

CHAPTER 11

WATER SERVICE RELIABILITY

11.1 RELIABILITY DURING A DROUGHT

The available supplies and water demands for IEUA’s service area were analyzed to assess the region’s ability to satisfy demands during three scenarios: a normal water year, single dry year, and multiple dry years. The tables in this section present the supply-demand balance for the various drought scenarios for the twenty-five year planning period 2010-2035. It is expected that the region will be able to meet 100 percent of its dry year demand under every scenario. The following Table 11-1 presents the supply reliability, as percentages of normal water year supplies, for the IEUA service area during normal, single dry, and multiple dry water years.

Table 11-1
Supply Reliability as Percentage of Normal Water Year Supply

	Normal Water Year	Single Dry Water Year	Multiple Dry Water Years ⁽²⁾		
			Year 1	Year 2	Year3
Groundwater	100%	115%	116%	115%	114%
Recycled Water	100%	100%	100%	105%	110%
Surface Water⁽¹⁾	100%	31%	49%	84%	77%
Imported Water	100%	62%	60%	61%	62%

Notes:

- (1) Estimated decrease in surface water availability per Prado region 1970-2003 rainfall data. Surface water does not constitute a significant portion of the water supply.
- (2) Chino Basin Dry-Year Yield (DYY) Program facilities provide for 100,000 AF of storage and 33,000 AFY of additional groundwater production for use in-lieu of Imported Water during dry years. The DYY Program is in effect during dry years between 2008 and 2023. Percentages reflect decrease in imported water and associated increase in groundwater production. From MWD’s 2010 UWMP. Metropolitan has documented the capability to reliably meet 100 percent of projected supplemental water demands through 2035.
- (3) MWD’s 2010 UWMP, provides information for three consecutive dry years.

The historical basis for the supply reliability data is presented in Table 11-2, which summarizes the base years for normal, single dry, and multiple dry water years.

Table 11-2
Basis of Water Year Data

Water Year Type	Base Year(s)	Historical Sequence
Normal Water Year	FY 2004	1922-2004 ⁽²⁾
Single Dry Water Year⁽¹⁾	1977 ⁽²⁾	
Multiple Dry Water Years⁽¹⁾	1990-1992 ⁽²⁾	

Notes:

- (1) Rainfall data from Prado region (1970-2003) used as basis for surface water reliability.
- (2) From MWD’s Draft 2010 RUWMP, April 2010.

The following subsections describe the region’s water supply and demand during each of the three scenarios for the next twenty-five years.

Normal Water Year

The region’s water supply is broken down into four categories: groundwater, recycled water, surface water, and imported water. With emphasis on local water supply development within IEUA’s service area, including an increase in the availability of recycled water, it is anticipated that the region’s dependability on imported water supplies will be reduced by 2035. The Supply Reliability described previously and summarized in Table 11-1 predicts that 100 percent of local and imported supplies will be available to meet the region’s demands during a normal water year. The following Table 11-3 presents the projected water supply during a normal year.

**Table 11-3
Projected Normal Year Water Supply⁽¹⁾ (AFY)**

Supply	2010	2015	2020	2025	2030	2035
Groundwater ⁽²⁾	145,644	166,099	163,138	170,187	174,632	185,554
Recycled Water	24,506	61,599	65,631	68,319	72,798	77,278
Surface Water	25,652	24,060	24,560	25,560	25,560	25,560
Imported Water	54,934	76,880	78,265	79,649	81,033	84,396
% of Normal Year⁽³⁾						
Groundwater	97%	111%	109%	114%	117%	124%
Recycled Water	2316%	5822%	6203%	6458%	6881%	7304%
Surface Water	239%	224%	229%	238%	238%	238%
Imported Water	69%	97%	99%	100%	102%	107%

Notes:

- (1) Assumes zero conservation.
- (2) Includes groundwater from Chino Basin (inc. CDA supply) and other basins.
- (3) From Table 11-2.

Table 11-4 summarizes the region’s demands during a normal year over the next twenty years. It is estimated that water demands will increase to approximately 318,000 AF by the year 2035. However, as additional recycled water supplies become available and local agencies connect to the recycled water system, the region’s dependability on imported water supplies will decrease.

**Table 11-4
Projected Normal Year Water Demand (AFY)**

	2010	2015	2020	2025	2030	2035
Demand	243,664	273,067	274,765	288,458	298,229	316,783
% of Year 2010		112%	113%	118%	122%	130%

The comparison between supply and demand for a normal water year is presented in Table 11-5. In a normal year, zero water conservation has been assumed, providing a more conservative assessment of the region's supplies. The region is expected to meet 100 percent of water demands through the year 2035, with an annual surplus averaging approximately 56,000 AF.

**Table 11-5
Projected Normal Year Supply and Demand Comparison (AFY)**

	2010	2015	2020	2025	2030	2035
Supply Totals	243,664	328,638	331,594	343,715	354,023	372,788
Demand Totals	243,664	273,067	274,765	288,458	298,229	316,783
Difference (Supply minus Demand)	0	55,571	56,829	55,257	55,794	56,005
Difference as % of Supply	0%	17%	17%	16%	16%	15%
Difference as % of Demand	0%	20%	21%	19%	19%	18%

Single Dry Year

The water demands and supplies for IEUA's service area over the next twenty-five years were analyzed in the event that a single dry year occurs, similar to the drought that occurred in California in 1977¹. The development of groundwater storage, recycled water systems, surface water supplies, and improvements in water quality and conservation, will greatly reduce the need for imported water supplies during dry years. The following paragraphs describe the available water supply to IEUA.

Groundwater. Groundwater supplies represent a significant supplemental source of water for water agencies within the IEUA service area. The majority of groundwater is produced from the Chino Basin with additional water produced from other local groundwater basins. The Chino Basin is the largest groundwater basin in the Upper Santa Ana Watershed, currently containing 5,000,000 AF of water in storage with an unused storage capacity of approximately 1,000,000 AF. Water rights within the Chino Basin have been adjudicated and the average safe-yield of the Basin is 145,000 AFY. It is anticipated that when over-pumping is required during a single dry year event, additional groundwater pumped beyond the safe yield of the Basin will be replenished during wet or normal years with imported water purchased from the Metropolitan Water District of Southern California (MWD) and with supplemental water from recycled and/or surface supplies.

IEUA, the Chino Basin Watermaster (Watermaster), and MWD have developed the Chino Basin Dry-Year Yield Program (DYY Program) to help alleviate demands on imported water during dry years by pumping additional groundwater. Three Valleys Municipal Water District is also a signatory to the Program. The DYY Program is the first

¹ MWD 2010 RUWMP, NOVEMBER 2010

step in a phased plan to develop and implement a comprehensive conjunctive use program to allow maximum use of imported water available during wet years and stored groundwater in the Chino Basin during dry years. Imported water deliveries to participants would increase during wet or normal (or “put”) years, and purchase of imported water would decrease during dry (or “take”) years. Collectively, the eight DYY participants, six of which are local member agencies of IEUA, would meet predetermined amounts to achieve a 25,000 AFY “put” and a 33,000 AFY “take”. Each of the local member agencies volunteered to produce excess groundwater during a dry year in-lieu of normal imported water deliveries. In exchange, they received funding for new groundwater treatment and well facilities that would allow excess groundwater production during dry years. DYY participants overall imported water demands during dry years would decrease by 33,000 AFY, which equals the portion of the 33,000 AFY of the DYY shift obligation for IEUA’s local member agencies, as shown in Table 11-6.

**Table 11-6
Participating Agencies DYY Shift Obligations**

Local Retail Agency	DYY Program Shift Obligation (AFY)
City of Chino	1,159
City of Chino Hills	1,448
Cucamonga Valley Water District	11,353
Jurupa Community Services District ⁽¹⁾	2,000
Monte Vista Water District	3,963
City of Ontario	8,076
City of Pomona ⁽¹⁾	2,000
City of Upland	3,001
Total	33,000

Notes:

(1) Agencies not within the IEUA service area.

During dry years when the DYY Program is active, groundwater production will increase to approximately 115 percent of a normal year.

Recycled Water. Recycled water is becoming an increasingly important source of local water for the region. Recycled water is a critical component of the Optimum Basin Management Plan (OBMP), developed in 2000, and the IEUA Recycled Water Business Plan, developed in 2007, to address water quality issues in the Chino Basin. Current use of recycled water (direct reuse and recharge) within the region is approximately 24,000 AFY and is expected to increase to nearly 63,000 AF by 2035. During a single dry year, it has been assumed that recycled water will be 100 percent reliable.

Surface Water. A portion of the water supply for the IEUA service area is comprised of surface water. The principal sources of surface water include San Antonio Canyon, Cucamonga Canyon, Day Creek, Lytle Creek and several smaller surface streams. Currently, the region receives approximately 25,000 AFY of surface water, which is expected to hold constant through 2035. During a dry year, however, it is anticipated

that the availability of surface supplies will decrease. For a single dry year event, surface supplies are assumed to have 31 percent reliability, which is estimated based upon historical rainfall data in the Prado region during the years 1970-2003.

Imported Water. Southern California expects to have a reliable water supply for the foreseeable future due to the integrated resources planning effort of the MWD and its member agencies. As a water wholesaler, MWD supplies imported water to IEUA to meet the water needs of its service area at the lowest possible cost. MWD’s 2010 Integrated Regional Plan establishes the framework for the policies, projects and programs that will ensure that Southern California has an adequate and reliable water supply for our future residential, commercial and environmental needs. The proposed 2010 IRP is an adaptive resources management plan that can change in response to the many challenges and uncertainties facing the regional water supply. The proposed 2010 IRP strategies focus on three key components: core resources, supply buffer and foundational actions.²

As a result, during a single dry year event, MWD will have the resources to supply IEUA with 100 percent of their imported water demands. However, as discussed previously, with the DYY Program in effect, as well as the MWD Water Supply Allocation Plan (WSAP), several of IEUA’s member agencies will reduce their imported water demand by their DYY Program shift and allocation, thus reducing demands on Metropolitan. During a dry year, imported water demands are expected to decrease to approximately 62 percent.

Tables 11-7 through 11-9 summarize the projected single dry year water supply and demand for the years 2010 through 2035.

**Table 11-7
Projected Single Dry Year Water Supply (AFY)**

Supply	2015	2020	2025	2030	2035
Groundwater	191,014	187,609	195,715	200,827	213,387
Recycled Water	61,599	65,631	68,319	72,798	77,278
Surface Water	7,459	7,614	7,924	7,924	7,924
Imported Water	47,666	48,524	49,382	50,240	52,326
% of Normal Year					
Groundwater	115%	115%	115%	115%	115%
Recycled Water	100%	100%	100%	100%	100%
Surface Water	31%	31%	31%	31%	31%
Imported Water	62%	62%	62%	62%	62%

Notes:

(1) Projected normal use from Table 11-3.

² MWD’s 2010 IRP, JULY 2010

**Table 11-8
Projected Single Dry Year Water Demand (AFY)**

	2015	2020	2025	2030	2035
Demand	273,067	274,765	288,458	298,229	316,783
Conservation⁽¹⁾	-27,307	-27,477	-28,846	-29,823	-31,678
Adjusted Demand	245,760	247,289	259,612	268,406	285,105
% of Projected Normal⁽²⁾	90%	90%	90%	90%	90%

Notes:

- (1) Assumed 10% conservation of demand for single dry years.
- (2) Projected Normal Use from Table 11-4.

**Table 11-9
Projected Single Dry Year Supply and Demand Comparison (AFY)**

	2015	2020	2025	2030	2035
Supply Totals	307,737	309,377	321,340	331,789	350,915
Demand Totals	245,760	247,289	259,612	268,406	285,105
Difference (Supply minus Demand)	61,976	62,089	61,727	63,383	65,810
Difference as % of Supply	20%	20%	19%	19%	19%
Difference as % of Demand	25%	25%	24%	24%	23%

Multiple Dry Years

The water demands and supplies for IEUA's service area over the next twenty years were analyzed in the event that a multiple dry year occurs, similar to the drought that occurred during the years 1990-1992³. The following paragraphs describe the available water supply to IEUA during a multiple dry year period.

Groundwater. Similar to the Single Dry Year scenario described previously, implementing the DYY Program requires local retail agencies to produce additional groundwater in-lieu of accepting imported water deliveries. Each agency pumps additional groundwater in the amount of their shift obligation. Production in excess of the safe yield of the Basin is replaced with replenishment water during wet or normal years. With the DYY Program in place, groundwater is expected to decrease from 116 percent during the first dry year to 115 and 114 percent, respectively, during the next two subsequent dry years.

Recycled Water. During multiple dry years, the use of recycled water for irrigation and other purposes helps reduce overall water demands. It has been assumed that during multiple dry years, the production of recycled water will gradually increase from 100 percent during the first dry year to 105 and 110 percent, respectively, during the next

³ MWD's 2010 RUWMP, JULY 2010

two subsequent dry years as more customers become connected to the recycled water system.

Surface Water. Though surface water provides a supplemental source of water during normal years, the volume of available surface water is expected to decrease in a multiple dry year scenario. Surface water reliability was estimated using rainfall data for the Prado region during the years 1970-2003. This decrease in available supplies can be offset by implementation of a conservation program during dry years or through pumping of additional groundwater. Surface water reliability is anticipated to be in the range of 49 to 84 percent during a multiple year drought.

Imported Water.

During multiple dry years, local agencies reduce their imported water demands by increasing groundwater production in accordance with the DYY Program. The DYY Program reduces imported water demands by approximately 60 percent, thereby conserving Metropolitan’s supplies during a drought.

The following Tables 11-10 through 11-12 summarize the projected multiple dry year water supply and demand for five-year periods during the years 2010 through 2035. Each five year period is contains three consecutive dry years where the DYY Program and conservation programs are implemented.

Tables 11-10 through 11-12: 2011-2015

**Table 11-10
Projected Supply During Multiple Dry Year Period Ending in 2015 (AFY)**

	(normal)	(normal)	(dry)	(dry)	(dry)
Supply⁽¹⁾	2011	2012	2013⁽²⁾	2014⁽²⁾	2015⁽²⁾
Groundwater	149,735	153,826	183,184	186,309	189,353
Recycled Water	31,925	39,343	46,762	56,889	67,759
Surface Water	25,334	25,015	12,101	20,478	18,526
Imported Water	59,323	63,712	40,861	44,219	47,666
% of Projected Normal⁽³⁾					
Groundwater	100%	100%	116%	115%	114%
Recycled Water	100%	100%	100%	105%	110%
Surface Water	100%	100%	49%	84%	77%
Imported Water	100%	100%	60%	61%	62%

Notes:

- (1) Supply values extrapolated from 2010 and 2015 data.
- (2) DYY Program in effect during multiple dry years.
- (3) Projected Normal Use from Table 11-3.

**Table 11-11
Projected Demand During Multiple Dry Year Period Ending in 2015 (AFY)**

	(normal)	(normal)	(dry)	(dry)	(dry)
	2011	2012	2013	2014	2015
Demand	249,545	255,425	261,306	267,186	273,067
Conservation⁽¹⁾	0	0	-26,131	-26,719	-27,307
Adjusted Demand	249,545	255,425	235,175	240,468	245,760
% of Projected Normal⁽²⁾	100%	100%	90%	90%	90%

Notes:

- (1) Assumed 10% conservation of demand for dry years.
- (2) Projected Normal Use from Table 11-4.

**Table 11-12
Projected Supply and Demand Comparison During Multiple
Dry Year Period Ending in 2015 (AFY)**

	(normal)	(normal)	(dry)	(dry)	(dry)
	2011	2012	2013	2014	2015
Supply Totals	266,316	281,897	282,908	307,896	323,303
Demand Totals	249,545	255,425	235,175	240,468	245,760
Difference (Supply minus Demand)	16,772	26,471	47,732	67,428	77,543
Difference as % of Supply	6%	9%	17%	22%	24%
Difference as % of Demand	7%	10%	20%	28%	32%

Tables 11-13 through 11-15: 2016-2020

**Table 11-13
Projected Supply During Multiple Dry Year Period Ending in 2020 (AFY)**

	(normal)	(normal)	(dry)	(dry)	(dry)
	2016	2017	2018	2019	2020
Supply⁽¹⁾⁽²⁾					
Groundwater	165,507	164,915	190,614	188,290	185,977
Recycled Water	62,405	63,211	64,018	68,065	72,194
Surface Water	24,160	24,260	11,936	20,546	18,911
Imported Water	77,157	77,434	46,627	47,573	48,524
% of Projected Normal⁽³⁾					
Groundwater	100%	100%	116%	115%	114%
Recycled Water	100%	100%	100%	105%	110%
Surface Water	100%	100%	49%	84%	77%
Imported Water	100%	100%	60%	61%	62%

Notes:

- (1) Supply values extrapolated from 2015 and 2020 data.
- (2) DYY Program in effect during multiple dry years.
- (3) Projected Normal Use from Table 11-3.

Table 11-14
Projected Demand During Multiple Dry Year Period Ending in 2020 (AFY)

	(normal)	(normal)	(dry)	(dry)	(dry)
	2016	2017	2018	2019	2020
Demand	273,407	273,746	274,086	274,425	274,765
Conservation⁽¹⁾	0	0	-27,409	-27,443	-27,477
Adjusted Demand	273,407	273,746	246,677	246,983	247,289
% of Projected Normal⁽²⁾	100%	100%	90%	90%	90%

Notes:

- (1) Assumed 10% conservation of demand for multiple dry years.
- (2) Projected Normal Use from Table 11-4.

Table 11-15
Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2020 (AFY)

	(normal)	(normal)	(dry)	(dry)	(dry)
	2016	2017	2018	2019	2020
Supply Totals	329,229	329,820	313,195	324,474	325,606
Demand Totals	273,407	273,746	246,677	246,983	247,289
Difference (Supply minus Demand)	55,822	56,074	66,518	77,491	78,318
Difference as % of Supply	17%	17%	21%	24%	24%
Difference as % of Demand	20%	20%	27%	31%	32%

Tables 11-16 through 11-18: 2021-2025

Table 11-16
Projected Supply During Multiple Dry Year Period Ending in 2025 (AFY)

	(normal)	(normal)	(dry)	(dry)	(dry)
	2021	2022	2023	2024	2025
Supply⁽¹⁾⁽²⁾					
Groundwater	164,548	165,958	194,146	194,094	194,013
Recycled Water	66,168	66,706	67,243	71,170	75,150
Surface Water	24,760	24,960	12,328	21,302	19,681
Imported Water	78,542	78,819	47,457	48,417	49,382
% of Projected Normal⁽³⁾					
Groundwater	100%	100%	116%	115%	114%
Recycled Water	100%	100%	100%	105%	110%
Surface Water	100%	100%	49%	84%	77%
Imported Water	100%	100%	60%	61%	62%

Notes:

- (1) Supply values extrapolated from 2020 and 2025 data.
- (2) DYY Program in effect during multiple dry years.
- (3) Projected Normal Use from Table 11-3.

Table 11-17
Projected Demand During Multiple Dry Year Period Ending in 2025 (AFY)

	(normal)	(normal)	(dry)	(dry)	(dry)
	2021	2022	2023	2024	2025
Demand	277,504	280,242	282,981	285,719	288,458
Conservation⁽¹⁾	0	0	-28,298	-28,572	-28,846
Adjusted Demand	277,504	280,242	254,683	257,147	259,612
% of Projected Normal⁽²⁾	100%	100%	90%	90%	90%

Notes:

- (1) Assumed 10% conservation of demand for multiple dry years.
- (2) Projected Normal Use from Table 11-4.

Table 11-18
Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2025 (AFY)

	(normal)	(normal)	(dry)	(dry)	(dry)
	2021	2022	2023	2024	2025
Supply Totals	334,018	336,442	321,175	334,983	338,227
Demand Totals	277,504	280,242	254,683	257,147	259,612
Difference (Supply minus Demand)	56,514	56,200	66,492	77,836	78,615
Difference as % of Supply	17%	17%	21%	23%	23%
Difference as % of Demand	20%	20%	26%	30%	30%

Tables 11-19 through 11-21: 2026-2030

Table 11-19
Projected Supply During Multiple Dry Year Period Ending in 2030 (AFY)

	(normal)	(normal)	(dry)	(dry)	(dry)
	2026	2027	2028	2029	2030
Supply⁽¹⁾⁽²⁾					
Groundwater	171,076	171,965	200,511	199,804	199,080
Recycled Water	69,214	70,110	71,006	75,498	80,078
Surface Water	25,560	25,560	12,524	21,470	19,681
Imported Water	79,926	80,203	48,288	49,261	50,240
% of Projected Normal⁽³⁾					
Groundwater	100%	100%	116%	115%	114%
Recycled Water	100%	100%	100%	105%	110%
Surface Water	100%	100%	49%	84%	77%
Imported Water	100%	100%	60%	61%	62%

Notes:

- (1) Supply values extrapolated from 2025 and 2030 data.
- (2) DYY Program in effect during multiple dry years.
- (3) Projected Normal Use from Table 11-3.

Table 11-20
Projected Demand During Multiple Dry Year Period Ending in 2030 (AFY)

	(normal)	(normal)	(dry)	(dry)	(dry)
	2026	2027	2028	2029	2030
Demand	290,412	292,366	294,321	296,275	298,229
Conservation⁽¹⁾	0	0	-29,432	-29,627	-29,823
Adjusted Demand	290,412	292,366	264,889	266,647	268,406
% of Projected Normal⁽²⁾	100%	100%	90%	90%	90%

Notes:

- (1) Assumed 10% conservation of demand for multiple dry years.
- (2) Projected Normal Use from Table 11-4.

Table 11-21
Projected Supply and Demand Comparison During Multiple Dry Year Period Ending in 2030 (AFY)

	(normal)	(normal)	(dry)	(dry)	(dry)
	2026	2027	2028	2029	2030
Supply Totals	345,776	347,838	332,329	346,034	349,080
Demand Totals	290,412	292,366	264,889	266,647	268,406
Difference (Supply minus Demand)	55,364	55,472	67,441	79,386	80,674
Difference as % of Supply	16%	16%	20%	23%	23%
Difference as % of Demand	19%	19%	25%	30%	30%

Tables 11-22 through 11-24: 2031-2035

Table 11-22
Projected Supply During Multiple Dry Year Period Ending in 2035 (AFY)

	(normal)	(normal)	(dry)	(dry)	(dry)
	2031	2032	2033	2034	2035
Supply⁽¹⁾⁽²⁾					
Groundwater	176,816	179,001	210,175	210,875	211,532
Recycled Water	73,694	74,590	75,486	80,201	85,006
Surface Water	25,560	25,560	12,524	21,470	19,681
Imported Water	81,706	82,378	49,830	51,071	52,326
% of Projected Normal⁽³⁾					
Groundwater	100%	100%	116%	115%	114%
Recycled Water	100%	100%	100%	105%	110%
Surface Water	100%	100%	49%	84%	77%
Imported Water	100%	100%	60%	61%	62%

Notes:

- (1) Supply values extrapolated from 2030 and 2035 data.
- (2) DYY Program in effect during multiple dry years.
- (3) Projected Normal Use from Table 11-3.

**Table 11-23
Projected Demand During Multiple Dry Year Period Ending in 2035 (AFY)**

	(normal)	(normal)	(dry)	(dry)	(dry)
	2031	2032	2033	2034	2035
Demand	301,940	305,651	309,361	313,072	316,783
Conservation⁽¹⁾	0	0	-30,936	-31,307	-31,678
Adjusted Demand	301,940	305,651	278,425	281,765	285,105
% of Projected Normal⁽²⁾	100%	100%	90%	90%	90%

Notes:

- (1) Assumed 10% conservation of demand for multiple dry years.
- (2) Projected Normal Use from Table 11-4.

**Table 11-24
Projected Supply and Demand Comparison During Multiple
Dry Year Period Ending in 2035 (AFY)**

	(normal)	(normal)	(dry)	(dry)	(dry)
	2031	2032	2033	2034	2035
Supply Totals	357,776	361,529	348,016	363,618	368,544
Demand Totals	301,940	305,651	278,425	281,765	285,105
Difference (Supply minus Demand)	55,837	55,879	69,591	81,853	83,440
Difference as % of Supply	16%	15%	20%	23%	23%
Difference as % of Demand	18%	18%	25%	29%	29%

11.2 WATER AGENCY INTERCONNECTIONS

Several local agencies have had the ability to provide their neighbor agencies with water supplies during periods of extraordinary high demand or temporary disruptions in imported supply. Other agencies provide water supplies to other agencies as a matter of routine business agreements. This is generally the result of a lack of capacity to pump local groundwater supplies.

These interconnections are extremely important because the ability to move water around the Chino Basin to provide an important level supply reliability for all the local agencies.

Current interconnections include the Monte Vista Water District which provides an annual supplementary water supply to the City of Chino Hills. This amounts to as much as 10,000 acre-feet each year. Other interconnections occur between the Cucamonga Valley Water District and the Fontana Water Company. Cucamonga Valley Water District provides as much as 5,000 acre-feet annually to Fontana Water Company. In addition, the Chino Desalter Authority as a part of the Chino 1 expansion and the new Chino 2 Desalter have interconnected all the participating agencies with a common supply with booster pumps and storage reservoirs which will allow substantial flexibility

and enhanced reliability for delivery water among the agencies during emergency outages or future drought episodes. Finally, an important interconnection occurs between the City of Ontario and the City of Chino.

11.3 MWD SERVICE LINE CAPITAL IMPROVEMENTS

For reasons of water quality, the Santa Ana Regional Water Quality Control Board allows only State Water Project imported supplies to be delivered to the IEUA service area. (Colorado River supplies are too high in TDS to be used in the Chino Basin.) By having only one source of imported water supply, the region is dangerously susceptible to emergency disruptions. This became quite evident in June 2004 when MWD had to conduct an unplanned shutdown of the Rialto Feeder to make emergency repairs. Many local agencies suffered through as much as a 50 percent loss of supply for one week while MWD conducted their repair operations.

This emergency outage showed the vulnerability of the IEUA service area should a catastrophic disruption of MWD supply occur again during the summer months when demand for imported supplies is at its highest. As a result, MWD, working with local agencies, identified several key points along the Rialto Feeder where isolation valves could be installed. Installation of these valves would provide a greater level of reliability to local agencies. In the event of a break in the Rialto Feeder, only a portion of the Feeder may need to be shutdown instead of the entire pipeline being shutdown from the Devils Canyon Forebay to LaVerne (approximately 30 miles). Interconnections and mutual aid agreements between the local agencies would likely be sufficient to provide adequate supplies during the emergency period.

11.4 MUTUAL AID AGREEMENTS

Mutual aid agreements among local agencies in California are a typical way of dealing effectively with disasters such as brush fires, earthquakes, law enforcement shortages, etc., and the IEUA service area is no different.

As the agency that provides regional sewer service to the seven cities and agencies in the service area (referred to as Regional Contracting Agencies), IEUA took the lead to develop a United Response Guidance Plan for Sanitary Sewer Overflows at the request of the Santa Ana Regional Water Quality Control Board (SARWQCB). The purpose of the SARWQCB's request was the need for a united and coordinated approach for sanitary sewer spills and their possible infiltration into the storm sewers of San Bernardino County. With the joint efforts of IEUA and the Regional Contracting Agencies, the United Response Plan was developed and submitted to the SARWQCB and the San Bernardino County Flood Control District.

The agreement helps to minimize the environmental impact of a sanitary sewer overflow by facilitating communication, dispatching appropriate equipment, reducing

spillage, and expediting cleanup. In addition to sewer spills, the Contracting Agencies also agree to provide mutual aid in the event of disruption of water service supply as well. This element of the agreement provides the basis for a full spectrum of mutual aid should any unforeseen disruption occur. Specifically, the agreement says:

“In the event of any disruption or damage to the ability of either Inland Empire Utilities Agency or the Regional Contracting Agencies to continue to serve the public or its customers with water service, sewer service or sewage treatment service, the other party will cooperate to a maximum extent possible, as determined in its discretion, to provide mutual aid assistance as requested. “

This mutual aid agreement provides an important basis for supporting reliability in the IEUA service area.

11.5 MWD IMPORTED WATER RELIABILITY

In 2002, the California Legislature enacted two pieces of legislation to better coordinate water supply and land use planning. These two bills were Senate Bill (SB) 221 (Kuehl) and SB 610 (Costa). These laws require new development to meet certain criteria and provide “substantial evidence” of available water supplies in the event of drought.

MWD’s 2010 UWMP, shows that the diversification of water supplies allows for a greater reliability for all MWD member agencies. It also states that if all of MWD’s imported supply programs, local supply projects, and water use efficiency programs proceed as planned, without changes in demand projections, MWD reliability is assured for the next twenty-five years and beyond (MWD’s 2010 UWMP).