

**Appendix B:
Cross-Section Flood
Routing Variable
Predictions**

Table B-1: Cross-section flood routing variable predictions, Willow Park dam breach.

Stream	Reach	Station (ft)	Peak Discharge (cfs)	Time to Initial Breach Flow (hr)	Time to Peak Discharge (hr)	Time of Rise (min)	Discharge Left (cfs)	Discharge Right (cfs)	Minimum Channel Elevation (ft)	Water- Surface Elevation (ft)	Maximum Water Depth (ft)	Energy Elevation (ft)	Energy Slope (ft/ft)	Channel (ft/s)	Velocity (ft/s)		Flow Area (ft ²)	Top Width (ft)	Froude Number		Downstream Reach lengths			Modeling Distances			
															Left	Right			Channel	Section	Left (ft)	Channel (ft)	Right (ft)	Channel (ft)	Distance (miles)	Valley Distance (ft)	Distance (miles)
S. Piney	Canyon	983120	75,100	0	0.9	55	26,744	8,121	8571	8595	24	8602	0.0190	28.2	6.6	6.0	6822	582	1.02	0.57	1670	1740	1450	0	0.0	0	0.0
S. Piney	Canyon	981380	72,000	----	----	----	13,381	11,397	8520	8553	33	8564	0.0340	32.0	10.2	9.7	3972	240	1.04	0.79	1040	1060	1020	1,740	0.3	1,560	0.3
S. Piney	Canyon	980320	71,500	----	----	----	11,423	24,000	8480	8516	36	8525	0.0597	32.0	13.1	14.7	3639	205	0.99	0.82	660	680	660	2,800	0.5	2,590	0.5
S. Piney	Canyon	979640	71,400	----	----	----	15,911	20,153	8440	8471	31	8481	0.0907	31.2	15.6	16.1	3407	218	1.03	0.93	470	480	400	3,480	0.7	3,250	0.6
S. Piney	Canyon	979160	71,200	----	----	----	4,738	18,393	8400	8432	32	8442	0.0526	29.7	9.9	12.1	3614	229	1.01	0.87	500	660	650	3,960	0.8	3,685	0.7
S. Piney	Canyon	978500	71,100	0.25	1.0	45	31,189	8,264	8360	8394	34	8404	0.0803	33.3	16.7	14.3	3401	198	1.04	0.89	510	570	630	4,620	0.9	4,260	0.8
S. Piney	Canyon	977930	71,000	----	----	----	11,570	30,674	8320	8345	25	8353	0.0927	30.5	13.9	15.2	3790	298	1.11	0.93	420	530	520	5,190	1.0	4,830	0.9
S. Piney	Canyon	977400	70,900	----	----	----	4,683	40,663	8280	8302	22	8307	0.0937	25.5	11.6	14.0	4312	394	1.00	0.88	420	420	440	5,720	1.1	5,300	1.0
S. Piney	Canyon	976980	70,800	----	----	----	6,480	41,880	8240	8262	22	8267	0.0816	26.7	12.2	13.2	4542	410	1.03	0.83	480	580	380	6,140	1.2	5,730	1.1
S. Piney	Canyon	976400	70,700	0.33	1.0	40	14,574	28,243	8200	8223	23	8229	0.0941	26.5	13.6	13.9	4155	369	1.02	0.89	375	470	440	6,720	1.3	6,160	1.2
S. Piney	Canyon	975930	70,600	----	----	----	22,511	23,399	8160	8183	23	8189	0.0714	28.2	12.5	12.6	4540	393	1.06	0.81	1430	940	550	7,190	1.4	6,568	1.2
S. Piney	Canyon	974990	70,400	----	----	----	159	540	8120	8131	11	8134	0.0240	14.0	2.2	3.0	5248	827	0.93	0.94	1630	1570	1090	8,130	1.5	7,558	1.4
S. Piney	Canyon	973370	69,900	----	----	----	1,059	39,596	8080	8100	20	8104	0.0176	22.6	4.7	6.7	7433	614	0.93	0.48	1480	1570	1370	9,700	1.8	8,918	1.7
S. Piney	Canyon	971800	69,200	----	----	----	1,235	14,066	8040	8064	24	8072	0.0125	25.4	4.2	6.0	4751	320	0.97	0.67	1730	1980	1800	11,270	2.1	10,343	2.0
S. Piney	Canyon	969820	68,200	0.42	1.2	45	13,062	9,051	8000	8034	34	8045	0.0524	31.3	12.4	11.3	3329	196	1.01	0.88	830	990	970	13,250	2.5	12,108	2.3
S. Piney	Canyon	968830	68,200	----	----	----	35,752	6,344	7960	7987	27	7992	0.0222	26.4	9.9	7.1	5515	331	0.94	0.53	750	780	700	14,240	2.7	13,008	2.5
S. Piney	Canyon	968050	68,000	----	----	----	5,100	31,753	7920	7956	36	7964	0.0493	31.6	10.7	13.6	3799	214	0.97	0.75	700	770	800	15,020	2.8	13,733	2.6
S. Piney	Canyon	967280	67,900	----	----	----	15,265	17,067	7880	7911	31	7920	0.0642	31.2	13.4	13.5	3544	227	1.03	0.85	830	795	645	15,790	3.0	14,483	2.7
S. Piney	Canyon	966485	67,800	----	----	----	2,550	47,066	7840	7861	21	7866	0.0875	24.8	10.1	16.4	3860	293	1.02	0.85	400	520	420	16,585	3.1	15,220	2.9
S. Piney	Canyon	965965	67,700	----	----	----	3,151	33,366	7800	7826	26	7831	0.0303	25.2	7.0	10.9	4761	299	0.94	0.63	815	850	815	17,105	3.2	15,630	3.0
S. Piney	Canyon	965115	67,600	0.50	1.2	40	27,914	4,131	7760	7789	29	7797	0.0777	28.5	15.0	11.1	3483	238	1.01	0.89	340	430	420	17,955	3.4	16,445	3.1
S. Piney	Canyon	964685	67,500	----	----	----	12,364	18,407	7720	7755	35	7767	0.1012	33.9	16.4	17.8	2877	165	1.07	0.99	730	860	820	18,385	3.5	16,825	3.2
S. Piney	Canyon	963105	67,500	----	----	----	30,809	2,033	7640	7670	30	7679	0.0700	29.6	14.4	9.6	3521	234	1.02	0.87	630	700	600	19,245	3.6	17,600	3.3
S. Piney	Canyon	962405	67,400	----	----	----	14,559	29,869	7600	7622	22	7627	0.0539	25.4	10.3	12.8	4654	368	1.00	0.72	730	640	420	19,945	3.8	18,215	3.4
S. Piney	Canyon	961765	67,400	----	----	----	47,971	4,144	7560	7583	23	7587	0.0436	23.5	13.0	8.7	4825	315	0.89	0.63	585	565	520	20,585	3.9	18,790	3.6
S. Piney	Canyon	961200	67,300	----	----	----	5,084	37,471	7520	7548	28	7553	0.0308	24.4	8.0	11.8	4834	278	0.85	0.59	590	650	630	21,150	4.0	19,343	3.7
S. Piney	Canyon	960550	67,200	----	----	----	14,305	21	7480	7508	28	7519	0.1330	29.0	15.6	3.9	2745	194	1.14	1.15	545	610	620	21,800	4.1	19,953	3.8
S. Piney	Canyon	959540	67,200	0.58	1.3	40	12,051	32,090	7400	7424	24	7431	0.0903	26.4	13.8	17.3	3598	253	1.00	0.87	450	470	475	22,410	4.2	20,535	3.9
S. Piney	Canyon	959070	67,100	----	----	----	4,557	43,815	7360	7381	21	7387	0.0807	24.6	10.8	16.1	3914	291	1.00	0.82	550	555	405	22,880	4.3	20,998	4.0
S. Piney	Canyon	958515	67,100	----	----	----	3,063	43,112	7320	7342	22	7347	0.0581	23.4	9.0	13.9	4333	307	0.93	0.73	740	780	770	23,435	4.4	21,475	4.1
S. Piney	Canyon	957735	67,000	----	----	----	24,396	30,228	7280	7296	16	7299	0.1025	21.5	13.4	13.7	4609	495	1.00	0.84	400	450	480	24,215	4.6	22,230	4.2
S. Piney	Canyon	957285	67,000	----	----	----	21,570	35,860	7240	7252	12	7254	0.0731	18.5	9.1	9.3	6747	1020	0.96	0.68	600	540	440	24,665	4.7	22,670	4.3
S. Piney	Canyon	956745	66,900	----	----	----	14,726	42,255	7200	7213	13	7216	0.0732	19.7	10.0	10.3	6067	784	0.98	0.70	445	510	470	25,205	4.8	23,190	4.4
S. Piney	Canyon	956235	66,800	----	----	----	969	48,168	7160	7179	19	7182	0.0179	25.9	4.4	7.2	7630	608	1.11	0.44	570	770	610	25,715	4.9	23,648	4.5
S. Piney	Canyon	955465	66,700	----	----	----	54,820	1,096	7120	7138	18	7141	0.0440	21.8	10.7	6.7	5790	494	0.95	0.59	705	770	710	26,485	5.0	24,238	4.6
S. Piney	Canyon	954695	66,600	----	----	----	29,667	25,873	7080	7100	20	7104	0.0608	23.4	13.2	13.2	4675	354	0.95	0.69	525	560	525	27,255	5.2	24,945	4.7
S. Piney	Canyon	954135	66,600	0.67	1.3	40	41,233	4,251	7040	7065	25	7070	0.0411	26.3	12.9	8.7	4496	281	0.97	0.65	655	940	650	27,815	5.3	25,470	4.8
S. Piney	Canyon	953195	66,500	----	----	----	28,574	11,334	7000	7030	30	7039	0.0843	31.9	16.5	14.3	3358	221	1.07	0.89	580	545	520	28,755	5.4	26,123	4.9
S. Piney	Canyon	952650	66,400	----	----	----	27,711	4,741	6960	6988	28	6995	0.0309	27.2	11.1	8.0	4337	258	0.96	0.66	1060	1170	965	29,300	5.5	26,673	5.1
S. Piney	Canyon	951480	66,200	----	----	----	24,818	14,587	6920	6952	32	6960	0.0653	29.7	14.7	13.8	3651	226	0.96	0.80	470	580	630	30,470	5.8	27,685	5.2
S. Piney	Canyon	950900	66,200	----	----	----	12,771	18,220	6880	6914	34	6924	0.0548	32.9	12.5	13.4	3453	206	1.05	0.82	660	600	560	31,050	5.9	28,235	5.3
S. Piney	Canyon	950300	66,100	----	----	----	24,000	6,910	6840	6878	38	6886	0.0538	30.3	14.3	11.6	3432	183	0.92	0.78	695	660	625	31,650	6.0	28,845	5.5
S. Piney	Canyon	949640	66,100	----	----	----	6,703	33,818	6800	6831	31	6839	0.0657	30.5	12.4	16.7	3408	190	1.02	0.81	550	660	670	32,310	6.1	29,505	5.6
S. Piney	Canyon	948980	66,000	----	----	----	19,225	13,926	6760	6789	29	6795	0.0479	26.7	13.2	12.8	3775	212	0.95	0.73	660	710	630	32,970	6.2	30,115	5.7
S. Piney	Canyon	948270	65,900	----	----	----	8,695	15,489	6720	6754	34	6764	0.0524	31.3	11.4	12.6	3324	198	1.01	0.85	810	950	1000	33,680	6.4	30,760	5.8
S. Piney	Canyon	947320	65,800	0.75	1.4	40	7,336	31,137	6680	6708	28	6714	0.0663	26.9	11.7	13.7	3918	282	0.94	0.79	560	580	540	34,630	6.6	31,665	6.0
S. Piney	Canyon	946740	65,800	----	----	----	14,547	21,244	6640	6670	30	6678	0.0505	30.4	11.8	12.5	3922	258	1.01	0.76	620	780	720	35,210	6.7	32,215	6.1
S. Piney	Canyon	945960	65,700	----	----	----	20,536	8,847	6600	6633	33	6642	0.0506	30.8	13.0	11.2	3553	215	1.00	0.80	620						

Table B-1: Cross-section flood routing variable predictions, Willow Park dam breach.

Stream	Reach	Station (ft)	Peak Discharge (cfs)	Time to Initial Breach Flow (hr)	Time to Peak Discharge (hr)	Time of Rise (min)	Discharge Left (cfs)	Discharge Right (cfs)	Minimum Channel Elevation (ft)	Water- Surface Elevation (ft)	Maximum Water Depth (ft)	Energy Elevation (ft)	Energy Slope (ft/ft)	Channel (ft/s)	Velocity (ft/s)		Flow Area (ft ²)	Top Width (ft)	Froude Number		Downstream Reach lengths			Modeling Distances				
															Left	Right			Channel	Section	Left (ft)	Channel (ft)	Right (ft)	Channel (ft)	Distance (miles)	Valley Distance (ft)	Distance (miles)	
S. Piney	Canyon	928960	64,100	----	----	----	17,933	2,145	5720	5744	24	5751	0.0266	25.0	7.9	5.3	4434	365	0.99	0.73	1070	1120	1070	52,370	9.9	48,003	9.1	
S. Piney	Canyon	927840	63,800	----	----	----	12,056	11,459	5680	5714	34	5723	0.0882	28.3	15.9	14.1	2996	177	0.93	0.91	460	400	320	53,490	10.1	49,073	9.3	
S. Piney	Canyon	927440	63,800	----	----	----	23,703	8,185	5640	5675	35	5688	0.1365	35.1	21.4	17.1	2496	144	1.12	1.08	255	340	450	53,890	10.2	49,463	9.4	
S. Piney	Canyon	927100	63,800	----	----	----	14,708	6,304	5600	5633	33	5643	0.0385	29.5	10.7	9.5	3492	211	0.97	0.79	510	500	445	54,230	10.3	49,815	9.4	
S. Piney	Canyon	926600	63,700	1.0	1.7	40	15,411	4,310	5592.19	5616	24	5625	0.0469	27.3	13.2	10.0	3215	175	1.01	0.82	1341	1388	1365	54,730	10.4	50,293	9.5	
S. Piney	Story	925217	63,300	----	----	----	16,973	18,099	5520	5537.2	17.2	5542	0.0471	24.6	6.6	9.9	5550	730	1.09	0.73	946	1250	1151	56,118	10.6	51,646	9.8	
S. Piney	Story	923967	63,100	----	----	----	28,472	18,991	5480	5492.5	12.5	5494	0.0467	19.4	5.5	6.4	8928	1886	1.02	0.57	895	880	880	57,368	10.9	52,694	10.0	
S. Piney	Story	923087	62,900	----	----	----	40,042	9,239	5440	5451.64	11.64	5453	0.0466	18.3	4.7	5.7	10841	3021	1.01	0.54	860	1055	860	58,248	11.0	53,582	10.1	
S. Piney	Story	922032	62,800	----	----	----	38,605	11,788	5400	5410.96	10.96	5412	0.0480	17.8	4.1	5.2	12364	4291	1.01	0.53	870	890	680	59,303	11.2	54,442	10.3	
S. Piney	Story	921142	62,600	1.3	1.8	30	36,522	10,521	5360	5372.63	12.63	5374	0.0444	19.0	4.3	5.3	11299	3434	1.00	0.54	900	890	930	60,193	11.4	55,217	10.5	
S. Piney	Story	920252	62,300	----	----	----	38,391	9,972	5320	5331.91	11.91	5333	0.0564	18.2	4.5	5.6	11168	3868	0.99	0.58	780	855	610	61,083	11.6	56,132	10.6	
S. Piney	Story	919397	62,100	----	----	----	36,520	11,248	5280	5292.16	12.16	5294	0.0438	18.4	4.1	5.0	12043	3973	0.98	0.52	990	910	830	61,938	11.7	56,827	10.8	
S. Piney	Story	918487	61,900	----	----	----	35,543	11,306	5240	5252.46	12.46	5254	0.0334	18.7	3.7	4.5	13019	4081	0.99	0.47	1050	1370	1300	62,848	11.9	57,737	10.9	
S. Piney	Story	917117	61,400	1.5	2.0	30	37,416	8,385	5200	5212.65	12.65	5214	0.0342	19.1	3.8	4.6	12498	3837	1.00	0.48	1205	1225	1140	64,218	12.2	58,912	11.2	
S. Piney	Story	915892	61,000	----	----	----	43,645	2,384	5160	5172.28	12.27	5174	0.0352	19.0	3.7	4.6	13171	4462	1.01	0.48	1215	1140	1030	65,443	12.4	60,084	11.4	
S. Piney	Story	914752	60,600	----	----	----	39,050	6,288	5120	5132.42	12.42	5134	0.0351	19.1	3.7	4.6	12613	4077	1.01	0.48	1140	1230	1080	66,583	12.6	61,207	11.6	
S. Piney	Story	913522	60,300	1.8	2.2	25	42,272	818	5080	5093.23	13.23	5095	0.0257	20.0	3.5	4.2	13164	3828	1.02	0.44	1700	1720	1330	67,813	12.8	62,317	11.8	
S. Piney	Story	911802	59,700	----	----	----	31,415	14,306	5040	5051.35	11.35	5053	0.0302	19.3	3.4	4.3	13191	4151	1.08	0.45	1700	1142	930	69,533	13.2	63,832	12.1	
S. Piney	Story	910660	59,300	----	----	----	28,396	15,936	5000	5012.31	12.31	5014	0.0177	18.9	3.2	3.9	13719	3192	1.00	0.37	2220	1790	1600	70,675	13.4	65,147	12.3	
S. Piney	Story	908870	58,500	----	----	----	37,349	2,092	4960	4973.83	13.83	4976	0.0186	21.1	4.4	3.7	9908	1620	1.05	0.42	1130	1380	990	72,465	13.7	67,057	12.7	
Piney	Story	907490	58,200	2.1	2.5	25	369	29,265	4920	4938.69	18.69	4943	0.0179	22.1	3.8	5.5	6672	707	0.94	0.50	800	1120	1070	73,845	14.0	68,117	12.9	
Piney	Story to I90	906370	57,800	----	----	----	23,905	1,965	4900	4917.1	17.1	4921	0.0118	21.8	6.9	5.3	5303	550	0.99	0.62	1240	1160	740	74,965	14.2	69,052	13.1	
Piney	Story to I90	905210	57,400	----	----	----	3,671	11,769	4880	4898.78	18.78	4906	0.0144	25.8	6.6	6.5	4004	436	1.11	0.83	1530	1750	1330	76,125	14.4	70,042	13.3	
Piney	Story to I90	903460	57,200	----	----	----	22,066	4,190	4860	4876.72	16.72	4881	0.0121	21.7	6.7	5.3	5526	632	1.00	0.62	1500	1840	1800	77,875	14.7	71,472	13.5	
Piney	Story to I90	901620	56,800	2.2	2.6	25	20,434	7,630	4840	4856.29	16.29	4860	0.0115	20.7	6.6	5.1	6000	732	0.97	0.58	1550	2110	1660	79,715	15.1	73,122	13.8	
Piney	Story to I90	899510	56,300	----	----	----	19,174	2,861	4820	4834.71	14.71	4842	0.0242	27.8	7.0	6.7	4407	707	1.38	0.90	700	1100	900	81,825	15.5	74,727	14.2	
Piney	Story to I90	898410	56,200	----	----	----	16,570	11,397	4800	4816.45	16.44	4820	0.0107	20.1	6.5	6.4	5732	599	0.93	0.56	1700	1900	1500	82,925	15.7	75,527	14.3	
Piney	Story to I90	896510	55,800	----	----	----	15,387	5,819	4780	4796.77	16.77	4803	0.0150	24.1	8.1	5.9	4306	462	1.11	0.75	1200	1300	1250	84,825	16.1	77,127	14.6	
Piney	Story to I90	895210	55,500	----	----	----	9,359	9,549	4760	4778.58	18.58	4784	0.0114	22.7	5.9	5.7	4873	563	0.99	0.68	1900	2410	1900	86,125	16.3	78,352	14.8	
Piney	Story to I90	892800	55,100	2.3	2.8	30	25,944	4,897	4740	4754.21	14.21	4757	0.0139	20.5	5.7	4.9	6781	1105	1.03	0.58	1200	1700	1170	88,535	16.8	80,252	15.2	
Piney	Story to I90	891100	54,700	----	----	----	15,406	13,482	4720	4735.62	15.62	4739	0.0109	19.6	5.0	4.8	7241	1162	0.94	0.53	1470	1840	1620	90,235	17.1	81,437	15.4	
Piney	Story to I90	889260	54,300	----	----	----	29,470	1,845	4700	4714.7	14.7	4717	0.0109	18.6	5.4	4.5	7098	1021	0.92	0.51	2100	2100	1420	92,075	17.4	82,982	15.7	
Piney	Story to I90	887160	53,900	----	----	----	20,282	9,374	4680	4693.58	13.58	4697	0.0165	21.6	7.1	5.1	5817	918	1.12	0.65	1000	1200	830	94,175	17.8	84,742	16.0	
Piney	Story to I90	885960	53,500	----	----	----	31,715	247	4660	4678.59	18.59	4680	0.0039	13.4	4.4	2.7	8945	820	0.58	0.32	2210	3060	2030	95,375	18.1	85,657	16.2	
Piney	Story to I90	882900	52,800	----	----	----	851	23,200	4640	4654.88	14.88	4660	0.0163	23.0	5.6	5.5	5593	966	1.13	0.69	1050	1025	1520	98,435	18.6	87,777	16.6	
Piney	Story to I90	881875	52,500	2.6	3.1	30	6,477	20,103	4620	4635.17	15.17	4639	0.0123	20.3	5.1	4.9	6644	1127	0.99	0.57	1580	1630	1735	99,460	18.8	89,062	16.9	
Piney	Story to I90	880245	52,000	----	----	----	20,881	11,240	4600	4614.24	14.24	4616	0.0093	16.7	5.2	4.0	8052	1292	0.85	0.46	1475	1805	2270	101,090	19.1	90,719	17.2	
Piney	Story to I90	878440	42,300	2.75	3.5	45	8,714	26,686	4580	4610.42	30.42	4610	0.0001	3.0	0.9	1.0	39220	2266	0.10	0.05	270	290	420	102,895	19.5	92,592	17.5	
Piney	Story to I90	878295	Bridge																									
Piney	Story to I90	878150	42,300	2.75	3.5	45	7,220	18,301	4580	4592.67	12.67	4595	0.0123	18.7	4.6	4.5	6590	1345	0.96	0.51	1760	1600	1150	103,185	19.5	92,937	17.6	
Piney	Story to I90	876550	42,100	2.8	3.6	45	4,010	17,643	4560	4574.54	14.54	4577	0.0120	19.1	5.1	4.3	5973	1193	0.96	0.55	1670	2100	1830	104,785	19.8	94,392	17.9	
Piney	I-90 to US-14	874450	41,900	----	----	----	22,066	564	4540	4553.11	13.11	4555	0.0095	17.2	4.9	3.4	5808	895	0.94	0.50	1860	2870	1800	106,885	20.2	96,142	18.2	
Piney	I-90 to US-14	871580	41,800	----	----	----	14,221	10,522	4520	4532.7	12.69	4535	0.0086	15.9	4.2	7.6	5891	1074	0.88	0.53	2660	2770	2480	109,755	20.8	97,972	18.6	
Piney	I-90 to US-14	868810	41,700	3.0	3.8	45	1,396	21,294	4500	4513.52	13.52	4516	0.0082	16.4	3.6	5.3	5556	1095	0.87	0.59	2090	2500	2130	112,525	21.3	100,542	19.0	
Piney	I-90 to US-14	866310	41,600	----	----	----	13,406	11,481	4480	4492.41	12.41	4494	0.0091	16.0	6.8	4.0	5867	1025	0.90	0.52	2270	3165	2330	115,025	21.8	102,652	19.4	
Piney	I-90 to US-14	863145	41,500	3.3	3.9	40	15,645	9,880	4460	4471.93	11.93	4473	0.0064	14.6	3.6	6.0	7128	1259	0.78	0.43	1600	7340	3970	118,190	22.4	104,952	19.9	
Piney																												

Table B-1: Cross-section flood routing variable predictions, Willow Park dam breach.

Stream	Reach	Station (ft)	Peak Discharge (cfs)	Time to Initial Breach Flow (hr)	Time to Peak Discharge (hr)	Time of Rise (min)	Discharge Left (cfs)	Discharge Right (cfs)	Minimum Channel Elevation (ft)	Water- Surface Elevation (ft)	Maximum Water Depth (ft)	Energy Elevation (ft)	Energy Slope (ft/ft)	Channel (ft/s)	Velocity		Flow Area (ft ²)	Top Width (ft)	Froude Number		Downstream Reach lengths			Modeling Distances				
															Left (ft/s)	Right (ft/s)			Channel	Section	Left (ft)	Channel (ft)	Right (ft)	Channel (ft)	Distance (miles)	Valley Distance (ft)	Distance (miles)	
Clear	Piney to Clearmont	734820	33,300	6.5	7.4	55	2,326	16,588	4020	4036.66	16.66	4037	0.0021	8.3	4.3	3.1	7646	1810	0.44	0.37	5530	10830	5040	248,895	47.1	184,762	35.0	
Clear	Piney to Clearmont	723990	32,500	----	----	----	18,912	8,927	4010	4020	10	4020	0.0014	5.9	3.4	3.3	9063	1650	0.35	0.27	4170	9430	3760	259,725	49.2	190,047	36.0	
Clear	Piney to Clearmont	714560	31,900	7.0	7.9	55	13,039	11,256	4000	4011.32	11.32	4012	0.0022	8.2	4.2	4.3	6686	1177	0.45	0.35	7830	11200	7720	269,155	51.0	194,012	36.7	
Clear	Piney to Clearmont	703360	31,200	----	----	----	23,548	1,190	3980	3990.14	10.14	3991	0.0031	8.7	3.2	3.2	8444	2900	0.51	0.38	5210	10900	6930	280,355	53.1	201,787	38.2	
Clear	Piney to Clearmont	692460	30,900	7.8	8.7	55	15,479	8,135	3960	3969.68	9.68	3970	0.0046	10.3	3.6	4.4	6821	2398	0.62	0.47	4420	9290	4300	291,255	55.2	207,857	39.4	
Clear	Piney to Clearmont	683170	30,700	----	----	----	13,175	13,228	3940	3948.22	8.22	3948	0.0030	7.4	3.2	3.2	8764	2985	0.48	0.36	3600	9730	4870	300,545	56.9	212,217	40.2	
Clear	Piney to Clearmont	673440	30,100	8.3	9.2	55	10,224	11,300	3920	3933.74	13.74	3934	0.0018	8.3	4.3	4.9	5699	738	0.41	0.33	7990	9440	6500	310,275	58.8	216,452	41.0	
Clear	Piney to Clearmont	664000	29,500	----	----	----	14,921	1,822	3900	3914.86	14.85	3916	0.0029	11.3	6.8	4.7	3705	407	0.53	0.46	6750	8460	7000	319,715	60.6	223,697	42.4	
Clear	Piney to Clearmont	655540	29,200	8.8	9.8	60	9,845	12,870	3880	3891.7	11.7	3892	0.0018	7.5	4.1	4.0	6477	1058	0.40	0.32	4130	7150	4940	328,175	62.2	230,572	43.7	
Clear	Clearmont to Buffalo	648390	28,800	----	----	----	17,098	5,766	3870	3881.27	11.27	3882	0.0017	7.1	3.0	3.0	8444	2074	0.39	0.30	4460	6290	4700	335,325	63.5	235,107	44.5	
Clear	Clearmont to Buffalo	642100	28,100	9.2	10.3	65	13,976	8,550	3860	3872.25	12.25	3873	0.0011	6.1	3.2	3.5	7813	1254	0.32	0.25	4690	6660	4390	341,615	64.7	239,687	45.4	
Clear	Clearmont to Buffalo	635440	27,800	----	----	----	15,028	3,091	3850	3863.22	13.22	3864	0.0026	9.7	4.3	4.6	5155	925	0.49	0.40	4000	7640	4550	348,275	66.0	244,227	46.3	
Clear	Clearmont to Buffalo	627800	27,700	9.7	10.8	65	9,768	11,497	3840	3848.03	8.03	3849	0.0071	11.2	3.5	3.5	6714	3841	0.74	0.55	1580	5710	1610	355,915	67.4	248,502	47.1	
Clear	Clearmont to Buffalo	622090	27,300	----	----	----	73	24,428	3820	3831.02	11.02	3831	0.0004	3.4	1.2	1.9	13813	2414	0.19	0.15	4660	8150	5330	361,625	68.5	250,097	47.4	
Clear	Clearmont to Buffalo	613940	26,700	10.0	11.2	70	22,686	28	3800	3812.4	12.4	3813	0.0005	4.3	2.5	1.2	10161	1451	0.22	0.17	4780	4345	3870	369,775	70.0	255,092	48.3	
Clear	Clearmont to Buffalo	609595	26,400	----	----	----	2,815	12,365	3790	3804.76	14.76	3806	0.0023	10.0	3.0	4.6	4774	867	0.48	0.42	4390	9860	4310	374,120	70.9	259,417	49.1	
Clear	Clearmont to Buffalo	599735	26,200	10.4	11.8	80	4,704	12,303	3780	3791.64	11.64	3792	0.0037	10.6	4.1	4.1	5014	1295	0.57	0.47	4470	6940	4420	383,980	72.7	263,767	50.0	
Clear	Clearmont to Buffalo	592795	26,100	----	----	----	611	15,707	3760	3774.32	14.32	3775	0.0020	9.0	3.6	4.4	4820	698	0.43	0.36	5290	6900	4450	390,920	74.0	268,212	50.8	
Clear	Clearmont to Buffalo	585895	25,800	10.8	12.2	85	3,090	13,268	3750	3764.58	14.58	3765	0.0017	8.5	2.8	4.9	4927	741	0.41	0.36	4030	7660	4880	397,820	75.3	273,082	51.7	
Clear	Clearmont to Buffalo	578235	23,300	----	----	----	20,222	94	3740	3750.92	10.92	3751	0.0005	3.7	2.0	1.3	10917	1941	0.20	0.16	3680	6150	4290	405,480	76.8	277,537	52.6	
Clear	Clearmont to Buffalo	572085	22,500	11.3	13.3	115	3,195	4,563	3730	3748.38	18.38	3750	0.0018	10.4	7.2	7.0	2512	1607	0.44	0.40	200	200	200	411,630	78.0	281,522	53.3	
Clear	Clearmont to Buffalo	571985	Bridge																		Bridge							
Clear	Clearmont to Buffalo	571885	22,500	11.3	13.3	115	2,564	3,511	3730	3741.95	11.95	3746	0.0106	18.4	11.1	10.7	1451	868	0.98	0.92	3200	7650	3450	411,830	78.0	281,722	53.4	
Clear	Clearmont to Buffalo	564235	21,400	11.6	14.0	145	7,265		3720	3738.06	18.06	3740	0.0021	11.2	7.3		2270	2320	0.47	0.44	200	200	200	419,480	79.4	285,047	54.0	
Clear	Clearmont to Buffalo	564135	Bridge																		Bridge							
Clear	Clearmont to Buffalo	564035	21,400	11.6	14.0	145	4,695		3720	3730.81	10.81	3738	0.0183	22.8	11.6		1139	1946	1.27	1.23	3570	6330	2960	419,680	79.5	285,247	54.0	
Clear	Clearmont to Buffalo	557705	21,400	----	----	----	146	16,219	3710	3719.59	9.59	3720	0.0023	7.2	2.5	3.7	5194	1171	0.43	0.35	3570	6570	3530	426,010	80.7	288,512	54.6	
Clear	Clearmont to Buffalo	551135	21,400	11.9	14.4	150	204	17,137	3700	3709.74	9.74	3710	0.0014	5.7	2.0	2.9	6719	1505	0.34	0.27	3900	6650	3250	432,580	81.9	292,062	55.3	
Clear	Clearmont to Buffalo	544485	21,400	----	----	----	12,366	5,464	3690	3699.41	9.41	3700	0.0012	5.2	2.5	2.5	7804	1944	0.31	0.24	3390	7550	5820	439,230	83.2	295,637	56.0	
Clear	Clearmont to Buffalo	536935	21,300	12.4	14.9	150	13,803	79	3680	3692.1	12.1	3693	0.0021	8.2	3.2	2.6	5239	1269	0.43	0.35	4190	5255	4170	446,780	84.6	300,242	56.9	
Clear	Clearmont to Buffalo	531680	21,300	----	----	----	12,688	33	3670	3682.65	12.65	3683	0.0023	9.0	3.8	1.9	4279	849	0.46	0.39	4190	5300	3450	452,035	85.6	304,422	57.7	
Clear	Clearmont to Buffalo	526380	21,200	12.8	15.3	150	4,358	8,627	3660	3672.74	12.74	3673	0.0021	8.6	4.0	3.4	4571	940	0.44	0.37	10400	12400	9380	457,335	86.6	308,242	58.4	
Clear	Clearmont to Buffalo	513980	21,100	----	----	----	17,688	149	3640	3649.14	9.14	3649	0.0012	5.0	2.4	1.7	8043	2090	0.31	0.24	6310	10300	6480	469,735	89.0	318,132	60.3	
Clear	Clearmont to Buffalo	503680	21,100	13.8	16.2	145	13,124	242	3620	3633.82	13.82	3634	0.0014	7.4	4.4	2.8	4093	470	0.36	0.31	5120	8900	6890	480,035	90.9	324,527	61.5	
Clear	Clearmont to Buffalo	494780	20,900	----	----	----	13,161	1,524	3610	3624.58	14.58	3625	0.0007	5.6	2.1	2.5	8061	1746	0.27	0.21	4740	6700	5160	488,935	92.6	330,532	62.6	
Clear	Clearmont to Buffalo	488080	20,800	14.3	16.9	160	7,758	1,068	3600	3617.78	17.78	3619	0.0014	8.7	3.6	3.7	3804	484	0.38	0.34	7750	10600	7890	495,635	93.9	335,482	63.5	
Clear	Clearmont to Buffalo	477480	20,700	----	----	----	6,857	2,160	3590	3605.07	15.06	3606	0.0023	10.2	3.0	4.9	3908	932	0.48	0.45	6160	8810	5090	506,235	95.9	343,302	65.0	
Clear	Clearmont to Buffalo	468670	20,600	14.9	17.7	165	918	10,202	3580	3593.94	13.94	3595	0.0020	9.0	3.7	2.9	4805	1222	0.44	0.38	5890	7400	5830	515,045	97.5	348,927	66.1	
Clear	Clearmont to Buffalo	461270	20,500	----	----	----	1,088	11,550	3570	3582.49	12.49	3583	0.0021	8.4	2.5	3.8	4433	919	0.44	0.37	4690	6120	5040	522,445	98.9	354,787	67.2	
Clear	Clearmont to Buffalo	455150	20,500	15.6	18.2	160	702	13,631	3560	3571.93	11.93	3572	0.0015	6.9	2.7	3.9	4687	731	0.37	0.30	5130	5990	4760	528,565	100.1	359,652	68.1	
Clear	Buffalo to Powder	449150	20,400	----	----	----	12,242	1,145	3550	3563.99	13.99	3564	0.0011	6.6	1.9	2.7	7876	1944	0.32	0.23	3660	6400	4470	534,555	101.2	364,597	69.1	
Clear	Buffalo to Powder	442750	20,200	16.1	18.8	165	8,871	2,191	3540	3555.9	15.9	3556	0.0012	7.6	2.7	2.7	5344	825	0.34	0.26	6650	10100	6770	540,955	102.5	368,662	69.8	
Clear	Buffalo to Powder	432650	20,100	----	----	----	3,106	4,304	3530	3545.81	15.81	3547	0.0023	10.5	3.0	2.8	3758	754	0.48	0.42	5290	8000	6130	551,055	104.4	375,372	71.1	
Clear	Buffalo to Powder	424650	20,000	16.8	19.6	165	7,514	7,084	3520	3531.25	11.25	3532	0.0015	6.5	2.6	2.6	6408	1289	0.36	0.25	5570	7880	6450	559,055	105.9	381,082	72.2	
Clear	Buffalo to Powder	416770	19,800	----	----	----	728	13,019	3510	3523.3	13.3	3524	0.0010	6.0	2.2	2.4	6829	1172	0.30	0.21	5950	6800	4680	566,935	107.4	385,632	73.0	
Clear	Buffalo to Powder	409970	19,600	17.5	20.4	175	3,104	3,201	3500	3516.82	16.82	3518	0.0021	10.3	3.7	3.7	2993	365	0.46	0.40	5110	5970	5070	573,735	108.7			