



Routing Diagram for 61 Waverly St Hydrology
 Prepared by Symmes, Maini & McKee, Printed 3/6/2026
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61 Waverly St Hydrology

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Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.982	39	>75% Grass cover, Good, HSG A (PR 1.2, PR 1.3, PR 2.2, PR 2.4, PR 4.1)
0.100	61	>75% Grass cover, Good, HSG B (PR 1.1, PR 1.2, PR 4.1)
0.819	30	Meadow, non-grazed, HSG A (PR 2.1, PR 2.3, PR 4.2, PR 4.3, PR 4.4, PR 5.1)
0.420	58	Meadow, non-grazed, HSG B (PR 4.2, PR 4.3, PR 4.4)
3.819	98	Paved parking, HSG A (PR 1.1, PR 1.2, PR 1.3, PR 2.2, PR 2.4, PR 4.1, PR 5.1)
1.276	98	Roofs, HSG A (PR 1.3, PR 2.2, PR 2.4)
0.218	98	Water Surface, 0% imp, HSG A (PR 1.3)
1.451	30	Woods, Good, HSG A (PR 1.3, PR 2.1, PR 2.3, PR 3.1, PR 4.3, PR 5.1)
10.083	69	TOTAL AREA

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Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.982	0.100	0.000	0.000	0.000	2.082	>75% Grass cover, Good	PR 1.1, PR 1.2, PR 1.3, PR 2.2, PR 2.4, PR 4.1
0.819	0.420	0.000	0.000	0.000	1.239	Meadow, non-grazed	PR 2.1, PR 2.3, PR 4.2, PR 4.3, PR 4.4, PR 5.1
3.819	0.000	0.000	0.000	0.000	3.819	Paved parking	PR 1.1, PR 1.2, PR 1.3, PR 2.2, PR 2.4, PR 4.1, PR 5.1
1.276	0.000	0.000	0.000	0.000	1.276	Roofs	PR 1.3, PR 2.2, PR 2.4
0.218	0.000	0.000	0.000	0.000	0.218	Water Surface, 0% imp	PR 1.3
1.451	0.000	0.000	0.000	0.000	1.451	Woods, Good	PR 1.3, PR 2.1, PR 2.3, PR 3.1, PR 4.3, PR 5.1
9.563	0.520	0.000	0.000	0.000	10.083	TOTAL AREA	

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Type III 24-hr 2-yr Rainfall=3.34"

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Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PR 1.1: PR 1.1	Runoff Area=2,705 sf 50.28% Impervious Runoff Depth=1.51" Tc=6.0 min CN=80 Runoff=0.11 cfs 0.008 af
Subcatchment PR 1.2: PR 1.2	Runoff Area=15,398 sf 36.65% Impervious Runoff Depth=0.63" Tc=6.0 min CN=64 Runoff=0.20 cfs 0.018 af
Subcatchment PR 1.3: PR 1.3	Runoff Area=76,423 sf 61.68% Impervious Runoff Depth=1.72" Flow Length=306' Tc=6.8 min CN=83 Runoff=3.45 cfs 0.252 af
Subcatchment PR 2.1: PR 2.1	Runoff Area=14,380 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=29' Slope=0.0200 '/' Tc=8.0 min CN=30 Runoff=0.00 cfs 0.000 af
Subcatchment PR 2.2: PR 2.2	Runoff Area=133,377 sf 76.23% Impervious Runoff Depth=1.80" Flow Length=359' Tc=7.2 min CN=84 Runoff=6.20 cfs 0.459 af
Subcatchment PR 2.3: PR 2.3	Runoff Area=17,092 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=112' Tc=6.5 min CN=30 Runoff=0.00 cfs 0.000 af
Subcatchment PR 2.4: PR 2.4	Runoff Area=91,951 sf 71.48% Impervious Runoff Depth=1.58" Tc=6.0 min CN=81 Runoff=3.89 cfs 0.278 af
Subcatchment PR 3.1: PR 3.1	Runoff Area=10,100 sf 0.00% Impervious Runoff Depth=0.00" Tc=6.0 min CN=30 Runoff=0.00 cfs 0.000 af
Subcatchment PR 4.1: PR 4.1	Runoff Area=2,688 sf 3.13% Impervious Runoff Depth=0.06" Tc=6.0 min CN=45 Runoff=0.00 cfs 0.000 af
Subcatchment PR 4.2: PR 4.2	Runoff Area=2,552 sf 0.00% Impervious Runoff Depth=0.00" Tc=6.0 min CN=34 Runoff=0.00 cfs 0.000 af
Subcatchment PR 4.3: PR 4.3	Runoff Area=63,985 sf 0.00% Impervious Runoff Depth=0.00" Flow Length=133' Tc=14.0 min CN=38 Runoff=0.00 cfs 0.000 af
Subcatchment PR 4.4: PR 4.4	Runoff Area=2,700 sf 0.00% Impervious Runoff Depth=0.00" Tc=6.0 min CN=30 Runoff=0.00 cfs 0.000 af
Subcatchment PR 5.1: PR 5.1	Runoff Area=5,871 sf 4.56% Impervious Runoff Depth=0.00" Tc=6.0 min CN=33 Runoff=0.00 cfs 0.000 af
Pond SDB1: Surface Detention (SDB-1)	Peak Elev=227.14' Storage=9,574 cf Inflow=3.45 cfs 0.252 af Primary=0.03 cfs 0.188 af Secondary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.188 af
Pond SDS1: MC-3500 Detention (SDS-1)	Peak Elev=216.70' Storage=1,881 cf Inflow=0.22 cfs 0.206 af Outflow=0.03 cfs 0.166 af
Pond SIS1: CMP Infiltration (SIS-1)	Peak Elev=227.67' Storage=7,206 cf Inflow=6.20 cfs 0.459 af Discarded=0.66 cfs 0.459 af Primary=0.00 cfs 0.000 af Outflow=0.66 cfs 0.459 af

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Type III 24-hr 2-yr Rainfall=3.34"

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Pond SIS2: CMP Infiltration (SIS-2) Peak Elev=230.07' Storage=4,186 cf Inflow=3.89 cfs 0.278 af
Discarded=0.44 cfs 0.278 af Primary=0.00 cfs 0.000 af Outflow=0.44 cfs 0.278 af

Link DP-1(PR): 12" RCP WAVERLY ST Inflow=0.11 cfs 0.173 af
Primary=0.11 cfs 0.173 af

Link DP-2(PR): WETLAND Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP-3(PR): NIKKIE ST CULVERT Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP-4(PR): WAVERLY STREET SHEET FLOW Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP-5(PR): UNION ST DRAIN SYSTEM Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 10.083 ac Runoff Volume = 1.016 af Average Runoff Depth = 1.21"
49.48% Pervious = 4.989 ac 50.52% Impervious = 5.094 ac

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Type III 24-hr 10-yr Rainfall=5.23"

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Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PR 1.1: PR 1.1	Runoff Area=2,705 sf 50.28% Impervious Runoff Depth=3.09" Tc=6.0 min CN=80 Runoff=0.23 cfs 0.016 af
Subcatchment PR 1.2: PR 1.2	Runoff Area=15,398 sf 36.65% Impervious Runoff Depth=1.73" Tc=6.0 min CN=64 Runoff=0.68 cfs 0.051 af
Subcatchment PR 1.3: PR 1.3	Runoff Area=76,423 sf 61.68% Impervious Runoff Depth=3.38" Flow Length=306' Tc=6.8 min CN=83 Runoff=6.73 cfs 0.495 af
Subcatchment PR 2.1: PR 2.1	Runoff Area=14,380 sf 0.00% Impervious Runoff Depth=0.01" Flow Length=29' Slope=0.0200 '/' Tc=8.0 min CN=30 Runoff=0.00 cfs 0.000 af
Subcatchment PR 2.2: PR 2.2	Runoff Area=133,377 sf 76.23% Impervious Runoff Depth=3.48" Flow Length=359' Tc=7.2 min CN=84 Runoff=11.89 cfs 0.888 af
Subcatchment PR 2.3: PR 2.3	Runoff Area=17,092 sf 0.00% Impervious Runoff Depth=0.01" Flow Length=112' Tc=6.5 min CN=30 Runoff=0.00 cfs 0.000 af
Subcatchment PR 2.4: PR 2.4	Runoff Area=91,951 sf 71.48% Impervious Runoff Depth=3.19" Tc=6.0 min CN=81 Runoff=7.88 cfs 0.561 af
Subcatchment PR 3.1: PR 3.1	Runoff Area=10,100 sf 0.00% Impervious Runoff Depth=0.01" Tc=6.0 min CN=30 Runoff=0.00 cfs 0.000 af
Subcatchment PR 4.1: PR 4.1	Runoff Area=2,688 sf 3.13% Impervious Runoff Depth=0.52" Tc=6.0 min CN=45 Runoff=0.02 cfs 0.003 af
Subcatchment PR 4.2: PR 4.2	Runoff Area=2,552 sf 0.00% Impervious Runoff Depth=0.09" Tc=6.0 min CN=34 Runoff=0.00 cfs 0.000 af
Subcatchment PR 4.3: PR 4.3	Runoff Area=63,985 sf 0.00% Impervious Runoff Depth=0.21" Flow Length=133' Tc=14.0 min CN=38 Runoff=0.05 cfs 0.026 af
Subcatchment PR 4.4: PR 4.4	Runoff Area=2,700 sf 0.00% Impervious Runoff Depth=0.01" Tc=6.0 min CN=30 Runoff=0.00 cfs 0.000 af
Subcatchment PR 5.1: PR 5.1	Runoff Area=5,871 sf 4.56% Impervious Runoff Depth=0.06" Tc=6.0 min CN=33 Runoff=0.00 cfs 0.001 af
Pond SDB1: Surface Detention (SDB-1)	Peak Elev=228.48' Storage=19,549 cf Inflow=6.73 cfs 0.495 af Primary=0.04 cfs 0.279 af Secondary=0.00 cfs 0.000 af Outflow=0.04 cfs 0.279 af
Pond SDS1: MC-3500 Detention (SDS-1)	Peak Elev=216.79' Storage=2,179 cf Inflow=0.71 cfs 0.330 af Outflow=0.06 cfs 0.286 af
Pond SIS1: CMP Infiltration (SIS-1)	Peak Elev=228.87' Storage=18,219 cf Inflow=11.89 cfs 0.888 af Discarded=0.66 cfs 0.889 af Primary=0.00 cfs 0.000 af Outflow=0.66 cfs 0.889 af

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Type III 24-hr 10-yr Rainfall=5.23"

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Pond SIS2: CMP Infiltration (SIS-2) Peak Elev=231.29' Storage=11,459 cf Inflow=7.88 cfs 0.561 af
Discarded=0.44 cfs 0.561 af Primary=0.00 cfs 0.000 af Outflow=0.44 cfs 0.561 af

Link DP-1(PR): 12" RCP WAVERLY ST Inflow=0.23 cfs 0.302 af
Primary=0.23 cfs 0.302 af

Link DP-2(PR): WETLAND Inflow=0.00 cfs 0.001 af
Primary=0.00 cfs 0.001 af

Link DP-3(PR): NIKKIE ST CULVERT Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP-4(PR): WAVERLY STREET SHEET FLOW Inflow=0.06 cfs 0.029 af
Primary=0.06 cfs 0.029 af

Link DP-5(PR): UNION ST DRAIN SYSTEM Inflow=0.00 cfs 0.001 af
Primary=0.00 cfs 0.001 af

Total Runoff Area = 10.083 ac Runoff Volume = 2.042 af Average Runoff Depth = 2.43"
49.48% Pervious = 4.989 ac 50.52% Impervious = 5.094 ac

61 Waverly St Hydrology

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Type III 24-hr 100-yr Rainfall=8.22"

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Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PR 1.1: PR 1.1	Runoff Area=2,705 sf 50.28% Impervious Runoff Depth=5.83" Tc=6.0 min CN=80 Runoff=0.42 cfs 0.030 af
Subcatchment PR 1.2: PR 1.2	Runoff Area=15,398 sf 36.65% Impervious Runoff Depth=3.96" Tc=6.0 min CN=64 Runoff=1.63 cfs 0.117 af
Subcatchment PR 1.3: PR 1.3	Runoff Area=76,423 sf 61.68% Impervious Runoff Depth=6.19" Flow Length=306' Tc=6.8 min CN=83 Runoff=12.03 cfs 0.905 af
Subcatchment PR 2.1: PR 2.1	Runoff Area=14,380 sf 0.00% Impervious Runoff Depth=0.47" Flow Length=29' Slope=0.0200 '/' Tc=8.0 min CN=30 Runoff=0.05 cfs 0.013 af
Subcatchment PR 2.2: PR 2.2	Runoff Area=133,377 sf 76.23% Impervious Runoff Depth=6.31" Flow Length=359' Tc=7.2 min CN=84 Runoff=21.02 cfs 1.609 af
Subcatchment PR 2.3: PR 2.3	Runoff Area=17,092 sf 0.00% Impervious Runoff Depth=0.47" Flow Length=112' Tc=6.5 min CN=30 Runoff=0.06 cfs 0.015 af
Subcatchment PR 2.4: PR 2.4	Runoff Area=91,951 sf 71.48% Impervious Runoff Depth=5.95" Tc=6.0 min CN=81 Runoff=14.42 cfs 1.047 af
Subcatchment PR 3.1: PR 3.1	Runoff Area=10,100 sf 0.00% Impervious Runoff Depth=0.47" Tc=6.0 min CN=30 Runoff=0.03 cfs 0.009 af
Subcatchment PR 4.1: PR 4.1	Runoff Area=2,688 sf 3.13% Impervious Runoff Depth=1.85" Tc=6.0 min CN=45 Runoff=0.11 cfs 0.010 af
Subcatchment PR 4.2: PR 4.2	Runoff Area=2,552 sf 0.00% Impervious Runoff Depth=0.79" Tc=6.0 min CN=34 Runoff=0.02 cfs 0.004 af
Subcatchment PR 4.3: PR 4.3	Runoff Area=63,985 sf 0.00% Impervious Runoff Depth=1.16" Flow Length=133' Tc=14.0 min CN=38 Runoff=0.98 cfs 0.141 af
Subcatchment PR 4.4: PR 4.4	Runoff Area=2,700 sf 0.00% Impervious Runoff Depth=0.47" Tc=6.0 min CN=30 Runoff=0.01 cfs 0.002 af
Subcatchment PR 5.1: PR 5.1	Runoff Area=5,871 sf 4.56% Impervious Runoff Depth=0.71" Tc=6.0 min CN=33 Runoff=0.04 cfs 0.008 af
Pond SDB1: Surface Detention (SDB-1)	Peak Elev=228.79' Storage=22,171 cf Inflow=12.03 cfs 0.905 af Primary=2.54 cfs 0.683 af Secondary=0.00 cfs 0.000 af Outflow=2.54 cfs 0.683 af
Pond SDS1: MC-3500 Detention (SDS-1)	Peak Elev=221.20' Storage=13,216 cf Inflow=2.93 cfs 0.799 af Outflow=0.41 cfs 0.756 af
Pond SIS1: CMP Infiltration (SIS-1)	Peak Elev=231.44' Storage=38,601 cf Inflow=21.02 cfs 1.609 af Discarded=0.66 cfs 1.439 af Primary=0.21 cfs 0.170 af Outflow=0.87 cfs 1.609 af

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Type III 24-hr 100-yr Rainfall=8.22"

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Pond SIS2: CMP Infiltration (SIS-2) Peak Elev=233.82' Storage=24,950 cf Inflow=14.42 cfs 1.047 af
Discarded=0.44 cfs 0.908 af Primary=0.16 cfs 0.139 af Outflow=0.60 cfs 1.047 af

Link DP-1(PR): 12" RCP WAVERLY ST Inflow=0.42 cfs 0.786 af
Primary=0.42 cfs 0.786 af

Link DP-2(PR): WETLAND Inflow=0.41 cfs 0.338 af
Primary=0.41 cfs 0.338 af

Link DP-3(PR): NIKKIE ST CULVERT Inflow=0.03 cfs 0.009 af
Primary=0.03 cfs 0.009 af

Link DP-4(PR): WAVERLY STREET SHEET FLOW Inflow=1.08 cfs 0.157 af
Primary=1.08 cfs 0.157 af

Link DP-5(PR): UNION ST DRAIN SYSTEM Inflow=0.04 cfs 0.008 af
Primary=0.04 cfs 0.008 af

Total Runoff Area = 10.083 ac Runoff Volume = 3.910 af Average Runoff Depth = 4.65"
49.48% Pervious = 4.989 ac 50.52% Impervious = 5.094 ac

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Type III 24-hr 100-yr Rainfall=8.22"

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Summary for Subcatchment PR 1.1: PR 1.1

Runoff = 0.42 cfs @ 12.09 hrs, Volume= 0.030 af, Depth= 5.83"

Routed to Link DP-1(PR) : 12" RCP WAVERLY ST

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
1,345	61	>75% Grass cover, Good, HSG B
1,360	98	Paved parking, HSG A
2,705	80	Weighted Average
1,345		49.72% Pervious Area
1,360		50.28% Impervious Area

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

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Type III 24-hr 100-yr Rainfall=8.22"

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Summary for Subcatchment PR 1.2: PR 1.2

Runoff = 1.63 cfs @ 12.09 hrs, Volume= 0.117 af, Depth= 3.96"
Routed to Pond SDS1 : MC-3500 Detention (SDS-1)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
5,643	98	Paved parking, HSG A
7,207	39	>75% Grass cover, Good, HSG A
2,548	61	>75% Grass cover, Good, HSG B
15,398	64	Weighted Average
9,755		63.35% Pervious Area
5,643		36.65% Impervious Area

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

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Type III 24-hr 100-yr Rainfall=8.22"

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Summary for Subcatchment PR 1.3: PR 1.3

[47] Hint: Peak is 338% of capacity of segment #4

Runoff = 12.03 cfs @ 12.10 hrs, Volume= 0.905 af, Depth= 6.19"
 Routed to Pond SDB1 : Surface Detention (SDB-1)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
10,500	98	Roofs, HSG A
36,641	98	Paved parking, HSG A
19,041	39	>75% Grass cover, Good, HSG A
9,482	98	Water Surface, 0% imp, HSG A
759	30	Woods, Good, HSG A
76,423	83	Weighted Average
29,282		38.32% Pervious Area
47,141		61.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"
0.4	56	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.7	160	0.0400	4.06		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.1	40	0.0100	4.54	3.56	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
6.8	306	Total			

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Type III 24-hr 100-yr Rainfall=8.22"

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Summary for Subcatchment PR 2.1: PR 2.1

Runoff = 0.05 cfs @ 12.43 hrs, Volume= 0.013 af, Depth= 0.47"

Routed to Link DP-2(PR) : WETLAND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
9,911	30	Meadow, non-grazed, HSG A
4,469	30	Woods, Good, HSG A
14,380	30	Weighted Average
14,380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	29	0.0200	0.06		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"

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Summary for Subcatchment PR 2.2: PR 2.2

[47] Hint: Peak is 590% of capacity of segment #4

Runoff = 21.02 cfs @ 12.10 hrs, Volume= 1.609 af, Depth= 6.31"
 Routed to Pond SIS1 : CMP Infiltration (SIS-1)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
24,000	98	Roofs, HSG A
* 77,676	98	Paved parking, HSG A
31,701	39	>75% Grass cover, Good, HSG A
133,377	84	Weighted Average
31,701		23.77% Pervious Area
101,676		76.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	50	0.0200	0.15		Sheet Flow, Grass: Short n= 0.150 P2= 3.20"
0.4	52	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.6	96	0.0200	2.87		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	161	0.0100	4.54	3.56	Pipe Channel, 12.0" Round Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.013 Corrugated PE, smooth interior
7.2	359	Total			

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Summary for Subcatchment PR 2.3: PR 2.3

Runoff = 0.06 cfs @ 12.40 hrs, Volume= 0.015 af, Depth= 0.47"

Routed to Link DP-2(PR) : WETLAND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
13,487	30	Woods, Good, HSG A
3,605	30	Meadow, non-grazed, HSG A
17,092	30	Weighted Average
17,092		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	50	0.1200	0.14		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
0.5	62	0.1500	1.94		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
6.5	112	Total			

61 Waverly St Hydrology

Type III 24-hr 100-yr Rainfall=8.22"

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Summary for Subcatchment PR 2.4: PR 2.4

Runoff = 14.42 cfs @ 12.09 hrs, Volume= 1.047 af, Depth= 5.95"
Routed to Pond SIS2 : CMP Infiltration (SIS-2)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
21,062	98	Roofs, HSG A
44,664	98	Paved parking, HSG A
26,225	39	>75% Grass cover, Good, HSG A
91,951	81	Weighted Average
26,225		28.52% Pervious Area
65,726		71.48% Impervious Area

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

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Type III 24-hr 100-yr Rainfall=8.22"

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Summary for Subcatchment PR 3.1: PR 3.1

Runoff = 0.03 cfs @ 12.40 hrs, Volume= 0.009 af, Depth= 0.47"
Routed to Link DP-3(PR) : NIKKIE ST CULVERT

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
10,100	30	Woods, Good, HSG A
10,100		100.00% Pervious Area

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

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Type III 24-hr 100-yr Rainfall=8.22"

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Summary for Subcatchment PR 4.1: PR 4.1

Runoff = 0.11 cfs @ 12.10 hrs, Volume= 0.010 af, Depth= 1.85"

Routed to Link DP-4(PR) : WAVERLY STREET SHEET FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
84	98	Paved parking, HSG A
2,144	39	>75% Grass cover, Good, HSG A
460	61	>75% Grass cover, Good, HSG B
2,688	45	Weighted Average
2,604		96.88% Pervious Area
84		3.13% Impervious Area

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

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Type III 24-hr 100-yr Rainfall=8.22"

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Summary for Subcatchment PR 4.2: PR 4.2

Runoff = 0.02 cfs @ 12.28 hrs, Volume= 0.004 af, Depth= 0.79"

Routed to Link DP-4(PR) : WAVERLY STREET SHEET FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
2,172	30	Meadow, non-grazed, HSG A
380	58	Meadow, non-grazed, HSG B
2,552	34	Weighted Average
2,552		100.00% Pervious Area

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

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Type III 24-hr 100-yr Rainfall=8.22"

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Summary for Subcatchment PR 4.3: PR 4.3

Runoff = 0.98 cfs @ 12.27 hrs, Volume= 0.141 af, Depth= 1.16"

Routed to Link DP-4(PR) : WAVERLY STREET SHEET FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
13,041	30	Meadow, non-grazed, HSG A
17,899	58	Meadow, non-grazed, HSG B
33,045	30	Woods, Good, HSG A
63,985	38	Weighted Average
63,985		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	50	0.0200	0.07		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 3.20"
1.7	83	0.0250	0.79		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
14.0	133	Total			

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Type III 24-hr 100-yr Rainfall=8.22"

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Summary for Subcatchment PR 4.4: PR 4.4

Runoff = 0.01 cfs @ 12.40 hrs, Volume= 0.002 af, Depth= 0.47"

Routed to Link DP-4(PR) : WAVERLY STREET SHEET FLOW

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
2,682	30	Meadow, non-grazed, HSG A
18	58	Meadow, non-grazed, HSG B
2,700	30	Weighted Average
2,700		100.00% Pervious Area

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

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Type III 24-hr 100-yr Rainfall=8.22"

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Summary for Subcatchment PR 5.1: PR 5.1

Runoff = 0.04 cfs @ 12.31 hrs, Volume= 0.008 af, Depth= 0.71"

Routed to Link DP-5(PR) : UNION ST DRAIN SYSTEM

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.22"

Area (sf)	CN	Description
1,338	30	Woods, Good, HSG A
268	98	Paved parking, HSG A
4,265	30	Meadow, non-grazed, HSG A
5,871	33	Weighted Average
5,603		95.44% Pervious Area
268		4.56% Impervious Area

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

Summary for Pond SDB1: Surface Detention (SDB-1)

Inflow Area = 1.754 ac, 61.68% Impervious, Inflow Depth = 6.19" for 100-yr event
 Inflow = 12.03 cfs @ 12.10 hrs, Volume= 0.905 af
 Outflow = 2.54 cfs @ 12.52 hrs, Volume= 0.683 af, Atten= 79%, Lag= 25.7 min
 Primary = 2.54 cfs @ 12.52 hrs, Volume= 0.683 af
 Routed to Pond SDS1 : MC-3500 Detention (SDS-1)
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link DP-2(PR) : WETLAND

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 228.79' @ 12.52 hrs Surf.Area= 8,633 sf Storage= 22,171 cf

Plug-Flow detention time= 1,098.4 min calculated for 0.683 af (75% of inflow)
 Center-of-Mass det. time= 1,014.3 min (1,809.8 - 795.4)

Volume	Invert	Avail.Storage	Storage Description
#1	225.50'	33,533 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
225.50	4,957	0	0
226.00	5,469	2,607	2,607
228.00	7,674	13,143	15,750
230.00	10,109	17,783	33,533

Device	Routing	Invert	Outlet Devices
#1	Primary	221.00'	12.0" Round Culvert L= 45.0' Ke= 0.500 Inlet / Outlet Invert= 221.00' / 218.69' S= 0.0513 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	225.50'	1.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	228.50'	5.0' long x 1.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s)
#4	Secondary	229.00'	8.0' long Sharp-Crested Rectangular Weir 2 End Contraction(s) 0.5' Crest Height

Primary OutFlow Max=2.54 cfs @ 12.52 hrs HW=228.79' TW=217.45' (Dynamic Tailwater)
 ↑ **1=Culvert** (Passes 2.54 cfs of 10.21 cfs potential flow)
 ↑ **2=Orifice/Grate** (Orifice Controls 0.05 cfs @ 8.67 fps)
 ↑ **3=Sharp-Crested Rectangular Weir** (Weir Controls 2.49 cfs @ 1.75 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=225.50' TW=0.00' (Dynamic Tailwater)
 ↑ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Stage-Discharge for Pond SDB1: Surface Detention (SDB-1)

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
225.50	0.00	0.00	0.00	228.10	0.04	0.04	0.00
225.55	0.00	0.00	0.00	228.15	0.04	0.04	0.00
225.60	0.01	0.01	0.00	228.20	0.04	0.04	0.00
225.65	0.01	0.01	0.00	228.25	0.04	0.04	0.00
225.70	0.01	0.01	0.00	228.30	0.04	0.04	0.00
225.75	0.01	0.01	0.00	228.35	0.04	0.04	0.00
225.80	0.01	0.01	0.00	228.40	0.04	0.04	0.00
225.85	0.01	0.01	0.00	228.45	0.04	0.04	0.00
225.90	0.02	0.02	0.00	228.50	0.05	0.05	0.00
225.95	0.02	0.02	0.00	228.55	0.23	0.23	0.00
226.00	0.02	0.02	0.00	228.60	0.56	0.56	0.00
226.05	0.02	0.02	0.00	228.65	0.99	0.99	0.00
226.10	0.02	0.02	0.00	228.70	1.50	1.50	0.00
226.15	0.02	0.02	0.00	228.75	2.07	2.07	0.00
226.20	0.02	0.02	0.00	228.80	2.70	2.70	0.00
226.25	0.02	0.02	0.00	228.85	3.39	3.39	0.00
226.30	0.02	0.02	0.00	228.90	4.12	4.12	0.00
226.35	0.02	0.02	0.00	228.95	4.90	4.90	0.00
226.40	0.02	0.02	0.00	229.00	5.71	5.71	0.00
226.45	0.03	0.03	0.00	229.05	6.87	6.57	0.30
226.50	0.03	0.03	0.00	229.10	8.31	7.47	0.85
226.55	0.03	0.03	0.00	229.15	9.96	8.40	1.57
226.60	0.03	0.03	0.00	229.20	11.80	9.36	2.44
226.65	0.03	0.03	0.00	229.25	13.80	10.35	3.45
226.70	0.03	0.03	0.00	229.30	15.14	10.56	4.58
226.75	0.03	0.03	0.00	229.35	16.42	10.60	5.83
226.80	0.03	0.03	0.00	229.40	17.82	10.63	7.19
226.85	0.03	0.03	0.00	229.45	19.33	10.66	8.67
226.90	0.03	0.03	0.00	229.50	20.95	10.70	10.25
226.95	0.03	0.03	0.00	229.55	22.67	10.73	11.94
227.00	0.03	0.03	0.00	229.60	24.50	10.76	13.73
227.05	0.03	0.03	0.00	229.65	26.43	10.80	15.63
227.10	0.03	0.03	0.00	229.70	28.46	10.83	17.63
227.15	0.03	0.03	0.00	229.75	30.59	10.86	19.73
227.20	0.03	0.03	0.00	229.80	32.83	10.89	21.93
227.25	0.03	0.03	0.00	229.85	35.17	10.93	24.24
227.30	0.03	0.03	0.00	229.90	37.60	10.96	26.64
227.35	0.04	0.04	0.00	229.95	40.14	10.99	29.14
227.40	0.04	0.04	0.00	230.00	42.77	11.03	31.75
227.45	0.04	0.04	0.00				
227.50	0.04	0.04	0.00				
227.55	0.04	0.04	0.00				
227.60	0.04	0.04	0.00				
227.65	0.04	0.04	0.00				
227.70	0.04	0.04	0.00				
227.75	0.04	0.04	0.00				
227.80	0.04	0.04	0.00				
227.85	0.04	0.04	0.00				
227.90	0.04	0.04	0.00				
227.95	0.04	0.04	0.00				
228.00	0.04	0.04	0.00				
228.05	0.04	0.04	0.00				

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Type III 24-hr 100-yr Rainfall=8.22"

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Stage-Area-Storage for Pond SDB1: Surface Detention (SDB-1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
225.50	4,957	0	228.10	7,796	16,523
225.55	5,008	249	228.15	7,857	16,914
225.60	5,059	501	228.20	7,917	17,309
225.65	5,111	755	228.25	7,978	17,706
225.70	5,162	1,012	228.30	8,039	18,106
225.75	5,213	1,271	228.35	8,100	18,510
225.80	5,264	1,533	228.40	8,161	18,917
225.85	5,315	1,798	228.45	8,222	19,326
225.90	5,367	2,065	228.50	8,283	19,739
225.95	5,418	2,334	228.55	8,344	20,154
226.00	5,469	2,607	228.60	8,404	20,573
226.05	5,524	2,881	228.65	8,465	20,995
226.10	5,579	3,159	228.70	8,526	21,420
226.15	5,634	3,439	228.75	8,587	21,847
226.20	5,689	3,722	228.80	8,648	22,278
226.25	5,745	4,008	228.85	8,709	22,712
226.30	5,800	4,297	228.90	8,770	23,149
226.35	5,855	4,588	228.95	8,831	23,589
226.40	5,910	4,882	229.00	8,892	24,032
226.45	5,965	5,179	229.05	8,952	24,478
226.50	6,020	5,479	229.10	9,013	24,927
226.55	6,075	5,781	229.15	9,074	25,380
226.60	6,130	6,086	229.20	9,135	25,835
226.65	6,186	6,394	229.25	9,196	26,293
226.70	6,241	6,705	229.30	9,257	26,754
226.75	6,296	7,018	229.35	9,318	27,219
226.80	6,351	7,335	229.40	9,379	27,686
226.85	6,406	7,653	229.45	9,439	28,157
226.90	6,461	7,975	229.50	9,500	28,630
226.95	6,516	8,300	229.55	9,561	29,107
227.00	6,572	8,627	229.60	9,622	29,586
227.05	6,627	8,957	229.65	9,683	30,069
227.10	6,682	9,289	229.70	9,744	30,555
227.15	6,737	9,625	229.75	9,805	31,043
227.20	6,792	9,963	229.80	9,866	31,535
227.25	6,847	10,304	229.85	9,926	32,030
227.30	6,902	10,648	229.90	9,987	32,528
227.35	6,957	10,994	229.95	10,048	33,029
227.40	7,013	11,344	230.00	10,109	33,533
227.45	7,068	11,696			
227.50	7,123	12,050			
227.55	7,178	12,408			
227.60	7,233	12,768			
227.65	7,288	13,131			
227.70	7,343	13,497			
227.75	7,398	13,865			
227.80	7,454	14,237			
227.85	7,509	14,611			
227.90	7,564	14,988			
227.95	7,619	15,367			
228.00	7,674	15,750			
228.05	7,735	16,135			

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Summary for Pond SDS1: MC-3500 Detention (SDS-1)

Inflow Area = 2.108 ac, 57.49% Impervious, Inflow Depth > 4.55" for 100-yr event
 Inflow = 2.93 cfs @ 12.50 hrs, Volume= 0.799 af
 Outflow = 0.41 cfs @ 16.55 hrs, Volume= 0.756 af, Atten= 86%, Lag= 243.1 min
 Primary = 0.41 cfs @ 16.55 hrs, Volume= 0.756 af
 Routed to Link DP-1(PR) : 12" RCP WAVERLY ST

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 221.20' @ 16.55 hrs Surf.Area= 3,864 sf Storage= 13,216 cf
 Flood Elev= 393.58' Surf.Area= 3,864 sf Storage= 13,292 cf

Plug-Flow detention time= 591.5 min calculated for 0.756 af (95% of inflow)
 Center-of-Mass det. time= 382.5 min (2,050.3 - 1,667.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	215.75'	5,305 cf	49.92'W x 77.40'L x 5.50'H Field A 21,250 cf Overall - 7,987 cf Embedded = 13,263 cf x 40.0% Voids
#2	215.75'	81 cf	6.0" Round Pipe Storage Inside #1 L= 415.0'
#3A	216.50'	7,905 cf	ADS_StormTech MC-3500 d +Cap x 70 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap 70 Chambers in 7 Rows Cap Storage= 14.9 cf x 2 x 7 rows = 208.6 cf
		13,292 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	215.75'	12.0" Round Culvert L= 27.0' Ke= 0.500 Inlet / Outlet Invert= 215.75' / 215.62' S= 0.0048 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 0.79 sf
#2	Device 1	215.75'	0.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#3	Device 1	216.60'	3.0" W x 1.5" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 1	219.45'	1.5" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#5	Primary	221.20'	4.5' long x 1.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s)

Primary OutFlow Max=0.41 cfs @ 16.55 hrs HW=221.20' TW=0.00' (Dynamic Tailwater)

- 1=Culvert (Passes 0.41 cfs of 8.41 cfs potential flow)
- 2=Orifice/Grate (Orifice Controls 0.02 cfs @ 11.22 fps)
- 3=Orifice/Grate (Orifice Controls 0.32 cfs @ 10.26 fps)
- 4=Orifice/Grate (Orifice Controls 0.08 cfs @ 6.26 fps)
- 5=Sharp-Crested Rectangular Weir (Weir Controls 0.00 cfs @ 0.10 fps)

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Stage-Discharge for Pond SDS1: MC-3500 Detention (SDS-1)

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
215.75	0.00	267.75	144.66	319.75	211.03	371.75	261.04
216.75	0.05	268.75	146.22	320.75	212.11	372.75	261.91
217.75	0.17	269.75	147.77	321.75	213.18	373.75	262.78
218.75	0.23	270.75	149.29	322.75	214.24	374.75	263.64
219.75	0.31	271.75	150.81	323.75	215.29	375.75	264.50
220.75	0.38	272.75	152.30	324.75	216.35	376.75	265.36
221.75	6.30	273.75	153.79	325.75	217.39	377.75	266.21
222.75	21.89	274.75	155.26	326.75	218.43	378.75	267.06
223.75	30.66	275.75	156.71	327.75	219.47	379.75	267.91
224.75	37.38	276.75	158.15	328.75	220.50	380.75	268.76
225.75	43.04	277.75	159.58	329.75	221.53	381.75	269.60
226.75	48.04	278.75	161.00	330.75	222.55	382.75	270.44
227.75	52.56	279.75	162.40	331.75	223.57	383.75	271.28
228.75	56.72	280.75	163.79	332.75	224.58	384.75	272.12
229.75	60.59	281.75	165.18	333.75	225.59	385.75	272.95
230.75	64.23	282.75	166.54	334.75	226.60	386.75	273.78
231.75	67.67	283.75	167.90	335.75	227.60	387.75	274.61
232.75	70.95	284.75	169.25	336.75	228.59	388.75	275.43
233.75	74.08	285.75	170.58	337.75	229.58	389.75	276.25
234.75	77.09	286.75	171.91	338.75	230.57	390.75	277.08
235.75	79.98	287.75	173.23	339.75	231.55	391.75	277.89
236.75	82.77	288.75	174.53	340.75	232.53	392.75	278.71
237.75	85.47	289.75	175.83	341.75	233.50		
238.75	88.08	290.75	177.11	342.75	234.47		
239.75	90.63	291.75	178.39	343.75	235.44		
240.75	93.10	292.75	179.66	344.75	236.40		
241.75	95.51	293.75	180.92	345.75	237.36		
242.75	97.85	294.75	182.17	346.75	238.31		
243.75	100.15	295.75	183.41	347.75	239.27		
244.75	102.39	296.75	184.64	348.75	240.21		
245.75	104.58	297.75	185.87	349.75	241.16		
246.75	106.73	298.75	187.09	350.75	242.10		
247.75	108.84	299.75	188.30	351.75	243.03		
248.75	110.90	300.75	189.50	352.75	243.96		
249.75	112.93	301.75	190.69	353.75	244.89		
250.75	114.93	302.75	191.88	354.75	245.82		
251.75	116.88	303.75	193.06	355.75	246.74		
252.75	118.81	304.75	194.23	356.75	247.66		
253.75	120.71	305.75	195.40	357.75	248.57		
254.75	122.57	306.75	196.55	358.75	249.48		
255.75	124.41	307.75	197.71	359.75	250.39		
256.75	126.22	308.75	198.85	360.75	251.30		
257.75	128.01	309.75	199.99	361.75	252.20		
258.75	129.77	310.75	201.12	362.75	253.10		
259.75	131.51	311.75	202.25	363.75	253.99		
260.75	133.22	312.75	203.37	364.75	254.88		
261.75	134.92	313.75	204.48	365.75	255.77		
262.75	136.59	314.75	205.59	366.75	256.66		
263.75	138.24	315.75	206.69	367.75	257.54		
264.75	139.87	316.75	207.78	368.75	258.42		
265.75	141.49	317.75	208.87	369.75	259.30		
266.75	143.08	318.75	209.96	370.75	260.17		

61 Waverly St Hydrology

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Stage-Area-Storage for Pond SDS1: MC-3500 Detention (SDS-1)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
215.75	0	319.75	13,292
217.75	5,297	321.75	13,292
219.75	10,858	323.75	13,292
221.75	13,292	325.75	13,292
223.75	13,292	327.75	13,292
225.75	13,292	329.75	13,292
227.75	13,292	331.75	13,292
229.75	13,292	333.75	13,292
231.75	13,292	335.75	13,292
233.75	13,292	337.75	13,292
235.75	13,292	339.75	13,292
237.75	13,292	341.75	13,292
239.75	13,292	343.75	13,292
241.75	13,292	345.75	13,292
243.75	13,292	347.75	13,292
245.75	13,292	349.75	13,292
247.75	13,292	351.75	13,292
249.75	13,292	353.75	13,292
251.75	13,292	355.75	13,292
253.75	13,292	357.75	13,292
255.75	13,292	359.75	13,292
257.75	13,292	361.75	13,292
259.75	13,292	363.75	13,292
261.75	13,292	365.75	13,292
263.75	13,292	367.75	13,292
265.75	13,292	369.75	13,292
267.75	13,292	371.75	13,292
269.75	13,292	373.75	13,292
271.75	13,292	375.75	13,292
273.75	13,292	377.75	13,292
275.75	13,292	379.75	13,292
277.75	13,292	381.75	13,292
279.75	13,292	383.75	13,292
281.75	13,292	385.75	13,292
283.75	13,292	387.75	13,292
285.75	13,292	389.75	13,292
287.75	13,292	391.75	13,292
289.75	13,292		
291.75	13,292		
293.75	13,292		
295.75	13,292		
297.75	13,292		
299.75	13,292		
301.75	13,292		
303.75	13,292		
305.75	13,292		
307.75	13,292		
309.75	13,292		
311.75	13,292		
313.75	13,292		
315.75	13,292		
317.75	13,292		

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Summary for Pond SIS1: CMP Infiltration (SIS-1)

Inflow Area = 3.062 ac, 76.23% Impervious, Inflow Depth = 6.31" for 100-yr event
 Inflow = 21.02 cfs @ 12.10 hrs, Volume= 1.609 af
 Outflow = 0.87 cfs @ 15.24 hrs, Volume= 1.609 af, Atten= 96%, Lag= 188.6 min
 Discarded = 0.66 cfs @ 10.48 hrs, Volume= 1.439 af
 Primary = 0.21 cfs @ 15.24 hrs, Volume= 0.170 af
 Routed to Link DP-2(PR) : WETLAND

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 231.44' @ 15.24 hrs Surf.Area= 11,886 sf Storage= 38,601 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 455.6 min (1,248.8 - 793.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	226.50'	12,571 cf	84.00'W x 130.00'L x 5.00'H Field A 54,600 cf Overall - 23,172 cf Embedded = 31,428 cf x 40.0% Voids
#2A	227.00'	23,172 cf	CMP Round 48 x 84 Inside #1 Effective Size= 48.0"W x 48.0"H => 12.57 sf x 20.00'L = 251.3 cf Overall Size= 48.0"W x 48.0"H x 20.00'L 84 Chambers in 14 Rows 82.00' Header x 12.57 sf x 2 = 2,060.9 cf Inside
#3B	226.50'	1,123 cf	42.00'W x 23.00'L x 5.00'H Field B 4,830 cf Overall - 2,023 cf Embedded = 2,807 cf x 40.0% Voids
#4B	227.00'	2,023 cf	CMP Round 48 x 7 Inside #3 Effective Size= 48.0"W x 48.0"H => 12.57 sf x 20.00'L = 251.3 cf Overall Size= 48.0"W x 48.0"H x 20.00'L Row Length Adjustment= +3.00' x 12.57 sf x 7 rows
		38,889 cf	Total Available Storage

Storage Group A created with Chamber Wizard
 Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	226.50'	2.410 in/hr Exfiltration over Surface area
#2	Primary	228.95'	12.0" Round Culvert L= 158.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 228.95' / 228.00' S= 0.0060 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#3	Device 2	229.00'	2.0" W x 2.0" H Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	231.45'	4.5' long x 2.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s)

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Discarded OutFlow Max=0.66 cfs @ 10.48 hrs HW=226.57' (Free Discharge)

↑1=Exfiltration (Exfiltration Controls 0.66 cfs)

Primary OutFlow Max=0.21 cfs @ 15.24 hrs HW=231.44' TW=0.00' (Dynamic Tailwater)

↑2=Culvert (Passes 0.21 cfs of 3.87 cfs potential flow)

↑3=Orifice/Grate (Orifice Controls 0.21 cfs @ 7.39 fps)

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

Stage-Discharge for Pond SIS1: CMP Infiltration (SIS-1)

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
226.50	0.00	0.00	0.00	231.70	2.70	0.66	2.04
226.60	0.66	0.66	0.00	231.80	3.88	0.66	3.22
226.70	0.66	0.66	0.00	231.90	4.89	0.66	4.22
226.80	0.66	0.66	0.00	232.00	4.96	0.66	4.29
226.90	0.66	0.66	0.00	232.10	5.03	0.66	4.37
227.00	0.66	0.66	0.00	232.20	5.10	0.66	4.44
227.10	0.66	0.66	0.00	232.30	5.17	0.66	4.50
227.20	0.66	0.66	0.00	232.40	5.24	0.66	4.57
227.30	0.66	0.66	0.00	232.50	5.30	0.66	4.64
227.40	0.66	0.66	0.00	232.60	5.37	0.66	4.70
227.50	0.66	0.66	0.00	232.70	5.43	0.66	4.77
227.60	0.66	0.66	0.00	232.80	5.50	0.66	4.83
227.70	0.66	0.66	0.00	232.90	5.56	0.66	4.90
227.80	0.66	0.66	0.00	233.00	5.62	0.66	4.96
227.90	0.66	0.66	0.00	233.10	5.68	0.66	5.02
228.00	0.66	0.66	0.00	233.20	5.74	0.66	5.08
228.10	0.66	0.66	0.00	233.30	5.80	0.66	5.14
228.20	0.66	0.66	0.00	233.40	5.86	0.66	5.20
228.30	0.66	0.66	0.00				
228.40	0.66	0.66	0.00				
228.50	0.66	0.66	0.00				
228.60	0.66	0.66	0.00				
228.70	0.66	0.66	0.00				
228.80	0.66	0.66	0.00				
228.90	0.66	0.66	0.00				
229.00	0.66	0.66	0.00				
229.10	0.68	0.66	0.02				
229.20	0.71	0.66	0.04				
229.30	0.72	0.66	0.06				
229.40	0.74	0.66	0.08				
229.50	0.75	0.66	0.09				
229.60	0.76	0.66	0.10				
229.70	0.77	0.66	0.10				
229.80	0.78	0.66	0.11				
229.90	0.78	0.66	0.12				
230.00	0.79	0.66	0.13				
230.10	0.80	0.66	0.13				
230.20	0.80	0.66	0.14				
230.30	0.81	0.66	0.15				
230.40	0.82	0.66	0.15				
230.50	0.82	0.66	0.16				
230.60	0.83	0.66	0.16				
230.70	0.83	0.66	0.17				
230.80	0.84	0.66	0.18				
230.90	0.84	0.66	0.18				
231.00	0.85	0.66	0.19				
231.10	0.85	0.66	0.19				
231.20	0.86	0.66	0.19				
231.30	0.86	0.66	0.20				
231.40	0.87	0.66	0.20				
231.50	1.04	0.66	0.37				
231.60	1.72	0.66	1.06				

61 Waverly St Hydrology

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Type III 24-hr 100-yr Rainfall=8.22"

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Stage-Area-Storage for Pond SIS1: CMP Infiltration (SIS-1)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
226.50	11,886	0	231.70	11,886	38,889
226.60	11,886	475	231.80	11,886	38,889
226.70	11,886	951	231.90	11,886	38,889
226.80	11,886	1,426	232.00	11,886	38,889
226.90	11,886	1,902	232.10	11,886	38,889
227.00	11,886	2,377	232.20	11,886	38,889
227.10	11,886	2,953	232.30	11,886	38,889
227.20	11,886	3,611	232.40	11,886	38,889
227.30	11,886	4,319	232.50	11,886	38,889
227.40	11,886	5,066	232.60	11,886	38,889
227.50	11,886	5,845	232.70	11,886	38,889
227.60	11,886	6,652	232.80	11,886	38,889
227.70	11,886	7,482	232.90	11,886	38,889
227.80	11,886	8,333	233.00	11,886	38,889
227.90	11,886	9,202	233.10	11,886	38,889
228.00	11,886	10,087	233.20	11,886	38,889
228.10	11,886	10,986	233.30	11,886	38,889
228.20	11,886	11,897	233.40	11,886	38,889
228.30	11,886	12,818			
228.40	11,886	13,749			
228.50	11,886	14,687			
228.60	11,886	15,631			
228.70	11,886	16,580			
228.80	11,886	17,533			
228.90	11,886	18,488			
229.00	11,886	19,445			
229.10	11,886	20,401			
229.20	11,886	21,356			
229.30	11,886	22,309			
229.40	11,886	23,258			
229.50	11,886	24,203			
229.60	11,886	25,141			
229.70	11,886	26,071			
229.80	11,886	26,993			
229.90	11,886	27,903			
230.00	11,886	28,802			
230.10	11,886	29,687			
230.20	11,886	30,556			
230.30	11,886	31,407			
230.40	11,886	32,238			
230.50	11,886	33,044			
230.60	11,886	33,824			
230.70	11,886	34,571			
230.80	11,886	35,279			
230.90	11,886	35,936			
231.00	11,886	36,512			
231.10	11,886	36,988			
231.20	11,886	37,463			
231.30	11,886	37,938			
231.40	11,886	38,414			
231.50	11,886	38,889			
231.60	11,886	38,889			

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Summary for Pond SIS2: CMP Infiltration (SIS-2)

Inflow Area = 2.111 ac, 71.48% Impervious, Inflow Depth = 5.95" for 100-yr event
 Inflow = 14.42 cfs @ 12.09 hrs, Volume= 1.047 af
 Outflow = 0.60 cfs @ 15.15 hrs, Volume= 1.047 af, Atten= 96%, Lag= 184.0 min
 Discarded = 0.44 cfs @ 10.63 hrs, Volume= 0.908 af
 Primary = 0.16 cfs @ 15.15 hrs, Volume= 0.139 af
 Routed to Link DP-2(PR) : WETLAND

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
 Peak Elev= 233.82' @ 15.15 hrs Surf.Area= 7,800 sf Storage= 24,950 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 437.1 min (1,236.7 - 799.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	229.00'	8,985 cf	60.00'W x 130.00'L x 5.00'H Field A 39,000 cf Overall - 16,537 cf Embedded = 22,463 cf x 40.0% Voids
#2A	229.50'	16,537 cf	CMP Round 48 x 60 Inside #1 Effective Size= 48.0"W x 48.0"H => 12.57 sf x 20.00'L = 251.3 cf Overall Size= 48.0"W x 48.0"H x 20.00'L 60 Chambers in 10 Rows 58.00' Header x 12.57 sf x 2 = 1,457.7 cf Inside
		25,522 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	229.00'	2.410 in/hr Exfiltration over Surface area
#2	Primary	231.25'	12.0" Round Culvert L= 50.0' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 231.25' / 231.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#3	Device 2	231.29'	2.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads
#4	Device 2	233.95'	4.5' long x 2.00' rise Sharp-Crested Rectangular Weir 2 End Contraction(s)

Discarded OutFlow Max=0.44 cfs @ 10.63 hrs HW=229.07' (Free Discharge)
 ↳ **1=Exfiltration** (Exfiltration Controls 0.44 cfs)

Primary OutFlow Max=0.16 cfs @ 15.15 hrs HW=233.82' TW=0.00' (Dynamic Tailwater)
 ↳ **2=Culvert** (Passes 0.16 cfs of 4.85 cfs potential flow)
 ↳ ↳ **3=Orifice/Grate** (Orifice Controls 0.16 cfs @ 7.53 fps)
 ↳ ↳ ↳ **4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

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Stage-Discharge for Pond SIS2: CMP Infiltration (SIS-2)

Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)	Elevation (feet)	Discharge (cfs)	Discarded (cfs)	Primary (cfs)
229.00	0.00	0.00	0.00	234.20	2.43	0.44	2.00
229.10	0.44	0.44	0.00	234.30	3.61	0.44	3.18
229.20	0.44	0.44	0.00	234.40	4.97	0.44	4.54
229.30	0.44	0.44	0.00	234.50	6.12	0.44	5.69
229.40	0.44	0.44	0.00	234.60	6.24	0.44	5.80
229.50	0.44	0.44	0.00	234.70	6.35	0.44	5.91
229.60	0.44	0.44	0.00	234.80	6.45	0.44	6.02
229.70	0.44	0.44	0.00	234.90	6.56	0.44	6.13
229.80	0.44	0.44	0.00	235.00	6.67	0.44	6.23
229.90	0.44	0.44	0.00	235.10	6.77	0.44	6.33
230.00	0.44	0.44	0.00	235.20	6.87	0.44	6.43
230.10	0.44	0.44	0.00	235.30	6.97	0.44	6.53
230.20	0.44	0.44	0.00	235.40	7.07	0.44	6.63
230.30	0.44	0.44	0.00	235.50	7.17	0.44	6.73
230.40	0.44	0.44	0.00	235.60	7.26	0.44	6.83
230.50	0.44	0.44	0.00	235.70	7.35	0.44	6.92
230.60	0.44	0.44	0.00	235.80	7.45	0.44	7.01
230.70	0.44	0.44	0.00	235.90	7.54	0.44	7.10
230.80	0.44	0.44	0.00				
230.90	0.44	0.44	0.00				
231.00	0.44	0.44	0.00				
231.10	0.44	0.44	0.00				
231.20	0.44	0.44	0.00				
231.30	0.44	0.44	0.00				
231.40	0.45	0.44	0.02				
231.50	0.47	0.44	0.04				
231.60	0.49	0.44	0.05				
231.70	0.50	0.44	0.06				
231.80	0.50	0.44	0.07				
231.90	0.51	0.44	0.08				
232.00	0.52	0.44	0.08				
232.10	0.52	0.44	0.09				
232.20	0.53	0.44	0.10				
232.30	0.54	0.44	0.10				
232.40	0.54	0.44	0.11				
232.50	0.55	0.44	0.11				
232.60	0.55	0.44	0.12				
232.70	0.56	0.44	0.12				
232.80	0.56	0.44	0.13				
232.90	0.56	0.44	0.13				
233.00	0.57	0.44	0.13				
233.10	0.57	0.44	0.14				
233.20	0.58	0.44	0.14				
233.30	0.58	0.44	0.15				
233.40	0.58	0.44	0.15				
233.50	0.59	0.44	0.15				
233.60	0.59	0.44	0.16				
233.70	0.60	0.44	0.16				
233.80	0.60	0.44	0.16				
233.90	0.60	0.44	0.17				
234.00	0.77	0.44	0.33				
234.10	1.46	0.44	1.02				

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Stage-Area-Storage for Pond SIS2: CMP Infiltration (SIS-2)

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
229.00	7,800	0	234.20	7,800	25,522
229.10	7,800	312	234.30	7,800	25,522
229.20	7,800	624	234.40	7,800	25,522
229.30	7,800	936	234.50	7,800	25,522
229.40	7,800	1,248	234.60	7,800	25,522
229.50	7,800	1,560	234.70	7,800	25,522
229.60	7,800	1,938	234.80	7,800	25,522
229.70	7,800	2,369	234.90	7,800	25,522
229.80	7,800	2,834	235.00	7,800	25,522
229.90	7,800	3,324	235.10	7,800	25,522
230.00	7,800	3,836	235.20	7,800	25,522
230.10	7,800	4,365	235.30	7,800	25,522
230.20	7,800	4,910	235.40	7,800	25,522
230.30	7,800	5,469	235.50	7,800	25,522
230.40	7,800	6,039	235.60	7,800	25,522
230.50	7,800	6,620	235.70	7,800	25,522
230.60	7,800	7,210	235.80	7,800	25,522
230.70	7,800	7,808	235.90	7,800	25,522
230.80	7,800	8,412			
230.90	7,800	9,023			
231.00	7,800	9,639			
231.10	7,800	10,258			
231.20	7,800	10,881			
231.30	7,800	11,507			
231.40	7,800	12,133			
231.50	7,800	12,761			
231.60	7,800	13,389			
231.70	7,800	14,016			
231.80	7,800	14,641			
231.90	7,800	15,264			
232.00	7,800	15,884			
232.10	7,800	16,499			
232.20	7,800	17,110			
232.30	7,800	17,715			
232.40	7,800	18,313			
232.50	7,800	18,903			
232.60	7,800	19,483			
232.70	7,800	20,054			
232.80	7,800	20,612			
232.90	7,800	21,157			
233.00	7,800	21,687			
233.10	7,800	22,198			
233.20	7,800	22,688			
233.30	7,800	23,153			
233.40	7,800	23,584			
233.50	7,800	23,962			
233.60	7,800	24,274			
233.70	7,800	24,586			
233.80	7,800	24,898			
233.90	7,800	25,210			
234.00	7,800	25,522			
234.10	7,800	25,522			

61 Waverly St Hydrology

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Type III 24-hr 100-yr Rainfall=8.22"

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Summary for Link DP-1(PR): 12" RCP WAVERLY ST

Inflow Area = 2.170 ac, 57.28% Impervious, Inflow Depth > 4.35" for 100-yr event
Inflow = 0.42 cfs @ 16.54 hrs, Volume= 0.786 af
Primary = 0.42 cfs @ 16.54 hrs, Volume= 0.786 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

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Summary for Link DP-2(PR): WETLAND

Inflow Area = 5.895 ac, 65.19% Impervious, Inflow Depth = 0.69" for 100-yr event
Inflow = 0.41 cfs @ 14.80 hrs, Volume= 0.338 af
Primary = 0.41 cfs @ 14.80 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

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Summary for Link DP-3(PR): NIKKIE ST CULVERT

Inflow Area = 0.232 ac, 0.00% Impervious, Inflow Depth = 0.47" for 100-yr event
Inflow = 0.03 cfs @ 12.40 hrs, Volume= 0.009 af
Primary = 0.03 cfs @ 12.40 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

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Summary for Link DP-4(PR): WAVERLY STREET SHEET FLOW

Inflow Area = 1.651 ac, 0.12% Impervious, Inflow Depth = 1.14" for 100-yr event
Inflow = 1.08 cfs @ 12.27 hrs, Volume= 0.157 af
Primary = 1.08 cfs @ 12.27 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

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Summary for Link DP-5(PR): UNION ST DRAIN SYSTEM

Inflow Area = 0.135 ac, 4.56% Impervious, Inflow Depth = 0.71" for 100-yr event
Inflow = 0.04 cfs @ 12.31 hrs, Volume= 0.008 af
Primary = 0.04 cfs @ 12.31 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs