APPENDIX A.
Tables Showing Flows at Selected Sites Along the Lower Colorado River

Introduction

Effects on river flows due to change in point of diversions were determined for several points on the river between Parker Dam and Imperial Dam. This reach of the river will be affected because of anticipated reduction in diversions to Imperial Valley at Imperial Dam. The reduced diversions at Imperial Dam and corresponding Parker Dam releases will be transferred to California by increased diversions from Lake Havasu. Annual river flows above Lake Havasu and below Imperial Dam will not be affected by this transfer.

The annual reduction in releases from Parker Dam due to the Secretarial Implementation Agreement as shown on Table 3 is anticipated to be about 400 kaf by 2011 and should remain at that amount there after. For the past 10 years, annual releases from Parker Dam in non-flood years has varied between 5.5 maf in 1993 to 7.3 maf in 1996 due to crop infestation, Gila River flows, fallowing, and climatic conditions. The following tables use 1996 as the baseline condition, and reductions are made from 1996 monthly releases from Parker Dam. Monthly water diversion, returns, and losses along this river reach were also based on this same year.

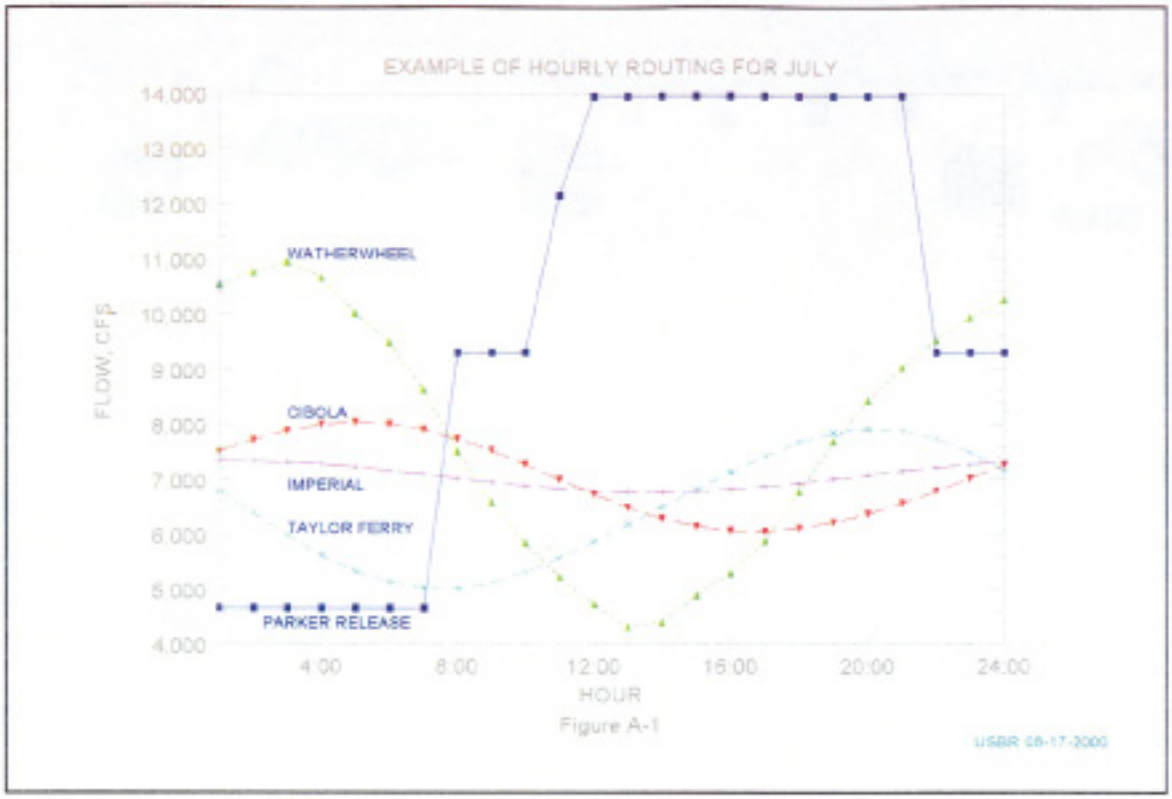
Several different reductions in releases were examined. The greatest annual reduction, 1.574 maf, assumed agricultural uses below Parker Dam would be cut back to allow full M&I uses for year 2060 during extreme shortage conditions. This 1.574 maf is within the natural variation in releases from Parker Dam in non-flood years for the last 10 years. Diversions to Imperial Valley have varied about 0.6 maf during the last 10 years.

Reductions in the 1996 monthly releases were distributed according to Imperial Irrigation Districts monthly 1996 diversions so that changes in Parker Dam releases were greater in the summer than in the winter. For the monthly amount transferred, Parker Dam's 1996 monthly release was reduced accordingly. This average monthly release rate was assumed to be the typical daily release rate for that month. This daily release was then distributed hourly to give the typical hourly release rate pattern for that daily release amount. The hourly releases could then be routed downstream to give the attenuated flow patterns at the downstream sites of interest.

The downstream routing of hourly releases were calibrated with observed flows at downstream flow gages using the Muskingum method with adjustments for diversions, returns, and losses. The downstream flow gages were Colorado River at Waterwheel (ww), at Taylor Ferry (tf), at Cibola (cib), and at Imperial Dam (imp). Figure A-1 shows an example of the hourly releases from Parker Dam and the depleted and attenuated routed flows to these downstream flow gage sites.

Points of interest are located by river mileage above the Southerly International Boundary. The river miles for selected points of interest are:

River Mile	Location Name
192.2	Parker Dam
177.7	Headgate Rock Diversion Dam
152.0	Waterwheel Gage
133.8	Palo Verde Diversion Dam
106.6	Taylor Ferry Gage
87.3	Cibola Gage
49.2	Imperial Dam



Tables 1-7 show the river mileage at selected points of interest. At the top of each table, the designations ww, tf, cib, and imp indicate the point where the routed flows were determined. These sites were close enough to the actual river mile of interest to accurately reflect the flow rates at the nearby sites.

Each table shows the average daily flow in cubic feet per second at Parker Dam (Parker Dam Avg Flow) for the baseline and the reduced flow due to transfers. Table 1 shows the daily average flow for the year routed to the points of interest, and Tables 2-7 show the hourly minimum or maximum flow at the downstream points of interest for selected months in cubic feet per second.

For each of the routed flows, river elevations were computed at each river cross-section of interest. The elevation versus flow ratings were developed from the steady flow and elevation data presented in Appendix A4 of the Review Draft Multi-Species Conservation Program report (MSCP, 2000). The river elevations for steady flow for the draft report were computed using the step-back water surface computations of the Corps of Engineers HEC-RAS computer program with cross-sectional survey data located about every mile. Figure A-2 shows an example of the hourly routed and depleted flows converted to elevation using the elevation versus flow rating for 2 example sites.

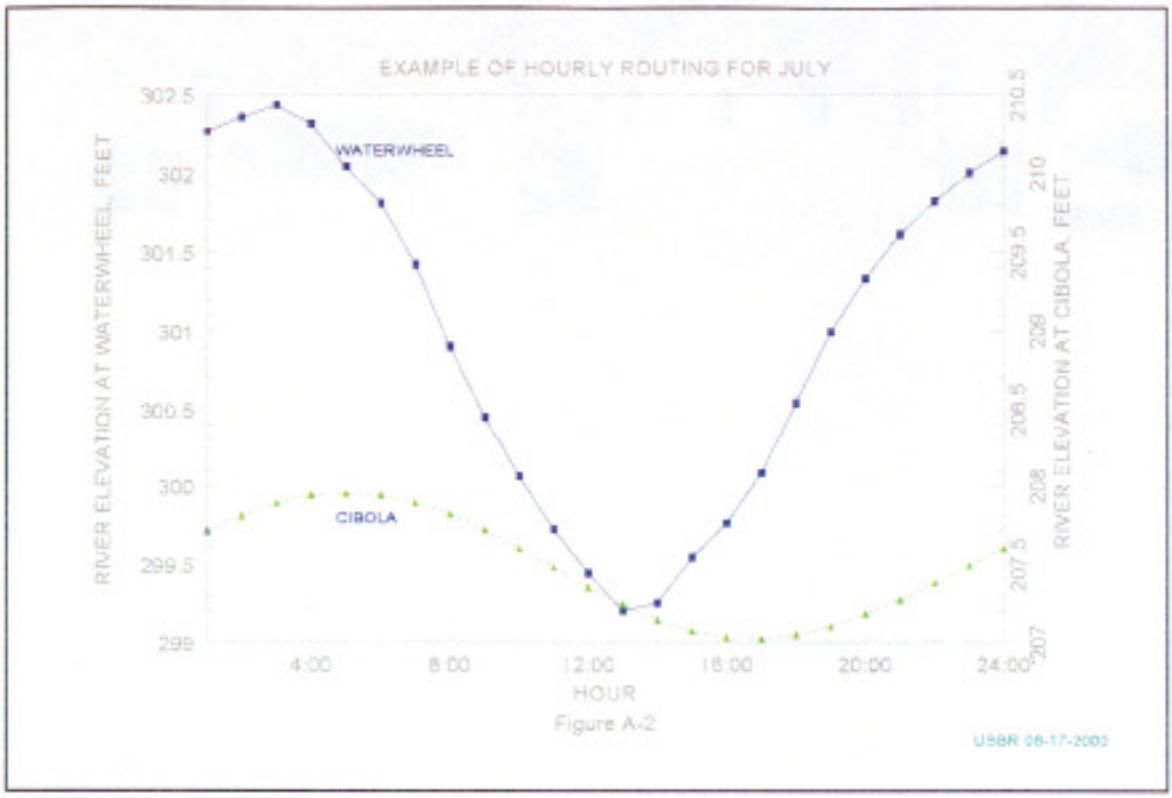


Figure A-2

The dates of the cross-sectional surveys used in the draft MSCP report are as follows:

Mile 176.3 to 139.9 surveyed 1996-1997
Mile 138.9 to 134.1 surveyed 1987
Mile 133.5 to 87.9 surveyed 1985
Mile 86.9 to 49.4 surveyed 1991

Of special note are river elevation changes at river mile 135.8 and river mile 50.8. These 2 sites are located in the reservoirs of Palo Verde Dam and Imperial Dam respectively and show little change in elevation with change in flow.

Table A-1 Annual Median Flows at Selected Locations along the Lower Colorado River

			ww	ww	ww	ww	ww	ww	tf	tf	tf
Location (RM)	ParkerDam Avg Flow		171.3	167.6	160.9	149.5	146.9	135.8	119.7	116.5	114.6
Baseline	10083	Flow:	8474	8474	8474	8474	8474	8474	7796	7796	7796
		Elev:	334.12	327.66	316.12	298.96	295.52	283.83	248.26	241.93	239.50
200K AF Reduction	9808	Flow:	8199	8199	8199	8199	8199	8199	7521	7521	7521
		Elev:	333.98	327.51	315.98	298.81	295.41	283.81	248.12	241.75	239.33
Change	-275	dElev:	-0.14	-0.15	-0.14	-0.14	-0.11	-0.02	-0.14	-0.18	-0.17
300K AF Reduction	9669	Flow:	8060	8060	8060	8060	8060	8060	7382	7382	7382
		Elev:	333.91	327.44	315.91	298.74	295.35	283.80	248.05	241.65	239.24
Change	-414	dElev:	-0.21	-0.22	-0.22	-0.22	-0.17	-0.03	-0.21	-0.28	-0.26
400K AF Reduction	9531	Flow:	7922	7922	7922	7922	7922	7922	7244	7244	7244
		Elev:	333.84	327.36	315.83	298.67	295.29	283.80	247.98	241.56	239.15
Change	-552	dElev:	-0.28	-0.30	-0.29	-0.29	-0.22	-0.04	-0.28	-0.37	-0.34
500K AF Reduction	9393	Flow:	7784	7784	7784	7784	7784	7784	7106	7106	7106
		Elev:	333.77	327.28	315.76	298.59	295.24	283.79	247.91	241.46	239.07
Change	-690	dElev:	-0.35	-0.38	-0.36	-0.36	-0.28	-0.04	-0.35	-0.47	-0.43
675K AF Reduction	9152	Flow:	7543	7543	7543	7543	7543	7543	6865	6865	6865
		Elev:	333.64	327.15	315.63	298.46	295.13	283.77	247.78	241.29	238.91
Change	-932	dElev:	-0.47	-0.51	-0.50	-0.50	-0.38	-0.06	-0.48	-0.63	-0.59
948K AF Reduction	8775	Flow:	7166	7166	7166	7166	7166	7166	6488	6488	6488
		Elev:	333.45	326.94	315.42	298.25	294.97	283.75	247.58	241.02	238.66
Change	-1308	dElev:	-0.67	-0.72	-0.70	-0.71	-0.55	-0.08	-0.68	-0.90	-0.84
1,553K AF Reduction	7940	Flow:	6331	6331	6331	6331	6331	6331	5653	5653	5653
		Elev:	333.00	326.45	314.94	297.75	294.59	283.70	247.11	240.40	238.07
Change	-2143	dElev:	-1.12	-1.21	-1.18	-1.20	-0.93	-0.13	-1.15	-1.53	-1.43
1.574K AF Reduction	7911	Flow:	6302	6302	6302	6302	6302	6302	5624	5624	5624
		Elev:	332.98	326.43	314.92	297.74	294.57	283.70	247.09	240.38	238.05
Change	-2172	dElev:	-1.14	-1.23	-1.20	-1.22	-0.95	-0.13	-1.17	-1.55	-1.45

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tf	tf	tf	cib	cib	cib	cib	cib	imp	imp	imp
109.1	103.1	96.7	86.1	80.4	72.2	70.3	66.1	56	53.6	50.8
7796	7796	7796	8860	8860	8860	8860	8860	8856	8856	8856
230.96	224.50	215.98	207.15	202.15	194.28	193.24	189.20	183.93	180.97	179.70
7521	7521	7521	8585	8585	8585	8585	8585	8581	8581	8581
230.79	224.36	215.81	207.01	202.03	194.16	193.12	189.08	183.83	180.91	179.69
-0.17	-0.15	-0.17	-0.13	-0.11	-0.12	-0.12	-0.13	-0.11	-0.06	-0.01
7382	7382	7382	8446	8446	8446	8446	8446	8443	8443	8443
230.71	224.28	215.72	206.94	201.97	194.10	193.05	189.01	183.77	180.88	179.68
-0.26	-0.22	-0.26	-0.20	-0.17	-0.19	-0.19	-0.19	-0.16	-0.10	-0.02
7244	7244	7244	8308	8308	8308	8308	8308	8305	8305	8305
230.62	224.21	215.63	206.87	201.92	194.03	192.99	188.95	183.72	180.85	179.68
-0.35	-0.30	-0.35	-0.27	-0.23	-0.25	-0.25	-0.26	-0.21	-0.13	-0.02
7106	7106	7106	8170	8170	8170	8170	8170	8167	8167	8167
230.53	224.13	215.55	206.80	201.86	193.97	192.92	188.88	183.67	180.81	179.67
-0.43	-0.37	-0.44	-0.34	-0.29	-0.31	-0.32	-0.32	-0.27	-0.16	-0.03
6865	6865	6865	7929	7929	7929	7929	7929	7926	7926	7926
230.37	224.00	215.39	206.68	201.75	193.86	192.81	188.77	183.57	180.76	179.66
-0.59	-0.51	-0.59	-0.47	-0.40	-0.42	-0.43	-0.43	-0.36	-0.21	-0.04
6488	6488	6488	7552	7552	7552	7552	7552	7549	7549	7549
230.13	223.78	215.14	206.48	201.58	193.68	192.63	188.59	183.42	180.67	179.65
-0.84	-0.72	-0.84	-0.67	-0.56	-0.60	-0.61	-0.61	-0.52	-0.30	-0.05
5653	5653	5653	6718	6718	6718	6718	6718	6715	6715	6715
229.55	223.30	214.57	206.01	201.20	193.27	192.22	188.18	183.07	180.49	179.62
-1.42	-1.21	-1.41	-1.14	-0.95	-1.01	-1.02	-1.02	-0.87	-0.49	-0.08
5624	5624	5624	6689	6689	6689	6689	6689	6686	6686	6686
229.53	223.28	214.55	205.99	201.18	193.26	192.20	188.17	183.05	180.48	179.62
-1.44	-1.22	-1.43	-1.16	-0.96	-1.02	-1.04	-1.03	-0.88	-0.49	-0.08

Table A-2 Minimum Hourly Flows at Selected Locations along the Lower Colorado River in April

			ww	ww	ww	ww	ww	ww	tf	tf	tf
Location (RM)	ParkerDam		171.3	167.6	160.9	149.5	146.9	135.8	119.7	116.5	114.6
	Avg Flow										
Baseline	14234	Flow:	10437	10437	10437	10437	10437	10437	10004	10004	10004
		Elev:	335.05	328.67	317.09	299.89	296.24	283.97	249.29	243.28	240.75
200K AF Reduction	13405	Flow:	9245	9245	9245	9245	9245	9245	9360	9360	9360
		Elev:	334.49	328.07	316.51	299.34	295.82	283.88	249.00	242.91	240.40
Change	-829	dElev:	-0.56	-0.60	-0.57	-0.55	-0.43	-0.08	-0.29	-0.38	-0.34
300K AF Reduction	13219	Flow:	9185	9185	9185	9185	9185	9185	9236	9236	9236
		Elev:	334.46	328.04	316.48	299.31	295.79	283.88	248.94	242.83	240.33
Change	-1015	dElev:	-0.59	-0.63	-0.60	-0.58	-0.45	-0.09	-0.34	-0.45	-0.41
400K AF Reduction	13034	Flow:	9141	9141	9141	9141	9141	9141	9132	9132	9132
		Elev:	334.44	328.01	316.46	299.29	295.78	283.88	248.90	242.77	240.28
Change	-1200	dElev:	-0.61	-0.66	-0.63	-0.60	-0.47	-0.09	-0.39	-0.51	-0.47
500K AF Reduction	12849	Flow:	9092	9092	9092	9092	9092	9092	9019	9019	9019
		Elev:	334.42	327.99	316.44	299.27	295.76	283.87	248.84	242.70	240.21
Change	-1385	dElev:	-0.63	-0.68	-0.65	-0.63	-0.49	-0.10	-0.44	-0.58	-0.53
675K AF Reduction	12364	Flow:	8678	8678	8678	8678	8678	8678	8530	8530	8530
		Elev:	334.22	327.77	316.23	299.06	295.60	283.84	248.62	242.40	239.94
Change	-1870	dElev:	-0.83	-0.90	-0.86	-0.83	-0.64	-0.12	-0.67	-0.88	-0.81
948K AF Reduction	11608	Flow:	6565	6565	6565	6565	6565	6565	7359	7359	7359
		Elev:	333.12	326.59	315.08	297.90	294.70	283.71	248.04	241.64	239.23
Change	-2626	dElev:	-1.93	-2.08	-2.01	-2.00	-1.55	-0.26	-1.25	-1.65	-1.52
1,553K AF Reduction	9932	Flow:	4988	4988	4988	4988	4988	4988	5441	5441	5441
		Elev:	332.23	325.63	314.11	296.87	293.90	283.63	246.99	240.23	237.92
Change	-4302	dElev:	-2.82	-3.04	-2.97	-3.03	-2.34	-0.34	-2.30	-3.05	-2.83
1.574K AF Reduction	9874	Flow:	4978	4978	4978	4978	4978	4978	5395	5395	5395
		Elev:	332.22	325.62	314.11	296.86	293.89	283.62	246.96	240.20	237.88
Change	-4360	dElev:	-2.83	-3.05	-2.98	-3.03	-2.35	-0.34	-2.33	-3.09	-2.86

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tf	tf	tf	cib	cib	cib	cib	cib	imp	imp	imp
109.1	103.1	96.7	86.1	80.4	72.2	70.3	66.1	56	53.6	50.8
10004	10004	10004	10970	10970	10970	10970	10970	11547	11547	11547
232.23	225.61	217.27	208.09	202.97	195.17	194.13	190.14	184.88	181.62	179.81
9360	9360	9360	10230	10230	10230	10230	10230	10733	10733	10733
231.88	225.30	216.91	207.78	202.69	194.87	193.83	189.82	184.61	181.42	179.78
-0.35	-0.31	-0.36	-0.32	-0.28	-0.30	-0.30	-0.32	-0.27	-0.20	-0.04
9236	9236	9236	10101	10101	10101	10101	10101	10566	10566	10566
231.81	225.24	216.84	207.72	202.64	194.81	193.78	189.76	184.55	181.38	179.77
-0.42	-0.37	-0.43	-0.37	-0.33	-0.35	-0.36	-0.38	-0.33	-0.24	-0.05
9132	9132	9132	9990	9990	9990	9990	9990	10400	10400	10400
231.75	225.19	216.78	207.67	202.60	194.77	193.73	189.71	184.49	181.34	179.76
-0.48	-0.42	-0.49	-0.42	-0.37	-0.40	-0.40	-0.43	-0.39	-0.28	-0.05
9019	9019	9019	9873	9873	9873	9873	9873	10235	10235	10235
231.69	225.13	216.71	207.62	202.56	194.72	193.68	189.66	184.44	181.30	179.75
-0.54	-0.48	-0.56	-0.47	-0.42	-0.45	-0.45	-0.48	-0.45	-0.32	-0.06
8530	8530	8530	9412	9412	9412	9412	9412	9758	9758	9758
231.41	224.88	216.43	207.41	202.37	194.52	193.48	189.45	184.27	181.19	179.73
-0.83	-0.72	-0.84	-0.69	-0.60	-0.64	-0.65	-0.69	-0.62	-0.43	-0.08
7359	7359	7359	8398	8398	8398	8398	8398	8928	8928	8928
230.69	224.27	215.71	206.92	201.95	194.07	193.03	188.99	183.96	180.99	179.70
-1.54	-1.34	-1.56	-1.18	-1.02	-1.09	-1.10	-1.15	-0.92	-0.63	-0.11
5441	5441	5441	6502	6502	6502	6502	6502	7190	7190	7190
229.39	223.17	214.42	205.88	201.09	193.17	192.11	188.08	183.27	180.59	179.64
-2.84	-2.44	-2.85	-2.21	-1.88	-2.00	-2.03	-2.06	-1.61	-1.03	-0.18
5395	5395	5395	6447	6447	6447	6447	6447	7132	7132	7132
229.36	223.14	214.38	205.85	201.07	193.14	192.08	188.05	183.24	180.58	179.63
-2.87	-2.47	-2.88	-2.25	-1.90	-2.03	-2.05	-2.09	-1.64	-1.04	-0.18

Table A-3 Maximum Hourly Flows at Selected Locations along the Lower Colorado River in April

			ww	ww	ww	ww	ww	ww	tf	tf	tf
Location (RM)	ParkerDam Avg Flow		171.3	167.6	160.9	149.5	146.9	135.8	119.7	116.5	114.6
Baseline	14234	Flow:	15864	15864	15864	15864	15864	15864	12353	12353	12353
		Elev:	337.29	331.09	319.33	301.95	297.83	284.42	250.24	244.54	241.89
200K AF Reduction	13405	Flow:	14504	14504	14504	14504	14504	14504	11389	11389	11389
		Elev:	336.77	330.53	318.82	301.49	297.48	284.30	249.87	244.04	241.44
Change	-829	dElev:	-0.52	-0.56	-0.51	-0.46	-0.35	-0.13	-0.38	-0.50	-0.45
300K AF Reduction	13219	Flow:	14034	14034	14034	14034	14034	14034	11110	11110	11110
		Elev:	336.58	330.33	318.63	301.32	297.35	284.26	249.75	243.89	241.30
Change	-1015	dElev:	-0.71	-0.76	-0.70	-0.62	-0.48	-0.17	-0.49	-0.64	-0.59
400K AF Reduction	13034	Flow:	13559	13559	13559	13559	13559	13559	10854	10854	10854
		Elev:	336.39	330.12	318.44	301.15	297.22	284.22	249.65	243.76	241.18
Change	-1200	dElev:	-0.90	-0.97	-0.89	-0.80	-0.62	-0.21	-0.60	-0.78	-0.71
500K AF Reduction	12849	Flow:	12888	12888	12888	12888	12888	12888	10587	10587	10587
		Elev:	336.12	329.82	318.17	300.90	297.02	284.16	249.53	243.61	241.05
Change	-1385	dElev:	-1.17	-1.26	-1.16	-1.05	-0.81	-0.26	-0.71	-0.93	-0.85
675K AF Reduction	12364	Flow:	12300	12300	12300	12300	12300	12300	10118	10118	10118
		Elev:	335.87	329.56	317.92	300.67	296.85	284.11	249.33	243.35	240.81
Change	-1870	dElev:	-1.42	-1.53	-1.41	-1.28	-0.99	-0.31	-0.91	-1.19	-1.09
948K AF Reduction	11608	Flow:	11984	11984	11984	11984	11984	11984	9779	9779	9779
		Elev:	335.74	329.41	317.78	300.55	296.75	284.09	249.19	243.15	240.63
Change	-2626	dElev:	-1.55	-1.68	-1.55	-1.40	-1.08	-0.34	-1.06	-1.39	-1.26
1,553K AF Reduction	9932	Flow:	11579	11579	11579	11579	11579	11579	8328	8328	8328
		Elev:	335.56	329.22	317.61	300.38	296.62	284.05	248.52	242.27	239.82
Change	-4302	dElev:	-1.73	-1.87	-1.73	-1.57	-1.21	-0.37	-1.72	-2.27	-2.07
1.574K AF Reduction	9874	Flow:	11530	11530	11530	11530	11530	11530	8264	8264	8264
		Elev:	335.54	329.20	317.58	300.36	296.61	284.05	248.49	242.23	239.78
Change	-4360	dElev:	-1.75	-1.89	-1.75	-1.59	-1.23	-0.37	-1.76	-2.31	-2.11

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tf	tf	tf	cib	cib	cib	cib	cib	imp	imp	imp
109.1	103.1	96.7	86.1	80.4	72.2	70.3	66.1	56	53.6	50.8
12353	12353	12353	12529	12529	12529	12529	12529	11979	11979	11979
233.42	226.66	218.49	208.71	203.52	195.77	194.73	190.80	185.02	181.73	179.84
11389	11389	11389	11686	11686	11686	11686	11686	11141	11141	11141
232.95	226.24	218.00	208.39	203.23	195.45	194.41	190.44	184.75	181.52	179.80
-0.47	-0.42	-0.48	-0.33	-0.29	-0.32	-0.32	-0.35	-0.28	-0.21	-0.04
11110	11110	11110	11438	11438	11438	11438	11438	10939	10939	10939
232.81	226.12	217.86	208.29	203.14	195.35	194.32	190.34	184.68	181.47	179.79
-0.61	-0.54	-0.63	-0.43	-0.38	-0.41	-0.41	-0.46	-0.34	-0.26	-0.05
10854	10854	10854	11194	11194	11194	11194	11194	10736	10736	10736
232.68	226.00	217.72	208.19	203.05	195.26	194.22	190.24	184.61	181.42	179.78
-0.74	-0.66	-0.76	-0.52	-0.47	-0.51	-0.51	-0.56	-0.41	-0.31	-0.06
10587	10587	10587	10946	10946	10946	10946	10946	10533	10533	10533
232.54	225.88	217.58	208.08	202.96	195.16	194.12	190.13	184.54	181.37	179.77
-0.88	-0.78	-0.90	-0.63	-0.56	-0.61	-0.61	-0.67	-0.48	-0.35	-0.07
10118	10118	10118	10453	10453	10453	10453	10453	10047	10047	10047
232.29	225.66	217.33	207.88	202.78	194.96	193.92	189.92	184.37	181.26	179.75
-1.12	-1.00	-1.16	-0.84	-0.74	-0.81	-0.81	-0.88	-0.65	-0.47	-0.09
9779	9779	9779	9997	9997	9997	9997	9997	9369	9369	9369
232.11	225.50	217.14	207.68	202.60	194.77	193.73	189.72	184.12	181.09	179.72
-1.31	-1.16	-1.35	-1.04	-0.92	-0.99	-1.00	-1.08	-0.90	-0.63	-0.12
8328	8328	8328	8476	8476	8476	8476	8476	7743	7743	7743
231.29	224.78	216.30	206.96	201.99	194.11	193.07	189.03	183.50	180.72	179.66
-2.13	-1.88	-2.18	-1.75	-1.53	-1.66	-1.67	-1.77	-1.53	-1.01	-0.18
8264	8264	8264	8413	8413	8413	8413	8413	7684	7684	7684
231.25	224.75	216.27	206.93	201.96	194.08	193.04	189.00	183.47	180.70	179.65
-2.17	-1.92	-2.22	-1.79	-1.56	-1.68	-1.69	-1.80	-1.55	-1.02	-0.18

Table A-4 Minimum Hourly Flows at Selected Locations along the Lower Colorado River in August

Location (RM)	ParkerDam Avg Flow		ww 171.3	ww 167.6	ww 160.9	ww 149.5	ww 146.9	ww 135.8	tf 119.7	tf 116.5	tf 114.6
Baseline	10818	Flow:	5412	5412	5412	5412	5412	5412	6853	6853	6853
		Elev:	332.48	325.89	314.38	297.16	294.13	283.65	247.78	241.29	238.90
200K AF Reduction	10502	Flow:	5251	5251	5251	5251	5251	5251	6490	6490	6490
		Elev:	332.38	325.79	314.28	297.05	294.04	283.64	247.58	241.03	238.66
Change	-316	dElev:	-0.09	-0.10	-0.10	-0.11	-0.09	-0.01	-0.20	-0.26	-0.24
300K AF Reduction	10344	Flow:	5204	5204	5204	5204	5204	5204	6351	6351	6351
		Elev:	332.36	325.76	314.25	297.02	294.02	283.64	247.50	240.92	238.57
Change	-474	dElev:	-0.12	-0.13	-0.13	-0.14	-0.11	-0.01	-0.27	-0.36	-0.34
400K AF Reduction	10186	Flow:	5132	5132	5132	5132	5132	5132	6204	6204	6204
		Elev:	332.32	325.72	314.21	296.97	293.98	283.63	247.42	240.82	238.46
Change	-632	dElev:	-0.16	-0.18	-0.18	-0.19	-0.15	-0.01	-0.35	-0.47	-0.44
500K AF Reduction	10028	Flow:	5038	5038	5038	5038	5038	5038	6066	6066	6066
		Elev:	332.26	325.66	314.15	296.90	293.93	283.63	247.35	240.71	238.37
Change	-790	dElev:	-0.22	-0.24	-0.24	-0.26	-0.20	-0.02	-0.43	-0.57	-0.53
675K AF Reduction	9752	Flow:	4941	4941	4941	4941	4941	4941	5841	5841	5841
		Elev:	332.20	325.60	314.08	296.83	293.87	283.62	247.22	240.54	238.21
Change	-1067	dElev:	-0.28	-0.30	-0.30	-0.33	-0.25	-0.02	-0.56	-0.74	-0.69
948K AF Reduction	9320	Flow:	4784	4784	4784	4784	4784	4784	5557	5557	5557
		Elev:	332.11	325.50	313.98	296.72	293.79	283.61	247.05	240.32	238.00
Change	-1498	dElev:	-0.37	-0.40	-0.40	-0.44	-0.34	-0.03	-0.72	-0.96	-0.90
1,553K AF Reduction	8364	Flow:	5123	5123	5123	5123	5123	5123	5352	5352	5352
		Elev:	332.31	325.71	314.20	296.96	293.97	283.63	246.93	240.16	237.85
Change	-2454	dElev:	-0.17	-0.18	-0.18	-0.20	-0.15	-0.02	-0.84	-1.12	-1.05
1.574K AF Reduction	8331	Flow:	5051	5051	5051	5051	5051	5051	5302	5302	5302
		Elev:	332.27	325.67	314.15	296.91	293.93	283.63	246.90	240.12	237.81
Change	-2487	dElev:	-0.21	-0.23	-0.23	-0.25	-0.19	-0.02	-0.87	-1.16	-1.09

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tf	tf	tf	cib	cib	cib	cib	cib	imp	imp	imp
109.1	103.1	96.7	86.1	80.4	72.2	70.3	66.1	56	53.6	50.8
6853	6853	6853	8264	8264	8264	8264	8264	8930	8930	8930
230.37	223.99	215.38	206.85	201.90	194.01	192.97	188.93	183.96	180.99	179.70
6490	6490	6490	7914	7914	7914	7914	7914	8604	8604	8604
230.13	223.79	215.14	206.67	201.74	193.85	192.80	188.76	183.84	180.92	179.69
-0.24	-0.20	-0.24	-0.18	-0.15	-0.16	-0.16	-0.16	-0.12	-0.08	-0.01
6351	6351	6351	7754	7754	7754	7754	7754	8443	8443	8443
230.03	223.71	215.05	206.59	201.67	193.78	192.73	188.69	183.77	180.88	179.68
-0.33	-0.28	-0.33	-0.27	-0.22	-0.24	-0.24	-0.24	-0.19	-0.11	-0.02
6204	6204	6204	7591	7591	7591	7591	7591	8284	8284	8284
229.93	223.62	214.95	206.50	201.60	193.70	192.65	188.61	183.71	180.84	179.68
-0.43	-0.37	-0.43	-0.35	-0.30	-0.31	-0.32	-0.32	-0.25	-0.15	-0.02
6066	6066	6066	7435	7435	7435	7435	7435	8128	8128	8128
229.84	223.54	214.85	206.41	201.53	193.63	192.57	188.53	183.65	180.81	179.67
-0.53	-0.45	-0.53	-0.44	-0.37	-0.39	-0.39	-0.39	-0.31	-0.19	-0.03
5841	5841	5841	7177	7177	7177	7177	7177	7858	7858	7858
229.68	223.41	214.70	206.27	201.41	193.50	192.45	188.41	183.54	180.74	179.66
-0.69	-0.58	-0.68	-0.58	-0.48	-0.51	-0.52	-0.52	-0.42	-0.25	-0.04
5557	5557	5557	6813	6813	6813	6813	6813	7447	7447	7447
229.48	223.24	214.50	206.06	201.24	193.32	192.27	188.23	183.37	180.65	179.64
-0.89	-0.75	-0.88	-0.79	-0.65	-0.69	-0.70	-0.70	-0.59	-0.34	-0.06
5352	5352	5352	6430	6430	6430	6430	6430	6655	6655	6655
229.33	223.11	214.35	205.84	201.06	193.13	192.07	188.04	183.04	180.47	179.62
-1.04	-0.88	-1.03	-1.01	-0.84	-0.88	-0.90	-0.89	-0.92	-0.52	-0.08
5302	5302	5302	6387	6387	6387	6387	6387	6619	6619	6619
229.29	223.08	214.32	205.81	201.04	193.11	192.05	188.02	183.02	180.47	179.62
-1.07	-0.91	-1.06	-1.04	-0.86	-0.91	-0.92	-0.91	-0.94	-0.53	-0.08