Table 6-1
Recharge Improvements Recommended by the Chino Basin Recharge Master Plan Steering Committee
For Evaluation in Task 8

Project Name	Facility Owner	Project Advocates[2]	Map Code	Man. Zone	Estimated Increase in Recharge from Improvements (acre-ft/yr)			Proposed Improvements		
					Storm/Dry Weather	Imported	Recycled	Description of Improvements[1]	Cost	Expected Benefits
Sierra Avenue Water Conservation Project	City of Fontana	City of Fontana, FWC and JCSD	1	3	423	Unknown	Unknown	C1 Increase conservation storage, other onsite improvements and connection to recycled water system	Unknown	1. Increase recharge of storm and recycled waters 2. Improve the balance of recharge and discharge in MZ3
Sultana Avenue/Miller Avenue Water Conservation Improvement Project	City of Fontana	City of Fontana, FWC and JCSD	2	3	94	Unknown	Unknown	C1 Increase conservation storage, other onsite improvements and connection to recycled water system	Unknown	1. Increase in yield from storm water recharge and water supply from recycled water recharge 2. Improve the balance of recharge and discharge in MZ3
Alder Basin Water Conservation Improvement Project	City of Fontana	City of Fontana, FWC and JCSD	3	3	126	Unknown	Unknown	C1 Increase conservation storage, other onsite improvements and connection to recycled water system	Unknown	1. Increase recharge of storm and recycled water 2. Improve the balance of recharge and discharge in MZ3; not included in Watermaster diversion permits
San Sevaine Basins 1 - 5 Improvements	SBCFCD	IEUA	5	2	Unknown	Unknown	Unknown	C1 Construct Internal berms in SS1 and SS2	Unknown	1. Would help mitigate vector problems
					Unknown	Unknown	Unknown	C2 Install gate between SS1 and SS2	Unknown	
					Unknown	Unknown	Unknown	C3 Construct internal berms in SS5	Unknown	1. Would help mitigate vector problems and increase recharge capacity for storm and supplemental water
					Unknown	Unknown	Unknown	C4 Construct pump station from SS5 to SS3 or higher	Unknown	1. Increase storm and recycled water recharge capacity
					Unknown	Unknown	Unknown	C5 Extend IEUA recycled water pipeline to SS3 or higher	Unknown	1. Increase recycled water recharge
					Unknown	Unknown	Unknown	C6 CB13T power supply	Unknown	
					na	Unknown	Unknown	C7 Increase CB13T capacity	Unknown	1. Increase imported and recycled waters recharge
					Unknown	Unknown	Unknown	I1 Investigate SS5 poor infiltration rate	Unknown	1. Increase storm and supplemental water recharge
					Unknown	Unknown	Unknown	I2 Evaluation of Etiwanda Creek and San Sevaine Channel area properties for new recharge sites	Unknown	1. Increase storm and supplemental water recharge
					na	na	Unknown	I3 Conduct investigation/regulatory process to permit recycled water recharge in SS1 through SS4	Unknown	1. Increase recycled water recharge

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					Storm/Dry Weather	Imported	Recycled	Description of Improvements[1]	Cost	Expected Benefits
Etiwanda Debris Basin	SBCFCD	IEUA	6	2	Unknown	Unknown	Unknown	O1 Rip basin and shore up Berm	Unknown	1. Increase storm and imported water recharge
					na	na	na	I1 Evaluate opportunity to use the "Etiwanda habitat Area" for recharge use	Unknown	Increase storm and imported water recharge
Victoria Basin	SBCFCD	IEUA	7	2	Unknown	Unknown	Unknown	C1 Abandon the mid-level outlet	Unknown	1. Increase storm and supplemental water recharge
					Unknown	Unknown	Unknown	C2 Remove fine-grained materials from basin floor	Unknown	1. Increase storm and supplemental water recharge
					na	na	Unknown	C3 Extension of lysimeters	Unknown	1. Increase the amount of recycled water recharge
Banana Basin	SBCFCD	IEUA	8	3	Unknown	Unknown	Unknown	O1 Increase frequency of basin maintenance	Unknown	1. Increase storm and supplemental water recharge
					na	na	na	C1 Extend level sensor to more readily monitor recharge at low levels		1. Improve estimates of recharge
Hickory Basin	SBCFCD	IEUA	9	2	na	na	na	O1 Increase frequency of basin maintenance	Unknown	1. Increase storm and supplemental water recharge
Lower Day Basin	SBCFCD	IEUA	10	2	Unknown	Unknown	Unknown	C1 Install gate on mid-level outlet to increase conservation storage	Unknown	1. Increase storm and supplemental water recharge
					1,470	Unknown	Unknown	C2 Improve inlet per 2010 RMPU	$1,234,750	1. Increase storm and recycled water recharge
					Unknown	Unknown	Unknown	I1 Evaluate the use of the northern part of the basin	Unknown	1. Increase storm and supplemental water recharge
					Unknown	na	na	I2 Evaluate recharge potential of 200 acre-s of SBCFCD land just north of the 210 freeway	Unknown	1. Increase storm and supplemental water recharge
Wineville Basin	SBCFCD	IEUA, JCSD	11	3	Unknown	Unknown	Unknown	I1 Conduct proof of concept investigation to determine recharge feasibility	Unknown	1. Increase storm and supplemental water recharge
Riverside Basin	SBCFCD	IEUA	12	3	Unknown	Unknown	Unknown	I1 Conduct proof of concept investigation to determine recharge feasibility	Unknown	1. Increase storm and supplemental water recharge

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					Storm/Dry Weather	Imported	Recycled	Description of Improvements[1]	Cost	Expected Benefits
RP3 Basins	IEUA	IEUA, JCSD	13	3	~740	Unknown	Unknown	C1 Increase conservation storage	Unknown	1. Increase storm water recharge
					Unknown	Unknown	Unknown	C2 Construct horizontal recharge wells under Fontana RDA and SCE rights of way	Unknown	1. Increase storm and supplemental water recharge
					na	na	na	I1 Investigate the recharge feasibility of adjacent 60 acres	Unknown	1. Increase storm and supplemental water recharge
Declez Basin	SBCFCD	IEUA	14	3	Unknown	Unknown	Unknown	O1 increase basin maintenance frequency	Unknown	1. Increase storm and supplemental water recharge
					35	Unknown	Unknown	C1 construct improvements per 2010 RMPU	$3,720,000	1. Minor increase storm and supplemental water recharge. RMPU did not recommend this project.
					na	na	na	I1 Investigate the recharge feasibility of adjacent 12 acres	Unknown	1. Increase storm and supplemental water recharge
Jurupa Basin	SBCFCD	IEUA	15	3	Unknown	Unknown	Unknown	C1 Increase capacity of San Sevaine Channel inlet	$694,375	1. Increase storm and supplemental water recharge at RP3 and Declez Basins
					Unknown	Unknown	Unknown	C2 Increase conservation storage	$20,270,000	1. Increase storm and recycled water recharge at RP3 and Declez Basins
					na	Unknown	Unknown	C3 Increase CB18 turnout capacity	Unknown	1. Increase supplemental water recharge at RP3 and Declez Basins
					na	na	na	I1 Investigate poor recharge capacity	Unknown	1. Increase storm and supplemental water recharge
Turner Basins	CBWCD, SBCFCD	IEUA	16	2	Unknown	Unknown	Unknown	C1 Raise the Turner 2 spillway	Unknown	1. Increase storm water recharge
					na	na	na	I1 Evaluate the property next to Turner 1 as a potential recycled water storage site	Unknown	1 Increase recycled water recharge
New Lower Cucamonga Basin Project as per 2010 RMPU	CBWCD, IEUA, SBCFCD	IEUA	17	2, 3	Unknown	Unknown	Unknown	C1 Construct improvements as per 2010 RMPU	$21,060,000	1. Increase stormwater recharge at other basins by pumping storm water captured at the LCB to other recharge basins; could increase recycled water by providing new diluent water supply

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Project Name	Facility Owner	Project Advocates[2]	Map Code	Man. Zone	Estimated Increase in Recharge from Improvements (acre-ft/yr)			Proposed Improvements		
					Storm/Dry Weather	Imported	Recycled	Description of Improvements[1]	Cost	Expected Benefits
Misc Recharge Projects in the Cucamonga Groundwater Basin	TBD	IEUA	18	Cucamonga Basin	Unknown	Unknown	Unknown	I1 Investigate the construction pump station and pipeline from the Colonies A Basin to recharge sites up on the Cucamonga Creek debris cone	Unknown	1. Reduce the hydraulic loading on the Turner Basin and allow for more supplemental water recharge in the Turner Basins. 2. Improve the yield of the Cucamonga Basin
					na	na	na	I2 Investigate the improvement of recharge basins in the Cucamonga Basin	Unknown	1. Reduce the hydraulic loading on the Turner Basin and allow for more supplemental water recharge in the Turner Basins. 2. Improve the yield of the Cucamonga Basin
Ely Basin	CBWCD, SBCFCD	IEUA	19	2	Unknown	na	Unknown	O1 Increase maintenance frequency	Unknown	1. Increase storm and recycled water recharge
					Unknown	na	Unknown	I1 Investigate the poor infiltration rate	Unknown	1. Increase storm and recycled water recharge
	City of Ontario	City of Ontario			Unknown	na	Unknown	C1 Construct storm drain improvements to increase drainage area by 770 acres and increase the conservation storage in the Ely Basin by 310 acre-ft.	$12,700,000	1. Increase storm water recharge and potentially recycled water recharge.
15th Street Basin	City of Upland	IEUA	20	1	Unknown	Unknown	Unknown	I1 Investigate ways to improve storm and supplemental water recharge	Unknown	1. Increase storm and supplemental water recharge
Princeton Basin	City of Ontario	City of Ontario, IEUA	21	1	Unknown	Unknown	Unknown	C1 Construct improvements to enable storm and supplemental water recharge	Unknown	1. Increase recharge of storm and supplemental water
Upland Basin	City of Upland	City of Upland	22	1	na	na	Unknown	I1 Investigate the recharge of recycled water	Unknown	1. Increase the recharge of recycled water; helps achieve the Peace II 6,500 acre-ft/yr recharge commitment to MZ1
		IEUA			Unknown	Unknown	na	C1 Construct a low-level drain or pump station to drain basin for maintenance	Unknown	1. Increase recharge of storm and imported water

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Project Name	Facility Owner	Project Advocates[2]	Map Code	Man. Zone	Estimated Increase in Recharge from Improvements (acre-ft/yr)			Proposed Improvements		
					Storm/Dry Weather	Imported	Recycled	Description of Improvements[1]	Cost	Expected Benefits
Montclair Basins	CBWCD	CBWCD	23	1	150 to 200	Unknown	na	C1 Clean and grub Basin 4, remove 5 feet of bottom materials from Basin 4, construct pump stations and pipelines to convey water from Basin 4 to Basins 2 and 3 and from Basin 3 to Basin 2	Unknown	1. Increase storm water recharge
		IEUA			Unknown	Unknown	na	C2 Construct new inlets from San Antonio Creek to Basins 2 and 3	Unknown	1. Increase storm water recharge
					Unknown	Unknown	na	C3 Automate inlet to Basin 1	Unknown	1. Increase storm water recharge
					Unknown	Unknown	na	C4 Construct low-level drains from Basin 1 to 2 and 2 to 3	Unknown	1. Increase recharge of storm and imported water
					na	na	na	I1 Investigate the recharge of recycled water	Unknown	1. Increase the recharge of recycled water; helps achieve the Peace II 6,500 acre-ft/yr recharge commitment to MZ1
College Heights	CBWCD	IEUA	24	1	Unknown	Unknown	na	C1 Construct internal berms to reduce seepage to Upland Basin	Unknown	1. Increase recharge of imported water
					na	na	unknown	I1 Investigate the recharge of recycled water	Unknown	1. Increase the recharge of recycled water; helps achieve the Peace II 6,500 acre-ft/yr recharge commitment to MZ1
Brooks Basin	CBWCD	IEUA	25	1	Unknown	Unknown	Unknown	O1 Remove trees from below high-water line	Unknown	
					Unknown	na	Unknown	I1 Investigate the rerouting of recycled water and street runoff to State Street storm drain	Unknown	1. Increase storm and recycled water recharge
					Unknown	Unknown	Unknown	I2 Evaluate the installation of a low elevation pump station to drain basin for maintenance	Unknown	1. Increase storm and storm and supplemental water recharge
Ontario Municipal Services Center Bioswale Project	City of Ontario	City of Ontario	37	2	1	na	na	C1. Construct infiltration/detention basin approximately 35 feet wide x 580 feet long with a depth varying from 0 to 4 feet.	$650,000	1. Increase storm water recharge.
North West Upland Basin	City of Upland	City of Upland	36	1	Unknown	Unknown	Unknown	C1 Construct a new stormwater management basin that will recharge water	Unknown	1. Increase storm water recharge with unknown potential for supplemental water recharge.

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					Storm/Dry Weather	Imported	Recycled	Description of Improvements[1]	Cost	Expected Benefits
CSI Storm Water Basin	CSI	CSI	38	3	Unknown	Unknown	Unknown	C1 Expand Basin Volume and construct recycled water recharge improvements	Unknown	1. Increase storm water recharge with unknown potential for supplemental water recharge.
Wineville Basin	SBCFCD	2010 RMPU	11	3	1,529	0	0	C1 Gate the low-elevation outlet, replace embankment with dam, and construct a pneumatic gate on the spillway	$5,990,000	1. Increase storm water and supplemental water recharge
				3	0	0	0	C2 Construct a pump station and pipeline to Jurupa Basin with a 20 cfs diversion rate	$9,119,000	1. Divert storm water from the Day Creek system for recharge in RP3 and Declez Basins
				3	0	0	0	C3 Construct pump station and pipeline to Etiwanda Basin with a 40 cfs diversion rate	$11,900,000	1. Divert storm water from the Day Creek system to recharge basins high up in the San Sevaine system and to the Lower Day Creek Basin
Jurupa Basin	SBCFCD	2010 RMPU	15	3	0	0	0	C1 Inlet improvements	$694,375	1. Increase storm and supplemental water recharge at RP3 and Declez Basins
					0	0	0	C2 Construct a pump station and pipeline to RP3 Basins with a 40 cfs diversion rate	$282,000	1. Increase storm and supplemental water recharge at RP3 and Declez Basins
					0	0	0	C3 Increase conservation storage by basin enlargement	$20,270,000	1. Increase storm and recycled water recharge at RP3 and Declez Basins
RP3 Basins	IEUA	2010 RMPU	13	3	2,810	Unknown	Unknown	C1 Inlet improvements	$5,890,000	1. Increase storm and supplemental water recharge
					733	Unknown	Unknown	C2 Basin Enlargement	$16,630,000	1. Increase storm and supplemental water recharge
Vulcan Pit		2010 RMPU	4	3	1,077	Unknown	Unknown	C1 Basin grading, Inlet and outlet improvements	$2,446,000	1. Increase storm and supplemental water recharge
Lower Day Basin	SBCFCD		10	2	1,469	Unknown	Unknown	C1 Inlet improvements, reconstruction of embankment and outlet	$2,130,000	1. Increase storm and supplemental water recharge
Lower Cucamonga Basin	TBD	2010 RMPU	17	2, 3	na	na	na	C1 Construct Basin C2 Construct a pump station and pipeline to Wineville Basin with a 20 cfs diversion rate	$21,060,000 $16,717,000	1. Increase stormwater recharge at other basins by pumping storm water captured at the LCB to other recharge basins; could increase recycled water by providing diluent water

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					Storm/Dry Weather	Imported	Recycled	Description of Improvements[1]	Cost	Expected Benefits
Wineville Basin to Etiwanda Pump Station	TBD	2010 RMPU	26	2, 3	na	na	na	C1 Construct a pump station and pipeline to Etiwanda Pump Station with a 40 cfs diversion rate	$11,900,000	
Etiwanda Pump Station & Pipeline to Hickory	TBD	2010 RMPU	27	2, 3	2	na	na	C1 Construct a pump station and pipeline to Hickory Basin with a 40 cfs diversion rate	$19,216,000	
Hickory Pump Station & Pipeline to Victoria	TBD	2010 RMPU	28	2	810	na	na	C1 Construct a pump station and pipeline to Victoria Basin with a 40 cfs diversion rate	$22,208,000	
Hickory Pump Station & Pipeline to Banana	TBD	2010 RMPU	29	3	520	na	na	C1 Construct a pump station and pipeline to Banana Basin with a 6 cfs diversion rate	$31,228,000	1. Increase stormwater recharge at other basins by pumping storm water captured at the Lower Cucamonga, Wineville and Jurupa Basins to other recharge basins; could increase recycled water by providing new diluent water supply
Victoria Pump Station & Pipeline to Lower Day	TBD	2010 RMPU	30	2	260	na	na	C1 Construct a pump station and pipeline to Lower Day Basin with a 8 cfs diversion rate		
Victoria Pump Station & Pipeline to Etiwanda Debris	TBD	2010 RMPU	31	2	720	na	na	C1 Construct a pump station and pipeline to Etiwanda Debris Basin with a 7 cfs diversion rate		
Victoria Pump Station & Pipeline to San Sevaine 1-4	TBD	2010 RMPU	32	2	4,100	na	na	C1 Construct a pump station and pipeline to San Sevaine 1-4 Basins with a 27 cfs diversion rate		
Victoria Pump Station & Pipeline to San Sevaine 5	TBD	2010 RMPU	33	2	550	na	na	C1 Construct a pump station and pipeline to San Sevaine 5 Basin with a 17 cfs diversion rate		
Lower San Sevaine Basin	TBD	2010 RMPU	34	2	1,679	Unknown	Unknown	C1 Construct basin and appurtenances	$30,360,000	1. Increase storm and supplemental water recharge
Turner Basin Expansion East of Archibald Ave	IEUA	2010 RMPU	35	2	1,300	na	Unknown	C1 Construct basin and appurtenances	Unknown	1. Increase storm and supplemental water recharge
Ontario MZ3 In-Lieu	na	City of Ontario and JCSD	na	3	na	na	na	O1 Exchange 3,200 to 9,500 acre-ft/yr using existing connections from the City of Ontario to JCSD	Unknown	1. Reduce groundwater production in the JCSD Well Field area

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					Storm/Dry Weather	Imported	Recycled	Description of Improvements[1]	Cost	Expected Benefits
Fontana MZ3 In-Lieu	na	FWC and the JCSD	na	3	na	na	na	C1 Construct a pipeline to connect to FWC. O1 Exchange 3,200 to 9,500 acre-ft/yr from FWC to JCSD	Unknown	1. Reduce groundwater production in the JCSD Well Field area
CVWD MZ3 In-Lieu	na	CVWD and JCSD	na	3	na	na	na	O1 Exchange 3,200 to 9,500 acre-ft/yr from CVWD to JCSD conveyed by City of Ontario or FWC	Unknown	1. Reduce groundwater production in the JCSD Well Field area
MZ3 In-Lieu Partnership	na	Partnership and the JCSD	na	3	na	na	na	O1 Exchange 3,200 to 9,500 acre-ft/yr from CVWD, City of Ontario or FWC to JCSD conveyed by some or all of the project owners	Unknown	1. Reduce groundwater production in the JCSD Well Field area
CDA MZ3 In-Lieu	na	CDA and JCSD	na	3	na	na	na	O1 Exchange 3,200 to 9,500 acre-ft/yr using existing connections from CDA to JCSD	Unknown	1. Reduce groundwater production in the JCSD Well Field area
Two JCSD ASR Wells - A	na	City of Ontario and JCSD	na	3	na	na	na	O1 Exchange 2,680 acre-ft/yr using existing connections from the City of Ontario to JCSD C1 Equip ASR wells	Unknown	1. Reduce net groundwater production in the JCSD Well Field area
Two JCSD ASR Wells - B	na	FWC and the JCSD	na	3	na	na	na	C1 Construct a pipeline to connect to FWC. C2 Equip ASR wells O1 Exchange 2,680 acre-ft/yr from FWC to JCSD	Unknown	1. Reduce net groundwater production in the JCSD Well Field area
Two JCSD ASR Wells - C	na	CVWD and JCSD	na	3	na	na	na	O1 Exchange 2,680 acre-ft/yr from CVWD to JCSD conveyed by City of Ontario or FWC C1 Equip ASR wells	Unknown	1. Reduce net groundwater production in the JCSD Well Field area
Two JCSD ASR Wells - Partnership	na	Partnership and the JCSD	na	3	na	na	na	O1 Exchange 2,680 acre-ft/yr from CVWD, City of Ontario or FWC to JCSD conveyed by some or all of the project owners C1 Equip ASR wells	Unknown	1. Reduce net groundwater production in the JCSD Well Field area

[1] O=Operational, I=Investigation, C=Capital

[2] In November 2011, the Steering Committee requested that IEUA develop a list of improvements and suggested actions that, based on their experience in operating the CBFIP facilities, could increase stormwater recharge at a reasonable cost – the IEUA suggested projects include these projects. "IEUA" is used herein to represent a larger group of stakeholders including IEUA that "advocate" the project.