



September 28, 2011

Mr. Desi Alvarez
Chino Basin Watermaster
9641 San Bernardino Road
Rancho Cucamonga, CA 91730

Subject: Annual Streamflow Monitoring Report for Fiscal 2010/11, Water Rights Permit 21225

Dear Mr. Alvarez:

Wildermuth Environmental, Inc. (WEI) hereby submits the third Annual Streamflow Monitoring Report which was prepared at your direction and pursuant to Term 20 of Watermaster's Water Rights Permit 21225. Per the terms of the March 20, 2007 Stipulation, Watermaster and the California Department of Fish and Game have agreed that Watermaster will prepare estimates of the monthly changes in discharge in each tributary of the Santa Ana River from which stormwater is diverted, prepare annual reports describing the data and methods used to prepare these estimates, and submit these annual reports to the Department of Fish and Game by October 1 of each year¹. Each annual report will be prepared for the 12-month period running from July 1 through June 30. This report describes the data collected, the methodology for assessing impacts from stormwater diversions, and summarizes the diversion analysis for each tributary system for the period July 1, 2010 through June 30, 2011.

As in past years, the measured and estimated stormwater and dry-weather discharges diverted for recharge within the Chino Basin between July 1, 2010 and June 30, 2011 were relatively small, about 12% of the total discharge. About 88% the diversions occurred between November and March and typically resulted from short-duration, high-volume stormwater events. Watermaster's diversion for recharge provides some mitigation to the increase in stormwater discharge that occurs from the urbanization of the watershed. This reduction in stormwater and dry-weather discharges improves water quality in the Santa Ana River and its Chino Basin tributaries, and reduces channel erosion in these drainages.

DATA COLLECTION AND METHODOLOGY

There are four main tributary systems to the Santa Ana River from which stormwater and dry-weather discharges are diverted for groundwater recharge: Chino Creek, Cucamonga Creek, Day Creek, and San Sevaine Creek. These creeks, their drainage areas, and other significant hydrologic features are shown in Figure 1.

Two of the four systems, Chino and Cucamonga, are equipped with USGS stream gages from which average daily discharge data are available. The data collected from the USGS gages, stormwater and dry-weather discharge diversions measured and reported by the Inland Empire

¹ In September 2010, Watermaster requested and DFG approved an extension of the report due date from September 1st to October 1st of each year.

Utilities Agency (IEUA), and discharge data collected from other known point discharges (e.g. recycled water discharges) are used to estimate the discharge of Chino and Cucamonga Creeks as they enter the Prado Dam Reservoir. These data are also used to reconstruct hydrographs for each tributary as they would have been without the stormwater and dry-weather discharge diversions.

Day Creek and San Sevaine Creek are not equipped with USGS gage stations. In lieu of measured discharge data, the hydrographs for these two systems were estimated using WEI's Waste Load Allocation Model (WLAM). The WLAM uses recharge basin and stream channel characteristics, daily precipitation, boundary inflows, and land use characteristics to estimate stormwater runoff, and subsequently route stormwater, non-tributary inflows, and dry-weather discharges through the Santa Ana River Watershed. The WLAM was developed for and is used by the Santa Ana Regional Water Quality Control Board to evaluate the discharge and water quality impacts from existing and planned recycled and storm water discharges to the surface and groundwater resources of the watershed (WEI, 2009). The model is calibrated periodically by the Basin Monitoring Task Force². The WLAM was used by the Chino Basin Watermaster and the City of Riverside to complete the only watershed-wide (system-wide) review of all the appropriative water rights applications on the Santa Ana River in the 2006 State Board hearing process. Watermaster updated the WLAM in 2010 and subsequently used the WLAM to develop its 2010 Recharge Master Plan Update (WEI, 2010).

Daily discharge tables for key hydrologic components and for the aggregate of hydrologic components have been included in the appendices.

DIVERSION IMPACT ANALYSIS

During fiscal 2010/11, Watermaster diverted a total of 17,072 acre-feet (acre-ft) of stormwater and dry-weather discharge to spreading basins on the Chino, Cucamonga, Day, and San Sevaine tributary systems. Table 1 summarizes, by tributary, the monthly recharge volumes diverted to each spreading basin. The impacts of these diversions are analyzed below.

Chino Creek

Figure 1 shows the locations of significant points of recharge and discharge on the Chino Creek tributary system, including Watermaster's points of diversion to recharge basins, USGS gaging stations, and IEUA's recycled water discharges. The impact of Watermaster's diversions on discharge to the Prado Dam Reservoir is assessed at the point on Chino Creek where recycled water from the IEUA RP1 recycling plant discharges to Chino Creek³ (see *Point of Discharge Estimation* on Figure 1). Estimated average daily discharge entering the Prado Dam Reservoir from Chino Creek is calculated from the average daily discharge measured at USGS gage 11073360 plus the average daily discharge from each of IEUA's recycled water discharge points (Carbon Canyon, RP1-Prado, and RP5). These discharges are summarized in rows 1 and 2 of Table 2a and are shown in detail in Appendices A1 and A2. The resulting daily discharge time

² The Basin Monitoring Task Force consists of the all the recycling and regional water agencies in the watershed. The Task Force is administered by the Santa Ana Watershed Project Authority.

³ Note that the IEUA RP1 recycling plant has two discharge locations: one to Chino Creek (RP1-Prado) and one to Cucamonga Creek (RP1-Cucamonga).

history, summarized in row 3 of Table 2a and shown in detail in Appendix A3, approximates actual daily discharge in Chino Creek after Watermaster's diversions. Note that this estimation does not account for additional stormwater inputs generated by the Chino Creek drainage area that enter the creek downstream of USGS gage 11073360. The unaccounted for downstream flows are generated by an area that covers 23.75 square miles and represents about 26 percent of the total Chino Creek drainage. Thus, the relative impact of Watermaster's diversions is overstated.

The time history of stormwater and dry-weather discharge diversions is summarized in row 4 of Table 2a and is shown in detail in Appendix A4. When added together, the daily discharge time histories from Appendices A3 and A4 yield the approximate daily discharge time history in Chino Creek had Watermaster not diverted stormwater and dry-weather flows for recharge. The discharge time history without stormwater diversions is summarized in row 5 of Table 2a and is shown in detail in Appendix A5. The percent reduction in discharge entering the Prado Dam Reservoir relative to the estimated discharge without Watermaster diversions is summarized in row 6 of Table 2a.

The total discharge entering the Prado Dam Reservoir from Chino Creek during fiscal 2010/11 was estimated to be about 27,313 acre-ft, ranging from a low of about 792 acre-ft/month to a high of about 7,766 acre-ft/month. The total diversions from Chino Creek were about 4,296 acre-ft. 98 percent of the diversions on Chino Creek occurred between November and March and were coincident with the larger storm events of the year. About 13.6 percent of the total discharge in Chino Creek was diverted for recharge in fiscal 2010/11. Total discharge to the Prado Dam Reservoir is shown in Figure 2a as a stacked bar chart for monthly totals (acre-ft) and an x-y plot for the average daily discharge (cubic feet per second [cfs]). Figure 2a illustrates that the relative magnitude of the stormwater diversions for recharge are small compared with the total estimated discharge entering the Prado Dam Reservoir. Figure 2a also shows that the vast majority of recharge results from just a few short-duration, high-volume stormwater events.

Cucamonga Creek

Figure 1 shows the location of significant points of recharge and discharge on the Cucamonga Creek tributary system, including Watermaster's points of diversion to recharge basins, USGS gaging stations, and IEUA's recycled water discharges. The impact of Watermaster's diversions on discharge to the Santa Ana River at the Prado Dam Reservoir is assessed at the point where the concrete-lined channel of Cucamonga Creek ends (see *Point of Discharge Estimation* on Figure 1). Average daily discharge entering the Prado Dam Reservoir from Cucamonga Creek is approximated as the average daily discharge measured at USGS gage 11073495. The estimated discharge time history is summarized in row 1 of Table 2b and is shown in detail in Appendix B1. Note that this estimation does not account for additional stormwater inputs generated by the Cucamonga Creek drainage area that enter the creek downstream of USGS gage 11073495. The unaccounted for downstream flows are generated by an area that covers 13.42 square miles and represents about 15 percent of the total Cucamonga Creek drainage. Thus, the relative impact of Watermaster's diversions is overstated.

The time history of stormwater and dry-weather discharge diversions is summarized in row 2 of Table 2b and is shown in detail in Appendix B2. When added together, the daily discharge time histories from Appendices B1 and B2 yield the approximate daily discharge time history in Cucamonga Creek had Watermaster not diverted stormwater and dry-weather flows for

recharge. The discharge time history without Watermaster diversions is summarized in row 3 of Table 2b and is shown in detail in Appendix B3. The percent reduction in discharge entering the Prado Dam Reservoir relative to the estimated discharge without Watermaster diversions is summarized in row 4 of Table 2b.

The total discharge entering the Prado Dam Reservoir from Cucamonga Creek during fiscal 2010/11 was estimated to be about 43,618 acre-ft, ranging from a low of about 331 acre-ft/month to a high of about 20,019 acre-ft/month. The total diversions from Cucamonga Creek were about 5,746 acre-ft. 85 percent of the diversions on Cucamonga Creek occurred between November and March and were coincident with the larger storm events of the year. About 11.6 percent of the total discharge in Cucamonga Creek was diverted for recharge in fiscal 2010/11. Total discharge to the Prado Dam Reservoir is shown in Figure 2b as a stacked bar chart for monthly totals (acre-ft) and an x-y plot for average daily discharge (cfs). Figure 2b illustrates that the relative magnitude of the stormwater diversions for recharge are small compared with the total estimated discharge entering the Prado Dam Reservoir. Figure 2b also shows that the vast majority of recharge results from just a few short-duration, high-volume stormwater events.

Day Creek

Figure 1 shows the locations of significant points of recharge and discharge on the Day Creek tributary system, including Watermaster's points of diversion to recharge basins and the confluence of the Day Creek with the Santa Ana River (see *Point of Discharge Estimation* on Figure 1). Average daily discharge to the Santa Ana River from Day Creek is simulated using the WLAM. The simulated daily discharge represents the discharge to the Santa Ana River without stormwater and dry-weather diversions for recharge. The discharge time history simulated by the WLAM is summarized in row 1 of Table 2c and is shown in detail in Appendix C1.

The time history of stormwater and dry-weather discharge diversions is summarized in row 2 of Table 2c and is shown in detail in Appendix C2. Subtracting the daily diversion time history of Appendix C2 from the daily discharge time history of Appendix C1 yields an estimated time history of average daily discharge from Day Creek to the Santa Ana River after Watermaster diversions⁴. This discharge time history is summarized in row 3 of Table 2c and shown in detail in Appendix C3. The percent reduction in discharge entering the Santa Ana River relative to the simulated discharge without Watermaster diversions is summarized in row 4 of Table 2c. Table 2c also shows a summary of the discharge measured at USGS gage 11064600 (row 5), the closest gage on the Santa Ana River upstream of the confluence with Day Creek (see Figure 1). The percent reduction in discharge from Day Creek relative to discharge in the Santa Ana River at USGS gage 11064600 is summarized in row 6 of Table 2c.

Total discharge to the Santa Ana River from Day Creek during fiscal 2010/11 was estimated to be about 25,946 acre-ft, ranging from a low of 0 acre-ft/month to a high of about 20,526 acre-ft/month. The total diversions from Day Creek were estimated to be about 2,377 acre-ft. 91

⁴ Note that the WLAM does not simulate dry-weather flows on the Day Creek or San Sevaine Creek tributary systems. Thus, there will be dates where the simulated discharge to the Santa Ana River without diversions is zero even though measured diversions from Day Creek or San Sevaine were greater than zero on those same dates. For those dates where WLAM simulated discharge to the Santa Ana River without diversions is zero and diversions from Day or San Sevaine Creeks are greater than zero, the calculated average daily flow after diversions is set to zero because discharge cannot be a negative number.

percent of the diversions on Day Creek occurred between November and March and were coincident with the larger storm events of the year. About 7 percent of the total discharge in Day Creek was diverted for recharge in fiscal 2010/11. The percent reduction in discharge in Day Creek relative to discharge in the Santa Ana River, as represented at USGS gage 11064600, is about 0.8 percent⁵. Total discharge is shown in Figure 2c as a stacked bar chart for monthly totals (acre-ft) and an x-y plot for average daily discharge (cfs). Figure 2c illustrates that the vast majority of recharge results from just a few short-duration, high-volume stormwater events.

San Sevaine Creek

Figure 1 shows the locations of significant points of recharge and discharge on the San Sevaine Creek tributary system, including Watermaster's points of diversion and the confluence of the San Sevaine Creek with the Santa Ana River (*Point of Discharge Estimation* on Figure 1). Average daily discharge to the Santa Ana River from San Sevaine Creek is simulated using the WLAM. The simulated daily discharge represents the discharge to the Santa Ana River without stormwater and dry-weather diversions for recharge. The discharge time history simulated by the WLAM is summarized in row 1 of Table 2d and shown in detail in Appendix D1.

The time history of stormwater and dry-weather discharge diversions is summarized in row 2 of Table 2d and shown in detail in Appendix D2. Subtracting the daily diversion time history of Appendix D2 from the daily discharge time history of Appendix D1 yields an estimated time history of daily discharge from San Sevaine Creek to the Santa Ana River after Watermaster diversions⁴. This discharge time history is summarized in row 3 of Table 2d and shown in detail in Appendix D3. The percent reduction in discharge entering the Santa Ana River relative to the estimated discharge of San Sevaine Creek without Watermaster diversions is summarized in row 4 of Table 2d. Table 2d also shows a summary of the discharge measured at USGS gage 11064600 (row 5), the closest gage on the Santa Ana River upstream of the confluence with San Sevaine Creek (see Figure 1). The percent reduction in discharge from San Sevaine Creek relative to discharge in the Santa Ana River at USGS gage 11064600 is summarized in row 6 of Table 2d.

Total discharge to the Santa Ana River from San Sevaine Creek during fiscal 2010/11 was estimated to be about 27,042 acre-ft, ranging from a low of 0 acre-ft/month to a high of about 21,007 acre-ft/month. The total diversions from San Sevaine Creek were estimated to be about 4,654 acre-ft. 88 percent of the diversions on San Sevaine Creek occurred between November and March and were coincident with the larger storm events of the year. About 10 percent of the total discharge in San Sevaine Creek was diverted for recharge in fiscal 2010/11. The percent reduction in discharge in San Sevaine Creek relative to discharge in the Santa Ana River, as represented at USGS gage 11064600, is about 1.3 percent⁵. Total discharge is shown in Figure 2d as a stacked bar chart for monthly totals (acre-ft) and an x-y plot for average daily discharge (cfs). Figure 2d illustrates that the vast majority of recharge results from just a few short-duration, high-volume stormwater events.

⁵ FY 2010/11 data is incomplete for USGS Gage 11064600. Daily data is not available from the USGS for the period from 10/14/10 through 10/20/10 and from 6/1/11 through 6/30/11. Thus the percent reduction in discharge is overstated.

Should you have any questions regarding the information contained herein, please call me or Samantha Adams at (949) 420-3030.

Respectfully,

Wildermuth Environmental, Inc.



Mark J. Wildermuth, MS, RCE 32331 (exp 12/31/2012)
President



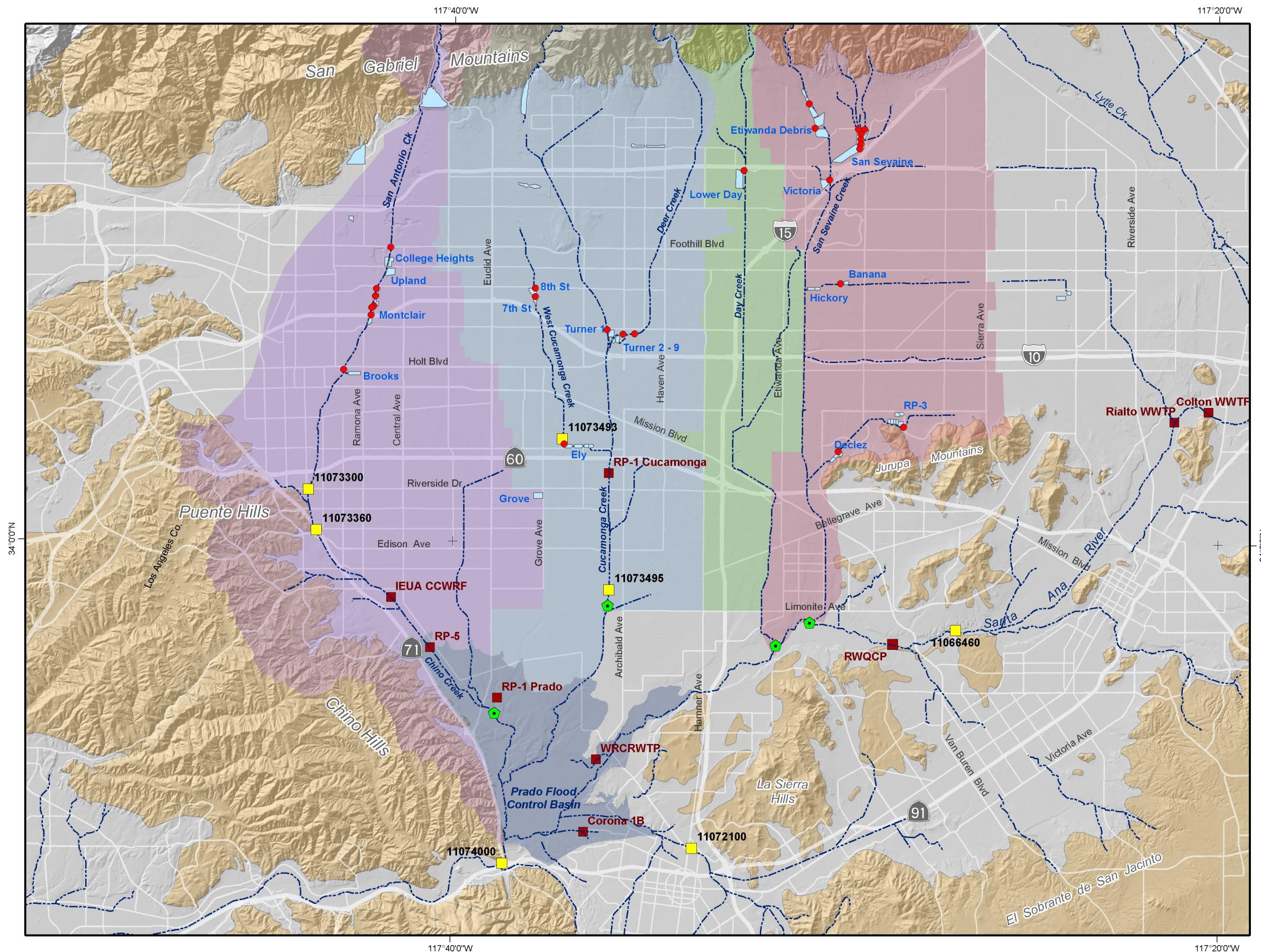
Samantha S. Adams
Senior Scientist

Encl. Tables 1, 2a through 2d; Figures 1 and 2a through 2d; and Appendices A through D

REFERENCES

Wildermuth Environmental, Inc. (2009). *2008 Santa Ana River Wasteload Allocation Model Report*. Prepared for the Basin Monitoring Program Task Force. May, 2009.

Wildermuth Environmental, Inc, Black & Veatch Corporation, Wagner & Bonsignore, and Sierra Water Group. (2010). *2010 Recharge Master Plan Update*. Prepared for the Chino Basin Watermaster, Chino Basin Water Conservation District, and the Inland Empire Utilities Agency. June, 2010.



**Stormwater Recharge Points of Diversion
Water Rights Permit 21225**

Figure 1

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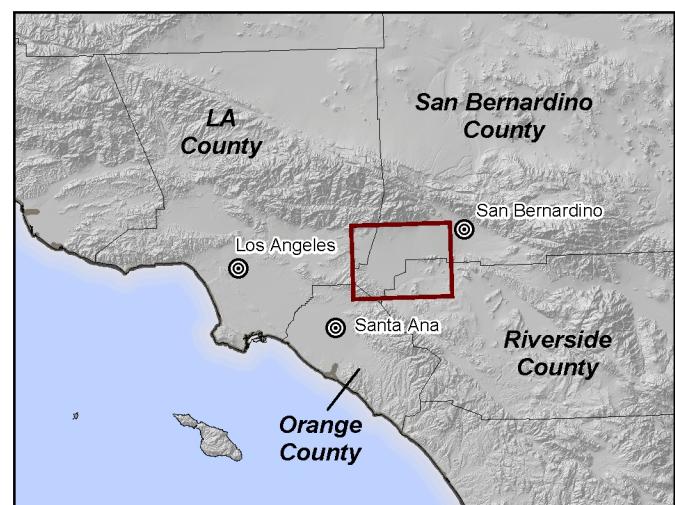
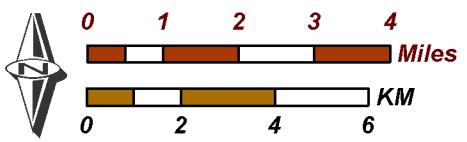


Figure 2a
**Estimated Discharge from Chino Creek to Prado Dam Reservoir
 with and without Stormwater Diversions**

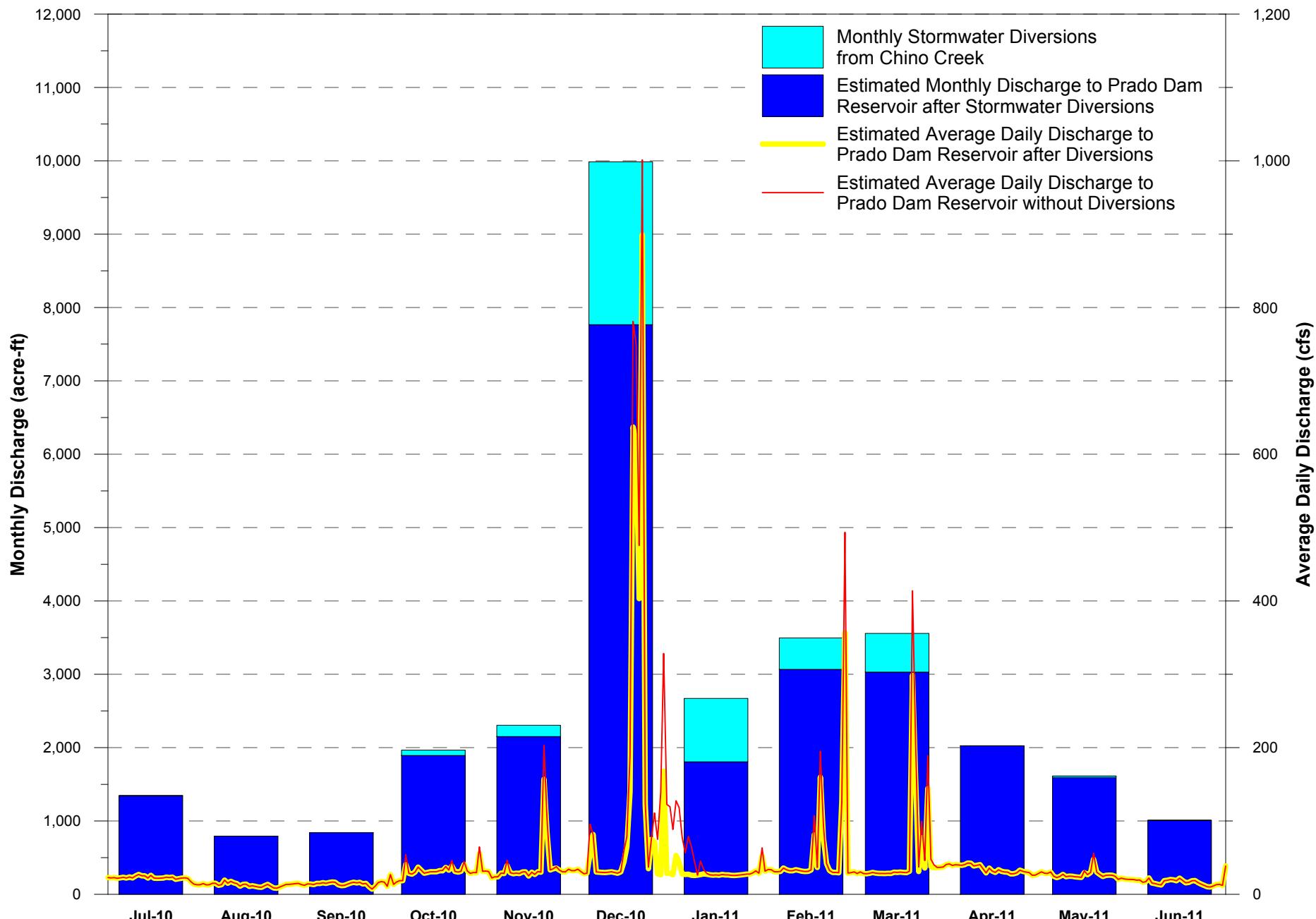


Figure 2b
**Estimated Discharge from Cucamonga Creek to Prado Dam Reservoir
 with and without Stormwater Diversions**

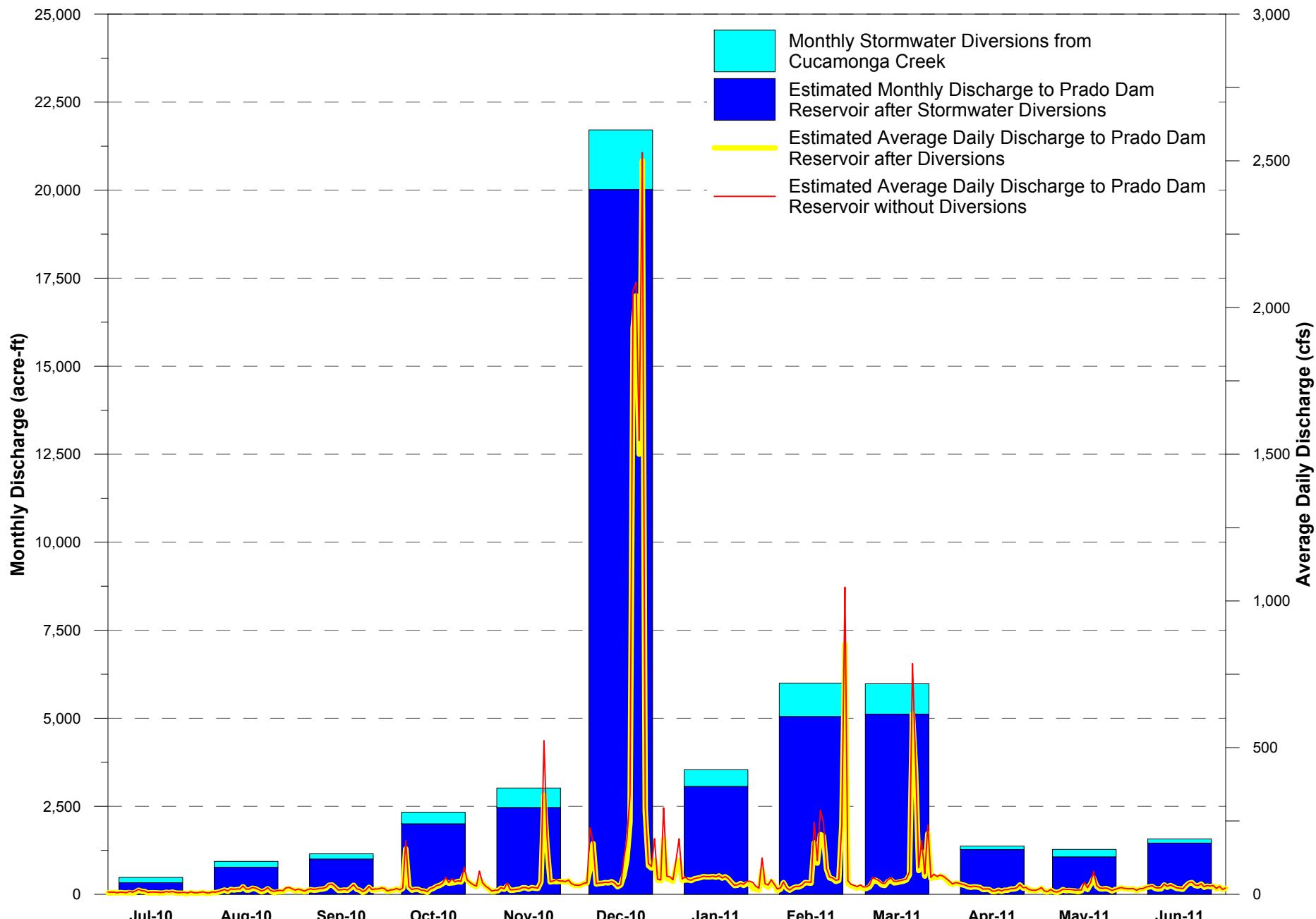


Figure 2c
**Estimated Discharge from Day Creek to the Santa Ana River
 with and without Stormwater Diversions**

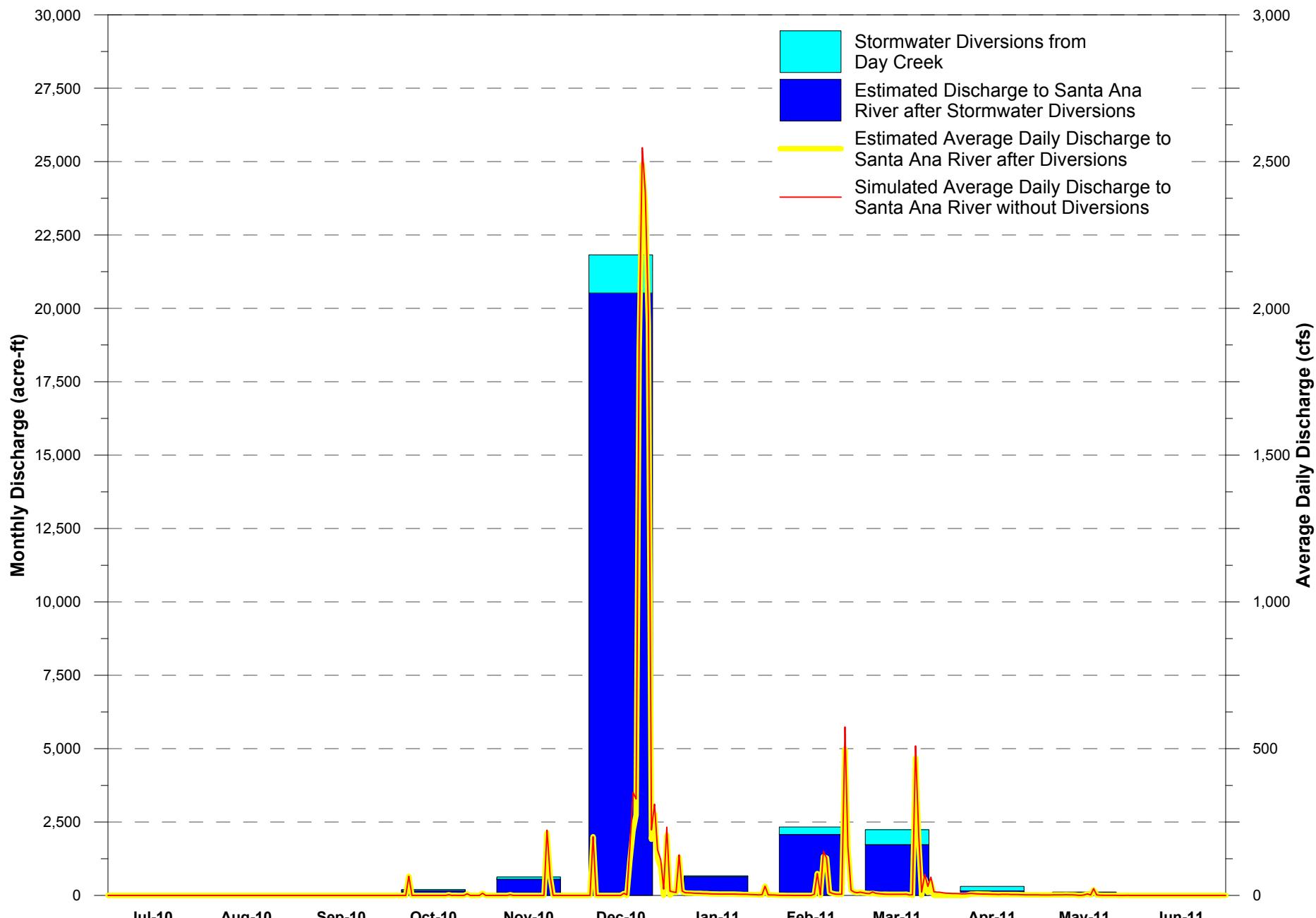


Figure 2d
**Estimated Discharge from San Sevaine Creek to the Santa Ana River
 with and without Stormwater Diversions**

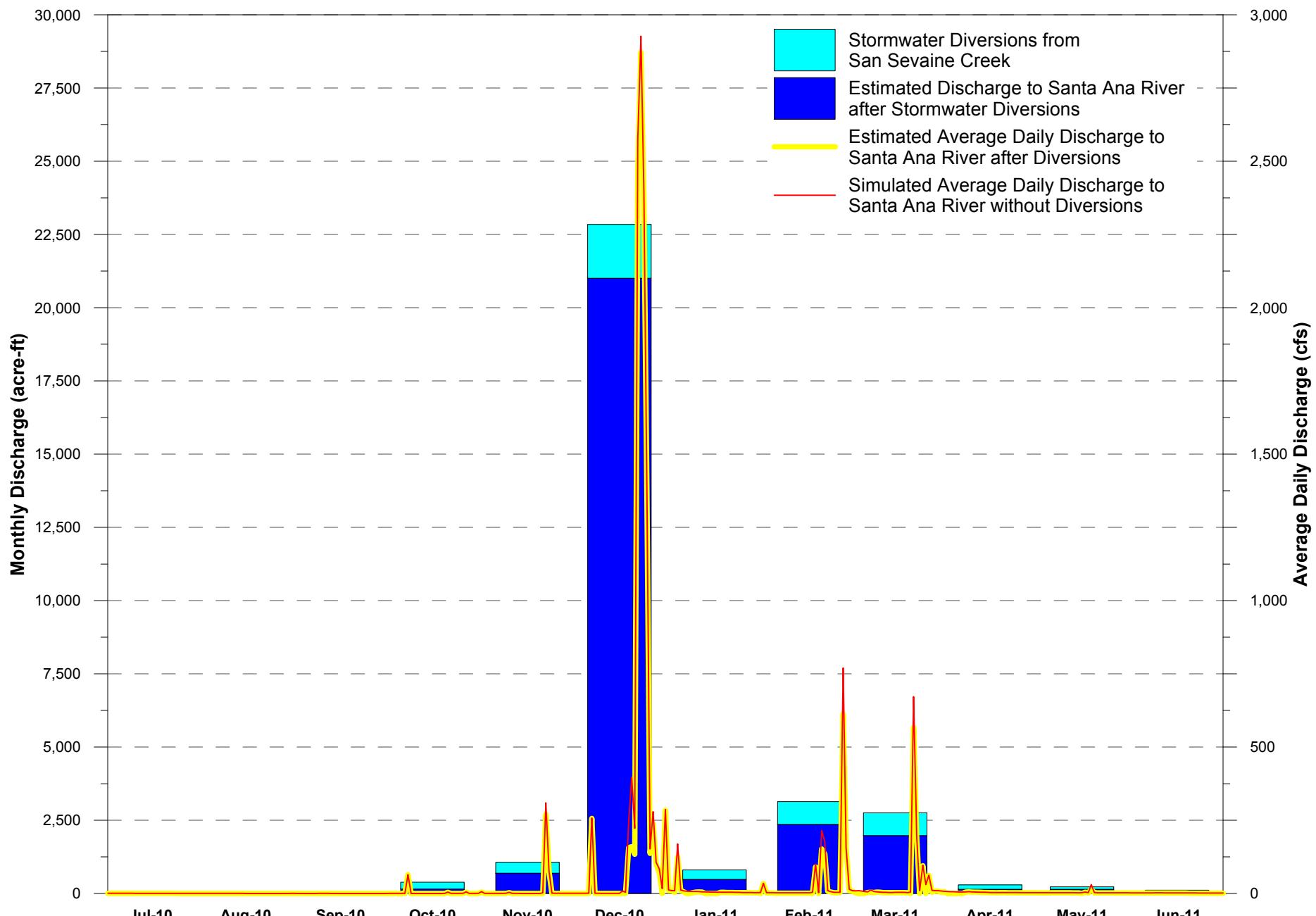


Table 1
Total Monthly Stormwater Recharge -- FY 2010/11
(acre-ft)

Tributary System	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Chino Creek													
College Heights	0	0	0	1	0	315	223	0	54	0	0	0	593
Upland	0	0	0	7	38	722	318	90	133	0	0	0	1,309
Montclair	0	0	0	42	70	901	325	216	199	0	11	0	1,764
Brooks	1	1	1	24	44	282	0	123	142	1	10	1	630
<i>Tributary Total</i>	1	1	1	73	153	2,220	866	429	528	1	22	1	4,296
Cucamonga Creek													
7th and 8th	30	28	36	89	186	500	110	277	250	24	33	21	1,584
Ely	0	0	0	29	127	572	104	323	236	3	13	8	1,415
Turner 1&2	23	53	57	90	141	365	190	234	264	76	139	90	1,723
Turner 3&4	95	84	54	56	39	161	1	50	49	0	0	0	588
Grove	0	0	0	65	60	94	68	59	61	0	24	0	432
<i>Tributary Total</i>	149	165	147	329	554	1,692	473	944	861	103	210	118	5,746
Day Creek													
Lower Day	2	1	1	17	11	351	17	91	152	56	3	1	702
Etiwanda Debris	0	0	0	8	31	698	0	90	294	90	2	0	1,212
Victoria	3	2	2	15	34	243	18	72	59	6	6	3	462
<i>Tributary Total</i>	5	3	2	39	76	1,293	35	253	505	152	11	4	2,377
San Sevaine Creek													
San Sevaine	0	0	0	94	81	578	13	143	133	0	7	0	1,050
Hickory	0	0	12	13	36	149	12	79	70	0	0	0	372
Banana	0	0	0	5	16	51	10	41	26	0	0	0	150
RP3	7	6	26	72	146	744	234	315	414	142	62	34	2,204
Declez	3	8	2	45	95	313	52	196	138	2	14	9	879
<i>Tributary Total</i>	11	14	39	229	374	1,837	321	774	782	144	84	44	4,654
Grand Total	166	182	190	670	1,156	7,042	1,695	2,400	2,675	400	327	168	17,072

Source: Inland Empire Utilities Agency

*Recharge volumes represent diversions of both stormwater and dry-weather discharge.

**Recharge volumes have been rounded to the nearest whole number.

Table 2a
Impact of Stormwater Diversions on Total Monthly Discharge Entering the Prado Dam Reservoir from Chino Creek for FY 2010/11
(acre-ft)

Row	Discharge Components	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11	Total
(1)	Discharge in Chino Creek at USGS Gage 11073360	40	22	26	189	403	5,890	191	1,333	1,181	60	110	99	9,543
(2)	Recycled Water Discharges from IEUA's Carbon Canyon, RP-5, and RP1-Prado	1,303	770	816	1,703	1,749	1,876	1,615	1,733	1,848	1,965	1,483	909	17,769
(3) = (1) + (2)	Estimated Discharge Entering the Prado Dam Reservoir	1,343	792	842	1,892	2,152	7,766	1,805	3,066	3,029	2,025	1,593	1,008	27,313
(4)	Stormwater and Dry-Weather Discharge Diversions	1	1	1	73	153	2,220	866	429	528	1	22	1	4,296
(5) = (3) + (4)	Estimated Discharge that would have Entered the Prado Dam Reservoir <i>without</i> Stormwater and Dry-Weather Diversions	1,345	793	843	1,965	2,304	9,986	2,671	3,494	3,557	2,026	1,614	1,009	31,608
(6) = (4) / (5)	Percent Reduction in Discharge Entering the Prado Dam Reservoir Relative to the Estimated Discharge <i>without</i> Diversions	0.1%	0.1%	0.1%	3.7%	6.6%	22.2%	32.4%	12.3%	14.8%	0.0%	1.3%	0.1%	13.6%

Table 2b
Impact of Stormwater Diversions on Total Monthly Discharge Entering the Prado Dam Reservoir from Cucamonga Creek for FY 2010/11
(acre-ft)

Row	Discharge Components	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11	Total
(1)	Discharge Entering the Prado Dam Reservoir after Stormwater and Dry-Weather Diversions (USGS Gage 11073495)	331	770	1,003	2,003	2,465	20,019	3,066	5,050	5,119	1,271	1,067	1,454	43,618
(2)	Stormwater and Dry-Weather Discharge Diversions	149	165	147	329	554	1,692	473	944	861	103	210	118	5,746
(3) = (1) + (2)	Estimated Discharge that would have Entered the Prado Dam Reservoir <i>without</i> Stormwater and Dry-Weather Diversions	481	934	1,150	2,331	3,019	21,712	3,539	5,994	5,981	1,374	1,276	1,572	49,364
(4) = (2) / (3)	Percent Reduction in Discharge Entering the Prado Dam Reservoir Relative to the Estimated Discharge <i>without</i> Diversions	31.1%	17.6%	12.8%	14.1%	18.4%	7.8%	13.4%	15.8%	14.4%	7.5%	16.4%	7.5%	11.6%

Table 2c
Impact of Stormwater Diversions on Total Monthly Discharge Entering the Santa Ana River from Day Creek for FY 2010/11
(acre-ft)

Row	Discharge Components	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11	Total
(1)	Discharge Entering the Santa Ana River <u>without</u> Stormwater and Dry-Weather Diversions ¹	0	0	0	162	572	21,736	670	2,282	2,107	247	116	0	27,892
(2)	Stormwater and Dry-Weather Discharge Diversions	5	3	2	39	76	1,293	35	253	505	152	11	4	2,377
(3) ²	Estimated Discharge Entering the Santa Ana River after Stormwater and Dry-Weather Diversions	0	0	0	160	552	20,526	636	2,078	1,732	156	106	0	25,946
(4) ³	Percent Reduction in Discharge Entering the Santa Ana River Relative to Discharge <u>without</u> Diversions	0%	0%	0%	1%	4%	6%	5%	9%	18%	37%	9%	0%	7%
(5)	Discharge in the Santa Ana River at USGS Gage 11066460 ⁴	4,481	3,051	3,191	2,858	4,975	142,463	7,833	21,550	26,949	24,206	3,965	NA	245,522
(6) ⁵	Percent Reduction in Discharge Entering the Santa Ana River Relative to Discharge at 11066460	0.0%	0.0%	0.0%	0.0%	0.4%	0.8%	0.4%	0.9%	1.4%	0.4%	0.3%	NA	0.8%

Notes

1--Estimated using the WLAM

2--Calculated on a daily basis, (3) = (1) - (2). Note that the WLAM does not simulate dry-weather flows on the Day Creek tributary system. Thus, there will be dates where the estimated discharge to the Santa Ana River without diversions is zero even though measured diversions from Day Creek were greater than zero on those same dates. For those dates where WLAM estimated discharge to the Santa Ana River without diversions is zero and diversions from Day Creek is greater than zero, the calculated average daily flow after diversions is set to zero.

3-- (4) = [(1) - (3)] / (1)

4--FY 2010/11 data is incomplete for USGS Gage 11064600. Daily data is not available from the USGS for the period from 10/14/10 through 10/20/10 and from 6/1/11 through 6/30/11.

5-- (6) = [(1) - (3)] / (5)

Table 2d
Impact of Stormwater Diversions on Total Monthly Discharge Entering the Santa Ana River from San Sevaine Creek for FY 2010/11
(acre-ft)

Row	Discharge Components	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11	Total
(1)	Discharge Entering the Santa Ana River <i>without</i> Stormwater and Dry-Weather Diversions ¹	33	14	10	173	801	22,434	712	2,974	2,421	244	216	110	30,140
(2)	Stormwater and Dry-Weather Discharge Diversions	11	14	39	229	374	1,837	321	774	782	144	84	44	4,654
(3) ²	Estimated Discharge Entering the Santa Ana River after Stormwater and Dry-Weather Diversions	22	2	0	153	693	21,007	479	2,358	1,973	145	143	66	27,042
(4) ³	Percent Reduction in Discharge Entering the Santa Ana River Relative to Discharge <i>without</i> Diversions	33%	89%	100%	12%	13%	6%	33%	21%	18%	41%	34%	40%	10%
(5)	Discharge in the Santa Ana River at USGS Gage 11066460 ⁴	4,481	3,051	3,191	2,858	4,975	142,463	7,833	21,550	26,949	24,206	3,965	NA	245,522
(6) ⁵	Percent Reduction in Discharge Entering the Santa Ana River Relative to Discharge at 11066460	0.2%	0.4%	0.3%	0.7%	2.2%	1.0%	3.0%	2.9%	1.7%	0.4%	1.8%	NA	1.3%

Notes

1--Estimated using the WLAM

2--Calculated on a daily basis, (3) = (1) - (2). Note that the WLAM does not simulate dry-weather flows on the San Sevaine Creek tributary system. Thus, there will be dates where the estimated discharge to the Santa Ana River without diversions is zero even though measured diversions from San Sevaine were greater than zero on those same dates. For those dates where WLAM estimated discharge to the Santa Ana River without diversions is zero and diversions from San Sevaine Creek are greater than zero, the calculated average daily flow after diversions is set to zero.

3-- (4) = [(1) - (3)] / (1)

4--FY 2010/11 data is incomplete for USGS Gage 11064600. Daily data is not available from the USGS for the period from 10/14/10 through 10/20/10 and from 6/1/11 through 6/30/11.

5-- (6) = [(1) - (3)] / (5)

Appendix A1
Average Daily Discharge at USGS Gage 11073360 on Chino Creek
(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	0.54	0.27	0.35	14.00	0.63	0.46	1.00	1.10	1.10	1.20	0.91	1.10
2	0.56	0.30	0.38	0.64	0.60	0.52	27.00	0.95	0.85	1.10	1.00	1.00
3	0.55	0.35	0.35	0.60	0.57	0.49	16.00	0.95	2.70	0.98	1.00	1.10
4	0.50	0.38	0.35	0.67	0.61	0.48	1.20	1.00	0.84	1.00	1.00	0.99
5	0.53	0.34	0.33	1.20	0.59	25.00	1.00	1.10	0.89	1.00	1.00	0.99
6	0.55	0.34	0.37	16.00	0.56	51.00	0.97	2.80	0.89	0.92	1.10	1.20
7	0.56	0.33	0.38	0.90	0.54	0.69	0.93	1.60	2.70	1.20	0.93	0.82
8	0.62	0.31	0.39	0.88	9.10	0.55	0.94	0.92	1.40	0.85	0.93	0.76
9	0.59	0.37	0.38	0.66	0.57	0.53	0.91	0.84	0.91	0.94	1.00	0.79
10	0.57	0.36	0.40	0.77	0.54	0.52	1.00	0.84	0.97	1.30	1.10	0.78
11	0.56	0.34	0.37	0.85	0.50	0.56	1.50	1.00	0.97	0.89	0.99	0.82
12	0.61	0.36	0.38	0.69	0.54	0.52	1.10	0.86	0.90	0.92	1.10	0.84
13	0.60	0.36	0.39	0.74	0.54	0.51	1.10	0.85	0.94	0.88	1.10	0.86
14	0.64	0.39	0.45	0.66	0.52	0.53	1.10	0.87	1.10	0.95	0.95	0.84
15	5.20	0.35	0.51	0.67	0.54	0.52	1.10	0.89	1.00	1.00	4.20	0.78
16	0.70	0.41	0.43	0.67	0.55	14.00	1.10	46.00	1.10	1.10	1.00	0.78
17	0.58	0.38	0.41	1.00	0.57	34.00	1.20	1.10	1.00	1.10	1.50	0.75
18	0.55	0.41	0.40	0.76	0.56	106.00	1.30	124.00	0.94	0.94	21.00	0.78
19	0.56	0.35	0.48	4.70	0.56	599.00	1.20	41.00	3.30	1.00	1.10	0.76
20	0.53	0.36	0.43	1.80	126.00	573.00	1.20	7.30	269.00	0.96	1.10	0.89
21	0.51	0.43	0.45	7.80	51.00	361.00	1.20	1.80	134.00	0.99	1.10	0.67
22	0.48	0.33	0.48	0.73	0.62	863.00	1.20	1.00	1.30	1.00	1.10	0.70
23	0.44	0.36	0.47	0.63	0.55	95.00	1.20	1.30	49.00	1.00	1.10	0.69
24	0.42	0.41	0.50	0.63	1.50	2.00	1.10	0.81	2.20	0.96	1.00	0.77
25	0.39	0.43	0.53	8.40	0.47	47.00	1.00	102.00	108.00	1.00	0.93	0.71
26	0.36	0.40	0.44	0.81	0.46	45.00	1.10	327.00	1.30	1.10	0.98	0.72
27	0.33	0.39	0.49	0.57	0.67	1.50	1.00	1.20	1.00	1.00	0.98	0.72
28	0.33	0.35	0.55	0.55	1.60	2.00	1.10	0.90	0.99	1.20	0.96	0.74
29	0.36	0.33	0.55	0.56	0.46	141.00	1.00		1.20	0.98	1.20	0.72
30	0.35	0.36	0.54	25.00	0.45	1.80	22.00		1.50	0.96	1.00	26.00
31	0.32	0.34		0.63		1.40	1.30		1.30		1.00	
Total (cfs-days)	20.39	11.19	12.93	95.17	202.97	2,969.6	96.05	671.98	595.29	30.42	55.36	50.07
Min	0.32	0.27	0.33	0.55	0.45	0.46	0.91	0.81	0.84	0.85	0.91	0.67
Max	5.20	0.43	0.55	25.00	126.00	863.00	27.00	327.00	269.00	1.30	21.00	26.00
Avg	0.66	0.36	0.43	3.07	6.77	95.79	3.10	24.00	19.20	1.01	1.79	1.67
Total (acre-ft)	40	22	26	189	403	5,890	191	1,333	1,181	60	110	99

Appendix A2
Average Daily Discharge of Recycled Water Effluent Discharges to Chino Creek

(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	22.28	14.23	14.54	12.72	31.11	33.79	25.73	32.75	29.55	40.05	29.72	18.08
2	21.81	12.53	12.84	12.86	30.34	30.41	26.01	32.64	27.32	38.27	27.83	18.58
3	22.12	12.69	11.91	16.12	21.66	27.49	27.37	29.84	26.86	39.34	27.41	15.33
4	21.19	14.70	13.77	17.95	23.05	28.26	26.30	29.78	27.43	39.00	29.36	16.26
5	21.97	14.85	13.77	17.36	23.17	30.10	26.22	30.14	27.10	38.50	23.51	21.36
6	22.74	12.07	12.84	24.81	28.29	30.65	26.27	32.97	27.71	39.57	21.66	14.20
7	21.66	12.99	14.54	27.77	27.78	29.69	25.06	31.88	27.27	41.46	23.50	13.77
8	23.05	19.03	14.39	26.56	30.09	29.47	24.64	31.22	27.51	41.46	26.30	12.69
9	21.81	14.70	15.47	29.47	28.94	29.32	25.37	31.36	27.44	37.59	23.05	11.91
10	24.60	17.33	14.54	36.34	27.54	29.21	25.99	32.69	27.40	38.21	23.67	17.95
11	26.61	15.32	15.62	31.98	28.37	29.47	26.42	31.62	27.27	39.60	23.51	18.25
12	24.75	14.23	16.40	28.03	27.66	30.21	26.28	30.80	27.68	33.83	22.74	19.34
13	24.75	10.67	16.09	29.02	29.84	29.16	25.51	30.12	27.52	28.26	22.43	18.87
14	21.50	13.15	12.69	30.12	30.21	28.19	25.17	30.43	29.08	34.67	22.12	17.64
15	20.58	13.46	11.29	30.15	24.40	30.20	25.32	32.29	28.88	30.80	25.37	21.18
16	21.35	10.21	11.76	30.18	29.47	30.21	24.88	35.04	29.16	28.79	25.83	17.95
17	21.19	11.29	13.46	31.31	26.52	30.71	25.97	35.46	28.87	32.52	28.46	14.85
18	21.35	10.21	14.85	31.26	30.35	33.80	25.15	35.77	28.65	30.46	26.56	15.47
19	21.66	9.44	15.93	31.84	29.47	38.06	25.17	35.50	28.12	29.41	28.96	17.64
20	22.90	9.28	15.01	31.08	30.91	43.41	24.58	34.56	29.56	29.25	25.99	17.85
21	22.12	11.14	15.78	30.75	32.83	42.09	24.43	30.62	25.29	26.93	23.33	15.44
22	23.05	13.15	13.77	30.52	32.55	36.17	24.75	28.91	29.76	27.09	24.77	13.20
23	20.11	10.67	14.54	29.66	34.16	27.23	25.11	28.65	28.26	28.33	25.08	11.51
24	20.88	8.20	10.06	30.75	34.05	32.81	25.91	28.54	33.68	31.88	24.95	9.59
25	21.66	7.89	6.50	32.12	32.55	27.95	26.42	23.87	36.43	30.18	23.70	9.28
26	22.12	9.59	10.36	31.06	30.37	26.31	26.45	29.64	36.35	29.21	19.24	10.69
27	21.35	11.14	15.47	27.91	29.97	26.42	28.23	27.83	35.40	28.70	20.90	12.56
28	16.86	13.15	16.71	29.16	32.60	24.66	30.80	28.70	35.58	24.81	19.83	12.75
29	13.46	13.15	16.09	28.87	31.81	26.83	27.72		35.52	25.28	19.35	11.51
30	12.69	13.61	10.36	30.31	31.78	26.56	30.40		35.86	27.24	19.35	12.35
31	12.69	14.23		30.69		27.13	30.35		39.31		19.03	
Total (cfs-days)	656.86	388.30	411.35	858.72	881.82	945.97	814.00	873.61	931.84	990.71	747.54	458.04
Min	12.69	7.89	6.50	12.72	21.66	24.66	24.43	23.87	25.29	24.81	19.03	9.28
Max	26.61	19.03	16.71	36.34	34.16	43.41	30.80	35.77	39.31	41.46	29.72	21.36
Avg	21.19	12.53	13.71	27.70	29.39	30.52	26.26	31.20	30.06	33.02	24.11	15.27
Total (acre-ft)	1,303	770	816	1,703	1,749	1,876	1,615	1,733	1,848	1,965	1,483	909

Appendix A3
Estimated Average Daily Discharge from Chino Creek to Prado Dam Reservoir
after Watermaster Diversions
(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	22.82	14.50	14.89	26.72	31.74	34.25	26.73	33.85	30.65	41.25	30.63	19.18
2	22.37	12.83	13.22	13.50	30.94	30.93	53.01	33.59	28.17	39.37	28.83	19.58
3	22.67	13.04	12.26	16.72	22.23	27.98	43.37	30.79	29.56	40.32	28.41	16.43
4	21.69	15.08	14.12	18.62	23.66	28.74	27.50	30.78	28.27	40.00	30.36	17.25
5	22.50	15.19	14.10	18.56	23.76	55.10	27.22	31.24	27.99	39.50	24.51	22.35
6	23.29	12.41	13.21	40.81	28.85	81.65	27.24	35.77	28.60	40.49	22.76	15.40
7	22.22	13.32	14.92	28.67	28.32	30.38	25.99	33.48	29.97	42.66	24.43	14.59
8	23.67	19.34	14.78	27.44	39.19	30.02	25.58	32.14	28.91	42.31	27.23	13.45
9	22.40	15.07	15.85	30.13	29.51	29.85	26.28	32.20	28.35	38.53	24.05	12.70
10	25.17	17.69	14.94	37.11	28.08	29.73	26.99	33.53	28.37	39.51	24.77	18.73
11	27.17	15.66	15.99	32.83	28.87	30.03	27.92	32.62	28.24	40.49	24.50	19.07
12	25.36	14.59	16.78	28.72	28.20	30.73	27.38	31.66	28.58	34.75	23.84	20.18
13	25.35	11.03	16.48	29.76	30.38	29.67	26.61	30.97	28.46	29.14	23.53	19.73
14	22.14	13.54	13.14	30.78	30.73	28.72	26.27	31.30	30.18	35.62	23.07	18.48
15	25.78	13.81	11.80	30.82	24.94	30.72	26.42	33.18	29.88	31.80	29.57	21.96
16	22.05	10.62	12.19	30.85	30.02	44.21	25.98	81.04	30.26	29.89	26.83	18.73
17	21.77	11.67	13.87	32.31	27.09	64.71	27.17	36.56	29.87	33.62	29.96	15.60
18	21.90	10.62	15.25	32.02	30.91	139.80	26.45	159.77	29.59	31.40	47.56	16.25
19	22.22	9.79	16.41	36.54	30.03	637.06	26.37	76.50	31.42	30.41	30.06	18.40
20	23.43	9.64	15.44	32.88	156.91	616.41	25.78	41.86	298.56	30.21	27.09	18.74
21	22.63	11.57	16.23	38.55	83.83	403.09	25.63	32.42	159.29	27.92	24.43	16.11
22	23.53	13.48	14.25	31.25	33.17	899.17	25.95	29.91	31.06	28.09	25.87	13.90
23	20.55	11.03	15.01	30.29	34.71	122.23	26.31	29.95	77.26	29.33	26.18	12.20
24	21.30	8.61	10.56	31.38	35.55	34.81	27.01	29.35	35.88	32.84	25.95	10.36
25	22.05	8.32	7.03	40.52	33.02	74.95	27.42	125.87	144.43	31.18	24.63	9.99
26	22.48	9.99	10.80	31.87	30.83	71.31	27.55	356.64	37.65	30.31	20.22	11.41
27	21.68	11.53	15.96	28.48	30.64	27.92	29.23	29.03	36.40	29.70	21.88	13.28
28	17.19	13.50	17.26	29.71	34.20	26.66	31.90	29.60	36.57	26.01	20.79	13.49
29	13.82	13.48	16.64	29.43	32.27	167.83	28.72		36.72	26.26	20.55	12.23
30	13.04	13.97	10.90	55.31	32.23	28.36	52.40		37.36	28.20	20.35	38.35
31	13.01	14.57		31.32		28.53	31.65		40.61		20.03	
Total (cfs-days)	677.25	399.49	424.28	953.89	1,084.8	3,915.6	910.05	1,545.6	1,527.1	1,021.1	802.90	508.11
Min	13.01	8.32	7.03	13.50	22.23	26.66	25.58	29.03	27.99	26.01	20.03	9.99
Max	27.17	19.34	17.26	55.31	156.91	899.17	53.01	356.64	298.56	42.66	47.56	38.35
Avg	21.85	12.89	14.14	30.77	36.16	126.31	29.36	55.20	49.26	34.04	25.90	16.94
Total (acre-ft)	1,343	792	842	1,892	2,152	7,766	1,805	3,066	3,029	2,025	1,593	1,008

Appendix A4
Daily Diversions to Spreading Basins from the Chino Creek Tributary System
(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	0.01	0.01	0.02	0.04	0.08	0.04	61.73	0.01	0.01	0.01	0.01	0.01
2	0.01	0.01	0.02	0.04	0.08	0.04	74.56	0.01	0.01	0.01	0.01	0.01
3	0.01	0.01	0.02	0.04	0.08	0.04	74.91	0.01	1.16	0.01	0.01	0.01
4	0.01	0.01	0.02	0.04	0.08	0.04	50.40	0.01	0.01	0.01	0.01	0.01
5	0.01	0.01	0.02	0.04	0.08	40.61	29.55	0.01	0.01	0.01	0.01	0.01
6	0.01	0.01	0.02	13.30	0.08	0.04	51.52	0.01	0.01	0.01	0.01	0.01
7	0.01	0.01	0.02	0.04	0.08	0.04	39.49	0.01	0.01	0.01	0.01	0.01
8	0.01	0.01	0.02	0.04	7.32	0.04	19.19	0.01	0.01	0.01	0.01	0.01
9	0.01	0.01	0.02	0.04	0.08	0.04	0.00	0.01	0.01	0.01	0.01	0.01
10	0.01	0.01	0.02	0.04	0.08	0.04	18.18	0.01	0.01	0.01	0.01	0.01
11	0.01	0.01	0.02	0.04	0.08	0.04	6.06	0.01	0.01	0.01	0.01	0.01
12	0.01	0.01	0.02	0.04	0.08	0.04	1.01	0.01	0.01	0.01	0.01	0.01
13	0.01	0.01	0.02	0.04	0.08	0.04	0.00	0.01	0.01	0.01	0.01	0.01
14	0.01	0.01	0.02	0.04	0.08	0.04	0.00	0.01	0.01	0.01	0.01	0.01
15	0.01	0.01	0.02	0.04	0.08	0.04	0.00	0.01	0.01	0.01	2.32	0.01
16	0.03	0.01	0.02	0.04	0.08	15.40	0.00	26.50	0.01	0.01	0.01	0.04
17	0.03	0.01	0.02	0.04	0.08	13.74	0.00	0.02	0.01	0.01	0.01	0.04
18	0.03	0.01	0.02	0.69	0.08	48.84	0.00	35.15	0.01	0.01	8.38	0.04
19	0.03	0.01	0.02	1.46	0.08	144.14	0.00	17.93	0.01	0.01	0.01	0.04
20	0.03	0.01	0.02	0.04	45.91	133.59	0.00	0.02	115.15	0.01	0.01	0.04
21	0.03	0.01	0.02	7.22	19.70	72.47	0.00	0.01	53.13	0.01	0.01	0.04
22	0.03	0.01	0.02	0.04	0.08	101.97	0.00	0.01	6.27	0.01	0.01	0.04
23	0.03	0.01	0.02	0.04	0.08	1.72	0.00	0.01	21.97	0.01	0.01	0.04
24	0.03	0.01	0.02	0.04	2.07	2.25	0.00	0.01	10.11	0.01	0.01	0.04
25	0.03	0.01	0.02	4.09	0.08	1.81	0.00	0.01	44.70	0.01	0.01	0.04
26	0.03	0.01	0.02	0.04	0.08	39.70	0.00	136.82	10.11	0.01	0.01	0.04
27	0.03	0.01	0.02	0.04	0.08	47.02	0.00	0.01	3.79	0.01	0.01	0.04
28	0.03	0.01	0.02	0.04	0.08	111.87	0.00	0.01	0.01	0.01	0.01	0.04
29	0.03	0.01	0.02	0.04	0.08	160.33	0.00		0.01	0.01	0.01	0.04
30	0.03	0.01	0.02	9.34	0.08	94.29	10.96		0.01	0.01	0.01	0.04
31	0.03	0.01		0.04		91.00	0.00		0.01		0.01	
Total (cfs-days)	0.64	0.31	0.61	37.00	77.10	1,121.2	437.56	216.54	266.49	0.30	11.00	0.68
Min	0.01	0.01	0.02	0.04	0.08	0.04	0.00	0.01	0.01	0.01	0.01	0.01
Max	0.03	0.01	0.02	13.30	45.91	160.33	74.91	136.82	115.15	0.01	8.38	0.04
Avg	0.02	0.01	0.02	1.19	2.57	36.17	14.11	7.73	8.60	0.01	0.35	0.02
Total (acre-ft)	1	1	1	73	153	2,220	866	429	528	1	22	1

Appendix A5
Estimated Average Daily Discharge from Chino Creek to Prado Dam Reservoir
without Watermaster Diversions
(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	22.83	14.51	14.91	26.75	31.82	34.28	88.46	33.85	30.65	41.26	30.64	19.19
2	22.38	12.84	13.24	13.53	31.02	30.97	127.56	33.60	28.18	39.38	28.84	19.59
3	22.68	13.05	12.28	16.76	22.31	28.02	118.28	30.80	30.72	40.33	28.42	16.44
4	21.70	15.09	14.14	18.65	23.74	28.78	77.90	30.78	28.27	40.01	30.37	17.26
5	22.51	15.20	14.12	18.59	23.84	95.71	56.77	31.24	28.00	39.51	24.52	22.36
6	23.30	12.42	13.23	54.12	28.94	81.68	78.75	35.77	28.60	40.50	22.77	15.41
7	22.23	13.33	14.94	28.70	28.40	30.41	65.49	33.49	29.98	42.67	24.44	14.60
8	23.68	19.35	14.80	27.48	46.51	30.06	44.78	32.14	28.91	42.32	27.24	13.46
9	22.41	15.08	15.87	30.17	29.60	29.88	26.28	32.20	28.36	38.54	24.06	12.71
10	25.18	17.70	14.96	37.14	28.16	29.76	45.17	33.53	28.37	39.52	24.78	18.74
11	27.18	15.67	16.01	32.86	28.95	30.07	33.98	32.63	28.25	40.50	24.51	19.08
12	25.37	14.60	16.80	28.76	28.28	30.77	28.39	31.67	28.58	34.76	23.85	20.19
13	25.36	11.04	16.50	29.80	30.46	29.71	26.61	30.98	28.47	29.15	23.54	19.74
14	22.15	13.55	13.16	30.82	30.81	28.75	26.27	31.30	30.19	35.63	23.08	18.49
15	25.79	13.82	11.82	30.86	25.02	30.75	26.42	33.18	29.89	31.81	31.89	21.97
16	22.08	10.63	12.21	30.89	30.10	59.62	25.98	107.54	30.27	29.90	26.85	18.76
17	21.80	11.68	13.89	32.35	27.17	78.45	27.17	36.57	29.87	33.63	29.97	15.64
18	21.93	10.63	15.27	32.72	30.99	188.64	26.45	194.92	29.60	31.41	55.95	16.29
19	22.25	9.80	16.43	38.00	30.11	781.20	26.37	94.43	31.43	30.42	30.07	18.43
20	23.46	9.65	15.46	32.91	202.82	749.99	25.78	41.88	413.71	30.22	27.10	18.78
21	22.66	11.58	16.25	45.78	103.52	475.57	25.63	32.42	212.42	27.93	24.44	16.14
22	23.56	13.49	14.27	31.29	33.25	1001.14	25.95	29.92	37.33	28.10	25.88	13.93
23	20.58	11.04	15.03	30.32	34.79	123.94	26.31	29.96	99.23	29.34	26.19	12.24
24	21.33	8.62	10.58	31.42	37.62	37.06	27.01	29.36	45.98	32.85	25.96	10.40
25	22.08	8.33	7.05	44.61	33.10	76.77	27.42	125.88	189.13	31.19	24.64	10.03
26	22.51	10.00	10.83	31.91	30.91	111.01	27.55	493.46	47.76	30.32	20.23	11.45
27	21.71	11.54	15.98	28.51	30.72	74.94	29.23	29.04	40.19	29.71	21.89	13.32
28	17.22	13.51	17.28	29.75	34.28	138.53	31.90	29.60	36.58	26.02	20.80	13.52
29	13.85	13.49	16.66	29.46	32.35	328.16	28.72		36.72	26.27	20.56	12.27
30	13.07	13.98	10.93	64.65	32.31	122.65	63.36		37.36	28.21	20.36	38.38
31	13.04	14.58		31.36		119.53	31.65		40.61		20.04	
Total (cfs-days)	677.88	399.80	424.88	990.90	1,161.9	5,036.8	1,347.6	1,762.1	1,793.6	1,021.4	813.90	508.79
Min	13.04	8.33	7.05	13.53	22.31	28.02	25.63	29.04	28.00	26.02	20.04	10.03
Max	27.18	19.35	17.28	64.65	202.82	1,001.1	127.56	493.46	413.71	42.67	55.95	38.38
Avg	21.87	12.90	14.16	31.96	38.73	162.48	43.47	62.93	57.86	34.05	26.25	16.96
Total (acre-ft)	1,345	793	843	1,965	2,304	9,986	2,671	3,494	3,557	2,026	1,614	1,009

Appendix B1
Estimated Average Daily Discharge from Cucamonga Creek to Prado Dam Reservoir after Diversions
(Average Daily Discharge at USGS Gage 11073495)
(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	5.30	6.00	15.00	13.00	26.00	30.00	44.00	23.00	25.00	38.00	21.00	12.00
2	4.30	3.00	12.00	14.00	19.00	31.00	95.00	45.00	21.00	34.00	9.60	18.00
3	6.70	3.10	8.20	19.00	9.60	37.00	116.00	32.00	26.00	38.00	7.80	18.00
4	4.20	6.40	13.00	14.00	12.00	38.00	46.00	12.00	19.00	37.00	15.00	23.00
5	5.80	5.40	16.00	20.00	12.00	87.00	49.00	17.00	20.00	33.00	8.10	25.00
6	5.20	7.90	14.00	155.00	21.00	173.00	49.00	40.00	25.00	31.00	6.20	27.00
7	4.50	11.00	15.00	24.00	17.00	35.00	47.00	21.00	42.00	26.00	9.40	20.00
8	5.80	15.00	17.00	14.00	28.00	37.00	53.00	14.00	48.00	24.00	16.00	18.00
9	2.70	9.50	18.00	17.00	14.00	38.00	55.00	21.00	41.00	26.00	12.00	19.00
10	7.80	17.00	21.00	17.00	14.00	40.00	57.00	25.00	32.00	25.00	13.00	32.00
11	14.00	15.00	31.00	12.00	16.00	39.00	61.00	25.00	30.00	23.00	12.00	24.00
12	10.00	16.00	32.00	11.00	17.00	43.00	59.00	30.00	43.00	16.00	11.00	30.00
13	9.60	16.00	23.00	6.60	22.00	37.00	59.00	40.00	49.00	17.00	8.60	25.00
14	3.60	26.00	13.00	17.00	22.00	26.00	61.00	39.00	39.00	16.00	12.00	20.00
15	5.40	15.00	13.00	20.00	18.00	32.00	58.00	38.00	40.00	9.20	29.00	19.00
16	5.40	15.00	15.00	27.00	23.00	64.00	63.00	176.00	43.00	9.70	16.00	17.00
17	4.90	21.00	13.00	30.00	21.00	117.00	55.00	106.00	45.00	14.00	35.00	28.00
18	4.00	19.00	21.00	36.00	20.00	246.00	60.00	204.00	49.00	10.00	55.00	38.00
19	4.10	14.00	31.00	43.00	42.00	1,930.0	53.00	198.00	66.00	14.00	27.00	40.00
20	6.90	8.10	17.00	38.00	337.00	2,040.0	41.00	85.00	615.00	14.00	19.00	30.00
21	5.70	12.00	14.00	39.00	161.00	1,500.0	30.00	56.00	426.00	18.00	18.00	28.00
22	7.70	19.00	6.00	40.00	42.00	2,500.0	31.00	53.00	81.00	18.00	20.00	35.00
23	4.60	11.00	12.00	44.00	44.00	285.00	37.00	44.00	145.00	21.00	16.00	24.00
24	3.50	5.50	24.00	42.00	43.00	98.00	30.00	47.00	62.00	32.00	11.00	28.00
25	3.70	7.90	13.00	67.00	44.00	89.00	36.00	237.00	207.00	21.00	16.00	26.00
26	2.20	9.40	16.00	47.00	44.00	116.00	37.00	853.00	54.00	22.00	19.00	28.00
27	2.60	9.90	16.00	38.00	42.00	48.00	19.00	37.00	59.00	14.00	22.00	18.00
28	6.20	18.00	19.00	31.00	47.00	46.00	17.00	28.00	57.00	13.00	19.00	26.00
29	3.40	19.00	18.00	26.00	35.00	189.00	14.00		62.00	12.00	18.00	16.00
30	2.80	16.00	9.50	50.00	30.00	52.00	83.00		59.00	15.00	18.00	21.00
31	4.40	11.00		38.00		50.00	31.00		51.00		18.00	
Total (cfs-days)	167.00	388.10	505.70	1,009.6	1,242.6	10,093.0	1,546.0	2,546.0	2,581.0	640.90	537.70	733.00
Min	2.20	3.00	6.00	6.60	9.60	26.00	14.00	12.00	19.00	9.20	6.20	12.00
Max	14.00	26.00	32.00	155.00	337.00	2,500.0	116.00	853.00	615.00	38.00	55.00	40.00
Avg	5.39	12.52	16.86	32.57	41.42	325.58	49.87	90.93	83.26	21.36	17.35	24.43
Total (acre-ft)	331	770	1,003	2,003	2,465	20,019	3,066	5,050	5,119	1,271	1,067	1,454

Appendix B2
Daily Diversions to Spreading Basins on the Cucamonga Creek Tributary System
(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	2.56	2.13	2.50	1.76	1.26	1.09	5.61	8.59	5.45	7.29	1.51	1.44
2	2.97	2.13	2.85	1.77	1.95	1.06	21.86	4.27	5.42	1.51	1.51	1.46
3	0.75	2.13	2.85	0.86	1.66	1.07	73.09	1.99	5.71	1.51	1.51	1.59
4	1.08	2.13	2.85	1.25	1.67	1.09	5.96	6.69	5.82	1.51	1.51	1.57
5	1.83	2.13	2.85	1.18	1.82	139.70	10.21	4.92	6.08	1.51	1.51	1.62
6	1.11	1.78	2.50	28.43	1.95	1.26	1.06	2.25	6.33	1.51	1.51	2.47
7	1.20	1.78	2.92	2.22	1.63	1.30	1.06	1.81	15.96	1.51	1.51	2.93
8	4.90	1.78	2.86	2.37	11.21	1.08	1.06	0.77	4.36	1.51	1.51	3.84
9	4.28	1.43	2.51	2.37	1.16	1.08	1.06	1.35	5.94	1.51	4.99	3.74
10	3.63	1.76	2.86	2.37	1.17	1.06	1.06	1.55	6.52	1.51	3.98	3.16
11	3.24	2.11	2.51	2.37	1.11	1.06	1.06	1.67	6.82	1.51	3.53	2.85
12	2.61	2.46	2.51	2.37	1.16	1.06	1.06	1.11	6.87	1.51	3.29	2.05
13	2.04	2.11	2.16	2.37	1.21	1.21	1.06	2.10	6.92	1.51	6.01	1.95
14	2.21	2.49	1.75	2.37	1.52	1.36	1.06	2.78	4.90	2.56	2.66	1.98
15	2.34	2.49	2.14	2.37	1.53	1.36	1.06	2.63	4.22	1.51	12.48	1.93
16	2.27	2.58	2.14	2.37	1.52	59.19	0.88	69.22	4.24	1.51	5.95	1.97
17	2.46	2.44	1.79	2.37	1.51	69.90	0.88	8.35	4.09	1.51	5.54	1.93
18	2.04	2.42	2.14	2.37	1.42	91.46	0.88	81.62	3.74	1.51	23.06	1.93
19	2.26	2.65	2.14	14.57	1.17	126.16	0.88	47.16	10.47	1.51	2.58	1.90
20	3.00	3.60	2.13	2.20	186.72	46.06	0.88	3.25	171.31	1.51	2.20	1.90
21	1.99	2.67	2.37	14.09	38.38	46.46	0.88	2.76	32.01	1.51	2.27	1.90
22	2.03	3.09	3.43	2.37	1.14	28.13	0.88	3.38	9.75	1.51	1.80	1.12
23	2.03	2.26	2.99	2.37	1.11	13.23	0.88	3.31	38.26	1.51	1.97	1.93
24	2.17	4.07	2.65	2.37	7.22	6.71	3.59	2.83	7.76	1.51	1.89	1.97
25	2.52	4.50	2.81	25.51	1.12	5.73	7.63	1.62	29.51	1.51	1.19	1.92
26	4.29	3.91	2.68	1.77	1.09	73.60	7.85	193.60	3.52	1.51	1.26	1.90
27	1.61	2.72	2.17	1.77	1.35	3.72	21.48	8.69	9.18	1.51	1.19	1.90
28	2.64	4.13	2.52	1.77	1.43	2.83	10.58	5.88	3.74	1.51	1.31	1.12
29	2.28	4.75	1.90	2.07	1.12	105.56	6.64		3.65	1.51	1.34	0.82
30	2.28	3.13	1.67	29.44	1.21	9.34	41.16		2.76	1.51	1.59	0.82
31	2.64	3.19		1.77		9.34	5.12		2.92		1.46	
Total (cfs-days)	75.27	82.96	74.19	165.65	279.53	853.29	238.41	476.13	434.22	52.06	105.63	59.61
Min	0.75	1.43	1.67	0.86	1.09	1.06	0.88	0.77	2.76	1.51	1.19	0.82
Max	4.90	4.75	3.43	29.44	186.72	139.70	73.09	193.60	171.31	7.29	23.06	3.84
Avg	2.43	2.68	2.47	5.34	9.32	27.53	7.69	17.00	14.01	1.74	3.41	1.99
Total (acre-ft)	149	165	147	329	554	1,692	473	944	861	103	210	118

Appendix B3
Estimated Average Daily Discharge from Cucamonga Creek to Prado Dam Reservoir
without Watermaster Diversions
(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	7.86	8.13	17.50	14.76	27.26	31.09	49.61	31.59	30.45	45.29	22.51	13.44
2	7.27	5.13	14.85	15.77	20.95	32.06	116.86	49.27	26.42	35.51	11.11	19.46
3	7.45	5.23	11.05	19.86	11.26	38.07	189.09	33.99	31.71	39.51	9.31	19.59
4	5.28	8.53	15.85	15.25	13.67	39.09	51.96	18.69	24.82	38.51	16.51	24.57
5	7.63	7.53	18.85	21.18	13.82	226.70	59.21	21.92	26.08	34.51	9.61	26.62
6	6.31	9.68	16.50	183.43	22.95	174.26	50.06	42.25	31.33	32.51	7.71	29.47
7	5.70	12.78	17.92	26.22	18.63	36.30	48.06	22.81	57.96	27.51	10.91	22.93
8	10.70	16.78	19.86	16.37	39.21	38.08	54.06	14.77	52.36	25.51	17.51	21.84
9	6.98	10.93	20.51	19.37	15.16	39.08	56.06	22.35	46.94	27.51	16.99	22.74
10	11.43	18.76	23.86	19.37	15.17	41.06	58.06	26.55	38.52	26.51	16.98	35.16
11	17.24	17.11	33.51	14.37	17.11	40.06	62.06	26.67	36.82	24.51	15.53	26.85
12	12.61	18.46	34.51	13.37	18.16	44.06	60.06	31.11	49.87	17.51	14.29	32.05
13	11.64	18.11	25.16	8.97	23.21	38.21	60.06	42.10	55.92	18.51	14.61	26.95
14	5.81	28.49	14.75	19.37	23.52	27.36	62.06	41.78	43.90	18.56	14.66	21.98
15	7.74	17.49	15.14	22.37	19.53	33.36	59.06	40.63	44.22	10.71	41.48	20.93
16	7.67	17.58	17.14	29.37	24.52	123.19	63.88	245.22	47.24	11.21	21.95	18.97
17	7.36	23.44	14.79	32.37	22.51	186.90	55.88	114.35	49.09	15.51	40.54	29.93
18	6.04	21.42	23.14	38.37	21.42	337.46	60.88	285.62	52.74	11.51	78.06	39.93
19	6.36	16.65	33.14	57.57	43.17	2,056.2	53.88	245.16	76.47	15.51	29.58	41.90
20	9.90	11.70	19.13	40.20	523.72	2,086.1	41.88	88.25	786.31	15.51	21.20	31.90
21	7.69	14.67	16.37	53.09	199.38	1,546.5	30.88	58.76	458.01	19.51	20.27	29.90
22	9.73	22.09	9.43	42.37	43.14	2,528.1	31.88	56.38	90.75	19.51	21.80	36.12
23	6.63	13.26	14.99	46.37	45.11	298.23	37.88	47.31	183.26	22.51	17.97	25.93
24	5.67	9.57	26.65	44.37	50.22	104.71	33.59	49.83	69.76	33.51	12.89	29.97
25	6.22	12.40	15.81	92.51	45.12	94.73	43.63	238.62	236.51	22.51	17.19	27.92
26	6.49	13.31	18.68	48.77	45.09	189.60	44.85	1,046.6	57.52	23.51	20.26	29.90
27	4.21	12.62	18.17	39.77	43.35	51.72	40.48	45.69	68.18	15.51	23.19	19.90
28	8.84	22.13	21.52	32.77	48.43	48.83	27.58	33.88	60.74	14.51	20.31	27.12
29	5.68	23.75	19.90	28.07	36.12	294.56	20.64		65.65	13.51	19.34	16.82
30	5.08	19.13	11.17	79.44	31.21	61.34	124.16		61.76	16.51	19.59	21.82
31	7.04	14.19		39.77		59.34	36.12		53.92		19.46	
Total (cfs-days)	242.27	471.06	579.89	1,175.3	1,522.1	10,946.3	1,784.4	3,022.1	3,015.2	692.96	643.33	792.61
Min	4.21	5.13	9.43	8.97	11.26	27.36	20.64	14.77	24.82	10.71	7.71	13.44
Max	17.24	28.49	34.51	183.43	523.72	2,528.1	189.09	1,046.6	786.31	45.29	78.06	41.90
Avg	7.82	15.20	19.33	37.91	50.74	353.11	57.56	107.93	97.27	23.10	20.75	26.42
Total (acre-ft)	481	934	1,150	2,331	3,019	21,712	3,539	5,994	5,981	1,374	1,276	1,572

Appendix C1
WLAM Estimated Daily Discharge from Day Creek to the Santa Ana River without Watermaster Diversions
(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	0.00	0.00	0.00	0.00	0.00	0.00	11.80	2.00	11.20	7.20	1.40	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	10.20	1.40	9.40	6.60	1.40	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	137.90	1.40	11.20	6.60	1.40	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	14.70	1.00	8.90	5.90	1.40	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	9.40	0.60	6.80	5.50	1.80	0.00
6	0.00	0.00	0.00	0.00	0.00	199.90	8.60	0.60	6.20	5.50	1.80	0.00
7	0.00	0.00	0.00	65.40	0.00	0.00	8.20	0.30	12.10	5.90	1.80	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	7.50	0.30	7.20	6.80	2.00	0.00
9	0.00	0.00	0.00	0.00	2.30	0.00	7.20	0.00	5.90	5.90	2.40	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	6.80	0.00	5.20	5.50	2.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	6.20	0.00	4.20	5.20	1.80	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	5.90	0.00	3.80	4.80	1.40	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	5.50	0.00	3.50	4.60	0.30	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	5.20	0.00	3.50	4.20	0.60	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	5.20	0.00	3.80	3.50	2.00	0.00
16	0.00	0.00	0.00	0.00	0.00	7.60	4.80	3.80	3.80	3.50	5.30	0.00
17	0.00	0.00	0.00	0.00	0.00	1.90	4.80	75.00	3.80	3.10	1.40	0.00
18	0.00	0.00	0.00	0.00	0.00	174.40	4.80	1.80	4.20	3.50	23.10	0.00
19	0.00	0.00	0.00	0.00	0.00	350.90	4.60	150.40	1.40	3.50	1.60	0.00
20	0.00	0.00	0.00	2.30	0.00	328.70	4.60	127.20	2.40	3.50	1.00	0.00
21	0.00	0.00	0.00	0.00	222.40	1,893.1	4.60	10.40	509.30	3.10	0.60	0.00
22	0.00	0.00	0.00	0.60	63.60	2,547.2	4.20	6.40	207.30	3.10	0.60	0.00
23	0.00	0.00	0.00	0.00	0.00	2,396.6	3.80	4.20	11.20	3.10	0.60	0.00
24	0.00	0.00	0.00	0.00	0.00	1,978.2	3.50	3.80	71.40	2.80	0.30	0.00
25	0.00	0.00	0.00	0.30	0.00	223.10	3.50	4.20	30.90	2.40	0.30	0.00
26	0.00	0.00	0.00	5.50	0.00	310.70	3.10	573.50	62.20	2.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	155.10	2.80	164.80	12.50	2.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	121.50	2.40	17.60	11.20	1.80	0.00	0.00
29	0.00	0.00	0.00	0.00	0.00	21.90	2.00		10.80	1.80	0.30	0.00
30	0.00	0.00	0.00	0.00	0.00	232.80	2.80		8.90	1.80	0.00	0.00
31	0.00	0.00		7.40		14.90	31.30		7.90		0.00	
Total (cfs-days)	0.00	0.00	0.00	81.50	288.30	10,958.5	337.90	1,150.7	1,062.1	124.70	58.60	0.00
Min	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	1.40	1.80	0.00	0.00
Max	0.00	0.00	0.00	65.40	222.40	2,547.2	137.90	573.50	509.30	7.20	23.10	0.00
Avg	0.00	0.00	0.00	2.63	9.61	353.50	10.90	41.10	34.26	4.16	1.89	0.00
Total (acre-ft)	0	0	0	162	572	21,736	670	2,282	2,107	247	116	0

Appendix C2
Daily Diversions to Spreading Basins on the Day Creek Tributary System
(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	0.07	0.05	0.04	0.07	0.07	0.02	0.56	0.09	0.02	13.84	0.05	0.05
2	0.07	0.05	0.04	0.07	0.07	0.02	0.06	0.09	0.02	14.75	0.05	0.05
3	0.07	0.05	0.04	0.07	0.07	0.02	9.14	0.09	0.78	12.55	0.05	0.05
4	0.07	0.05	0.04	0.07	0.07	0.02	1.57	0.09	0.02	10.36	0.05	0.05
5	0.07	0.05	0.04	0.07	0.07	8.79	1.06	0.09	0.02	9.08	0.05	0.05
6	0.07	0.05	0.04	4.59	0.07	0.02	0.81	0.09	0.02	7.00	0.05	0.05
7	0.07	0.05	0.04	0.07	0.07	0.02	0.56	0.09	5.05	4.52	0.05	0.05
8	0.07	0.05	0.04	0.07	0.95	0.02	0.56	0.09	1.79	2.08	0.05	0.05
9	0.07	0.05	0.04	0.07	0.07	0.02	0.06	0.09	1.54	1.07	0.05	0.05
10	0.07	0.05	0.04	0.07	0.07	0.02	0.06	0.09	1.54	0.06	0.05	0.05
11	0.07	0.05	0.04	0.07	0.07	0.02	0.06	0.09	0.02	0.06	0.05	0.05
12	0.07	0.05	0.04	0.07	0.07	0.02	0.06	0.09	0.02	0.06	0.05	0.05
13	0.07	0.05	0.04	0.07	0.07	0.02	0.06	0.09	0.02	0.06	0.05	0.05
14	0.07	0.05	0.04	0.07	0.07	0.02	0.06	0.09	0.02	0.06	0.05	0.05
15	0.07	0.05	0.04	0.07	0.07	0.02	0.06	0.09	0.02	0.06	0.05	0.05
16	0.09	0.05	0.04	0.07	0.07	0.97	0.09	10.61	0.02	0.06	0.05	0.09
17	0.09	0.05	0.04	0.07	0.07	22.22	0.09	0.41	0.02	0.06	0.05	0.09
18	0.09	0.05	0.04	0.07	0.07	52.22	0.09	18.94	0.02	0.06	3.99	0.09
19	0.09	0.05	0.04	4.09	0.07	130.40	0.09	17.78	0.02	0.06	0.05	0.09
20	0.09	0.05	0.04	0.07	24.12	54.55	0.09	0.02	32.28	0.06	0.05	0.09
21	0.09	0.05	0.04	1.87	10.00	45.35	0.09	0.02	40.58	0.06	0.05	0.09
22	0.09	0.05	0.04	0.07	0.07	57.78	0.09	0.02	16.82	0.06	0.05	0.09
23	0.09	0.05	0.04	0.07	0.98	44.90	0.09	0.02	17.38	0.06	0.05	0.09
24	0.09	0.05	0.04	0.07	0.45	36.06	0.09	0.02	15.85	0.06	0.05	0.09
25	0.09	0.05	0.04	5.56	0.03	32.07	0.09	0.02	21.38	0.06	0.05	0.09
26	0.09	0.05	0.04	0.07	0.03	33.54	0.09	75.56	18.51	0.06	0.05	0.09
27	0.09	0.05	0.04	0.07	0.03	28.29	0.09	2.55	19.13	0.06	0.05	0.09
28	0.09	0.05	0.04	0.07	0.07	27.28	0.09	0.27	18.80	0.06	0.05	0.09
29	0.09	0.05	0.04	0.07	0.07	34.90	0.09		17.57	0.06	0.05	0.09
30	0.09	0.05	0.04	1.72	0.07	28.33	1.39		15.25	0.06	0.05	0.09
31	0.09	0.05		0.07		14.19	0.09		10.10		0.05	
Total (cfs-days)	2.36	1.57	1.21	19.66	38.14	652.06	17.45	127.60	254.61	76.52	5.35	1.97
Min	0.07	0.05	0.04	0.07	0.03	0.02	0.06	0.02	0.02	0.06	0.05	0.05
Max	0.09	0.05	0.04	5.56	24.12	130.40	9.14	75.56	40.58	14.75	3.99	0.09
Avg	0.08	0.05	0.04	0.63	1.27	21.03	0.56	4.56	8.21	2.55	0.17	0.07
Total (acre-ft)	5	3	2	39	76	1,293	35	253	505	152	11	4

Appendix C3
Estimated Average Daily Discharge from Day Creek to the Santa Ana River with Watermaster Diversions
(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	0.00	0.00	0.00	0.00	0.00	0.00	11.24	1.91	11.18	0.00	1.35	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	10.14	1.31	9.38	0.00	1.35	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	128.76	1.31	10.42	0.00	1.35	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	13.13	0.91	8.88	0.00	1.35	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	8.34	0.51	6.78	0.00	1.75	0.00
6	0.00	0.00	0.00	0.00	0.00	199.88	7.79	0.51	6.18	0.00	1.75	0.00
7	0.00	0.00	0.00	65.33	0.00	0.00	7.64	0.21	7.05	1.38	1.75	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	6.94	0.21	5.41	4.72	1.95	0.00
9	0.00	0.00	0.00	0.00	2.23	0.00	7.14	0.00	4.36	4.83	2.35	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	6.74	0.00	3.66	5.44	1.95	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	6.14	0.00	4.18	5.14	1.75	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	5.84	0.00	3.78	4.74	1.35	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	5.44	0.00	3.48	4.54	0.25	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	5.14	0.00	3.48	4.14	0.55	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	5.14	0.00	3.78	3.44	1.95	0.00
16	0.00	0.00	0.00	0.00	0.00	6.63	4.71	0.00	3.78	3.44	5.25	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	4.71	74.59	3.78	3.04	1.35	0.00
18	0.00	0.00	0.00	0.00	0.00	122.18	4.71	0.00	4.18	3.44	19.11	0.00
19	0.00	0.00	0.00	0.00	0.00	220.50	4.51	132.62	1.38	3.44	1.55	0.00
20	0.00	0.00	0.00	2.23	0.00	274.15	4.51	127.18	0.00	3.44	0.95	0.00
21	0.00	0.00	0.00	0.00	212.40	1,847.7	4.51	10.38	468.72	3.04	0.55	0.00
22	0.00	0.00	0.00	0.53	63.53	2,489.4	4.11	6.38	190.48	3.04	0.55	0.00
23	0.00	0.00	0.00	0.00	0.00	2,351.7	3.71	4.18	0.00	3.04	0.55	0.00
24	0.00	0.00	0.00	0.00	0.00	1,942.1	3.41	3.78	55.55	2.74	0.25	0.00
25	0.00	0.00	0.00	0.00	0.00	191.03	3.41	4.18	9.52	2.34	0.25	0.00
26	0.00	0.00	0.00	5.43	0.00	277.16	3.01	497.94	43.69	1.94	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	126.81	2.71	162.25	0.00	1.94	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	94.22	2.31	17.33	0.00	1.74	0.00	0.00
29	0.00	0.00	0.00	0.00	0.00	0.00	1.91		0.00	1.74	0.25	0.00
30	0.00	0.00	0.00	0.00	0.00	204.47	1.41		0.00	1.74	0.00	0.00
31	0.00	0.00		7.33		0.71	31.21		0.00		0.00	
Total (cfs-days)	0.00	0.00	0.00	80.85	278.16	10,349	320.45	1,047.7	873.10	78.46	53.47	0.00
Min	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	0.00	0.00	0.00	0.00
Max	0.00	0.00	0.00	65.33	212.40	2,489.4	128.76	497.94	468.72	5.44	19.11	0.00
Avg	0.00	0.00	0.00	2.61	9.27	333.83	10.34	37.42	28.16	2.62	1.72	0.00
Total (acre-ft)	0	0	0	160	552	20,526	636	2,078	1,732	156	106	0

Appendix D1
WLAM Estimated Daily Discharge from San Sevaine Creek to the Santa Ana River
without Watermaster Diversions
(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	0.70	0.40	0.20	0.30	0.40	0.70	10.20	2.90	9.80	6.70	2.60	2.00
2	0.70	0.30	0.20	0.30	0.30	0.70	9.10	2.60	8.60	6.00	2.60	2.00
3	0.70	0.30	0.10	0.30	0.30	0.70	169.60	2.60	9.60	6.00	2.60	2.00
4	0.70	0.30	0.10	0.40	0.30	0.70	11.40	2.50	8.20	5.40	2.60	2.00
5	0.70	0.30	0.10	0.40	0.30	0.70	8.60	2.40	6.30	5.00	2.80	2.00
6	0.80	0.30	0.10	0.40	0.30	257.60	8.00	2.40	5.60	5.00	2.80	2.00
7	0.80	0.30	0.20	64.10	0.30	0.70	7.60	2.30	11.80	5.40	2.80	2.00
8	0.70	0.30	0.30	0.20	0.80	0.70	6.90	2.30	6.70	6.30	2.90	2.20
9	0.70	0.30	0.40	0.20	3.50	0.60	6.70	2.20	5.40	5.40	3.00	2.20
10	0.60	0.30	0.30	0.10	0.30	0.60	6.30	2.20	4.70	5.00	2.90	2.20
11	0.60	0.30	0.30	0.10	0.30	0.50	5.60	2.20	3.70	4.70	2.80	2.00
12	0.60	0.30	0.20	0.10	0.30	0.50	5.40	2.20	3.50	4.30	2.60	2.00
13	0.50	0.30	0.20	0.10	0.20	0.50	5.00	2.20	3.40	4.10	2.30	2.00
14	0.50	0.30	0.20	0.10	0.20	0.50	4.70	2.20	3.40	3.70	2.40	1.90
15	0.50	0.20	0.20	0.10	0.20	0.50	4.70	2.20	3.50	3.40	2.90	1.90
16	0.50	0.20	0.20	0.20	0.20	8.30	4.30	3.90	3.50	3.40	4.80	1.90
17	0.40	0.20	0.20	0.20	0.20	3.50	4.30	100.10	3.50	3.20	2.60	1.90
18	0.40	0.20	0.10	0.20	0.10	243.30	4.30	2.80	3.70	3.40	30.30	1.90
19	0.40	0.20	0.10	0.30	0.20	397.00	4.10	214.70	2.90	3.40	3.10	1.90
20	0.50	0.20	0.10	4.50	2.30	222.60	4.10	176.90	4.40	3.40	2.50	1.80
21	0.50	0.10	0.20	0.40	309.90	2,575.4	4.10	9.30	672.00	3.20	2.40	1.80
22	0.50	0.10	0.20	0.50	76.50	2,927.1	3.70	5.90	192.10	3.20	2.40	1.60
23	0.40	0.10	0.20	0.30	0.80	2,399.1	3.50	3.70	9.80	3.20	2.40	1.60
24	0.40	0.10	0.10	0.30	0.90	1,331.6	3.40	3.50	96.30	3.10	2.30	1.60
25	0.40	0.10	0.10	0.70	0.80	151.70	3.40	3.70	30.30	3.00	2.30	1.50
26	0.40	0.10	0.10	5.40	0.70	279.20	3.20	769.70	62.20	2.90	2.20	1.50
27	0.40	0.10	0.10	0.30	0.70	106.10	3.10	155.50	10.70	2.90	2.20	1.50
28	0.40	0.10	0.00	0.30	0.80	83.60	3.00	14.10	9.80	2.80	2.20	1.40
29	0.40	0.20	0.10	0.30	0.80	16.90	2.90		9.50	2.80	2.30	1.50
30	0.40	0.30	0.20	0.40	0.70	286.70	3.10		8.20	2.80	2.20	1.50
31	0.40	0.30		5.80		12.20	34.50		7.30		2.00	
Total (cfs-days)	16.60	7.10	5.10	87.30	403.60	11,311	358.80	1,499.2	1,220.4	123.10	108.80	55.30
Min	0.40	0.10	0.00	0.10	0.10	0.50	2.90	2.20	2.90	2.80	2.00	1.40
Max	0.80	0.40	0.40	64.10	309.90	2,927.1	169.60	769.70	672.00	6.70	30.30	2.20
Avg	0.54	0.23	0.17	2.82	13.45	364.85	11.57	53.54	39.37	4.10	3.51	1.84
Total (acre-ft)	33	14	10	173	801	22,434	712	2,974	2,421	244	216	110

Appendix D2
Daily Diversions to Spreading Basins on the San Sevaine Creek Tributary System
(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	0.28	0.27	1.30	0.58	0.71	8.70	0.65	1.37	2.55	15.18	0.59	0.70
2	0.28	0.38	1.05	0.43	0.71	10.47	4.79	1.37	5.73	17.16	0.59	0.70
3	0.28	0.27	1.05	0.33	0.71	6.23	44.49	1.37	24.72	7.13	0.59	0.70
4	0.27	0.27	1.05	0.33	0.71	3.20	2.20	1.37	18.86	6.36	0.59	0.70
5	0.24	0.27	1.05	0.49	0.71	50.91	3.06	1.37	8.15	4.92	0.59	0.70
6	0.24	0.27	1.05	6.06	0.71	1.38	11.55	1.37	2.55	5.85	0.59	0.70
7	0.24	0.27	0.82	0.57	0.76	1.36	7.23	1.37	7.68	0.67	0.59	0.70
8	0.10	0.27	0.54	0.56	12.22	1.36	4.07	1.37	3.51	0.67	0.59	0.70
9	0.03	0.27	0.54	0.56	0.76	1.36	1.90	1.37	0.73	0.67	0.59	0.70
10	0.03	0.27	0.54	0.56	0.76	1.36	1.33	1.37	0.73	0.67	0.59	0.70
11	0.03	0.27	0.54	0.57	0.76	1.36	0.84	1.37	0.73	0.67	0.59	0.70
12	0.03	0.27	0.54	0.58	0.76	1.36	13.26	1.37	0.73	0.67	0.61	0.69
13	0.19	0.27	0.54	0.58	0.76	1.36	17.11	1.37	0.73	0.67	0.61	0.70
14	0.03	0.27	0.54	0.58	0.76	1.36	8.92	1.37	0.73	0.67	0.61	0.70
15	0.03	0.27	0.54	0.58	0.76	1.36	8.06	1.37	0.73	0.67	8.71	0.70
16	0.03	0.19	0.54	0.58	0.76	30.30	4.15	45.91	0.73	0.67	0.61	0.70
17	0.03	0.19	0.54	0.58	0.76	66.87	0.82	9.56	0.73	0.67	0.61	0.74
18	0.03	0.19	0.54	0.61	0.76	87.32	0.82	40.71	0.73	0.67	15.94	0.74
19	0.03	0.19	0.54	15.05	0.76	237.42	0.82	62.63	0.73	0.67	0.61	1.17
20	0.03	0.19	0.54	0.61	105.05	88.64	0.82	42.60	96.16	0.67	0.61	1.06
21	0.27	0.19	0.54	6.43	38.99	103.38	0.82	1.32	105.10	0.69	0.61	0.74
22	0.27	0.19	0.54	0.61	0.76	55.35	0.82	1.32	4.11	0.69	0.61	0.70
23	0.27	0.19	0.54	0.61	0.76	24.20	0.82	1.32	45.45	0.69	0.61	0.70
24	0.27	0.19	0.54	0.61	4.31	7.26	0.82	1.27	1.79	0.69	0.61	0.80
25	0.27	0.19	0.54	62.47	2.77	14.43	0.82	0.53	43.84	0.69	0.61	0.70
26	0.28	0.19	0.54	0.61	3.16	41.01	0.82	156.72	0.98	0.69	0.61	0.70
27	0.27	0.19	0.54	0.61	2.03	6.66	0.82	1.28	6.43	0.69	0.61	0.70
28	0.27	0.19	0.54	0.76	0.76	10.70	0.82	4.31	2.14	0.69	0.61	0.70
29	0.27	0.19	0.54	0.86	0.76	55.15	0.82		0.98	0.69	0.61	0.70
30	0.27	0.19	0.54	10.45	3.59	2.52	17.02		4.67	0.69	0.61	0.70
31	0.27	0.19		0.90		2.06	0.82		0.68		0.81	
Total (cfs-days)	5.42	7.19	19.69	115.68	188.60	926.45	162.08	390.08	394.06	72.81	42.38	21.99
Min	0.03	0.19	0.54	0.33	0.71	1.36	0.65	0.53	0.68	0.67	0.59	0.69
Max	0.28	0.38	1.30	62.47	105.05	237.42	44.49	156.72	105.10	17.16	15.94	1.17
Avg	0.17	0.23	0.66	3.73	6.29	29.89	5.23	13.93	12.71	2.43	1.37	0.73
Total (acre-ft)	11	14	39	229	374	1,837	321	774	782	144	84	44

Appendix D3

Estimated Daily Discharge from San Sevaine Creek to the Santa Ana River with Watermaster Diversions

(cfs)

	Jul 10	Aug 10	Sep 10	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	Apr 11	May 11	Jun 11
1	0.42	0.13	0.00	0.00	0.00	0.00	9.55	1.53	7.25	0.00	2.01	1.30
2	0.42	0.00	0.00	0.00	0.00	0.00	4.31	1.23	2.87	0.00	2.01	1.30
3	0.42	0.03	0.00	0.00	0.00	0.00	125.11	1.23	0.00	0.00	2.01	1.30
4	0.43	0.03	0.00	0.07	0.00	0.00	9.20	1.13	0.00	0.00	2.01	1.30
5	0.46	0.03	0.00	0.00	0.00	0.00	5.54	1.03	0.00	0.08	2.21	1.30
6	0.56	0.03	0.00	0.00	0.00	256.22	0.00	1.03	3.05	0.00	2.21	1.30
7	0.56	0.03	0.00	63.53	0.00	0.00	0.37	0.93	4.12	4.73	2.21	1.30
8	0.60	0.03	0.00	0.00	0.00	0.00	2.83	0.93	3.19	5.63	2.31	1.50
9	0.67	0.03	0.00	0.00	2.74	0.00	4.80	0.83	4.67	4.73	2.41	1.50
10	0.57	0.03	0.00	0.00	0.00	0.00	4.97	0.83	3.97	4.33	2.31	1.50
11	0.57	0.03	0.00	0.00	0.00	0.00	4.76	0.83	2.97	4.03	2.21	1.30
12	0.57	0.03	0.00	0.00	0.00	0.00	0.00	0.83	2.77	3.63	1.99	1.31
13	0.31	0.03	0.00	0.00	0.00	0.00	0.00	0.83	2.67	3.43	1.69	1.30
14	0.47	0.03	0.00	0.00	0.00	0.00	0.00	0.83	2.67	3.03	1.79	1.20
15	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.83	2.77	2.73	0.00	1.20
16	0.47	0.01	0.00	0.00	0.00	0.00	0.15	0.00	2.77	2.73	4.19	1.20
17	0.37	0.01	0.00	0.00	0.00	0.00	3.48	90.54	2.77	2.53	1.99	1.16
18	0.37	0.01	0.00	0.00	0.00	155.98	3.48	0.00	2.97	2.73	14.36	1.16
19	0.37	0.01	0.00	0.00	0.00	159.58	3.28	152.07	2.17	2.73	2.49	0.73
20	0.47	0.01	0.00	3.89	0.00	133.96	3.28	134.30	0.00	2.73	1.89	0.74
21	0.23	0.00	0.00	0.00	270.91	2,472.0	3.28	7.98	566.90	2.51	1.79	1.06
22	0.23	0.00	0.00	0.00	75.74	2,871.7	2.88	4.58	187.99	2.51	1.79	0.90
23	0.13	0.00	0.00	0.00	0.04	2,374.9	2.68	2.38	0.00	2.51	1.79	0.90
24	0.13	0.00	0.00	0.00	0.00	1,324.3	2.58	2.23	94.51	2.41	1.69	0.80
25	0.13	0.00	0.00	0.00	0.00	137.27	2.58	3.17	0.00	2.31	1.69	0.80
26	0.12	0.00	0.00	4.79	0.00	238.19	2.38	612.98	61.22	2.21	1.59	0.80
27	0.13	0.00	0.00	0.00	0.00	99.44	2.28	154.22	4.27	2.21	1.59	0.80
28	0.13	0.00	0.00	0.00	0.04	72.90	2.18	9.79	7.66	2.11	1.59	0.70
29	0.13	0.01	0.00	0.00	0.04	0.00	2.08		8.52	2.11	1.69	0.80
30	0.13	0.11	0.00	0.00	0.00	284.18	0.00		3.53	2.11	1.59	0.80
31	0.13	0.11		4.90		10.14	33.68		6.62		1.19	
Total (cfs-days)	11.18	0.78	0.00	77.20	349.50	10,591	241.73	1,189.0	994.92	72.88	72.23	33.31
Min	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70
Max	0.67	0.13	0.00	63.53	270.91	2,871.7	125.11	612.98	566.90	5.63	14.36	1.50
Avg	0.36	0.03	0.00	2.49	11.65	341.64	7.80	42.47	32.09	2.43	2.33	1.11
Total (acre-ft)	22	2	0	153	693	21,007	479	2,358	1,973	145	143	66