2020 Urban Water Management Plan

Appendix B: Delta Reliance Tables (DWR Tables C-1 through C-4)

Appendix B: Delta Reliability

1.1 REDUCED DELTA RELIANCE REPORTING

The Sacramento-San Joaquin Delta Reform Act of 2009 established a certification process that requires state and local public agencies proposing a covered action in the Delta (such as importing water from the Delta, exchanges, or transfers), prepare a written certification of consistency with detailed findings as to whether the covered action is consistent with applicable Delta Plan policies (Wat. Code, § 85225) and submit that certification to the Delta Stewardship Council.

Livermore Municipal Water (LMW), through its relationship with its wholesale water supplier Zone 7, has identified management actions which improve local reliability and reduce reliance on the Delta. Accordingly, LMW, is providing information in its 2015 and 2020 Urban Water Management Plans (UWMPs) that can then be used in the covered action process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (WR P1).

As stated in WR P1(c)(1)(C), the policy requires that, commencing in 2015, UWMPs include expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance. WR P1 further states that those outcomes shall be reported in the UWMP as the reduction in the amount of water used, or in the percentage of water used, from the Delta.

The expected outcomes for LMW's Delta reliance and regional self-reliance were developed using the approach and guidance described in Appendix C of DWR's Urban Water Management Plan Guidebook 2020 (Guidebook Appendix C) issued in March 2021.

This analysis is provided with the 2020 UWMP and is attached hereto. As this analysis also applies to the 2015 UWMP, and as an amendment, it will be released for public review and adopted by the Agency. This action does not re-open the 2015 UWMP for additional review. It is an addendum to the 2015 UWMP made pursuant to DWR's recommendation.

As stated in the 2020 UWMP Guidebook Appendix C (Final version dated April 2021):

> *"An urban water supplier (Supplier) that anticipates participating in or receiving water supply benefits from a proposed project (covered action1) such as a multi-year water transfer, conveyance facility, or new diversion that involves transferring water through, exporting water from, or using water in the Sacramento-San Joaquin Delta (Delta) should provide information in their 2015 and 2020 Urban Water Management Plans (UWMP's) that can then be used in the covered action process to demonstrate consistency with Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance (California Code Reg., tit. 23, § 5003)."*

WR P1 subsection (c)(1) further defines what adequately contributing to reduced reliance on the Delta means in terms of (a)(1) above.

> *"(c)(1) Water suppliers that have done all the following are contributing to reduced reliance on the Delta and improved regional self-reliance and are therefore consistent with this policy:*

(A) Completed a current Urban or Agricultural Water Management Plan (Plan) which has been reviewed by the California Department of Water Resources for compliance with the applicable requirements of Water Code Division 6, Parts 2.55, 2.6, and 2.8;

(B) Identified, evaluated, and commenced implementation, consistent with the implementation schedule set forth in the Plan, of all programs and projects included in the Plan that are locally cost effective and technically feasible which reduce reliance on the Delta; and

(C) Included in the Plan, commencing in 2015, the expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance. The expected outcome for measurable reduction in Delta reliance and improvement in regional self-reliance shall be reported in the Plan as the reduction in the amount of water used, or in the percentage of water used, from the Delta watershed. For the purposes of reporting, water efficiency is considered a new source of water supply, consistent with Water Code section 1011(a)."

1.2 Preparation of UWMPs and Implementation of Projects from the UWMP

LMW has identified, evaluated, and implemented water use efficiency measures and recycled water programs that are locally cost effective and technically feasible which improve local water supply reliability and reduce reliance on the Delta.

1.2.1 Expected Outcomes for Measurable Reduction in Delta Reliance

The expected outcomes for LMW's Delta reliance and regional self-reliance were developed based on the approach and guidance described in Appendix C of DWR's Urban Water Management Plan Guidebook 2020 and are summarized in DWR Table C-1 to DWR Table C-4 below. This involves setting a baseline and evaluating normal year water demands (potable and non-potable), estimating service area population and water use in gallons per capita per day, and evaluating and projecting water supply sources to meet estimated normal year demands. All water supply information is derived from Zone 7"s 2020 UWMP Appendix B Demonstration of Reduced Delta Reliance. Inputs to Tables C-1, C-2, and C-3 include:

- **Baseline**. In order to calculate the expected outcomes for measurable reduction in Delta reliance and improved regional self-reliance, a baseline is needed to compare against. For consistency with Zone 7's 2020 UWMP, LMW is using year 2010 as the baseline year. This analysis uses a normal water year representation of 2010 as the baseline. Data for the 2010 baseline were taken from LMW's 2010 UWMP.

- **Service Area Demands**. Service area demands, including demands for non-potable water, for 2010, 2015, and 2020 were taken from previous and current (2010, 2015, and 2020) UWMPs. Service area demands 2025 to 2045 were taken from projections developed as part of the 2020 UWMP.

- **Service Area Population**. Service area population data were taken from the 2020 UWMP Table 1-7. See Section 1.7 for details on derivation of population estimates for future years.

- **Service Area Water Supply**. Service area water supplies were derived from historical water supplies (2010, 2015, and 2020) and projected water supplies from Zone 7 (2025-2045). The percentage of Zone 7's supplies from the Delta were utilized to project the water supplies for Livermore from the Delta.

The outcome of Table C-1 is a calculation of water use efficiency since the baseline year (2010). The calculation uses the change in gallons per capita per day and service area population to calculate or estimate water use efficiency in years 2015 through 2045 compared to the baseline year of 2010.

1.2.1.1 Supplies Contributing to Regional Self-Reliance

All water supplies are provided by Zone 7 as the wholesaler of the region's water. LMW water supply projections from the Delta are shown in Table C-4 and are based on the percentage of Zone 7's water supplies from the Delta for each of the planning years. Any additional reduction in Delta reliance by LMW is a product of water use efficiency measures and an increase in use of recycled water.

The outcome of Table C-4 is a calculation of the percent change in supplies from the Delta watershed relative to the 2010 Baseline. Table C-4 illustrates that from 2010 to 2015, LMW reduced reliance on the Delta by 24% and is projected to have a net reduction in reliance on the Delta from the baseline, through year 2045. The year 2020 showed an increase in per capita water use likely due to the COVID-19 pandemic and customers remaining at home during this time. However, per Zone 7's Delta Reliability tables, water supplies from the Delta watershed decreased in 2020 likely attributable to an increase in alternate water supplies and water use efficiency measures by all of Zone 7's retailers.

Overall, Livermore shows a reduction in reliance on the Delta Watershed with increasing percent of supplies contributing to regional self-reliance projecting out to 2045.

Table C-1: Optional Calculation of Water Use Efficiency -To be completed if Water Supplier does not specifically estimate Water Use Efficiency as a supply

Service Area Water Use Efficiency Demands (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	2,409	2,244	2,845	2,717	2,789	2,861	2,934	2,934
Non-Potable Water Demands	428	760	710	616	635	653	671	671
Potable Service Area Demands with Water Use Efficiency Accounted For	1,981	1,484	2,134	2,101	2,154	2,208	2,263	2,263

Total Service Area Population	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Population	26,400	28,782	30,830	34,965	39,101	43,236	47,371	47,371

Water Use Efficiency Since Baseline (GPCD/Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Per Capita Water Use (GPCD)	206	141	190	165	151	140	131	131
Change in Per Capita Water Use from Baseline (GPCD)		(64)	(16)	(41)	(55)	(66)	(75)	(75)
Estimated Water Use Efficiency Since Baseline (Million Gallons)		676	179	523	780	1,036	1,292	1,292

Table C-2: Calculation of Service Area Water Demands Without Water Use Efficiency

Total Service Area Water Demands (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands with Water Use Efficiency Accounted For	2,409	2,244	2,845	2,717	2,789	2,861	2,934	2,934
Reported Water Use Efficiency or Estimated Water Use Efficiency Since Baseline		676	179	523	780	1,036	1,292	1,292
Service Area Water Demands without Water Use Efficiency Accounted For	2,409	2,920	3,023	3,240	3,569	3,897	4,226	4,226

Table C-3: Calculation of Supplies Contributing to Regional Self-Reliance

Water Supplies Contributing to Regional Self-Reliance (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Use Efficiency		676	179	523	780	1,036	1,292	1,292
Water Recycling	428	760	710	616	635	653	671	671
Stormwater Capture and Use								
Advanced Water Technologies								
Conjunctive Use Projects								
Local and Regional Water Supply and Storage Projects								
Other Programs and Projects that Contribute to Regional Self-Reliance								
Water Supplies Contributing to Regional Self-Reliance	428	1,436	889	1,139	1,415	1,689	1,963	1,963

Service Area Water Demands without Water Use Efficiency (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands without Water Use Efficiency Accounted For	2,409	2,920	3,023	3,240	3,569	3,897	4,226	4,226

Change in Regional Self Reliance (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Supplies Contributing to Regional Self-Reliance	428	1,436	889	1,139	1,415	1,689	1,963	1,963
Change in Water Supplies Contributing to Regional Self-Reliance		1,008	461	711	987	1,261	1,535	1,535

Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Percent of Water Supplies Contributing to Regional Self-Reliance	17.8%	49.2%	29.4%	35.1%	39.6%	43.3%	46.4%	46.4%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance		31.4%	11.6%	17.4%	21.9%	25.6%	28.7%	28.7%

Table C-4: Calculation of Reliance on Water Supplies from the Delta Watershed

Water Supplies from the Delta Watershed (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
CVP/SWP Contract Supplies	1,677	1,321	1,341	1,649	1,524	1,522	1,549	1,549
Delta/Delta Tributary Diversions								
Transfers and Exchanges of Supplies from the Delta Watershed								
Other Water Supplies from the Delta Watershed								
Total Water Supplies from the Delta Watershed	1,677	1,321	1,341	1,649	1,524	1,522	1,549	1,549

Service Area Water Demands without Water Use Efficiency (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Service Area Water Demands without Water Use Efficiency Accounted For	2,409	2,920	3,023	3,240	3,569	3,897	4,226	4,226

Change in Supplies from the Delta Watershed (Million Gallons)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Water Supplies from the Delta Watershed	1,677	1,321	1,341	1,649	1,524	1,522	1,549	1,549
Change in Water Supplies from the Delta Watershed		(357)	(336)	(28)	(153)	(155)	(128)	(128)

Percent Change in Supplies from the Delta Watershed (As a Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045 (Optional)
Percent of Water Supplies from the Delta Watershed	70%	45%	44%	51%	43%	39%	37%	37%
Change in Percent of Water Supplies from the Delta Watershed		-24%	-25%	-19%	-27%	-31%	-33%	-33%