

Appendix L

Quantifying Self-Reliance and Reduced Reliance on Water Supplies from the Delta Watershed

L.1 Background

The Delta Reform Act was enacted in 2009 to reduce reliance on the Sacramento-San Joaquin Delta (Delta) as stated in Water Code Section 85021:

The policy of the State of California is to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency. Each region that depends on water from the Delta watershed shall improve its regional self-reliance for water through investment in water use efficiency, water recycling, advanced water technologies, local and regional water supply projects, and improved regional coordination of local and regional water supply efforts.

Urban water suppliers that anticipate receiving water originating from the Delta are required to demonstrate consistency with Delta Plan Policy WR P1, *Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance* (Policy). The Policy states that water shall not be exported from, transferred through, or used in the Delta if one or more water suppliers what would receive these waters have failed to adequately contribute to a reduced reliance on the Delta through improved self-reliance. Water agencies must prepare a written certification of consistency with the Policy prior to proposing a plan, project or program that will occur within the Delta, described as a "covered action". These regulations are contained in the California Code of Regulations at Title 23, Division 6, Chapter 2, Article 3¹. The regulations are included in Section L.5 for reference.

The District does not plan, at this time, to conduct a covered action in the Delta but purchases a small amount of State Water Project (SWP) water, which is partially sourced from the Delta. Because LACSD may receive water from a covered action conducted by other agencies, LACSD is providing this information as an appendix to its 2015 and 2020 Urban Water Management Plans (UWMP). This information can then be used in the covered action process to demonstrate consistency with the Policy.

Figure L.1 Sacramento-San Joaquin Delta

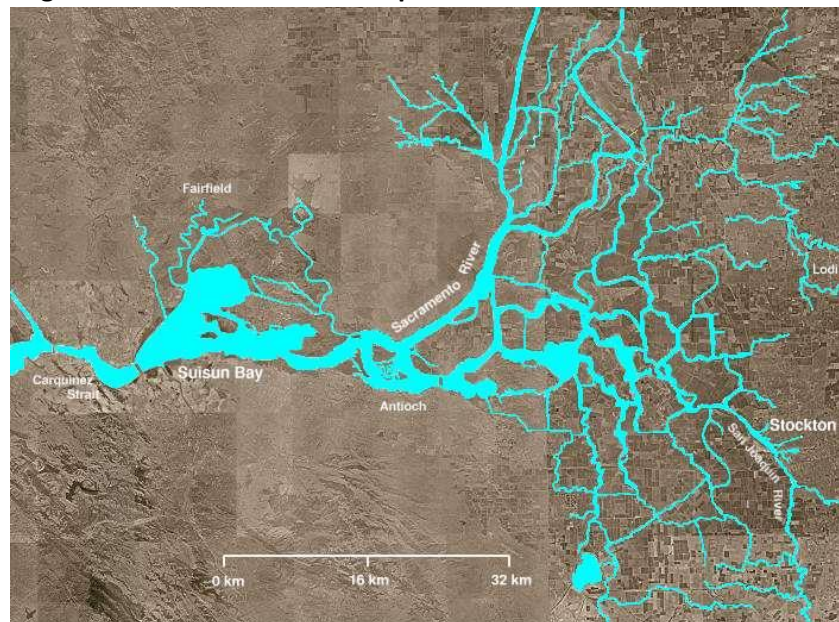


Photo Credit: United States Geological Survey

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[https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I201CA5F107AA11E39A73EBDA152904D8&originationContext=documenttoc&transitionType=Default&contextData=\(sc.Default\)](https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=I201CA5F107AA11E39A73EBDA152904D8&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default))

One way water agencies may demonstrate reduced reliance is by completing an UWMP that has been reviewed for compliance by the California Department of Water Resources (DWR), which the District has done. The UWMP should identify, evaluate, and commence implementation of programs and projects that reduce reliance and improve self-reliance. This appendix highlights the applicable programs and projects from the District's 2020 UWMP that qualify for demonstrating reduced reliance and improved self-reliance. Water use efficiency is considered a source of supply for these purposes.

L.2 Measurable Reduction in Delta Reliance

In accordance with the Policy, water agencies are required to include expected measurable reductions in Delta reliance in their UWMPs. The District relied on Appendix C of DWR's UWMP Guidebook to prepare that documentation. This data is specific to LACSD's imported water purchases from other agencies. The agencies that the District receives SWP water from may report their own data separately.

LACSD receives SWP water through agreements with Crestline-Lake Arrowhead Water Agency (CLAWA) and San Bernardino Valley Municipal Water District (Valley District). Because their supplies may include local water supplies in addition to SWP water, it is unclear how much of the water that the District purchases actually comes from the Delta. The District has no control over the origin of the water it purchases so this section demonstrates a reduction in purchases of imported water as a whole with no guarantee that all of it can be attributed to a reduction in Delta reliance. CLAWA is not required to prepare an UWMP.

LACSD strives to be an independent supplier relying on local sources but a connection to alternative supplies is critical for emergency preparedness due to the remote nature of the service area. Also, the District serves Lake Arrowhead water to a portion of CLAWA's service area which should be offset. The District can demonstrate a reduced reliance on the Delta but will maintain the connection to CLAWA for these reasons.

Past Purchases

To demonstrate the District's reduced reliance on imported water and therefore, the Delta, projected water purchases are compared to past purchases. Figure L.1 shows the District's past purchases of SWP water by contract. In accordance with the CLAWA I contract, purchases are limited in quantity to the amount that was used by the customers that were served in the area where LACSD and CLAWA's services overlap. CLAWA II purchases are for supplemental supply. The District has utilized less of this water in the last ten years and plans to continue this trend through the development of increased local groundwater supplies.

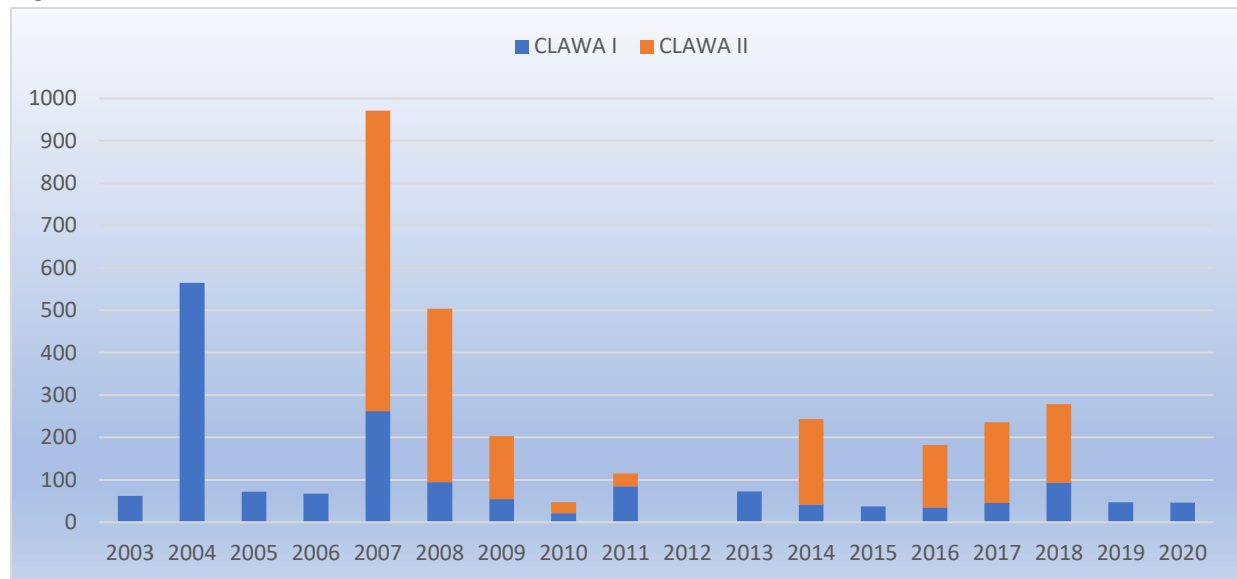
To be consistent with future UWMPs, a baseline must be calculated that will be used for comparison purposes now and in the future. The District began purchasing imported water in 2003 for the overlap area and entered into a supplemental agreement in 2005 with the intention of relying on this water as a regular supply source. The original CLAWA II contract required minimum purchases of 560-640 acre-feet per year (AFY). By 2010, it became clear that water conservation efforts were effective enough to enable the District to reduce these purchases. See Section L.3.1 for more information on demand reduction. The District also developed a recycled water program in 2010. For these reasons, the average annual

purchases from 2003-2010 of 311 AFY are being utilized as the baseline. This timeline is also appropriate since the Delta Reform Act became effective in 2010.

Table L.1 Calculating Baseline Imported Water Purchases (Acre-Feet)

Purchased	2003	2004	2005	2006	2007	2008	2009	2010	Average
CLAWA I	62	565	72	67	262	94	55	21	150
CLAWA II	0	0	0	0	709	410	148	26	162
Total	62	565	72	67	971	504	203	47	311

Figure L.2 Past Purchases of SWP Water (Acre-Feet)



In the last ten years, the District has reduced its average annual purchases by 60% to an average of 126 AFY as shown in Table L.2.

Table L.2 SWP Purchases 2011-2020 (Acre-Feet)

Purchased	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Average
CLAWA I	85	0	72	41	37	35	45	93	47	46	50
CLAWA II	30	0	0	202	0	147	191	186	0	0	76
Total	115	0	72	243	37	182	236	279	47	46	126

Future Purchases

In the future, the District plans to continue purchasing replacement water for the overlap area at approximately 50 AFY and will purchase supplemental water sparingly as needed. The District is continuing to develop local groundwater sources that will replace future imported water purchases. Table L.3 shows how the District plans to increase local supplies to offset additional purchases in future years under normal conditions. See Chapters 6 and 7 of the District’s 2020 UWMP for more information regarding future supplies.

Table L.3 Future Supply Sources (Acre-Feet)

Source	2025	2030	2035	2040	2045
Surface	1,566	1,566	1,566	1,566	1,566
Groundwater	285	315	375	405	435
Imported	50	50	50	50	50
Recycled	1,123	1,123	1,123	1,123	1,123
Total	3,024	3,054	3,114	3,144	3,174

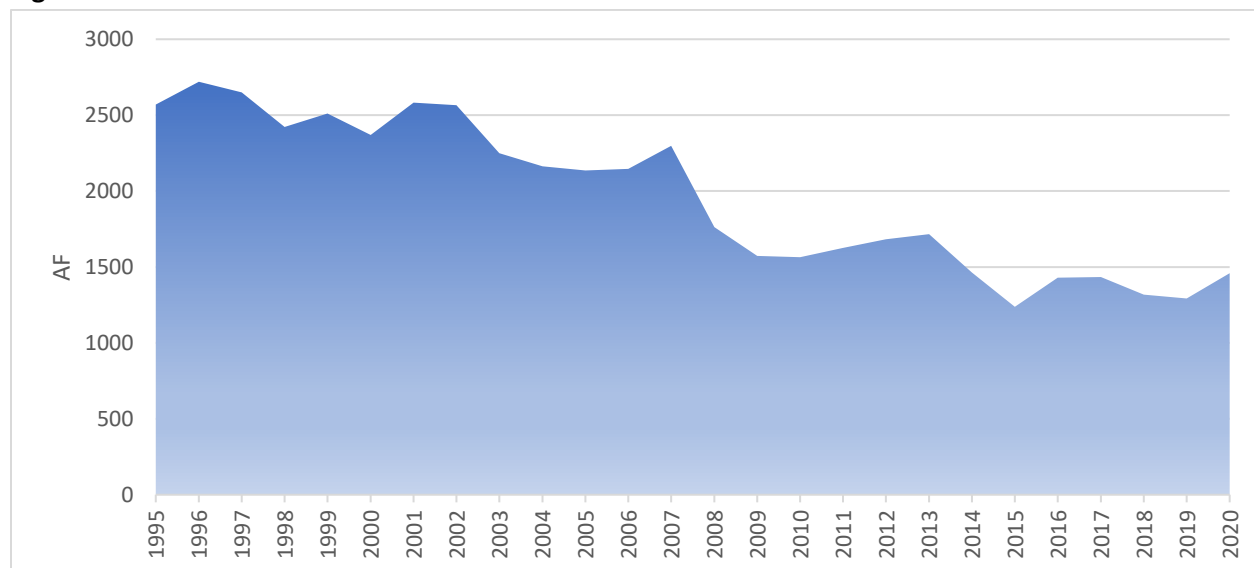
L.3 Improvement in Self-Reliance

In 2006, the District’s surface water withdrawal rights from Lake Arrowhead were limited and LACSD began searching for additional sources. Since that time, the District has developed local groundwater supplies, began delivering recycled water and constructed a connection to CLAWA. In addition, demand from customers was drastically reduced by 47% through strict water efficiency ordinances. The amount of water generated by LACSD for self-reliance is greater than the amount of water the District would purchase.

L.3.1 Demand Reduction

Since the mid 1990’s, water use within LACSD’S service area has steadily declined. This is mostly due to water conservation and partly due to fluctuations in full-time population. Annual water use from 1995 to 2020 ranged from 1,238 AF to 2,720 acre-feet (AF) with an average of 1,959 AF as shown in Figure L.2. Water use declined considerably in 2008 due to the recession and District water use efficiency ordinances. Further declines were seen in 2014 due to increased public awareness during the unprecedented drought. Water use has remained below 2013 levels since that time. In 2020, the Lake Arrowhead area saw a surge in population due to the COVID-19 pandemic. The outdoor recreational opportunities and the increase in telework made Lake Arrowhead a desirable destination. See Chapter 9 of the District’s 2020 UWMP for details on the demand management measures that the District has implemented.

Figure L.3 Historic Water Delivered to Distribution



Section (c)(2) of the Policy’s regulations states that improvements in water use efficiency can be used to demonstrate improved self-reliance. Section (c)(1)(C) also states that water use efficiency savings are considered a new source of water supply consistent with Water Code section 1011(a). The District utilized the DWR Reduced Reliance Calculation Data Template to demonstrate the quantities. The population used in this table is based on U.S. Census Bureau data which doesn’t account for the service area’s seasonal population. The 2020 population as stated is an estimate based on the 2019 American Community Survey. It is very clear from the District’s daily meter data that a population of 7,008 in 2020 is artificially low. Even so, the data indicates a reduction in the District’s GPCD from the baseline into the future. This data will vary from the calculations in Chapter 5 of the District’s 2020 UWMP related to compliance with Senate Bill X7-7.

Table L.4 Calculation of Water Use Efficiency

Service Area Water Use Efficiency Demands (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Water Demands with Water Use Efficiency Accounted For	1,693	1,458	1,776	1,580	1,600	1,628	1,648	1,669
Non-Potable Water Demands	127	219	269	245	240	240	241	241
Potable Service Area Demands with Water Use Efficiency Accounted For	1,566	1,239	1,507	1,336	1,360	1,387	1,406	1,428

Total Service Area Population	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Population	8,100	8,523	7,008	7,527	7,817	8,232	8,768	9,424

Water Use Efficiency Since Baseline (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Per Capita Water Use (GPCD)	173	130	192	158	155	150	143	135
Change in Per Capita Water Use from Baseline (GPCD)		(43)	19	(14)	(17)	(22)	(29)	(37)
Estimated Water Use Efficiency Since Baseline		409	(152)	119	151	204	289	394

L.3.2 Recycled Water

Section (c)(2) of the Policy’s regulations states that water recycling can also be used to demonstrate improved self-reliance. The District developed a recycled water program in 2010 for golf course irrigation. This facility is permitted to produce up to one million gallons of Title 22 recycled water per day. Additional uses for this water are being analyzed but the projections in Table L.5 do not include any future increases until the uses have been determined. See Sections 3.1.6 and 6.2.5 of the District’s 2020 UWMP for more information about the District’s recycled water infrastructure and uses.

L.3.3 Groundwater

Section (c)(2) of the Policy’s regulations states that local water supply projects can be used to demonstrate improved self-reliance. The District is committed to developing additional sources of local supply. Current groundwater wells can produce up to 225 AFY. This program is being expanded to improve the District’s self-reliance. As of 2020, LACSD had five production wells and has identified an additional 16 sites for further review and possible development. The groundwater basins in LACSD’s service area are not

adjudicated and currently do not have a groundwater management plan associated with them. As such, LACSD is not part of a Groundwater Sustainability Agency but the District is aware of the importance of managing this resource wisely to ensure that none of its groundwater wells will create a negative impact. Table L.5 shows how the District has increased its self-reliance.

Table L.5 Calculation of Supplies Contributing to Self-Reliance

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Water Use Efficiency		409	-	119	151	204	289	394
Water Recycling	127	219	269	245	240	240	241	241
Local and Regional Water Supply and Storage Projects		-	-	60	90	150	180	210
Water Supplies Contributing to Regional Self-Reliance	127	628	269	424	480	594	710	845

Service Area Water Demands without Water Use Efficiency (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Water Demands without Water Use Efficiency Accounted For	1,693	1,867	1,776	1,700	1,751	1,832	1,936	2,063

Change in Regional Self Reliance (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Water Supplies Contributing to Regional Self-Reliance	127	628	269	424	480	594	710	845
Change in Water Supplies Contributing to Regional Self-Reliance		501	142	297	353	467	583	718

Percent Change in Regional Self Reliance (As Percent of Demand w/out WUE)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Percent of Water Supplies Contributing to Regional Self-Reliance	7.5%	33.7%	15.1%	24.9%	27.4%	32.5%	36.7%	41.0%
Change in Percent of Water Supplies Contributing to Regional Self-Reliance		26.2%	7.6%	17.4%	19.9%	24.9%	29.2%	33.5%

L.3.4 Calculation of Reliance on Water Supplies from the Delta

Table L.6 calculates the change in the use of water supplies that may have originated from the Delta. The baseline of 311 AFY is compared to actual purchases in 2015 and 2020 and to projected purchases from 2025 to 2045. This data indicates that the District anticipates utilizing SWP water for less than 3% of its supplies which is a decrease of nearly 16%.

Table L.6 Calculation of Reliance on Water Supplies from the Delta Watershed

Water Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
SWP Purchases	311	94	158	50	50	50	50	50
Total Water Supplies from the Delta Watershed	311	94	158	50	50	50	50	50

Service Area Water Demands without Water Use Efficiency (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Service Area Water Demands without Water Use Efficiency Accounted For	1,693	1,867	1,776	1,700	1,751	1,832	1,936	2,063

Change in Supplies from the Delta Watershed (Acre-Feet)	Baseline (2010)	2015	2020	2025	2030	2035	2040	2045
Water Supplies from the Delta Watershed	311	94	158	50	50	50	50	50
Change in Water Supplies from the Delta Watershed		(217)	(153)	(261)	(261)	(261)	(261)	(261)

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
Percent of Water Supplies from the Delta Watershed	18.4%	5.0%	8.9%	2.9%	2.9%	2.7%	2.6%	2.4%
Change in Percent of Water Supplies from the Delta Watershed		-13.3%	-9.5%	-15.4%	-15.5%	-15.6%	-15.8%	-15.9%

L.4 Wholesaler Consistency with the Delta Plan

CLAWA is not required to prepare an UWMP but the District's CLAWA II contract is through an agreement with Valley District which prepares a Regional UWMP² and participates in the Upper Santa Ana River Watershed Integrated Regional Water Management Plan³. This plan includes a strategy to support the Bay Delta Conservation Plan. One of their primary methods to reduce reliance is by storing water in local groundwater basins for later use during droughts. Valley District has been conducting groundwater recharge activities since 1972. The San Bernardino Valley Water Conservation District and its predecessors have conducted water conservation and groundwater recharge activities in the area since 1912. Other strategies included in their plan are desalination, water use efficiency, groundwater contamination remediation and prevention, stormwater capture and increased recycled water use.

L.5 Delta Plan Policy WR P1 Regulations

WR P1 is one of fourteen policies in the Delta Plan. The regulations as set forth in the Policy are included below for reference.

² <https://www.sbvmd.com/home/showpublisheddocument/5660/636610193531930000>

³ <https://www.sbvmd.com/home/showpublisheddocument/1468/635562587417470000>

WR P1, Reduce Reliance on the Delta Through Improved Regional Water Self-Reliance

(Cal. Code Regs., tit. 23, § 5003)

(a) Water shall not be exported from, transferred through, or used in the Delta if all of the following apply:

(1) One or more water suppliers that would receive water as a result of the export, transfer, or use have failed to adequately contribute to reduced reliance on the Delta and improved regional self-reliance consistent with all of the requirements listed in paragraph (1) of subsection (c);

(2) That failure has significantly caused the need for the export, transfer, or use; and

(3) The export, transfer, or use would have a significant adverse environmental impact in the Delta.

(b) For purposes of Water Code section 85057.5(a)(3) and section 5001(j)(1)(E) of this Chapter, this policy covers a proposed action to export water from, transfer water through, or use water in the Delta, but does not cover any such action unless one or more water suppliers would receive water as a result of the proposed action.

(c) (1) Water suppliers that have done all of 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).

(2) Programs and projects that reduce reliance could include, but are not limited to, improvements in water use efficiency, water recycling, stormwater capture and use, advanced water technologies, conjunctive use projects, local and regional water supply and storage projects, and improved regional coordination of local and regional water supply efforts.