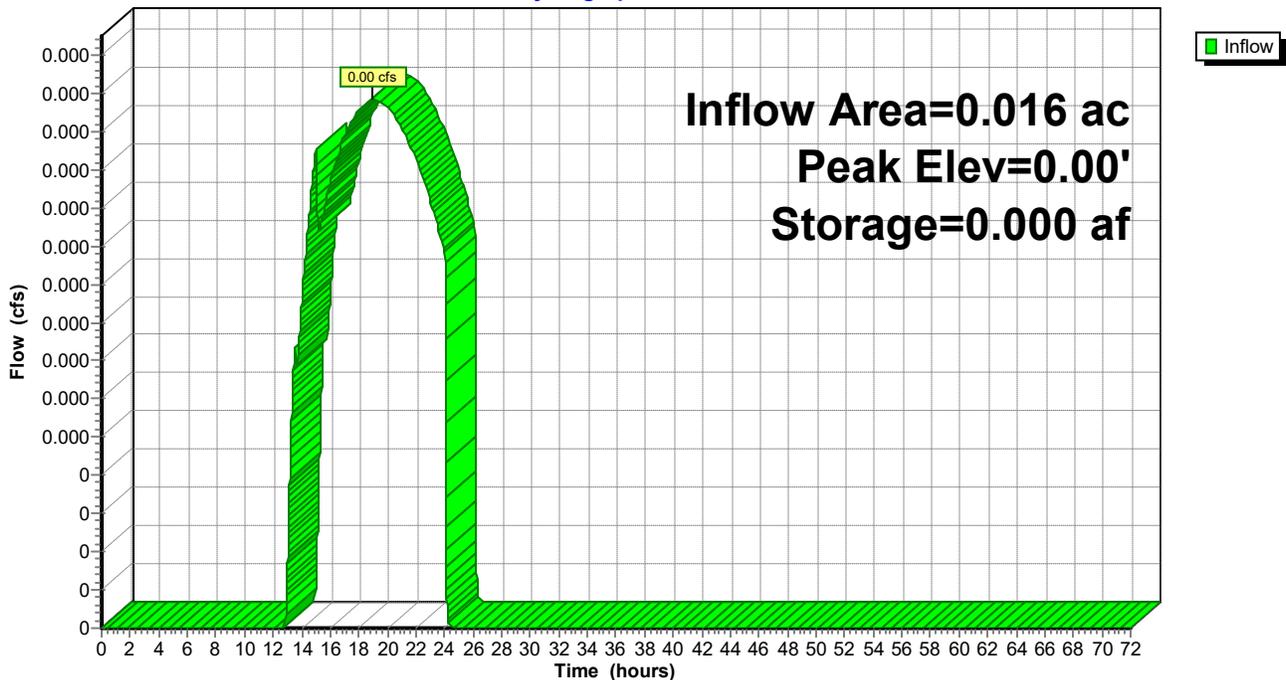
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 24.34 hrs Surf.Area= 9,999.000 ac Storage= 0.000 af

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	0.00'	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-31: #31 Elm St

Hydrograph



Summary for Pond AP-35: #35 Elm St

Inflow Area = 0.321 ac, 0.00% Impervious, Inflow Depth = 0.14" for 25-Year event
 Inflow = 0.00 cfs @ 19.27 hrs, Volume= 0.004 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

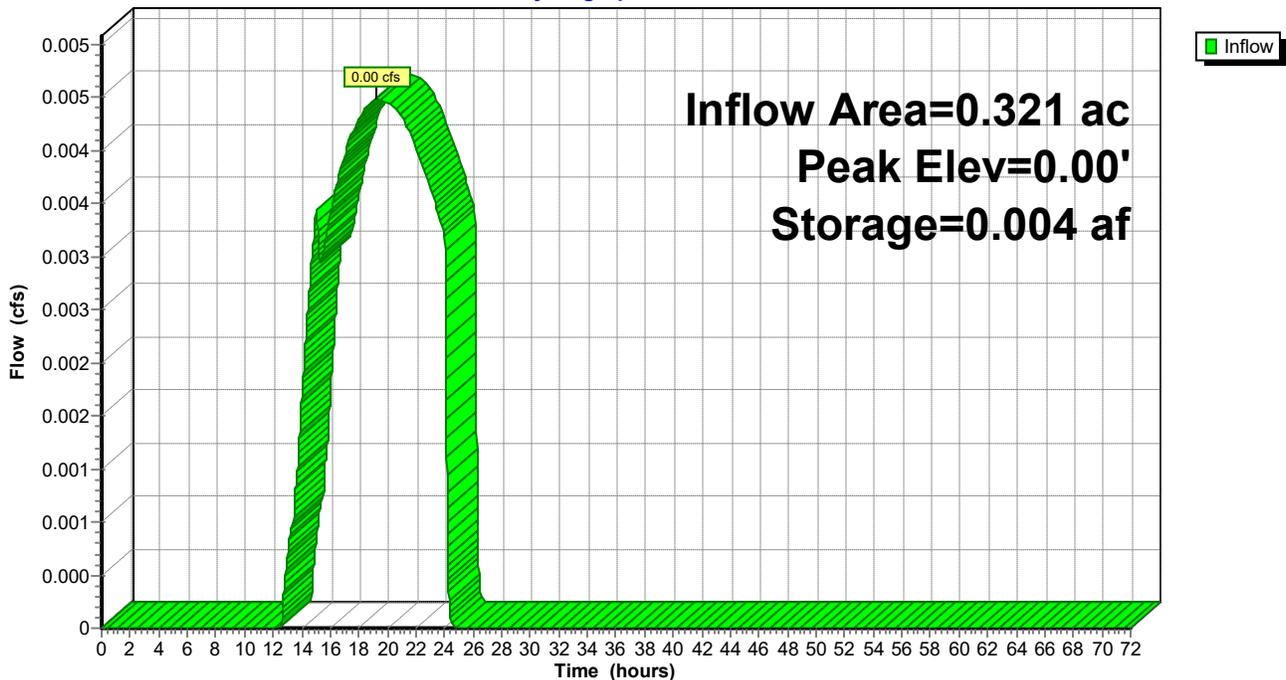
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 24.68 hrs Surf.Area= 9,999.000 ac Storage= 0.004 af

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	0.00	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-35: #35 Elm St

Hydrograph



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NOAA10 24-hr D 100-Year Rainfall=8.26"

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Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PR-2: Subcat PR-2	Runoff Area=0.060 ac 0.00% Impervious Runoff Depth=0.64" Tc=6.0 min CN=32 Runoff=0.01 cfs 0.003 af
Subcatchment PR-3: Subcat PR-3	Runoff Area=0.016 ac 0.00% Impervious Runoff Depth=0.56" Tc=6.0 min CN=31 Runoff=0.00 cfs 0.001 af
Subcatchment PR-4: Subcat PR-4	Runoff Area=0.260 ac 0.00% Impervious Runoff Depth=0.48" Tc=12.0 min CN=30 Runoff=0.02 cfs 0.010 af
Pond AP-31: #31 Elm St	Peak Elev=0.00' Storage=0.001 af Inflow=0.00 cfs 0.001 af Outflow=0.00 cfs 0.000 af
Pond AP-35: #35 Elm St	Peak Elev=0.00' Storage=0.014 af Inflow=0.02 cfs 0.014 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 0.336 ac Runoff Volume = 0.014 af Average Runoff Depth = 0.51"
100.00% Pervious = 0.336 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment PR-2: Subcat PR-2

Runoff = 0.01 cfs @ 12.17 hrs, Volume= 0.003 af, Depth= 0.64"
 Routed to Pond AP-35 : #35 Elm St

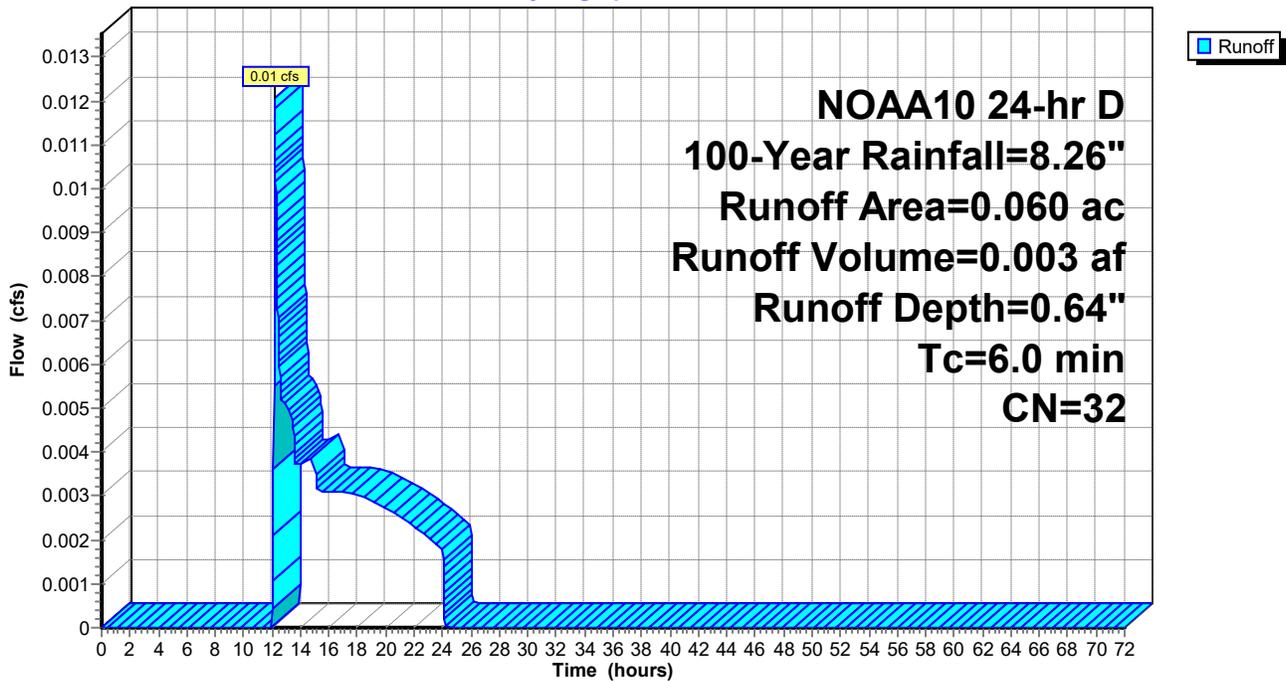
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 100-Year Rainfall=8.26"

Area (ac)	CN	Description
0.012	39	>75% Grass cover, Good, HSG A
0.048	30	Woods, Good, HSG A
0.060	32	Weighted Average
0.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					Direct Entry, 6 MINUTE MINIMUM

Subcatchment PR-2: Subcat PR-2

Hydrograph



Summary for Subcatchment PR-4: Subcat PR-4

Runoff = 0.02 cfs @ 12.44 hrs, Volume= 0.010 af, Depth= 0.48"
 Routed to Pond AP-35 : #35 Elm St

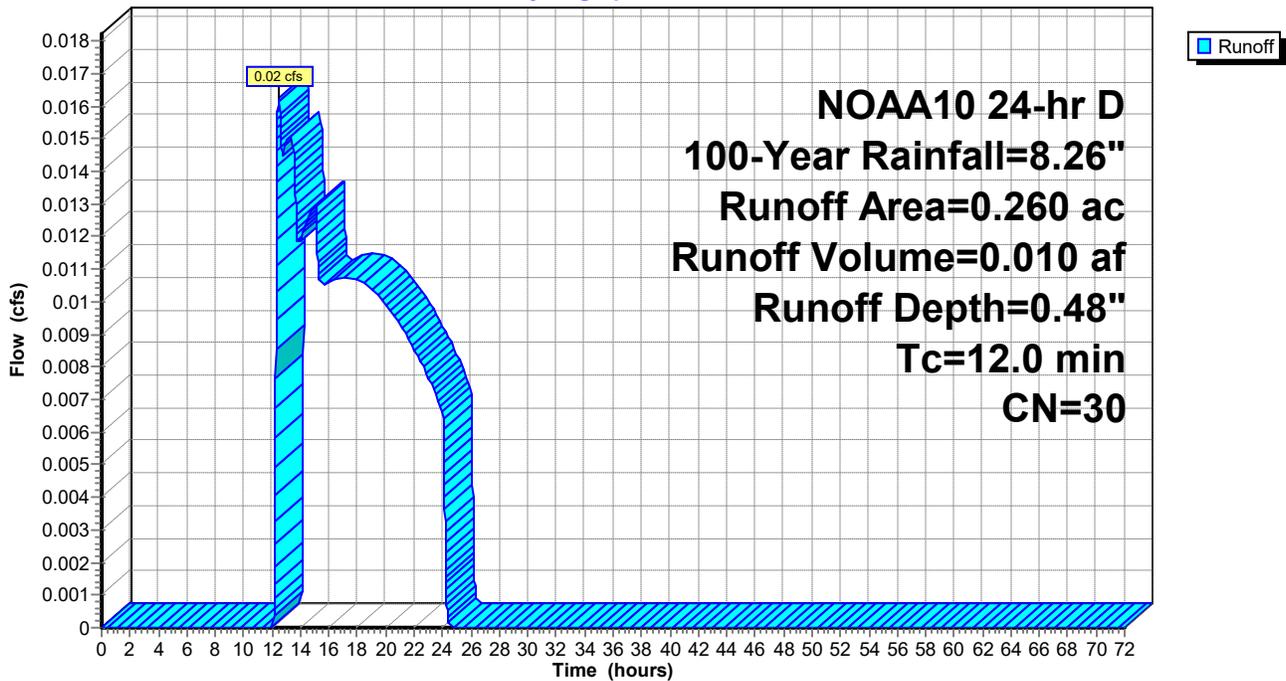
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 NOAA10 24-hr D 100-Year Rainfall=8.26"

Area (ac)	CN	Description
0.199	30	Woods, Good, HSG A
0.061	30	Woods, Good, HSG A
0.260	30	Weighted Average
0.260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0					Direct Entry, 6 MINUTE MINIMUM

Subcatchment PR-4: Subcat PR-4

Hydrograph



Summary for Pond AP-31: #31 Elm St

Inflow Area = 0.016 ac, 0.00% Impervious, Inflow Depth = 0.56" for 100-Year event
 Inflow = 0.00 cfs @ 12.25 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

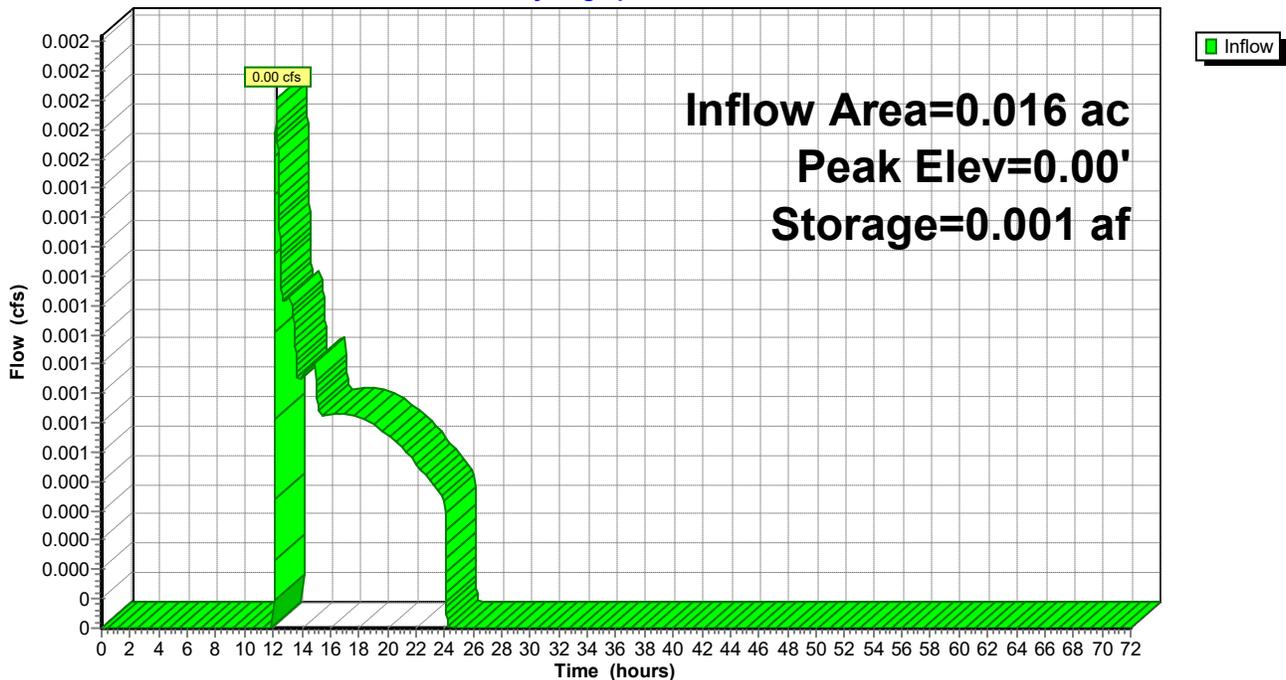
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 24.34 hrs Surf.Area= 9,999.000 ac Storage= 0.001 af

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	0.00'	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-31: #31 Elm St

Hydrograph



Summary for Pond AP-35: #35 Elm St

Inflow Area = 0.321 ac, 0.00% Impervious, Inflow Depth = 0.51" for 100-Year event
 Inflow = 0.02 cfs @ 12.39 hrs, Volume= 0.014 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min

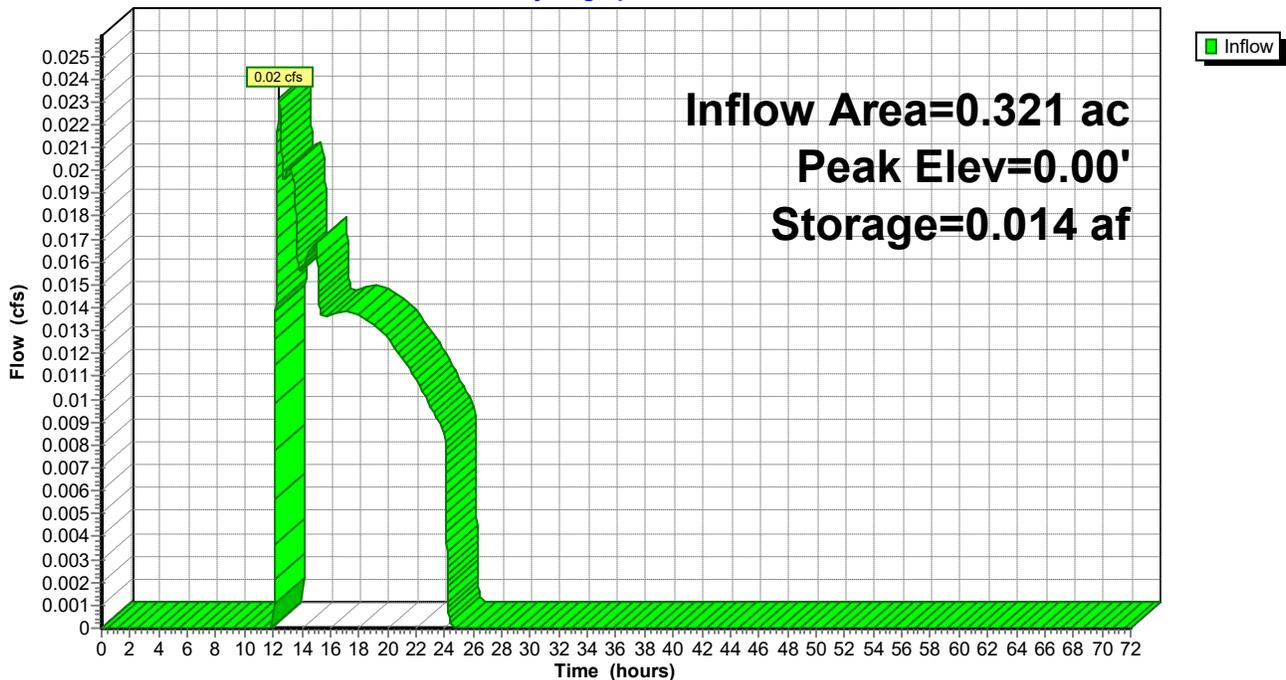
Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 0.00' @ 24.68 hrs Surf.Area= 9,999.000 ac Storage= 0.014 af

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	0.00'	9,935,001.000 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
0.00	9,999.000	0.000	0.000
9,999.00	99,999.000	549,935,001.000	549,935,001.000

Pond AP-35: #35 Elm St

Hydrograph



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Multi-Event Tables

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Events for Subcatchment PR-2: Subcat PR-2

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2-Year	3.37	0.00	0.000	0.00
10-Year	5.26	0.00	0.000	0.05
25-Year	6.44	0.00	0.001	0.20
100-Year	8.26	0.01	0.003	0.64

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Multi-Event Tables

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Events for Subcatchment PR-3: Subcat PR-3

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2-Year	3.37	0.00	0.000	0.00
10-Year	5.26	0.00	0.000	0.03
25-Year	6.44	0.00	0.000	0.16
100-Year	8.26	0.00	0.001	0.56

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Multi-Event Tables

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Events for Subcatchment PR-4: Subcat PR-4

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
2-Year	3.37	0.00	0.000	0.00
10-Year	5.26	0.00	0.000	0.01
25-Year	6.44	0.00	0.003	0.13
100-Year	8.26	0.02	0.010	0.48

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Multi-Event Tables

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Events for Pond AP-31: #31 Elm St

Event	Inflow (cfs)	Elevation (feet)	Storage (acre-feet)
2-Year	0.00	0.00	0.000
10-Year	0.00	0.00	0.000
25-Year	0.00	0.00	0.000
100-Year	0.00	0.00	0.001

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Multi-Event Tables

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Events for Pond AP-35: #35 Elm St

Event	Inflow (cfs)	Elevation (feet)	Storage (acre-feet)
2-Year	0.00	0.00	0.000
10-Year	0.00	0.00	0.001
25-Year	0.00	0.00	0.004
100-Year	0.02	0.00	0.014