

Appendix A

Hydraulic Model Results and Hydrogeomorphic Relations

Sassafras Tributary Main Branch - Model Update Results

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # C	Power Cha (N/m s)	Shear Char (N/m2)	Entrain	Transport
Reach-2	1120	Regional	32.1	98.9	100.5		100.61	0.003012	1.9	23.02	35.98	0.49	75.08	39.47	0.048728	0.136991
Reach-2	1120	100 yr	8.25	98.9	99.95		100.01	0.002853	1.38	8.13	18.93	0.44	33.42	24.15	0.029815	0.068358
Reach-2	1120	50 yr	7.13	98.9	99.91		99.96	0.002787	1.33	7.33	17.94	0.43	29.97	22.57	0.027864	0.063088
Reach-2	1120	25 yr	6.01	98.9	99.86		99.91	0.002717	1.27	6.49	16.83	0.42	26.45	20.89	0.02579	0.057065
Reach-2	1120	10 yr	4.57	98.9	99.79		99.83	0.002661	1.18	5.29	15.1	0.41	22.2	18.77	0.023173	0.048638
Reach-2	1120	5 yr	3.55	98.9	99.73		99.76	0.002557	1.1	4.41	13.7	0.4	18.42	16.71	0.02063	0.041753
Reach-2	1120	2 yr	2.25	98.9	99.62		99.65	0.002467	0.98	3.12	11.32	0.38	13.72	13.95	0.017222	0.032481
Reach-2	1110	Regional	32.1	98.9	100.38		100.54	0.004987	2.32	18.92	32.14	0.62	139.71	60.25	0.074383	0.211469
Reach-2	1110	100 yr	8.25	98.9	99.77	99.77	99.93	0.010205	2.28	4.97	14.6	0.81	159.46	70.07	0.086506	0.203623
Reach-2	1110	50 yr	7.13	98.9	99.72	99.72	99.88	0.010443	2.22	4.39	13.66	0.81	151.47	68.1	0.084074	0.192153
Reach-2	1110	25 yr	6.01	98.9	99.68	99.68	99.83	0.010594	2.15	3.82	12.66	0.81	140.39	65.15	0.080432	0.179225
Reach-2	1110	10 yr	4.57	98.9	99.62	99.62	99.76	0.009963	1.98	3.15	11.37	0.77	112.02	56.55	0.0569815	0.149841
Reach-2	1110	5 yr	3.55	98.9	99.57	99.57	99.69	0.010279	1.9	2.54	10.06	0.77	101.17	53.37	0.056889	0.136991
Reach-2	1110	2 yr	2.25	98.9	99.49	99.49	99.59	0.009676	1.67	1.78	8.17	0.73	72.59	43.47	0.053667	0.103484
Reach-2	1100	Regional	32.1	98.2	100.42		100.46	0.00626	1.09	37.54	35.47	0.24	12.51	11.51	0.01421	0.040933
Reach-2	1100	100 yr	8.25	98.2	99.3		99.36	0.002484	1.33	8.14	16.95	0.42	29.29	22.01	0.027173	0.063088
Reach-2	1100	50 yr	7.13	98.2	99.24		99.29	0.002657	1.32	7.12	15.93	0.43	29.27	22.15	0.027346	0.062062
Reach-2	1100	25 yr	6.01	98.2	99.17		99.23	0.00291	1.32	6.06	14.8	0.44	29.72	22.56	0.027852	0.062062
Reach-2	1100	10 yr	4.57	98.2	99.07		99.13	0.00326	1.3	4.73	13.23	0.46	29.36	22.65	0.027963	0.060036
Reach-2	1100	5 yr	3.55	98.2	99		99.05	0.003596	1.28	3.77	11.96	0.47	28.88	22.65	0.027963	0.058046
Reach-2	1100	2 yr	2.25	98.2	98.88		98.93	0.004132	1.21	2.48	9.46	0.49	26.47	21.79	0.026901	0.051366
Reach-2	1090	Regional	32.1	97.7	100.24		100.38	0.01641	1.93	19.9	13.95	0.39	66.62	34.57	0.042679	0.141737
Reach-2	1090	100 yr	8.25	97.7	98.97		99.1	0.004222	1.92	5.42	8.77	0.56	83.38	43.48	0.053679	0.140145
Reach-2	1090	50 yr	7.13	97.7	98.88		99.01	0.004657	1.92	4.67	8.12	0.58	85.15	44.46	0.054889	0.140145
Reach-2	1090	25 yr	6.01	97.7	98.79		98.92	0.005119	1.9	3.95	7.44	0.6	85.09	44.86	0.055383	0.136991
Reach-2	1090	10 yr	4.57	97.7	98.66		98.79	0.005788	1.85	3.06	6.48	0.62	81.93	44.4	0.054815	0.129275
Reach-2	1090	5 yr	3.55	97.7	98.56		98.68	0.006371	1.79	2.43	5.72	0.64	77.23	43.27	0.05342	0.120334
Reach-2	1090	2 yr	2.25	97.7	98.41		98.52	0.006658	1.6	1.67	4.64	0.63	59.09	37.01	0.045691	0.094286
Reach-2	1080	Regional	32.1	97.2	99.46	99.46	100.15	0.008878	4.14	9.26	7.12	0.89	689.32	166.31	0.205321	0.744752
Reach-2	1080	100 yr	8.25	97.2	98.37	98.37	98.74	0.011267	2.95	3.21	4.38	0.89	313.26	106.11	0.131	0.3565
Reach-2	1080	50 yr	7.13	97.2	98.29	98.29	98.63	0.011348	2.83	2.89	4.25	0.89	282.46	99.8	0.12321	0.325725
Reach-2	1080	25 yr	6.01	97.2	98.22	98.22	98.52	0.011274	2.68	2.57	4.12	0.87	246.3	91.86	0.113407	0.289357
Reach-2	1080	10 yr	4.57	97.2	98.1	98.1	98.37	0.011453	2.48	2.11	3.91	0.86	204.1	82.19	0.101469	0.244462
Reach-2	1080	5 yr	3.55	97.2	98.01	98.01	98.25	0.011308	2.29	1.78	3.76	0.84	166.8	72.73	0.08979	0.205569
Reach-2	1080	2 yr	2.25	97.2	97.85	97.85	98.05	0.01308	2.09	1.2	3.07	0.87	136.41	65.41	0.080753	0.16853
Reach-2	1070	Regional	32.1	95.7	97.83	97.83	98.57	0.010097	4.25	8.83	6.21	0.94	755.92	178.05	0.219815	0.788442
Reach-2	1070	100 yr	8.25	95.7	96.75	96.75	97.12	0.012606	2.9	3.13	4.31	0.93	308.6	106.35	0.131296	0.343495
Reach-2	1070	50 yr	7.13	95.7	96.67	96.67	97.02	0.012938	2.79	2.81	4.18	0.93	281	100.8	0.124444	0.3158
Reach-2	1070	25 yr	6.01	95.7	96.6	96.6	96.91	0.01305	2.64	2.49	4.05	0.92	246.07	93.16	0.115012	0.280051
Reach-2	1070	10 yr	4.57	95.7	96.48	96.48	96.75	0.013792	2.46	2.03	3.84	0.92	208.49	84.81	0.104704	0.240196
Reach-2	1070	5 yr	3.55	95.7	96.39	96.39	96.63	0.01398	2.27	1.71	3.69	0.91	172.25	75.73	0.093494	0.201686
Reach-2	1070	2 yr	2.25	95.7	96.26	96.26	96.44	0.014724	2	1.24	3.46	0.9	126.73	63.33	0.078185	0.153151
Reach-2	1060	Regional	32.1	93.5	95.81		95.88	0.000773	1.24	28.73	20.28	0.26	18.4	14.82	0.018296	0.054175
Reach-2	1060	100 yr	8.25	93.5	94.8		94.84	0.001225	1.05	9.83	15.63	0.3	13.62	12.95	0.015988	0.037737
Reach-2	1060	50 yr	7.13	93.5	94.73		94.76	0.00128	1.03	8.67	14.71	0.3	13.11	12.71	0.015691	0.036192
Reach-2	1060	25 yr	6.01	93.5	94.65		94.68	0.001335	1	7.52	13.74	0.31	12.38	12.34	0.015235	0.03394
Reach-2	1060	10 yr	4.57	93.5	94.54		94.57	0.001368	0.95	6.08	12.42	0.31	10.76	11.37	0.014037	0.030358
Reach-2	1060	5 yr	3.55	93.5	94.45		94.47	0.001386	0.89	5.01	11.35	0.3	9.35	10.46	0.012914	0.026344
Reach-2	1060	2 yr	2.25	93.5	94.32		94.34	0.001242	0.77	3.72	9.88	0.28	6.2	8.09	0.009988	0.019229
Reach-2	1050	Regional	32.1	93.7	95.74		95.84	0.00153	1.43	23.61	19.45	0.37	31.18	21.77	0.026877	0.073857
Reach-2	1050	100 yr	8.25	93.7	94.71		94.78	0.003417	1.16	7.1	11.65	0.48	22.6	19.45	0.024012	0.046863
Reach-2	1050	50 yr	7.13	93.7	94.63		94.7	0.003762	1.15	6.19	11.06	0.49	22.64	19.66	0.024272	0.045989
Reach-2	1050	25 yr	6.01	93.7	94.54		94.61	0.004445	1.15	5.23	10.67	0.52	23.45	20.41	0.025198	0.045989
Reach-2	1050	10 yr	4.57	93.7	94.41		94.48	0.006617	1.18	3.86	10.23	0.62	27.91	23.58	0.029111	0.048638
Reach-2	1050	5 yr	3.55	93.7	94.29		94.38	0.00954	1.29	2.76	8.48	0.72	37.7	29.3	0.036173	0.059036
Reach-2	1050	2 yr	2.25	93.7	94.11	94.11	94.23	0.020245	1.55	1.45	5.9	1	73	46.95	0.057963	0.087998
Reach-2	1040	Regional	32.1	93.24	95.61	94.9	95.75	0.001813	1.84	20.37	18.03	0.41	60.49	32.95	0.040679	0.127761
Reach-2	1040	100 yr	8.25	93.24	94.59		94.66	0.00175	1.16	7.46	9.21	0.36	18.88	16.33	0.02016	0.046863
Reach-2	1040	50 yr	7.13	93.24	94.51		94.57	0.001762	1.1	6.71	8.85	0.35	16.68	15.17	0.018728	0.041753
Reach-2	1040	25 yr	6.01	93.24	94.42		94.47	0.001733	1.04	5.92	8.22	0.35	14.3	13.81	0.017049	0.03696
Reach-2	1040	10 yr	4.57	93.24	94.28		94.33	0.001652	0.93	4.92	6.4	0.33	10.78	11.6	0.014321	0.028986
Reach-2	1040	5 yr	3.55	93.24	94.17		94.21	0.001532	0.84	4.24	5.91	0.32	8.13	9.72	0.012	0.023233
Reach-2	1040	2 yr	2.25	93.24	94		94.02	0.001316	0.69	3.27	5.53	0.29	4.8	6.98	0.008617	0.015149
Reach-2	1030	Regional	35.4	93.24	94.95	94.95	95.47	0.013709	3.2	11.06	10.79	1.01	402.84	125.84	0.155358	0.42546
Reach-2	1030	100 yr	9.1	93.24	94.06	94.06	94.38	0.015892	2.51	3.63	5.67	1	227.25	90.59	0.11184	0.250936
Reach-2	1030	50 yr	7.86	93.24	94	94	94.29	0.016385	2.42	3.25	5.52	1.01	209.23	86.47	0.106753	0.231786
Reach-2	1030	25 yr	6.63	93.24	93.93	93.93	94.2	0.016769	2.31	2.87	5.37	1.01	187.1	81.05	0.100062	0.209492
Reach-2	1030	10 yr	5.04	93.24	93.83	93.83	94.06	0.017064	2.12	2.38	5.16	1	152.17	71.72	0.088543	0.173833
Reach-2	1030	5 yr	3.91	93.24	93.75	93.75	93.95	0.017784	1.97	1.98	4.98	1	128.5	65.07	0.080333	0.148201
Reach-2	1030	2 yr	2.48	93.24	93.64	93.64	93.79	0.019428	1.74	1.43	4.73	1.01	95.19	54.83	0.067691	0.113146
Reach-3	1020	Regional	43.47	91.7	94.54		94.54	0.000089	0.49	110.54	83.03	0.09	1.02	2.11	0.002605	0.007198
Reach-3	1020	100 yr	11.17	91.7	94.19		94.2	0.000014	0.18	82.55	81.1	0.04				

Sassafras Tributary Main Branch - Model Update Results

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # C	Power Cha (N/m s)	Shear Char (N/m2)	Entrain	Transport
Reach-3	1013	25 yr	8.14	91.5	93.5	92.99	93.89	0.00491	2.79	2.92	38.15	0.64	220.07	79.01	0.097543	0.3158
Reach-3	1013	10 yr	6.19	91.5	93.14	92.75	93.49	0.005559	2.59	2.39	15.93	0.66	189.47	73.12	0.090272	0.268649
Reach-3	1013	5 yr	4.81	91.5	92.94	92.56	93.21	0.005291	2.31	2.08	6.72	0.63	140.14	60.72	0.074963	0.209492
Reach-3	1013	2 yr	3.05	91.5	92.39	92.3	92.69	0.011376	2.42	1.26	4.21	0.84	191.06	78.95	0.097469	0.231786
Reach-3	1012.5	Culvert													0	0
Reach-3	1012	Regional	43.47	91.3	93.4	93.4	93.56	0.004065	2.62	27.76	47.56	0.58	180.74	68.89	0.085049	0.275459
Reach-3	1012	100 yr	11.17	91.3	93.13	93.13	94.02	0.012384	4.17	2.68	27.26	1	761.71	182.56	0.225383	0.756534
Reach-3	1012	50 yr	9.65	91.3	92.97	92.97	93.77	0.012891	3.98	2.42	16.69	1	684.98	171.98	0.212321	0.683598
Reach-3	1012	25 yr	8.14	91.3	92.79	92.79	93.51	0.013342	3.76	2.17	15.14	1	598.05	159.08	0.196395	0.604109
Reach-3	1012	10 yr	6.19	91.3	92.55	92.55	93.15	0.014157	3.43	1.8	12.98	1	482.56	140.69	0.173691	0.494754
Reach-3	1012	5 yr	4.81	91.3	92.36	92.36	92.87	0.015104	3.16	1.52	11.28	1	400.04	126.54	0.156222	0.413984
Reach-3	1012	2 yr	3.05	91.3	92.1	92.1	92.47	0.016492	2.71	1.13	8.92	1	276.99	102.39	0.126407	0.296445
Reach-3	1011	Regional	43.47	90.14	93.27	92.5	93.43	0.002469	1.79	26.08	32.91	0.46	61.61	34.36	0.04242	0.120334
Reach-3	1011	100 yr	11.17	90.14	91.57		91.78	0.006385	2.06	5.43	5.25	0.65	110.32	53.6	0.066173	0.163315
Reach-3	1011	50 yr	9.65	90.14	91.46		91.66	0.006459	1.98	4.87	5.09	0.65	100.7	50.8	0.062716	0.149841
Reach-3	1011	25 yr	8.14	90.14	91.35		91.53	0.006559	1.9	4.29	4.92	0.65	90.54	47.73	0.058926	0.136991
Reach-3	1011	10 yr	6.19	90.14	91.19		91.34	0.006662	1.76	3.52	4.68	0.65	75.14	42.75	0.052778	0.115993
Reach-3	1011	5 yr	4.81	90.14	91.06		91.2	0.006711	1.63	2.95	4.5	0.64	62.42	38.28	0.047259	0.098171
Reach-3	1011	2 yr	3.05	90.14	90.88		90.98	0.006662	1.42	2.15	4.13	0.63	43.86	30.95	0.03821	0.072739
Reach-4	1010	Regional	47.98	89.99	92.31	92.31	93.18	0.015545	4.12	11.63	6.78	1.01	783.04	189.88	0.23442	0.736953
Reach-4	1010	100 yr	12.33	89.99	91.09	91.02	91.46	0.013023	2.67	4.63	5.06	0.89	251.67	94.41	0.116556	0.287015
Reach-4	1010	50 yr	10.66	89.99	91.02	90.93	91.34	0.01245	2.51	4.25	4.98	0.87	213.77	85.22	0.10521	0.250936
Reach-4	1010	25 yr	8.98	89.99	90.94		91.21	0.011785	2.33	3.85	4.9	0.84	175.71	75.35	0.093025	0.213455
Reach-4	1010	10 yr	6.83	89.99	90.82		91.04	0.010866	2.08	3.29	4.78	0.8	128.95	62.07	0.07663	0.166782
Reach-4	1010	5 yr	5.31	89.99	90.73		90.9	0.010239	1.87	2.83	4.68	0.77	98.23	52.41	0.064704	0.132333
Reach-4	1010	2 yr	3.36	89.99	90.58		90.7	0.009435	1.56	2.15	4.53	0.72	61.03	39.07	0.048235	0.089237
Reach-4	1000	Regional	47.98	89.52	91.58	91.43	92.15	0.010007	3.35	14.32	9.72	0.88	417.3	124.55	0.153765	0.470012
Reach-4	1000	100 yr	12.33	89.52	90.54	90.44	90.8	0.010005	2.22	5.55	7.31	0.81	149.69	67.33	0.083123	0.192153
Reach-4	1000	50 yr	10.66	89.52	90.47	90.37	90.7	0.010007	2.12	5.03	7.15	0.81	133.01	62.72	0.077432	0.173833
Reach-4	1000	25 yr	8.98	89.52	90.39	90.29	90.6	0.010015	2.01	4.48	6.96	0.8	115.75	57.7	0.071235	0.154821
Reach-4	1000	10 yr	6.83	89.52	90.28	90.19	90.45	0.010016	1.84	3.72	6.64	0.78	92.92	50.58	0.062444	0.127761
Reach-4	1000	5 yr	5.31	89.52	90.19	90.11	90.34	0.010002	1.69	3.14	6.39	0.77	75.45	44.63	0.055099	0.106197
Reach-4	1000	2 yr	3.36	89.52	90.06	89.99	90.17	0.010003	1.45	2.32	6.01	0.74	51.27	35.4	0.043704	0.076121

Sassafras Tributary 1 - Model Update Results

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude #	Power Cha (N/m s)	Shear Cha (N/m2)	Entrain	Transport
Reach-1	6190	Regional	4.51	124	127.63		127.63	0.000002	0.04	77.52	44.71	0.01	0	0.02	2.46914E-05	3.10246E-05
Reach-1	6190	100 yr	1.16	124	125	124.51	125.07	0.006761	1.14	1.06	12.06	0.37	25.56	22.42	0.027679012	0.045124566
Reach-1	6190	50 yr	1	124	124.91	124.46	124.97	0.006501	1.09	0.92	1.02	0.37	22.63	20.76	0.02562963	0.040932549
Reach-1	6190	25 yr	0.84	124	124.81	124.41	124.86	0.006184	1.03	0.81	1.02	0.37	19.48	18.87	0.023296296	0.036192105
Reach-1	6190	10 yr	0.64	124	124.67	124.34	124.72	0.005804	0.95	0.67	1.01	0.37	15.58	16.4	0.020246914	0.030358471
Reach-1	6190	5 yr	0.5	124	124.57	124.29	124.61	0.005498	0.88	0.57	1.01	0.37	12.65	14.4	0.017777778	0.025704964
Reach-1	6190	2 yr	0.32	124	124.42	124.22	124.45	0.00508	0.76	0.42	1.01	0.38	8.68	11.39	0.014061728	0.018689856
Reach-1	6180	Regional	4.51	123.5	127.63		127.63	0	0.02	147.48	65.66	0	0	0	0	6.87533E-06
Reach-1	6180	100 yr	1.16	123.5	124.02	124.02	124.27	0.038013	2.24	0.52	1.01	1	213.04	95.09	0.117395062	0.195936602
Reach-1	6180	50 yr	1	123.5	123.97	123.97	124.2	0.03693	2.13	0.47	1.01	1	187.34	87.77	0.108358025	0.175620633
Reach-1	6180	25 yr	0.84	123.5	123.91	123.91	124.12	0.036175	2.02	0.42	1.01	1.01	163.16	80.62	0.099530864	0.156499935
Reach-1	6180	10 yr	0.64	123.5	123.85	123.85	124.02	0.034465	1.84	0.35	1.01	1	127.88	69.32	0.085580247	0.127760839
Reach-1	6180	5 yr	0.5	123.5	123.79	123.79	123.94	0.033514	1.7	0.29	1.01	1	103.61	60.93	0.075222222	0.107567915
Reach-1	6180	2 yr	0.32	123.5	123.72	123.72	123.83	0.032054	1.46	0.22	1	1	69.96	47.92	0.059160494	0.072767285
Reach-1	6170	Regional	4.51	121.3	127.63		127.63	0	0.01	265.09	70.2	0	0	0	0	1.52363E-06
Reach-1	6170	100 yr	1.16	121.3	123.37		123.37	0.000001	0.02	38.12	38.18	0	0	0.01	1.23457E-05	6.87533E-06
Reach-1	6170	50 yr	1	121.3	122.75		122.75	0.000011	0.06	15.63	34.04	0.02	0	0.05	6.17284E-05	7.49055E-05
Reach-1	6170	25 yr	0.84	121.3	122.32	121.72	122.34	0.002861	0.75	1.59	31.13	0.24	7.21	9.62	0.011876543	0.3108159375
Reach-1	6170	10 yr	0.64	121.3	122.13		122.16	0.003321	0.76	0.84	1.02	0.27	7.82	10.26	0.012666667	0.018689856
Reach-1	6170	5 yr	0.5	121.3	122		122.02	0.003173	0.71	0.7	1.01	0.27	6.49	9.13	0.011271605	0.016119643
Reach-1	6170	2 yr	0.32	121.3	121.82		121.84	0.002764	0.61	0.53	1.01	0.27	4.23	6.97	0.008604938	0.011588642
Reach-1	6162	Regional	4.51	121.3	127.63	122.81	127.63	0	0.02	215.51	75.88	0	0	0	0	6.87533E-06
Reach-1	6162	100 yr	1.16	121.3	123.34	121.91	123.37	0.000756	0.73	1.59	24.26	0.16	4.85	6.65	0.008209877	0.017123109
Reach-1	6162	50 yr	1	121.3	122.7	121.86	122.75	0.001975	0.92	1.09	12.77	0.25	10.94	11.91	0.014703704	0.028312924
Reach-1	6162	25 yr	0.84	121.3	122.24	121.79	122.3	0.005147	1.16	0.72	0.79	0.38	24.86	21.45	0.026481481	0.046863303
Reach-1	6162	10 yr	0.64	121.3	122.06	121.71	122.12	0.005235	1.09	0.59	0.79	0.4	21.51	19.71	0.024333333	0.040932549
Reach-1	6162	5 yr	0.5	121.3	121.93	121.65	121.98	0.005344	1.03	0.48	0.78	0.42	18.75	18.18	0.022444444	0.036192105
Reach-1	6162	2 yr	0.32	121.3	121.76	121.56	121.8	0.005094	0.89	0.36	0.78	0.42	12.96	14.5	0.017901235	0.026344206
Reach-1	6161.5	Culvert													0	0
Reach-1	6161	Regional	4.51	120.2	122.26	120.38	122.26	0.000006	0.11	41.17	25.58	0.02	0.01	0.11	0.000135802	0.000279755
Reach-1	6161	100 yr	1.16	120.2	121.51	120.27	121.51	0.000002	0.04	26.24	23.55	0.01	0	0.02	2.46914E-05	3.10246E-05
Reach-1	6161	50 yr	1	120.2	121.37	120.26	121.37	0.000002	0.04	23.31	23.16	0.01	0	0.02	2.46914E-05	3.10246E-05
Reach-1	6161	25 yr	0.84	120.2	121.23	120.26	121.23	0.000002	0.04	20.57	22.78	0.01	0	0.02	2.46914E-05	3.10246E-05
Reach-1	6161	10 yr	0.64	120.2	121.06	120.25	121.06	0.000002	0.04	17.2	22.33	0.01	0	0.02	2.46914E-05	3.10246E-05
Reach-1	6161	5 yr	0.5	120.2	120.94	120.24	120.94	0.000002	0.03	14.79	22	0.01	0	0.02	2.46914E-05	1.65997E-05
Reach-1	6161	2 yr	0.32	120.2	120.77	120.23	120.77	0.000002	0.03	11.43	21.55	0.01	0	0.01	1.23457E-05	1.65997E-05
Reach-1	6160	Regional	4.51	120.2	122.26		122.26	0.000005	0.1	46.91	25.58	0.02	0.01	0.1	0.000123457	0.000227402
Reach-1	6160	100 yr	1.16	120.2	121.51		121.51	0.000001	0.04	28.57	23.55	0.01	0	0.02	2.46914E-05	3.10246E-05
Reach-1	6160	50 yr	1	120.2	121.37		121.37	0.000002	0.04	25.15	23.16	0.01	0	0.02	2.46914E-05	3.10246E-05
Reach-1	6160	25 yr	0.84	120.2	121.23		121.23	0.000002	0.04	22	22.78	0.01	0	0.02	2.46914E-05	3.10246E-05
Reach-1	6160	10 yr	0.64	120.2	121.06		121.06	0.000002	0.04	18.21	22.33	0.01	0	0.02	2.46914E-05	3.10246E-05
Reach-1	6160	5 yr	0.5	120.2	120.94		120.94	0.000002	0.03	15.53	22	0.01	0	0.01	1.23457E-05	1.65997E-05
Reach-1	6160	2 yr	0.32	120.2	120.77		120.77	0.000002	0.03	11.87	21.55	0.01	0	0.01	1.23457E-05	1.65997E-05
Reach-1	6150	Regional	4.51	120.2	122.26		122.26	0.000001	0.05	92.48	48.84	0.01	0	0.02	2.46914E-05	5.03942E-05
Reach-1	6150	100 yr	1.16	120.2	121.51		121.51	0	0.02	57.06	46	0.01	0	0	0	6.87533E-06
Reach-1	6150	50 yr	1	120.2	121.37		121.37	0	0.02	50.37	45.44	0.01	0	0	0	6.87533E-06
Reach-1	6150	25 yr	0.84	120.2	121.23		121.23	0	0.02	44.18	44.92	0.01	0	0	0	6.87533E-06
Reach-1	6150	10 yr	0.64	120.2	121.06		121.06	0	0.02	36.68	44.28	0.01	0	0	0	6.87533E-06
Reach-1	6150	5 yr	0.5	120.2	120.94		120.94	0	0.02	31.36	43.82	0.01	0	0	0	6.87533E-06
Reach-1	6150	2 yr	0.32	120.2	120.77		120.77	0	0.01	24.04	43.18	0.01	0	0	0	1.52363E-06
Reach-1	6140	Regional	4.51	120.2	122.26		122.26	0.000001	0.05	97.3	59.44	0.01	0	0.02	2.46914E-05	5.03942E-05
Reach-1	6140	100 yr	1.16	120.2	121.51		121.51	0	0.02	58.67	48.44	0.01	0	0	0	6.87533E-06
Reach-1	6140	50 yr	1	120.2	121.37		121.37	0	0.02	51.63	47.61	0.01	0	0	0	6.87533E-06
Reach-1	6140	25 yr	0.84	120.2	121.23		121.23	0	0.02	45.16	46.84	0.01	0	0	0	6.87533E-06
Reach-1	6140	10 yr	0.64	120.2	121.06		121.06	0	0.02	37.37	45.88	0.01	0	0	0	6.87533E-06
Reach-1	6140	5 yr	0.5	120.2	120.94		120.94	0	0.02	31.87	45.2	0.01	0	0	0	6.87533E-06
Reach-1	6140	2 yr	0.32	120.2	120.77		120.77	0	0.01	24.35	44.24	0.01	0	0	0	1.52363E-06
Reach-1	6122	Regional	4.51	120.2	122.26	120.3	122.26	0.000001	0.04	111.95	69.68	0.01	0	0.02	2.46914E-05	3.10246E-05
Reach-1	6122	100 yr	1.16	120.2	121.51	120.24	121.51	0	0.02	65.27	57.51	0.01	0	0	0	6.87533E-06
Reach-1	6122	50 yr	1	120.2	121.37	120.24	121.37	0	0.02	48.94	55.78	0.01	0	0	0	6.87533E-06
Reach-1	6122	25 yr	0.84	120.2	121.23	120.24	121.23	0	0.02	43.19	54.16	0.01	0	0	0	6.87533E-06
Reach-1	6122	10 yr	0.64	120.2	121.06	120.23	121.06	0	0.02	36.13	52.17	0.01	0	0	0	6.87533E-06
Reach-1	6122	5 yr	0.5	120.2	120.94	120.22	120.94	0	0.02	31.06	50.75	0.01	0	0	0	6.87533E-06
Reach-1	6122	2 yr	0.32	120.2	120.77	120.22	120.77	0	0.01	23.99	48.76	0.01	0	0	0	1.52363E-06
Reach-1	6121.5	Culvert													0	0
Reach-1	6121	Regional	4.51	114.8	115.79	115.79	116.25	0.014998	3.03	1.49	26.09	1	358.78	118.45	0.146234568	0.377851582
Reach-1	6121	100 yr	1.16	114.8	115.24	115.24	115.42	0.019684	1.91	0.61	7.99	0.99	121.11	63.44	0.078320988	0.13856353
Reach-1	6121	50 yr	1	114.8	115.2	115.2	115.37	0.02083	1.83	0.55	6.19	1	110.49	60.38	0.07454321	0.126256191
Reach-1	6121	25 yr	0.84	114.8	115.16	115.16	115.31	0.021825	1.73	0.49	4.39	1	97.24	56.19	0.06937037	0.111737349
Reach-1	6121	10 yr	0.64	114.8	115.11	115.11	115.24	0.023382	1.58	0.4	2	1.01	79.38	50.09	0.061839506	0.091742394
Reach-1	6121	5 yr	0.5	114.8	115.07	115.07	115.18	0.022983	1.46	0.34	1.54	0.98	63.86	43.88	0.05417284	0.077267285
Reach-1	6121	2 yr	0.32	114.8	115.01	115.01	115.09	0.023682	1.28	0.25	1.41	0.97	46.89	36.57	0.045148148	0.058045958

Sassafras Tributary 1 - Model Update Results

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # C	Power Cha (N/m s)	Shear Cha (N/m2)	Entrain	Transport
Reach-1	6050	2 yr	0.32	102.7	102.95		103	0.012754	1.04	0.31	1.5	0.73	23.54	22.73	0.028061728	0.036960329
Reach-1	6040	Regional	4.51	102.2	104.16		104.16	0.000005	0.09	71.07	91.13	0.02	0.01	0.08	9.87654E-05	0.000180851
Reach-1	6040	100 yr	1.16	102.2	103.18		103.18	0.000029	0.13	12.71	35.58	0.04	0.03	0.23	0.000283951	0.000402251
Reach-1	6040	50 yr	1	102.2	103.07		103.07	0.000052	0.16	9.06	29.76	0.06	0.06	0.36	0.000444444	0.000631732
Reach-1	6040	25 yr	0.84	102.2	102.96		102.96	0.000101	0.21	6.08	23.99	0.08	0.12	0.6	0.000740741	0.00114096
Reach-1	6040	10 yr	0.64	102.2	102.82		102.83	0.000276	0.29	3.24	16.74	0.13	0.39	1.33	0.001641975	0.002301478
Reach-1	6040	5 yr	0.5	102.2	102.72		102.73	0.000622	0.39	1.84	11.59	0.18	0.96	2.46	0.003037037	0.004382449
Reach-1	6040	2 yr	0.32	102.2	102.59		102.6	0.001922	0.55	0.7	5.45	0.3	2.95	5.41	0.006679012	0.009252901
Reach-1	6032	Regional	4.51	102	104.16	103.36	104.16	0.000001	0.04	131.78	169.76	0.01	0	0.02	2.46914E-05	3.10246E-05
Reach-1	6032	100 yr	1.16	102	103.11	102.55	103.18	0.002755	1.15	1.01	47.53	0.35	21.03	18.23	0.022506173	0.045989497
Reach-1	6032	50 yr	1	102	103	102.5	103.06	0.002867	1.1	0.91	35.22	0.35	18.87	17.15	0.02117284	0.041753312
Reach-1	6032	25 yr	0.84	102	102.9	102.45	102.95	0.002929	1.03	0.81	29.98	0.35	16.19	15.68	0.019358025	0.036192105
Reach-1	6032	10 yr	0.64	102	102.76	102.37	102.81	0.002923	0.93	0.69	23.45	0.34	12.31	13.3	0.016419753	0.028986215
Reach-1	6032	5 yr	0.5	102	102.66	102.31	102.7	0.002847	0.83	0.6	18.62	0.33	9.37	11.26	0.013901235	0.022635477
Reach-1	6032	2 yr	0.32	102	102.52	102.24	102.54	0.002621	0.68	0.47	11.68	0.3	5.52	8.13	0.010037037	0.014675597
Reach-1	6031.5	Culvert													0	0
Reach-1	6031	Regional	4.51	99	100.41	100.41	101.09	0.01163	3.66	1.23	12.76	1.01	541.03	147.75	0.182407407	0.569725577
Reach-1	6031	100 yr	1.16	99	99.61	99.61	99.88	0.015643	2.32	0.5	4.08	1	187.17	80.5	0.099382716	0.211468621
Reach-1	6031	50 yr	1	99	99.6	99.55	99.81	0.012329	2.04	0.49	4.06	0.89	127.17	62.34	0.076962963	0.159888009
Reach-1	6031	25 yr	0.84	99	99.59	99.5	99.74	0.008963	1.73	0.49	4.04	0.76	77.66	44.92	0.05545679	0.111737349
Reach-1	6031	10 yr	0.64	99	99.58	99.43	99.67	0.005642	1.35	0.47	4.01	0.6	37.24	27.59	0.034061728	0.065169009
Reach-1	6031	5 yr	0.5	99	99.57	99.37	99.63	0.003762	1.08	0.46	3.98	0.49	19.4	17.92	0.022123457	0.040120577
Reach-1	6031	2 yr	0.32	99	99.54	99.29	99.57	0.001819	0.73	0.44	3.92	0.33	6	8.24	0.01017284	0.017123109
Reach-1	6030	Regional	4.51	99.2	99.77		99.79	0.001796	0.7	7.77	29.21	0.31	5.48	7.79	0.009617284	0.015630161
Reach-1	6030	100 yr	1.16	99.2	99.58	99.56	99.6	0.003981	0.77	2.5	26.95	0.43	8.43	10.93	0.013493827	0.019228595
Reach-1	6030	50 yr	1	99.2	99.57	99.56	99.58	0.00417	0.77	2.21	26.83	0.44	8.55	11.07	0.013666667	0.019228595
Reach-1	6030	25 yr	0.84	99.2	99.56	99.55	99.57	0.004495	0.78	1.89	26.68	0.45	8.97	11.48	0.01417284	0.01977561
Reach-1	6030	10 yr	0.64	99.2	99.54	99.53	99.56	0.004728	0.77	1.49	26.5	0.46	8.89	11.47	0.014160494	0.019228595
Reach-1	6030	5 yr	0.5	99.2	99.53	99.47	99.55	0.005279	0.79	1.13	26.34	0.48	9.65	12.19	0.015049383	0.02033092
Reach-1	6030	2 yr	0.32	99.2	99.5	99.4	99.54	0.005882	0.79	0.51	26.05	0.5	9.75	12.4	0.015308642	0.02033092
Reach-1	6020	Regional	4.51	98.69	99.37	99.37	99.57	0.019085	1.96	2.31	6.11	1.02	127.69	65.28	0.080592593	0.146570349
Reach-1	6020	100 yr	1.16	98.69	99.13	99.13	99.21	0.023218	1.3	0.9	5.23	1	47.87	36.95	0.045617284	0.060035727
Reach-1	6020	50 yr	1	98.69	99.1	99.1	99.19	0.024934	1.31	0.77	4.64	1.03	49.83	38.12	0.047061728	0.061044204
Reach-1	6020	25 yr	0.84	98.69	99.08	99.08	99.16	0.023869	1.26	0.67	4.14	1	44.71	35.57	0.04391358	0.056092355
Reach-1	6020	10 yr	0.64	98.69	99.03	99.03	99.12	0.025491	1.29	0.5	3.07	1.03	48.57	37.63	0.04645679	0.059036316
Reach-1	6020	5 yr	0.5	98.69	98.98	98.98	99.07	0.023211	1.38	0.36	1.84	0.99	56.08	40.63	0.050160494	0.068358387
Reach-1	6020	2 yr	0.32	98.69	98.91	98.91	98.99	0.024729	1.27	0.25	1.53	1	46.35	36.48	0.045037037	0.057064642
Reach-1	6010	Regional	4.51	97.03	97.88	97.88	98.18	0.019118	2.44	1.85	3.08	1.01	222.91	91.21	0.112604938	0.235970999
Reach-1	6010	100 yr	1.16	97.03	97.45	97.45	97.6	0.021133	1.71	0.68	2.3	1.01	94.07	54.91	0.067790123	0.108948215
Reach-1	6010	50 yr	1	97.03	97.42	97.42	97.55	0.020851	1.63	0.61	2.25	1	82.57	50.71	0.062604938	0.098171231
Reach-1	6010	25 yr	0.84	97.03	97.39	97.39	97.51	0.02121	1.55	0.54	2.19	1	73.31	47.29	0.058382716	0.087997715
Reach-1	6010	10 yr	0.64	97.03	97.34	97.34	97.45	0.021817	1.43	0.45	2.11	1	60.69	42.34	0.052271605	0.073857376
Reach-1	6010	5 yr	0.5	97.03	97.31	97.31	97.4	0.022526	1.34	0.37	2.04	1	51.39	38.44	0.04745679	0.064124149
Reach-1	6010	2 yr	0.32	97.03	97.25	97.25	97.32	0.025691	1.23	0.26	1.79	1.03	43.13	35.06	0.043283951	0.053229542

Sassafra Tributary 2 - Model Update Results

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # C	Power Cha (N/m s)	Shear Char (N/m2)	Entrain	Transport
Reach-1	5180	Regional	8.07	129.7	131.22		131.23	0.000379	0.65	13.93	15.91	0.17	3.06	4.7	0.005802	0.013304
Reach-1	5180	100 yr	2.07	129.7	130.18	130.18	130.28	0.011217	1.56	1.64	7.56	0.76	63.46	40.7	0.050247	0.089237
Reach-1	5180	50 yr	1.79	129.7	130.15	130.15	130.25	0.013479	1.62	1.38	7.27	0.82	72.85	45.03	0.055593	0.096867
Reach-1	5180	25 yr	1.51	129.7	130.15	130.15	130.22	0.00977	1.37	1.38	7.26	0.7	44.72	32.53	0.04016	0.067286
Reach-1	5180	10 yr	1.15	129.7	130.11	130.11	130.18	0.011317	1.37	1.07	6.9	0.74	45.9	33.54	0.041407	0.067286
Reach-1	5180	5 yr	0.89	129.7	130.09	130.09	130.15	0.00976	1.22	0.93	6.72	0.68	33.25	27.23	0.033617	0.052293
Reach-1	5180	2 yr	0.57	129.7	130.04	130.04	130.1	0.009044	1.07	0.66	6.37	0.64	23.68	22.05	0.027222	0.039317
Reach-1	5173	Regional	8.07	128.5	131.22		131.23	0.000059	0.32	25.89	17.69	0.06	0.32	1	0.001235	0.002851
Reach-1	5173	100 yr	2.07	128.5	129.33		129.38	0.004158	1.2	2.07	5.71	0.42	25.53	21.34	0.026346	0.050448
Reach-1	5173	50 yr	1.79	128.5	129.22		129.3	0.007105	1.42	1.5	4.74	0.54	45.1	31.67	0.039099	0.072739
Reach-1	5173	25 yr	1.51	128.5	129.1	129.1	129.23	0.013655	1.76	1.02	3.71	0.72	89.6	51.05	0.063025	0.115993
Reach-1	5173	10 yr	1.15	128.5	129.04	129.04	129.16	0.014792	1.69	0.79	3.12	0.74	83.04	49.16	0.060691	0.106197
Reach-1	5173	5 yr	0.89	128.5	128.97	128.97	129.1	0.016397	1.64	0.61	2.56	0.76	78.74	48.11	0.059395	0.099485
Reach-1	5173	2 yr	0.57	128.5	128.83	128.83	128.98	0.028954	1.71	0.34	1.29	0.95	101.49	59.3	0.07321	0.108948
Reach-1	5172	Regional	8.07	128	130.08	130.08	131.12	0.018751	4.52	1.79	13.65	1	1030.33	228.1	0.281605	0.901407
Reach-1	5172	100 yr	2.07	128	128.85	128.85	129.26	0.025056	2.86	0.72	4.75	1	353.16	123.51	0.152481	0.333278
Reach-1	5172	50 yr	1.79	128	128.77	128.77	129.15	0.026069	2.73	0.66	4.19	1	317.73	116.38	0.143679	0.301222
Reach-1	5172	25 yr	1.51	128	128.68	128.68	129.02	0.02714	2.58	0.58	3.6	1	279.04	108.1	0.133457	0.266399
Reach-1	5172	10 yr	1.15	128	128.57	128.57	128.85	0.0288	2.36	0.49	2.79	1	225.52	95.7	0.118148	0.219475
Reach-1	5172	5 yr	0.89	128	128.48	128.48	128.72	0.03057	2.17	0.41	2.16	1	185.26	85.55	0.105617	0.182869
Reach-1	5172	2 yr	0.57	128	128.36	128.36	128.54	0.033514	1.86	0.31	1.28	1	130.07	69.84	0.086222	0.130799
Reach-1	5171	Regional	8.07	127.5	129.23	129.23	130.1	0.017459	4.13	1.96	14.84	1	807.86	195.73	0.241642	0.740847
Reach-1	5171	100 yr	2.07	127.5	128.2	128.2	128.55	0.024205	2.64	0.78	4.92	1.01	287.29	108.75	0.134259	0.280051
Reach-1	5171	50 yr	1.79	127.5	128.13	128.13	128.45	0.024998	2.52	0.71	4.31	1.01	256.58	101.95	0.125864	0.253114
Reach-1	5171	25 yr	1.51	127.5	128.07	128.07	128.35	0.024931	2.35	0.64	3.73	0.99	215.86	91.88	0.113432	0.217458
Reach-1	5171	10 yr	1.15	127.5	127.98	127.98	128.21	0.026822	2.15	0.53	2.81	1	176.86	82.13	0.101395	0.179225
Reach-1	5171	5 yr	0.89	127.5	127.9	127.9	128.1	0.028484	1.98	0.45	2.09	1	145.36	73.45	0.090679	0.149841
Reach-1	5171	2 yr	0.57	127.5	127.8	127.8	127.95	0.031066	1.7	0.34	1.13	1	101.6	59.76	0.073778	0.107568
Reach-1	5170	Regional	8.07	126.7	127.45	127.45	127.62	0.011951	2.23	4.64	13.81	0.85	157.1	70.55	0.087099	0.19404
Reach-1	5170	100 yr	2.07	126.7	127.19	127.19	127.28	0.011791	1.61	1.68	8.67	0.78	69.6	43.23	0.05337	0.095571
Reach-1	5170	50 yr	1.79	126.7	127.17	127.17	127.26	0.011854	1.56	1.5	8.25	0.78	64.48	41.31	0.051	0.089237
Reach-1	5170	25 yr	1.51	126.7	127.15	127.15	127.23	0.011513	1.48	1.32	7.84	0.76	56.5	38.05	0.046975	0.079587
Reach-1	5170	10 yr	1.15	126.7	127.12	127.12	127.19	0.009717	1.31	1.14	7.37	0.69	39.4	30.14	0.03721	0.061044
Reach-1	5170	5 yr	0.89	126.7	127.08	127.08	127.15	0.01123	1.3	0.87	6.61	0.73	40.62	31.14	0.038444	0.060036
Reach-1	5170	2 yr	0.57	126.7	126.99	126.99	127.11	0.023349	1.52	0.37	1.58	1	71.67	47.1	0.058148	0.084337
Reach-1	5160	Regional	8.07	124.7	125.37	125.37	125.52	0.011637	2.02	5.03	17.63	0.82	121.7	60.37	0.074531	0.1565
Reach-1	5160	100 yr	2.07	124.7	125.16	125.16	125.23	0.009418	1.38	2	12.08	0.69	45.14	32.6	0.040247	0.068358
Reach-1	5160	50 yr	1.79	124.7	125.13	125.13	125.21	0.012761	1.52	1.6	11.14	0.79	61.47	40.44	0.049926	0.084337
Reach-1	5160	25 yr	1.51	124.7	125.12	125.12	125.19	0.011079	1.39	1.49	10.85	0.74	47.39	34.11	0.042111	0.06944
Reach-1	5160	10 yr	1.15	124.7	125.1	125.1	125.15	0.008842	1.2	1.31	10.41	0.65	31.3	26	0.032099	0.050448
Reach-1	5160	5 yr	0.89	124.7	125.07	125.07	125.13	0.010374	1.22	1	9.55	0.7	33.93	27.73	0.034235	0.052293
Reach-1	5160	2 yr	0.57	124.7	125.04	125.04	125.09	0.008299	1.03	0.74	8.76	0.61	20.7	20.16	0.024889	0.036192
Reach-1	5150	Regional	8.07	123.2	123.88	123.88	124.01	0.012231	2.1	5.38	21.07	0.85	136.62	65.03	0.080284	0.170288
Reach-1	5150	100 yr	2.07	123.2	123.68	123.68	123.75	0.01094	1.52	1.93	12.42	0.75	59.48	39.05	0.04821	0.084337
Reach-1	5150	50 yr	1.79	123.2	123.67	123.67	123.73	0.009048	1.37	1.85	12.15	0.68	43.62	31.81	0.039272	0.067286
Reach-1	5150	25 yr	1.51	123.2	123.65	123.65	123.71	0.009162	1.33	1.6	11.25	0.68	40.68	30.54	0.037704	0.063088
Reach-1	5150	10 yr	1.15	123.2	123.61	123.61	123.68	0.010081	1.31	1.22	9.72	0.7	39.93	30.49	0.037642	0.061044
Reach-1	5150	5 yr	0.89	123.2	123.6	123.6	123.65	0.007903	1.13	1.08	9.11	0.62	25.86	22.93	0.028309	0.044268
Reach-1	5150	2 yr	0.57	123.2	123.54	123.54	123.6	0.009467	1.1	0.64	6.81	0.65	25.33	23.06	0.028469	0.041753
Reach-1	5140	Regional	8.07	121.7	122.85	122.85	122.88	0.001253	0.98	10.83	21.46	0.3	11.41	11.67	0.014407	0.032481
Reach-1	5140	100 yr	2.07	121.7	122.22	122.22	122.33	0.011123	1.65	1.61	7.86	0.77	73.01	44.23	0.054605	0.100809
Reach-1	5140	50 yr	1.79	121.7	122.21	122.21	122.3	0.009627	1.51	1.52	7.6	0.71	56.3	37.3	0.046049	0.083136
Reach-1	5140	25 yr	1.51	121.7	122.2	122.18	122.27	0.00828	1.37	1.4	7.27	0.66	42.44	31.01	0.038284	0.067286
Reach-1	5140	10 yr	1.15	121.7	122.15	122.14	122.22	0.008927	1.32	1.09	6.26	0.67	39.39	29.88	0.036889	0.062062
Reach-1	5140	5 yr	0.89	121.7	122.1	122.1	122.18	0.011312	1.35	0.79	5.13	0.74	44.34	32.85	0.040556	0.065169
Reach-1	5140	2 yr	0.57	121.7	122.06	121.98	122.11	0.0089	1.1	0.59	4.21	0.64	24.79	22.62	0.027926	0.041753
Reach-1	5130	Regional	8.07	121	122.87	122.87	122.87	0.000028	0.17	43.85	39.73	0.04	0.05	0.32	0.000395	0.000721
Reach-1	5130	100 yr	2.07	121	121.6	121.6	121.63	0.005621	1.12	2.61	14.6	0.46	23.18	20.75	0.025617	0.043421
Reach-1	5130	50 yr	1.79	121	121.53	121.53	121.6	0.010899	1.44	1.77	11.66	0.63	51.76	35.91	0.044333	0.074985
Reach-1	5130	25 yr	1.51	121	121.5	121.5	121.58	0.01292	1.51	1.43	10.22	0.68	60.31	40.03	0.04942	0.083136
Reach-1	5130	10 yr	1.15	121	121.48	121.48	121.54	0.011529	1.37	1.18	9.05	0.64	46.57	33.89	0.04184	0.067286
Reach-1	5130	5 yr	0.89	121	121.46	121.46	121.51	0.008653	1.17	1.07	8.45	0.55	28.89	24.73	0.030531	0.047746
Reach-1	5130	2 yr	0.57	121	121.4	121.4	121.46	0.011113	1.19	0.61	5.4	0.61	32.42	27.17	0.033543	0.049538
Reach-1	5120	Regional	8.07	120.6	122.87	122.87	122.87	0.000027	0.2	43.11	37.39	0.04	0.08	0.41	0.000506	0.001026
Reach-1	5120	100 yr	2.07	120.6	121.6	121.6	121.6	0.000322	0.39	6.61	16.68	0.13	0.84	2.12	0.002617	0.004382
Reach-1	5120	50 yr	1.79	120.6	121.51	121.51	121.51	0.000457	0.44	5.18	14.66	0.15	1.2	2.74	0.003383	0.005696
Reach-1	5120	25 yr	1.51	120.6	121.4	121.4	121.41	0.000748	0.52	3.76	12.33	0.19	2.06	3.96	0.004889	0.008191
Reach-1	5120	10 yr	1.15	120.6	121.27	121.27	121.28	0.001515	0.65	2.3	9.35	0.26	4.36	6.68	0.008247	0.013304
Reach-1	5120	5 yr	0.89	120.6	121.16	121.16	121.18	0.002949	0.81	1.42	6.96	0.35	8.81	10.89	0.013444	0.021466
Reach-1	5120	2 yr	0.57	120.6	121	121	121.06									

Sassafras Tributary 2 - Model Update Results

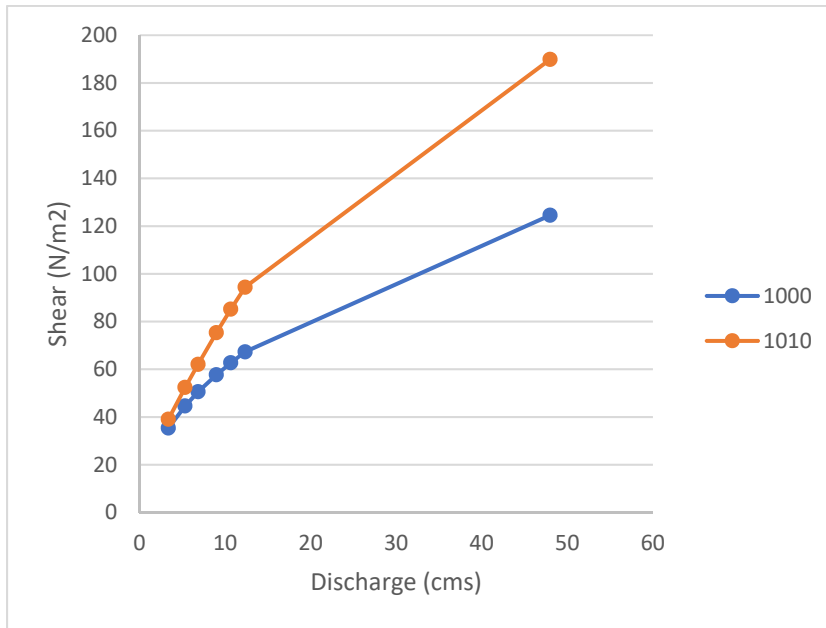
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # C	Power Cha	Shear Char	Entrain	Transport
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)		(N/m s)	(N/m2)		
Reach-1	5112	25 yr	1.51	119.5	120.12	120.12	120.42	0.025622	2.44	0.62	40.42	0.99	238.5	97.81	0.120753	0.235971
Reach-1	5112	10 yr	1.15	119.5	120.01	120.01	120.27	0.027652	2.24	0.51	28.78	1	196.04	87.62	0.108173	0.195937
Reach-1	5112	5 yr	0.89	119.5	119.94	119.94	120.15	0.028367	2.03	0.44	18.83	0.99	155.63	76.49	0.094432	0.158189
Reach-1	5112	2 yr	0.57	119.5	119.88	119.82	120	0.018085	1.49	0.38	11.79	0.77	63.55	42.72	0.052741	0.08076
Reach-1	5111	Regional	8.07	119.4	120	120	120.09	0.015915	1.89	6.46	40.22	0.78	111.43	59.08	0.072938	0.135429
Reach-1	5111	100 yr	2.07	119.4	119.87	119.87	119.92	0.013397	1.47	2.33	23.11	0.69	57.03	38.85	0.047963	0.078422
Reach-1	5111	50 yr	1.79	119.4	119.87	119.87	119.91	0.010746	1.31	2.27	22.72	0.61	40.53	30.96	0.038222	0.061044
Reach-1	5111	25 yr	1.51	119.4	119.84	119.84	119.9	0.013295	1.41	1.78	19.74	0.68	51.29	36.43	0.044975	0.07163
Reach-1	5111	10 yr	1.15	119.4	119.83	119.83	119.88	0.010958	1.25	1.52	17.93	0.61	36.39	29.08	0.035901	0.055129
Reach-1	5111	5 yr	0.89	119.4	119.82	119.82	119.86	0.008421	1.08	1.35	16.66	0.53	23.59	21.84	0.026963	0.040121
Reach-1	5111	2 yr	0.57	119.4	119.79	119.79	119.82	0.007029	0.94	0.95	13.08	0.48	16.07	17.04	0.021037	0.029668
Reach-1	5110	Regional	8.07	117	117.98	117.98	118.26	0.016388	2.33	3.46	6.47	1.02	191.06	81.88	0.101086	0.213455
Reach-1	5110	100 yr	2.07	117	117.63	117.53	117.72	0.009122	1.33	1.56	4.36	0.71	40.56	30.47	0.037617	0.063088
Reach-1	5110	50 yr	1.79	117	117.59	117.5	117.67	0.00892	1.27	1.41	4.15	0.7	36.04	28.32	0.034963	0.057065
Reach-1	5110	25 yr	1.51	117	117.55	117.46	117.63	0.008754	1.21	1.25	3.92	0.68	31.66	26.16	0.032296	0.051366
Reach-1	5110	10 yr	1.15	117	117.49	117.41	117.56	0.008574	1.12	1.03	3.56	0.67	25.99	23.19	0.02863	0.043421
Reach-1	5110	5 yr	0.89	117	117.44	117.36	117.5	0.008559	1.05	0.85	3.25	0.66	22.04	21	0.025926	0.037737
Reach-1	5110	2 yr	0.57	117	117.36	117.29	117.41	0.008262	0.92	0.62	2.79	0.63	15.9	17.21	0.021247	0.028313
Reach-1	5100	Regional	8.07	116	117.1	117.1	117.22	0.006578	1.67	6.09	27.13	0.67	65.75	39.41	0.048654	0.103484
Reach-1	5100	100 yr	2.07	116	116.54	116.54	116.69	0.018969	1.75	1.18	3.82	1	96.53	55.16	0.068099	0.114565
Reach-1	5100	50 yr	1.79	116	116.5	116.5	116.65	0.019574	1.71	1.05	3.6	1.01	91.37	53.54	0.066099	0.108948
Reach-1	5100	25 yr	1.51	116	116.46	116.46	116.6	0.020058	1.65	0.92	3.37	1.01	84.42	51.19	0.063198	0.100809
Reach-1	5100	10 yr	1.15	116	116.41	116.41	116.53	0.020641	1.56	0.74	3.04	1.01	73.42	47.21	0.058284	0.089237
Reach-1	5100	5 yr	0.89	116	116.36	116.36	116.47	0.021043	1.47	0.61	2.76	1	63.75	43.45	0.053642	0.078422
Reach-1	5100	2 yr	0.57	116	116.29	116.29	116.38	0.022169	1.33	0.43	2.34	1	50.84	38.14	0.047086	0.063088
Reach-1	5090	Regional	8.07	114.7	115.51	115.58	115.58	0.004821	1.49	7.03	20.54	0.55	45.84	30.77	0.037988	0.08076
Reach-1	5090	100 yr	2.07	114.7	115.28	115.31	115.31	0.002677	0.87	3.14	13.89	0.39	10.45	11.95	0.014753	0.025074
Reach-1	5090	50 yr	1.79	114.7	115.25	115.28	115.28	0.002808	0.86	2.76	13.06	0.39	10.24	11.86	0.014642	0.024452
Reach-1	5090	25 yr	1.51	114.7	115.24	115.26	115.26	0.002364	0.78	2.59	12.67	0.36	7.56	9.72	0.012	0.019776
Reach-1	5090	10 yr	1.15	114.7	115.2	115.22	115.22	0.002468	0.75	2.06	11.39	0.36	6.89	9.23	0.011395	0.018159
Reach-1	5090	5 yr	0.89	114.7	115.18	115.19	115.19	0.001916	0.64	1.87	10.87	0.31	4.41	6.88	0.008494	0.012863
Reach-1	5090	2 yr	0.57	114.7	115.13	115.14	115.14	0.001672	0.55	1.39	9.48	0.29	2.95	5.33	0.00658	0.009253
Reach-1	5080	Regional	8.07	114.7	115.22	115.22	115.34	0.013732	1.83	5.49	23.42	0.85	99.13	54.27	0.067	0.126256
Reach-1	5080	100 yr	2.07	114.7	115.08	115.08	115.14	0.01366	1.44	2.3	22.91	0.8	54.75	37.98	0.046889	0.074985
Reach-1	5080	50 yr	1.79	114.7	115.09	115.09	115.13	0.009418	1.2	2.36	22.92	0.67	31.79	26.41	0.032605	0.050448
Reach-1	5080	25 yr	1.51	114.7	115.07	115.07	115.12	0.011895	1.3	1.93	22.85	0.74	40.93	31.46	0.03884	0.060036
Reach-1	5080	10 yr	1.15	114.7	115.07	115.07	115.1	0.007245	1.01	1.9	22.84	0.58	19.3	19.07	0.023543	0.034682
Reach-1	5080	5 yr	0.89	114.7	115.05	115.05	115.08	0.007644	1	1.53	22.78	0.59	19.14	19.08	0.023556	0.03394
Reach-1	5080	2 yr	0.57	114.7	115.04	115.04	115.06	0.004706	0.77	1.29	22.75	0.46	8.7	11.33	0.013988	0.019229
Reach-1	5070	Regional	8.07	112.7	113.44	113.44	113.59	0.011843	2.19	4.89	15.92	0.85	150.13	68.59	0.084679	0.186553
Reach-1	5070	100 yr	2.07	112.7	113.2	113.2	113.28	0.009787	1.5	1.85	9.82	0.72	55.52	37.05	0.045741	0.081943
Reach-1	5070	50 yr	1.79	112.7	113.18	113.18	113.26	0.009918	1.46	1.64	9.25	0.72	52.07	35.7	0.044074	0.077267
Reach-1	5070	25 yr	1.51	112.7	113.15	113.15	113.23	0.010977	1.46	1.37	8.48	0.74	53.65	36.71	0.045321	0.077267
Reach-1	5070	10 yr	1.15	112.7	113.12	113.12	113.19	0.010008	1.33	1.14	7.74	0.7	41.17	31.04	0.038321	0.063088
Reach-1	5070	5 yr	0.89	112.7	113.09	113.09	113.16	0.01025	1.26	0.91	6.92	0.7	36.68	29.02	0.035827	0.056092
Reach-1	5070	2 yr	0.57	112.7	113.04	113.04	113.1	0.010223	1.14	0.6	5.66	0.68	28.05	24.7	0.030494	0.045125
Reach-1	5060	Regional	8.07	109.7	110.66	110.66	110.98	0.012484	2.71	3.28	5.18	0.91	258.37	95.5	0.117901	0.296445
Reach-1	5060	100 yr	2.07	109.7	110.22	110.22	110.37	0.014183	1.86	1.26	4.14	0.87	104.74	56.27	0.069469	0.130799
Reach-1	5060	50 yr	1.79	109.7	110.2	110.2	110.33	0.013488	1.75	1.16	4.08	0.84	89.03	50.79	0.062704	0.114565
Reach-1	5060	25 yr	1.51	109.7	110.17	110.17	110.29	0.013315	1.66	1.04	4.01	0.83	77.65	46.73	0.057691	0.102142
Reach-1	5060	10 yr	1.15	109.7	110.12	110.12	110.23	0.013491	1.55	0.85	3.9	0.81	65.01	42.06	0.051926	0.087998
Reach-1	5060	5 yr	0.89	109.7	110.09	110.09	110.18	0.012593	1.4	0.73	3.82	0.77	50.17	35.75	0.044136	0.07053
Reach-1	5060	2 yr	0.57	109.7	110.03	110.03	110.11	0.013379	1.26	0.49	3.67	0.77	38.99	30.92	0.038173	0.056092
Reach-1	5050	Regional	8.07	105.7	107.93	107.93	107.94	0.000176	0.58	15.58	10.78	0.13	1.87	3.24	0.004	0.010385
Reach-1	5050	100 yr	2.07	105.7	106.78	106.79	106.79	0.000261	0.43	5.21	7.34	0.13	0.97	2.28	0.002815	0.005419
Reach-1	5050	50 yr	1.79	105.7	106.71	106.72	106.72	0.000266	0.41	4.7	7.13	0.13	0.88	2.15	0.002654	0.004886
Reach-1	5050	25 yr	1.51	105.7	106.64	106.64	106.64	0.000269	0.39	4.17	6.91	0.13	0.78	2.01	0.002481	0.004382
Reach-1	5050	10 yr	1.15	105.7	106.53	106.54	106.54	0.000269	0.36	3.47	6.6	0.13	0.64	1.77	0.002185	0.003683
Reach-1	5050	5 yr	0.89	105.7	106.45	106.45	106.45	0.000266	0.33	2.94	6.35	0.13	0.52	1.57	0.001938	0.003048
Reach-1	5050	2 yr	0.57	105.7	106.34	106.34	106.34	0.000248	0.28	2.24	6.01	0.12	0.35	1.22	0.001506	0.002132
Reach-1	5042	Regional	8.07	106	107.24	107.24	107.87	0.016255	3.51	2.3	8.21	1.01	529.33	150.79	0.18616	0.520184
Reach-1	5042	100 yr	2.07	106	106.51	106.51	106.76	0.021645	2.22	0.93	3.24	1	180.8	81.45	0.100556	0.192153
Reach-1	5042	50 yr	1.79	106	106.46	106.46	106.69	0.022266	2.11	0.85	2.93	1	160.83	76.14	0.094	0.172056
Reach-1	5042	25 yr	1.51	106	106.41	106.41	106.61	0.023204	2	0.76	2.59	1	141.39	70.77	0.08737	0.153151
Reach-1	5042	10 yr	1.15	106	106.34	106.34	106.51	0.025458	1.84	0.62	2.11	1.01	118.14	64.13	0.079173	0.127761
Reach-1	5042	5 yr	0.89	106	106.29	106.29	106.43	0.02534	1.67	0.53	1.85	0.99	91.73	55.07	0.067988	0.103484
Reach-1	5042	2 yr	0.57	106	106.21	106.21	106.32	0.02733	1.46	0.39	1.84	1.02	67.78	46.28	0.057136	0.077267
Reach-1	5041	Regional	8.07	103	104.25	104.25	104.87	0.016038	3.5	2.31	91.47	1	522.28	149.38	0.18442	0.516968
Reach-1	5041	100 yr	2.07	103	103.5	103.5	103.76	0.022023	2.23	0.93	23.66	1.01	183.96	82.44	0.1017	

Sassafras Tributary 2 - Model Update Results

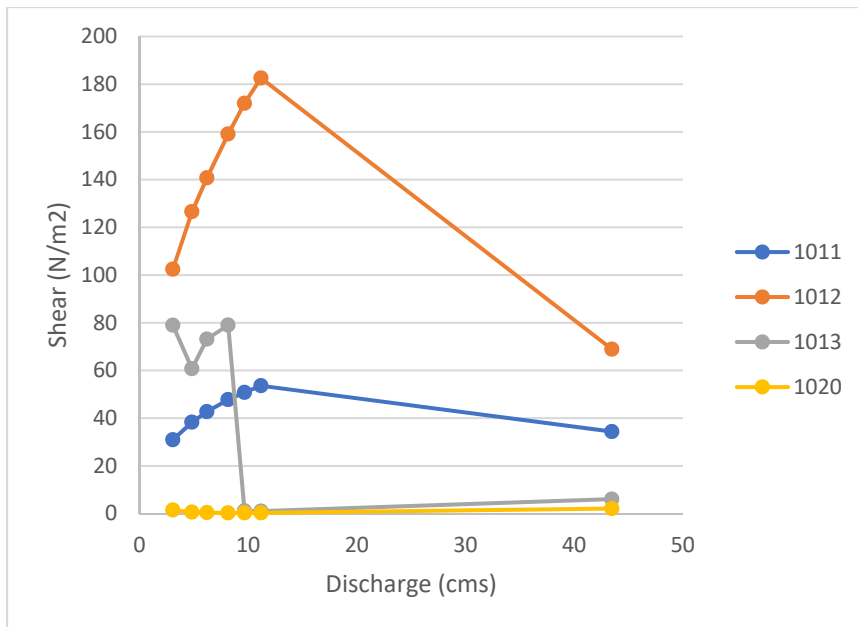
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # C	Power Cha (N/m s)	Shear Char (N/m2)	Entrain	Transport
Reach-1	5040	2 yr	0.57	102.7	103.05	103.05	103.08	0.006712	0.93	0.88	11.6	0.55	15.35	16.5	0.02037	0.028986
Reach-1	5031	Regional	8.07	99.6	102.31		102.31	0.000037	0.26	35.73	28.7	0.05	0.17	0.65	0.000802	0.001815
Reach-1	5031	100 yr	2.07	99.6	100.69		100.7	0.000568	0.55	4.59	9.91	0.17	2.24	4.06	0.005012	0.009253
Reach-1	5031	50 yr	1.79	99.6	100.59		100.6	0.000782	0.61	3.64	8.71	0.19	3.07	5.06	0.006247	0.011589
Reach-1	5031	25 yr	1.51	99.6	100.49		100.5	0.001103	0.67	2.79	7.5	0.23	4.27	6.39	0.007889	0.01421
Reach-1	5031	10 yr	1.15	99.6	100.33		100.36	0.001981	0.79	1.79	5.73	0.29	7.5	9.5	0.011728	0.020331
Reach-1	5031	5 yr	0.89	99.6	100.22		100.25	0.003134	0.89	1.2	4.39	0.36	11.21	12.66	0.01563	0.026344
Reach-1	5031	2 yr	0.57	99.6	100.05		100.1	0.006096	1	0.63	2.55	0.48	17.86	17.89	0.022086	0.03394
Reach-1	5030	Regional	8.07	99.5	101.8	101.2	102.26	0.006199	3	2.69	24.01	0.63	280.29	93.51	0.115444	0.369766
Reach-1	5030	100 yr	2.07	99.5	100.52	100.19	100.68	0.006123	1.73	1.19	9.1	0.55	71.01	40.98	0.050593	0.111737
Reach-1	5030	50 yr	1.79	99.5	100.44	100.12	100.57	0.006128	1.64	1.09	8.1	0.54	61.46	37.58	0.046395	0.099485
Reach-1	5030	25 yr	1.51	99.5	100.35	100.05	100.47	0.005977	1.52	1	7.12	0.53	50.57	33.35	0.041173	0.084337
Reach-1	5030	10 yr	1.15	99.5	100.23	99.96	100.32	0.00598	1.36	0.85	5.62	0.51	38.53	28.33	0.034975	0.066223
Reach-1	5030	5 yr	0.89	99.5	100.13	99.89	100.21	0.005714	1.21	0.73	4.52	0.49	28.49	23.53	0.029049	0.051366
Reach-1	5030	2 yr	0.57	99.5	99.99	99.79	100.04	0.005543	1	0.57	2.89	0.46	17.7	17.63	0.021765	0.03394
Reach-1	5029	Regional	8.07	99	100.69	100.69	101.54	0.017263	4.08	1.98	46.56	1	780.57	191.52	0.236444	0.721488
Reach-1	5029	100 yr	2.07	99	99.69	99.69	100.03	0.023423	2.59	0.8	20.33	1	271.68	104.82	0.129407	0.268649
Reach-1	5029	50 yr	1.79	99	99.62	99.62	99.93	0.023983	2.46	0.73	17.28	1	240.54	97.67	0.12058	0.240196
Reach-1	5029	25 yr	1.51	99	99.55	99.55	99.83	0.025308	2.34	0.65	13.83	1.01	214.12	91.57	0.113049	0.215452
Reach-1	5029	10 yr	1.15	99	99.46	99.46	99.7	0.026767	2.13	0.54	9.31	1	172.48	80.88	0.099852	0.175621
Reach-1	5029	5 yr	0.89	99	99.39	99.39	99.59	0.028604	1.96	0.45	5.65	1.01	142.64	72.65	0.089691	0.14657
Reach-1	5029	2 yr	0.57	99	99.29	99.29	99.44	0.031833	1.71	0.33	1.17	1.02	103.05	60.42	0.074593	0.108948
Reach-1	5020	Regional	8.07	96.49	97.4	97.4	97.71	0.016452	2.49	3.24	5.22	1.01	225.02	90.36	0.111556	0.246609
Reach-1	5020	100 yr	2.07	96.49	96.91	96.91	97.08	0.019249	1.83	1.13	3.33	1.01	109	59.42	0.073358	0.126256
Reach-1	5020	50 yr	1.79	96.49	96.88	96.88	97.04	0.019256	1.75	1.02	3.23	1	97.54	55.59	0.06863	0.114565
Reach-1	5020	25 yr	1.51	96.49	96.84	96.84	96.99	0.02012	1.69	0.89	3.11	1.01	89.72	53.11	0.065568	0.106197
Reach-1	5020	10 yr	1.15	96.49	96.79	96.79	96.91	0.020714	1.56	0.73	2.95	1	74.62	47.68	0.058864	0.089237
Reach-1	5020	5 yr	0.89	96.49	96.75	96.75	96.85	0.021333	1.45	0.61	2.82	1	62.55	43.02	0.053111	0.076121
Reach-1	5020	2 yr	0.57	96.49	96.68	96.68	96.77	0.022904	1.28	0.44	2.64	1	46.49	36.26	0.044765	0.058046
Reach-1	5010	Regional	8.07	94.66	95.66	95.66	96	0.016917	2.6	3.1	4.53	1	252.81	97.18	0.119975	0.279099
Reach-1	5010	100 yr	2.07	94.66	95.18	95.18	95.34	0.020415	1.79	1.15	3.6	1.01	104.73	58.36	0.072049	0.120334
Reach-1	5010	50 yr	1.79	94.66	95.15	95.15	95.3	0.020151	1.7	1.05	3.55	1	91.21	53.64	0.066222	0.107568
Reach-1	5010	25 yr	1.51	94.66	95.11	95.11	95.25	0.020882	1.62	0.93	3.48	1	81.77	50.42	0.062247	0.096867
Reach-1	5010	10 yr	1.15	94.66	95.07	95.07	95.18	0.021904	1.5	0.77	3.35	1	68.31	45.48	0.056148	0.081943
Reach-1	5010	5 yr	0.89	94.66	95.02	95.02	95.12	0.023527	1.44	0.62	3.05	1.02	62.59	43.46	0.053654	0.074985
Reach-1	5010	2 yr	0.57	94.66	94.97	94.97	95.04	0.023814	1.23	0.46	2.96	0.99	42.39	34.44	0.042519	0.05323

Sassafras Tributary Main Branch – Hydro-geomorphic Relations to Channel Discharge

Shear Stress

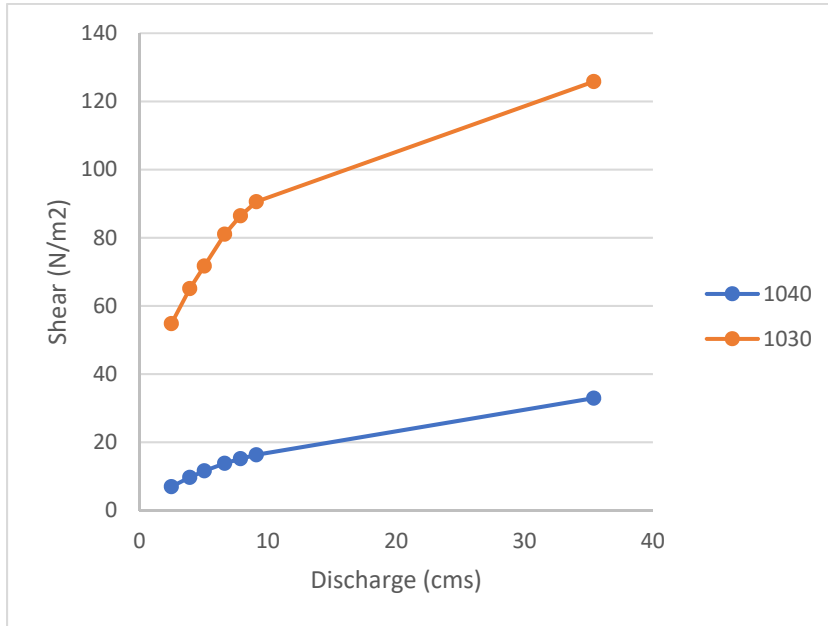


Shear Stress

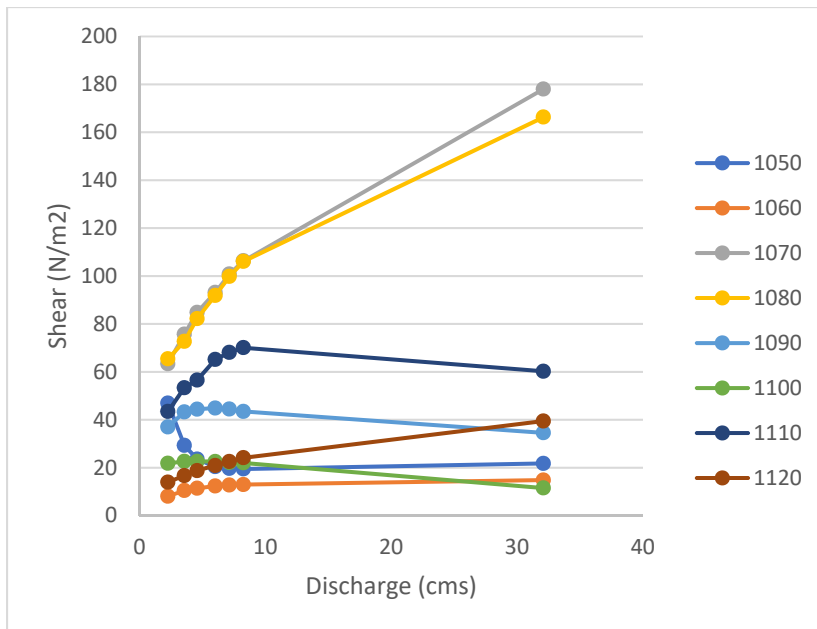


Sassafras Tributary Main Branch – Hydro-geomorphic Relations to Channel Discharge

Shear Stress (continued)

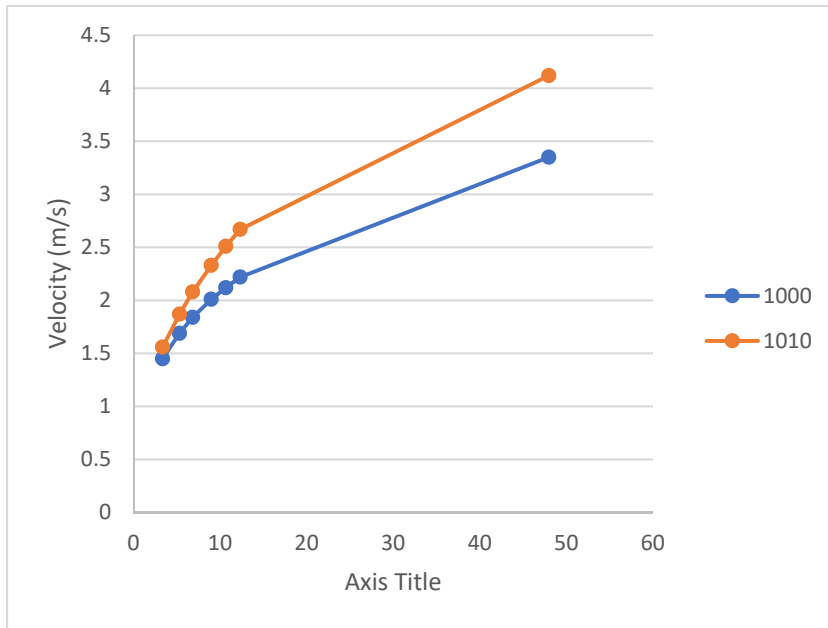


Shear Stress

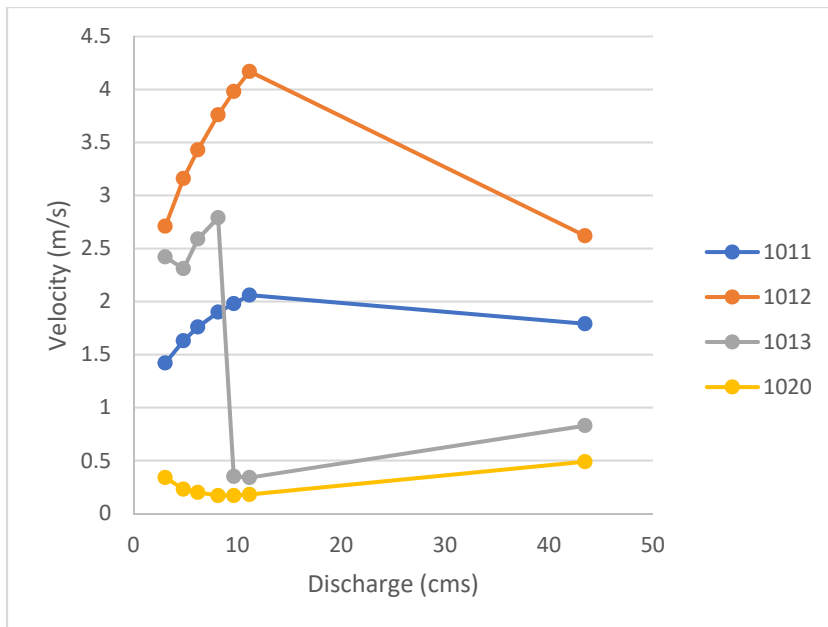


Sassafras Tributary Main Branch – Hydro-geomorphic Relations to Channel Discharge

Velocity

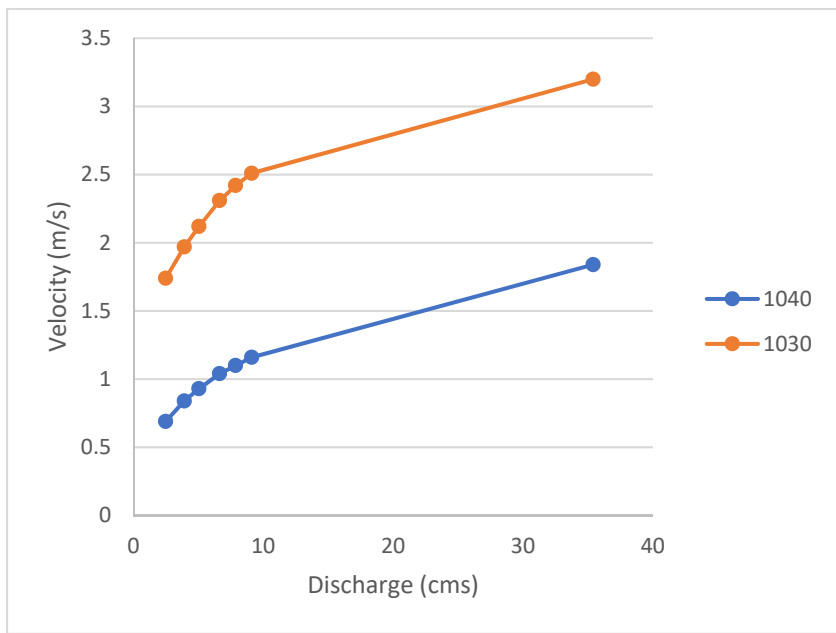


Velocity

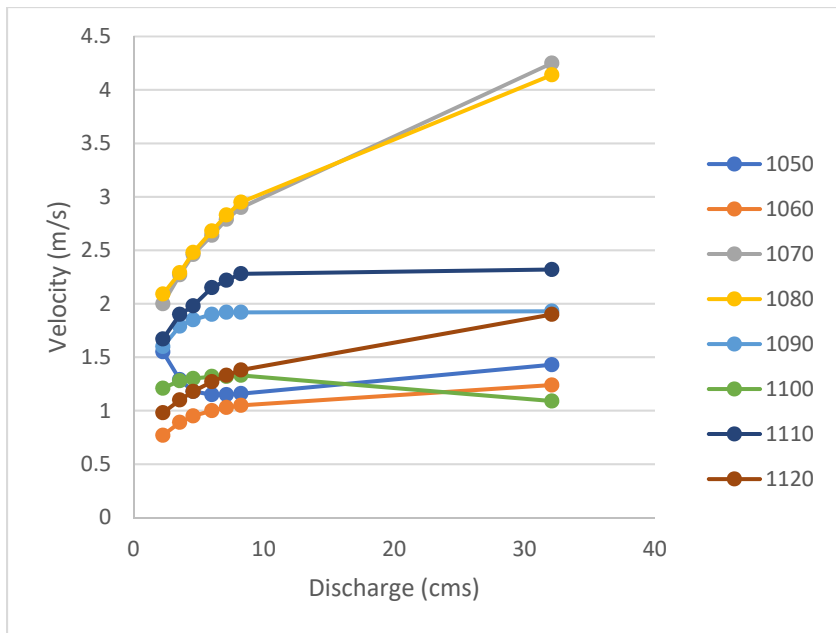


Sassafras Tributary Main Branch – Hydro-geomorphic Relations to Channel Discharge

Velocity (continued)

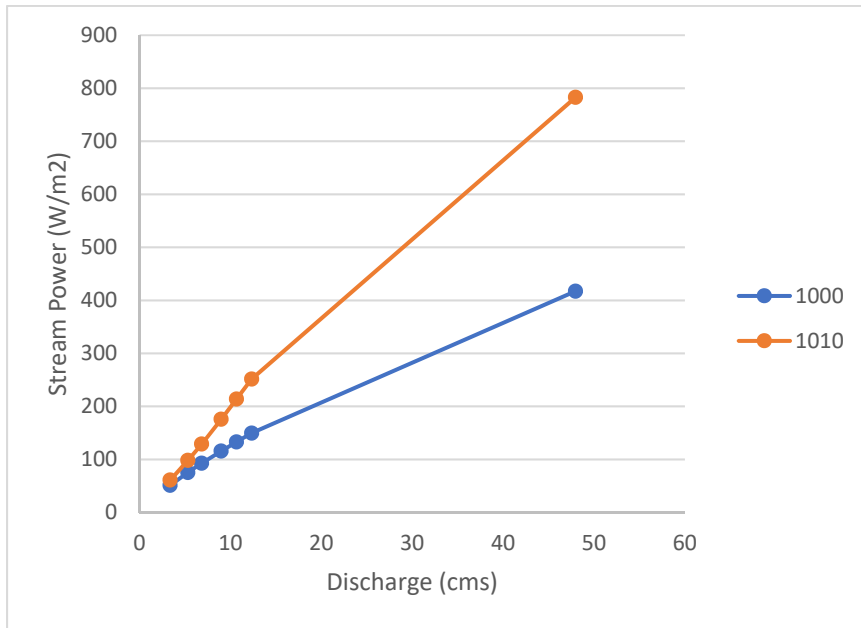


Velocity

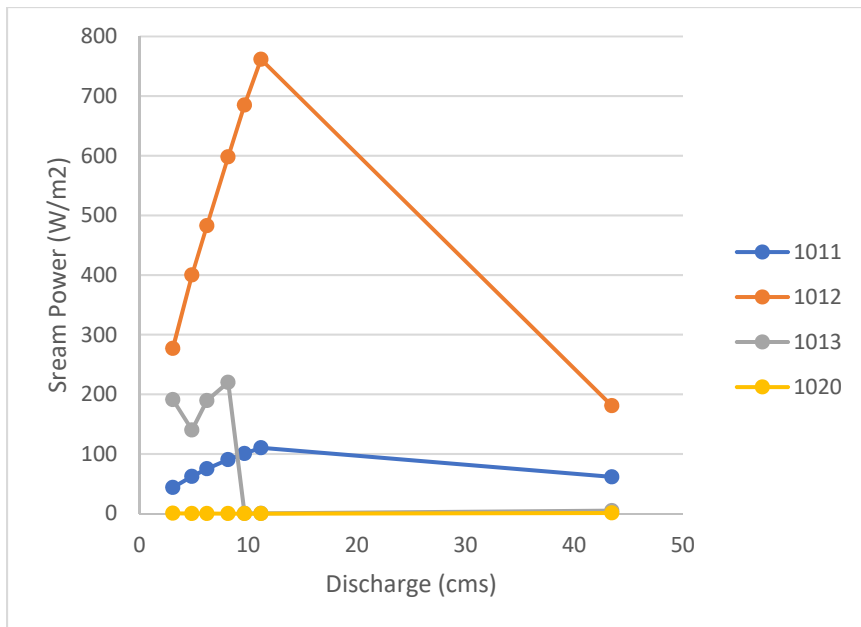


Sassafras Tributary Main Branch – Hydro-geomorphic Relations to Channel Discharge

Stream Power

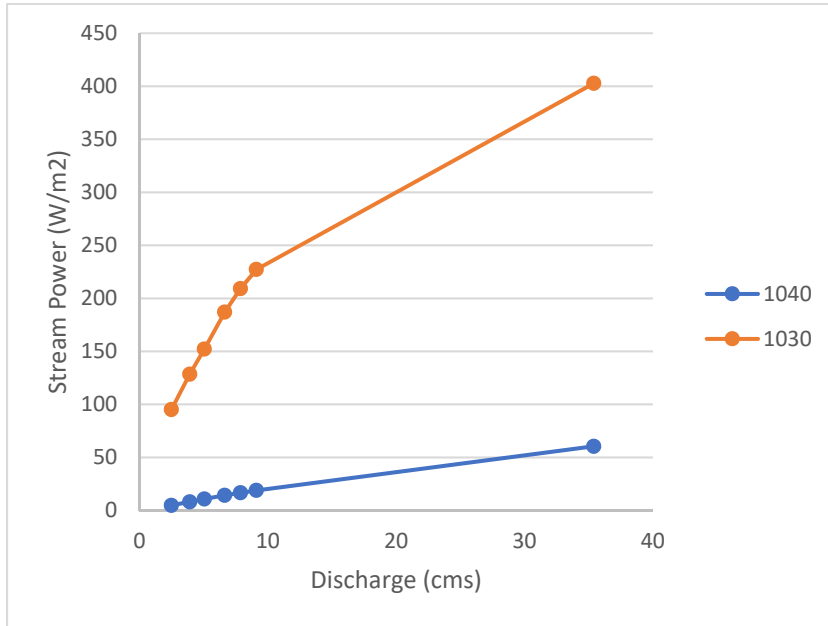


Stream Power

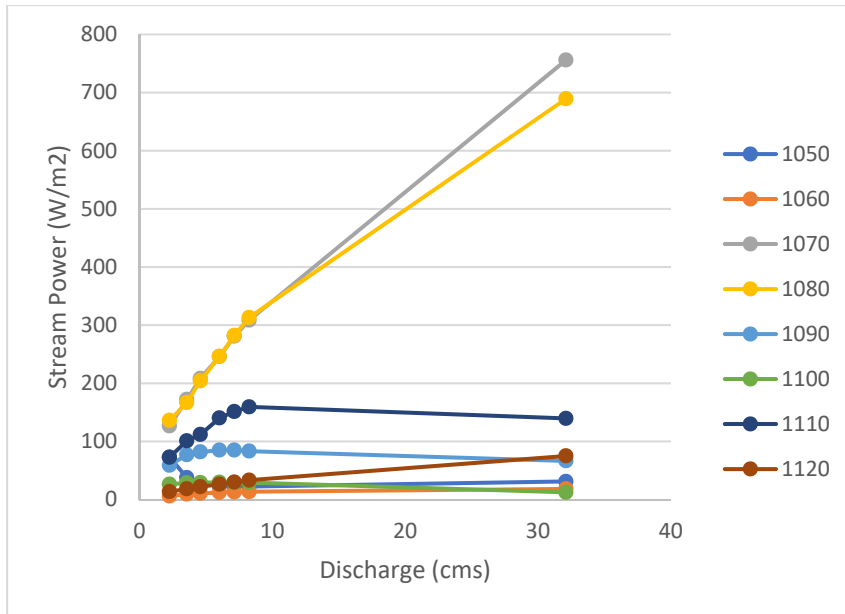


Sassafras Tributary Main Branch – Hydro-geomorphic Relations to Channel Discharge

Stream Power (continued)

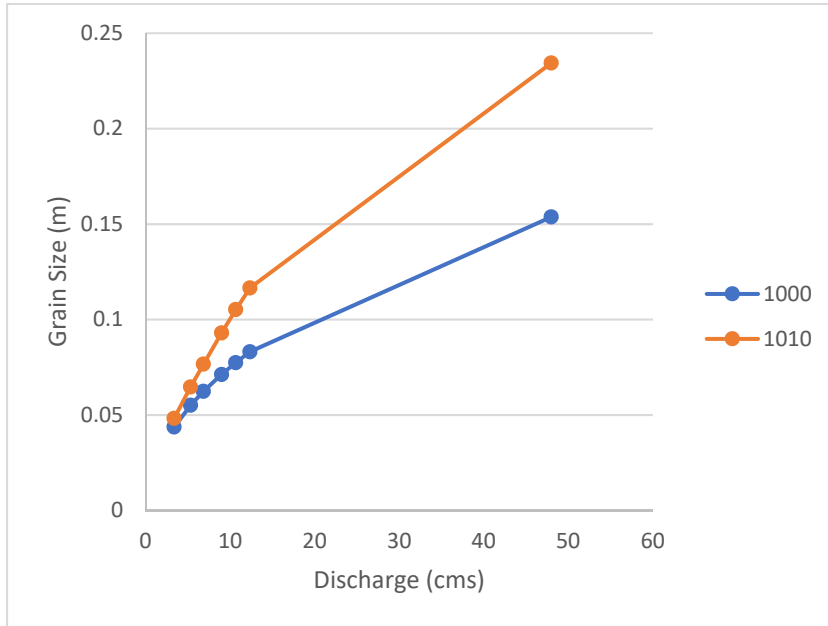


Stream Power

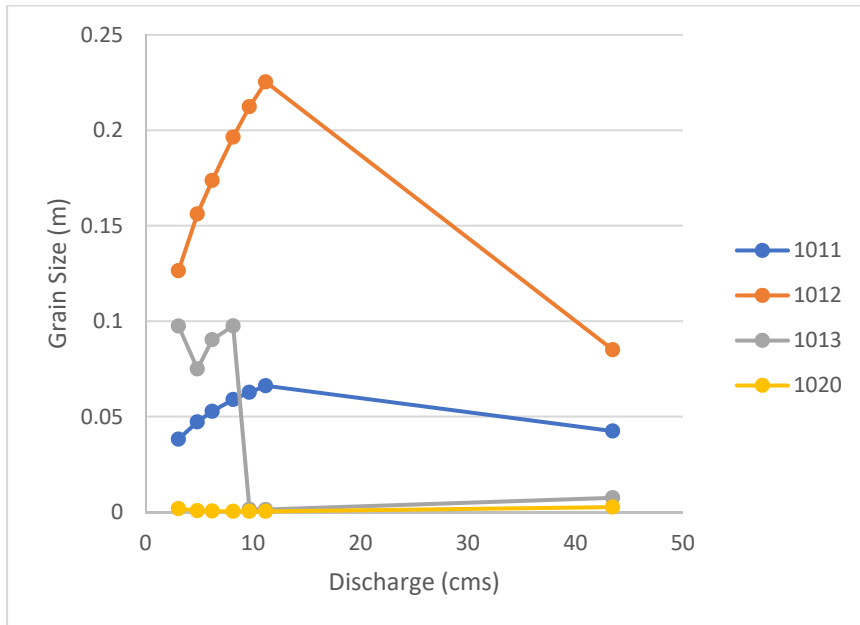


Sassafras Tributary Main Branch – Hydro-geomorphic Relations to Channel Discharge

Potential Sediment Entrainment

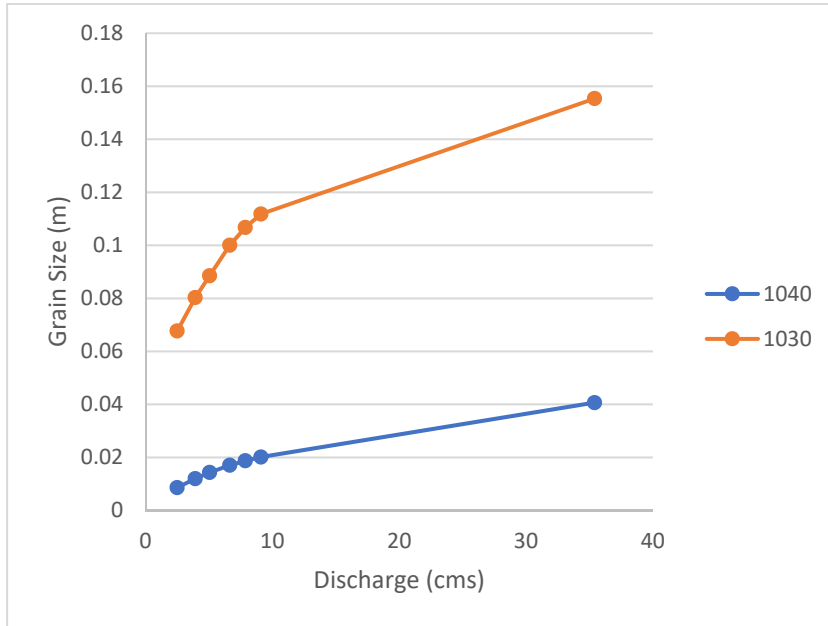


Potential Sediment Entrainment

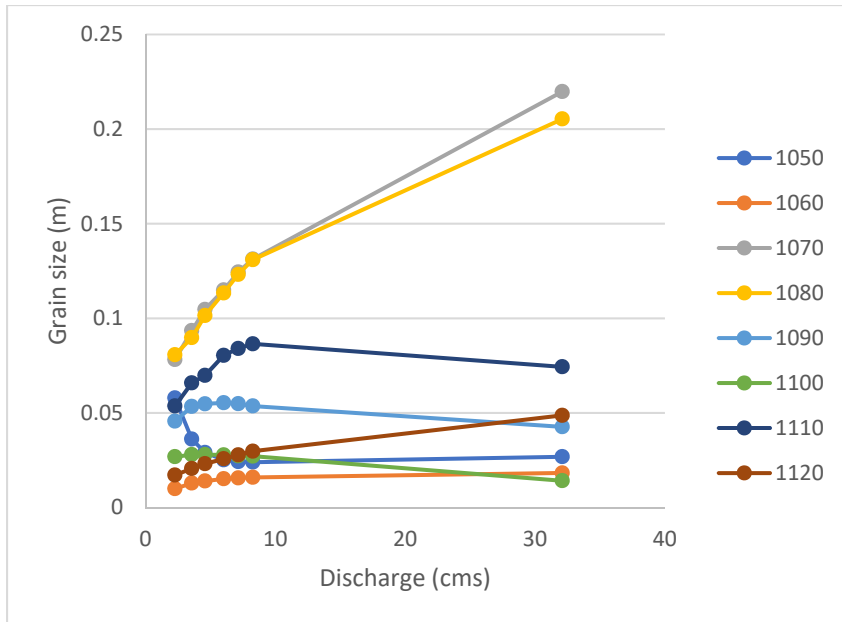


Sassafras Tributary Main Branch – Hydro-geomorphic Relations to Channel Discharge

Potential Sediment Entrainment (continued)

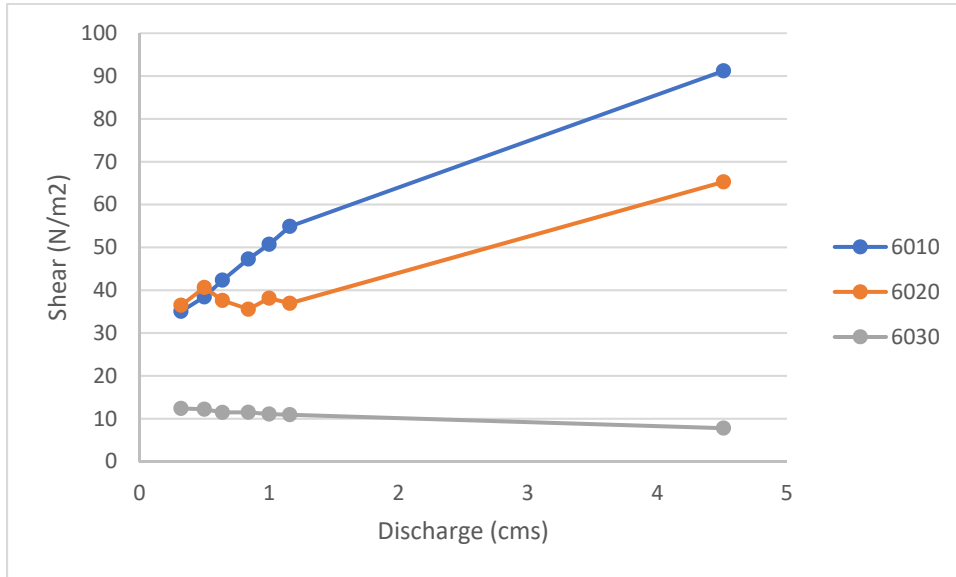


Potential Sediment Entrainment

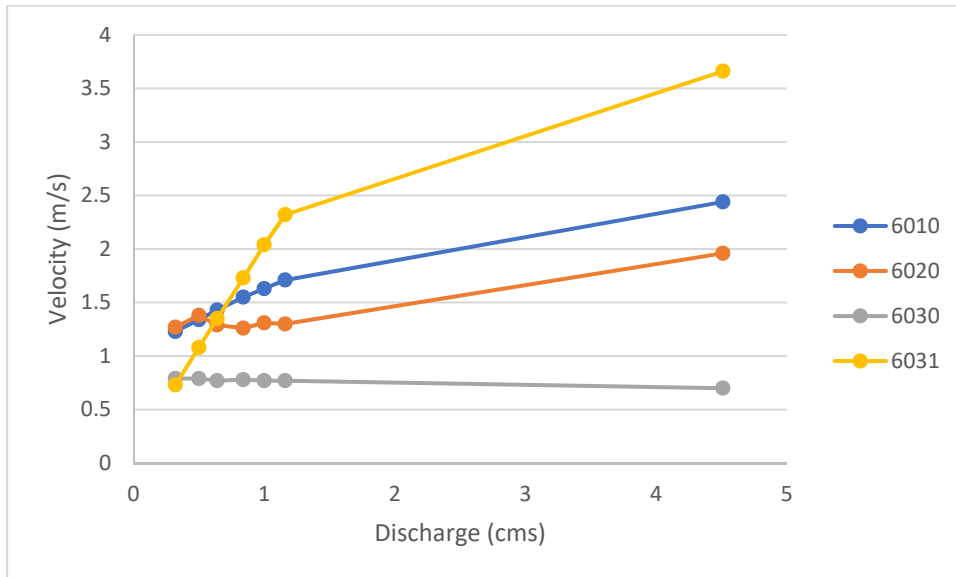


Sassafras Tributary 1 – Hydro-geomorphic Relations to Channel Discharge

Shear Stress

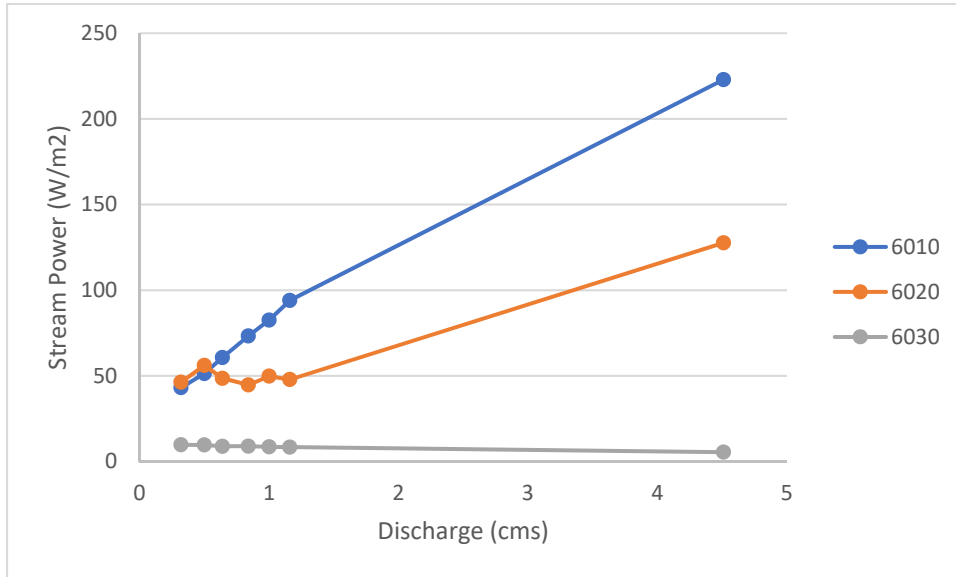


Velocity

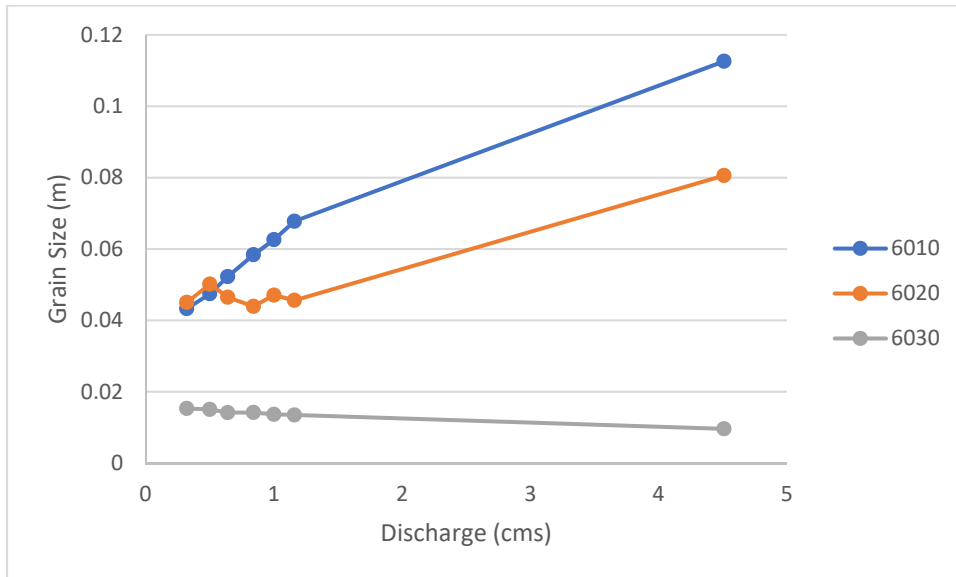


Sassafras Tributary 1 – Hydro-geomorphic Relations to Channel Discharge

Stream Power

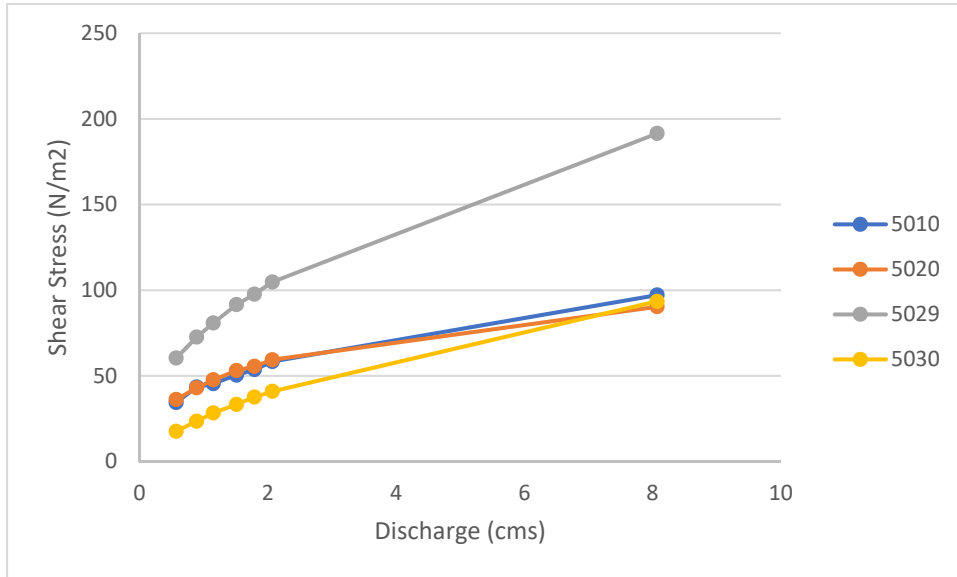


Potential Sediment Entrainment

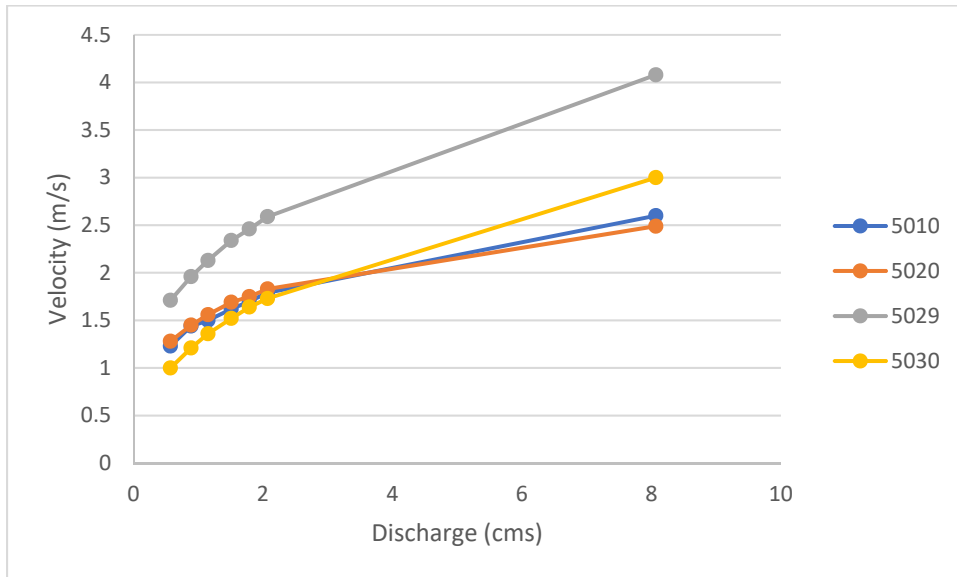


Sassafras Tributary 2 – Hydro-geomorphic Relations to Channel Discharge

Shear Stress

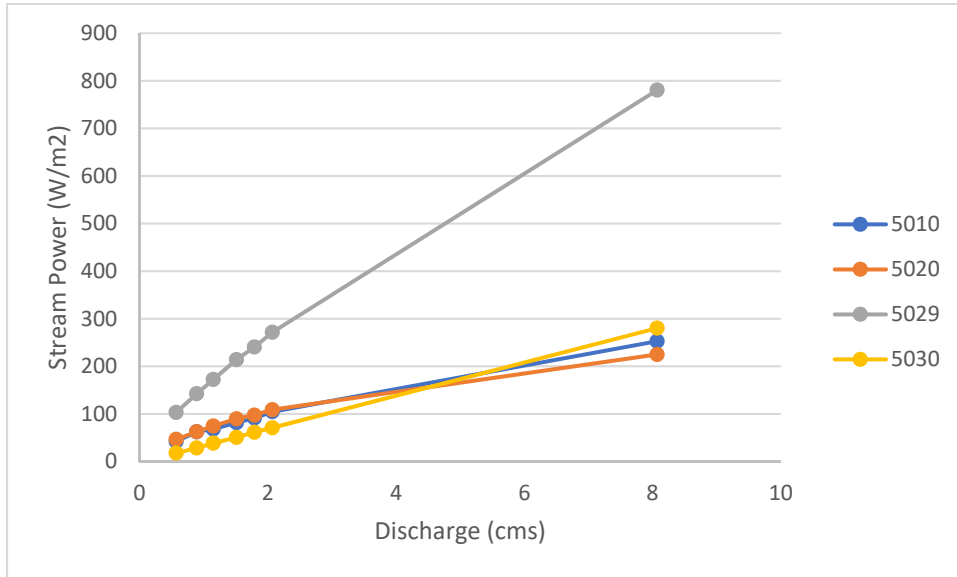


Velocity



Sassafras Tributary 2 – Hydro-geomorphic Relations to Channel Discharge

Stream Power



Potential Sediment Entrainment

