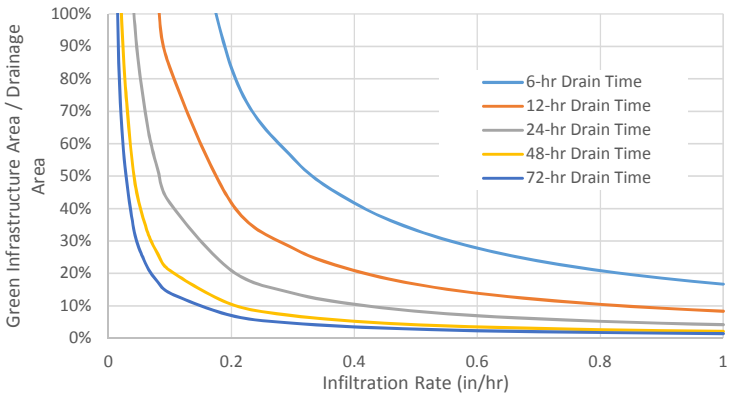
Green Infrastructure Area and Depth Requirements for Fixed Water Quality Runoff Volume

Water Quality Runoff Volume (in): 1

Allowable Duration (hr): 6, 12, 24, 48, 72

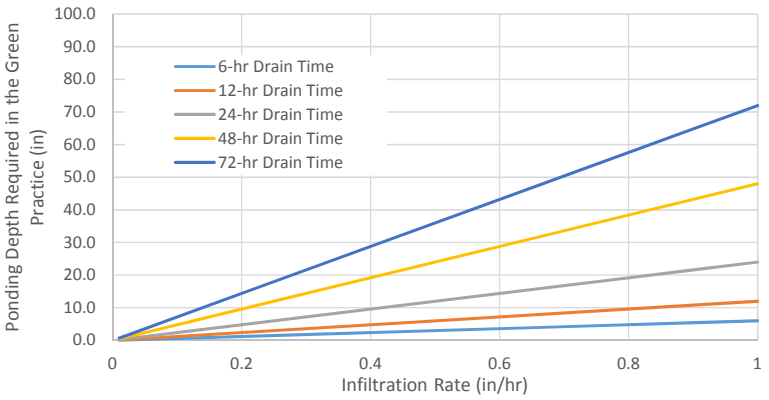
Infiltration Rate (in/hr) — Green Infrastructure Area / Drainage Area

Infiltration Rate (in/hr)	6	12	24	48	72
0.01	1667%	833%	417%	208%	139%
0.02	833%	417%	208%	104%	69%
0.04	417%	208%	104%	52%	35%
0.06	278%	139%	69%	35%	23%
0.08	208%	104%	52%	26%	17%
0.1	167%	83%	42%	21%	14%
0.2	83%	42%	21%	10%	7%
0.3	56%	28%	14%	7%	5%
0.4	42%	21%	10%	5%	3%
0.5	33%	17%	8%	4%	3%
0.6	28%	14%	7%	3%	2%
0.7	24%	12%	6%	3%	2%
0.8	21%	10%	5%	3%	2%
0.9	19%	9%	5%	2%	2%
1	17%	8%	4%	2%	1%



Infiltration Rate (in/hr) — Ponding Depth Required in the Green Practice (in)

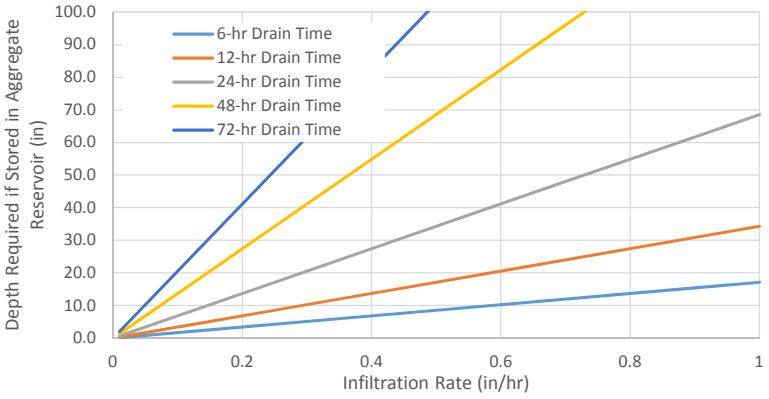
Infiltration Rate (in/hr)	6	12	24	48	72
0.01	0.1	0.1	0.2	0.5	0.7
0.02	0.1	0.2	0.5	1.0	1.4
0.04	0.2	0.5	1.0	2	3
0.06	0.4	0.7	1.4	3	4
0.08	0.5	1.0	2	4	6
0.1	0.6	1.2	2	5	7
0.2	1.2	2	5	10	14
0.3	2	4	7	14	22
0.4	2	5	10	19	29
0.5	3	6	12	24	36
0.6	4	7	14	29	43
0.7	4	8	17	34	50
0.8	5	10	19	38	58
0.9	5	11	22	43	65
1	6	12	24	48	72



Aggregate Void Space (%): 35%

Infiltration Rate (in/hr) — Depth Required if Stored in Aggregate (in)

Infiltration Rate (in/hr)	6	12	24	48	72
0.01	0.2	0.3	0.7	1.4	2
0.02	0.3	0.7	1.4	3	4
0.04	0.7	1.4	3	5	8
0.06	1.0	2	4	8	12
0.08	1.4	3	5	11	16
0.1	2	3	7	14	21
0.2	3	7	14	27	41
0.3	5	10	21	41	62
0.4	7	14	27	55	82
0.5	9	17	34	69	103
0.6	10	21	41	82	123
0.7	12	24	48	96	144
0.8	14	27	55	110	165
0.9	15	31	62	123	185
1	17	34	69	137	206



$$\frac{Green\ Infrastructure\ Area}{Drainage\ Area} = \frac{Water\ Quality\ Volume\ (1\ inch\ runoff)}{Infiltration\ Rate\ * Drain\ Time}$$

$$Ponding\ Depth = Inilftration\ Rate\ * Drain\ Time$$

$$Aggregate\ Depth = \frac{Ponding\ Depth}{Aggregate\ Porosity}$$