

Table 1 - Coordination with Appropriate Agencies

Category	Agency			Received Notification of Preparation of UWMP and Encouraged to Participate	Participate in UWMP Development	Commented on Draft	Attended Public Meeting	Contacted for Assistance	Received Copy of Draft	Sent notice of intention to adopt
Other water suppliers	Metropolitan Water District of Southern California			X	X			X	X	X
Water management agencies	Water Replenishment District of Southern California							X	X	X
	California Department of Water Resources, Glendale Office								X	X
Relevant public agencies & officials	Watermaster, Central Basin Aquifer							X	x	x
	Mayor, City of Long Beach								X	X
	City Council, City of Long Beach								X	X
	City Manager, City of Long Beach								X	X
	Advance Planner, City of Long Beach			X				X	X	X
	City Librarian, City of Long Beach								X	X
	City Clerk, City of Long Beach								X	X

Cities in which LBWD accounts are located	# of Accounts	% of Total							
<i>Bellflower</i>	2	0%	X					X	X
<i>Compton</i>	3	0%	X					X	X
<i>County of Los Angeles, Unincorporated</i>	521	1%	X					X	X
<i>Hawaiian Gardens</i>	4	0%	X					X	X
<i>Long Beach</i>	89,866	99%	X					X	X
<i>Lakewood</i>	15	0%	X					X	X
<i>Los Alamitos</i>	74	0%	X					X	X
<i>Paramount</i>	27	0%	X					X	X
<i>Signal Hill</i>	4	0%	X					X	X
Total:	90,516	100%							

Other	Environment Now							X	X
	Eco-Link							X	X
	Chamber of Commerce, Long Beach							X	X
	Surfrider Foundation							X	X
	So Cal Watershed Alliance							X	X
	Available for review at LBWD							X	X
	Posted on LBWD Website							X	X
	General Public						X		

Table 2 - Population: Current and Projected

Year	Based on 2010 US Census Bureau Data
2010	462,257 *
2011	464,014
2012	465,777
2013	467,547
2014	469,323
2015	471,107
2016	472,897
2017	474,694
2018	476,498
2019	478,309
2020	480,126
2021	481,951
2022	483,782
2023	485,620
2024	487,466
2025	489,318
2026	491,178
2027	493,044
2028	494,918
2029	496,798
2030	498,686
2031	500,581
2032	502,483
2033	504,393
2034	506,310
2035	508,233

*Population estimate taken from 2010 US Census

Table 2A

	2010	2015	2020	2025	2030	2035
Housing	169,928	176,071	182,082	186,774	191,296	195,040
SF-Units	78,974	81,123	82,940	84,210	85,396	86,267
MF-Units	90,954	94,948	99,142	102,564	105,900	108,773
<i>Single-Family Household Size</i>	3.49	3.47	3.41	3.36	3.32	3.28
<i>Multifamily Household Size</i>	2.05	2.00	1.99	2.02	2.04	2.07
<i>Average (total population / total housing)</i>	2.72	2.68	2.64	2.62	2.61	2.61
SF Housing Density (Units/Acre)	6.2	6.2	6.2	6.2	6.2	6.2
MF Housing Density (Units/Acre)	27.0	27.0	27.0	27.0	27.0	27.0
SF Housing Density (People/Acre)	21.6	21.5	21.1	20.8	20.6	20.3
MF Housing Density (People/Acre)	55.5	53.9	53.8	54.4	55.0	56.0
Employment	179,842	184,299	186,876	189,900	193,137	196,185
Median Household Income	47,927	48,886	49,863	50,861	51,878	52,915
Population	462,257	471,107	480,126	489,318	498,686	508,233

Notes:

Housing units info taken MWD 2010 IWRP

Housing Density taken from MWD 2010 IWRP but adjusted for difference in total population between MWD's estimate and LBWD's estimate. These estimate differences are discussed in LBWD's 2010 UWMP.

Single family housing units include single, duplex, and townhouses.

Per Capita use before conservation*: 167

Water

Year	Population**	Water Use w/o Conservation***	2005 UWMP Est of Wtr Use ~ after Conservation^					Reclaimed	Total	Conserved Water
			Potable Water							
			MWD	Groundwater	Desal	Subtotal				
2010	462,257	86,469	22,237	34,655	-	56,892	6,556	63,448	23,021	
2015	471,107	88,125	24,520	33,000	-	57,520	10,100	67,620	20,505	
2020	480,126	89,812	24,046	33,500	-	57,546	11,300	68,846	20,966	
2025	489,318	91,531	18,551	34,000	5,000	57,551	13,400	70,951	20,580	
2030	498,686	93,284	17,477	34,500	5,000	56,977	13,700	70,677	22,606	
2035	508,233	95,070	11,929	35,000	10,000	56,929	14,000	70,929	24,140	

Percent of Totals

2010	86,469	26%	40%	0%	66%	8%	73%	27%
2015	88,125	28%	37%	0%	65%	11%	77%	23%
2020	89,812	27%	37%	0%	64%	13%	77%	23%
2025	91,531	20%	37%	5%	63%	15%	78%	22%
2030	93,284	19%	37%	5%	61%	15%	76%	24%
2035	95,070	13%	37%	11%	60%	15%	75%	25%

* This is the average GPCD for the ten-year period 1980 through 1989.

** From LBWD's 2010 UWMP, which was taken from 2010 US Census

*** Population x's per capita use prior to 1990's drought.

^ From LBWD 2010 UWMP; this includes recycled water, but excludes demand for barrier water.

Table 3: Water deliveries - Actual, 2005

Water Use Sectors	Metered		Not Metered		Total
	# of accounts	Acre-feet	# of accounts	Acre-feet	Acre-feet
Single-family	60,258	18,997			18,997
Multi-Family	19,871	21,926			21,926
Commercial	7,906	19,484			19,484
Industrial	319	695			695
Institutional/governmental	0	0			0
Landscape	996	2,834			2,834
Agriculture	0	0			0
Other	0	0			0
Total	89,350	63,936	0	0	63,936

Does not include recycled water (see Table 10)

Table 4: Water deliveries - Actual, 2010

Water Use Sectors	Metered		Not Metered		Total
	# of accounts	Acre-feet	# of accounts	Acre-feet	Acre-feet
Single-family	59,768	18,172			18,172
Multi-Family [^]	19,830	19,614			19,614
Commercial	6,293	14,168			14,168
Industrial	265	229			229
Institutional/governmental	0	0			0
Landscape	1,074	1,938			1,938
Agriculture	0	0			0
Firelines*	1,131	8			8
Total	88,361	54,128	0	0	54,128

Data based on monthly Utility Billing downloads.

[^] Includes duplex and other multi-family.

* Includes firelines and miscellaneous uses such as water consumed in treatment process, construction meters, and sewer line and street cleaning.

Table 5: Water deliveries - Projected, 2015

Water Use Sectors	Metered		Not Metered		Total
	# of accounts	Acre-feet	# of accounts	Acre-feet	Acre-feet
Single-family	60,833	18,539			18,539
Multi-Family	20,552	20,009			20,009
Commercial	6,310	14,453			14,453
Industrial	266	234			234
Institutional/governmental	0	0			0
Landscape	1,077	1,977			1,977
Agriculture	0	0			0
Firelines	1,134	8			8
Total	90,172	55,219	0	0	55,219

*Deliveries expected below that of 2015 gpcd target. Do not expect demand to increase substantially over 2010 deliveries

Table 6: Water deliveries - Projected, 2020

Water Use Sectors	Metered		Not Metered		Total
	# of accounts	Acre-feet	# of accounts	Acre-feet	Acre-feet
Single-family	61,917	18,547			18,547
Multi-Family	21,301	20,018			20,018
Commercial	6,326	14,460			14,460
Industrial	266	234			234
Institutional/governmental	0	0			0
Landscape	1,080	1,978			1,978
Agriculture	0	0			0
Firelines	1,137	8			8
Total	92,028	55,244	0	0	55,244

Table 7: Water deliveries - Projected

Water Use Sectors	2025 Metered		2030 Metered		2035 Metered	
	# of accounts	Acre-feet	# of accounts	Acre-feet	# of accounts	Acre-feet
Single-family	63,021	18,549	64,144	18,364	65,287	18,348
Multi-Family	22,077	20,020	22,881	19,820	23,715	19,804
Commercial	6,343	14,461	6,359	14,317	6,376	14,305
Industrial	267	234	268	232	269	231
Institutional/governmental	0	0	0	0	0	0
Landscape	1,082	1,978	1,085	1,958	1,088	1,957
Agriculture	0	0	0	0	0	0
Firelines	1,140	8	1,143	8	1,146	8
Total	93,930	55,249	95,881	54,698	97,881	54,652

Does not include recycled, saline barriers, or system losses. See Table 10.

*Taken from LBWD (BMP's?) fy 2009-2010

Volumes based on estimated population * expected gpcd * 365 / 325,851

Table 8 - Low Income projected water demands (AF/Year)

Low Income Water Demands*	2015	2020	2025	2030	2035
Single-family residential	5,191	5,193	5,194	5,142	5,137
Multi-family residential	5,603	5,605	5,606	5,550	5,545
Total	10,793	10,798	10,799	10,691	10,682

*Low Income households = 28% of Long Beach
 These estimates are included in Tables 3 through 8.

Table 9 - Sales to other water agencies (AF/Year)

Water Distributed	2005	2010	2015	2020	2025	2030	2035
N/A	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0

Table 10 - Additional water uses and losses (AF/Year)

Water Uses	2005	2010	2015	2020	2025	2030	2035
Saline barriers							
Groundwater recharge							
Conjunctive use							
Raw water							
Recycled water	4,589	6,556	10,100	11,300	13,400	13,700	14,000
System losses	3,387	2,570	2,301	2,302	2,302	2,279	2,277
Other (define)							
Total	7,976	9,126	12,401	13,602	15,702	15,979	16,277

Water Accounted for in tables 3-7 are not included in this table.
 Water losses historically between 3% and 5% of supply.
 Recycled water includes barrier supplies.

Table 11 - Total Water Use (AF/Year)

Water Uses	2005	2010	2015	2020	2025	2030	2035
Total water deliveries (T3 thru T7)	63,936	54,322	55,219	55,244	55,249	54,698	54,652
Sales to other Water agencies (T9)	0	0	0	0	0	0	0
Additional water uses and losses (T10)	7,976	9,126	12,401	13,602	15,702	15,979	16,277
Total	71,912	63,448	67,620	68,846	70,951	70,677	70,929

Table 12 - Retail agency demand projections provided to wholesale suppliers (AF/Year)

Wholesaler	Contracted Volume	2010	2015	2020	2025	2030	2035
Metropolitan Water District of SoCal*		22,237	24,520	24,046	18,551	17,477	11,929
Total	0	22,237	24,520	24,046	18,551	17,477	11,929

*MWDSC 2010 IRWP A.2-28
 The wholesale water agency generates regional demand projections using a number of different inputs, including estimates of regional population growth, income and employment.

Table 13 - Base period ranges

sec 3.2

AF/Year

Base	Parameter	Value	Units
10 to 15 year base period	2008 total water deliveries	63,743	
	2008 total volume of delivered recycled water	5,103	
	2008 recycled water as a percent of total deliveries	8%	percent
	Number of years in base period	10	years
	Year beginning base period range	1996	
	Year ending base period range	2005	
5 year base period	Number of years in base period	5	years
	Year beginning base period range	2004	
	Year ending base period range	2008	

If 2008 recycled water % is <10% the first base period is a continuous 10-yr period.

If 2008 is >10%, first base period is continuous 10 to 15 yr period

Table 14 - Base daily per capita water use - 10 to 15 year range

sec. 3.2

Base Period Year		Distribution System Population	Daily System gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Fiscal Year Ending June			
Year 1	1996	448,361	68,853	137
Year 2	1997	451,616	70,112	139
Year 3	1998	454,894	67,446	132
Year 4	1999	458,196	67,635	132
Year 5	2000	461,522	69,428	134
Year 6	2001	461,596	69,107	134
Year 7	2002	461,669	69,488	134
Year 8	2003	461,743	67,365	130
Year 9	2004	461,816	70,194	136
Year 10	2005	461,890	66,937	129
Base Daily Per Capita Water Use Total				134

Population adjusted to reflect 2010 census data

Table 15 - Base daily per capita water use - 5 year range

Base Period Year		Distribution System Population	Daily System gross water use (mgd)	Annual daily per capita water use (gpcd)
Sequence Year	Fiscal Year Ending June			
Year 1	2004	461,816	70,194	136
Year 2	2005	461,890	66,937	129
Year 3	2006	461,963	65,987	128
Year 4	2007	462,037	68,837	133
Year 5	2008	462,110	63,743	123
Base Daily Per Capita Water Use Total				130

Population adjusted to reflect 2010 census data

Table 16 - Water Supplies - current and projected (AF/Year)

Water Purchased from:	Wholesaler supplied volume	2010	2015	2020	2025	2030	2035
Wholesale Purchases: MWDSC	Yes	22,237	24,520	24,046	18,551	17,477	11,929
Groundwater: LBWD Central Basin Aquifer rights	no	34,655	33,000	33,500	34,000	34,500	35,000
Desalinated Water (Potable Supply)		-	-	-	5,000	5,000	10,000
Transfers in or out		-	-	-	-	-	-
Exchanges in or out		-	-	-	-	-	-
Recycled Water		6,556	10,100	11,300	13,400	13,700	14,000
Other							
Total		63,448	67,620	68,846	70,951	70,677	70,929

Table 17 - Wholesale supplies - existing and planned sources of water (AF/Year)

Wholesaler	Contracted Volume	2010	2015	2020	2025	2030	2035
Metropolitan Water District of SoCal		22,237	24,520	24,046	18,551	17,477	11,929
Total	0	22237	24520.1	24045.7	18551.2	17477.2	11929.5

Table 18 - Groundwater -- volume pumped (AF/Year)

Basin Name(s)	Metered or Unmetered*	2006	2007	2008	2009	2010
Central Basin	Metered	23,240	25,411	35,701	35,195	34,655
West Coast Basin		0	0	0	0	0
Groundwater as a percent of total water supply		35%	37%	56%	62%	55%

*Indicate whether volume is based on volumetric meter data or another method

Table 19 - Groundwater -- volume projected to be pumped (AF/Year)

Basin Name(s)		2015	2020	2025	2030	2035
Central Basin		33,000	33,500	34,000	34,500	35,000
West Coast Basin		-	-	-	-	-
Groundwater as a percent of total water supply		49%	49%	48%	49%	49%

These estimates make certain assumptions, such as the assumption that MWD will not have a long-term storage incentive program in place.

Table 20 - Transfer and exchange opportunities

Transfer Agency	Transfer or exchange	Short term or long term	Proposed Volume
LBWD does not anticipate participating in transfers or exchanges			

Table 21 - Recycled Water - Wastewater Collected and Treated (AF/Year)

Maximum plant effluent capacity: 25 mgd; plant expansion not expected.
 Plant is able to convert approximately 89.8% of influent into recycled water; the balance (sludge) transported to water treatment plant.

Type of Wastewater	2005	2010	2015	2020	2025	2030	2035
<i>Avg MGD:</i>	17.4	18.4	21.2	21.6	21.9	22.1	22.4
Wastewater collected & treated in service area	19,491	20,611	23,747	24,195	24,531	24,755	25,091
Volume that meets recycled water standard	17,502	18,508	21,325	21,727	22,029	22,230	22,532

Table 22 - Recycled water - non-recycled wastewater disposal (AF/Year)

Treated wastewater that is not recycled is discharged into the Coyote Creek.

Method of Disposal	Treatment Level	2010	2015	2020	2025	2030	2035
Discharge	Title 22	11,952	11,225	10,427	8,629	8,530	8,532
Total		11,952	11,225	10,427	8,629	8,530	8,532

Table 23 - Recycled Water Uses - Potential Future Use (AF/Year)

User Type	Description	Feasibility	2015	2020	2025	2030	2035
Agriculture							
Landscape			3,300	3,500	4,200	4,400	4,600
Commercial irrigation							
Golf course irrigation							
Wildlife Habitat							
Wetlands							
Industrial*			3,800	4,800	6,200	6,300	6,400
Groundwater Recharge							
Seawater Barrier Injection			3,000	3,000	3,000	3,000	3,000
Geothermal/Energy							
Indirect Potable Reuse							
Other (type of use)							
Total			10,100	11,300	13,400	13,700	14,000

Based on Recycled Water Master Plan; \$3M per year expansion

*Industrial Increase based in part on commitment from LADWP to use reclaimed water to repower their generators. LBWD is therefore planning for increased demand of reclaimed water.

Table 24 - Recycled Water -- 2005 UWMP use projection compared to 2010 actuals (AF/Year)

User Type	2010 Actual Use	2005 Projection for 2010
Agriculture		0
Landscape	3,133	2585
Commercial irrigation		
Golf course irrigation		
Wildlife Habitat		
Wetlands		
Industrial	1,136	2100
Groundwater Recharge		
Seawater Barrier Injection	2,287	525
Geothermal/Energy		
Indirect Potable Reuse		
Other (type of use)		
Total	6,556	5,210

Table 25 - Methods to Encourage Recycled Water Use (AF/Year)

Actions	Projection Results					
	2010	2015	2020	2025	2030	2035
Financial incentives (50% to 75% of potable rate)	4,269	4,269	4,269	4,269	4,269	4,269
Cooperation in development & operation of seawater barrier project (huge discount)	2,287	3,000	3,000	3,000	3,000	3,000
Expansion of reclaimed water infrastructure		2,831	4,031	6,131	6,431	6,731
Total	6,556	10,100	11,300	13,400	13,700	14,000

Table 26 - Future Water Supply Projects

Project Name	Project Schedule		Potential Project Constraints	AF/ Year				
	Projected Start Date	Projected Completion Date [^]		Normal-year Supply	Single-dry year supply	Multiple-dry Years		
						Year 1	Year 2	Year 3
Expand Reclaimed Water Infrastructure	2010	2035	Identifying cost-effective projects.	6,731	6,731	6,731	6,731	6,731
Reclaimed Water Barrier Injection - Phase II	2011	2015	Getting this complex, ground-breaking high-tech project to operate at 100% of capacity.	713	713	713	713	713
Possible Project: Seawater Desalination*	2020	2025	Cost of building and operating an environmentally responsible project supported by the community.	5,000	5,000	5,000	5,000	5,000
Total				12,444	12,444	12,444	12,444	12,444

[^] different phases of the expansion will come on-line at different times; this assumes all projects on-line by 2035.

* this project, if it comes on-line, may produce from 5,000 to 10,000 AF/Year; in any case, the project's reliability will not be affected by dry-years.

Table 27- Basis of Water Year Data

Water Year Type	Base Years
Normal Water Year	avg 2000-2004
Single Dry Water Year*	1977
Multiple Dry Water Years*	1990-92

* Same as used by MWDSC in its Regional-UWMP.

Table 28 - Supply Reliability - Historic conditions (AF/Year)

Source	Normal Water Year	Single Dry Water Year	Multiple Dry Water Years		
			Year 1	Year 2	Year 3
Potable	2000-04	1977	1990	1991	1992
Wholesale Purchases*	44,720	33,961	49,778	43,139	34,703
Groundwater	24,569	27,676	26,634	25,884	27,529
Supplier surface diversions					
Transfers in or out					
Exchanges in or out					
Seawater Desalination					
Recycled water	5,314	5,314	3,992	3,494	3,040
Total	74,603	66,951	80,404	72,517	65,272
% of Normal:		90%	108%	97%	87%

Table 29 - Factors Resulting in Inconsistency of Supply

Name of Supply	Legal	Environmental	Water Quality	Climatic
Imported Water	See MWDSC's RUWMP	See MWDSC's RUWMP	See MWDSC's RUWMP	See MWDSC's RUWMP
Groundwater	n/a	n/a	n/a	n/a
Reclaimed Water	n/a	n/a	n/a	n/a
Seawater Desalination**	n/a	n/a	n/a	n/a

** If developed and put into production, this source is expected to be very consistent.

If it is not brought into production, the water it accounts for in future years would be replaced by MWDSC supplies. This transfer of about 5,000 acre-feet to MWDSC will have no impact on the MWDSC ability to supply reliable water to the region, due to the relative miniscual amount of water involved compared to the total MWDSC supply and the supply buffer created by MWDSC.

Table 30 - Current & Projected Water Supply Changes Due To Water Quality - percentage

Water Source	2005	2010	2015	2020	2025	2030
Recycled water	0%	0%	0%	0%	0%	0%
Groundwater	0%	0%	0%	0%	0%	0%
Water purchased wholesale	0%	0%	0%	0%	0%	0%
Total	0%	0%	0%	0%	0%	0%

Table 31 - Supply Reliability - current water sources (AF/Year)

Source	Average/Normal Water Year Supply^	Multiple Dry Water Years			
		2011	2012	2013	2014
Potable					
Wholesale Purchases*	23,750	23,902	24,055	24,209	24,364
Groundwater	33,000	33,000	33,000	33,000	33,000
Supplier surface diversions					
Transfers in or out					
Exchanges in or out					
Seawater Desalination					
Recycled water**	6,966	7,503	8,082	8,705	9,377
Total	63,716	64,406	65,137	65,915	66,741
	% of Normal^^:	101%	102%	103%	105%

* Wholesale water supply reliability based on the MWDSC statements of reliability in its 2010 Regional UWMP.

^ Total potable demand based on weather-normalized demand for FY 2010, as reported to CUWCC.

** Recycled includes barrier; amount shown assumes weather did not effect industrial or barrier demand 2010, but did affect irrigation demand; so irrigation demand adjusted to reflect average irrigation demand for the years 2002 thru 2010.

^^ The increases shown in "% of Normal" reflect the expected increase in total demand between the years 2010 and 2015.

Table 32 -Supply and Demand Comparison - Normal Year (AF/Year)

	2010	2015	2020	2025	2030	2035
Supply Total (from Table 16)	63,448	67,620	68,846	70,951	70,677	70,929
Demand Total (from Table 11)	63,448	67,620	68,846	70,951	70,677	70,929
Difference (Supply - Demand)	-	-	-	-	-	-
Difference as % of Supply	0%	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%	0%

Table 33 -Supply and Demand Comparison - Single Dry-year (AF/Year)

	2010	2015	2020	2025	2030	2035
Supply Total (from Table 16)	63,448	67,620	68,846	70,951	70,677	70,929
Demand Total	63,448	67,620	68,846	70,951	70,677	70,929
Difference (Supply - Demand)	-	-	-	-	-	-
Difference as % of Supply	0%	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%	0%

Demand in single dry year expected to be the same as normal year re: the additional water conservation messages are likely to affect how people use water. For example, in recent years demand declined during dry years.

Table 34 - Supply & Demand Comparison During Multiple Dry-year Events (AF/Year)

		2010	2015	2020	2025	2030	2035
Multiple-dry year first year supply	Supply Totals	63,448	67,620	68,846	70,951	70,677	70,929
	Demand Totals	63,448	67,620	68,846	70,951	70,677	70,929
	Difference (Supply - Demand)	-	-	-	-	-	-
	Difference as % of Supply	0%	0%	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%	0%	0%
Multiple-dry year second year supply	Supply Totals	63,448	67,620	68,846	70,951	70,677	70,929
	Demand Totals	63,448	67,620	68,846	70,951	70,677	70,929
	Difference (Supply - Demand)	-	-	-	-	-	-
	Difference as % of Supply	0%	0%	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%	0%	0%
Multiple-dry year third year supply	Supply Totals	63,448	67,620	68,846	70,951	70,677	70,929
	Demand Totals	63,448	67,620	68,846	70,951	70,677	70,929
	Difference (Supply - Demand)	-	-	-	-	-	-
	Difference as % of Supply	0%	0%	0%	0%	0%	0%
	Difference as % of Demand	0%	0%	0%	0%	0%	0%

Table 35 - Water Supply Shortage contingency -rationing stages to address water supply shortages

If a shortage is suffered at the LBWD retail level, it will be because the wholesale water provider was not able to meet LBWD's need for supplemental supplies. Therefore, this table focuses on supply availability from the wholesale provider.

Assumption #1:

MWDSC 'normal' supplies: 2,000,000 acre-feet
 For example, if MWDSC declares a 10% shortage, it is assumed it has only 1,800,000 acre-feet.

Assumption #2

LBWD's preferential right to MWDSC supplies 2.54%

Assumption #3

LBWD average retail demand for potable water (average 2010 thru 2035) 57,236

Assumption #4

LBWD's local supplies (2010 thru 2035) 34,109

Assumption #5

LBWD average population during this period (years 2010 thru 2035) 484,897

LBWD Water Shortage Plan Category

LBWD Retail Supply Shortage*

= retail supplies of

...which equals GPCD of...

Potential Imminent Water Supply Shortage	Imminent Water Supply Shortage	Stage 1 Shortage	Stage 2 Shortage	Stage 3 Shortage	Stage 3 Shortage ^{^^}
5%	10%	20%	30%	40%	50%
54,374	51,512	45,789	40,065	34,342	28,618
100	95	84	74	63	53

- less LBWD Groundwater

= Limit of supplemental supplies available to

LBWD, precipitating the retail shortage

= Shortage of supplemental supplies

(34,109)	(34,109)	(34,109)	(34,109)	(34,109)	(34,109)
20,265	17,403	11,680	5,956	232	(5,491)
2,862	5,724	11,447	17,171	22,894	28,618

Severity of regional shortage that would result in so little supplemental water available

When Preferential Rights have been invoked

Given LBWD's Preferential Rights, if MWDSC could only deliver this amount of water to LBWD, it's total regional supply would equal only:

797,834	685,165	459,827	234,488	9,150	(216,189)
60%	66%	77%	88%	100%	111%

...which would mean a MWDSC regionwide shortage of:

When MWDSC honors its guarantee of 100 GPCD at the retail level

LBWD retail GPCD

MWDSC supplies needed to meet this guarantee

in GPCD

in Acre-feet

100	95	84	74	63	53
-	5	16	26	37	47
-	2,803	8,527	14,250	19,974	25,697

...Because voluntary conservation prior to shortage allocation is expected to be 10% or more, and because a 10% reduction in LB retail demand would result in retail demand of less than 100 GPCD, there would be no need for rationing at LBWD's retail level if MWDSC honors its commitment to keep retail agencies whole at the 100 GPCD level.

* The decision to declare is shortage in Long Beach rests with the Board of Water Commissioners. The Board may choose to invoke any one of these shortage stages at any time, when it has determined that doing so maximises water reliability. For example, the Board may choose to invoke a shortage stage prior to the shortage level noted on this table if doing so would preserve stored water for future uncertain contingencies.

Table 36 - Water Shortage Contingency - Mandatory Prohibitions

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory	
Failure to repair leaks and breaks in water lines, including irrigation lines. Irrigating landscape except on certain days, during certain hours, and for specified lengths of time.	Permanent prohibition -- that is, these practices are prohibited even when water supplies are adequate to meet normal demands.	
Over watering to the point of creating runoff.		
Inefficient irrigation including excessive overspray, misting, or pressurization, and misaligned or broken heads		
Washing hardscape with a hose unless using a pressurized cleaning device		
Washing a vehicle with a hose that does not have a water shut-off nozzle.		
Operating a fountain that does not recirculate the water.		
Hotels and motels not giving patrons the option of choosing not to have linen and towels laundered.		
Restaurants and institution food preparation sites operating non-water conserving pre-rinse spray nozzle.		
Operating a commercial laundry system installed after November 3, 2006 that does not recirculate wash and/or rinse water.		
Operating a conveyor type car wash system that does not recirculate the wash and/or rinse water.		
Installing a single-pass cooling system in a building requesting a water connection after November 3, 2006.		
Using potable water when recycled water can be cost-effectively substituted.		
Restaurants serving water without first being asked by customers. Irrigating landscape with potable water any day other than Monday, Thursday, or Saturday and for more than 10 minutes per station.		Imminent water supply shortage condition; supply reduction of possibly 10%.
Irrigating with reclaimed water to the point of runoff.		
Irrigating landscape more than 2 days per week from October through March. Filling residential swimming pools	Stage 1 water supply shortage; implemented in supply reduction of perhaps 20%.	
Irrigating landscape more than 2 days per week throughout the entire year. Additional restrictions as deemed necessary by the Board of Water Commissioners.	Stage 2 water supply shortage; implemented in supply reduction of possibly 30%.	
Additional restrictions as deemed necessary by the Board of Water Commissioners.	Stage 3 water supply shortage; during supply	

Table 37 - Water Shortage Contingency - Consumption Reduction Methods

Please see Table 36 for most of the reduction methods.

Consumption Reduction Method	Stage When Method Takes Effect	Projected Reduction (%)
Increase public education, increase water rates, increase types of water-use restrictions and increase charge for violation of water-use restriction	Stage 1.	20%
Increase public education, increase water rates, increase types of water-use restrictions and increase charge for violation of water-use restriction	Stage 2.	30%
Increase public education, increase water rates, increase types of water-use restrictions and increase charge for violation of water-use restriction	Stage 3.	40% to 50%

Table 38 - Water Shortage Contingency - Penalties and Charges

Penalty or Charge	Stage when Penalty Takes Effect
\$150 with 1st notice of violation of water-use prohibition; \$300 for 2nd notice; \$450 for 3rd notice, etc.	Non-shortage condition and "Potential" water supply shortage condition
\$200 with 1st notice of violation of water-use prohibition; \$400 for 2nd notice; \$600 for 3rd notice, etc.	Stage 1
\$250 with 1st notice of violation of water-use prohibition; \$500 for 2nd notice; \$750 for 3rd notice, etc.	Stage 2
Base charge shall be determined by the Board of Water Commissioners at the time a Stage 3 Water Supply shortage is declared.	Stage 3
LBWD has the option of installing a flow restrictor and the option of terminating water service when necessary to impose water-use restrictions and prohibitions.	At all times.
Tiered water rates for residential accounts.	At all times.