APPENDIX C:

Hydrologic Model Setup

- **Model Parameter Summary;**
- **AES Design Storm Hyetographs**

TABLE C.1
PCSWMM Hydrologic Model Setup - Model Parameters

Percent Imperviousness (rural / agricultural) = 2%
Depression Storage: impervious cover = 2mm, pervious cover = 5mm
Manning's roughness: impervious = 0.013, pervious = 0.200

Stoney Creek

Catchment ID (Figure 3.34)	Area (ha)	Flow Length (m)	CN
1000	27.042	416.682	82
1001	7.27	236.039	78
1006	43.6552	576.354	84
1008	9.34	155.667	78
1010	5.63	254.751	84
1012	27.1	536.634	84
1013	1.87	111.976	78
1014	7.5958	303.6	84
1016	11.44	547.368	84
1018	5.08	360.284	84
1020	31.13	871.989	84
1022	7.55	463.19	84
1024	3.66	174.286	84
1026	20.7	399.614	78
1028	12.95	341.689	78
1030	22.87	570.762	78
1032	2.46	143.86	84
1034	2.4	681.667	84
1036	4.38	365	84
1040	32.1879	857.866	78
1042	27.64	990.681	78
1044	6.18	298.551	78
	27.042	416.682	82

Sinkhole Creek

Catchment ID	Area (ha)	Length (m)	CN
500	72.0205	1861.29	84
502	2.51	137.912	84

504	13.88	578.333	84
506	7.41	578.906	84
508	27.75	538.835	78
510	61.25	1678.08	78
512	8.5752	612.143	84
514	16.98	485.143	78
516	72.2901	1224.576	78
518	22.88	558.049	78
520	13.97	393.521	78
522	18.42	386.164	84
524	15.55	598.077	84
526	25.31	733.623	84
532	25.48	483.491	78
534	14.7	483.553	84
536	22.37	545.61	78
538	14.24	325.858	84
540	27.33	643.059	78
542	72.3133	1861.29	84
600	13.28	948.571	78
700	11.87	557.277	78
800	6.52	366.292	78
900	61.64	795.355	78

Twenty Mile Creek

Catchment ID	Area (ha)	Length (m)	CN
100	50.1	1063.694	78
102	10.08	236.62	78
104	10.28	361.972	78
106	17.13	613.978	78
108	48.54	731.024	78
110	19.04	580.488	78
112	12.49	426.28	78
114	8.71	321.402	78
116	36.76	668.364	78
118	37.34	1101.475	78
200	44.99	1008.744	78
202	59.72	1128.922	78
300	27.4	346.835	78
400	22.01	527.818	78

TABLE C.2
12-Hour AES Design Storm Hyetographs - Mount Hope Station*

Time Step (min)	Rainfall Intensity (mm/hr)					
	2-year	5-year	10-year	25-year	50-year	100-year
0	0	0	0	0	0	0
10	5.79	8.14	9.7	11.66	13.12	14.57
20	5.79	8.14	9.7	11.66	13.12	14.57
30	5.79	8.14	9.7	11.66	13.12	14.57
40	5.79	8.14	9.7	11.66	13.12	14.57
50	5.79	8.14	9.7	11.66	13.12	14.57
60	5.79	8.14	9.7	11.66	13.12	14.57
70	12.02	16.9	20.14	24.22	27.24	30.27
80	12.02	16.9	20.14	24.22	27.24	30.27
90	12.02	16.9	20.14	24.22	27.24	30.27
100	12.02	16.9	20.14	24.22	27.24	30.27
110	12.02	16.9	20.14	24.22	27.24	30.27
120	12.02	16.9	20.14	24.22	27.24	30.27
130	8.01	11.27	13.43	16.15	18.16	20.18
140	8.01	11.27	13.43	16.15	18.16	20.18
150	8.01	11.27	13.43	16.15	18.16	20.18
160	8.01	11.27	13.43	16.15	18.16	20.18
170	8.01	11.27	13.43	16.15	18.16	20.18
180	8.01	11.27	13.43	16.15	18.16	20.18
190	7.57	10.64	12.68	15.25	17.15	19.06
200	7.57	10.64	12.68	15.25	17.15	19.06
210	7.57	10.64	12.68	15.25	17.15	19.06
220	7.57	10.64	12.68	15.25	17.15	19.06
230	7.57	10.64	12.68	15.25	17.15	19.06
240	7.57	10.64	12.68	15.25	17.15	19.06
250	5.79	8.14	9.7	11.66	13.12	14.57
260	5.79	8.14	9.7	11.66	13.12	14.57
270	5.79	8.14	9.7	11.66	13.12	14.57
280	5.79	8.14	9.7	11.66	13.12	14.57
290	5.79	8.14	9.7	11.66	13.12	14.57
300	5.79	8.14	9.7	11.66	13.12	14.57
310	4.01	5.63	6.71	8.07	9.08	10.09
320	4.01	5.63	6.71	8.07	9.08	10.09
330	4.01	5.63	6.71	8.07	9.08	10.09
340	4.01	5.63	6.71	8.07	9.08	10.09

350	4.01	5.63	6.71	8.07	9.08	10.09
360	4.01	5.63	6.71	8.07	9.08	10.09
370	0.89	1.252	1.492	1.794	2.018	2.242
380	0.89	1.252	1.492	1.794	2.018	2.242
390	0.89	1.252	1.492	1.794	2.018	2.242
400	0.89	1.252	1.492	1.794	2.018	2.242
410	0.89	1.252	1.492	1.794	2.018	2.242
420	0.89	1.252	1.492	1.794	2.018	2.242
430	0.01	0.445	0.626	0.746	0.897	1.009
440	0.01	0.445	0.626	0.746	0.897	1.009
450	0.01	0.445	0.626	0.746	0.897	1.009
460	0.01	0.445	0.626	0.746	0.897	1.009
470	0.01	0.445	0.626	0.746	0.897	1.009
480	0.01	0.445	0.626	0.746	0.897	1.009
490	0	0	0	0	0	0
500	0	0	0	0	0	0
510	0	0	0	0	0	0
520	0	0	0	0	0	0
530	0	0	0	0	0	0
540	0	0	0	0	0	0
550	0	0	0	0	0	0
560	0	0	0	0	0	0
570	0	0	0	0	0	0
580	0	0	0	0	0	0
590	0	0	0	0	0	0
600	0	0	0	0	0	0
610	0	0	0	0	0	0
620	0	0	0	0	0	0
630	0	0	0	0	0	0
640	0	0	0	0	0	0
650	0	0	0	0	0	0
660	0	0	0	0	0	0
670	0	0	0	0	0	0
680	0	0	0	0	0	0
690	0	0	0	0	0	0
700	0	0	0	0	0	0
710	0	0	0	0	0	0
720	0	0	0	0	0	0

* City of Hamilton Criteria and Guidelines for Stormwater Infrastructure Design