DRAFT Table 8-1a

Project Data for MZ3/MZ4/MZ5 Sustainability Projects[1]

Project	Benefiting Management Zone	Summary of Key Project Features	New Supply (acre-ft/yr)	Capital Cost ($)	Annualized Capital Cost ($)	Annual O&M Cost ($)	Other Annual Cost ($/acre-ft)	Supplemental Water Acquisition Cost ($)	Total Annual Cost ($)	Unit Cost ($/acre-ft)	Reliability of the Water Supply	Production Sustainability Score[4]
Min General In-Lieu	3	Construct two wells and related conveyance to move non-MZ3 groundwater or imported water to the JCSD.	5,800	$ 5,440,000	$ 354,000	$ 524,000	$ -	$ -	$ 878,000	$ 151	High	2
Max General In-Lieu	3	Construct four wells and related conveyance to move non-MZ3 groundwater or imported water to the JCSD.	11,600	$ 10,640,000	$ 692,000	$ 1,048,000	$ -	$ -	$ 1,740,000	$ 150	High	2
Chino Hills/MVWD Exchange Project	3	Chino Hills forgoes taking Desalter I water and provides that water to the JCSD. Chino Hills makes up the exchanged supply from MZ1 groundwater production or imported water treated at the WFA plant.	2,800	$ -	$ -	(see note 5 below)	$ -	$ -	(see note 5 below)		High	2
OGRP Project[2]	3	Installation of one well and extend OGRP raw water conveyance.	2,900	$ 4,222,500	$ 275,000	$ -	$ -	$ -	$ 275,000	$ 95	High	2
Ont-CDA MZ3 In-Lieu[3]	3	Ontario sale of 5,000 acre-ft/yr of their CDA water to the JCSD using existing connections.	5,000	$ -	$ -	$ -	$ 920	$ -	$ 4,600,000	$ 920	High	2

[1] The amount and timing of in-lieu supply required to ensure sustainability is unknown.

[2] The total estimated costs for the well and pipeline were derived from Table 9 of the Technical Report, Ontario Groundwater Recovery Project(Carollo, 2013). The production rate was assumed to be 2,000 gpm (2,900 acre-ft/yr at an operating factor of 90%).

[3] The Other Annual Cost for the CDA MZ3 In-Lieu project is the Fiscal Year 2013/14 gross cost/acre-ft for Ontario before the MWD local projects contribution. Source is Exhibit A of the June 6, 2013 CDA Special Board of Directors Meeting Agenda. Note that this cost does not reflect a credit for the avoided cost of pumping by JCSD.

[4] The production sustainability score is a tool to characterize a project's contribution to production sustainability in areas with sustainability challenges. Per the evaluation criteria described in Section 7, the score will be as follows: 0 – does not contribute to production sustainability, 1 – contributes minimally to production sustainability (a necessary but not sufficient condition of sustainability), and 2 – contributes significantly to production sustainability (a necessary and sufficient condition of sustainability).

[5] Annual and unit costs are unknown. The cost to produce and convey water to the JCSD could be paid for by the JCSD or some other arrangement that could involve the Watermaster. Some or all the cost to produce and convey the water to the JCSD would be offset by the JCSD's avoided cost to produce and convey its own water. There is possibility of no new capital cost and that this alternative could be the lowest cost production sustainability alternative.

DRAFT Table 8-1b

Screening of MZ3/MZ4/MZ5 Sustainability Projects[1]

Project	New Supply (acre-ft/yr)	Unit Cost ($/acre-ft)	Capital Cost ($)	Reliability of the Water Supply	Water Quality Challenges	Ease of Implementation
Min General In-Lieu[2]	5,800	$ 151	$ 5,440,000	High	None[2]	b
Max General In-Lieu[2]	11,600	$ 150	$ 10,640,000	High	None[2]	b
Chino Hills/MVWD Exchange Project	2,800	(See note 5 on Table 8-1a)		High	None[2]	d
OGRP Project	2,900	$ 95	$ 4,222,500	High	None	c
Ont-CDA MZ3 In-Lieu	5,000	$ 920	$ -	High	None	a

[1] The amount and timing of in-lieu supply required to ensure sustainability is unknown.

[2] The water supplied will be wheeled through adjacent agency's water system where it is assumed that the water will already be potable. The new wells associated with this project will presumably be sited to avoid water quality challenges and may in fact provide water quality benefits to the source agency. That said, future groundwater degradation could occur necessitating treatment.

[3] Assumes that the water supply cost is offset by the JCSD's avoided production and annual transfer of an equal amount of water from their own production rights.

a - Requires an agreement between the City of Ontario and the JCSD. Ontario's position is that they will need to be compensated for their cost of the water.

b - Requires an agreement between the JCSD and others to construct, operate, and pay for the improvements.

c - Requires an agreement with non-Watermaster Parties that are adversarial to the project to cover VOC treatment costs and is dependent on grant funding.

d - Requires an agreement between the City of Chino Hills, the MVWD, the CDA, and the JCSD.

DRAFT Table 8-1c
Ranked MZ3/MZ4/MZ5 Sustainability Projects

Project	New Supply (acre-ft/yr)	Unit Cost ($/acre-ft)	Capital Cost ($)
Recommended Projects			
Min General In-Lieu	5,800	$ 151	$ 5,440,000
Total of Recommended Projects	Up to 5,800	$ 151	$ 5,440,000
Other Projects			
Chino Hills/MVWD Exchange Project[1]	2,800	Unknown	Unknown
OGRP Project	2,900	$ 95	$ 4,222,500
Max General In-Lieu	11,600	$ 150	$ 10,640,000
Ont-CDA MZ3 In-Lieu	5,000	$ 920	$ -

[1] Annual and unit costs are unknown. The cost to produce and convey water to the JCSD could be paid for by the JCSD or some other arrangement that could involve the Watermaster. Some or all the cost to produce and convey the water to the JCSD would be offset by the JCSD's avoided cost to produce and convey its own water. There is possibility of no new capital cost and that this alternative could be the lowest cost production sustainability alternative.

DRAFT Table 8-2a
Project Data for Yield Enhancement Projects

Project ID	Project Combinations	Group[1]	Project	Man. Zone	Summary of Key Project Features	Potential Cost Share if Mutually Agreed?	Storm Water Recharge									Recycled Water Recharge							Imported Water Recharge							All Recharge			Additional Benefit	Production Sustainability Score[5]
							Baseline Storm Water Recharge (acre-ft/yr)	New Storm Water Recharge (acre-ft/yr)	Constructed for Regulatory Compliance?	Project Complete?	Capital Cost ($)	Annualized Capital Cost ($)	Annual O&M Cost ($)	Total Annual Cost ($)	Storm Water Recharge Unit Cost[2]	New Recycled Water Recharge (acre-ft/yr)	Recycled Water Acquisition Cost[3]	Capital Cost ($)	Annualized Capital Cost ($)	Annual O&M Cost ($)	Total Annual Cost ($)	Recycled Water Recharge Unit Cost[2]	New Imported Water Recharge (acre-ft/yr)	Imported Water Acquisition Cost[4]	Capital Cost ($)	Annualized Capital Cost ($)	Annual O&M Cost ($)	Total Annual Cost ($)	Imported Water Recharge Unit Cost[2]	Total New Storm and Supplemental Water (acre-ft/yr)	Total Capital Cost ($)	Total Unit Cost of All New Recharge		
Proposed Projects in Table 6-1 that Were Analyzed in Detail																																	
1		i	Montclair Basins	1	Transfer water between Montclair Basins and deepen MC 4	N	1,188	71	N	N	$ 5,450,000	$ 354,500	$ 2,631	$ 357,131	$ 4,997	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	71	$ 5,450,000	$ 4,997		0
1a		i	Montclair Basins	1	Transfer water between Montclair Basins and deepen MC 4	N	1,188	71	N	N	$ 5,050,000	$ 328,500	$ 2,631	$ 331,131	$ 4,633	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	71	$ 5,050,000	$ 4,633		0
2		i	Montclair Basins	1	New drop inlet structures to MC 2 and MC 3	N	1,188	248	N	N	$ 1,440,000	$ 93,700	$ 9,132	$ 102,832	$ 415	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	248	$ 1,440,000	$ 415		0
3		i	Montclair Basins	1	Automate inlet to MC 1[6]	N	1,188	0	N	N	$ 50,000	$ 3,300	$ (6,000)	$ (2,700)	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ 50,000	$ -	Y[19]	0
4		i	Montclair Basins	1	Construct low-level drains from Basin 1 to 2 and 2 to 3	N	1,188	0	N	N	$ 790,000	$ 51,400	$ -	$ 51,400	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ 790,000	$ -		0
5		i	North West Upland Basin	1	Increase drainage area and basin enlargement	N	29	93	N	N	$ 5,490,000	$ 357,100	$ 3,441	$ 360,541	$ 3,858	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	93	$ 5,490,000	$ 3,858		0
5a		i	North West Upland Basin	1	Increase drainage area and basin enlargement	N	29	93	N	N	$ 4,640,000	$ 301,800	$ 3,441	$ 305,241	$ 3,266	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	93	$ 4,640,000	$ 3,266		
6		i	Princeton Basin	2	Basin enlargement and increased drainage area[22]	N	48	0	N	N	$ -	$ -	$ -	$ -	#DIV/0!	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -		0
7		ii	San Sevaine Basins	2	Construct pump station, pump water from SS 5 to SS 3, and construct internal berm in SS 5[7]	Y	1,177	642	N	N	$ 1,775,000	$ 115,500	$ 23,641	$ 139,141	$ 217	1,911	$ 372,645	$ 1,775,000	$ 115,500	$ 45,311	$ 533,456	$ 279	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	2,553	$ 3,550,000	$ 263		0
8		ii	San Sevaine Basins	2	Extend IEUA recycled water pipeline to SS 3 and construct internal berm in SS 5[7]	Y	1,177	345	N	N	$ 1,310,000	$ 85,200	$ 12,719	$ 97,919	$ 283	1,911	$ 372,645	$ 1,310,000	$ 85,200	$ 45,311	$ 503,156	$ 263	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	2,256	$ 2,620,000	$ 266		0
9		i	San Sevaine Basins	2	Construct internal berms in SS 1 and SS 2 and install a gate between SS 1 and SS 2	N	1,177	0	N	N	$ 300,000	$ 19,500	$ -	$ 19,500	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ 300,000	$ -	Y[20]	0
10		i	San Sevaine Basins	2	Increase CB13T capacity and power supply	N	1,177	0	N	N	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	1,235	$ 766,935	$ 1,980,000	$ 128,800	$ 29,283	$ 925,018	$ 749	1,235	$ 1,980,000	$ 749		0
11		i	Victoria Basin	2	Abandon the mid-level outlet and extend the lysimeters	Y	439	43	N	N	$ 75,000	$ 4,900	$ 1,576	$ 6,476	$ 151	120	$ 23,400	$ 75,000	$ 4,900	$ 2,845	$ 31,145	$ 260	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	163	$ 150,000	$ 231		0
12		ii	Lower Day Basin (2010 RMPU)	2	Inlet improvements, rebuilding embankment, elimination of mid-level outlet	N	395	789	N	N	$ 2,480,000	$ 161,300	$ 29,041	$ 190,341	$ 241	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	789	$ 2,480,000	$ 241		0
13		ii	Lower Day Basin	2	Install gate on mid-level outlet	N	395	75	N	N	$ 600,000	$ 39,000	$ 2,777	$ 41,777	$ 554	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	75	$ 600,000	$ 554		0
14		i	Turner Basin	2	Raise Turner 2 spillway[8]	N	1,226	66	N	N	$ 890,000	$ 57,900	$ 2,426	$ 60,326	$ 916	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	66	$ 890,000	$ 916		1
15		i	Ely Basin	2	Basin enlargement and increased drainage area	N	1,103	221	N	N	$ 9,120,000	$ 593,300	$ 8,122	$ 601,422	$ 2,726	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	221	$ 9,120,000	$ 2,726		0
15a		i	Ely Basin	2	Basin enlargement and increased drainage area	N	1,103	221	N	N	$ 3,200,000	$ 208,200	$ 8,122	$ 216,322	$ 981	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	221	$ 3,200,000	$ 981		
16		i	Ontario Bioswale Project	2	New bioswale	N	0	8	Y	Y	$ 650,000	$ 42,300	$ 277	$ 42,577	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	8	$ 650,000	$ -		0
17		i	Lower San Sevaine Basin (2010 RMPU)	2	New basin	Y	0	1,221	N	N	$ 22,715,000	$ 1,477,600	$ 44,947	$ 1,522,547	$ 1,247	500	$ 97,500	$ 22,715,000	$ 1,477,600	$ 11,855	$ 1,586,955	$ 3,174	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	1,721	$ 45,430,000	$ 1,807		0
17a		i	Lower San Sevaine Basin (2010 RMPU)	2	New basin	Y	0	1,221	N	N	$ 11,275,000	$ 733,500	$ 44,947	$ 778,447	$ 638	500	$ 97,500	$ 11,275,000	$ 733,500	$ 11,855	$ 842,855	$ 1,686	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	1,721	$ 22,550,000	$ 942		0
18		i	CSI Storm Water Basin	3	Deepen basin by 10 feet	N	72	81	N	N	$ 900,000	$ 58,500	$ 2,998	$ 61,498	$ 755	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	81	$ 900,000	$ 755		0
18a		i	CSI Storm Water Basin	3	Deepen basin by 10 feet	N	72	81	N	N	$ 440,000	$ 28,600	$ 2,998	$ 31,598	$ 388	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	81	$ 440,000	$ 388		0
19		iii	Wineville Basin (2010 RMPU)	3	Gate the low-elevation outlet, replace embankment with dam, and construct a pneumatic gate on the spillway[9]	Y	5	2,157	N	N	$ 3,140,000	$ 204,300	$ 79,438	$ 283,738	$ 132	630	$ 122,850	$ 3,140,000	$ 204,300	$ 14,938	$ 342,088	$ 543	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	2,787	$ 6,280,000	$ 225		2
19a		iii	Wineville Basin (2010 RMPU)	3	Gate the low-elevation outlet, replace embankment with dam, and construct a pneumatic gate on the spillway[9]	Y	5	2,157	N	N	$ 2,445,000	$ 159,100	$ 79,438	$ 238,538	$ 111	630	$ 122,850	$ 2,445,000	$ 159,100	$ 14,938	$ 296,888	$ 471	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	2,787	$ 4,890,000	$ 192		2
20		iii	Jurupa Basin	3	Inlet improvements and CB-18 turnout modifications	N	234	421	N	N	$ 1,900,000	$ 123,600	$ 15,516	$ 139,116	$ 330	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	421	$ 1,900,000	$ 330	Y[21]	2
21		ii	RP3 Basin Improvements (2010 RMPU)	3	Inlet improvements and enlargement	N	628	406	N	N	$ 22,044,000	$ 1,434,000	$ 14,931	$ 1,448,931	$ 3,573	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	406	$ 22,044,000	$ 3,573		2
21a		ii	RP3 Basin Improvements (2010 RMPU)	3	Inlet improvements and enlargement	N	628	406	N	N	$ 13,464,000	$ 875,900	$ 14,931	$ 890,831	$ 2,197	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	406	$ 13,464,000	$ 2,197		
22		ii, iii	RP3 Basin Improvements (2013 RMPU)	3	Increase conservation storage[10]	Y	628	137	N	N	$ 2,645,000	$ 172,100	$ 5,062	$ 177,162	$ 1,289	2,905	$ 566,475	$ 2,645,000	$ 172,100	$ 68,879	$ 807,454	$ 278	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	3,042	$ 5,290,000	$ 324		2
22a		ii, iii	RP3 Basin Improvements (2013 RMPU)	3	Increase conservation storage[10]	Y	628	137	N	N	$ 1,855,000	$ 120,700	$ 5,062	$ 125,762	$ 915	2,905	$ 566,475	$ 1,855,000	$ 120,700	$ 68,879	$ 756,054	$ 260	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	3,042	$ 3,710,000	$ 290		2
23	Includes PID's 19,20,22	iv	2013 RMPU Proposed Wineville PS to Jurupa, Expanded Jurupa PS to RP3 Basin with 2013 Proposed RP3 Improvements	3	2010 RMPU Proposed Wineville Basin Improvements, Wineville 20 cfs PS to Jurupa, Improved Jurupa Basin Inlet, 40 cfs PS to RP3 Basin with Proposed 2013 RMPU RP3	Y	867	3,166	N	N	$ 11,662,000	$ 758,600	$ 311,014	$ 1,069,614	$ 338	3,535	$ 689,325	$ 11,662,000	$ 758,600	$ 83,817	$ 1,531,742	$ 433	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	6,701	$ 23,324,000	$ 388		2
23a	Includes PID's 19,20,22	iv	2013 RMPU Proposed Wineville PS to Jurupa, Expanded Jurupa PS to RP3 Basin with 2013 Proposed RP3 Improvements	3	2010 RMPU Proposed Wineville Basin Improvements, Wineville 20 cfs PS to Jurupa, Improved Jurupa Basin Inlet, 40 cfs PS to RP3 Basin with Proposed 2013 RMPU RP3	Y	867	3,166	N	N	$ 10,657,000	$ 693,300	$ 311,014	$ 1,004,314	$ 317	3,535	$ 689,325	$ 10,657,000	$ 693,300	$ 83,817	$ 1,466,442	$ 415	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	6,701	$ 21,314,000	$ 369		2
24		i	Vulcan Pit	3	Construct new inflow and outflow structures[11]	Y	0	857	N	N	$ 13,850,000	$ 901,000	$ 31,548	$ 932,548	$ 1,088	840	$ 163,800	$ 13,850,000	$ 901,000	$ 19,917	$ 1,084,717	$ 1,291	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	1,697	$ 27,700,000	$ 1,189		1
25		i	Sierra	3	Deepen basin by 10 feet	N	12	64	N	N	$ 1,000,000	$ 65,100	$ 2,351	$ 67,451	$ 1,056	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	64	$ 1,000,000	$ 1,056		1
25a		i	Sierra	3	Deepen basin by 10 feet	N	12	64	N	N	$ 490,000	$ 31,900	$ 2,351	$ 34,251	$ 536	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	64	$ 490,000	$ 536		1
26		i	Sultana Avenue	3	Deepen basin by 10 feet	N	89	7	N	N	$ 1,026,200	$ 66,800	$ 258	$ 67,058	$ 9,556	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	7	$ 1,026,200	$ 9,556		1
26a		i	Sultana Avenue	3	Deepen basin by 10 feet	N	89	7	N	N	$ 502,200	$ 32,700	$ 258	$ 32,958	$ 4,697	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	7	$ 502,200	$ 4,697		1
27		i	Declez Basin	3	Reconstruct existing embankment and install a gate on the low level outlet[12]	N	674	241	N	N	$ 4,070,000	$ 264,800	$ 8,877	$ 273,677	$ 1,135	0	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	241	$ 4,070,000	$ 1,135		2
Operations and Maintenance[13]																																	
28		ii	Banana Basin (annual cleaning)	3	Increase frequency of basin maintenance (Increased infiltration rate to 0.6 ft/day)	Y	317	11	N	N			$ 3,183	$ 3,183	$ 294	130	$ 25,350	$ -	$ -	$ 38,159	$ 63,509	$ 489	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	141		$ 474		0
29		ii	Banana Basin (semiannual cleanings)	3	Increase frequency of basin maintenance (Increased infiltration rate to 0.72 ft/day)	Y	317	31	N	N			$ 15,192	$ 15,192	$ 495	155	$ 30,225	$ -	$ -	$ 76,744	$ 106,969	$ 690	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	186		$ 658		0
30		ii	Declez Basin (annual cleaning)	3	Increase basin maintenance frequency (Increased infiltration rate to 0.66 ft/day)	Y	674	16	N	N			$ 6,537	$ 6,537	$ 409	178	$ 34,710	$ -	$ -	$ 72,735	$ 107,445	$ 604	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	194		$ 588		0
31		ii	Declez Basin (semiannual cleanings)	3	Increase basin maintenance frequency (Increased infiltration rate to 0.78 ft/day)	Y	674	47	N	N			$ 32,923	$ 32,923	$ 701	210	$ 40,950	$ -	$ -	$ 147,109	$ 188,059	$ 896	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	257		$ 860		0
32		ii	Ely Basin (annual cleaning)	2	Increase maintenance frequency (Increased infiltration rate to 0.27 ft/day)	Y	1,103	44	N	N			$ 29,450	$ 29,450	$ 668	217	$ 42,315	$ -	$ -	$ 144,868	$ 187,183	$ 863	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	261		$ 830		0
33		ii	Ely Basin (semiannual cleanings)	2	Increase maintenance frequency (Increased infiltration rate to 0.33 ft/day)	Y	1,103	128	N	N			$ 127,949	$ 127,949	$ 997	258	$ 50,310	$ -	$ -	$ 257,342	$ 307,652	$ 1,192	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	386		$ 1,128		0
34		ii	Hickory Basin (annual cleaning)	2	Increase frequency of basin maintenance (Increased infiltration rate to 0.44 ft/day)	Y	353	7	N	N			$ 3,812	$ 3,812	$ 518	148	$ 28,860	$ -	$ -	$ 76,622	$ 105,482	$ 713	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	155		$ 703		0
35		ii	Hickory Basin (semiannual cleanings)	2	Increase frequency of basin maintenance (Increased infiltration rate to 0.52 ft/day)	Y	353	20	N	N			$ 17,640	$ 17,640	$ 877	175	$ 34,125	$ -	$ -	$ 153,435	$ 187,560	$ 1,072	0	$ -	$ -	$ -	$ -	$ -	$ -	$ -	195		$ 1,052		0
Proposed Projects in Table 6-1 that Were Not Analyzed																																	
36			Turner Expansion	2	Basin improvements to the basins east of Archibald Ave and new basins adjacent to Turner 4[14]																														
37			Upland Basin	1	Construct low level drain[15]																														
38			College Heights	1	Construct internal berms to reduce seepage to the Upland basin[16]																														
39			Lower Cucamonga Basin	2	Basin enlargement for distribution[17]																														
40			Management Zones 2 and 3 Capture, Pump and Recharge	2,3	Capture water in MZ-2 and 3 basins low in the system and pump to basins higher in the system[17]																														
41			Jurupa Basin	3	Inlet improvements and basin enlargement[17]																														
42			RP3 Basins	3	Inlet improvements[18]																														
43			Alder Basin	3	Deepen basin[17]																														

[1] The project group column was created to determine the total yield from different combinations of projects. The group was determined as follows: i- the project can be standalone; ii- the project is mutually exclusive; iii- the project can be standalone but is also included in a multi-project scenario; iv- the project is included in a "iii" group.

[2] The results of this table provide an estimate of the cost per acre-ft of recharge. These estimates are reconnaissance level (level 5) estimates, and additional technical work needs to be done to assure feasibility.

[3] The IEUA recycled water recharge rate was assumed to be $195/acre-ft per Table 2-9.

[4] The MWD imported water recharge rate was assumed to be untreated Tier 1 Service at a price of $621 an acre-ft per Table 2-9.

[5] The production sustainability score is a tool to characterize a project's contribution to production sustainability in areas with sustainability challenges. In simple terms, the score is as follows: 0 – does not contribute to production sustainability; 1 – contributes minimally to production sustainability (a necessary but not sufficient condition of sustainability); 2 – contributes significantly to production sustainability (a necessary and sufficient condition of sustainability).

[6] The automation of the inlet gate and flume data to MC 1 results in a reduction of O&M.

[7] With a 40-percent RWC limitation, an additional 1,911 acre-ft/yr of recycled water can be recharged.

[8] The baseline for the Turner 2 Spillway Project and the Turner Expansion includes the recharge from Turner 1, 2, 3, and 4.

[9] The results from the Wineville proof-of-concept project may render the project infeasible. Recycled water recharge was estimated to be 630 acre-ft/yr, assuming an infiltration rate of 0.10 ft/day over 30 acres.

[10] The maximum amount of recycled water that can be recharged is 12,800 acre-ft/yr at RP3. *

[11] Recycled water recharge based upon an estimated 0.1 ft/day infiltration at 40-acres for 7-months of operations. Actual RWC is unknown; recharge based upon an assumed RWC at 25% with the following flows: 840 AFY storm water, 1,800 AFY underflow, and diluent water the same at Banana Basin. The project includes the price of land at $14 million.

[12] Recycled water recharge operations will not benefit from the increased operating level. *

[13] Based on available information, it can be assumed that basin infiltration can be increased 10 to 20% with annual cleaning and 20 to 50 % with cleaning twice a year. Field data needs to be established to determine optimum cleaning frequencies per basin.

[14] The Turner Basin expansion project was not included because it is currently under construction.

[15] The Upland Basin Project was removed by the IEUA because the basin performs well, and limited cleaning is needed.

[16] The College Heights project does not affect stormwater recharge.

[17] The projects did not pass the screening criteria and were not considered.

[18] The estimated total stormwater recharge gained by the 2010 RMPU RP3 inlet improvement is comparable to the currently achievable stormwater recharge at RP3 due to enhance stormwater recharge efforts by IEUA.

[19] Reduces the amount of lost water due to basin inlet constraints and clogging.

[20] Will increase the amount of time water can be recharged in SS-1 by solving the vector control issues.

[21] Will allow the Jurupa Basin to accept an additional 15 cfs from the CB 18 if Hickory and Banana Basins were offline.

[22] The SBCFCD did not allow the City of Ontario to connect the new 5th Street storm drain to the Princeton Basin. The SBCFCD required improvements to the Princeton Basin such as enlarging the basin by purchasing the adjacent property, deepening the basin, and enlarging the outlet structures in order to allow the diversion of the 15th St storm drain to the Princeton Basin. These costs made the improvement infeasible. The City of Ontario connected the 60" storm drain to the West Cucamonga channel to the south of the Princeton Basin. This information was not presented until after the model runs and cost estimates were completed.

a - The project includes excavation costs, and the capital cost shown assumes that the project's excavation costs would be reduced by 90%. The material excavated could be used for another construction site or leased to a mining operator.

DRAFT Table 8-2b
Screening of Yield Enhancement Projects

Project ID	Project	Management Zone	Capital Cost	Annualized Capital Cost ($)	Annual O&M Cost ($)	Total Annual Cost ($)	New Yield	Recycled Water	Unit Cost	Water Quality Challenges	Institutional Challenges
1	Montclair Basins	1	$ 5,450,000	$ 354,500	$ 2,644	$ 357,144	71	0	$ 4,997		c
1a	Montclair Basins	1	$ 5,050,000	$ 328,500	$ 2,644	$ 331,144	71	0	$ 4,634		c
2	Montclair Basins	1	$ 1,440,000	$ 93,700	$ 9,176	$ 102,876	248	0	$ 415		c
3	Montclair Basins	1	$ 50,000	$ 3,300	$ -	$ 3,300	0	0	--		c
4	Montclair Basins	1	$ 790,000	$ 51,400	$ -	$ 51,400	0	0	--		c
5	North West Upland Basin	1	$ 5,490,000	$ 357,100	$ 3,458	$ 360,558	93	0	$ 3,858		c, g
5a	North West Upland Basin	1	$ 4,640,000	$ 301,800	$ 3,458	$ 305,258	93	0	$ 3,267		c, g
6	Princeton Basin	2	$ -	$ -	$ -	$ -	0	0	--		c
7	San Sevaine Basins	2	$ 1,775,000	$ 115,500	$ 23,756	$ 139,256	642	1,911	$ 217		c, e, f
8	San Sevaine Basins	2	$ 2,620,000	$ 170,400	$ 12,781	$ 183,181	345	1,911	$ 530		c, e
9	San Sevaine Basins	2	$ 300,000	$ 19,500	$ -	$ 19,500	0	0	--		c
10	San Sevaine Basins	2	$ 1,980,000	$ 128,800	$ -	$ 128,800	0	0	--		c
11	Victoria Basin	2	$ 75,000	$ 4,900	$ 1,584	$ 6,484	43	120	$ 151		c, e, f
12	Lower Day Basin (2010 RMPU)	2	$ 2,480,000	$ 161,300	$ 29,182	$ 190,482	789	0	$ 242		c
13	Lower Day Basin	2	$ 600,000	$ 39,000	$ 2,791	$ 41,791	75	0	$ 554		c
14	Turner Basin	2	$ 890,000	$ 57,900	$ 2,438	$ 60,338	66	0	$ 916		c
15	Ely Basin	2	$ 9,120,000	$ 593,300	$ 8,162	$ 601,462	221	0	$ 2,727	b	
15a	Ely Basin	2	$ 3,200,000	$ 208,200	$ 8,162	$ 216,362	221	0	$ 981	b	
16	Ontario Bioswale Project	2	$ 650,000	$ 42,300	$ 279	$ 42,579	8	0	$ 5,652		
17	Lower San Sevaine Basin (2010 RMPU)	2	$ 45,430,000	$ 2,955,300	$ 45,165	$ 3,000,465	1,221	500	$ 2,458		d, e
17a	Lower San Sevaine Basin (2010 RMPU)	2	$ 22,550,000	$ 1,466,900	$ 45,165	$ 1,512,065	1,221	500	$ 1,239		d, e
18	CSI Storm Water Basin	3	$ 900,000	$ 58,500	$ 3,012	$ 61,512	81	0	$ 756	b	g
18a	CSI Storm Water Basin	3	$ 440,000	$ 28,600	$ 3,012	$ 31,612	81	0	$ 388	b	g
19	Wineville Basin (2010 RMPU)	3	$ 6,280,000	$ 408,500	$ 79,824	$ 488,324	2,157	630	$ 226	b	
19a	Wineville Basin (2010 RMPU)	3	$ 4,890,000	$ 318,100	$ 79,824	$ 397,924	2,157	630	$ 184	b	
20	Jurupa Basin	3	$ 1,900,000	$ 123,600	$ 15,591	$ 139,191	421	0	$ 330		
21	RP3 Basin Improvements (2010 RMPU)	3	$ 22,044,000	$ 1,434,000	$ 15,004	$ 1,449,004	406	0	$ 3,573		
21a	RP3 Basin Improvements (2010 RMPU)	3	$ 13,464,000	$ 875,900	$ 15,004	$ 890,904	406	0	$ 2,197		
22	RP3 Basin Improvements (2013 RMPU)	3	$ 2,645,000	$ 172,100	$ 5,087	$ 177,187	137	2,905	$ 1,289		f
22a	RP3 Basin Improvements (2013 RMPU)	3	$ 1,855,000	$ 120,700	$ 5,087	$ 125,787	137	2,905	$ 915		f
23	2013 RMPU Proposed Wineville PS to Jurupa, Expanded Jurupa PS to RP3 Basin with 2013 Proposed RP3 Improvements	3	$ 23,324,000	$ 1,517,300	$ 311,014	$ 1,828,314	3,166	3,535	$ 577		d, e
23a	2013 RMPU Proposed Wineville PS to Jurupa, Expanded Jurupa PS to RP3 Basin with 2013 Proposed RP3 Improvements	3	$ 21,314,000	$ 1,386,500	$ 311,014	$ 1,697,514	3,166	3,535	$ 536		d, e
24	Vulcan Pit	3	$ 27,700,000	$ 1,801,900	$ 31,701	$ 1,833,601	857	840	$ 2,140	b	d, e, g
25	Sierra	3	$ 1,000,000	$ 65,100	$ 2,362	$ 67,462	64	0	$ 1,057		g
25a	Sierra	3	$ 490,000	$ 31,900	$ 2,362	$ 34,262	64	0	$ 537		g
26	Sultana Avenue	3	$ 1,026,200	$ 66,800	$ 260	$ 67,060	7	0	$ 9,556		g
26a	Sultana Avenue	3	$ 502,200	$ 32,700	$ 260	$ 32,960	7	0	$ 4,697		g
27	Declez Basin	3	$ 4,070,000	$ 264,800	$ 8,920	$ 273,720	241	0	$ 1,135		
28	Banana Basin (annual cleaning)	3					11	130	$ 294		
29	Banana Basin (semiannual cleanings)	3					31	155	$ 495		
30	Declez Basin (annual cleaning)	3					16	178	$ 409		
31	Declez Basin (semiannual cleanings)	3					47	210	$ 701		
32	Ely Basin (annual cleaning)	2					44	217	$ 668	b	
33	Ely Basin (semiannual cleanings)	2					128	258	$ 997	b	
34	Hickory Basin (annual cleaning)	2					7	148	$ 518		
35	Hickory Basin (semiannual cleanings)	2					20	175	$ 877		

a - Project ID no.'s with an "a" extension indicate that the project includes excavation and haul-off costs, and the capital cost shown assumes that the project's excavation and haul-off costs are reduced by 90 percent with the excavated materials being used in another construction project.

Key to Water Quality Challenges

b - A potential water quality challenge has been identified with this project.

Key to Institutional Challenges

c - An agreement will be required with the property owner to construct and operate stormwater recharge facilities. Other agreements with resource agencies may also be required. The time required to negotiate and approve these agreements could range from one to two years.

d - This basin is not currently included in the Watermaster/IEUA recharge permit. Therefore, the existing permit will need to be amended to include recycled water at this basin. The time required to prepare the Title 22 engineering report and regulatory process is about two years.

e - The project includes a recycled water recharge component. The IEUA has discretion as to whether to participate or not in this project.

f - At the July 18, 2013 Steering Committee Meeting, Ryan Shaw (IEUA) indicated that Project IDs 7, 11, and 22a are being recommended to be cost shared. The capital cost shown assumes a 50/50 split of the capital cost per Peace II Agreement Article VIII.

g - The Watermaster will have to submit a Petition for Change with the State Water Resources Control Board for the project because it is not included in the Watermaster's current diversion permits.

DRAFT Table 8-2c
Ranked Yield Enhancement Projects

Project ID	Group[1]	Project	Yield	Recycled Water	Storm Water Recharge Unit Cost	Capital Cost	Total Annual Cost
Recommended MZ3 Projects							
18a	i	CSI Storm Water Basin	81	0	$ 388	$ 440,000	$ 31,612
23a	iv	2013 RMPU Proposed Wineville PS to Jurupa, Expanded Jurupa PS to RP3 Basin, and 2013 Proposed RP3 Improvements[2,3]	3,166	2,905	$ 497	$ 19,392,000	$ 1,261,000
25a	i	Sierra	64	0	$ 537	$ 490,000	$ 34,262
Total MZ3			**3,311**	**2,905**	**$ 495**	**$ 20,322,000**	**$ 1,326,875**
Recommended MZ2 Projects							
11	i	Victoria Basin[2, 4]	43	120	$ 151	$ 75,000	$ 6,484
7	ii	San Sevaine Basins[2, 5]	642	1,911	$ 217	$ 1,775,000	$ 139,256
12	ii	Lower Day Basin (2010 RMPU)	789	0	$ 242	$ 2,480,000	$ 190,482
Total MZ2			**1,474**	**2,031**	**$ 228**	**$ 4,330,000**	**$ 336,222**
Recommended MZ1 Projects							
2	i	Montclair Basins	248	0	$ 415	$ 1,440,000	$ 102,876
Total MZ1			**248**	**0**	**$ 415**	**$ 1,440,000**	**$ 102,876**
Total Recommended Projects			**5,033**	**4,936**	**$ 413**	**$ 26,092,000**	**$ 1,765,973**
Other Projects							
19a	iii	Wineville Basin (2010 RMPU)	2,157	0	$ 184	$ 4,890,000	$ 397,924
20	iii	Jurupa Basin	421	0	$ 330	$ 1,900,000	$ 139,191
22a	ii, iii	RP3 Basin Improvements (2013 RMPU)	137	0	$ 915	$ 1,855,000	$ 125,787

Note - color shading within each MZ indicates mutually exclusive projects.

[1] The project group column was created to determine the total yield from different combinations of projects. The group was determined as follows: i- the project can be standalone; ii- the project is mutually exclusive; iii- the project can be standalone but is also included in a multi-project scenario; and iv- the project includes the "iii" group.

[2] At the July 18, 2013 Steering Committee Meeting, Ryan Shaw (IEUA) indicated that Project IDs 7, 11, and 22a are being recommended to be cost shared and the capital cost shown assumes a 50/50 split of the capital cost per Peace II Agreement Article VIII.

[3] Project ID 23a includes Project IDs 19a, 20, and 22a and associated conveyance facilities. The total capital cost represents an IEUA capital cost share for only Project ID 22a. The capital costs associated with Project IDs 19a and 20 and the associated conveyance facilities were not cost shared. The recycled water recharge shown represents the increase in Project ID 22a. The recycled water recharge associated with Project ID 19a was not included because the project was not recommended to be cost shared by IEUA. The total capital cost of Project ID 23a is about $17,440,000.

[4] The total capital cost for Project ID 11 is about $150,000.

[5] The total capital cost for Project ID 12 is about $3,550,000.

a - Project ID no.'s with an "a" extension indicate that the project includes excavation and haul-off costs, and the capital cost shown assumes that the project's excavation and haul-off costs are reduced by 90 percent with the excavated materials being used in another construction project.

DRAFT Table 8-3

Ranked Yield Enhancement Projects with Capital Cost Breakdown and Amortization Cost

Project ID	Group[1]	Project	Yield	Recycled Water	Storm Water Recharge Unit Cost	Direct Construction Cost	Engineering and Admin Costs	Total Capital Cost	Annual Amortization Cost		Annual Costs for Pay-As-You-Go for All Soft Costs						
									Finance All Costs	Finance Construction Costs Only	Fiscal 2015	Fiscal 2016	Fiscal 2017	Fiscal 2018	Fiscal 2019	Fiscal 2020	Fiscal 2021
Recommended MZ3 Projects																	
18a	i	CSI Storm Water Basin	81	0	$ 388	$ 291,000	$ 150,000	$ 441,000	$ 29,000	$ 19,000							
23a	iv	2013 RMPU Proposed Wineville PS to Jurupa, Expanded Jurupa PS to RP3 Basin, and 2013 Proposed RP3 Improvements	3,166	2,905	$ 497	$ 17,513,000	$ 1,879,000	$ 19,392,000	$ 1,261,000	$ 1,139,000							
25a	i	Sierra	64	0	$ 537	$ 323,000	$ 167,000	$ 490,000	$ 32,000	$ 21,000							
Total MZ3			**3,311**	**2,905**	**$ 495**				**$ 1,322,000**	**$ 1,179,000**							
Recommended MZ2 Projects																	
11	i	Victoria Basin	43	120	$ 151	$ 65,000	$ 9,750	$ 74,750	$ 5,000	$ 4,000							
7	ii	San Sevaine Basins	642	1,911	$ 217	$ 1,614,000	$ 161,500	$ 1,775,500	$ 115,000	$ 105,000							
12	ii	Lower Day Basin (2010 RMPU)	789	0	$ 242	$ 2,158,000	$ 324,000	$ 2,482,000	$ 161,000	$ 140,000							
Total MZ2			**1,474**	**2,031**	**$ 228**				**$ 281,000**	**$ 249,000**							
Recommended MZ1 Projects																	
2	i	Montclair Basins	248	0	$ 415	$ 1,251,900	$ 188,000	$ 1,439,900	$ 94,000	$ 102,876							
Total MZ1			**248**	**0**	**$ 415**				**$ 94,000**	**$ 102,876**							
Total Recommended Projects			**5,033**	**4,936**	**$ 413**	**$ 23,215,900**	**$ 2,879,250**	**$ 26,095,150**	**$ 1,697,000**	**$ 1,530,876**	**$ 100,000**	**$ 300,944**	**$ 300,944**	**$ 773,775**	**$ 773,775**	**$ 322,406**	**$ 322,406**

$200,000 CEQA cost as a lump sum. Project-level for the projects listed above and programmatic level for all other unique projects in Table 8-2c.

$100,000 Watermaster cost to negotiate implementation agreements, legal costs and staff time

15% Preliminary engineering as a fraction of E&A

60% Final design as a fraction of E&A

25% CMS as a fraction of E&A