APPENDIX I

CITY WIDE RUNOFF VOLUMES BASED ON PER ACRE RUNOFF VOLUMES GENERATED FROM RAINFALL, LAND USE, AND SOILS INFORMATION

ANNUAL AVERAGE RUNOFF

Year	Rainfall (inches)	Impervious	Non-Impervious								
			Developed	Ag A-Soils	Ag B-Soils	Ag C-Soils	Ag D-Soils	Open A-Soils	Open B-Soils	Open C-Soils	Open D-Soils
		Total Runoff Volume Inches/Acre									
1997	34.40	23.47	1.75	3.03	5.77	8.22	9.83	0.49	2.07	4.81	6.88
1998	33.39	21.28	0.28	0.74	2.28	4.19	5.69	0.03	0.37	1.66	3.07
1999	30.54	18.26	0.12	0.35	1.31	2.70	3.86	0.00	0.17	0.89	1.87
2000	30.48	19.32	0.30	0.80	2.38	4.21	5.55	0.03	0.41	1.76	3.15
2001	34.23	22.21	0.30	0.75	2.17	4.06	5.57	0.02	0.41	1.59	2.96
2002	38.28	26.12	0.77	1.77	4.36	7.00	8.87	0.09	1.00	3.38	5.52
2003	22.72	14.59	0.09	0.30	1.14	2.44	3.50	0.00	0.14	0.76	1.67
2004	27.39	16.21	0.01	0.11	0.79	2.05	3.03	0.00	0.03	0.46	1.27
2005	33.41	21.54	1.24	1.95	3.69	5.51	6.83	0.54	1.42	3.04	4.49
2006	27.57	18.07	0.48	0.93	2.36	4.11	5.43	0.08	0.58	1.78	3.12
Average Runoff	**31.24**	**20.11**	**0.53**	**1.07**	**2.62**	**4.44**	**5.81**	**0.13**	**0.66**	**2.01**	**3.40**

*Rainfall data obtained from the the Minnesota Climatology Working Group website for Savage Gauging Station.
**SCS Methodology was used in calculating runoff volume from the following equation:
$Q=(P-0.2S)^2 / (P+0.8S)$, $S=1000/CN-10$
Q=accumulated direct runoff (inches), P=accumulated rainfall (inches), S=potential maximum retention after runoff begins (inches)
CN=SCS Curve Number.