## Summary for Subcatchment E1: Existing Site

Runoff = 3.48 cfs @ 12.17 hrs, Volume= 0.259 af, Depth= 0.61"
Routed to Reach Existing : Site Discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 10-Year Rainfall=4.20"

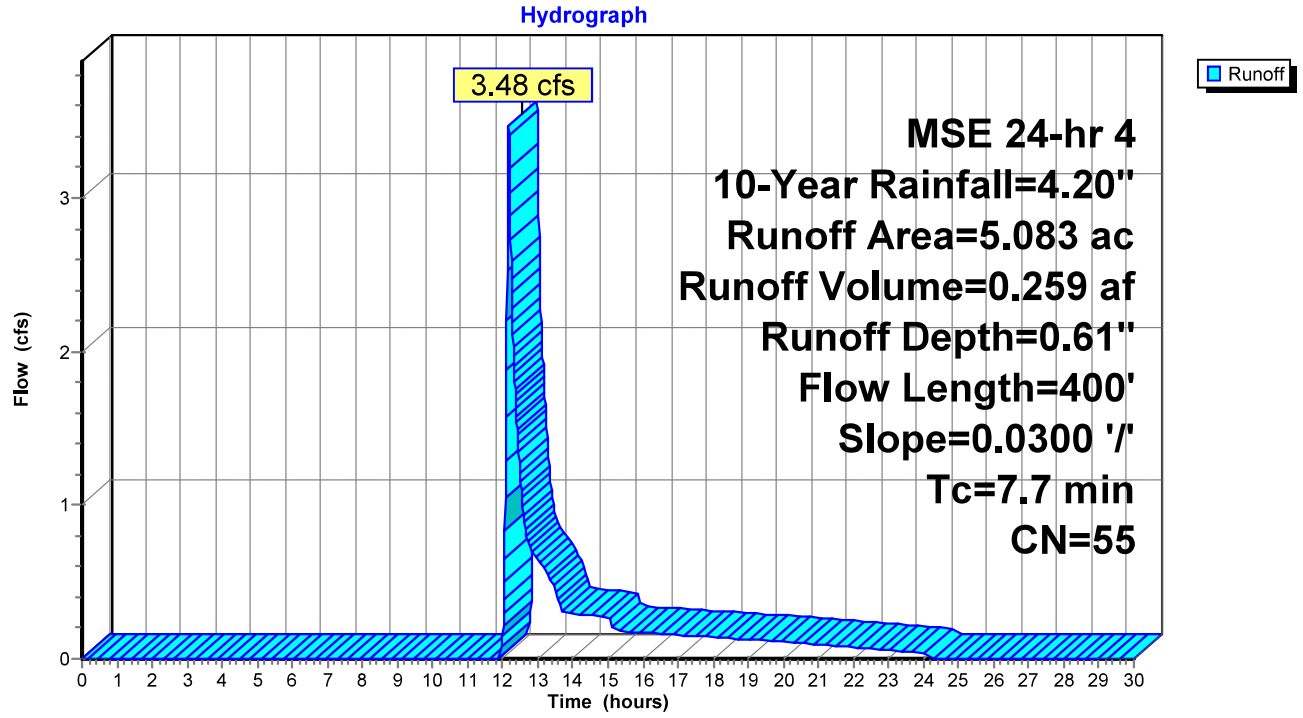
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 5.083 | 55 | Woods, Good, HSG B | Woods |
| 5.083 | | 100.00% Pervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 7.7 | 400 | 0.0300 | 0.87 | | **Shallow Concentrated Flow, Natural Drainage** Woodland Kv= 5.0 fps |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 0.00% Impervious, Rv= 0.050, Runoff= 1.75"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 5.083 | Woods | 40.32 | 0.50 |
| 5.083 | Total | 40.32 | 0.50 |

## Subcatchment E1: Existing Site

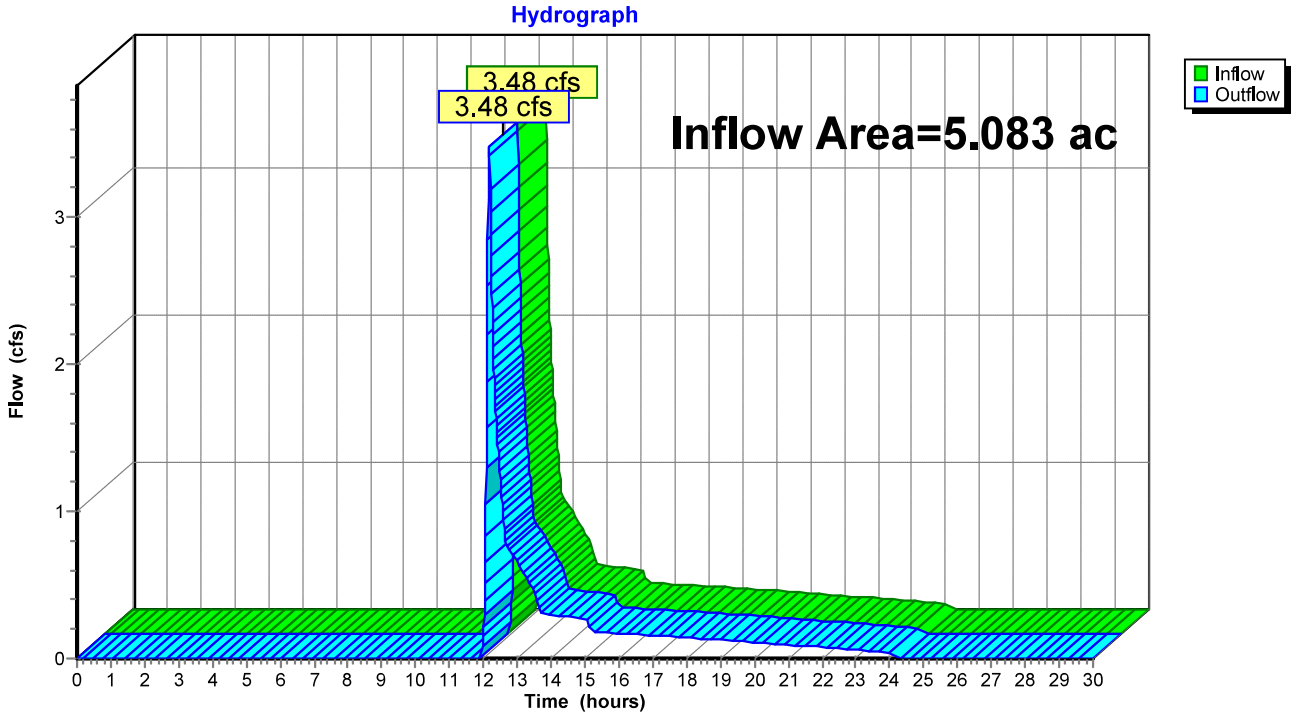


## Summary for Reach Existing: Site Discharge

Inflow Area = 5.083 ac, 0.00% Impervious, Inflow Depth = 0.61" for 10-Year event
Inflow = 3.48 cfs @ 12.17 hrs, Volume= 0.259 af
Outflow = 3.48 cfs @ 12.17 hrs, Volume= 0.259 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

### Reach Existing: Site Discharge



Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 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 E1: Existing Site** Runoff Area=5.083 ac 0.00% Impervious Runoff Depth=1.52"
Flow Length=400' Slope=0.0300 '/' Tc=7.7 min CN=55 Runoff=10.89 cfs 0.643 af

**Reach Existing: Site Discharge** Inflow=10.89 cfs 0.643 af
Outflow=10.89 cfs 0.643 af

**Total Runoff Area = 5.083 ac Runoff Volume = 0.643 af Average Runoff Depth = 1.52"**
**100.00% Pervious = 5.083 ac 0.00% Impervious = 0.000 ac**

## Summary for Subcatchment E1: Existing Site

Runoff = 10.89 cfs @ 12.16 hrs, Volume= 0.643 af, Depth= 1.52"
Routed to Reach Existing : Site Discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs
MSE 24-hr 4 100-Year Rainfall=6.00"

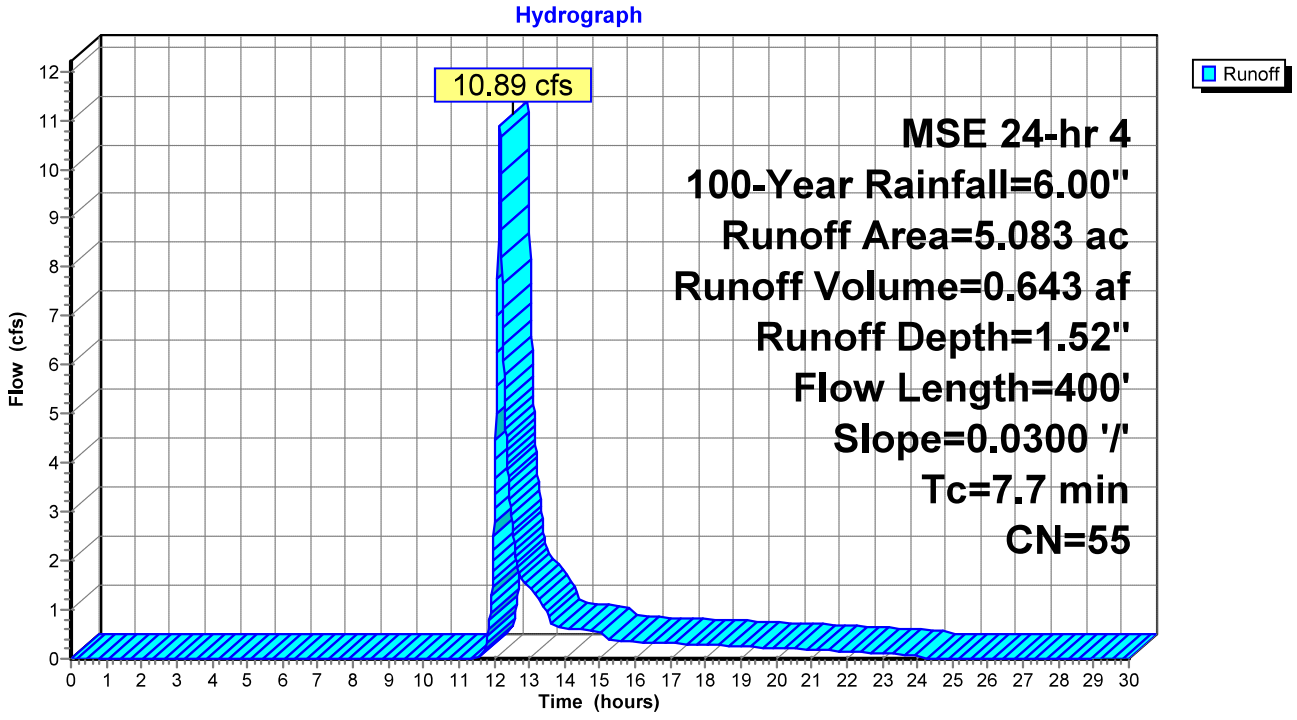
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 5.083 | 55 | Woods, Good, HSG B | Woods |
| 5.083 | | 100.00% Pervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 7.7 | 400 | 0.0300 | 0.87 | | **Shallow Concentrated Flow, Natural Drainage** Woodland Kv= 5.0 fps |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 0.00% Impervious, Rv= 0.050, Runoff= 1.75"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 5.083 | Woods | 40.32 | 0.50 |
| 5.083 | Total | 40.32 | 0.50 |

## Subcatchment E1: Existing Site

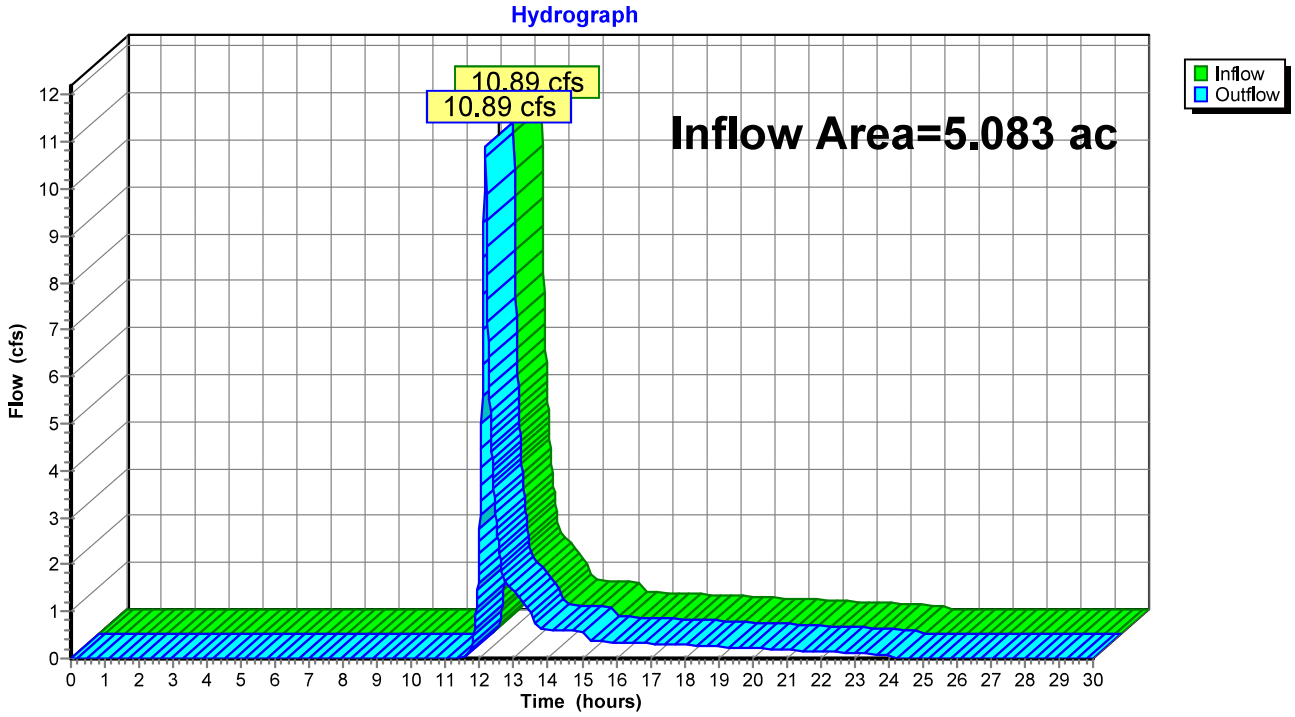


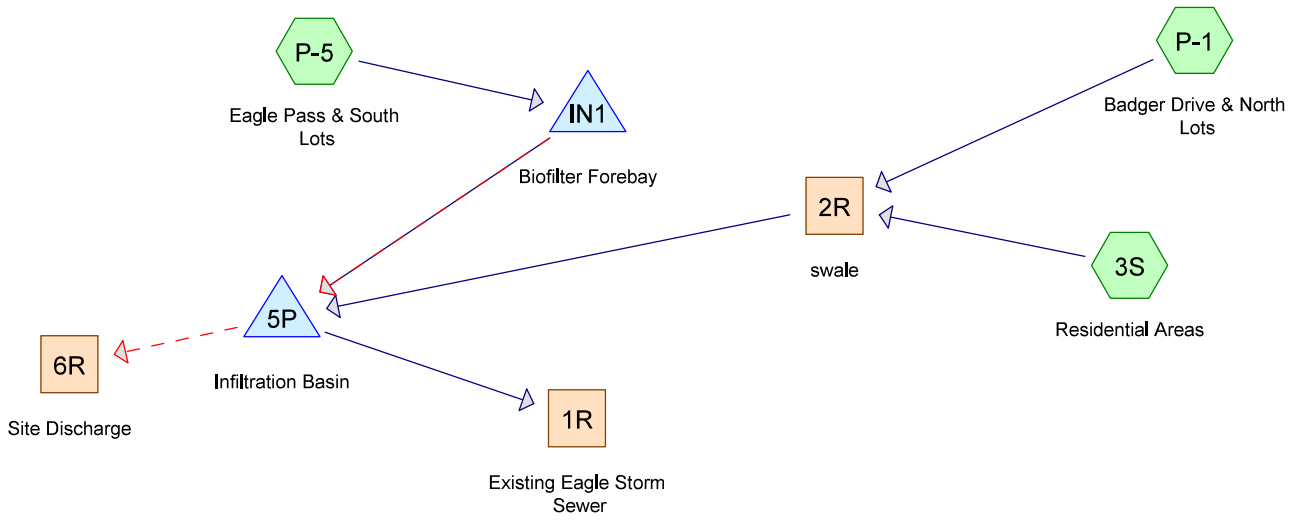
## Summary for Reach Existing: Site Discharge

Inflow Area = 5.083 ac, 0.00% Impervious, Inflow Depth = 1.52" for 100-Year event
Inflow = 10.89 cfs @ 12.16 hrs, Volume= 0.643 af
Outflow = 10.89 cfs @ 12.16 hrs, Volume= 0.643 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs

## Reach Existing: Site Discharge






Subcat Reach Pond Link

**Routing Diagram for Hartland Subdivision Post-Dev Base Condition 2025-0721**

Prepared by Roth Professional Solutions, Printed 7/23/2025

## Rainfall Events Listing (selected events)

| Event# | Event Name | Storm Type | Curve | Mode | Duration (hours) | B/B | Depth (inches) | AMC |
|---|---|---|---|---|---|---|---|---|
| 1 | 1-Year | MSE 24-hr | 3 | Default | 24.00 | 1 | 2.38 | 2 |
| 2 | 2-Year | MSE 24-hr | 3 | Default | 24.00 | 1 | 2.69 | 2 |
| 3 | 10-Year | MSE 24-hr | 3 | Default | 24.00 | 1 | 3.80 | 2 |
| 4 | 100-Year | MSE 24-hr | 3 | Default | 24.00 | 1 | 6.16 | 2 |
| 5 | Custom | MSE 24-hr | 3 | Default | 24.00 | 1 | 2.50 | 2 |

## Area Listing (all nodes)

| Area (acres) | CN | Description (subcatchment-numbers) |
|---|---|---|
| 4.630 | 61 | >75% Grass cover, Good, HSG B (3S, P-1, P-5) |
| 0.453 | 98 | Paved roads w/curbs & sewers, HSG B (P-1, P-5) |
| **5.083** | **64** | **TOTAL AREA** |

## Pipe Listing (all nodes)

| Line# | Node Number | In-Invert (feet) | Out-Invert (feet) | Length (feet) | Slope (ft/ft) | n | Width (inches) | Diam/Height (inches) | Inside-Fill (inches) | Node Name |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5P | 946.40 | 945.50 | 54.0 | 0.0167 | 0.012 | 0.0 | 12.0 | 0.0 | |

Time span=0.00-80.00 hrs, dt=0.01 hrs, 8001 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 3S: Residential Areas** Runoff Area=1.800 ac 0.00% Impervious Runoff Depth=0.16"
Flow Length=115' Slope=0.0300 '/' Tc=9.9 min CN=61 Runoff=0.16 cfs 0.024 af

**Subcatchment P-1: Badger Drive & North** Runoff Area=1.650 ac 13.33% Impervious Runoff Depth=0.28"
Flow Length=194' Tc=11.6 min CN=66 Runoff=0.42 cfs 0.039 af

**Subcatchment P-5: Eagle Pass & South** Runoff Area=1.633 ac 14.27% Impervious Runoff Depth=0.28"
Flow Length=315' Tc=12.1 min CN=66 Runoff=0.41 cfs 0.038 af

**Reach 1R: Existing Eagle Storm Sewer** Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

**Reach 2R: swale** Avg. Flow Depth=0.11' Max Vel=0.29 fps Inflow=0.57 cfs 0.063 af
n=0.150 L=280.0' S=0.0179 '/' Capacity=20.16 cfs Outflow=0.36 cfs 0.063 af

**Reach 6R: Site Discharge** Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

**Pond 5P: Infiltration Basin** Peak Elev=943.06' Storage=523 cf Inflow=0.49 cfs 0.101 af
Discarded=0.35 cfs 0.101 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.101 af

**Pond IN1: Biofilter Forebay** Peak Elev=947.10' Storage=342 cf Inflow=0.41 cfs 0.038 af
Primary=0.13 cfs 0.038 af Secondary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.038 af

**Total Runoff Area = 5.083 ac Runoff Volume = 0.101 af Average Runoff Depth = 0.24"**
**91.09% Pervious = 4.630 ac 8.91% Impervious = 0.453 ac**

## Summary for Subcatchment 3S: Residential Areas

Runoff = 0.16 cfs @ 12.33 hrs, Volume= 0.024 af, Depth= 0.16"
Routed to Reach 2R : swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 1-Year Rainfall=2.38"

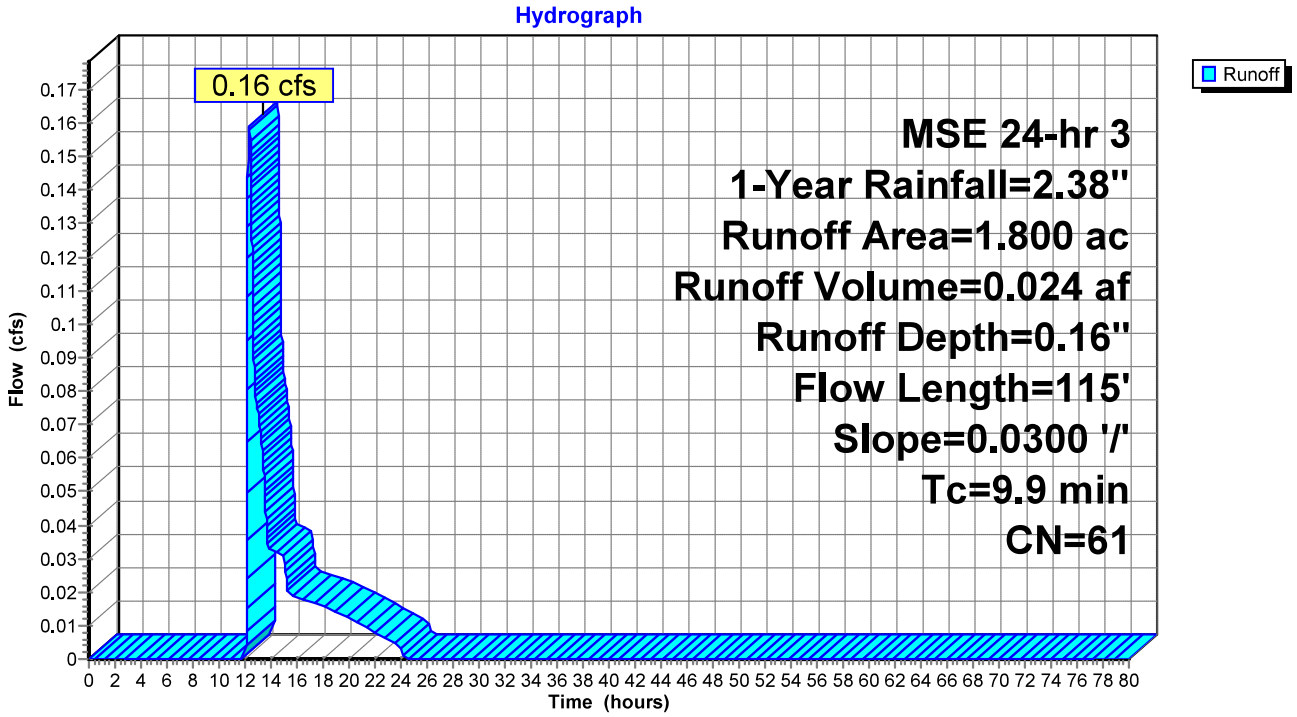
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 1.800 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 1.800 | | 100.00% Pervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 9.9 | 115 | 0.0300 | 0.19 | | **Sheet Flow, Uncaptured By Swale**<br>Grass: Short n= 0.150 P2= 2.84"<br>Using McCuen-Spiess flow length |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.800 | Open Space | 185.89 | 1.49 |
| 1.800 | Total | 185.89 | 1.49 |

## Subcatchment 3S: Residential Areas



## Summary for Subcatchment P-1: Badger Drive & North Lots

Runoff = 0.42 cfs @ 12.24 hrs, Volume= 0.039 af, Depth= 0.28"
Routed to Reach 2R : swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 1-Year Rainfall=2.38"

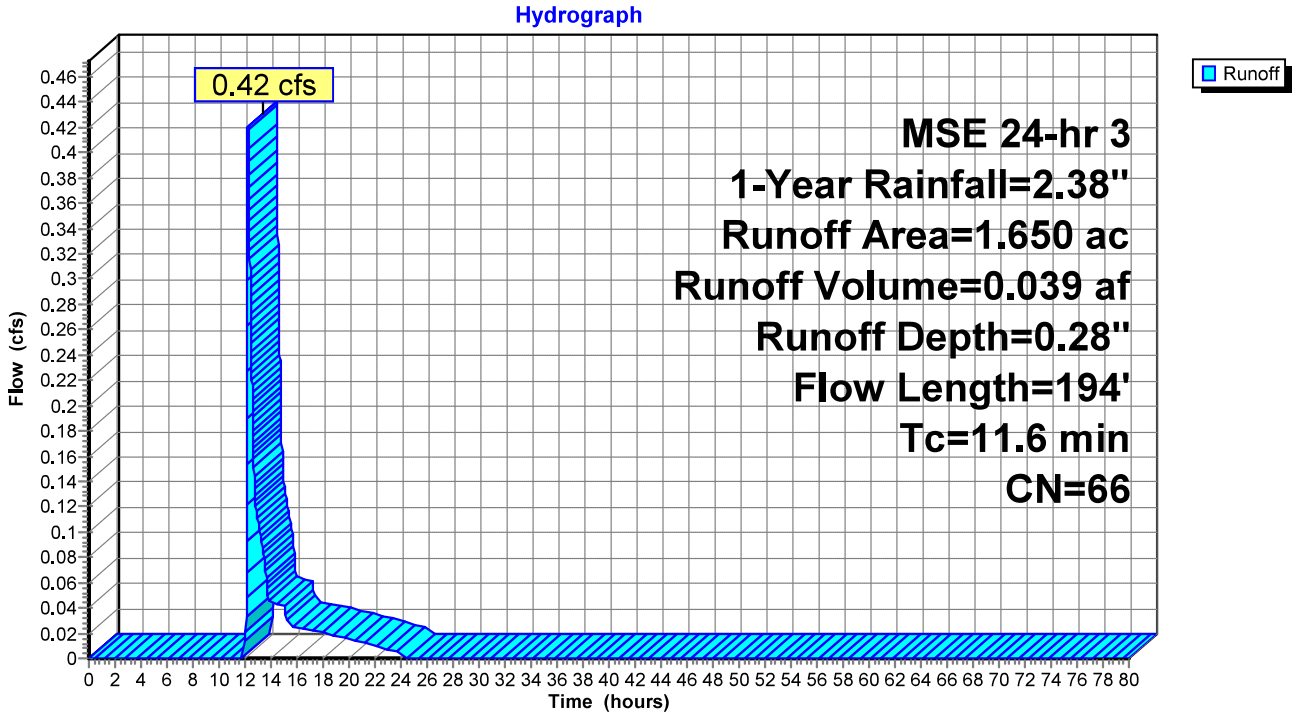
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 1.430 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 0.220 | 98 | Paved roads w/curbs & sewers, HSG B | Roadway |
| 1.650 | 66 | Weighted Average | |
| 1.430 | | 86.67% Pervious Area | |
| 0.220 | | 13.33% Impervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 9.9 | 94 | 0.0200 | 0.16 | | **Sheet Flow, Pretreated Flow to Basin**<br>Grass: Short n= 0.150 P2= 2.84"<br>Using McCuen-Spiess flow length |
| 1.7 | 100 | 0.0100 | 0.98 | | **Sheet Flow, Badger Dr**<br>Smooth surfaces n= 0.011 P2= 2.84" |
| 11.6 | 194 | Total | | | |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.430 | Open Space | 147.68 | 1.18 |
| 0.220 | Roadway | 34.08 | 0.27 |
| 1.650 | Total | 181.76 | 1.45 |

## Subcatchment P-1: Badger Drive & North Lots



## Summary for Subcatchment P-5: Eagle Pass & South Lots

Runoff = 0.41 cfs @ 12.25 hrs, Volume= 0.038 af, Depth= 0.28"
Routed to Pond IN1 : Biofilter Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 1-Year Rainfall=2.38"

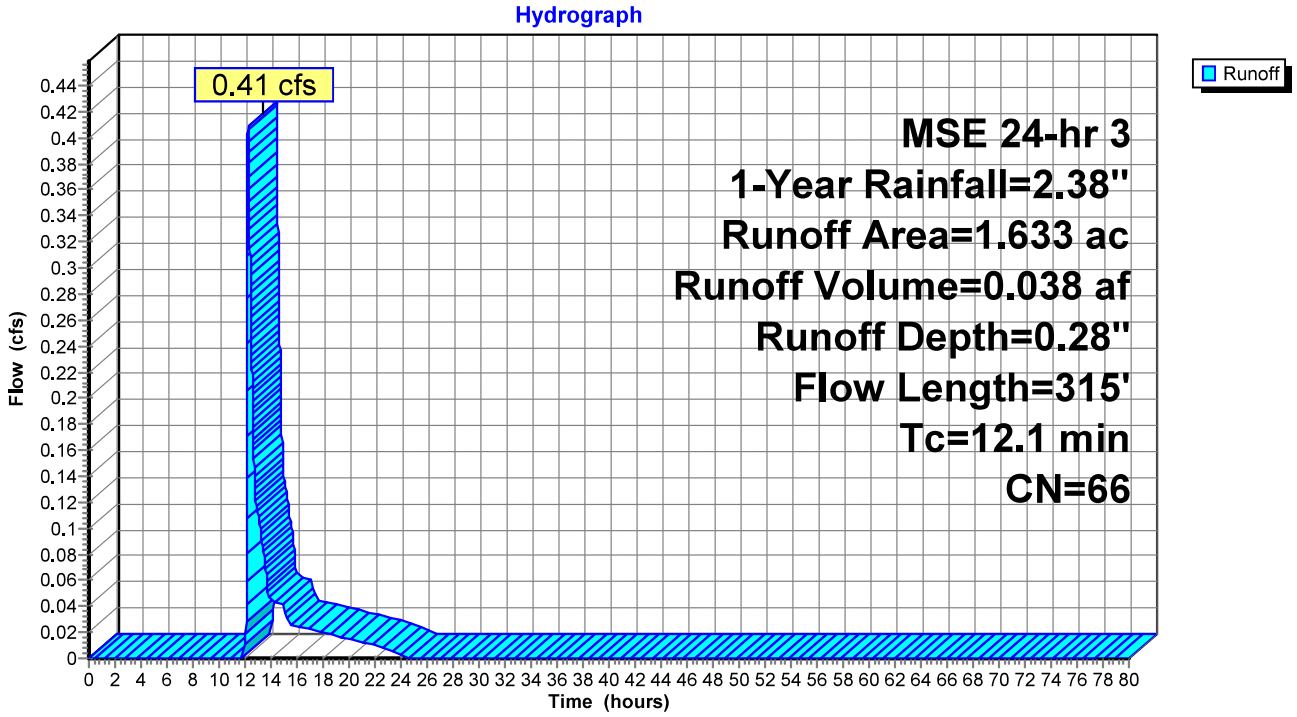
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 0.233 | 98 | Paved roads w/curbs & sewers, HSG B | Roadway |
| 1.400 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 1.633 | 66 | Weighted Average | |
| 1.400 | | 85.73% Pervious Area | |
| 0.233 | | 14.27% Impervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 2.2 | 200 | 0.0200 | 1.49 | | **Sheet Flow, Roads/Sewers/Roofs** Smooth surfaces n= 0.011 P2= 2.84" |
| 9.9 | 115 | 0.0300 | 0.19 | | **Sheet Flow, Eagle Lots** Grass: Short n= 0.150 P2= 2.84" Using McCuen-Spiess flow length |
| 12.1 | 315 | Total | | | |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.400 | Open Space | 144.58 | 1.16 |
| 0.233 | Roadway | 36.09 | 0.29 |
| 1.633 | Total | 180.68 | 1.45 |

## Subcatchment P-5: Eagle Pass & South Lots

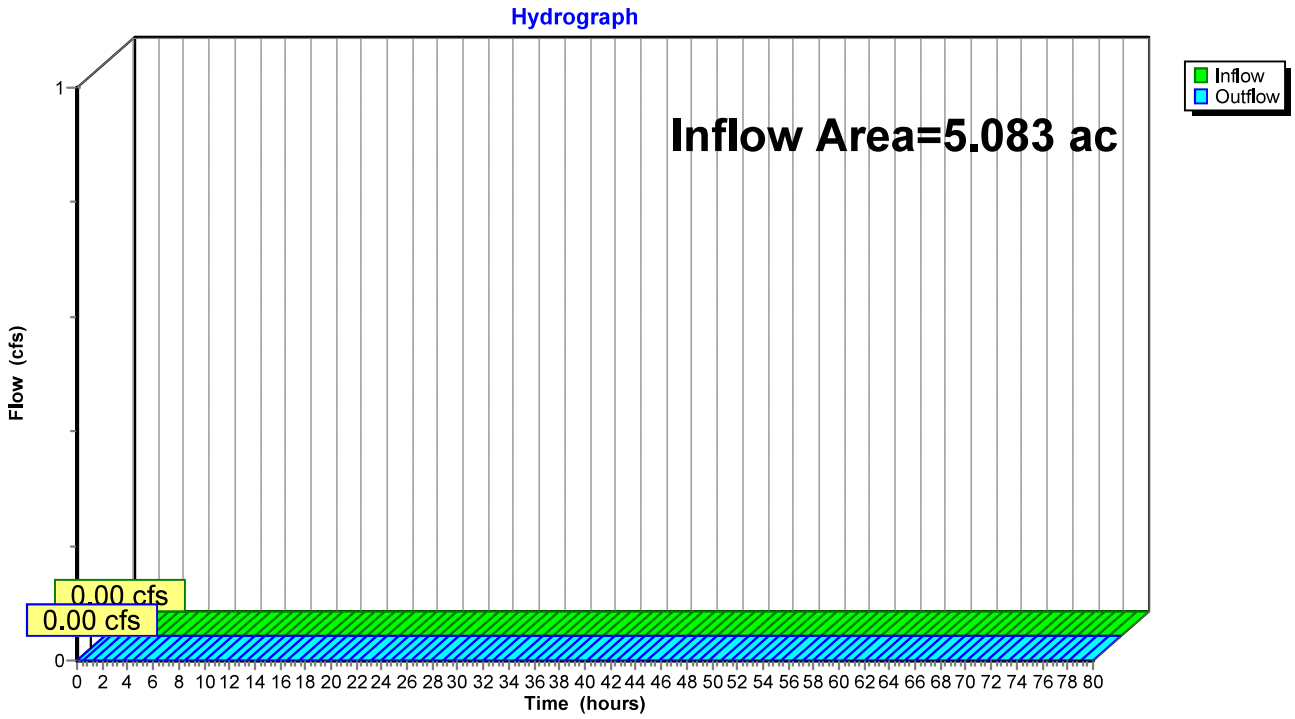


## Summary for Reach 1R: Existing Eagle Storm Sewer

Inflow Area = 5.083 ac, 8.91% Impervious, Inflow Depth = 0.00" for 1-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 Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs

## Reach 1R: Existing Eagle Storm Sewer



## Summary for Reach 2R: swale

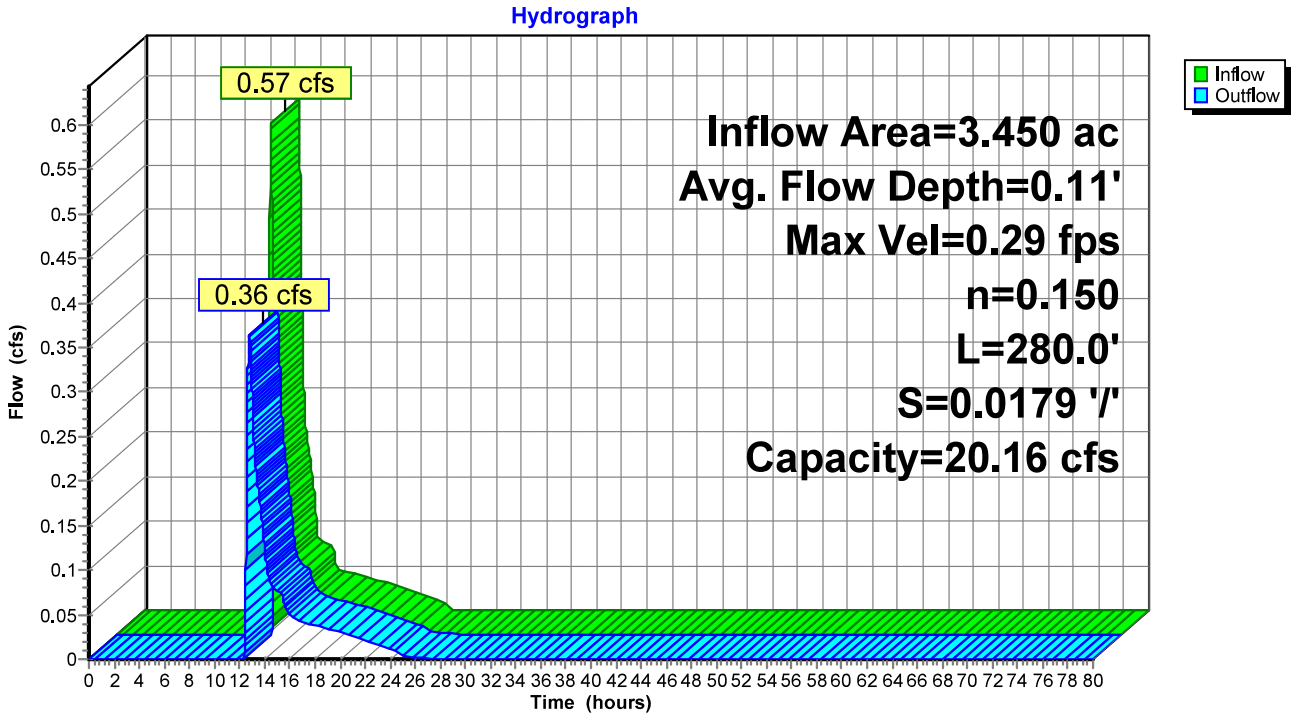
Inflow Area = 3.450 ac, 6.38% Impervious, Inflow Depth = 0.22" for 1-Year event
Inflow = 0.57 cfs @ 12.25 hrs, Volume= 0.063 af
Outflow = 0.36 cfs @ 12.77 hrs, Volume= 0.063 af, Atten= 37%, Lag= 31.3 min
Routed to Pond 5P : Infiltration Basin

Routing by Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.29 fps, Min. Travel Time= 16.1 min
Avg. Velocity = 0.10 fps, Avg. Travel Time= 45.0 min

Peak Storage= 352 cf @ 12.51 hrs
Average Depth at Peak Storage= 0.11' , Surface Width= 12.26'
Bank-Full Depth= 1.00' Flow Area= 20.0 sf, Capacity= 20.16 cfs

10.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 280.0' Slope= 0.0179 '/'
Inlet Invert= 959.00', Outlet Invert= 954.00'

‡



## Stage-Discharge for Reach 2R: swale

| Elevation (feet) | Velocity (ft/sec) | Discharge (cfs) |
|---|---|---|
| 959.00 | 0.00 | 0.00 |
| 959.01 | 0.06 | 0.01 |
| 959.02 | 0.10 | 0.02 |
| 959.03 | 0.13 | 0.04 |
| 959.04 | 0.15 | 0.06 |
| 959.05 | 0.17 | 0.09 |
| 959.06 | 0.20 | 0.12 |
| 959.07 | 0.22 | 0.16 |
| 959.08 | 0.23 | 0.20 |
| 959.09 | 0.25 | 0.25 |
| 959.10 | 0.27 | 0.30 |
| 959.11 | 0.29 | 0.35 |
| 959.12 | 0.30 | 0.40 |
| 959.13 | 0.32 | 0.46 |
| 959.14 | 0.33 | 0.53 |
| 959.15 | 0.34 | 0.59 |
| 959.16 | 0.36 | 0.66 |
| 959.17 | 0.37 | 0.74 |
| 959.18 | 0.38 | 0.81 |
| 959.19 | 0.40 | 0.90 |
| 959.20 | 0.41 | 0.98 |
| 959.21 | 0.42 | 1.07 |
| 959.22 | 0.43 | 1.16 |
| 959.23 | 0.44 | 1.25 |
| 959.24 | 0.45 | 1.35 |
| 959.25 | 0.46 | 1.45 |
| 959.26 | 0.48 | 1.56 |
| 959.27 | 0.49 | 1.67 |
| 959.28 | 0.50 | 1.78 |
| 959.29 | 0.51 | 1.89 |
| 959.30 | 0.52 | 2.01 |
| 959.31 | 0.53 | 2.13 |
| 959.32 | 0.54 | 2.26 |
| 959.33 | 0.54 | 2.39 |
| 959.34 | 0.55 | 2.52 |
| 959.35 | 0.56 | 2.66 |
| 959.36 | 0.57 | 2.80 |
| 959.37 | 0.58 | 2.94 |
| 959.38 | 0.59 | 3.09 |
| 959.39 | 0.60 | 3.24 |
| 959.40 | 0.61 | 3.40 |
| 959.41 | 0.62 | 3.56 |
| 959.42 | 0.62 | 3.72 |
| 959.43 | 0.63 | 3.89 |
| 959.44 | 0.64 | 4.06 |
| 959.45 | 0.65 | 4.23 |
| 959.46 | 0.66 | 4.41 |
| 959.47 | 0.66 | 4.59 |
| 959.48 | 0.67 | 4.77 |
| 959.49 | 0.68 | 4.96 |
| 959.50 | 0.69 | 5.15 |
| 959.51 | 0.69 | 5.35 |
| 959.52 | 0.70 | 5.55 |
| 959.53 | 0.71 | 5.76 |
| 959.54 | 0.72 | 5.96 |
| 959.55 | 0.72 | 6.18 |
| 959.56 | 0.73 | 6.39 |
| 959.57 | 0.74 | 6.61 |
| 959.58 | 0.75 | 6.84 |
| 959.59 | 0.75 | 7.07 |
| 959.60 | 0.76 | 7.30 |
| 959.61 | 0.77 | 7.53 |
| 959.62 | 0.77 | 7.78 |
| 959.63 | 0.78 | 8.02 |
| 959.64 | 0.79 | 8.27 |
| 959.65 | 0.79 | 8.52 |
| 959.66 | 0.80 | 8.78 |
| 959.67 | 0.81 | 9.04 |
| 959.68 | 0.81 | 9.31 |
| 959.69 | 0.82 | 9.58 |
| 959.70 | 0.83 | 9.85 |
| 959.71 | 0.83 | 10.13 |
| 959.72 | 0.84 | 10.41 |
| 959.73 | 0.85 | 10.70 |
| 959.74 | 0.85 | 10.99 |
| 959.75 | 0.86 | 11.29 |
| 959.76 | 0.87 | 11.59 |
| 959.77 | 0.87 | 11.89 |
| 959.78 | 0.88 | 12.20 |
| 959.79 | 0.88 | 12.51 |
| 959.80 | 0.89 | 12.83 |
| 959.81 | 0.90 | 13.15 |
| 959.82 | 0.90 | 13.48 |
| 959.83 | 0.91 | 13.81 |
| 959.84 | 0.92 | 14.15 |
| 959.85 | 0.92 | 14.49 |
| 959.86 | 0.93 | 14.83 |
| 959.87 | 0.93 | 15.18 |
| 959.88 | 0.94 | 15.54 |
| 959.89 | 0.95 | 15.90 |
| 959.90 | 0.95 | 16.26 |
| 959.91 | 0.96 | 16.63 |
| 959.92 | 0.96 | 17.00 |
| 959.93 | 0.97 | 17.38 |
| 959.94 | 0.97 | 17.76 |
| 959.95 | 0.98 | 18.15 |
| 959.96 | 0.99 | 18.54 |
| 959.97 | 0.99 | 18.94 |
| 959.98 | 1.00 | 19.34 |
| 959.99 | 1.00 | 19.75 |
| 960.00 | **1.01** | **20.16** |

## Stage-Area-Storage for Reach 2R: swale

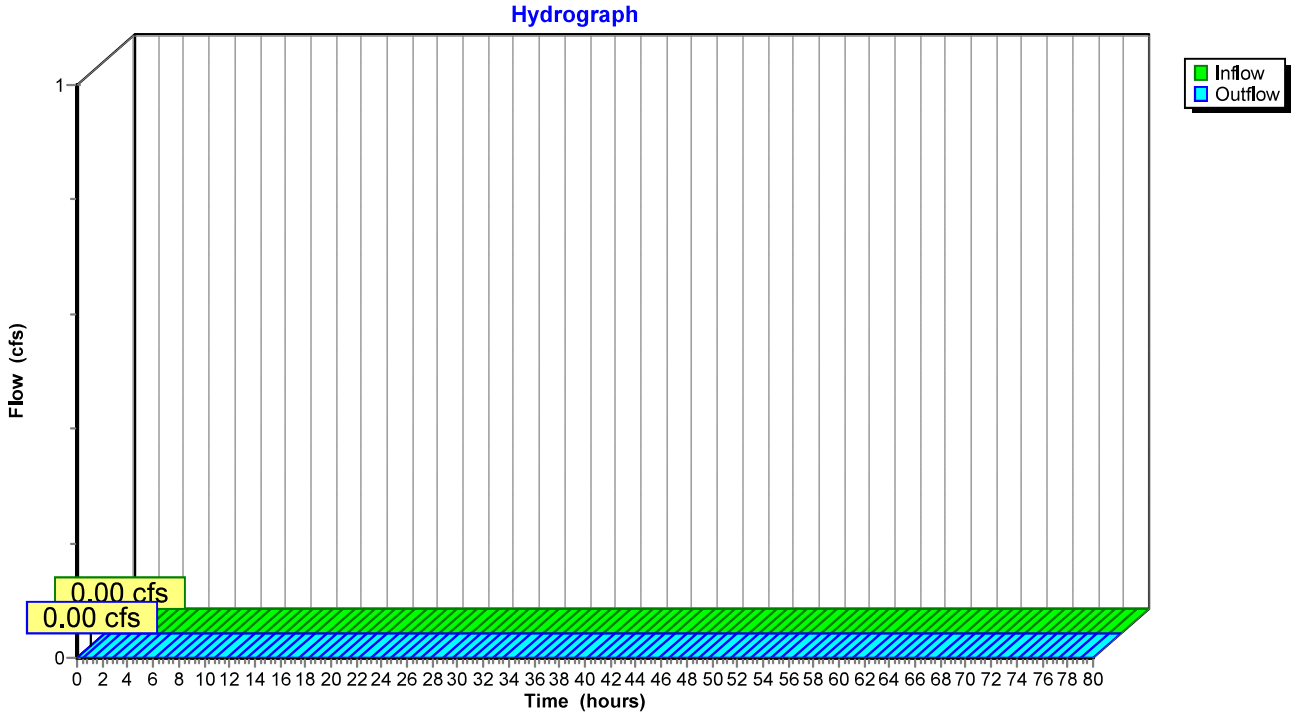
| Elevation (feet) | End-Area (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 959.00 | 0.0 | 0 |
| 959.01 | 0.1 | 28 |
| 959.02 | 0.2 | 57 |
| 959.03 | 0.3 | 87 |
| 959.04 | 0.4 | 116 |
| 959.05 | 0.5 | 147 |
| 959.06 | 0.6 | 178 |
| 959.07 | 0.7 | 210 |
| 959.08 | 0.9 | 242 |
| 959.09 | 1.0 | 275 |
| 959.10 | 1.1 | 308 |
| 959.11 | 1.2 | 342 |
| 959.12 | 1.3 | 376 |
| 959.13 | 1.5 | 411 |
| 959.14 | 1.6 | 447 |
| 959.15 | 1.7 | 483 |
| 959.16 | 1.9 | 520 |
| 959.17 | 2.0 | 557 |
| 959.18 | 2.1 | 595 |
| 959.19 | 2.3 | 633 |
| 959.20 | 2.4 | 672 |
| 959.21 | 2.5 | 711 |
| 959.22 | 2.7 | 752 |
| 959.23 | 2.8 | 792 |
| 959.24 | 3.0 | 833 |
| 959.25 | 3.1 | 875 |
| 959.26 | 3.3 | 917 |
| 959.27 | 3.4 | 960 |
| 959.28 | 3.6 | 1,004 |
| 959.29 | 3.7 | 1,047 |
| 959.30 | 3.9 | 1,092 |
| 959.31 | 4.1 | 1,137 |
| 959.32 | 4.2 | 1,183 |
| 959.33 | 4.4 | 1,229 |
| 959.34 | 4.6 | 1,276 |
| 959.35 | 4.7 | 1,323 |
| 959.36 | 4.9 | 1,371 |
| 959.37 | 5.1 | 1,419 |
| 959.38 | 5.2 | 1,468 |
| 959.39 | 5.4 | 1,518 |
| 959.40 | 5.6 | 1,568 |
| 959.41 | 5.8 | 1,619 |
| 959.42 | 6.0 | 1,670 |
| 959.43 | 6.1 | 1,722 |
| 959.44 | 6.3 | 1,774 |
| 959.45 | 6.5 | 1,827 |
| 959.46 | 6.7 | 1,880 |
| 959.47 | 6.9 | 1,935 |
| 959.48 | 7.1 | 1,989 |
| 959.49 | 7.3 | 2,044 |
| 959.50 | 7.5 | 2,100 |
| 959.51 | 7.7 | 2,156 |
| 959.52 | 7.9 | 2,213 |
| 959.53 | 8.1 | 2,271 |
| 959.54 | 8.3 | 2,328 |
| 959.55 | 8.5 | 2,387 |
| 959.56 | 8.7 | 2,446 |
| 959.57 | 8.9 | 2,506 |
| 959.58 | 9.2 | 2,566 |
| 959.59 | 9.4 | 2,627 |
| 959.60 | 9.6 | 2,688 |
| 959.61 | 9.8 | 2,750 |
| 959.62 | 10.0 | 2,812 |
| 959.63 | 10.3 | 2,875 |
| 959.64 | 10.5 | 2,939 |
| 959.65 | 10.7 | 3,003 |
| 959.66 | 11.0 | 3,068 |
| 959.67 | 11.2 | 3,133 |
| 959.68 | 11.4 | 3,199 |
| 959.69 | 11.7 | 3,265 |
| 959.70 | 11.9 | 3,332 |
| 959.71 | 12.1 | 3,399 |
| 959.72 | 12.4 | 3,468 |
| 959.73 | 12.6 | 3,536 |
| 959.74 | 12.9 | 3,605 |
| 959.75 | 13.1 | 3,675 |
| 959.76 | 13.4 | 3,745 |
| 959.77 | 13.6 | 3,816 |
| 959.78 | 13.9 | 3,888 |
| 959.79 | 14.1 | 3,959 |
| 959.80 | 14.4 | 4,032 |
| 959.81 | 14.7 | 4,105 |
| 959.82 | 14.9 | 4,179 |
| 959.83 | 15.2 | 4,253 |
| 959.84 | 15.5 | 4,328 |
| 959.85 | 15.7 | 4,403 |
| 959.86 | 16.0 | 4,479 |
| 959.87 | 16.3 | 4,555 |
| 959.88 | 16.5 | 4,632 |
| 959.89 | 16.8 | 4,710 |
| 959.90 | 17.1 | 4,788 |
| 959.91 | 17.4 | 4,867 |
| 959.92 | 17.7 | 4,946 |
| 959.93 | 17.9 | 5,026 |
| 959.94 | 18.2 | 5,106 |
| 959.95 | 18.5 | 5,187 |
| 959.96 | 18.8 | 5,268 |
| 959.97 | 19.1 | 5,351 |
| 959.98 | 19.4 | 5,433 |
| 959.99 | 19.7 | 5,516 |
| 960.00 | **20.0** | **5,600** |

## Summary for Reach 6R: Site Discharge

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 Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs

## Reach 6R: Site Discharge



## Summary for Pond 5P: Infiltration Basin

Inflow Area = 5.083 ac, 8.91% Impervious, Inflow Depth = 0.24" for 1-Year event
Inflow = 0.49 cfs @ 12.77 hrs, Volume= 0.101 af
Outflow = 0.35 cfs @ 13.25 hrs, Volume= 0.101 af, Atten= 29%, Lag= 28.6 min
Discarded = 0.35 cfs @ 13.25 hrs, Volume= 0.101 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1R : Existing Eagle Storm Sewer
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 6R : Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Peak Elev= 943.06' @ 13.25 hrs Surf.Area= 9,297 sf Storage= 523 cf

Plug-Flow detention time= 24.3 min calculated for 0.101 af (100% of inflow)
Center-of-Mass det. time= 24.3 min ( 951.8 - 927.6 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 943.00' | 70,609 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 943.00 | 9,227 | 0 | 0 |
| 944.00 | 10,462 | 9,845 | 9,845 |
| 945.00 | 11,755 | 11,109 | 20,953 |
| 946.00 | 13,106 | 12,431 | 33,384 |
| 947.00 | 14,512 | 13,809 | 47,193 |
| 947.50 | 15,237 | 7,437 | 54,630 |
| 948.00 | 15,976 | 7,803 | 62,433 |
| 948.50 | 16,729 | 8,176 | 70,609 |

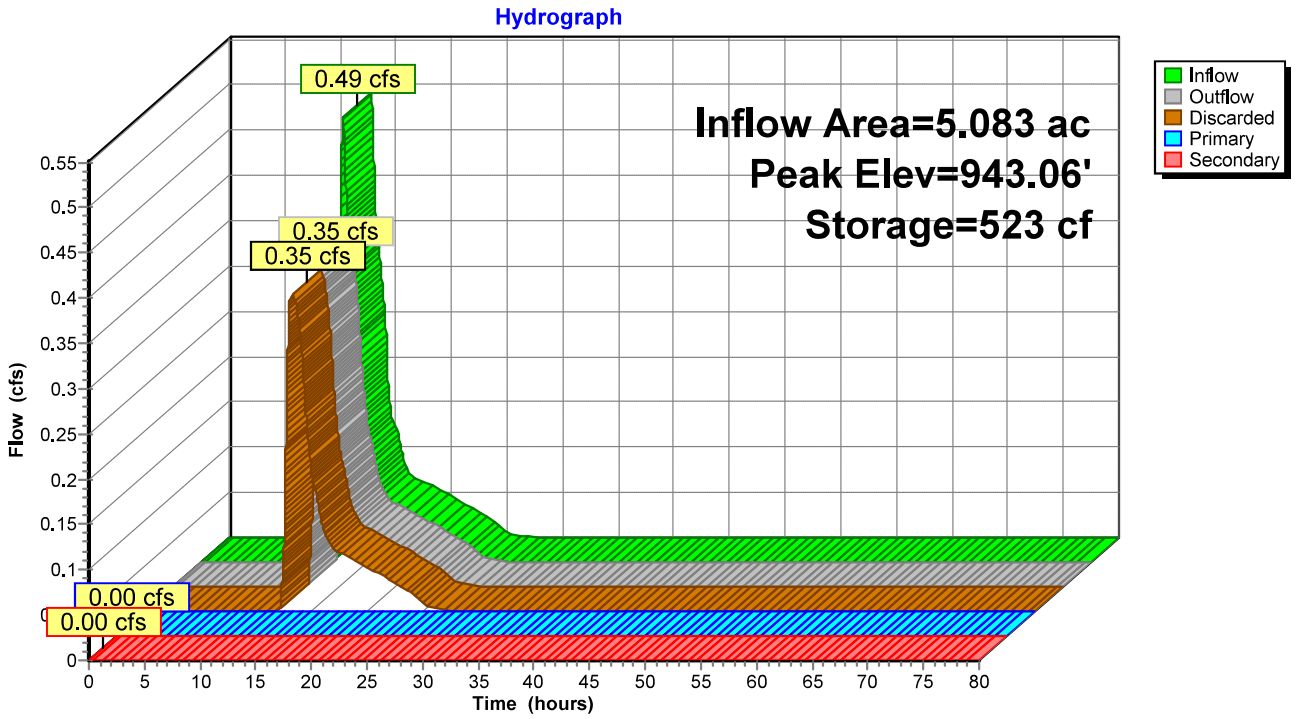
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 947.50' | **26.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2 | Discarded | 943.00' | **1.630 in/hr Exfiltration - Primary over Surface area** |
| #3 | Primary | 946.40' | **12.0" Round Secondary Culvert to Street**<br>L= 54.0' RCP, mitered to conform to fill, Ke= 0.700<br>Inlet / Outlet Invert= 946.40' / 945.50' S= 0.0167 '/' Cc= 0.900<br>n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf |

**Discarded OutFlow** Max=0.35 cfs @ 13.25 hrs HW=943.06' (Free Discharge)
↑—**2=Exfiltration - Primary** (Exfiltration Controls 0.35 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=943.00' (Free Discharge)
↑—**3=Secondary Culvert to Street** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=943.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond 5P: Infiltration Basin



## Stage-Discharge for Pond 5P: Infiltration Basin

| Elevation (feet) | Discharge (cfs) | Discarded (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|
| 943.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 943.20 | 0.36 | 0.36 | 0.00 | 0.00 |
| 943.40 | 0.37 | 0.37 | 0.00 | 0.00 |
| 943.60 | 0.38 | 0.38 | 0.00 | 0.00 |
| 943.80 | 0.39 | 0.39 | 0.00 | 0.00 |
| 944.00 | 0.39 | 0.39 | 0.00 | 0.00 |
| 944.20 | 0.40 | 0.40 | 0.00 | 0.00 |
| 944.40 | 0.41 | 0.41 | 0.00 | 0.00 |
| 944.60 | 0.42 | 0.42 | 0.00 | 0.00 |
| 944.80 | 0.43 | 0.43 | 0.00 | 0.00 |
| 945.00 | 0.44 | 0.44 | 0.00 | 0.00 |
| 945.20 | 0.45 | 0.45 | 0.00 | 0.00 |
| 945.40 | 0.46 | 0.46 | 0.00 | 0.00 |
| 945.60 | 0.47 | 0.47 | 0.00 | 0.00 |
| 945.80 | 0.48 | 0.48 | 0.00 | 0.00 |
| 946.00 | 0.49 | 0.49 | 0.00 | 0.00 |
| 946.20 | 0.51 | 0.51 | 0.00 | 0.00 |
| 946.40 | 0.52 | 0.52 | 0.00 | 0.00 |
| 946.60 | 0.68 | 0.53 | 0.15 | 0.00 |
| 946.80 | 1.09 | 0.54 | 0.56 | 0.00 |
| 947.00 | 1.69 | 0.55 | 1.14 | 0.00 |
| 947.20 | 2.37 | 0.56 | 1.81 | 0.00 |
| 947.40 | 2.93 | 0.57 | 2.36 | 0.00 |
| 947.60 | 5.42 | 0.58 | 2.79 | 2.05 |
| 947.80 | 14.54 | 0.59 | 3.17 | 10.79 |
| 948.00 | 28.28 | 0.60 | 3.50 | 24.18 |
| 948.20 | 45.46 | 0.61 | 3.80 | 41.04 |
| 948.40 | **64.32** | **0.63** | **4.09** | **59.60** |

## Stage-Area-Storage for Pond 5P: Infiltration Basin

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 943.00 | 9,227 | 0 |
| 943.10 | 9,351 | 929 |
| 943.20 | 9,474 | 1,870 |
| 943.30 | 9,597 | 2,824 |
| 943.40 | 9,721 | 3,790 |
| 943.50 | 9,845 | 4,768 |
| 943.60 | 9,968 | 5,759 |
| 943.70 | 10,092 | 6,761 |
| 943.80 | 10,215 | 7,777 |
| 943.90 | 10,338 | 8,804 |
| 944.00 | 10,462 | 9,845 |
| 944.10 | 10,591 | 10,897 |
| 944.20 | 10,721 | 11,963 |
| 944.30 | 10,850 | 13,041 |
| 944.40 | 10,979 | 14,133 |
| 944.50 | 11,109 | 15,237 |
| 944.60 | 11,238 | 16,354 |
| 944.70 | 11,367 | 17,485 |
| 944.80 | 11,496 | 18,628 |
| 944.90 | 11,626 | 19,784 |
| 945.00 | 11,755 | 20,953 |
| 945.10 | 11,890 | 22,135 |
| 945.20 | 12,025 | 23,331 |
| 945.30 | 12,160 | 24,540 |
| 945.40 | 12,295 | 25,763 |
| 945.50 | 12,431 | 26,999 |
| 945.60 | 12,566 | 28,249 |
| 945.70 | 12,701 | 29,512 |
| 945.80 | 12,836 | 30,789 |
| 945.90 | 12,971 | 32,080 |
| 946.00 | 13,106 | 33,384 |
| 946.10 | 13,247 | 34,701 |
| 946.20 | 13,387 | 36,033 |
| 946.30 | 13,528 | 37,379 |
| 946.40 | 13,668 | 38,738 |
| 946.50 | 13,809 | 40,112 |
| 946.60 | 13,950 | 41,500 |
| 946.70 | 14,090 | 42,902 |
| 946.80 | 14,231 | 44,318 |
| 946.90 | 14,371 | 45,748 |
| 947.00 | 14,512 | 47,193 |
| 947.10 | 14,657 | 48,651 |
| 947.20 | 14,802 | 50,124 |
| 947.30 | 14,947 | 51,611 |
| 947.40 | 15,092 | 53,113 |
| 947.50 | 15,237 | 54,630 |
| 947.60 | 15,385 | 56,161 |
| 947.70 | 15,533 | 57,707 |
| 947.80 | 15,680 | 59,267 |
| 947.90 | 15,828 | 60,843 |
| 948.00 | 15,976 | 62,433 |
| 948.10 | 16,127 | 64,038 |
| 948.20 | 16,277 | 65,658 |
| 948.30 | 16,428 | 67,294 |
| 948.40 | 16,578 | 68,944 |
| 948.50 | **16,729** | **70,609** |

## Summary for Pond IN1: Biofilter Forebay

Inflow Area = 1.633 ac, 14.27% Impervious, Inflow Depth = 0.28" for 1-Year event
Inflow = 0.41 cfs @ 12.25 hrs, Volume= 0.038 af
Outflow = 0.13 cfs @ 12.77 hrs, Volume= 0.038 af, Atten= 69%, Lag= 31.4 min
Primary = 0.13 cfs @ 12.77 hrs, Volume= 0.038 af
Routed to Pond 5P : Infiltration Basin
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 5P : Infiltration Basin

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Peak Elev= 947.10' @ 12.77 hrs Surf.Area= 3,393 sf Storage= 342 cf

Plug-Flow detention time= 25.4 min calculated for 0.038 af (100% of inflow)
Center-of-Mass det. time= 25.3 min ( 908.5 - 883.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 947.00' | 14,802 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

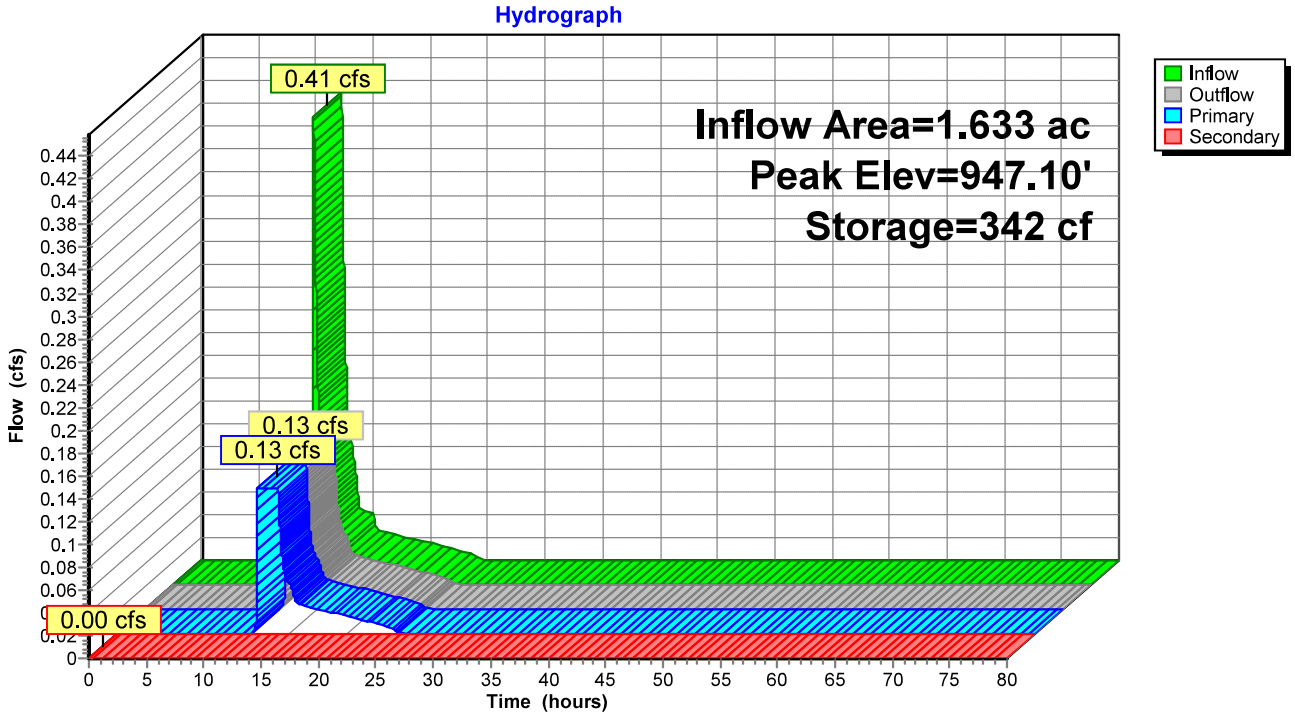
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 947.00 | 3,348 | 0 | 0 |
| 948.00 | 3,795 | 3,572 | 3,572 |
| 949.00 | 4,266 | 4,031 | 7,602 |
| 949.50 | 4,636 | 2,226 | 9,828 |
| 950.00 | 5,020 | 2,414 | 12,242 |
| 950.50 | 5,220 | 2,560 | 14,802 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 949.00' | **23.0' long x 14.8' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.67 2.69 2.70 2.64 2.63 2.64 2.64 2.63 |
| #2 | Primary | 947.00' | **1.630 in/hr Exfiltration over Surface area** |

**Primary OutFlow** Max=0.13 cfs @ 12.77 hrs HW=947.10' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.13 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=947.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond IN1: Biofilter Forebay



## Stage-Discharge for Pond IN1: Biofilter Forebay

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 947.00 | 0.00 | 0.00 | 0.00 |
| 947.05 | 0.13 | 0.13 | 0.00 |
| 947.10 | 0.13 | 0.13 | 0.00 |
| 947.15 | 0.13 | 0.13 | 0.00 |
| 947.20 | 0.13 | 0.13 | 0.00 |
| 947.25 | 0.13 | 0.13 | 0.00 |
| 947.30 | 0.13 | 0.13 | 0.00 |
| 947.35 | 0.13 | 0.13 | 0.00 |
| 947.40 | 0.13 | 0.13 | 0.00 |
| 947.45 | 0.13 | 0.13 | 0.00 |
| 947.50 | 0.13 | 0.13 | 0.00 |
| 947.55 | 0.14 | 0.14 | 0.00 |
| 947.60 | 0.14 | 0.14 | 0.00 |
| 947.65 | 0.14 | 0.14 | 0.00 |
| 947.70 | 0.14 | 0.14 | 0.00 |
| 947.75 | 0.14 | 0.14 | 0.00 |
| 947.80 | 0.14 | 0.14 | 0.00 |
| 947.85 | 0.14 | 0.14 | 0.00 |
| 947.90 | 0.14 | 0.14 | 0.00 |
| 947.95 | 0.14 | 0.14 | 0.00 |
| 948.00 | 0.14 | 0.14 | 0.00 |
| 948.05 | 0.14 | 0.14 | 0.00 |
| 948.10 | 0.14 | 0.14 | 0.00 |
| 948.15 | 0.15 | 0.15 | 0.00 |
| 948.20 | 0.15 | 0.15 | 0.00 |
| 948.25 | 0.15 | 0.15 | 0.00 |
| 948.30 | 0.15 | 0.15 | 0.00 |
| 948.35 | 0.15 | 0.15 | 0.00 |
| 948.40 | 0.15 | 0.15 | 0.00 |
| 948.45 | 0.15 | 0.15 | 0.00 |
| 948.50 | 0.15 | 0.15 | 0.00 |
| 948.55 | 0.15 | 0.15 | 0.00 |
| 948.60 | 0.15 | 0.15 | 0.00 |
| 948.65 | 0.15 | 0.15 | 0.00 |
| 948.70 | 0.16 | 0.16 | 0.00 |
| 948.75 | 0.16 | 0.16 | 0.00 |
| 948.80 | 0.16 | 0.16 | 0.00 |
| 948.85 | 0.16 | 0.16 | 0.00 |
| 948.90 | 0.16 | 0.16 | 0.00 |
| 948.95 | 0.16 | 0.16 | 0.00 |
| 949.00 | 0.16 | 0.16 | 0.00 |
| 949.05 | 0.85 | 0.16 | 0.69 |
| 949.10 | 2.11 | 0.16 | 1.94 |
| 949.15 | 3.73 | 0.17 | 3.57 |
| 949.20 | 5.66 | 0.17 | 5.49 |
| 949.25 | 7.86 | 0.17 | 7.69 |
| 949.30 | 10.30 | 0.17 | 10.13 |
| 949.35 | 12.96 | 0.17 | 12.79 |
| 949.40 | 15.82 | 0.17 | 15.65 |
| 949.45 | 18.87 | 0.17 | 18.69 |
| 949.50 | 22.09 | 0.17 | 21.92 |
| 949.55 | 25.48 | 0.18 | 25.31 |
| 949.60 | 29.04 | 0.18 | 28.86 |
| 949.65 | 32.54 | 0.18 | 32.36 |
| 949.70 | 36.15 | 0.18 | 35.97 |
| 949.75 | 39.85 | 0.18 | 39.66 |
| 949.80 | 43.63 | 0.18 | 43.45 |
| 949.85 | 47.72 | 0.19 | 47.54 |
| 949.90 | 51.93 | 0.19 | 51.75 |
| 949.95 | 56.25 | 0.19 | 56.06 |
| 950.00 | 60.68 | 0.19 | 60.49 |
| 950.05 | 65.34 | 0.19 | 65.14 |
| 950.10 | 70.11 | 0.19 | 69.92 |
| 950.15 | 75.00 | 0.19 | 74.81 |
| 950.20 | 80.01 | 0.19 | 79.82 |
| 950.25 | 85.05 | 0.19 | 84.86 |
| 950.30 | 90.19 | 0.19 | 90.00 |
| 950.35 | 95.44 | 0.19 | 95.24 |
| 950.40 | 100.78 | 0.20 | 100.58 |
| 950.45 | 106.11 | 0.20 | 105.92 |
| 950.50 | **111.54** | **0.20** | **111.34** |

## Stage-Area-Storage for Pond IN1: Biofilter Forebay

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 947.00 | 3,348 | 0 |
| 947.05 | 3,370 | 168 |
| 947.10 | 3,393 | 337 |
| 947.15 | 3,415 | 507 |
| 947.20 | 3,437 | 679 |
| 947.25 | 3,460 | 851 |
| 947.30 | 3,482 | 1,025 |
| 947.35 | 3,504 | 1,199 |
| 947.40 | 3,527 | 1,375 |
| 947.45 | 3,549 | 1,552 |
| 947.50 | 3,572 | 1,730 |
| 947.55 | 3,594 | 1,909 |
| 947.60 | 3,616 | 2,089 |
| 947.65 | 3,639 | 2,271 |
| 947.70 | 3,661 | 2,453 |
| 947.75 | 3,683 | 2,637 |
| 947.80 | 3,706 | 2,821 |
| 947.85 | 3,728 | 3,007 |
| 947.90 | 3,750 | 3,194 |
| 947.95 | 3,773 | 3,382 |
| 948.00 | 3,795 | 3,572 |
| 948.05 | 3,819 | 3,762 |
| 948.10 | 3,842 | 3,953 |
| 948.15 | 3,866 | 4,146 |
| 948.20 | 3,889 | 4,340 |
| 948.25 | 3,913 | 4,535 |
| 948.30 | 3,936 | 4,731 |
| 948.35 | 3,960 | 4,929 |
| 948.40 | 3,983 | 5,127 |
| 948.45 | 4,007 | 5,327 |
| 948.50 | 4,031 | 5,528 |
| 948.55 | 4,054 | 5,730 |
| 948.60 | 4,078 | 5,933 |
| 948.65 | 4,101 | 6,138 |
| 948.70 | 4,125 | 6,343 |
| 948.75 | 4,148 | 6,550 |
| 948.80 | 4,172 | 6,758 |
| 948.85 | 4,195 | 6,967 |
| 948.90 | 4,219 | 7,178 |
| 948.95 | 4,242 | 7,389 |
| 949.00 | 4,266 | 7,602 |
| 949.05 | 4,303 | 7,816 |
| 949.10 | 4,340 | 8,032 |
| 949.15 | 4,377 | 8,250 |
| 949.20 | 4,414 | 8,470 |
| 949.25 | 4,451 | 8,692 |
| 949.30 | 4,488 | 8,915 |
| 949.35 | 4,525 | 9,140 |
| 949.40 | 4,562 | 9,368 |
| 949.45 | 4,599 | 9,597 |
| 949.50 | 4,636 | 9,828 |
| 949.55 | 4,674 | 10,060 |
| 949.60 | 4,713 | 10,295 |
| 949.65 | 4,751 | 10,532 |
| 949.70 | 4,790 | 10,770 |
| 949.75 | 4,828 | 11,011 |
| 949.80 | 4,866 | 11,253 |
| 949.85 | 4,905 | 11,497 |
| 949.90 | 4,943 | 11,743 |
| 949.95 | 4,982 | 11,991 |
| 950.00 | 5,020 | 12,242 |
| 950.05 | 5,040 | 12,493 |
| 950.10 | 5,060 | 12,746 |
| 950.15 | 5,080 | 12,999 |
| 950.20 | 5,100 | 13,254 |
| 950.25 | 5,120 | 13,509 |
| 950.30 | 5,140 | 13,765 |
| 950.35 | 5,160 | 14,023 |
| 950.40 | 5,180 | 14,281 |
| 950.45 | 5,200 | 14,541 |
| 950.50 | **5,220** | **14,802** |

Time span=0.00-80.00 hrs, dt=0.01 hrs, 8001 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 3S: Residential Areas** Runoff Area=1.800 ac 0.00% Impervious Runoff Depth=0.26"
Flow Length=115' Slope=0.0300 '/' Tc=9.9 min CN=61 Runoff=0.37 cfs 0.038 af

**Subcatchment P-1: Badger Drive & North** Runoff Area=1.650 ac 13.33% Impervious Runoff Depth=0.40"
Flow Length=194' Tc=11.6 min CN=66 Runoff=0.72 cfs 0.056 af

**Subcatchment P-5: Eagle Pass & South** Runoff Area=1.633 ac 14.27% Impervious Runoff Depth=0.40"
Flow Length=315' Tc=12.1 min CN=66 Runoff=0.70 cfs 0.055 af

**Reach 1R: Existing Eagle Storm Sewer** Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

**Reach 2R: swale** Avg. Flow Depth=0.16' Max Vel=0.36 fps Inflow=1.09 cfs 0.094 af
n=0.150 L=280.0' S=0.0179 '/' Capacity=20.16 cfs Outflow=0.69 cfs 0.094 af

**Reach 6R: Site Discharge** Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

**Pond 5P: Infiltration Basin** Peak Elev=943.12' Storage=1,119 cf Inflow=0.82 cfs 0.149 af
Discarded=0.35 cfs 0.149 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.149 af

**Pond IN1: Biofilter Forebay** Peak Elev=947.22' Storage=736 cf Inflow=0.70 cfs 0.055 af
Primary=0.13 cfs 0.055 af Secondary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.055 af

**Total Runoff Area = 5.083 ac Runoff Volume = 0.149 af Average Runoff Depth = 0.35"**
**91.09% Pervious = 4.630 ac 8.91% Impervious = 0.453 ac**

## Summary for Subcatchment 3S: Residential Areas

Runoff = 0.37 cfs @ 12.23 hrs, Volume= 0.038 af, Depth= 0.26"
Routed to Reach 2R : swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.69"

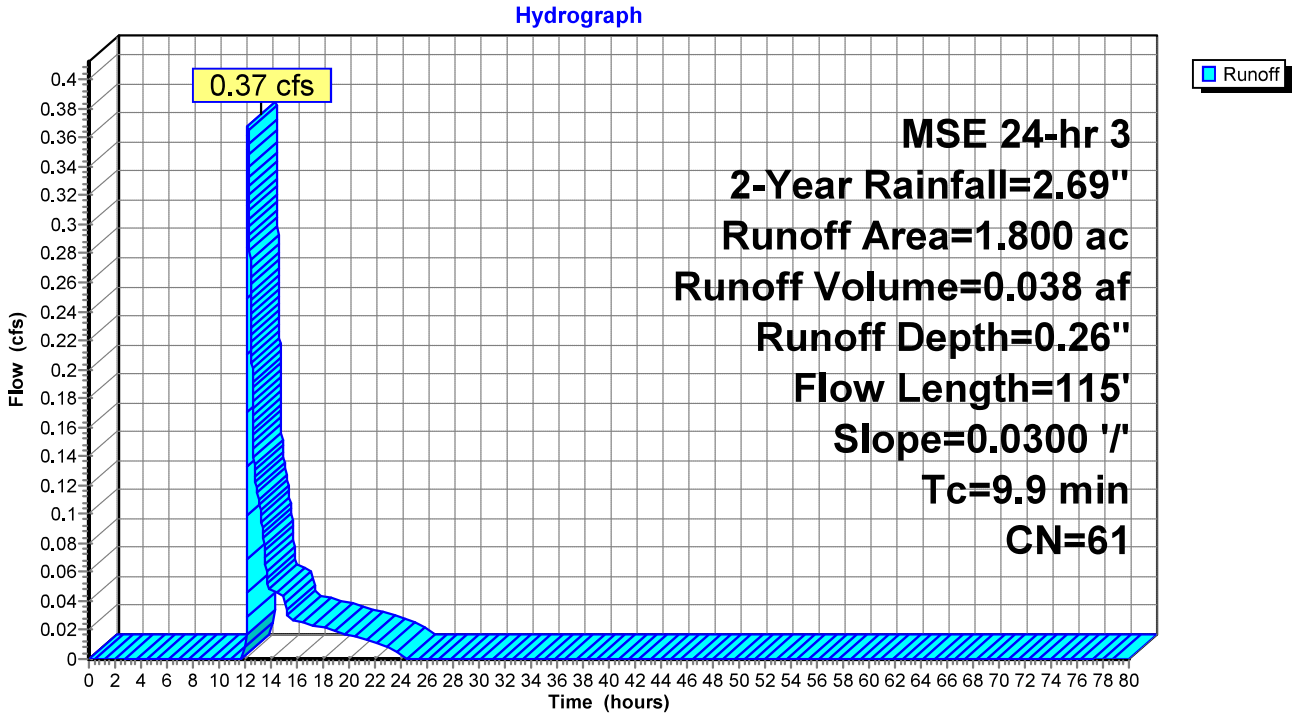
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 1.800 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 1.800 | | 100.00% Pervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 9.9 | 115 | 0.0300 | 0.19 | | **Sheet Flow, Uncaptured By Swale**<br>Grass: Short n= 0.150 P2= 2.84"<br>Using McCuen-Spiess flow length |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.800 | Open Space | 185.89 | 1.49 |
| 1.800 | Total | 185.89 | 1.49 |

## Subcatchment 3S: Residential Areas



## Summary for Subcatchment P-1: Badger Drive & North Lots

Runoff = 0.72 cfs @ 12.23 hrs, Volume= 0.056 af, Depth= 0.40"
Routed to Reach 2R : swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.69"

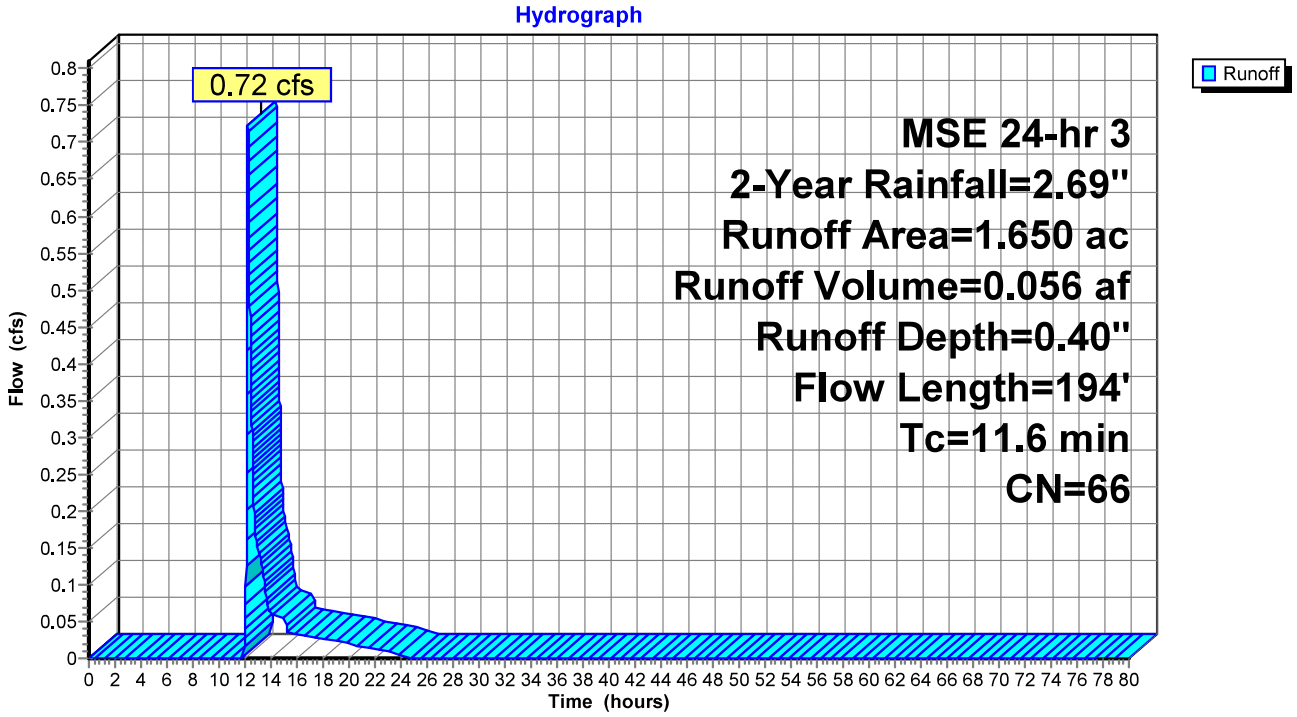
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 1.430 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 0.220 | 98 | Paved roads w/curbs & sewers, HSG B | Roadway |
| 1.650 | 66 | Weighted Average | |
| 1.430 | | 86.67% Pervious Area | |
| 0.220 | | 13.33% Impervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 9.9 | 94 | 0.0200 | 0.16 | | **Sheet Flow, Pretreated Flow to Basin**<br>Grass: Short n= 0.150 P2= 2.84"<br>Using McCuen-Spiess flow length |
| 1.7 | 100 | 0.0100 | 0.98 | | **Sheet Flow, Badger Dr**<br>Smooth surfaces n= 0.011 P2= 2.84" |
| 11.6 | 194 | Total | | | |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.430 | Open Space | 147.68 | 1.18 |
| 0.220 | Roadway | 34.08 | 0.27 |
| 1.650 | Total | 181.76 | 1.45 |

## Subcatchment P-1: Badger Drive & North Lots



## Summary for Subcatchment P-5: Eagle Pass & South Lots

Runoff = 0.70 cfs @ 12.23 hrs, Volume= 0.055 af, Depth= 0.40"
Routed to Pond IN1 : Biofilter Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-Year Rainfall=2.69"

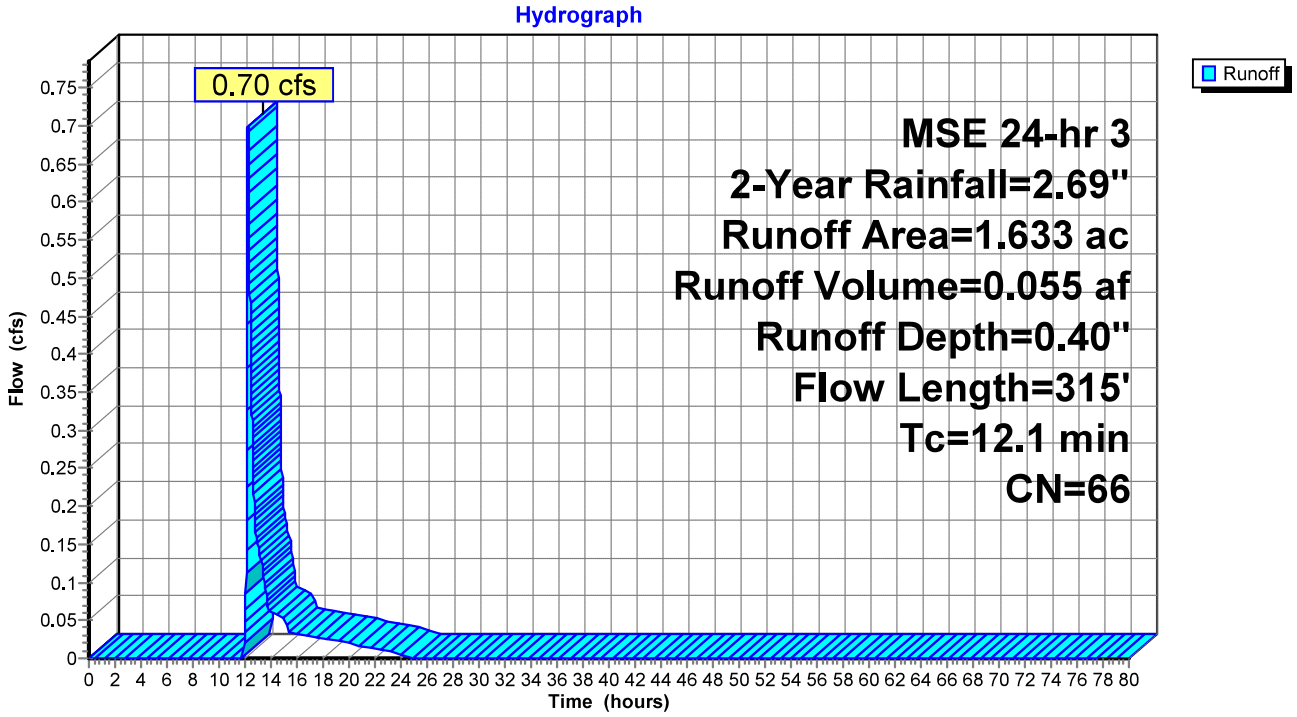
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 0.233 | 98 | Paved roads w/curbs & sewers, HSG B | Roadway |
| 1.400 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 1.633 | 66 | Weighted Average | |
| 1.400 | | 85.73% Pervious Area | |
| 0.233 | | 14.27% Impervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 2.2 | 200 | 0.0200 | 1.49 | | **Sheet Flow, Roads/Sewers/Roofs** Smooth surfaces n= 0.011 P2= 2.84" |
| 9.9 | 115 | 0.0300 | 0.19 | | **Sheet Flow, Eagle Lots** Grass: Short n= 0.150 P2= 2.84" Using McCuen-Spiess flow length |
| 12.1 | 315 | Total | | | |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.400 | Open Space | 144.58 | 1.16 |
| 0.233 | Roadway | 36.09 | 0.29 |
| 1.633 | Total | 180.68 | 1.45 |

## Subcatchment P-5: Eagle Pass & South Lots

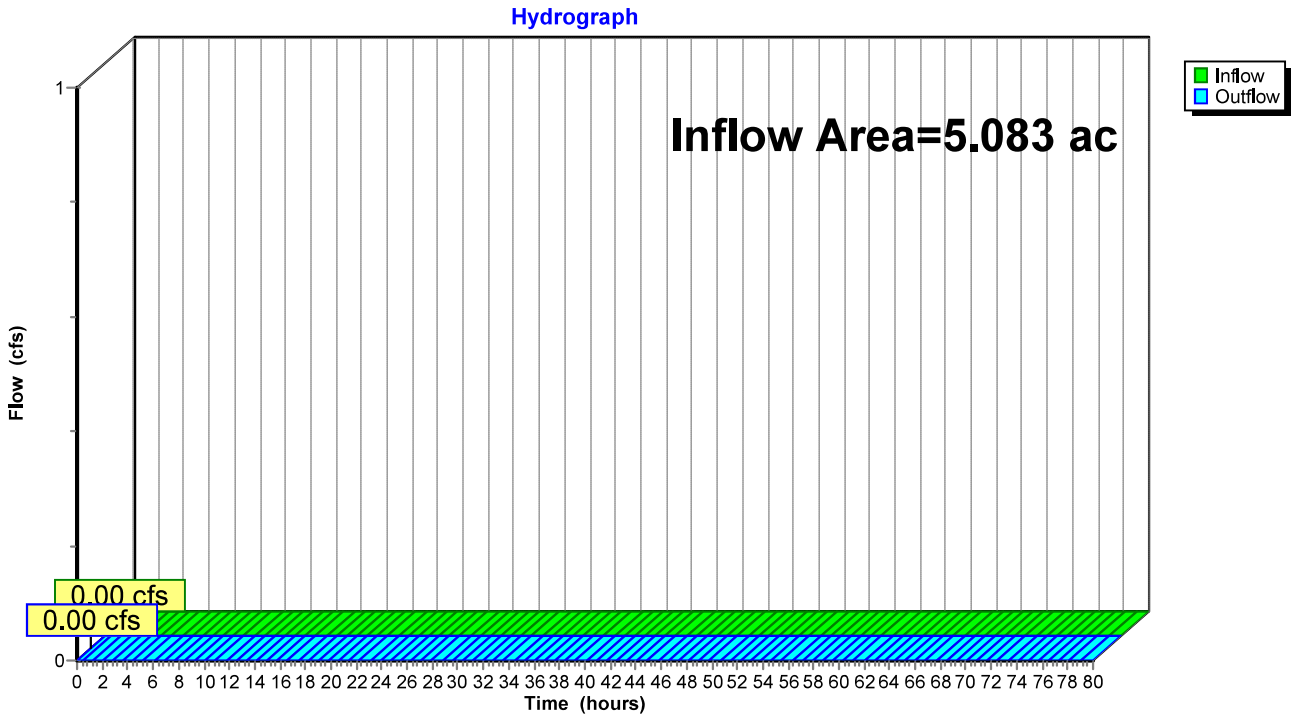


## Summary for Reach 1R: Existing Eagle Storm Sewer

Inflow Area = 5.083 ac, 8.91% 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 Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs

## Reach 1R: Existing Eagle Storm Sewer



## Summary for Reach 2R: swale

Inflow Area = 3.450 ac, 6.38% Impervious, Inflow Depth = 0.33" for 2-Year event
Inflow = 1.09 cfs @ 12.23 hrs, Volume= 0.094 af
Outflow = 0.69 cfs @ 12.63 hrs, Volume= 0.094 af, Atten= 36%, Lag= 24.0 min
Routed to Pond 5P : Infiltration Basin

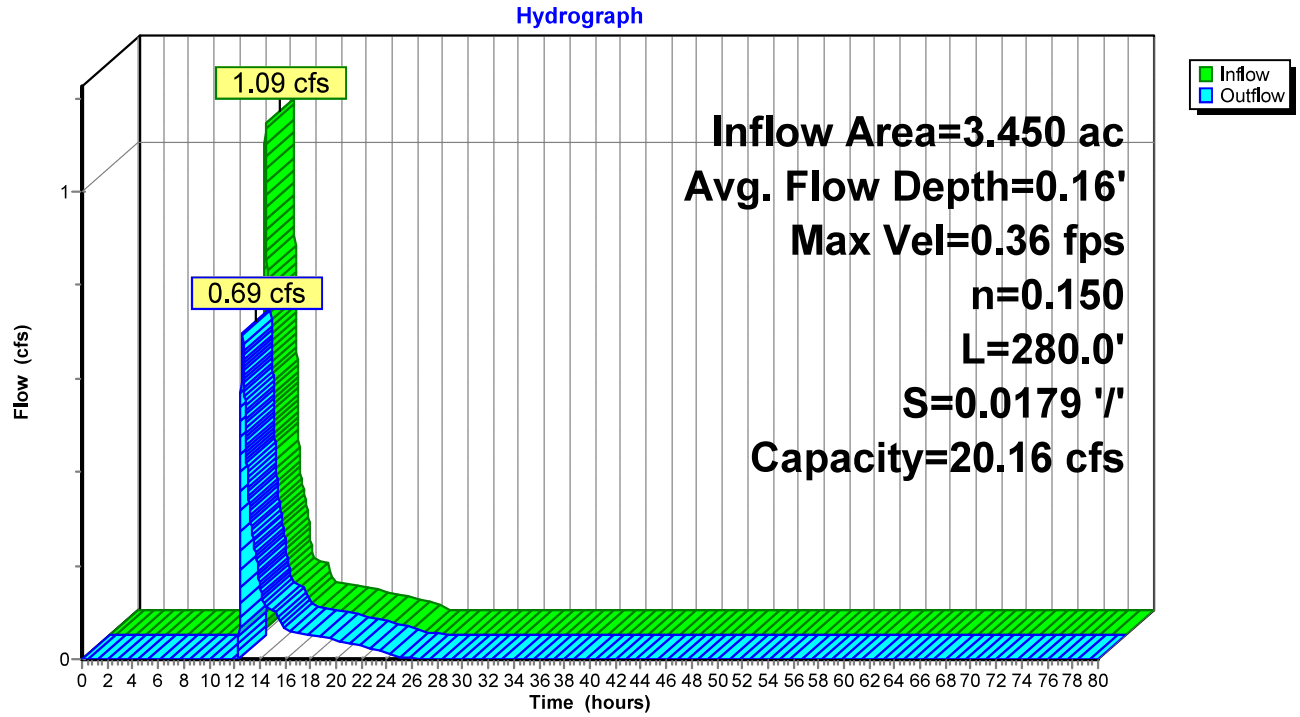
Routing by Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.36 fps, Min. Travel Time= 12.8 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 41.0 min

Peak Storage= 535 cf @ 12.41 hrs
Average Depth at Peak Storage= 0.16' , Surface Width= 13.28'
Bank-Full Depth= 1.00' Flow Area= 20.0 sf, Capacity= 20.16 cfs

10.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 280.0' Slope= 0.0179 '/'
Inlet Invert= 959.00', Outlet Invert= 954.00'

‡

**Reach 2R: swale**



## Stage-Discharge for Reach 2R: swale

| Elevation (feet) | Velocity (ft/sec) | Discharge (cfs) |
|---|---|---|
| 959.00 | 0.00 | 0.00 |
| 959.01 | 0.06 | 0.01 |
| 959.02 | 0.10 | 0.02 |
| 959.03 | 0.13 | 0.04 |
| 959.04 | 0.15 | 0.06 |
| 959.05 | 0.17 | 0.09 |
| 959.06 | 0.20 | 0.12 |
| 959.07 | 0.22 | 0.16 |
| 959.08 | 0.23 | 0.20 |
| 959.09 | 0.25 | 0.25 |
| 959.10 | 0.27 | 0.30 |
| 959.11 | 0.29 | 0.35 |
| 959.12 | 0.30 | 0.40 |
| 959.13 | 0.32 | 0.46 |
| 959.14 | 0.33 | 0.53 |
| 959.15 | 0.34 | 0.59 |
| 959.16 | 0.36 | 0.66 |
| 959.17 | 0.37 | 0.74 |
| 959.18 | 0.38 | 0.81 |
| 959.19 | 0.40 | 0.90 |
| 959.20 | 0.41 | 0.98 |
| 959.21 | 0.42 | 1.07 |
| 959.22 | 0.43 | 1.16 |
| 959.23 | 0.44 | 1.25 |
| 959.24 | 0.45 | 1.35 |
| 959.25 | 0.46 | 1.45 |
| 959.26 | 0.48 | 1.56 |
| 959.27 | 0.49 | 1.67 |
| 959.28 | 0.50 | 1.78 |
| 959.29 | 0.51 | 1.89 |
| 959.30 | 0.52 | 2.01 |
| 959.31 | 0.53 | 2.13 |
| 959.32 | 0.54 | 2.26 |
| 959.33 | 0.54 | 2.39 |
| 959.34 | 0.55 | 2.52 |
| 959.35 | 0.56 | 2.66 |
| 959.36 | 0.57 | 2.80 |
| 959.37 | 0.58 | 2.94 |
| 959.38 | 0.59 | 3.09 |
| 959.39 | 0.60 | 3.24 |
| 959.40 | 0.61 | 3.40 |
| 959.41 | 0.62 | 3.56 |
| 959.42 | 0.62 | 3.72 |
| 959.43 | 0.63 | 3.89 |
| 959.44 | 0.64 | 4.06 |
| 959.45 | 0.65 | 4.23 |
| 959.46 | 0.66 | 4.41 |
| 959.47 | 0.66 | 4.59 |
| 959.48 | 0.67 | 4.77 |
| 959.49 | 0.68 | 4.96 |
| 959.50 | 0.69 | 5.15 |
| 959.51 | 0.69 | 5.35 |
| 959.52 | 0.70 | 5.55 |
| 959.53 | 0.71 | 5.76 |
| 959.54 | 0.72 | 5.96 |
| 959.55 | 0.72 | 6.18 |
| 959.56 | 0.73 | 6.39 |
| 959.57 | 0.74 | 6.61 |
| 959.58 | 0.75 | 6.84 |
| 959.59 | 0.75 | 7.07 |
| 959.60 | 0.76 | 7.30 |
| 959.61 | 0.77 | 7.53 |
| 959.62 | 0.77 | 7.78 |
| 959.63 | 0.78 | 8.02 |
| 959.64 | 0.79 | 8.27 |
| 959.65 | 0.79 | 8.52 |
| 959.66 | 0.80 | 8.78 |
| 959.67 | 0.81 | 9.04 |
| 959.68 | 0.81 | 9.31 |
| 959.69 | 0.82 | 9.58 |
| 959.70 | 0.83 | 9.85 |
| 959.71 | 0.83 | 10.13 |
| 959.72 | 0.84 | 10.41 |
| 959.73 | 0.85 | 10.70 |
| 959.74 | 0.85 | 10.99 |
| 959.75 | 0.86 | 11.29 |
| 959.76 | 0.87 | 11.59 |
| 959.77 | 0.87 | 11.89 |
| 959.78 | 0.88 | 12.20 |
| 959.79 | 0.88 | 12.51 |
| 959.80 | 0.89 | 12.83 |
| 959.81 | 0.90 | 13.15 |
| 959.82 | 0.90 | 13.48 |
| 959.83 | 0.91 | 13.81 |
| 959.84 | 0.92 | 14.15 |
| 959.85 | 0.92 | 14.49 |
| 959.86 | 0.93 | 14.83 |
| 959.87 | 0.93 | 15.18 |
| 959.88 | 0.94 | 15.54 |
| 959.89 | 0.95 | 15.90 |
| 959.90 | 0.95 | 16.26 |
| 959.91 | 0.96 | 16.63 |
| 959.92 | 0.96 | 17.00 |
| 959.93 | 0.97 | 17.38 |
| 959.94 | 0.97 | 17.76 |
| 959.95 | 0.98 | 18.15 |
| 959.96 | 0.99 | 18.54 |
| 959.97 | 0.99 | 18.94 |
| 959.98 | 1.00 | 19.34 |
| 959.99 | 1.00 | 19.75 |
| 960.00 | **1.01** | **20.16** |

## Stage-Area-Storage for Reach 2R: swale

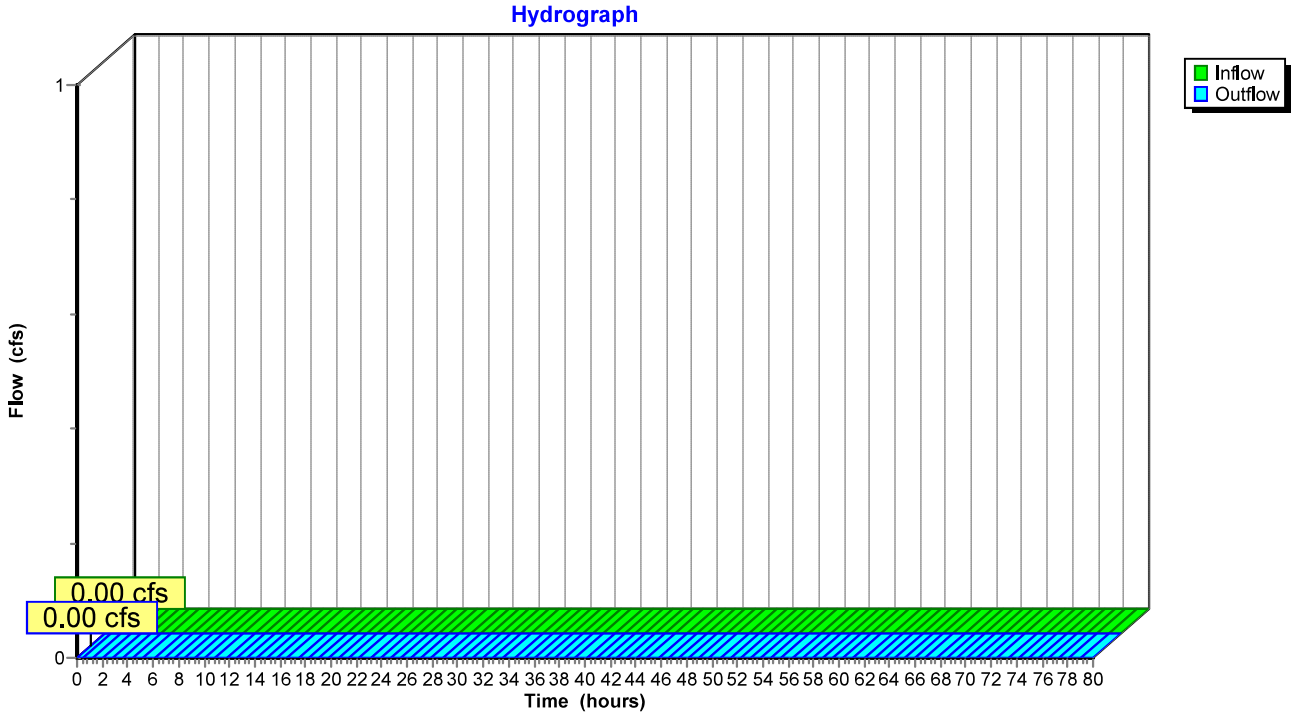
| Elevation (feet) | End-Area (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 959.00 | 0.0 | 0 |
| 959.01 | 0.1 | 28 |
| 959.02 | 0.2 | 57 |
| 959.03 | 0.3 | 87 |
| 959.04 | 0.4 | 116 |
| 959.05 | 0.5 | 147 |
| 959.06 | 0.6 | 178 |
| 959.07 | 0.7 | 210 |
| 959.08 | 0.9 | 242 |
| 959.09 | 1.0 | 275 |
| 959.10 | 1.1 | 308 |
| 959.11 | 1.2 | 342 |
| 959.12 | 1.3 | 376 |
| 959.13 | 1.5 | 411 |
| 959.14 | 1.6 | 447 |
| 959.15 | 1.7 | 483 |
| 959.16 | 1.9 | 520 |
| 959.17 | 2.0 | 557 |
| 959.18 | 2.1 | 595 |
| 959.19 | 2.3 | 633 |
| 959.20 | 2.4 | 672 |
| 959.21 | 2.5 | 711 |
| 959.22 | 2.7 | 752 |
| 959.23 | 2.8 | 792 |
| 959.24 | 3.0 | 833 |
| 959.25 | 3.1 | 875 |
| 959.26 | 3.3 | 917 |
| 959.27 | 3.4 | 960 |
| 959.28 | 3.6 | 1,004 |
| 959.29 | 3.7 | 1,047 |
| 959.30 | 3.9 | 1,092 |
| 959.31 | 4.1 | 1,137 |
| 959.32 | 4.2 | 1,183 |
| 959.33 | 4.4 | 1,229 |
| 959.34 | 4.6 | 1,276 |
| 959.35 | 4.7 | 1,323 |
| 959.36 | 4.9 | 1,371 |
| 959.37 | 5.1 | 1,419 |
| 959.38 | 5.2 | 1,468 |
| 959.39 | 5.4 | 1,518 |
| 959.40 | 5.6 | 1,568 |
| 959.41 | 5.8 | 1,619 |
| 959.42 | 6.0 | 1,670 |
| 959.43 | 6.1 | 1,722 |
| 959.44 | 6.3 | 1,774 |
| 959.45 | 6.5 | 1,827 |
| 959.46 | 6.7 | 1,880 |
| 959.47 | 6.9 | 1,935 |
| 959.48 | 7.1 | 1,989 |
| 959.49 | 7.3 | 2,044 |
| 959.50 | 7.5 | 2,100 |
| 959.51 | 7.7 | 2,156 |
| 959.52 | 7.9 | 2,213 |
| 959.53 | 8.1 | 2,271 |
| 959.54 | 8.3 | 2,328 |
| 959.55 | 8.5 | 2,387 |
| 959.56 | 8.7 | 2,446 |
| 959.57 | 8.9 | 2,506 |
| 959.58 | 9.2 | 2,566 |
| 959.59 | 9.4 | 2,627 |
| 959.60 | 9.6 | 2,688 |
| 959.61 | 9.8 | 2,750 |
| 959.62 | 10.0 | 2,812 |
| 959.63 | 10.3 | 2,875 |
| 959.64 | 10.5 | 2,939 |
| 959.65 | 10.7 | 3,003 |
| 959.66 | 11.0 | 3,068 |
| 959.67 | 11.2 | 3,133 |
| 959.68 | 11.4 | 3,199 |
| 959.69 | 11.7 | 3,265 |
| 959.70 | 11.9 | 3,332 |
| 959.71 | 12.1 | 3,399 |
| 959.72 | 12.4 | 3,468 |
| 959.73 | 12.6 | 3,536 |
| 959.74 | 12.9 | 3,605 |
| 959.75 | 13.1 | 3,675 |
| 959.76 | 13.4 | 3,745 |
| 959.77 | 13.6 | 3,816 |
| 959.78 | 13.9 | 3,888 |
| 959.79 | 14.1 | 3,959 |
| 959.80 | 14.4 | 4,032 |
| 959.81 | 14.7 | 4,105 |
| 959.82 | 14.9 | 4,179 |
| 959.83 | 15.2 | 4,253 |
| 959.84 | 15.5 | 4,328 |
| 959.85 | 15.7 | 4,403 |
| 959.86 | 16.0 | 4,479 |
| 959.87 | 16.3 | 4,555 |
| 959.88 | 16.5 | 4,632 |
| 959.89 | 16.8 | 4,710 |
| 959.90 | 17.1 | 4,788 |
| 959.91 | 17.4 | 4,867 |
| 959.92 | 17.7 | 4,946 |
| 959.93 | 17.9 | 5,026 |
| 959.94 | 18.2 | 5,106 |
| 959.95 | 18.5 | 5,187 |
| 959.96 | 18.8 | 5,268 |
| 959.97 | 19.1 | 5,351 |
| 959.98 | 19.4 | 5,433 |
| 959.99 | 19.7 | 5,516 |
| 960.00 | **20.0** | **5,600** |

## Summary for Reach 6R: Site Discharge

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 Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs

## Reach 6R: Site Discharge



## Summary for Pond 5P: Infiltration Basin

Inflow Area = 5.083 ac, 8.91% Impervious, Inflow Depth = 0.35" for 2-Year event
Inflow = 0.82 cfs @ 12.63 hrs, Volume= 0.149 af
Outflow = 0.35 cfs @ 13.67 hrs, Volume= 0.149 af, Atten= 57%, Lag= 62.7 min
Discarded = 0.35 cfs @ 13.67 hrs, Volume= 0.149 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1R : Existing Eagle Storm Sewer
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 6R : Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Peak Elev= 943.12' @ 13.67 hrs Surf.Area= 9,376 sf Storage= 1,119 cf

Plug-Flow detention time= 34.3 min calculated for 0.149 af (100% of inflow)
Center-of-Mass det. time= 34.3 min ( 952.4 - 918.1 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 943.00' | 70,609 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 943.00 | 9,227 | 0 | 0 |
| 944.00 | 10,462 | 9,845 | 9,845 |
| 945.00 | 11,755 | 11,109 | 20,953 |
| 946.00 | 13,106 | 12,431 | 33,384 |
| 947.00 | 14,512 | 13,809 | 47,193 |
| 947.50 | 15,237 | 7,437 | 54,630 |
| 948.00 | 15,976 | 7,803 | 62,433 |
| 948.50 | 16,729 | 8,176 | 70,609 |

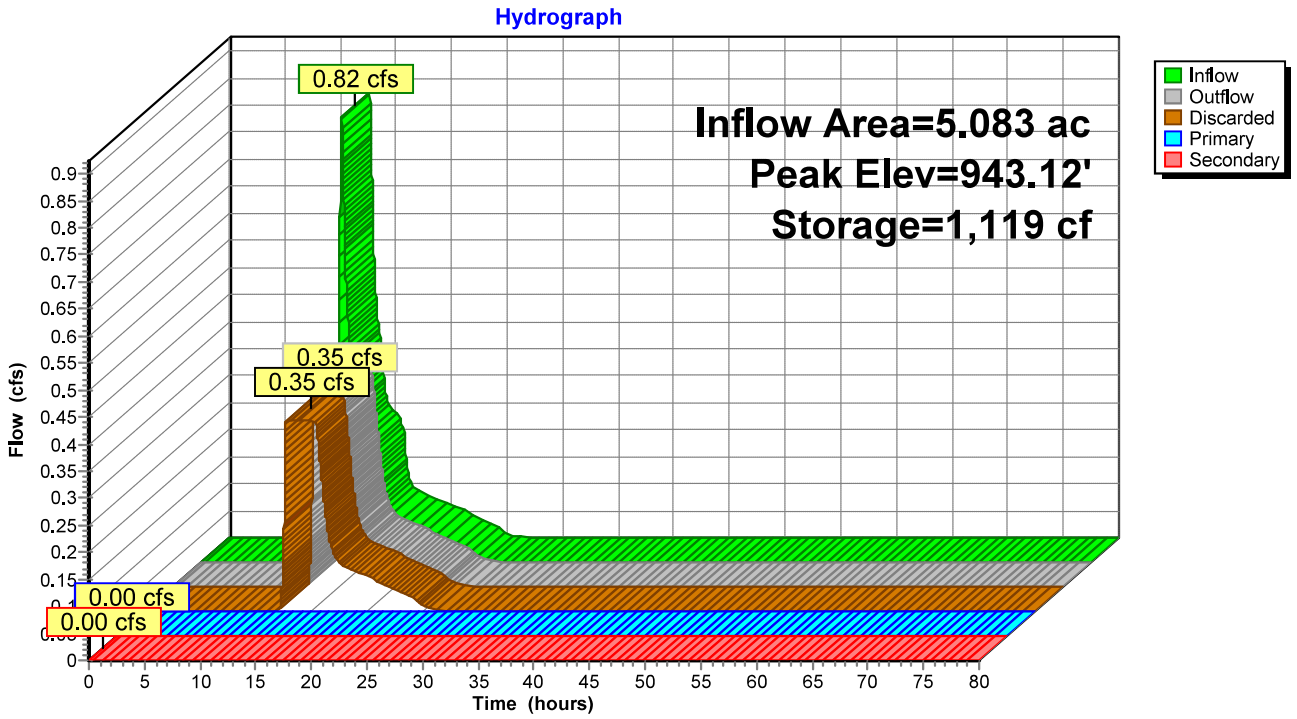
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 947.50' | **26.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2 | Discarded | 943.00' | **1.630 in/hr Exfiltration - Primary over Surface area** |
| #3 | Primary | 946.40' | **12.0" Round Secondary Culvert to Street**<br>L= 54.0' RCP, mitered to conform to fill, Ke= 0.700<br>Inlet / Outlet Invert= 946.40' / 945.50' S= 0.0167 '/' Cc= 0.900<br>n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf |

**Discarded OutFlow** Max=0.35 cfs @ 13.67 hrs HW=943.12' (Free Discharge)
↑—**2=Exfiltration - Primary** (Exfiltration Controls 0.35 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=943.00' (Free Discharge)
↑—**3=Secondary Culvert to Street** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=943.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond 5P: Infiltration Basin



## Stage-Discharge for Pond 5P: Infiltration Basin

| Elevation (feet) | Discharge (cfs) | Discarded (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|
| 943.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 943.20 | 0.36 | 0.36 | 0.00 | 0.00 |
| 943.40 | 0.37 | 0.37 | 0.00 | 0.00 |
| 943.60 | 0.38 | 0.38 | 0.00 | 0.00 |
| 943.80 | 0.39 | 0.39 | 0.00 | 0.00 |
| 944.00 | 0.39 | 0.39 | 0.00 | 0.00 |
| 944.20 | 0.40 | 0.40 | 0.00 | 0.00 |
| 944.40 | 0.41 | 0.41 | 0.00 | 0.00 |
| 944.60 | 0.42 | 0.42 | 0.00 | 0.00 |
| 944.80 | 0.43 | 0.43 | 0.00 | 0.00 |
| 945.00 | 0.44 | 0.44 | 0.00 | 0.00 |
| 945.20 | 0.45 | 0.45 | 0.00 | 0.00 |
| 945.40 | 0.46 | 0.46 | 0.00 | 0.00 |
| 945.60 | 0.47 | 0.47 | 0.00 | 0.00 |
| 945.80 | 0.48 | 0.48 | 0.00 | 0.00 |
| 946.00 | 0.49 | 0.49 | 0.00 | 0.00 |
| 946.20 | 0.51 | 0.51 | 0.00 | 0.00 |
| 946.40 | 0.52 | 0.52 | 0.00 | 0.00 |
| 946.60 | 0.68 | 0.53 | 0.15 | 0.00 |
| 946.80 | 1.09 | 0.54 | 0.56 | 0.00 |
| 947.00 | 1.69 | 0.55 | 1.14 | 0.00 |
| 947.20 | 2.37 | 0.56 | 1.81 | 0.00 |
| 947.40 | 2.93 | 0.57 | 2.36 | 0.00 |
| 947.60 | 5.42 | 0.58 | 2.79 | 2.05 |
| 947.80 | 14.54 | 0.59 | 3.17 | 10.79 |
| 948.00 | 28.28 | 0.60 | 3.50 | 24.18 |
| 948.20 | 45.46 | 0.61 | 3.80 | 41.04 |
| 948.40 | **64.32** | **0.63** | **4.09** | **59.60** |

## Stage-Area-Storage for Pond 5P: Infiltration Basin

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 943.00 | 9,227 | 0 |
| 943.10 | 9,351 | 929 |
| 943.20 | 9,474 | 1,870 |
| 943.30 | 9,597 | 2,824 |
| 943.40 | 9,721 | 3,790 |
| 943.50 | 9,845 | 4,768 |
| 943.60 | 9,968 | 5,759 |
| 943.70 | 10,092 | 6,761 |
| 943.80 | 10,215 | 7,777 |
| 943.90 | 10,338 | 8,804 |
| 944.00 | 10,462 | 9,845 |
| 944.10 | 10,591 | 10,897 |
| 944.20 | 10,721 | 11,963 |
| 944.30 | 10,850 | 13,041 |
| 944.40 | 10,979 | 14,133 |
| 944.50 | 11,109 | 15,237 |
| 944.60 | 11,238 | 16,354 |
| 944.70 | 11,367 | 17,485 |
| 944.80 | 11,496 | 18,628 |
| 944.90 | 11,626 | 19,784 |
| 945.00 | 11,755 | 20,953 |
| 945.10 | 11,890 | 22,135 |
| 945.20 | 12,025 | 23,331 |
| 945.30 | 12,160 | 24,540 |
| 945.40 | 12,295 | 25,763 |
| 945.50 | 12,431 | 26,999 |
| 945.60 | 12,566 | 28,249 |
| 945.70 | 12,701 | 29,512 |
| 945.80 | 12,836 | 30,789 |
| 945.90 | 12,971 | 32,080 |
| 946.00 | 13,106 | 33,384 |
| 946.10 | 13,247 | 34,701 |
| 946.20 | 13,387 | 36,033 |
| 946.30 | 13,528 | 37,379 |
| 946.40 | 13,668 | 38,738 |
| 946.50 | 13,809 | 40,112 |
| 946.60 | 13,950 | 41,500 |
| 946.70 | 14,090 | 42,902 |
| 946.80 | 14,231 | 44,318 |
| 946.90 | 14,371 | 45,748 |
| 947.00 | 14,512 | 47,193 |
| 947.10 | 14,657 | 48,651 |
| 947.20 | 14,802 | 50,124 |
| 947.30 | 14,947 | 51,611 |
| 947.40 | 15,092 | 53,113 |
| 947.50 | 15,237 | 54,630 |
| 947.60 | 15,385 | 56,161 |
| 947.70 | 15,533 | 57,707 |
| 947.80 | 15,680 | 59,267 |
| 947.90 | 15,828 | 60,843 |
| 948.00 | 15,976 | 62,433 |
| 948.10 | 16,127 | 64,038 |
| 948.20 | 16,277 | 65,658 |
| 948.30 | 16,428 | 67,294 |
| 948.40 | 16,578 | 68,944 |
| 948.50 | **16,729** | **70,609** |

## Summary for Pond IN1: Biofilter Forebay

Inflow Area = 1.633 ac, 14.27% Impervious, Inflow Depth = 0.40" for 2-Year event
Inflow = 0.70 cfs @ 12.23 hrs, Volume= 0.055 af
Outflow = 0.13 cfs @ 13.23 hrs, Volume= 0.055 af, Atten= 81%, Lag= 59.7 min
Primary = 0.13 cfs @ 13.23 hrs, Volume= 0.055 af
Routed to Pond 5P : Infiltration Basin
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 5P : Infiltration Basin

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Peak Elev= 947.22' @ 13.23 hrs Surf.Area= 3,445 sf Storage= 736 cf

Plug-Flow detention time= 51.1 min calculated for 0.055 af (100% of inflow)
Center-of-Mass det. time= 51.1 min ( 921.4 - 870.3 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 947.00' | 14,802 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

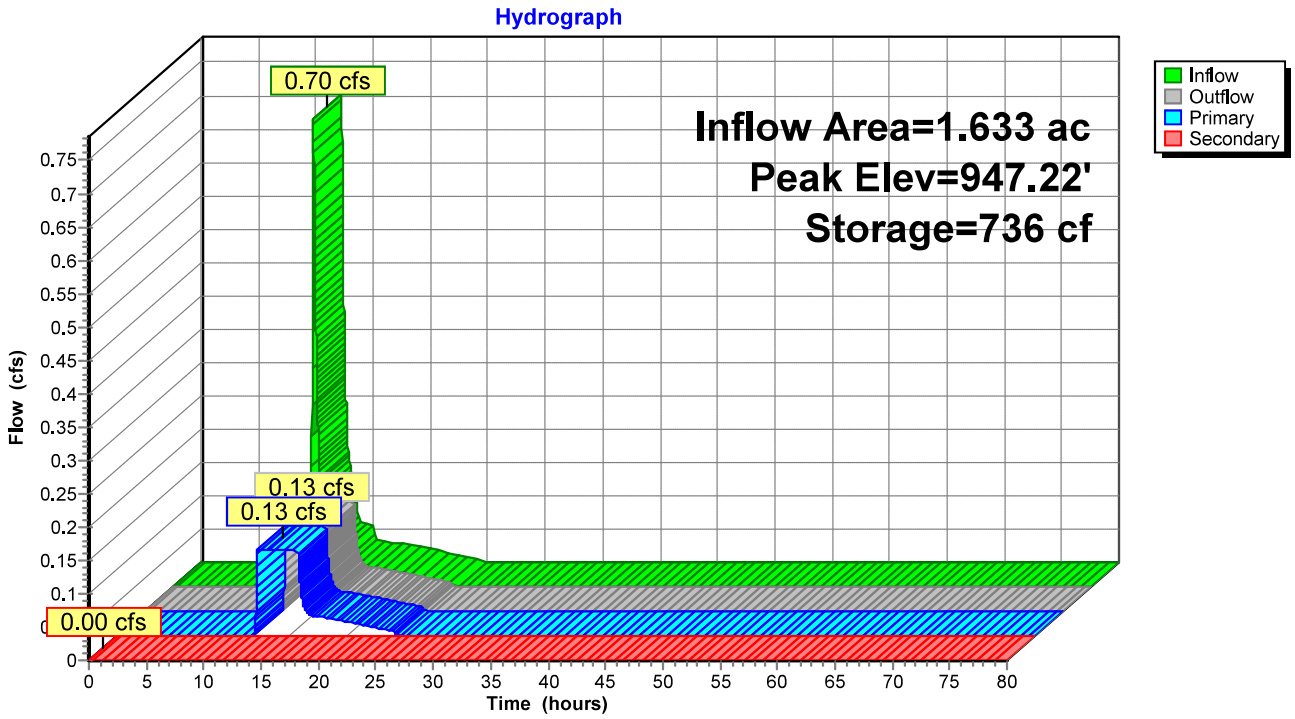
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 947.00 | 3,348 | 0 | 0 |
| 948.00 | 3,795 | 3,572 | 3,572 |
| 949.00 | 4,266 | 4,031 | 7,602 |
| 949.50 | 4,636 | 2,226 | 9,828 |
| 950.00 | 5,020 | 2,414 | 12,242 |
| 950.50 | 5,220 | 2,560 | 14,802 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 949.00' | **23.0' long x 14.8' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.67 2.69 2.70 2.64 2.63 2.64 2.64 2.63 |
| #2 | Primary | 947.00' | **1.630 in/hr Exfiltration over Surface area** |

**Primary OutFlow** Max=0.13 cfs @ 13.23 hrs HW=947.22' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.13 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=947.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond IN1: Biofilter Forebay



## Stage-Discharge for Pond IN1: Biofilter Forebay

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 947.00 | 0.00 | 0.00 | 0.00 |
| 947.05 | 0.13 | 0.13 | 0.00 |
| 947.10 | 0.13 | 0.13 | 0.00 |
| 947.15 | 0.13 | 0.13 | 0.00 |
| 947.20 | 0.13 | 0.13 | 0.00 |
| 947.25 | 0.13 | 0.13 | 0.00 |
| 947.30 | 0.13 | 0.13 | 0.00 |
| 947.35 | 0.13 | 0.13 | 0.00 |
| 947.40 | 0.13 | 0.13 | 0.00 |
| 947.45 | 0.13 | 0.13 | 0.00 |
| 947.50 | 0.13 | 0.13 | 0.00 |
| 947.55 | 0.14 | 0.14 | 0.00 |
| 947.60 | 0.14 | 0.14 | 0.00 |
| 947.65 | 0.14 | 0.14 | 0.00 |
| 947.70 | 0.14 | 0.14 | 0.00 |
| 947.75 | 0.14 | 0.14 | 0.00 |
| 947.80 | 0.14 | 0.14 | 0.00 |
| 947.85 | 0.14 | 0.14 | 0.00 |
| 947.90 | 0.14 | 0.14 | 0.00 |
| 947.95 | 0.14 | 0.14 | 0.00 |
| 948.00 | 0.14 | 0.14 | 0.00 |
| 948.05 | 0.14 | 0.14 | 0.00 |
| 948.10 | 0.14 | 0.14 | 0.00 |
| 948.15 | 0.15 | 0.15 | 0.00 |
| 948.20 | 0.15 | 0.15 | 0.00 |
| 948.25 | 0.15 | 0.15 | 0.00 |
| 948.30 | 0.15 | 0.15 | 0.00 |
| 948.35 | 0.15 | 0.15 | 0.00 |
| 948.40 | 0.15 | 0.15 | 0.00 |
| 948.45 | 0.15 | 0.15 | 0.00 |
| 948.50 | 0.15 | 0.15 | 0.00 |
| 948.55 | 0.15 | 0.15 | 0.00 |
| 948.60 | 0.15 | 0.15 | 0.00 |
| 948.65 | 0.15 | 0.15 | 0.00 |
| 948.70 | 0.16 | 0.16 | 0.00 |
| 948.75 | 0.16 | 0.16 | 0.00 |
| 948.80 | 0.16 | 0.16 | 0.00 |
| 948.85 | 0.16 | 0.16 | 0.00 |
| 948.90 | 0.16 | 0.16 | 0.00 |
| 948.95 | 0.16 | 0.16 | 0.00 |
| 949.00 | 0.16 | 0.16 | 0.00 |
| 949.05 | 0.85 | 0.16 | 0.69 |
| 949.10 | 2.11 | 0.16 | 1.94 |
| 949.15 | 3.73 | 0.17 | 3.57 |
| 949.20 | 5.66 | 0.17 | 5.49 |
| 949.25 | 7.86 | 0.17 | 7.69 |
| 949.30 | 10.30 | 0.17 | 10.13 |
| 949.35 | 12.96 | 0.17 | 12.79 |
| 949.40 | 15.82 | 0.17 | 15.65 |
| 949.45 | 18.87 | 0.17 | 18.69 |
| 949.50 | 22.09 | 0.17 | 21.92 |
| 949.55 | 25.48 | 0.18 | 25.31 |
| 949.60 | 29.04 | 0.18 | 28.86 |
| 949.65 | 32.54 | 0.18 | 32.36 |
| 949.70 | 36.15 | 0.18 | 35.97 |
| 949.75 | 39.85 | 0.18 | 39.66 |
| 949.80 | 43.63 | 0.18 | 43.45 |
| 949.85 | 47.72 | 0.19 | 47.54 |
| 949.90 | 51.93 | 0.19 | 51.75 |
| 949.95 | 56.25 | 0.19 | 56.06 |
| 950.00 | 60.68 | 0.19 | 60.49 |
| 950.05 | 65.34 | 0.19 | 65.14 |
| 950.10 | 70.11 | 0.19 | 69.92 |
| 950.15 | 75.00 | 0.19 | 74.81 |
| 950.20 | 80.01 | 0.19 | 79.82 |
| 950.25 | 85.05 | 0.19 | 84.86 |
| 950.30 | 90.19 | 0.19 | 90.00 |
| 950.35 | 95.44 | 0.19 | 95.24 |
| 950.40 | 100.78 | 0.20 | 100.58 |
| 950.45 | 106.11 | 0.20 | 105.92 |
| 950.50 | **111.54** | **0.20** | **111.34** |

## Stage-Area-Storage for Pond IN1: Biofilter Forebay

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 947.00 | 3,348 | 0 |
| 947.05 | 3,370 | 168 |
| 947.10 | 3,393 | 337 |
| 947.15 | 3,415 | 507 |
| 947.20 | 3,437 | 679 |
| 947.25 | 3,460 | 851 |
| 947.30 | 3,482 | 1,025 |
| 947.35 | 3,504 | 1,199 |
| 947.40 | 3,527 | 1,375 |
| 947.45 | 3,549 | 1,552 |
| 947.50 | 3,572 | 1,730 |
| 947.55 | 3,594 | 1,909 |
| 947.60 | 3,616 | 2,089 |
| 947.65 | 3,639 | 2,271 |
| 947.70 | 3,661 | 2,453 |
| 947.75 | 3,683 | 2,637 |
| 947.80 | 3,706 | 2,821 |
| 947.85 | 3,728 | 3,007 |
| 947.90 | 3,750 | 3,194 |
| 947.95 | 3,773 | 3,382 |
| 948.00 | 3,795 | 3,572 |
| 948.05 | 3,819 | 3,762 |
| 948.10 | 3,842 | 3,953 |
| 948.15 | 3,866 | 4,146 |
| 948.20 | 3,889 | 4,340 |
| 948.25 | 3,913 | 4,535 |
| 948.30 | 3,936 | 4,731 |
| 948.35 | 3,960 | 4,929 |
| 948.40 | 3,983 | 5,127 |
| 948.45 | 4,007 | 5,327 |
| 948.50 | 4,031 | 5,528 |
| 948.55 | 4,054 | 5,730 |
| 948.60 | 4,078 | 5,933 |
| 948.65 | 4,101 | 6,138 |
| 948.70 | 4,125 | 6,343 |
| 948.75 | 4,148 | 6,550 |
| 948.80 | 4,172 | 6,758 |
| 948.85 | 4,195 | 6,967 |
| 948.90 | 4,219 | 7,178 |
| 948.95 | 4,242 | 7,389 |
| 949.00 | 4,266 | 7,602 |
| 949.05 | 4,303 | 7,816 |
| 949.10 | 4,340 | 8,032 |
| 949.15 | 4,377 | 8,250 |
| 949.20 | 4,414 | 8,470 |
| 949.25 | 4,451 | 8,692 |
| 949.30 | 4,488 | 8,915 |
| 949.35 | 4,525 | 9,140 |
| 949.40 | 4,562 | 9,368 |
| 949.45 | 4,599 | 9,597 |
| 949.50 | 4,636 | 9,828 |
| 949.55 | 4,674 | 10,060 |
| 949.60 | 4,713 | 10,295 |
| 949.65 | 4,751 | 10,532 |
| 949.70 | 4,790 | 10,770 |
| 949.75 | 4,828 | 11,011 |
| 949.80 | 4,866 | 11,253 |
| 949.85 | 4,905 | 11,497 |
| 949.90 | 4,943 | 11,743 |
| 949.95 | 4,982 | 11,991 |
| 950.00 | 5,020 | 12,242 |
| 950.05 | 5,040 | 12,493 |
| 950.10 | 5,060 | 12,746 |
| 950.15 | 5,080 | 12,999 |
| 950.20 | 5,100 | 13,254 |
| 950.25 | 5,120 | 13,509 |
| 950.30 | 5,140 | 13,765 |
| 950.35 | 5,160 | 14,023 |
| 950.40 | 5,180 | 14,281 |
| 950.45 | 5,200 | 14,541 |
| 950.50 | **5,220** | **14,802** |

Time span=0.00-80.00 hrs, dt=0.01 hrs, 8001 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 3S: Residential Areas** Runoff Area=1.800 ac 0.00% Impervious Runoff Depth=0.71"
Flow Length=115' Slope=0.0300 '/' Tc=9.9 min CN=61 Runoff=1.70 cfs 0.107 af

**Subcatchment P-1: Badger Drive & North** Runoff Area=1.650 ac 13.33% Impervious Runoff Depth=0.97"
Flow Length=194' Tc=11.6 min CN=66 Runoff=2.15 cfs 0.133 af

**Subcatchment P-5: Eagle Pass & South** Runoff Area=1.633 ac 14.27% Impervious Runoff Depth=0.97"
Flow Length=315' Tc=12.1 min CN=66 Runoff=2.09 cfs 0.132 af

**Reach 1R: Existing Eagle Storm Sewer** Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

**Reach 2R: swale** Avg. Flow Depth=0.36' Max Vel=0.57 fps Inflow=3.83 cfs 0.240 af
n=0.150 L=280.0' S=0.0179 '/' Capacity=20.16 cfs Outflow=2.83 cfs 0.240 af

**Reach 6R: Site Discharge** Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

**Pond 5P: Infiltration Basin** Peak Elev=943.56' Storage=5,355 cf Inflow=2.97 cfs 0.372 af
Discarded=0.37 cfs 0.372 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.37 cfs 0.372 af

**Pond IN1: Biofilter Forebay** Peak Elev=947.84' Storage=2,975 cf Inflow=2.09 cfs 0.132 af
Primary=0.14 cfs 0.132 af Secondary=0.00 cfs 0.000 af Outflow=0.14 cfs 0.132 af

**Total Runoff Area = 5.083 ac Runoff Volume = 0.372 af Average Runoff Depth = 0.88"**
**91.09% Pervious = 4.630 ac 8.91% Impervious = 0.453 ac**

## Summary for Subcatchment 3S: Residential Areas

Runoff = 1.70 cfs @ 12.19 hrs, Volume= 0.107 af, Depth= 0.71"
Routed to Reach 2R : swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=3.80"

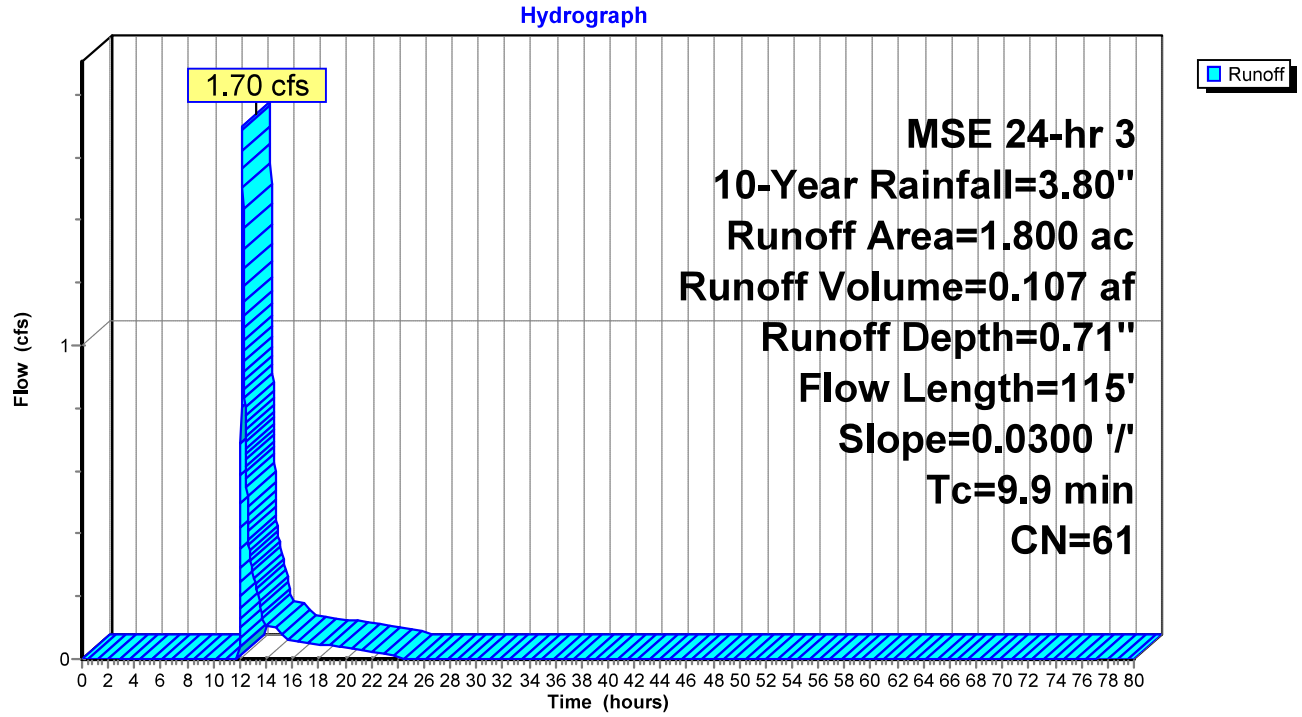
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 1.800 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 1.800 | | 100.00% Pervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 9.9 | 115 | 0.0300 | 0.19 | | **Sheet Flow, Uncaptured By Swale**<br>Grass: Short n= 0.150 P2= 2.84"<br>Using McCuen-Spiess flow length |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.800 | Open Space | 185.89 | 1.49 |
| 1.800 | Total | 185.89 | 1.49 |

## Subcatchment 3S: Residential Areas



## Summary for Subcatchment P-1: Badger Drive & North Lots

Runoff = 2.15 cfs @ 12.21 hrs, Volume= 0.133 af, Depth= 0.97"
Routed to Reach 2R : swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=3.80"

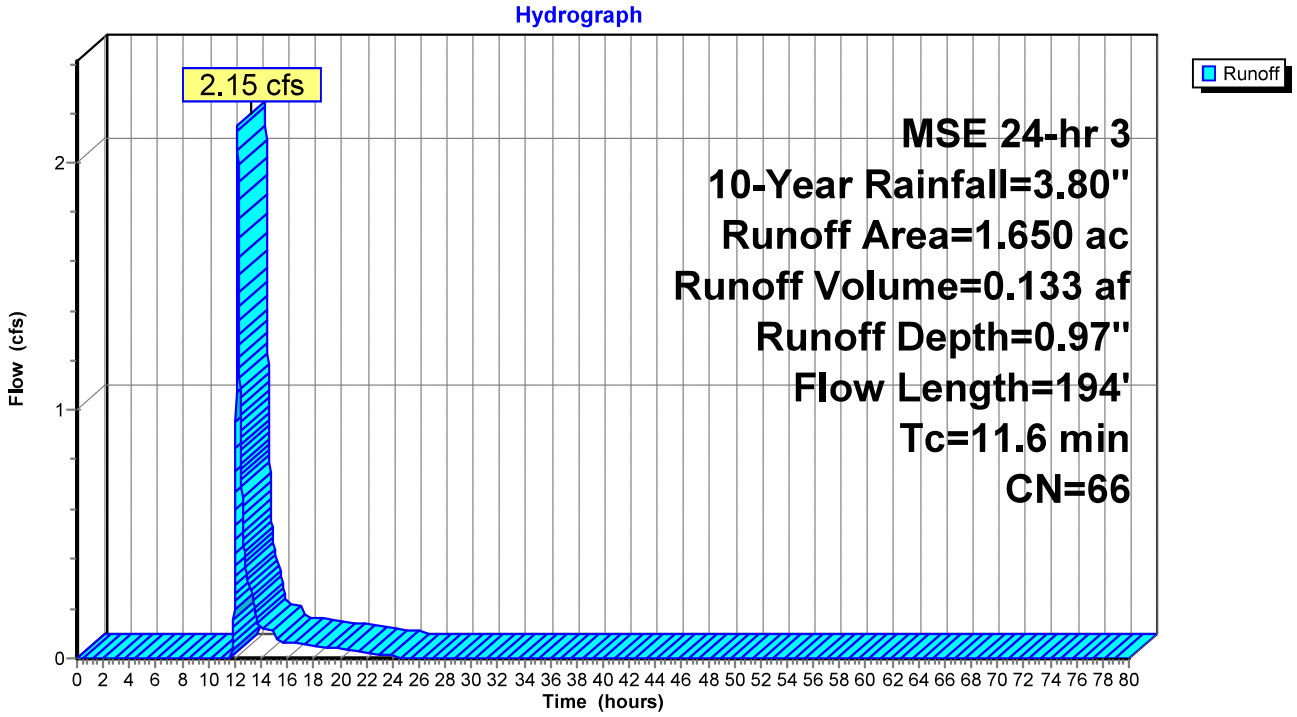
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 1.430 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 0.220 | 98 | Paved roads w/curbs & sewers, HSG B | Roadway |
| 1.650 | 66 | Weighted Average | |
| 1.430 | | 86.67% Pervious Area | |
| 0.220 | | 13.33% Impervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 9.9 | 94 | 0.0200 | 0.16 | | **Sheet Flow, Pretreated Flow to Basin**<br>Grass: Short n= 0.150 P2= 2.84"<br>Using McCuen-Spiess flow length |
| 1.7 | 100 | 0.0100 | 0.98 | | **Sheet Flow, Badger Dr**<br>Smooth surfaces n= 0.011 P2= 2.84" |
| 11.6 | 194 | Total | | | |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.430 | Open Space | 147.68 | 1.18 |
| 0.220 | Roadway | 34.08 | 0.27 |
| 1.650 | Total | 181.76 | 1.45 |

## Subcatchment P-1: Badger Drive & North Lots



## Summary for Subcatchment P-5: Eagle Pass & South Lots

Runoff = 2.09 cfs @ 12.21 hrs, Volume= 0.132 af, Depth= 0.97"
Routed to Pond IN1 : Biofilter Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-Year Rainfall=3.80"

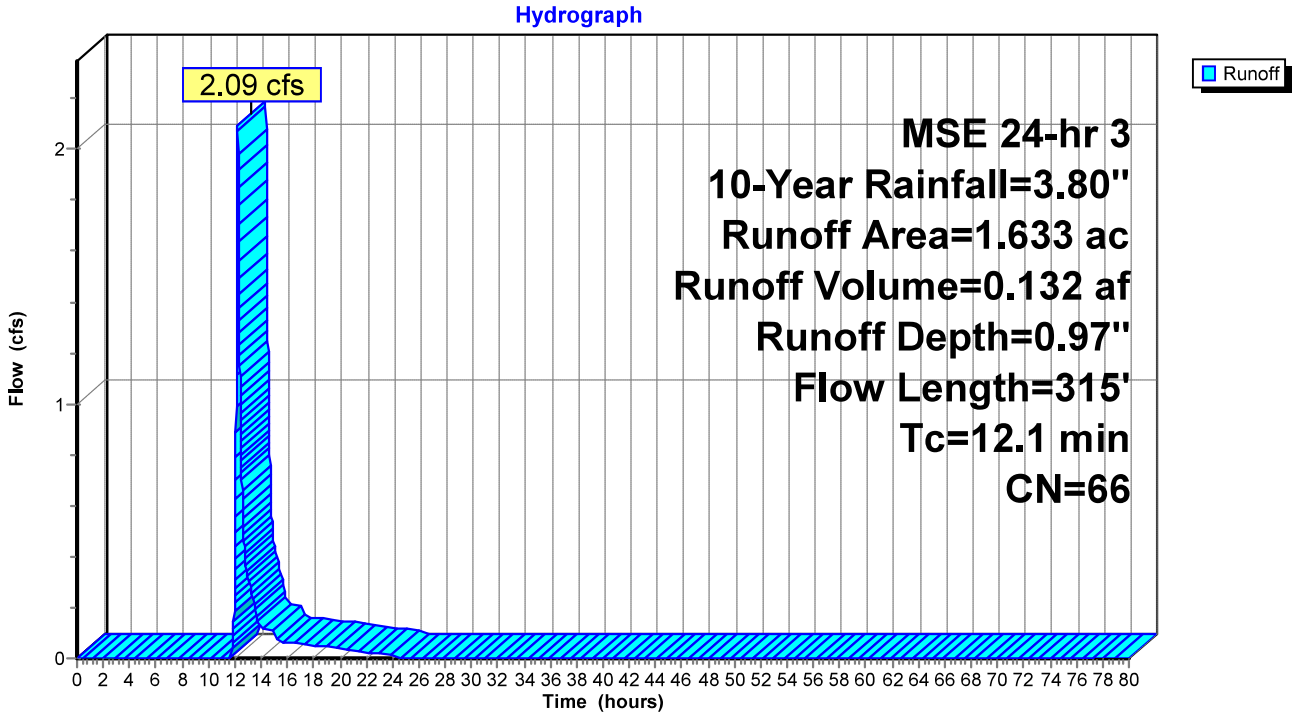
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 0.233 | 98 | Paved roads w/curbs & sewers, HSG B | Roadway |
| 1.400 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 1.633 | 66 | Weighted Average | |
| 1.400 | | 85.73% Pervious Area | |
| 0.233 | | 14.27% Impervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 2.2 | 200 | 0.0200 | 1.49 | | **Sheet Flow, Roads/Sewers/Roofs** Smooth surfaces n= 0.011 P2= 2.84" |
| 9.9 | 115 | 0.0300 | 0.19 | | **Sheet Flow, Eagle Lots** Grass: Short n= 0.150 P2= 2.84" Using McCuen-Spiess flow length |
| 12.1 | 315 | Total | | | |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.400 | Open Space | 144.58 | 1.16 |
| 0.233 | Roadway | 36.09 | 0.29 |
| 1.633 | Total | 180.68 | 1.45 |

## Subcatchment P-5: Eagle Pass & South Lots

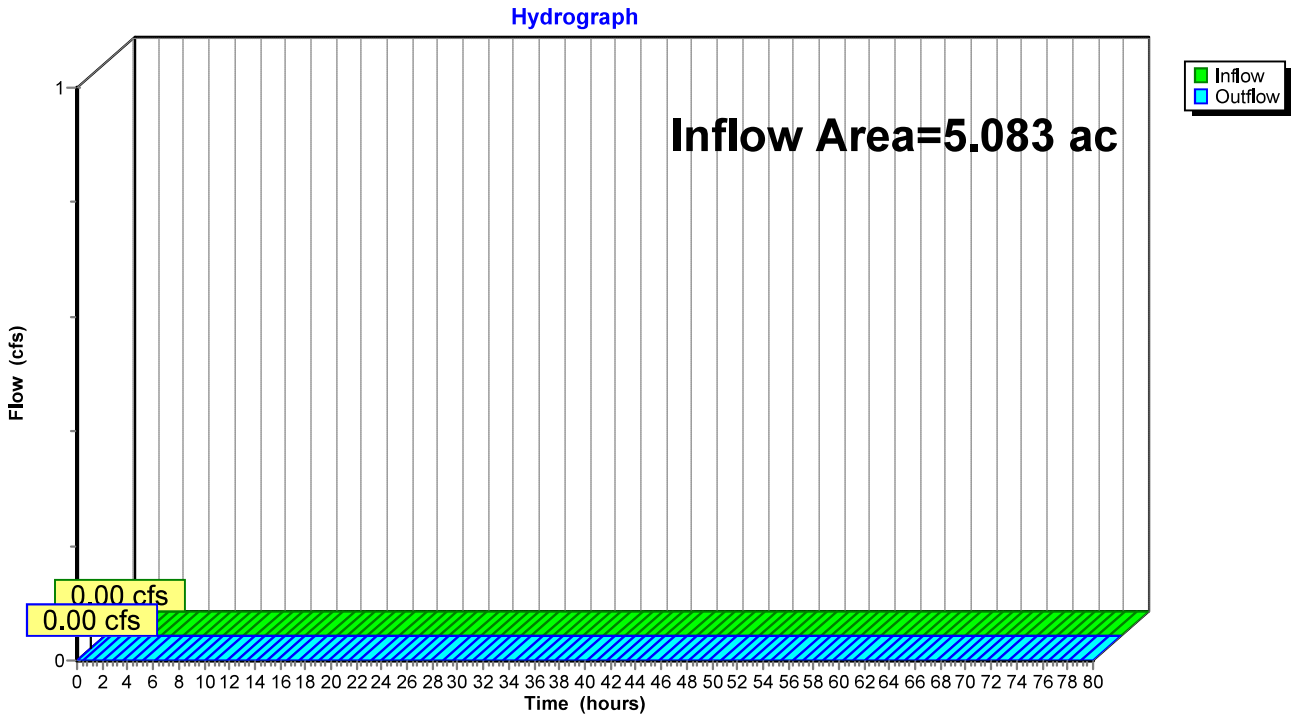


## Summary for Reach 1R: Existing Eagle Storm Sewer

Inflow Area = 5.083 ac, 8.91% Impervious, Inflow Depth = 0.00" for 10-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 Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs

## Reach 1R: Existing Eagle Storm Sewer



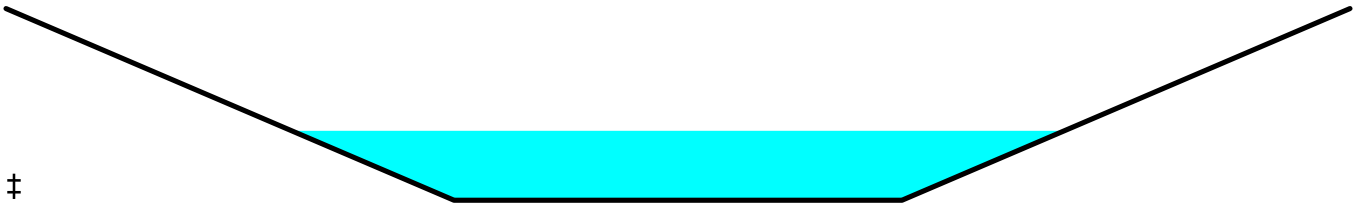
## Summary for Reach 2R: swale

Inflow Area = 3.450 ac, 6.38% Impervious, Inflow Depth = 0.84" for 10-Year event
Inflow = 3.83 cfs @ 12.20 hrs, Volume= 0.240 af
Outflow = 2.83 cfs @ 12.43 hrs, Volume= 0.240 af, Atten= 26%, Lag= 13.8 min
Routed to Pond 5P : Infiltration Basin

Routing by Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.57 fps, Min. Travel Time= 8.1 min
Avg. Velocity = 0.14 fps, Avg. Travel Time= 32.9 min

Peak Storage= 1,382 cf @ 12.29 hrs
Average Depth at Peak Storage= 0.36' , Surface Width= 17.25'
Bank-Full Depth= 1.00' Flow Area= 20.0 sf, Capacity= 20.16 cfs

10.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 280.0' Slope= 0.0179 '/'
Inlet Invert= 959.00', Outlet Invert= 954.00'



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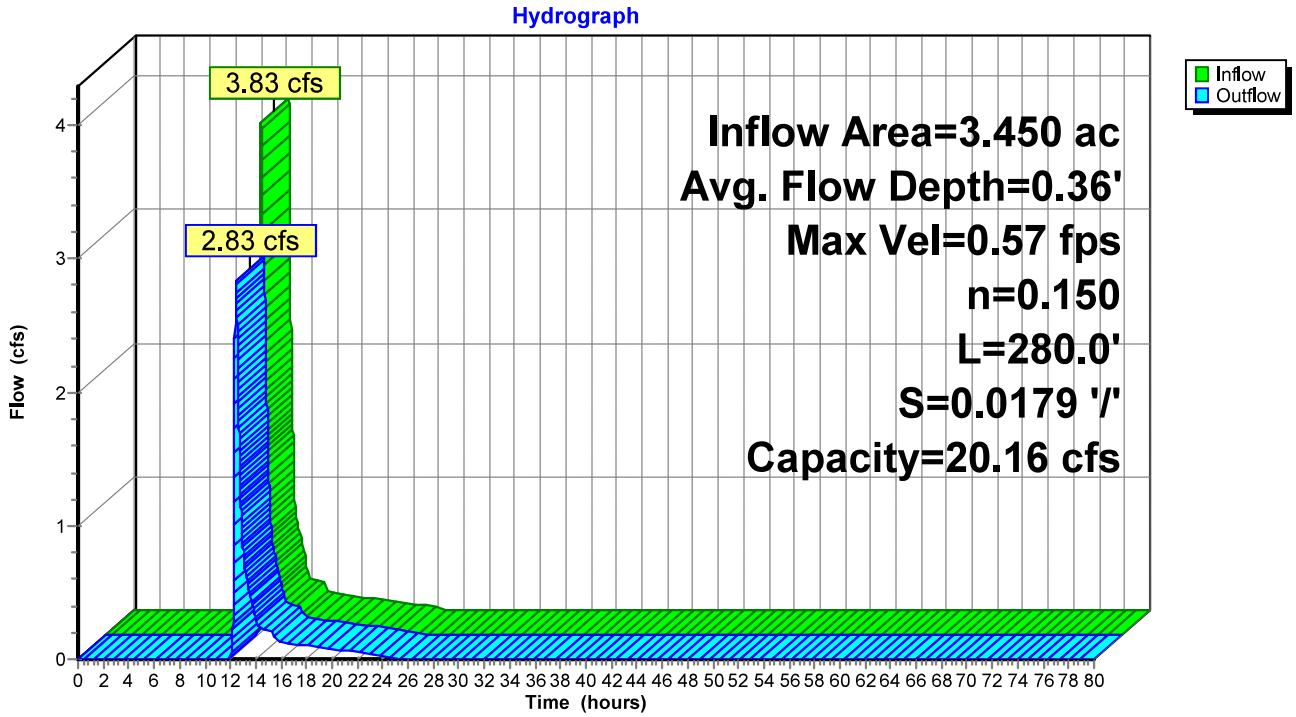


## Stage-Discharge for Reach 2R: swale

| Elevation (feet) | Velocity (ft/sec) | Discharge (cfs) |
|---|---|---|
| 959.00 | 0.00 | 0.00 |
| 959.01 | 0.06 | 0.01 |
| 959.02 | 0.10 | 0.02 |
| 959.03 | 0.13 | 0.04 |
| 959.04 | 0.15 | 0.06 |
| 959.05 | 0.17 | 0.09 |
| 959.06 | 0.20 | 0.12 |
| 959.07 | 0.22 | 0.16 |
| 959.08 | 0.23 | 0.20 |
| 959.09 | 0.25 | 0.25 |
| 959.10 | 0.27 | 0.30 |
| 959.11 | 0.29 | 0.35 |
| 959.12 | 0.30 | 0.40 |
| 959.13 | 0.32 | 0.46 |
| 959.14 | 0.33 | 0.53 |
| 959.15 | 0.34 | 0.59 |
| 959.16 | 0.36 | 0.66 |
| 959.17 | 0.37 | 0.74 |
| 959.18 | 0.38 | 0.81 |
| 959.19 | 0.40 | 0.90 |
| 959.20 | 0.41 | 0.98 |
| 959.21 | 0.42 | 1.07 |
| 959.22 | 0.43 | 1.16 |
| 959.23 | 0.44 | 1.25 |
| 959.24 | 0.45 | 1.35 |
| 959.25 | 0.46 | 1.45 |
| 959.26 | 0.48 | 1.56 |
| 959.27 | 0.49 | 1.67 |
| 959.28 | 0.50 | 1.78 |
| 959.29 | 0.51 | 1.89 |
| 959.30 | 0.52 | 2.01 |
| 959.31 | 0.53 | 2.13 |
| 959.32 | 0.54 | 2.26 |
| 959.33 | 0.54 | 2.39 |
| 959.34 | 0.55 | 2.52 |
| 959.35 | 0.56 | 2.66 |
| 959.36 | 0.57 | 2.80 |
| 959.37 | 0.58 | 2.94 |
| 959.38 | 0.59 | 3.09 |
| 959.39 | 0.60 | 3.24 |
| 959.40 | 0.61 | 3.40 |
| 959.41 | 0.62 | 3.56 |
| 959.42 | 0.62 | 3.72 |
| 959.43 | 0.63 | 3.89 |
| 959.44 | 0.64 | 4.06 |
| 959.45 | 0.65 | 4.23 |
| 959.46 | 0.66 | 4.41 |
| 959.47 | 0.66 | 4.59 |
| 959.48 | 0.67 | 4.77 |
| 959.49 | 0.68 | 4.96 |
| 959.50 | 0.69 | 5.15 |
| 959.51 | 0.69 | 5.35 |
| 959.52 | 0.70 | 5.55 |
| 959.53 | 0.71 | 5.76 |
| 959.54 | 0.72 | 5.96 |
| 959.55 | 0.72 | 6.18 |
| 959.56 | 0.73 | 6.39 |
| 959.57 | 0.74 | 6.61 |
| 959.58 | 0.75 | 6.84 |
| 959.59 | 0.75 | 7.07 |
| 959.60 | 0.76 | 7.30 |
| 959.61 | 0.77 | 7.53 |
| 959.62 | 0.77 | 7.78 |
| 959.63 | 0.78 | 8.02 |
| 959.64 | 0.79 | 8.27 |
| 959.65 | 0.79 | 8.52 |
| 959.66 | 0.80 | 8.78 |
| 959.67 | 0.81 | 9.04 |
| 959.68 | 0.81 | 9.31 |
| 959.69 | 0.82 | 9.58 |
| 959.70 | 0.83 | 9.85 |
| 959.71 | 0.83 | 10.13 |
| 959.72 | 0.84 | 10.41 |
| 959.73 | 0.85 | 10.70 |
| 959.74 | 0.85 | 10.99 |
| 959.75 | 0.86 | 11.29 |
| 959.76 | 0.87 | 11.59 |
| 959.77 | 0.87 | 11.89 |
| 959.78 | 0.88 | 12.20 |
| 959.79 | 0.88 | 12.51 |
| 959.80 | 0.89 | 12.83 |
| 959.81 | 0.90 | 13.15 |
| 959.82 | 0.90 | 13.48 |
| 959.83 | 0.91 | 13.81 |
| 959.84 | 0.92 | 14.15 |
| 959.85 | 0.92 | 14.49 |
| 959.86 | 0.93 | 14.83 |
| 959.87 | 0.93 | 15.18 |
| 959.88 | 0.94 | 15.54 |
| 959.89 | 0.95 | 15.90 |
| 959.90 | 0.95 | 16.26 |
| 959.91 | 0.96 | 16.63 |
| 959.92 | 0.96 | 17.00 |
| 959.93 | 0.97 | 17.38 |
| 959.94 | 0.97 | 17.76 |
| 959.95 | 0.98 | 18.15 |
| 959.96 | 0.99 | 18.54 |
| 959.97 | 0.99 | 18.94 |
| 959.98 | 1.00 | 19.34 |
| 959.99 | 1.00 | 19.75 |
| 960.00 | **1.01** | **20.16** |

## Stage-Area-Storage for Reach 2R: swale

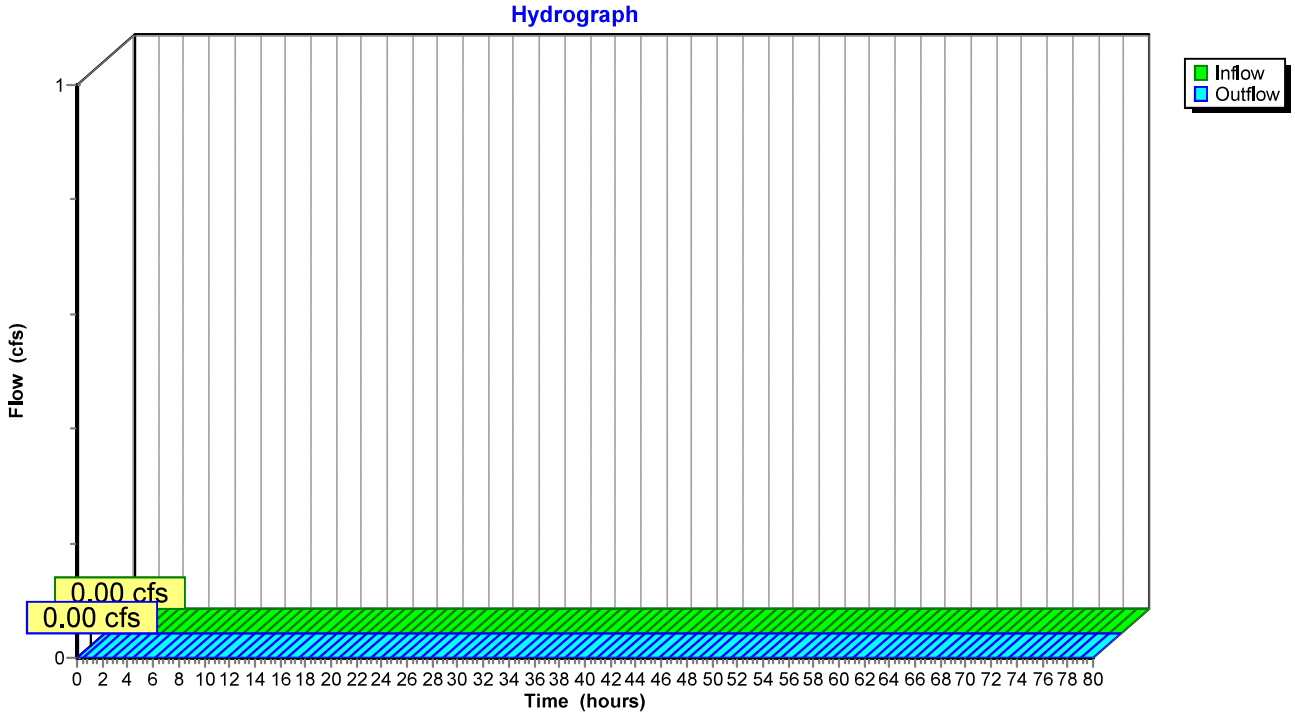
| Elevation (feet) | End-Area (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 959.00 | 0.0 | 0 |
| 959.01 | 0.1 | 28 |
| 959.02 | 0.2 | 57 |
| 959.03 | 0.3 | 87 |
| 959.04 | 0.4 | 116 |
| 959.05 | 0.5 | 147 |
| 959.06 | 0.6 | 178 |
| 959.07 | 0.7 | 210 |
| 959.08 | 0.9 | 242 |
| 959.09 | 1.0 | 275 |
| 959.10 | 1.1 | 308 |
| 959.11 | 1.2 | 342 |
| 959.12 | 1.3 | 376 |
| 959.13 | 1.5 | 411 |
| 959.14 | 1.6 | 447 |
| 959.15 | 1.7 | 483 |
| 959.16 | 1.9 | 520 |
| 959.17 | 2.0 | 557 |
| 959.18 | 2.1 | 595 |
| 959.19 | 2.3 | 633 |
| 959.20 | 2.4 | 672 |
| 959.21 | 2.5 | 711 |
| 959.22 | 2.7 | 752 |
| 959.23 | 2.8 | 792 |
| 959.24 | 3.0 | 833 |
| 959.25 | 3.1 | 875 |
| 959.26 | 3.3 | 917 |
| 959.27 | 3.4 | 960 |
| 959.28 | 3.6 | 1,004 |
| 959.29 | 3.7 | 1,047 |
| 959.30 | 3.9 | 1,092 |
| 959.31 | 4.1 | 1,137 |
| 959.32 | 4.2 | 1,183 |
| 959.33 | 4.4 | 1,229 |
| 959.34 | 4.6 | 1,276 |
| 959.35 | 4.7 | 1,323 |
| 959.36 | 4.9 | 1,371 |
| 959.37 | 5.1 | 1,419 |
| 959.38 | 5.2 | 1,468 |
| 959.39 | 5.4 | 1,518 |
| 959.40 | 5.6 | 1,568 |
| 959.41 | 5.8 | 1,619 |
| 959.42 | 6.0 | 1,670 |
| 959.43 | 6.1 | 1,722 |
| 959.44 | 6.3 | 1,774 |
| 959.45 | 6.5 | 1,827 |
| 959.46 | 6.7 | 1,880 |
| 959.47 | 6.9 | 1,935 |
| 959.48 | 7.1 | 1,989 |
| 959.49 | 7.3 | 2,044 |
| 959.50 | 7.5 | 2,100 |
| 959.51 | 7.7 | 2,156 |
| 959.52 | 7.9 | 2,213 |
| 959.53 | 8.1 | 2,271 |
| 959.54 | 8.3 | 2,328 |
| 959.55 | 8.5 | 2,387 |
| 959.56 | 8.7 | 2,446 |
| 959.57 | 8.9 | 2,506 |
| 959.58 | 9.2 | 2,566 |
| 959.59 | 9.4 | 2,627 |
| 959.60 | 9.6 | 2,688 |
| 959.61 | 9.8 | 2,750 |
| 959.62 | 10.0 | 2,812 |
| 959.63 | 10.3 | 2,875 |
| 959.64 | 10.5 | 2,939 |
| 959.65 | 10.7 | 3,003 |
| 959.66 | 11.0 | 3,068 |
| 959.67 | 11.2 | 3,133 |
| 959.68 | 11.4 | 3,199 |
| 959.69 | 11.7 | 3,265 |
| 959.70 | 11.9 | 3,332 |
| 959.71 | 12.1 | 3,399 |
| 959.72 | 12.4 | 3,468 |
| 959.73 | 12.6 | 3,536 |
| 959.74 | 12.9 | 3,605 |
| 959.75 | 13.1 | 3,675 |
| 959.76 | 13.4 | 3,745 |
| 959.77 | 13.6 | 3,816 |
| 959.78 | 13.9 | 3,888 |
| 959.79 | 14.1 | 3,959 |
| 959.80 | 14.4 | 4,032 |
| 959.81 | 14.7 | 4,105 |
| 959.82 | 14.9 | 4,179 |
| 959.83 | 15.2 | 4,253 |
| 959.84 | 15.5 | 4,328 |
| 959.85 | 15.7 | 4,403 |
| 959.86 | 16.0 | 4,479 |
| 959.87 | 16.3 | 4,555 |
| 959.88 | 16.5 | 4,632 |
| 959.89 | 16.8 | 4,710 |
| 959.90 | 17.1 | 4,788 |
| 959.91 | 17.4 | 4,867 |
| 959.92 | 17.7 | 4,946 |
| 959.93 | 17.9 | 5,026 |
| 959.94 | 18.2 | 5,106 |
| 959.95 | 18.5 | 5,187 |
| 959.96 | 18.8 | 5,268 |
| 959.97 | 19.1 | 5,351 |
| 959.98 | 19.4 | 5,433 |
| 959.99 | 19.7 | 5,516 |
| 960.00 | **20.0** | **5,600** |

## Summary for Reach 6R: Site Discharge

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 Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs

## Reach 6R: Site Discharge



## Summary for Pond 5P: Infiltration Basin

Inflow Area = 5.083 ac, 8.91% Impervious, Inflow Depth = 0.88" for 10-Year event
Inflow = 2.97 cfs @ 12.43 hrs, Volume= 0.372 af
Outflow = 0.37 cfs @ 14.42 hrs, Volume= 0.372 af, Atten= 87%, Lag= 119.4 min
Discarded = 0.37 cfs @ 14.42 hrs, Volume= 0.372 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1R : Existing Eagle Storm Sewer
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 6R : Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Peak Elev= 943.56' @ 14.42 hrs Surf.Area= 9,918 sf Storage= 5,355 cf

Plug-Flow detention time= 158.6 min calculated for 0.372 af (100% of inflow)
Center-of-Mass det. time= 158.6 min ( 1,101.4 - 942.9 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 943.00' | 70,609 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 943.00 | 9,227 | 0 | 0 |
| 944.00 | 10,462 | 9,845 | 9,845 |
| 945.00 | 11,755 | 11,109 | 20,953 |
| 946.00 | 13,106 | 12,431 | 33,384 |
| 947.00 | 14,512 | 13,809 | 47,193 |
| 947.50 | 15,237 | 7,437 | 54,630 |
| 948.00 | 15,976 | 7,803 | 62,433 |
| 948.50 | 16,729 | 8,176 | 70,609 |

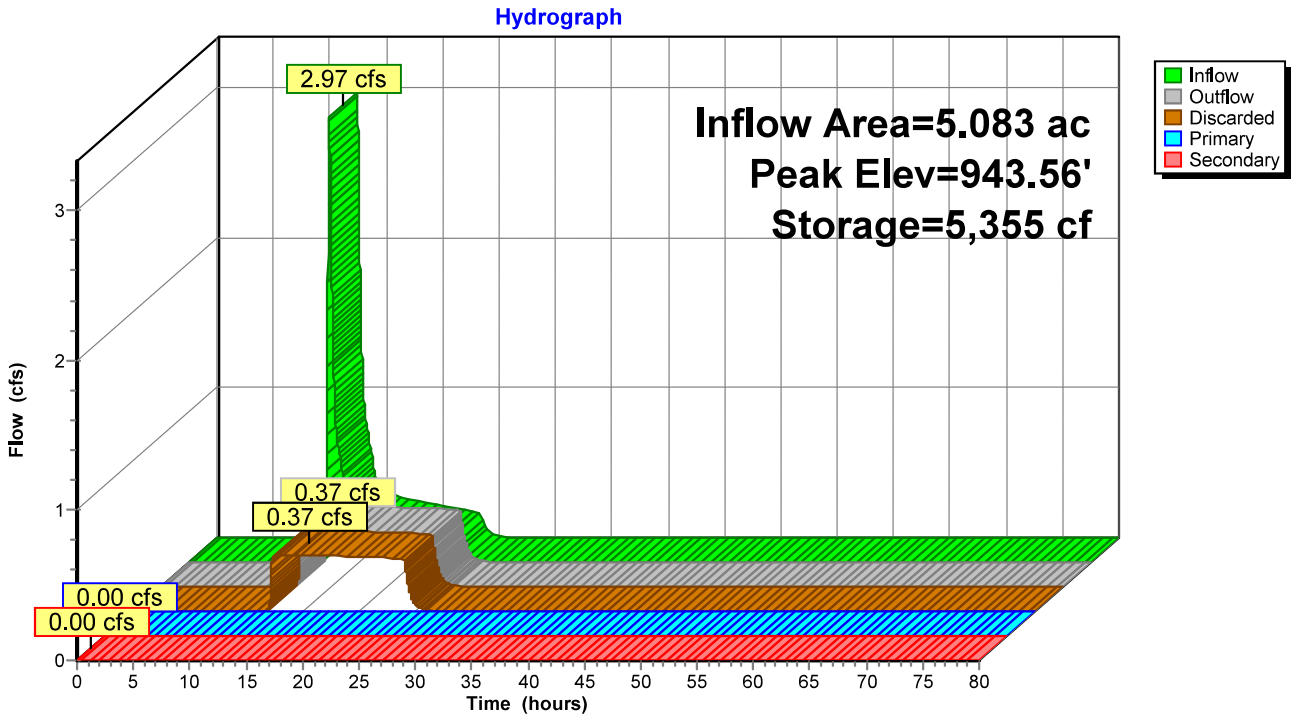
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 947.50' | **26.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2 | Discarded | 943.00' | **1.630 in/hr Exfiltration - Primary over Surface area** |
| #3 | Primary | 946.40' | **12.0" Round Secondary Culvert to Street**<br>L= 54.0' RCP, mitered to conform to fill, Ke= 0.700<br>Inlet / Outlet Invert= 946.40' / 945.50' S= 0.0167 '/' Cc= 0.900<br>n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf |

**Discarded OutFlow** Max=0.37 cfs @ 14.42 hrs HW=943.56' (Free Discharge)
↑—**2=Exfiltration - Primary** (Exfiltration Controls 0.37 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=943.00' (Free Discharge)
↑—**3=Secondary Culvert to Street** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=943.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond 5P: Infiltration Basin



## Stage-Discharge for Pond 5P: Infiltration Basin

| Elevation (feet) | Discharge (cfs) | Discarded (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|
| 943.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 943.20 | 0.36 | 0.36 | 0.00 | 0.00 |
| 943.40 | 0.37 | 0.37 | 0.00 | 0.00 |
| 943.60 | 0.38 | 0.38 | 0.00 | 0.00 |
| 943.80 | 0.39 | 0.39 | 0.00 | 0.00 |
| 944.00 | 0.39 | 0.39 | 0.00 | 0.00 |
| 944.20 | 0.40 | 0.40 | 0.00 | 0.00 |
| 944.40 | 0.41 | 0.41 | 0.00 | 0.00 |
| 944.60 | 0.42 | 0.42 | 0.00 | 0.00 |
| 944.80 | 0.43 | 0.43 | 0.00 | 0.00 |
| 945.00 | 0.44 | 0.44 | 0.00 | 0.00 |
| 945.20 | 0.45 | 0.45 | 0.00 | 0.00 |
| 945.40 | 0.46 | 0.46 | 0.00 | 0.00 |
| 945.60 | 0.47 | 0.47 | 0.00 | 0.00 |
| 945.80 | 0.48 | 0.48 | 0.00 | 0.00 |
| 946.00 | 0.49 | 0.49 | 0.00 | 0.00 |
| 946.20 | 0.51 | 0.51 | 0.00 | 0.00 |
| 946.40 | 0.52 | 0.52 | 0.00 | 0.00 |
| 946.60 | 0.68 | 0.53 | 0.15 | 0.00 |
| 946.80 | 1.09 | 0.54 | 0.56 | 0.00 |
| 947.00 | 1.69 | 0.55 | 1.14 | 0.00 |
| 947.20 | 2.37 | 0.56 | 1.81 | 0.00 |
| 947.40 | 2.93 | 0.57 | 2.36 | 0.00 |
| 947.60 | 5.42 | 0.58 | 2.79 | 2.05 |
| 947.80 | 14.54 | 0.59 | 3.17 | 10.79 |
| 948.00 | 28.28 | 0.60 | 3.50 | 24.18 |
| 948.20 | 45.46 | 0.61 | 3.80 | 41.04 |
| 948.40 | **64.32** | **0.63** | **4.09** | **59.60** |

## Stage-Area-Storage for Pond 5P: Infiltration Basin

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 943.00 | 9,227 | 0 |
| 943.10 | 9,351 | 929 |
| 943.20 | 9,474 | 1,870 |
| 943.30 | 9,597 | 2,824 |
| 943.40 | 9,721 | 3,790 |
| 943.50 | 9,845 | 4,768 |
| 943.60 | 9,968 | 5,759 |
| 943.70 | 10,092 | 6,761 |
| 943.80 | 10,215 | 7,777 |
| 943.90 | 10,338 | 8,804 |
| 944.00 | 10,462 | 9,845 |
| 944.10 | 10,591 | 10,897 |
| 944.20 | 10,721 | 11,963 |
| 944.30 | 10,850 | 13,041 |
| 944.40 | 10,979 | 14,133 |
| 944.50 | 11,109 | 15,237 |
| 944.60 | 11,238 | 16,354 |
| 944.70 | 11,367 | 17,485 |
| 944.80 | 11,496 | 18,628 |
| 944.90 | 11,626 | 19,784 |
| 945.00 | 11,755 | 20,953 |
| 945.10 | 11,890 | 22,135 |
| 945.20 | 12,025 | 23,331 |
| 945.30 | 12,160 | 24,540 |
| 945.40 | 12,295 | 25,763 |
| 945.50 | 12,431 | 26,999 |
| 945.60 | 12,566 | 28,249 |
| 945.70 | 12,701 | 29,512 |
| 945.80 | 12,836 | 30,789 |
| 945.90 | 12,971 | 32,080 |
| 946.00 | 13,106 | 33,384 |
| 946.10 | 13,247 | 34,701 |
| 946.20 | 13,387 | 36,033 |
| 946.30 | 13,528 | 37,379 |
| 946.40 | 13,668 | 38,738 |
| 946.50 | 13,809 | 40,112 |
| 946.60 | 13,950 | 41,500 |
| 946.70 | 14,090 | 42,902 |
| 946.80 | 14,231 | 44,318 |
| 946.90 | 14,371 | 45,748 |
| 947.00 | 14,512 | 47,193 |
| 947.10 | 14,657 | 48,651 |
| 947.20 | 14,802 | 50,124 |
| 947.30 | 14,947 | 51,611 |
| 947.40 | 15,092 | 53,113 |
| 947.50 | 15,237 | 54,630 |
| 947.60 | 15,385 | 56,161 |
| 947.70 | 15,533 | 57,707 |
| 947.80 | 15,680 | 59,267 |
| 947.90 | 15,828 | 60,843 |
| 948.00 | 15,976 | 62,433 |
| 948.10 | 16,127 | 64,038 |
| 948.20 | 16,277 | 65,658 |
| 948.30 | 16,428 | 67,294 |
| 948.40 | 16,578 | 68,944 |
| 948.50 | **16,729** | **70,609** |

## Summary for Pond IN1: Biofilter Forebay

Inflow Area = 1.633 ac, 14.27% Impervious, Inflow Depth = 0.97" for 10-Year event
Inflow = 2.09 cfs @ 12.21 hrs, Volume= 0.132 af
Outflow = 0.14 cfs @ 13.72 hrs, Volume= 0.132 af, Atten= 93%, Lag= 90.6 min
Primary = 0.14 cfs @ 13.72 hrs, Volume= 0.132 af
Routed to Pond 5P : Infiltration Basin
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Pond 5P : Infiltration Basin

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Peak Elev= 947.84' @ 13.72 hrs Surf.Area= 3,724 sf Storage= 2,975 cf

Plug-Flow detention time= 222.4 min calculated for 0.132 af (100% of inflow)
Center-of-Mass det. time= 222.4 min ( 1,067.4 - 845.0 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 947.00' | 14,802 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

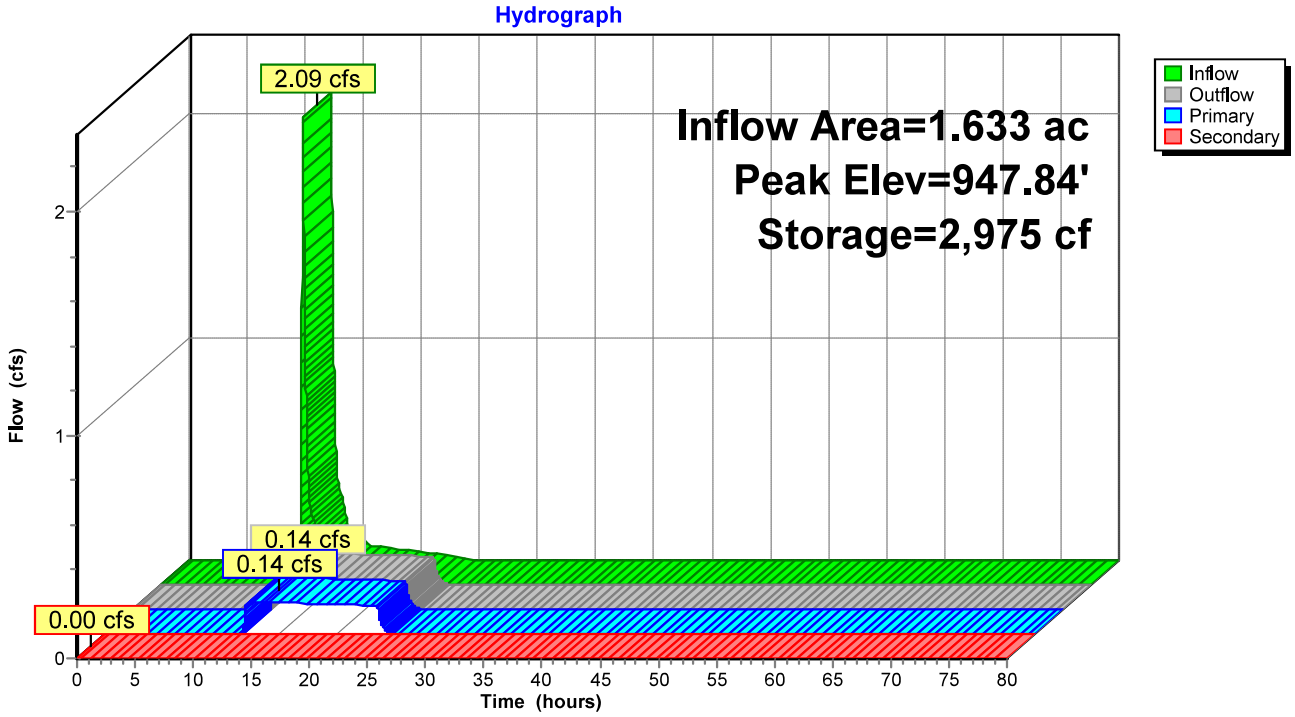
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 947.00 | 3,348 | 0 | 0 |
| 948.00 | 3,795 | 3,572 | 3,572 |
| 949.00 | 4,266 | 4,031 | 7,602 |
| 949.50 | 4,636 | 2,226 | 9,828 |
| 950.00 | 5,020 | 2,414 | 12,242 |
| 950.50 | 5,220 | 2,560 | 14,802 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 949.00' | **23.0' long x 14.8' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.67 2.69 2.70 2.64 2.63 2.64 2.64 2.63 |
| #2 | Primary | 947.00' | **1.630 in/hr Exfiltration over Surface area** |

**Primary OutFlow** Max=0.14 cfs @ 13.72 hrs HW=947.84' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.14 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=947.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond IN1: Biofilter Forebay



## Stage-Discharge for Pond IN1: Biofilter Forebay

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 947.00 | 0.00 | 0.00 | 0.00 |
| 947.05 | 0.13 | 0.13 | 0.00 |
| 947.10 | 0.13 | 0.13 | 0.00 |
| 947.15 | 0.13 | 0.13 | 0.00 |
| 947.20 | 0.13 | 0.13 | 0.00 |
| 947.25 | 0.13 | 0.13 | 0.00 |
| 947.30 | 0.13 | 0.13 | 0.00 |
| 947.35 | 0.13 | 0.13 | 0.00 |
| 947.40 | 0.13 | 0.13 | 0.00 |
| 947.45 | 0.13 | 0.13 | 0.00 |
| 947.50 | 0.13 | 0.13 | 0.00 |
| 947.55 | 0.14 | 0.14 | 0.00 |
| 947.60 | 0.14 | 0.14 | 0.00 |
| 947.65 | 0.14 | 0.14 | 0.00 |
| 947.70 | 0.14 | 0.14 | 0.00 |
| 947.75 | 0.14 | 0.14 | 0.00 |
| 947.80 | 0.14 | 0.14 | 0.00 |
| 947.85 | 0.14 | 0.14 | 0.00 |
| 947.90 | 0.14 | 0.14 | 0.00 |
| 947.95 | 0.14 | 0.14 | 0.00 |
| 948.00 | 0.14 | 0.14 | 0.00 |
| 948.05 | 0.14 | 0.14 | 0.00 |
| 948.10 | 0.14 | 0.14 | 0.00 |
| 948.15 | 0.15 | 0.15 | 0.00 |
| 948.20 | 0.15 | 0.15 | 0.00 |
| 948.25 | 0.15 | 0.15 | 0.00 |
| 948.30 | 0.15 | 0.15 | 0.00 |
| 948.35 | 0.15 | 0.15 | 0.00 |
| 948.40 | 0.15 | 0.15 | 0.00 |
| 948.45 | 0.15 | 0.15 | 0.00 |
| 948.50 | 0.15 | 0.15 | 0.00 |
| 948.55 | 0.15 | 0.15 | 0.00 |
| 948.60 | 0.15 | 0.15 | 0.00 |
| 948.65 | 0.15 | 0.15 | 0.00 |
| 948.70 | 0.16 | 0.16 | 0.00 |
| 948.75 | 0.16 | 0.16 | 0.00 |
| 948.80 | 0.16 | 0.16 | 0.00 |
| 948.85 | 0.16 | 0.16 | 0.00 |
| 948.90 | 0.16 | 0.16 | 0.00 |
| 948.95 | 0.16 | 0.16 | 0.00 |
| 949.00 | 0.16 | 0.16 | 0.00 |
| 949.05 | 0.85 | 0.16 | 0.69 |
| 949.10 | 2.11 | 0.16 | 1.94 |
| 949.15 | 3.73 | 0.17 | 3.57 |
| 949.20 | 5.66 | 0.17 | 5.49 |
| 949.25 | 7.86 | 0.17 | 7.69 |
| 949.30 | 10.30 | 0.17 | 10.13 |
| 949.35 | 12.96 | 0.17 | 12.79 |
| 949.40 | 15.82 | 0.17 | 15.65 |
| 949.45 | 18.87 | 0.17 | 18.69 |
| 949.50 | 22.09 | 0.17 | 21.92 |
| 949.55 | 25.48 | 0.18 | 25.31 |
| 949.60 | 29.04 | 0.18 | 28.86 |
| 949.65 | 32.54 | 0.18 | 32.36 |
| 949.70 | 36.15 | 0.18 | 35.97 |
| 949.75 | 39.85 | 0.18 | 39.66 |
| 949.80 | 43.63 | 0.18 | 43.45 |
| 949.85 | 47.72 | 0.19 | 47.54 |
| 949.90 | 51.93 | 0.19 | 51.75 |
| 949.95 | 56.25 | 0.19 | 56.06 |
| 950.00 | 60.68 | 0.19 | 60.49 |
| 950.05 | 65.34 | 0.19 | 65.14 |
| 950.10 | 70.11 | 0.19 | 69.92 |
| 950.15 | 75.00 | 0.19 | 74.81 |
| 950.20 | 80.01 | 0.19 | 79.82 |
| 950.25 | 85.05 | 0.19 | 84.86 |
| 950.30 | 90.19 | 0.19 | 90.00 |
| 950.35 | 95.44 | 0.19 | 95.24 |
| 950.40 | 100.78 | 0.20 | 100.58 |
| 950.45 | 106.11 | 0.20 | 105.92 |
| 950.50 | **111.54** | **0.20** | **111.34** |

## Stage-Area-Storage for Pond IN1: Biofilter Forebay

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 947.00 | 3,348 | 0 |
| 947.05 | 3,370 | 168 |
| 947.10 | 3,393 | 337 |
| 947.15 | 3,415 | 507 |
| 947.20 | 3,437 | 679 |
| 947.25 | 3,460 | 851 |
| 947.30 | 3,482 | 1,025 |
| 947.35 | 3,504 | 1,199 |
| 947.40 | 3,527 | 1,375 |
| 947.45 | 3,549 | 1,552 |
| 947.50 | 3,572 | 1,730 |
| 947.55 | 3,594 | 1,909 |
| 947.60 | 3,616 | 2,089 |
| 947.65 | 3,639 | 2,271 |
| 947.70 | 3,661 | 2,453 |
| 947.75 | 3,683 | 2,637 |
| 947.80 | 3,706 | 2,821 |
| 947.85 | 3,728 | 3,007 |
| 947.90 | 3,750 | 3,194 |
| 947.95 | 3,773 | 3,382 |
| 948.00 | 3,795 | 3,572 |
| 948.05 | 3,819 | 3,762 |
| 948.10 | 3,842 | 3,953 |
| 948.15 | 3,866 | 4,146 |
| 948.20 | 3,889 | 4,340 |
| 948.25 | 3,913 | 4,535 |
| 948.30 | 3,936 | 4,731 |
| 948.35 | 3,960 | 4,929 |
| 948.40 | 3,983 | 5,127 |
| 948.45 | 4,007 | 5,327 |
| 948.50 | 4,031 | 5,528 |
| 948.55 | 4,054 | 5,730 |
| 948.60 | 4,078 | 5,933 |
| 948.65 | 4,101 | 6,138 |
| 948.70 | 4,125 | 6,343 |
| 948.75 | 4,148 | 6,550 |
| 948.80 | 4,172 | 6,758 |
| 948.85 | 4,195 | 6,967 |
| 948.90 | 4,219 | 7,178 |
| 948.95 | 4,242 | 7,389 |
| 949.00 | 4,266 | 7,602 |
| 949.05 | 4,303 | 7,816 |
| 949.10 | 4,340 | 8,032 |
| 949.15 | 4,377 | 8,250 |
| 949.20 | 4,414 | 8,470 |
| 949.25 | 4,451 | 8,692 |
| 949.30 | 4,488 | 8,915 |
| 949.35 | 4,525 | 9,140 |
| 949.40 | 4,562 | 9,368 |
| 949.45 | 4,599 | 9,597 |
| 949.50 | 4,636 | 9,828 |
| 949.55 | 4,674 | 10,060 |
| 949.60 | 4,713 | 10,295 |
| 949.65 | 4,751 | 10,532 |
| 949.70 | 4,790 | 10,770 |
| 949.75 | 4,828 | 11,011 |
| 949.80 | 4,866 | 11,253 |
| 949.85 | 4,905 | 11,497 |
| 949.90 | 4,943 | 11,743 |
| 949.95 | 4,982 | 11,991 |
| 950.00 | 5,020 | 12,242 |
| 950.05 | 5,040 | 12,493 |
| 950.10 | 5,060 | 12,746 |
| 950.15 | 5,080 | 12,999 |
| 950.20 | 5,100 | 13,254 |
| 950.25 | 5,120 | 13,509 |
| 950.30 | 5,140 | 13,765 |
| 950.35 | 5,160 | 14,023 |
| 950.40 | 5,180 | 14,281 |
| 950.45 | 5,200 | 14,541 |
| 950.50 | **5,220** | **14,802** |

Time span=0.00-80.00 hrs, dt=0.01 hrs, 8001 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 3S: Residential Areas** Runoff Area=1.800 ac 0.00% Impervious Runoff Depth=2.11"
Flow Length=115' Slope=0.0300 '/' Tc=9.9 min CN=61 Runoff=5.86 cfs 0.317 af

**Subcatchment P-1: Badger Drive & North** Runoff Area=1.650 ac 13.33% Impervious Runoff Depth=2.56"
Flow Length=194' Tc=11.6 min CN=66 Runoff=6.11 cfs 0.352 af

**Subcatchment P-5: Eagle Pass & South** Runoff Area=1.633 ac 14.27% Impervious Runoff Depth=2.56"
Flow Length=315' Tc=12.1 min CN=66 Runoff=5.97 cfs 0.348 af

**Reach 1R: Existing Eagle Storm Sewer** Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

**Reach 2R: swale** Avg. Flow Depth=0.71' Max Vel=0.83 fps Inflow=11.90 cfs 0.669 af
n=0.150 L=280.0' S=0.0179 '/' Capacity=20.16 cfs Outflow=10.04 cfs 0.669 af

**Reach 6R: Site Discharge** Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

**Pond 5P: Infiltration Basin** Peak Elev=945.16' Storage=22,848 cf Inflow=10.19 cfs 1.017 af
Discarded=0.45 cfs 1.017 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.45 cfs 1.017 af

**Pond IN1: Biofilter Forebay** Peak Elev=949.06' Storage=7,846 cf Inflow=5.97 cfs 0.348 af
Primary=0.16 cfs 0.286 af Secondary=0.86 cfs 0.062 af Outflow=1.02 cfs 0.348 af

**Total Runoff Area = 5.083 ac Runoff Volume = 1.017 af Average Runoff Depth = 2.40"**
**91.09% Pervious = 4.630 ac 8.91% Impervious = 0.453 ac**

## Summary for Subcatchment 3S: Residential Areas

Runoff = 5.86 cfs @ 12.18 hrs, Volume= 0.317 af, Depth= 2.11"
Routed to Reach 2R : swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.16"

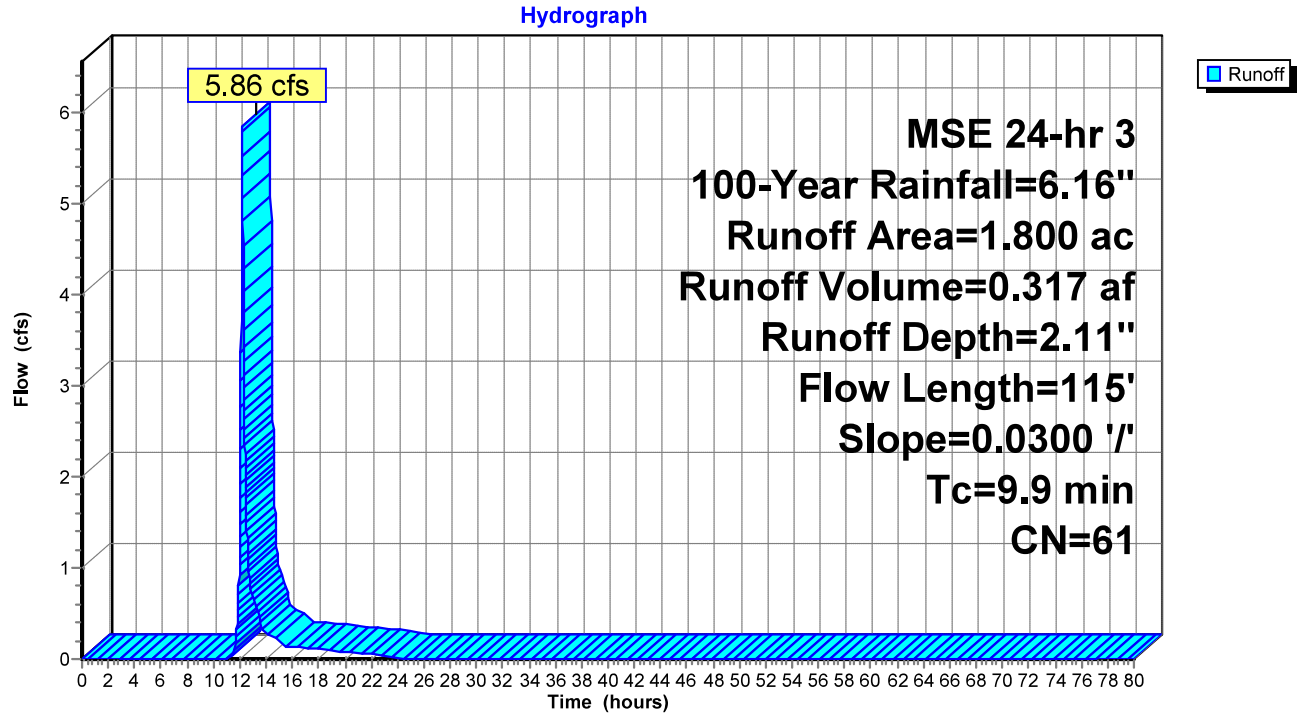
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 1.800 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 1.800 | | 100.00% Pervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 9.9 | 115 | 0.0300 | 0.19 | | **Sheet Flow, Uncaptured By Swale**<br>Grass: Short n= 0.150 P2= 2.84"<br>Using McCuen-Spiess flow length |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.800 | Open Space | 185.89 | 1.49 |
| 1.800 | Total | 185.89 | 1.49 |

## Subcatchment 3S: Residential Areas



## Summary for Subcatchment P-1: Badger Drive & North Lots

Runoff = 6.11 cfs @ 12.20 hrs, Volume= 0.352 af, Depth= 2.56"
Routed to Reach 2R : swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.16"

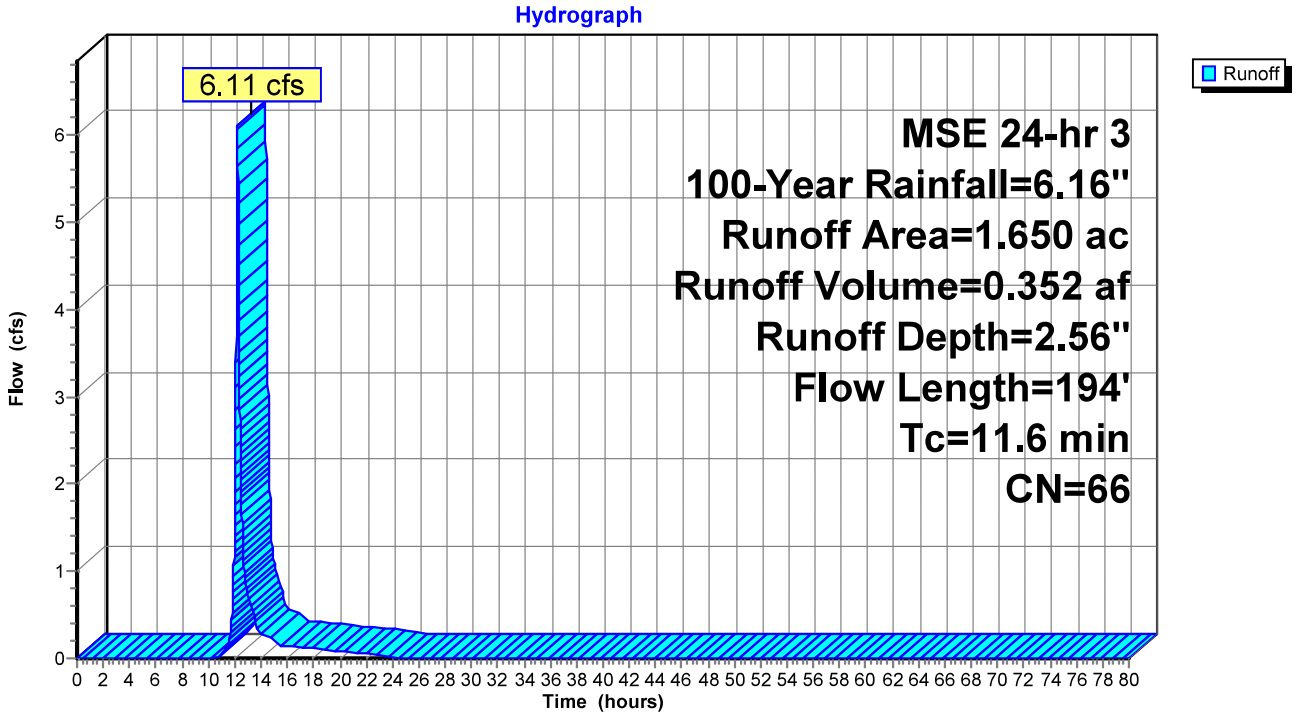
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 1.430 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 0.220 | 98 | Paved roads w/curbs & sewers, HSG B | Roadway |
| 1.650 | 66 | Weighted Average | |
| 1.430 | | 86.67% Pervious Area | |
| 0.220 | | 13.33% Impervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 9.9 | 94 | 0.0200 | 0.16 | | **Sheet Flow, Pretreated Flow to Basin**<br>Grass: Short n= 0.150 P2= 2.84"<br>Using McCuen-Spiess flow length |
| 1.7 | 100 | 0.0100 | 0.98 | | **Sheet Flow, Badger Dr**<br>Smooth surfaces n= 0.011 P2= 2.84" |
| 11.6 | 194 | Total | | | |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.430 | Open Space | 147.68 | 1.18 |
| 0.220 | Roadway | 34.08 | 0.27 |
| 1.650 | Total | 181.76 | 1.45 |

## Subcatchment P-1: Badger Drive & North Lots



## Summary for Subcatchment P-5: Eagle Pass & South Lots

Runoff = 5.97 cfs @ 12.20 hrs, Volume= 0.348 af, Depth= 2.56"
Routed to Pond IN1 : Biofilter Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-Year Rainfall=6.16"

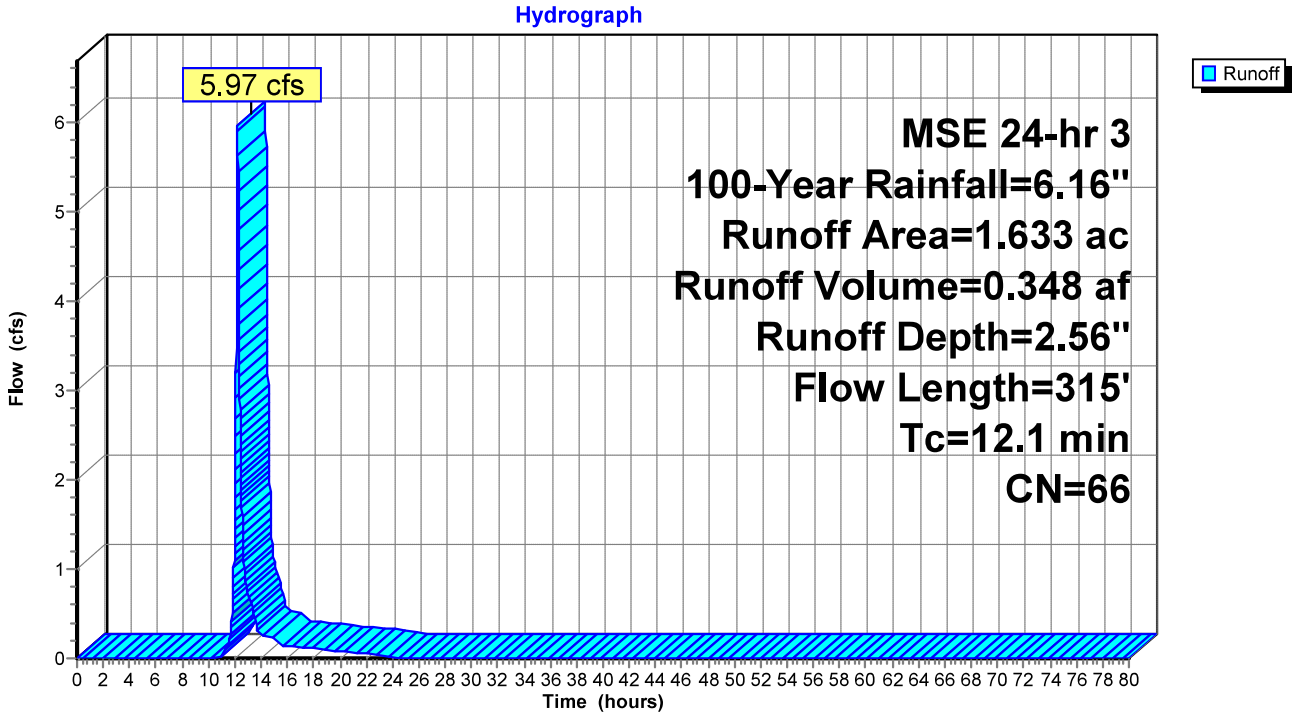
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 0.233 | 98 | Paved roads w/curbs & sewers, HSG B | Roadway |
| 1.400 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 1.633 | 66 | Weighted Average | |
| 1.400 | | 85.73% Pervious Area | |
| 0.233 | | 14.27% Impervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 2.2 | 200 | 0.0200 | 1.49 | | **Sheet Flow, Roads/Sewers/Roofs** Smooth surfaces n= 0.011 P2= 2.84" |
| 9.9 | 115 | 0.0300 | 0.19 | | **Sheet Flow, Eagle Lots** Grass: Short n= 0.150 P2= 2.84" Using McCuen-Spiess flow length |
| 12.1 | 315 | Total | | | |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.400 | Open Space | 144.58 | 1.16 |
| 0.233 | Roadway | 36.09 | 0.29 |
| 1.633 | Total | 180.68 | 1.45 |

## Subcatchment P-5: Eagle Pass & South Lots

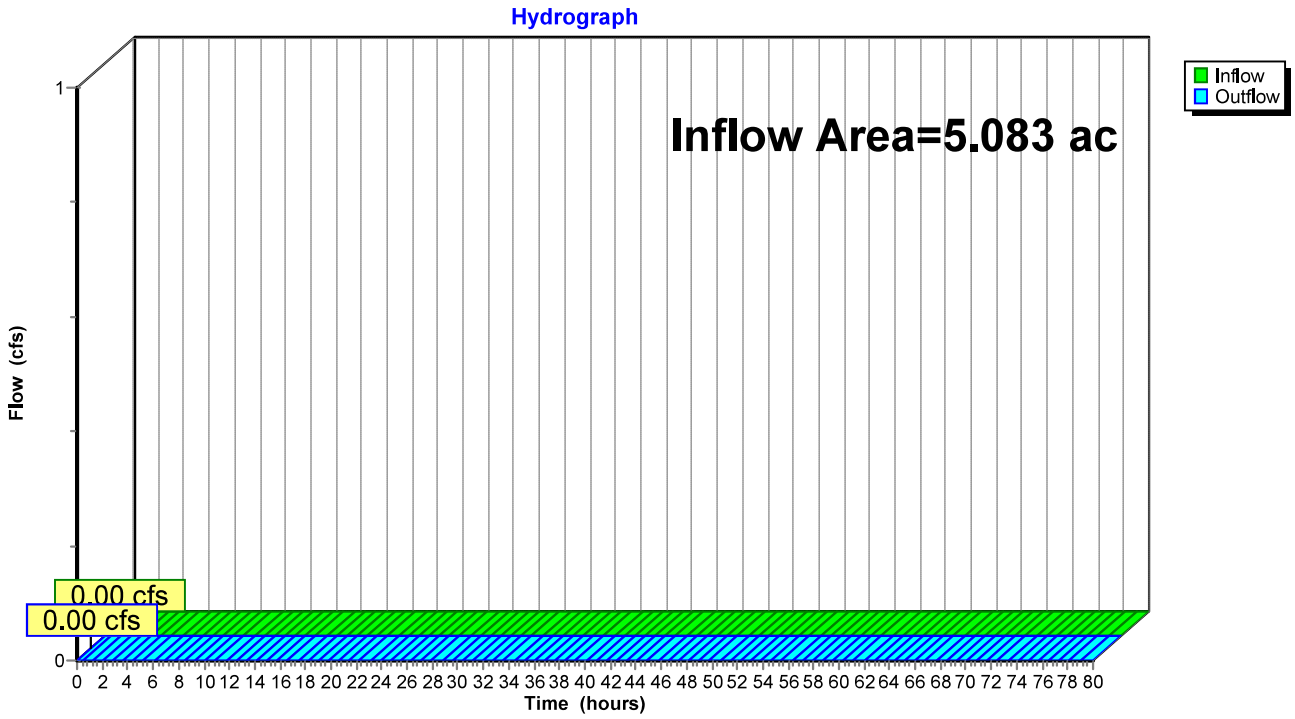


## Summary for Reach 1R: Existing Eagle Storm Sewer

Inflow Area = 5.083 ac, 8.91% Impervious, Inflow Depth = 0.00" for 100-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 Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs

## Reach 1R: Existing Eagle Storm Sewer



## Summary for Reach 2R: swale

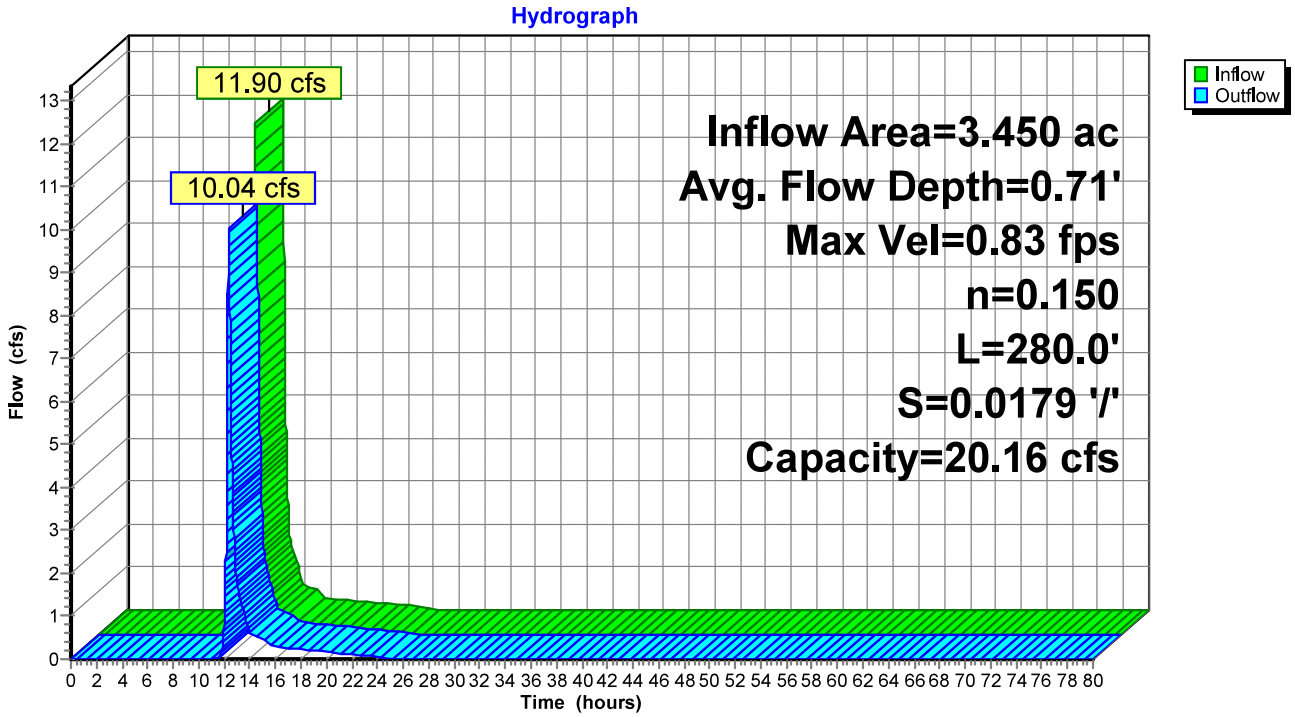
Inflow Area = 3.450 ac, 6.38% Impervious, Inflow Depth = 2.33" for 100-Year event
Inflow = 11.90 cfs @ 12.19 hrs, Volume= 0.669 af
Outflow = 10.04 cfs @ 12.34 hrs, Volume= 0.669 af, Atten= 16%, Lag= 9.3 min
Routed to Pond 5P : Infiltration Basin

Routing by Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.83 fps, Min. Travel Time= 5.6 min
Avg. Velocity = 0.18 fps, Avg. Travel Time= 25.6 min

Peak Storage= 3,379 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.71' , Surface Width= 24.14'
Bank-Full Depth= 1.00' Flow Area= 20.0 sf, Capacity= 20.16 cfs

10.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 280.0' Slope= 0.0179 '/'
Inlet Invert= 959.00', Outlet Invert= 954.00'

‡



## Stage-Discharge for Reach 2R: swale

| Elevation (feet) | Velocity (ft/sec) | Discharge (cfs) |
|---|---|---|
| 959.00 | 0.00 | 0.00 |
| 959.01 | 0.06 | 0.01 |
| 959.02 | 0.10 | 0.02 |
| 959.03 | 0.13 | 0.04 |
| 959.04 | 0.15 | 0.06 |
| 959.05 | 0.17 | 0.09 |
| 959.06 | 0.20 | 0.12 |
| 959.07 | 0.22 | 0.16 |
| 959.08 | 0.23 | 0.20 |
| 959.09 | 0.25 | 0.25 |
| 959.10 | 0.27 | 0.30 |
| 959.11 | 0.29 | 0.35 |
| 959.12 | 0.30 | 0.40 |
| 959.13 | 0.32 | 0.46 |
| 959.14 | 0.33 | 0.53 |
| 959.15 | 0.34 | 0.59 |
| 959.16 | 0.36 | 0.66 |
| 959.17 | 0.37 | 0.74 |
| 959.18 | 0.38 | 0.81 |
| 959.19 | 0.40 | 0.90 |
| 959.20 | 0.41 | 0.98 |
| 959.21 | 0.42 | 1.07 |
| 959.22 | 0.43 | 1.16 |
| 959.23 | 0.44 | 1.25 |
| 959.24 | 0.45 | 1.35 |
| 959.25 | 0.46 | 1.45 |
| 959.26 | 0.48 | 1.56 |
| 959.27 | 0.49 | 1.67 |
| 959.28 | 0.50 | 1.78 |
| 959.29 | 0.51 | 1.89 |
| 959.30 | 0.52 | 2.01 |
| 959.31 | 0.53 | 2.13 |
| 959.32 | 0.54 | 2.26 |
| 959.33 | 0.54 | 2.39 |
| 959.34 | 0.55 | 2.52 |
| 959.35 | 0.56 | 2.66 |
| 959.36 | 0.57 | 2.80 |
| 959.37 | 0.58 | 2.94 |
| 959.38 | 0.59 | 3.09 |
| 959.39 | 0.60 | 3.24 |
| 959.40 | 0.61 | 3.40 |
| 959.41 | 0.62 | 3.56 |
| 959.42 | 0.62 | 3.72 |
| 959.43 | 0.63 | 3.89 |
| 959.44 | 0.64 | 4.06 |
| 959.45 | 0.65 | 4.23 |
| 959.46 | 0.66 | 4.41 |
| 959.47 | 0.66 | 4.59 |
| 959.48 | 0.67 | 4.77 |
| 959.49 | 0.68 | 4.96 |
| 959.50 | 0.69 | 5.15 |
| 959.51 | 0.69 | 5.35 |
| 959.52 | 0.70 | 5.55 |
| 959.53 | 0.71 | 5.76 |
| 959.54 | 0.72 | 5.96 |
| 959.55 | 0.72 | 6.18 |
| 959.56 | 0.73 | 6.39 |
| 959.57 | 0.74 | 6.61 |
| 959.58 | 0.75 | 6.84 |
| 959.59 | 0.75 | 7.07 |
| 959.60 | 0.76 | 7.30 |
| 959.61 | 0.77 | 7.53 |
| 959.62 | 0.77 | 7.78 |
| 959.63 | 0.78 | 8.02 |
| 959.64 | 0.79 | 8.27 |
| 959.65 | 0.79 | 8.52 |
| 959.66 | 0.80 | 8.78 |
| 959.67 | 0.81 | 9.04 |
| 959.68 | 0.81 | 9.31 |
| 959.69 | 0.82 | 9.58 |
| 959.70 | 0.83 | 9.85 |
| 959.71 | 0.83 | 10.13 |
| 959.72 | 0.84 | 10.41 |
| 959.73 | 0.85 | 10.70 |
| 959.74 | 0.85 | 10.99 |
| 959.75 | 0.86 | 11.29 |
| 959.76 | 0.87 | 11.59 |
| 959.77 | 0.87 | 11.89 |
| 959.78 | 0.88 | 12.20 |
| 959.79 | 0.88 | 12.51 |
| 959.80 | 0.89 | 12.83 |
| 959.81 | 0.90 | 13.15 |
| 959.82 | 0.90 | 13.48 |
| 959.83 | 0.91 | 13.81 |
| 959.84 | 0.92 | 14.15 |
| 959.85 | 0.92 | 14.49 |
| 959.86 | 0.93 | 14.83 |
| 959.87 | 0.93 | 15.18 |
| 959.88 | 0.94 | 15.54 |
| 959.89 | 0.95 | 15.90 |
| 959.90 | 0.95 | 16.26 |
| 959.91 | 0.96 | 16.63 |
| 959.92 | 0.96 | 17.00 |
| 959.93 | 0.97 | 17.38 |
| 959.94 | 0.97 | 17.76 |
| 959.95 | 0.98 | 18.15 |
| 959.96 | 0.99 | 18.54 |
| 959.97 | 0.99 | 18.94 |
| 959.98 | 1.00 | 19.34 |
| 959.99 | 1.00 | 19.75 |
| 960.00 | **1.01** | **20.16** |

## Stage-Area-Storage for Reach 2R: swale

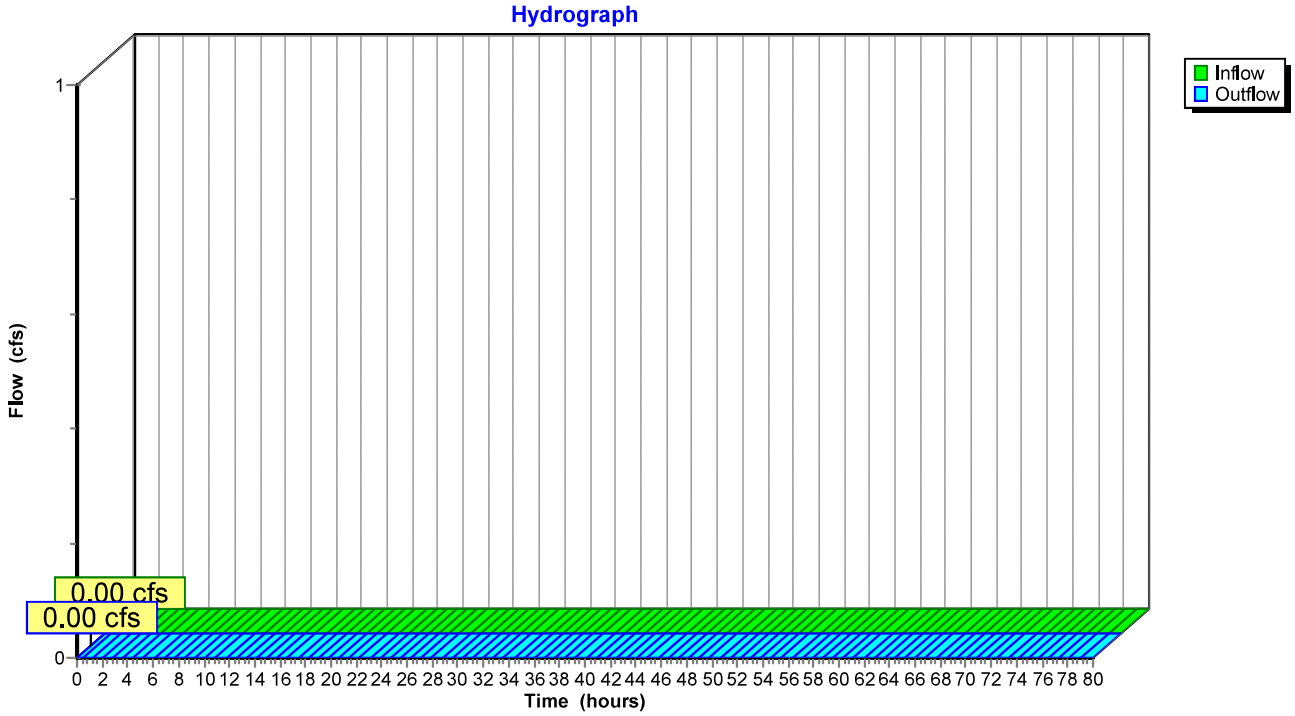
| Elevation (feet) | End-Area (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 959.00 | 0.0 | 0 |
| 959.01 | 0.1 | 28 |
| 959.02 | 0.2 | 57 |
| 959.03 | 0.3 | 87 |
| 959.04 | 0.4 | 116 |
| 959.05 | 0.5 | 147 |
| 959.06 | 0.6 | 178 |
| 959.07 | 0.7 | 210 |
| 959.08 | 0.9 | 242 |
| 959.09 | 1.0 | 275 |
| 959.10 | 1.1 | 308 |
| 959.11 | 1.2 | 342 |
| 959.12 | 1.3 | 376 |
| 959.13 | 1.5 | 411 |
| 959.14 | 1.6 | 447 |
| 959.15 | 1.7 | 483 |
| 959.16 | 1.9 | 520 |
| 959.17 | 2.0 | 557 |
| 959.18 | 2.1 | 595 |
| 959.19 | 2.3 | 633 |
| 959.20 | 2.4 | 672 |
| 959.21 | 2.5 | 711 |
| 959.22 | 2.7 | 752 |
| 959.23 | 2.8 | 792 |
| 959.24 | 3.0 | 833 |
| 959.25 | 3.1 | 875 |
| 959.26 | 3.3 | 917 |
| 959.27 | 3.4 | 960 |
| 959.28 | 3.6 | 1,004 |
| 959.29 | 3.7 | 1,047 |
| 959.30 | 3.9 | 1,092 |
| 959.31 | 4.1 | 1,137 |
| 959.32 | 4.2 | 1,183 |
| 959.33 | 4.4 | 1,229 |
| 959.34 | 4.6 | 1,276 |
| 959.35 | 4.7 | 1,323 |
| 959.36 | 4.9 | 1,371 |
| 959.37 | 5.1 | 1,419 |
| 959.38 | 5.2 | 1,468 |
| 959.39 | 5.4 | 1,518 |
| 959.40 | 5.6 | 1,568 |
| 959.41 | 5.8 | 1,619 |
| 959.42 | 6.0 | 1,670 |
| 959.43 | 6.1 | 1,722 |
| 959.44 | 6.3 | 1,774 |
| 959.45 | 6.5 | 1,827 |
| 959.46 | 6.7 | 1,880 |
| 959.47 | 6.9 | 1,935 |
| 959.48 | 7.1 | 1,989 |
| 959.49 | 7.3 | 2,044 |
| 959.50 | 7.5 | 2,100 |
| 959.51 | 7.7 | 2,156 |
| 959.52 | 7.9 | 2,213 |
| 959.53 | 8.1 | 2,271 |
| 959.54 | 8.3 | 2,328 |
| 959.55 | 8.5 | 2,387 |
| 959.56 | 8.7 | 2,446 |
| 959.57 | 8.9 | 2,506 |
| 959.58 | 9.2 | 2,566 |
| 959.59 | 9.4 | 2,627 |
| 959.60 | 9.6 | 2,688 |
| 959.61 | 9.8 | 2,750 |
| 959.62 | 10.0 | 2,812 |
| 959.63 | 10.3 | 2,875 |
| 959.64 | 10.5 | 2,939 |
| 959.65 | 10.7 | 3,003 |
| 959.66 | 11.0 | 3,068 |
| 959.67 | 11.2 | 3,133 |
| 959.68 | 11.4 | 3,199 |
| 959.69 | 11.7 | 3,265 |
| 959.70 | 11.9 | 3,332 |
| 959.71 | 12.1 | 3,399 |
| 959.72 | 12.4 | 3,468 |
| 959.73 | 12.6 | 3,536 |
| 959.74 | 12.9 | 3,605 |
| 959.75 | 13.1 | 3,675 |
| 959.76 | 13.4 | 3,745 |
| 959.77 | 13.6 | 3,816 |
| 959.78 | 13.9 | 3,888 |
| 959.79 | 14.1 | 3,959 |
| 959.80 | 14.4 | 4,032 |
| 959.81 | 14.7 | 4,105 |
| 959.82 | 14.9 | 4,179 |
| 959.83 | 15.2 | 4,253 |
| 959.84 | 15.5 | 4,328 |
| 959.85 | 15.7 | 4,403 |
| 959.86 | 16.0 | 4,479 |
| 959.87 | 16.3 | 4,555 |
| 959.88 | 16.5 | 4,632 |
| 959.89 | 16.8 | 4,710 |
| 959.90 | 17.1 | 4,788 |
| 959.91 | 17.4 | 4,867 |
| 959.92 | 17.7 | 4,946 |
| 959.93 | 17.9 | 5,026 |
| 959.94 | 18.2 | 5,106 |
| 959.95 | 18.5 | 5,187 |
| 959.96 | 18.8 | 5,268 |
| 959.97 | 19.1 | 5,351 |
| 959.98 | 19.4 | 5,433 |
| 959.99 | 19.7 | 5,516 |
| 960.00 | **20.0** | **5,600** |

## Summary for Reach 6R: Site Discharge

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 Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs

## Reach 6R: Site Discharge



## Summary for Pond 5P: Infiltration Basin

Inflow Area = 5.083 ac, 8.91% Impervious, Inflow Depth = 2.40" for 100-Year event
Inflow = 10.19 cfs @ 12.34 hrs, Volume= 1.017 af
Outflow = 0.45 cfs @ 15.85 hrs, Volume= 1.017 af, Atten= 96%, Lag= 210.5 min
Discarded = 0.45 cfs @ 15.85 hrs, Volume= 1.017 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1R : Existing Eagle Storm Sewer
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 6R : Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Peak Elev= 945.16' @ 15.85 hrs Surf.Area= 11,971 sf Storage= 22,848 cf

Plug-Flow detention time= 580.2 min calculated for 1.017 af (100% of inflow)
Center-of-Mass det. time= 580.2 min ( 1,565.7 - 985.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 943.00' | 70,609 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 943.00 | 9,227 | 0 | 0 |
| 944.00 | 10,462 | 9,845 | 9,845 |
| 945.00 | 11,755 | 11,109 | 20,953 |
| 946.00 | 13,106 | 12,431 | 33,384 |
| 947.00 | 14,512 | 13,809 | 47,193 |
| 947.50 | 15,237 | 7,437 | 54,630 |
| 948.00 | 15,976 | 7,803 | 62,433 |
| 948.50 | 16,729 | 8,176 | 70,609 |

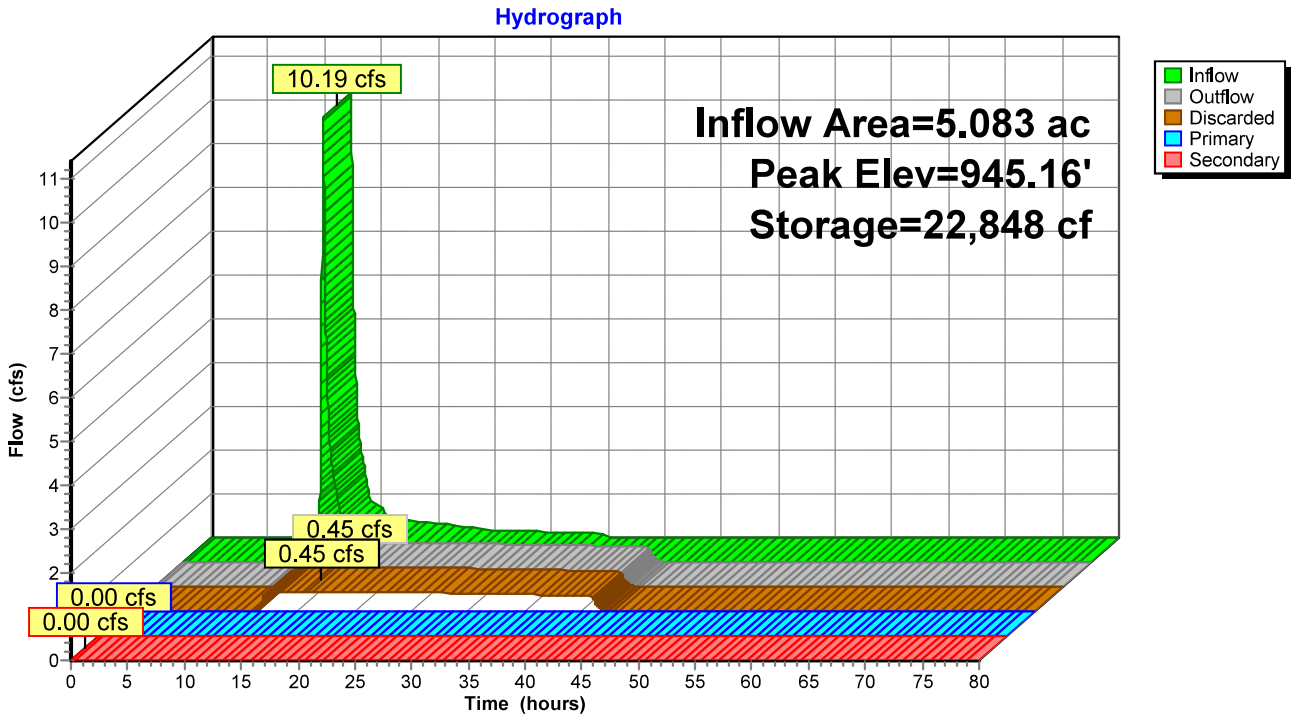
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 947.50' | **26.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2 | Discarded | 943.00' | **1.630 in/hr Exfiltration - Primary over Surface area** |
| #3 | Primary | 946.40' | **12.0" Round Secondary Culvert to Street**<br>L= 54.0' RCP, mitered to conform to fill, Ke= 0.700<br>Inlet / Outlet Invert= 946.40' / 945.50' S= 0.0167 '/' Cc= 0.900<br>n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf |

**Discarded OutFlow** Max=0.45 cfs @ 15.85 hrs HW=945.16' (Free Discharge)
↑—**2=Exfiltration - Primary** (Exfiltration Controls 0.45 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=943.00' (Free Discharge)
↑—**3=Secondary Culvert to Street** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=943.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond 5P: Infiltration Basin



## Stage-Discharge for Pond 5P: Infiltration Basin

| Elevation (feet) | Discharge (cfs) | Discarded (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|
| 943.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 943.20 | 0.36 | 0.36 | 0.00 | 0.00 |
| 943.40 | 0.37 | 0.37 | 0.00 | 0.00 |
| 943.60 | 0.38 | 0.38 | 0.00 | 0.00 |
| 943.80 | 0.39 | 0.39 | 0.00 | 0.00 |
| 944.00 | 0.39 | 0.39 | 0.00 | 0.00 |
| 944.20 | 0.40 | 0.40 | 0.00 | 0.00 |
| 944.40 | 0.41 | 0.41 | 0.00 | 0.00 |
| 944.60 | 0.42 | 0.42 | 0.00 | 0.00 |
| 944.80 | 0.43 | 0.43 | 0.00 | 0.00 |
| 945.00 | 0.44 | 0.44 | 0.00 | 0.00 |
| 945.20 | 0.45 | 0.45 | 0.00 | 0.00 |
| 945.40 | 0.46 | 0.46 | 0.00 | 0.00 |
| 945.60 | 0.47 | 0.47 | 0.00 | 0.00 |
| 945.80 | 0.48 | 0.48 | 0.00 | 0.00 |
| 946.00 | 0.49 | 0.49 | 0.00 | 0.00 |
| 946.20 | 0.51 | 0.51 | 0.00 | 0.00 |
| 946.40 | 0.52 | 0.52 | 0.00 | 0.00 |
| 946.60 | 0.68 | 0.53 | 0.15 | 0.00 |
| 946.80 | 1.09 | 0.54 | 0.56 | 0.00 |
| 947.00 | 1.69 | 0.55 | 1.14 | 0.00 |
| 947.20 | 2.37 | 0.56 | 1.81 | 0.00 |
| 947.40 | 2.93 | 0.57 | 2.36 | 0.00 |
| 947.60 | 5.42 | 0.58 | 2.79 | 2.05 |
| 947.80 | 14.54 | 0.59 | 3.17 | 10.79 |
| 948.00 | 28.28 | 0.60 | 3.50 | 24.18 |
| 948.20 | 45.46 | 0.61 | 3.80 | 41.04 |
| 948.40 | **64.32** | **0.63** | **4.09** | **59.60** |

## Stage-Area-Storage for Pond 5P: Infiltration Basin

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 943.00 | 9,227 | 0 |
| 943.10 | 9,351 | 929 |
| 943.20 | 9,474 | 1,870 |
| 943.30 | 9,597 | 2,824 |
| 943.40 | 9,721 | 3,790 |
| 943.50 | 9,845 | 4,768 |
| 943.60 | 9,968 | 5,759 |
| 943.70 | 10,092 | 6,761 |
| 943.80 | 10,215 | 7,777 |
| 943.90 | 10,338 | 8,804 |
| 944.00 | 10,462 | 9,845 |
| 944.10 | 10,591 | 10,897 |
| 944.20 | 10,721 | 11,963 |
| 944.30 | 10,850 | 13,041 |
| 944.40 | 10,979 | 14,133 |
| 944.50 | 11,109 | 15,237 |
| 944.60 | 11,238 | 16,354 |
| 944.70 | 11,367 | 17,485 |
| 944.80 | 11,496 | 18,628 |
| 944.90 | 11,626 | 19,784 |
| 945.00 | 11,755 | 20,953 |
| 945.10 | 11,890 | 22,135 |
| 945.20 | 12,025 | 23,331 |
| 945.30 | 12,160 | 24,540 |
| 945.40 | 12,295 | 25,763 |
| 945.50 | 12,431 | 26,999 |
| 945.60 | 12,566 | 28,249 |
| 945.70 | 12,701 | 29,512 |
| 945.80 | 12,836 | 30,789 |
| 945.90 | 12,971 | 32,080 |
| 946.00 | 13,106 | 33,384 |
| 946.10 | 13,247 | 34,701 |
| 946.20 | 13,387 | 36,033 |
| 946.30 | 13,528 | 37,379 |
| 946.40 | 13,668 | 38,738 |
| 946.50 | 13,809 | 40,112 |
| 946.60 | 13,950 | 41,500 |
| 946.70 | 14,090 | 42,902 |
| 946.80 | 14,231 | 44,318 |
| 946.90 | 14,371 | 45,748 |
| 947.00 | 14,512 | 47,193 |
| 947.10 | 14,657 | 48,651 |
| 947.20 | 14,802 | 50,124 |
| 947.30 | 14,947 | 51,611 |
| 947.40 | 15,092 | 53,113 |
| 947.50 | 15,237 | 54,630 |
| 947.60 | 15,385 | 56,161 |
| 947.70 | 15,533 | 57,707 |
| 947.80 | 15,680 | 59,267 |
| 947.90 | 15,828 | 60,843 |
| 948.00 | 15,976 | 62,433 |
| 948.10 | 16,127 | 64,038 |
| 948.20 | 16,277 | 65,658 |
| 948.30 | 16,428 | 67,294 |
| 948.40 | 16,578 | 68,944 |
| 948.50 | **16,729** | **70,609** |

## Summary for Pond IN1: Biofilter Forebay

Inflow Area = 1.633 ac, 14.27% Impervious, Inflow Depth = 2.56" for 100-Year event
Inflow = 5.97 cfs @ 12.20 hrs, Volume= 0.348 af
Outflow = 1.02 cfs @ 12.71 hrs, Volume= 0.348 af, Atten= 83%, Lag= 30.2 min
Primary = 0.16 cfs @ 12.71 hrs, Volume= 0.286 af
Routed to Pond 5P : Infiltration Basin
Secondary = 0.86 cfs @ 12.71 hrs, Volume= 0.062 af
Routed to Pond 5P : Infiltration Basin

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Peak Elev= 949.06' @ 12.71 hrs Surf.Area= 4,308 sf Storage= 7,846 cf

Plug-Flow detention time= 438.1 min calculated for 0.348 af (100% of inflow)
Center-of-Mass det. time= 438.2 min ( 1,260.7 - 822.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 947.00' | 14,802 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

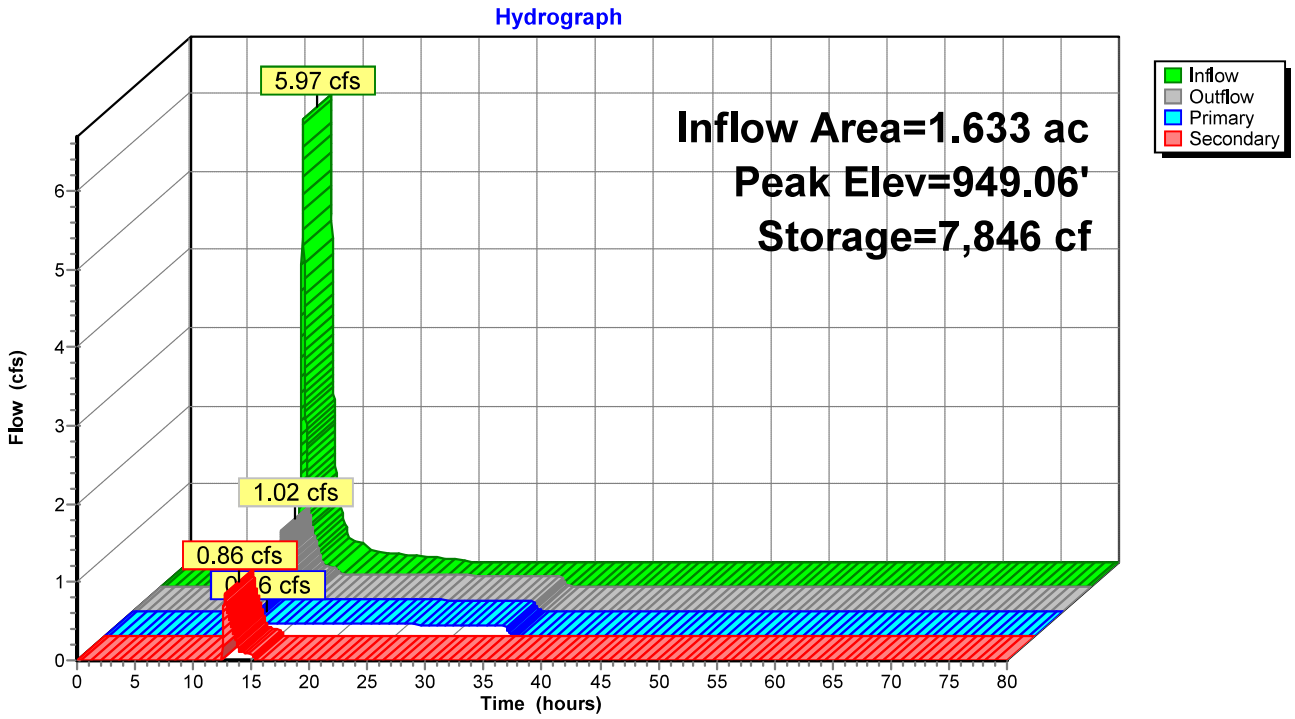
| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 947.00 | 3,348 | 0 | 0 |
| 948.00 | 3,795 | 3,572 | 3,572 |
| 949.00 | 4,266 | 4,031 | 7,602 |
| 949.50 | 4,636 | 2,226 | 9,828 |
| 950.00 | 5,020 | 2,414 | 12,242 |
| 950.50 | 5,220 | 2,560 | 14,802 |

| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 949.00' | **23.0' long x 14.8' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.67 2.69 2.70 2.64 2.63 2.64 2.64 2.63 |
| #2 | Primary | 947.00' | **1.630 in/hr Exfiltration over Surface area** |

**Primary OutFlow** Max=0.16 cfs @ 12.71 hrs HW=949.06' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.16 cfs)

**Secondary OutFlow** Max=0.83 cfs @ 12.71 hrs HW=949.06' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.83 cfs @ 0.64 fps)

## Pond IN1: Biofilter Forebay



## Stage-Discharge for Pond IN1: Biofilter Forebay

| Elevation (feet) | Discharge (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|
| 947.00 | 0.00 | 0.00 | 0.00 |
| 947.05 | 0.13 | 0.13 | 0.00 |
| 947.10 | 0.13 | 0.13 | 0.00 |
| 947.15 | 0.13 | 0.13 | 0.00 |
| 947.20 | 0.13 | 0.13 | 0.00 |
| 947.25 | 0.13 | 0.13 | 0.00 |
| 947.30 | 0.13 | 0.13 | 0.00 |
| 947.35 | 0.13 | 0.13 | 0.00 |
| 947.40 | 0.13 | 0.13 | 0.00 |
| 947.45 | 0.13 | 0.13 | 0.00 |
| 947.50 | 0.13 | 0.13 | 0.00 |
| 947.55 | 0.14 | 0.14 | 0.00 |
| 947.60 | 0.14 | 0.14 | 0.00 |
| 947.65 | 0.14 | 0.14 | 0.00 |
| 947.70 | 0.14 | 0.14 | 0.00 |
| 947.75 | 0.14 | 0.14 | 0.00 |
| 947.80 | 0.14 | 0.14 | 0.00 |
| 947.85 | 0.14 | 0.14 | 0.00 |
| 947.90 | 0.14 | 0.14 | 0.00 |
| 947.95 | 0.14 | 0.14 | 0.00 |
| 948.00 | 0.14 | 0.14 | 0.00 |
| 948.05 | 0.14 | 0.14 | 0.00 |
| 948.10 | 0.14 | 0.14 | 0.00 |
| 948.15 | 0.15 | 0.15 | 0.00 |
| 948.20 | 0.15 | 0.15 | 0.00 |
| 948.25 | 0.15 | 0.15 | 0.00 |
| 948.30 | 0.15 | 0.15 | 0.00 |
| 948.35 | 0.15 | 0.15 | 0.00 |
| 948.40 | 0.15 | 0.15 | 0.00 |
| 948.45 | 0.15 | 0.15 | 0.00 |
| 948.50 | 0.15 | 0.15 | 0.00 |
| 948.55 | 0.15 | 0.15 | 0.00 |
| 948.60 | 0.15 | 0.15 | 0.00 |
| 948.65 | 0.15 | 0.15 | 0.00 |
| 948.70 | 0.16 | 0.16 | 0.00 |
| 948.75 | 0.16 | 0.16 | 0.00 |
| 948.80 | 0.16 | 0.16 | 0.00 |
| 948.85 | 0.16 | 0.16 | 0.00 |
| 948.90 | 0.16 | 0.16 | 0.00 |
| 948.95 | 0.16 | 0.16 | 0.00 |
| 949.00 | 0.16 | 0.16 | 0.00 |
| 949.05 | 0.85 | 0.16 | 0.69 |
| 949.10 | 2.11 | 0.16 | 1.94 |
| 949.15 | 3.73 | 0.17 | 3.57 |
| 949.20 | 5.66 | 0.17 | 5.49 |
| 949.25 | 7.86 | 0.17 | 7.69 |
| 949.30 | 10.30 | 0.17 | 10.13 |
| 949.35 | 12.96 | 0.17 | 12.79 |
| 949.40 | 15.82 | 0.17 | 15.65 |
| 949.45 | 18.87 | 0.17 | 18.69 |
| 949.50 | 22.09 | 0.17 | 21.92 |
| 949.55 | 25.48 | 0.18 | 25.31 |
| 949.60 | 29.04 | 0.18 | 28.86 |
| 949.65 | 32.54 | 0.18 | 32.36 |
| 949.70 | 36.15 | 0.18 | 35.97 |
| 949.75 | 39.85 | 0.18 | 39.66 |
| 949.80 | 43.63 | 0.18 | 43.45 |
| 949.85 | 47.72 | 0.19 | 47.54 |
| 949.90 | 51.93 | 0.19 | 51.75 |
| 949.95 | 56.25 | 0.19 | 56.06 |
| 950.00 | 60.68 | 0.19 | 60.49 |
| 950.05 | 65.34 | 0.19 | 65.14 |
| 950.10 | 70.11 | 0.19 | 69.92 |
| 950.15 | 75.00 | 0.19 | 74.81 |
| 950.20 | 80.01 | 0.19 | 79.82 |
| 950.25 | 85.05 | 0.19 | 84.86 |
| 950.30 | 90.19 | 0.19 | 90.00 |
| 950.35 | 95.44 | 0.19 | 95.24 |
| 950.40 | 100.78 | 0.20 | 100.58 |
| 950.45 | 106.11 | 0.20 | 105.92 |
| 950.50 | **111.54** | **0.20** | **111.34** |

## Stage-Area-Storage for Pond IN1: Biofilter Forebay

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 947.00 | 3,348 | 0 |
| 947.05 | 3,370 | 168 |
| 947.10 | 3,393 | 337 |
| 947.15 | 3,415 | 507 |
| 947.20 | 3,437 | 679 |
| 947.25 | 3,460 | 851 |
| 947.30 | 3,482 | 1,025 |
| 947.35 | 3,504 | 1,199 |
| 947.40 | 3,527 | 1,375 |
| 947.45 | 3,549 | 1,552 |
| 947.50 | 3,572 | 1,730 |
| 947.55 | 3,594 | 1,909 |
| 947.60 | 3,616 | 2,089 |
| 947.65 | 3,639 | 2,271 |
| 947.70 | 3,661 | 2,453 |
| 947.75 | 3,683 | 2,637 |
| 947.80 | 3,706 | 2,821 |
| 947.85 | 3,728 | 3,007 |
| 947.90 | 3,750 | 3,194 |
| 947.95 | 3,773 | 3,382 |
| 948.00 | 3,795 | 3,572 |
| 948.05 | 3,819 | 3,762 |
| 948.10 | 3,842 | 3,953 |
| 948.15 | 3,866 | 4,146 |
| 948.20 | 3,889 | 4,340 |
| 948.25 | 3,913 | 4,535 |
| 948.30 | 3,936 | 4,731 |
| 948.35 | 3,960 | 4,929 |
| 948.40 | 3,983 | 5,127 |
| 948.45 | 4,007 | 5,327 |
| 948.50 | 4,031 | 5,528 |
| 948.55 | 4,054 | 5,730 |
| 948.60 | 4,078 | 5,933 |
| 948.65 | 4,101 | 6,138 |
| 948.70 | 4,125 | 6,343 |
| 948.75 | 4,148 | 6,550 |
| 948.80 | 4,172 | 6,758 |
| 948.85 | 4,195 | 6,967 |
| 948.90 | 4,219 | 7,178 |
| 948.95 | 4,242 | 7,389 |
| 949.00 | 4,266 | 7,602 |
| 949.05 | 4,303 | 7,816 |
| 949.10 | 4,340 | 8,032 |
| 949.15 | 4,377 | 8,250 |
| 949.20 | 4,414 | 8,470 |
| 949.25 | 4,451 | 8,692 |
| 949.30 | 4,488 | 8,915 |
| 949.35 | 4,525 | 9,140 |
| 949.40 | 4,562 | 9,368 |
| 949.45 | 4,599 | 9,597 |
| 949.50 | 4,636 | 9,828 |
| 949.55 | 4,674 | 10,060 |
| 949.60 | 4,713 | 10,295 |
| 949.65 | 4,751 | 10,532 |
| 949.70 | 4,790 | 10,770 |
| 949.75 | 4,828 | 11,011 |
| 949.80 | 4,866 | 11,253 |
| 949.85 | 4,905 | 11,497 |
| 949.90 | 4,943 | 11,743 |
| 949.95 | 4,982 | 11,991 |
| 950.00 | 5,020 | 12,242 |
| 950.05 | 5,040 | 12,493 |
| 950.10 | 5,060 | 12,746 |
| 950.15 | 5,080 | 12,999 |
| 950.20 | 5,100 | 13,254 |
| 950.25 | 5,120 | 13,509 |
| 950.30 | 5,140 | 13,765 |
| 950.35 | 5,160 | 14,023 |
| 950.40 | 5,180 | 14,281 |
| 950.45 | 5,200 | 14,541 |
| 950.50 | **5,220** | **14,802** |

Time span=0.00-80.00 hrs, dt=0.01 hrs, 8001 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 3S: Residential Areas** Runoff Area=1.800 ac 0.00% Impervious Runoff Depth=0.20"
Flow Length=115' Slope=0.0300 '/' Tc=9.9 min CN=61 Runoff=0.23 cfs 0.029 af

**Subcatchment P-1: Badger Drive & North** Runoff Area=1.650 ac 13.33% Impervious Runoff Depth=0.33"
Flow Length=194' Tc=11.6 min CN=66 Runoff=0.53 cfs 0.045 af

**Subcatchment P-5: Eagle Pass & South** Runoff Area=1.633 ac 14.27% Impervious Runoff Depth=0.33"
Flow Length=315' Tc=12.1 min CN=66 Runoff=0.52 cfs 0.044 af

**Reach 1R: Existing Eagle Storm Sewer** Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

**Reach 2R: swale** Avg. Flow Depth=0.13' Max Vel=0.32 fps Inflow=0.76 cfs 0.074 af
n=0.150 L=280.0' S=0.0179 '/' Capacity=20.16 cfs Outflow=0.48 cfs 0.074 af

**Reach 6R: Site Discharge** Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

**Pond 5P: Infiltration Basin** Peak Elev=943.08' Storage=698 cf Inflow=0.61 cfs 0.119 af
Discarded=0.35 cfs 0.119 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.35 cfs 0.119 af

**Pond IN1: Biofilter Forebay** Peak Elev=947.14' Storage=476 cf Inflow=0.52 cfs 0.044 af
Primary=0.13 cfs 0.044 af Secondary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.044 af

**Total Runoff Area = 5.083 ac Runoff Volume = 0.119 af Average Runoff Depth = 0.28"**
**91.09% Pervious = 4.630 ac 8.91% Impervious = 0.453 ac**

## Summary for Subcatchment 3S: Residential Areas

Runoff = 0.23 cfs @ 12.25 hrs, Volume= 0.029 af, Depth= 0.20"
Routed to Reach 2R : swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 Custom Rainfall=2.50"

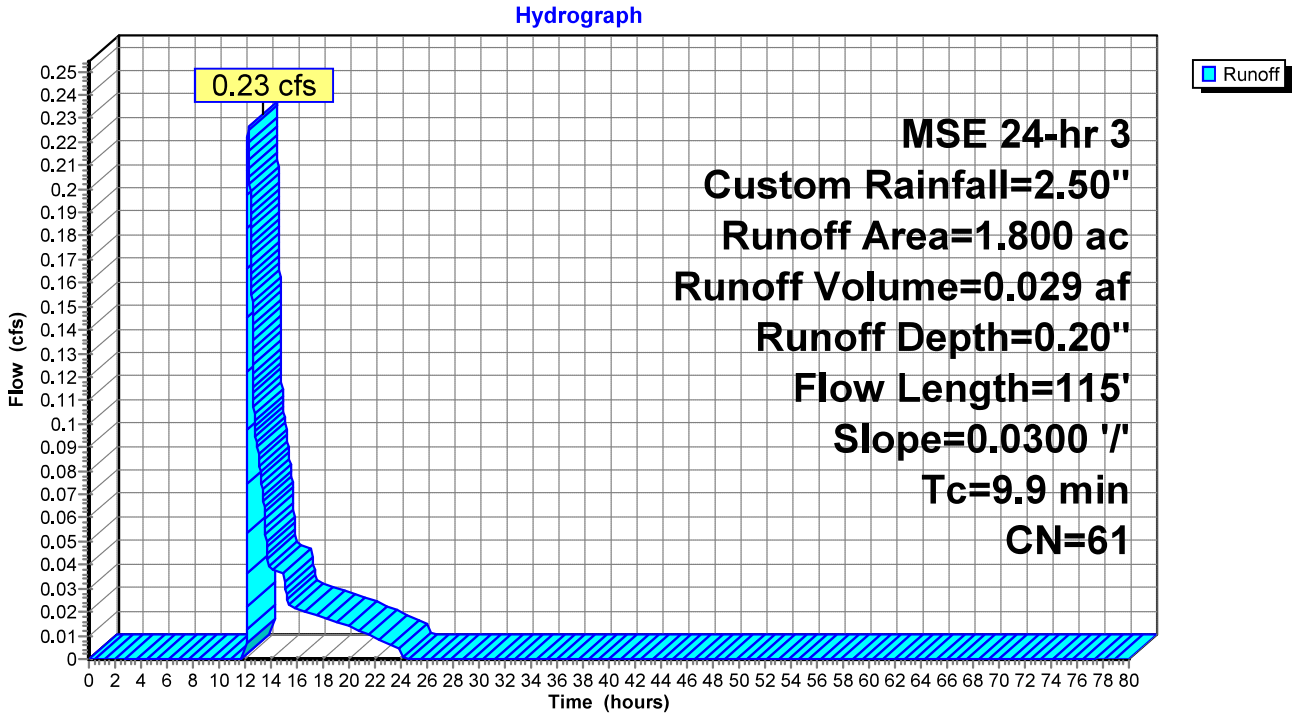
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 1.800 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 1.800 | | 100.00% Pervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 9.9 | 115 | 0.0300 | 0.19 | | **Sheet Flow, Uncaptured By Swale**<br>Grass: Short n= 0.150 P2= 2.84"<br>Using McCuen-Spiess flow length |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.800 | Open Space | 185.89 | 1.49 |
| 1.800 | Total | 185.89 | 1.49 |

## Subcatchment 3S: Residential Areas



## Summary for Subcatchment P-1: Badger Drive & North Lots

Runoff = 0.53 cfs @ 12.23 hrs, Volume= 0.045 af, Depth= 0.33"
Routed to Reach 2R : swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 Custom Rainfall=2.50"

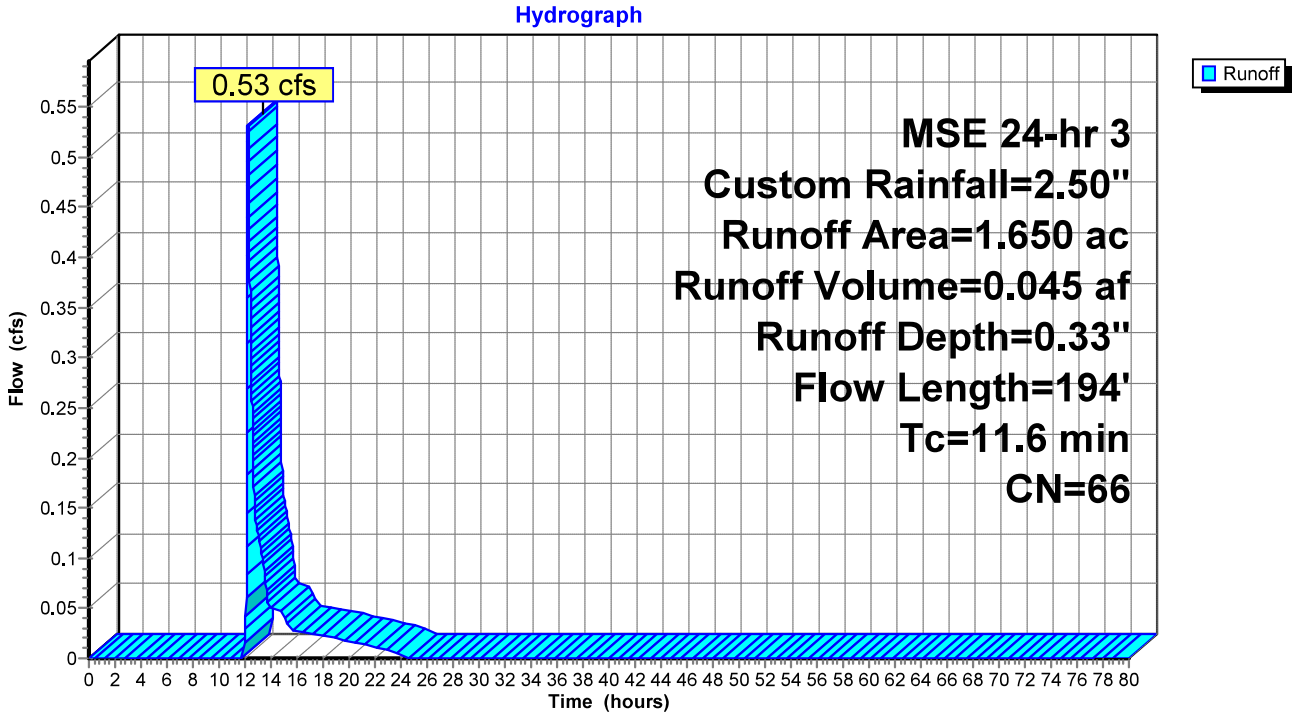
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 1.430 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 0.220 | 98 | Paved roads w/curbs & sewers, HSG B | Roadway |
| 1.650 | 66 | Weighted Average | |
| 1.430 | | 86.67% Pervious Area | |
| 0.220 | | 13.33% Impervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 9.9 | 94 | 0.0200 | 0.16 | | **Sheet Flow, Pretreated Flow to Basin**<br>Grass: Short n= 0.150 P2= 2.84"<br>Using McCuen-Spiess flow length |
| 1.7 | 100 | 0.0100 | 0.98 | | **Sheet Flow, Badger Dr**<br>Smooth surfaces n= 0.011 P2= 2.84" |
| 11.6 | 194 | Total | | | |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.430 | Open Space | 147.68 | 1.18 |
| 0.220 | Roadway | 34.08 | 0.27 |
| 1.650 | Total | 181.76 | 1.45 |

## Subcatchment P-1: Badger Drive & North Lots



## Summary for Subcatchment P-5: Eagle Pass & South Lots

Runoff = 0.52 cfs @ 12.24 hrs, Volume= 0.044 af, Depth= 0.33"
Routed to Pond IN1 : Biofilter Forebay

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 Custom Rainfall=2.50"

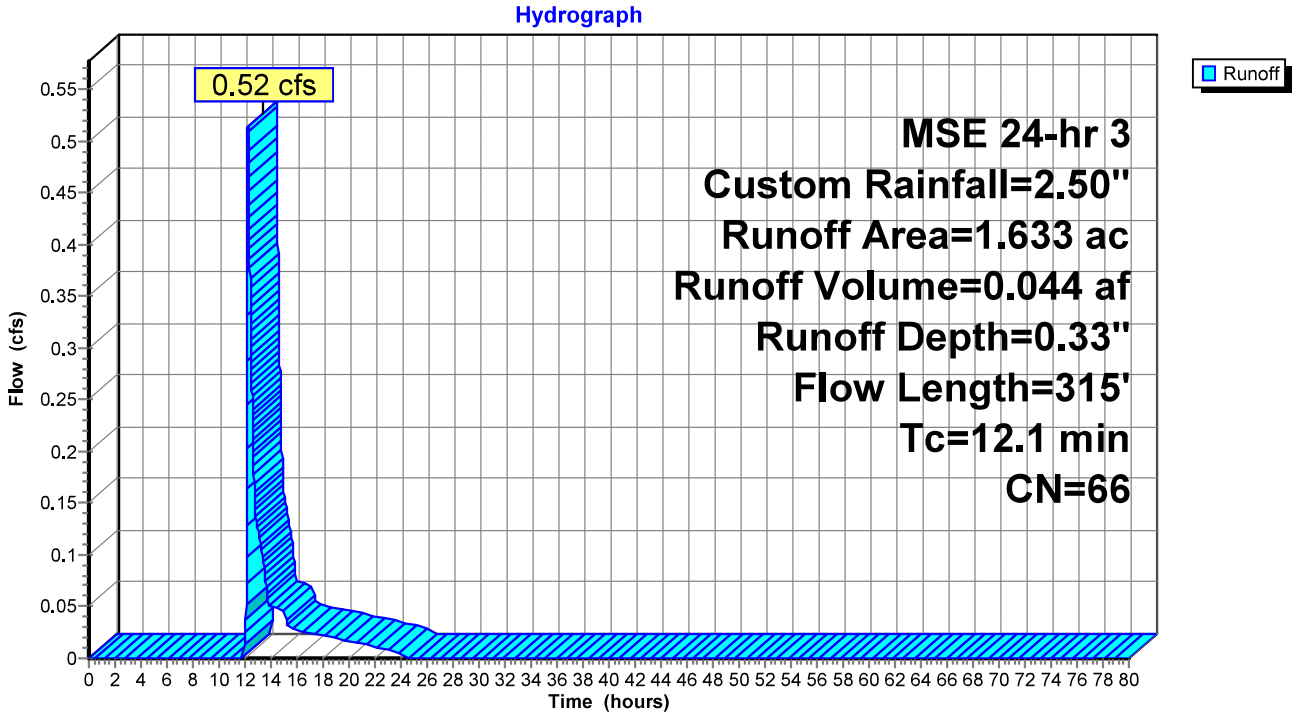
| Area (ac) | CN | Description | Land Use |
|---|---|---|---|
| 0.233 | 98 | Paved roads w/curbs & sewers, HSG B | Roadway |
| 1.400 | 61 | >75% Grass cover, Good, HSG B | Open Space |
| 1.633 | 66 | Weighted Average | |
| 1.400 | | 85.73% Pervious Area | |
| 0.233 | | 14.27% Impervious Area | |

| Tc (min) | Length (feet) | Slope (ft/ft) | Velocity (ft/sec) | Capacity (cfs) | Description |
|---|---|---|---|---|---|
| 2.2 | 200 | 0.0200 | 1.49 | | **Sheet Flow, Roads/Sewers/Roofs** Smooth surfaces n= 0.011 P2= 2.84" |
| 9.9 | 115 | 0.0300 | 0.19 | | **Sheet Flow, Eagle Lots** Grass: Short n= 0.150 P2= 2.84" Using McCuen-Spiess flow length |
| 12.1 | 315 | Total | | | |

Pollutant Loading for 35.00" Rainfall, Pj=1.000
Project 8.91% Impervious, Rv= 0.130, Runoff= 4.56"

| Area (acres) | Land Use | tss (pounds) | p (pounds) |
|---|---|---|---|
| 1.400 | Open Space | 144.58 | 1.16 |
| 0.233 | Roadway | 36.09 | 0.29 |
| 1.633 | Total | 180.68 | 1.45 |

## Subcatchment P-5: Eagle Pass & South Lots

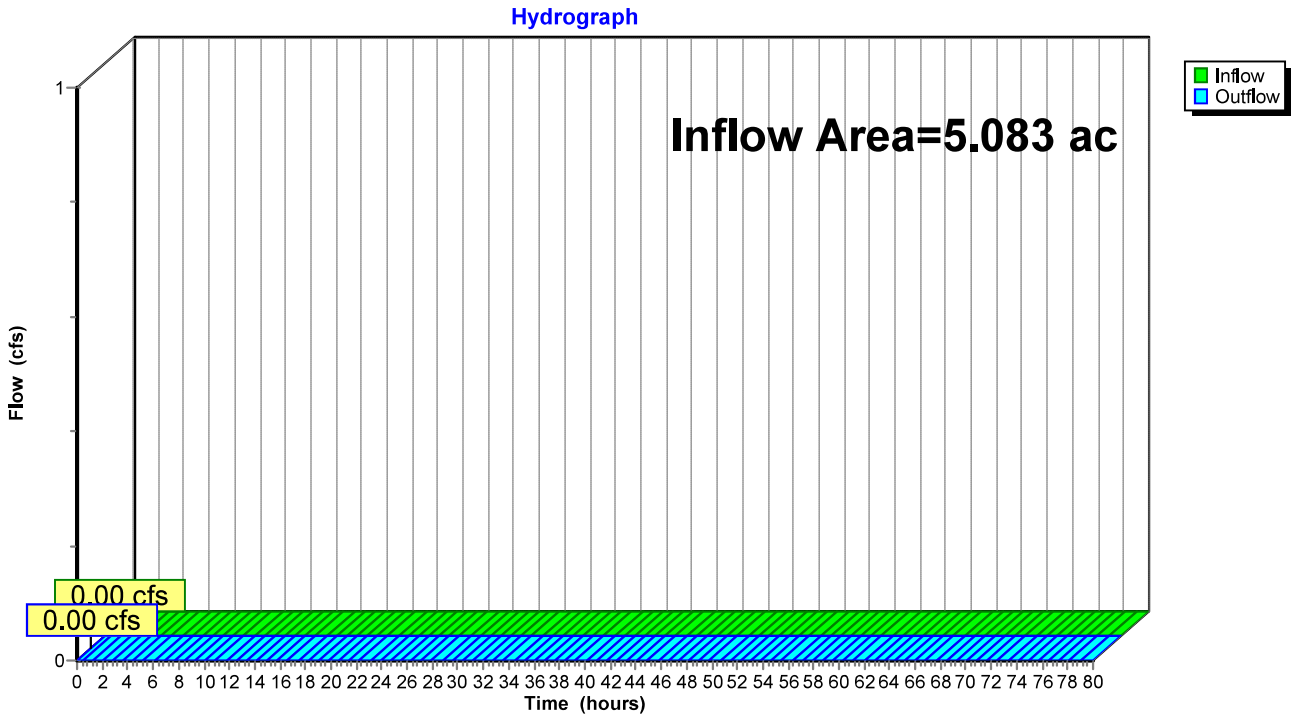


## Summary for Reach 1R: Existing Eagle Storm Sewer

Inflow Area = 5.083 ac, 8.91% Impervious, Inflow Depth = 0.00" for Custom 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 Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs

## Reach 1R: Existing Eagle Storm Sewer



## Summary for Reach 2R: swale

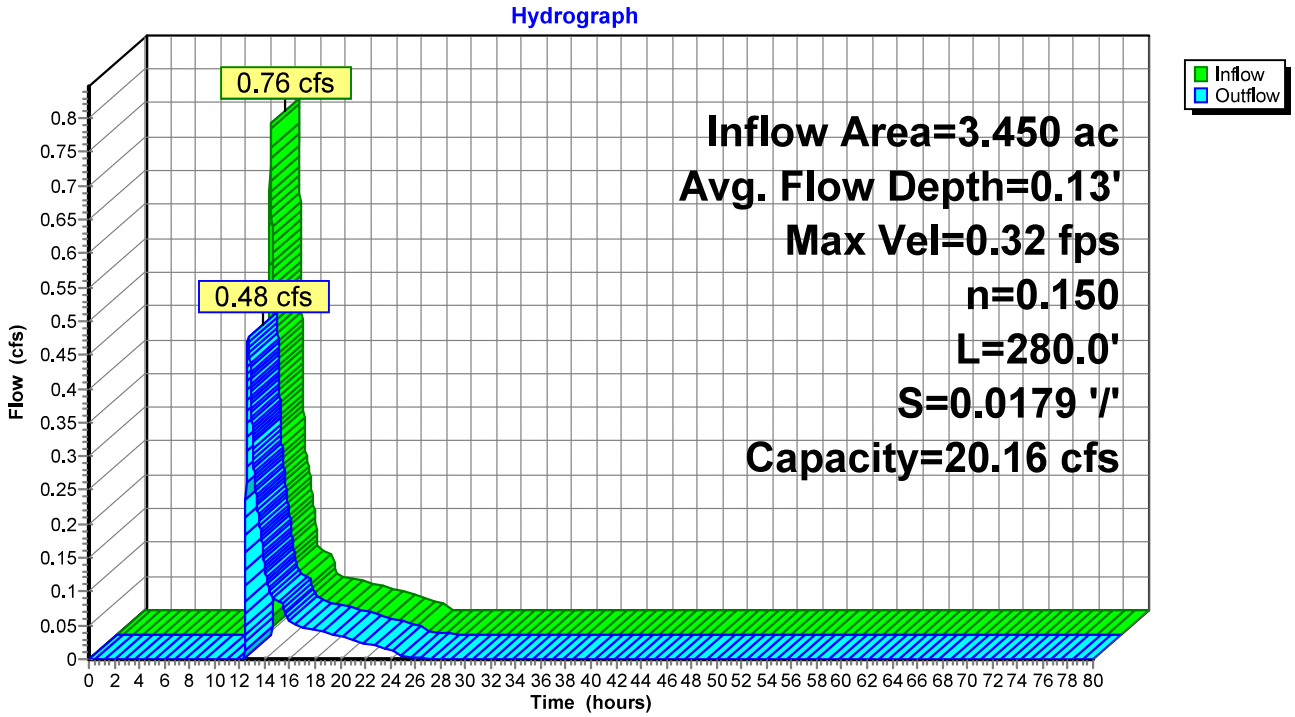
Inflow Area = 3.450 ac, 6.38% Impervious, Inflow Depth = 0.26" for Custom event
Inflow = 0.76 cfs @ 12.24 hrs, Volume= 0.074 af
Outflow = 0.48 cfs @ 12.71 hrs, Volume= 0.074 af, Atten= 37%, Lag= 28.2 min
Routed to Pond 5P : Infiltration Basin

Routing by Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.32 fps, Min. Travel Time= 14.6 min
Avg. Velocity = 0.11 fps, Avg. Travel Time= 43.3 min

Peak Storage= 419 cf @ 12.47 hrs
Average Depth at Peak Storage= 0.13' , Surface Width= 12.64'
Bank-Full Depth= 1.00' Flow Area= 20.0 sf, Capacity= 20.16 cfs

10.00' x 1.00' deep channel, n= 0.150 Sheet flow over Short Grass
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 280.0' Slope= 0.0179 '/'
Inlet Invert= 959.00', Outlet Invert= 954.00'

‡



## Stage-Discharge for Reach 2R: swale

| Elevation (feet) | Velocity (ft/sec) | Discharge (cfs) |
|---|---|---|
| 959.00 | 0.00 | 0.00 |
| 959.01 | 0.06 | 0.01 |
| 959.02 | 0.10 | 0.02 |
| 959.03 | 0.13 | 0.04 |
| 959.04 | 0.15 | 0.06 |
| 959.05 | 0.17 | 0.09 |
| 959.06 | 0.20 | 0.12 |
| 959.07 | 0.22 | 0.16 |
| 959.08 | 0.23 | 0.20 |
| 959.09 | 0.25 | 0.25 |
| 959.10 | 0.27 | 0.30 |
| 959.11 | 0.29 | 0.35 |
| 959.12 | 0.30 | 0.40 |
| 959.13 | 0.32 | 0.46 |
| 959.14 | 0.33 | 0.53 |
| 959.15 | 0.34 | 0.59 |
| 959.16 | 0.36 | 0.66 |
| 959.17 | 0.37 | 0.74 |
| 959.18 | 0.38 | 0.81 |
| 959.19 | 0.40 | 0.90 |
| 959.20 | 0.41 | 0.98 |
| 959.21 | 0.42 | 1.07 |
| 959.22 | 0.43 | 1.16 |
| 959.23 | 0.44 | 1.25 |
| 959.24 | 0.45 | 1.35 |
| 959.25 | 0.46 | 1.45 |
| 959.26 | 0.48 | 1.56 |
| 959.27 | 0.49 | 1.67 |
| 959.28 | 0.50 | 1.78 |
| 959.29 | 0.51 | 1.89 |
| 959.30 | 0.52 | 2.01 |
| 959.31 | 0.53 | 2.13 |
| 959.32 | 0.54 | 2.26 |
| 959.33 | 0.54 | 2.39 |
| 959.34 | 0.55 | 2.52 |
| 959.35 | 0.56 | 2.66 |
| 959.36 | 0.57 | 2.80 |
| 959.37 | 0.58 | 2.94 |
| 959.38 | 0.59 | 3.09 |
| 959.39 | 0.60 | 3.24 |
| 959.40 | 0.61 | 3.40 |
| 959.41 | 0.62 | 3.56 |
| 959.42 | 0.62 | 3.72 |
| 959.43 | 0.63 | 3.89 |
| 959.44 | 0.64 | 4.06 |
| 959.45 | 0.65 | 4.23 |
| 959.46 | 0.66 | 4.41 |
| 959.47 | 0.66 | 4.59 |
| 959.48 | 0.67 | 4.77 |
| 959.49 | 0.68 | 4.96 |
| 959.50 | 0.69 | 5.15 |
| 959.51 | 0.69 | 5.35 |
| 959.52 | 0.70 | 5.55 |
| 959.53 | 0.71 | 5.76 |
| 959.54 | 0.72 | 5.96 |
| 959.55 | 0.72 | 6.18 |
| 959.56 | 0.73 | 6.39 |
| 959.57 | 0.74 | 6.61 |
| 959.58 | 0.75 | 6.84 |
| 959.59 | 0.75 | 7.07 |
| 959.60 | 0.76 | 7.30 |
| 959.61 | 0.77 | 7.53 |
| 959.62 | 0.77 | 7.78 |
| 959.63 | 0.78 | 8.02 |
| 959.64 | 0.79 | 8.27 |
| 959.65 | 0.79 | 8.52 |
| 959.66 | 0.80 | 8.78 |
| 959.67 | 0.81 | 9.04 |
| 959.68 | 0.81 | 9.31 |
| 959.69 | 0.82 | 9.58 |
| 959.70 | 0.83 | 9.85 |
| 959.71 | 0.83 | 10.13 |
| 959.72 | 0.84 | 10.41 |
| 959.73 | 0.85 | 10.70 |
| 959.74 | 0.85 | 10.99 |
| 959.75 | 0.86 | 11.29 |
| 959.76 | 0.87 | 11.59 |
| 959.77 | 0.87 | 11.89 |
| 959.78 | 0.88 | 12.20 |
| 959.79 | 0.88 | 12.51 |
| 959.80 | 0.89 | 12.83 |
| 959.81 | 0.90 | 13.15 |
| 959.82 | 0.90 | 13.48 |
| 959.83 | 0.91 | 13.81 |
| 959.84 | 0.92 | 14.15 |
| 959.85 | 0.92 | 14.49 |
| 959.86 | 0.93 | 14.83 |
| 959.87 | 0.93 | 15.18 |
| 959.88 | 0.94 | 15.54 |
| 959.89 | 0.95 | 15.90 |
| 959.90 | 0.95 | 16.26 |
| 959.91 | 0.96 | 16.63 |
| 959.92 | 0.96 | 17.00 |
| 959.93 | 0.97 | 17.38 |
| 959.94 | 0.97 | 17.76 |
| 959.95 | 0.98 | 18.15 |
| 959.96 | 0.99 | 18.54 |
| 959.97 | 0.99 | 18.94 |
| 959.98 | 1.00 | 19.34 |
| 959.99 | 1.00 | 19.75 |
| 960.00 | **1.01** | **20.16** |

## Stage-Area-Storage for Reach 2R: swale

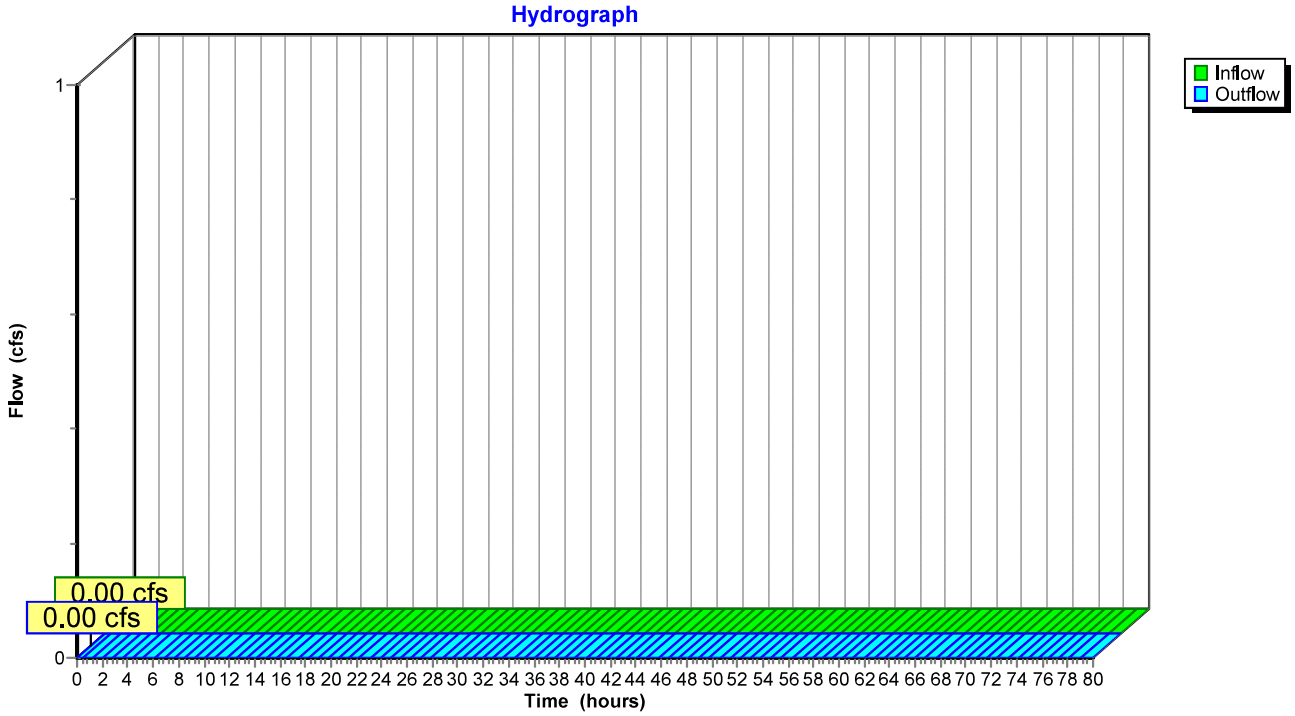
| Elevation (feet) | End-Area (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 959.00 | 0.0 | 0 |
| 959.01 | 0.1 | 28 |
| 959.02 | 0.2 | 57 |
| 959.03 | 0.3 | 87 |
| 959.04 | 0.4 | 116 |
| 959.05 | 0.5 | 147 |
| 959.06 | 0.6 | 178 |
| 959.07 | 0.7 | 210 |
| 959.08 | 0.9 | 242 |
| 959.09 | 1.0 | 275 |
| 959.10 | 1.1 | 308 |
| 959.11 | 1.2 | 342 |
| 959.12 | 1.3 | 376 |
| 959.13 | 1.5 | 411 |
| 959.14 | 1.6 | 447 |
| 959.15 | 1.7 | 483 |
| 959.16 | 1.9 | 520 |
| 959.17 | 2.0 | 557 |
| 959.18 | 2.1 | 595 |
| 959.19 | 2.3 | 633 |
| 959.20 | 2.4 | 672 |
| 959.21 | 2.5 | 711 |
| 959.22 | 2.7 | 752 |
| 959.23 | 2.8 | 792 |
| 959.24 | 3.0 | 833 |
| 959.25 | 3.1 | 875 |
| 959.26 | 3.3 | 917 |
| 959.27 | 3.4 | 960 |
| 959.28 | 3.6 | 1,004 |
| 959.29 | 3.7 | 1,047 |
| 959.30 | 3.9 | 1,092 |
| 959.31 | 4.1 | 1,137 |
| 959.32 | 4.2 | 1,183 |
| 959.33 | 4.4 | 1,229 |
| 959.34 | 4.6 | 1,276 |
| 959.35 | 4.7 | 1,323 |
| 959.36 | 4.9 | 1,371 |
| 959.37 | 5.1 | 1,419 |
| 959.38 | 5.2 | 1,468 |
| 959.39 | 5.4 | 1,518 |
| 959.40 | 5.6 | 1,568 |
| 959.41 | 5.8 | 1,619 |
| 959.42 | 6.0 | 1,670 |
| 959.43 | 6.1 | 1,722 |
| 959.44 | 6.3 | 1,774 |
| 959.45 | 6.5 | 1,827 |
| 959.46 | 6.7 | 1,880 |
| 959.47 | 6.9 | 1,935 |
| 959.48 | 7.1 | 1,989 |
| 959.49 | 7.3 | 2,044 |
| 959.50 | 7.5 | 2,100 |
| 959.51 | 7.7 | 2,156 |
| 959.52 | 7.9 | 2,213 |
| 959.53 | 8.1 | 2,271 |
| 959.54 | 8.3 | 2,328 |
| 959.55 | 8.5 | 2,387 |
| 959.56 | 8.7 | 2,446 |
| 959.57 | 8.9 | 2,506 |
| 959.58 | 9.2 | 2,566 |
| 959.59 | 9.4 | 2,627 |
| 959.60 | 9.6 | 2,688 |
| 959.61 | 9.8 | 2,750 |
| 959.62 | 10.0 | 2,812 |
| 959.63 | 10.3 | 2,875 |
| 959.64 | 10.5 | 2,939 |
| 959.65 | 10.7 | 3,003 |
| 959.66 | 11.0 | 3,068 |
| 959.67 | 11.2 | 3,133 |
| 959.68 | 11.4 | 3,199 |
| 959.69 | 11.7 | 3,265 |
| 959.70 | 11.9 | 3,332 |
| 959.71 | 12.1 | 3,399 |
| 959.72 | 12.4 | 3,468 |
| 959.73 | 12.6 | 3,536 |
| 959.74 | 12.9 | 3,605 |
| 959.75 | 13.1 | 3,675 |
| 959.76 | 13.4 | 3,745 |
| 959.77 | 13.6 | 3,816 |
| 959.78 | 13.9 | 3,888 |
| 959.79 | 14.1 | 3,959 |
| 959.80 | 14.4 | 4,032 |
| 959.81 | 14.7 | 4,105 |
| 959.82 | 14.9 | 4,179 |
| 959.83 | 15.2 | 4,253 |
| 959.84 | 15.5 | 4,328 |
| 959.85 | 15.7 | 4,403 |
| 959.86 | 16.0 | 4,479 |
| 959.87 | 16.3 | 4,555 |
| 959.88 | 16.5 | 4,632 |
| 959.89 | 16.8 | 4,710 |
| 959.90 | 17.1 | 4,788 |
| 959.91 | 17.4 | 4,867 |
| 959.92 | 17.7 | 4,946 |
| 959.93 | 17.9 | 5,026 |
| 959.94 | 18.2 | 5,106 |
| 959.95 | 18.5 | 5,187 |
| 959.96 | 18.8 | 5,268 |
| 959.97 | 19.1 | 5,351 |
| 959.98 | 19.4 | 5,433 |
| 959.99 | 19.7 | 5,516 |
| 960.00 | **20.0** | **5,600** |

## Summary for Reach 6R: Site Discharge

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 Stor-Ind+Trans method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs

## Reach 6R: Site Discharge



## Summary for Pond 5P: Infiltration Basin

Inflow Area = 5.083 ac, 8.91% Impervious, Inflow Depth = 0.28" for Custom event
Inflow = 0.61 cfs @ 12.71 hrs, Volume= 0.119 af
Outflow = 0.35 cfs @ 13.43 hrs, Volume= 0.119 af, Atten= 42%, Lag= 43.2 min
Discarded = 0.35 cfs @ 13.43 hrs, Volume= 0.119 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1R : Existing Eagle Storm Sewer
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 6R : Site Discharge

Routing by Stor-Ind method, Time Span= 0.00-80.00 hrs, dt= 0.01 hrs
Peak Elev= 943.08' @ 13.43 hrs Surf.Area= 9,320 sf Storage= 698 cf

Plug-Flow detention time= 26.4 min calculated for 0.119 af (100% of inflow)
Center-of-Mass det. time= 26.4 min ( 948.9 - 922.5 )

| Volume | Invert | Avail.Storage | Storage Description |
|---|---|---|---|
| #1 | 943.00' | 70,609 cf | **Custom Stage Data (Prismatic)** Listed below (Recalc) |

| Elevation (feet) | Surf.Area (sq-ft) | Inc.Store (cubic-feet) | Cum.Store (cubic-feet) |
|---|---|---|---|
| 943.00 | 9,227 | 0 | 0 |
| 944.00 | 10,462 | 9,845 | 9,845 |
| 945.00 | 11,755 | 11,109 | 20,953 |
| 946.00 | 13,106 | 12,431 | 33,384 |
| 947.00 | 14,512 | 13,809 | 47,193 |
| 947.50 | 15,237 | 7,437 | 54,630 |
| 948.00 | 15,976 | 7,803 | 62,433 |
| 948.50 | 16,729 | 8,176 | 70,609 |

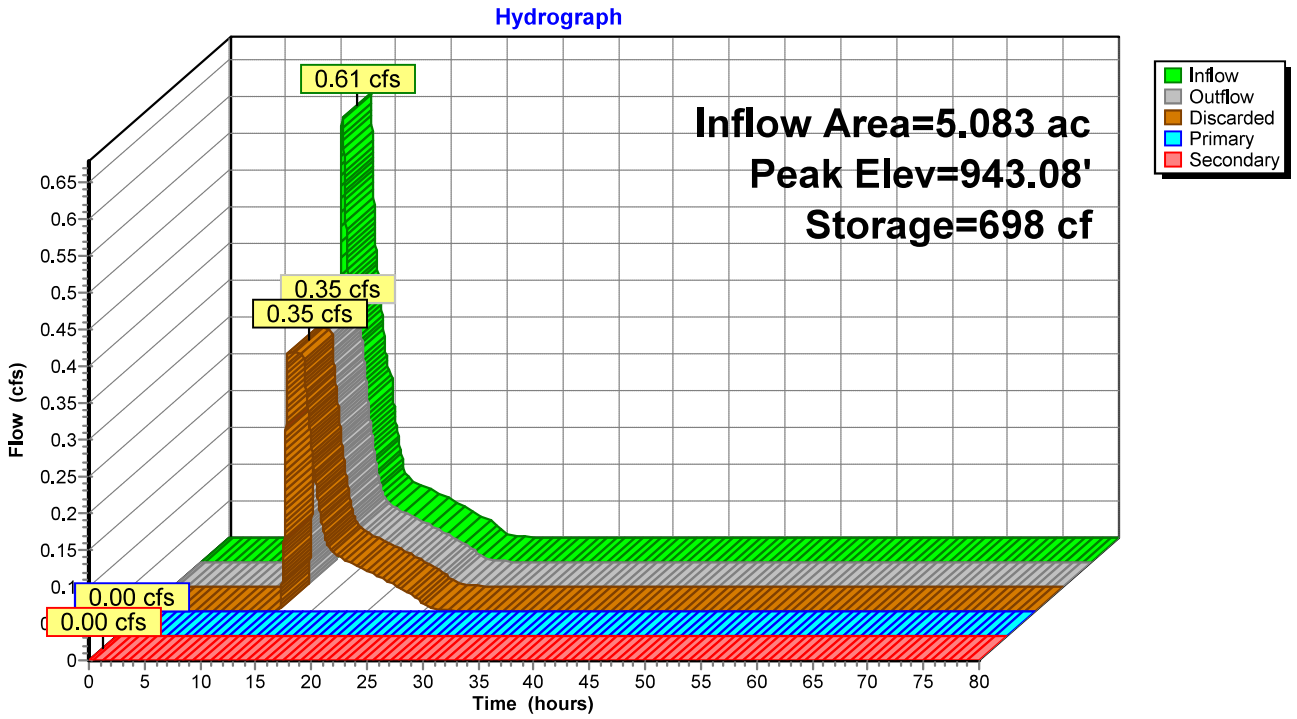
| Device | Routing | Invert | Outlet Devices |
|---|---|---|---|
| #1 | Secondary | 947.50' | **26.0' long x 10.0' breadth Broad-Crested Rectangular Weir**<br>Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60<br>Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64 |
| #2 | Discarded | 943.00' | **1.630 in/hr Exfiltration - Primary over Surface area** |
| #3 | Primary | 946.40' | **12.0" Round Secondary Culvert to Street**<br>L= 54.0' RCP, mitered to conform to fill, Ke= 0.700<br>Inlet / Outlet Invert= 946.40' / 945.50' S= 0.0167 '/' Cc= 0.900<br>n= 0.012 Concrete pipe, finished, Flow Area= 0.79 sf |

**Discarded OutFlow** Max=0.35 cfs @ 13.43 hrs HW=943.08' (Free Discharge)
↑—**2=Exfiltration - Primary** (Exfiltration Controls 0.35 cfs)

**Primary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=943.00' (Free Discharge)
↑—**3=Secondary Culvert to Street** ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=943.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

## Pond 5P: Infiltration Basin



## Stage-Discharge for Pond 5P: Infiltration Basin

| Elevation (feet) | Discharge (cfs) | Discarded (cfs) | Primary (cfs) | Secondary (cfs) |
|---|---|---|---|---|
| 943.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 943.20 | 0.36 | 0.36 | 0.00 | 0.00 |
| 943.40 | 0.37 | 0.37 | 0.00 | 0.00 |
| 943.60 | 0.38 | 0.38 | 0.00 | 0.00 |
| 943.80 | 0.39 | 0.39 | 0.00 | 0.00 |
| 944.00 | 0.39 | 0.39 | 0.00 | 0.00 |
| 944.20 | 0.40 | 0.40 | 0.00 | 0.00 |
| 944.40 | 0.41 | 0.41 | 0.00 | 0.00 |
| 944.60 | 0.42 | 0.42 | 0.00 | 0.00 |
| 944.80 | 0.43 | 0.43 | 0.00 | 0.00 |
| 945.00 | 0.44 | 0.44 | 0.00 | 0.00 |
| 945.20 | 0.45 | 0.45 | 0.00 | 0.00 |
| 945.40 | 0.46 | 0.46 | 0.00 | 0.00 |
| 945.60 | 0.47 | 0.47 | 0.00 | 0.00 |
| 945.80 | 0.48 | 0.48 | 0.00 | 0.00 |
| 946.00 | 0.49 | 0.49 | 0.00 | 0.00 |
| 946.20 | 0.51 | 0.51 | 0.00 | 0.00 |
| 946.40 | 0.52 | 0.52 | 0.00 | 0.00 |
| 946.60 | 0.68 | 0.53 | 0.15 | 0.00 |
| 946.80 | 1.09 | 0.54 | 0.56 | 0.00 |
| 947.00 | 1.69 | 0.55 | 1.14 | 0.00 |
| 947.20 | 2.37 | 0.56 | 1.81 | 0.00 |
| 947.40 | 2.93 | 0.57 | 2.36 | 0.00 |
| 947.60 | 5.42 | 0.58 | 2.79 | 2.05 |
| 947.80 | 14.54 | 0.59 | 3.17 | 10.79 |
| 948.00 | 28.28 | 0.60 | 3.50 | 24.18 |
| 948.20 | 45.46 | 0.61 | 3.80 | 41.04 |
| 948.40 | **64.32** | **0.63** | **4.09** | **59.60** |

## Stage-Area-Storage for Pond 5P: Infiltration Basin

| Elevation (feet) | Surface (sq-ft) | Storage (cubic-feet) |
|---|---|---|
| 943.00 | 9,227 | 0 |
| 943.10 | 9,351 | 929 |
| 943.20 | 9,474 | 1,870 |
| 943.30 | 9,597 | 2,824 |
| 943.40 | 9,721 | 3,790 |
| 943.50 | 9,845 | 4,768 |
| 943.60 | 9,968 | 5,759 |
| 943.70 | 10,092 | 6,761 |
| 943.80 | 10,215 | 7,777 |
| 943.90 | 10,338 | 8,804 |
| 944.00 | 10,462 | 9,845 |
| 944.10 | 10,591 | 10,897 |
| 944.20 | 10,721 | 11,963 |
| 944.30 | 10,850 | 13,041 |
| 944.40 | 10,979 | 14,133 |
| 944.50 | 11,109 | 15,237 |
| 944.60 | 11,238 | 16,354 |
| 944.70 | 11,367 | 17,485 |
| 944.80 | 11,496 | 18,628 |
| 944.90 | 11,626 | 19,784 |
| 945.00 | 11,755 | 20,953 |
| 945.10 | 11,890 | 22,135 |
| 945.20 | 12,025 | 23,331 |
| 945.30 | 12,160 | 24,540 |
| 945.40 | 12,295 | 25,763 |
| 945.50 | 12,431 | 26,999 |
| 945.60 | 12,566 | 28,249 |
| 945.70 | 12,701 | 29,512 |
| 945.80 | 12,836 | 30,789 |
| 945.90 | 12,971 | 32,080 |
| 946.00 | 13,106 | 33,384 |
| 946.10 | 13,247 | 34,701 |
| 946.20 | 13,387 | 36,033 |
| 946.30 | 13,528 | 37,379 |
| 946.40 | 13,668 | 38,738 |
| 946.50 | 13,809 | 40,112 |
| 946.60 | 13,950 | 41,500 |
| 946.70 | 14,090 | 42,902 |
| 946.80 | 14,231 | 44,318 |
| 946.90 | 14,371 | 45,748 |
| 947.00 | 14,512 | 47,193 |
| 947.10 | 14,657 | 48,651 |
| 947.20 | 14,802 | 50,124 |
| 947.30 | 14,947 | 51,611 |
| 947.40 | 15,092 | 53,113 |
| 947.50 | 15,237 | 54,630 |
| 947.60 | 15,385 | 56,161 |
| 947.70 | 15,533 | 57,707 |
| 947.80 | 15,680 | 59,267 |
| 947.90 | 15,828 | 60,843 |
| 948.00 | 15,976 | 62,433 |
| 948.10 | 16,127 | 64,038 |
| 948.20 | 16,277 | 65,658 |
| 948.30 | 16,428 | 67,294 |
| 948.40 | 16,578 | 68,944 |
| 948.50 | **16,729** | **70,609** |