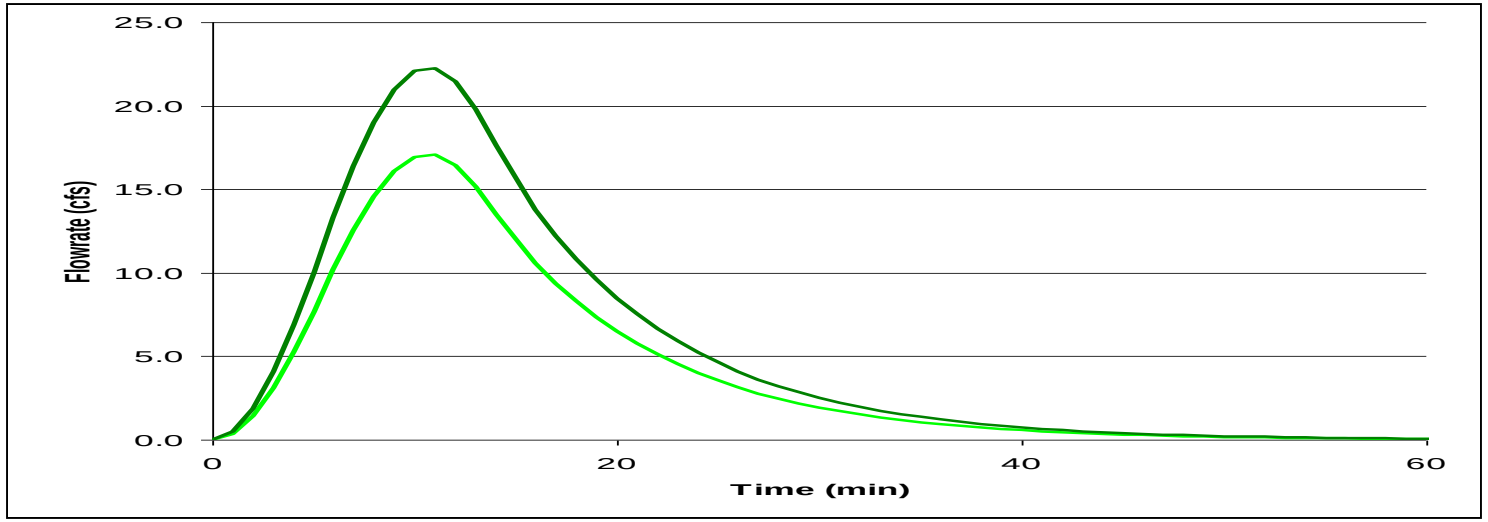
Quantity Control Requirements:

- 2-year storm: control peak discharge to pre-development conditions.
- 15-year storm: control peak discharge to pre-project conditions.

Curve Number Reduction

1. Calculate Curve Number and Site Runoff Volume
2. Subtract Runoff Reduction Volume Achieved from Site Runoff Volume
3. Determine Reduced Curve Number based on Reduced Site Runoff Volume



Detention Calculations

D.A. 1

Pre-Development CN = 70

Pre-Project:

Imp. Cover= 16,187 sf, CN = 99

Comp. Cover= 5,914 sf, CN = 74

Pre-Project CN: 92

D.A. 2

Pre-Development CN: 70

Pre-Project:

Imp. Cover= 15,593 sf, CN = 99

Comp. Cover= 12,125 sf, CN = 74

Pre-Project CN: 88

	A	B	C	D	E	F
49	**Based on the use of stormwater BMPs in the various drainage areas, the spreadsheet calculates an adjusted $RV_{Developed}$ and adjusted Curve Number.**					
50						
51	**D.A. 1**					
52	**Land Area**			**Soils**		
53	Natural Cover		Area (sf)	0.0		
54			CN	70		
55	Compacted Cover		Area (sf)	4896.0		
56			CN	74		
57	Impervious Cover		Area (sf)	17835.0	**Weighted CN**	**S**
58			CN	98	93	0.77
59						
60				**2-year storm**	**15-year storm**	**100-year storm**
61			**Runoff Volume (in) with no BMPs**	2.43	4.38	7.51
62			**Runoff Volume (in) with BMPs**	1.13	3.08	6.21
63			**Adjusted CN**	**76**	**80**	**82**
64						
65	**D.A. 2**					
66	**Land Area**			**Soils**		
67	Natural Cover		Area (sf)	0.0		
68			CN	70		
69	Compacted Cover		Area (sf)	10250.0		
70			CN	74		
71	Impervious Cover		Area (sf)	17468.0	**Weighted CN**	**S**
72			CN	98	89	1.22
73						
74				**2-year storm**	**15-year storm**	**100-year storm**
75			**$RV_{Developed}$ (in) with no BMPs**	2.09	3.98	7.07
76			**$RV_{Developed}$ (in) with BMPs**	0.73	2.61	5.70
77			**Adjusted CN**	**68**	**75**	**78**

Detention Calculations

D.A. 1

Pre-Development CN: 70

Post-Developemnt 2-year CN: 76

Pre-Project CN: 92

Post-Developemnt 15-year CN: 80

Detention Required for 2-year storm only!

Detention Calculations

D.A. 2

Pre-Development CN: 70

Post-Developemnt 2-year CN: 68

Pre-Project CN: 88

Post-Development 15-year CN: 75

No Detention Required!

Detention Calculations – Appendix H

D.A. 1

2-yr inflow

CN=76, Tc=5 min, Area = 0.52 ac

Q_2 = 1.13 in. qi=0.90 cfs qo/qi = 0.62

2-yr outflow

CN=70, Tc=10 min, Area = 0.52 ac

qo=0.56 cfs

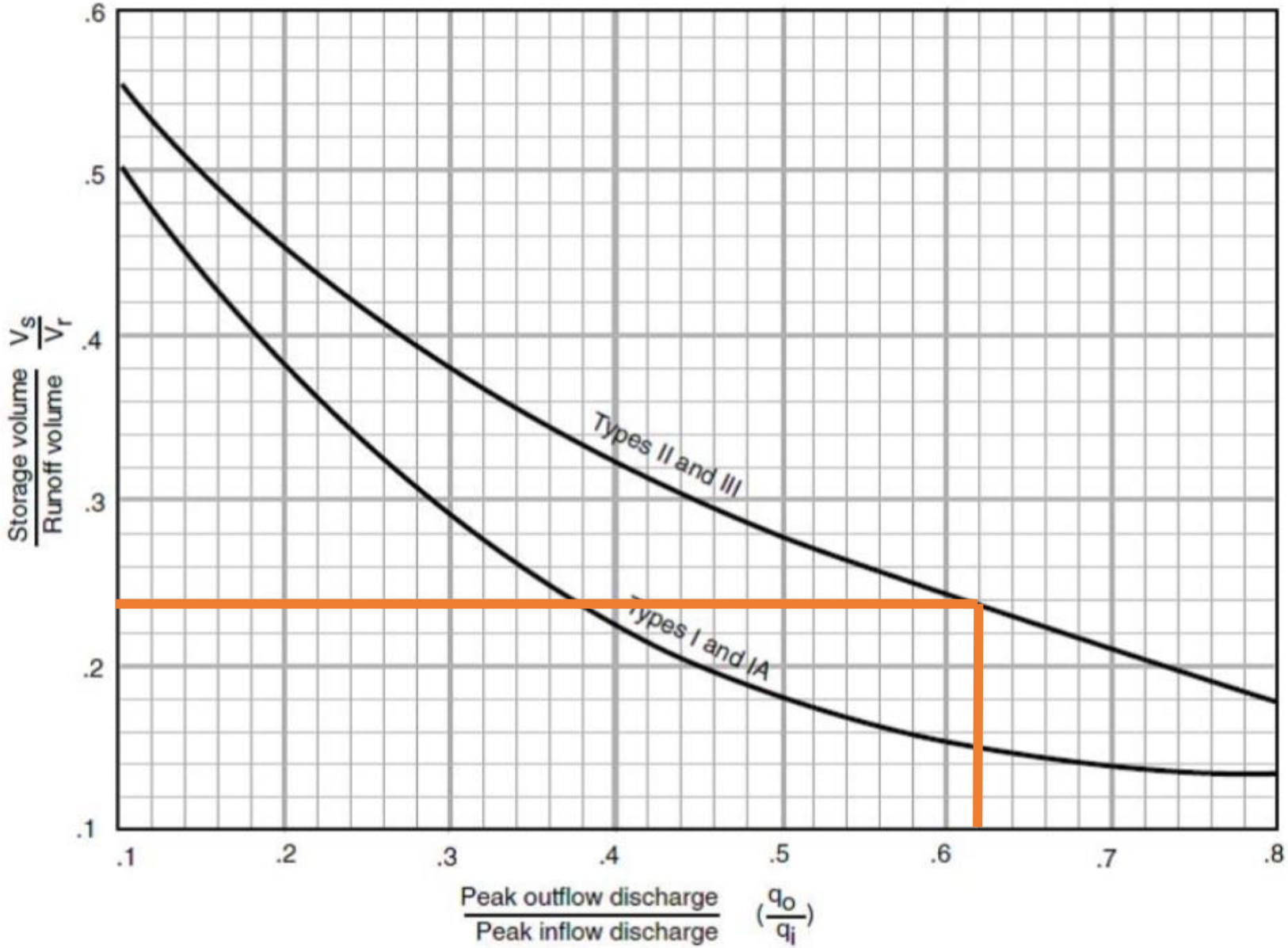


Figure H.1 Approximate detention basin routing for rainfall types I, IA, II and III.

Detention Calculations – Appendix H

Vs/Vr = 0.24

$$Vr_2 = 53.33 \; x \; Q_2 \times Am$$

Vr_2 = 53.33 x 1.13 in x 0.00081 mi^2 =0.049

Vs/Vr x Vr2 = 0.24 x 0.049 = 0.01176 ac-feet = **512 cf**