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

			Multiple Dry Water Years[2]		
	Normal Water Year	Single Dry Water Year	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	180,078	174,217	182,581	188,480	200,842
Recycled Water	24,506	66,241	70,391	74,402	78,884	83,436
Surface Water	25,652	28,490	28,490	28,490	28,490	28,490
Imported Water	54,934	80,556	81,641	82,725	83,809	85,978
% of Normal Year[3]						
Groundwater	97%	120%	116%	122%	126%	134%
Recycled Water	2316%	6260%	6653%	7033%	7456%	7886%
Surface Water	239%	265%	265%	265%	265%	265%
Imported Water	69%	102%	103%	104%	106%	109%

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 314,000 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	271,871	268,465	282,328	293,933	314,136
% of Year 2010		112%	110%	116%	121%	129%

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 85,000 AF.

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

	2015	2020	2025	2030	2035
Supply Totals	355,365	354,739	368,198	379,663	398,746
Demand Totals	271,871	268,465	282,328	293,933	314,136
Difference (Supply minus Demand)	83,494	86,274	85,870	85,730	84,610
Difference as % of Supply	23%	24%	23%	23%	21%
Difference as % of Demand	31%	32%	30%	29%	27%

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 1977[1]. 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 62,000 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 28,000 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	207,090	200,350	209,968	216,752	230,968
Recycled Water	66,241	70,391	74,402	78,884	83,436
Surface Water	8,832	8,832	8,832	8,832	8,832
Imported Water	49,945	50,617	51,290	51,962	53,306
% 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	271,871	268,465	282,328	293,933	314,136
Conservation[(1)]	-27,187	-26,847	-28,233	-29,393	-31,414
Adjusted Demand	244,684	241,619	254,095	264,540	282,722
% 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	332,107	330,190	344,492	356,430	376,542
Demand Totals	244,684	241,619	254,095	264,540	282,722
Difference (Supply minus Demand)	87,423	88,571	90,397	91,890	93,820
Difference as % of Supply	26%	27%	26%	26%	25%
Difference as % of Demand	36%	37%	36%	35%	33%

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 1990-1992[3]. 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	152,531	159,417	192,913	199,170	205,289
Recycled Water	32,853	41,200	49,547	60,788	72,865
Surface Water	26,220	26,787	13,404	23,455	21,937
Imported Water	60,058	65,183	42,184	46,013	49,945
% 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	249,305	254,947	260,588	266,230	271,871
Conservation[(1)]	0	0	-26,059	-26,623	-27,187
Adjusted Demand	249,305	254,947	234,529	239,607	244,684
% 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	271,662	292,587	298,048	329,426	350,036
Demand Totals	249,305	254,947	234,529	239,607	244,684
Difference (Supply minus Demand)	22,356	37,641	63,519	89,820	105,352
Difference as % of Supply	8%	13%	21%	27%	30%
Difference as % of Demand	9%	15%	27%	37%	43%

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)
Supply[(1)(2)]	**2016**	**2017**	**2018**	**2019**	**2020**
Groundwater	178,906	177,734	204,811	201,698	198,607
Recycled Water	67,071	67,901	68,731	73,039	77,430
Surface Water	28,490	28,490	13,960	23,932	21,937
Imported Water	80,773	80,990	48,724	49,669	50,617
% 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 2015and 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	271,190	270,509	269,827	269,146	268,465
Conservation[(1)]	0	0	-26,983	-26,915	-26,847
Adjusted Demand	271,190	270,509	242,845	242,232	241,619
% 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	355,240	355,114	336,226	348,337	348,592
Demand Totals	271,190	270,509	242,845	242,232	241,619
Difference (Supply minus Demand)	84,050	84,606	93,382	106,105	106,973
Difference as % of Supply	24%	24%	28%	30%	31%
Difference as % of Demand	31%	31%	38%	44%	44%

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)
Supply[(1)(2)]	**2021**	**2022**	**2023**	**2024**	**2025**
Groundwater	175,890	177,563	207,913	208,044	208,142
Recycled Water	71,193	71,995	72,798	77,280	81,842
Surface Water	28,490	28,490	13,960	23,932	21,937
Imported Water	81,858	82,075	49,375	50,330	51,290
% 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	271,238	274,010	276,783	279,555	282,328
Conservation[(1)]	0	0	-27,678	-27,956	-28,233
Adjusted Demand	271,238	274,010	249,105	251,600	254,095
% 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	357,431	360,123	344,046	359,586	363,212
Demand Totals	271,238	274,010	249,105	251,600	254,095
Difference (Supply minus Demand)	86,193	86,112	94,941	107,986	109,116
Difference as % of Supply	24%	24%	28%	30%	30%
Difference as % of Demand	32%	31%	38%	43%	43%

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)
Supply[(1)(2)]	**2026**	**2027**	**2028**	**2029**	**2030**
Groundwater	183,761	184,941	215,900	215,395	214,867
Recycled Water	75,299	76,195	77,091	81,887	86,773
Surface Water	28,490	28,490	13,960	23,932	21,937
Imported Water	82,942	83,159	50,025	50,991	51,962
% 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 2025and 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	284,649	286,970	289,291	291,612	293,933
Conservation[(1)]	0	0	-28,929	-29,161	-29,393
Adjusted Demand	284,649	286,970	260,362	262,451	264,540
% 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	370,491	372,784	356,977	372,205	375,539
Demand Totals	284,649	286,970	260,362	262,451	264,540
Difference (Supply minus Demand)	85,842	85,814	96,615	109,755	110,999
Difference as % of Supply	23%	23%	27%	29%	30%
Difference as % of Demand	30%	30%	37%	42%	42%

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)
Supply[(1)(2)]	**2031**	**2032**	**2033**	**2034**	**2035**
Groundwater	190,952	193,425	227,241	228,125	228,960
Recycled Water	79,795	80,705	81,615	86,652	91,779
Surface Water	28,490	28,490	13,960	23,932	21,937
Imported Water	84,243	84,677	51,066	52,182	53,306
% 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	297,974	302,014	306,055	310,095	314,136
Conservation[(1)]	0	0	-30,605	-31,010	-31,414
Adjusted Demand	297,974	302,014	275,449	279,086	282,722
% 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	383,480	387,296	373,882	390,890	395,983
Demand Totals	297,974	302,014	275,449	279,086	282,722
Difference (Supply minus Demand)	85,506	85,282	98,433	111,805	113,261
Difference as % of Supply	22%	22%	26%	29%	29%
Difference as % of Demand	29%	28%	36%	40%	40%

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).