26 Attachment 2

Township of Sandy

APPENDIX B
DESIGN CRITERIA
Figure B-2. Storm Intensity-Duration-Frequency Curves for Region 2.

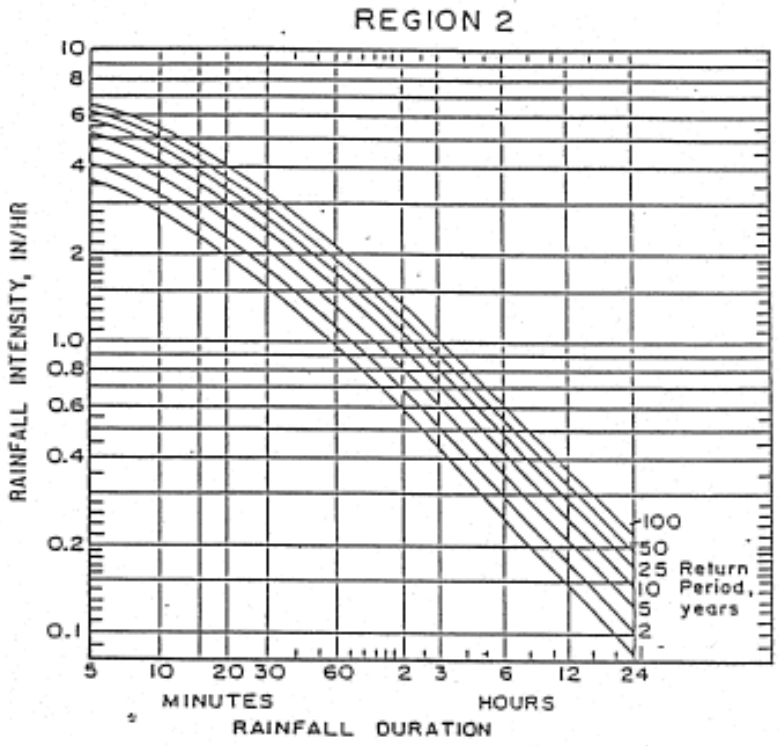


TABLE B-2

RUNOFF CURVE NUMBERS (CN'S) TO BE UTILIZED FOR SANDY LICK CREEK

(AMCII - IA = .2S)

		Hydrologic soil Group			
Land Use Description		**A**	**B**	**C**	**D**
Open Space (lawn, park, golf courses, cemeteries, pasture)		44	65	77	82
Meadow, Orchards		30**	58	71	78
Newly Graded Land, Fallow, Disturbed Land with No or Little Vegetation Cover		77	86	91	94
Forest		36**	60	73	79
Commercial (85% Impervious)		89	92	94	95
Industrial (72% Impervious)		81	88	91	93
Residential					
Average Lot Size	**% Impervious**				
1/8 Acre or less*	65	77	85	90	92
1/4 - 1/3 Acre	34	59	74	82	87
1/2 - 1 Acre	23	53	69	80	85
2 - 4 Acres	12	46	66	78	82
Farmstead		59	74	82	86
Smooth Surfaces (concrete, asphalt, gravel or bare compacted soil)		98	98	98	98
Water		98	98	98	98

* Includes multifamily housing unless justified lower density can be provided.
** Caution - CN's under 40 may produce erroneous modeling results.
Existing site conditions of bare earth or fallow shall be considered as meadow when choosing a C value.

Cover Description			Curve Number for Hydrologic Soil Group			
Cover Type	**Treatment[2]**	**Hydrologic Condition[3]**	**A**	**B**	**C**	**D**
Fallow	Bare soil	-	77	86	91	94
	Crop residue cover	Poor	76	85	90	93
	(CR)	Good	74	83	88	90
Row Crops	Straight row (SR)	Poor	72	81	88	91
		Good	67	78	85	89
	SR + CR	Poor	71	80	87	90
		Good	64	75	82	85
	Contoured (C)	Poor	70	79	84	88
		Good	65	75	82	86
	C + CR	Poor	69	78	83	87
		Good	64	74	81	85
	Contoured and Terraced (C and T)	Poor	66	74	80	82
		Good	62	71	78	81
	C and T + CR	Poor	65	73	79	81
		Good	61	70	77	80
Small Grain	SR	Poor	65	76	84	88
		Good	63	75	83	87
	SR + CR	Poor	64	75	83	86
		Good	60	72	80	84
	C	Poor	63	74	82	85
		Good	61	73	81	84
	C + CR	Poor	62	73	82	84
		Good	60	72	80	83
	C and T	Poor	61	72	79	82
		Good	59	70	78	81
	C and T + CR	Poor	60	71	78	81
		Good	58	69	77	80

Cover Description		Curve Number for Hydrologic Soil Group				
Cover Type	**Treatment[2]**	**Hydrologic Condition[3]**	**A**	**B**	**C**	**D**
Close seeded or broadcast legumes or rotation meadow	Sr	Poor	66	77	85	89
		Good	58	72	81	85
	C	Poor	64	75	83	85
		Good	55	69	78	83
	C and T	Poor	63	73	80	83
		Good	51	67	76	80

[1] Average runoff condition and 1 = 0.28

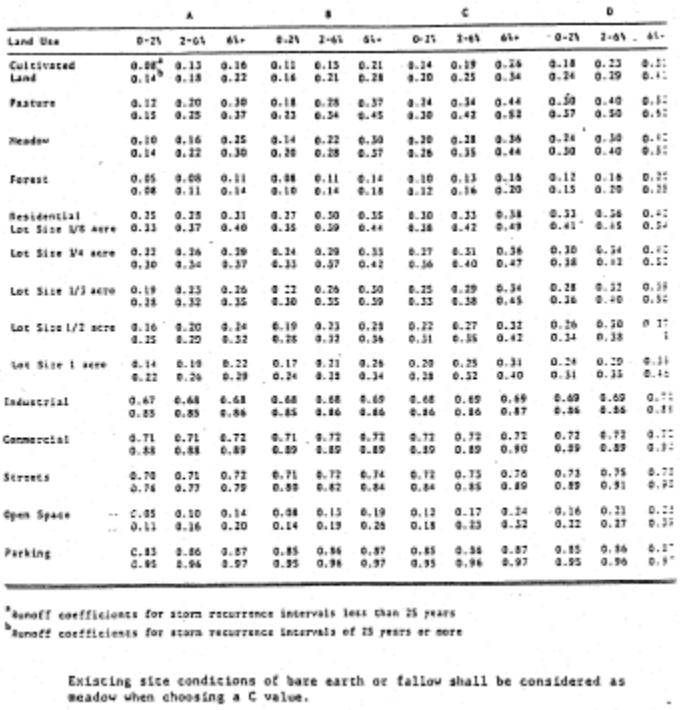
[2] Crop residue cover applies only if residue is on at least 5% of the surface throught the year.

[3] Hydrologic condition is based on combination of factors that affect infiltration and runoff, including (a) density and canopy of vegetative areas, (b) amount of year-round cover, (c) amount of grass or close seeded legumes in rotations, (d) percent of residue cover on the land in face (good >20',) and (e) degree of surface roughness.

Poor: Factors impair infiltration and tend to increase runoff.

Good: Factors encouraging average and better than average infiltration and tend to decrease runoff.

Table B-3. Runoff Coefficients for the Rational Formula by Hydrologic Soil Groups and Slope Range [after Rawls et. al., 1981].



Land Use	A			B			C			D		
	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+
Cultivated Land	0.08[a] 0.14[b]	0.13 0.18	0.16 0.22	0.11 0.16	0.15 0.21	0.21 0.28	0.14 0.20	0.19 0.25	0.26 0.34	0.18 0.24	0.23 0.29	0.31 0.41
Pasture	0.12 0.15	0.20 0.25	0.30 0.37	0.18 0.23	0.28 0.34	0.37 0.45	0.24 0.30	0.34 0.42	0.44 0.52	0.30 0.37	0.40 0.50	0.51 0.63
Meadow	0.10 0.14	0.16 0.22	0.25 0.30	0.14 0.20	0.22 0.28	0.30 0.37	0.20 0.26	0.28 0.35	0.36 0.44	0.24 0.30	0.30 0.40	0.41 0.51
Forest	0.05 0.08	0.08 0.11	0.11 0.14	0.08 0.10	0.11 0.14	0.14 0.18	0.10 0.12	0.13 0.16	0.16 0.20	0.12 0.15	0.16 0.20	0.20 0.25
Residential Lot Size 1/8 acre	0.25 0.33	0.28 0.37	0.31 0.40	0.27 0.35	0.30 0.39	0.35 0.44	0.30 0.38	0.33 0.42	0.38 0.49	0.33 0.41	0.36 0.45	0.41 0.54
Lot Size 1/4 acre	0.22 0.30	0.26 0.34	0.29 0.37	0.24 0.33	0.29 0.37	0.33 0.42	0.27 0.36	0.31 0.40	0.36 0.47	0.30 0.38	0.34 0.43	0.40 0.52
Lot Size 1/3 acre	0.19 0.28	0.23 0.32	0.26 0.35	0.22 0.30	0.26 0.35	0.30 0.39	0.25 0.33	0.29 0.38	0.34 0.45	0.28 0.36	0.32 0.40	0.38 0.50
Lot Size 1/2 acre	0.16 0.25	0.20 0.29	0.24 0.32	0.19 0.26	0.23 0.32	0.28 0.36	0.22 0.31	0.27 0.35	0.32 0.42	0.26 0.34	0.30 0.38	0.37 [illegible]
Lot Size 1 acre	0.14 0.22	0.19 0.26	0.22 0.29	0.17 0.24	0.21 0.28	0.26 0.34	0.20 0.28	0.25 0.32	0.31 0.40	0.24 0.31	0.29 0.35	0.35 0.45
Industrial	0.67 0.85	0.68 0.85	0.68 0.86	0.68 0.85	0.68 0.86	0.69 0.86	0.68 0.86	0.69 0.86	0.69 0.87	0.69 0.86	0.69 0.86	0.71 0.89
Commercial	0.71 0.88	0.71 0.88	0.72 0.89	0.71 0.89	0.72 0.89	0.72 0.89	0.72 0.89	0.72 0.89	0.72 0.90	0.72 0.89	0.72 0.89	0.72 0.92
Streets	0.70 0.76	0.71 0.77	0.72 0.79	0.71 0.80	0.72 0.82	0.74 0.84	0.72 0.84	0.73 0.85	0.76 0.89	0.73 0.89	0.75 0.91	0.77 0.93
Open Space	0.05 0.11	0.10 0.16	0.14 0.20	0.08 0.14	0.13 0.19	0.19 0.26	0.12 0.18	0.17 0.23	0.24 0.32	0.16 0.22	0.21 0.27	0.28 0.38
Parking	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97	0.85 0.95	0.86 0.96	0.87 0.97

[a] Runoff coefficients for storm recurrence intervals less than 25 years

[b] Runoff coefficients for storm recurrence intervals of 25 years or more

Existing site conditions of bare earth or fallow shall be considered as meadow when choosing a C value.