Selection of Infiltration Performance Standards for Different Land Uses

Purpose: Determine an infiltration performance standard for each land use assuming the infiltration cap is the maximum surface area required for the infiltration device.

Modeling Assumptions:

1. Infiltration rate of 0.13 in/hr (silt loam).
2. Predevelopment curve number is 70 (B soils).
3. Annual rainfall of 29 inches.
4. Annual volume of infiltration of 27.9 inches.
5. Performance standard for residential is ***25.1*** inches (0.9 X 27.9 inches) and the standard for non residential is ***16.7*** inches (0.6 X 27.9).
6. Use standard land use files with drainage area of 100 acres.
7. Infiltration device is bioretention with 3 feet engineered soil and one foot of gravel. Storage on top is 0.25 feet and there is no drain pipe.
8. This bioretention works the same as an infiltration basin that is 1.57 feet deep.

Additional Land Uses:

1. AP – airports (terminal area = SC)
2. DUPR – Duplexes (same as MRNA)
3. BTERM - Bus terminal (same as CST)
4. TRSTAT – Train Station (same as CST)
5. TRTRAC – Train Tracks (same as OSUD)
6. BTRA – Bike Trail (same as park)
7. RUNWAY – same as FREE
8. SHIPT – Ship Terminal (same as CST)

Land Use	Percent Connected Imperv.	Proposed Perform. Standard, %	Cap as % of Roof & P Lots	Cap as % of Total Area	Current Performance @ .13 in\hr (Cap = Roof & Parking)	Cap as % of Total Area	Proposed Performance @ 0.13 in/ hr (Cap = Total Area)
CDT	95	60	2			2	
CST	91	60	2			2	
SC	91	60	2	1.6	56%	2	60%
HOSP	75	75	2	1.1	53%	2	69%
OP	73	75	2	1.1	62%	2	72%
LI	71	75	2			2	
MI	64	75	2	1.4	72%	2	89%
MISC	59	75	2			2	
FREE	50	75	2			2	
SCH	39	75	2	0.5	65%	2	83%
HRR	64	75		1	66%	2	79%
MF	50	75		1	74%	2	86%
MOBR	48	75		1		2	
HRWA	40	90		1	79%	1	79%
HRNA	39	90		1		1	
MRWA	27	90		1		1	
MRNA	24	90		1	91%	1	91%
LR	13	90		1	97%	1	97%
CEM	11	90		1		1	
Park	10	0					
SUBR	7	0					
OSUD	5	0					