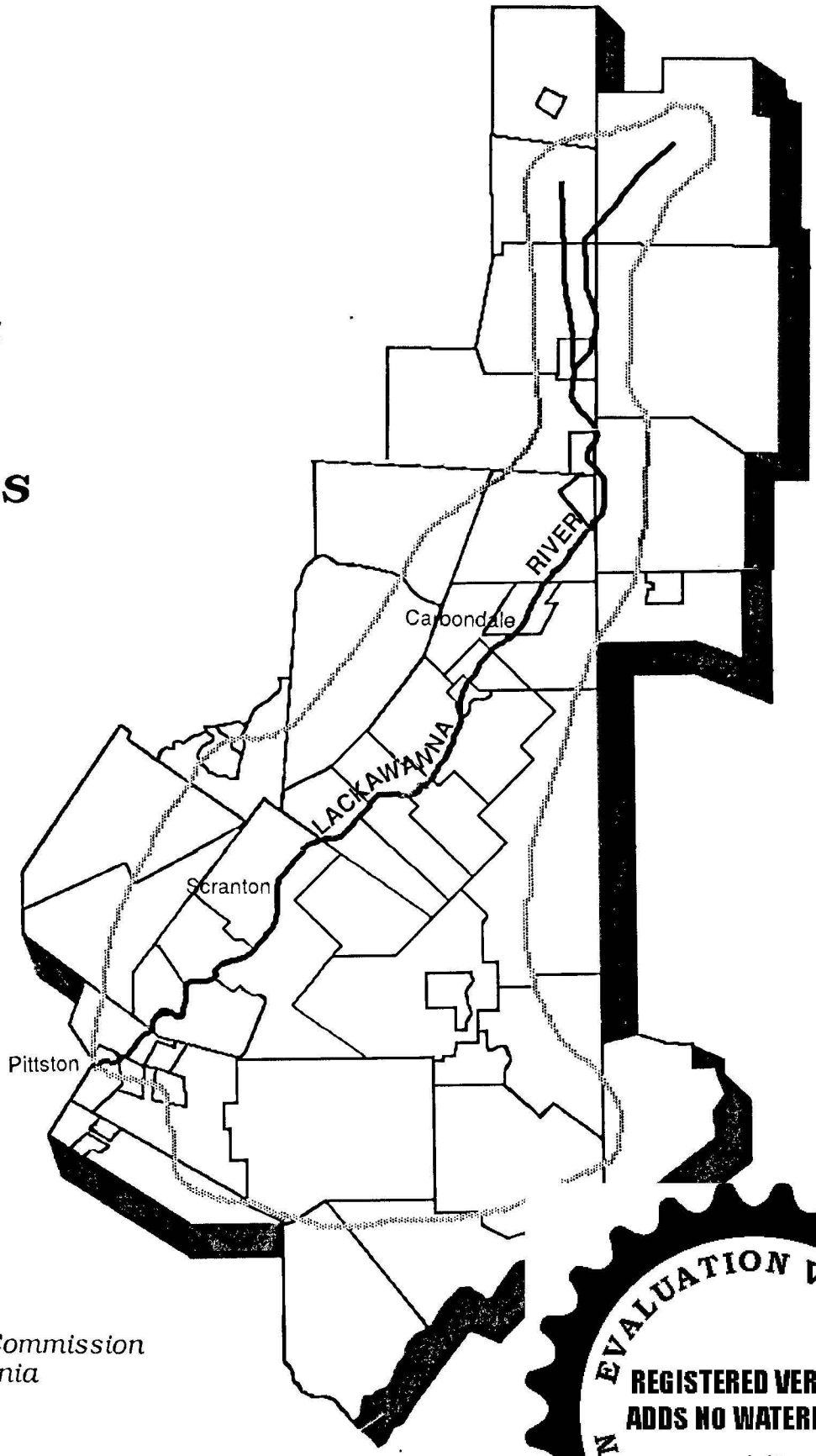
Lackawanna River Watershed

Act 167

Stormwater Management Plan

APPENDICES



Prepared by:

Lackawanna County
Regional Planning Commission
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in cooperation with

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West Chester, Pennsylvania

LACKAWANNA RIVER WATERSHED
PENNSYLVANIA ACT 167
STORMWATER MANAGEMENT PLAN

APPENDICES

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SEPTEMBER 1991

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APPENDIX A

PRIORITY WATERSHED PSRM MODEL CALIBRATION

WALTER B. SATTERTHWAITE ASSOCIATES, INC.

STERRY CREEK (SW #1)
CALIBRATION

Runoff Peak:

Subarea Number	Initial Run (cfs)	Calibration Run With: Ia=0.4 Surface: n=0.6 (cfs)	% Difference
1	346	107	31
2	607	240	40
3	491	199	41
4	161	50	31
5	472	174	37
6	343	125	36
7	0	0	0
8	429	138	32
9	522	188	36
10	301	101	34
11	646	317	49
12	278	85	31
13	282	103	37
14	398	122	31
15	513	184	36
16	593	288	49
17	282	98	35
18	297	115	39

At Outflow:

	Initial (cfs)	Calibration Run (cfs)	% Difference
t_{1800}	810	598	74

PSRM DE #	HEC-2 100 yr (cfs)	HEC-2 500 yr (cfs)	Initial Run (cfs)		Difference vs. HEC-2 Difference	New Calibration (cfs)	Difference vs. HEC-2 Difference
11	1,220	2,480	3,429		2.81		
13	1,220	2,480	282		0.00		
14	1,490	2,640	4,387	3.2*	2.94		
15	1,490	2,640	4,899		3.29		
16	1,490	2,640	5,163		3.47		
17	1,490	2,640	5,358		3.6		

*Average value of flow differences

WILDCAT CREEK (SW #2)
CALIBRATION

Runoff Peak:

Subarea Number	Initial Run (cfs)	Calibration Run With: Ia=0.4 Surface: n=0.6 (cfs)	% Difference
1	536	204	38
2	331	113	34
3	224	72	32
4	0	0	0
5	886	346	39
6	878	413	47
7	329	107	33
8	250	104	42
9	189	61	32
10	571	354	62
11	732	409	56
12	371	128	35
13	571	222	39
14	974	394	40
15	650	237	36
16	124	65	52
17	620	254	41
18	475	178	37
19	504	263	52
20	181	125	69

At Outflow:

	Initial (cfs)	Calibration Run (cfs)	% Difference
t_{1800}	857	731	85

PSRM DE #	HEC-2 100 yr (cfs)	HEC-2 500 yr (cfs)	Initial Run (cfs)	Difference vs. HEC-2 Difference	New Difference vs. HEC-2
4	640	0	1,091		1.70
6	900	1,600	1,939		2.15
10	1,420	2,512	2,706	2.4*	1.91
17	1,900	3,280	6,390		3.36
19	2,380	4,020	6,848		2.88

*Average value of flow differences

Runoff Peak:

Subarea Number	Initial Run (cfs)	Calibration Run With: I_a=0.4 Surface: n=0.6 (cfs)	% Difference
1	270	91	34
2	418	154	37
3	1,023	523	51
4	263	104	40
5	286	97	34
6	629	241	38
7	467	318	68
8	583	311	53
9	95	68	72

At Outflow:

	Initial (cfs)	Calibration Run (cfs)	% Difference
t_{1800}	331	164	50

PSRM DE #	HEC-2 100 yr (cfs)	HEC-2 500 yr (cfs)	Initial Run (cfs)		Difference vs. HEC-2 Difference	New Calibration (cfs)	Difference vs. HEC-2 Difference	
2	650	770	688		1.06	245	.38	
4	800	0	1,640	1.6*	2.05	745	.93	.72
8	1,000	1,200	1,600		1.60	848	.85	

*Average value of flow differences

ST. JOHN CREEK (SW #9)
CALIBRATION

Runoff Peak:

Subarea Number	Initial Run (cfs)	Calibration Run With: Ia=0.4 Surface: n=0.6 (cfs)	% Difference
1	199	62	31
2	534	213	40
3	470	171	36
4	363	133	37
5	216	70	32
6	108	36	33
7	590	234	40
8	206	66	32
9	626	239	38
10	276	144	52
11	196	63	32
12	366	128	35
13	0	0	0
14	445	154	35
15	470	162	35
16	145	50	34
17	283	90	32
18	423	166	39
19	256	80	31
20	386	134	35
30	0	0	0
31	278	112	40
32	331	126	38
33	0	0	0
34	570	219	38
35	301	108	36
36	178	73	41

At Outflow:

	Initial (cfs)	Calibration Run (cfs)	% Difference
t_{1800}	1,363	1,119	

PSRM DE #	HEC-2 100 yr (cfs)	HEC-2 500 yr (cfs)	Initial Run (cfs)	Ca	Difference vs. HEC-2 Difference
16	2,064	4,240	3,827		1.85
21	2,064	4,240	5,726	2.4*	2.77
26	3,028	6,240	7,027		2.32
35	3,028	6,240	8,153		1.6

*Average value of flow differences

APPENDIX B

TR-20 MODELING EFFORT - SECTION 4.6 SUPPLEMENT

TR-20 MODELING EFFORT - SECTION 4.6 SUPPLEMENT

Selection of Subarea Breakpoints

As with the development of the detailed PSRM models, it is important to define those locations within the watershed which are considered to be points-of-interest in terms of stormwater impact evaluations. However, unlike the detailed study areas, a compilation of significant flooding problems and flow obstructions was not developed by the LCRPC. For this reason, the primary selection of breakpoints was based on stream confluence points. These points include both confluences of individual tributaries and confluences of tributaries with the Lackawanna River main stem. The drainage areas to these points were further subdivided based on topographic characteristics and the requirement that the subarea sizes be homogeneous.

Watershed Model Data Requirements

The SCS TR-20 model requires the input of parameters reflecting runoff generating characteristics for the individual subareas. These parameters are used to define the individual runoff hydrographs for each of the subareas. Additionally, it is necessary to provide information for the transfer of these hydrographs to downstream locations where they can be combined with flow data for other portions of the watershed.

Subarea Runoff Characteristics

To develop the individual subarea runoff hydrographs associated with defined storm events, the TR-20 model requires the input of parameters defining the subareas areal extent, composite runoff curve number and time-of-concentration. The subarea areal extent was determined by planimetering the subareas as delineated on the U.S.G.S. topographic mapping (Reference 2). However, associated runoff curve numbers could not be computed directly due to a lack of compiled hydrologic soil information. Since a very detailed computational process was applied to define the runoff curve numbers in the PSRM study areas, associated average condition curve numbers were applied to the TR-20 subareas with similar land use charact
identification of the TR-20 subarea land us
information depicted on the U.S.G.S.
(Reference 2).

Unlike the Penn State Runoff Model, wh
relationship of overland flow width to subare
define the time it takes for rainfall to t
subarea, the TR-20 model requires the direc
information in the form of a "time-of-conce
parameter was developed by identifying th
overland flow path for runoff and then com

velocity of flow for runoff along this path. This information was developed from the U.S.G.S. quadrangle mapping and reflected the guidelines included in the Soil Conservation Service's Technical Release 55 (Reference 3). By dividing the overland flow segment lengths by associated velocities, and summing the resultant travel times, the individual subarea time-of-conentrations (TC) were defined. Appendix B presents the TC, runoff curve number, and areal extent data developed for each of the TR-20 subareas.

Hydrograph Routing

After computing the individual subarea runoff hydrographs, it was necessary to translate them to downstream locations where they coulc be combined with flows from other portions of the watershed. This was accomplished using the attenuated-kinematic hydrograph routing procedure that is a part of the SCS TR-20 model (Reference 1). This process utilizes rating tables that reflect the flow area-discharge relationship for representative cross-sections of downstream watercourse segments (i.e., reaches). These were developed through the application of normal depth calculations or, where possible, from data contained within previously developed HEC-2 hydraulic modeling. As with the PSRM study areas, the cross-sections and associated channel slopes utilized in normal depth calculations were developed using the U.S.G.S. topographic mapping (Reference 2) in conjunction with standard channel configurations as defined previously for the PSRM study areas. It must be stressed that the normal depth calculations do not reflect backwater impacts and therefore may significantly underestimate available floodplain attenuation capacity and overestimate associated velocity.

Other Data

In addition to subarea characteristics and hydrograph routing data, the SCS TR-20 model requires the input of rainfall distribution and depth for the storm events of interest. As with the PSRM's, the rainfall distribution utilized was the SCS Type II. This distribution was applied to rainfall amounts for the mean annual, 5-, 10-, 25-, 50- and 100-ye[illegible] input to the model were elevation-discha[illegible] tabulations for significant hydrologic struct[illegible] approximate study areas, only stream impoundmen[illegible] considered. The required TR-20 input data was t[illegible] Dam Safety Evaluation Reports on file with t[illegible] Environmental Resources. The impoundment st[illegible] available Phase I reports or without assoc[illegible] discharge-storage data, were not included in[illegible] modeling effort. This includes the Stillwate[illegible] However, available information indicates that t[illegible] capacity to store the full 100-year runoff[illegible] associated drainage area.

Since the purpose of developing the approximate TR-20 model was to provide a watershed basis for evaluating stormwater impacts and management, it was important to link the TR-20 model to the detailed PSRM models. This was accomplished by inputting the PSRM generated outflow hydrographs from the detailed study areas into the TR-20 models at appropriate stream confluence points. To facilitate this process, a program was written to translate the hydrographs developed by the PSRM's for direct input to the TR-20 models. This was done for each of the storm events of interest and for the design event with distributed storage facilities (i.e., performance standards) reflected.

TR-20 Model Calibration

As with the detailed study area PSRM models, it was necessary to calibrate the preliminary TR-20 model to increase its accuracy in developing storm event hydrographs. This calibration effort was based on comparison of peak flows for the historical storm event referred to as "Agnes", which occurred in June of 1972, as developed using the TR-20 model and as recorded at two of the U.S.G.S. stream gages located along the Lackawanna River main stem. The gage that is located at Archbald is used in the calibration of the upper half of the TR-20 model. A second gage, located at Old Forge, was used for calibration of the lower half of the TR-20 model. Due to the approximate level of detail reflected within these hydrologic models, it was decided that the calibration effort would be directed at attempting to simulate the peak flows recorded at the stream gages as opposed to duplicating the associated hydrographs. The primary hydrologic input parameters considered for modification in this calibration effort were the subarea runoff curve numbers and times-of-concentration, and the travel times (rating tables) input parameters.

The original TR-20 models generated peak flows which were significantly greater than the recorded historical peak flows. However, it was noted that the volume as recorded at the gage and as computed using the TR-20 model were, in fact, similar. Therefore, our calibration efforts were directed at increasing the times-of-concentrations for the individu decreasing the flow velocities reflected in th The individual subarea T_C's were modified by Manning's roughness coefficient reflected in segment of the associated overland flow paths. increased times of concentration and associated peak runoff rate. A similar modification was ma portion of the cross-sections reflected in t calculations that were used to generate associat

As with the PSRM travel time input para hydraulic analyses are required to maximize

associated rating tables. This effort was outside the scope of this project. The preliminary attempts to revise these rating tables by increasing the Manning's "n" roughness coefficient for the channel segment did not reduce the TR-20 generated historical event peak flow sufficiently in terms of duplicating the historical gage records. For this reason, the rating tables were further modified by increasing the flow area associated with a peak flow quantity so as to reflect a significantly slower flow velocity.

Figures B-1 and B-2 present a comparison of the calibrated TR-20 generated historical event hydrographs to the associated gage records at the Old Forge and Archbald U.S.G.S. gages, respectively. The associated peak flows are consistent, but the hydrograph shapes vary. In both cases the portion of the hydrographs associated with the peak flows are similar. However, the TR-20 generated hydrographs had secondary peaks. Additionally, the TR-20 generated historical hydrograph at the Archbald gage location included a significantly greater volume of flow. A detailed evaluation of these inconsistencies indicated that they resulted from the lack of detailed hydraulic analyses for the rating tables and to the use of a single rainfall amount for the entire contributory watershed. Since rainfall events will result in widely varying rainfall amounts and temporal distributions throughout a large watershed of this type (see report Section 1.2.1), the use of a single "maximum" rainfall total and distribution will normally result in higher runoff volumes. Accordingly, the calibrated TR-20 models were considered adequate for the purposes of the Pennsylvania Act 167 program.

Outflow hydrographs from the detailed study areas for each of the storm events of interest were input to the calibrated TR-20 "macro" watershed model. This was done so as to provide a watershed-wide basis for evaluating future development flow impacts. This macro-modeling effort resulted in significantly greater flows for the 100-year storm event along the Lackawanna River main stem than were utilized in the associated FEMA Flood Insurance Studies. The FEMA studies utilized a statistical analysis of historical gage records to define peak flows associated with specific recurrence interval events such as the 100-year storm. This process does not re
detailed hydraulic information for routing
runoff curve numbers and associated times of
subareas, and has been found to be an acc
defining design storm flows for large watershe
in resultant flows does not, however, affect t
the use of the macro-micro models developed a
167 modeling effort as a tool to evaluat
development on existing flows and the
performance standards in mitigating the in
because the same modeling basis is applied.

FIGURE B-1

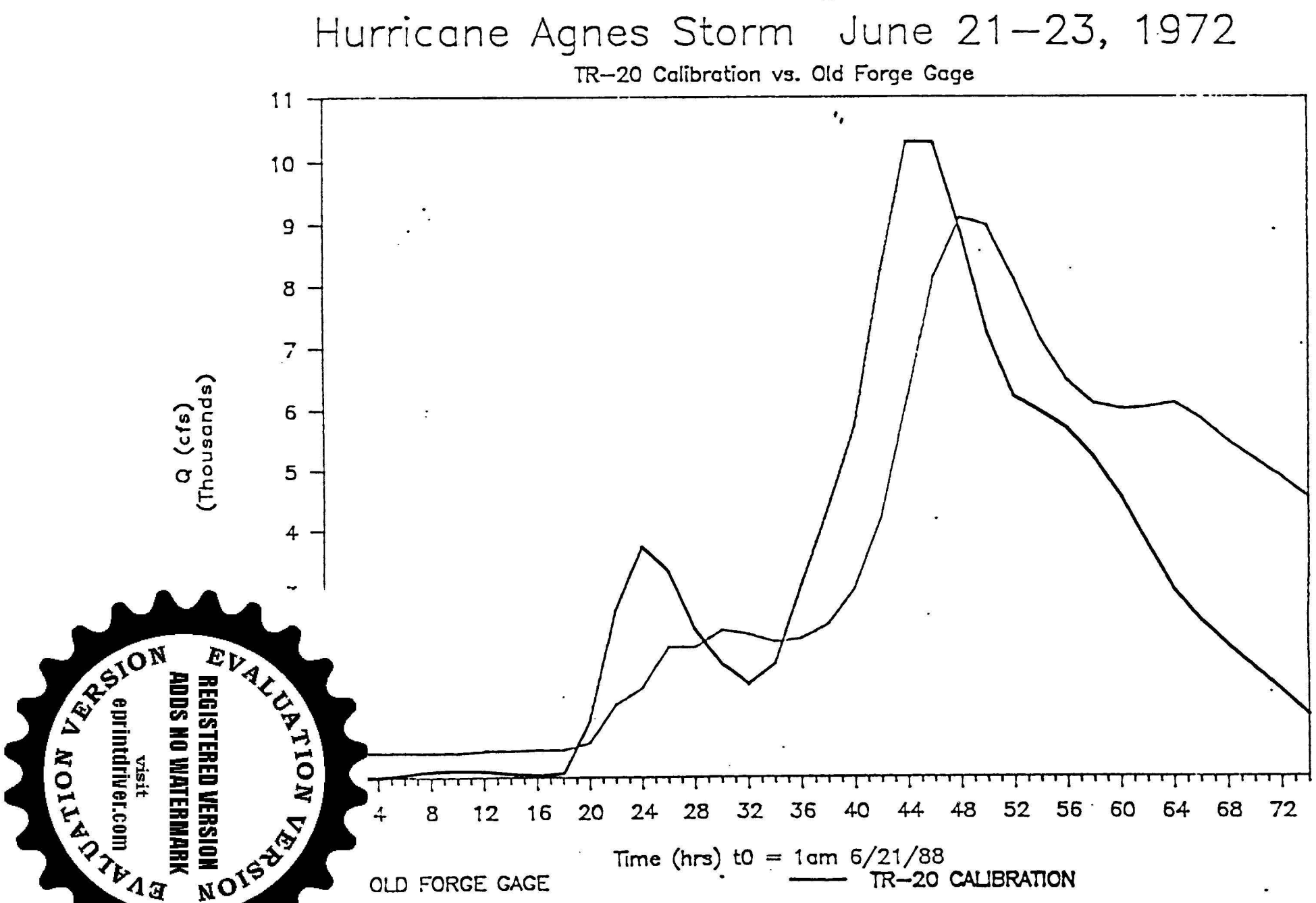
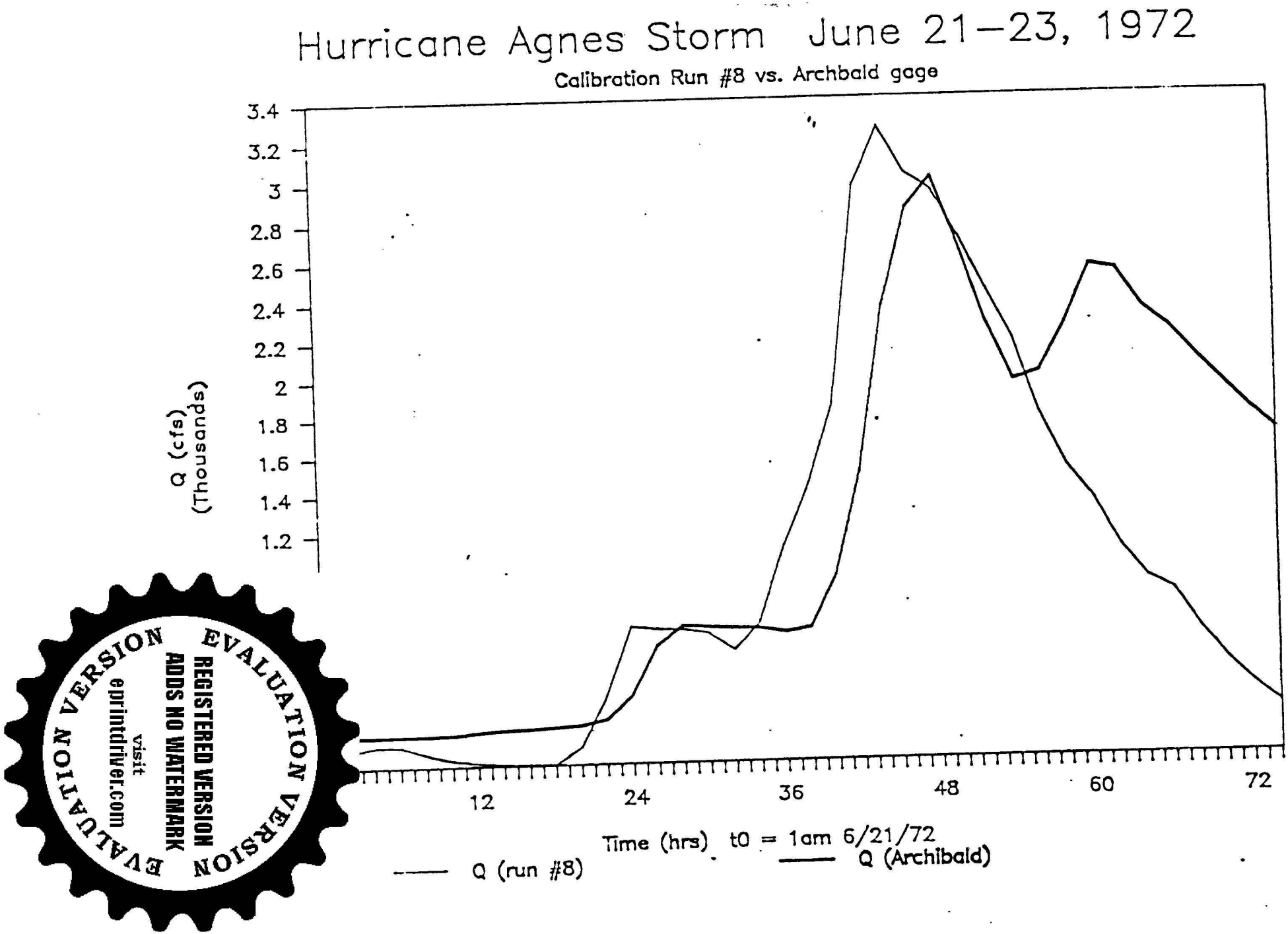


FIGURE B-2



It must be stressed that flows generated with the "macro" TR-20 model should not be used directly for facility design projects or floodplain delineation, due to the approximate nature of associated subarea hydrologic parameters and the hydrograph routing rating tables. This is not the case, however, for the "micro" models developed as part of this project. These PSRM's reflected very detailed land use and soils information. Additionally, the associated calibration efforts results in models that are consistent with those utilized in the previously developed FEMA flood insurance studies. Since the FEMA studies flows were based on statistical analysis of U.S.G.S. gage records along the Lackawanna River main stem, the resultant flows may not be as accurate as those developed for the river's main stem. However, applicability of the PSRM models for use in design projects should be coordinated through the appropriate municipalities, State and County agencies.

TR-20 SUMMARY INFORMATION

SUBAREA NUMBER	LAND AREA (Sq. Miles)	RUNOFF CURVE NUMBER	TIME OF CONCENTRATION (hours)
1 . . 17	Not included in TR-20 Modeling (Drainage area above Stillwater Dam)		
18	1.772	72	0.81
19	1.914	72	0.70
20	2.594	72	0.84
21	2.518	78	0.79
22	2.718	72	0.75
23	2.527	72	0.78
24	4.766	72	1.88
25	3.667	72	1.22
31	3.104	72	1.15
32	3.528	72	1.05
33	3.169	72	1.20
34	1.679	72	0.80
35	1.274	72	0.70
36	1.576	72	0.68
37	2.275	72	0.85
38	1.365	72	0.77
39	4.491	72	1.39
40	4.531	78	0.77
46	1.760	78	0.58
47	2.400	72	1.01
48	2.189	72	0.48
49	2.048	72	0.77
50	3.526	72	1.12
51	1.399	72	0.84
52	2.232	72	0.86
53	5.303	72	1.32
54	2.745	72	0.80
55	2.431	78	1.71
56	2.594	78	1.44
60	1.981	72	0.73
61	1.533	72	0.66
62	2.682	72	1.01
63	1.636	84	1.29
64	0.800	84	
65	3.308	72	
66	2.318	78	

TR-20 SUMMARY INFORMATION

SUBAREA NUMBER	LAND AREA (Sq. Miles)	RUNOFF CURVE NUMBER	TIME OF CONCENTRATION (hours)
67	1.533	78	0.95
68	2.263	84	1.18
69	1.090	72	0.59
70	1.768	72	0.74
75	2.347	72	0.80
76	3.473	78	0.94
77	3.293	84	0.88
78	2.201	84	1.73
79	3.868	84	0.80
80	1.437	84	0.74
81	3.772	84	1.65
82	1.245	85	0.39
83	1.715	72	0.92
84	2.086	84	0.91
85	4.825	72	1.09
86	3.058	72	1.33
91	1.447	72	0.47
92	3.129	74	0.62
93	3.170	84	2.08
95	3.451	84	0.92
96	0.793	84	0.42
97	2.292	78	0.93
98	1.667	72	0.73
99	4.036	72	1.39
106	1.595	72	0.66
107	3.312	72	1.18
108	5.422	72	1.64
109	3.976	78	1.25
110	1.564	72	0.87
111	1.229	72	0.64
112	2.316	72	0.75
113	4.369	72	1.18
114	2.503	72	0.87
115	3.715	72	1.12
121	2.838	72	0.74
122	2.024	72	1.08
123	2.632	72	1.30
124	4.321	72	
125	2.443	72	
126	2.922	72	

APPENDIX C

PRIORITY WATERSHED RUNOFF CURVE NUMBERS BY SUBAREA

STERRY CREEK WATERSHED
RUNOFF CURVE NUMBERS BY SUBAREA

SUBAREA NUMBER	LAND AREA (acres)	EXISTING CONDITIONS CURVE NUMBER	FUTURE CONDITIONS CURVE NUMBER
1	289.3	73	73
2	162.5	72	72
3	119.4	72	72
4	126.7	73	73
5	142.3	72	72
6	104.7	72	72
7	0.1	70	70
8	203.9	72	73
9	191.0	80	79
10	177.2	80	80
11	142.3	91	91
12	205.7	74	89
13	99.2	79	84
14	277.3	74	84
15	245.2	86	89
16	122.1	86	83
17	136.1	83	84
18	101.9	85	83

WILDCAT CREEK WATERSHED
RUNOFF CURVE NUMBERS BY SUBAREA

SUBAREA NUMBER	LAND AREA (acres)	EXISTING CONDITIONS CURVE NUMBER	FUTURE CONDITIONS CURVE NUMBER
1	150.6	72	72
2	141.4	73	73
3	132.2	72	72
4	0.1	70	70
5	271.8	83	85
6	194.7	87	84
7	183.7	74	73
8	75.3	88	90
9	100.1	73	75
10	91.8	89	90
11	127.6	86	84
12	136.8	74	75
13	170.8	71	77
14	240.6	73	73
15	204.8	73	73
16	23.0	85	91
17	193.8	88	87
18	162.5	83	82
19	92.8	84	83
20	27.6	85	85

HULL CREEK WATERSHED
RUNOFF CURVE NUMBERS BY SUBAREA

SUBAREA NUMBER	LAND AREA (acres)	EXISTING CONDITIONS CURVE NUMBER	FUTURE CONDITIONS CURVE NUMBER
1	111.1	82	82
2	181.8	82	81
3	137.7	82	81
4	180.0	82	82
5	178.2	74	76
6	124.0	80	80
7	110.2	76	77
8	0.1	70	70
9	135.9	75	76
10	305.8	74	74
11	127.6	72	72
12	90.0	70	70
13	151.5	72	74
14	169.9	82	79
15	117.5	83	83

EDDY CREEK WATERSHED
RUNOFF CURVE NUMBERS BY SUBAREA

SUBAREA NUMBER	LAND AREA (acres)	EXISTING CONDITIONS CURVE NUMBER	FUTURE CONDITIONS CURVE NUMBER
1	150.6	72	72
2	105.6	72	72
3	79.0	71	71
4	84.5	74	73
5	118.5	70	70
6	85.4	74	74
7	102.9	71	71
8	116.6	79	80
9	131.3	71	71
10	167.1	71	71
11	259.9	70	70
12	0.1	70	70
13	114.8	73	73
14	152.4	74	74
15	101.9	74	73
16	202.9	74	74
17	153.4	73	73
18	252.5	79	79
19	99.2	84	84
20	246.1	81	79
21	194.7	88	84
22	120.3	78	86
23	141.4	87	91
24	183.7	92	92
25	181.8	87	90
26	0.1	70	70
27	134.1	81	89
28	194.7	83	84
29	116.6	87	87
30	63.4	93	93
31	162.5	90	91
32	144.2	90	92
33	142.3	88	84
34	124.9	88	84
35	93.7	87	87

DICKSON CITY WATERSHED
RUNOFF CURVE NUMBERS BY SUBAREA

SUBAREA NUMBER	LAND AREA (acres)	EXISTING CONDITIONS CURVE NUMBER	FUTURE CONDITIONS CURVE NUMBER
1	132.2	70	72
2	138.7	78	84
3	194.7	85	85
4	85.4	86	85
5	133.2	70	70
6	171.7	74	81
7	71.6	84	85
8	106.5	86	85
9	13.8	91	91
10	167.1	71	71

ROARING BROOK WATERSHED
RUNOFF CURVE NUMBERS BY SUBAREA

SUBAREA NUMBER	LAND AREA (acres)	EXISTING CONDITIONS CURVE NUMBER	FUTURE CONDITIONS CURVE NUMBER
1	442.6	72	72
2	203.9	72	72
3	266.3	73	73
4	143.3	71	71
5	139.6	71	71
6	400.4	72	72
7	150.6	72	72
8	137.7	74	74
9	393.0	71	71
10	236.9	72	73
11	183.7	72	72
12	0.1	70	70
13	262.6	72	72
14	332.4	72	72
15	202.0	75	77
16	222.2	66	66
17	233.2	72	72
18	510.6	72	73
19	400.4	77	77
20	393.0	70	70
21	202.0	83	86
22	345.3	75	77
23	225.9	74	74
24	314.1	79	79
25	394.9	71	72
26	0.1	70	70
27	363.6	69	69
28	165.3	69	68
29	0.1	70	70
30	264.5	67	67
31	0.1	70	70
32	225.9	73	76
33	266.3	74	76
34	99.2	65	64
35	174.5	76	76
36	426.1	75	75
37	337.9	78	77
38	0.1	70	70
39	207.5	75	75
40	304.9	75	76

ROARING BROOK WATERSHED
RUNOFF CURVE NUMBERS BY SUBAREA

SUBAREA NUMBER	LAND AREA (acres)	EXISTING CONDITIONS CURVE NUMBER	FUTURE CONDITIONS CURVE NUMBER
41	0.1	70	70
42	238.8	74	73
43	200.2	73	73
44	216.7	76	77
45	137.7	78	76
46	180.0	78	85
47	213.0	75	78
48	242.4	75	77
49	253.1	78	78
50	0.1	70	70
51	145.1	74	73
52	0.1	70	70
53	214.9	69	70
54	405.9	76	76
55	189.2	74	75
56	303.0	80	80
57	244.3	78	79
58	304.9	73	74
59	382.0	73	75
60	415.1	75	77
61	328.7	78	79
62	253.4	73	76
63	404.0	73	74
64	314.1	79	79
65	378.3	74	74
66	148.8	78	77
67	0.1	70	70
68	371.0	80	80
69	214.9	75	77
70	73.5	77	80
71	0.1	70	70
72	104.7	81	81
73	0.1	70	70
74	376.5	78	78
75	169.0	75	75
76	314.1	77	7
77	271.8	75	7
78	268.1	81	7
79	161.6	74	7
80	152.4	82	8

ROARING BROOK WATERSHED
RUNOFF CURVE NUMBERS BY SUBAREA

SUBAREA NUMBER	LAND AREA (acres)	EXISTING CONDITIONS CURVE NUMBER	FUTURE CONDITIONS CURVE NUMBER
81	396.7	82	81
82	205.7	73	72
83	192.8	78	78
84	181.8	69	70
85	334.3	78	79
86	301.2	71	71
87	51.4	99	99
88	235.1	79	81
89	218.6	77	76
90	343.4	75	75
91	227.7	70	70
92	23.9	99	99
93	290.2	73	75
94	233.2	79	81
95	251.6	75	74
96	51.4	99	99
97	328.7	74	74
98	314.1	76	77
99	27.6	99	99
100	102.9	99	99
101	181.8	73	78
102	293.9	74	75
103	152.4	74	77
104	209.4	79	79
105	354.5	77	78
106	317.7	75	78
107	332.4	75	76
108	104.7	70	70
109	231.4	73	72
110	262.6	80	83
111	242.4	79	78
112	325.1	77	76
113	323.2	73	73
114	110.2	78	78
115	0.1	70	70
116	141.4	72	7:
117	387.5	72	7:
118	170.8	72	7:
119	0.1	70	7(
120	343.4	69	6:

ROARING BROOK WATERSHED
RUNOFF CURVE NUMBERS BY SUBAREA

SUBAREA NUMBER	LAND AREA (acres)	EXISTING CONDITIONS CURVE NUMBER	FUTURE CONDITIONS CURVE NUMBE
121	328.7	70	70
122	229.6	68	68
123	157.9	72	72
124	284.7	66	66
125	152.4	73	73
126	0.1	70	70
127	413.2	67	67
128	134.1	74	74
129	304.9	73	74
130	303.0	75	78
131	194.7	74	74
132	170.8	79	78
133	282.8	74	73
134	345.3	73	73
135	0.1	70	70
136	347.1	69	70
137	429.8	69	70
138	137.7	77	78
139	466.5	73	73
140	352.6	72	72
141	345.3	74	74
142	255.3	72	72
143	0.1	70	70
144	132.2	75	75
145	312.2	73	74
146	211.2	83	86
147	426.1	77	78
148	378.3	78	81
149	113.9	85	85
150	244.3	82	82
151	242.4	77	79
152	295.7	78	82
153	266.3	83	84
154	191.0	85	85
155	102.9	84	83
156	209.4	85	85
157	20.2	88	90

KEYSER CREEK WATERSHED
RUNOFF CURVE NUMBERS BY SUBAREA

SUBAREA NUMBER	LAND AREA (acres)	EXISTING CONDITIONS CURVE NUMBER	FUTURE CONDITIONS CURVE NUMBER
1	247.9	74	74
2	256.2	76	75
3	151.5	73	74
4	192.8	84	80
5	161.6	91	90
6	266.3	90	88
7	121.2	88	87
8	198.4	74	77
9	220.4	84	81
10	137.7	84	85
11	232.3	72	72
12	202.9	72	76
13	127.6	77	83
14	0.1	70	70
15	249.8	81	81
16	248.9	70	70
17	196.5	71	73
18	185.5	73	78
19	183.7	80	82
20	200.2	75	80
21	0.1	70	70
22	167.1	78	82
23	236.0	84	82
24	0.1	70	70
25	220.4	78	82
26	99.2	74	87
27	0.1	70	70
28	186.4	77	82
29	189.2	77	85
30	0.1	70	70
31	150.6	80	82
32	150.6	87	87
33	173.6	86	92

SPRING BROOK WATERSHED
RUNOFF CURVE NUMBERS BY SUBAREA

SUBAREA NUMBER	LAND AREA (acres)	EXISTING CONDITIONS CURVE NUMBER	FUTURE CONDITIONS CURVE NUMBER
1	232.3	70	70
2	253.4	74	73
3	153.4	73	74
4	260.8	74	74
5	146.9	68	70
6	222.2	73	78
7	136.7	71	78
8	0.1	70	70
9	169.9	72	72
10	160.7	83	86
11	112.0	75	79
12	265.4	73	80
13	90.0	72	78
14	261.7	81	83
15	29.4	74	74
16	67.0	79	83

ST. JOHN'S CREEK WATERSHED
RUNOFF CURVE NUMBERS BY SUBAREA

SUBAREA NUMBER	LAND AREA (acres)	EXISTING CONDITIONS CURVE NUMBER	FUTURE CONDITIONS CURVE NUMBER
1	146.9	70	70
2	162.5	70	70
3	158.9	71	71
4	112.0	73	73
5	111.1	71	72
6	52.3	70	70
7	163.5	76	78
8	121.2	71	71
9	172.6	72	73
10	52.3	73	74
11	110.2	73	79
12	154.3	78	82
13	0.1	70	70
14	198.4	79	81
15	209.4	80	79
16	68.0	78	81
17	143.3	72	79
18	123.1	71	76
19	180.0	75	77
20	171.7	82	83
21	143.3	77	79
22	186.4	80	78
23	85.4	71	72
24	233.2	73	74
25	231.4	76	75
26	223.1	85	85
27	86.3	74	74
28	111.1	87	83
29	120.3	85	84
30	0.1	70	70
31	76.2	83	82
32	122.1	86	83
33	0.1	70	70
34	215.8	87	86
35	140.5	85	83
36	54.2	87	87

APPENDIX D

PRIORITY WATERSHED PEAK FLOW TABLES

TABLE D-1

% INCREASE AT WATERSHED OUTLET FOR STORM EVENTS MODELED

WATERSHED NAME	Mean Annual 2.33 Yr.	5 Yr.	10 Yr.	25 Yr.	50 Yr.	100 Yr.
STERRY CREEK	6.2	18.0	17.3	15.6	14.9	13.4
WILDCAT CREEK	-6.1	-1.8	0.8	1.2	1.3	1.8
HULL CREEK	-8.2	-1.3	-1.0	-1.7	-1.0	-0.8
EDDY CREEK	7.6	6.0	4.7	2.8	2.7	2.7
DICKSON CITY WATERSHED	-1.8	8.5	11.7	13.2	12.9	13.5
ROARING BROOK	5.8	5.9	5.6	5.5	2.9	2.1
	6.5	11.0	10.8	9.9	9.0	8.1
	-7.2	7.6	17.1	13.7	15.8	12.5
	-7.1	-1.8	3.9	5.2	5.2	5.5

WALTER B. SATTERTHWAITE ASSOCIATES, INC.

STERRY1 SUBAREA PEAK FLOW

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	11.3	712.5	11.3	712.5	0.0	0.00%	15.2	748.5	15.2	748.5	0.0	0.00%	26.8	763.5	26.8	763.5	0.0	0.00%
2	48.0	715.5	48.0	715.5	0.0	0.00%	38.2	706.5	38.2	706.5	0.0	0.00%	54.8	718.5	54.8	718.5	0.0	0.00%
3	42.1	715.5	42.1	715.5	0.0	0.00%	33.5	706.5	33.5	706.5	0.0	0.00%	46.6	718.5	46.6	718.5	0.0	0.00%
4	5.3	712.5	5.3	712.5	0.0	0.00%	7.1	718.5	7.1	718.5	0.0	0.00%	12.5	763.5	12.5	763.5	0.0	0.00%
5	32.3	715.5	32.3	715.5	0.0	0.00%	25.7	706.5	25.7	706.5	0.0	0.00%	38.3	718.5	38.3	718.5	0.0	0.00%
6	23.2	715.5	23.2	715.5	0.0	0.00%	18.5	706.5	18.5	706.5	0.0	0.00%	27.6	718.5	27.6	718.5	0.0	0.00%
7	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
8	22.5	715.5	17.0	712.5	-5.5	24.44%	17.9	706.5	22.2	718.5	4.3	24.02%	28.5	748.5	35.3	718.5	6.8	23.86%
9	10.6	748.5	9.8	748.5	-0.8	7.55%	27.1	763.5	24.6	763.5	-2.5	9.23%	47.5	763.5	43.3	763.5	-4.2	8.84%
10	5.7	763.5	5.7	763.5	0.0	0.00%	15.5	793.5	15.5	793.5	0.0	0.00%	27.8	793.5	27.8	793.5	0.0	0.00%
11	37.2	718.5	37.2	718.5	0.0	0.00%	78.2	718.5	78.2	718.5	0.0	0.00%	119.6	718.5	119.6	718.5	0.0	0.00%
12	9.2	712.5	22.7	793.5	13.5	146.74%	11.5	748.5	48.0	763.5	36.5	317.39%	20.6	778.5	73.9	748.5	53.3	258.74%
13	5.8	718.5	9.6	763.5	3.8	65.52%	14.2	763.5	23.2	748.5	9.0	63.38%	24.8	748.5	39.2	718.5	14.4	58.06%
14	13.3	712.5	17.0	793.5	3.7	27.82%	16.6	748.5	42.3	778.5	25.7	154.82%	29.5	763.5	70.5	763.5	41.0	138.98%
15	15.8	808.5	23.1	808.5	7.3	46.20%	37.0	793.5	48.9	778.5	11.9	32.16%	59.6	778.5	74.9	763.5	15.3	25.67%
16	22.4	718.5	15.9	748.5	-6.5	29.02%	55.0	718.5	39.5	718.5	-15.5	28.18%	91.7	718.5	68.8	718.5	-22.9	24.97%
17	6.7	793.5	7.6	793.5	0.9	13.43%	17.1	793.5	18.9	793.5	1.8	10.53%	29.0	778.5	31.6	778.5	2.6	8.97%
18	8.6	778.5	6.7	778.5	-1.9	22.09%	20.6	763.5	16.8	778.5	-3.8	18.45%	33.8	748.5	28.4	763.5	-5.4	15.98%

STERRY1 SUBAREA PEAK FLOW

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	34.6	778.5	34.6	778.5	0.0	0.00%	50.1	778.5	50.1	778.5	0.0	0.00%	71.0	778.5	71.0	778.5	0.0	0.00%
2	78.4	718.5	78.4	718.5	0.0	0.00%	102.8	718.5	102.8	718.5	0.0	0.00%	144.0	718.5	144.0	718.5	0.0	0.00%
3	66.0	718.5	66.0	718.5	0.0	0.00%	86.3	718.5	86.3	718.5	0.0	0.00%	119.2	718.5	119.2	718.5	0.0	0.00%
4	16.0	778.5	16.0	778.5	0.0	0.00%	23.1	778.5	23.1	778.5	0.0	0.00%	32.7	778.5	32.7	778.5	0.0	0.00%
5	56.0	718.5	56.0	718.5	0.0	0.00%	72.9	718.5	72.9	718.5	0.0	0.00%	103.0	718.5	103.0	718.5	0.0	0.00%
6	40.4	718.5	40.4	718.5	0.0	0.00%	52.6	718.5	52.6	718.5	0.0	0.00%	74.4	718.5	74.4	718.5	0.0	0.00%
7	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
8	42.4	718.5	43.9	748.5	1.5	3.54%	56.8	748.5	62.3	748.5	5.5	9.68%	81.1	718.5	88.2	718.5	7.1	8.75%
9	63.5	748.5	58.4	748.5	-5.1	8.03%	86.1	718.5	79.7	748.5	-6.4	7.43%	119.4	718.5	110.3	718.5	-9.1	7.62%
10	37.2	778.5	37.2	778.5	0.0	0.00%	50.2	778.5	50.2	778.5	0.0	0.00%	67.8	763.5	67.8	763.5	0.0	0.00%
11	147.4	718.5	147.4	718.5	0.0	0.00%	183.7	718.5	183.7	718.5	0.0	0.00%	228.7	718.5	228.7	718.5	0.0	0.00%
12	28.3	778.5	92.8	748.5	64.5	227.92%	39.7	778.5	118.1	718.5	78.4	197.48%	55.4	778.5	152.1	718.5	96.7	174.55%
13	33.5	748.5	52.2	718.5	18.7	55.82%	46.4	718.5	70.1	718.5	23.7	51.08%	64.5	718.5	93.7	718.5	29.2	45.27%
14	40.3	778.5	91.9	763.5	51.6	128.04%	56.4	778.5	120.5	748.5	64.1	113.65%	78.8	763.5	157.4	748.5	78.6	99.75%
15	76.0	763.5	93.8	748.5	17.8	23.42%	98.1	763.5	118.5	748.5	20.4	20.80%	126.8	748.5	150.5	718.5	23.7	18.69%
16	119.2	718.5	92.5	718.5	-26.7	22.40%	154.7	718.5	123.6	718.5	-31.1	20.10%	201.0	718.5	165.9	718.5	-35.1	17.46%
17	38.0	763.5	41.1	763.5	3.1	8.16%	50.1	763.5	53.6	763.5	3.5	6.99%	66.0	748.5	70.2	748.5	4.2	6.36%
18	43.6	748.5	37.4	748.5	-6.2	14.22%	57.6	718.5	49.1	745.5	-8.5	14.76%	76.7	718.5	66.8	718.5	-9.9	12.91%

STERRY1 WATERSHED PEAK FLOW

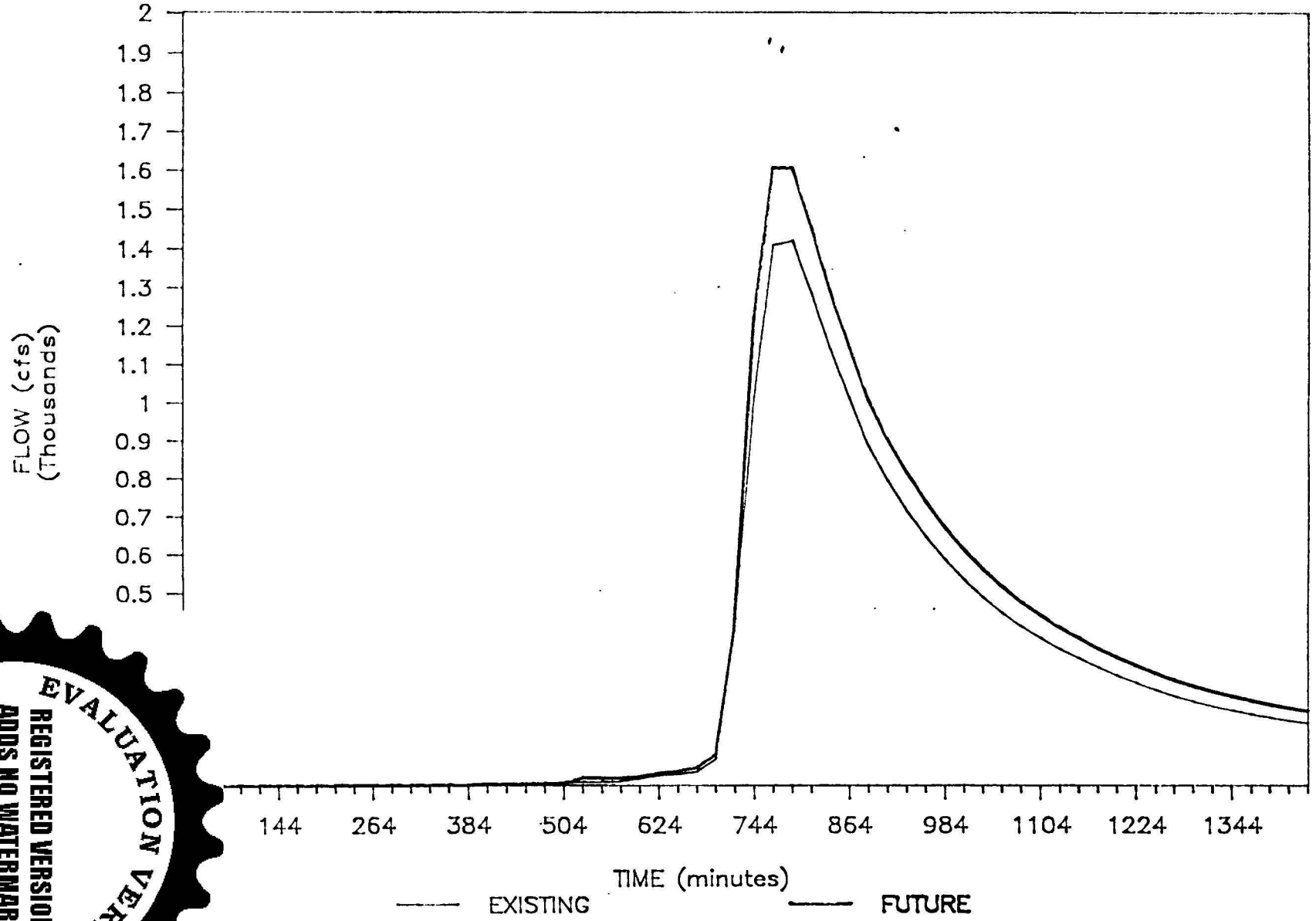
SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	11.3	712.5	11.3	712.5	0.0	0.00%	15.2	748.5	15.2	748.5	0.0	0.00%	26.8	763.5	26.8	763.5	0.0	0.00%
2	59.3	715.5	59.3	715.5	0.0	0.00%	47.8	718.5	47.8	718.5	0.0	0.00%	74.7	718.5	74.7	718.5	0.0	0.00%
3	96.6	718.5	96.6	718.5	0.0	0.00%	73.4	718.5	73.4	718.5	0.0	0.00%	112.9	721.5	112.9	721.5	0.0	0.00%
4	5.3	712.5	5.3	712.5	0.0	0.00%	7.1	718.5	7.1	718.5	0.0	0.00%	12.5	763.5	12.5	763.5	0.0	0.00%
5	34.4	718.5	34.4	718.5	0.0	0.00%	29.7	718.5	29.7	718.5	0.0	0.00%	46.0	718.5	46.0	718.5	0.0	0.00%
6	53.2	718.5	53.2	718.5	0.0	0.00%	44.7	718.5	44.7	718.5	0.0	0.00%	69.2	721.5	69.2	721.5	0.0	0.00%
7	149.8	718.5	149.8	718.5	0.0	0.00%	118.1	718.5	118.1	718.5	0.0	0.00%	182.1	721.5	182.1	721.5	0.0	0.00%
8	168.2	721.5	161.9	721.5	-6.3	3.75%	133.0	721.5	137.3	721.5	4.3	3.23%	207.3	724.5	213.6	724.5	6.3	3.04%
9	137.9	736.5	132.0	736.5	-5.9	4.28%	146.1	748.5	148.2	748.5	2.1	1.44%	249.8	751.5	251.9	751.5	2.1	0.84%
10	143.2	739.5	137.3	739.5	-5.9	4.12%	160.8	754.5	162.8	754.5	2.0	1.24%	276.6	757.5	278.6	757.5	2.0	0.72%
11	179.6	739.5	173.7	739.5	-5.9	3.29%	231.4	748.5	233.6	745.5	2.2	0.95%	377.0	748.5	379.2	748.5	2.2	0.58%
12	186.7	742.5	194.4	742.5	7.7	4.12%	243.0	748.5	281.1	748.5	38.1	15.68%	397.1	751.5	452.8	751.5	55.7	14.03%
13	5.8	718.5	9.6	763.5	3.8	65.52%	14.2	763.5	23.2	748.5	9.0	63.38%	24.8	748.5	39.2	718.5	14.4	58.06%
14	202.3	742.5	218.4	742.5	16.1	7.96%	273.2	748.5	344.7	751.5	71.5	26.17%	450.5	751.5	560.9	751.5	110.4	24.51%
15	216.5	748.5	239.7	748.5	23.2	10.72%	308.8	757.5	392.7	757.5	83.9	27.17%	509.2	757.5	635.5	757.5	126.3	24.80%
16	238.6	754.5	255.3	754.5	16.7	7.00%	355.8	760.5	428.6	763.5	72.8	20.46%	579.3	760.5	692.8	760.5	113.5	19.59%
17	245.0	760.5	262.5	760.5	17.5	7.14%	372.6	766.5	447.2	769.5	74.6	20.02%	608.0	766.5	724.2	766.5	116.2	19.11%
18	253.6	766.5	269.2	766.5	15.6	6.15%	393.1	772.5	464.0	775.5	70.9	18.04%	641.2	772.5	752.4	772.5	111.2	17.34%

STERRY1 WATERSHED PEAK FLOW

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	34.6	778.5	34.6	778.5	0.0	0.00%	50.1	778.5	50.1	778.5	0.0	0.00%	71.0	778.5	71.0	778.5	0.0	0.00%
2	101.6	718.5	101.6	718.5	0.0	0.00%	136.0	718.5	136.0	718.5	0.0	0.00%	191.6	718.5	191.6	718.5	0.0	0.00%
3	156.9	721.5	156.9	721.5	0.0	0.00%	207.3	721.5	207.3	721.5	0.0	0.00%	291.0	721.5	291.0	721.5	0.0	0.00%
4	16.0	778.5	16.0	778.5	0.0	0.00%	23.1	778.5	23.1	778.5	0.0	0.00%	32.7	778.5	32.7	778.5	0.0	0.00%
5	64.4	718.5	64.4	718.5	0.0	0.00%	84.7	733.5	84.7	733.5	0.0	0.00%	119.5	718.5	119.5	718.5	0.0	0.00%
6	98.7	721.5	98.7	721.5	0.0	0.00%	131.1	736.5	131.1	736.5	0.0	0.00%	183.1	721.5	183.1	721.5	0.0	0.00%
7	255.7	721.5	255.7	721.5	0.0	0.00%	337.2	721.5	337.2	721.5	0.0	0.00%	474.1	721.5	474.1	721.5	0.0	0.00%
8	293.6	724.5	294.4	724.5	0.8	0.27%	387.9	724.5	393.1	724.5	5.2	1.34%	547.3	724.5	553.9	724.5	6.6	1.21%
9	348.3	748.5	344.6	748.5	-3.7	1.06%	465.3	748.5	464.5	748.5	-0.8	0.17%	643.1	748.5	642.1	748.5	-1.0	0.16%
10	384.3	754.5	380.6	754.5	-3.7	0.96%	514.4	751.5	513.6	751.5	-0.8	0.16%	710.5	754.5	709.4	754.5	-1.1	0.15%
11	507.2	745.5	503.3	745.5	-3.9	0.77%	657.4	748.5	656.5	748.5	-0.9	0.14%	879.1	748.5	876.4	751.5	-2.7	0.31%
12	534.5	748.5	596.0	748.5	61.5	11.51%	695.8	751.5	772.2	751.5	76.4	10.98%	933.3	751.5	1021.8	751.5	88.5	9.48%
13	33.5	748.5	52.2	718.5	18.7	55.82%	46.4	718.5	70.1	718.5	23.7	51.08%	64.5	718.5	93.7	718.5	29.2	45.27%
14	606.7	751.5	737.5	748.5	130.8	21.56%	796.5	754.5	957.0	751.5	160.5	20.15%	1071.8	751.5	1261.8	751.5	190.0	17.73%
15	682.2	757.5	831.1	754.5	148.9	21.83%	894.4	760.5	1075.1	757.5	180.7	20.20%	1197.8	757.5	1410.0	757.5	212.2	17.72%
16	769.3	760.5	903.8	760.5	134.5	17.48%	998.7	763.5	1164.8	763.5	166.1	16.63%	1324.1	763.5	1522.1	763.5	198.0	14.95%
17	807.2	766.5	944.8	766.5	137.6	17.05%	1048.5	769.5	1218.1	769.5	169.6	16.18%	1389.4	769.5	1590.9	769.5	201.5	14.50%
18	849.2	772.5	981.3	772.5	132.1	15.56%	1101.4	775.5	1265.4	772.5	164.0	14.89%	1456.2	775.5	1651.2	775.5	195.0	13.39%

STERRY CREEK WATERSHED

100 YEAR EVENT -- EXISTING VS. FUTURE



WILDCAT2 SUBAREA PEAK FLOW

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	39.3	715.5	39.3	715.5	0.0	0.00%	31.3	706.5	31.3	706.5	0.0	0.00%	45.7	718.5	45.7	718.5	0.0	0.00%
2	13.1	712.5	13.1	712.5	0.0	0.00%	17.0	718.5	17.0	718.5	0.0	0.00%	27.1	718.5	27.1	718.5	0.0	0.00%
3	11.3	715.5	11.3	715.5	0.0	0.00%	9.0	706.5	9.0	706.5	0.0	0.00%	14.9	748.5	14.9	748.5	0.0	0.00%
4	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
5	22.6	763.5	28.7	763.5	6.1	26.99%	55.5	763.5	68.0	748.5	12.5	22.52%	93.8	748.5	113.6	718.5	19.8	21.11%
6	34.7	748.5	23.9	748.5	-10.8	31.12%	82.0	718.5	58.3	718.5	-23.7	28.90%	134.5	718.5	101.3	718.5	-33.2	24.68%
7	12.0	712.5	10.8	712.5	-1.2	10.00%	14.4	748.5	14.4	718.5	0.0	0.00%	25.0	763.5	23.9	748.5	-1.1	4.40%
8	9.7	778.5	12.3	763.5	2.6	26.80%	21.1	748.5	25.4	748.5	4.3	20.38%	33.6	718.5	39.8	718.5	6.2	18.45%
9	6.7	712.5	4.7	712.5	-2.0	29.85%	8.9	718.5	9.2	748.5	0.3	3.37%	14.5	748.5	15.9	763.5	1.4	9.66%
10	41.1	718.5	46.6	718.5	5.5	13.38%	89.8	718.5	97.6	718.5	7.8	8.69%	137.2	718.5	147.3	718.5	10.1	7.36%
11	34.7	718.5	27.3	718.5	-7.4	21.33%	82.9	718.5	66.4	718.5	-16.5	19.90%	136.7	718.5	114.6	718.5	-22.1	16.17%
12	15.5	712.5	9.9	712.5	-5.6	36.13%	18.1	718.5	18.4	718.5	0.3	1.66%	29.4	718.5	30.2	718.5	0.8	2.72%
13	41.3	715.5	17.7	718.5	-23.6	57.14%	53.5	709.5	44.8	718.5	-8.7	16.26%	51.2	718.5	80.2	718.5	29.0	56.64%
14	57.0	712.5	57.0	712.5	0.0	0.00%	67.8	718.5	67.8	718.5	0.0	0.00%	103.7	718.5	103.7	718.5	0.0	0.00%
15	30.0	712.5	30.0	712.5	0.0	0.00%	37.7	718.5	37.7	718.5	0.0	0.00%	59.1	718.5	59.1	718.5	0.0	0.00%
16	4.9	718.5	10.9	718.5	6.0	122.45%	12.0	718.5	22.2	718.5	10.2	85.00%	20.4	718.5	32.9	718.5	12.5	61.27%
17	23.8	778.5	21.2	778.5	-2.6	10.92%	51.9	748.5	47.3	763.5	-4.6	8.86%	81.9	718.5	75.5	748.5	-6.4	7.81%
18	11.8	778.5	10.4	763.5	-1.4	11.86%	29.2	763.5	26.4	763.5	-2.8	9.59%	49.3	748.5	45.3	748.5	-4.0	8.11%
19	19.1	718.5	17.4	718.5	-1.7	8.90%	46.7	718.5	42.5	718.5	-4.2	8.99%	80.6	718.5	73.1	718.5	-7.5	9.31%
20	11.8	718.5	11.8	718.5	0.0	0.00%	27.1	718.5	27.1	718.5	0.0	0.00%	44.9	718.5	44.9	718.5	0.0	0.00%

WILDCAT2 SUBAREA PEAK FLOW

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	66.5	718.5	66.5	718.5	0.0	0.00%	86.3	718.5	86.3	718.5	0.0	0.00%	121.4	718.5	121.4	718.5	0.0	0.00%
2	33.1	718.5	33.1	718.5	0.0	0.00%	47.3	718.5	47.3	718.5	0.0	0.00%	67.3	718.5	67.3	718.5	0.0	0.00%
3	22.4	748.5	22.4	748.5	0.0	0.00%	30.2	763.5	30.2	763.5	0.0	0.00%	43.2	748.5	43.2	748.5	0.0	0.00%
4	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
5	126.0	718.5	148.9	718.5	22.9	18.17%	169.5	718.5	198.4	718.5	28.9	17.05%	229.6	718.5	263.2	718.5	33.6	14.63%
6	173.0	718.5	135.1	718.5	-37.9	21.91%	223.3	718.5	180.6	718.5	-42.7	19.12%	288.8	718.5	239.0	718.5	-49.8	17.24%
7	33.9	763.5	30.4	763.5	-3.5	10.32%	47.0	763.5	43.4	763.5	-3.6	7.66%	65.4	748.5	61.0	748.5	-4.4	6.73%
8	43.0	718.5	50.1	718.5	7.1	16.51%	55.8	718.5	63.6	718.5	7.8	13.98%	72.2	718.5	80.5	718.5	8.3	11.50%
9	18.3	763.5	21.8	763.5	3.5	19.13%	26.0	748.5	30.1	748.5	4.1	15.77%	36.6	748.5	42.2	748.5	5.6	15.30%
10	170.2	718.5	180.6	718.5	10.4	6.11%	210.6	718.5	221.0	718.5	10.4	4.94%	260.9	718.5	271.2	718.5	10.3	3.95%
11	176.2	718.5	149.9	718.5	-26.3	14.93%	227.8	718.5	198.2	718.5	-29.6	12.99%	290.8	718.5	260.1	718.5	-30.7	10.56%
12	39.2	718.5	41.4	718.5	2.2	5.61%	54.2	718.5	57.9	718.5	3.7	6.83%	76.0	718.5	82.2	718.5	6.2	8.16%
13	62.8	718.5	105.2	718.5	42.4	67.52%	94.9	718.5	148.5	718.5	53.6	56.48%	130.5	718.5	205.6	718.5	75.1	57.55%
14	124.7	718.5	124.7	718.5	0.0	0.00%	174.0	718.5	174.0	718.5	0.0	0.00%	239.5	718.5	239.5	718.5	0.0	0.00%
15	72.0	718.5	72.0	718.5	0.0	0.00%	101.0	718.5	101.0	718.5	0.0	0.00%	142.0	718.5	142.0	718.5	0.0	0.00%
16	26.4	718.5	40.1	718.5	13.7	51.89%	34.7	718.5	49.0	718.5	14.3	41.21%	45.2	718.5	60.0	718.5	14.8	32.74%
17	105.0	718.5	96.7	718.5	-8.3	7.90%	136.3	718.5	126.8	718.5	-9.5	6.97%	176.4	718.5	166.1	718.5	-10.3	5.84%
18	65.0	748.5	59.6	748.5	-5.4	8.31%	86.8	718.5	80.1	718.5	-6.7	7.72%	117.8	718.5	109.6	718.5	-8.2	6.96%
19	105.6	718.5	96.9	718.5	-8.7	8.24%	139.8	718.5	129.5	718.5	-10.3	7.37%	183.6	718.5	172.3	718.5	-11.3	6.15%
20	57.6	718.5	57.6	718.5	0.0	0.00%	73.3	718.5	73.3	718.5	0.0	0.00%	92.9	718.5	92.9	718.5	0.0	0.00%

WILDCAT2 WATERSHED PEAK FLOW

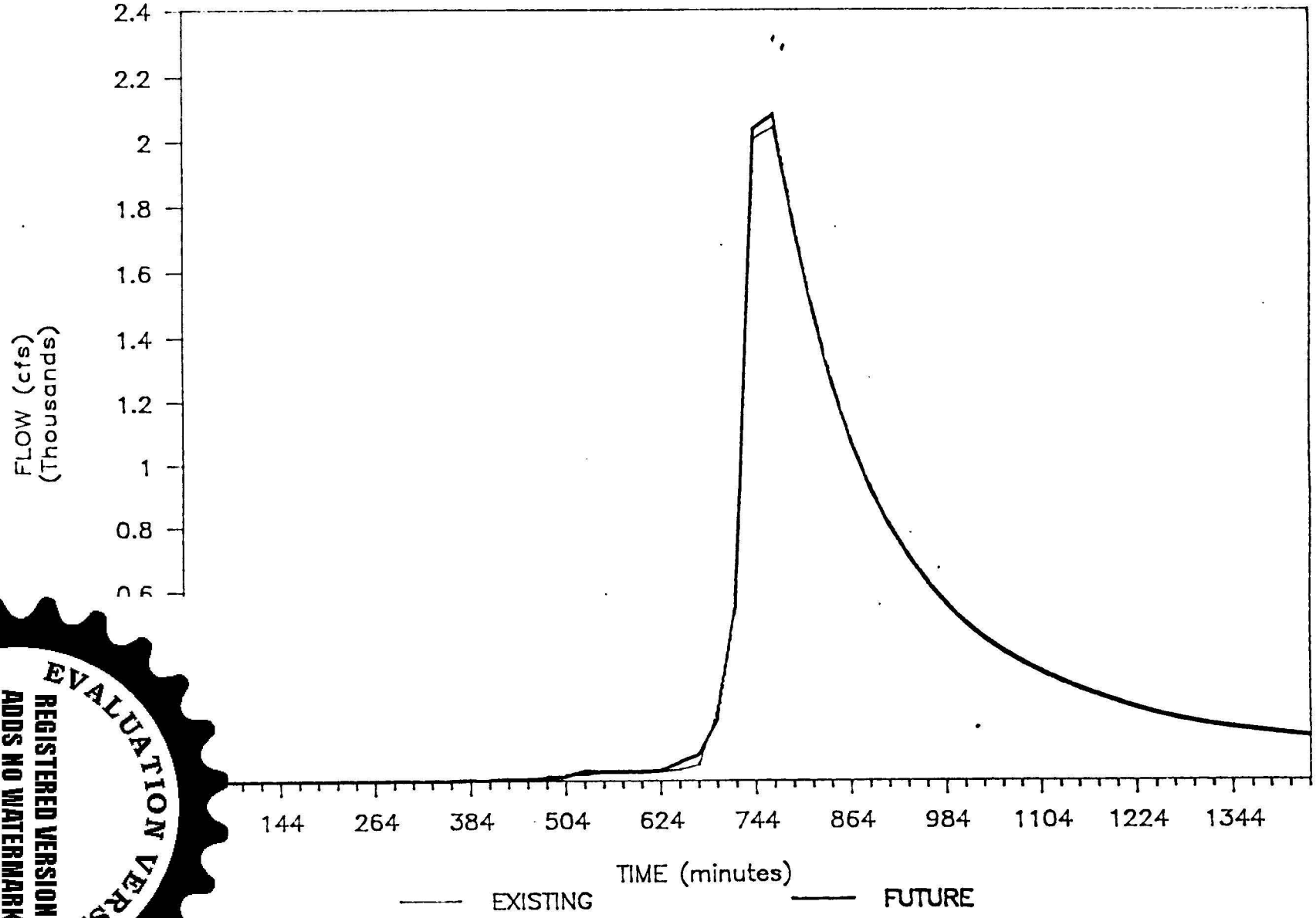
SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	39.3	715.5	39.3	715.5	0.0	0.00%	31.3	706.5	31.3	706.5	0.0	0.00%	45.7	718.5	45.7	718.5	0.0	0.00%
2	13.1	712.5	13.1	712.5	0.0	0.00%	17.0	718.5	17.0	718.5	0.0	0.00%	27.1	718.5	27.1	718.5	0.0	0.00%
3	50.6	715.5	50.6	715.5	0.0	0.00%	40.2	706.5	40.2	706.5	0.0	0.00%	60.2	718.5	60.2	718.5	0.0	0.00%
4	62.1	715.5	62.1	715.5	0.0	0.00%	55.7	706.5	55.7	706.5	0.0	0.00%	87.3	718.5	87.3	718.5	0.0	0.00%
5	80.2	721.5	85.1	721.5	4.9	6.11%	103.0	724.5	115.6	724.5	12.6	12.23%	173.4	724.5	192.5	724.5	19.1	11.01%
6	112.2	727.5	106.5	727.5	-5.7	5.08%	179.8	730.5	171.0	730.5	-8.8	4.89%	296.3	730.5	286.7	730.5	-9.6	3.24%
7	12.0	712.5	10.8	712.5	-1.2	10.00%	14.4	748.5	14.4	718.5	0.0	0.00%	25.0	763.5	23.9	748.5	-1.1	4.40%
8	130.1	730.5	125.6	730.5	-4.5	3.46%	213.4	733.5	209.7	757.5	-3.7	1.73%	351.1	733.5	346.5	733.5	-4.6	1.31%
9	6.7	712.5	4.7	712.5	-2.0	29.85%	8.9	718.5	9.2	748.5	0.3	3.37%	14.5	748.5	15.9	763.5	1.4	9.66%
10	170.9	733.5	170.2	733.5	-0.7	0.41%	291.3	736.5	292.7	736.5	1.4	0.48%	464.7	736.5	466.9	736.5	2.2	0.47%
11	202.4	736.5	195.1	736.5	-7.3	3.61%	360.1	733.5	350.3	733.5	-9.8	2.72%	570.5	739.5	557.9	739.5	-12.6	2.21%
12	15.5	712.5	9.9	712.5	-5.6	36.13%	18.1	718.5	18.4	718.5	0.3	1.66%	29.4	718.5	30.2	718.5	0.8	2.72%
13	51.3	718.5	27.6	718.5	-23.7	46.20%	68.8	709.5	58.1	718.5	-10.7	15.55%	72.2	724.5	99.2	724.5	27.0	37.40%
14	57.0	712.5	57.0	712.5	0.0	0.00%	67.8	718.5	67.8	718.5	0.0	0.00%	103.7	718.5	103.7	718.5	0.0	0.00%
15	83.2	715.5	83.2	715.5	0.0	0.00%	100.1	721.5	100.1	721.5	0.0	0.00%	154.4	721.5	154.4	721.5	0.0	0.00%
16	129.3	718.5	111.6	718.5	-17.7	13.69%	174.1	718.5	179.4	718.5	5.3	3.04%	238.2	721.5	275.4	718.5	37.2	15.62%
17	315.9	739.5	297.1	739.5	-18.8	5.95%	564.0	736.5	558.5	736.5	-5.5	0.98%	874.9	742.5	891.4	742.5	16.5	1.89%
18	11.8	778.5	10.4	763.5	-1.4	11.86%	29.2	763.5	26.4	763.5	-2.8	9.59%	49.3	748.5	45.3	748.5	-4.0	8.11%
19	343.8	748.5	322.3	748.5	-21.5	6.25%	629.4	745.5	617.7	745.5	-11.7	1.86%	981.6	751.5	989.9	751.5	8.3	0.85%
20	351.6	754.5	330.1	754.5	-21.5	6.11%	644.9	751.5	633.2	751.5	-11.7	1.81%	1001.4	757.5	1009.7	757.5	8.3	0.83%

WILDCAT2 WATERSHED PEAK FLOW

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	66.5	718.5	66.5	718.5	0.0	0.00%	86.3	718.5	86.3	718.5	0.0	0.00%	121.4	718.5	121.4	718.5	0.0	0.00%
2	33.1	718.5	33.1	718.5	0.0	0.00%	47.3	718.5	47.3	718.5	0.0	0.00%	67.3	718.5	67.3	718.5	0.0	0.00%
3	88.1	718.5	88.1	718.5	0.0	0.00%	115.0	718.5	115.0	718.5	0.0	0.00%	163.0	718.5	163.0	718.5	0.0	0.00%
4	121.1	718.5	121.1	718.5	0.0	0.00%	162.4	718.5	162.4	718.5	0.0	0.00%	230.3	718.5	230.3	718.5	0.0	0.00%
5	237.5	724.5	258.6	724.5	21.1	8.88%	318.3	724.5	344.6	724.5	26.3	8.26%	440.4	724.5	470.6	724.5	30.2	6.86%
6	393.2	730.5	382.4	730.5	-10.8	2.75%	515.9	730.5	507.0	730.5	-8.9	1.73%	691.2	730.5	681.7	730.5	-9.5	1.37%
7	33.9	763.5	30.4	763.5	-3.5	10.32%	47.0	763.5	43.4	763.5	-3.6	7.66%	65.4	748.5	61.0	748.5	-4.4	6.73%
8	464.4	733.5	456.7	733.5	-7.7	1.66%	610.8	733.5	605.3	733.5	-5.5	0.90%	818.3	733.5	811.6	733.5	-6.7	0.82%
9	18.3	763.5	21.8	763.5	3.5	19.13%	26.0	748.5	30.1	748.5	4.1	15.77%	36.6	748.5	42.2	748.5	5.6	15.30%
10	600.9	736.5	602.1	736.5	1.2	0.20%	778.4	736.5	782.3	736.5	3.9	0.50%	1023.8	736.5	1027.9	736.5	4.1	0.40%
11	731.0	739.5	717.2	739.5	-13.8	1.89%	938.9	739.5	926.3	739.5	-12.6	1.34%	1220.2	739.5	1207.6	739.5	-12.6	1.03%
12	39.2	718.5	41.4	718.5	2.2	5.61%	54.2	718.5	57.9	718.5	3.7	6.83%	76.0	718.5	82.2	718.5	6.2	8.16%
13	91.9	724.5	131.7	724.5	39.8	43.31%	135.3	724.5	184.4	724.5	49.1	36.29%	186.0	724.5	255.8	724.5	69.8	37.53%
14	124.7	718.5	124.7	718.5	0.0	0.00%	174.0	718.5	174.0	718.5	0.0	0.00%	239.5	718.5	239.5	718.5	0.0	0.00%
15	186.5	721.5	186.5	721.5	0.0	0.00%	261.9	721.5	261.9	721.5	0.0	0.00%	362.2	721.5	362.2	721.5	0.0	0.00%
16	292.0	721.5	343.0	721.5	51.0	17.47%	414.2	721.5	475.4	721.5	61.2	14.78%	569.3	721.5	652.5	721.5	83.2	14.61%
17	1112.8	742.5	1137.6	742.5	24.8	2.23%	1456.4	742.5	1488.1	742.5	31.7	2.18%	1916.2	742.5	1965.9	742.5	49.7	2.59%
18	65.0	748.5	59.6	748.5	-5.4	8.31%	86.8	718.5	80.1	718.5	-6.7	7.72%	117.8	718.5	109.6	718.5	-8.2	6.96%
19	1249.9	751.5	1264.6	751.5	14.7	1.18%	1632.1	751.5	1653.0	751.5	20.9	1.28%	2139.8	751.5	2177.6	751.5	37.8	1.77%
20	1273.1	757.5	1287.8	757.5	14.7	1.15%	1659.2	757.5	1680.0	757.5	20.8	1.25%	2170.6	757.5	2208.5	757.5	37.9	1.75%

WILDCAT CREEK WATERSHED

100 YEAR EVENT -- EXISTING VS. FUTURE



HULL3 SUBAREA PEAK FLOWS

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	9.6	763.5	9.6	763.5	0.0	0.00%	23.7	748.5	23.7	748.5	0.0	0.00%	41.4	718.5	41.4	718.5	0.0	0.00%
2	13.5	763.5	12.1	763.5	-1.4	10.37%	33.8	763.5	30.4	763.5	-3.4	10.06%	58.0	748.5	52.8	748.5	-5.2	8.97%
3	11.3	763.5	10.1	748.5	-1.2	10.62%	28.0	748.5	25.2	763.5	-2.8	10.00%	48.3	718.5	43.8	748.5	-4.5	9.32%
4	18.6	748.5	18.6	748.5	0.0	0.00%	45.6	718.5	45.6	718.5	0.0	0.00%	81.7	718.5	81.7	718.5	0.0	0.00%
5	15.1	712.5	12.2	709.5	-2.9	19.21%	18.0	718.5	19.2	748.5	1.2	6.67%	29.9	748.5	33.9	748.5	4.0	13.38%
6	13.7	718.5	13.7	718.5	0.0	0.00%	32.2	718.5	32.2	718.5	0.0	0.00%	57.6	718.5	57.6	718.5	0.0	0.00%
7	6.3	709.5	3.8	718.5	-2.5	39.68%	10.2	763.5	11.0	763.5	0.8	7.84%	18.3	763.5	20.4	763.5	2.1	11.48%
8	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
9	16.3	712.5	20.6	709.5	4.3	26.38%	28.8	718.5	29.5	718.5	0.7	2.43%	47.1	718.5	50.8	718.5	3.7	7.86%
10	36.0	712.5	36.0	712.5	0.0	0.00%	41.9	718.5	41.9	718.5	0.0	0.00%	67.8	718.5	67.8	718.5	0.0	0.00%
11	18.2	715.5	18.2	715.5	0.0	0.00%	14.4	706.5	14.4	706.5	0.0	0.00%	22.6	718.5	22.6	718.5	0.0	0.00%
12	14.2	718.5	14.2	718.5	0.0	0.00%	13.0	709.5	13.0	709.5	0.0	0.00%	15.1	718.5	15.1	718.5	0.0	0.00%
13	58.7	715.5	48.9	712.5	-9.8	16.70%	46.7	706.5	50.0	718.5	3.3	7.07%	63.8	718.5	77.4	718.5	13.6	21.32%
14	25.9	718.5	21.3	718.5	-4.6	17.76%	63.3	718.5	47.8	718.5	-15.5	24.49%	110.7	718.5	82.5	718.5	-28.2	25.47%
15	21.2	718.5	21.2	718.5	0.0	0.00%	51.9	718.5	51.9	718.5	0.0	0.00%	89.5	718.5	89.5	718.5	0.0	0.00%

HULL3 SUBAREA PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	55.2	718.5	55.2	718.5	0.0	0.00%	75.9	718.5	75.9	718.5	0.0	0.00%	103.4	718.5	103.4	718.5	0.0	0.00%
2	76.7	718.5	70.4	748.5	-6.3	8.21%	105.1	718.5	96.3	718.5	-8.8	8.37%	143.5	718.5	132.9	718.5	-10.6	7.39%
3	65.0	718.5	59.6	718.5	-5.4	8.31%	88.7	718.5	81.3	718.5	-7.4	8.34%	121.0	718.5	112.1	718.5	-8.9	7.36%
4	108.7	718.5	108.7	718.5	0.0	0.00%	148.9	718.5	148.9	718.5	0.0	0.00%	201.1	718.5	201.1	718.5	0.0	0.00%
5	40.2	748.5	46.9	748.5	6.7	16.67%	55.4	748.5	64.8	748.5	9.4	16.97%	77.2	718.5	90.7	718.5	13.5	17.49%
6	77.4	718.5	77.4	718.5	0.0	0.00%	107.0	718.5	107.0	718.5	0.0	0.00%	146.7	718.5	146.7	718.5	0.0	0.00%
7	25.3	763.5	27.2	763.5	1.9	7.51%	35.0	748.5	38.0	748.5	3.0	8.57%	48.5	748.5	52.2	748.5	3.7	7.63%
8	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
9	63.7	718.5	69.1	718.5	5.4	8.48%	87.3	718.5	96.1	718.5	8.8	10.08%	123.9	718.5	134.0	718.5	10.1	8.15%
10	90.5	718.5	90.5	718.5	0.0	0.00%	125.0	718.5	125.0	718.5	0.0	0.00%	175.2	718.5	175.2	718.5	0.0	0.00%
11	33.4	718.5	33.4	718.5	0.0	0.00%	44.2	718.5	44.2	718.5	0.0	0.00%	62.9	718.5	62.9	718.5	0.0	0.00%
12	18.1	718.5	18.1	718.5	0.0	0.00%	28.0	718.5	28.0	718.5	0.0	0.00%	36.1	718.5	36.1	718.5	0.0	0.00%
13	89.9	718.5	102.2	718.5	12.3	13.68%	117.4	718.5	136.7	718.5	19.3	16.44%	161.5	718.5	188.5	718.5	27.0	16.72%
14	147.9	718.5	112.8	718.5	-35.1	23.73%	199.7	718.5	156.4	718.5	-43.3	21.68%	269.1	718.5	215.2	718.5	-53.9	20.03%
15	118.8	718.5	118.8	718.5	0.0	0.00%	158.8	718.5	158.8	718.5	0.0	0.00%	211.5	718.5	211.5	718.5	0.0	0.00%

HULL3 WATERSHED PEAK FLOWS

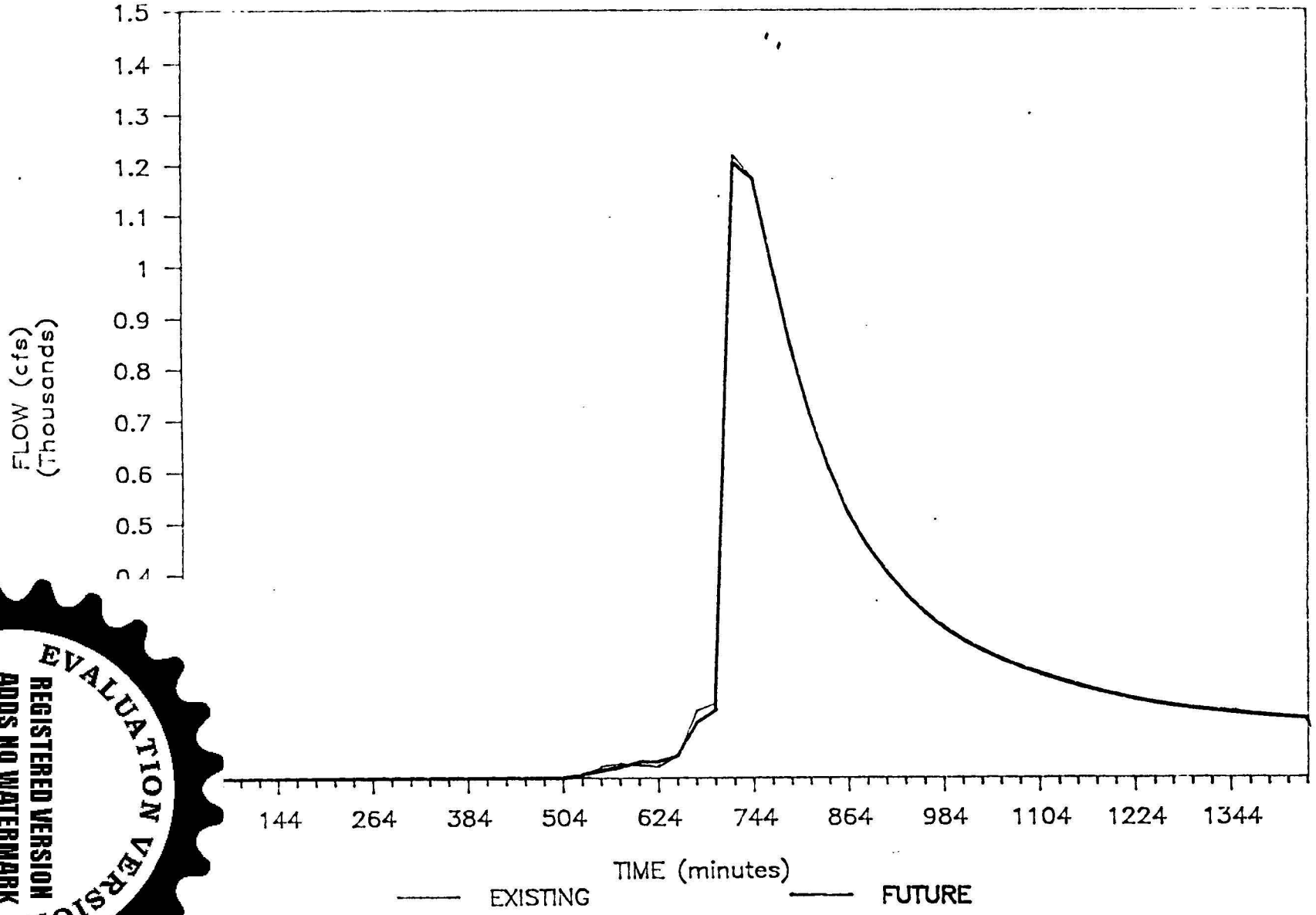
SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	9.6	763.5	9.6	763.5	0.0	0.00%	23.7	748.5	23.7	748.5	0.0	0.00%	41.4	718.5	41.4	718.5	0.0	0.00%
2	23.1	763.5	21.7	763.5	-1.4	6.06%	57.3	763.5	54.0	763.5	-3.3	5.76%	98.5	748.5	93.3	748.5	-5.2	5.28%
3	4.1	1192.5	3.6	1150.5	-0.5	12.20%	11.5	1351.5	10.5	1327.5	-1.0	8.70%	18.6	1378.5	17.4	1366.5	-1.2	6.45%
4	19.2	763.5	19.2	763.5	0.0	0.00%	46.7	748.5	46.6	748.5	-0.1	0.21%	82.4	718.5	82.3	718.5	-0.1	0.12%
5	1.4	877.5	1.4	904.5	0.0	0.00%	3.3	973.5	4.2	1024.5	0.9	27.27%	7.4	1027.5	9.5	1054.5	2.1	28.38%
6	13.8	718.5	13.8	718.5	0.0	0.00%	32.5	718.5	32.5	718.5	0.0	0.00%	58.0	718.5	58.0	718.5	0.0	0.00%
7	18.9	721.5	17.1	721.5	-1.8	9.52%	41.7	751.5	42.5	751.5	0.8	1.92%	73.0	721.5	74.9	721.5	1.9	2.60%
8	37.6	748.5	36.0	748.5	-1.6	4.26%	88.3	748.5	88.9	748.5	0.6	0.68%	150.5	748.5	152.6	748.5	2.1	1.40%
9	48.4	748.5	49.7	748.5	1.3	2.69%	112.7	751.5	114.6	751.5	1.9	1.69%	191.7	748.5	197.1	748.5	5.4	2.82%
10	75.5	724.5	76.6	724.5	1.1	1.46%	150.8	748.5	152.6	751.5	1.8	1.19%	257.0	748.5	262.4	748.5	5.4	2.10%
11	92.8	715.5	92.4	715.5	-0.4	0.43%	163.2	748.5	165.0	748.5	1.8	1.10%	278.7	748.5	284.1	748.5	5.4	1.94%
12	14.2	718.5	14.2	718.5	0.0	0.00%	13.0	709.5	13.0	709.5	0.0	0.00%	15.1	718.5	15.1	718.5	0.0	0.00%
13	151.5	715.5	136.7	721.5	-14.8	9.77%	201.1	748.5	210.6	748.5	9.5	4.72%	339.5	748.5	355.6	739.5	16.1	4.74%
14	172.1	715.5	154.8	721.5	-17.3	10.05%	257.6	748.5	254.0	748.5	-3.6	1.40%	433.3	739.5	428.9	739.5	-4.4	1.02%
15	188.6	715.5	173.1	721.5	-15.5	8.22%	302.5	733.5	298.7	748.5	-3.8	1.26%	510.5	733.5	505.4	733.5	-5.1	1.00%

HULL3 WATERSHED PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	55.2	718.5	55.2	718.5	0.0	0.00%	75.9	718.5	75.9	718.5	0.0	0.00%	103.4	718.5	103.4	718.5	0.0	0.00%
2	128.9	748.5	123.3	748.5	-5.6	4.34%	171.5	736.5	163.7	736.5	-7.8	4.55%	233.4	721.5	223.7	721.5	-9.7	4.16%
3	25.6	1327.5	23.6	1333.5	-2.0	7.81%	35.2	1270.5	33.2	1276.5	-2.0	5.68%	45.1	1240.5	43.4	1240.5	-1.7	3.77%
4	109.6	718.5	109.6	718.5	0.0	0.00%	150.2	718.5	150.1	718.5	-0.1	0.07%	202.7	718.5	202.6	718.5	-0.1	0.05%
5	11.1	1036.5	13.5	1057.5	2.4	21.62%	14.9	1057.5	17.0	1078.5	2.1	14.09%	19.0	1075.5	21.4	1087.5	2.4	12.63%
6	78.0	718.5	78.2	718.5	0.2	0.26%	107.9	718.5	108.1	718.5	0.2	0.19%	148.0	718.5	148.2	718.5	0.2	0.14%
7	99.2	721.5	101.0	721.5	1.8	1.81%	138.1	721.5	141.1	721.5	3.0	2.17%	191.2	721.5	195.1	721.5	3.9	2.04%
8	197.6	733.5	199.6	733.5	2.0	1.01%	272.3	721.5	275.3	721.5	3.0	1.10%	372.1	721.5	375.9	721.5	3.8	1.02%
9	253.7	736.5	261.0	736.5	7.3	2.88%	347.8	724.5	358.4	724.5	10.6	3.05%	478.6	724.5	491.9	724.5	13.3	2.78%
10	339.9	742.5	347.1	739.5	7.2	2.12%	461.8	727.5	472.4	727.5	10.6	2.30%	637.6	727.5	651.0	727.5	13.4	2.10%
11	371.4	742.5	378.6	742.5	7.2	1.94%	502.9	739.5	513.1	739.5	10.2	2.03%	695.1	727.5	708.4	727.5	13.3	1.91%
12	18.1	718.5	18.1	718.5	0.0	0.00%	28.0	718.5	28.0	718.5	0.0	0.00%	36.1	718.5	36.1	718.5	0.0	0.00%
13	456.8	739.5	472.9	739.5	16.1	3.52%	621.1	727.5	647.2	727.5	26.1	4.20%	856.6	727.5	889.6	727.5	33.0	3.85%
14	582.7	733.5	571.6	733.5	-11.1	1.90%	791.1	727.5	782.0	727.5	-9.1	1.15%	1081.1	727.5	1071.8	727.5	-9.3	0.86%
15	683.2	727.5	671.8	733.5	-11.4	1.67%	923.9	727.5	914.8	727.5	-9.1	0.98%	1256.2	724.5	1246.1	724.5	-10.1	0.80%

HULL CREEK WATERSHED

100 YEAR EVENT -- EXISTING VS. FUTURE



EDDY4 SUBAREA PEAK FLOWS

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	9.4	715.5	9.4	715.5	0.0	0.00%	7.5	718.5	7.5	718.5	0.0	0.00%	13.2	763.5	13.2	763.5	0.0	0.00%
2	7.5	715.5	7.5	715.5	0.0	0.00%	6.0	706.5	6.0	706.5	0.0	0.00%	10.4	763.5	10.4	763.5	0.0	0.00%
3	16.6	715.5	16.6	715.5	0.0	0.00%	21.5	709.5	21.5	709.5	0.0	0.00%	21.1	718.5	21.1	718.5	0.0	0.00%
4	5.4	712.5	4.9	712.5	-0.5	9.26%	6.5	748.5	6.5	718.5	0.0	0.00%	11.3	763.5	10.8	748.5	-0.5	4.42%
5	30.2	718.5	30.2	718.5	0.0	0.00%	27.8	709.5	27.8	709.5	0.0	0.00%	30.5	718.5	30.5	718.5	0.0	0.00%
6	5.1	712.5	5.1	712.5	0.0	0.00%	6.2	748.5	6.2	748.5	0.0	0.00%	10.9	763.5	10.9	763.5	0.0	0.00%
7	33.1	715.5	33.1	715.5	0.0	0.00%	43.0	709.5	43.0	709.5	0.0	0.00%	39.0	718.5	39.0	718.5	0.0	0.00%
8	6.7	718.5	7.2	748.5	0.5	7.46%	16.5	763.5	18.2	763.5	1.7	10.30%	28.9	748.5	31.8	748.5	2.9	10.03%
9	11.6	715.5	11.6	715.5	0.0	0.00%	15.1	709.5	15.1	709.5	0.0	0.00%	16.1	718.5	16.1	718.5	0.0	0.00%
10	32.1	715.5	32.1	715.5	0.0	0.00%	41.7	709.5	41.7	709.5	0.0	0.00%	41.3	718.5	41.3	718.5	0.0	0.00%
11	17.0	718.5	17.0	718.5	0.0	0.00%	15.6	709.5	15.6	709.5	0.0	0.00%	19.3	748.5	19.3	748.5	0.0	0.00%
12	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
13	5.4	712.5	5.4	712.5	0.0	0.00%	7.2	718.5	7.2	718.5	0.0	0.00%	12.5	763.5	12.5	763.5	0.0	0.00%
14	13.4	712.5	13.4	712.5	0.0	0.00%	15.9	718.5	15.9	718.5	0.0	0.00%	26.4	748.5	26.4	748.5	0.0	0.00%
15	5.3	712.5	4.8	712.5	-0.5	9.43%	6.5	748.5	6.4	718.5	-0.1	1.54%	11.5	763.5	11.0	763.5	-0.5	4.35%
16	8.1	712.5	8.1	712.5	0.0	0.00%	10.3	763.5	10.3	763.5	0.0	0.00%	18.6	778.5	18.6	778.5	0.0	0.00%
17	27.1	712.5	27.1	712.5	0.0	0.00%	33.4	718.5	33.4	718.5	0.0	0.00%	51.9	718.5	51.9	718.5	0.0	0.00%
18	17.7	718.5	17.7	718.5	0.0	0.00%	41.8	748.5	41.8	748.5	0.0	0.00%	72.8	748.5	72.8	748.5	0.0	0.00%
19	8.6	778.5	8.6	778.5	0.0	0.00%	21.0	763.5	21.0	763.5	0.0	0.00%	35.1	748.5	35.1	748.5	0.0	0.00%
20	9.4	778.5	7.6	763.5	-1.8	19.15%	25.1	793.5	20.3	793.5	-4.8	19.12%	44.2	778.5	36.7	778.5	-7.5	16.97%
21	26.8	778.5	16.2	778.5	-10.6	39.55%	58.7	748.5	39.5	763.5	-19.2	32.71%	93.9	718.5	66.1	748.5	-27.8	29.61%
22	15.8	706.5	31.1	718.5	15.3	96.84%	32.3	718.5	74.7	718.5	42.4	131.27%	58.2	718.5	123.3	718.5	65.1	111.86%
23	36.0	718.5	61.9	718.5	25.9	71.94%	84.9	718.5	126.5	718.5	41.6	49.00%	138.0	718.5	188.1	718.5	50.1	36.30%
24	25.8	793.5	25.8	793.5	0.0	0.00%	49.8	763.5	49.8	763.5	0.0	0.00%	73.6	748.5	73.6	748.5	0.0	0.00%
25	43.2	718.5	65.0	718.5	21.8	50.46%	102.3	718.5	139.0	718.5	36.7	35.87%	167.7	718.5	212.2	718.5	44.5	26.54%
26	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
27	5.5	778.5	15.2	793.5	9.7	176.36%	14.6	793.5	32.1	763.5	17.5	119.86%	25.6	778.5	49.5	748.5	23.9	93.36%
28	10.1	793.5	11.4	793.5	1.3	12.87%	25.8	793.5	28.5	793.5	2.7	10.47%	43.6	778.5	47.5	778.5	3.9	8.94%
				748.5	0.0	0.00%	51.3	718.5	51.3	718.5	0.0	0.00%	84.1	718.5	84.1	718.5	0.0	0.00%
				718.5	0.0	0.00%	48.7	718.5	48.7	718.5	0.0	0.00%	70.3	718.5	70.3	718.5	0.0	0.00%
				718.5	6.4	14.65%	94.7	718.5	104.4	718.5	9.7	10.24%	147.3	718.5	158.8	718.5	11.5	7.81%
				763.5	5.1	25.63%	40.7	748.5	48.7	748.5	8.0	19.66%	62.5	718.5	72.9	718.5	10.4	16.64%
				778.5	-7.9	39.50%	43.8	748.5	29.5	763.5	-14.3	32.65%	70.3	718.5	49.3	748.5	-21.0	29.87%
				718.5	-14.9	39.95%	85.7	718.5	55.8	718.5	-29.9	34.89%	136.0	718.5	95.6	718.5	-40.4	29.71%
				718.5	0.0	0.00%	52.2	718.5	52.2	718.5	0.0	0.00%	85.6	718.5	85.6	718.5	0.0	0.00%

EDDY4 SUBAREA PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	20.0	763.5	20.0	763.5	0.0	0.00%	27.3	763.5	27.3	763.5	0.0	0.00%	39.2	763.5	39.2	763.5	0.0	0.00%
2	15.6	763.5	15.6	763.5	0.0	0.00%	21.2	763.5	21.2	763.5	0.0	0.00%	30.3	763.5	30.3	763.5	0.0	0.00%
3	25.8	718.5	25.8	718.5	0.0	0.00%	39.2	718.5	39.2	718.5	0.0	0.00%	54.1	718.5	54.1	718.5	0.0	0.00%
4	15.3	763.5	13.7	763.5	-1.6	10.46%	21.2	763.5	19.6	763.5	-1.6	7.55%	29.5	748.5	27.5	763.5	-2.0	6.78%
5	36.8	718.5	36.8	718.5	0.0	0.00%	56.0	718.5	56.0	718.5	0.0	0.00%	70.9	718.5	70.9	718.5	0.0	0.00%
6	14.8	763.5	14.8	763.5	0.0	0.00%	20.6	763.5	20.6	763.5	0.0	0.00%	28.6	763.5	28.6	763.5	0.0	0.00%
7	47.9	718.5	47.9	718.5	0.0	0.00%	71.5	718.5	71.5	718.5	0.0	0.00%	97.3	718.5	97.3	718.5	0.0	0.00%
8	39.0	748.5	42.4	748.5	3.4	8.72%	53.9	718.5	58.3	718.5	4.4	8.16%	75.0	718.5	81.2	718.5	6.2	8.27%
9	20.3	748.5	20.3	748.5	0.0	0.00%	31.4	748.5	31.4	748.5	0.0	0.00%	44.1	748.5	44.1	748.5	0.0	0.00%
10	50.4	718.5	50.4	718.5	0.0	0.00%	77.8	718.5	77.8	718.5	0.0	0.00%	106.6	718.5	106.6	718.5	0.0	0.00%
11	24.8	763.5	24.8	763.5	0.0	0.00%	39.0	763.5	39.0	763.5	0.0	0.00%	52.4	778.5	52.4	778.5	0.0	0.00%
12	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
13	15.9	763.5	15.9	763.5	0.0	0.00%	22.9	763.5	22.9	763.5	0.0	0.00%	32.4	763.5	32.4	763.5	0.0	0.00%
14	35.4	748.5	35.4	748.5	0.0	0.00%	48.8	748.5	48.8	748.5	0.0	0.00%	68.4	718.5	68.4	718.5	0.0	0.00%
15	15.7	778.5	14.1	778.5	-1.6	10.19%	21.9	763.5	20.2	763.5	-1.7	7.76%	30.7	763.5	28.6	763.5	-2.1	6.84%
16	25.5	778.5	25.5	778.5	0.0	0.00%	35.9	778.5	35.9	778.5	0.0	0.00%	50.3	778.5	50.3	778.5	0.0	0.00%
17	63.3	718.5	63.3	718.5	0.0	0.00%	88.1	718.5	88.1	718.5	0.0	0.00%	123.2	718.5	123.2	718.5	0.0	0.00%
18	100.2	718.5	100.2	718.5	0.0	0.00%	139.1	718.5	139.1	718.5	0.0	0.00%	194.4	718.5	194.4	718.5	0.0	0.00%
19	46.6	718.5	46.6	718.5	0.0	0.00%	62.2	718.5	62.2	718.5	0.0	0.00%	83.3	718.5	83.3	718.5	0.0	0.00%
20	58.9	778.5	49.8	778.5	-9.1	15.45%	78.6	763.5	67.8	778.5	-10.8	13.74%	105.4	763.5	92.1	763.5	-13.3	12.62%
21	120.8	718.5	87.0	718.5	-33.8	27.98%	156.6	718.5	116.2	718.5	-40.4	25.80%	201.3	718.5	155.8	718.5	-45.5	22.60%
22	80.2	718.5	159.1	718.5	78.9	98.38%	110.7	718.5	206.0	718.5	95.3	86.09%	153.1	718.5	263.5	718.5	110.4	72.11%
23	176.3	718.5	230.0	718.5	53.7	30.46%	226.7	718.5	282.8	718.5	56.1	24.75%	288.6	718.5	345.6	718.5	57.0	19.75%
24	89.8	718.5	89.8	718.5	0.0	0.00%	112.5	718.5	112.5	718.5	0.0	0.00%	141.4	718.5	141.4	718.5	0.0	0.00%
25	213.2	718.5	262.9	718.5	49.7	23.31%	274.6	718.5	327.3	718.5	52.7	19.19%	351.9	718.5	404.8	718.5	52.9	15.03%
26	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
27	34.1	778.5	62.1	748.5	28.0	82.11%	45.6	763.5	79.4	718.5	33.8	74.12%	61.2	748.5	102.2	718.5	41.0	66.99%
28	57.3	763.5	61.9	763.5	4.6	8.03%	75.3	763.5	81.0	748.5	5.7	7.57%	99.7	748.5	105.9	748.5	6.2	6.22%
				718.5	0.0	0.00%	139.4	718.5	139.4	718.5	0.0	0.00%	180.1	718.5	180.1	718.5	0.0	0.00%
				718.5	0.0	0.00%	103.6	718.5	103.6	718.5	0.0	0.00%	126.4	718.5	126.4	718.5	0.0	0.00%
				718.5	12.1	6.62%	229.2	718.5	241.8	718.5	12.6	5.50%	287.0	718.5	299.9	718.5	12.9	4.49%
				718.5	11.8	15.03%	99.9	718.5	112.8	718.5	12.9	12.91%	127.4	718.5	140.7	718.5	13.3	10.44%
				718.5	-25.3	27.99%	117.1	718.5	87.0	718.5	-30.1	25.70%	150.5	718.5	116.6	718.5	-33.9	22.52%
				718.5	-46.3	26.90%	218.6	718.5	166.9	718.5	-51.7	23.65%	274.8	718.5	220.1	718.5	-54.7	19.91%
				718.5	0.0	0.00%	140.2	718.5	140.2	718.5	0.0	0.00%	179.8	718.5	179.8	718.5	0.0	0.00%

EDDY4 WATERSHED PEAK FLOWS

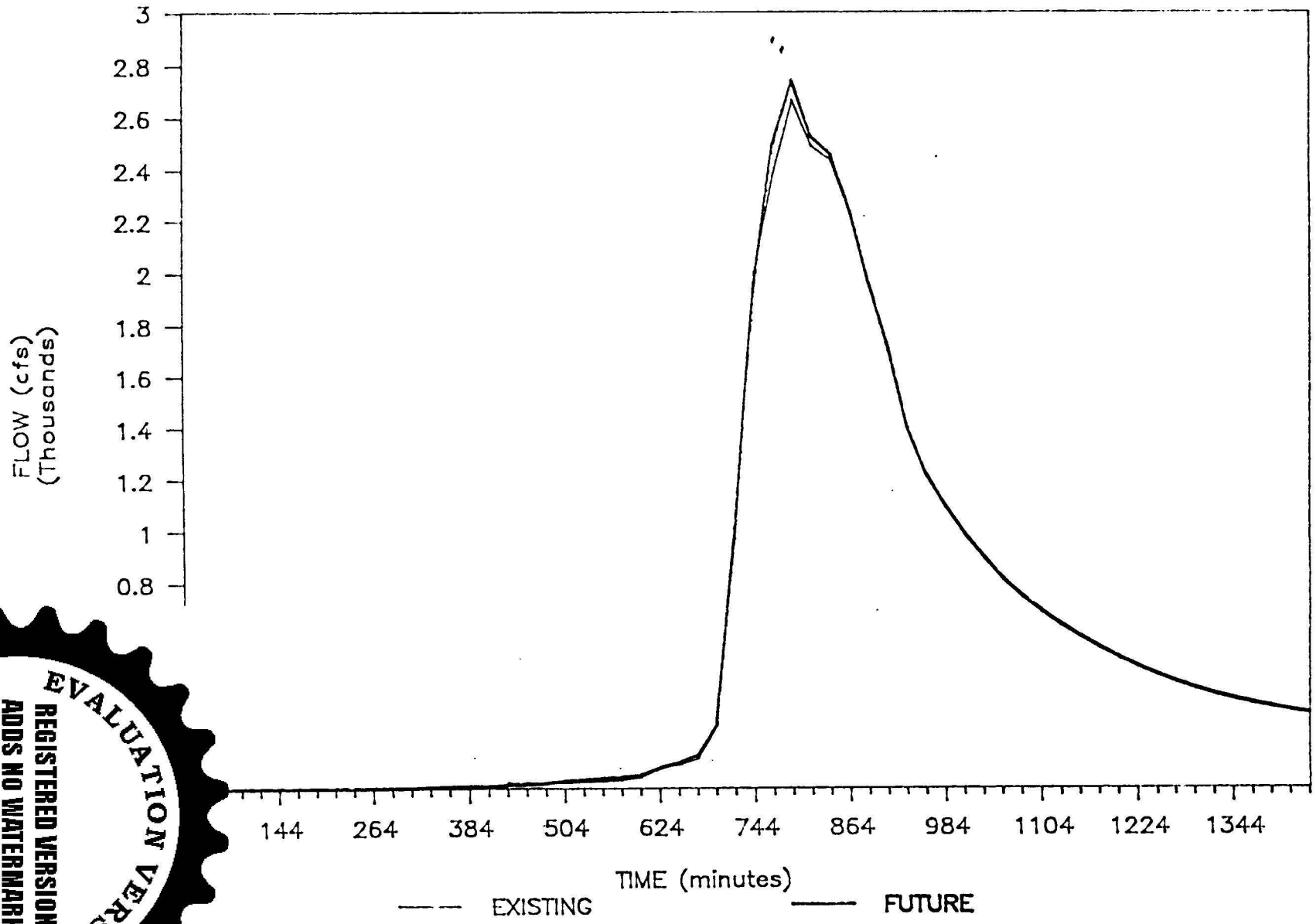
SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	9.4	715.5	9.4	715.5	0.0	0.00%	7.5	718.5	7.5	718.5	0.0	0.00%	13.2	763.5	13.2	763.5	0.0	0.00%
2	7.5	715.5	7.5	715.5	0.0	0.00%	6.0	706.5	6.0	706.5	0.0	0.00%	10.4	763.5	10.4	763.5	0.0	0.00%
3	30.7	718.5	30.7	718.5	0.0	0.00%	34.2	709.5	34.2	709.5	0.0	0.00%	41.2	718.5	41.2	718.5	0.0	0.00%
4	5.4	712.5	4.9	712.5	-0.5	9.26%	6.5	748.5	6.5	718.5	0.0	0.00%	11.3	763.5	10.8	748.5	-0.5	4.42%
5	62.3	721.5	61.5	721.5	-0.8	1.28%	63.6	712.5	64.2	712.5	0.6	0.94%	77.5	721.5	77.3	721.5	-0.2	0.26%
6	66.3	721.5	65.6	721.5	-0.7	1.06%	68.4	712.5	68.9	712.5	0.5	0.73%	87.8	748.5	87.4	748.5	-0.4	0.46%
7	94.0	718.5	93.4	718.5	-0.6	0.64%	107.1	712.5	107.7	712.5	0.6	0.56%	122.1	718.5	122.2	718.5	0.1	0.08%
8	100.7	718.5	100.5	718.5	-0.2	0.20%	119.9	718.5	121.6	718.5	1.7	1.42%	149.9	718.5	152.9	718.5	3.0	2.00%
9	11.6	715.5	11.6	715.5	0.0	0.00%	15.1	709.5	15.1	709.5	0.0	0.00%	16.1	718.5	16.1	718.5	0.0	0.00%
10	33.5	730.5	33.5	730.5	0.0	0.00%	48.2	724.5	48.2	724.5	0.0	0.00%	52.6	718.5	52.6	718.5	0.0	0.00%
11	47.2	724.5	47.2	724.5	0.0	0.00%	61.0	733.5	61.0	733.5	0.0	0.00%	71.0	742.5	71.0	742.5	0.0	0.00%
12	137.3	724.5	137.0	724.5	-0.3	0.22%	175.9	718.5	177.5	718.5	1.6	0.91%	215.6	742.5	218.1	742.5	2.5	1.16%
13	5.4	712.5	5.4	712.5	0.0	0.00%	7.2	718.5	7.2	718.5	0.0	0.00%	12.5	763.5	12.5	763.5	0.0	0.00%
14	17.7	715.5	17.7	715.5	0.0	0.00%	22.5	748.5	22.5	748.5	0.0	0.00%	38.5	748.5	38.5	748.5	0.0	0.00%
15	155.8	727.5	154.7	727.5	-1.1	0.71%	197.3	721.5	197.3	721.5	0.0	0.00%	265.4	754.5	267.5	754.5	2.1	0.79%
16	162.1	733.5	161.1	733.5	-1.0	0.62%	206.5	727.5	206.4	727.5	-0.1	0.05%	283.7	760.5	285.8	760.5	2.1	0.74%
17	178.0	736.5	176.9	736.5	-1.1	0.62%	234.7	730.5	234.7	730.5	0.0	0.00%	323.7	763.5	325.8	763.5	2.1	0.65%
18	194.6	739.5	193.6	739.5	-1.0	0.51%	274.5	733.5	274.5	733.5	0.0	0.00%	394.4	766.5	396.4	766.5	2.0	0.51%
19	202.7	742.5	201.7	742.5	-1.0	0.49%	294.4	736.5	294.4	736.5	0.0	0.00%	428.4	769.5	430.5	769.5	2.1	0.49%
20	9.4	778.5	7.6	763.5	-1.8	19.15%	25.1	793.5	20.3	793.5	-4.8	19.12%	44.2	778.5	36.7	778.5	-7.5	16.97%
21	36.2	778.5	23.8	778.5	-12.4	34.25%	82.0	763.5	59.4	778.5	-22.6	27.56%	132.5	748.5	100.9	763.5	-31.6	23.85%
22	244.6	745.5	249.0	745.5	4.4	1.80%	395.0	754.5	402.9	754.5	7.9	2.00%	603.3	772.5	604.9	757.5	1.6	0.27%
23	277.9	751.5	301.1	751.5	23.2	8.35%	461.1	760.5	492.7	754.5	31.6	6.85%	694.2	763.5	719.3	754.5	25.1	3.62%
24	25.8	793.5	25.8	793.5	0.0	0.00%	49.8	763.5	49.8	763.5	0.0	0.00%	73.6	748.5	73.6	748.5	0.0	0.00%
25	65.9	748.5	83.4	733.5	17.5	26.56%	141.1	718.5	177.8	718.5	36.7	26.01%	227.6	718.5	272.2	718.5	44.6	19.60%
26	343.5	751.5	383.5	751.5	40.0	11.64%	593.0	754.5	653.3	745.5	60.3	10.17%	883.9	763.5	941.4	754.5	57.5	6.51%
27	348.9	751.5	397.9	751.5	49.0	14.04%	607.1	760.5	684.8	745.5	77.7	12.80%	909.3	763.5	990.6	754.5	81.3	8.94%
28	358.5	754.5	408.7	754.5	50.2	14.00%	632.5	763.5	712.0	748.5	79.5	12.57%	952.7	766.5	1037.6	757.5	84.9	8.91%
29	379.8	760.5	430.0	760.5	50.2	13.22%	676.8	763.5	758.2	754.5	81.4	12.03%	1018.4	763.5	1104.4	763.5	86.0	8.44%
[illegible]	[illegible]	[illegible]	[illegible]	718.5	0.0	0.00%	48.7	718.5	48.7	718.5	0.0	0.00%	70.3	718.5	70.3	718.5	0.0	0.00%
				730.5	5.8	8.66%	135.7	730.5	144.0	730.5	8.3	6.12%	202.0	730.5	211.4	730.5	9.4	4.65%
				754.5	11.1	12.85%	176.3	754.5	192.3	754.5	16.0	9.08%	263.7	754.5	281.5	754.5	17.8	6.75%
				778.5	-7.9	39.50%	43.8	748.5	29.5	763.5	-14.3	32.65%	70.3	718.5	49.3	748.5	-21.0	29.87%
				766.5	38.4	7.70%	942.0	778.5	997.9	766.5	55.9	5.93%	1413.7	775.5	1479.4	766.5	65.7	4.65%
				769.5	39.3	7.60%	978.8	781.5	1037.6	769.5	58.8	6.01%	1466.9	778.5	1536.4	769.5	69.5	4.74%

EDDY4 WATERSHED PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	20.0	763.5	20.0	763.5	0.0	0.00%	27.3	763.5	27.3	763.5	0.0	0.00%	39.2	763.5	39.2	763.5	0.0	0.00%
2	15.6	763.5	15.6	763.5	0.0	0.00%	21.2	763.5	21.2	763.5	0.0	0.00%	30.3	763.5	30.3	763.5	0.0	0.00%
3	57.5	748.5	57.5	748.5	0.0	0.00%	80.7	748.5	80.7	748.5	0.0	0.00%	113.0	748.5	113.0	748.5	0.0	0.00%
4	15.3	763.5	13.7	763.5	-1.6	10.46%	21.2	763.5	19.6	763.5	-1.6	7.55%	29.5	748.5	27.5	763.5	-2.0	6.78%
5	103.6	748.5	102.0	748.5	-1.6	1.54%	148.0	748.5	146.4	748.5	-1.6	1.08%	201.6	748.5	199.6	748.5	-2.0	0.99%
6	118.2	748.5	116.6	748.5	-1.6	1.35%	168.4	748.5	166.8	748.5	-1.6	0.95%	230.2	748.5	228.2	748.5	-2.0	0.87%
7	154.7	748.5	153.1	748.5	-1.6	1.03%	222.6	718.5	221.5	718.5	-1.1	0.49%	304.2	721.5	302.2	721.5	-2.0	0.66%
8	193.8	748.5	195.6	748.5	1.8	0.93%	276.5	718.5	279.7	718.5	3.2	1.16%	376.1	718.5	380.8	718.5	4.7	1.25%
9	20.3	748.5	20.3	748.5	0.0	0.00%	31.4	748.5	31.4	748.5	0.0	0.00%	44.1	748.5	44.1	748.5	0.0	0.00%
10	64.9	733.5	64.9	733.5	0.0	0.00%	100.0	733.5	100.0	733.5	0.0	0.00%	137.9	733.5	137.9	733.5	0.0	0.00%
11	88.7	757.5	88.7	757.5	0.0	0.00%	137.2	742.5	137.2	742.5	0.0	0.00%	187.3	742.5	187.3	742.5	0.0	0.00%
12	280.4	748.5	282.2	742.5	1.8	0.64%	410.2	742.5	412.5	742.5	2.3	0.56%	558.0	742.5	561.1	742.5	3.1	0.56%
13	15.9	763.5	15.9	763.5	0.0	0.00%	22.9	763.5	22.9	763.5	0.0	0.00%	32.4	763.5	32.4	763.5	0.0	0.00%
14	50.8	763.5	50.8	763.5	0.0	0.00%	70.9	748.5	70.9	748.5	0.0	0.00%	99.1	748.5	99.1	748.5	0.0	0.00%
15	346.7	760.5	346.9	760.5	0.2	0.06%	502.7	754.5	503.2	754.5	0.5	0.10%	687.2	754.5	688.2	754.5	1.0	0.15%
16	371.9	766.5	372.1	766.5	0.2	0.05%	538.4	772.5	538.9	772.5	0.5	0.09%	737.3	772.5	738.3	772.5	1.0	0.14%
17	421.5	763.5	421.7	763.5	0.2	0.05%	597.2	781.5	597.7	781.5	0.5	0.08%	813.5	781.5	814.6	781.5	1.1	0.14%
18	514.9	766.5	515.1	766.5	0.2	0.04%	711.8	784.5	712.3	784.5	0.5	0.07%	955.6	790.5	956.6	790.5	1.0	0.10%
19	558.4	769.5	558.7	769.5	0.3	0.05%	763.5	787.5	764.0	787.5	0.5	0.07%	1018.5	793.5	1019.5	793.5	1.0	0.10%
20	58.9	778.5	49.8	778.5	-9.1	15.45%	78.6	763.5	67.8	778.5	-10.8	13.74%	105.4	763.5	92.1	763.5	-13.3	12.62%
21	169.8	748.5	133.1	754.5	-36.7	21.61%	219.3	748.5	176.4	748.5	-42.9	19.56%	286.1	724.5	234.2	748.5	-51.9	18.14%
22	782.8	772.5	776.2	772.5	-6.6	0.84%	1038.9	775.5	1028.7	775.5	-10.2	0.98%	1350.9	790.5	1333.7	790.5	-17.2	1.27%
23	876.3	772.5	894.0	772.5	17.7	2.02%	1153.6	769.5	1166.9	769.5	13.3	1.15%	1458.0	790.5	1454.3	790.5	-3.7	0.25%
24	89.8	718.5	89.8	718.5	0.0	0.00%	112.5	718.5	112.5	718.5	0.0	0.00%	141.4	718.5	141.4	718.5	0.0	0.00%
25	288.1	718.5	337.9	718.5	49.8	17.29%	368.7	718.5	421.4	718.5	52.7	14.29%	470.8	718.5	523.7	718.5	52.9	11.24%
26	1093.0	772.5	1139.0	763.5	46.0	4.21%	1419.3	769.5	1450.3	769.5	31.0	2.18%	1732.7	790.5	1740.2	790.5	7.5	0.43%
27	1127.0	772.5	1200.0	763.5	73.0	6.48%	1464.6	769.5	1524.7	772.5	60.1	4.10%	1790.8	793.5	1826.4	793.5	35.6	1.99%
28	1184.1	775.5	1261.7	766.5	77.6	6.55%	1539.3	772.5	1604.2	775.5	64.9	4.22%	1883.6	796.5	1923.7	796.5	40.1	2.13%
29	1258.5	772.5	1322.2	787.5	63.7	5.06%	1618.3	793.5	1681.3	796.5	63.0	3.89%	1960.6	817.5	2000.7	817.5	40.1	2.05%
30	85.1	718.5	85.1	718.5	0.0	0.00%	103.6	718.5	103.6	718.5	0.0	0.00%	126.4	718.5	126.4	718.5	0.0	0.00%
				730.5	9.8	3.98%	302.4	730.5	312.3	730.5	9.9	3.27%	370.9	730.5	380.8	730.5	9.9	2.67%
				754.5	19.1	5.94%	396.2	754.5	415.9	754.5	19.7	4.97%	487.2	754.5	507.2	754.5	20.0	4.11%
				718.5	-25.3	27.99%	117.1	718.5	87.0	718.5	-30.1	25.70%	150.5	718.5	116.6	718.5	-33.9	22.52%
				778.5	50.2	2.88%	2150.3	790.5	2207.8	787.5	57.5	2.67%	2589.6	787.5	2660.5	787.5	70.9	2.74%
				781.5	50.1	2.77%	2215.2	793.5	2274.5	790.5	59.3	2.68%	2667.5	790.5	2738.3	790.5	70.8	2.65%

EDDY BRANCH WATERSHED

100 YEAR EVENT -- EXISTING VS. FUTURE



DICKSON5 SUBAREA PEAK FLOWS

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	19.1	718.5	16.4	715.5	-2.7	14.14%	17.6	709.5	13.0	706.5	-4.6	26.14%	20.5	718.5	20.6	718.5	0.1	0.49%
2	8.9	718.5	15.1	763.5	6.2	69.66%	19.3	748.5	36.4	748.5	17.1	88.60%	35.6	748.5	63.1	718.5	27.5	77.25%
3	39.4	718.5	39.4	718.5	0.0	0.00%	96.7	718.5	96.7	718.5	0.0	0.00%	164.4	718.5	164.4	718.5	0.0	0.00%
4	8.4	778.5	7.4	778.5	-1.0	11.90%	19.4	763.5	17.6	763.5	-1.8	9.28%	31.5	748.5	29.0	748.5	-2.5	7.94%
5	20.8	718.5	20.8	718.5	0.0	0.00%	19.1	709.5	19.1	709.5	0.0	0.00%	22.1	718.5	22.1	718.5	0.0	0.00%
6	32.7	712.5	24.0	718.5	-8.7	26.61%	36.3	718.5	57.2	718.5	20.9	57.58%	58.1	718.5	100.5	718.5	42.4	72.98%
7	28.4	718.5	31.5	718.5	3.1	10.92%	65.5	718.5	72.3	718.5	6.8	10.38%	109.2	718.5	119.6	718.5	10.4	9.52%
8	25.6	718.5	22.6	718.5	-3.0	11.72%	61.5	718.5	55.3	718.5	-6.2	10.08%	102.7	718.5	93.9	718.5	-8.8	8.57%
9	10.8	718.5	10.8	718.5	0.0	0.00%	21.0	718.5	21.0	718.5	0.0	0.00%	30.1	718.5	30.1	718.5	0.0	0.00%

DICKSON5 WATERSHED PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	24.7	718.5	30.5	718.5	5.8	23.48%	38.2	718.5	40.5	718.5	2.3	6.02%	49.3	718.5	58.2	718.5	8.9	18.05%
2	73.7	718.5	114.2	718.5	40.5	54.95%	106.0	718.5	152.6	718.5	46.6	43.96%	144.9	718.5	207.1	718.5	62.2	42.93%
3	257.7	727.5	298.2	727.5	40.5	15.72%	341.8	727.5	388.5	727.5	46.7	13.66%	446.4	727.5	508.7	727.5	62.3	13.96%
4	296.9	730.5	334.4	730.5	37.5	12.63%	392.9	730.5	436.0	730.5	43.1	10.97%	513.1	730.5	571.2	730.5	58.1	11.32%
5	26.6	718.5	26.6	718.5	0.0	0.00%	41.1	718.5	41.1	718.5	0.0	0.00%	53.1	718.5	53.1	718.5	0.0	0.00%
6	98.8	718.5	158.2	718.5	59.4	60.12%	136.7	718.5	217.5	718.5	80.8	59.11%	186.4	718.5	292.3	718.5	105.9	56.81%
7	219.7	718.5	280.9	721.5	61.2	27.86%	289.1	718.5	371.6	721.5	82.5	28.54%	375.8	718.5	484.9	721.5	109.1	29.03%
8	331.3	727.5	383.9	730.5	52.6	15.88%	431.1	727.5	502.4	730.5	71.3	16.54%	555.1	727.5	650.6	730.5	95.5	17.20%
9	641.4	733.5	726.1	736.5	84.7	13.21%	836.1	733.5	943.6	733.5	107.5	12.86%	1076.6	733.5	1222.3	733.5	145.7	13.53%

DICKSON5 WATERSHED PEAK FLOWS

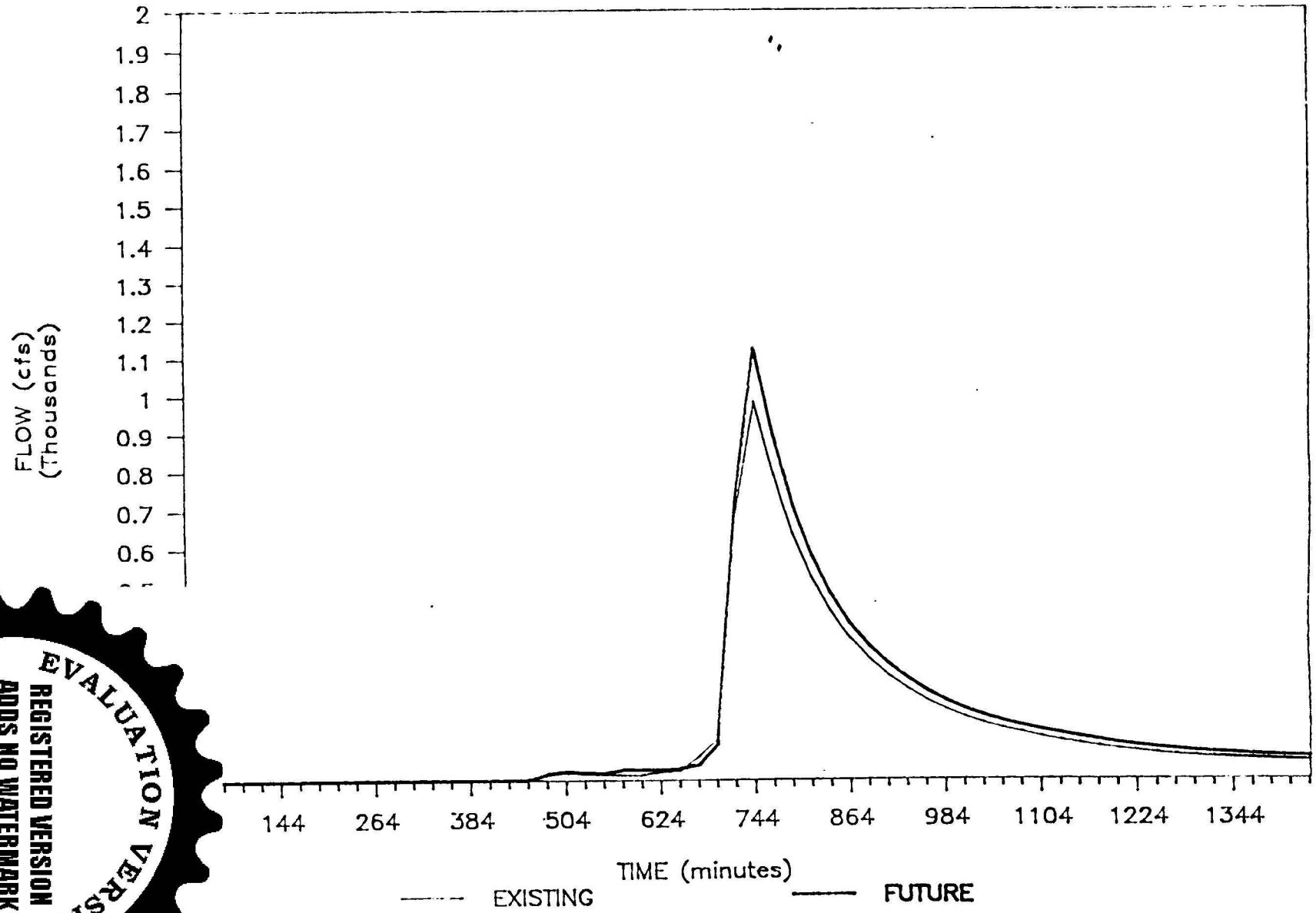
SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	19.1	718.5	16.4	715.5	-2.7	14.14%	17.6	709.5	13.0	706.5	-4.6	26.14%	20.5	718.5	20.6	718.5	0.1	0.49%
2	28.1	718.5	29.0	718.5	0.9	3.20%	34.2	718.5	48.6	718.5	14.4	42.11%	55.6	718.5	83.7	718.5	28.1	50.54%
3	64.0	727.5	64.9	727.5	0.9	1.41%	123.2	718.5	135.8	727.5	12.6	10.23%	198.7	727.5	226.8	727.5	28.1	14.14%
4	71.2	730.5	71.2	730.5	0.0	0.00%	139.8	721.5	151.9	730.5	12.1	8.66%	228.9	730.5	254.4	730.5	25.5	11.14%
5	20.8	718.5	20.8	718.5	0.0	0.00%	19.1	709.5	19.1	709.5	0.0	0.00%	22.1	718.5	22.1	718.5	0.0	0.00%
6	45.0	721.5	41.3	721.5	-3.7	8.22%	52.9	718.5	73.7	718.5	20.8	39.32%	77.2	718.5	119.6	718.5	42.4	54.92%
7	68.2	724.5	67.1	724.5	-1.1	1.61%	114.2	718.5	133.8	721.5	19.6	17.16%	172.8	718.5	216.4	721.5	43.6	25.23%
8	92.2	733.5	88.3	733.5	-3.9	4.23%	168.7	727.5	183.6	730.5	14.9	8.83%	261.0	727.5	297.1	730.5	36.1	13.83%
9	168.8	739.5	165.8	739.5	-3.0	1.78%	319.3	733.5	346.4	736.5	27.1	8.49%	503.0	733.5	561.8	736.5	58.8	11.69%

DICKSON5 SUBAREA PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	24.7	718.5	30.5	718.5	5.8	23.48%	38.2	718.5	40.5	718.5	2.3	6.02%	49.3	718.5	58.2	718.5	8.9	18.05%
2	49.0	718.5	83.7	718.5	34.7	70.82%	67.7	718.5	112.1	718.5	44.4	65.58%	95.5	718.5	148.9	718.5	53.4	55.92%
3	213.1	718.5	213.1	718.5	0.0	0.00%	279.9	718.5	279.9	718.5	0.0	0.00%	365.3	718.5	365.3	718.5	0.0	0.00%
4	40.7	718.5	37.4	748.5	-3.3	8.11%	53.6	718.5	49.6	718.5	-4.0	7.46%	70.7	718.5	66.0	718.5	-4.7	6.65%
5	26.6	718.5	26.6	718.5	0.0	0.00%	41.1	718.5	41.1	718.5	0.0	0.00%	53.1	718.5	53.1	718.5	0.0	0.00%
6	77.2	718.5	136.6	718.5	59.4	76.94%	104.0	718.5	184.8	718.5	80.8	77.69%	145.8	718.5	251.8	718.5	106.0	72.70%
7	141.8	718.5	151.9	718.5	10.1	7.12%	182.6	718.5	194.5	718.5	11.9	6.52%	234.2	718.5	246.4	718.5	12.2	5.21%
8	131.8	718.5	121.5	718.5	-10.3	7.81%	171.0	718.5	159.5	718.5	-11.5	6.73%	219.3	718.5	207.9	718.5	-11.4	5.20%
9	36.1	718.5	36.1	718.5	0.0	0.00%	43.5	718.5	43.5	718.5	0.0	0.00%	52.3	718.5	52.3	718.5	0.0	0.00%

DICKSON CITY WATERSHED

100 YEAR EVENT -- EXISTING VS. FUTURE



ROARING6 SUBAREA PEAK FLOWS

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	20.0	715.5	20.0	715.5	0.0	0.00%	16.1	718.5	16.1	718.5	0.0	0.00%	29.5	778.5	29.5	778.5	0.0	0.00%
2	8.2	715.5	8.2	715.5	0.0	0.00%	6.6	718.5	6.6	718.5	0.0	0.00%	12.3	778.5	12.3	778.5	0.0	0.00%
3	18.9	712.5	18.9	712.5	0.0	0.00%	24.9	718.5	24.9	718.5	0.0	0.00%	40.3	748.5	40.3	748.5	0.0	0.00%
4	10.7	715.5	10.7	715.5	0.0	0.00%	13.9	709.5	13.9	709.5	0.0	0.00%	15.1	748.5	15.1	748.5	0.0	0.00%
5	33.9	715.5	33.9	715.5	0.0	0.00%	44.0	709.5	44.0	709.5	0.0	0.00%	42.1	718.5	42.1	718.5	0.0	0.00%
6	73.3	715.5	73.3	715.5	0.0	0.00%	58.3	706.5	58.3	706.5	0.0	0.00%	89.1	718.5	89.1	718.5	0.0	0.00%
7	33.4	715.5	33.4	715.5	0.0	0.00%	26.6	706.5	26.6	706.5	0.0	0.00%	39.7	718.5	39.7	718.5	0.0	0.00%
8	42.6	712.5	42.6	712.5	0.0	0.00%	43.9	718.5	43.9	718.5	0.0	0.00%	68.1	718.5	68.1	718.5	0.0	0.00%
9	16.3	715.5	16.3	715.5	0.0	0.00%	21.2	718.5	21.2	718.5	0.0	0.00%	25.0	763.5	25.0	763.5	0.0	0.00%
10	23.1	715.5	17.4	712.5	-5.7	24.68%	18.4	706.5	22.9	718.5	4.5	24.46%	30.0	748.5	36.9	748.5	6.9	23.00%
11	18.1	715.5	18.1	715.5	0.0	0.00%	14.4	706.5	14.4	706.5	0.0	0.00%	23.4	748.5	23.4	748.5	0.0	0.00%
12	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
13	45.9	715.5	45.9	715.5	0.0	0.00%	36.5	706.5	36.5	706.5	0.0	0.00%	56.0	718.5	56.0	718.5	0.0	0.00%
14	6.5	715.5	6.5	715.5	0.0	0.00%	5.4	748.5	5.4	748.5	0.0	0.00%	10.5	793.5	10.5	793.5	0.0	0.00%
15	6.1	712.5	4.8	718.5	-1.3	21.31%	12.7	763.5	14.6	778.5	1.9	14.96%	22.7	778.5	27.8	778.5	5.1	22.47%
16	100.9	745.5	100.9	745.5	0.0	0.00%	117.5	715.5	117.5	715.5	0.0	0.00%	104.5	709.5	104.5	709.5	0.0	0.00%
17	25.6	715.5	25.6	715.5	0.0	0.00%	20.4	706.5	20.4	706.5	0.0	0.00%	32.5	748.5	32.5	748.5	0.0	0.00%
18	49.5	715.5	37.3	712.5	-12.2	24.65%	39.4	706.5	49.1	718.5	9.7	24.62%	64.3	748.5	79.2	748.5	14.9	23.17%
19	23.2	718.5	23.2	718.5	0.0	0.00%	60.6	718.5	60.6	718.5	0.0	0.00%	111.2	718.5	111.2	718.5	0.0	0.00%
20	72.7	718.5	72.7	718.5	0.0	0.00%	67.0	709.5	67.0	709.5	0.0	0.00%	76.3	718.5	76.3	718.5	0.0	0.00%
21	13.9	778.5	20.3	778.5	6.4	46.04%	34.7	763.5	46.7	763.5	12.0	34.58%	58.4	748.5	75.7	748.5	17.3	29.62%
22	24.4	712.5	18.7	718.5	-5.7	23.36%	45.4	718.5	49.3	748.5	3.9	8.59%	74.9	718.5	90.0	718.5	15.1	20.16%
23	22.1	712.5	22.1	712.5	0.0	0.00%	26.1	718.5	26.1	718.5	0.0	0.00%	42.3	748.5	42.3	748.5	0.0	0.00%
24	9.6	763.5	9.6	763.5	0.0	0.00%	25.6	793.5	25.6	793.5	0.0	0.00%	46.3	793.5	46.3	793.5	0.0	0.00%
25	16.8	715.5	18.4	715.5	1.6	9.52%	21.9	718.5	14.8	718.5	-7.1	32.42%	25.8	763.5	27.0	778.5	1.2	4.65%
26	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
27	62.4	718.5	62.4	718.5	0.0	0.00%	50.1	712.5	50.1	712.5	0.0	0.00%	73.1	718.5	73.1	718.5	0.0	0.00%
28	4.1	718.5	5.3	721.5	1.2	29.27%	3.3	712.5	5.3	712.5	2.0	60.61%	5.4	763.5	4.2	748.5	-1.2	22.22%
29	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
30	52.2	730.5	52.2	730.5	0.0	0.00%	47.7	712.5	47.7	712.5	0.0	0.00%	61.2	709.5	61.2	709.5	0.0	0.00%
31	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
32	13.0	712.5	11.6	709.5	-1.4	10.77%	17.3	718.5	19.3	763.5	2.0	11.56%	28.9	748.5	34.7	763.5	5.8	20.07%
33	7.0	712.5	5.6	709.5	-1.4	20.00%	9.3	763.5	10.6	778.5	1.3	13.98%	17.1	793.5	20.1	808.5	3.0	17.54%
34	52.0	766.5	50.0	799.5	-2.0	3.85%	56.8	715.5	47.0	718.5	-9.8	17.25%	49.3	709.5	69.6	712.5	20.3	41.18%
35	39.3	709.5	39.3	709.5	0.0	0.00%	52.8	718.5	52.8	718.5	0.0	0.00%	89.3	718.5	89.3	718.5	0.0	0.00%
				712.5	0.0	0.00%	59.5	718.5	59.5	718.5	0.0	0.00%	98.0	718.5	98.0	718.5	0.0	0.00%
				718.5	-8.4	24.21%	71.3	718.5	67.9	718.5	-3.4	4.77%	131.9	718.5	123.1	718.5	-8.8	6.67%
				718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
				712.5	0.0	0.00%	34.0	718.5	34.0	718.5	0.0	0.00%	55.8	718.5	55.8	718.5	0.0	0.00%
				709.5	7.7	26.46%	52.7	718.5	54.0	718.5	1.3	2.47%	86.5	718.5	93.3	718.5	6.8	7.86%
				718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
				712.5	-0.5	9.26%	7.3	763.5	6.9	763.5	-0.4	5.48%	13.5	793.5	12.7	778.5	-0.8	5.93%
				712.5	0.0	0.00%	42.6	718.5	42.6	718.5	0.0	0.00%	66.2	718.5	66.2	718.5	0.0	0.00%
				718.5	-3.4	38.64%	15.2	763.5	16.4	778.5	1.2	7.89%	27.8	778.5	31.1	778.5	3.3	11.87%
				709.5	3.4	26.56%	26.3	718.5	23.8	718.5	-2.5	9.51%	49.0	718.5	41.1	718.5	-7.9	16.12%
				718.5	19.1	71.54%	53.6	718.5	110.7	718.5	57.1	106.53%	96.0	718.5	185.4	718.5	89.4	93.13%
				748.5	0.3	4.92%	12.8	763.5	16.0	778.5	3.2	25.00%	22.9	778.5	30.4	778.5	7.5	32.75%
				718.5	-4.7	23.62%	36.6	718.5	39.4	718.5	2.8	7.65%	60.2	718.5	72.2	718.5	12.0	19.93%
				718.5	0.0	0.00%	40.8	748.5	40.8	748.5	0.0	0.00%	75.7	718.5	75.7	718.5	0.0	0.00%
				718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
				712.5	-2.7	9.71%	30.8	718.5	31.1	718.5	0.3	0.97%	49.3	718.5	48.3	718.5	-1.0	2.03%
				718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
				718.5	5.1	8.87%	46.2	712.5	57.7	709.5	11.5	24.89%	64.3	718.5	62.3	718.5	-2.0	3.11%

ROARING6 SUBAREA PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	45.2	778.5	45.2	778.5	0.0	0.00%	62.4	778.5	62.4	778.5	0.0	0.00%	90.3	778.5	90.3	778.5	0.0	0.00%
2	18.9	778.5	18.9	778.5	0.0	0.00%	26.2	793.5	26.2	793.5	0.0	0.00%	38.0	778.5	38.0	778.5	0.0	0.00%
3	50.6	748.5	50.6	748.5	0.0	0.00%	72.2	748.5	72.2	748.5	0.0	0.00%	101.4	748.5	101.4	748.5	0.0	0.00%
4	19.4	763.5	19.4	763.5	0.0	0.00%	30.0	763.5	30.0	763.5	0.0	0.00%	42.3	748.5	42.3	748.5	0.0	0.00%
5	51.5	718.5	51.5	718.5	0.0	0.00%	77.9	718.5	77.9	718.5	0.0	0.00%	107.1	718.5	107.1	718.5	0.0	0.00%
6	130.9	718.5	130.9	718.5	0.0	0.00%	172.9	718.5	172.9	718.5	0.0	0.00%	243.6	718.5	243.6	718.5	0.0	0.00%
7	58.1	718.5	58.1	718.5	0.0	0.00%	75.7	718.5	75.7	718.5	0.0	0.00%	107.1	718.5	107.1	718.5	0.0	0.00%
8	90.0	718.5	90.0	718.5	0.0	0.00%	120.5	718.5	120.5	718.5	0.0	0.00%	166.3	718.5	166.3	718.5	0.0	0.00%
9	32.8	778.5	32.8	778.5	0.0	0.00%	51.8	778.5	51.8	778.5	0.0	0.00%	74.4	778.5	74.4	778.5	0.0	0.00%
10	44.7	748.5	46.3	748.5	1.6	3.58%	60.1	748.5	66.0	748.5	5.9	9.82%	85.5	748.5	92.5	748.5	7.0	8.19%
11	34.9	748.5	34.9	748.5	0.0	0.00%	46.9	748.5	46.9	748.5	0.0	0.00%	66.7	748.5	66.7	748.5	0.0	0.00%
12	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
13	82.4	718.5	82.4	718.5	0.0	0.00%	108.9	718.5	108.9	718.5	0.0	0.00%	153.7	718.5	153.7	718.5	0.0	0.00%
14	16.5	793.5	16.5	793.5	0.0	0.00%	23.4	808.5	23.4	808.5	0.0	0.00%	34.8	823.5	34.8	823.5	0.0	0.00%
15	31.5	778.5	37.3	778.5	5.8	18.41%	43.9	778.5	52.1	763.5	8.2	18.68%	61.6	763.5	71.5	763.5	9.9	16.07%
16	92.3	706.5	92.3	706.5	0.0	0.00%	100.0	718.5	100.0	718.5	0.0	0.00%	151.6	718.5	151.6	718.5	0.0	0.00%
17	48.2	748.5	48.2	748.5	0.0	0.00%	64.6	748.5	64.6	748.5	0.0	0.00%	92.2	718.5	92.2	718.5	0.0	0.00%
18	96.0	748.5	99.4	748.5	3.4	3.54%	129.0	748.5	141.7	748.5	12.7	9.84%	183.6	748.5	198.6	748.5	15.0	8.17%
19	149.0	718.5	149.0	718.5	0.0	0.00%	211.0	718.5	211.0	718.5	0.0	0.00%	296.6	718.5	296.6	718.5	0.0	0.00%
20	91.9	718.5	91.9	718.5	0.0	0.00%	141.2	718.5	141.2	718.5	0.0	0.00%	181.8	718.5	181.8	718.5	0.0	0.00%
21	77.2	748.5	97.7	718.5	20.5	26.55%	102.1	718.5	129.3	718.5	27.2	26.64%	138.8	718.5	170.6	718.5	31.8	22.91%
22	102.5	718.5	120.8	718.5	18.3	17.85%	143.5	718.5	171.4	718.5	27.9	19.44%	203.9	718.5	241.0	718.5	37.1	18.20%
23	56.7	748.5	56.7	748.5	0.0	0.00%	78.5	718.5	78.5	718.5	0.0	0.00%	110.3	718.5	110.3	718.5	0.0	0.00%
24	62.9	778.5	62.9	778.5	0.0	0.00%	85.6	778.5	85.6	778.5	0.0	0.00%	116.3	763.5	116.3	763.5	0.0	0.00%
25	33.8	778.5	41.4	778.5	7.6	22.49%	53.3	778.5	57.1	778.5	3.8	7.13%	76.5	778.5	82.5	778.5	6.0	7.84%
26	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
27	85.0	718.5	85.0	718.5	0.0	0.00%	109.3	718.5	109.3	718.5	0.0	0.00%	164.9	718.5	164.9	718.5	0.0	0.00%
28	7.0	778.5	6.7	763.5	-0.3	4.29%	9.8	793.5	9.3	778.5	-0.5	5.10%	15.4	808.5	13.4	793.5	-2.0	12.99%
29	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
30	58.9	718.5	58.9	718.5	0.0	0.00%	72.3	718.5	72.3	718.5	0.0	0.00%	94.1	718.5	94.1	718.5	0.0	0.00%
31	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
32	36.8	763.5	48.2	763.5	11.4	30.98%	52.6	763.5	66.6	763.5	14.0	26.62%	73.8	748.5	92.4	748.5	18.6	25.20%
33	23.9	793.5	28.6	808.5	4.7	19.67%	34.0	808.5	40.3	808.5	6.3	18.53%	48.1	793.5	56.2	793.5	8.1	16.84%
34	37.7	709.5	65.6	709.5	27.9	74.01%	52.6	718.5	59.9	706.5	7.3	13.88%	65.1	718.5	64.4	718.5	-0.7	1.08%
35	121.1	718.5	121.1	718.5	0.0	0.00%	167.1	718.5	167.1	718.5	0.0	0.00%	231.2	718.5	231.2	718.5	0.0	0.00%
[illegible]	[illegible]	[illegible]	[illegible]	718.5	0.0	0.00%	187.3	718.5	187.3	718.5	0.0	0.00%	265.7	718.5	265.7	718.5	0.0	0.00%
				718.5	-18.2	10.06%	250.5	718.5	230.8	718.5	-19.7	7.86%	348.5	718.5	323.4	718.5	-25.1	7.20%
				808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
				718.5	0.0	0.00%	105.0	718.5	105.0	718.5	0.0	0.00%	149.8	718.5	149.8	718.5	0.0	0.00%
				718.5	11.4	9.69%	162.3	718.5	178.7	718.5	16.4	10.10%	231.2	718.5	251.9	718.5	20.7	8.95%
				808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
				793.5	-2.1	11.11%	27.1	808.5	24.8	808.5	-2.3	8.49%	38.5	808.5	35.7	808.5	-2.8	7.27%
				718.5	0.0	0.00%	112.5	718.5	112.5	718.5	0.0	0.00%	157.5	718.5	157.5	718.5	0.0	0.00%
				778.5	3.1	8.01%	53.8	763.5	58.3	763.5	4.5	8.36%	74.5	763.5	80.0	763.5	5.5	7.38%
				718.5	-10.3	15.30%	93.4	718.5	79.0	718.5	-14.4	15.42%	130.9	718.5	111.3	718.5	-19.6	14.97%
				718.5	109.1	82.71%	180.4	718.5	314.8	718.5	134.4	74.50%	251.0	718.5	405.6	718.5	154.6	61.59%
				778.5	10.0	31.45%	44.5	778.5	56.8	778.5	12.3	27.64%	62.3	763.5	77.9	763.5	15.6	25.04%
				718.5	14.6	17.78%	114.7	718.5	136.6	718.5	21.9	19.09%	162.4	718.5	191.9	718.5	29.5	18.17%
				718.5	0.0	0.00%	145.3	718.5	145.3	718.5	0.0	0.00%	204.4	718.5	204.4	718.5	0.0	0.00%
				808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
				718.5	-6.6	10.08%	88.2	718.5	82.1	718.5	-6.1	6.92%	123.7	718.5	114.8	718.5	-8.9	7.19%
				808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
				718.5	1.1	1.49%	95.0	718.5	112.2	718.5	17.2	18.11%	140.2	718.5	143.3	718.5	3.1	2.21%

ROARING6 SUBAREA PEAK FLOWS

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
54	24.7	709.5	24.7	709.5	0.0	0.00%	39.7	763.5	39.7	763.5	0.0	0.00%	70.9	763.5	70.9	763.5	0.0	0.00%
55	11.4	712.5	7.2	712.5	-4.2	36.84%	13.8	748.5	14.4	763.5	0.6	4.35%	24.2	763.5	25.4	763.5	1.2	4.96%
56	20.5	748.5	20.5	748.5	0.0	0.00%	51.0	763.5	51.0	763.5	0.0	0.00%	89.3	748.5	89.3	748.5	0.0	0.00%
57	17.2	718.5	18.0	718.5	0.8	4.65%	36.7	748.5	42.2	748.5	5.5	14.99%	67.2	718.5	73.7	718.5	6.5	9.67%
58	29.7	712.5	32.8	712.5	3.1	10.44%	38.5	718.5	38.4	718.5	-0.1	0.26%	61.1	718.5	62.3	718.5	1.2	1.96%
59	10.4	712.5	7.3	712.5	-3.1	29.81%	14.4	748.5	15.9	778.5	1.5	10.42%	26.0	778.5	29.3	793.5	3.3	12.69%
60	11.5	712.5	9.0	718.5	-2.5	21.74%	24.0	763.5	27.8	778.5	3.8	15.83%	43.2	778.5	53.0	778.5	9.8	22.69%
61	19.0	718.5	19.9	718.5	0.9	4.74%	42.1	763.5	48.4	763.5	6.3	14.96%	77.7	748.5	84.9	748.5	7.2	9.27%
62	39.3	712.5	34.9	709.5	-4.4	11.20%	49.2	718.5	50.6	718.5	1.4	2.85%	76.8	718.5	87.2	718.5	10.4	13.54%
63	16.2	712.5	17.9	712.5	1.7	10.49%	21.8	748.5	22.6	748.5	0.8	3.67%	38.4	763.5	40.4	778.5	2.0	5.21%
64	11.6	748.5	11.6	748.5	0.0	0.00%	30.5	778.5	30.5	778.5	0.0	0.00%	54.5	778.5	54.5	778.5	0.0	0.00%
65	15.2	712.5	15.2	712.5	0.0	0.00%	19.3	763.5	19.3	763.5	0.0	0.00%	34.8	778.5	34.8	778.5	0.0	0.00%
66	10.8	718.5	8.2	718.5	-2.6	24.07%	22.9	748.5	21.5	748.5	-1.4	6.11%	42.2	718.5	39.3	718.5	-2.9	6.87%
67	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
68	28.0	718.5	28.0	718.5	0.0	0.00%	68.7	748.5	68.7	748.5	0.0	0.00%	120.7	718.5	120.7	718.5	0.0	0.00%
69	18.8	712.5	14.3	718.5	-4.5	23.94%	34.4	718.5	37.1	718.5	2.7	7.85%	56.5	718.5	67.8	718.5	11.3	20.00%
70	7.5	718.5	10.7	718.5	3.2	42.67%	18.9	718.5	24.8	718.5	5.9	31.22%	33.9	718.5	43.3	718.5	9.4	27.73%
71	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
72	11.8	718.5	11.8	718.5	0.0	0.00%	28.4	718.5	28.4	718.5	0.0	0.00%	50.4	718.5	50.4	718.5	0.0	0.00%
73	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
74	23.3	718.5	23.3	718.5	0.0	0.00%	50.7	763.5	50.7	763.5	0.0	0.00%	93.6	748.5	93.6	748.5	0.0	0.00%
75	13.6	712.5	13.6	712.5	0.0	0.00%	25.1	718.5	25.1	718.5	0.0	0.00%	41.3	718.5	41.3	718.5	0.0	0.00%
76	25.4	718.5	33.4	718.5	8.0	31.50%	65.4	718.5	68.6	718.5	3.2	4.89%	118.4	718.5	126.8	718.5	8.4	7.09%
77	7.4	712.5	10.6	712.5	3.2	43.24%	15.6	763.5	14.3	748.5	-1.3	8.33%	28.1	778.5	25.1	763.5	-3.0	10.68%
78	17.7	763.5	14.8	718.5	-2.9	16.38%	44.5	763.5	36.7	763.5	-7.8	17.53%	77.3	748.5	64.3	748.5	-13.0	16.82%
79	9.5	712.5	9.5	712.5	0.0	0.00%	11.5	748.5	11.5	748.5	0.0	0.00%	20.2	763.5	20.2	763.5	0.0	0.00%
80	9.4	778.5	7.5	763.5	-1.9	20.21%	23.8	778.5	19.4	778.5	-4.4	18.49%	40.9	763.5	34.2	763.5	-6.7	16.38%
81	24.3	778.5	21.7	763.5	-2.6	10.70%	61.9	778.5	55.6	778.5	-6.3	10.18%	106.3	763.5	97.0	763.5	-9.3	8.75%
82	55.8	712.5	74.0	715.5	18.2	32.62%	65.7	706.5	58.9	706.5	-6.8	10.35%	98.6	718.5	81.6	718.5	-17.0	17.24%
83	21.9	718.5	21.9	718.5	0.0	0.00%	44.9	718.5	44.9	718.5	0.0	0.00%	82.6	718.5	82.6	718.5	0.0	0.00%
84	39.2	718.5	42.7	718.5	3.5	8.93%	31.5	712.5	39.3	709.5	7.8	24.76%	44.9	718.5	43.6	718.5	-1.3	2.90%
85	10.6	748.5	11.5	763.5	0.9	8.49%	26.3	778.5	30.5	778.5	4.2	15.97%	49.9	778.5	54.7	778.5	4.8	9.62%
86	26.4	715.5	26.4	715.5	0.0	0.00%	34.3	709.5	34.3	709.5	0.0	0.00%	36.5	718.5	36.5	718.5	0.0	0.00%
87	26.9	718.5	26.9	718.5	0.0	0.00%	42.7	718.5	42.7	718.5	0.0	0.00%	56.5	718.5	56.5	718.5	0.0	0.00%
				763.5	2.2	22.68%	25.1	778.5	30.7	778.5	5.6	22.31%	44.6	763.5	53.6	763.5	9.0	20.18%
				709.5	4.2	63.64%	19.4	763.5	18.0	763.5	-1.4	7.22%	36.4	763.5	32.5	763.5	-3.9	10.71%
				712.5	0.0	0.00%	36.1	718.5	36.1	718.5	0.0	0.00%	61.7	748.5	61.7	748.5	0.0	0.00%
				718.5	0.0	0.00%	17.6	709.5	17.6	709.5	0.0	0.00%	21.1	718.5	21.1	718.5	0.0	0.00%
				718.5	0.0	0.00%	37.9	718.5	37.9	718.5	0.0	0.00%	49.1	718.5	49.1	718.5	0.0	0.00%
				712.5	-5.5	29.73%	24.5	718.5	25.3	748.5	0.8	3.27%	40.2	748.5	44.2	763.5	4.0	9.95%
				718.5	3.3	12.27%	60.8	718.5	72.4	718.5	11.6	19.08%	106.5	718.5	127.8	718.5	21.3	20.00%
				712.5	9.8	57.31%	32.0	718.5	31.6	718.5	-0.4	1.25%	52.8	748.5	51.2	718.5	-1.6	3.03%
				718.5	0.0	0.00%	36.0	718.5	36.0	718.5	0.0	0.00%	48.1	718.5	48.1	718.5	0.0	0.00%
				712.5	0.0	0.00%	53.1	718.5	53.1	718.5	0.0	0.00%	85.6	718.5	85.6	718.5	0.0	0.00%
				718.5	-4.7	38.21%	21.4	763.5	23.1	778.5	1.7	7.94%	39.2	778.5	43.9	778.5	4.7	11.99%
				718.5	0.0	0.00%	34.3	718.5	34.3	718.5	0.0	0.00%	45.0	718.5	45.0	718.5	0.0	0.00%
				763.5	0.0	0.00%	32.4	748.5	32.4	748.5	0.0	0.00%	43.5	748.5	43.5	748.5	0.0	0.00%
				718.5	-5.0	28.57%	22.7	718.5	26.7	748.5	4.0	17.62%	36.0	718.5	49.0	748.5	13.0	36.11%
				712.5	-12.9	36.24%	41.3	718.5	41.8	718.5	0.5	1.21%	66.8	718.5	68.8	718.5	2.0	2.99%
				718.5	-16.4	52.73%	34.2	718.5	37.4	718.5	3.2	9.36%	54.6	718.5	67.1	718.5	12.5	22.89%
				763.5	0.0	0.00%	16.2	793.5	16.2	793.5	0.0	0.00%	29.4	793.5	29.4	793.5	0.0	0.00%
				718.5	5.3	32.52%	44.2	748.5	47.3	763.5	3.1	7.01%	81.2	748.5	87.3	748.5	6.1	7.51%
				748.5	0.5	7.25%	14.9	763.5	18.9	793.5	4.0	26.85%	27.1	793.5	36.4	793.5	9.3	34.32%

ROARING6 SUBAREA PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
54	97.8	763.5	97.8	763.5	0.0	0.00%	135.6	748.5	135.6	748.5	0.0	0.00%	187.6	748.5	187.6	748.5	0.0	0.00%
55	32.8	763.5	35.1	763.5	2.3	7.01%	45.6	763.5	48.7	763.5	3.1	6.80%	63.4	763.5	68.1	748.5	4.7	7.41%
56	120.5	718.5	120.5	718.5	0.0	0.00%	166.3	718.5	166.3	718.5	0.0	0.00%	231.3	718.5	231.3	718.5	0.0	0.00%
57	93.7	718.5	101.8	718.5	8.1	8.64%	129.5	718.5	141.2	718.5	11.7	9.03%	182.3	718.5	197.1	718.5	14.8	8.12%
58	74.6	718.5	83.2	718.5	8.6	11.53%	106.6	718.5	115.2	718.5	8.6	8.07%	150.3	718.5	161.7	718.5	11.4	7.58%
59	34.0	793.5	41.3	793.5	7.3	21.47%	49.7	793.5	58.3	793.5	8.6	17.30%	71.1	793.5	82.4	793.5	11.3	15.89%
60	60.2	778.5	71.5	778.5	11.3	18.77%	84.2	778.5	100.0	778.5	15.8	18.76%	118.1	778.5	137.1	763.5	19.0	16.09%
61	106.2	748.5	114.5	748.5	8.3	7.82%	146.3	718.5	158.6	718.5	12.3	8.41%	205.2	718.5	222.0	718.5	16.8	8.19%
62	93.6	718.5	120.2	718.5	26.6	28.42%	131.1	718.5	165.8	718.5	34.7	26.47%	183.9	718.5	233.2	718.5	49.3	26.81%
63	49.5	778.5	55.4	778.5	5.9	11.92%	71.5	778.5	77.7	778.5	6.2	8.67%	101.2	778.5	108.5	778.5	7.3	7.21%
64	73.6	763.5	73.6	763.5	0.0	0.00%	100.3	763.5	100.3	763.5	0.0	0.00%	136.4	748.5	136.4	748.5	0.0	0.00%
65	47.8	778.5	47.8	778.5	0.0	0.00%	67.3	778.5	67.3	778.5	0.0	0.00%	94.3	778.5	94.3	778.5	0.0	0.00%
66	58.8	718.5	52.7	718.5	-6.1	10.37%	81.1	718.5	74.8	718.5	-6.3	7.77%	114.2	718.5	105.2	718.5	-9.0	7.88%
67	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
68	164.8	718.5	164.8	718.5	0.0	0.00%	227.0	718.5	227.0	718.5	0.0	0.00%	315.4	718.5	315.4	718.5	0.0	0.00%
69	77.1	718.5	90.7	718.5	13.6	17.64%	106.5	718.5	127.9	718.5	21.4	20.09%	152.0	718.5	179.5	718.5	27.5	18.09%
70	44.4	718.5	58.6	718.5	14.2	31.98%	62.7	718.5	80.0	718.5	17.3	27.59%	86.9	718.5	109.8	718.5	22.9	26.35%
71	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
72	68.7	718.5	68.7	718.5	0.0	0.00%	93.9	718.5	93.9	718.5	0.0	0.00%	127.6	718.5	127.6	718.5	0.0	0.00%
73	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
74	127.7	718.5	127.7	718.5	0.0	0.00%	178.0	718.5	178.0	718.5	0.0	0.00%	249.3	718.5	249.3	718.5	0.0	0.00%
75	56.3	718.5	56.3	718.5	0.0	0.00%	78.7	718.5	78.7	718.5	0.0	0.00%	111.5	718.5	111.5	718.5	0.0	0.00%
76	156.3	718.5	173.7	718.5	17.4	11.13%	221.6	718.5	240.5	718.5	18.9	8.53%	308.2	718.5	334.2	718.5	26.0	8.44%
77	39.1	778.5	32.4	778.5	-6.7	17.14%	54.7	778.5	46.9	778.5	-7.8	14.26%	76.7	778.5	66.5	778.5	-10.2	13.30%
78	103.1	748.5	87.0	748.5	-16.1	15.62%	140.7	718.5	119.3	718.5	-21.4	15.21%	194.3	718.5	166.1	718.5	-28.2	14.51%
79	27.4	763.5	27.4	763.5	0.0	0.00%	38.2	763.5	38.2	763.5	0.0	0.00%	53.2	763.5	53.2	763.5	0.0	0.00%
80	53.7	748.5	45.5	763.5	-8.2	15.27%	72.0	718.5	61.7	748.5	-10.3	14.31%	98.1	718.5	83.9	718.5	-14.2	14.48%
81	139.6	748.5	129.2	748.5	-10.4	7.45%	187.1	718.5	173.2	748.5	-13.9	7.43%	254.7	718.5	235.7	718.5	-19.0	7.46%
82	118.3	718.5	115.4	718.5	-2.9	2.45%	164.3	718.5	151.0	718.5	-13.3	8.09%	225.3	718.5	208.3	718.5	-17.0	7.55%
83	112.9	718.5	112.9	718.5	0.0	0.00%	156.2	718.5	156.2	718.5	0.0	0.00%	216.7	718.5	216.7	718.5	0.0	0.00%
84	51.9	718.5	52.5	718.5	0.6	1.16%	66.8	718.5	80.2	718.5	13.4	20.06%	99.2	718.5	101.8	718.5	2.6	2.62%
85	68.5	778.5	74.0	778.5	5.5	8.03%	93.2	763.5	100.7	763.5	7.5	8.05%	127.7	763.5	136.7	763.5	9.0	7.05%
86	46.0	748.5	46.0	748.5	0.0	0.00%	71.3	748.5	71.3	748.5	0.0	0.00%	100.2	748.5	100.2	748.5	0.0	0.00%
87	65.8	718.5	65.8	718.5	0.0	0.00%	77.5	718.5	77.5	718.5	0.0	0.00%	91.7	718.5	91.7	718.5	0.0	0.00%
88	60.4	763.5	71.4	763.5	11.0	18.21%	82.1	748.5	95.7	748.5	13.6	16.57%	112.0	748.5	128.4	718.5	16.4	14.64%
				763.5	-3.5	7.19%	67.8	763.5	62.6	763.5	-5.2	7.67%	93.2	748.5	86.7	748.5	-6.5	6.97%
				748.5	0.0	0.00%	116.6	748.5	116.6	748.5	0.0	0.00%	165.7	718.5	165.7	718.5	0.0	0.00%
				763.5	0.0	0.00%	41.7	763.5	41.7	763.5	0.0	0.00%	55.6	763.5	55.6	763.5	0.0	0.00%
				718.5	0.0	0.00%	65.9	718.5	65.9	718.5	0.0	0.00%	77.2	718.5	77.2	718.5	0.0	0.00%
				763.5	9.8	19.25%	72.5	763.5	83.8	763.5	11.3	15.59%	102.0	748.5	117.7	748.5	15.7	15.39%
				718.5	29.5	20.44%	200.4	718.5	235.5	718.5	35.1	17.51%	276.2	718.5	321.4	718.5	45.2	16.36%
				718.5	-3.9	5.40%	101.1	718.5	94.6	718.5	-6.5	6.43%	143.7	718.5	132.8	718.5	-10.9	7.59%
				718.5	0.0	0.00%	65.9	718.5	65.9	718.5	0.0	0.00%	78.3	718.5	78.3	718.5	0.0	0.00%
				718.5	0.0	0.00%	156.8	718.5	156.8	718.5	0.0	0.00%	218.8	718.5	218.8	718.5	0.0	0.00%
				778.5	4.3	7.86%	75.9	778.5	82.3	763.5	6.4	8.43%	105.3	763.5	113.0	763.5	7.7	7.31%
				718.5	0.0	0.00%	60.7	718.5	60.7	718.5	0.0	0.00%	71.4	718.5	71.4	718.5	0.0	0.00%
				748.5	0.0	0.00%	60.3	718.5	60.3	718.5	0.0	0.00%	72.4	718.5	72.4	718.5	0.0	0.00%
				718.5	24.2	55.13%	62.9	718.5	94.1	718.5	31.2	49.60%	88.6	718.5	132.5	718.5	43.9	49.55%
				718.5	5.0	5.61%	123.1	718.5	131.5	718.5	8.4	6.82%	172.4	718.5	186.5	718.5	14.1	8.18%
				718.5	15.6	21.52%	97.4	718.5	124.6	718.5	27.2	27.93%	136.5	718.5	172.7	718.5	36.2	26.52%
				778.5	0.0	0.00%	54.3	778.5	54.3	778.5	0.0	0.00%	73.7	763.5	73.7	763.5	0.0	0.00%
				748.5	11.2	10.38%	152.7	718.5	165.7	718.5	13.0	8.51%	213.7	718.5	232.2	718.5	18.5	8.66%
				793.5	12.2	32.02%	53.5	793.5	68.7	793.5	15.2	28.41%	75.5	778.5	94.3	778.5	18.8	24.90%

ROARING6 SUBAREA PEAK FLOWS

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
107	7.8	712.5	9.9	709.5	2.1	26.92%	16.7	763.5	17.9	778.5	1.2	7.19%	30.3	778.5	33.2	793.5	2.9	9.57%
108	21.3	718.5	21.3	718.5	0.0	0.00%	19.6	709.5	19.6	709.5	0.0	0.00%	22.2	718.5	22.2	718.5	0.0	0.00%
109	18.1	712.5	24.0	715.5	5.9	32.60%	23.8	718.5	19.1	706.5	-4.7	19.75%	37.9	748.5	30.8	748.5	-7.1	18.73%
110	6.5	778.5	9.5	808.5	3.0	46.15%	18.0	808.5	25.1	808.5	7.1	39.44%	32.7	808.5	42.6	808.5	9.9	30.28%
111	8.6	763.5	8.0	718.5	-0.6	6.98%	22.7	778.5	19.6	778.5	-3.1	13.66%	40.6	778.5	37.1	778.5	-3.5	8.62%
112	22.6	718.5	37.8	709.5	15.2	67.26%	58.6	718.5	55.7	718.5	-2.9	4.95%	106.8	718.5	96.2	718.5	-10.6	9.93%
113	42.5	712.5	42.5	712.5	0.0	0.00%	53.9	718.5	53.9	718.5	0.0	0.00%	84.8	718.5	84.8	718.5	0.0	0.00%
114	16.5	706.5	16.5	706.5	0.0	0.00%	33.0	718.5	33.0	718.5	0.0	0.00%	59.2	718.5	59.2	718.5	0.0	0.00%
115	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
116	19.3	715.5	19.3	715.5	0.0	0.00%	15.4	706.5	15.4	706.5	0.0	0.00%	24.1	718.5	24.1	718.5	0.0	0.00%
117	36.9	715.5	36.9	715.5	0.0	0.00%	29.3	706.5	29.3	706.5	0.0	0.00%	48.1	748.5	48.1	748.5	0.0	0.00%
118	37.1	715.5	37.1	715.5	0.0	0.00%	29.5	706.5	29.5	706.5	0.0	0.00%	44.2	718.5	44.2	718.5	0.0	0.00%
119	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
120	46.3	718.5	46.3	718.5	0.0	0.00%	37.2	712.5	37.2	712.5	0.0	0.00%	55.3	718.5	55.3	718.5	0.0	0.00%
121	31.6	718.5	31.6	718.5	0.0	0.00%	29.1	709.5	29.1	709.5	0.0	0.00%	34.8	718.5	34.8	718.5	0.0	0.00%
122	88.2	721.5	88.2	721.5	0.0	0.00%	88.0	712.5	88.0	712.5	0.0	0.00%	68.9	706.5	68.9	706.5	0.0	0.00%
123	6.6	715.5	6.6	715.5	0.0	0.00%	5.3	718.5	5.3	718.5	0.0	0.00%	9.8	778.5	9.8	778.5	0.0	0.00%
124	99.3	745.5	99.3	745.5	0.0	0.00%	117.2	715.5	117.2	715.5	0.0	0.00%	102.8	709.5	102.8	709.5	0.0	0.00%
125	49.9	712.5	49.9	712.5	0.0	0.00%	58.8	706.5	58.8	706.5	0.0	0.00%	82.8	718.5	82.8	718.5	0.0	0.00%
126	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
127	152.8	730.5	152.8	730.5	0.0	0.00%	139.8	712.5	139.8	712.5	0.0	0.00%	179.4	709.5	179.4	709.5	0.0	0.00%
128	44.9	712.5	44.9	712.5	0.0	0.00%	45.6	718.5	45.6	718.5	0.0	0.00%	70.4	718.5	70.4	718.5	0.0	0.00%
129	22.7	712.5	25.1	712.5	2.4	10.57%	29.9	718.5	29.9	718.5	0.0	0.00%	48.0	748.5	50.0	748.5	2.0	4.17%
130	9.7	712.5	10.1	718.5	0.4	4.12%	19.8	763.5	24.7	778.5	4.9	24.75%	35.4	778.5	46.8	778.5	11.4	32.20%
131	32.9	712.5	32.9	712.5	0.0	0.00%	37.1	718.5	37.1	718.5	0.0	0.00%	59.5	718.5	59.5	718.5	0.0	0.00%
132	25.8	718.5	24.7	706.5	-1.1	4.26%	57.3	718.5	49.8	718.5	-7.5	13.09%	97.9	718.5	89.4	718.5	-8.5	8.68%
133	33.1	712.5	29.9	712.5	-3.2	9.67%	38.5	718.5	38.6	718.5	0.1	0.26%	62.4	718.5	61.1	718.5	-1.3	2.08%
134	47.4	712.5	47.4	712.5	0.0	0.00%	60.0	718.5	60.0	718.5	0.0	0.00%	94.1	718.5	94.1	718.5	0.0	0.00%
135	0.0	718.5	0.0	718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
136	70.5	718.5	76.8	718.5	6.3	8.94%	56.6	712.5	70.7	709.5	14.1	24.91%	81.3	718.5	79.1	718.5	-2.2	2.71%
137	90.8	718.5	98.9	718.5	8.1	8.92%	72.9	712.5	91.1	709.5	18.2	24.97%	104.3	718.5	101.4	718.5	-2.9	2.78%
138	15.9	709.5	20.9	706.5	5.0	31.45%	39.8	718.5	41.9	718.5	2.1	5.28%	70.0	718.5	74.8	718.5	4.8	6.86%
139	17.2	712.5	17.2	712.5	0.0	0.00%	23.3	748.5	23.3	748.5	0.0	0.00%	41.3	763.5	41.3	763.5	0.0	0.00%
140	26.7	715.5	26.7	715.5	0.0	0.00%	21.3	706.5	21.3	706.5	0.0	0.00%	36.3	763.5	36.3	763.5	0.0	0.00%
				712.5	0.0	0.00%	19.6	748.5	19.6	748.5	0.0	0.00%	35.0	778.5	35.0	778.5	0.0	0.00%
				715.5	0.0	0.00%	46.7	706.5	46.7	706.5	0.0	0.00%	69.5	718.5	69.5	718.5	0.0	0.00%
				718.5	0.0	0.00%	0.0	709.5	0.0	709.5	0.0	0.00%	0.0	778.5	0.0	778.5	0.0	0.00%
				712.5	0.0	0.00%	42.9	718.5	42.9	718.5	0.0	0.00%	68.5	718.5	68.5	718.5	0.0	0.00%
				712.5	0.9	9.89%	12.5	748.5	13.0	763.5	0.5	4.00%	22.5	778.5	23.8	778.5	1.3	5.78%
				718.5	11.9	41.61%	71.3	718.5	99.4	718.5	28.1	39.41%	124.1	718.5	165.3	718.5	41.2	33.20%
				718.5	6.5	32.50%	54.0	748.5	57.7	763.5	3.7	6.85%	99.0	748.5	106.5	748.5	7.5	7.58%
				763.5	4.8	27.75%	40.1	763.5	56.2	763.5	16.1	40.15%	74.8	763.5	97.9	763.5	23.1	30.88%
				763.5	0.0	0.00%	33.1	718.5	33.1	718.5	0.0	0.00%	56.7	718.5	56.7	718.5	0.0	0.00%
				763.5	0.0	0.00%	47.1	763.5	47.1	763.5	0.0	0.00%	81.1	748.5	81.1	748.5	0.0	0.00%
				718.5	7.2	37.89%	48.9	718.5	59.3	718.5	10.4	21.27%	88.8	718.5	104.3	718.5	15.5	17.45%
				778.5	5.4	46.15%	27.8	778.5	43.6	778.5	15.8	56.83%	52.0	763.5	75.0	763.5	23.0	44.23%
				778.5	2.6	11.87%	53.9	763.5	59.4	763.5	5.5	10.20%	91.2	748.5	99.7	718.5	8.5	9.32%
				763.5	0.0	0.00%	61.6	718.5	61.6	718.5	0.0	0.00%	105.2	718.5	105.2	718.5	0.0	0.00%
				793.5	-0.7	11.29%	15.4	778.5	13.9	778.5	-1.5	9.74%	25.6	763.5	23.6	778.5	-2.0	7.81%
				778.5	0.0	0.00%	51.4	748.5	51.4	748.5	0.0	0.00%	85.6	718.5	85.6	718.5	0.0	0.00%
				718.5	2.2	31.88%	15.7	718.5	19.2	718.5	3.5	22.29%	24.8	718.5	28.9	718.5	4.1	16.53%

ROARING6 SUBAREA PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
107	42.3	793.5	46.6	793.5	4.3	10.17%	59.4	778.5	65.2	778.5	5.8	9.76%	83.8	778.5	90.6	778.5	6.8	8.11%
108	26.7	718.5	26.7	718.5	0.0	0.00%	40.9	718.5	40.9	718.5	0.0	0.00%	52.1	718.5	52.1	718.5	0.0	0.00%
109	47.5	748.5	45.9	748.5	-1.6	3.37%	67.6	748.5	61.6	748.5	-6.0	8.88%	94.8	718.5	87.4	748.5	-7.4	7.81%
110	43.9	793.5	56.1	793.5	12.2	27.79%	59.4	793.5	73.7	778.5	14.3	24.07%	80.2	778.5	97.1	778.5	16.9	21.07%
111	54.9	778.5	50.9	778.5	-4.0	7.29%	74.8	763.5	69.2	763.5	-5.6	7.49%	101.6	748.5	94.8	763.5	-6.8	6.69%
112	142.8	718.5	133.3	718.5	-9.5	6.65%	201.3	718.5	184.7	718.5	-16.6	8.25%	282.4	718.5	260.5	718.5	-21.9	7.75%
113	103.4	718.5	103.4	718.5	0.0	0.00%	146.9	718.5	146.9	718.5	0.0	0.00%	205.2	718.5	205.2	718.5	0.0	0.00%
114	81.3	718.5	81.3	718.5	0.0	0.00%	111.1	718.5	111.1	718.5	0.0	0.00%	154.5	718.5	154.5	718.5	0.0	0.00%
115	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
116	35.7	718.5	35.7	718.5	0.0	0.00%	47.3	718.5	47.3	718.5	0.0	0.00%	67.8	718.5	67.8	718.5	0.0	0.00%
117	71.8	748.5	71.8	748.5	0.0	0.00%	96.5	748.5	96.5	748.5	0.0	0.00%	137.4	748.5	137.4	748.5	0.0	0.00%
118	64.6	718.5	64.6	718.5	0.0	0.00%	84.3	718.5	84.3	718.5	0.0	0.00%	119.3	718.5	119.3	718.5	0.0	0.00%
119	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
120	64.7	718.5	64.7	718.5	0.0	0.00%	83.0	718.5	83.0	718.5	0.0	0.00%	125.8	718.5	125.8	718.5	0.0	0.00%
121	43.1	748.5	43.1	748.5	0.0	0.00%	67.1	748.5	67.1	748.5	0.0	0.00%	88.7	763.5	88.7	763.5	0.0	0.00%
122	88.5	718.5	88.5	718.5	0.0	0.00%	108.9	718.5	108.9	718.5	0.0	0.00%	144.3	718.5	144.3	718.5	0.0	0.00%
123	15.0	778.5	15.0	778.5	0.0	0.00%	20.7	778.5	20.7	778.5	0.0	0.00%	30.1	778.5	30.1	778.5	0.0	0.00%
124	90.8	706.5	90.8	706.5	0.0	0.00%	102.7	718.5	102.7	718.5	0.0	0.00%	158.3	718.5	158.3	718.5	0.0	0.00%
125	100.9	718.5	100.9	718.5	0.0	0.00%	139.3	718.5	139.3	718.5	0.0	0.00%	189.9	718.5	189.9	718.5	0.0	0.00%
126	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
127	160.9	718.5	160.9	718.5	0.0	0.00%	193.1	718.5	193.1	718.5	0.0	0.00%	246.3	718.5	246.3	718.5	0.0	0.00%
128	93.0	718.5	93.0	718.5	0.0	0.00%	124.3	718.5	124.3	718.5	0.0	0.00%	171.2	718.5	171.2	718.5	0.0	0.00%
129	60.3	748.5	67.2	748.5	6.9	11.44%	85.9	748.5	92.8	748.5	6.9	8.03%	120.3	748.5	128.8	748.5	8.5	7.07%
130	49.0	778.5	64.1	778.5	15.1	30.82%	68.2	778.5	87.3	763.5	19.1	28.01%	95.8	763.5	119.5	763.5	23.7	24.74%
131	79.2	718.5	79.2	718.5	0.0	0.00%	107.2	718.5	107.2	718.5	0.0	0.00%	150.5	718.5	150.5	718.5	0.0	0.00%
132	133.4	718.5	122.8	718.5	-10.6	7.95%	182.9	718.5	168.0	718.5	-14.9	8.15%	252.6	718.5	233.8	718.5	-18.8	7.44%
133	83.2	718.5	74.6	718.5	-8.6	10.34%	115.0	718.5	106.5	718.5	-8.5	7.39%	161.2	718.5	149.8	718.5	-11.4	7.07%
134	114.8	718.5	114.8	718.5	0.0	0.00%	162.8	718.5	162.8	718.5	0.0	0.00%	227.1	718.5	227.1	718.5	0.0	0.00%
135	0.0	808.5	0.0	808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
136	94.2	718.5	95.2	718.5	1.0	1.06%	121.1	718.5	145.7	718.5	24.6	20.31%	180.3	718.5	185.2	718.5	4.9	2.72%
137	120.7	718.5	122.1	718.5	1.4	1.16%	155.1	718.5	186.5	718.5	31.4	20.25%	230.8	718.5	236.8	718.5	6.0	2.60%
138	92.6	718.5	102.8	718.5	10.2	11.02%	130.5	718.5	140.5	718.5	10.0	7.66%	180.4	718.5	195.4	718.5	15.0	8.31%
				778.5	0.0	0.00%	77.3	778.5	77.3	778.5	0.0	0.00%	109.8	778.5	109.8	778.5	0.0	0.00%
				763.5	0.0	0.00%	74.0	763.5	74.0	763.5	0.0	0.00%	105.6	763.5	105.6	763.5	0.0	0.00%
				778.5	0.0	0.00%	67.1	778.5	67.1	778.5	0.0	0.00%	93.8	778.5	93.8	778.5	0.0	0.00%
				718.5	0.0	0.00%	132.2	718.5	132.2	718.5	0.0	0.00%	186.7	718.5	186.7	718.5	0.0	0.00%
				808.5	0.0	0.00%	0.0	823.5	0.0	823.5	0.0	0.00%	0.0	883.5	0.0	883.5	0.0	0.00%
				718.5	0.0	0.00%	125.3	718.5	125.3	718.5	0.0	0.00%	174.7	718.5	174.7	718.5	0.0	0.00%
				793.5	3.6	12.29%	42.7	793.5	46.6	793.5	3.9	9.13%	61.1	793.5	65.6	793.5	4.5	7.36%
				718.5	46.7	28.01%	222.6	718.5	278.4	718.5	55.8	25.07%	298.5	718.5	361.2	718.5	62.7	21.01%
				718.5	13.9	10.57%	186.8	718.5	202.7	718.5	15.9	8.51%	261.2	718.5	283.8	718.5	22.6	8.65%
				748.5	28.8	28.24%	139.1	748.5	175.4	718.5	36.3	26.10%	190.4	718.5	241.2	718.5	50.8	26.68%
				718.5	0.0	0.00%	99.2	718.5	99.2	718.5	0.0	0.00%	130.5	718.5	130.5	718.5	0.0	0.00%
				718.5	0.0	0.00%	148.0	718.5	148.0	718.5	0.0	0.00%	202.1	718.5	202.1	718.5	0.0	0.00%
				718.5	24.3	20.72%	166.4	718.5	196.7	718.5	30.3	18.21%	233.1	718.5	271.5	718.5	38.4	16.47%
				748.5	26.9	37.73%	96.8	763.5	131.8	748.5	35.0	36.16%	133.2	748.5	177.4	718.5	44.2	33.18%
				718.5	10.7	8.76%	164.5	718.5	178.3	718.5	13.8	8.39%	222.9	718.5	238.7	718.5	15.8	7.09%
				718.5	0.0	0.00%	183.5	718.5	183.5	718.5	0.0	0.00%	240.8	718.5	240.8	718.5	0.0	0.00%
				763.5	-2.4	7.19%	43.8	748.5	40.8	748.5	-3.0	6.85%	57.3	748.5	53.9	748.5	-3.4	5.93%
				718.5	0.0	0.00%	149.5	718.5	149.5	718.5	0.0	0.00%	198.4	718.5	198.4	718.5	0.0	0.00%
				718.5	4.3	13.74%	39.6	718.5	43.8	718.5	4.2	10.61%	49.5	718.5	54.0	718.5	4.5	9.09%

ROARING6 WATERSHED PEAK FLOWS

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN
1	20.0	715.5	20.0	715.5	0.0	0.00%	16.1	718.5	16.1	718.5	0.0	0.00%	29.5	778.5	29.5	778.5	0.0	0.00%
2	28.3	715.5	28.3	715.5	0.0	0.00%	22.7	718.5	22.7	718.5	0.0	0.00%	41.8	778.5	41.8	778.5	0.0	0.00%
3	41.9	721.5	41.9	721.5	0.0	0.00%	45.7	754.5	45.7	754.5	0.0	0.00%	80.9	763.5	80.9	763.5	0.0	0.00%
4	50.2	724.5	50.2	724.5	0.0	0.00%	57.6	751.5	57.6	751.5	0.0	0.00%	95.7	766.5	95.7	766.5	0.0	0.00%
5	74.5	724.5	74.5	724.5	0.0	0.00%	96.0	718.5	96.0	718.5	0.0	0.00%	127.4	748.5	127.4	748.5	0.0	0.00%
6	73.3	715.5	73.3	715.5	0.0	0.00%	58.3	706.5	58.3	706.5	0.0	0.00%	89.1	718.5	89.1	718.5	0.0	0.00%
7	98.8	724.5	98.8	724.5	0.0	0.00%	80.8	715.5	80.8	715.5	0.0	0.00%	123.3	727.5	123.3	727.5	0.0	0.00%
8	198.8	733.5	198.8	733.5	0.0	0.00%	211.9	724.5	211.9	724.5	0.0	0.00%	287.3	748.5	287.3	748.5	0.0	0.00%
9	16.3	715.5	16.3	715.5	0.0	0.00%	21.2	718.5	21.2	718.5	0.0	0.00%	25.0	763.5	25.0	763.5	0.0	0.00%
10	35.2	721.5	28.8	721.5	-6.4	18.18%	38.0	718.5	42.9	718.5	4.9	12.89%	54.5	763.5	61.1	754.5	6.6	12.11%
11	48.3	739.5	41.9	739.5	-6.4	13.25%	50.8	736.5	55.6	736.5	4.8	9.45%	77.0	772.5	83.8	772.5	6.8	8.83%
12	235.6	733.5	227.9	733.5	-7.7	3.27%	250.6	736.5	255.4	736.5	4.8	1.92%	360.4	763.5	367.3	763.5	6.9	1.91%
13	3.9	838.5	3.9	838.5	0.0	0.00%	5.5	892.5	5.5	892.5	0.0	0.00%	11.0	940.5	11.0	940.5	0.0	0.00%
14	242.5	781.5	234.8	781.5	-7.7	3.18%	259.5	784.5	264.3	784.5	4.8	1.85%	378.9	811.5	385.8	811.5	6.9	1.82%
15	6.1	712.5	4.8	718.5	-1.3	21.31%	12.7	763.5	14.6	778.5	1.9	14.96%	22.7	778.5	27.8	778.5	5.1	22.47%
16	269.5	793.5	262.0	793.5	-7.5	2.78%	288.4	796.5	295.5	796.5	7.1	2.46%	417.0	808.5	429.0	808.5	12.0	2.88%
17	25.6	715.5	25.6	715.5	0.0	0.00%	20.4	706.5	20.4	706.5	0.0	0.00%	32.5	748.5	32.5	748.5	0.0	0.00%
18	65.4	724.5	52.0	724.5	-13.4	20.49%	56.8	718.5	67.1	718.5	10.3	18.13%	96.2	757.5	110.6	757.5	14.4	14.97%
19	83.7	775.5	68.1	748.5	-15.6	18.64%	114.6	769.5	124.9	769.5	10.3	8.99%	190.6	778.5	205.2	778.5	14.6	7.66%
20	111.6	751.5	106.2	760.5	-5.4	4.84%	150.6	751.5	158.8	781.5	8.2	5.44%	243.2	790.5	257.8	790.5	14.6	6.00%
21	13.9	778.5	20.3	778.5	6.4	46.04%	34.7	763.5	46.7	763.5	12.0	34.58%	58.4	748.5	75.7	748.5	17.3	29.62%
22	24.4	712.5	18.7	718.5	-5.7	23.36%	45.4	718.5	49.3	748.5	3.9	8.59%	74.9	718.5	90.0	718.5	15.1	20.16%
23	52.0	715.5	53.3	721.5	1.3	2.50%	102.3	751.5	120.1	751.5	17.8	17.40%	174.8	751.5	207.1	751.5	32.3	18.48%
24	9.6	763.5	9.6	763.5	0.0	0.00%	25.6	793.5	25.6	793.5	0.0	0.00%	46.3	793.5	46.3	793.5	0.0	0.00%
25	16.8	715.5	18.4	715.5	1.6	9.52%	21.9	718.5	14.8	718.5	-7.1	32.42%	25.8	763.5	27.0	778.5	1.2	4.65%
26	24.7	715.5	26.3	715.5	1.6	6.48%	44.8	763.5	39.6	763.5	-5.2	11.61%	71.8	778.5	73.3	778.5	1.5	2.09%
27	78.2	724.5	79.8	724.5	1.6	2.05%	81.1	727.5	74.0	727.5	-7.1	8.75%	128.6	748.5	129.5	757.5	0.9	0.70%
28	4.1	718.5	5.3	721.5	1.2	29.27%	3.3	712.5	5.3	712.5	2.0	60.61%	5.4	763.5	4.2	748.5	-1.2	22.22%
29	128.9	724.5	133.4	724.5	4.5	3.49%	183.1	748.5	195.9	748.5	12.8	6.99%	308.1	751.5	340.1	751.5	32.0	10.39%
30	262.9	730.5	267.3	730.5	4.4	1.67%	359.4	754.5	372.2	754.5	12.8	3.56%	572.9	754.5	616.5	784.5	43.6	7.61%
31	262.9	730.5	267.3	730.5	4.4	1.67%	359.4	754.5	372.2	754.5	12.8	3.56%	572.9	754.5	616.5	784.5	43.6	7.61%
32	13.0	712.5	11.6	709.5	-1.4	10.77%	17.3	718.5	19.3	763.5	2.0	11.56%	28.9	748.5	34.7	763.5	5.8	20.07%
33	668.8	703.5	653.4	793.5	-15.4	3.28%	646.7	784.5	680.7	784.5	34.0	5.26%	1002.7	796.5	1067.6	796.5	64.9	6.47%
				799.5	-10.0	2.05%	654.2	787.5	686.8	787.5	32.6	4.98%	1009.8	799.5	1076.1	799.5	66.3	6.57%
				709.5	0.0	0.00%	52.8	718.5	52.8	718.5	0.0	0.00%	89.3	718.5	89.3	718.5	0.0	0.00%
				712.5	0.0	0.00%	59.5	718.5	59.5	718.5	0.0	0.00%	98.0	718.5	98.0	718.5	0.0	0.00%
				718.5	-8.4	24.21%	71.3	718.5	67.9	718.5	-3.4	4.77%	131.9	718.5	123.1	718.5	-8.8	6.67%
				712.5	-6.8	6.95%	183.6	718.5	180.2	718.5	-3.4	1.85%	319.2	718.5	310.4	718.5	-8.8	2.76%
				712.5	0.0	0.00%	34.0	718.5	34.0	718.5	0.0	0.00%	55.8	718.5	55.8	718.5	0.0	0.00%
				718.5	0.5	0.35%	263.3	724.5	261.3	724.5	-2.0	0.76%	451.0	724.5	448.6	724.5	-2.4	0.53%
				799.5	-14.2	2.53%	862.8	787.5	894.1	787.5	31.3	3.63%	1344.7	787.5	1408.8	799.5	64.1	4.77%
				802.5	-15.1	2.68%	869.9	790.5	900.7	790.5	30.8	3.54%	1358.2	790.5	1421.3	802.5	63.1	4.65%
				805.5	-15.6	2.74%	893.2	793.5	924.0	793.5	30.8	3.45%	1399.1	793.5	1461.6	793.5	62.5	4.47%
				718.5	-3.4	38.64%	15.2	763.5	16.4	778.5	1.2	7.89%	27.8	778.5	31.1	778.5	3.3	11.87%
				718.5	-1.6	7.66%	40.1	754.5	37.8	754.5	-2.3	5.74%	71.8	748.5	68.0	754.5	-3.8	5.29%
				718.5	19.1	71.54%	53.6	718.5	110.7	718.5	57.1	106.53%	96.0	718.5	185.4	718.5	89.4	93.13%
				748.5	0.3	4.92%	12.8	763.5	16.0	778.5	3.2	25.00%	22.9	778.5	30.4	778.5	7.5	32.75%
				718.5	22.0	49.11%	98.0	718.5	155.5	718.5	57.5	58.67%	164.2	718.5	265.6	718.5	101.4	61.75%
				724.5	21.5	34.51%	134.0	724.5	191.6	724.5	57.6	42.99%	232.3	724.5	333.8	724.5	101.5	43.69%
				724.5	18.4	22.12%	172.9	754.5	226.9	724.5	54.0	31.23%	303.5	748.5	397.3	724.5	93.8	30.91%
				727.5	14.1	13.60%	197.9	751.5	253.2	727.5	55.3	27.94%	345.2	751.5	439.0	727.5	93.8	27.17%
				805.5	-1.8	0.28%	1064.5	793.5	1129.1	793.5	64.6	6.07%	1696.0	787.5	1802.4	793.5	106.4	6.27%
				766.5	0.9	0.14%	1077.5	799.5	1146.1	799.5	68.6	6.37%	1726.9	793.5	1833.0	799.5	106.1	6.14%

ROARING6 WATERSHED PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	WTRSHED PEAK	WTRSHED TIME	RUNOFF PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	WTRSHED TIME	RUNOFF PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	WTRSHED TIME	RUNOFF PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTING
1	45.2	778.5	45.2	778.5	0.0	0.00%	62.4	778.5	62.4	778.5	0.0	0.00%	90.3	778.5	90.3	778.5	0.0	0.00%
2	64.1	778.5	64.1	778.5	0.0	0.00%	88.6	778.5	88.6	778.5	0.0	0.00%	128.4	778.5	128.4	778.5	0.0	0.00%
3	113.6	769.5	113.6	769.5	0.0	0.00%	158.1	769.5	158.1	769.5	0.0	0.00%	224.9	769.5	224.9	769.5	0.0	0.00%
4	132.7	772.5	132.7	772.5	0.0	0.00%	187.6	772.5	187.6	772.5	0.0	0.00%	266.5	772.5	266.5	772.5	0.0	0.00%
5	171.9	757.5	171.9	757.5	0.0	0.00%	244.5	757.5	244.5	757.5	0.0	0.00%	342.9	748.5	342.9	748.5	0.0	0.00%
6	130.9	718.5	130.9	718.5	0.0	0.00%	172.9	718.5	172.9	718.5	0.0	0.00%	243.6	718.5	243.6	718.5	0.0	0.00%
7	181.3	727.5	181.3	727.5	0.0	0.00%	239.5	727.5	239.5	727.5	0.0	0.00%	333.9	742.5	333.9	742.5	0.0	0.00%
8	393.9	748.5	393.9	748.5	0.0	0.00%	538.9	748.5	538.9	748.5	0.0	0.00%	761.2	751.5	761.2	751.5	0.0	0.00%
9	32.8	778.5	32.8	778.5	0.0	0.00%	51.8	778.5	51.8	778.5	0.0	0.00%	74.4	778.5	74.4	778.5	0.0	0.00%
10	75.6	760.5	77.7	775.5	2.1	2.78%	109.6	775.5	115.1	763.5	5.5	5.02%	155.6	760.5	162.3	760.5	6.7	4.31%
11	109.0	778.5	110.9	778.5	1.9	1.74%	154.6	778.5	160.3	778.5	5.7	3.69%	218.9	778.5	225.6	778.5	6.7	3.06%
12	497.9	763.5	499.5	763.5	1.6	0.32%	686.2	748.5	692.0	748.5	5.8	0.85%	967.1	751.5	974.3	751.5	7.2	0.74%
13	16.4	952.5	16.4	952.5	0.0	0.00%	22.3	970.5	22.3	970.5	0.0	0.00%	30.7	973.5	30.7	973.5	0.0	0.00%
14	526.4	811.5	527.9	811.5	1.5	0.28%	723.8	796.5	729.6	796.5	5.8	0.80%	1022.1	799.5	1029.3	799.5	7.2	0.70%
15	31.5	778.5	37.3	778.5	5.8	18.41%	43.9	778.5	52.1	763.5	8.2	18.68%	61.6	763.5	71.5	763.5	9.9	16.07%
16	579.9	808.5	586.8	808.5	6.9	1.19%	791.2	829.5	804.3	829.5	13.1	1.66%	1117.4	832.5	1132.8	832.5	15.4	1.38%
17	48.2	748.5	48.2	748.5	0.0	0.00%	64.6	748.5	64.6	748.5	0.0	0.00%	92.2	718.5	92.2	718.5	0.0	0.00%
18	142.2	763.5	146.4	763.5	4.2	2.95%	191.5	763.5	203.8	763.5	12.3	6.42%	270.9	739.5	286.2	739.5	15.3	5.65%
19	264.6	790.5	267.6	790.5	3.0	1.13%	352.3	790.5	364.9	790.5	12.6	3.58%	481.5	790.5	496.8	790.5	15.3	3.18%
20	328.9	802.5	332.0	802.5	3.1	0.94%	448.1	802.5	460.7	802.5	12.6	2.81%	608.0	802.5	623.3	802.5	15.3	2.52%
21	77.2	748.5	97.7	718.5	20.5	26.55%	102.1	718.5	129.3	718.5	27.2	26.64%	138.8	718.5	170.6	718.5	31.8	22.91%
22	102.5	718.5	120.8	718.5	18.3	17.85%	143.5	718.5	171.4	718.5	27.9	19.44%	203.9	718.5	241.0	718.5	37.1	18.20%
23	234.4	751.5	271.3	751.5	36.9	15.74%	316.6	751.5	369.9	721.5	53.3	16.84%	441.1	721.5	508.5	721.5	67.4	15.28%
24	62.9	778.5	62.9	778.5	0.0	0.00%	85.6	778.5	85.6	778.5	0.0	0.00%	116.3	763.5	116.3	763.5	0.0	0.00%
25	33.8	778.5	41.4	778.5	7.6	22.49%	53.3	778.5	57.1	778.5	3.8	7.13%	76.5	778.5	82.5	778.5	6.0	7.84%
26	96.6	778.5	104.2	778.5	7.6	7.87%	138.9	778.5	142.7	778.5	3.8	2.74%	192.1	763.5	198.1	778.5	6.0	3.12%
27	166.4	757.5	174.1	757.5	7.7	4.63%	233.1	757.5	236.3	757.5	3.2	1.37%	332.9	757.5	338.6	757.5	5.7	1.71%
28	7.0	778.5	6.7	763.5	-0.3	4.29%	9.8	793.5	9.3	778.5	-0.5	5.10%	15.4	808.5	13.4	793.5	-2.0	12.99%
29	406.0	751.5	450.2	751.5	44.2	10.89%	556.3	751.5	606.8	748.5	50.5	9.08%	774.6	751.5	832.4	751.5	57.8	7.46%
30	759.9	784.5	801.4	784.5	41.5	5.46%	1033.4	784.5	1105.5	784.5	72.1	6.98%	1425.7	784.5	1493.1	784.5	67.4	4.73%
31	759.9	784.5	801.4	784.5	41.5	5.46%	1033.4	784.5	1105.5	784.5	72.1	6.98%	1425.7	784.5	1493.1	784.5	67.4	4.73%
32	36.8	763.5	48.2	763.5	11.4	30.98%	52.6	763.5	66.6	763.5	14.0	26.62%	73.8	748.5	92.4	748.5	18.6	25.20%
33	1353.5	808.5	1415.0	808.5	61.5	4.54%	1821.9	805.5	1906.2	802.5	84.3	4.63%	2453.8	835.5	2540.2	835.5	86.4	3.52%
				811.5	61.9	4.55%	1836.5	808.5	1919.9	805.5	83.4	4.54%	2467.3	838.5	2551.9	838.5	84.6	3.43%
				718.5	0.0	0.00%	167.1	718.5	167.1	718.5	0.0	0.00%	231.2	718.5	231.2	718.5	0.0	0.00%
				718.5	0.0	0.00%	187.3	718.5	187.3	718.5	0.0	0.00%	265.7	718.5	265.7	718.5	0.0	0.00%
				718.5	-18.2	10.06%	250.5	718.5	230.8	718.5	-19.7	7.86%	348.5	718.5	323.4	718.5	-25.1	7.20%
				718.5	-18.2	4.17%	604.9	718.5	585.2	718.5	-19.7	3.26%	845.4	718.5	820.3	718.5	-25.1	2.97%
				718.5	0.0	0.00%	105.0	718.5	105.0	718.5	0.0	0.00%	149.8	718.5	149.8	718.5	0.0	0.00%
				724.5	-7.9	1.28%	854.3	724.5	848.1	724.5	-6.2	0.73%	1180.4	742.5	1158.3	742.5	-22.1	1.87%
				799.5	61.5	3.45%	2374.3	802.5	2472.1	802.5	97.8	4.12%	3044.8	796.5	3140.5	796.5	95.7	3.14%
				802.5	59.4	3.30%	2401.4	805.5	2496.9	805.5	95.5	3.98%	3070.9	799.5	3176.2	805.5	105.3	3.43%
				805.5	59.4	3.21%	2462.9	808.5	2558.4	808.5	95.5	3.88%	3154.7	802.5	3256.1	808.5	101.4	3.21%
				778.5	3.1	8.01%	53.8	763.5	58.3	763.5	4.5	8.36%	74.5	763.5	80.0	763.5	5.5	7.38%
				748.5	-6.2	6.33%	132.7	748.5	126.5	748.5	-6.2	4.67%	184.5	724.5	173.2	724.5	-11.3	6.12%
				718.5	109.1	82.71%	180.4	718.5	314.8	718.5	134.4	74.50%	251.0	718.5	405.6	718.5	154.6	61.59%
				778.5	10.0	31.45%	44.5	778.5	56.8	778.5	12.3	27.64%	62.3	763.5	77.9	763.5	15.6	25.04%
				718.5	125.0	55.98%	306.6	718.5	465.8	718.5	159.2	51.92%	429.2	718.5	618.0	718.5	188.8	43.99%
				724.5	124.9	39.24%	437.2	724.5	596.4	724.5	159.2	36.41%	611.8	724.5	800.7	724.5	188.9	30.88%
				724.5	117.6	28.49%	568.4	724.5	719.3	724.5	150.9	26.55%	796.3	724.5	973.9	724.5	177.6	22.30%
				727.5	111.7	23.77%	645.1	727.5	790.5	727.5	145.4	22.54%	902.7	727.5	1072.7	727.5	170.0	18.83%
				805.5	101.0	4.56%	2930.9	808.5	3071.8	808.5	140.9	4.81%	3939.5	757.5	4091.0	757.5	151.5	3.85%
				811.5	104.3	4.64%	2975.8	814.5	3122.6	814.5	146.8	4.93%	4018.8	790.5	4180.6	781.5	161.8	4.03%

ROARING6 WATERSHED PEAK FLOWS

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	WTRSHED RUNOFF		WTRSHED RUNOFF		CHANGE IN FLOW	% OF EXISTIN	WTRSHED RUNOFF		WTRSHED RUNOFF		CHANGE IN FLOW	% OF EXISTIN	WTRSHED RUNOFF		WTRSHED RUNOFF		CHANGE IN FLOW	% OF EXISTIN
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
54	24.7	709.5	24.7	709.5	0.0	0.00%	39.7	763.5	39.7	763.5	0.0	0.00%	70.9	763.5	70.9	763.5	0.0	0.00%
55	11.4	712.5	7.2	712.5	-4.2	36.84%	13.8	748.5	14.4	763.5	0.6	4.35%	24.2	763.5	25.4	763.5	1.2	4.96%
56	16.7	889.5	16.1	892.5	-0.6	3.59%	48.3	943.5	49.4	943.5	1.1	2.28%	98.6	931.5	99.9	931.5	1.3	1.32%
57	24.6	808.5	25.8	808.5	1.2	4.88%	65.1	904.5	69.3	898.5	4.2	6.45%	131.2	889.5	135.7	889.5	4.5	3.43%
58	46.1	712.5	47.3	712.5	1.2	2.60%	85.0	784.5	92.2	784.5	7.2	8.47%	161.7	844.5	170.2	844.5	8.5	5.26%
59	0.3	895.5	0.3	931.5	0.0	0.00%	1.2	1075.5	1.7	1195.5	0.5	41.67%	3.1	1294.5	4.3	1438.5	1.2	38.71%
60	11.5	712.5	9.0	718.5	-2.5	21.74%	24.4	763.5	28.3	778.5	3.9	15.98%	44.0	778.5	53.8	778.5	9.8	22.27%
61	27.9	721.5	28.4	718.5	0.5	1.79%	66.1	763.5	75.7	772.5	9.6	14.52%	118.5	766.5	134.6	766.5	16.1	13.59%
62	57.3	712.5	54.7	724.5	-2.6	4.54%	103.9	748.5	118.5	763.5	14.6	14.05%	179.2	754.5	207.0	757.5	27.8	15.51%
63	4.2	826.5	5.5	838.5	1.3	30.95%	11.2	886.5	12.4	898.5	1.2	10.71%	22.8	928.5	24.9	940.5	2.1	9.21%
64	14.7	778.5	15.6	793.5	0.9	6.12%	38.5	808.5	39.1	823.5	0.6	1.56%	69.1	823.5	70.0	823.5	0.9	1.30%
65	15.2	712.5	15.2	712.5	0.0	0.00%	19.3	763.5	19.3	763.5	0.0	0.00%	34.8	778.5	34.8	778.5	0.0	0.00%
66	26.0	718.5	23.4	718.5	-2.6	10.00%	42.0	754.5	40.5	754.5	-1.5	3.57%	74.5	763.5	71.6	763.5	-2.9	3.89%
67	37.3	718.5	34.6	718.5	-2.7	7.24%	78.1	778.5	76.8	778.5	-1.3	1.66%	139.7	778.5	137.4	793.5	-2.3	1.65%
68	63.3	730.5	60.6	730.5	-2.7	4.27%	143.7	775.5	142.4	775.5	-1.3	0.90%	249.9	775.5	247.4	775.5	-2.5	1.00%
69	77.4	736.5	73.0	736.5	-4.4	5.68%	172.4	769.5	175.7	769.5	3.3	1.91%	299.6	766.5	306.7	766.5	7.1	2.37%
70	83.6	736.5	82.4	736.5	-1.2	1.44%	187.4	766.5	195.4	766.5	8.0	4.27%	325.0	766.5	338.8	751.5	13.8	4.25%
71	133.8	736.5	133.8	736.5	0.0	0.00%	289.9	763.5	313.5	763.5	23.6	8.14%	503.0	766.5	544.7	763.5	41.7	8.29%
72	144.9	736.5	144.8	736.5	-0.1	0.07%	316.0	763.5	339.7	763.5	23.7	7.50%	547.0	751.5	589.1	751.5	42.1	7.70%
73	778.6	760.5	821.0	766.5	42.4	5.45%	1452.7	799.5	1554.1	799.5	101.4	6.98%	2395.2	793.5	2549.6	793.5	154.4	6.45%
74	799.7	763.5	841.5	769.5	41.8	5.23%	1499.0	802.5	1600.4	802.5	101.4	6.76%	2479.9	796.5	2634.3	796.5	154.4	6.23%
75	808.1	769.5	849.4	775.5	41.3	5.11%	1516.6	808.5	1618.0	808.5	101.4	6.69%	2512.3	802.5	2666.7	802.5	154.4	6.15%
76	827.1	769.5	874.0	775.5	46.9	5.67%	1561.0	808.5	1666.7	808.5	105.7	6.77%	2591.2	802.5	2751.4	802.5	160.2	6.18%
77	7.4	712.5	10.6	712.5	3.2	43.24%	15.6	763.5	14.3	748.5	-1.3	8.33%	28.1	778.5	25.1	763.5	-3.0	10.68%
78	23.8	748.5	23.6	718.5	-0.2	0.84%	60.0	763.5	50.7	763.5	-9.3	15.50%	104.4	763.5	89.4	763.5	-15.0	14.37%
79	9.5	712.5	9.5	712.5	0.0	0.00%	11.5	748.5	11.5	748.5	0.0	0.00%	20.2	763.5	20.2	763.5	0.0	0.00%
80	5.2	1120.5	3.8	1024.5	-1.4	26.92%	16.3	1234.5	12.7	1174.5	-3.6	22.09%	29.7	1288.5	24.9	1246.5	-4.8	16.16%
81	26.0	793.5	23.1	778.5	-2.9	11.15%	66.0	793.5	59.1	793.5	-6.9	10.45%	112.0	778.5	102.1	778.5	-9.9	8.84%
82	64.8	712.5	85.1	715.5	20.3	31.33%	108.1	727.5	90.6	727.5	-17.5	16.19%	181.7	727.5	157.4	727.5	-24.3	13.37%
83	83.6	712.5	104.8	715.5	21.2	25.36%	148.0	727.5	131.6	748.5	-16.4	11.08%	255.0	727.5	230.7	727.5	-24.3	9.53%
84	896.8	775.5	943.5	781.5	46.7	5.21%	1684.3	814.5	1781.5	814.5	97.2	5.77%	2812.9	808.5	2961.1	766.5	148.2	5.27%
85	10.6	748.5	11.5	763.5	0.9	8.49%	26.3	778.5	30.5	778.5	4.2	15.97%	49.9	778.5	54.7	778.5	4.8	9.62%
86	26.4	715.5	26.4	715.5	0.0	0.00%	34.3	709.5	34.3	709.5	0.0	0.00%	36.5	718.5	36.5	718.5	0.0	0.00%
			)	781.5	46.0	4.89%	1758.2	775.5	1855.4	775.5	97.2	5.53%	2923.3	808.5	3092.2	766.5	168.9	5.78%
			)	763.5	2.2	22.68%	25.1	778.5	30.7	778.5	5.6	22.31%	44.6	763.5	53.6	763.5	9.0	20.18%
			3	709.5	4.2	63.64%	19.4	763.5	18.0	763.5	-1.4	7.22%	36.4	763.5	32.5	763.5	-3.9	10.71%
			1	712.5	0.0	0.00%	36.1	718.5	36.1	718.5	0.0	0.00%	61.7	748.5	61.7	748.5	0.0	0.00%
			1	718.5	0.0	0.00%	17.6	709.5	17.6	709.5	0.0	0.00%	21.1	718.5	21.1	718.5	0.0	0.00%
			5	718.5	0.0	0.00%	90.0	718.5	90.0	718.5	0.0	0.00%	129.9	718.5	129.9	718.5	0.0	0.00%
			)	712.5	-5.5	29.73%	24.5	718.5	25.3	748.5	0.8	3.27%	40.2	748.5	44.2	763.5	4.0	9.95%
			4	718.5	-0.9	2.08%	82.4	718.5	93.1	718.5	10.7	12.99%	138.2	718.5	159.7	718.5	21.5	15.56%
			9	712.5	9.8	57.31%	32.0	718.5	31.6	718.5	-0.4	1.25%	52.8	748.5	51.2	718.5	-1.6	3.03%
			4	718.5	6.9	4.81%	240.4	718.5	250.6	718.5	10.2	4.24%	368.9	718.5	388.8	718.5	19.9	5.39%
			5	712.5	0.0	0.00%	53.1	718.5	53.1	718.5	0.0	0.00%	85.6	718.5	85.6	718.5	0.0	0.00%
			0	721.5	3.2	1.69%	302.9	721.5	314.0	721.5	11.1	3.66%	472.9	721.5	496.8	721.5	23.9	5.05%
			9	721.5	6.4	2.98%	349.2	721.5	359.6	721.5	10.4	2.98%	542.5	721.5	563.0	721.5	20.5	3.78%
			3	775.5	54.4	4.87%	2113.1	763.5	2225.5	775.5	112.4	5.32%	3488.5	769.5	3705.3	766.5	216.8	6.21%
			6	949.5	0.6	60.00%	2.8	949.5	5.1	1081.5	2.3	82.14%	5.7	1015.5	9.5	1114.5	3.8	66.67%
			7	712.5	-12.9	36.24%	41.5	718.5	42.0	718.5	0.5	1.20%	67.2	718.5	69.4	748.5	2.2	3.27%
			0	778.5	42.3	3.67%	2175.1	766.5	2291.8	778.5	116.7	5.37%	3590.9	772.5	3823.2	769.5	232.3	6.47%
			0	763.5	0.0	0.00%	16.2	793.5	16.2	793.5	0.0	0.00%	29.4	793.5	29.4	793.5	0.0	0.00%
			9	763.5	46.9	4.00%	2234.5	766.5	2354.3	766.5	119.8	5.36%	3698.4	772.5	3937.1	769.5	238.7	6.45%
			2	769.5	48.9	4.15%	2249.3	772.5	2372.9	784.5	123.6	5.50%	3725.5	778.5	3973.1	775.5	247.6	6.65%

ROARING6 WATERSHED PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTING
54	97.8	763.5	97.8	763.5	0.0	0.00%	135.6	748.5	135.6	748.5	0.0	0.00%	187.6	748.5	187.6	748.5	0.0	0.00%
55	32.8	763.5	35.1	763.5	2.3	7.01%	45.6	763.5	48.7	763.5	3.1	6.80%	63.4	763.5	68.1	748.5	4.7	7.41%
56	135.2	922.5	137.1	925.5	1.9	1.41%	187.8	907.5	190.3	907.5	2.5	1.33%	257.8	892.5	261.0	892.5	3.2	1.24%
57	178.8	883.5	184.1	880.5	5.3	2.96%	245.1	880.5	251.3	880.5	6.2	2.53%	335.5	862.5	342.9	862.5	7.4	2.21%
58	222.5	838.5	234.0	829.5	11.5	5.17%	304.8	829.5	317.7	823.5	12.9	4.23%	416.6	847.5	431.3	838.5	14.7	3.53%
59	4.9	1438.5	6.7	1438.5	1.8	36.73%	7.8	1438.5	9.8	1438.5	2.0	25.64%	11.6	1438.5	13.8	1438.5	2.2	18.97%
60	61.1	778.5	72.6	778.5	11.5	18.82%	85.5	778.5	101.6	778.5	16.1	18.83%	120.1	778.5	139.0	778.5	18.9	15.74%
61	161.5	766.5	180.3	766.5	18.8	11.64%	220.0	763.5	246.6	763.5	26.6	12.09%	300.8	751.5	334.4	736.5	33.6	11.17%
62	238.3	754.5	279.5	742.5	41.2	17.29%	330.5	742.5	385.3	742.5	54.8	16.58%	455.8	742.5	509.9	757.5	54.1	11.87%
63	31.0	949.5	35.2	952.5	4.2	13.55%	45.6	955.5	50.0	958.5	4.4	9.65%	64.5	955.5	69.4	958.5	4.9	7.60%
64	91.0	823.5	93.7	823.5	2.7	2.97%	123.6	808.5	126.5	823.5	2.9	2.35%	166.1	808.5	169.1	808.5	3.0	1.81%
65	47.8	778.5	47.8	778.5	0.0	0.00%	67.3	778.5	67.3	778.5	0.0	0.00%	94.3	778.5	94.3	778.5	0.0	0.00%
66	100.3	763.5	95.6	763.5	-4.7	4.69%	136.4	763.5	132.0	763.5	-4.4	3.23%	187.8	733.5	180.4	763.5	-7.4	3.94%
67	186.9	778.5	184.3	778.5	-2.6	1.39%	254.8	778.5	252.4	778.5	-2.4	0.94%	345.9	763.5	341.9	778.5	-4.0	1.16%
68	331.7	760.5	327.5	760.5	-4.2	1.27%	446.8	760.5	443.2	760.5	-3.6	0.81%	610.2	745.5	603.0	745.5	-7.2	1.18%
69	399.7	766.5	406.3	766.5	6.6	1.65%	542.9	751.5	554.2	751.5	11.3	2.08%	741.0	751.5	752.9	751.5	11.9	1.61%
70	434.4	751.5	450.1	751.5	15.7	3.61%	590.1	751.5	611.4	751.5	21.3	3.61%	802.6	751.5	825.5	751.5	22.9	2.85%
71	671.2	751.5	727.1	751.5	55.9	8.33%	916.4	751.5	989.9	751.5	73.5	8.02%	1250.2	751.5	1316.5	757.5	66.3	5.30%
72	729.3	751.5	785.2	751.5	55.9	7.66%	991.6	751.5	1065.2	751.5	73.6	7.42%	1347.3	751.5	1408.9	757.5	61.6	4.57%
73	3116.7	799.5	3283.8	799.5	167.1	5.36%	4138.0	778.5	4364.2	778.5	226.2	5.47%	5622.8	781.5	5910.8	781.5	288.0	5.12%
74	3226.0	802.5	3393.1	802.5	167.1	5.18%	4293.8	781.5	4529.0	751.5	235.2	5.48%	5823.3	784.5	6111.3	784.5	288.0	4.95%
75	3267.9	808.5	3435.0	808.5	167.1	5.11%	4346.9	814.5	4592.1	784.5	245.2	5.64%	5891.4	817.5	6179.4	817.5	288.0	4.89%
76	3370.0	796.5	3547.0	796.5	177.0	5.25%	4483.1	784.5	4747.0	784.5	263.9	5.89%	6034.9	817.5	6329.8	817.5	294.9	4.89%
77	39.1	778.5	32.4	778.5	-6.7	17.14%	54.7	778.5	46.9	778.5	-7.8	14.26%	76.7	778.5	66.5	778.5	-10.2	13.30%
78	140.5	748.5	118.2	748.5	-22.3	15.87%	189.2	748.5	163.6	748.5	-25.6	13.53%	262.7	718.5	224.7	718.5	-38.0	14.47%
79	27.4	763.5	27.4	763.5	0.0	0.00%	38.2	763.5	38.2	763.5	0.0	0.00%	53.2	763.5	53.2	763.5	0.0	0.00%
80	39.5	1309.5	33.8	1279.5	-5.7	14.43%	52.0	1321.5	45.9	1300.5	-6.1	11.73%	61.0	1369.5	57.7	1330.5	-3.3	5.41%
81	145.8	763.5	134.9	763.5	-10.9	7.48%	193.7	748.5	179.1	763.5	-14.6	7.54%	257.2	718.5	238.7	748.5	-18.5	7.19%
82	235.1	727.5	220.7	727.5	-14.4	6.13%	322.7	727.5	295.8	727.5	-26.9	8.34%	431.2	727.5	407.2	727.5	-24.0	5.57%
83	334.6	727.5	320.2	727.5	-14.4	4.30%	458.7	727.5	431.8	727.5	-26.9	5.86%	618.1	727.5	594.1	727.5	-24.0	3.88%
84	3664.2	802.5	3873.4	763.5	209.2	5.71%	4824.2	823.5	5077.2	823.5	253.0	5.24%	6423.4	826.5	6681.5	856.5	258.1	4.02%
85	68.5	778.5	74.0	778.5	5.5	8.03%	93.2	763.5	100.7	763.5	7.5	8.05%	127.7	763.5	136.7	763.5	9.0	7.05%
86	46.0	748.5	46.0	748.5	0.0	0.00%	71.3	748.5	71.3	748.5	0.0	0.00%	100.2	748.5	100.2	748.5	0.0	0.00%
				763.5	223.6	5.86%	5004.4	823.5	5263.8	823.5	259.4	5.18%	6655.9	826.5	6892.5	856.5	236.6	3.55%
				763.5	11.0	18.21%	82.1	748.5	95.7	748.5	13.6	16.57%	112.0	748.5	128.4	718.5	16.4	14.64%
				763.5	-3.5	7.19%	67.8	763.5	62.6	763.5	-5.2	7.67%	93.2	748.5	86.7	748.5	-6.5	6.97%
				748.5	0.0	0.00%	116.6	748.5	116.6	748.5	0.0	0.00%	165.7	718.5	165.7	718.5	0.0	0.00%
				763.5	0.0	0.00%	41.7	763.5	41.7	763.5	0.0	0.00%	55.6	763.5	55.6	763.5	0.0	0.00%
				718.5	0.0	0.00%	220.9	718.5	220.9	718.5	0.0	0.00%	294.5	718.5	294.5	718.5	0.0	0.00%
				763.5	9.8	19.25%	72.5	763.5	83.8	763.5	11.3	15.59%	102.0	748.5	117.7	748.5	15.7	15.39%
				718.5	35.7	19.68%	253.1	718.5	296.0	718.5	42.9	16.95%	351.2	718.5	408.9	718.5	57.7	16.43%
				718.5	-3.9	5.40%	101.1	718.5	94.6	718.5	-6.5	6.43%	143.7	718.5	132.8	718.5	-10.9	7.59%
				718.5	31.8	6.71%	641.0	718.5	677.4	718.5	36.4	5.68%	867.7	718.5	914.6	718.5	46.9	5.41%
				718.5	0.0	0.00%	156.8	718.5	156.8	718.5	0.0	0.00%	218.8	718.5	218.8	718.5	0.0	0.00%
				721.5	35.2	5.72%	838.9	721.5	881.2	721.5	42.3	5.04%	1156.5	727.5	1211.2	727.5	54.7	4.73%
				721.5	32.3	4.60%	950.5	721.5	987.8	721.5	37.3	3.92%	1301.3	727.5	1349.4	727.5	48.1	3.70%
				763.5	258.2	5.64%	5782.0	823.5	6067.6	823.5	285.6	4.94%	7640.7	826.5	7805.6	817.5	164.9	2.16%
				1120.5	4.9	64.47%	10.9	1078.5	16.2	1120.5	5.3	48.62%	15.0	1090.5	20.9	1114.5	5.9	39.33%
				718.5	5.3	5.92%	123.8	718.5	132.6	718.5	8.8	7.11%	173.5	718.5	188.0	718.5	14.5	8.36%
				766.5	276.8	5.87%	5913.0	826.5	6215.9	826.5	302.9	5.12%	7807.9	829.5	8002.9	820.5	195.0	2.50%
				778.5	0.0	0.00%	54.3	778.5	54.3	778.5	0.0	0.00%	73.7	763.5	73.7	763.5	0.0	0.00%
				766.5	287.0	5.90%	6076.8	826.5	6386.9	826.5	310.1	5.10%	8018.5	829.5	8230.2	820.5	211.7	2.64%
				772.5	299.0	6.10%	6128.4	832.5	6452.9	832.5	324.5	5.30%	8090.2	835.5	8320.1	826.5	229.9	2.84%

ROARING6 WATERSHED PEAK FLOWS

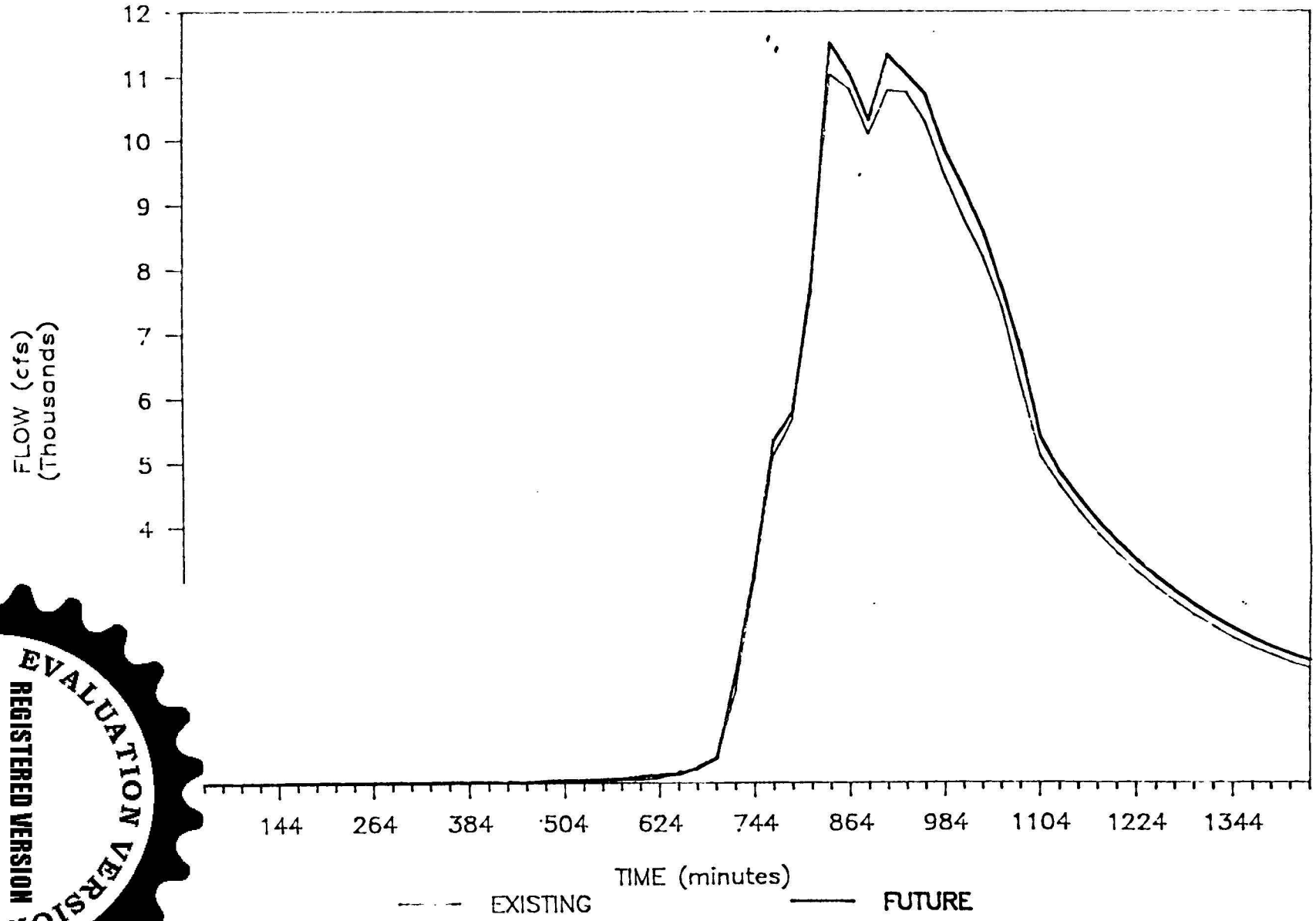
SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN
107	1184.2	769.5	1235.1	769.5	50.9	4.30%	2265.9	772.5	2390.7	784.5	124.8	5.51%	3755.8	778.5	4006.1	775.5	250.3	6.66%
108	1191.9	778.5	1242.8	778.5	50.9	4.27%	2275.4	781.5	2400.1	781.5	124.7	5.48%	3770.7	787.5	4021.4	784.5	250.7	6.65%
109	1199.3	784.5	1253.1	784.5	53.8	4.49%	2294.3	787.5	2414.6	787.5	120.3	5.24%	3804.4	793.5	4049.4	790.5	245.0	6.44%
110	6.5	778.5	9.5	808.5	3.0	46.15%	18.0	808.5	25.1	808.5	7.1	39.44%	32.7	808.5	42.6	808.5	9.9	30.28%
111	15.0	763.5	16.9	778.5	1.9	12.67%	40.5	793.5	44.3	793.5	3.8	9.38%	72.9	793.5	79.4	793.5	6.5	8.92%
112	33.9	748.5	43.6	718.5	9.7	28.61%	92.6	760.5	92.0	760.5	-0.6	0.65%	165.8	757.5	163.2	760.5	-2.6	1.57%
113	42.5	712.5	42.5	712.5	0.0	0.00%	53.9	718.5	53.9	718.5	0.0	0.00%	84.8	718.5	84.8	718.5	0.0	0.00%
114	57.2	715.5	57.2	715.5	0.0	0.00%	81.9	721.5	81.9	721.5	0.0	0.00%	135.8	721.5	135.8	721.5	0.0	0.00%
115	88.3	715.5	100.1	715.5	11.8	13.36%	166.9	748.5	166.2	748.5	-0.7	0.42%	291.1	748.5	287.7	748.5	-3.4	1.17%
116	105.9	718.5	117.7	718.5	11.8	11.14%	179.9	751.5	179.2	751.5	-0.7	0.39%	314.0	751.5	310.7	751.5	-3.3	1.05%
117	136.3	721.5	148.0	721.5	11.7	8.58%	206.4	754.5	205.6	754.5	-0.8	0.39%	361.7	754.5	358.3	754.5	-3.4	0.94%
118	164.6	724.5	176.3	724.5	11.7	7.11%	227.5	757.5	226.7	757.5	-0.8	0.35%	398.6	757.5	395.3	757.5	-3.3	0.83%
119	1295.6	784.5	1356.1	784.5	60.5	4.67%	2498.6	787.5	2618.3	787.5	119.7	4.79%	4161.7	787.5	4407.5	790.5	245.8	5.91%
120	1308.8	790.5	1369.3	790.5	60.5	4.62%	2515.9	793.5	2638.0	781.5	122.1	4.85%	4199.6	793.5	4444.4	796.5	244.8	5.83%
121	31.6	718.5	31.6	718.5	0.0	0.00%	29.1	709.5	29.1	709.5	0.0	0.00%	34.8	718.5	34.8	718.5	0.0	0.00%
122	1336.9	790.5	1397.4	790.5	60.5	4.53%	2557.2	781.5	2682.2	781.5	125.0	4.89%	4256.6	793.5	4499.8	796.5	243.2	5.71%
123	6.6	715.5	6.6	715.5	0.0	0.00%	5.3	718.5	5.3	718.5	0.0	0.00%	9.8	778.5	9.8	778.5	0.0	0.00%
124	1364.7	796.5	1425.2	796.5	60.5	4.43%	2589.6	787.5	2714.7	787.5	125.1	4.83%	4294.1	799.5	4535.8	802.5	241.7	5.63%
125	49.9	712.5	49.9	712.5	0.0	0.00%	58.8	706.5	58.8	706.5	0.0	0.00%	82.8	718.5	82.8	718.5	0.0	0.00%
126	1370.8	796.5	1431.3	796.5	60.5	4.41%	2610.9	787.5	2736.0	787.5	125.1	4.79%	4324.4	799.5	4564.9	802.5	240.5	5.56%
127	1381.6	814.5	1442.1	814.5	60.5	4.38%	2630.2	805.5	2755.2	805.5	125.0	4.75%	4361.3	817.5	4599.8	820.5	238.5	5.47%
128	1385.8	817.5	1446.3	817.5	60.5	4.37%	2645.3	808.5	2770.3	808.5	125.0	4.73%	4383.9	820.5	4621.7	823.5	237.8	5.42%
129	22.7	712.5	25.1	712.5	2.4	10.57%	29.9	718.5	29.9	718.5	0.0	0.00%	48.0	748.5	50.0	748.5	2.0	4.17%
130	9.7	712.5	10.1	718.5	0.4	4.12%	19.8	763.5	24.7	778.5	4.9	24.75%	35.4	778.5	46.8	778.5	11.4	32.20%
131	58.1	718.5	63.4	715.5	5.3	9.12%	79.3	748.5	83.7	748.5	4.4	5.55%	133.9	748.5	145.0	760.5	11.1	8.29%
132	80.0	724.5	84.0	721.5	4.0	5.00%	127.4	748.5	125.5	748.5	-1.9	1.49%	212.1	745.5	217.0	745.5	4.9	2.31%
133	104.7	727.5	104.8	724.5	0.1	0.10%	163.1	748.5	159.9	748.5	-3.2	1.96%	272.6	748.5	275.2	748.5	2.6	0.95%
134	135.4	730.5	136.2	727.5	0.8	0.59%	214.2	748.5	210.7	748.5	-3.5	1.63%	356.9	748.5	359.2	748.5	2.3	0.64%
135	1438.2	811.5	1498.6	817.5	60.4	4.20%	2802.5	808.5	2929.0	808.5	126.5	4.51%	4641.0	820.5	4882.3	823.5	241.3	5.20%
136	1445.0	814.5	1506.8	820.5	61.8	4.28%	2818.2	811.5	2950.5	811.5	132.3	4.69%	4673.9	823.5	4917.2	826.5	243.3	5.21%
137	1450.3	823.5	1513.5	829.5	63.2	4.36%	2834.5	820.5	2973.5	820.5	139.0	4.90%	4710.1	832.5	4956.5	835.5	246.4	5.23%
138	1455.2	826.5	1520.1	832.5	64.9	4.46%	2852.9	823.5	2993.7	823.5	140.8	4.94%	4737.1	835.5	4984.9	838.5	247.8	5.23%
139	17.2	712.5	17.2	712.5	0.0	0.00%	23.3	748.5	23.3	748.5	0.0	0.00%	41.3	763.5	41.3	763.5	0.0	0.00%
			9	715.5	0.0	0.00%	43.3	748.5	43.3	748.5	0.0	0.00%	77.3	763.5	77.3	763.5	0.0	0.00%
			6	712.5	0.0	0.00%	19.6	748.5	19.6	748.5	0.0	0.00%	35.0	778.5	35.0	778.5	0.0	0.00%
			4	718.5	0.0	0.00%	57.8	718.5	57.8	718.5	0.0	0.00%	93.2	748.5	93.2	748.5	0.0	0.00%
			4	718.5	0.0	0.00%	99.5	718.5	99.5	718.5	0.0	0.00%	169.0	748.5	169.0	748.5	0.0	0.00%
			1	724.5	0.0	0.00%	134.7	724.5	134.7	724.5	0.0	0.00%	217.8	754.5	217.8	754.5	0.0	0.00%
			1	724.5	1.4	1.05%	145.6	724.5	145.7	724.5	0.1	0.07%	239.7	754.5	240.6	754.5	0.9	0.38%
			8	832.5	70.3	4.66%	2993.7	823.5	3147.3	823.5	153.6	5.13%	4975.5	835.5	5233.5	835.5	258.0	5.19%
			4	838.5	74.7	4.92%	3036.2	829.5	3194.5	829.5	158.3	5.21%	5048.9	841.5	5313.2	841.5	264.3	5.23%
			5	841.5	81.6	5.33%	3071.3	832.5	3244.7	832.5	173.4	5.65%	5111.0	844.5	5393.6	844.5	282.6	5.53%
			0	844.5	81.4	5.28%	3096.4	835.5	3269.9	835.5	173.5	5.60%	5145.5	847.5	5428.2	847.5	282.7	5.49%
			0	847.5	81.0	5.20%	3135.4	838.5	3308.8	838.5	173.4	5.53%	5204.2	850.5	5486.8	850.5	282.6	5.43%
			0	850.5	85.8	5.49%	3161.9	841.5	3342.5	841.5	180.6	5.71%	5246.4	853.5	5536.4	853.5	290.0	5.53%
			5	853.5	93.1	5.92%	3186.0	844.5	3381.6	844.5	195.6	6.14%	5290.0	856.5	5598.1	856.5	308.1	5.82%
			0	850.5	95.5	6.01%	3230.0	844.5	3429.5	847.5	199.5	6.18%	5354.8	859.5	5667.4	859.5	312.6	5.84%
			2	856.5	95.4	5.93%	3270.5	850.5	3469.4	853.5	198.9	6.08%	5408.3	865.5	5720.9	865.5	312.6	5.78%
			.2	856.5	94.7	5.87%	3284.7	850.5	3482.3	853.5	197.6	6.02%	5430.6	853.5	5741.2	865.5	310.6	5.72%
			.5	856.5	94.7	5.80%	3325.3	850.5	3522.4	853.5	197.1	5.93%	5489.9	853.5	5797.6	865.5	307.7	5.60%
			.1	856.5	95.2	5.82%	3330.4	850.5	3527.9	853.5	197.5	5.93%	5496.3	853.5	5803.8	865.5	307.5	5.59%

ROARING6 WATERSHED PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTING
107	4942.5	772.5	5245.7	772.5	303.2	6.13%	6185.1	832.5	6515.1	832.5	330.0	5.34%	8168.8	835.5	8406.2	826.5	237.4	2.91%
108	4963.0	781.5	5266.3	781.5	303.3	6.11%	6204.3	841.5	6534.3	841.5	330.0	5.32%	8194.0	844.5	8433.3	835.5	239.3	2.92%
109	5007.5	787.5	5308.4	787.5	300.9	6.01%	6252.1	847.5	6577.8	847.5	325.7	5.21%	8257.6	850.5	8495.3	841.5	237.7	2.88%
110	43.9	793.5	56.1	793.5	12.2	27.79%	59.4	793.5	73.7	778.5	14.3	24.07%	80.2	778.5	97.1	778.5	16.9	21.07%
111	98.2	778.5	106.5	778.5	8.3	8.45%	133.3	778.5	142.5	778.5	9.2	6.90%	180.5	763.5	191.5	763.5	11.0	6.09%
112	221.1	748.5	220.8	748.5	-0.3	0.14%	302.5	748.5	298.9	748.5	-3.6	1.19%	411.1	742.5	406.4	745.5	-4.7	1.14%
113	103.4	718.5	103.4	718.5	0.0	0.00%	146.9	718.5	146.9	718.5	0.0	0.00%	205.2	718.5	205.2	718.5	0.0	0.00%
114	172.7	721.5	172.7	721.5	0.0	0.00%	242.3	721.5	242.3	721.5	0.0	0.00%	336.3	721.5	336.3	721.5	0.0	0.00%
115	379.9	748.5	379.6	748.5	-0.3	0.08%	520.4	733.5	515.1	742.5	-5.3	1.02%	717.4	730.5	710.5	730.5	-6.9	0.96%
116	413.7	751.5	413.5	751.5	-0.2	0.05%	565.9	745.5	560.5	748.5	-5.4	0.95%	781.2	742.5	774.3	742.5	-6.9	0.88%
117	484.9	754.5	484.6	754.5	-0.3	0.06%	662.4	748.5	656.6	748.5	-5.8	0.88%	917.3	745.5	910.4	745.5	-6.9	0.75%
118	538.7	751.5	538.1	751.5	-0.6	0.11%	734.1	751.5	728.3	751.5	-5.8	0.79%	1017.0	748.5	1010.2	748.5	-6.8	0.67%
119	5496.5	787.5	5798.6	787.5	302.1	5.50%	6809.5	772.5	7056.7	847.5	247.2	3.63%	8877.6	847.5	9164.4	835.5	286.8	3.23%
120	5546.8	793.5	5848.9	793.5	302.1	5.45%	6884.2	778.5	7104.4	853.5	220.2	3.20%	8948.5	853.5	9241.0	841.5	292.5	3.27%
121	43.1	748.5	43.1	748.5	0.0	0.00%	67.1	748.5	67.1	748.5	0.0	0.00%	88.7	763.5	88.7	763.5	0.0	0.00%
122	5628.4	793.5	5930.5	793.5	302.1	5.37%	7014.6	778.5	7180.0	853.5	165.4	2.36%	9055.7	853.5	9357.4	841.5	301.7	3.33%
123	15.0	778.5	15.0	778.5	0.0	0.00%	20.7	778.5	20.7	778.5	0.0	0.00%	30.1	778.5	30.1	778.5	0.0	0.00%
124	5678.6	799.5	5980.6	799.5	302.0	5.32%	7095.2	784.5	7222.2	859.5	127.0	1.79%	9122.0	859.5	9430.3	847.5	308.3	3.38%
125	100.9	718.5	100.9	718.5	0.0	0.00%	139.3	718.5	139.3	718.5	0.0	0.00%	189.9	718.5	189.9	718.5	0.0	0.00%
126	5717.2	799.5	6019.3	799.5	302.1	5.28%	7155.1	784.5	7260.7	781.5	105.6	1.48%	9154.1	859.5	9466.5	847.5	312.4	3.41%
127	5766.8	817.5	6068.9	817.5	302.1	5.24%	7239.7	802.5	7348.3	799.5	108.6	1.50%	9204.5	877.5	9524.2	865.5	319.7	3.47%
128	5796.2	820.5	6098.2	820.5	302.0	5.21%	7283.7	805.5	7393.8	802.5	110.1	1.51%	9230.3	880.5	9552.8	868.5	322.5	3.49%
129	60.3	748.5	67.2	748.5	6.9	11.44%	85.9	748.5	92.8	748.5	6.9	8.03%	120.3	748.5	128.8	748.5	8.5	7.07%
130	49.0	778.5	64.1	778.5	15.1	30.82%	68.2	778.5	87.3	763.5	19.1	28.01%	95.8	763.5	119.5	763.5	23.7	24.74%
131	174.3	751.5	195.9	751.5	21.6	12.39%	241.7	751.5	267.9	751.5	26.2	10.84%	333.4	748.5	366.9	748.5	33.5	10.05%
132	276.5	739.5	289.3	736.5	12.8	4.63%	368.0	748.5	385.4	748.5	17.4	4.73%	497.6	748.5	523.4	748.5	25.8	5.18%
133	356.2	742.5	360.4	739.5	4.2	1.18%	471.8	757.5	484.6	757.5	12.8	2.71%	641.9	757.5	659.7	757.5	17.8	2.77%
134	461.6	745.5	465.5	742.5	3.9	0.84%	613.7	751.5	618.6	766.5	4.9	0.80%	821.9	763.5	838.3	766.5	16.4	2.00%
135	6133.9	820.5	6447.7	820.5	313.8	5.12%	7784.5	805.5	7918.1	802.5	133.6	1.72%	9653.2	880.5	10023.3	868.5	370.1	3.83%
136	6179.8	823.5	6498.4	823.5	318.6	5.16%	7858.5	808.5	8004.8	805.5	146.3	1.86%	9709.8	883.5	10090.9	871.5	381.1	3.92%
137	6231.6	832.5	6556.2	832.5	324.6	5.21%	7943.7	817.5	8104.8	814.5	161.1	2.03%	9774.2	892.5	10168.5	880.5	394.3	4.03%
138	6265.4	835.5	6592.2	835.5	326.8	5.22%	7991.9	820.5	8156.9	817.5	165.0	2.06%	9805.7	895.5	10204.2	883.5	398.5	4.06%
139	53.4	778.5	53.4	778.5	0.0	0.00%	77.3	778.5	77.3	778.5	0.0	0.00%	109.8	778.5	109.8	778.5	0.0	0.00%
			0	766.5	0.0	0.00%	150.3	778.5	150.3	778.5	0.0	0.00%	214.0	766.5	214.0	766.5	0.0	0.00%
			9	778.5	0.0	0.00%	67.1	778.5	67.1	778.5	0.0	0.00%	93.8	778.5	93.8	778.5	0.0	0.00%
			1	748.5	0.0	0.00%	176.2	748.5	176.2	748.5	0.0	0.00%	243.8	724.5	243.8	724.5	0.0	0.00%
			5	748.5	0.0	0.00%	322.4	748.5	322.4	748.5	0.0	0.00%	452.0	748.5	452.0	748.5	0.0	0.00%
			6	754.5	0.0	0.00%	403.4	748.5	403.4	748.5	0.0	0.00%	562.9	739.5	562.9	739.5	0.0	0.00%
			9	754.5	3.4	1.04%	443.6	748.5	447.1	748.5	3.5	0.79%	617.7	745.5	622.0	745.5	4.3	0.70%
			6	835.5	341.2	5.18%	8455.1	820.5	8642.4	817.5	187.3	2.22%	10336.4	811.5	10671.9	883.5	335.5	3.25%
			3	841.5	349.4	5.23%	8590.1	826.5	8788.5	823.5	198.4	2.31%	10519.0	817.5	10802.8	889.5	283.8	2.70%
			7	844.5	369.4	5.46%	8704.1	829.5	8927.6	826.5	223.5	2.57%	10672.9	820.5	10934.3	892.5	261.4	2.45%
			0	847.5	369.4	5.43%	8757.9	832.5	8982.5	829.5	224.6	2.56%	10740.3	823.5	10978.6	895.5	238.3	2.22%
			6	850.5	369.5	5.37%	8854.7	835.5	9080.7	832.5	226.0	2.55%	10864.5	826.5	11069.2	826.5	204.7	1.88%
			1	853.5	377.4	5.45%	8930.4	838.5	9167.0	835.5	236.6	2.65%	10965.1	829.5	11179.2	829.5	214.1	1.95%
			8	856.5	396.8	5.68%	9010.9	841.5	9271.5	838.5	260.6	2.89%	11073.5	832.5	11313.6	832.5	240.1	2.17%
			0	859.5	401.4	5.68%	9115.5	844.5	9383.0	841.5	267.5	2.93%	11206.5	835.5	11451.9	835.5	245.4	2.19%
			1	865.5	401.4	5.63%	9196.8	850.5	9465.7	847.5	268.9	2.92%	11306.9	841.5	11552.3	841.5	245.4	2.17%
			8	865.5	399.7	5.58%	9232.4	850.5	9499.7	847.5	267.3	2.90%	11352.5	841.5	11595.9	841.5	243.4	2.14%
			6	865.5	399.7	5.53%	9319.8	850.5	9588.4	847.5	268.6	2.88%	11461.5	841.5	11704.9	841.5	243.4	2.12%
			5	865.5	400.1	5.53%	9328.1	850.5	9597.3	847.5	269.2	2.89%	11471.5	841.5	11715.1	841.5	243.6	2.12%

ROARING BROOK WATERSHED

100 YEAR EVENT -- EXISTING VS. FUTURE



KEYSER7 SUBAREA PEAK FLOWS

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	47.5	712.5	47.5	712.5	0.0	0.00%	52.7	718.5	52.7	718.5	0.0	0.00%	84.4	718.5	84.4	718.5	0.0	0.00%
2	31.6	709.5	25	712.5	-6.6	20.89%	46.3	718.5	45.1	718.5	-1.2	2.59%	79.9	718.5	74.1	718.5	-5.8	7.26%
3	16.7	712.5	18.4	712.5	1.7	10.18%	21.5	718.5	21.4	718.5	-0.1	0.47%	33.9	718.5	34.6	718.5	0.7	2.06%
4	17.5	778.5	11.3	748.5	-6.2	35.43%	42.4	763.5	28.5	763.5	-13.9	32.78%	71	748.5	49.9	748.5	-21.1	29.72%
5	37.7	748.5	33.4	748.5	-4.3	11.41%	78.7	718.5	71.7	718.5	-7.0	8.89%	121	718.5	111.9	718.5	-9.1	7.52%
6	36.5	778.5	28.6	793.5	-7.9	21.64%	74.5	748.5	62.3	763.5	-12.2	16.38%	114.1	718.5	97.6	748.5	-16.5	14.46%
7	19.4	763.5	17.3	763.5	-2.1	10.82%	43.3	718.5	38.9	718.5	-4.4	10.16%	70.1	718.5	64.3	718.5	-5.8	8.27%
8	17.5	712.5	8.6	718.5	-8.9	50.86%	20.7	718.5	23.5	748.5	2.8	13.53%	34.3	748.5	43.3	748.5	9.0	26.24%
9	32.6	748.5	24.7	718.5	-7.9	24.23%	82.2	718.5	59.6	718.5	-22.6	27.49%	141.8	718.5	105.8	718.5	-36.0	25.39%
10	18.7	748.5	21.1	748.5	2.4	12.83%	46.3	718.5	52.1	718.5	5.8	12.53%	80.2	718.5	88.5	718.5	8.3	10.35%
11	42.4	715.5	42.4	715.5	0.0	0.00%	33.7	706.5	33.7	706.5	0.0	0.00%	51.5	718.5	51.5	718.5	0.0	0.00%
12	47.7	715.5	31.9	709.5	-15.8	33.12%	38	706.5	45.5	718.5	7.5	19.74%	56.3	718.5	78.3	718.5	22.0	39.08%
13	17.7	709.5	31.4	718.5	13.7	77.40%	43	718.5	74	718.5	31.0	72.09%	74.6	718.5	126.9	718.5	52.3	70.11%
14	0	718.5	0	718.5	0.0	0.00%	0	709.5	0	709.5	0.0	0.00%	0	778.5	0	778.5	0.0	0.00%
15	12.8	763.5	12.8	763.5	0.0	0.00%	33	778.5	33	778.5	0.0	0.00%	57.5	763.5	57.5	763.5	0.0	0.00%
16	28.7	718.5	28.7	718.5	0.0	0.00%	26.4	709.5	26.4	709.5	0.0	0.00%	31.2	718.5	31.2	718.5	0.0	0.00%
17	46	715.5	38	712.5	-8.0	17.39%	59.7	709.5	46.4	718.5	-13.3	22.28%	57.4	718.5	71.8	718.5	14.4	25.09%
18	12.3	712.5	8.9	718.5	-3.4	27.64%	16.2	718.5	20.5	763.5	4.3	26.54%	26.6	748.5	38	763.5	11.4	42.86%
19	19.1	718.5	22.2	718.5	3.1	16.23%	44.9	718.5	54.9	718.5	10.0	22.27%	80.3	718.5	96.9	718.5	16.6	20.67%
20	19.3	712.5	21.1	718.5	1.8	9.33%	34.8	718.5	49.7	718.5	14.9	42.82%	57.2	718.5	89	718.5	31.8	55.59%
21	0	718.5	0	718.5	0.0	0.00%	0	709.5	0	709.5	0.0	0.00%	0	778.5	0	778.5	0.0	0.00%
22	4.2	748.5	6.5	793.5	2.3	54.76%	10.8	793.5	17.3	793.5	6.5	60.19%	20.7	793.5	30	793.5	9.3	44.93%
23	14.3	793.5	11.2	778.5	-3.1	21.68%	35.6	778.5	29.1	793.5	-6.5	18.26%	59.2	763.5	50.2	778.5	-9.0	15.20%
24	0	718.5	0	718.5	0.0	0.00%	0	709.5	0	709.5	0.0	0.00%	0	778.5	0	778.5	0.0	0.00%
25	7.9	718.5	11.8	778.5	3.9	49.37%	19.2	778.5	30.3	778.5	11.1	57.81%	36.1	778.5	52	763.5	15.9	44.04%
26	10.8	712.5	16.7	748.5	5.9	54.63%	12.6	718.5	39.1	718.5	26.5	210.32%	20.4	718.5	64.3	718.5	43.9	215.20%
27	0	718.5	0	718.5	0.0	0.00%	0	709.5	0	709.5	0.0	0.00%	0	778.5	0	778.5	0.0	0.00%
28	5.9	718.5	11.4	778.5	5.5	93.22%	17.3	763.5	29.1	778.5	11.8	68.21%	32.2	763.5	50	763.5	17.8	55.28%
29	4.6	718.5	13.6	793.5	9.0	195.65%	14	778.5	32.5	778.5	18.5	132.14%	26.5	778.5	53.3	763.5	26.8	101.13%
				718.5	0.0	0.00%	0	709.5	0	709.5	0.0	0.00%	0	778.5	0	778.5	0.0	0.00%
				763.5	2.1	23.33%	22.7	763.5	27.7	763.5	5.0	22.03%	39.7	748.5	47.6	748.5	7.9	19.90%
				793.5	0.0	0.00%	31.9	763.5	31.9	763.5	0.0	0.00%	50.8	748.5	50.8	748.5	0.0	0.00%
				718.5	26.3	111.91%	54.4	718.5	101	718.5	46.6	85.66%	91.7	718.5	150.9	718.5	59.2	64.56%

KEYSER7 SUBAREA PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	112.1	718.5	112.1	718.5	0.0	0.00%	151	718.5	151	718.5	0.0	0.00%	211.7	718.5	211.7	718.5	0.0	0.00%
2	110.6	718.5	100.8	718.5	-9.8	8.86%	153	718.5	138.9	718.5	-14.1	9.22%	215.5	718.5	197.8	718.5	-17.7	8.21%
3	41.4	718.5	46.2	718.5	4.8	11.59%	59.1	718.5	63.8	718.5	4.7	7.95%	82.9	718.5	89.2	718.5	6.3	7.60%
4	94.5	718.5	66.8	748.5	-27.7	29.31%	126.9	718.5	91.3	718.5	-35.6	28.05%	169.9	718.5	126.5	718.5	-43.4	25.54%
5	150.2	718.5	140.3	718.5	-9.9	6.59%	186.7	718.5	176.3	718.5	-10.4	5.57%	233.3	718.5	222.5	718.5	-10.8	4.63%
6	143.4	718.5	123.3	748.5	-20.1	14.02%	182.6	718.5	159.7	718.5	-22.9	12.54%	232.8	718.5	207.1	718.5	-25.7	11.04%
7	90	718.5	83	718.5	-7.0	7.78%	116.2	718.5	108.4	718.5	-7.8	6.71%	148.8	718.5	140.4	718.5	-8.4	5.65%
8	46	748.5	57.6	748.5	11.6	25.22%	63.4	748.5	80.8	718.5	17.4	27.44%	88.9	718.5	113.1	718.5	24.2	27.22%
9	188.5	718.5	144.2	718.5	-44.3	23.50%	249.4	718.5	197.1	718.5	-52.3	20.97%	330.3	718.5	268	718.5	-62.3	18.86%
10	106.7	718.5	116	718.5	9.3	8.72%	141.6	718.5	152.5	718.5	10.9	7.70%	187.9	718.5	200.5	718.5	12.6	6.71%
11	75.8	718.5	75.8	718.5	0.0	0.00%	100.1	718.5	100.1	718.5	0.0	0.00%	141	718.5	141	718.5	0.0	0.00%
12	82.2	718.5	106.3	718.5	24.1	29.32%	107	718.5	147.7	718.5	40.7	38.04%	150.9	718.5	205.8	718.5	54.9	36.38%
13	98.5	718.5	168.5	718.5	70.0	71.07%	137	718.5	223.8	718.5	86.8	63.36%	190.7	718.5	293.5	718.5	102.8	53.91%
14	0	808.5	0	808.5	0.0	0.00%	0	823.5	0	823.5	0.0	0.00%	0	883.5	0	883.5	0.0	0.00%
15	76.6	763.5	76.6	763.5	0.0	0.00%	102.7	748.5	102.7	748.5	0.0	0.00%	138.1	718.5	138.1	718.5	0.0	0.00%
16	37.8	748.5	37.8	748.5	0.0	0.00%	58.5	748.5	58.5	748.5	0.0	0.00%	76.9	748.5	76.9	748.5	0.0	0.00%
17	70.3	718.5	87.5	718.5	17.2	24.47%	106.5	718.5	121.4	718.5	14.9	13.99%	146.6	718.5	169.5	718.5	22.9	15.62%
18	33.5	763.5	51.9	748.5	18.4	54.93%	47.8	748.5	70.8	748.5	23.0	48.12%	67.2	748.5	97.7	718.5	30.5	45.39%
19	108.1	718.5	129.8	718.5	21.7	20.07%	149.5	718.5	177.3	718.5	27.8	18.60%	205.4	718.5	238.5	718.5	33.1	16.11%
20	77.8	718.5	119.7	718.5	41.9	53.86%	107.2	718.5	165.5	718.5	58.3	54.38%	152.8	718.5	227.2	718.5	74.4	48.69%
21	0	808.5	0	808.5	0.0	0.00%	0	823.5	0	823.5	0.0	0.00%	0	883.5	0	883.5	0.0	0.00%
22	28.5	793.5	39.3	778.5	10.8	37.89%	38.9	778.5	52.4	778.5	13.5	34.70%	53.3	778.5	69.7	763.5	16.4	30.77%
23	77.2	763.5	65.8	763.5	-11.4	14.77%	101.2	748.5	87.8	763.5	-13.4	13.24%	132.2	748.5	116.7	748.5	-15.5	11.72%
24	0	808.5	0	808.5	0.0	0.00%	0	823.5	0	823.5	0.0	0.00%	0	883.5	0	883.5	0.0	0.00%
25	49.4	763.5	68.2	763.5	18.8	38.06%	67.3	763.5	91.4	748.5	24.1	35.81%	92.3	748.5	121.2	718.5	28.9	31.31%
26	27.3	718.5	82.8	718.5	55.5	203.30%	37.8	718.5	107	718.5	69.2	183.07%	53	718.5	138.7	718.5	85.7	161.70%
27	0	808.5	0	808.5	0.0	0.00%	0	823.5	0	823.5	0.0	0.00%	0	883.5	0	883.5	0.0	0.00%
28	43.1	763.5	65.7	748.5	22.6	52.44%	59.9	748.5	88	718.5	28.1	46.91%	82.5	748.5	119.8	718.5	37.3	45.21%
			.5	748.5	32.9	92.42%	49.7	763.5	89.4	748.5	39.7	79.88%	68.3	763.5	117.3	718.5	49.0	71.74%
			0	808.5	0.0	0.00%	0	823.5	0	823.5	0.0	0.00%	0	883.5	0	883.5	0.0	0.00%
			.8	718.5	9.8	18.49%	72.7	718.5	86.1	718.5	13.4	18.43%	100.7	718.5	117.5	718.5	16.8	16.68%
			.5	748.5	0.0	0.00%	83.2	718.5	83.2	718.5	0.0	0.00%	109.3	718.5	109.3	718.5	0.0	0.00%
			.4	718.5	64.6	53.92%	157.6	718.5	227.8	718.5	70.2	44.54%	205.6	718.5	281.5	718.5	75.9	36.92%

KEYSER7 WATERSHED PEAK FLOWS

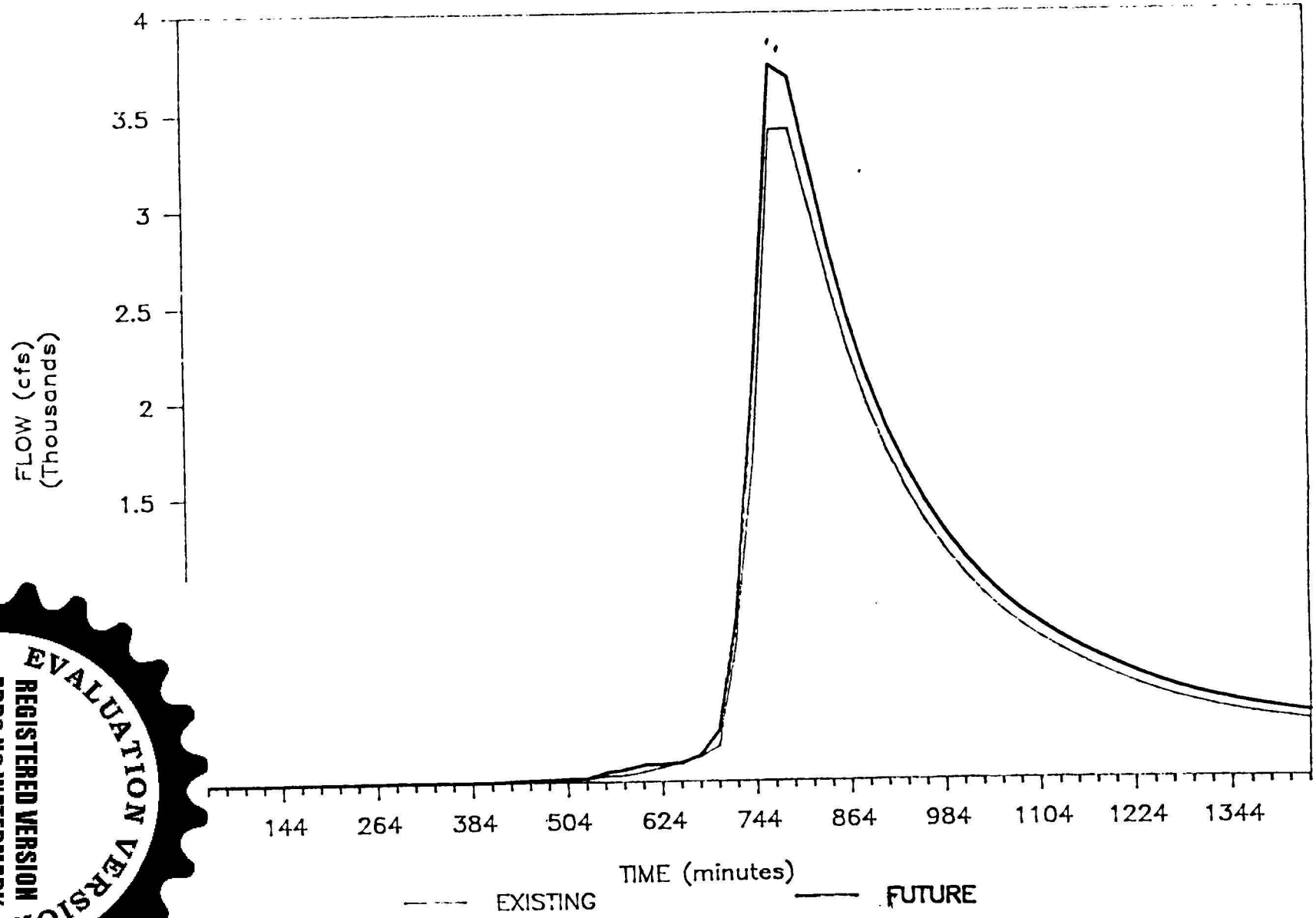
SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN
1	47.5	712.50	47.5	712.50	0.0	0.00%	52.7	718.50	52.7	718.50	0.0	0.00%	84.4	718.50	84.4	718.50	0.0	0.00%
2	75.1	715.50	70.7	715.50	-4.4	5.86%	92.4	721.50	91.4	721.50	-1.0	1.08%	153.5	721.50	148.2	721.50	-5.3	3.45%
3	89.8	715.50	87.5	715.50	-2.3	2.56%	113.5	718.50	112.2	718.50	-1.3	1.15%	182.9	721.50	178.3	721.50	-4.6	2.52%
4	105.3	718.50	98.5	718.50	-6.8	6.46%	149.8	721.50	135.6	721.50	-14.2	9.48%	250.9	748.50	225.4	751.50	-25.5	10.16%
5	37.7	748.50	33.4	748.50	-4.3	11.41%	78.7	718.50	71.7	718.50	-7.0	8.89%	121	718.50	111.9	718.50	-9.1	7.52%
6	154.6	739.50	133.8	739.50	-20.8	13.45%	299.3	739.50	264.2	754.50	-35.1	11.73%	483.6	739.50	431.1	739.50	-52.5	10.86%
7	173.5	742.5	150.5	742.5	-23.0	13.26%	341.6	742.5	302.4	757.5	-39.2	11.48%	549.1	742.5	491.9	742.5	-57.2	10.42%
8	17.5	712.5	8.6	718.5	-8.9	50.86%	20.7	718.5	23.5	748.5	2.8	13.53%	34.3	748.5	43.3	748.5	9.0	26.24%
9	46.1	721.5	32.9	718.5	-13.2	28.63%	97.5	718.5	79.7	748.5	-17.8	18.26%	161	727.5	138.4	727.5	-22.6	14.04%
10	236.6	748.5	201.6	748.5	-35.0	14.79%	480	748.5	428	763.5	-52.0	10.83%	778	748.5	704.1	748.5	-73.9	9.50%
11	42.4	715.5	42.4	715.5	0.0	0.00%	33.7	706.5	33.7	706.5	0.0	0.00%	51.5	718.5	51.5	718.5	0.0	0.00%
12	85.3	718.5	70.4	718.5	-14.9	17.47%	66.6	709.5	74.4	718.5	7.8	11.71%	98.8	721.5	120.1	718.5	21.3	21.56%
13	99.4	721.5	97.1	721.5	-2.3	2.31%	103.1	718.5	139	718.5	35.9	34.82%	161.2	724.5	228.9	721.5	67.7	42.00%
14	305	748.5	277.2	748.5	-27.8	9.11%	570.1	748.5	551.3	748.5	-18.8	3.30%	930.9	748.5	907.3	748.5	-23.6	2.54%
15	317.5	754.5	289.8	754.5	-27.7	8.72%	602.2	754.5	583.4	754.5	-18.8	3.12%	987.8	754.5	964.2	754.5	-23.6	2.39%
16	28.7	718.5	28.7	718.5	0.0	0.00%	26.4	709.5	26.4	709.5	0.0	0.00%	31.2	718.5	31.2	718.5	0.0	0.00%
17	63.4	721.5	54.3	721.5	-9.1	14.35%	81	712.5	69.5	718.5	-11.5	14.20%	84.3	718.5	98.6	718.5	14.3	16.96%
18	72.1	724.5	62.1	724.5	-10.0	13.87%	95.4	715.5	85.9	721.5	-9.5	9.96%	107.1	721.5	130.2	721.5	23.1	21.57%
19	89.1	727.5	82.3	727.5	-6.8	7.63%	140.3	718.5	135.3	718.5	-5.0	3.56%	178.8	724.5	217.6	724.5	38.8	21.70%
20	103.7	730.5	101.5	730.5	-2.2	2.12%	170.1	721.5	180.4	727.5	10.3	6.06%	229.9	727.5	298	727.5	68.1	29.62%
21	401.9	754.5	380.9	754.5	-21.0	5.23%	751.8	754.5	759.3	754.5	7.5	1.00%	1215.6	754.5	1255.1	754.5	39.5	3.25%
22	406.1	763.5	387.3	763.5	-18.8	4.63%	762.3	763.5	776.1	763.5	13.8	1.81%	1235.8	763.5	1284.6	763.5	48.8	3.95%
23	14.3	793.5	11.2	778.5	-3.1	21.68%	35.6	778.5	29.1	793.5	-6.5	18.26%	59.2	763.5	50.2	778.5	-9.0	15.20%
24	420	763.5	398.3	763.5	-21.7	5.17%	797.5	763.5	804.7	763.5	7.2	0.90%	1295	763.5	1334.6	763.5	39.6	3.06%
25	427.6	766.5	409.9	766.5	-17.7	4.14%	816.4	766.5	834.7	766.5	18.3	2.24%	1330.9	766.5	1386.5	766.5	55.6	4.18%
26	10.8	712.5	16.7	748.5	5.9	54.63%	12.6	718.5	39.1	718.5	26.5	210.32%	20.4	718.5	64.3	718.5	43.9	215.20%
27	433.7	766.5	426.5	766.5	-7.2	1.66%	827.6	766.5	869.9	766.5	42.3	5.11%	1350.2	766.5	1439.2	766.5	89.0	6.59%
28	439	775.5	437.9	775.5	-1.1	0.25%	844.7	775.5	898.9	775.5	54.2	6.42%	1382.2	775.5	1488.6	775.5	106.4	7.70%
29	4.6	718.5	13.6	793.5	9.0	195.65%	14	778.5	32.5	778.5	18.5	132.14%	26.5	778.5	53.3	763.5	26.8	101.13%
				775.5	8.2	1.85%	858.7	775.5	931.4	775.5	72.7	8.47%	1408.7	775.5	1541.6	775.5	132.9	9.43%
				763.5	2.1	23.33%	22.7	763.5	27.7	763.5	5.0	22.03%	39.7	748.5	47.6	748.5	7.9	19.90%
				790.5	2.1	9.09%	54.5	775.5	59.6	775.5	5.1	9.36%	90.2	760.5	98.2	760.5	8.0	8.87%
				781.5	32.0	6.54%	963.3	781.5	1069.6	781.5	106.3	11.03%	1574	781.5	1744.3	781.5	170.3	10.82%

KEYSER7 WATERSHED PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN	WTRSHED PEAK	RUNOFF TIME	WTRSHED PEAK	RUNOFF TIME	CHANGE IN FLOW	% OF EXISTIN
1	112.1	718.50	112.1	718.50	0.0	0.00%	151	718.50	151	718.50	0.0	0.00%	211.7	718.50	211.7	718.50	0.0	0.00%
2	208.2	721.50	199.3	721.50	-8.9	4.27%	284.3	721.50	272.8	721.50	-11.5	4.05%	399.7	721.50	383.8	721.50	-15.9	3.98%
3	244.1	721.50	239.5	721.50	-4.6	1.88%	335.9	721.50	328.6	721.50	-7.3	2.17%	472.9	721.50	462.2	721.50	-10.7	2.26%
4	332	724.50	300.6	739.50	-31.4	9.46%	452.7	724.50	412.6	724.50	-40.1	8.86%	628.5	724.50	578.3	724.50	-50.2	7.99%
5	150.2	718.50	140.3	718.50	-9.9	6.59%	186.7	718.50	176.3	718.50	-10.4	5.57%	233.3	718.50	222.5	718.50	-10.8	4.63%
6	621.5	739.50	562.5	739.50	-59.0	9.49%	809.1	739.50	739.7	739.50	-69.4	8.58%	1061.7	739.50	983.6	739.50	-78.1	7.36%
7	703.5	742.5	639	742.5	-64.5	9.17%	912.1	742.5	836.8	742.5	-75.3	8.26%	1189.9	742.5	1105.8	742.5	-84.1	7.07%
8	46	748.5	57.6	748.5	11.6	25.22%	63.4	748.5	80.8	718.5	17.4	27.44%	88.9	718.5	113.1	718.5	24.2	27.22%
9	211.9	727.5	185.4	727.5	-26.5	12.51%	280.4	727.5	254.8	727.5	-25.6	9.13%	372.3	727.5	346.1	727.5	-26.2	7.04%
10	1001.1	748.5	916.4	748.5	-84.7	8.46%	1299.8	748.5	1206	748.5	-93.8	7.22%	1694.6	748.5	1591.9	748.5	-102.7	6.06%
11	75.8	718.5	75.8	718.5	0.0	0.00%	100.1	718.5	100.1	718.5	0.0	0.00%	141	718.5	141	718.5	0.0	0.00%
12	145.4	721.5	168.1	721.5	22.7	15.61%	191.9	721.5	227.1	721.5	35.2	18.34%	269.5	721.5	319.2	721.5	49.7	18.44%
13	227.3	724.5	309	721.5	81.7	35.94%	305.7	724.5	412.4	721.5	106.7	34.90%	424.2	724.5	560.1	721.5	135.9	32.04%
14	1211.5	748.5	1185.5	748.5	-26.0	2.15%	1576.4	748.5	1551.6	748.5	-24.8	1.57%	2065.8	748.5	2041.9	748.5	-23.9	1.16%
15	1287.8	754.5	1261.8	754.5	-26.0	2.02%	1678.4	754.5	1653.6	754.5	-24.8	1.48%	2201.5	754.5	2177.6	754.5	-23.9	1.09%
16	37.8	748.5	37.8	748.5	0.0	0.00%	58.5	748.5	58.5	748.5	0.0	0.00%	76.9	748.5	76.9	748.5	0.0	0.00%
17	100.7	718.5	117.9	718.5	17.2	17.08%	152.9	718.5	167.7	718.5	14.8	9.68%	204.3	718.5	227.2	718.5	22.9	11.21%
18	130.1	751.5	162.5	721.5	32.4	24.90%	193.4	748.5	230.2	721.5	36.8	19.03%	262.6	721.5	315.9	721.5	53.3	20.30%
19	224.9	724.5	277.9	724.5	53.0	23.57%	325.6	724.5	386.6	724.5	61.0	18.73%	442.6	724.5	524.3	724.5	81.7	18.46%
20	296.3	742.5	385.2	727.5	88.9	30.00%	422.2	727.5	534	733.5	111.8	26.48%	579.9	733.5	721.2	733.5	141.3	24.37%
21	1581	754.5	1634.4	754.5	53.4	3.38%	2088.3	754.5	2159.6	754.5	71.3	3.41%	2754.2	754.5	2843.3	754.5	89.1	3.24%
22	1609	763.5	1673.4	763.5	64.4	4.00%	2126.8	763.5	2212	763.5	85.2	4.01%	2807.4	763.5	2913	763.5	105.6	3.76%
23	77.2	763.5	65.8	763.5	-11.4	14.77%	101.2	748.5	87.8	763.5	-13.4	13.24%	132.2	748.5	116.7	748.5	-15.5	11.72%
24	1686.2	763.5	1739.1	763.5	52.9	3.14%	2227.3	763.5	2299.8	763.5	72.5	3.26%	2937.2	763.5	3028.6	763.5	91.4	3.11%
25	1735.5	766.5	1807.1	766.5	71.6	4.13%	2294.4	766.5	2389.9	766.5	95.5	4.16%	3028.6	766.5	3146.4	763.5	117.8	3.89%
26	27.3	718.5	82.8	718.5	55.5	203.30%	37.8	718.5	107	718.5	69.2	183.07%	53	718.5	138.7	718.5	85.7	161.70%
27	1761.3	766.5	1871.3	766.5	110.0	6.25%	2329.3	766.5	2468.6	766.5	139.3	5.98%	3076	766.5	3244.5	763.5	168.5	5.48%
28	1804.1	775.5	1935.3	775.5	131.2	7.27%	2388.3	775.5	2552.4	775.5	164.1	6.87%	3155.5	775.5	3353.4	772.5	197.9	6.27%
				748.5	32.9	92.42%	49.7	763.5	89.4	748.5	39.7	79.88%	68.3	763.5	117.3	718.5	49.0	71.74%
				775.5	163.2	8.87%	2437.9	775.5	2638.8	775.5	200.9	8.24%	3223.2	775.5	3463.9	772.5	240.7	7.47%
				718.5	9.8	18.49%	72.7	718.5	86.1	718.5	13.4	18.43%	100.7	718.5	117.5	718.5	16.8	16.68%
				760.5	9.4	8.05%	153.2	730.5	166.5	730.5	13.3	8.68%	205.4	730.5	222.2	730.5	16.8	8.18%
				781.5	202.7	9.90%	2698.5	781.5	2940.2	781.5	241.7	8.96%	3550	781.5	3838.1	778.5	288.1	8.12%

KEYSER CREEK WATERSHED

100 YEAR EVENT -- EXISTING VS. FUTURE



SPRING8 SUBAREA PEAK FLOWS

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	28.2	718.5	28.2	718.5	0.0	0.00%	25.9	709.5	25.9	709.5	0.0	0.00%	30.5	718.5	30.5	718.5	0.0	0.00%
2	43.1	712.5	39	712.5	-4.1	9.51%	48.5	718.5	48.8	718.5	0.3	0.62%	77.8	718.5	76.3	718.5	-1.5	1.93%
3	8.3	712.5	9.2	712.5	0.9	10.84%	11.1	718.5	11.2	748.5	0.1	0.90%	18.7	763.5	19.6	763.5	0.9	4.81%
4	24	712.5	24	712.5	0.0	0.00%	28.4	718.5	28.4	718.5	0.0	0.00%	46.6	748.5	46.6	748.5	0.0	0.00%
5	73.3	721.5	63.1	718.5	-10.2	13.92%	73.1	712.5	58.1	709.5	-15.0	20.52%	58.1	706.5	58.9	703.5	0.8	1.38%
6	10.7	712.5	7.8	718.5	-2.9	27.10%	14.3	718.5	19	778.5	4.7	32.87%	24.5	763.5	35.9	778.5	11.4	46.53%
7	17	715.5	10	718.5	-7.0	41.18%	22.1	709.5	21.2	748.5	-0.9	4.07%	23	718.5	39	718.5	16.0	69.57%
8	0	718.5	0	718.5	0.0	0.00%	0	709.5	0	709.5	0.0	0.00%	0	778.5	0	778.5	0.0	0.00%
9	18	715.5	18	715.5	0.0	0.00%	14.4	706.5	14.4	706.5	0.0	0.00%	23	748.5	23	748.5	0.0	0.00%
10	33.4	718.5	46.5	718.5	13.1	39.22%	79.8	718.5	110.8	718.5	31.0	38.85%	138.8	718.5	182.1	718.5	43.3	31.20%
11	15.9	712.5	16.1	718.5	0.2	1.26%	27.3	718.5	35.9	718.5	8.6	31.50%	44.6	718.5	61.4	718.5	16.8	37.67%
12	15.4	712.5	13.1	763.5	-2.3	14.94%	20.5	718.5	33.7	778.5	13.2	64.39%	34.2	748.5	59.4	763.5	25.2	73.68%
13	9.2	715.5	5	718.5	-4.2	45.65%	7.3	706.5	11.1	763.5	3.8	52.05%	11.8	748.5	20.5	748.5	8.7	73.73%
14	36.6	718.5	43.8	718.5	7.2	19.67%	87.3	718.5	107.8	718.5	20.5	23.48%	153.5	718.5	186.3	718.5	32.8	21.37%
15	11.6	712.5	11.6	712.5	0.0	0.00%	11.4	703.5	11.4	703.5	0.0	0.00%	17.4	718.5	17.4	718.5	0.0	0.00%
16	11.2	718.5	14.9	718.5	3.7	33.04%	24.7	718.5	35.4	718.5	10.7	43.32%	41.9	718.5	61.5	718.5	19.6	46.78%

SPRING8 SUBAREA PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	36.8	718.5	36.8	718.5	0.0	0.00%	57.1	718.5	57.1	718.5	0.0	0.00%	74.6	748.5	74.6	748.5	0.0	0.00%
2	103.5	718.5	93	718.5	-10.5	10.14%	140.1	718.5	130.2	718.5	-9.9	7.07%	196.8	718.5	182.8	718.5	-14.0	7.11%
3	23.8	763.5	26.6	763.5	2.8	11.76%	34.1	763.5	36.9	763.5	2.8	8.21%	48	763.5	51.4	763.5	3.4	7.08%
4	62.5	748.5	62.5	748.5	0.0	0.00%	86	748.5	86	748.5	0.0	0.00%	121.5	718.5	121.5	718.5	0.0	0.00%
5	70.7	718.5	70.5	718.5	-0.2	0.28%	84.9	718.5	103.4	718.5	18.5	21.79%	114.5	718.5	131.3	718.5	16.8	14.67%
6	31.3	763.5	49.1	763.5	17.8	56.87%	45.1	763.5	66.9	763.5	21.8	48.34%	63.6	763.5	91.7	748.5	28.1	44.18%
7	28	718.5	54.4	718.5	26.4	94.29%	43.6	718.5	75.1	718.5	31.5	72.25%	61.2	718.5	105.6	718.5	44.4	72.55%
8	0	808.5	0	808.5	0.0	0.00%	0	823.5	0	823.5	0.0	0.00%	0	883.5	0	883.5	0.0	0.00%
9	34.3	748.5	34.3	748.5	0.0	0.00%	46	748.5	46	748.5	0.0	0.00%	65.3	718.5	65.3	718.5	0.0	0.00%
10	183.4	718.5	234.5	718.5	51.1	27.86%	244.4	718.5	302.5	718.5	58.1	23.77%	324.3	718.5	385.3	718.5	61.0	18.81%
11	59.4	718.5	83.8	718.5	24.4	41.08%	82	718.5	115.1	718.5	33.1	40.37%	115.1	718.5	159.1	718.5	44.0	38.23%
12	43.5	763.5	79.1	763.5	35.6	81.84%	62.1	763.5	107.2	748.5	45.1	72.62%	87.2	748.5	145.7	718.5	58.5	67.09%
13	17.6	748.5	28.1	748.5	10.5	59.66%	23.6	748.5	38.4	718.5	14.8	62.71%	33.5	748.5	53.9	718.5	20.4	60.90%
14	208.5	718.5	249.4	718.5	40.9	19.62%	282.1	718.5	331.5	718.5	49.4	17.51%	384.4	718.5	442.4	718.5	58.0	15.09%
15	22.9	718.5	22.9	718.5	0.0	0.00%	30.1	718.5	30.1	718.5	0.0	0.00%	41.9	718.5	41.9	718.5	0.0	0.00%
16	57.1	718.5	81.1	718.5	24.0	42.03%	78	718.5	108	718.5	30.0	38.46%	107.6	718.5	142.2	718.5	34.6	32.16%

SPRING8 WATERSHED PEAK FLOWS

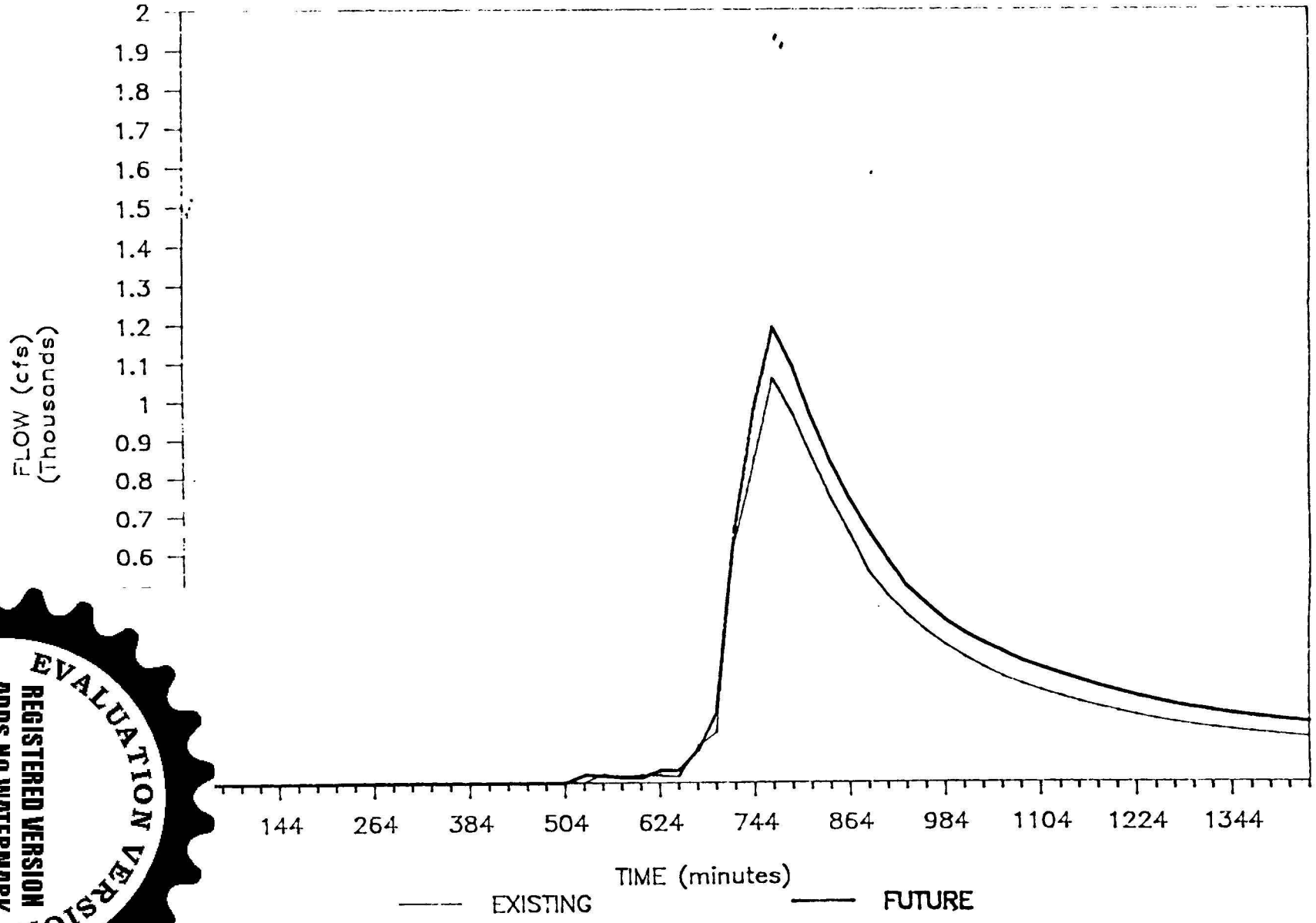
SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	28.2	718.50	28.2	718.50	0.0	0.00%	25.9	709.50	25.9	709.50	0.0	0.00%	30.5	718.50	30.5	718.50	0.0	0.00%
2	60.4	721.50	55	721.50	-5.4	8.94%	71.2	718.50	71.5	718.50	0.3	0.42%	104.1	718.50	102.6	718.50	-1.5	1.44%
3	66.4	724.50	62.3	724.50	-4.1	6.17%	80.8	721.50	81.2	721.50	0.4	0.50%	119.8	721.50	118.6	721.50	-1.2	1.00%
4	84.7	727.50	80.5	727.50	-4.2	4.96%	105.9	724.50	106.2	724.50	0.3	0.28%	163.2	754.50	161.2	754.50	-2.0	1.23%
5	145	721.50	125.4	730.50	-19.6	13.52%	152.7	721.50	143.7	721.50	-9.0	5.89%	199.4	727.50	206.6	727.50	7.2	3.61%
6	10.7	712.5	7.8	718.5	-2.9	27.10%	14.3	718.5	19	778.5	4.7	32.87%	24.5	763.5	35.9	778.5	11.4	46.53%
7	24	721.5	16.8	748.5	-7.2	30.00%	33	718.5	39.4	763.5	6.4	19.39%	45.3	757.5	72.7	757.5	27.4	60.49%
8	169	721.5	141.2	730.5	-27.8	16.45%	184.5	727.5	177.9	727.5	-6.6	3.58%	242.7	727.5	274.1	727.5	31.4	12.94%
9	180.1	733.5	154.4	736.5	-25.7	14.27%	197.3	739.5	190.6	739.5	-6.7	3.40%	264.9	739.5	296.3	739.5	31.4	11.85%
10	6.9	946.5	9.8	970.5	2.9	42.03%	14.9	952.5	18.9	952.5	4.0	26.85%	22.3	943.5	26.7	937.5	4.4	19.73%
11	16.3	712.5	17.2	718.5	0.9	5.52%	29.3	718.5	39.2	748.5	9.9	33.79%	47.8	718.5	65.4	718.5	17.6	36.82%
12	6.2	1096.5	12.1	1051.5	5.9	95.16%	17.6	1006.5	32.5	1093.5	14.9	84.66%	32.5	1042.5	52.8	1087.5	20.3	62.46%
13	9.2	715.5	5	718.5	-4.2	45.65%	7.3	706.5	11.1	763.5	3.8	52.05%	11.8	748.5	20.5	748.5	8.7	73.73%
14	45.7	718.5	48.3	718.5	2.6	5.69%	93.8	718.5	116.3	718.5	22.5	23.99%	163.3	718.5	203.4	718.5	40.1	24.56%
15	227.2	733.5	206.4	736.5	-20.8	9.15%	292.5	739.5	307.6	739.5	15.1	5.16%	424.5	739.5	490.3	739.5	65.8	15.50%
16	236.5	736.5	219.5	739.5	-17.0	7.19%	313.3	742.5	337	742.5	23.7	7.56%	458.1	742.5	536.6	742.5	78.5	17.14%

SPRING8 WATERSHED PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	36.8	718.50	36.8	718.50	0.0	0.00%	57.1	718.50	57.1	718.50	0.0	0.00%	74.6	748.50	74.6	748.50	0.0	0.00%
2	133.3	718.50	122.8	718.50	-10.5	7.88%	185.5	718.50	175.6	718.50	-9.9	5.34%	253.3	718.50	239.3	718.50	-14.0	5.53%
3	152.5	721.50	145.7	751.50	-6.8	4.46%	213.5	721.50	207.4	751.50	-6.1	2.86%	296.1	727.50	285.4	727.50	-10.7	3.61%
4	213.6	754.50	207.6	754.50	-6.0	2.81%	297.5	748.50	292.8	748.50	-4.7	1.58%	410.9	730.50	400.7	745.50	-10.2	2.48%
5	263.9	727.50	257.1	748.50	-6.8	2.58%	359.9	727.50	366.8	727.50	6.9	1.92%	501.5	733.50	504.2	733.50	2.7	0.54%
6	31.3	763.5	49.1	763.5	17.8	56.87%	45.1	763.5	66.9	763.5	21.8	48.34%	63.6	763.5	91.7	748.5	28.1	44.18%
7	57.6	757.5	99.2	757.5	41.6	72.22%	85	757.5	133.9	748.5	48.9	57.53%	119.2	757.5	183.6	727.5	64.4	54.03%
8	317.2	748.5	355.7	748.5	38.5	12.14%	441.8	748.5	499	742.5	57.2	12.95%	613.3	733.5	683.7	733.5	70.4	11.48%
9	350.9	760.5	389.4	760.5	38.5	10.97%	487.2	760.5	544.5	754.5	57.3	11.76%	678	745.5	748.4	745.5	70.4	10.38%
10	27.2	934.5	31.8	928.5	4.6	16.91%	33.1	925.5	38.1	916.5	5.0	15.11%	40.3	916.5	45.5	907.5	5.2	12.90%
11	63.5	718.5	89	718.5	25.5	40.16%	87.3	718.5	121.8	718.5	34.5	39.52%	122.2	718.5	168.1	718.5	45.9	37.56%
12	43.1	1060.5	66.5	1078.5	23.4	54.29%	58	1063.5	83.6	1066.5	25.6	44.14%	76.6	1057.5	105.9	1045.5	29.3	38.25%
13	17.6	748.5	28.1	748.5	10.5	59.66%	23.6	748.5	38.4	718.5	14.8	62.71%	33.5	748.5	53.9	718.5	20.4	60.90%
14	223.5	718.5	273.3	718.5	49.8	22.28%	302.3	718.5	364.7	718.5	62.4	20.64%	413.7	718.5	489.2	718.5	75.5	18.25%
15	559.1	742.5	633.1	742.5	74.0	13.24%	756.9	742.5	871.4	742.5	114.5	15.13%	1030.9	748.5	1156.4	748.5	125.5	12.17%
16	602	745.5	684.2	754.5	82.2	13.65%	807.2	754.5	934.4	754.5	127.2	15.76%	1090.3	760.5	1226.3	760.5	136.0	12.47%

SPRING BROOK WATERSHED

100 YEAR EVENT -- EXISTING VS. FUTURE



STJOHN9 SUBAREA PEAK FLOWS

SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	12.3	718.5	12.3	718.5	0.0	0.00%	11.3	709.5	11.3	709.5	0.0	0.00%	13.6	718.5	13.6	718.5	0.0	0.00%
2	52.9	718.5	52.9	718.5	0.0	0.00%	48.8	709.5	48.8	709.5	0.0	0.00%	51.7	718.5	51.7	718.5	0.0	0.00%
3	29.8	715.5	29.8	715.5	0.0	0.00%	38.7	709.5	38.7	709.5	0.0	0.00%	38.5	718.5	38.5	718.5	0.0	0.00%
4	17	712.5	17	712.5	0.0	0.00%	21.3	718.5	21.3	718.5	0.0	0.00%	33.2	718.5	33.2	718.5	0.0	0.00%
5	11.1	715.5	12.1	715.5	1.0	9.01%	14.3	709.5	9.6	706.5	-4.7	32.87%	15.2	718.5	15.4	748.5	0.2	1.32%
6	7.7	718.5	7.7	718.5	0.0	0.00%	7.1	709.5	7.1	709.5	0.0	0.00%	8.2	718.5	8.2	718.5	0.0	0.00%
7	21.1	709.5	16.6	718.5	-4.5	21.33%	30.8	718.5	34.1	718.5	3.3	10.71%	53.1	718.5	63.1	718.5	10.0	18.83%
8	10.1	715.5	10.1	715.5	0.0	0.00%	13	709.5	13	709.5	0.0	0.00%	14	718.5	14	718.5	0.0	0.00%
9	46.7	715.5	35.2	712.5	-11.5	24.63%	37.1	706.5	42.7	718.5	5.6	15.09%	54	718.5	65.8	718.5	11.8	21.85%
10	29.2	712.5	32.2	712.5	3.0	10.27%	34.3	706.5	31.6	703.5	-2.7	7.87%	41.1	718.5	42.1	718.5	1.0	2.43%
11	6.9	712.5	5.3	748.5	-1.6	23.19%	9.1	718.5	13.3	763.5	4.2	46.15%	15	748.5	23.6	763.5	8.6	57.33%
12	7.1	718.5	10.2	763.5	3.1	43.66%	16.4	763.5	25.7	763.5	9.3	56.71%	30.7	763.5	44.1	748.5	13.4	43.65%
13	0	718.5	0	718.5	0.0	0.00%	0	709.5	0	709.5	0.0	0.00%	0	778.5	0	778.5	0.0	0.00%
14	8.5	748.5	10.4	763.5	1.9	22.35%	21.8	778.5	26.7	778.5	4.9	22.48%	38.8	763.5	46.5	763.5	7.7	19.85%
15	9.2	763.5	8.4	748.5	-0.8	8.70%	24.2	778.5	21.8	778.5	-2.4	9.92%	42.6	763.5	38.8	778.5	-3.8	8.92%
16	2.7	718.5	3.5	763.5	0.8	29.63%	6.5	778.5	9.1	778.5	2.6	40.00%	12.1	763.5	15.9	763.5	3.8	31.40%
17	14.5	715.5	8.2	718.5	-6.3	43.45%	11.5	706.5	20.3	763.5	8.8	76.52%	18.7	748.5	35.5	748.5	16.8	89.84%
18	31.4	715.5	23.1	709.5	-8.3	26.43%	40.8	709.5	32	718.5	-8.8	21.57%	38.7	718.5	55	718.5	16.3	42.12%
19	5.1	712.5	4	718.5	-1.1	21.57%	10.7	763.5	12.3	778.5	1.6	14.95%	19.2	778.5	23.5	778.5	4.3	22.40%
20	8.5	778.5	9.6	778.5	1.1	12.94%	22.1	778.5	24.4	778.5	2.3	10.41%	38	778.5	41.2	763.5	3.2	8.42%
21	13.3	718.5	18.3	718.5	5.0	37.59%	33.9	718.5	41.1	718.5	7.2	21.24%	61	718.5	70.8	718.5	9.8	16.07%
22	7.4	763.5	6.2	718.5	-1.2	16.22%	19.5	778.5	15.2	778.5	-4.3	22.05%	34.6	778.5	28.7	778.5	-5.9	17.05%
23	13.1	715.5	14.4	715.5	1.3	9.92%	17	709.5	11.4	706.5	-5.6	32.94%	17.3	718.5	17.6	718.5	0.3	1.73%
24	14	712.5	15.5	712.5	1.5	10.71%	18.6	718.5	18.6	718.5	0.0	0.00%	30.9	748.5	32.3	763.5	1.4	4.53%
25	13	709.5	10.3	712.5	-2.7	20.77%	21.2	763.5	20.1	748.5	-1.1	5.19%	38.1	763.5	35	763.5	-3.1	8.14%
26	24.7	763.5	24.7	763.5	0.0	0.00%	58.5	748.5	58.5	748.5	0.0	0.00%	98.8	718.5	98.8	718.5	0.0	0.00%
27	6.1	712.5	6.1	712.5	0.0	0.00%	7.4	718.5	7.4	718.5	0.0	0.00%	12.6	763.5	12.6	763.5	0.0	0.00%
28	41.5	718.5	26.2	718.5	-15.3	36.87%	96	718.5	62	718.5	-34.0	35.42%	153.2	718.5	107.4	718.5	-45.8	29.90%
				778.5	-1.3	12.50%	24.6	763.5	22.2	763.5	-2.4	9.76%	40.4	748.5	37	748.5	-3.4	8.42%
				718.5	0.0	0.00%	0	709.5	0	709.5	0.0	0.00%	0	778.5	0	778.5	0.0	0.00%
				763.5	-0.8	10.96%	17.8	748.5	16.1	748.5	-1.7	9.55%	30.7	718.5	28	718.5	-2.7	8.79%
				778.5	-3.3	31.73%	24.1	778.5	17.9	778.5	-6.2	25.73%	38.9	748.5	30.2	763.5	-8.7	22.37%
				718.5	0.0	0.00%	0	709.5	0	709.5	0.0	0.00%	0	778.5	0	778.5	0.0	0.00%
				793.5	-2.4	12.24%	44	778.5	39.9	778.5	-4.1	9.32%	69.8	748.5	64.4	763.5	-5.4	7.74%
				793.5	-2.0	23.53%	20.5	793.5	16.8	793.5	-3.7	18.05%	33.6	778.5	28.4	778.5	-5.2	15.48%
				778.5	0.0	0.00%	14.1	748.5	14.1	748.5	0.0	0.00%	22.7	718.5	22.7	718.5	0.0	0.00%

STJOHN9 SUBAREA PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	17.2	763.5	17.2	763.5	0.0	0.00%	26.8	763.5	26.8	763.5	0.0	0.00%	35.8	763.5	35.8	763.5	0.0	0.00%
2	62.2	718.5	62.2	718.5	0.0	0.00%	92.7	718.5	92.7	718.5	0.0	0.00%	118.2	718.5	118.2	718.5	0.0	0.00%
3	47	718.5	47	718.5	0.0	0.00%	72.6	718.5	72.6	718.5	0.0	0.00%	99.5	718.5	99.5	718.5	0.0	0.00%
4	40.5	718.5	40.5	718.5	0.0	0.00%	56.8	718.5	56.8	718.5	0.0	0.00%	79.8	718.5	79.8	718.5	0.0	0.00%
5	18.8	748.5	22.9	748.5	4.1	21.81%	29	748.5	30.7	748.5	1.7	5.86%	40.7	718.5	43.7	718.5	3.0	7.37%
6	9.9	718.5	9.9	718.5	0.0	0.00%	15.4	718.5	15.4	718.5	0.0	0.00%	19.8	718.5	19.8	718.5	0.0	0.00%
7	73.4	718.5	86.5	718.5	-13.1	17.85%	101.4	718.5	119.8	718.5	18.4	18.15%	142.7	718.5	166.7	718.5	24.0	16.82%
8	17.7	763.5	17.7	763.5	0.0	0.00%	27.5	748.5	27.5	748.5	0.0	0.00%	38.7	748.5	38.7	748.5	0.0	0.00%
9	78.5	718.5	80.2	718.5	1.7	2.17%	101.8	718.5	111.1	718.5	9.3	9.14%	143	718.5	154.9	718.5	11.9	8.32%
10	50.1	718.5	54.5	718.5	4.4	8.78%	67	718.5	71.6	718.5	4.6	6.87%	91.7	718.5	99.7	718.5	8.0	8.72%
11	19	763.5	31.7	763.5	12.7	66.84%	27.1	763.5	43.4	748.5	16.3	60.15%	38.1	748.5	59.3	718.5	21.2	55.64%
12	41.8	763.5	57.9	748.5	16.1	38.52%	57	748.5	78.2	718.5	21.2	37.19%	78.2	718.5	107	718.5	28.8	36.83%
13	0	808.5	0	808.5	0.0	0.00%	0	823.5	0	823.5	0.0	0.00%	0	883.5	0	883.5	0.0	0.00%
14	52.4	763.5	61.9	763.5	9.5	18.13%	71.3	748.5	83.1	748.5	11.8	16.55%	96.7	748.5	112.1	718.5	15.4	15.93%
15	56.9	763.5	52.4	763.5	-4.5	7.91%	76.8	748.5	71.3	763.5	-5.5	7.16%	103.8	748.5	97.2	748.5	-6.6	6.36%
16	16.6	763.5	21.2	763.5	4.6	27.71%	22.5	763.5	28.4	748.5	5.9	26.22%	31	748.5	38.4	718.5	7.4	23.87%
17	27.8	748.5	48	748.5	20.2	72.66%	37.4	748.5	66.4	718.5	29.0	77.54%	53.1	748.5	92.3	718.5	39.2	73.82%
18	47.4	718.5	74.1	718.5	26.7	56.33%	71.5	718.5	102.6	718.5	31.1	43.50%	98.1	718.5	142.5	718.5	44.4	45.26%
19	26.7	778.5	31.7	778.5	5.0	18.73%	37.3	778.5	44.3	778.5	7.0	18.77%	52.2	778.5	60.7	763.5	8.5	16.28%
20	49.9	763.5	54.2	763.5	4.3	8.62%	66.6	748.5	71.5	748.5	4.9	7.36%	88.6	748.5	94.4	748.5	5.8	6.55%
21	80.2	718.5	96.8	718.5	16.6	20.70%	113.5	718.5	134.2	718.5	20.7	18.24%	157.5	718.5	184.6	718.5	27.1	17.21%
22	46.1	763.5	39.4	778.5	-6.7	14.53%	62.3	763.5	53.6	763.5	-8.7	13.96%	84.4	748.5	73.4	763.5	-11.0	13.03%
23	21.1	718.5	25.9	718.5	4.8	22.75%	32.8	718.5	34.3	718.5	1.5	4.57%	45.3	718.5	48.5	718.5	3.2	7.06%
24	39.2	763.5	43.7	763.5	4.5	11.48%	56	763.5	60.6	763.5	4.6	8.21%	78.6	748.5	84.3	748.5	5.7	7.25%
25	52.7	763.5	48.1	763.5	-4.6	8.73%	72.8	748.5	66.4	763.5	-6.4	8.79%	101	748.5	93.3	748.5	-7.7	7.62%
26	129.3	718.5	129.3	718.5	0.0	0.00%	172.1	718.5	172.1	718.5	0.0	0.00%	227.1	718.5	227.1	718.5	0.0	0.00%
27	17	763.5	17	763.5	0.0	0.00%	23.5	748.5	23.5	748.5	0.0	0.00%	32.8	748.5	32.8	748.5	0.0	0.00%
28	193.9	718.5	141.5	718.5	-52.4	27.02%	244.7	718.5	188.1	718.5	-56.6	23.13%	308.8	718.5	247.1	718.5	-61.7	19.98%
				748.5	-3.7	7.10%	69.1	718.5	63.9	718.5	-5.2	7.53%	92	718.5	85.8	718.5	-6.2	6.74%
				808.5	0.0	0.00%	0	823.5	0	823.5	0.0	0.00%	0	883.5	0	883.5	0.0	0.00%
				718.5	-3.8	9.22%	55.6	718.5	51.4	718.5	-4.2	7.55%	74.8	718.5	70	718.5	-4.8	6.42%
				763.5	-10.2	20.44%	64.6	718.5	52.5	748.5	-12.1	18.73%	85.5	718.5	69.4	718.5	-16.1	18.83%
				808.5	0.0	0.00%	0	823.5	0	823.5	0.0	0.00%	0	883.5	0	883.5	0.0	0.00%
				748.5	-6.2	6.99%	113.7	718.5	106.3	748.5	-7.4	6.51%	149.5	718.5	139.8	718.5	-9.7	6.49%
				778.5	-6.0	13.89%	56.1	763.5	49	763.5	-7.1	12.66%	73	748.5	64.8	748.5	-8.2	11.23%
				718.5	0.0	0.00%	38.3	718.5	38.3	718.5	0.0	0.00%	50.1	718.5	50.1	718.5	0.0	0.00%

STJOHN9 WATERSHED PEAK FLOWS

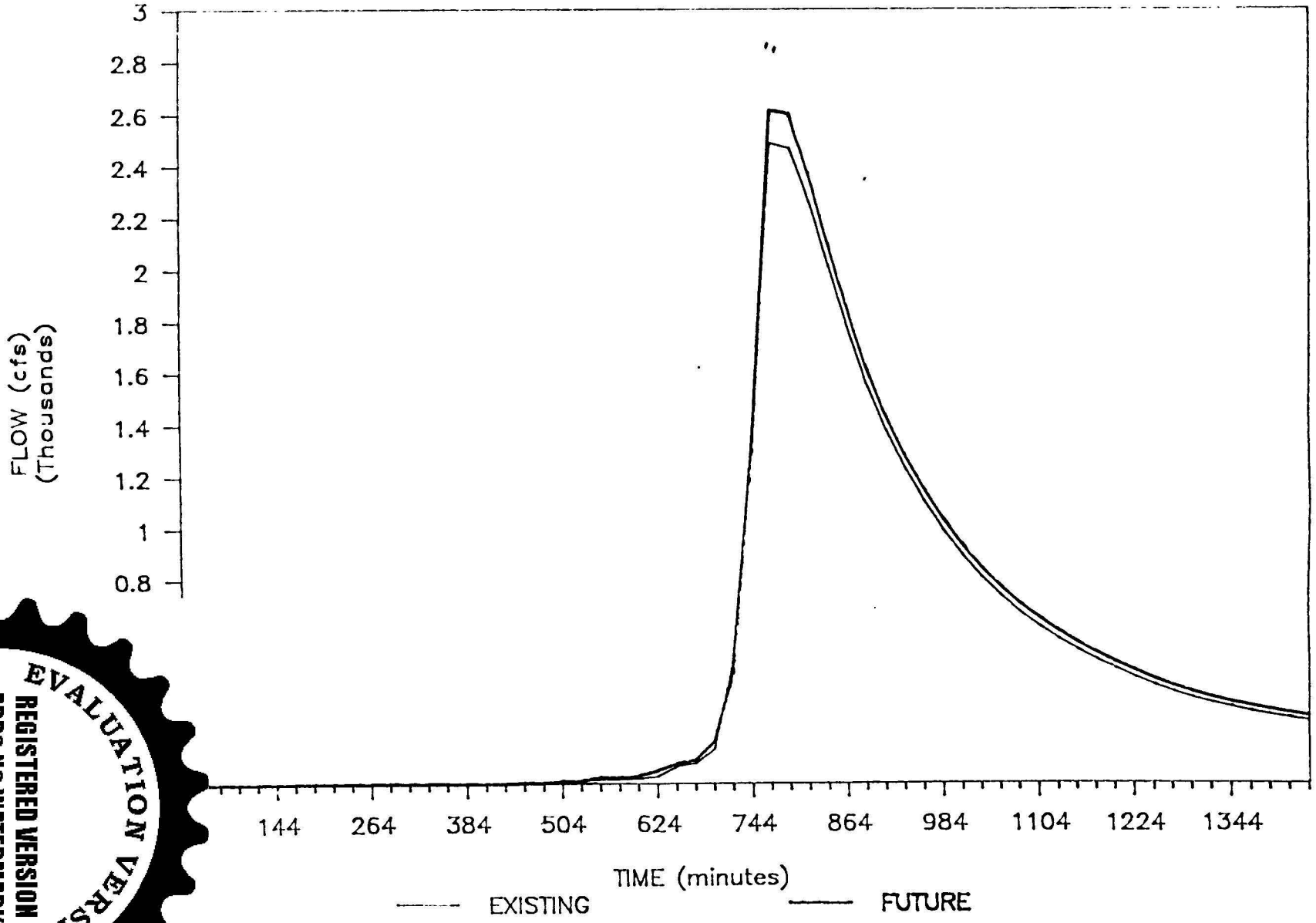
SUB AREA #	2.33-YEAR EVENT						5-YEAR EVENT						10-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	12.3	718.50	12.3	718.50	0.0	0.00%	11.3	709.50	11.3	709.50	0.0	0.00%	13.6	718.50	13.6	718.50	0.0	0.00%
2	58.9	721.50	58.9	721.50	0.0	0.00%	54.3	712.50	54.3	712.50	0.0	0.00%	63.4	718.50	63.4	718.50	0.0	0.00%
3	81.7	721.50	81.7	721.50	0.0	0.00%	90	712.50	90	712.50	0.0	0.00%	101.9	718.50	101.9	718.50	0.0	0.00%
4	93.4	721.50	93.4	721.50	0.0	0.00%	108.1	718.50	108.1	718.50	0.0	0.00%	135.1	718.50	135.1	718.50	0.0	0.00%
5	101.9	724.5	103.1	724.5	1.2	1.18%	121.3	715.5	116.5	715.5	-4.8	3.96%	148.1	721.5	148.3	721.5	0.2	0.14%
6	7.7	718.5	7.7	718.5	0.0	0.00%	7.1	709.5	7.1	709.5	0.0	0.00%	8.2	718.5	8.2	718.5	0.0	0.00%
7	124.3	730.5	124.1	730.5	-0.2	0.16%	156.1	718.5	154.1	718.5	-2.0	1.28%	202.8	727.5	212.1	727.5	9.3	4.59%
8	10.1	715.5	10.1	715.5	0.0	0.00%	13	709.5	13	709.5	0.0	0.00%	14	718.5	14	718.5	0.0	0.00%
9	51.8	718.5	37.7	718.5	-14.1	27.22%	46	718.5	54.9	718.5	8.9	19.35%	65.6	718.5	77.4	718.5	11.8	17.99%
10	68.3	721.5	62.2	715.5	-6.1	8.93%	71.8	718.5	78.3	718.5	6.5	9.05%	97.2	721.5	109.8	721.5	12.6	12.96%
11	6.9	712.5	5.3	748.5	-1.6	23.19%	9.1	718.5	13.3	763.5	4.2	46.15%	15	748.5	23.6	763.5	8.6	57.33%
12	12.8	712.5	15.4	763.5	2.6	20.31%	24.9	763.5	39	763.5	14.1	56.63%	45.6	763.5	67.5	763.5	21.9	48.03%
13	81.1	721.5	72.1	715.5	-9.0	11.10%	92.7	721.5	112.1	721.5	19.4	20.93%	140.1	721.5	173.8	721.5	33.7	24.05%
14	8.5	748.5	10.4	763.5	1.9	22.35%	21.8	778.5	26.7	778.5	4.9	22.48%	38.8	763.5	46.5	763.5	7.7	19.85%
15	9.2	763.5	8.4	748.5	-0.8	8.70%	24.2	778.5	21.8	778.5	-2.4	9.92%	42.6	763.5	38.8	778.5	-3.8	8.92%
16	199.8	730.5	194.7	730.5	-5.1	2.55%	271	721.5	294.4	721.5	23.4	8.63%	374.7	730.5	427.4	730.5	52.7	14.06%
17	14.5	715.5	8.2	718.5	-6.3	43.45%	11.5	706.5	20.3	763.5	8.8	76.52%	18.7	748.5	35.5	748.5	16.8	89.84%
18	45.9	715.5	29.3	709.5	-16.6	36.17%	51	709.5	51	718.5	0.0	0.00%	57.1	718.5	89.2	718.5	32.1	56.22%
19	50.8	718.5	32.8	712.5	-18.0	35.43%	58.1	712.5	60.4	721.5	2.3	3.96%	71.8	721.5	107.2	721.5	35.4	49.30%
20	57.3	721.5	39.1	715.5	-18.2	31.76%	74.7	724.5	82.7	754.5	8.0	10.71%	105.6	754.5	144.5	754.5	38.9	36.84%
21	264	742.5	254.5	742.5	-9.5	3.60%	397.1	733.5	430.8	733.5	33.7	8.49%	568.5	742.5	663.6	742.5	95.1	16.73%
22	7.4	763.5	6.2	718.5	-1.2	16.22%	19.5	778.5	15.2	778.5	-4.3	22.05%	34.6	778.5	28.7	778.5	-5.9	17.05%
23	13.1	715.5	14.4	715.5	1.3	9.92%	17	709.5	11.4	706.5	-5.6	32.94%	17.3	718.5	17.6	718.5	0.3	1.73%
24	25.5	715.5	28.6	715.5	3.1	12.16%	34.8	718.5	29.5	718.5	-5.3	15.23%	47.2	718.5	48.5	748.5	1.3	2.75%
25	37.6	718.5	38.3	718.5	0.7	1.86%	52.5	721.5	48	751.5	-4.5	8.57%	84.1	751.5	83	751.5	-1.1	1.31%
26	323.6	748.5	314.2	748.5	-9.4	2.90%	521.4	739.5	546.3	739.5	24.9	4.78%	778	748.5	866	748.5	88.0	11.31%
27	6.1	712.5	6.1	712.5	0.0	0.00%	7.4	718.5	7.4	718.5	0.0	0.00%	12.6	763.5	12.6	763.5	0.0	0.00%
28	42.3	724.5	28.7	724.5	-13.6	32.15%	101.6	718.5	67.6	718.5	-34.0	33.46%	158.9	718.5	113	718.5	-45.9	28.89%
[illegible]	[illegible]	[illegible]	323	754.5	-10.6	3.18%	545.4	745.5	567.9	745.5	22.5	4.13%	818.2	754.5	902.9	754.5	84.7	10.35%
			1	754.5	-21.7	5.85%	621.7	745.5	624.4	745.5	2.7	0.43%	919.7	754.5	984.9	754.5	65.2	7.09%
			6	760.5	-22.4	5.93%	639.3	751.5	640.4	751.5	1.1	0.17%	948.8	760.5	1011.8	760.5	63.0	6.64%
			1	778.5	-3.3	31.73%	24.1	778.5	17.9	778.5	-6.2	25.73%	38.9	748.5	30.2	763.5	-8.7	22.37%
			5	760.5	-25.6	6.60%	663	751.5	657.7	751.5	-5.3	0.80%	987.6	760.5	1041.9	760.5	54.3	5.50%
			4	769.5	-28.0	6.87%	706.7	760.5	697.2	760.5	-9.5	1.34%	1056.9	769.5	1106	769.5	49.1	4.65%
			8	772.5	-29.8	7.17%	726.8	763.5	713.5	763.5	-13.3	1.83%	1090.5	772.5	1134.3	772.5	43.8	4.02%
			1	775.5	-29.8	7.06%	740.8	766.5	727.5	766.5	-13.3	1.80%	1111.9	775.5	1155.6	775.5	43.7	3.93%

STJOHN9 WATERSHED PEAK FLOWS

SUB AREA #	25-YEAR EVENT						50-YEAR EVENT						100-YEAR EVENT					
	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.	EXISTING		FUTURE		CHANGE IN FLOW	% OF EXIST.
	PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME			PEAK	TIME	PEAK	TIME		
1	17.2	763.50	17.2	763.50	0.0	0.00%	26.8	763.50	26.8	763.50	0.0	0.00%	35.8	763.50	35.8	763.50	0.0	0.00%
2	75.5	718.50	75.5	718.50	0.0	0.00%	113	718.50	113	718.50	0.0	0.00%	143.6	718.50	143.6	718.50	0.0	0.00%
3	122.5	718.50	122.5	718.50	0.0	0.00%	185.5	718.50	185.5	718.50	0.0	0.00%	243	718.50	243	718.50	0.0	0.00%
4	163	718.50	163	718.50	0.0	0.00%	242.3	718.50	242.3	718.50	0.0	0.00%	322.8	718.50	322.8	718.50	0.0	0.00%
5	178.9	721.5	183	721.5	4.1	2.29%	267.6	721.5	268.9	721.5	1.3	0.49%	358.6	721.5	361.4	721.5	2.8	0.78%
6	9.9	718.5	9.9	718.5	0.0	0.00%	15.4	718.5	15.4	718.5	0.0	0.00%	19.8	718.5	19.8	718.5	0.0	0.00%
7	253.1	727.5	269.7	727.5	16.6	6.56%	372.2	736.5	388.5	736.5	16.3	4.38%	500.8	736.5	522.5	736.5	21.7	4.33%
8	17.7	763.5	17.7	763.5	0.0	0.00%	27.5	748.5	27.5	748.5	0.0	0.00%	38.7	748.5	38.7	748.5	0.0	0.00%
9	91.8	718.5	93.6	718.5	1.8	1.96%	122.5	718.5	131.8	718.5	9.3	7.59%	171.7	718.5	183.6	718.5	11.9	6.93%
10	130	721.5	136	721.5	6.0	4.62%	174.2	721.5	186.4	721.5	12.2	7.00%	240.9	721.5	258.9	721.5	18.0	7.47%
11	19	763.5	31.7	763.5	12.7	66.84%	27.1	763.5	43.4	748.5	16.3	60.15%	38.1	748.5	59.3	718.5	21.2	55.64%
12	60.8	763.5	89.7	748.5	28.9	47.53%	84	748.5	120.7	718.5	36.7	43.69%	115.9	748.5	166.3	718.5	50.4	43.49%
13	187.6	721.5	223.2	721.5	35.6	18.98%	255.4	721.5	307.1	721.5	51.7	20.24%	355.9	721.5	425.2	721.5	69.3	19.47%
14	52.4	763.5	61.9	763.5	9.5	18.13%	71.3	748.5	83.1	748.5	11.8	16.55%	96.7	748.5	112.1	718.5	15.4	15.93%
15	56.9	763.5	52.4	763.5	-4.5	7.91%	76.8	748.5	71.3	763.5	-5.5	7.16%	103.8	748.5	97.2	748.5	-6.6	6.36%
16	486.4	730.5	551.6	730.5	65.2	13.40%	694.6	739.5	776.2	739.5	81.6	11.75%	944.2	739.5	1045.6	739.5	101.4	10.74%
17	27.8	748.5	48	748.5	20.2	72.66%	37.4	748.5	66.4	718.5	29.0	77.54%	53.1	748.5	92.3	718.5	39.2	73.82%
18	74.9	718.5	121.4	718.5	46.5	62.08%	108	718.5	169	718.5	61.0	56.48%	150.8	718.5	234.8	718.5	84.0	55.70%
19	95.4	721.5	146	721.5	50.6	53.04%	137.2	721.5	204.7	721.5	67.5	49.20%	193.4	721.5	285.7	721.5	92.3	47.72%
20	142	754.5	193.9	724.5	51.9	36.55%	197.3	724.5	269.8	724.5	72.5	36.75%	275.7	724.5	373.4	727.5	97.7	35.44%
21	744.7	742.5	869.4	742.5	124.7	16.74%	1054.7	751.5	1208.4	751.5	153.7	14.57%	1432.2	751.5	1629.9	751.5	197.7	13.80%
22	46.1	763.5	39.4	778.5	-6.7	14.53%	62.3	763.5	53.6	763.5	-8.7	13.96%	84.4	748.5	73.4	763.5	-11.0	13.03%
23	21.1	718.5	25.9	718.5	4.8	22.75%	32.8	718.5	34.3	718.5	1.5	4.57%	45.3	718.5	48.5	718.5	3.2	7.06%
24	50.7	748.5	67.3	748.5	8.6	14.65%	85.7	748.5	92	748.5	6.3	7.35%	120.7	718.5	129.6	718.5	8.9	7.37%
25	110.9	751.5	114.9	751.5	4.0	3.61%	158.2	751.5	158.1	751.5	-0.1	0.06%	220.1	751.5	220.7	751.5	0.6	0.27%
26	1017.6	748.5	1139.5	748.5	121.9	11.98%	1424.8	757.5	1569.4	757.5	144.6	10.15%	1926.1	757.5	2113.2	757.5	187.1	9.71%
27	17	763.5	17	763.5	0.0	0.00%	23.5	748.5	23.5	748.5	0.0	0.00%	32.8	748.5	32.8	748.5	0.0	0.00%
28	200	718.5	147.5	718.5	-52.5	26.25%	251.9	718.5	195.2	718.5	-56.7	22.51%	317.8	718.5	256.2	718.5	-61.6	19.38%
29	1069.2	754.5	1187.5	754.5	118.3	11.06%	1490	763.5	1630.7	763.5	140.7	9.44%	2009.2	763.5	2192	763.5	182.8	9.10%
30	1191.4	754.5		754.5	98.6	8.28%	1622.7	763.5	1748.1	763.5	125.4	7.73%	2167.4	763.5	2336.1	763.5	168.7	7.78%
				760.5	96.0	7.81%	1668.6	769.5	1791.3	769.5	122.7	7.35%	2225.3	769.5	2391.2	769.5	165.9	7.46%
				763.5	-10.2	20.44%	64.6	718.5	52.5	748.5	-12.1	18.73%	85.5	718.5	69.4	718.5	-16.1	18.83%
				760.5	86.3	6.75%	1730.5	769.5	1842.8	769.5	112.3	6.49%	2303.8	769.5	2457.9	769.5	154.1	6.69%
				769.5	80.6	5.90%	1838.5	778.5	1945.3	778.5	106.8	5.81%	2439.3	778.5	2586.8	778.5	147.5	6.05%
				772.5	74.7	5.30%	1893.6	781.5	1993.8	781.5	100.2	5.29%	2509.7	781.5	2650.1	781.5	140.4	5.59%
				775.5	74.7	5.21%	1925.3	784.5	2025.5	784.5	100.2	5.20%	2548.7	784.5	2689.1	784.5	140.4	5.51%

ST. JOHN'S CREEK WATERSHED

100 YEAR EVENT --- EXISTING VS. FUTURE



APPENDIX E

PRIORITY WATERSHED MUNICIPALITIES

LIST OF MUNICIPALITIES WITHIN SUBWATERSHED AREAS

#1 Sterry Creek
- Jefferson Township
- Jessup Borough
- Olyphant Borough

#2 Wildcat Creek
- Archbald Borough
- Blakely Borough
- Scott Township

#3 Hull Creek
- Blakely Borough
- Dickson City Borough
- Scott Township

#4 Eddy Creek
- Dunmore Borough
- Jefferson Township
- Jessup Borough
- Olyphant Borough
- Roaring Brook Township
- Throop Borough

#5 Tributary Through Dickson City
- Blakely Borough
- Dickson City Borough
- Scott Township

#6 Roaring Brook
- Covington Township
- Dunmore Borough
- Elmhurst Township
- Jefferson Township
- Madison Township
- Moscow Borough
- Olyphant Borough
- Roaring Brook Township
- Scranton City
- Springbrook Township
- Sterling Township
- Throop Borough

#7 Keyser Creek
- Newtown Township
- Ransom Township
- Scranton City
- Taylor Borough

#8 Spring Brook
- Moosic Borough
- Pittston Township
- Scranton City
- Springbrook Township

#9 St. John's Creek
- Newtown Township
- Old Forge Borough
- Ransom Township
- Taylor Borough

APPENDIX F

PRIORITY WATERSHED RELEASE RATES BY SUBAREA

NUMBER OF SUBAREAS WITH RELEASE RATE % AS SHOWN

WATERSHED NAME	50-59	60-69	70-79	80-89	90-98	100	TOTAL	# OF DIRECT DISCHARGE CANDIDATES
STERRY CREEK								
# of sub-areas	0	0	2	3	3	9	17	4
affected area (AC)	0	0	282	346	620	1,618	2,866	
% of total	0	0	9.8	12.1	21.6	56.5	100	
WILDCAT CREEK								
# of sub-areas	0	0	1	0	1	17	19	2
affected area (AC)	0	0	171	0	137	2,417	2,725	
% of total	0	0	6.2	0	5.0	88.7	100	
	0	0	0	0	14	14	0	
	0	0	0	0	2,123	2,123		
	0	0	0	0	100	100		

WALTER B. SATTERTHWAITE ASSOCIATES, INC.

NUMBER OF SUBAREAS WITH RELEASE RATE % AS SHOWN

WATERSHED NAME	50-59	60-69	70-79	80-89	90-98	100	TOTAL	# OF DIRECT DISCHARGE CANDIDATES
EDDY CREEK # of sub-areas	0	0	0	0	0	33	33	5
affected area (AC)	0	0	0	0	0	4,725	4,725	
% of total	0	0	0	0	0	100	100	
DICKSON CREEK # of sub-areas	0	0	1	0	3	4	9	0
affected area (AC)	0	0	195	172	404	278	1,049	
% of total	0	0	18.6	16.4	38.5	26.5	100	
	2	2	1	3	20	28		2
	381	403	232	633	3,707	5,356		
	7.1	7.5	4.3	11.8	69.2	100		

WALTER B. SATTERTHWAITE ASSOCIATES, INC.

NUMBER OF SUBAREAS WITH RELEASE RATE % AS SHOWN

WATERSHED NAME	50-59	60-69	70-79	80-89	90-98	100	TOTAL	# OF DIRECT DISCHARGE CANDIDATES
SPRING BROOK								
# of sub-areas	0	0	1	0	0	14	15	0
affected area (AC)	0	0	112	0	0	2,449	2,561	
% of total	0	0	4.4	0	0	95.6	100	
ST. JOHN CREEK								
# of sub-areas	1	3	3	3	12	11	33	5
affected area (AC)	52	439	435	471	1,749	1,492	4,638	
% of total	1.1	9.5	9.4	10.2	37.7	32.2	100	
	3	5	14	11	94	141		27
	880	1,574	3,648	3,024	23,951	35,745		
	2.5	4.4	10.2	8.5	67.0	100		

WALTER B. SATTERTHWAITE ASSOCIATES, INC.

STERRY CREEK WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
1	289	93
2	163	77
3	119	73
4	127	94
5	142	84
6	105	84
8	204	97
9	191	100
10	177	100
11	142	100*
12	206	100*
13	99	89
14	277	100
15	245	100
16	122	100*
17	156	100
18	102	100*

* Candidate for direct discharge

WILDCAT CREEK WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
1	151	100
2	141	100
3	132	100
5	272	100
6	195	100
7	184	100
8	75	100
9	100	100
10	92	100
11	128	100
12	137	90
13	171	70
14	241	100
15	205	100
16	23	100
17	194	100
18	163	100
19	93	100*
20	28	100*

* Candidate for direct discharge

HULL CREEK WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
1	111	100
2	182	100
3	138	100
4	180	100
5	178	100
6	124	100
7	110	100
9	136	100
10	306	100
11	128	100
12	90	100
13	152	100
14	170	100
15	118	100

No direct discharge candidates

EDDY CREEK WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
1	151	100
2	106	100
3	79	100
4	85	100
5	119	100
6	85	100
7	103	100
8	117	100
9	131	100
10	167	100
11	260	100
13	115	100
14	152	100
15	102	100
16	203	100
17	153	100
18	253	100
19	99	100*
20	246	100
21	195	100
22	120	100
23	141	100*
24	184	100
25	182	100
27	134	100
28	195	100
29	117	100*
30	63	100
31	163	100
32	144	100
33	142	100
34	125	100*
35	94	100*

* Direct discharge candidates

DICKSON CITY WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
1	132	96
2	139	93
3	195	71
4	85	100
5	133	95
6	172	82
7	72	100
8	107	100
9	14	100

No direct discharge candidates

ROARING BROOK WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
1	443	86
2	204	84
3	266	91
4	143	95
5	140	55
6	400	69
7	151	61
8	138	50
9	393	86
10	237	91
11	184	91
13	263	100
14	332	100
15	202	88
16	222	50*
17	233	100
18	511	100
19	400	100
20	393	100
21	202	100
22	345	100
23	226	100
24	314	100
25	395	100
27	364	100
28	165	100
30	265	54
32	226	81
33	266	98
34	99	50*
35	175	100
36	426	100
37	338	100

* Candidates for direct discharge

ROARING BROOK WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
39	208	100
40	305	100
42	239	100
43	200	50*
44	217	86
45	138	50
46	180	100
47	213	100
48	242	100
49	253	51
51	145	50
53	215	50*
54	406	74
55	189	83
56	303	100*
57	244	50
58	305	54
59	382	100
60	415	90
61	329	64
62	253	50
63	404	100
64	314	83
65	378	92
66	149	100
68	371	100
69	215	100*
70	74	100*
72	105	100*
74	377	100
75	169	100
76	314	100*
77	272	100
78	268	

* Candidates for direct discharge

ROARING BROOK WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
79	162	100
80	152	100
81	397	100
82	206	100
83	193	100
84	182	100*
85	334	86
86	301	75
87	51	50*
88	235	79
89	219	80
90	343	100
91	228	100
92	24	100
93	290	100
94	233	100
95	252	100
96	51	100
97	329	100
98	314	87
99	28	100
100	103	82
101	182	100
102	294	100
103	152	100*
104	209	90
105	355	100
106	318	95
107	332	89
108	105	100
109	231	100
110	263	95
111	242	100
112	325	

* Candidates for direct discharge

ROARING BROOK WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
113	323	100
114	110	100
116	141	100
117	388	100
118	171	100
120	343	100
121	329	71
122	230	100*
123	158	89
124	285	100*
125	152	100
127	413	100*
128	134	100*
129	305	100
130	303	75
131	195	100
132	171	100
133	283	100
134	345	100
136	347	100*
137	430	100*
138	138	100*
139	467	100
140	353	100
141	345	90
142	255	100
144	132	100
145	312	100
146	211	100*
147	426	100
148	378	100
149	114	100*
150	244	100

* Candidates for direct discharge

ROARING BROOK WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
151	242	100*
152	296	100
153	266	100*
154	191	100*
155	103	100*
156	209	100*
157	20	100*

* Candidates for direct discharge

KEYSER CREEK WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
1	248	100
2	256	100
3	152	100
4	193	100
5	162	100
6	266	100
7	121	100
8	198	98
9	220	100
10	138	100*
11	232	80
12	203	71
13	128	100
15	250	100
16	249	98
17	197	68
18	186	98
19	184	69
20	200	76
22	167	100
23	236	100
25	220	100
26	99	100
28	186	100
29	189	100
31	151	100
32	151	100
33	174	100*

* Candidates for direct discharge

SPRING BROOK WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
1	232	100
2	253	100
3	153	100
4	261	100
5	147	100
6	222	100
7	137	100
9	170	100
10	161	100
11	112	70
12	265	100
13	90	100
14	262	100
15	29	100
16	67	100

No direct discharge candidates

ST. JOHN'S CREEK WATERSHED
RELEASE RATE SUMMARY

SUBAREA NO.	LAND AREA (Acres)	RELEASE RATE PERCENT
1	147	100
2	163	80
3	159	77
4	112	75
5	111	96
6	52	93
7	164	73
8	121	98
9	173	66
10	52	50
11	110	98
12	154	96
14	198	98
15	209	98
16	68	98
17	143	97
18	123	65
19	180	95
20	172	98
21	143	65*
22	186	100
23	85	83
24	233	100
25	231	98
26	223	80
27	86	100
28	111	100
29	120	100*
31	76	100*
32	122	100
34	216	100*
35	141	100
36	54	100*

* Candidates for direct discharge

APPENDIX G

PRIORITY WATERSHED EXISTING AND FUTURE LAND USE DISTRIBUTION BY SUBAREA

STERRY CREEK -- EXISTING LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
1	0.0	0.0	0.0	0.0	0.0	289.3	0.0	0.0	0.0	289.3
2	0.0	0.0	0.0	0.0	0.0	157.9	0.0	0.0	4.6	162.5
3	0.0	0.0	0.0	0.0	0.0	118.5	0.0	0.0	0.9	119.4
4	0.0	0.0	0.0	0.0	0.0	126.7	0.0	0.0	0.0	126.7
5	0.0	0.0	0.0	0.0	0.0	142.3	0.0	0.0	0.0	142.3
6	0.0	0.0	0.0	0.0	0.0	104.7	0.0	0.0	0.0	104.7
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	4.6	199.3	0.0	0.0	0.0	203.9
9	0.0	0.0	0.0	0.0	57.9	133.2	0.0	0.0	0.0	191.0
10	0.0	0.0	0.0	0.0	113.0	75.3	0.0	0.0	0.0	188.3
11	0.0	0.0	0.0	0.0	155.2	1.8	0.0	0.0	0.0	157.0
12	0.0	0.0	0.0	0.9	29.4	175.4	0.0	0.0	0.0	205.7
13	62.4	0.0	0.0	0.0	0.9	26.6	9.2	0.0	0.0	99.2
14	11.0	0.0	0.0	19.3	41.3	205.7	0.0	0.0	0.0	277.3
15	6.4	0.0	0.0	0.0	164.4	55.1	31.2	4.6	0.0	261.7
16	26.6	0.0	0.0	0.0	76.2	19.3	0.0	0.0	0.0	122.1
17	144.2	0.0	0.0	0.0	0.0	5.5	0.0	6.4	0.0	156.1
18	86.3	0.0	0.0	1.8	21.1	0.0	3.7	2.8	0.0	115.7

STERRY CREEK -- FUTURE LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
1	0.0	0.0	0.0	0.0	0.0	289.3	0.0	0.0	0.0	289.3
2	0.0	0.0	0.0	0.0	0.0	158.9	0.0	0.0	3.7	162.5
3	0.0	0.0	0.0	0.0	0.0	119.4	0.0	0.0	0.0	119.4
4	0.0	0.0	0.0	0.0	0.0	126.7	0.0	0.0	0.0	126.7
5	0.0	0.0	0.0	0.0	0.0	142.3	0.0	0.0	0.0	142.3
6	0.0	0.0	0.0	0.0	0.0	104.7	0.0	0.0	0.0	104.7
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	14.7	189.2	0.0	0.0	0.0	203.9
9	0.0	0.0	0.0	0.0	48.7	142.3	0.0	0.0	0.0	191.0
10	0.0	0.0	0.0	0.0	45.9	83.6	58.8	0.0	0.0	188.3
11	0.0	0.0	0.0	0.0	9.2	3.7	137.7	6.4	0.0	157.0
12	0.0	0.0	0.0	0.0	44.1	35.8	96.4	29.4	0.0	205.7
13	64.3	0.0	0.0	0.0	1.8	8.3	24.8	0.0	0.0	99.2
14	80.8	0.0	0.0	9.2	33.1	66.1	76.2	11.9	0.0	277.3
15	67.0	0.0	0.0	0.0	112.0	0.0	82.6	0.0	0.0	261.7
16	116.6	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	122.1
17	146.9	0.0	0.0	0.0	0.0	0.0	0.0	9.2	0.0	156.1
18	112.0	0.0	0.0	0.0	1.8	0.0	0.0	1.8	0.0	115.7

WILDCAT CREEK -- EXISTING LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	TOTAL
1	0.0	0.0	0.0	0.0	0.0	166.2	0.0	0.0	166.2
2	0.0	0.0	0.0	0.0	0.0	142.3	0.0	0.0	142.3
3	0.0	0.0	0.0	0.0	0.0	132.2	0.0	0.0	132.2
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	8.3	0.0	0.0	82.6	72.5	72.5	0.0	35.8	271.8
6	40.4	0.0	0.0	0.0	76.2	33.1	0.0	45.0	194.7
7	0.9	0.0	0.0	0.0	19.3	155.2	0.0	8.3	183.7
8	30.3	0.0	0.0	0.0	0.0	4.6	0.0	40.4	75.3
9	0.0	0.0	0.0	0.0	0.0	88.2	0.0	11.9	100.1
10	35.8	0.0	0.0	0.0	20.2	0.0	7.3	28.5	91.8
11	75.3	0.0	0.0	7.3	19.3	0.0	10.1	15.6	127.6
12	0.0	0.0	0.0	45.0	0.0	106.5	0.0	0.0	151.5
13	0.0	0.0	0.0	11.9	0.0	161.6	0.0	1.8	175.4
14	0.0	0.0	0.0	0.0	0.0	253.5	0.0	0.0	253.5
15	0.0	0.0	0.0	42.2	0.0	157.0	0.0	5.5	204.8
16	0.0	0.0	0.0	0.0	0.0	8.3	0.0	14.7	23.0
17	33.1	0.0	0.0	0.9	101.9	24.8	0.0	48.7	209.4
18	129.5	0.0	0.0	15.6	15.6	0.0	0.0	0.0	160.7
19	91.8	0.0	0.0	0.0	8.3	0.0	0.0	3.7	103.8
20	26.6	0.0	0.0	0.0	0.0	0.0	0.0	5.5	32.1

WILDCAT CREEK -- FUTURE LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	TOTAL
1	0.0	0.0	1.8	0.0	0.0	164.4	0.0	0.0	166.2
2	0.0	0.0	0.0	0.0	0.0	138.7	0.0	3.7	142.3
3	0.0	0.0	0.0	0.0	0.0	128.6	0.0	3.7	132.2
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	17.4	0.0	0.0	103.8	56.0	42.2	0.0	52.3	271.8
6	52.3	0.0	0.0	0.0	30.3	63.4	0.0	48.7	194.7
7	4.6	0.0	0.0	0.0	0.0	167.1	0.0	11.9	183.7
8	28.5	0.0	0.0	0.0	0.0	0.0	0.0	46.8	75.3
9	0.0	0.0	0.0	0.0	0.0	79.0	0.0	21.1	100.1
10	33.1	0.0	0.0	0.0	0.0	0.0	8.3	50.5	91.8
11	85.4	0.0	0.0	25.7	0.0	0.0	5.5	11.0	127.6
12	0.0	0.0	0.0	56.9	0.0	94.6	0.0	0.0	151.5
13	0.0	66.1	0.0	20.2	0.0	79.9	0.0	9.2	175.4
14	0.0	0.0	0.0	0.0	0.0	253.5	0.0	0.0	253.5
15	0.0	0.0	0.0	19.3	0.0	170.8	0.0	14.7	204.8
16	0.0	0.0	0.0	5.5	0.0	0.0	0.0	17.4	23.0
17	112.0	16.5	0.0	5.5	0.0	1.8	0.0	73.5	209.4
18	149.7	0.0	0.0	11.0	0.0	0.0	0.0	0.0	160.7
19	101.9	0.0	0.0	0.0	0.0	0.0	0.0	1.8	103.8
20	24.8	0.0	0.0	0.9	0.0	0.0	0.0	6.4	32.1

HULL CREEK -- EXISTING LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	TOTAL
1	0.0	0.0	16.5	99.2	0.0	0.0	0.0	0.0	115.7
2	0.0	0.0	27.5	164.4	0.0	0.0	0.0	0.0	191.9
3	0.0	0.0	34.0	110.2	0.0	0.0	0.0	0.0	144.2
4	0.0	0.0	16.5	179.1	0.0	0.0	0.0	0.0	195.6
5	0.0	0.0	5.5	53.3	0.0	119.4	0.0	0.0	178.2
6	0.0	0.0	12.9	80.8	0.0	30.3	0.0	0.0	124.0
7	0.0	0.0	0.9	55.1	0.0	54.2	0.0	0.0	110.2
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	32.1	0.0	32.1	0.0	72.5	0.0	0.0	136.8
10	0.0	89.1	0.0	34.0	0.0	201.1	0.0	0.0	324.2
11	0.0	0.0	0.0	6.4	0.0	126.7	0.0	0.0	133.2
12	0.0	0.0	0.0	0.0	0.0	90.0	0.0	0.0	90.0
13	7.3	0.0	0.0	0.0	0.0	138.7	0.0	7.3	153.4
14	11.9	0.0	0.0	13.8	52.3	79.0	0.0	26.6	183.7
15	112.0	0.0	0.0	5.5	7.3	6.4	0.0	0.9	132.2

HULL CREEK -- FUTURE LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	TOTAL
1	0.0	0.0	34.0	81.7	0.0	0.0	0.0	0.0	115.7
2	0.0	0.0	113.0	79.0	0.0	0.0	0.0	0.0	191.9
3	0.0	0.0	82.6	61.5	0.0	0.0	0.0	0.0	144.2
4	0.0	0.0	39.5	156.1	0.0	0.0	0.0	0.0	195.6
5	0.0	0.0	47.8	53.3	0.0	77.1	0.0	0.0	178.2
6	0.0	0.0	61.5	49.6	0.0	12.9	0.0	0.0	124.0
7	0.0	0.0	59.7	14.7	0.0	35.8	0.0	0.0	110.2
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	32.1	40.4	19.3	0.0	45.0	0.0	0.0	136.8
10	0.0	124.0	0.0	14.7	0.0	185.5	0.0	0.0	324.2
11	0.0	5.5	0.0	6.4	0.0	121.2	0.0	0.0	133.2
12	0.0	0.0	0.0	0.0	0.0	90.0	0.0	0.0	90.0
13	6.4	32.1	0.0	0.0	0.0	109.3	0.0	5.5	153.4
14	27.5	0.0	1.8	12.9	0.0	95.5	0.0	45.9	183.7
15	116.6	0.0	0.0	13.8	0.0	0.0	0.9	0.9	132.2

EDDY CREEK -- EXISTING LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
1	0.0	0.0	0.0	0.0	0.0	145.1	0.0	0.0	5.5	150.6
2	0.0	0.0	0.0	0.0	0.0	105.6	0.0	0.0	0.0	105.6
3	0.0	0.0	0.0	0.0	0.0	79.0	0.0	0.0	0.0	79.0
4	0.0	0.0	0.0	0.0	0.0	78.1	0.0	0.0	11.0	89.1
5	0.0	0.0	0.0	0.0	0.0	124.0	0.0	0.0	0.9	124.9
6	0.0	0.0	0.0	0.0	0.0	87.2	0.0	0.0	0.0	87.2
7	0.0	0.0	0.0	0.0	0.0	109.3	0.0	0.0	0.0	109.3
8	0.0	0.0	0.0	0.0	0.0	80.8	0.0	0.0	36.7	117.5
9	0.0	0.0	0.0	0.0	0.0	131.3	0.0	0.0	0.0	131.3
10	0.0	0.0	0.0	0.0	0.0	167.1	0.0	0.0	0.0	167.1
11	0.0	0.0	0.0	0.0	0.0	259.9	0.0	0.0	0.0	259.9
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	114.8	0.0	0.0	0.0	114.8
14	0.0	0.0	0.0	0.0	0.0	152.4	0.0	0.0	0.0	152.4
15	0.0	0.0	0.0	0.0	0.0	94.6	0.0	0.0	7.3	101.9
16	0.0	0.0	0.0	0.0	0.0	202.9	0.0	0.0	0.0	202.9
17	0.0	0.0	0.0	0.0	10.1	143.3	0.0	0.0	0.0	153.4
18	0.0	0.0	0.0	0.0	58.8	193.8	0.0	0.0	0.0	252.5
19	0.0	0.0	0.0	0.0	47.8	51.4	0.0	0.0	0.0	99.2
20	0.0	0.0	0.0	0.0	90.0	156.1	0.0	0.0	0.0	246.1
21	0.0	0.0	0.0	35.8	96.4	12.9	57.9	0.0	0.0	202.9
22	0.0	0.0	0.0	8.3	0.9	74.4	16.5	20.2	0.0	120.3
23	0.0	0.0	0.0	5.5	37.7	26.6	69.8	5.5	0.0	145.1
24	0.0	0.0	0.0	0.0	173.6	10.1	0.0	0.0	0.0	183.7
25	0.0	0.0	0.0	19.3	125.8	28.5	0.0	8.3	0.0	181.8
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	15.6	0.0	0.0	9.2	21.1	60.6	44.1	0.0	0.0	150.6
28	18.4	0.0	0.0	164.4	17.4	0.0	0.0	6.4	0.0	206.6
29	34.9	0.0	0.0	27.5	57.9	0.0	0.0	0.0	0.0	120.3
30	0.0	0.0	0.0	0.0	63.4	0.0	0.0	0.0	0.0	63.4
31	0.0	0.0	0.0	3.7	107.4	1.8	31.2	18.4	0.0	162.5
32	0.0	0.0	0.0	23.0	116.6	0.0	0.0	4.6	0.0	144.2
33	56.0	0.0	0.0	0.0	89.1	0.0	0.0	0.0	0.0	145.1
34	43.2	0.0	0.0	0.0	82.6	0.0	0.0	0.0	0.0	125.8
35	45.0	0.0	0.0	0.0	59.7	0.0	0.0	0.0	0.0	104.7

EDDY CREEK -- FUTURE LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
1	0.0	0.0	0.0	0.0	0.0	146.0	0.0	0.0	4.6	150.6
2	0.0	0.0	0.0	0.0	0.0	105.6	0.0	0.0	0.0	105.6
3	0.0	0.0	0.0	0.0	0.0	79.0	0.0	0.0	0.0	79.0
4	0.0	0.0	0.0	0.0	0.0	81.7	0.0	0.0	7.3	89.1
5	0.0	0.0	0.0	0.0	0.0	124.9	0.0	0.0	0.0	124.9
6	0.0	0.0	0.0	0.0	0.0	87.2	0.0	0.0	0.0	87.2
7	0.0	0.0	0.0	0.0	0.0	109.3	0.0	0.0	0.0	109.3
8	0.0	0.0	0.0	0.0	0.0	79.0	0.0	0.0	38.6	117.5
9	0.0	0.0	0.0	0.0	0.0	131.3	0.0	0.0	0.0	131.3
10	0.0	0.0	0.0	0.0	0.0	167.1	0.0	0.0	0.0	167.1
11	0.0	0.0	0.0	0.0	0.0	259.9	0.0	0.0	0.0	259.9
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	114.8	0.0	0.0	0.0	114.8
14	0.0	0.0	0.0	0.0	0.0	152.4	0.0	0.0	0.0	152.4
15	0.0	0.0	0.0	0.0	0.0	96.4	0.0	0.0	5.5	101.9
16	0.0	0.0	0.0	0.0	0.0	202.9	0.0	0.0	0.0	202.9
17	0.0	0.0	0.0	0.0	9.2	144.2	0.0	0.0	0.0	153.4
18	0.0	0.0	0.0	0.0	36.7	215.8	0.0	0.0	0.0	252.5
19	0.0	0.0	0.0	0.0	1.8	64.3	33.1	0.0	0.0	99.2
20	0.0	0.0	0.0	123.1	0.0	123.1	0.0	0.0	0.0	246.1
21	0.0	0.0	0.0	129.5	0.0	9.2	64.3	0.0	0.0	202.9
22	0.0	0.0	0.0	0.0	0.0	34.0	60.6	25.7	0.0	120.3
23	0.0	0.0	0.0	0.9	0.0	0.0	124.9	19.3	0.0	145.1
24	0.0	0.0	0.0	0.0	44.1	12.9	126.7	0.0	0.0	183.7
25	0.0	0.0	0.0	20.2	0.0	0.0	147.8	13.8	0.0	181.8
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	30.3	0.0	0.0	6.4	0.0	0.0	113.9	0.0	0.0	150.6
28	56.0	0.0	0.0	124.0	13.8	0.0	0.0	12.9	0.0	206.6
29	85.4	0.0	0.0	20.2	14.7	0.0	0.0	0.0	0.0	120.3
30	0.0	0.0	0.0	0.0	0.0	0.0	63.4	0.0	0.0	63.4
31	3.7	0.0	0.0	0.0	0.0	0.0	124.0	34.9	0.0	162.5
32	3.7	0.0	0.0	0.0	53.3	0.0	58.8	28.5	0.0	144.2
33	117.5	0.0	0.0	8.3	19.3	0.0	0.0	0.0	0.0	145.1
34	113.0	0.0	0.0	0.0	9.2	0.0	3.7	0.0	0.0	125.8
35	34.9	0.0	0.0	0.0	69.8	0.0	0.0	0.0	0.0	104.7

DICKSON CITY -- EXISTING LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	TOTAL
1	0.0	0.0	0.0	0.0	0.0	146.0	0.0	0.0	146.0
2	0.0	0.0	0.0	0.0	0.0	107.4	0.0	45.9	153.4
3	37.7	0.0	0.0	7.3	87.2	44.1	0.0	31.2	207.5
4	62.4	0.0	0.0	0.0	13.8	0.0	0.0	15.6	91.8
5	0.0	0.0	0.0	0.0	0.0	139.6	0.0	0.0	139.6
6	0.0	0.0	0.0	0.0	0.0	145.1	0.0	26.6	171.7
7	32.1	0.0	0.0	10.1	12.9	9.2	0.0	7.3	71.6
8	67.0	0.0	0.0	0.0	21.1	0.0	0.0	18.4	106.5
9	0.0	0.0	0.0	0.0	0.0	0.0	14.7	0.9	15.6

DICKSON CITY -- FUTURE LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	TOTAL
1	0.0	0.0	20.2	0.0	0.0	123.1	0.0	2.8	146.0
2	0.0	0.0	0.0	0.0	0.0	68.9	0.0	84.5	153.4
3	75.3	0.0	0.0	5.5	47.8	33.1	0.0	45.9	207.5
4	76.2	0.0	0.0	0.0	0.0	0.0	2.8	12.9	91.8
5	0.0	0.0	0.9	0.0	0.0	138.7	0.0	0.0	139.6
6	0.0	0.0	91.8	0.0	0.0	34.9	0.0	45.0	171.7
7	49.6	0.0	0.0	9.2	0.0	0.0	0.0	12.9	71.6
8	87.2	0.0	0.0	0.0	0.0	0.0	2.8	16.5	106.5
9	0.0	0.0	0.0	0.0	0.0	0.0	15.6	0.0	15.6

ROARING BROOK -- EXISTING LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
1	0.0	0.0	0.0	0.0	0.0	442.6	0.0	0.0	0.0	442.6
2	0.0	0.0	0.0	0.0	0.0	203.9	0.0	0.0	0.0	203.9
3	0.0	0.0	0.0	1.8	0.0	264.5	0.0	0.0	0.0	266.3
4	0.0	0.0	0.0	0.0	0.0	143.2	0.0	0.0	0.0	143.2
5	0.0	0.0	0.0	0.0	0.0	139.6	0.0	0.0	0.0	139.6
6	0.0	0.0	0.0	0.0	0.0	400.4	0.0	0.0	0.0	400.4
7	0.0	0.0	0.0	0.0	0.0	150.6	0.0	0.0	0.0	150.6
8	0.0	0.0	0.0	11.0	0.0	126.7	0.0	0.0	0.0	137.7
9	0.0	0.0	0.0	0.0	0.0	393.0	0.0	0.0	0.0	393.0
10	0.0	0.0	0.0	11.0	0.0	225.9	0.0	0.0	0.0	236.9
11	0.0	0.0	0.0	0.0	0.0	181.8	0.0	0.0	1.8	183.7
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	257.1	0.0	0.0	5.5	262.6
14	0.0	0.0	0.0	0.0	0.0	332.4	0.0	0.0	0.0	332.4
15	0.0	0.0	20.2	71.6	0.0	110.2	0.0	0.0	0.0	202.0
16	0.0	0.0	0.0	0.0	0.0	222.2	0.0	0.0	0.0	222.2
17	0.0	0.0	0.0	0.0	0.0	231.4	0.0	0.0	1.8	233.2
18	0.0	0.0	0.0	0.0	0.0	510.5	0.0	0.0	1.8	512.4
19	66.1	0.0	0.0	0.0	0.0	284.7	0.0	1.8	47.7	400.4
20	0.0	0.0	0.0	0.0	0.0	393.0	0.0	0.0	0.0	393.0
21	49.6	0.0	0.0	0.0	0.0	91.8	0.0	0.0	60.6	202.0
22	58.8	0.0	0.0	0.0	0.0	275.5	0.0	0.0	29.4	363.6
23	53.3	0.0	0.0	0.0	0.0	165.3	0.0	0.0	7.3	225.9
24	0.0	29.4	49.6	0.0	0.0	202.0	0.0	64.3	0.0	345.3
25	0.0	11.0	9.2	14.7	0.0	380.2	0.0	0.0	9.2	424.2
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	12.9	0.0	0.0	337.9	0.0	12.9	0.0	363.6
28	0.0	0.0	16.5	0.0	0.0	148.8	0.0	0.0	0.0	165.3
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	264.5	0.0	0.0	0.0	264.5
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	0.0	34.9	0.0	183.7	0.0	0.0	7.3	225.9
33	0.0	0.0	0.0	77.1	0.0	157.9	0.0	3.7	27.5	266.3
34	0.0	0.0	0.0	12.9	0.0	86.3	0.0	0.0	0.0	99.2
35	0.0	0.0	0.0	68.0	0.0	106.5	0.0	0.0	0.0	174.5
36	0.0	0.0	7.3	119.4	0.0	286.5	0.0	0.0	12.9	426.1
37	0.0	0.0	0.0	128.6	0.0	205.7	0.0	0.0	3.7	337.9
38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	0.0	0.0	0.0	56.9	0.0	150.6	0.0	0.0	0.0	207.5
40	0.0	0.0	0.0	102.8	0.0	194.7	0.0	0.0	7.3	304.9
41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	11.0	58.8	0.0	169.0	0.0	0.0	0.0	238.7
43	0.0	0.0	0.0	23.9	0.0	176.3	0.0	0.0	0.0	200.2
44	0.0	36.7	29.4	31.2	0.0	119.4	0.0	0.0	0.0	216.7
45	0.0	0.0	9.2	71.6	0.0	56.9	0.0	0.0	0.0	137.7
46	0.0	3.7	12.9	0.0	0.0	119.4	0.0	44.1	0.0	180.0
47	0.0	0.0	38.6	0.0	0.0	185.5	0.0	16.5	0.0	240.6
48	0.0	0.0	36.7	16.5	0.0	176.3	0.0	12.9	0.0	242.4
49	0.0	0.0	73.5	73.5	0.0	86.3	0.0	0.0	1.8	235.1
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	45.9	27.5	0.0	71.6	0.0	0.0	0.0	145.1
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	0.0	0.0	33.1	11.0	0.0	170.8	0.0	0.0	0.0	214.9
54	0.0	0.0	0.0	157.9	0.0	247.9	0.0	0.0	0.0	405.9
55	0.0	0.0	9.2	33.1	0.0	146.9	0.0	0.0	0.0	189.2
56	0.0	0.0	9.2	255.3	0.0	38.6	0.0	0.0	0.0	303.0
57	0.0	1.8	56.9	143.2	0.0	42.2	0.0	0.0	0.0	244.3
58	0.0	12.9	75.3	123.0	0.0	93.7	0.0	0.0	0.0	304.9
59	0.0	0.0	53.3	1.8	0.0	393.0	0.0	0.0	0.0	448.1
60	0.0	0.0	27.5	91.8	0.0	304.9	0.0	1.8	3.7	429.7
61	0.0	0.0	64.3	104.7	0.0	157.9	0.0			
62	0.0	0.0	31.2	60.6	0.0	161.6	0.0			
63	0.0	0.0	0.0	86.3	0.0	374.6	0.0			
64	0.0	0.0	5.5	200.2	0.0	108.4	0.0			
65	0.0	0.0	0.0	86.3	0.0	288.3	0.0			
66	0.0	0.0	0.0	135.9	0.0	12.9	0.0			
67	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
68	0.0	0.0	9.2	207.5	0.0	148.8	0.0			
69	0.0	0.0	44.1	73.5	0.0	97.3	0.0			
70	0.0	0.0	34.9	16.5	0.0	22.0	0.0			
71	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
72	1.8	0.0	80.8	0.0	0.0	7.3	0.0			
73	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

ROARING BROOK -- EXISTING LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
74	0.0	5.5	80.8	194.7	0.0	86.3	0.0	9.2	0.0	376.5
75	0.0	0.0	11.0	11.0	0.0	121.2	0.0	25.7	0.0	169.0
76	0.0	0.0	3.7	126.7	0.0	176.3	0.0	3.7	3.7	314.0
77	0.0	0.0	0.0	71.6	0.0	200.2	0.0	0.0	0.0	271.8
78	0.0	51.4	0.0	183.7	0.0	33.1	0.0	0.0	0.0	268.1
79	0.0	0.0	0.0	33.1	0.0	128.6	0.0	0.0	0.0	161.6
80	0.0	16.5	0.0	128.6	0.0	7.3	0.0	0.0	0.0	152.4
81	0.0	29.4	0.0	356.3	0.0	11.0	0.0	0.0	0.0	396.7
82	0.0	0.0	0.0	66.1	0.0	139.6	0.0	0.0	0.0	205.7
83	0.0	0.0	0.0	90.0	0.0	102.8	0.0	0.0	0.0	192.8
84	0.0	0.0	12.9	58.8	0.0	110.2	0.0	0.0	0.0	181.8
85	0.0	0.0	22.0	176.3	0.0	132.2	0.0	0.0	3.7	334.2
86	0.0	0.0	0.0	9.2	0.0	290.2	0.0	0.0	1.8	301.2
87	0.0	0.0	0.0	0.0	0.0	14.7	0.0	0.0	36.7	51.4
88	0.0	7.3	47.7	95.5	0.0	66.1	0.0	5.5	12.9	235.1
89	0.0	7.3	0.0	27.5	0.0	139.6	0.0	7.3	36.7	218.5
90	40.4	0.0	0.0	0.0	0.0	284.7	0.0	0.0	18.4	343.4
91	0.0	0.0	0.0	0.0	0.0	227.7	0.0	0.0	0.0	227.7
92	0.0	0.0	0.0	0.0	0.0	9.2	0.0	0.0	14.7	23.9
93	0.0	0.0	0.0	20.2	0.0	253.4	0.0	0.0	16.5	290.2
94	23.9	0.0	14.7	68.0	0.0	84.5	0.0	0.0	42.2	233.2
95	0.0	0.0	0.0	99.2	0.0	152.4	0.0	0.0	0.0	251.6
96	0.0	0.0	0.0	0.0	0.0	29.4	0.0	0.0	22.0	51.4
97	0.0	0.0	0.0	86.3	0.0	240.6	0.0	0.0	1.8	328.7
98	0.0	3.7	0.0	143.2	0.0	165.3	0.0	0.0	1.8	314.0
99	0.0	0.0	0.0	0.0	0.0	25.7	0.0	0.0	1.8	27.5
100	0.0	0.0	0.0	0.0	0.0	12.9	0.0	0.0	90.0	102.8
101	0.0	34.9	0.0	0.0	0.0	146.9	0.0	0.0	0.0	181.8
102	0.0	40.4	9.2	14.7	0.0	227.7	0.0	1.8	0.0	293.8
103	0.0	9.2	18.4	36.7	0.0	79.0	0.0	0.0	9.2	152.4
104	0.0	47.7	0.0	90.0	0.0	60.6	0.0	0.0	11.0	209.4
105	0.0	14.7	36.7	159.8	0.0	143.2	0.0	0.0	0.0	354.4
106	0.0	0.0	130.4	1.8	0.0	167.1	0.0	9.2	9.2	317.7
107	0.0	0.0	34.9	77.1	0.0	218.5	0.0	0.0	1.8	332.4
108	0.0	0.0	0.0	20.2	0.0	84.5	0.0	0.0	0.0	104.7
109	0.0	0.0	0.0	38.6	0.0	192.8	0.0	0.0	0.0	231.4
110	0.0	5.5	0.0	194.7	0.0	62.4	0.0	0.0	0.0	262.6
111	0.0	5.5	0.0	167.1	0.0	69.8	0.0	0.0	0.0	242.4
112	0.0	33.1	0.0	130.4	0.0	161.6	0.0	0.0	0.0	325.1
113	0.0	40.4	0.0	22.0	0.0	260.8	0.0	0.0	0.0	323.2
114	0.0	0.0	0.0	60.6	0.0	49.6	0.0	0.0	0.0	110.2
115	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116	0.0	0.0	0.0	16.5	0.0	124.9	0.0	0.0	0.0	141.4
117	0.0	0.0	0.0	55.1	0.0	332.4	0.0	0.0	0.0	387.5
118	0.0	0.0	0.0	18.4	0.0	165.3	0.0	0.0	1.8	185.5
119	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	3.7	0.0	339.8	0.0	0.0	0.0	343.4
121	0.0	0.0	0.0	0.0	0.0	328.7	0.0	0.0	0.0	328.7
122	0.0	0.0	0.0	0.0	0.0	229.6	0.0	0.0	0.0	229.6
123	0.0	0.0	0.0	0.0	0.0	143.2	0.0	0.0	0.0	143.2
124	0.0	0.0	0.0	0.0	0.0	284.7	0.0	0.0	0.0	284.7
125	0.0	0.0	0.0	0.0	0.0	152.4	0.0	0.0	0.0	152.4
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.0	0.0	0.0	413.2	0.0	0.0	0.0	413.2
128	0.0	0.0	0.0	0.0	0.0	134.1	0.0	0.0	0.0	134.1
129	1.8	0.0	16.5	44.1	0.0	297.5	0.0	0.0	5.5	365.5
130	5.5	126.7	0.0	1.8	0.0	161.6	0.0	7.3	0.0	303.0
131	0.0	31.2	0.0	31.2	0.0	132.2	0.0	0.0	0.0	194.7
132	0.0	0.0	0.0	88.2	0.0	101.0	0.0	0.0	0.0	189.2
133	0.0	0.0	0.0	34.9	0.0	258.9	0.0	0.0	0.0	293.8
134	0.0	0.0	0.0	22.0	0.0	332.4	0.0			
135	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
136	0.0	0.0	0.0	5.5	0.0	337.9	0.0			
137	5.5	0.0	0.0	31.2	0.0	391.2	0.0			
138	14.7	0.0	0.0	14.7	0.0	86.3	0.0			
139	0.0	0.0	0.0	0.0	0.0	466.5	0.0			
140	0.0	0.0	0.0	0.0	0.0	352.6	0.0			
141	0.0	0.0	0.0	0.0	47.7	325.1	0.0			
142	0.0	0.0	0.0	0.0	0.0	271.8	0.0			
143	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
144	0.0	0.0	0.0	0.0	0.0	134.1	0.0			
145	0.0	0.0	0.0	0.0	0.0	301.2	0.0			
146	75.3	0.0	0.0	14.7	0.0	56.9	25.7			

ROARING BROOK -- EXISTING LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
147	91.8	0.0	0.0	141.4	0.0	211.2	0.0	0.0	0.0	444.4
148	139.6	0.0	0.0	71.6	3.7	145.1	16.5	3.7	0.0	380.2
149	64.3	0.0	0.0	18.4	0.0	0.0	33.1	0.0	0.0	115.7
150	181.8	0.0	0.0	5.5	0.0	27.5	22.0	18.4	0.0	255.3
151	88.2	0.0	0.0	25.7	0.0	128.6	0.0	0.0	0.0	242.4
152	148.8	0.0	0.0	11.0	0.0	161.6	0.0	0.0	0.0	321.4
153	130.4	0.0	0.0	82.6	0.0	25.7	0.0	36.7	0.0	275.5
154	137.7	0.0	0.0	38.6	0.0	0.0	0.0	31.2	0.0	207.5
155	84.5	0.0	0.0	5.5	0.0	0.0	9.2	9.2	0.0	108.4
156	170.8	0.0	0.0	0.0	0.0	0.0	29.4	25.7	0.0	225.9
157	3.7	0.0	7.3	0.0	0.0	0.0	22.0	0.0	0.0	33.1

ROARING BROOK -- FUTURE LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
1	0.0	0.0	0.0	0.0	0.0	442.6	0.0	0.0	0.0	442.6
2	0.0	0.0	0.0	0.0	0.0	203.9	0.0	0.0	0.0	203.9
3	0.0	0.0	0.0	5.5	0.0	260.8	0.0	0.0	0.0	266.3
4	0.0	0.0	0.0	0.0	0.0	143.2	0.0	0.0	0.0	143.2
5	0.0	0.0	0.0	0.0	0.0	139.6	0.0	0.0	0.0	139.6
6	0.0	0.0	0.0	0.0	0.0	400.4	0.0	0.0	0.0	400.4
7	0.0	0.0	0.0	0.0	0.0	150.6	0.0	0.0	0.0	150.6
8	0.0	0.0	0.0	9.2	0.0	128.6	0.0	0.0	0.0	137.7
9	0.0	0.0	0.0	0.0	0.0	393.0	0.0	0.0	0.0	393.0
10	0.0	0.0	0.0	23.9	0.0	213.0	0.0	0.0	0.0	236.9
11	0.0	0.0	0.0	0.0	0.0	183.7	0.0	0.0	0.0	183.7
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	1.8	0.0	260.8	0.0	0.0	0.0	262.6
14	0.0	0.0	0.0	0.0	0.0	332.4	0.0	0.0	0.0	332.4
15	0.0	0.0	38.6	90.0	0.0	73.5	0.0	0.0	0.0	202.0
16	0.0	0.0	0.0	0.0	0.0	222.2	0.0	0.0	0.0	222.2
17	0.0	0.0	0.0	0.0	0.0	233.2	0.0	0.0	0.0	233.2
18	9.2	0.0	0.0	0.0	0.0	501.4	0.0	0.0	1.8	512.4
19	75.3	0.0	0.0	0.0	0.0	284.7	0.0	0.0	40.4	400.4
20	0.0	0.0	0.0	0.0	0.0	393.0	0.0	0.0	0.0	393.0
21	113.9	0.0	0.0	0.0	0.0	29.4	0.0	0.0	58.8	202.0
22	77.1	0.0	0.0	0.0	0.0	251.6	0.0	0.0	34.9	363.6
23	53.3	0.0	0.0	0.0	0.0	170.8	0.0	0.0	1.8	225.9
24	0.0	40.4	60.6	0.0	0.0	192.8	0.0	51.4	0.0	345.3
25	0.0	22.0	12.9	3.7	0.0	372.8	0.0	3.7	9.2	424.2
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	1.8	5.5	0.0	0.0	350.8	0.0	5.5	0.0	363.6
28	0.0	0.0	0.0	0.0	0.0	165.3	0.0	0.0	0.0	165.3
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0	264.5	0.0	0.0	0.0	264.5
31	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32	0.0	0.0	22.0	47.7	0.0	135.9	0.0	0.0	20.2	225.9
33	0.0	0.0	16.5	91.8	0.0	128.6	0.0	3.7	25.7	266.3
34	0.0	0.0	3.7	5.5	0.0	90.0	0.0	0.0	0.0	99.2
35	0.0	0.0	0.0	58.8	0.0	113.9	0.0	0.0	1.8	174.5
36	0.0	0.0	11.0	115.7	0.0	288.3	0.0	0.0	11.0	426.1
37	0.0	0.0	0.0	132.2	0.0	205.7	0.0	0.0	0.0	337.9
38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
39	0.0	0.0	9.2	58.8	0.0	139.6	0.0	0.0	0.0	207.5
40	0.0	0.0	27.5	86.3	0.0	181.8	0.0	0.0	9.2	304.9
41	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42	0.0	0.0	14.7	38.6	0.0	185.5	0.0	0.0	0.0	238.7
43	0.0	0.0	3.7	23.9	0.0	172.6	0.0	0.0	0.0	200.2
44	0.0	31.2	40.4	38.6	0.0	106.5	0.0	0.0	0.0	216.7
45	0.0	0.0	23.9	33.1	0.0	80.8	0.0	0.0	0.0	137.7
46	0.0	9.2	31.2	42.2	0.0	27.5	0.0	69.8	0.0	180.0
47	0.0	0.0	56.9	44.1	0.0	121.2	0.0	18.4	0.0	240.6
48	0.0	0.0	49.6	18.4	0.0	150.6	0.0	23.9	0.0	242.4
49	0.0	0.0	121.2	47.7	0.0	66.1	0.0	0.0	0.0	235.1
50	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
51	0.0	0.0	64.3	0.0	0.0	80.8	0.0	0.0	0.0	145.1
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	0.0	0.0	44.1	11.0	0.0	159.8	0.0	0.0	0.0	214.9
54	0.0	66.1	0.0	126.7	0.0	213.0	0.0	0.0	0.0	405.9
55	0.0	0.0	18.4	49.6	0.0	121.2	0.0	0.0	0.0	189.2
56	0.0	7.3	75.3	202.0	0.0	18.4	0.0	0.0	0.0	303.0
57	0.0	0.0	97.3	130.4	0.0	16.5	0.0	0.0	0.0	244.3
58	0.0	20.2	124.9	91.8	0.0	68.0	0.0	0.0	0.0	304.9
59	0.0	0.0	73.5	53.3	0.0	321.4	0.0	0.0	0.0	448.1
60	0.0	0.0	16.5	170.8	0.0	235.1	0.0	0.0	7.3	429.7
61	0.0	0.0	121.2	88.2	0.0	117.5	0.0			
62	0.0	0.0	49.6	84.5	0.0	112.0	0.0			
63	0.0	0.0	25.7	95.5	0.0	339.8	0.0			
64	0.0	0.0	7.3	183.7	0.0	123.0	0.0			
65	0.0	16.5	0.0	95.5	0.0	264.5	0.0			
66	0.0	0.0	20.2	102.8	0.0	25.7	0.0			
67	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
68	0.0	0.0	106.5	156.1	0.0	106.5	0.0			
69	0.0	0.0	68.0	86.3	0.0	60.6	0.0			
70	0.0	0.0	45.9	11.0	0.0	9.2	0.0			
71	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
72	0.0	0.0	86.3	0.0	0.0	3.7	0.0			
73	0.0	0.0	0.0	0.0	0.0	0.0	0.0			

ROARING BROOK -- FUTURE LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
74	0.0	18.4	121.2	150.6	0.0	75.3	0.0	11.0	0.0	376.5
75	0.0	0.0	5.5	3.7	0.0	123.0	0.0	36.7	0.0	169.0
76	0.0	0.0	58.8	117.5	0.0	130.4	0.0	5.5	1.8	314.0
77	0.0	0.0	31.2	11.0	0.0	229.6	0.0	0.0	0.0	271.8
78	0.0	0.0	0.0	187.3	0.0	80.8	0.0	0.0	0.0	268.1
79	0.0	0.0	0.0	33.1	0.0	128.6	0.0	0.0	0.0	161.6
80	0.0	16.5	0.0	102.8	0.0	33.1	0.0	0.0	0.0	152.4
81	0.0	64.3	0.0	306.7	0.0	25.7	0.0	0.0	0.0	396.7
82	0.0	3.7	3.7	33.1	0.0	165.3	0.0	0.0	0.0	205.7
83	0.0	0.0	29.4	69.8	0.0	93.7	0.0	0.0	0.0	192.8
84	0.0	0.0	1.8	42.2	0.0	115.7	0.0	22.0	0.0	181.8
85	1.8	0.0	69.8	161.6	0.0	88.2	0.0	3.7	9.2	334.2
86	0.0	0.0	3.7	16.5	0.0	281.0	0.0	0.0	0.0	301.2
87	3.7	0.0	0.0	0.0	0.0	12.9	0.0	0.0	34.9	51.4
88	0.0	12.9	113.9	29.4	0.0	44.1	0.0	18.4	16.5	235.1
89	0.0	55.1	0.0	3.7	0.0	130.4	0.0	11.0	18.4	218.5
90	5.5	88.2	0.0	0.0	0.0	247.9	0.0	0.0	1.8	343.4
91	0.0	0.0	0.0	0.0	0.0	227.7	0.0	0.0	0.0	227.7
92	0.0	0.0	0.0	0.0	0.0	12.9	0.0	0.0	11.0	23.9
93	14.7	0.0	20.2	45.9	0.0	196.5	0.0	0.0	12.9	290.2
94	31.2	0.0	22.0	66.1	0.0	60.6	0.0	0.0	53.3	233.2
95	0.0	0.0	0.0	77.1	0.0	174.5	0.0	0.0	0.0	251.6
96	0.0	0.0	0.0	0.0	0.0	20.2	0.0	0.0	31.2	51.4
97	0.0	0.0	1.8	86.3	0.0	240.6	0.0	0.0	0.0	328.7
98	0.0	7.3	38.6	130.4	0.0	134.1	0.0	0.0	3.7	314.0
99	0.0	0.0	0.0	0.0	0.0	16.5	0.0	0.0	11.0	27.5
100	0.0	0.0	0.0	0.0	0.0	14.7	0.0	0.0	88.2	102.8
101	0.0	106.5	0.0	20.2	0.0	55.1	0.0	0.0	0.0	181.8
102	0.0	36.7	25.7	34.9	0.0	196.5	0.0	0.0	0.0	293.8
103	0.0	14.7	73.5	25.7	0.0	31.2	0.0	0.0	7.3	152.4
104	0.0	68.0	0.0	71.6	0.0	58.8	0.0	0.0	11.0	209.4
105	0.0	16.5	139.6	110.2	0.0	88.2	0.0	0.0	0.0	354.4
106	0.0	5.5	200.2	9.2	0.0	82.6	0.0	11.0	9.2	317.7
107	0.0	0.0	91.8	73.5	0.0	165.3	0.0	0.0	1.8	332.4
108	0.0	0.0	5.5	11.0	0.0	88.2	0.0	0.0	0.0	104.7
109	0.0	0.0	0.0	31.2	0.0	200.2	0.0	0.0	0.0	231.4
110	0.0	11.0	11.0	220.4	0.0	11.0	0.0	9.2	0.0	262.6
111	0.0	42.2	0.0	124.9	0.0	75.3	0.0	0.0	0.0	242.4
112	0.0	33.1	0.0	102.8	0.0	189.2	0.0	0.0	0.0	325.1
113	0.0	58.8	0.0	14.7	0.0	249.8	0.0	0.0	0.0	323.2
114	0.0	7.3	0.0	47.7	0.0	55.1	0.0	0.0	0.0	110.2
115	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116	0.0	9.2	0.0	12.9	0.0	119.4	0.0	0.0	0.0	141.4
117	0.0	0.0	0.0	27.5	0.0	360.0	0.0	0.0	0.0	387.5
118	0.0	0.0	0.0	23.9	0.0	159.8	0.0	0.0	1.8	185.5
119	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	7.3	0.0	336.1	0.0	0.0	0.0	343.4
121	0.0	0.0	0.0	0.0	0.0	328.7	0.0	0.0	0.0	328.7
122	0.0	0.0	0.0	0.0	0.0	229.6	0.0	0.0	0.0	229.6
123	0.0	0.0	0.0	0.0	0.0	143.2	0.0	0.0	0.0	143.2
124	0.0	0.0	0.0	0.0	0.0	284.7	0.0	0.0	0.0	284.7
125	0.0	0.0	0.0	0.0	0.0	152.4	0.0	0.0	0.0	152.4
126	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
127	0.0	0.0	0.0	0.0	0.0	413.2	0.0	0.0	0.0	413.2
128	0.0	0.0	0.0	0.0	0.0	134.1	0.0	0.0	0.0	134.1
129	3.7	0.0	45.9	44.1	0.0	268.1	0.0	0.0	3.7	365.5
130	3.7	211.2	0.0	0.0	0.0	80.8	0.0	7.3	0.0	303.0
131	0.0	34.9	0.0	34.9	0.0	124.9	0.0	0.0	0.0	194.7
132	0.0	0.0	0.0	73.5	0.0	115.7	0.0	0.0	0.0	189.2
133	0.0	0.0	0.0	22.0	0.0	271.8	0.0	[illegible]	[illegible]	[illegible]
134	0.0	0.0	0.0	23.9	0.0	330.6	0.0			
135	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
136	0.0	0.0	0.0	23.9	0.0	319.6	0.0			
137	12.9	0.0	69.8	1.8	0.0	337.9	0.0			
138	12.9	0.0	12.9	12.9	0.0	75.3	3.7			
139	0.0	0.0	0.0	0.0	0.0	466.5	0.0			
140	0.0	0.0	0.0	0.0	0.0	352.6	0.0			
141	0.0	0.0	0.0	0.0	34.9	337.9	0.0			
142	0.0	0.0	0.0	0.0	0.0	271.8	0.0			
143	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
144	0.0	0.0	0.0	0.0	0.0	134.1	0.0			
145	0.0	0.0	0.0	0.0	0.0	286.5	0.0			
146	69.8	0.0	0.0	25.7	0.0	25.7	25.7			

ROARING BROOK -- FUTURE LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
147	97.3	0.0	49.6	126.7	0.0	161.6	9.2	0.0	0.0	444.4
148	249.8	0.0	0.0	31.2	0.0	71.6	18.4	9.2	0.0	380.2
149	64.3	0.0	0.0	14.7	0.0	0.0	36.7	0.0	0.0	115.7
150	181.8	0.0	0.0	0.0	0.0	27.5	22.0	23.9	0.0	255.3
151	112.0	14.7	0.0	38.6	0.0	77.1	0.0	0.0	0.0	242.4
152	167.1	90.0	0.0	25.7	0.0	38.6	0.0	0.0	0.0	321.4
153	121.2	0.0	0.0	84.5	0.0	23.9	0.0	45.9	0.0	275.5
154	130.4	0.0	0.0	44.1	0.0	0.0	0.0	33.1	0.0	207.5
155	86.3	0.0	0.0	14.7	0.0	0.0	5.5	1.8	0.0	108.4
156	169.0	0.0	0.0	0.0	0.0	0.0	29.4	27.5	0.0	225.9
157	5.5	0.0	0.0	0.0	0.0	0.0	27.5	0.0	0.0	33.1

KEYSER CREEK -- EXISTING LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
1	0.0	0.0	0.0	0.0	0.0	267.2	0.0	0.0	0.0	267.2
2	0.0	0.0	0.0	27.5	0.0	236.9	0.0	0.0	0.0	264.5
3	11.9	0.0	0.0	8.3	0.0	124.9	0.0	0.0	0.0	145.1
4	3.7	0.0	0.0	0.0	112.0	76.2	0.9	2.8	0.0	195.6
5	0.0	0.0	0.0	0.0	128.6	9.2	4.6	23.0	0.0	165.3
6	21.1	0.0	0.0	0.0	139.6	0.0	95.5	10.1	0.0	266.3
7	24.8	0.0	0.0	21.1	71.6	0.0	3.7	0.0	0.0	121.2
8	50.5	0.0	0.0	0.0	0.0	147.8	0.0	0.0	0.0	198.4
9	147.8	0.0	0.0	0.0	45.9	19.3	0.0	2.8	4.6	220.4
10	107.4	0.0	0.0	5.5	0.9	0.0	23.9	0.0	0.0	137.7
11	0.0	0.0	0.0	0.0	0.0	240.6	0.0	0.0	4.6	245.2
12	11.0	26.6	0.0	0.0	0.0	165.3	0.0	0.0	0.0	202.9
13	67.0	0.0	0.0	0.0	0.0	60.6	0.0	0.0	0.0	127.6
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	193.8	0.0	0.0	55.1	0.0	0.0	0.0	0.9	0.0	249.8
16	0.0	0.0	0.0	0.0	0.0	266.3	0.0	0.0	0.0	266.3
17	0.0	0.0	0.0	11.9	0.0	190.1	0.0	0.0	0.0	202.0
18	0.0	11.9	0.0	25.7	0.0	156.1	0.0	0.0	0.0	193.8
19	6.4	16.5	0.0	100.1	0.0	68.9	0.0	0.0	0.0	191.9
20	25.7	0.0	0.0	34.0	0.0	128.6	5.5	7.3	0.0	201.1
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	10.1	0.0	104.7	55.1	0.0	0.0	169.9
23	98.3	0.0	0.0	33.1	89.1	11.9	3.7	0.0	0.0	236.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	67.0	0.0	0.0	30.3	0.0	109.3	34.0	1.8	0.0	242.4
26	1.8	0.0	0.0	12.9	10.1	64.3	10.1	0.0	0.0	99.2
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	72.5	0.0	0.0	68.9	2.8	36.7	0.9	7.3	0.0	189.2
29	59.7	0.0	0.0	61.5	0.9	58.8	0.9	7.3	0.0	189.2
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	34.0	0.0	0.0	27.5	36.7	70.7	0.0	0.0	0.0	169.0
32	83.6	0.0	0.0	3.7	46.8	0.0	0.0	21.1	2.8	157.9
33	5.5	0.0	0.0	36.7	84.5	25.7	11.0	10.1	0.0	173.6

KEYSER CREEK -- FUTURE LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
1	0.0	0.0	0.0	0.0	0.0	267.2	0.0	0.0	0.0	267.2
2	0.0	27.5	0.0	0.0	0.0	236.9	0.0	0.0	0.0	264.5
3	0.0	35.8	0.0	0.0	0.0	109.3	0.0	0.0	0.0	145.1
4	0.0	42.2	0.0	0.0	54.2	92.7	0.0	6.4	0.0	195.6
5	0.0	0.0	0.0	0.0	111.1	13.8	2.8	37.7	0.0	165.3
6	23.9	56.9	0.0	2.8	32.1	0.0	149.7	0.9	0.0	266.3
7	26.6	0.0	0.0	26.6	46.8	0.0	21.1	0.0	0.0	121.2
8	0.0	89.1	0.0	37.7	0.0	71.6	0.0	0.0	0.0	198.4
9	105.6	107.4	0.0	0.0	0.0	5.5	0.0	0.0	1.8	220.4
10	106.5	0.0	0.0	2.8	0.0	0.0	28.5	0.0	0.0	137.7
11	0.0	3.7	0.0	0.0	0.0	238.8	0.0	0.0	2.8	245.2
12	0.9	110.2	0.0	7.3	0.0	84.5	0.0	0.0	0.0	202.9
13	117.5	0.0	0.0	5.5	0.0	4.6	0.0	0.0	0.0	127.6
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	197.4	0.0	0.0	51.4	0.0	0.0	0.0	0.9	0.0	249.8
16	0.0	0.0	0.0	0.0	0.0	266.3	0.0	0.0	0.0	266.3
17	0.0	56.9	0.0	0.0	0.0	145.1	0.0	0.0	0.0	202.0
18	0.0	130.4	0.0	0.9	0.0	62.4	0.0	0.0	0.0	193.8
19	21.1	51.4	0.0	97.3	0.0	22.0	0.0	0.0	0.0	191.9
20	50.5	0.0	0.0	68.9	0.0	58.8	17.4	5.5	0.0	201.1
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	27.5	0.0	0.0	7.3	0.0	60.6	74.4	0.0	0.0	169.9
23	132.2	0.0	0.0	36.7	0.0	24.8	42.2	0.0	0.0	236.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	100.1	0.0	0.0	34.0	0.0	60.6	43.2	4.6	0.0	242.4
26	11.9	0.0	0.0	8.3	0.0	9.2	69.8	0.0	0.0	99.2
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	111.1	0.0	0.0	36.7	18.4	0.0	0.9	22.0	0.0	189.2
29	67.0	0.0	0.0	38.6	0.0	8.3	66.1	9.2	0.0	189.2
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	39.5	0.0	0.0	23.9	55.1	50.5	0.0	0.0	0.0	169.0
32	84.5	0.0	0.0	3.7	46.8	0.0	0.0	21.1	1.8	157.9
33	1.8	0.0	0.0	6.4	79.0	0.0	25.7	60.6	0.0	173.6

SPRING BROOK -- EXISTING LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
1	0.0	0.0	0.0	0.0	0.0	232.3	0.0	0.0	0.0	232.3
2	0.0	0.0	0.0	31.2	0.0	222.2	0.0	0.0	0.0	253.5
3	0.0	0.0	0.0	4.6	0.0	141.4	0.0	0.0	7.3	153.4
4	0.0	0.0	0.0	0.0	0.0	270.9	0.0	0.0	2.8	273.7
5	0.0	0.0	0.0	0.0	0.0	148.8	0.0	0.0	0.0	148.8
6	0.0	0.0	0.0	48.7	0.0	173.6	0.0	0.0	0.0	222.2
7	0.0	0.0	0.0	0.0	0.0	138.7	0.0	0.0	0.0	138.7
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	167.1	0.0	0.0	9.2	176.3
10	0.0	0.0	0.0	0.0	0.0	84.5	0.0	78.1	0.0	162.5
11	0.0	0.0	0.0	0.0	0.0	100.1	0.0	23.0	0.0	123.1
12	0.0	0.0	0.0	37.7	0.0	215.8	0.0	11.9	0.0	265.4
13	0.0	0.0	0.0	0.0	0.0	90.0	0.0	0.0	0.0	90.0
14	25.7	0.0	0.0	0.0	0.0	177.2	0.0	29.4	38.6	270.9
15	0.0	0.0	0.0	1.8	0.0	29.4	0.0	0.9	0.9	33.1
16	0.0	0.0	0.0	11.9	0.0	52.3	2.8	14.7	0.0	81.7

SPRING BROOK -- FUTURE LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	WATER	TOTAL
1	0.0	0.0	0.0	0.0	0.0	232.3	0.0	0.0	0.0	232.3
2	0.0	0.0	0.0	28.5	0.0	225.0	0.0	0.0	0.0	253.5
3	0.0	0.0	1.8	18.4	0.0	125.8	0.0	0.0	7.3	153.4
4	0.0	0.0	0.0	0.0	0.0	270.9	0.0	0.0	2.8	273.7
5	0.0	0.0	20.2	0.0	0.0	128.6	0.0	0.0	0.0	148.8
6	0.0	0.0	11.0	134.1	0.0	77.1	0.0	0.0	0.0	222.2
7	0.0	0.0	127.6	0.0	0.0	11.0	0.0	0.0	0.0	138.7
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	1.8	0.0	1.8	0.0	0.0	163.5	0.0	0.0	9.2	176.3
10	0.0	0.0	0.0	1.8	0.0	54.2	0.0	106.5	0.0	162.5
11	0.0	0.0	0.0	1.8	0.0	84.5	0.0	36.7	0.0	123.1
12	0.0	0.0	21.1	0.0	0.0	137.7	0.0	106.5	0.0	265.4
13	0.0	0.0	66.1	0.0	0.0	23.0	0.0	0.0	0.9	90.0
14	20.2	0.0	7.3	17.4	0.0	139.6	22.0	23.0	41.3	270.9
15	3.7	0.0	0.0	0.0	0.0	27.5	0.0	0.9	0.9	33.1
16	35.8	0.0	0.0	1.8	0.0	26.6	2.8	14.7	0.0	81.7

ST. JOHN'S CREEK -- EXISTING LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	TOTAL
1	0.0	0.0	0.0	0.0	0.0	155.2	0.0	0.0	155.2
2	0.0	0.0	0.0	0.0	0.0	162.5	0.0	0.0	162.5
3	0.0	0.0	0.0	0.0	0.0	158.9	0.0	0.0	158.9
4	0.0	0.0	0.0	0.0	0.0	112.0	0.0	0.0	112.0
5	11.0	0.0	0.0	0.0	0.0	100.1	0.0	0.0	111.1
6	0.0	0.0	0.0	0.0	0.0	52.3	0.0	0.0	52.3
7	65.2	0.0	0.0	0.0	0.0	98.3	0.0	0.0	163.5
8	0.0	0.0	0.0	0.0	0.0	135.0	0.0	0.0	135.0
9	0.0	0.0	0.0	0.0	0.0	172.6	0.0	0.0	172.6
10	0.0	0.0	0.0	0.0	3.7	48.7	0.0	0.0	52.3
11	0.0	0.0	0.0	9.2	0.0	101.0	0.0	0.0	110.2
12	0.0	0.0	0.0	0.0	42.2	112.0	0.0	0.0	154.3
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	25.7	0.0	0.0	75.3	0.0	73.5	0.0	23.9	198.4
15	8.3	0.0	0.0	156.1	0.0	43.2	0.0	1.8	209.4
16	0.0	0.0	0.0	4.6	19.3	40.4	0.0	3.7	68.0
17	0.0	0.0	0.0	0.0	0.0	158.9	0.0	0.0	158.9
18	0.0	0.0	0.0	3.7	0.0	126.7	0.0	0.0	130.4
19	0.0	0.0	0.0	6.4	35.8	145.1	0.0	0.0	187.3
20	5.5	0.0	0.0	74.4	48.7	43.2	0.0	0.0	171.7
21	38.6	0.0	0.0	5.5	8.3	79.0	0.0	11.9	143.3
22	8.3	0.0	0.0	1.8	79.0	96.4	0.0	0.9	186.4
23	0.0	0.0	0.0	0.0	0.0	88.2	0.0	0.0	88.2
24	0.0	0.0	0.0	10.1	0.0	238.8	0.0	0.0	248.9
25	35.8	0.0	0.0	5.5	29.4	158.9	0.0	3.7	233.2
26	87.2	0.0	0.0	70.7	58.8	0.0	0.9	5.5	223.1
27	0.0	0.0	0.0	0.0	16.5	80.8	0.0	0.0	97.3
28	59.7	0.0	0.0	0.0	50.5	0.0	0.9	0.0	111.1
29	84.5	0.0	0.0	12.9	11.0	0.0	11.9	0.0	120.3
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	36.7	0.0	0.0	25.7	13.8	0.0	0.0	0.0	76.2
32	19.3	0.0	0.0	0.0	82.6	24.8	0.0	0.0	126.7
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	48.7	0.0	0.0	0.0	157.9	13.8	0.0	0.0	220.4
35	14.7	0.0	0.0	0.0	121.2	18.4	0.0	0.0	154.3
36	23.0	0.0	0.0	0.0	35.8	0.0	0.0	8.3	67.0

ST. JOHN'S CREEK -- FUTURE LANDUSE
LANDUSE TYPES BY SUBAREA (acres)

SUBAREA #	1/4-ACRE RESIDENTIAL	1/2-ACRE RESIDENTIAL	1+ -ACRE RESIDENTIAL	OPEN SPACE	STRIP MINE	FOREST	INDUSTRIAL	COMMERCIAL	TOTAL
1	0.0	0.0	0.0	0.0	0.0	155.2	0.0	0.0	155.2
2	0.0	0.0	0.0	0.0	0.0	162.5	0.0	0.0	162.5
3	0.0	0.0	0.0	0.0	0.0	158.9	0.0	0.0	158.9
4	0.0	0.0	0.0	0.0	0.0	112.0	0.0	0.0	112.0
5	17.4	0.0	0.0	0.0	0.0	93.7	0.0	0.0	111.1
6	0.0	0.0	0.0	0.0	0.0	52.3	0.0	0.0	52.3
7	98.3	0.0	0.0	0.0	0.0	64.3	0.0	0.9	163.5
8	0.0	0.0	0.0	0.0	0.0	135.0	0.0	0.0	135.0
9	0.0	0.0	27.5	0.0	0.0	145.1	0.0	0.0	172.6
10	0.0	0.0	0.0	0.0	7.3	45.0	0.0	0.0	52.3
11	0.0	0.0	71.6	0.0	11.0	27.5	0.0	0.0	110.2
12	0.0	0.0	13.8	0.0	75.3	65.2	0.0	0.0	154.3
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	27.5	0.0	0.0	80.8	0.0	53.3	0.0	36.7	198.4
15	15.6	0.0	0.0	142.3	0.0	51.4	0.0	0.0	209.4
16	0.0	0.0	0.0	4.6	21.1	31.2	0.0	11.0	68.0
17	0.0	0.0	112.0	0.0	0.0	46.8	0.0	0.0	158.9
18	0.0	0.0	69.8	7.3	0.0	53.3	0.0	0.0	130.4
19	0.0	0.0	43.2	77.1	0.0	67.0	0.0	0.0	187.3
20	10.1	0.0	0.0	125.8	3.7	13.8	0.0	18.4	171.7
21	63.4	0.0	0.0	0.0	0.0	57.9	0.0	22.0	143.3
22	12.9	0.0	0.0	104.7	0.0	66.1	0.0	2.8	186.4
23	0.0	1.8	4.6	0.0	0.0	81.7	0.0	0.0	88.2
24	1.8	8.3	0.0	18.4	0.0	220.4	0.0	0.0	248.9
25	63.4	0.0	0.0	15.6	1.8	150.6	0.0	1.8	233.2
26	187.3	0.0	0.0	0.0	23.9	0.0	0.9	11.0	223.1
27	0.0	0.0	0.0	0.0	14.7	82.6	0.0	0.0	97.3
28	101.9	0.0	0.0	0.0	9.2	0.0	0.0	0.0	111.1
29	115.7	0.0	0.0	0.0	0.0	0.0	4.6	0.0	120.3
30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	54.2	0.0	0.0	22.0	0.0	0.0	0.0	0.0	76.2
32	61.5	0.0	0.0	0.0	38.6	26.6	0.0	0.0	126.7
33	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
34	79.0	0.0	0.0	0.0	122.1	19.3	0.0	0.0	220.4
35	29.4	0.0	0.0	0.0	97.3	27.5	0.0	0.0	154.3
36	24.8	0.0	0.0	0.0	30.3	0.0	0.0	11.9	67.0

APPENDIX H

SAMPLE IMPLEMENTATION OF RECOMMENDED PERFORMANCE CRITERIA

APPENDIX H

SAMPLE IMPLEMENTATION OF
RECOMMENDED PERFORMANCE CRITERIA

1.0 INTRODUCTION

In general, when sites become developed, the volume of water discharged and the rate of discharge (unit water volume per second) increase. This is due to a change in many factors that affect the length of time it takes for rainwater to drain from the site and the amount of water that infiltrates into the soils. Factors such as vegetation, soil permeability, leaf litter and other soil coverings, and stream meander all contribute to increasing the length of time over which water "concentrates" and runs off. For instance, vegetation has the effect of preventing precipitation from immediately reaching the ground. Leaves or grass "capture" water droplets and drip them at a regular rate, usually far below the peak rainfall rate. This slowing delays the buildup of standing water on soil surfaces. Leaf litter and thick ground covers impede water flow as it begins to concentrate on the ground surface. Naturally occurring soils have top layers that allow water to infiltrate easily. Streamlets and creeks tend to have winding irregular courses and natural obstacles such as rocks, fallen trees, and sand bars that slow the associated flows. During the course of development, these natural "controls" are reduced through the actions of clearing, soil stripping, paving and channelization of runoff. The results are that time for the peak runoff rate to develop is shortened and the volume of the runoff increases. The net effect is exacerbation of downstream flows and associated flooding.

A primary function of stormwater management ponds is to restore the natural reduction and delay of runoff in a developed watershed by providing temporary storage for the stormwater runoff in excess of the existing condition runoff. The following guidelines detail the steps normally applied in the design of stormwater management basins.

I. Define Primary Basin Control/Design Requir
Through Agency Coordination) -

A. Basin Type (e.g. - wet or dry).

B. Design Storm Event(s) (e.g. - 10-, 25-

C. Performance Standards (e.g. - Post-dev
development peak runoff rate).

II. Estimate Existing and Proposed Land Use Condition Runoff Volume and Peak Flows from Development Site -

A. Quantify runoff to basin by performing the following computations for both existing and proposed land use conditions.

1. Compute composite runoff curve numbers for the existing and proposed site conditions using the procedure outlined in Chapter 2 of the Soil Conservation Services Technical Release No. 55 (Reference 2). Generally, the applied steps are as follow:

   a. Delineate the area draining to the proposed facility onsite topographic mapping;

   b. Identify soil types on the site by applying U.S. Soil Conservation Service Soil Survey Mapping and associated hydrologic soil groups and using exhibit A-1 in Technical Release No. 55;

   c. Overlay existing and proposed site land uses on the hydrologic soils and compute appropriate Composite Runoff Curve Numbers (CN) per Chapter 2 and Table 2-2G of TR-55.

2. Determine the total quantity of stormwater runoff that arrives at the entrance of the detention facility.

   After determining the weighted CN value for both pre- and post-development site conditions, use (Eq. 2-4, TR-55):

$$S = \frac{1,000}{CN} - 10$$

   to determine the potential abstraction(s) for pre- and post-development conditions [illegible] the value determined for the pot[illegible] into (Eq. 2-3, TR-55):

$$Q = \frac{(P-0.2S)^2}{P + 0.8S}$$

   to determine the total runoff i[illegible] the total precipitation for t[illegible] event(s). For this pilot study[illegible] quantities for these events are[illegible] 1.

TABLE H-1

24-HOUR RAINFALL DEPTHS FOR SELECTED
RETURN PERIODS IN A STUDY WATERSHED

Return Periods	Depth In Inches
Mean Annual	
5-year	3.9
10-year	4.7
25-year	5.2
50-year	5.8
100-year	6.5

The total runoff volume should be calculated for all rainfall events of interest over both pre-and post-development conditions. The total runoff volume that will be infiltrated through on-site infiltration facilities can be subtracted from the total runoff (Q) when the total runoff for post-development conditions is calculated.

B. Calculate travel time or "time of concentration" (t_c) for both the existing and proposed conditions, if the flow paths are modified (e.g. - gutters, storm sewers).

1. Calculate the t_c for each subarea using the methods shown in Chapter 3 of TR-55. Sum the travel time for sheet, concentrated and channel flow segments of each subarea's overland flow path.

C. Compute the peak discharge and associated runoff hydrograph from the facility draina storm event of interest.

1. Determine initial abstraction subarea from RCN and Table 4-1 (T

2. Use the Graphical Peak Discharge subarea watersheds within specified in Chapter 4 of TR-55.

3. Use the Tabular Hydrograph Met Chapter 5 of TR-55 for a watershed.

Additionally, computer based hydrologic models such as the Penn State Runoff Model, Soil Conservation Service TR20 and U.S. Army Corps of Engineers HEC I can be applied to input the hydrographs and associated runoff volumes and peak flows.

III. Estimate Required Storage Volume for Each Storm Event for Which Discharge Controls are Required (i.e. - Design Storm Events) -

A. Determine the maximum allowable pond discharge (q_o) for each design storm event by applying the appropriate release rate (e.g. 80%) to the existing site discharge. Refer to the County watershed Stormwater Management Plan for the appropriate reduction factors and a description of the process.

B. Calculate the ratio of the allowable discharge (e.g. - q_o existing x 80%) to the proposed condition peak runoff or "basin inflow".

C. Use the allowable discharge to proposed condition inflow ratio (from step B) with Figure 6-1 in TR-55 to obtain the required storage volume to runoff volume factor (V_s/V_r).

D. Calculate runoff volume (V_r) by converting Q in inches to runoff in acre-feet by the following equation: V_r = Q (53.33) Am where:

V_r = runoff volume (acre-ft.),

Q = runoff depth (in.),

A_m = drainage area (in square miles), and

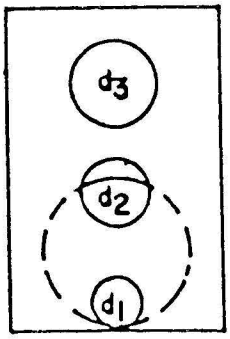
53.33 = conversion factor from in-mi^2 to acre-ft.

E. Obtain the required storage volume by multiplying the V_s/V_r factor (Step C above) by the [illegible] (Step D) for the design storm event(s

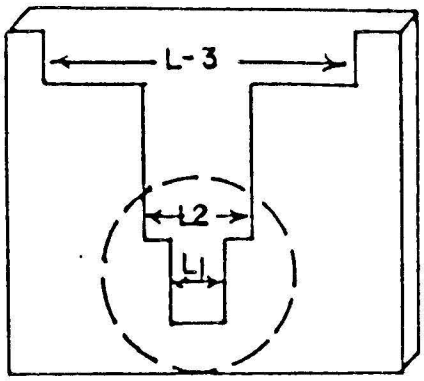
F. Set up required storage/discharge cu[illegible] facility.

IV. Develop Preliminary Pond Layout Based on [illegible] Volume Needed to Satisfy the Maximum Desi[illegible] the Storage/Discharge Curve Developed in

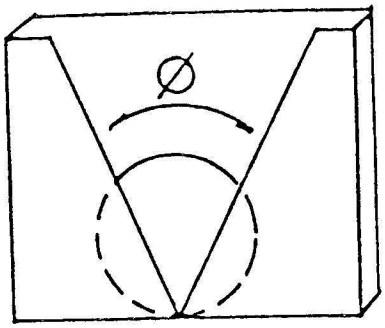
A. Establish the minimum base grade [illegible] pond if excavation is proposed.



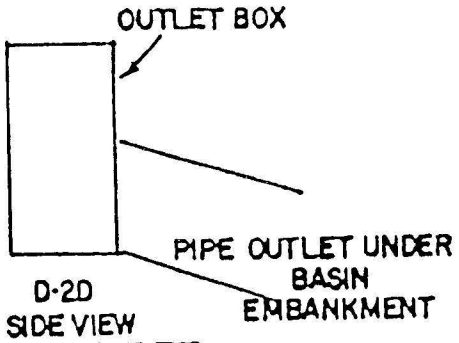
D-2A
FRONT VIEW



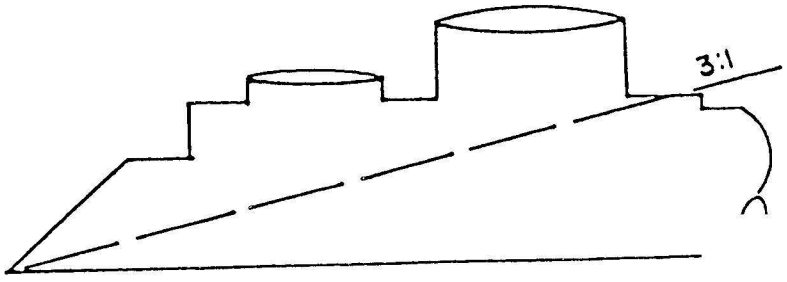
D-2B
FRONT VIEW



D-2C
FRONT VIEW



D-2D
SIDE VIEW
FOR ALL OUTLETS
EXCEPT D-2E



D-2E

TYPICAL OUTLET CONTROL STRUC

1. Geotechnical investigation may be necessary to establish the elevation of top of rock or groundwater at the site.

2. Establish the minimum buffer between top of rock or groundwater to set the base grade for the pond.

B. Layout of Pond.

1. Site topography and the available base grade will dictate the naturally available storage volume for a given depth in the pond. Where the size of the pond is not constrained by site conditions or development requirements, natural contours can be followed if slope requirements are met (otherwise cutting or filling may be necessary).

2. If available space is limited, the required volume can be met through the use of embankment berms and/or excavation to yield more volume. However, the use of berms should be minimized since they detract from a natural appearance and add to project expense.

3. In all cases, the length of flow through the pond should be maximized to enhance water quality benefits.

4. Controlling Urban Runoff - A Practical Manual For Planning and Designing BMPs (Metropolitan Washington Council of Governments) is recommended as a guide to design of effective, efficient ponds to enhance water quality of discharges. The reference details considerations of length to width ratios, wetland creation in ponds, landscaping, and other design considerations.

C. Develop a detailed stage-area-storage table/curve from the preliminary layout by calculating the pool surface area at various water elevations. volume between various stages (el calculated manually by the following

$V_s = \frac{h}{3} (A_1 + A_2 + (A_1A_2)^{0.5})$ where

V_s = incremental storage volume
h = elevation increment
A_1 = surface area at lower elevation
A_2 = surface area at upper elevation.

D. Select an outlet control structure.

The design on an outlet control structure is rather complex and time intensive. This structure often has to provide for a controlled discharge at multiple water level elevations, (e.g., the water level elevation for required 2-, 10-, and 25-year storage). An emergency spillway should be included to pass the peak post-development inflow rate of the 100-year rainfall while maintaining required minimum freeboard.

Some illustrations of outlet structures are shown in Figure H-1. Outlet structure is termed an "outlet control box". When the water surface is below the centroid of an opening, weir flow exists, and the following relationship can be used to calculate the discharge through the opening:

$Q = CLH^{1.5}$

where

Q = weir flow (cfs)

C = discharge coefficient

L = length of weir, maximum L = D/2 (feet), where D is the diameter of the opening.

H = effective head (feet), the difference in elevation between the weir crest and the water surface measured upstream of the crest a short distance

In all the equations given above coefficient (c) is required to solve flow. An excellent reference listing various conditions is Brater and King Hydraulics", Sixth Edition, McGraw Hill

When the water surface is above the opening, orifice flow exists, and relationship can be used to calculat through the opening:

$$Q = CA(2gH_o)^{0.5}$$

where

Q = orifice flow (cfs)

C = discharge coefficient

A = cross-sectional area (ft^2)

g = 32.2 ft/sec^2

H_o= effective head to centroid (ft)

After the water surface is above the top of the box, the primary outlet culvert may define the controlling discharge capacity for the structure. That is, in that flow is ultimately discharged through the primary culvert, the maximum outflow cannot exceed that which could be handled by the primary culvert. Therefore, after water in the detention basin rises above the top of the box, the combination of total weir flow and orifice flow in the box cannot exceed the discharge capacity of the primary culvert.

Outlet structure H-2B is referred to as "broad-crested weirs in a headwall". The formula for discharge is:

$$Q = C(L_n - 0.2H)H^{1.5}$$

where

Q = weir flow (cfs)

C = discharge coefficient

L_n = length of particular weir (ft)

H = effective head

After the water surface is above th
weir flow over the top needs to be
primary culvert capacity to determin
discharge" capacity of the structure.

Outlet structure H-2C is a "
structure". The flow through the V-
given by:

$$Q = C(8/15)\tan X\,(2g)^{0.5}H^{2.5}$$

where

Q = V-notch weir flow (cfs)

C = discharge coefficient

X = ø/2

ø = angle of V-notch

g = 32.2 ft/sec^2

H = effective head above notch opening

Again, as with all of these types of structures, when the water surface is above the top of the box, the total weir flow needs to be compared with the primary culvert capacity to determine the controlling discharge capacity.

Outlet structure H-2E is commonly referred to as a "multiple outflow structure". The flow through this structure is not as easily defined as the flow through the other three structures. The weir and orifice equations should be used in combination to accurately determine the flow associated with particular water level (stage) elevations in any impoundment.

E. Route the inflow hydrographs through the basin and develop outflow hydrographs.

The only proof of detention basin adequacy is to route a design inflow hydrograph through the storage volume and the proposed outlet structure. The procedure for hydrologic routing of a hydrograph through a detention facility is presented in "Introduction to Hydrology", by Viessman, Harbough, and Knapp, Intext Education Publishers, or many other hydrology texts. Additionally, this detailed assessment can be performed using readily available computer models such as the SCS TR-20 program, U.S. Army Corps of
program or the Penn State Runoff Model

F. Evaluate the basin design.

After completing the initial routing r
if all of the criteria for the basin
not, change the configuration of th
storage characteristics or the dimensi
structure to alter the outflow
Specifically, the storage/outflow cl

the basin are altered in this fashion to provide for the required peak runoff rate control.

V. Financial Considerations -

A. The factors affecting costs of stormwater management on a development site are numerous. The following constitute the primary cost impact areas.

1. Control requirements -

a. Design storm events required to control.
b. Performance standards (maximum release rate).

2. Development type -

a. Change in impervious coverage.
b. Density of development.

3. Site characteristics -

a. Watershed drainage area.
b. Topography/relief.
c. Soils and depth to rock.
d. Accessibility.
e. Proximity to construction materials and haul distances.
f. Wetland areas.

4. Type of controls that are proposed.

B. Factors affecting cost for construction of detention basins include:

1. Storage Volume;
2. Land Consumption;
3. Control structures;
4. Grading/excavation;
5. Design and permitting; and
6. Erosion and sediment control.

The impacts of these items on facil
costs are highlighted in the following

VI. Example of Detention Facility Design Proced

The following example is based on a constru
15.8 acre drainage area located in southern Penn
which 2-, 10- and 100-year controls were requir
land use conditions were "meadow" in good cond
conditions called for the entire 15.8-acre dra
paved.

A. Inflow hydrograph

Using the procedure outlined in Section II of this Appendix, pre- and post-development runoff hydrographs were developed. Figure H-2 shows the resultant hydrographs for the 10- and 100-year existing and proposed land use condition runoff for the development site. The graphs show how the proposed development results in an increased runoff that is roughly double the existing conditions rate and volume.

B. Pond design -

1. Stage Storage curve

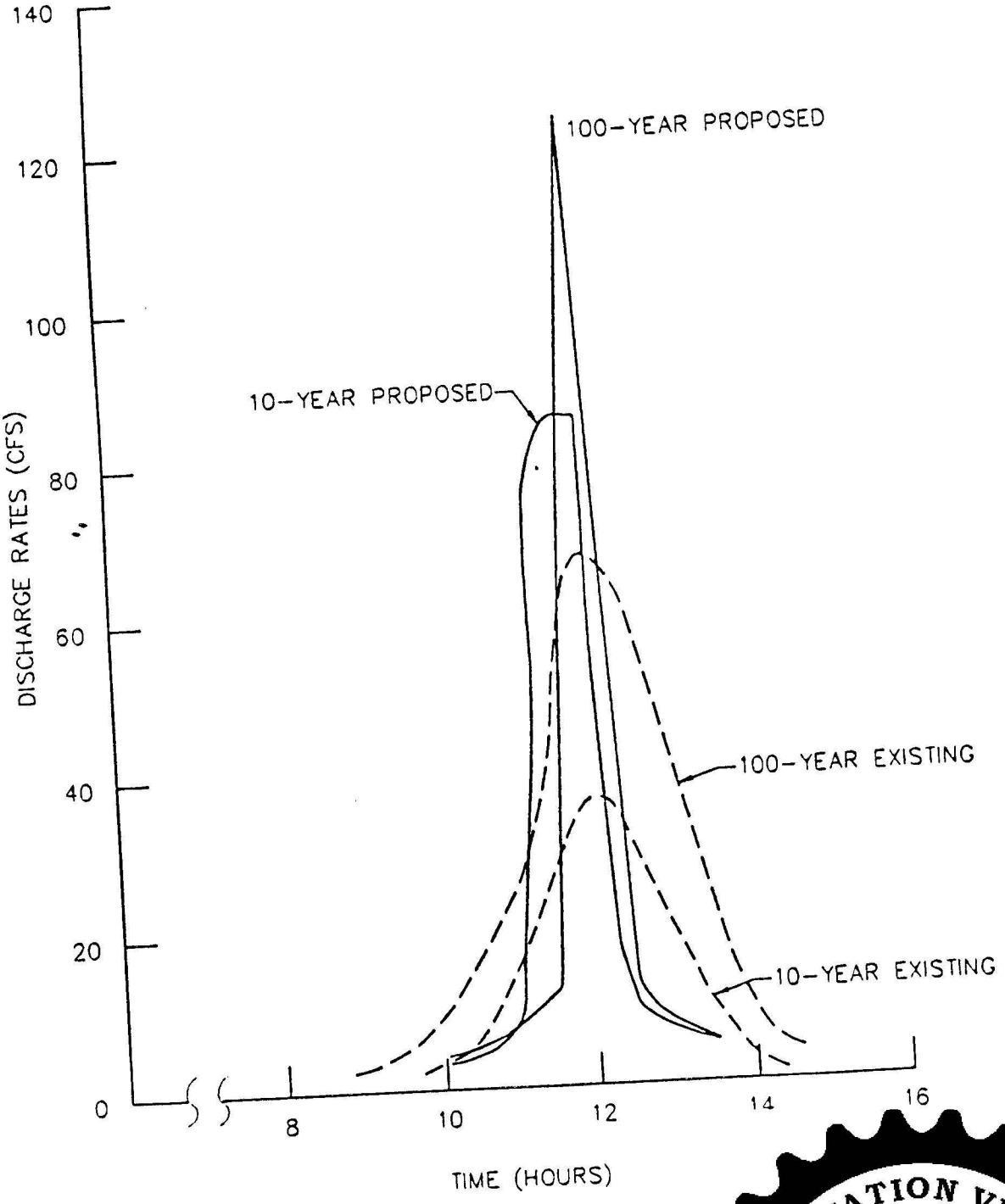
Figure H-3 shows the stage/storage curve for the pond design developed for the site. This curve shows the provided storage volume in the pond for a given stage (water surface elevation). It was developed by measuring the area and calculating the volume at various stages using the procedure outlined in Section III of this appendix.

2. Stage/discharge curves

Figure H-4 shows the stage/discharge curve for a 48-inch pipe under the embankment. Figure H-5 shows the stage/discharge curve for the box riser control structure. Examination of these two curves reveals that the pond discharge is controlled by the outlet structure, that is, the box riser weirs will pass less for a given stage than the pipe under the embankment would. These stage discharge relationships were developed using the procedures outlined in Section IV of this appendix.

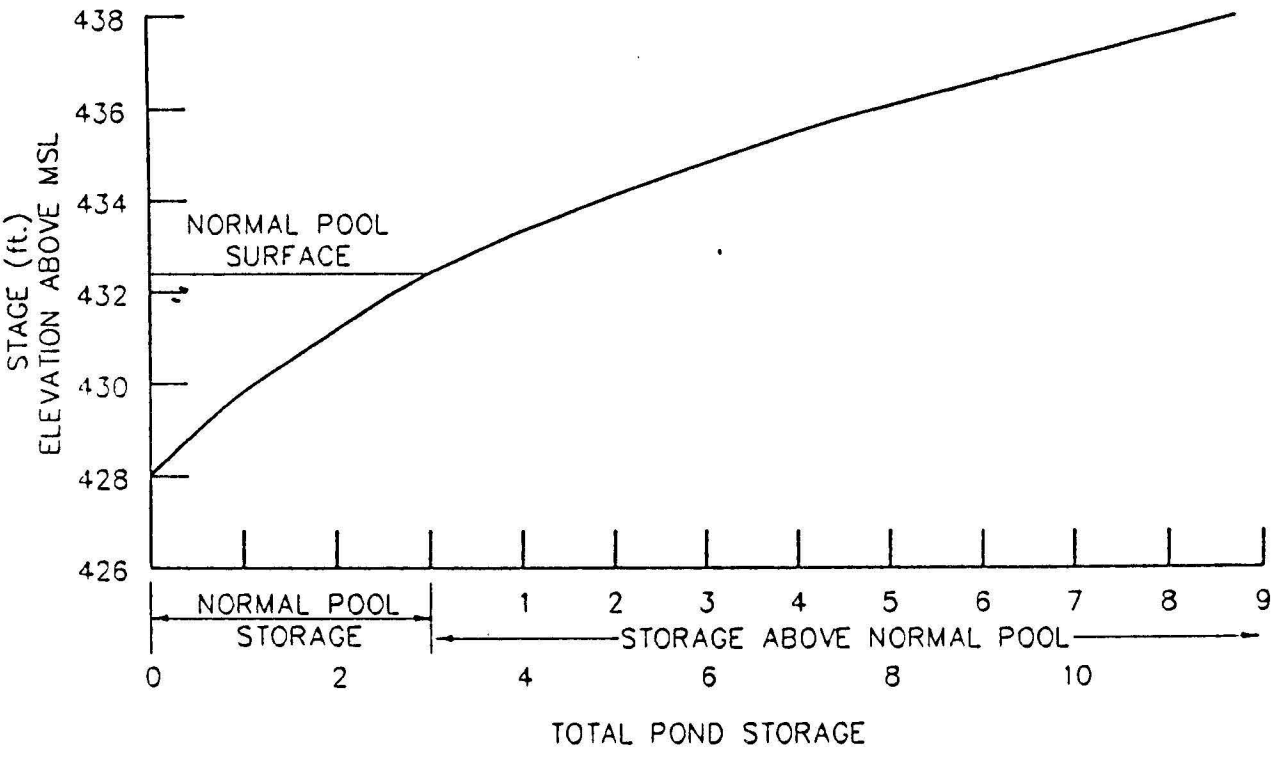
3. Storm routing hydrograph

Figure H-6 shows the storm ro... results from TR-20 modeling for the 10... discharge through the stormwate... The runoff from the 100-year ... site conditions is shown for co... discharge from the pond, 54 ... existing site discharge, 67 cfs

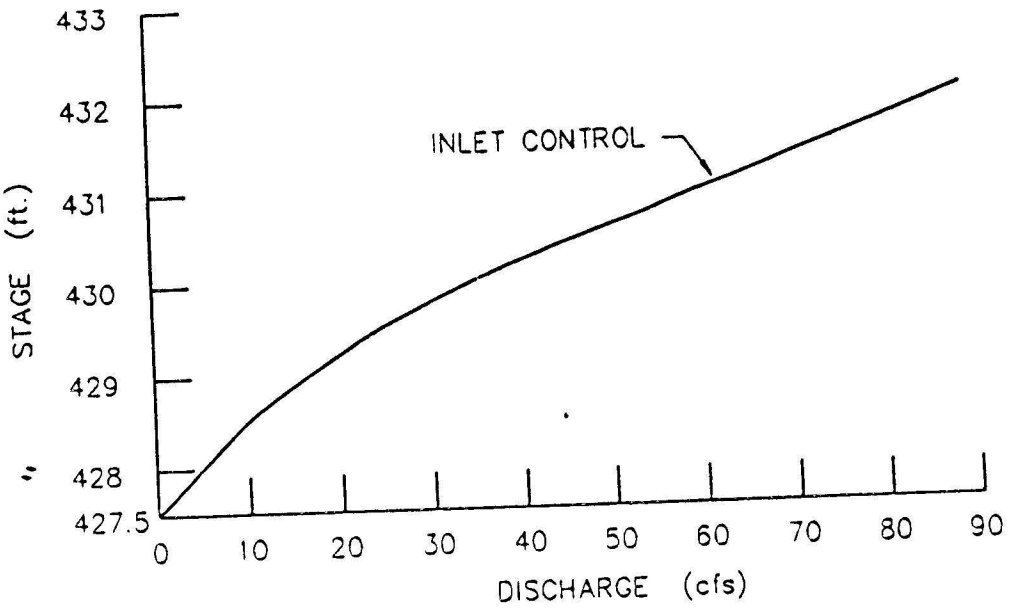


SITE DISCHARGE HYDROG

WALTER B. SATTERTHWAITE ASSOCIATES,
720 NORTH FIVE POINTS ROAD · WEST CHESTER, PA. 19380 · (215)692-
BRANCH OFFICE: 9418 ANNAPOLIS ROAD · LANHAM, MD. 20706 · (301)7



STAGE/STORAGE CURVE

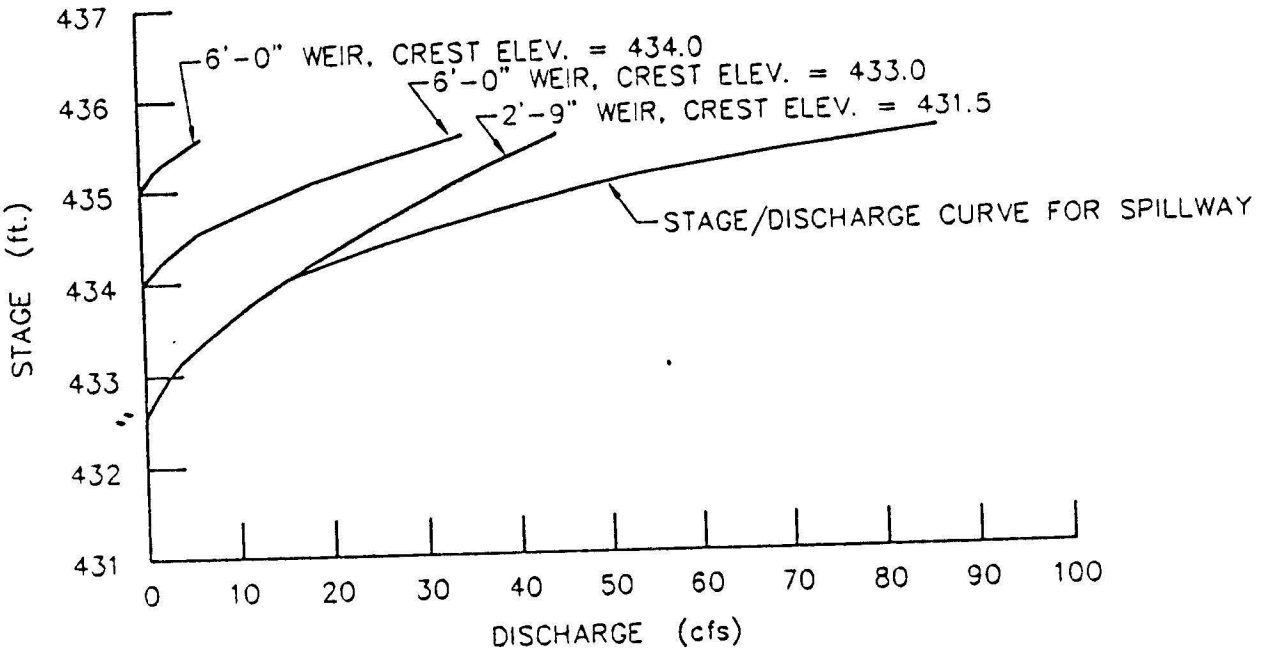


NOTE: THIS FIGURE SHOWS THE MAXIMUM DISCHARGE IN POND OUTLET PIPE FOR A GIVEN HYDRAULIC ELEVATION. USED WITH FIGURE TO DETERMINE WHETHER STRUCTURE WILL BE INLET OR OUTLET CONTROLLED (INLET CONTROLLED THIS EXAMPLE).

STAGE/DISCHARGE CURVE FOI

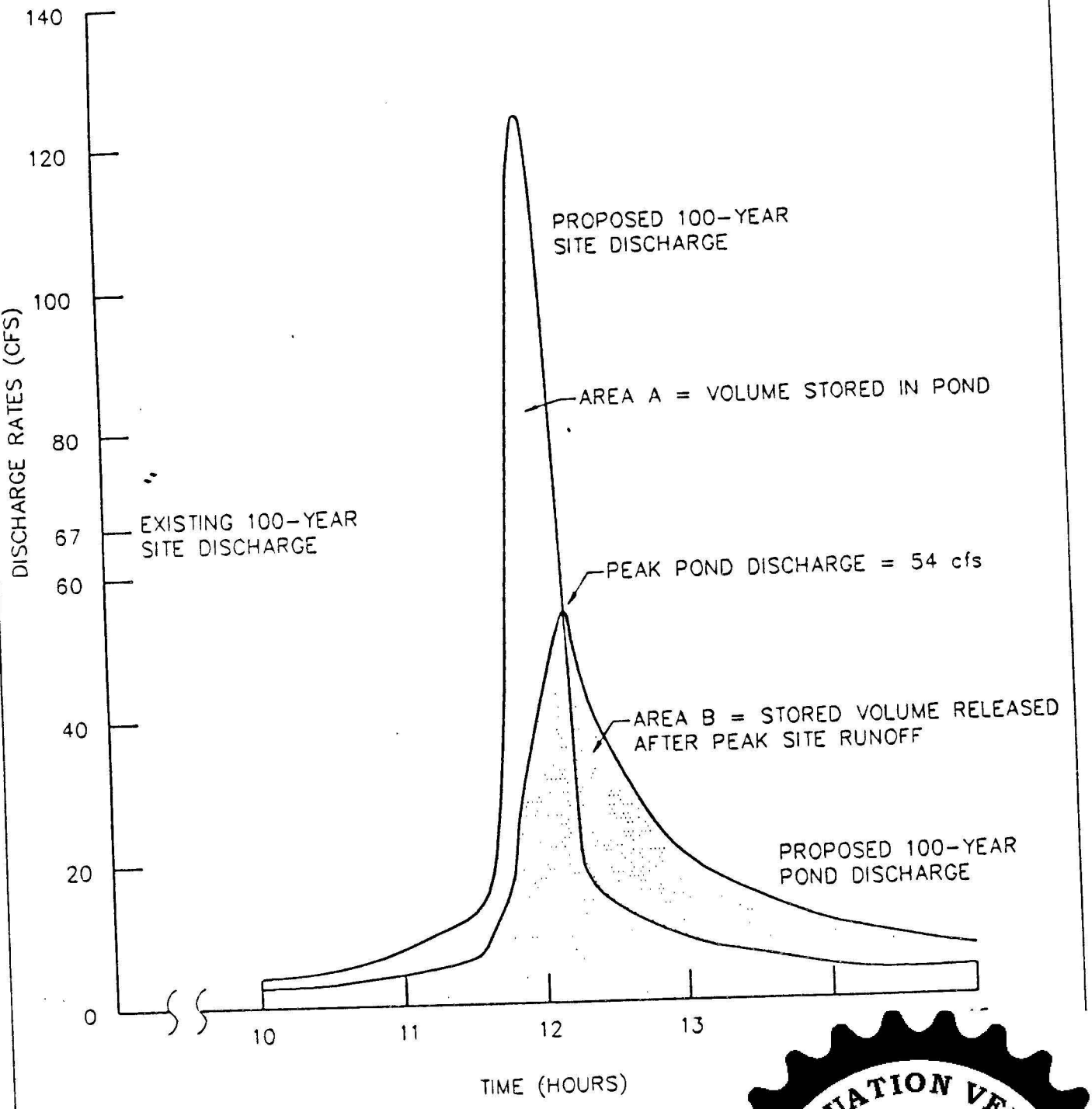
WALTER B. SATTERTHWAITE ASSOCIATES,
720 NORTH FIVE POINTS ROAD · WEST CHESTER, PA. 19380 · (215)692-5
BRANCH OFFICE: 9418 ANNAPOLIS ROAD · LANHAM, MD. 20706 · (301)73

STAGE/DISCHARGE CURVE FOR SPILLWAY



ELEV. ft.	Q cfs
432.5	0.0
433.0	3.1
433.5	8.7
434.0	16.0
434.5	31.4
435.0	53.4
435.5	86.9

STAGE DISCHARGE CURVE FOR CONT



INFLOW AND OUTFLOW HYDROGRAF
SHOWING STORM ROUTING THRC

WALTER B. SATTERTHWAITE ASSOCIATES,
720 NORTH FIVE POINTS ROAD · WEST CHESTER, PA. 19380 · (215)692-57
BRANCH OFFICE: 9418 ANNAPOLIS ROAD · LANHAM, MD. 20706 · (301)73

C. Costs

1. Land area/storage relationship

Figure H-7 shows the land area/storage volume relationship. As shown by the curve, the rate of increase in pond area for increased storage decreases as storage volumes increase.

2. Construction cost/storage volume relationship

Figure H-8 shows the relative construction cost curves for wet and dry extended detention basins, based on cost estimation curves developed by the Metropolitan Washington Council of Governments (Wiegand et al, 1986). The equation used for dry ponds is:

$$C = 10.71V_s^{0.69}$$

where

C = construction cost in 1985 dollars

V_s = volume of storage (cubic feet) of the pond up to the crest of the emergency spillway

The equation used for wet ponds with volumes in excess of 100,000 cubic feet is:

$$C = 34V_s^{0.64}$$

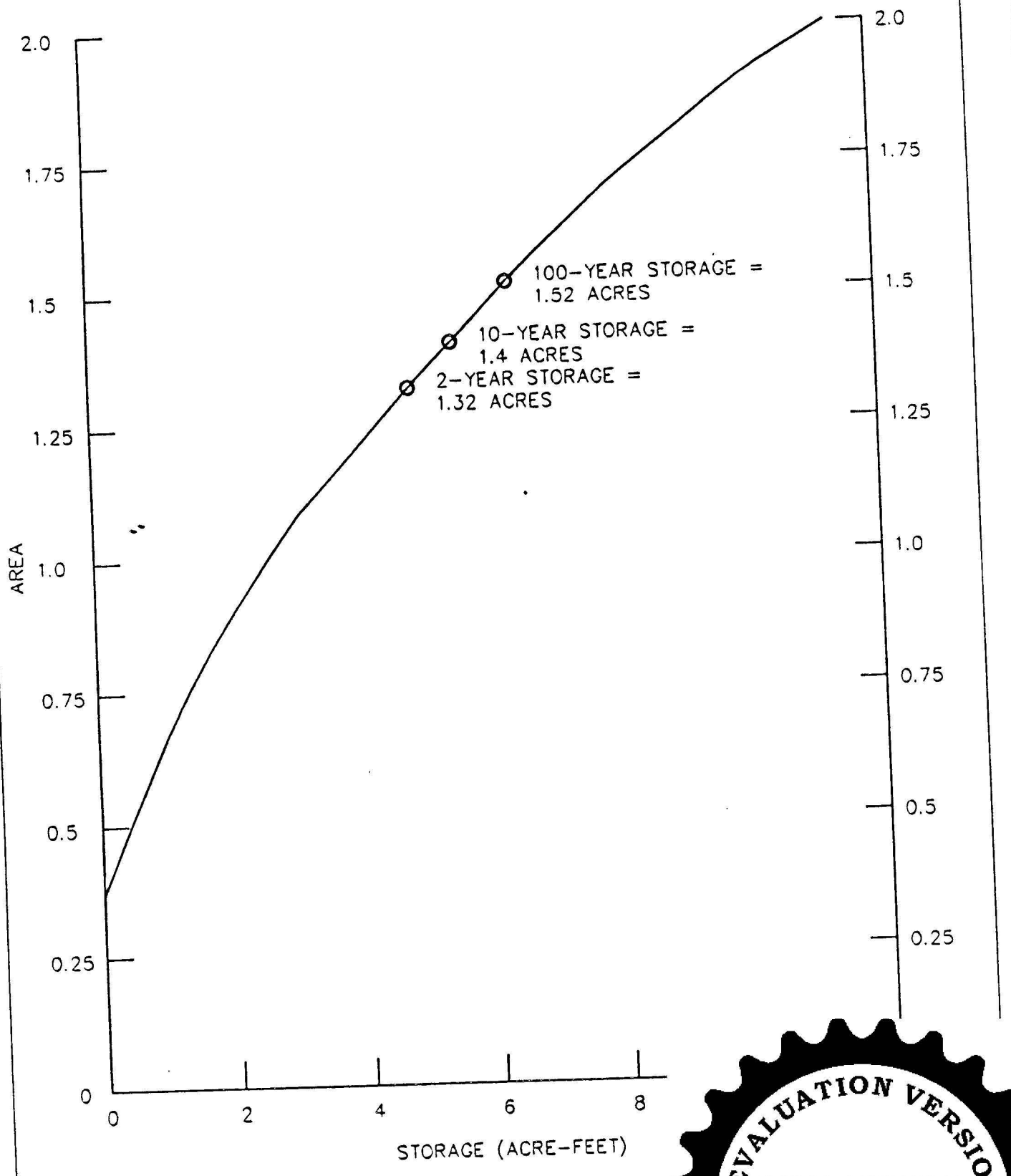
where

C = construction cost in 1985 dollars

V_s = volume of storage (cubic feet) of the pond up to the crest of the emergency spillway

It should be noted that the pre represent only the cost of constructic dollars. MWCOG recommends that 25 per contingencies such as design, p overseeing construction.

To adjust the 1985 costs to the 19 Figure H-7 a factor of 1.1 was a observations can be made of the cost H-7. First, the curves become near



LAND AREA OCCUPIED TO VOLUM

WALTER B. SATTERTHWAITE ASSOCIATES, I
720 NORTH FIVE POINTS ROAD · WEST CHESTER, PA. 19380 · (215)692-577
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WALTER B. SATTERTHWAITE ASSOCIATES, INC
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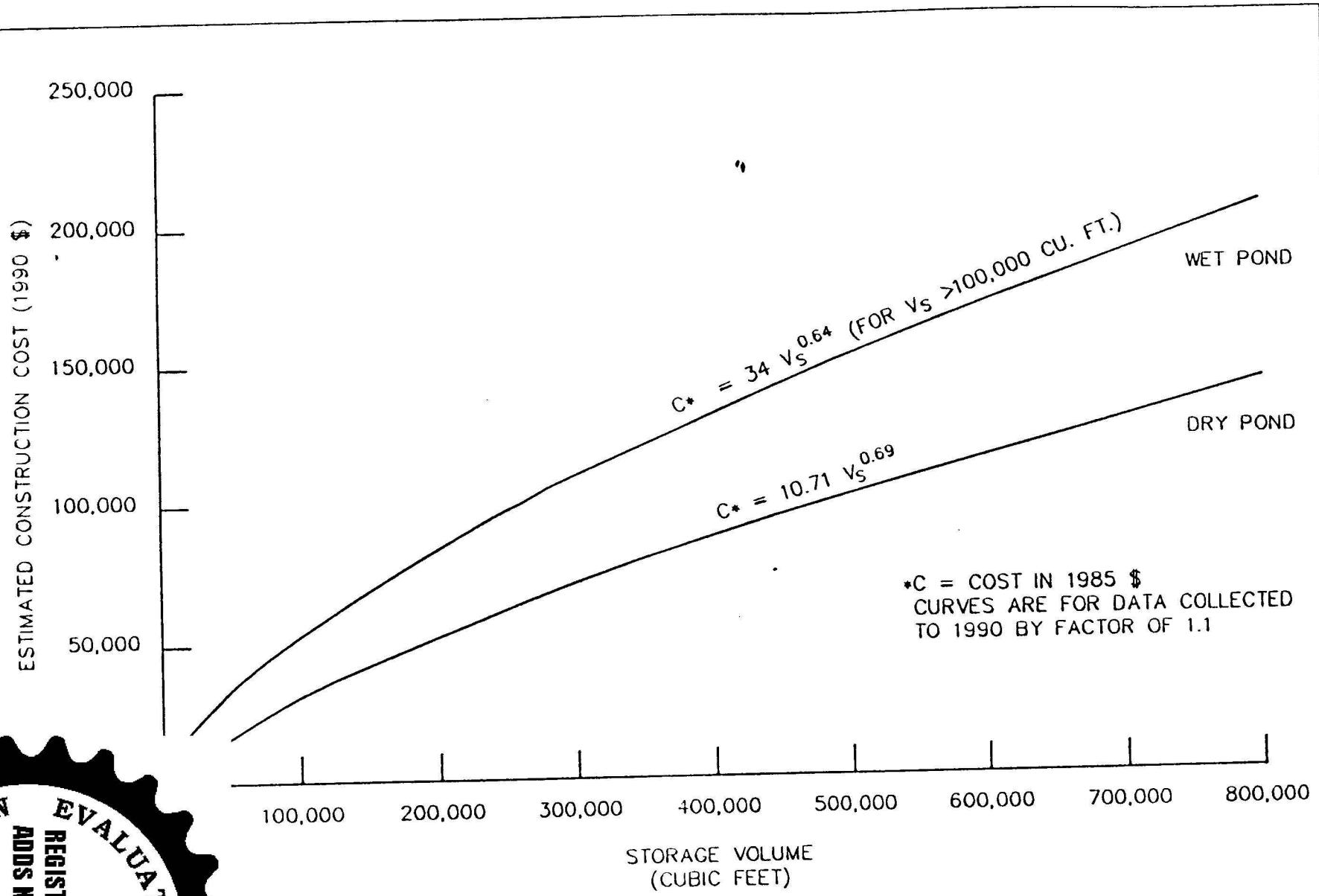

OST RELATIONSHIP FOR WET AND DRY EXTENDED DETENTION PONDS

OURCE: CONTROLLING URBAN RUNOFF – A PRACTICAL MANUAL FOR PLANNING
ND DESIGNING URBAN BMP'S; MWCOG; 1987.

volume of 400,000 cubic feet (about 9 acre feet). Second, the unit costs decrease with increasing pond size, indicating economies of scale with larger ponds. Third, wet ponds can cost from 45 to 60 percent more than dry ponds.

VII. Cost Comparison of 2-, 10- and 100-Year Ponds -

Table H-2 shows the area occupied by the pool at the corresponding 2-, 10- and 100-year stages for the Pennsylvania site used to develop the stage/storage/discharge curves and TR-20 model. The estimated construction cost to build a pond meeting these events is also shown in Table H-2.

TABLE H-2

COMPARISON OF AREA AND ESTIMATED CONSTRUCTION COSTS FOR THE 2-, 10- AND 100-YEAR STORM EVENTS

Event	Storage Acre-feet	Storage Cubic feet	Area Acres	Construction Cost* 1990 Dollars
2-year	6.88	212,600	1.32	$87,000
10-year	5.58	243,100	1.40	$95,000
100-year	6.40	282,300	1.52	105,000

* Costs were derived from the equation shown for wet extended detention ponds and were adjusted from 1985 dollars to 1990 dollars using a factor of 1.1.

The actual land necessary to construct a pond for any of these control events is greater than the area shown due to the land needed for the impoundment structure, outfall and buffer areas. However, the areas shown give a relative measure of the area required to control various events.

Table H-2 shows that the 100-year event acres more than the 10-year event, or an 8.6 land required. Also shown is that a pond w controls costs roughly 10,000 dollars more facility to construct, for a 10.5 percent i control the 100-year event over the cost to event.

The actual increase in construction cos might be less than 10.5 percent since in

emergency spillway would have to be provided for the 10-year controlled pond to prevent overtopping of the impoundment and possible breaching. The total increase due to the additional land and construction costs to meet 100-year controls depends on site specific factors, such as land cost, which precludes a meaningful estimate of the combined increase. It should be noted that the increase in land may or may not be meaningful for a given project site due to open space requirements, wetlands, or other factors that might otherwise prevent full development of the site. Additionally, an extended detention wet pond can be a good place to construct a wetland mitigation area required to develop other parts of a site.

VIII. Combining Effective Stormwater Management with Land Development Site Design -

The stormwater management system is only one item in the total site development design which includes grading, building layout, landscaping, E/S control, sanitary wastewater facilities, water supply, streets, and other utilities. Many times the stormwater system is treated as an add-on after the remainder of the site development design has been completed. Frequently, the result of the low priority given to stormwater management design results in:

- Excessive Delays During the Municipal Review Process

  If adequate planning and evaluation of stormwater management alternatives is not undertaken during the initial phases of the site planning process, the proposed stormwater management system is often found to be inadequate by the municipal engineer. The delay which this may create can usually be avoided if the stormwater management system is integrated into the overall site design during the initial planning phases.

- The Potential for Increased Construction Expense

  If integrated in the overall site design during the initial planning phases, the construction of the stormwater management system can serve multiple fun
  embankment may be used as an embankme
  basin, a seepage area may double as a re
  ways may cover Dutch drains, etc.). If
  management system may only be viewed as

- The Unknown Impact of the Operation
  Management System Within the Developmen
  Areas

  When the stormwater management system i
  on, the only criterion used for it is a

control (e.g., post-development peak runoff rate no greater than the pre-development peak runoff rate) at the development site boundary. The impact of redirected or increased stormwater runoff on-site and in downstream areas may create future claims for damage by affected landowners. Minor revisions of the development site design and review procedure may provide for better coordination of the stormwater management system design with other site development design phases.

An alternative procedure for developing a stormwater management system for a land development site may include the use of a "stormwater management feasibility study". The feasibility study could be used to preliminarily define an "optimum" stormwater management system for a site which can be more effectively designed and reviewed. The use of a feasibility approach can also help cut the overall costs for stormwater management on a development site. The contents of a stormwater management feasibility study for a land development site may include the items listed in Table H-3.

The benefits of the recommended procedure for incorporating the feasibility study approach into the site development review process include:

- A potential reduction of wasted engineering fees resulting from detailed work which is determined to be inadequate by the reviewing agency(ies)at advanced stages of the review process;

- A potential reduction in the overall time required for the review procedure because of early coordination between the applicant and the review agency(ies);

- The definition of potential areas of environmental concern during the initial planning phases when cost-effective methods for eliminating this potential for adverse impact can best be determine; and,

- Better overall coordination of the efforts of developers, technical consultants, mur
local municipal officials and agency r

TABLE H-3

Typical Contents of a
Stormwater Management Feasibility Study
and Preliminary Site Sketch Plan

A. Feasibility Study

- Existing ground cover conditions.
- Soil descriptions, boundaries, seasonal high groundwater levels (SCS Soil Surveys can be used as a reference).
- Underlying geologic conditions.
- Definition of the existing natural drainage paths and drainage area boundaries.
- Designation of any wetland areas.
- 100-year floodplain boundaries.
- Definition of existing on- or off-site drainage problems.
- Appropriate stormwater management criteria as defined by the standards and criteria of the pilot stormwater management plan;

  - Release rate percentage,
  - Direct discharge,
  - Downstream impact evaluation.

B. Preliminary Site Sketch Plan

- Architectural layout of streets, buildings, approximate building dimensions, parking areas, walkways, and other impervious areas.
- Configuration of the storm and san: layout.
- Approximate location and layout management system with a descriptic operation.
- No detailed calculations are require

APPENDIX I

(UNDER SEPARATE COVER)

PRIORITY WATERSHED SUBAREA MAPS
{FOR APPROPRIATE SUB-WATERSHED(S) & MUNICIPALITIES}

Sterry Creek
Wildcat Creek
Hull Creek
Eddy Creek
Dickson
Roaring Brook
Keyser Creek
Spring Brook
St. John Creek

APPENDIX J

WATERSHED PLANNING MAPS

PLATE 1 APPENDIX (SIGNIFICANT OBSTRUCTIONS).

ID #	OBSTRUCTION#	MUNICIPALITY	TYPE	OWNERSHIP
SO	1	Olyphant Borough	Road Crossing	Unknown
SO	2	Scott Township	Road Culvert	Unknown
SO	3	Scott Township	Road Culvert	Unknown
SO	4	Covington Township	Bridge	Covington Twp.
SO	5	Madison Township	Bridge	Madison Twp.
SO	6	Covington Township	Road Pipe	Covington Twp.
SO	7	Moscow Borough	Culvert	PennDOT
SO	8	Madison Township	Culvert	PennDOT
SO	9	Roaring Brook Township	Road pipe	PennDOT
SO	10	Moosic Borough	Railroad culvert	Pocono N.E. R.R.
SO	11	Moosic Borough	Culvert	Lacka. County
SO	12	Jessup Borough	Dam (Olyphant Res. #2)	PG&W
SO	13	Roaring Brook Township	Dam (Lake Scranton)	PG&W
SO	14	Scranton City	Dam (Dist. #5 Res.)	PG&W
SO	15	Springbrook Township	Dam (Watres Res.)	PG&W
SO	16	Springbrook Township	Dam (Nesbitt Res.)	PG&W
SO	17	Springbrook Township	Dam (Sprngbrk Intake)	PG&W
SO	18	Canaan Township	Dam (C'dale Res. #7)	PG&W
SO	19	Carbondale Township	Dam (C'dale Res. #4)	PG&W
SO	20	Carbondale Township	Dam (Brownell Res.)	PG&W
SO	21	Jessup Borough	Dam (Olyphant Res. #2)	PG&W
SO	22	S. Abington Township	Dam (Griffin Res.)	PG&W
SO	23	S. Abington Township	Dam (Summit Lake)	PG&W
SO	24	Archbald Borough	Dam (Aylesworth Creek)	A.C.O.E.
A205	3	Covington Township	Beaver Dams	Public
A206	1	Elmhurst Township	Culvert	PennDOT
A207	1	Fell Township	Debris	Public
A302	1	Scranton City	Bridge	Public
A302	2	Scranton City	Culvert	Public
A302	3	Scranton City	Box Culvert	City of Scranton
A302	4	Scranton City	Pipes	City of Scranton
A302	5	Scranton City	Open Channel	City of Scranton
A302	6	Scranton City	Pipes	City of Scranton
A302	7	Scranton City	Open Channel	City of Scranton
A302	8	Scranton City	Open Channel	City of Scranton
A401	1	Archbald Borough	Culvert, Debris	Public
A401	2	Archbald Borough	Culvert, Debris	Public
A401	3	Archbald Borough	Stream Enclosure	Public
A401	4	Archbald Borough	Culvert	Public
A401	5	Archbald Borough	Culvert	Public
A402	1	Blakely Borough	Debris, Sedimentation	Pa. D.E.R.
A402	2	Blakely Borough	Bridge	Lackawanna Co.
A404	1	Clarks Summit Borough	Culvert	PennDOT
A407	1	Dunmore Borough	Stream Enclosure	Public
A407	2	Dunmore Borough	Bridge	Public
A408	1	Jermyn Borough	Bridges	Public
A410	1	Moosic Borough	Debris	Public
A412	1	Old Forge Borough	Bridge	Unknown
A412	2	Old Forge Borough	Narrow Stream Bed	Unknown
A412	3	Old Forge Borough	Culvert	Unknown
A413	1	Olyphant Borough	Stream Enclosure	Private Utility
A414	2	Taylor Borough	Culvert	Public
A414	5	Taylor Borough	Bridge	
A417	1	Jessup Borough	Bridge	
A417	2	Jessup Borough	Deep Culvert	
A417	3	Jessup Borough	Bridge	
A417	4	Jessup Borough	Deep Culvert	
A417	5	Jessup Borough	Bridge	
A417	6	Jessup Borough	Bridge	
A417	7	Jessup Borough	Bridge	
A417	8	Jessup Borough	Short Bridge	
A417	9	Jessup Borough	Short Bridge	
C207	1	Clifford Township	Debris	
C215	1	Herrick Township	Bridge	
C215	2	Herrick Township	Bridge	
C401	1	Forest City Borough	Culvert, Enclosure	
C401	2	Forest City Borough	Debris	

SO = Significant Obstruction identified by cc

PLATE 1 APPENDIX (FLOODING/PROBLEM AREAS).

ID #	AREA #	MUNICIPALITY	TYPE OF PROBLEM	PROPOSED SOLUTION
A205	1	Covington Township	Undeveloped Area Flooding	Remove beaver dams
A205	2	Covington Township	Undeveloped Area Flooding	Larger drain pipe
A206	2	Elmhurst Township	Residential Flooding	Divert water
A206	3	Elmhurst Township	Residential Flooding	Larger drain pipe
A207	2	Fell Township	Undeveloped Area Flooding	Riprap needed
A210	1	Jefferson Township	Accelerated Erosion	rock bed, larger pipe
A216	1	Ransom Township	Residential Flooding	Clear debris, riprap
A218	1	Scott Township	Residential Flooding	Clear debris
A218	2	Scott Township	Residential Flooding	Clear debris
A220	1	Springbrook Township	Stormwater Velocity	Larger swales
A220	2	Springbrook Township	Stormwater Velocity	Larger swales
A302	9	Scranton City	Residential Flooding	Unknown
A302	10	Scranton City	Residential Flooding	Improve collection fac.
A302	11	Scranton City	Residential Flooding	Improve collection fac.
A302	12	Scranton City	Residential Flooding	Improve collection fac.
A302	13	Scranton City	Residential Flooding	Improve collection fac.
A302	14	Scranton City	Residential Flooding	Improve collection fac.
A302	16	Scranton City	Commercial Flooding	Improve collection fac.
A302	17	Scranton City	Residential Flooding	Improve collection fac.
A302	15	Scranton City	Residential/Commercial Flooding	Improve collection fac.
A401	1	Archbald Borough	Residential Flooding	Remove obstructions
A401	2	Archbald Borough	Residential/Industrial Flooding	Enlarge bridge
A401	3	Archbald Borough	Residential/Commercial Flooding	Widen stream channel
A401	4	Archbald Borough	Residential Flooding	Larger culvert
A401	5	Archbald Borough	Residential Flooding	Larger culvert
A401	6	Archbald Borough	Residential Flooding	Divert water
A402	3	Blakely Borough	Residential Flooding	Detain water upstream
A402	4	Blakely Borough	Residential Flooding	Detain water upstream
A402	5	Blakely Borough	Residential Flooding	Detain water upstream
A402	6	Blakely Borough	Residential/Undvlped Area Flooding	Larger stream channel
A406	1	Dickson City Borough	Residential Flooding	Improve collection fac.
A406	2	Dickson City Borough	Residential Flooding	Improve collection fac.
A406	3	Dickson City Borough	Residential Flooding	Improve collection fac.
A407	3	Dunmore Borough	Commercial Flooding	Retention pond
A407	4	Dunmore Borough	Residential Flooding	Install storm sewer
A407	5	Dunmore Borough	Commercial Flooding	Install storm sewer
A407	6	Dunmore Borough	Residential/Commercial Flooding	Separate sanitary line
A407	7	Dunmore Borough	Residential/Commercial Flooding	Separate sanitary line
A407	8	Dunmore Borough	Residential Flooding	Larger swales
A407	9	Dunmore Borough	Residential Flooding	Separate sanitary line
A407	10	Dunmore Borough	Residential Flooding	Stabilize banks
A409	1	Mayfield Borough	Industrial Flooding	Install storm sewer
A409	2	Mayfield Borough	Residential Flooding	Restore creek bed
A409	3	Mayfield Borough	Residential/Commercial Flooding	Install storm sewer
A409	4	Mayfield Borough	Residential Flooding	Clear pipes/basins
A410	2	Moosic Borough	Residential Flooding	Dredge creek
A410	3	Moosic Borough	Groundwater	Dredge creek
A410	4	Moosic Borough	Residential Flooding	Separate sanitary line
A410	5	Moosic Borough	Residential Flooding	Install storm sewer
A413	2	Olyphant Borough	Residential/Commercial Flooding	Separate sanitary line
A413	3	Olyphant Borough	Rsdntial/Comm./Indust. Flooding	Separate sanitary line
A414	1	Taylor Borough	Residential Flooding	Clear channel banks
A414	2	Taylor Borough	Residential Flooding	Sep
A414	3	Taylor Borough	Residential Flooding	Larg
A414	4	Taylor Borough	Residential Flooding	Clea
A414	5	Taylor Borough	Residential Flooding	Clea
A417	10	Jessup Borough	Residential Flooding	Sep
B224	1	Pittston Township	Residential Flooding	Drec
B224	2	Pittston Township	Residential Flooding	Drec
B407	1	Duryea Borough	Residential Flooding	Impr
B407	2	Duryea Borough	Residential Flooding	Insta
C215	2	Herrick Township	Road Flooding	Larg
C215	3	Herrick Township	Agricultural Flooding	Unk
C401	1	Forest City Borough	Residential/Commercial Flooding	Impr
C401	2	Forest City Borough	Residential Flooding	Drec

PLATE 2 (STREAMS WITH 100-YR. FLOODPLAINS)

Number	Stream
1	East Branch Lackawanna River
2	West Branch Lackawanna River
3	Fiddle Lake Creek
4	Main Branch Lackawanna River
5	Fallbrook Creek
6	Wilson Creek
7	Racket Brook
8	Unnamed tributary to Fallbrook Creek
9	Unnamed tributary to Fallbrook Creek
10	Lees Creek
11	Rush Brook
12	Callender Gap Creek
13	Wildcat Creek
14	White Oak Run
15	Laurel Run
16	Grassy Island Creek
17	Sterry Creek
18	Hulls Creek
19	Scott Creek
20	Storrs Creek
21	Leggetts Creek
22	Lackawanna Trail Tributary
23	Summit Lake Creek
24	Unnamed tributary to Leggetts Creek
25	Meadow Brook
26	Roaring Brook
27	Little Roaring Brook
28	White Oak Run
29	Bear Brook
30	VanBrunt Creek
31	Langan Creek
32	Lake Run
33	East Branch Roaring Brook
34	Green Run
35	Rattlesnake Creek
36	Springbrook Creek
44	Mill Creek
37	Painter Creek
38	Leach Creek
39	Keyser Creek
40	Lindy Creek
41	Stafford Meadow Brook
42	Unnamed tributary to Springbrook Creek
43	St. John's Creek
45	Lidy Creek
46	Collins Creek

PLATE 3 APPENDIX (EXISTING/PROPOSED FACILITIES)

ID #	FCLTY #	MUNICIPALITY	TYPE	OWNER
A205	1	Covington Township	Sluice pipes	Covington Township
A207	1	Fell Township	Channel Dredging	Fell Township
A207	2	Fell Township	Rock Riprap	Private Ownership
A207	3	Fell Township	Wetland	Private Ownership
A216	1	Ransom Township	Channel Excavation	Private Ownership
A216	2	Ransom Township	Rock Riprap	Private Ownership
A218	1	Scott Township	Channel Excavation/Riprap	Private Ownership
A302	1	Scranton City	Underpass elimination	PennDOT
A302	2	Scranton City	S. Scr. Flood Cntrl Prjt (F)	City of Scranton
A302	3	Scranton City	Merrifield Pump Station	City of Scranton
A302	4	Scranton City	Box Culvert	D.E.R./Scranton City
A302	5	Scranton City	Box Culvert	D.E.R./Scranton City
A302	6	Scranton City	Proposed Levees (F)	A.C.O.E.
A401	1	Archbald Borough	Channelization	Archbald Borough
A401	2	Archbald Borough	Pipe Channel	Lackawanna County
A401	3	Archbald Borough	Detention Basin	Valley View Sch. Dist.
A401	4	Archbald Borough	Wetland	Private Ownership
A401	5	Archbald Borough	Wetland	PennDOT
A401	6	Archbald Borough	Detention Basin	James Giardina
A401	7	Archbald Borough	Stripping Area	Unknown
A401	8	Archbald Borough	Dam (F)	A.C.O.E.
A402	1	Blakely Borough	Retention Basin/Levees (F)	Blakely Borough
A402	2	Blakely Borough	Channel Realignment	Fed. Gov't. or D.E.R.
A402	3	Blakely Borough	Retention Basin	Blakely Borough
A402	4	Blakely Borough	Rock Riprap	Pa. D.E.R.
A406	1	Dickson City Borough	Raised storm pipes	Unknown
A406	2	Dickson City Borough	Stormdrains	Dickson City Borough
A407	1	Dunmore Borough	Detention/Retention Basin	Days Inn
A407	2	Dunmore Borough	Detention/Retention Basin	Keystone Landfill
A408	1	Jermyn Borough	Channel Excavation	Unknown
A408	2	Jermyn Borough	Channel Excavation	Unknown
A408	3	Jermyn Borough	Pipe Channel	Unknown
A409	1	Mayfield Borough	Levee (F)	Mayfield Borough
A410	1	Moosic Borough	Levees (F)	Unknown
A410	2	Moosic Borough	Channel Excavation/Riprap	Unknown
A410	3	Moosic Borough	Channel Excavation/Riprap	Unknown
A412	1	Old Forge Borough	Channel Excavation	Unknown
A413	1	Olyphant Borough	Proposed Levees (F)	Pa. D.E.R.
A414	1	Taylor Borough	Retention Basin	Empire Landfill
A414	2	Taylor Borough	Retention Basin	Amity Landfill
A417	1	Jessup Borough	Bridge Rehabilitation	PennDOT
A417	2	Jessup Borough	Contain and Convey	Lack Co Housing Auth.
A417	3	Jessup Borough	Contain and Convey	MJJ Podrasky
A417	4	Jessup Borough	Restructure Restriction	O.S.M.
A417	5	Jessup Borough	Remove islands	Pa. D.E.R.
A417	6	Jessup Borough	Contain and Convey	Siniawa Enterprises
A417	7	Jessup Borough	Install Levee	A.C.O.E.
A417	8	Jessup Borough	Channel Rehabilitation	Jessup Borough
B224	1	Pittston Township	Natural Pond	Pittston Township
B407	1	Duryea Borough	Dike/Levee (F)	Duryea Borough
B407	2	Duryea Borough	Retention Basin	P.P. &
C207	1	Clifford Township	Dam (F)	A.C.O.
C215	1	Herrick Township	Levee	Unkn
C215	2	Herrick Township	Pipe Channel	Herric
C215	3	Herrick Township	Channel Excavation	Unkn
C215	4	Herrick Township	Wetland	State
C215	5	Herrick Township	Man-made Pond	Privat
C215	6	Herrick Township	Man-made Pond	Privat
C215	7	Herrick Township	Wetland	Unkn
C215	8	Herrick Township	Wetland	Privat
C401	1	Forest City Borough	Pipe Channel	Forest
C401	2	Forest City Borough	Nature Pond	Forest

(F) = Flood Control Project