River Windrush at Witney:

Hydraulic Model Development and Sensitivity

1.1 Background

The model is based on the Section 105 model produced for the Lower Windrush. The greater part of the model has not been altered but improvements have been made where the Windrush passes through Witney. The part of the model covered by the results reported here is indicated by the highlighted model components in Figure 1. The revisions to the model took place in stages and this is reflected in this assessment.

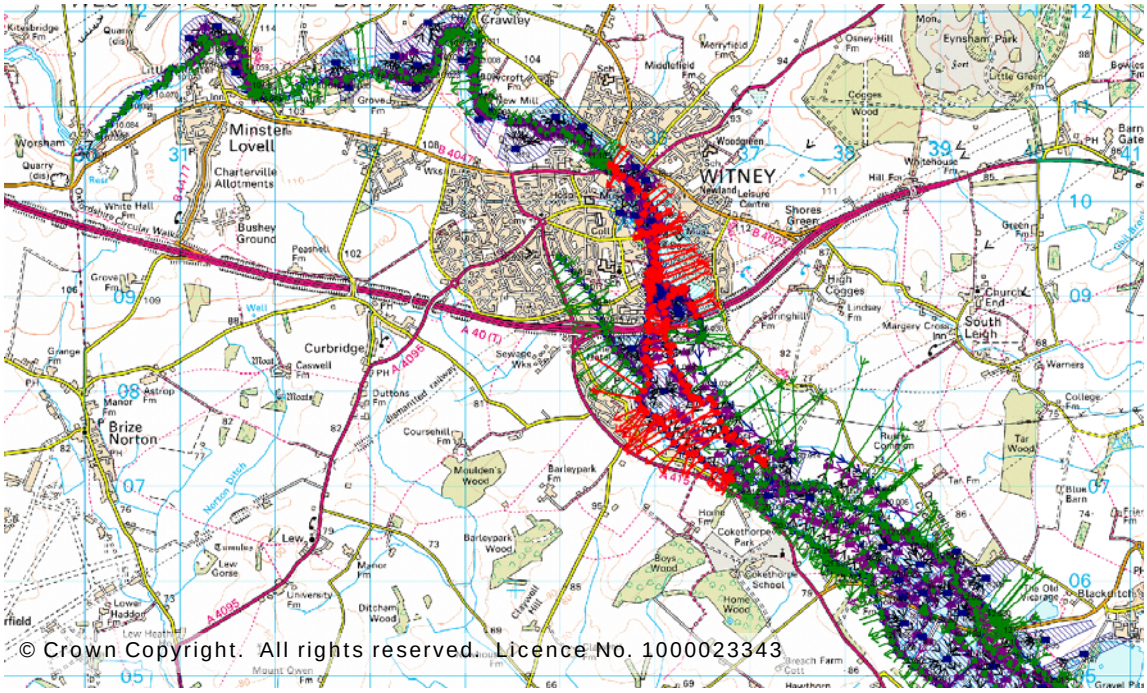

Figure 1 – Extent of sensitivity analysis and model updates.

1.2 Initial Stage

It was believed that the Manning's "n" values in the original model were significantly too high and an initial assessment was carried out for a range of values as set out in Table 1. The design flood was reassessed following this stage of the project so the flows in Table 1 are a little different to those in the following assessment.

1.3 Further Development

Improved calibration, taking the July 2007 flood into account, led to the identification of a range of options for Manning's "n" in the area. Selection of appropriate values was linked to observation of the model performance and, particularly, to the hydraulic efficiency of the Farm Mill culverts and channels, which influences the division of flow between the east and west channels of the Windrush. Table 2 sets out the key results for the range of options considered. From consideration of the observed flood extent, as discussed in the main report, option 8A was selected as the most reasonable representation of the actual model performance so the principal alternatives are compared to 8A at the design flow proposed for the scheme, 100 year flood plus 20%, which is in excess of the July 2007 flood.

1.4 Effect of Flood Magnitude on Water Levels

Table 3 sets out a range of return period floods showing how they compare to the design 100 year plus 20% flood. The detailed results show that the complex channel arrangement in the Windrush throughout the area of interest leads to apparent inconsistencies in the peak flows in the various channels. It should be noted however that the listings of peak flows, water levels and velocities do not imply that the various figure occur simultaneously at a particular point, or at adjacent model nodes.

1.5 Effect of Assumptions at Bridge Street

In setting out the scope of this project, it was identified that reasonable representation of the flood extent in the Bridge Street, Witney, area was significant to the credibility of the modelling results but that it was beyond the scope of the project to fully establish the complex flows through areas of buildings as occurred in July 2007. To demonstrate that the approximations made in this area would not be material to the flows in the CLR area, the model was run with the flows bypassing the Bridge Street bridge set to zero as an alternative. The results set out in Table 4 show that the effect of doing so at the design flood is insignificant.

1.6 Effect of the Flood Hydrograph Shape

A major departure from the S105 study is the adoption of the July 2007 flood hydrograph shape for design purposes in place of the extremely long timebase hydrograph previously proposed. The sensitivity of the results to this change is very important so the effect of setting the component inflow hydrographs to remain constant at their respective design peak flows was tested. This approach has the added benefit of making the flow magnitudes at the CLR location independent of the detail of the modelling of the upstream floodplain. The results of this exercise are also set out in Table 4 which shows the effect of this substantial change in the basic assumptions to be quite limited with an average rise in water levels of around 0.05m.

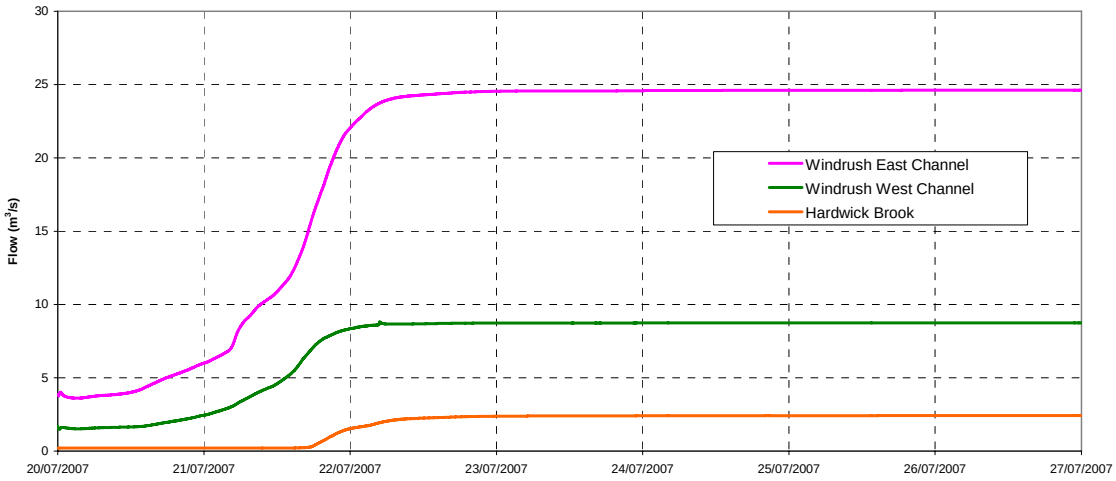

Figure 2 – Flows at A40 – 100 year plus 20% flood "steady flow".

Figure 2 shows that the modelled flow at the A40 bridges and culvert, just downstream from the CLR, is effectively constant well within the 168 hour period for which the hydraulic model has normally been run in the present study confirming the relatively rapid response of water levels in the area to flow and supporting g the use of the July 2007 hydrograph for design purposes.

Recalibrate:	4			Model 'n' minus 20%						Model 'n' Plus 20%					
Approx. 100 year + 20%	"n" 0.100/.025/0.100			"n" 0.080/.020/0.080						"n" 0.120/.030/0.120					
	Run Results			Run Results			Change from model values			Run Results			Change from model values		
Node	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
11.037	15.387	75.066	0.832	15.803	75.089	0.838	0.416	0.023	0.006	14.84	75.036	0.823	-0.547	-0.03	-0.009
11.038	15.407	75.106	0.725	15.85	75.118	0.737	0.443	0.012	0.012	14.842	75.088	0.713	-0.565	-0.018	-0.012
11.039	15.481	75.148	0.706	15.937	75.151	0.727	0.456	0.003	0.021	14.891	75.14	0.681	-0.59	-0.008	-0.025
11.04	15.48	75.166	0.653	15.937	75.159	0.678	0.457	-0.007	0.025	14.891	75.168	0.627	-0.589	0.002	-0.026
11.041	16.875	75.186	0.741	17.073	75.17	0.765	0.198	-0.016	0.024	16.46	75.199	0.712	-0.415	0.013	-0.029
11.042	16.876	75.232	0.989	17.073	75.197	1.069	0.197	-0.035	0.08	16.46	75.263	0.91	-0.416	0.031	-0.079
11.043	19.236	75.285	1.119	18.846	75.235	1.156	-0.39	-0.05	0.037	19.402	75.33	1.078	0.166	0.045	-0.041
11.044	19.238	75.359	1.501	18.847	75.279	1.588	-0.391	-0.08	0.087	19.403	75.435	1.409	0.165	0.076	-0.092
11.045	19.241	75.51	1.184	18.848	75.4	1.294	-0.393	-0.11	0.11	19.412	75.614	1.065	0.171	0.104	-0.119
11.046	19.253	75.664	0.95	18.852	75.467	1.121	-0.401	-0.197	0.171	19.421	75.747	0.855	0.168	0.083	-0.095
11.047	19.265	75.691	1.068	18.856	75.537	1.264	-0.409	-0.154	0.196	19.416	75.775	0.924	0.151	0.084	-0.144
11.048	19.268	75.691	1.504	18.857	75.625	1.532	-0.411	-0.066	0.028	19.421	75.759	1.399	0.153	0.068	-0.105
11.049	19.269	75.817	1.23	18.857	75.734	1.308	-0.412	-0.083	0.078	19.421	75.927	1.117	0.152	0.11	-0.113
11.05	19.269	75.907	1.394	18.857	75.805	1.531	-0.412	-0.102	0.137	19.422	76.025	1.244	0.153	0.118	-0.15
11.051	19.269	76.033	1.115	18.857	75.909	1.236	-0.412	-0.124	0.121	19.422	76.161	0.994	0.153	0.128	-0.121
11.053	19.269	76.128	0.985	18.857	75.997	1.073	-0.412	-0.131	0.088	19.423	76.26	0.9	0.154	0.132	-0.085
11.054	19.269	76.183	1.104	18.857	76.037	1.261	-0.412	-0.146	0.157	19.423	76.325	0.97	0.154	0.142	-0.134
11.055	19.269	76.26	1.058	18.858	76.11	1.17	-0.411	-0.15	0.112	19.424	76.402	0.959	0.155	0.142	-0.099
11.056	19.27	76.325	0.949	18.858	76.168	1.065	-0.412	-0.157	0.116	19.424	76.47	0.852	0.154	0.145	-0.097
11.057	19.27	76.385	1.224	18.858	76.225	1.49	-0.412	-0.16	0.266	19.425	76.539	1.161	0.155	0.154	-0.063
11.058	19.27	76.497	1.14	18.858	76.335	1.331	-0.412	-0.162	0.191	19.425	76.648	0.994	0.155	0.151	-0.146
11.059	19.27	76.579	1.296	18.858	76.421	1.497	-0.412	-0.158	0.201	19.425	76.731	1.135	0.155	0.152	-0.161
11.06	19.27	76.691	1.222	18.858	76.529	1.395	-0.412	-0.162	0.173	19.425	76.839	1.086	0.155	0.148	-0.136
11.061	19.271	76.807	1.453	18.858	76.655	1.707	-0.413	-0.152	0.254	19.425	76.953	1.254	0.154	0.146	-0.199
11.062	19.271	76.968	1.278	18.858	76.82	1.534	-0.413	-0.148	0.256	19.425	77.102	1.106	0.154	0.134	-0.172
11.063	19.27	77.081	1.528	18.858	76.949	1.727	-0.412	-0.132	0.199	19.425	77.205	1.363	0.155	0.124	-0.165
11.064	19.271	77.225	1.658	18.858	77.087	1.85	-0.413	-0.138	0.192	19.425	77.352	1.496	0.154	0.127	-0.162
11.065	19.27	77.386	1.539	18.858	77.23	1.708	-0.412	-0.156	0.169	19.425	77.525	1.395	0.155	0.139	-0.144
11.066	19.27	77.495	1.649	18.858	77.37	1.819	-0.412	-0.125	0.17	19.425	77.614	1.494	0.155	0.119	-0.155
11.067	19.27	77.683	1.465	18.858	77.529	1.679	-0.412	-0.154	0.214	19.41	77.814	1.303	0.14	0.131	-0.162
11.068	19.27	77.934	0.905	18.858	77.759	1.081	-0.412	-0.175	0.176	19.412	78.072	0.844	0.142	0.138	-0.061
11.069	19.271	77.992	1.236	18.858	77.817	1.502	-0.413	-0.175	0.266	19.412	78.141	1.171	0.141	0.149	-0.065
11.07	19.271	78.156	1.163	18.858	77.971	1.325	-0.413	-0.185	0.162	19.426	78.308	1.044	0.155	0.152	-0.119
11.071	19.512	78.206	1.249	19.077	78.014	1.427	-0.435	-0.192	0.178	19.901	78.364	1.132	0.389	0.158	-0.117
11.072	19.512	78.325	1.293	19.077	78.138	1.559	-0.435	-0.187	0.266	19.901	78.488	1.127	0.389	0.163	-0.166
11.073	19.513	78.441	1.631	19.077	78.28	1.891	-0.436	-0.161	0.26	19.901	78.6	1.424	0.388	0.159	-0.207
11.074	19.512	78.685	0.979	19.077	78.508	1.113	-0.435	-0.177	0.134	19.901	78.843	0.879	0.389	0.158	-0.1
11.075	19.512	78.82	0.957	19.077	78.632	1.108	-0.435	-0.188	0.151	19.902	78.998	0.824	0.39	0.178	-0.133
11.076	19.513	79.027	1.539	19.077	78.844	1.539	-0.436	-0.183	0	19.904	79.184	1.539	0.391	0.157	0
11.077	19.514	79.246	1.152	19.078	79.105	1.152	-0.436	-0.141	0	19.906	79.353	1.152	0.392	0.107	0
11.078	19.51	79.355	0.505	19.079	79.221	0.505	-0.431	-0.134	0	19.852	79.459	0.505	0.342	0.104	0
11.079	19.511	79.445	1.354	19.079	79.296	1.354	-0.432	-0.149	0	19.854	79.55	1.354	0.343	0.105	0
11.081	19.184	79.776	0.723	19.08	79.665	0.723	-0.104	-0.111	0	18.772	79.852	0.723	-0.412	0.076	0
11.082	16.513	79.82	0.813	17.755	79.71	0.813	1.242	-0.11	0	15.281	79.896	0.813	-1.232	0.076	0
11.083	14.353	79.844	0.903	15.415	79.729	0.914	1.062	-0.115	0.011	13.253	79.923	0.903	-1.1	0.079	0
11.084	15.682	79.937	0.938	16.2	79.841	0.938	0.518	-0.096	0	15.007	80.009	0.938	-0.675	0.072	0
11.085	15.989	79.942	0.706	16.426	79.847	0.706	0.437	-0.095	0	15.376	80.013	0.706	-0.613	0.071	0
11.086	15.992	79.988	0.82	16.429	79.898	0.82	0.437	-0.09	0	15.379	80.057	0.82	-0.613	0.069	0
11.087	25.644	80.032	1.317	25.727	79.947	1.317	0.083	-0.085	0	25.152	80.098	1.317	-0.492	0.066	0
11.088	25.662	80.139	1.362	25.728	80.027	1.518	0.066	-0.112	0.156	25.364	80.239	1.224	-0.298	0.1	-0.138
11.089	25.39	80.477	1.511	25.714	80.375	1.791	0.324	-0.102	0.28	24.74	80.578	1.5	-0.65	0.101	-0.011
11.09	25.39	80.725	1.881	25.714	80.6	2.059	0.324	-0.125	0.178	24.74	80.841	1.714	-0.65	0.116	-0.167
11.091	25.39	80.933	0.889	25.714	80.777	1	0.324	-0.156	0.111	24.74	81.064	0.864	-0.65	0.131	-0.025
11.092	25.393	81.18	0.828	25.714	80.969	0.936	0.321	-0.211	0.108	24.951	81.333	0.828	-0.442	0.153	0
11.093	25.393	81.143	1.418	25.714	80.945	1.685	0.321	-0.198	0.267	24.949	81.309	1.259	-0.444	0.166	-0.159
11.094	24.723	81.39	0.711	25.386	81.2	0.861	0.663	-0.19	0.15	24.09	81.545	0.631	-0.633	0.155	-0.08
11.095	3.314	81.435	0.423	3.313	81.237	0.51	-0.001	-0.198	0.087	3.305	81.595	0.359	-0.009	0.16	-0.064
20.014	12.327	75.067	0.835	12.919	75.086	0.857	0.592	0.019	0.022	11.626	75.043	0.811	-0.701	-0.024	-0.024
20.015	12.327	75.128	0.521	12.921	75.142	0.528	0.594	0.014	0.007	11.63	75.109	0.512	-0.697	-0.019	-0.009
20.016	12.329	75.144	0.634	12.929	75.151	0.666	0.6	0.007	0.032	11.635	75.133	0.612	-0.694	-0.011	-0.022
20.017	12.331	75.182	0.794	12.93	75.177	0.834	0.599	-0.005	0.04	11.64	75.182	0.75	-0.691	0	-0.044
20.018	12.331	75.221	0.824	12.932	75.202	0.895	0.601	-0.019	0.071	11.642	75.236	0.76	-0.689	0.015	-0.064
20.019	12.332	75.276	0.866	12.933	75.243	0.997	0.601	-0.033	0.131	11.644	75.305	0.756	-0.688	0.029	-0.11
20.02	12.391	75.358	1.098	12.94	75.315	1.289	0.549	-0.043	0.191	11.814	75.394	0.953	-0.577	0.036	-0.145
20.021	12.392	75.463	0.955	12.941	75.411	1.216	0.549	-0.052	0.261	11.814	75.503	0.829	-0.578	0.04	-0.126
20.022	12.392	75.563	1.05	12.941	75.503	1.271	0.549	-0.06	0.221	11.815	75.597	0.915	-0.577	0.034	-0.135
20.023	12.392	75.649	1.074	12.941	75.58	1.215	0.549	-0.069	0.141	11.814	75.695	0.977	-0.578	0.046	-0.097
20.024	12.392	75.778	0.762	12.942	75.723	0.94	0.55	-0.055	0.178	11.817	75.817	0.727	-0.575	0.039	-0.035
20.025	12.394	75.814	1.108	12.946	75.764	1.359	0.552	-0.05	0.251	11.837	75.85	0.995	-0.557	0.036	-0.113
20.026	12.398	75.889	1.016	12.951	75.84	1.265	0.553	-0.049	0.249	11.84	75.917	0.868	-0.558	0.028	-0.148
20.027	12.402	76.002	1.079	12.959	75.956	1.331	0.557	-0.046	0.252	11.843	76.036	1.048	-0.559	0.034	-0.031
20.029	12.404	76.201	1.692	12.963	76.157	1.802	0.559	-0.044	0.11	11.843	76.208	1.55	-0.561	0.007	-0.142
20.03	12.404	76.377	1.595	12.964	76.315	1.793	0.56	-0.062	0.198	11.843	76.44	1.415	-0.561	0.063	-0.18
20.031	12.404	76.634	1.617	12.963	76.545	1.862	0.559	-0.089	0.245	11.843	76.712	1.427	-0.561	0.078	-0.19
20.032	12.404	76.651	1.565	12.964	76.558	1.816	0.56	-0.093	0.251	11.843	76.731	1.373	-0.561	0.08	-0.192
20.033	12.404	76.734	1.624	12.964	76.639	1.887	0.56	-0.095	0.263	11.845	76.817	1.425	-0.559	0.083	-0.199
20.034	12.404	76.743	1.642	12.964	76.648	1.895	0.56	-0.095	0.253	11.845	76.825	1.446	-0.559	0.082	-0.196
20.035	12.404	76.82	1.124	12.964	76.705	1.298	0.56	-0.115	0.174	11.845	76.908	0.997	-0.559	0.088	-0.127
20.036	12.404	76.911	1.046	12.964	76.781	1.325	0.56	-0.13	0.279	11.845	77.012	0.872	-0.559	0.101	-0.174
20.037	12.404	76.979	1.132	12.964	76.862	1.311	0.56	-0.117	0.179	11.846	77.069	1.004	-0.558	0.09	-0.128
20.038	8.556	77.042	0.805	9.08	76.918	0.979	0.524	-0.124	0.174	8.053	77.138	0.685	-0.503	0.096	-0.12
20.039	8.556	77.103	0.934	9.08	76.976	1.136	0.524	-0.127	0.202	8.053	77.2	0.796	-0.503	0.097	-0.138
20.04	8.556	77.171	0.852	9.08	77.051	1.035	0.524	-0.12	0.183	8.054	77.264	0.728	-0.502	0.093	-0.124
20.041	8.556	77.227	0.824	9.079	77.112	1	0.523	-0.115	0.176	8.054	77.319	0.702	-0.502	0.092	-0.122

Recalibrate:	4			Model 'n' minus 20%						Model 'n' Plus 20%					
Approx. 100 year + 20%	"n" 0.100/.025/0.100			"n" 0.080/.020/0.080						"n" 0.120/.030/0.120					
	Run Results			Run Results			Change from model values			Run Results			Change from model values		
Node	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
20.043	8.556	77.266	0.946	9.08	77.149	1.164	0.524	-0.117	0.218	8.054	77.359	0.799	-0.502	0.093	-0.147
20.044	8.556	77.413	1.285	9.08	77.316	1.57	0.524	-0.097	0.285	8.057	77.504	1.104	-0.499	0.091	-0.181
20.045	8.556	77.582	1.086	9.08	77.483	1.318	0.524	-0.099	0.232	8.059	77.644	0.946	-0.497	0.062	-0.14
20.046	8.556	77.725	0.732	9.08	77.619	0.889	0.524	-0.106	0.157	8.06	77.79	0.628	-0.496	0.065	-0.104
20.047	8.556	77.756	0.576	9.08	77.66	0.661	0.524	-0.096	0.085	8.06	77.816	0.518	-0.496	0.06	-0.058
20.048	8.557	77.762	0.558	9.08	77.66	0.687	0.523	-0.102	0.129	8.06	77.824	0.479	-0.497	0.062	-0.079
20.049	8.556	77.759	0.809	9.08	77.651	1.005	0.524	-0.108	0.196	8.072	77.834	0.707	-0.484	0.075	-0.102
20.05	8.556	77.844	0.9	9.08	77.725	1.125	0.524	-0.119	0.225	8.171	77.916	0.77	-0.385	0.072	-0.13
20.051	8.556	77.868	1.117	9.08	77.762	1.382	0.524	-0.106	0.265	8.259	77.942	0.993	-0.297	0.074	-0.124
20.052	8.556	77.905	1.588	9.08	77.815	1.908	0.524	-0.09	0.32	8.259	77.972	1.414	-0.297	0.067	-0.174
20.053	8.556	78.008	1.152	9.08	77.903	1.403	0.524	-0.105	0.251	8.301	78.084	1.037	-0.255	0.076	-0.115
20.054	8.557	78.149	1.256	9.08	78.06	1.526	0.523	-0.089	0.27	8.603	78.231	1.137	0.046	0.082	-0.119
20.055	5.735	78.262	0.939	6.125	78.169	1.172	0.39	-0.093	0.233	5.61	78.346	0.933	-0.125	0.084	-0.006
20.056	5.725	78.367	0.754	6.126	78.265	0.928	0.401	-0.102	0.174	5.392	78.448	0.643	-0.333	0.081	-0.111
20.057	5.689	78.398	0.798	6.118	78.294	0.987	0.429	-0.104	0.189	5.261	78.478	0.724	-0.428	0.08	-0.074
20.058	5.689	79.118	1.556	6.118	79.159	1.593	0.429	0.041	0.037	5.261	79.075	1.518	-0.428	-0.043	-0.038
20.059	5.689	79.287	0.811	6.118	79.286	0.872	0.429	-0.001	0.061	5.261	79.293	0.745	-0.428	0.006	-0.066
20.06	7.413	79.45	0.576	8.307	79.435	0.653	0.894	-0.015	0.077	6.577	79.462	0.508	-0.836	0.012	-0.068
20.061	7.807	79.52	0.672	8.599	79.489	0.766	0.792	-0.031	0.094	7.065	79.542	0.592	-0.742	0.022	-0.08
20.062	8.563	79.605	0.727	9.08	79.559	0.804	0.517	-0.046	0.077	8.116	79.639	0.668	-0.447	0.034	-0.059
20.064	8.614	79.779	0.673	9.08	79.72	0.673	0.466	-0.059	0	8.273	79.827	0.673	-0.341	0.048	0
20.065	8.507	79.828	0.667	9.082	79.761	0.769	0.575	-0.067	0.102	7.856	79.883	0.636	-0.651	0.055	-0.031
20.066	8.507	79.919	0.704	9.083	79.845	0.717	0.576	-0.074	0.013	7.924	79.974	0.704	-0.583	0.055	0
20.067	8.963	79.988	0.521	9.193	79.914	0.54	0.23	-0.074	0.019	8.434	80.045	0.521	-0.529	0.057	0
20.068	9.652	80.032	0.662	9.296	79.947	0.726	-0.356	-0.085	0.064	9.77	80.098	0.591	0.118	0.066	-0.071
30.033	0.242	77.536	0.306	0.269	77.544	0.318	0.027	0.008	0.012	0.475	77.585	0.401	0.233	0.049	0.095
30.034	0.242	77.91	0.042	0.228	77.898	0.043	-0.014	-0.012	0.001	0.476	78.013	0.061	0.234	0.103	0.019
30.035	0.242	78.264	0.524	0.239	78.252	0.683	-0.003	-0.012	0.159	0.475	78.362	0.359	0.233	0.098	-0.165
30.036	-0.158	78.265	-0.131	-0.161	78.252	-0.148	-0.003	-0.013	-0.017	0.075	78.363	0.048	0.233	0.098	0.179
30.037	-0.158	78.263	-0.055	-0.177	78.247	-0.081	-0.019	-0.016	-0.026	0.075	78.363	0.017	0.233	0.1	0.072
30.038	-0.158	78.259	-0.117	-0.181	78.235	-0.153	-0.023	-0.024	-0.036	0.075	78.364	0.042	0.233	0.105	0.159
11.036u	15.387	75.069	0.768	15.803	75.093	0.773	0.416	0.024	0.005	14.84	75.037	0.76	-0.547	-0.032	-0.008
11.043J	16.876	75.285	0.981	17.073	75.235	1.047	0.197	-0.05	0.066	16.461	75.33	0.914	-0.415	0.045	-0.067
11.052d	19.269	76.093	1.139	18.857	75.96	1.234	-0.412	-0.133	0.095	19.423	76.227	1.043	0.154	0.134	-0.096
11.052u	19.269	76.11	1.125	18.857	75.977	1.218	-0.412	-0.133	0.093	19.423	76.242	1.031	0.154	0.132	-0.094
11.067us-CS8	19.27	77.89	1.143	18.858	77.718	1.309	-0.412	-0.172	0.166	19.41	78.03	1.026	0.14	0.14	-0.117
11.068us-CS9	19.27	77.954	1.144	18.859	77.78	1.326	-0.411	-0.174	0.182	19.412	78.098	1.018	0.142	0.144	-0.126
11.069us-CS10	19.271	78.145	1.11	18.858	77.964	1.26	-0.413	-0.181	0.15	19.426	78.295	0.989	0.155	0.15	-0.121
11.070J	19.271	78.206	1.199	18.858	78.014	1.385	-0.413	-0.192	0.186	19.426	78.364	1.065	0.155	0.158	-0.134
11.073us	19.513	78.579	1.194	19.077	78.397	1.377	-0.436	-0.182	0.183	19.901	78.737	1.067	0.388	0.158	-0.127
11.080d	19.184	79.612	1.071	19.08	79.477	1.199	-0.104	-0.135	0.128	18.772	79.712	0.969	-0.412	0.1	-0.102
11.080u	19.184	79.712	0.99	19.08	79.595	1.08	-0.104	-0.117	0.09	18.772	79.796	0.911	-0.412	0.084	-0.079
11.083J	16.798	79.844	1.136	17.869	79.729	1.136	1.071	-0.115	0	15.689	79.923	1.136	-1.109	0.079	0
11.087J	15.995	80.032	0.894	16.434	79.947	0.894	0.439	-0.085	0	15.385	80.098	0.894	-0.61	0.066	0
11.088US-ST04	25.391	80.226	0.344	25.713	80.138	0.365	0.322	-0.088	0.021	24.74	80.309	0.322	-0.651	0.083	-0.022
11.094ds	24.723	81.332	1.093	25.386	81.124	1.295	0.663	-0.208	0.202	24.09	81.5	0.953	-0.633	0.168	-0.14
11.095J	24.724	81.435	0.907	25.387	81.237	1.109	0.663	-0.198	0.202	24.091	81.595	0.78	-0.633	0.16	-0.127
20.013u	12.327	75.066	0.823	12.919	75.085	0.85	0.592	0.019	0.027	11.626	75.042	0.793	-0.701	-0.024	-0.03
20.028d	12.404	76.181	1.825	12.963	76.144	1.926	0.559	-0.037	0.101	11.843	76.182	1.686	-0.561	0.001	-0.139
20.028u	12.404	76.181	1.825	12.963	76.144	1.926	0.559	-0.037	0.101	11.843	76.182	1.686	-0.561	0.001	-0.139
20.038J	12.406	77.042	1.168	12.964	76.918	1.398	0.558	-0.124	0.23	11.847	77.138	1.008	-0.559	0.096	-0.16
20.042d	8.556	77.257	0.885	9.08	77.14	1.087	0.524	-0.117	0.202	8.054	77.349	0.749	-0.502	0.092	-0.136
20.042u	8.556	77.265	0.876	9.08	77.15	1.073	0.524	-0.115	0.197	8.054	77.356	0.747	-0.502	0.091	-0.129
20.050us	8.556	77.88	0.935	9.08	77.765	1.149	0.524	-0.115	0.214	8.251	77.949	0.879	-0.305	0.069	-0.056
20.054us-CS1	8.556	78.254	0.925	9.08	78.159	1.099	0.524	-0.095	0.174	9.043	78.343	0.885	0.487	0.089	-0.04
20.054us-CS3	5.735	78.254	0.713	6.125	78.159	0.855	0.39	-0.095	0.142	5.69	78.343	0.73	-0.045	0.089	0.017
20.055us-CS4	5.734	78.346	0.585	6.126	78.252	0.703	0.392	-0.094	0.118	5.524	78.423	0.534	-0.21	0.077	-0.051
20.056us-CS5	5.689	78.41	0.571	6.118	78.314	0.707	0.429	-0.096	0.136	5.261	78.486	0.491	-0.428	0.076	-0.08
20.059us-1	5.689	79.308	0.759	6.118	79.304	0.82	0.429	-0.004	0.061	5.261	79.317	0.694	-0.428	0.009	-0.065
20.059us-2	7.413	79.308	1.016	8.307	79.304	1.125	0.894	-0.004	0.109	6.578	79.317	0.909	-0.835	0.009	-0.107
20.063d	8.614	79.725	0.901	9.08	79.656	0.943	0.466	-0.069	0.042	8.273	79.779	0.901	-0.341	0.054	0
20.063u	8.614	79.757	0.821	9.08	79.697	0.903	0.466	-0.06	0.082	8.273	79.807	0.821	-0.341	0.05	0
30.033us-CS13	0.242	77.835	0.441	0.231	77.835	0.522	-0.011	0	0.081	0.476	77.943	0.403	0.234	0.108	-0.038
30.034!	0.242	77.911	0.244	0.222	77.898	0.26	-0.02	-0.013	0.016	0.476	78.015	0.307	0.234	0.104	0.063
CS2	2.821	78.254	1.79	2.955	78.159	2.256	0.134	-0.095	0.466	3.907	78.343	2.422	1.086	0.089	0.632
CS2US	2.823	78.516	0.834	2.954	78.454	1.049	0.131	-0.062	0.215	3.551	78.701	0.743	0.728	0.185	-0.091
CS6	2.868	78.875	0.922	2.962	78.82	1.144	0.094	-0.055	0.222	2.895	78.929	0.824	0.027	0.054	-0.098
CS7	2.832	78.681	0.851	2.954	78.634	0.993	0.122	-0.047	0.142	2.532	78.767	0.707	-0.3	0.086	-0.144
ST02ds	2.868	79.17	1.104	2.962	79.135	1.169	0.094	-0.035	0.065	2.803	79.202	1.066	-0.065	0.032	-0.038
ST03	2.868	79.132	1.217	2.962	79.103	1.31	0.094	-0.029	0.093	2.804	79.157	1.162	-0.064	0.025	-0.055
ST03ds	2.868	78.965	1.578	2.962	78.912	1.794	0.094	-0.053	0.216	2.804	79.008	1.461	-0.064	0.043	-0.117
W3.096	22.368	81.435	0.605	22.427	81.237	0.715	0.059	-0.198	0.11	22.296	81.595	0.541	-0.072	0.16	-0.064
W3.097	22.371	81.471	0.576	22.429	81.283	0.773	0.058	-0.188	0.197	22.298	81.627	0.455	-0.073	0.156	-0.121
W3.098	22.378	81.481	0.491	22.434	81.295	0.664	0.056	-0.186	0.173	22.302	81.635	0.382	-0.076	0.154	-0.109

	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
Average	0.188	-0.096	0.134
Maximum	1.242	0.041	0.466
Minimum	-0.436	-0.211	-0.036

	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
Average	-0.238	0.084	-0.078
Maximum	1.086	0.185	0.632
Minimum	-1.232	-0.043	-0.207

Recalibrate:	8A			6						7						8						9					
All - 100 year design flow + 20%	"n" 0.100/.035/0.100 50% Block Farm Mill Model adjustments			"n" 0.100/.035/0.100						"n" 0.100/.040/0.100						"n" 0.100/.035/0.100 & 50% Block Farm Mill						"n" 0.100/.040/0.100 & 50% Block Farm Mill					
	Run Results			Run Results			Change from model values			Run Results			Change from model values			Run Results			Change from model values			Run Results			Change from model values		
Node	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
11.037	14.817	75.036	0.821	14.709	75.029	0.82	-0.108	-0.007	-0.001	13.893	74.981	0.806	-0.924	-0.055	-0.015	14.817	75.036	0.821	0	0	0	13.848	74.978	0.805	-0.969	-0.058	-0.016
11.038	14.819	75.103	0.699	14.71	75.096	0.699	-0.109	-0.007	0	13.893	75.062	0.683	-0.926	-0.041	-0.016	14.819	75.103	0.699	0	0	0	13.848	75.059	0.683	-0.971	-0.044	-0.016
11.039	14.922	75.165	0.655	14.795	75.158	0.655	-0.127	-0.007	0	13.926	75.134	0.629	-0.996	-0.031	-0.026	14.922	75.165	0.655	0	0	0	13.877	75.131	0.629	-1.045	-0.034	-0.026
11.04	14.922	75.2	0.6	14.795	75.194	0.599	-0.127	-0.006	-0.001	13.926	75.18	0.572	-0.996	-0.02	-0.028	14.922	75.2	0.6	0	0	0	13.877	75.177	0.571	-1.045	-0.023	-0.029
11.041	17.431	75.237	0.721	17.133	75.231	0.713	-0.298	-0.006	-0.008	16.044	75.228	0.67	-1.387	-0.009	-0.051	17.432	75.237	0.721	0.001	0	0	15.92	75.226	0.667	-1.511	-0.011	-0.054
11.042	17.431	75.32	0.837	17.133	75.313	0.837	-0.298	-0.007	0	16.044	75.318	0.772	-1.387	-0.002	-0.065	17.431	75.32	0.837	0	0	0	15.92	75.315	0.772	-1.511	-0.005	-0.065
11.043	21.411	75.403	1.108	20.998	75.395	1.095	-0.413	-0.008	-0.013	20.17	75.412	1.035	-1.241	0.009	-0.073	21.411	75.403	1.108	0	0	0	19.991	75.409	1.029	-1.42	0.006	-0.079
11.044	21.412	75.553	1.396	20.999	75.542	1.382	-0.413	-0.011	-0.014	20.17	75.585	1.277	-1.242	0.032	-0.119	21.412	75.553	1.396	0	0	0	19.993	75.581	1.271	-1.419	0.028	-0.125
11.045	21.417	75.775	0.966	21.006	75.761	0.962	-0.411	-0.014	-0.004	20.173	75.816	0.868	-1.244	0.041	-0.098	21.415	75.775	0.966	-0.002	0	0	19.997	75.809	0.868	-1.42	0.034	-0.098
11.046	21.446	75.885	0.718	20.995	75.871	0.718	-0.451	-0.014	0	20.16	75.916	0.71	-1.286	0.031	-0.008	21.448	75.885	0.718	0.002	0	0	20	75.91	0.71	-1.446	0.025	-0.008
11.047	21.427	75.9	0.799	20.789	75.887	0.799	-0.638	-0.013	0	19.877	75.929	0.718	-1.55	0.029	-0.081	21.425	75.9	0.799	-0.002	0	0	19.842	75.923	0.718	-1.585	0.023	-0.081
11.048	21.429	75.906	1.359	20.792	75.894	1.338	-0.637	-0.012	-0.021	19.879	75.962	1.201	-1.55	0.056	-0.158	21.429	75.906	1.359	0	0	0	19.844	75.956	1.208	-1.585	0.05	-0.151
11.049	21.425	76.099	1.061	20.787	76.08	1.047	-0.638	-0.019	-0.014	19.886	76.148	0.941	-1.539	0.049	-0.12	21.426	76.099	1.061	0.001	0	0	19.872	76.143	0.946	-1.553	0.044	-0.115
11.05	21.425	76.206	1.157	20.787	76.186	1.145	-0.638	-0.02	-0.012	19.886	76.256	1.053	-1.539	0.05	-0.104	21.426	76.206	1.158	0.001	0	0.001	19.872	76.252	1.053	-1.553	0.046	-0.104
11.051	22.236	76.345	0.895	21.304	76.324	0.893	-0.932	-0.021	-0.002	21.432	76.384	0.793	-0.804	0.039	-0.102	22.237	76.346	0.895	0.001	0.001	0	21.362	76.381	0.795	-0.874	0.036	-0.1
11.053	22.399	76.444	0.912	21.391	76.42	0.885	-1.008	-0.024	-0.027	21.807	76.488	0.862	-0.592	0.044	-0.05	22.401	76.444	0.912	0.002	0	0	21.719	76.485	0.86	-0.68	0.041	-0.052
11.054	22.4	76.525	0.922	21.392	76.496	0.906	-1.008	-0.029	-0.016	21.633	76.578	0.845	-0.767	0.053	-0.077	22.401	76.525	0.922	0.001	0	0	21.639	76.575	0.848	-0.761	0.05	-0.074
11.055	22.453	76.61	0.905	21.392	76.579	0.902	-1.061	-0.031	-0.003	21.207	76.671	0.808	-1.246	0.061	-0.097	22.454	76.61	0.905	0.001	0	0	21.796	76.667	0.814	-0.657	0.057	-0.091
11.056	22.453	76.683	0.844	21.392	76.651	0.822	-1.061	-0.032	-0.022	21.21	76.737	0.778	-1.243	0.054	-0.066	22.454	76.683	0.844	0.001	0	0	21.796	76.737	0.792	-0.657	0.054	-0.052
11.057	22.509	76.757	1.104	21.411	76.724	1.104	-1.098	-0.033	0	21.358	76.809	1.104	-1.151	0.052	0	22.511	76.757	1.104	0.002	0	0	21.995	76.813	1.104	-0.514	0.056	0
11.058	22.509	76.864	0.959	21.411	76.827	0.939	-1.098	-0.037	-0.02	21.36	76.912	0.898	-1.149	0.048	-0.061	22.51	76.864	0.959	0.001	0	0	21.995	76.923	0.898	-0.514	0.059	-0.061
11.059	22.509	76.954	1.095	21.411	76.916	1.073	-1.098	-0.038	-0.022	21.361	77.007	1.002	-1.148	0.053	-0.093	22.511	76.954	1.095	0.002	0	0	21.995	77.023	1.016	-0.514	0.069	-0.079
11.06	22.509	77.067	1.06	21.412	77.027	1.037	-1.097	-0.04	-0.023	21.36	77.121	0.97	-1.149	0.054	-0.09	22.511	77.067	1.06	0.002	0	0	21.996	77.141	0.983	-0.513	0.074	-0.077
11.061	22.509	77.188	1.169	21.412	77.147	1.152	-1.097	-0.041	-0.017	21.361	77.247	1.057	-1.148	0.059	-0.112	22.511	77.188	1.169	0.002	0	0	21.996	77.27	1.067	-0.513	0.082	-0.102
11.062	22.51	77.328	1.181	21.412	77.288	1.181	-1.098	-0.04	0	21.361	77.386	1.181	-1.149	0.058	0	22.511	77.328	1.181	0.001	0	0	21.996	77.409	1.181	-0.514	0.081	0
11.063	22.51	77.431	1.291	21.412	77.388	1.278	-1.098	-0.043	-0.013	21.362	77.495	1.139	-1.148	0.064	-0.152	22.511	77.431	1.291	0.001	0	0	21.996	77.521	1.141	-0.514	0.09	-0.15
11.064	22.51	77.592	1.401	21.412	77.549	1.389	-1.098	-0.043	-0.012	21.362	77.658	1.243	-1.148	0.066	-0.158	22.511	77.592	1.401	0.001	0	0	21.996	77.684	1.247	-0.514	0.092	-0.154
11.065	22.51	77.78	1.294	21.412	77.735	1.29	-1.098	-0.045	-0.004	21.362	77.848	1.137	-1.148	0.068	-0.157	22.511	77.78	1.294	0.001	0	0	21.996	77.874	1.137	-0.514	0.094	-0.157
11.066	22.51	77.876	1.408	21.412	77.824	1.392	-1.098	-0.052	-0.016	21.362	77.933	1.282	-1.148	0.057	-0.126	22.511	77.876	1.408	0.001	0	0	21.996	77.964	1.292	-0.514	0.088	-0.116
11.067	21.469	78.088	1.169	20.663	78.035	1.163	-0.806	-0.053	-0.006	19.417	78.15	1.109	-2.052	0.062	-0.06	21.469	78.088	1.169	0	0	0	19.787	78.183	1.109	-1.682	0.095	-0.06
11.068	22.025	78.317	0.741	20.946	78.269	0.741	-1.079	-0.048	0	20.14	78.355	0.741	-1.885	0.038	0	22.025	78.317	0.741	0	0	0	20.832	78.381	0.741	-1.193	0.064	0
11.069	22.124	78.386	1.087	20.978	78.34	1.087	-1.146	-0.046	0	20.343	78.429	1.087	-1.781	0.043	0	22.125	78.386	1.087	0.001	0	0	21.139	78.455	1.087	-0.985	0.069	0
11.07	22.448	78.552	1.014	21.18	78.504	0.989	-1.268	-0.048	-0.025	20.848	78.593	0.917	-1.6	0.041	-0.097	22.45	78.552	1.014	0.002	0	0	21.852	78.622	0.943	-0.596	0.07	-0.071
11.071	24.183	78.615	1.097	22.575	78.566	1.091	-1.608	-0.049	-0.006	22.966	78.658	0.979	-1.217	0.043	-0.118	24.185	78.615	1.097	0.002	0	0	24.33	78.69	0.981	0.147	0.075	-0.116
11.072	24.184	78.753	1.085	22.576	78.7	1.069	-1.608	-0.053	-0.016	22.967	78.803	1.042	-1.217	0.05	-0.043	24.186	78.753	1.084	0.002	0	-0.001	24.331	78.84	1.042	0.147	0.087	-0.043
11.073	24.186	78.888	1.25	22.576	78.837	1.249	-1.61	-0.051	-0.001	22.97	78.942	1.102	-1.216	0.054	-0.148	24.188	78.888	1.251	0.002	0	0.001	24.334	78.977	1.102	0.148	0.089	-0.148
11.074	24.19	78.999	0.885	22.577	78.952	0.882	-1.613	-0.047	-0.003	22.972	79.052	0.779	-1.218	0.053	-0.106	24.192	78.999	0.885	0.002	0	0	24.35	79.084	0.78	0.16	0.085	-0.105
11.075	24.174	79.083	0.847	22.579	79.037	0.846	-1.595	-0.046	-0.001	22.976	79.134	0.748	-1.198	0.051	-0.099	24.177	79.083	0.847	0.003	0	0	24.342	79.167	0.749	0.168	0.084	-0.098
11.076	24.175	79.209	1.182	22.58	79.169	1.184	-1.595	-0.04	0.002	22.979	79.249	1.039	-1.196	0.04	-0.143	24.179	79.209	1.183	0.004	0	0.001	24.345	79.278	1.039	0.17	0.069	-0.143
11.077	23.955	79.331	0.895	22.583	79.299	0.895	-1.372	-0.032	0	22.983	79.365	0.789	-0.972	0.034	-0.106	23.96	79.331	0.895	0.005	0	0	24.162	79.392	0.789	0.207	0.061	-0.106
11.078	23.216	79.428	0.676	22.509	79.399	0.429	-0.707	-0.029	-0.247	22.847	79.464	0.384	-0.369	0.036	-0.292	23.226	79.433	0.429	0.01	0.005	-0.247	23.425	79.493	0.381	0.209	0.065	-0.295
11.079	23.217	79.511	1.135	22.51	79.48	1.152	-0.707	-0.031	0.017	22.85	79.545	1.017	-0.367	0.034	-0.118	23.225	79.507	1.149	0.008	-0.004	0.014	23.427	79.569	1.018	0.21	0.058	-0.117
11.081	21.921	79.857	0.572	21.653	79.836	0.572	-0.268	-0.021	0	21.446	79.882	0.512	-0.475	0.025	-0.06	21.935	79.857	0.572	0.014	0	0	21.628	79.898	0.512	-0.293	0.041	-0.06
11.082	19.236	79.895	0.746	18.757	79.875	0.747	-0.479	-0.02	0.001	18.156	79.92	0.669	-1.08	0.025	-0.077	19.242	79.894	0.747	0.006	-0.001	0.001	18.689	79.936	0.67	-0.547	0.041	-0.076
11.083	16.754	79.912	0.726	16.235	79.892	0.724	-0.519	-0.02	-0.002	15.71	79.941	0.66	-1.044	0.029	-0.066	16.756	79.911	0.727	0.002	-0.001	0.001	16.285	79.957	0.662	-0.469	0.045	-0.064
11.084	18.222	79.983	0.722	17.686	79.974	0.72	-0.536	-0.009	-0.002	17.427	80.019	0.646	-0.795	0.036	-0.076	18.223	79.983	0.722	0.001	0	0	18.01	80.025	0.647	-0.212	0.042	-0.075
11.085	18.532	79.987	0.545	18.004	79.979	0.544	-0.528	-0.008	-0.001	17.785	80.024	0.487	-0.747	0.037	-0.058	18.532	79.987	0.545	0	0	0	18.357	80.029	0.488	-0.175	0.042	-0.057
11.086	18.532	80.02	0.629	18.008	80.022	0.628	-0.524	0.002	-0.001	17.786	80.065	0.564	-0.746	0.045	-0.065	18.535	80.02	0.629	0.003	0	0	18.362	80.059	0.565	-0.17	0.039	-0.064
11.087	29.657	80.057	1.066	29.649	80.062	1.077	-0.008	0.005	0.011	29.233	80.101	0.971	-0.424	0.044	-0.095	29.653	80.057	1.066	-0.004	0	0	29.255	80.094	0.965	-0.402	0.037	-0.101
11.088	29.692	80.152	1.556	29.688	80.155	1.553	-0.004	0.003	-0.003	29.391	80.215	1.45	-0.301	0.063	-0.106	29.689	80.152	1.556	-0.003	0	0	29.394	80.211	1.456	-0.298	0.059	-0.1
11.089	29.147	80.517	1.681	29.143	80.518	1.681	-0.004	0.001	0	28.613	80.579	1.521	-0.534	0.062	-0.16	29.144	80.517	1.68	-0.003	0	-0.001	28.617	80.578	1.523	-0.53	0.061	-0.158
11.09	29.148	80.76	2.116	29.143	80.76	2.115	-0.005	0	-0.001	28.613	80.838	1.985	-0.535	0.078	-0.131	29.144	80.76	2.116	-0.004	0	0	28.617	80.838	1.986	-0.531	0.078	-0.13
11.091	29.148	80.96	1.004	29.143	80.961	1.003	-0.005	0.001	-0.001	28.613	81.058	0.929	-0.535	0.098	-0.075	29.144	80.96	1.004	-0.004	0	0	28.617	81.058	0.929	-0.531	0.098	-0.075
11.092	29.3	81.302	0.878	29.296	81.302	0.878	-0.004	0	0	29.015	81.42	0.797	-0.285	0.118	-0.081	29.296	81.301	0.878	-0.004	-0.001	0	29.019	81.42	0.797	-0.281	0.118	-0.081
11.093	29.3	81.262	1.564	29.296	81.262	1.562	-0.004	0	-0.002	28.986	81.387	1.419	-0.314	0.125	-0.145	29.296	81.261	1.564	-0.004	-0.001	0	28.99	81.387	1.419	-0.31	0.125	-0.145
11.094	28.44	81.528	0.746	28.438	81.528	0.746	-0.002	0	0	28.155	81.602	0.71	-0.285	0.074	-0.036	28.438	81.527	0.746	-0.002	-0.001	0	28.155	81.602	0.71	-0.285	0.074	-0.036
11.095	3.335	81.573	0.469	3.335	81.573	0.469	0	0	0	3.326	81.64	0.456	-0.009	0.067	-0.013	3.336	81.573	0.469	0.001	0	0	3.326	81.64	0.456	-0.009	0.067	-0.013
20.014	12.26	75.087	0.826	12.446	75.093	0.831	0.186	0.006	0.005	12.113	75.083	0.809	-0.147	-0.004	-0.017	12.259	75.087	0.826	-0.001	0	0	11.87	75.072	0.808	-0.39	-0.015	-0.018

Recalibrate:	8A			6						7						8						9					
All - 100 year design flow + 20%	"n" 0.100/.035/0.100 50% Block Farm Mill Model adjustments			"n" 0.100/.035/0.100						"n" 0.100/.040/0.100						"n" 0.100/.035/0.100 & 50% Block Farm Mill						"n" 0.100/.040/0.100 & 50% Block Farm Mill					
	Run Results			Run Results			Change from model values			Run Results			Change from model values			Run Results			Change from model values			Run Results			Change from model values		
Node	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
20.015	12.271	75.158	0.502	12.455	75.165	0.502	0.184	0.007	0	12.121	75.162	0.491	-0.15	0.004	-0.011	12.269	75.158	0.502	-0.002	0	0	11.874	75.15	0.491	-0.397	-0.008	-0.011
20.016	12.3	75.185	0.598	12.493	75.192	0.598	0.193	0.007	0	12.157	75.193	0.583	-0.143	0.008	-0.015	12.3	75.185	0.598	0	0	0	11.891	75.182	0.583	-0.409	-0.003	-0.015
20.017	12.309	75.23	0.735	12.493	75.237	0.735	0.184	0.007	0	12.16	75.242	0.735	-0.149	0.012	0	12.307	75.23	0.735	-0.002	0	0	11.893	75.232	0.735	-0.416	0.002	0
20.018	12.312	75.282	0.706	12.495	75.288	0.706	0.183	0.006	0	12.162	75.298	0.706	-0.15	0.016	0	12.311	75.282	0.706	-0.001	0	0	11.894	75.289	0.706	-0.418	0.007	0
20.019	12.316	75.352	0.83	12.496	75.359	0.83	0.18	0.007	0	12.163	75.374	0.83	-0.153	0.022	0	12.315	75.352	0.83	-0.001	0	0	11.895	75.365	0.83	-0.421	0.013	0
20.02	12.843	75.444	0.856	13.092	75.45	0.854	0.249	0.006	-0.002	12.952	75.47	0.818	0.109	0.026	-0.038	12.842	75.444	0.856	-0.001	0	0	12.579	75.462	0.818	-0.264	0.018	-0.038
20.021	12.844	75.559	0.903	13.093	75.565	0.903	0.249	0.006	0	12.953	75.591	0.903	0.109	0.032	0	12.843	75.559	0.903	-0.001	0	0	12.58	75.582	0.903	-0.264	0.023	0
20.022	12.844	75.663	0.839	13.093	75.669	0.842	0.249	0.006	0.003	12.953	75.703	0.769	0.109	0.04	-0.07	12.843	75.663	0.839	-0.001	0	0	12.58	75.693	0.765	-0.264	0.03	-0.074
20.023	12.844	75.778	0.979	13.093	75.786	0.991	0.249	0.008	0.012	12.959	75.83	0.941	0.115	0.052	-0.038	12.843	75.778	0.979	-0.001	0	0	12.582	75.818	0.924	-0.262	0.04	-0.055
20.024	12.886	75.901	0.575	13.173	75.91	0.575	0.287	0.009	0	13.096	75.954	0.575	0.21	0.053	0	12.884	75.901	0.575	-0.002	0	0	12.683	75.939	0.575	-0.203	0.038	0
20.025	13.155	75.92	0.89	13.658	75.929	0.89	0.503	0.009	0	13.79	75.969	0.89	0.635	0.049	0	13.154	75.92	0.89	-0.001	0	0	13.224	75.954	0.89	0.069	0.034	0
20.026	13.163	75.973	0.789	13.666	75.981	0.789	0.503	0.008	0	13.789	76.015	0.7	0.626	0.042	-0.089	13.161	75.973	0.79	-0.002	0	0.001	13.2	76.002	0.7	0.037	0.029	-0.089
20.027	12.356	76.069	0.883	13.289	76.077	0.883	0.933	0.008	0	12.246	76.094	0.883	-0.11	0.025	0	12.354	76.069	0.883	-0.002	0	0	11.726	76.084	0.883	-0.63	0.015	0
20.029	12.356	76.274	1.503	13.284	76.303	1.567	0.928	0.029	0.064	12.249	76.323	1.416	-0.107	0.049	-0.087	12.354	76.274	1.503	-0.002	0	0	11.721	76.304	1.382	-0.635	0.03	-0.121
20.03	12.355	76.542	1.32	13.284	76.582	1.36	0.929	0.04	0.04	12.249	76.612	1.213	-0.106	0.07	-0.107	12.354	76.542	1.32	-0.001	0	0	11.721	76.586	1.195	-0.634	0.044	-0.125
20.031	12.356	76.832	1.331	13.284	76.878	1.375	0.928	0.046	0.044	12.249	76.911	1.232	-0.107	0.079	-0.099	12.354	76.832	1.33	-0.002	0	-0.001	11.721	76.883	1.207	-0.635	0.051	-0.124
20.032	12.356	76.853	1.272	13.284	76.9	1.31	0.928	0.047	0.038	12.249	76.932	1.173	-0.107	0.079	-0.099	12.354	76.853	1.272	-0.002	0	0	11.721	76.903	1.152	-0.635	0.05	-0.12
20.033	12.439	76.946	1.321	13.446	76.995	1.362	1.007	0.049	0.041	12.486	77.03	1.224	0.047	0.084	-0.097	12.437	76.946	1.321	-0.002	0	0	11.891	77	1.199	-0.548	0.054	-0.122
20.034	12.439	76.954	1.344	13.446	77.003	1.389	1.007	0.049	0.045	12.486	77.039	1.25	0.047	0.085	-0.094	12.437	76.954	1.344	-0.002	0	0	11.891	77.009	1.222	-0.548	0.055	-0.122
20.035	12.439	77.042	0.938	13.446	77.094	0.973	1.007	0.052	0.035	12.486	77.126	0.88	0.047	0.084	-0.058	12.437	77.042	0.938	-0.002	0	0	11.891	77.093	0.861	-0.548	0.051	-0.077
20.036	12.439	77.161	0.756	13.446	77.22	0.756	1.007	0.059	0	12.486	77.242	0.668	0.047	0.081	-0.088	12.437	77.161	0.756	-0.002	0	0	11.891	77.208	0.668	-0.548	0.047	-0.088
20.037	12.44	77.19	0.96	13.447	77.241	0.999	1.007	0.051	0.039	12.487	77.275	0.905	0.047	0.085	-0.055	12.438	77.19	0.96	-0.002	0	0	11.892	77.243	0.882	-0.548	0.053	-0.078
20.038	8.316	77.27	0.609	9.135	77.326	0.64	0.819	0.056	0.031	8.06	77.362	0.545	-0.256	0.092	-0.064	8.315	77.27	0.609	-0.001	0	0	7.659	77.327	0.536	-0.657	0.057	-0.073
20.039	8.317	77.332	0.713	9.137	77.388	0.743	0.82	0.056	0.03	8.063	77.419	0.636	-0.254	0.087	-0.077	8.315	77.332	0.712	-0.002	0	-0.001	7.66	77.386	0.626	-0.657	0.054	-0.087
20.04	8.348	77.398	0.635	9.314	77.456	0.645	0.966	0.058	0.01	8.443	77.48	0.6	0.095	0.082	-0.035	8.347	77.398	0.635	-0.001	0	0	7.813	77.447	0.6	-0.535	0.049	-0.035
20.041	8.372	77.449	0.667	9.465	77.503	0.695	1.093	0.054	0.028	8.67	77.528	0.667	0.298	0.079	0	8.37	77.449	0.667	-0.002	0	0	7.928	77.493	0.667	-0.444	0.044	0
20.043	8.372	77.497	0.69	9.468	77.561	0.695	1.096	0.064	0.005	8.676	77.585	0.69	0.304	0.088	0	8.37	77.497	0.69	-0.002	0	0	7.929	77.543	0.69	-0.443	0.046	0
20.044	8.421	77.609	1.053	9.777	77.659	1.053	1.356	0.05	0	9.123	77.671	1.053	0.702	0.062	0	8.419	77.609	1.053	-0.002	0	0	8.114	77.636	1.053	-0.307	0.027	0
20.045	8.422	77.668	0.958	9.778	77.713	1.055	1.356	0.045	0.097	9.128	77.738	0.956	0.706	0.07	-0.002	8.419	77.668	0.958	-0.003	0	0	8.115	77.703	0.886	-0.307	0.035	-0.072
20.046	8.422	77.852	0.588	9.779	77.921	0.59	1.357	0.069	0.002	9.131	77.971	0.527	0.709	0.119	-0.061	8.419	77.852	0.588	-0.003	0	0	8.116	77.889	0.525	-0.306	0.037	-0.063
20.047	8.422	77.878	0.515	9.779	77.941	0.571	1.357	0.063	0.056	9.131	77.992	0.512	0.709	0.114	-0.003	8.419	77.878	0.515	-0.003	0	0	8.116	77.901	0.493	-0.306	0.023	-0.022
20.048	8.422	77.889	0.422	9.779	77.957	0.423	1.357	0.068	0.001	9.131	78.005	0.38	0.709	0.116	-0.042	8.419	77.889	0.422	-0.003	0	0	8.116	77.912	0.38	-0.306	0.023	-0.042
20.049	8.422	77.906	0.706	9.782	77.977	0.706	1.36	0.071	0	9.132	78.024	0.706	0.71	0.118	0	8.42	77.906	0.706	-0.002	0	0	8.118	77.933	0.706	-0.304	0.027	0
20.05	8.423	77.995	0.662	9.794	78.062	0.662	1.371	0.067	0	9.137	78.095	0.654	0.714	0.1	-0.008	8.421	77.995	0.662	-0.002	0	0	8.12	78.026	0.654	-0.303	0.031	-0.008
20.051	8.424	78.022	0.903	9.796	78.059	1.007	1.372	0.037	0.104	9.139	78.096	0.898	0.715	0.074	-0.005	8.421	78.022	0.902	-0.003	0	-0.001	8.122	78.045	0.848	-0.302	0.023	-0.055
20.052	8.424	78.052	1.329	9.796	78.097	1.411	1.372	0.045	0.082	9.139	78.128	1.329	0.715	0.076	0	8.421	78.052	1.329	-0.003	0	0	8.122	78.071	1.329	-0.302	0.019	0
20.053	8.423	78.174	0.932	9.796	78.236	1.007	1.373	0.062	0.075	9.139	78.272	0.899	0.716	0.098	-0.033	8.421	78.174	0.931	-0.002	0	-0.001	8.122	78.206	0.865	-0.301	0.032	-0.067
20.054	8.423	78.322	1.002	9.796	78.4	1.037	1.373	0.078	0.035	9.139	78.441	0.922	0.716	0.119	-0.08	8.421	78.322	1	-0.002	0	-0.002	8.123	78.368	0.894	-0.3	0.046	-0.108
20.055	5.949	78.441	0.8	7.245	78.528	0.829	1.296	0.087	0.029	6.754	78.567	0.726	0.805	0.126	-0.074	5.947	78.441	0.795	-0.002	0	-0.005	5.912	78.492	0.7	-0.037	0.051	-0.1
20.056	5.662	78.555	0.566	6.796	78.659	0.583	1.134	0.104	0.017	6.342	78.692	0.515	0.68	0.137	-0.051	5.661	78.555	0.567	-0.001	0	0.001	5.512	78.611	0.502	-0.15	0.056	-0.064
20.057	5.591	78.583	0.718	6.892	78.68	0.718	1.301	0.097	0	6.541	78.715	0.718	0.95	0.132	0	5.59	78.583	0.718	-0.001	0	0	5.456	78.638	0.718	-0.135	0.055	0
20.058	5.591	79.593	0.966	6.892	79.232	1.655	1.301	-0.361	0.689	6.541	79.199	1.627	0.95	-0.394	0.661	5.59	79.593	0.966	-0.001	0	0	5.456	79.572	0.959	-0.135	-0.021	-0.007
20.059	5.611	79.656	0.518	6.892	79.381	0.882	1.281	-0.275	0.364	6.541	79.376	0.842	0.93	-0.28	0.324	5.609	79.655	0.518	-0.002	-0.001	0	5.47	79.642	0.513	-0.141	-0.014	-0.005
20.06	5.564	79.677	0.434	8.182	79.512	0.614	2.618	-0.165	0.18	7.532	79.513	0.568	1.968	-0.164	0.134	5.564	79.677	0.434	0	0	0	5.333	79.667	0.418	-0.231	-0.01	-0.016
20.061	6.612	79.689	0.527	8.955	79.568	0.727	2.343	-0.121	0.2	8.34	79.576	0.667	1.728	-0.113	0.14	6.611	79.688	0.527	-0.001	-0.001	0	6.309	79.683	0.504	-0.303	-0.006	-0.023
20.062	9.428	79.706	0.707	10.126	79.639	0.833	0.698	-0.067	0.126	9.712	79.657	0.781	0.284	-0.049	0.074	9.422	79.706	0.707	-0.006	0	0	9.136	79.712	0.68	-0.292	0.006	-0.027
20.064	9.829	79.853	0.578	10.269	79.827	0.628	0.44	-0.026	0.05	9.931	79.855	0.582	0.102	0.002	0.004	9.822	79.853	0.577	-0.007	0	-0.001	9.585	79.873	0.545	-0.244	0.02	-0.033
20.065	9.462	79.889	0.687	9.986	79.869	0.744	0.524	-0.02	0.057	9.361	79.904	0.67	-0.101	0.015	-0.017	9.458	79.888	0.687	-0.004	-0.001	0	8.915	79.917	0.626	-0.547	0.028	-0.061
20.066	9.536	79.965	0.595	10.021	79.959	0.663	0.485	-0.006	0.068	9.488	79.992	0.591	-0.048	0.027	-0.004	9.533	79.965	0.595	-0.003	0	0	9.045	79.994	0.542	-0.491	0.029	-0.053
20.067	10.174	80.024	0.483	10.664	80.025	0.506	0.49	0.001	0.023	10.014	80.058	0.458	-0.16	0.034	-0.025	10.173	80.024	0.483	-0.001	0	0	9.53	80.054	0.44	-0.644	0.03	-0.043
20.068	11.128	80.057	0.73	11.649	80.062	0.757	0.521	0.005	0.027	11.445	80.101	0.688	0.317	0.044	-0.042	11.126	80.057	0.73	-0.002	0	0	10.891	80.094	0.665	-0.237	0.037	-0.065
30.033	1.602	77.758	0.504	1.368	77.722	0.504	-0.234	-0.036	0	1.995	77.824	0.504	0.393	0.066	0	1.602	77.758	0.504	0	0	0	2.387	77.893	0.505	0.785	0.135	0.001
30.034	1.602	78.183	0.14	1.368	78.155	0.126	-0.234	-0.028	-0.014	1.798	78.199	0.152	0.196	0.016	0.012	1.602	78.183	0.14	0	0	0	1.951	78.218	0.159	0.349	0.035	0.019
30.035	1.601	78.551	0.521	1.368	78.514	0.527	-0.233	-0.037	0.006	1.799	78.584	0.526	0.198	0.033	0.005	1.602	78.551	0.521	0.001	0	0	1.951	78.607	0.525	0.35	0.056	0.004
30.036	1.201	78.554	0.246	0.968	78.516	0.236	-0.233	-0.038	-0.01	1.399	78.586	0.25	0.198	0.032	0.004	1.202	78.554	0.246	0.001	0	0	1.551	78.609	0.255	0.35	0.055	0.009
30.037	1.201	78.574	0.113	0.968	78.534	0.11	-0.233	-0.04	-0.003	1.399	78.608	0.113	0.198	0.034	0	1.202	78.574	0.113	0.001	0	0	1.551	78.632	0.114	0.35	0.058	0.001
30.038	1.316	78.601	0.346	0.993	78.554	0.302	-0.323	-0.047	-0.044	1.649	78.639	0.389	0.333	0.038	0.043	1.316	78.601	0.346	0	0	0	1.939	78.668	0.426	0.623	0.067	0.08
11.036u	14.817	75.035	0.76	14.709	75.029	0.758	-0.108	-0.006	-0.002	13.893	74.98	0.745	-0.924	-0.055	-0.015	14.817	75.035	0.76	0	0	0	13.848	74.977	0.745	-0.969	-0.058	-0.015

Recalibrate:	8A			6						7						8						9					
All - 100 year design flow + 20%	"n" 0.100/.035/0.100 50% Block Farm Mill Model adjustments			"n" 0.100/.035/0.100						"n" 0.100/.040/0.100						"n" 0.100/.035/0.100 & 50% Block Farm Mill						"n" 0.100/.040/0.100 & 50% Block Farm Mill					
	Run Results			Run Results			Change from model values			Run Results			Change from model values			Run Results			Change from model values			Run Results			Change from model values		
Node	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
11.043J	17.431	75.403	0.902	17.133	75.395	0.893	-0.298	-0.008	-0.009	16.045	75.412	0.841	-1.386	0.009	-0.061	17.432	75.403	0.902	0.001	0	0	15.92	75.409	0.841	-1.511	0.006	-0.061
11.052d	22.399	76.408	1.061	21.391	76.386	1.029	-1.008	-0.022	-0.032	21.807	76.454	1.001	-0.592	0.046	-0.06	22.401	76.408	1.061	0.002	0	0	21.719	76.452	0.998	-0.68	0.044	-0.063
11.052u	22.399	76.425	1.048	21.391	76.402	1.017	-1.008	-0.023	-0.031	21.807	76.47	0.99	-0.592	0.045	-0.058	22.401	76.425	1.048	0.002	0	0	21.719	76.467	0.988	-0.68	0.042	-0.06
11.067us-CS8	21.64	78.278	0.957	20.723	78.231	0.944	-0.917	-0.047	-0.013	19.591	78.323	0.847	-2.049	0.045	-0.11	21.641	78.279	0.957	0.001	0.001	0	20.169	78.349	0.857	-1.471	0.071	-0.1
11.068us-CS9	22.121	78.34	0.954	20.978	78.294	0.938	-1.143	-0.046	-0.016	20.317	78.382	0.85	-1.804	0.042	-0.104	22.123	78.34	0.954	0.002	0	0	21.071	78.408	0.863	-1.05	0.068	-0.091
11.069us-CS10	22.44	78.539	0.936	21.18	78.491	0.917	-1.26	-0.048	-0.019	20.791	78.578	0.842	-1.649	0.039	-0.094	22.442	78.539	0.936	0.002	0	0	21.719	78.608	0.861	-0.721	0.069	-0.075
11.070J	22.468	78.615	1.024	21.183	78.566	1	-1.285	-0.049	-0.024	20.918	78.658	0.925	-1.55	0.043	-0.099	22.47	78.615	1.024	0.002	0	0	21.991	78.69	0.95	-0.477	0.075	-0.074
11.073us	24.187	78.955	0.975	22.576	78.906	0.974	-1.611	-0.049	-0.001	22.97	79.009	0.861	-1.217	0.054	-0.114	24.19	78.955	0.975	0.003	0	0	24.349	79.043	0.861	0.162	0.088	-0.114
11.080d	21.921	79.656	1.182	21.652	79.634	1.188	-0.269	-0.022	0.006	21.446	79.699	1.118	-0.475	0.043	-0.064	21.935	79.654	1.184	0.014	-0.002	0.002	21.628	79.717	1.112	-0.293	0.061	-0.07
11.080u	21.921	79.781	1.075	21.652	79.759	1.079	-0.269	-0.022	0.004	21.446	79.812	1.029	-0.475	0.031	-0.046	21.935	79.78	1.077	0.014	-0.001	0.002	21.628	79.829	1.025	-0.293	0.048	-0.05
11.083J	19.605	79.912	0.985	19.088	79.892	0.984	-0.517	-0.02	-0.001	18.565	79.941	0.873	-1.04	0.029	-0.112	19.61	79.911	0.986	0.005	-0.001	0.001	19.142	79.957	0.874	-0.463	0.045	-0.111
11.087J	18.537	80.057	0.703	18.011	80.062	0.702	-0.526	0.005	-0.001	17.788	80.101	0.623	-0.749	0.044	-0.08	18.542	80.057	0.704	0.005	0	0.001	18.365	80.094	0.624	-0.172	0.037	-0.079
11.088US-ST04	29.146	80.267	0.388	29.142	80.268	0.387	-0.004	0.001	-0.001	28.613	80.314	0.372	-0.533	0.047	-0.016	29.144	80.267	0.388	-0.002	0	0	28.616	80.311	0.373	-0.53	0.044	-0.015
11.094ds	28.44	81.468	1.169	28.437	81.468	1.169	-0.003	0	0	28.155	81.552	1.1	-0.285	0.084	-0.069	28.438	81.468	1.169	-0.002	0	0	28.154	81.552	1.1	-0.286	0.084	-0.069
11.095J	28.442	81.573	0.946	28.44	81.573	0.946	-0.002	0	0	28.157	81.64	0.908	-0.285	0.067	-0.038	28.44	81.573	0.946	-0.002	0	0	28.156	81.64	0.908	-0.286	0.067	-0.038
20.013u	12.26	75.084	0.815	12.446	75.089	0.821	0.186	0.005	0.006	12.113	75.079	0.802	-0.147	-0.005	-0.013	12.259	75.084	0.815	-0.001	0	0	11.87	75.069	0.791	-0.39	-0.015	-0.024
20.028d	12.356	76.242	1.649	13.284	76.27	1.722	0.928	0.028	0.073	12.248	76.286	1.563	-0.108	0.044	-0.086	12.354	76.242	1.649	-0.002	0	0	11.721	76.268	1.523	-0.635	0.026	-0.126
20.028u	12.356	76.242	1.649	13.284	76.27	1.722	0.928	0.028	0.073	12.248	76.286	1.563	-0.108	0.044	-0.086	12.354	76.242	1.649	-0.002	0	0	11.721	76.268	1.523	-0.635	0.026	-0.126
20.038J	12.442	77.27	0.915	13.449	77.326	0.927	1.007	0.056	0.012	12.495	77.362	0.82	0.053	0.092	-0.095	12.438	77.27	0.915	-0.004	0	0	11.893	77.327	0.816	-0.549	0.057	-0.099
20.042d	8.372	77.48	0.751	9.465	77.536	0.751	1.093	0.056	0	8.671	77.562	0.751	0.299	0.082	0	8.37	77.479	0.751	-0.002	-0.001	0	7.928	77.525	0.751	-0.444	0.045	0
20.042u	8.372	77.487	0.751	9.465	77.546	0.751	1.093	0.059	0	8.671	77.57	0.751	0.299	0.083	0	8.37	77.487	0.751	-0.002	0	0	7.928	77.532	0.751	-0.444	0.045	0
20.050us	8.424	78.03	0.792	9.795	78.095	0.792	1.371	0.065	0	9.139	78.126	0.792	0.715	0.096	0	8.421	78.03	0.792	-0.003	0	0	8.122	78.063	0.792	-0.302	0.033	0
20.054us-CS1	8.546	78.423	0.788	9.796	78.508	0.806	1.25	0.085	0.018	9.139	78.545	0.725	0.593	0.122	-0.063	8.527	78.423	0.787	-0.019	0	-0.001	8.124	78.47	0.695	-0.422	0.047	-0.093
20.054us-CS3	5.984	78.423	0.645	7.245	78.508	0.667	1.261	0.085	0.022	6.754	78.545	0.581	0.77	0.122	-0.064	5.947	78.423	0.641	-0.037	0	-0.004	5.912	78.47	0.559	-0.072	0.047	-0.086
20.055us-CS4	5.772	78.524	0.478	7.057	78.627	0.474	1.285	0.103	-0.004	6.729	78.658	0.422	0.957	0.134	-0.056	5.77	78.524	0.477	-0.002	0	-0.001	5.68	78.578	0.41	-0.092	0.054	-0.068
20.056us-CS5	5.591	78.591	0.43	6.892	78.692	0.445	1.301	0.101	0.015	6.541	78.724	0.407	0.95	0.133	-0.023	5.59	78.591	0.43	-0.001	0	0	5.456	78.645	0.407	-0.135	0.054	-0.023
20.059us-1	5.611	79.661	0.498	6.892	79.4	0.829	1.281	-0.261	0.331	6.541	79.398	0.789	0.93	-0.263	0.291	5.609	79.661	0.498	-0.002	0	0	5.471	79.649	0.493	-0.14	-0.012	-0.005
20.059us-2	5.549	79.661	0.686	8.177	79.4	1.062	2.628	-0.261	0.376	7.527	79.398	0.995	1.978	-0.263	0.309	5.55	79.661	0.686	0.001	0	0	5.319	79.649	0.667	-0.23	-0.012	-0.019
20.063d	9.829	79.788	0.894	10.269	79.753	0.966	0.44	-0.035	0.072	9.931	79.787	0.904	0.102	-0.001	0.01	9.822	79.788	0.894	-0.007	0	0	9.585	79.813	0.852	-0.244	0.025	-0.042
20.063u	9.829	79.828	0.862	10.269	79.798	0.925	0.44	-0.03	0.063	9.931	79.828	0.871	0.102	0	0.009	9.822	79.827	0.862	-0.007	-0.001	0	9.585	79.849	0.825	-0.244	0.021	-0.037
30.033us-CS13	1.602	78.058	0.842	1.368	78.029	0.81	-0.234	-0.029	-0.032	1.798	78.091	0.842	0.196	0.033	0	1.602	78.058	0.842	0	0	0	1.951	78.121	0.843	0.349	0.063	0.001
30.034!	1.602	78.176	0.63	1.367	78.15	0.577	-0.235	-0.026	-0.053	1.798	78.19	0.683	0.196	0.014	0.053	1.602	78.176	0.63	0	0	0	1.951	78.208	0.71	0.349	0.032	0.08
CS2	3.434	78.423	1.811	2.551	78.508	1.811	-0.883	0.085	0	2.386	78.545	1.811	-1.048	0.122	0	3.432	78.423	1.811	-0.002	0	0	2.214	78.47	1.811	-1.22	0.047	0
CS2US	3.221	78.652	0.72	2.743	78.653	0.727	-0.478	0.001	0.007	2.416	78.677	0.722	-0.805	0.025	0.002	3.211	78.651	0.72	-0.01	-0.001	0	2.456	78.626	0.671	-0.765	-0.026	-0.049
CS6	2.849	78.919	0.799	3.158	78.951	0.817	0.309	0.032	0.018	3.034	78.976	0.731	0.185	0.057	-0.068	2.848	78.919	0.801	-0.001	0	0.002	2.794	78.95	0.723	-0.055	0.031	-0.076
CS7	2.761	78.732	0.776	3	78.751	0.776	0.239	0.019	0	2.799	78.773	0.691	0.038	0.041	-0.085	2.761	78.729	0.762	0	-0.003	-0.014	2.633	78.745	0.691	-0.128	0.013	-0.085
ST02ds	2.849	79.389	0.953	3.158	79.274	1.147	0.309	-0.115	0.194	3.034	79.286	1.082	0.185	-0.103	0.129	2.848	79.389	0.953	-0.001	0	0	2.833	79.414	0.94	-0.016	0.025	-0.013
ST03	2.849	79.373	0.901	3.158	79.236	1.203	0.309	-0.137	0.302	3.034	79.242	1.115	0.185	-0.131	0.214	2.848	79.373	0.9	-0.001	0	-0.001	2.837	79.395	0.895	-0.012	0.022	-0.006
ST03ds	2.849	79.002	1.472	3.158	79.038	1.546	0.309	0.036	0.074	3.034	79.06	1.429	0.185	0.058	-0.043	2.848	79.002	1.472	-0.001	0	0	2.837	79.03	1.387	-0.012	0.028	-0.085
W3.096	26.533	81.573	0.654	26.531	81.573	0.654	-0.002	0	0	26.518	81.64	0.626	-0.015	0.067	-0.028	26.529	81.573	0.654	-0.004	0	0	26.515	81.64	0.626	-0.018	0.067	-0.028
W3.097	26.535	81.613	0.605	26.532	81.613	0.606	-0.003	0	0.001	26.519	81.676	0.576	-0.016	0.063	-0.029	26.532	81.613	0.605	-0.003	0	0	26.517	81.676	0.576	-0.018	0.063	-0.029
W3.098	26.541	81.622	0.516	26.538	81.622	0.516	-0.003	0	0	26.527	81.684	0.491	-0.014	0.062	-0.025	26.54	81.622	0.516	-0.001	0	0	26.525	81.683	0.491	-0.016	0.061	-0.025
							Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)				Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)				Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)				Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
						Average	0.068	-0.008	0.022			Average	-0.308	0.039	-0.038			Average	-0.001	0.000	-0.002			Average	-0.433	0.042	-0.058
						Maximum	2.628	0.104	0.689			Maximum	1.978	0.137	0.661			Maximum	0.014	0.005	0.014			Maximum	0.785	0.135	0.08
						Minimum	-1.613	-0.361	-0.247			Minimum	-2.052	-0.394	-0.292			Minimum	-0.037	-0.004	-0.247			Minimum	-1.682	-0.058	-0.295

Recalibrate:	100 year design flow + 20%			5 year design flow						20 year design flow						100 year design flow						1000 year design flow					
8A	"n" 0.100/.035/0.100 50% Block Farm Mill Model adjustments																										
	Run Results			Run Results			Change from model values			Run Results			Change from model values			Run Results			Change from model values			Run Results			Change from model values		
Node	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
11.037	14.817	75.036	0.821	9.018	74.651	0.703	-5.799	-0.385	-0.118	11.953	74.852	0.774	-2.864	-0.184	-0.047	14.075	74.991	0.81	-0.742	-0.045	-0.011	15.504	75.076	0.831	0.687	0.04	0.01
11.038	14.819	75.103	0.699	9.018	74.707	0.67	-5.801	-0.396	-0.029	11.953	74.913	0.695	-2.866	-0.19	-0.004	14.075	75.056	0.698	-0.744	-0.047	-0.001	15.482	75.145	0.698	0.663	0.042	-0.001
11.039	14.922	75.165	0.655	9.018	74.761	0.625	-5.904	-0.404	-0.03	11.954	74.97	0.654	-2.968	-0.195	-0.001	14.09	75.117	0.655	-0.832	-0.048	0	15.738	75.207	0.654	0.816	0.042	-0.001
11.04	14.922	75.2	0.6	9.018	74.814	0.559	-5.904	-0.386	-0.041	11.954	75.021	0.591	-2.968	-0.179	-0.009	14.09	75.156	0.597	-0.832	-0.044	-0.003	15.738	75.239	0.608	0.816	0.039	0.008
11.041	17.431	75.237	0.721	9.018	74.858	0.596	-8.413	-0.379	-0.125	11.954	75.068	0.615	-5.477	-0.169	-0.106	15.492	75.197	0.672	-1.939	-0.04	-0.049	19.342	75.273	0.77	1.911	0.036	0.049
11.042	17.431	75.32	0.837	9.018	74.905	0.801	-8.413	-0.415	-0.036	11.954	75.122	0.838	-5.477	-0.198	0.001	15.492	75.27	0.838	-1.939	-0.05	0.001	19.343	75.365	0.838	1.912	0.045	0.001
11.043	21.411	75.403	1.108	9.52	75	0.963	-11.891	-0.403	-0.145	13.439	75.207	0.963	-7.972	-0.196	-0.145	18.718	75.351	1.019	-2.693	-0.052	-0.089	24.035	75.448	1.193	2.624	0.045	0.085
11.044	21.412	75.553	1.396	9.52	75.105	0.964	-11.892	-0.448	-0.432	13.44	75.31	1.099	-7.972	-0.243	-0.297	18.72	75.482	1.301	-2.692	-0.071	-0.095	24.035	75.616	1.482	2.623	0.063	0.086
11.045	21.417	75.775	0.966	9.52	75.243	0.79	-11.897	-0.532	-0.176	13.447	75.46	0.869	-7.97	-0.315	-0.097	18.73	75.68	0.945	-2.687	-0.095	-0.021	24.017	75.856	0.977	2.6	0.081	0.011
11.046	21.446	75.885	0.718	9.52	75.34	0.715	-11.926	-0.545	-0.003	13.464	75.574	0.719	-7.982	-0.311	0.001	18.742	75.789	0.717	-2.704	-0.096	-0.001	24.071	75.967	0.724	2.625	0.082	0.006
11.047	21.427	75.9	0.799	9.52	75.422	0.757	-11.907	-0.478	-0.042	13.477	75.62	0.803	-7.95	-0.28	0.004	18.699	75.81	0.804	-2.728	-0.09	0.005	24.06	75.979	0.802	2.633	0.079	0.003
11.048	21.429	75.906	1.359	9.521	75.508	0.866	-11.908	-0.398	-0.493	13.479	75.685	1.036	-7.95	-0.221	-0.323	18.708	75.823	1.277	-2.721	-0.083	-0.082	24.061	75.996	1.407	2.632	0.09	0.048
11.049	21.425	76.099	1.061	9.521	75.612	0.756	-11.904	-0.487	-0.305	13.479	75.812	0.864	-7.946	-0.287	-0.197	18.709	75.999	1.01	-2.716	-0.1	-0.051	24.127	76.196	1.084	2.702	0.097	0.023
11.05	21.425	76.206	1.157	9.521	75.701	1.053	-11.904	-0.505	-0.104	13.479	75.904	1.053	-7.946	-0.302	-0.104	18.71	76.104	1.112	-2.715	-0.102	-0.045	24.127	76.301	1.2	2.702	0.095	0.043
11.051	22.236	76.345	0.895	9.521	75.802	0.701	-12.715	-0.543	-0.194	13.479	76.014	0.795	-8.757	-0.331	-0.1	18.717	76.236	0.886	-3.519	-0.109	-0.009	26.731	76.44	0.897	4.495	0.095	0.002
11.053	22.399	76.444	0.912	9.521	75.865	0.609	-12.878	-0.579	-0.303	13.479	76.093	0.709	-8.92	-0.351	-0.203	18.72	76.334	0.823	-3.679	-0.11	-0.089	27.592	76.548	1.048	5.193	0.104	0.136
11.054	22.4	76.525	0.922	9.521	75.92	0.833	-12.879	-0.605	-0.089	13.48	76.153	0.833	-8.92	-0.372	-0.089	18.721	76.402	0.87	-3.679	-0.123	-0.052	27.282	76.651	0.995	4.882	0.126	0.073
11.055	22.453	76.61	0.905	9.521	75.992	0.655	-12.932	-0.618	-0.25	13.48	76.226	0.76	-8.973	-0.384	-0.145	18.722	76.477	0.876	-3.731	-0.133	-0.029	26.513	76.756	0.925	4.06	0.146	0.02
11.056	22.453	76.683	0.844	9.521	76.042	0.607	-12.932	-0.641	-0.237	13.479	76.286	0.686	-8.974	-0.397	-0.158	18.722	76.547	0.775	-3.731	-0.136	-0.069	26.515	76.821	0.926	4.062	0.138	0.082
11.057	22.509	76.757	1.104	9.521	76.109	1.104	-12.988	-0.648	0	13.479	76.353	1.104	-9.03	-0.404	0	18.723	76.616	1.104	-3.786	-0.141	0	27.298	76.897	1.104	4.789	0.14	0
11.058	22.509	76.864	0.959	9.521	76.226	0.898	-12.988	-0.638	-0.061	13.479	76.46	0.898	-9.03	-0.404	-0.061	18.723	76.718	0.9	-3.786	-0.146	-0.059	27.299	77.013	1.043	4.79	0.149	0.084
11.059	22.509	76.954	1.095	9.521	76.33	0.865	-12.988	-0.624	-0.23	13.479	76.555	0.929	-9.03	-0.399	-0.166	18.724	76.807	1.025	-3.785	-0.147	-0.07	27.3	77.108	1.187	4.791	0.154	0.092
11.06	22.509	77.067	1.06	9.521	76.436	0.778	-12.988	-0.631	-0.282	13.48	76.661	0.878	-9.029	-0.406	-0.182	18.724	76.915	0.986	-3.785	-0.152	-0.074	27.182	77.232	1.15	4.673	0.165	0.09
11.061	22.509	77.188	1.169	9.521	76.567	1.054	-12.988	-0.621	-0.115	13.48	76.785	1.054	-9.029	-0.403	-0.115	18.724	77.035	1.117	-3.785	-0.153	-0.052	27.183	77.356	1.235	4.674	0.168	0.066
11.062	22.51	77.328	1.181	9.521	76.751	1.181	-12.989	-0.577	0	13.48	76.946	1.181	-9.03	-0.382	0	18.724	77.18	1.181	-3.786	-0.148	0	27.184	77.493	1.181	4.674	0.165	0
11.063	22.51	77.431	1.291	9.521	76.889	0.937	-12.989	-0.542	-0.354	13.48	77.069	1.082	-9.03	-0.362	-0.209	18.724	77.286	1.22	-3.786	-0.145	-0.071	27.187	77.617	1.297	4.677	0.186	0.006
11.064	22.51	77.592	1.401	9.521	77.023	0.997	-12.989	-0.569	-0.404	13.48	77.215	1.17	-9.03	-0.377	-0.231	18.724	77.438	1.344	-3.786	-0.154	-0.057	27.117	77.783	1.421	4.607	0.191	0.02
11.065	22.51	77.78	1.294	9.521	77.157	0.92	-12.989	-0.623	-0.374	13.48	77.371	1.089	-9.03	-0.409	-0.205	18.724	77.617	1.248	-3.786	-0.163	-0.046	27.119	77.965	1.297	4.609	0.185	0.003
11.066	22.51	77.876	1.408	9.521	77.193	1.091	-12.989	-0.683	-0.317	13.48	77.422	1.236	-9.03	-0.454	-0.172	18.724	77.69	1.351	-3.786	-0.186	-0.057	27.119	78.103	1.449	4.609	0.227	0.041
11.067	21.469	78.088	1.169	9.521	77.384	1.109	-11.948	-0.704	-0.06	13.48	77.632	1.109	-7.989	-0.456	-0.06	18.633	77.899	1.161	-2.836	-0.189	-0.008	22.826	78.326	1.172	1.357	0.238	0.003
11.068	22.025	78.317	0.741	9.521	77.621	0.741	-12.504	-0.696	0	13.48	77.872	0.741	-8.545	-0.445	0	18.664	78.148	0.741	-3.361	-0.169	0	24.862	78.485	0.741	2.837	0.168	0
11.069	22.124	78.386	1.087	9.521	77.705	1.087	-12.603	-0.681	0	13.48	77.952	1.087	-8.644	-0.434	0	18.664	78.224	1.087	-3.46	-0.162	0	25.728	78.542	1.087	3.604	0.156	0
11.07	22.448	78.552	1.014	9.521	77.869	0.734	-12.927	-0.683	-0.28	13.481	78.117	0.838	-8.967	-0.435	-0.176	18.725	78.39	0.948	-3.723	-0.162	-0.066	27.462	78.698	1.13	5.014	0.146	0.116
11.071	24.183	78.615	1.097	9.72	77.916	0.793	-14.463	-0.699	-0.304	13.711	78.171	0.902	-10.472	-0.444	-0.195	19.589	78.45	1.049	-4.594	-0.165	-0.048	31.145	78.769	1.101	6.962	0.154	0.004
11.072	24.184	78.753	1.085	9.72	78.051	1.042	-14.464	-0.702	-0.043	13.711	78.298	1.042	-10.473	-0.455	-0.043	19.589	78.583	1.042	-4.595	-0.17	-0.043	31.146	78.925	1.09	6.962	0.172	0.005
11.073	24.186	78.888	1.25	9.72	78.199	1.057	-14.466	-0.689	-0.193	13.711	78.424	1.166	-10.475	-0.464	-0.084	19.59	78.717	1.245	-4.596	-0.171	-0.005	31.212	79.056	1.252	7.026	0.168	0.002
11.074	24.19	78.999	0.885	9.72	78.34	0.667	-14.47	-0.659	-0.218	13.711	78.572	0.755	-10.479	-0.427	-0.13	19.59	78.843	0.865	-4.6	-0.156	-0.02	31.38	79.156	0.888	7.19	0.157	0.003
11.075	24.174	79.083	0.847	9.72	78.401	0.709	-14.454	-0.682	-0.138	13.711	78.639	0.791	-10.463	-0.444	-0.056	19.589	78.927	0.844	-4.585	-0.156	-0.003	31.283	79.24	0.847	7.109	0.157	0
11.076	24.175	79.209	1.182	9.72	78.55	1.181	-14.455	-0.659	-0.001	13.711	78.776	1.18	-10.464	-0.433	-0.002	19.59	79.067	1.183	-4.585	-0.142	0.001	31.247	79.347	1.18	7.072	0.138	-0.002
11.077	23.955	79.331	0.895	9.72	78.795	0.893	-14.235	-0.536	-0.002	13.711	79.005	0.895	-10.244	-0.326	0	19.569	79.226	0.894	-4.386	-0.105	-0.001	30.38	79.453	0.899	6.425	0.122	0.004
11.078	23.216	79.428	0.676	9.72	78.903	0.549	-13.496	-0.525	-0.127	13.712	79.104	0.636	-9.504	-0.324	-0.04	19.309	79.316	0.671	-3.907	-0.112	-0.005	28.663	79.564	0.676	5.447	0.136	0
11.079	23.217	79.511	1.135	9.72	78.99	1.049	-13.497	-0.521	-0.086	13.713	79.182	1.103	-9.504	-0.329	-0.032	19.312	79.407	1.127	-3.905	-0.104	-0.008	28.666	79.641	1.137	5.449	0.13	0.002
11.081	21.921	79.857	0.572	9.72	79.249	0.571	-12.201	-0.608	-0.001	13.714	79.465	0.57	-8.207	-0.392	-0.002	19.103	79.731	0.571	-2.818	-0.126	-0.001	25.129	80.001	0.57	3.208	0.144	-0.002
11.082	19.236	79.895	0.746	9.72	79.296	0.743	-9.516	-0.599	-0.003	13.55	79.523	0.746	-5.686	-0.372	0	17.156	79.774	0.745	-2.08	-0.121	-0.001	22.18	80.034	0.754	2.944	0.139	0.008
11.083	16.754	79.912	0.726	8.47	79.339	0.848	-8.284	-0.573	0.122	11.807	79.558	0.844	-4.947	-0.354	0.118	14.983	79.794	0.721	-1.771	-0.118	-0.005	19.194	80.048	0.775	2.44	0.136	0.049
11.084	18.222	79.983	0.722	8.47	79.485	0.793	-9.752	-0.498	0.071	11.957	79.696	0.79	-6.265	-0.287	0.068	15.982	79.884	0.731	-2.24	-0.099	0.009	21.168	80.106	0.753	2.946	0.123	0.031
11.085	18.532	79.987	0.545	8.47	79.507	0.591	-10.062	-0.48	0.046	12	79.705	0.59	-6.532	-0.282	0.045	16.231	79.889	0.549	-2.301	-0.098	0.004	21.549	80.109	0.562	3.017	0.122	0.017
11.086	18.532	80.02	0.629	8.47	79.573	0.684	-10.062	-0.447	0.055	12.003	79.764	0.672	-6.529	-0.256	0.043	16.236	79.929	0.638	-2.296	-0.091	0.009	21.554	80.136	0.659	3.022	0.116	0.03
11.087	29.657	80.057	1.066	13.108	79.657	1.114	-16.549	-0.4	0.048	18.335	79.831	1.105	-11.322	-0.226	0.039	25.045	79.975	1.078	-4.612	-0.082	0.012	35.333	80.164	1.105	5.676	0.107	0.039
11.088	29.692	80.152	1.556	13.109	79.849	0.918	-16.583	-0.303	-0.638	18.335	79.999	1.113	-11.357	-0.153	-0.443	25.047	80.061	1.431	-4.645	-0.091	-0.125	35.842	80.274	1.676	6.15	0.122	0.12
11.089	29.147	80.517	1.681	13.109	80.035	1.318	-16.038	-0.482	-0.363	18.334	80.218	1.516	-10.813	-0.299	-0.165	24.924	80.404	1.678	-4.223	-0.113	-0.003	34.126	80.658	1.677	4.979	0.141	-0.004
11.09	29.148	80.76	2.116	13.109	80.21	1.402	-16.039	-0.55	-0.714	18.334	80.413	1.669	-10.814	-0.347	-0.447	24.924	80.638	1.949	-4.224	-0.122	-0.167	34.126	80.915	2.27	4.978	0.155	0.154
11.091	29.148	80.96	1.004	13.109	80.344	0.733	-16.039	-0.616	-0.271	18.334	80.575	0.831	-10.814	-0.385	-0.173	24.924	80.826	0.937	-4.224	-0.134	-0.067	34.126	81.128	1.064	4.978	0.168	0.06
11.092	29.3	81.302	0.878	13.109	80.366	0.748	-16.191	-0.936	-0.13	18.334	80.64	0.833	-10.966	-0.662	-0.045	24.924	81.026	0.878	-4.376	-0.276	0	35.299	81.679	0.879	5.999	0.377	0.001
11.093	29.3	81.262	1.564	13.109	80.328	1.288	-16.191	-0.934	-0.276	18.334	80.58	1.508	-10.966	-0.682	-0.056	24.924	80.998	1.567	-4.376	-0.264	0.003	34.811	81.651	1.562	5.511	0.389	-0.002
11.094	28.44	81.528	0.746	13.109	80.609	0.743	-15.331	-0.919	-0.003	18.279	80.929	0.746	-10.161	-0.599	0	24.431	81.296	0.746	-4.009	-0.232	0	34.405	81.856	0.744	5.965	0.328	-0.002
11.095	3.335	81.573	0.469	3.204	80.703	0.489	-0.131	-0.87	0.02	3.258	81.003	0.488	-0.077	-0.57	0.019	3.309	81.349	0.486	-0.026	-0.224	0.017	3.335	81.891	0.467	0	0.318	-0.002
20.014	12.26	75.087	0.826	6.624	74.762	0.627	-5.636	-0.325	-0.199	9.026	74.913	0.726	-3.234	-0.174	-0.1	11.157	75.021	0.795	-1.103	-0.066	-0.031	13.636	75.179	0.847	1.376	0.092	0.021

Recalibrate:	100 year design flow + 20%			5 year design flow						20 year design flow						100 year design flow						1000 year design flow					
8A	"n" 0.100/.035/0.100 50% Block Farm Mill Model adjustments																										
	Run Results			Run Results			Change from model values			Run Results			Change from model values			Run Results			Change from model values			Run Results			Change from model values		
Node	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
20.015	12.271	75.158	0.502	6.624	74.807	0.501	-5.647	-0.351	-0.001	9.028	74.973	0.503	-3.243	-0.185	0.001	11.158	75.091	0.503	-1.113	-0.067	0.001	13.712	75.247	0.5	1.441	0.089	-0.002
20.016	12.3	75.185	0.598	6.625	74.836	0.592	-5.675	-0.349	-0.006	9.031	75.005	0.599	-3.269	-0.18	0.001	11.159	75.121	0.598	-1.141	-0.064	0	14.031	75.269	0.592	1.731	0.084	-0.006
20.017	12.309	75.23	0.735	6.625	74.9	0.735	-5.684	-0.33	0	9.034	75.071	0.735	-3.275	-0.159	0	11.16	75.174	0.735	-1.149	-0.056	0	14.037	75.306	0.735	1.728	0.076	0
20.018	12.312	75.282	0.706	6.625	74.981	0.706	-5.687	-0.301	0	9.037	75.143	0.706	-3.275	-0.139	0	11.16	75.234	0.706	-1.152	-0.048	0	14.039	75.349	0.706	1.727	0.067	0
20.019	12.316	75.352	0.83	6.626	75.069	0.83	-5.69	-0.283	0	9.038	75.219	0.83	-3.278	-0.133	0	11.16	75.309	0.83	-1.156	-0.043	0	14.041	75.413	0.83	1.725	0.061	0
20.02	12.843	75.444	0.856	6.626	75.15	0.818	-6.217	-0.294	-0.038	9.039	75.318	0.85	-3.804	-0.126	-0.006	11.358	75.405	0.854	-1.485	-0.039	-0.002	15.362	75.499	0.854	2.519	0.055	-0.002
20.021	12.844	75.559	0.903	6.626	75.278	0.903	-6.218	-0.281	0	9.04	75.446	0.903	-3.804	-0.113	0	11.357	75.522	0.903	-1.487	-0.037	0	15.363	75.616	0.903	2.519	0.057	0
20.022	12.844	75.663	0.839	6.626	75.388	0.744	-6.218	-0.275	-0.095	9.041	75.553	0.777	-3.803	-0.11	-0.062	11.358	75.623	0.82	-1.486	-0.04	-0.019	15.363	75.724	0.871	2.519	0.061	0.032
20.023	12.844	75.778	0.979	6.626	75.484	0.69	-6.218	-0.294	-0.289	9.041	75.647	0.786	-3.803	-0.131	-0.193	11.358	75.731	0.906	-1.486	-0.047	-0.073	15.383	75.848	1.099	2.539	0.07	0.12
20.024	12.886	75.901	0.575	6.627	75.572	0.575	-6.259	-0.329	0	9.041	75.739	0.575	-3.845	-0.162	0	11.371	75.841	0.575	-1.515	-0.06	0	15.539	75.993	0.575	2.653	0.092	0
20.025	13.155	75.92	0.89	6.628	75.661	0.89	-6.527	-0.259	0	9.044	75.778	0.89	-4.111	-0.142	0	11.451	75.865	0.89	-1.704	-0.055	0	16.32	76.008	0.89	3.165	0.088	0
20.026	13.163	75.973	0.789	6.63	75.765	0.747	-6.533	-0.208	-0.042	9.047	75.859	0.791	-4.116	-0.114	0.002	11.453	75.928	0.789	-1.71	-0.045	0	16.256	76.048	0.789	3.093	0.075	0
20.027	12.356	76.069	0.883	6.63	75.899	0.883	-5.726	-0.17	0	9.05	75.988	0.883	-3.306	-0.081	0	11.451	76.042	0.883	-0.905	-0.027	0	13.669	76.118	0.883	1.313	0.049	0
20.029	12.356	76.274	1.503	6.629	76.097	0.992	-5.727	-0.177	-0.511	9.051	76.177	1.259	-3.305	-0.097	-0.244	11.45	76.242	1.443	-0.906	-0.032	-0.06	13.677	76.328	1.576	1.321	0.054	0.073
20.03	12.355	76.542	1.32	6.629	76.256	0.989	-5.726	-0.286	-0.331	9.051	76.379	1.16	-3.304	-0.163	-0.16	11.45	76.5	1.281	-0.905	-0.042	-0.039	13.678	76.603	1.369	1.323	0.061	0.049
20.031	12.356	76.832	1.331	6.629	76.468	1.034	-5.727	-0.364	-0.297	9.051	76.644	1.168	-3.305	-0.188	-0.163	11.45	76.786	1.286	-0.906	-0.046	-0.045	13.678	76.897	1.392	1.322	0.065	0.061
20.032	12.356	76.853	1.272	6.629	76.481	1.01	-5.727	-0.372	-0.262	9.051	76.661	1.13	-3.305	-0.192	-0.142	11.45	76.806	1.233	-0.906	-0.047	-0.039	13.678	76.92	1.324	1.322	0.067	0.052
20.033	12.439	76.946	1.321	6.629	76.562	1.06	-5.81	-0.384	-0.261	9.051	76.745	1.172	-3.388	-0.201	-0.149	11.482	76.895	1.279	-0.957	-0.051	-0.042	13.884	77.015	1.38	1.445	0.069	0.059
20.034	12.439	76.954	1.344	6.629	76.573	1.052	-5.81	-0.381	-0.292	9.051	76.754	1.185	-3.388	-0.2	-0.159	11.482	76.903	1.3	-0.957	-0.051	-0.044	13.885	77.024	1.409	1.446	0.07	0.065
20.035	12.439	77.042	0.938	6.629	76.636	0.707	-5.81	-0.406	-0.231	9.051	76.828	0.815	-3.388	-0.214	-0.123	11.483	76.988	0.905	-0.956	-0.054	-0.033	13.885	77.116	0.986	1.446	0.074	0.048
20.036	12.439	77.161	0.756	6.629	76.711	0.735	-5.81	-0.45	-0.021	9.051	76.918	0.755	-3.388	-0.243	-0.001	11.483	77.101	0.756	-0.956	-0.06	0	13.885	77.243	0.756	1.446	0.082	0
20.037	12.44	77.19	0.96	6.629	76.791	0.716	-5.811	-0.399	-0.244	9.054	76.989	0.819	-3.386	-0.201	-0.141	11.484	77.139	0.922	-0.956	-0.051	-0.038	13.886	77.262	1.016	1.446	0.072	0.056
20.038	8.316	77.27	0.609	4.637	76.851	0.54	-3.679	-0.419	-0.069	6.332	77.056	0.591	-1.984	-0.214	-0.018	7.804	77.215	0.614	-0.512	-0.055	0.005	8.896	77.349	0.603	0.58	0.079	-0.006
20.039	8.317	77.332	0.713	4.637	76.919	0.626	-3.68	-0.413	-0.087	6.333	77.123	0.679	-1.984	-0.209	-0.034	7.804	77.28	0.711	-0.513	-0.052	-0.002	8.896	77.404	0.712	0.579	0.072	-0.001
20.04	8.348	77.398	0.635	4.637	76.984	0.6	-3.711	-0.414	-0.035	6.333	77.189	0.621	-2.015	-0.209	-0.014	7.805	77.347	0.643	-0.543	-0.051	0.008	8.768	77.467	0.616	0.42	0.069	-0.019
20.041	8.372	77.449	0.667	4.637	77.043	0.667	-3.735	-0.406	0	6.333	77.245	0.667	-2.039	-0.204	0	7.805	77.401	0.667	-0.567	-0.048	0	8.693	77.509	0.667	0.321	0.06	0
20.043	8.372	77.497	0.69	4.637	77.087	0.69	-3.735	-0.41	0	6.333	77.286	0.69	-2.039	-0.211	0	7.806	77.444	0.693	-0.566	-0.053	0.003	8.697	77.558	0.69	0.325	0.061	0
20.044	8.421	77.609	1.053	4.637	77.256	1.053	-3.784	-0.353	0	6.335	77.45	1.053	-2.086	-0.159	0	7.808	77.572	1.053	-0.613	-0.037	0	8.947	77.647	1.053	0.526	0.038	0
20.045	8.422	77.668	0.958	4.637	77.425	0.787	-3.785	-0.243	-0.171	6.339	77.594	0.791	-2.083	-0.074	-0.167	7.809	77.642	0.919	-0.613	-0.026	-0.039	8.948	77.697	1.003	0.526	0.029	0.045
20.046	8.422	77.852	0.588	4.637	77.538	0.5	-3.785	-0.314	-0.088	6.34	77.718	0.547	-2.082	-0.134	-0.041	7.809	77.809	0.587	-0.613	-0.043	-0.001	9.007	77.881	0.588	0.585	0.029	0
20.047	8.422	77.878	0.515	4.637	77.551	0.372	-3.785	-0.327	-0.143	6.34	77.735	0.434	-2.082	-0.143	-0.081	7.809	77.833	0.495	-0.613	-0.045	-0.02	9.03	77.894	0.551	0.608	0.016	0.036
20.048	8.422	77.889	0.422	4.637	77.551	0.415	-3.785	-0.338	-0.007	6.341	77.739	0.424	-2.081	-0.15	0.002	7.809	77.841	0.423	-0.613	-0.048	0.001	9.048	77.907	0.422	0.626	0.018	0
20.049	8.422	77.906	0.706	4.637	77.565	0.706	-3.785	-0.341	0	6.344	77.75	0.706	-2.078	-0.156	0	7.809	77.856	0.706	-0.613	-0.05	0	8.971	77.926	0.706	0.549	0.02	0
20.05	8.423	77.995	0.662	4.637	77.652	0.654	-3.786	-0.343	-0.008	6.35	77.845	0.661	-2.073	-0.15	-0.001	7.842	77.95	0.664	-0.581	-0.045	0.002	9.007	78.018	0.658	0.584	0.023	-0.004
20.051	8.424	78.022	0.903	4.637	77.704	0.774	-3.787	-0.318	-0.129	6.353	77.884	0.812	-2.071	-0.138	-0.091	7.884	77.98	0.89	-0.54	-0.042	-0.013	9.009	78.035	0.951	0.585	0.013	0.048
20.052	8.424	78.052	1.329	4.637	77.717	1.329	-3.787	-0.335	0	6.353	77.903	1.329	-2.071	-0.149	0	7.884	78.006	1.329	-0.54	-0.046	0	9.009	78.068	1.341	0.585	0.016	0.012
20.053	8.423	78.174	0.932	4.637	77.848	0.776	-3.786	-0.326	-0.156	6.355	78.02	0.843	-2.068	-0.154	-0.089	7.898	78.129	0.921	-0.525	-0.045	-0.011	9.011	78.199	0.968	0.588	0.025	0.036
20.054	8.423	78.322	1.002	4.637	78.008	0.85	-3.786	-0.314	-0.152	6.236	78.162	0.9	-2.187	-0.16	-0.102	8.003	78.281	0.988	-0.42	-0.041	-0.014	9.05	78.356	1.015	0.627	0.034	0.013
20.055	5.949	78.441	0.8	3.11	78.126	0.644	-2.839	-0.315	-0.156	4.505	78.278	0.728	-1.444	-0.163	-0.072	5.419	78.399	0.732	-0.53	-0.042	-0.068	6.496	78.479	0.783	0.547	0.038	-0.017
20.056	5.662	78.555	0.566	3.11	78.218	0.502	-2.552	-0.337	-0.064	4.276	78.379	0.554	-1.386	-0.176	-0.012	5.241	78.503	0.56	-0.421	-0.052	-0.006	6.061	78.598	0.565	0.399	0.043	-0.001
20.057	5.591	78.583	0.718	3.11	78.249	0.718	-2.481	-0.334	0	4.238	78.413	0.718	-1.353	-0.17	0	5.183	78.534	0.718	-0.408	-0.049	0	5.97	78.624	0.718	0.379	0.041	0
20.058	5.591	79.593	0.966	3.11	79.169	0.949	-2.481	-0.424	-0.017	4.238	79.372	0.949	-1.353	-0.221	-0.017	5.183	79.529	0.949	-0.408	-0.064	-0.017	5.97	79.694	0.986	0.379	0.101	0.02
20.059	5.611	79.656	0.518	3.11	79.215	0.483	-2.501	-0.441	-0.035	4.239	79.426	0.516	-1.372	-0.23	-0.002	5.184	79.588	0.518	-0.427	-0.068	0	6.03	79.75	0.519	0.419	0.094	0.001
20.06	5.564	79.677	0.434	4.551	79.278	0.413	-1.013	-0.399	-0.021	5.457	79.477	0.432	-0.107	-0.2	-0.002	5.546	79.613	0.435	-0.018	-0.064	0.001	5.553	79.769	0.432	-0.011	0.092	-0.002
20.061	6.612	79.689	0.527	4.556	79.306	0.497	-2.056	-0.383	-0.03	5.881	79.504	0.523	-0.731	-0.185	-0.004	6.393	79.629	0.527	-0.219	-0.06	0	7.276	79.776	0.525	0.664	0.087	-0.002
20.062	9.428	79.706	0.707	4.637	79.343	0.494	-4.791	-0.363	-0.213	6.328	79.543	0.568	-3.1	-0.163	-0.139	8.099	79.654	0.654	-1.329	-0.052	-0.053	11.579	79.786	0.772	2.151	0.08	0.065
20.064	9.829	79.853	0.578	4.638	79.439	0.523	-5.191	-0.414	-0.055	6.329	79.64	0.525	-3.5	-0.213	-0.053	8.267	79.776	0.55	-1.562	-0.077	-0.028	12.45	79.974	0.601	2.621	0.121	0.023
20.065	9.462	79.889	0.687	4.638	79.482	0.554	-4.824	-0.407	-0.133	6.329	79.675	0.591	-3.133	-0.214	-0.096	8.323	79.809	0.667	-1.139	-0.08	-0.02	10.977	80.013	0.695	1.515	0.124	0.008
20.066	9.536	79.965	0.595	4.638	79.553	0.582	-4.898	-0.412	-0.013	6.329	79.738	0.593	-3.207	-0.227	-0.002	8.323	79.882	0.596	-1.213	-0.083	0.001	11.342	80.084	0.592	1.806	0.119	-0.003
20.067	10.174	80.024	0.483	4.638	79.624	0.461	-5.536	-0.4	-0.022	6.329	79.8	0.468	-3.845	-0.224	-0.015	8.541	79.942	0.468	-1.633	-0.082	-0.015	11.502	80.137	0.494	1.328	0.113	0.011
20.068	11.128	80.057	0.73	4.638	79.657	0.481	-6.49	-0.4	-0.249	6.329	79.831	0.558	-4.799	-0.226	-0.172	8.808	79.975	0.664	-2.32	-0.082	-0.066	13.829	80.164	0.752	2.701	0.107	0.022
30.033	1.602	77.758	0.504	0.203	77.521	0.295	-1.399	-0.237	-0.209	0.23	77.532	0.303	-1.372	-0.226	-0.201	0.863	77.644	0.486	-0.739	-0.114	-0.018	4.118	78.205	0.498	2.516	0.447	-0.006
30.034	1.602	78.183	0.14	0.213	77.89	0.04	-1.389	-0.293	-0.1	0.23	77.895	0.042	-1.372	-0.288	-0.098	0.864	78.068	0.097	-0.738	-0.115	-0.043	2.361	78.322	0.17	0.759	0.139	0.03
30.035	1.601	78.551	0.521	0.203	78.234	0.521	-1.398	-0.317	0	0.23	78.257	0.521	-1.371	-0.294	0	0.864	78.425	0.521	-0.737	-0.126	0	2.47	78.65	0.521	0.869	0.099	0
30.036	1.201	78.554	0.246	-0.197	78.234	-0.173	-1.398	-0.32	-0.419	-0.17	78.257	-0.142	-1.371	-0.297	-0.388	0.464	78.427	0.185	-0.737	-0.127	-0.061	2.07	78.653	0.278	0.869	0.099	0.032
30.037	1.201	78.574	0.113	-0.199	78.231	-0.083	-1.4	-0.343	-0.196	-0.17	78.256	-0.061	-1.371	-0.318	-0.174	0.464	78.435	0.082	-0.737	-0.139	-0.031	2.069	78.681	0.122	0.868	0.107	0.009
30.038	1.316	78.601	0.346	-0.201	78.221	-0.162	-1.517	-0.38	-0.508	-0.17	78.25	-0.128	-1.486	-0.351	-0.474	0.464	78.444	0.207	-0.852	-0.157	-0.139	2.871	78.734	0.542	1.555	0.133	0.196
11.036u	14.817	75.035	0.76	9.018	74.651	0.648	-5.799	-0.384	-0.112	11.953	74.852	0.714	-2.864	-0.183	-0.046	14.075	74.991	0.748	-0.742	-0.044	-0.012	15.504	75.076	0.769	0.687	0.041	0.009

Recalibrate:	100 year design flow + 20%			5 year design flow						20 year design flow						100 year design flow						1000 year design flow					
8A	"n" 0.100/.035/0.100 50% Block Farm Mill Model adjustments																										
	Run Results			Run Results			Change from model values			Run Results			Change from model values			Run Results			Change from model values			Run Results			Change from model values		
Node	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
11.043J	17.431	75.403	0.902	9.018	75	0.841	-8.413	-0.403	-0.061	11.955	75.207	0.841	-5.476	-0.196	-0.061	15.492	75.351	0.843	-1.939	-0.052	-0.059	19.343	75.448	0.958	1.912	0.045	0.056
11.052d	22.399	76.408	1.061	9.521	75.854	0.679	-12.878	-0.554	-0.382	13.479	76.074	0.808	-8.92	-0.334	-0.253	18.72	76.305	0.952	-3.679	-0.103	-0.109	27.592	76.499	1.227	5.193	0.091	0.166
11.052u	22.399	76.425	1.048	9.521	75.858	0.677	-12.878	-0.567	-0.371	13.479	76.082	0.803	-8.92	-0.343	-0.245	18.72	76.318	0.943	-3.679	-0.107	-0.105	27.592	76.523	1.208	5.193	0.098	0.16
11.067us-CS8	21.64	78.278	0.957	9.521	77.595	0.75	-12.119	-0.683	-0.207	13.48	77.841	0.834	-8.16	-0.437	-0.123	18.641	78.109	0.927	-2.999	-0.169	-0.03	23.683	78.453	0.968	2.043	0.175	0.011
11.068us-CS9	22.121	78.34	0.954	9.521	77.664	0.835	-12.6	-0.676	-0.119	13.48	77.909	0.835	-8.641	-0.431	-0.119	18.664	78.177	0.918	-3.457	-0.163	-0.036	25.381	78.501	0.982	3.26	0.161	0.028
11.069us-CS10	22.44	78.539	0.936	9.521	77.856	0.7	-12.919	-0.683	-0.236	13.481	78.102	0.804	-8.959	-0.437	-0.132	18.725	78.375	0.891	-3.715	-0.164	-0.045	27.01	78.69	1.011	4.57	0.151	0.075
11.070J	22.468	78.615	1.024	9.521	77.916	0.768	-12.947	-0.699	-0.256	13.481	78.171	0.863	-8.987	-0.444	-0.161	18.725	78.45	0.962	-3.743	-0.165	-0.062	27.875	78.769	1.138	5.407	0.154	0.114
11.073us	24.187	78.955	0.975	9.72	78.295	0.778	-14.467	-0.66	-0.197	13.711	78.524	0.88	-10.476	-0.431	-0.095	19.59	78.796	0.972	-4.597	-0.159	-0.003	31.379	79.117	0.975	7.192	0.162	0
11.080d	21.921	79.656	1.182	9.72	79.179	0.842	-12.201	-0.477	-0.34	13.713	79.358	0.968	-8.208	-0.298	-0.214	19.103	79.557	1.117	-2.818	-0.099	-0.065	25.129	79.775	1.237	3.208	0.119	0.055
11.080u	21.921	79.781	1.075	9.72	79.223	0.797	-12.201	-0.558	-0.278	13.713	79.426	0.904	-8.208	-0.355	-0.171	19.103	79.664	1.023	-2.818	-0.117	-0.052	25.129	79.917	1.122	3.208	0.136	0.047
11.083J	19.605	79.912	0.985	9.72	79.339	0.973	-9.885	-0.573	-0.012	13.553	79.558	0.985	-6.052	-0.354	0	17.37	79.794	0.984	-2.235	-0.118	-0.001	22.73	80.048	0.994	3.125	0.136	0.009
11.087J	18.537	80.057	0.703	8.471	79.657	0.724	-10.066	-0.4	0.021	12.006	79.831	0.709	-6.531	-0.226	0.006	16.242	79.975	0.684	-2.295	-0.082	-0.019	21.565	80.164	0.715	3.028	0.107	0.012
11.088US-ST04	29.146	80.267	0.388	13.109	79.89	0.209	-16.037	-0.377	-0.179	18.335	80.058	0.27	-10.811	-0.209	-0.118	24.924	80.158	0.35	-4.222	-0.109	-0.038	34.126	80.405	0.426	4.98	0.138	0.038
11.094ds	28.44	81.468	1.169	13.109	80.57	0.968	-15.331	-0.898	-0.201	18.279	80.872	1.092	-10.161	-0.596	-0.077	24.431	81.228	1.161	-4.009	-0.24	-0.008	34.404	81.813	1.176	5.964	0.345	0.007
11.095J	28.442	81.573	0.946	13.109	80.703	0.931	-15.333	-0.87	-0.015	18.279	81.003	0.94	-10.163	-0.57	-0.006	24.431	81.349	0.945	-4.011	-0.224	-0.001	34.406	81.891	0.947	5.964	0.318	0.001
20.013u	12.26	75.084	0.815	6.624	74.764	0.566	-5.636	-0.32	-0.249	9.026	74.913	0.682	-3.234	-0.171	-0.133	11.157	75.02	0.773	-1.103	-0.064	-0.042	13.636	75.174	0.847	1.376	0.09	0.032
20.028d	12.356	76.242	1.649	6.629	76.08	1.06	-5.727	-0.162	-0.589	9.051	76.156	1.365	-3.305	-0.086	-0.284	11.45	76.211	1.58	-0.906	-0.031	-0.069	13.677	76.295	1.734	1.321	0.053	0.085
20.028u	12.356	76.242	1.649	6.629	76.08	1.06	-5.727	-0.162	-0.589	9.051	76.156	1.365	-3.305	-0.086	-0.284	11.45	76.211	1.58	-0.906	-0.031	-0.069	13.677	76.295	1.734	1.321	0.053	0.085
20.038J	12.442	77.27	0.915	6.629	76.851	0.773	-5.813	-0.419	-0.142	9.057	77.056	0.84	-3.385	-0.214	-0.075	11.485	77.215	0.901	-0.957	-0.055	-0.014	13.889	77.349	0.921	1.447	0.079	0.006
20.042d	8.372	77.48	0.751	4.637	77.079	0.751	-3.735	-0.401	0	6.333	77.277	0.751	-2.039	-0.203	0	7.806	77.432	0.751	-0.566	-0.048	0	8.695	77.537	0.751	0.323	0.057	0
20.042u	8.372	77.487	0.751	4.637	77.081	0.751	-3.735	-0.406	0	6.333	77.282	0.751	-2.039	-0.205	0	7.806	77.438	0.751	-0.566	-0.049	0	8.695	77.545	0.751	0.323	0.058	0
20.050us	8.424	78.03	0.792	4.637	77.698	0.792	-3.787	-0.332	0	6.353	77.885	0.792	-2.071	-0.145	0	7.882	77.984	0.792	-0.542	-0.046	0	9.008	78.053	0.792	0.584	0.023	0
20.054us-CS1	8.546	78.423	0.788	4.637	78.111	0.595	-3.909	-0.312	-0.193	6.116	78.253	0.667	-2.43	-0.17	-0.121	8.198	78.386	0.777	-0.348	-0.037	-0.011	9.229	78.463	0.803	0.683	0.04	0.015
20.054us-CS3	5.984	78.423	0.645	3.11	78.111	0.462	-2.874	-0.312	-0.183	4.638	78.253	0.581	-1.346	-0.17	-0.064	5.431	78.386	0.581	-0.553	-0.037	-0.064	6.495	78.463	0.622	0.511	0.04	-0.023
20.055us-CS4	5.772	78.524	0.478	3.11	78.195	0.384	-2.662	-0.329	-0.094	4.331	78.352	0.441	-1.441	-0.172	-0.037	5.323	78.473	0.46	-0.449	-0.051	-0.018	6.233	78.568	0.46	0.461	0.044	-0.018
20.056us-CS5	5.591	78.591	0.43	3.11	78.252	0.407	-2.481	-0.339	-0.023	4.239	78.418	0.421	-1.352	-0.173	-0.009	5.182	78.541	0.427	-0.409	-0.05	-0.003	5.969	78.633	0.431	0.378	0.042	0.001
20.059us-1	5.611	79.661	0.498	3.11	79.222	0.459	-2.501	-0.439	-0.039	4.239	79.432	0.493	-1.372	-0.229	-0.005	5.184	79.594	0.497	-0.427	-0.067	-0.001	6.03	79.755	0.502	0.419	0.094	0.004
20.059us-2	5.549	79.661	0.686	4.551	79.222	0.671	-0.998	-0.439	-0.015	5.454	79.432	0.684	-0.095	-0.229	-0.002	5.532	79.594	0.687	-0.017	-0.067	0.001	5.54	79.755	0.682	-0.009	0.094	-0.004
20.063d	9.829	79.788	0.894	4.638	79.412	0.652	-5.191	-0.376	-0.242	6.329	79.606	0.694	-3.5	-0.182	-0.2	8.267	79.727	0.798	-1.562	-0.061	-0.096	12.45	79.878	1.044	2.621	0.09	0.15
20.063u	9.829	79.828	0.862	4.638	79.428	0.637	-5.191	-0.4	-0.225	6.329	79.627	0.678	-3.5	-0.201	-0.184	8.267	79.757	0.774	-1.562	-0.071	-0.088	12.45	79.935	0.995	2.621	0.107	0.133
30.033us-CS13	1.602	78.058	0.842	0.216	77.798	0.484	-1.386	-0.26	-0.358	0.23	77.798	0.484	-1.372	-0.26	-0.358	0.864	77.958	0.681	-0.738	-0.1	-0.161	2.407	78.285	0.842	0.805	0.227	0
30.034!	1.602	78.176	0.63	0.207	77.891	0.243	-1.395	-0.285	-0.387	0.23	77.897	0.25	-1.372	-0.279	-0.38	0.864	78.066	0.468	-0.738	-0.11	-0.162	2.361	78.31	0.74	0.759	0.134	0.11
CS2	3.434	78.423	1.811	1.527	78.111	1.811	-1.907	-0.312	0	2.008	78.253	1.811	-1.426	-0.17	0	3.407	78.386	1.811	-0.027	-0.037	0	3.457	78.463	1.811	0.023	0.04	0
CS2US	3.221	78.652	0.72	1.527	78.366	0.72	-1.694	-0.286	0	2.003	78.57	0.721	-1.218	-0.082	0.001	3.109	78.589	0.72	-0.112	-0.063	0	3.33	78.622	0.72	0.109	-0.03	0
CS6	2.849	78.919	0.799	1.527	78.724	0.778	-1.322	-0.195	-0.021	2.087	78.84	0.791	-0.762	-0.079	-0.008	2.653	78.896	0.803	-0.196	-0.023	0.004	3.096	78.942	0.828	0.247	0.023	0.029
CS7	2.761	78.732	0.776	1.527	78.54	0.641	-1.234	-0.192	-0.135	2.262	78.656	0.738	-0.499	-0.076	-0.038	2.57	78.722	0.737	-0.191	-0.01	-0.039	2.933	78.745	0.781	0.172	0.013	0.005
ST02ds	2.849	79.389	0.953	1.527	79.063	0.635	-1.322	-0.326	-0.318	2.086	79.233	0.77	-0.763	-0.156	-0.183	2.629	79.354	0.898	-0.22	-0.035	-0.055	3.088	79.483	1.012	0.239	0.094	0.059
ST03	2.849	79.373	0.901	1.527	79.041	0.892	-1.322	-0.332	-0.009	2.085	79.215	0.892	-0.764	-0.158	-0.009	2.629	79.338	0.892	-0.22	-0.035	-0.009	3.088	79.471	0.942	0.239	0.098	0.041
ST03ds	2.849	79.002	1.472	1.527	78.807	1.155	-1.322	-0.195	-0.317	2.085	78.906	1.282	-0.764	-0.096	-0.19	2.629	78.975	1.423	-0.22	-0.027	-0.049	3.088	79.029	1.526	0.239	0.027	0.054
W3.096	26.533	81.573	0.654	9.905	80.703	0.546	-16.628	-0.87	-0.108	15.086	81.003	0.588	-11.447	-0.57	-0.066	21.754	81.349	0.63	-4.779	-0.224	-0.024	33.957	81.891	0.693	7.424	0.318	0.039
W3.097	26.535	81.613	0.605	9.905	80.74	0.606	-16.63	-0.873	0.001	15.087	81.046	0.607	-11.448	-0.567	0.002	21.755	81.39	0.606	-4.78	-0.223	0.001	33.959	81.932	0.606	7.424	0.319	0.001
W3.098	26.541	81.622	0.516	9.906	80.781	0.517	-16.635	-0.841	0.001	15.088	81.069	0.516	-11.453	-0.553	0	21.761	81.402	0.515	-4.78	-0.22	-0.001	33.965	81.939	0.516	7.424	0.317	0

	5 year: Increase in Max Flow (m3/s)	5 year: Increase in Max Stage (m AD)	5 year: Increase in Max Velocity (m/s)	20 year: Increase in Max Flow (m3/s)	20 year: Increase in Max Stage (m AD)	20 year: Increase in Max Velocity (m/s)	100 year: Increase in Max Flow (m3/s)	100 year: Increase in Max Stage (m AD)	100 year: Increase in Max Velocity (m/s)	1000 year: Increase in Max Flow (m3/s)	1000 year: Increase in Max Stage (m AD)	1000 year: Increase in Max Velocity (m/s)
Average	-8.023	-0.458	-0.143	-5.273	-0.269	-0.087	-2.008	-0.093	-0.028	2.593	0.111	0.028
Maximum	-0.131	-0.162	0.122	-0.077	-0.074	0.118	-0.017	-0.01	0.017	7.424	0.447	0.196
Minimum	-16.635	-0.936	-0.714	-11.453	-0.682	-0.474	-4.78	-0.276	-0.167	-0.011	-0.03	-0.023

Recalibrate:	8A			8A and no flow bypassing Bridge Street						8A and steady flow after hydrograph peak					
100 year design flow plus 20%	"n" 0.100/.035/0.100			"n" 0.100/.035/0.100						"n" 0.100/.035/0.100					
	Run Results			Run Results			Change from model values			Run Results			Change from model values		
Node	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
11.037	14.817	75.036	0.821	14.809	75.035	0.821	-0.008	-0.001	0	15.191	75.058	0.827	0.374	0.022	0.006
11.038	14.819	75.103	0.699	14.811	75.102	0.699	-0.008	-0.001	0	15.195	75.126	0.699	0.376	0.023	0
11.039	14.922	75.165	0.655	14.912	75.165	0.655	-0.01	0	0	15.378	75.189	0.655	0.456	0.024	0
11.04	14.922	75.2	0.6	14.912	75.199	0.6	-0.01	-0.001	0	15.379	75.222	0.604	0.457	0.022	0.004
11.041	17.431	75.237	0.721	17.408	75.237	0.72	-0.023	0	-0.001	18.513	75.257	0.749	1.082	0.02	0.028
11.042	17.431	75.32	0.837	17.408	75.32	0.837	-0.023	0	0	18.513	75.346	0.837	1.082	0.026	0
11.043	21.411	75.403	1.108	21.379	75.402	1.107	-0.032	-0.001	-0.001	22.902	75.429	1.157	1.491	0.026	0.049
11.044	21.412	75.553	1.396	21.379	75.552	1.395	-0.033	-0.001	-0.001	22.9	75.589	1.445	1.488	0.036	0.049
11.045	21.417	75.775	0.966	21.382	75.774	0.965	-0.035	-0.001	-0.001	22.898	75.823	0.968	1.481	0.048	0.002
11.046	21.446	75.885	0.718	21.417	75.884	0.718	-0.029	-0.001	0	22.929	75.934	0.718	1.483	0.049	0
11.047	21.427	75.9	0.799	21.391	75.899	0.799	-0.036	-0.001	0	22.858	75.947	0.8	1.431	0.047	0.001
11.048	21.429	75.906	1.359	21.393	75.905	1.357	-0.036	-0.001	-0.002	22.857	75.958	1.382	1.428	0.052	0.023
11.049	21.425	76.099	1.061	21.39	76.098	1.06	-0.035	-0.001	-0.001	22.839	76.155	1.072	1.414	0.056	0.011
11.05	21.425	76.206	1.157	21.39	76.205	1.157	-0.035	-0.001	0	22.839	76.26	1.176	1.414	0.054	0.019
11.051	22.236	76.345	0.895	22.184	76.344	0.895	-0.052	-0.001	0	24.574	76.398	0.896	2.338	0.053	0.001
11.053	22.399	76.444	0.912	22.341	76.443	0.91	-0.058	-0.001	-0.002	25.045	76.502	0.98	2.646	0.058	0.068
11.054	22.4	76.525	0.922	22.342	76.523	0.921	-0.058	-0.002	-0.001	24.893	76.594	0.957	2.493	0.069	0.035
11.055	22.453	76.61	0.905	22.387	76.609	0.905	-0.066	-0.001	0	24.32	76.69	0.906	1.867	0.08	0.001
11.056	22.453	76.683	0.844	22.388	76.681	0.842	-0.065	-0.002	-0.002	24.321	76.757	0.879	1.868	0.074	0.035
11.057	22.509	76.757	1.104	22.442	76.755	1.104	-0.067	-0.002	0	24.623	76.832	1.104	2.114	0.075	0
11.058	22.509	76.864	0.959	22.442	76.861	0.958	-0.067	-0.003	-0.001	24.624	76.94	0.993	2.115	0.076	0.034
11.059	22.509	76.954	1.095	22.441	76.952	1.094	-0.068	-0.002	-0.001	24.623	77.031	1.133	2.114	0.077	0.038
11.06	22.509	77.067	1.06	22.442	77.065	1.058	-0.067	-0.002	-0.002	24.623	77.147	1.097	2.114	0.08	0.037
11.061	22.509	77.188	1.169	22.442	77.186	1.168	-0.067	-0.002	-0.001	24.623	77.269	1.197	2.114	0.081	0.028
11.062	22.51	77.328	1.181	22.442	77.326	1.181	-0.068	-0.002	0	24.624	77.407	1.181	2.114	0.079	0
11.063	22.51	77.431	1.291	22.442	77.429	1.291	-0.068	-0.002	0	24.623	77.513	1.294	2.113	0.082	0.003
11.064	22.51	77.592	1.401	22.442	77.59	1.4	-0.068	-0.002	-0.001	24.623	77.672	1.416	2.113	0.08	0.015
11.065	22.51	77.78	1.294	22.442	77.777	1.293	-0.068	-0.003	-0.001	24.624	77.86	1.295	2.114	0.08	0.001
11.066	22.51	77.876	1.408	22.442	77.873	1.407	-0.068	-0.003	-0.001	24.624	77.974	1.436	2.114	0.098	0.028
11.067	21.469	78.088	1.169	21.436	78.085	1.169	-0.033	-0.003	0	22.313	78.193	1.17	0.844	0.105	0.001
11.068	22.025	78.317	0.741	21.975	78.314	0.741	-0.05	-0.003	0	23.468	78.393	0.741	1.443	0.076	0
11.069	22.124	78.386	1.087	22.07	78.384	1.087	-0.054	-0.002	0	23.804	78.459	1.087	1.68	0.073	0
11.07	22.448	78.552	1.014	22.385	78.55	1.013	-0.063	-0.002	-0.001	24.54	78.623	1.058	2.092	0.071	0.044
11.071	24.183	78.615	1.097	24.1	78.613	1.096	-0.083	-0.002	-0.001	27.007	78.689	1.097	2.824	0.074	0
11.072	24.184	78.753	1.085	24.101	78.75	1.084	-0.083	-0.003	-0.001	27.008	78.833	1.086	2.824	0.08	0.001
11.073	24.186	78.888	1.25	24.103	78.885	1.25	-0.083	-0.003	0	27.008	78.963	1.251	2.822	0.075	0.001
11.074	24.19	78.999	0.885	24.105	78.997	0.885	-0.085	-0.002	0	27.012	79.072	0.886	2.822	0.073	0.001
11.075	24.174	79.083	0.847	24.092	79.081	0.847	-0.082	-0.002	0	26.973	79.156	0.847	2.799	0.073	0
11.076	24.175	79.209	1.182	24.092	79.207	1.182	-0.083	-0.002	0	26.963	79.272	1.182	2.788	0.063	0
11.077	23.955	79.331	0.895	23.879	79.33	0.895	-0.076	-0.001	0	26.542	79.383	0.895	2.587	0.052	0
11.078	23.216	79.428	0.676	23.152	79.426	0.676	-0.064	-0.002	0	25.471	79.486	0.677	2.255	0.058	0.001
11.079	23.217	79.511	1.135	23.153	79.509	1.135	-0.064	-0.002	0	25.471	79.566	1.136	2.254	0.055	0.001
11.081	21.921	79.857	0.572	21.881	79.855	0.572	-0.04	-0.002	0	23.301	79.921	0.572	1.38	0.064	0
11.082	19.236	79.895	0.746	19.218	79.893	0.746	-0.018	-0.002	0	20.487	79.956	0.746	1.251	0.061	0
11.083	16.754	79.912	0.726	16.732	79.91	0.726	-0.022	-0.002	0	17.614	79.972	0.726	0.86	0.06	0
11.084	18.222	79.983	0.722	18.193	79.982	0.722	-0.029	-0.001	0	19.29	80.035	0.722	1.068	0.052	0
11.085	18.532	79.987	0.545	18.502	79.986	0.545	-0.03	-0.001	0	19.627	80.039	0.545	1.095	0.052	0
11.086	18.532	80.02	0.629	18.504	80.019	0.629	-0.028	-0.001	0	19.626	80.068	0.629	1.094	0.048	0
11.087	29.657	80.057	1.066	29.704	80.056	1.066	0.047	-0.001	0	31.865	80.101	1.066	2.208	0.044	0
11.088	29.692	80.152	1.556	29.737	80.153	1.558	0.045	0.001	0.002	31.986	80.199	1.602	2.294	0.047	0.046
11.089	29.147	80.517	1.681	29.737	80.527	1.681	0.59	0.01	0	31.036	80.578	1.683	1.889	0.061	0.002
11.09	29.148	80.76	2.116	29.737	80.777	2.137	0.589	0.017	0.021	31.037	80.83	2.164	1.889	0.07	0.048
11.091	29.148	80.96	1.004	29.737	80.979	1.012	0.589	0.019	0.008	31.037	81.035	1.021	1.889	0.075	0.017
11.092	29.3	81.302	0.878	29.737	81.343	0.878	0.437	0.041	0	31.529	81.456	0.878	2.229	0.154	0
11.093	29.3	81.262	1.564	29.717	81.303	1.564	0.417	0.041	0	31.443	81.419	1.561	2.143	0.157	-0.003
11.094	28.44	81.528	0.746	28.293	81.56	0.746	-0.147	0.032	0	30.616	81.658	0.746	2.176	0.13	0
11.095	3.335	81.573	0.469	3.333	81.602	0.469	-0.002	0.029	0	3.328	81.698	0.469	-0.007	0.125	0
20.014	12.26	75.087	0.826	12.247	75.086	0.826	-0.013	-0.001	0	13.072	75.149	0.832	0.812	0.062	0.006
20.015	12.271	75.158	0.502	12.256	75.158	0.502	-0.015	0	0	13.12	75.218	0.502	0.849	0.06	0
20.016	12.3	75.185	0.598	12.285	75.184	0.598	-0.015	-0.001	0	13.335	75.241	0.598	1.035	0.056	0
20.017	12.309	75.23	0.735	12.292	75.23	0.735	-0.017	0	0	13.333	75.281	0.735	1.024	0.051	0
20.018	12.312	75.282	0.706	12.296	75.281	0.706	-0.016	-0.001	0	13.333	75.326	0.706	1.021	0.044	0
20.019	12.316	75.352	0.83	12.299	75.352	0.83	-0.017	0	0	13.333	75.392	0.83	1.017	0.04	0
20.02	12.843	75.444	0.856	12.822	75.443	0.856	-0.021	-0.001	0	14.349	75.48	0.855	1.506	0.036	-0.001
20.021	12.844	75.559	0.903	12.822	75.559	0.903	-0.022	0	0	14.348	75.596	0.903	1.504	0.037	0
20.022	12.844	75.663	0.839	12.823	75.662	0.838	-0.021	-0.001	-0.001	14.348	75.702	0.854	1.504	0.039	0.015
20.023	12.844	75.778	0.979	12.824	75.778	0.978	-0.02	0	-0.001	14.354	75.822	1.05	1.51	0.044	0.071
20.024	12.886	75.901	0.575	12.865	75.9	0.575	-0.021	-0.001	0	14.461	75.957	0.575	1.575	0.056	0
20.025	13.155	75.92	0.89	13.132	75.919	0.89	-0.023	-0.001	0	15.037	75.974	0.89	1.882	0.054	0
20.026	13.163	75.973	0.789	13.137	75.972	0.789	-0.026	-0.001	0	15.056	76.018	0.789	1.893	0.045	0
20.027	12.356	76.069	0.883	12.348	76.068	0.883	-0.008	-0.001	0	13.324	76.099	0.883	0.968	0.03	0
20.029	12.356	76.274	1.503	12.348	76.274	1.503	-0.008	0	0	13.321	76.311	1.558	0.965	0.037	0.055
20.03	12.355	76.542	1.32	12.348	76.542	1.32	-0.007	0	0	13.321	76.586	1.358	0.966	0.044	0.038
20.031	12.356	76.832	1.331	12.348	76.832	1.33	-0.008	0	-0.001	13.321	76.88	1.375	0.965	0.048	0.044
20.032	12.356	76.853	1.272	12.348	76.853	1.271	-0.008	0	-0.001	13.321	76.903	1.31	0.965	0.05	0.038
20.033	12.439	76.946	1.321	12.43	76.945	1.321	-0.009	-0.001	0	13.489	76.997	1.364	1.05	0.051	0.043
20.034	12.439	76.954	1.344	12.43	76.954	1.344	-0.009	0	0	13.489	77.006	1.391	1.05	0.052	0.047
20.035	12.439	77.042	0.938	12.43	77.042	0.937	-0.009	0	-0.001	13.489	77.097	0.974	1.05	0.055	0.036
20.036	12.439	77.161	0.756	12.431	77.16	0.756	-0.008	-0.001	0	13.49	77.223	0.756	1.051	0.062	0
20.037	12.44	77.19	0.96	12.431	77.189	0.96	-0.009	-0.001	0	13.49	77.243	1.001	1.05	0.053	0.041
20.038	8.316	77.27	0.609	8.307	77.269	0.609	-0.009	-0.001	0	8.764	77.328	0.606	0.448	0.058	-0.003
20.039	8.317	77.332	0.713	8.308	77.331	0.712	-0.009	-0.001	-0.001	8.764	77.385	0.713	0.447	0.053	0
20.04	8.348	77.398	0.635	8.338	77.398	0.635	-0.01	0	0	8.584	77.45	0.63	0.236	0.052	-0.005
20.041	8.372	77.449	0.667	8.361	77.448	0.667	-0.011	-0.001	0	8.644	77.493	0.667	0.272	0.044	0

Recalibrate:	8A			8A and no flow bypassing Bridge Street						8A and steady flow after hydrograph peak					
100 year design flow plus 20%	"n" 0.100/.035/0.100			"n" 0.100/.035/0.100						"n" 0.100/.035/0.100					
	Run Results			Run Results			Change from model values			Run Results			Change from model values		
Node	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)	Max Flow (m3/s)	Max Stage (m AD)	Max Velocity (m/s)	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
20.043	8.372	77.497	0.69	8.361	77.496	0.69	-0.011	-0.001	0	8.646	77.541	0.69	0.274	0.044	0
20.044	8.421	77.609	1.053	8.408	77.609	1.053	-0.013	0	0	8.787	77.636	1.053	0.366	0.027	0
20.045	8.422	77.668	0.958	8.409	77.668	0.957	-0.013	0	-0.001	8.817	77.688	0.988	0.395	0.02	0.03
20.046	8.422	77.852	0.588	8.409	77.852	0.588	-0.013	0	0	8.815	77.871	0.588	0.393	0.019	0
20.047	8.422	77.878	0.515	8.409	77.878	0.514	-0.013	0	-0.001	8.814	77.887	0.537	0.392	0.009	0.022
20.048	8.422	77.889	0.422	8.409	77.889	0.422	-0.013	0	0	8.811	77.899	0.422	0.389	0.01	0
20.049	8.422	77.906	0.706	8.409	77.906	0.706	-0.013	0	0	8.776	77.917	0.706	0.354	0.011	0
20.05	8.423	77.995	0.662	8.409	77.994	0.662	-0.014	-0.001	0	8.788	78.006	0.662	0.365	0.011	0
20.051	8.424	78.022	0.903	8.41	78.022	0.902	-0.014	0	-0.001	8.864	78.031	0.94	0.44	0.009	0.037
20.052	8.424	78.052	1.329	8.41	78.051	1.329	-0.014	-0.001	0	8.864	78.063	1.329	0.44	0.011	0
20.053	8.423	78.174	0.932	8.41	78.174	0.938	-0.013	0	0.006	8.896	78.191	0.964	0.473	0.017	0.032
20.054	8.423	78.322	1.002	8.41	78.322	1.007	-0.013	0	0.005	9.083	78.349	1.023	0.66	0.027	0.021
20.055	5.949	78.441	0.8	5.937	78.44	0.79	-0.012	-0.001	-0.01	6.309	78.469	0.796	0.36	0.028	-0.004
20.056	5.662	78.555	0.566	5.653	78.554	0.566	-0.009	-0.001	0	5.925	78.58	0.567	0.263	0.025	0.001
20.057	5.591	78.583	0.718	5.582	78.582	0.718	-0.009	-0.001	0	5.807	78.607	0.718	0.216	0.024	0
20.058	5.591	79.593	0.966	5.582	79.592	0.966	-0.009	-0.001	0	5.807	79.627	0.978	0.216	0.034	0.012
20.059	5.611	79.656	0.518	5.601	79.654	0.518	-0.01	-0.002	0	5.846	79.69	0.519	0.235	0.034	0.001
20.06	5.564	79.677	0.434	5.564	79.676	0.434	0	-0.001	0	5.572	79.711	0.434	0.008	0.034	0
20.061	6.612	79.689	0.527	6.605	79.687	0.527	-0.007	-0.002	0	6.841	79.721	0.527	0.229	0.032	0
20.062	9.428	79.706	0.707	9.392	79.705	0.705	-0.036	-0.001	-0.002	10.327	79.735	0.741	0.899	0.029	0.034
20.064	9.829	79.853	0.578	9.786	79.851	0.577	-0.043	-0.002	-0.001	10.901	79.9	0.592	1.072	0.047	0.014
20.065	9.462	79.889	0.687	9.427	79.887	0.687	-0.035	-0.002	0	10.085	79.938	0.69	0.623	0.049	0.003
20.066	9.536	79.965	0.595	9.495	79.963	0.595	-0.041	-0.002	0	10.289	80.013	0.596	0.753	0.048	0.001
20.067	10.174	80.024	0.483	10.226	80.022	0.484	0.052	-0.002	0.001	10.751	80.069	0.487	0.577	0.045	0.004
20.068	11.128	80.057	0.73	11.198	80.056	0.731	0.07	-0.001	0.001	12.243	80.101	0.737	1.115	0.044	0.007
30.033	1.602	77.758	0.504	1.59	77.756	0.504	-0.012	-0.002	0	2.424	77.915	0.497	0.822	0.157	-0.007
30.034	1.602	78.183	0.14	1.59	78.183	0.139	-0.012	0	-0.001	1.949	78.219	0.159	0.347	0.036	0.019
30.035	1.601	78.551	0.521	1.59	78.549	0.521	-0.011	-0.002	0	1.949	78.605	0.521	0.348	0.054	0
30.036	1.201	78.554	0.246	1.19	78.552	0.246	-0.011	-0.002	0	1.549	78.608	0.256	0.348	0.054	0.01
30.037	1.201	78.574	0.113	1.19	78.572	0.113	-0.011	-0.002	0	1.549	78.631	0.113	0.348	0.057	0
30.038	1.316	78.601	0.346	1.298	78.598	0.343	-0.018	-0.003	-0.003	1.93	78.666	0.425	0.614	0.065	0.079
11.036u	14.817	75.035	0.76	14.809	75.035	0.76	-0.008	0	0	15.191	75.058	0.765	0.374	0.023	0.005
11.043J	17.431	75.403	0.902	17.408	75.402	0.902	-0.023	-0.001	0	18.515	75.429	0.934	1.084	0.026	0.032
11.052d	22.399	76.408	1.061	22.341	76.407	1.059	-0.058	-0.001	-0.002	25.045	76.46	1.145	2.646	0.052	0.084
11.052u	22.399	76.425	1.048	22.341	76.424	1.046	-0.058	-0.001	-0.002	25.045	76.48	1.129	2.646	0.055	0.081
11.067us-CS8	21.64	78.278	0.957	21.601	78.276	0.957	-0.039	-0.002	0	22.756	78.356	0.961	1.116	0.078	0.004
11.068us-CS9	22.121	78.34	0.954	22.067	78.338	0.954	-0.054	-0.002	0	23.727	78.413	0.967	1.606	0.073	0.013
11.069us-CS10	22.44	78.539	0.936	22.378	78.537	0.935	-0.062	-0.002	-0.001	24.401	78.612	0.965	1.961	0.073	0.029
11.070J	22.468	78.615	1.024	22.402	78.613	1.023	-0.066	-0.002	-0.001	24.678	78.689	1.067	2.21	0.074	0.043
11.073us	24.187	78.955	0.975	24.103	78.953	0.975	-0.084	-0.002	0	27.012	79.03	0.975	2.825	0.075	0
11.080d	21.921	79.656	1.182	21.881	79.654	1.181	-0.04	-0.002	-0.001	23.3	79.709	1.206	1.379	0.053	0.024
11.080u	21.921	79.781	1.075	21.881	79.779	1.075	-0.04	-0.002	0	23.3	79.841	1.095	1.379	0.06	0.02
11.083J	19.605	79.912	0.985	19.585	79.91	0.985	-0.02	-0.002	0	20.934	79.972	0.985	1.329	0.06	0
11.087J	18.537	80.057	0.703	18.508	80.056	0.703	-0.029	-0.001	0	19.626	80.101	0.703	1.089	0.044	0
11.088US-ST04	29.146	80.267	0.388	29.737	80.267	0.395	0.591	0	0.007	31.037	80.32	0.402	1.891	0.053	0.014
11.094ds	28.44	81.468	1.169	28.292	81.505	1.169	-0.148	0.037	0	30.616	81.604	1.17	2.176	0.136	0.001
11.095J	28.442	81.573	0.946	28.295	81.602	0.946	-0.147	0.029	0	30.616	81.698	0.946	2.174	0.125	0
20.013u	12.26	75.084	0.815	12.247	75.083	0.814	-0.013	-0.001	-0.001	13.072	75.144	0.831	0.812	0.06	0.016
20.028d	12.356	76.242	1.649	12.348	76.242	1.649	-0.008	0	0	13.321	76.279	1.713	0.965	0.037	0.064
20.028u	12.356	76.242	1.649	12.348	76.242	1.649	-0.008	0	0	13.321	76.279	1.713	0.965	0.037	0.064
20.038J	12.442	77.27	0.915	12.434	77.269	0.915	-0.008	-0.001	0	13.49	77.328	0.917	1.048	0.058	0.002
20.042d	8.372	77.48	0.751	8.361	77.479	0.751	-0.011	-0.001	0	8.645	77.521	0.751	0.273	0.041	0
20.042u	8.372	77.487	0.751	8.361	77.487	0.751	-0.011	0	0	8.645	77.53	0.751	0.273	0.043	0
20.050us	8.424	78.03	0.792	8.41	78.029	0.792	-0.014	-0.001	0	8.847	78.042	0.792	0.423	0.012	0
20.054us-CS1	8.546	78.423	0.788	8.554	78.423	0.788	0.008	0	0	9.347	78.457	0.81	0.801	0.034	0.022
20.054us-CS3	5.984	78.423	0.645	5.937	78.423	0.635	-0.047	0	-0.01	6.44	78.457	0.65	0.456	0.034	0.005
20.055us-CS4	5.772	78.524	0.478	5.762	78.523	0.475	-0.01	-0.001	-0.003	6.054	78.55	0.464	0.282	0.026	-0.014
20.056us-CS5	5.591	78.591	0.43	5.582	78.59	0.43	-0.009	-0.001	0	5.808	78.616	0.431	0.217	0.025	0.001
20.059us-1	5.611	79.661	0.498	5.601	79.659	0.498	-0.01	-0.002	0	5.846	79.695	0.5	0.235	0.034	0.002
20.059us-2	5.549	79.661	0.686	5.549	79.659	0.686	0	-0.002	0	5.558	79.695	0.686	0.009	0.034	0
20.063d	9.829	79.788	0.894	9.786	79.787	0.891	-0.043	-0.001	-0.003	10.901	79.823	0.96	1.072	0.035	0.066
20.063u	9.829	79.828	0.862	9.786	79.826	0.86	-0.043	-0.002	-0.002	10.901	79.87	0.921	1.072	0.042	0.059
30.033us-CS13	1.602	78.058	0.842	1.59	78.057	0.842	-0.012	-0.001	0	1.949	78.125	0.841	0.347	0.067	-0.001
30.034!	1.602	78.176	0.63	1.59	78.176	0.626	-0.012	0	-0.004	1.949	78.209	0.705	0.347	0.033	0.075
CS2	3.434	78.423	1.811	3.523	78.423	1.811	0.089	0	0	3.505	78.457	1.811	0.071	0.034	0
CS2US	3.221	78.652	0.72	3.339	78.643	0.72	0.118	-0.009	0	3.391	78.645	0.72	0.17	-0.007	0
CS6	2.849	78.919	0.799	2.844	78.919	0.806	-0.005	0	0.007	3.009	78.938	0.824	0.16	0.019	0.025
CS7	2.761	78.732	0.776	2.792	78.731	0.783	0.031	-0.001	0.007	2.963	78.747	0.81	0.202	0.015	0.034
ST02ds	2.849	79.389	0.953	2.844	79.388	0.952	-0.005	-0.001	-0.001	2.977	79.408	0.985	0.128	0.019	0.032
ST03	2.849	79.373	0.901	2.844	79.373	0.9	-0.005	0	-0.001	2.977	79.392	0.923	0.128	0.019	0.022
ST03ds	2.849	79.002	1.472	2.844	79.001	1.471	-0.005	-0.001	-0.001	2.977	79.018	1.502	0.128	0.016	0.03
W3.096	26.533	81.573	0.654	26.45	81.602	0.646	-0.083	0.029	-0.008	29.218	81.698	0.665	2.685	0.125	0.011
W3.097	26.535	81.613	0.605	26.452	81.64	0.605	-0.083	0.027	0	29.218	81.738	0.605	2.683	0.125	0
W3.098	26.541	81.622	0.516	26.458	81.648	0.516	-0.083	0.026	0	29.218	81.746	0.516	2.677	0.124	0

	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
Average	-0.007	0.001	0.000
Maximum	0.591	0.041	0.021
Minimum	-0.148	-0.009	-0.01

	Increase in Max Flow (m3/s)	Increase in Max Stage (m AD)	Increase in Max Velocity (m/s)
Average	1.207	0.053	0.014
Maximum	2.825	0.157	0.084
Minimum	-0.007	-0.007	-0.014