

CHAPTER 5.0: WATER SERVICE RELIABILITY

5.1 NORMAL YEAR SUPPLY AND DEMAND COMPARISON

5.1.1 Normal Year Supply Projection

In Chapter 3: Water Supply System, and Chapter 4: Past, Current, and Projected Water Demands, the water supply and demand calculations, including projections, were completed for the City of La Habra. Listed below is a summary of the projected supply between the years 2010 and 2030. Also included is the percentage of the supply during the year 2005 that will be supplied during subsequent years.

Table 5.1 – 1: Projected Normal Water Supply (AFY)					
	2010	2015	2020	2025	2030
Supply	11,825	12,077	12,213	12,284	12,299
% of year 2005	105%	107%	108%	109%	109%

5.1.2 Normal Year Demand Projection

Listed in Table 5.1 – 2: Projected Normal Water Demand (AFY) are similar values for the demand projections. The provided figures are based on those determined in Chapter 4: Past, Current, and Projected Water Demands.

Table 5.1 – 2: Projected Normal Water Demand (AFY)					
	2010	2015	2020	2025	2030
Demand	11,825	12,077	12,213	12,284	12,299
% of year 2005	105%	107%	108%	109%	109%

5.1.3 Normal Year Supply and Demand Comparison

A comparison of the projected supply and demand for a normal (non-drought) year is summarized below in Table 5.1 – 3: Projected Supply and Demand Comparison (AFY). The table demonstrates that the projected supply will be sufficient to meet the projected demand during a normal year.

Table 5.1 – 3: Projected Supply and Demand Comparison (AFY)					
	2010	2015	2020	2025	2030
Supply Totals	11,825	12,077	12,213	12,284	12,299
Demand Totals	11,825	12,077	12,213	12,284	12,299
Difference	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

5.2 SINGLE-DRY YEAR SUPPLY AND DEMAND COMPARISON

5.2.1 Single-Dry Year Supply Projection

In the event of a drought or dry year, the supply and demand will deviate from the normal year. Provided below are projections for the supply during a single-dry year based upon local hydrology during the historical driest year, 1961.

Table 5.2 – 1: Projected Single-Dry Year Water Supply (AFY)					
	2010	2015	2020	2025	2030
CDWC	7,500	7,500	7,500	7,500	7,500
La Habra Groundwater Basin	2,400	2,400	2,400	2,400	2,400
MWDOC	2,881	3,147	3,291	3,365	3,381
Supply Totals	12,781	13,047	13,191	13,265	13,281
% of projected normal	108.1%	108.0%	108.0%	108.0%	108.0%

5.2.2 Single-Dry Year Demand Projection

Table 5.2 – 2: Projected Single-Dry Year Water Demand (AFY) below demonstrates the water demand in AFY projected for a single-dry year between 2010 and 2030. Also provided are values for the percentage of the projected normal demand that will be used during a single-dry year.

Table 5.2 – 2: Projected Single-Dry Year Water Demand (AFY)					
	2010	2015	2020	2025	2030
Demand	12,481	12,747	12,891	12,965	12,981
% of projected normal	105.5%	105.5%	105.5%	105.5%	105.5%

5.2.3 Single-Dry Year Supply and Demand Comparison

Table 5.2 – 3: Projected Single-Dry Year Supply and Demand Comparison (AFY) provides a comparison between the projected supply and demand during a single-dry year between the years 2010 and 2030. As depicted below, there is a 2.3% supply surplus of approximately 300 AFY during single-dry years, thus the projected supply will be sufficient to meet the projected demand during a single-dry year.

Table 5.2 – 3: Projected Single-Dry Year Supply and Demand Comparison (AFY)					
	2010	2015	2020	2025	2030
Supply Totals	12,781	13,047	13,191	13,265	13,281
Demand Totals	12,481	12,747	12,891	12,965	12,981
Difference	300	300	300	300	300
Difference as % of Supply	2.3%	2.3%	2.3%	2.3%	2.3%
Difference as % of Demand	2.4%	2.4%	2.3%	2.3%	2.3%

5.3 MULTIPLE-DRY YEAR SUPPLY AND DEMAND COMPARISON

In the event of a multiple-dry year period, the supply will decrease and the demand will increase due to dry conditions. While the supply from CDWC and the La Habra Basin will remain the same during multiple-dry years, the amount of water purchased from MWDOC will deviate in order to account for changes in demand. MWDOC has supplied projections for the amount of water that is projected to be available to the City of La Habra during multiple-dry years occurring between the years of 2010 and 2030. The projections are provided for 3 consecutive-year periods of time, and based upon local hydrology during the driest historic 3 consecutive-years, 1959 to 1961. The following tables demonstrate that the available supply will meet, or exceed, the projected demand.

5.3.1 Multiple-Dry Year Period Ending in 2010

Table 5.3 – 1: Projected Supply during Multiple-Dry Year Period Ending in 2010 (AFY)			
	2008	2009	2010
Normal Supply			
Local Supplies (CDWC and La Habra Basin)	9,250	9,490	9,600
Imported Supplies (MWDOC)	2,375	2,252	2,225
Supply Totals	11,624	11,742	11,825
Multiple-Dry Year Supply			
Local Supplies (CDWC and La Habra Basin)	9,250	9,490	9,600
Imported Supplies (MWDOC)	3,153	2,687	2,881
Supply Totals	12,403	12,176	12,481
% of projected normal	106.7%	103.7%	105.5%

Table 5.3 – 2: Projected Demand during Multiple–Dry Year Period Ending in 2010 (AFY)

	2008	2009	2010
Normal Demand			
Total Demand	11,624	11,742	11,825
Multiple–Dry Year Demand			
Total Demand	12,403	12,176	12,481
% of projected normal	106.7%	103.7%	105.5%

Table 5.3 – 3: Projected Supply and Demand Comparison during Multiple–Dry Year Period Ending in 2010 (AFY)

	2008	2009	2010
Supply Totals	12,403	12,176	12,481
Demand Totals	12,403	12,176	12,481
Difference	0	0	0
Difference as % of Supply	0.0%	0.0%	0.0%
Difference as % of Demand	0.0%	0.0%	0.0%

5.3.2 Multiple-Dry Year Period Ending in 2015

Table 5.3 – 4: Projected Supply during Multiple-Dry Year Period Ending in 2015 (AFY)			
	2013	2014	2015
Normal Supply			
Local Supplies (CDWC and La Habra Basin)	9,900	9,900	9,900
Imported Supplies (MWDOC)	2,384	2,438	2,477
Supply Totals	12,284	12,338	12,377
Multiple-Dry Year Supply			
Local Supplies (CDWC and La Habra Basin)	9,900	9,900	9,900
Imported Supplies (MWDOC)	3,187	2,883	3,147
Supply Totals	13,087	12,783	13,047
% of projected normal	106.5%	103.6%	105.4%

Table 5.3 – 5: Projected Demand during Multiple-Dry Year Period Ending in 2015 (AFY)			
	2013	2014	2015
Normal Demand			
Total Demand	11,984	12,038	12,077
Multiple-Dry Year Demand			
Total Demand	12,787	12,483	12,747
% of projected normal	106.7%	103.7%	105.5%

Table 5.3 – 6: Projected Supply and Demand Comparison during Multiple–Dry Year Period Ending in 2015 (AFY)

	2013	2014	2015
Supply Totals	13,087	12,783	13,047
Demand Totals	12,787	12,483	12,747
Difference	300	300	300
Difference as % of Supply	2.3%	2.3%	2.3%
Difference as % of Demand	2.3%	2.4%	2.4%

5.3.3 Multiple–Dry Year Period Ending in 2020

Table 5.3 – 7: Projected Supply during Multiple–Dry Year Period Ending in 2020 (AFY)			
	2018	2019	2020
Normal Supply			
Local Supplies (CDWC and La Habra Basin)	9,900	9,900	9,900
Imported Supplies (MWDOC)	2,563	2,592	2,613
Supply Totals	12,463	12,492	12,513
Multiple – Dry Year Supply			
Local Supplies (CDWC and La Habra Basin)	9,900	9,900	9,900
Imported Supplies (MWDOC)	3,378	3,043	3,291
Supply Totals	13,278	12,943	13,191
% of projected normal	106.5%	103.6%	105.4%

Table 5.3 – 8: Projected Demand during Multiple–Dry Year Period Ending in 2020 (AFY)			
	2018	2019	2020
Normal Demand			
Total Demand	12,163	12,192	12,213
Multiple–Dry Year Demand			
Total Demand	12,978	12,643	12,891
% of projected normal	106.7%	103.7%	105.5%

Table 5.3 – 9: Projected Supply and Demand Comparison during Multiple–Dry Year Period Ending in 2020 (AFY)

	2018	2019	2020
Supply Totals	13,278	12,943	13,191
Demand Totals	12,978	12,643	12,891
Difference	300	300	300
Difference as % of Supply	2.3%	2.3%	2.3%
Difference as % of Demand	2.3%	2.4%	2.3%

5.3.4 Multiple–Dry Year Period Ending in 2025

Table 5.3 – 10: Projected Supply during Multiple–Dry Year Period Ending in 2025 (AFY)			
	2023	2024	2025
Normal Supply			
Local Supplies (CDWC and La Habra Basin)	9,900	9,900	9,900
Imported Supplies (MWDOC)	2,659	2,675	2,684
Supply Totals	12,559	12,575	12,584
Multiple–Dry Year Supply			
Local Supplies (CDWC and La Habra Basin)	9,900	9,900	9,900
Imported Supplies (MWDOC)	3,481	3,129	3,365
Supply Totals	13,381	13,029	13,265
% of projected normal	106.5%	103.6%	105.4%

Table 5.3 – 11: Projected Demand during Multiple–Dry Year Period Ending in 2025 (AFY)			
	2023	2024	2025
Normal Demand			
Total Demand	12,259	12,275	12,284
Multiple–Dry Year Demand			
Total Demand	13,081	12,729	12,965
% of projected normal	106.7%	103.7%	105.5%

Table 5.3 – 12: Projected Supply and Demand Comparison during Multiple–Dry Year Period Ending in 2025 (AFY)

	2023	2024	2025
Supply Totals	13,381	13,029	13,265
Demand Totals	13,081	12,729	12,965
Difference	300	300	300
Difference as % of Supply	2.2%	2.3%	2.3%
Difference as % of Demand	2.3%	2.4%	2.3%

5.3.5 Multiple – Dry Year Period Ending in 2030

Table 5.3 – 13: Projected Supply during Multiple–Dry Year Period Ending in 2030 (AFY)			
	2028	2029	2030
Normal Supply			
Local Supplies (CDWC and La Habra Basin)	9,900	9,900	9,900
Imported Supplies (MWDOC)	2,694	2,697	2,699
Supply Totals	12,594	12,597	12,599
Multiple–Dry Year Supply			
Local Supplies (CDWC and La Habra Basin)	9,900	9,900	9,900
Imported Supplies (MWDOC)	3,517	3,152	3,381
Supply Totals	13,417	13,052	13,281
% of projected normal	106.5%	103.6%	105.4%

Table 5.3 – 14: Projected Demand during Multiple–Dry Year Period Ending in 2030 (AFY)			
	2028	2029	2030
Normal Demand			
Total Demand	12,294	12,297	12,299
Multiple–Dry Year Demand			
Total Demand	13,117	12,752	12,981
% of projected normal	106.7%	103.7%	105.5%

Table 5.3 – 15: Projected Supply and Demand Comparison during Multiple–Dry Year Period Ending in 2030 (AFY)

	2028	2029	2030
Supply Totals	13,417	13,052	13,281
Demand Totals	13,117	12,752	12,981
Difference	300	300	300
Difference as % of Supply	2.2%	2.3%	2.3%
Difference as % of Demand	2.3%	2.4%	2.3%