



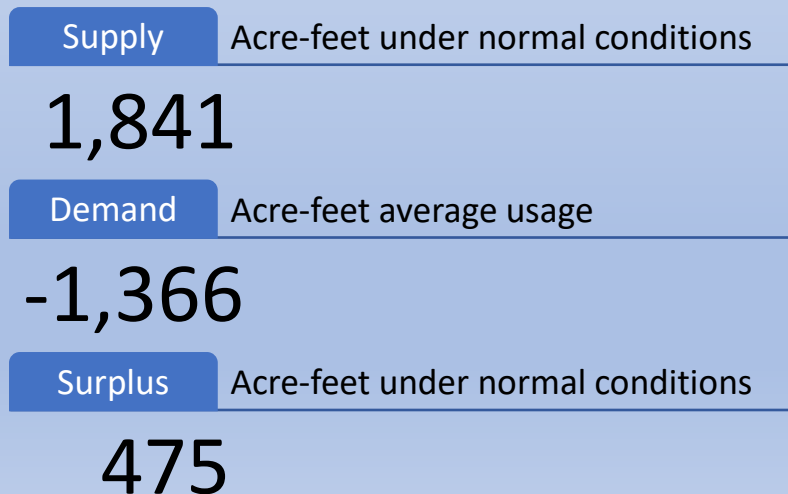
Lake Arrowhead Community Services District

Draft 2020 Urban Water Management Plan Workshop

May 25, 2021

Purpose of an UWMP, Chapter 1

- To document and communicate the District's water supply plan
- Required of all water suppliers in California that deliver more than 3,000 acre-feet per year or serve more than 3,000 customers
- Must include a "lay description" of the District's water supply
- Demonstrate Consistency with the Delta Plan



Preparation of the UWMP, Chapter 2

- 2020 UWMP was restructured utilizing guidance, tools and information from the California Department of Water Resources
- Under review by legal counsel to ensure that all 98 requirements from the water code were met
- Coordination and outreach to interested parties

LACSD's Water System, Chapter 3

- History
- Organizational Structure
- Imported Water Connections
- Groundwater System
- Surface Water System
- Wastewater and Recycled Water Systems
- Distribution System
- Water Service Area
- Climate
- Population and Demographics
- Land Uses

Water Use, Chapter 4

- Non-potable vs potable water uses
- Water use sectors
- Past water use
- Distribution System Water Loss
- Current Water Use
- Projected Water Use
- Characteristic five-year water use
- Lower income household water use
- Climate change considerations

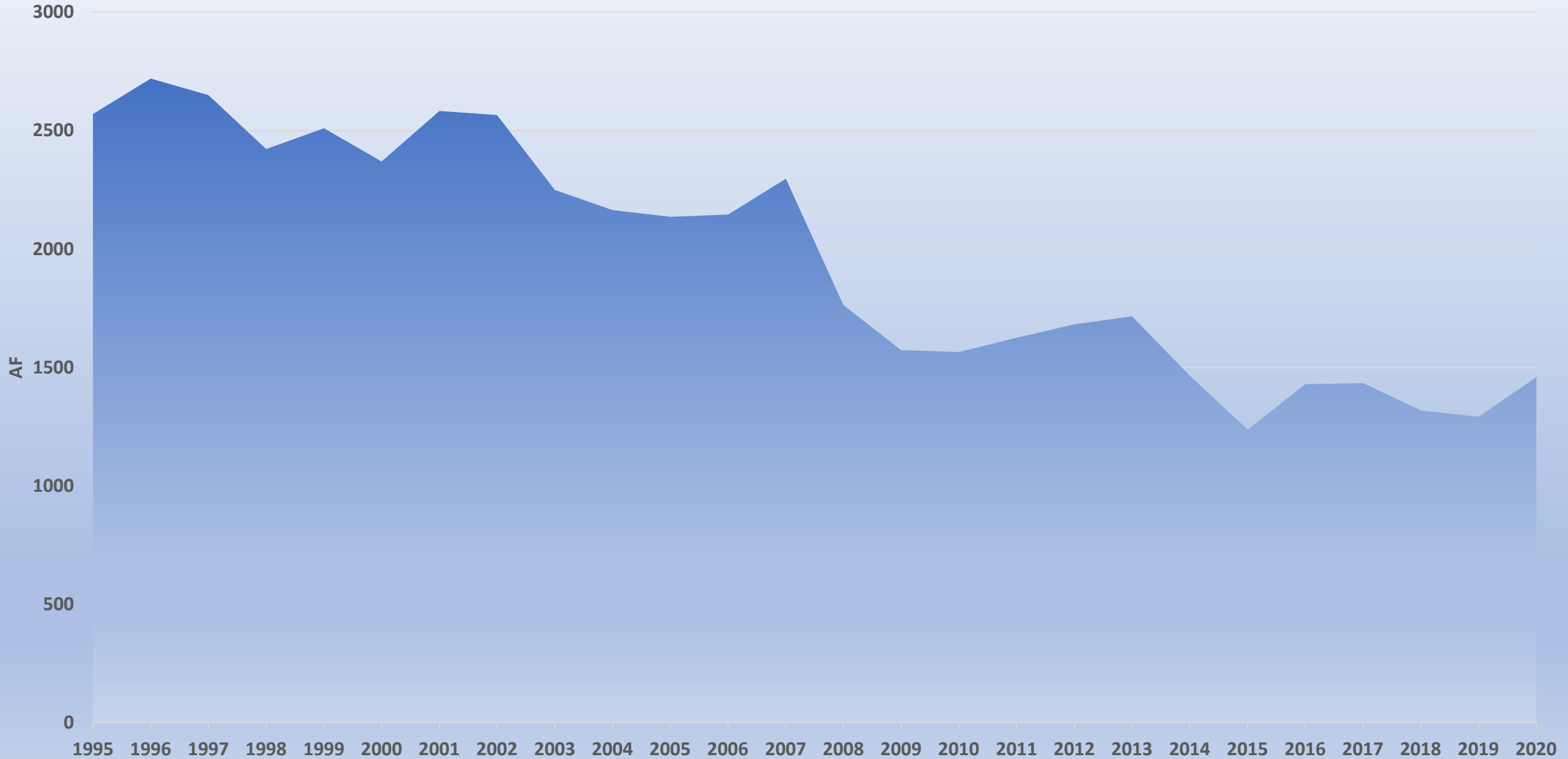
Water Demand by Sector

Sector	2016	2017	2018	2019	2020
Residential	996	992	1021	971	1,181
Commercial	102	105	91	87	86
Institutional	17	19	19	21	28
Irrigation	20	21	23	21	24
Hydrant	2	0	0	1	0
Fire Protection	0	0	0	0	0
Total AW Water Sales	1,137	1,136	1,155	1,101	1,320

Recycled Water	230	212	258	211	269
Unbilled Metered	9	11	11	20	10
Non-Revenue Water	305	274	148	156	177
Transfers	0	0	0	0	0
Total Other Water	544	497	417	387	456

Total Water Consumption	1,458	1,633	1,571	1,489	1,776
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Historic Water Delivered to Distribution



Compliance with SB X7-7, Chapter 5

- Legislation passed in 2008 required a 20% reduction by 2020
- Compliance demonstrated in 2020 UWMP

LACSD Targets and Usage (Gallons per Capita per Day)

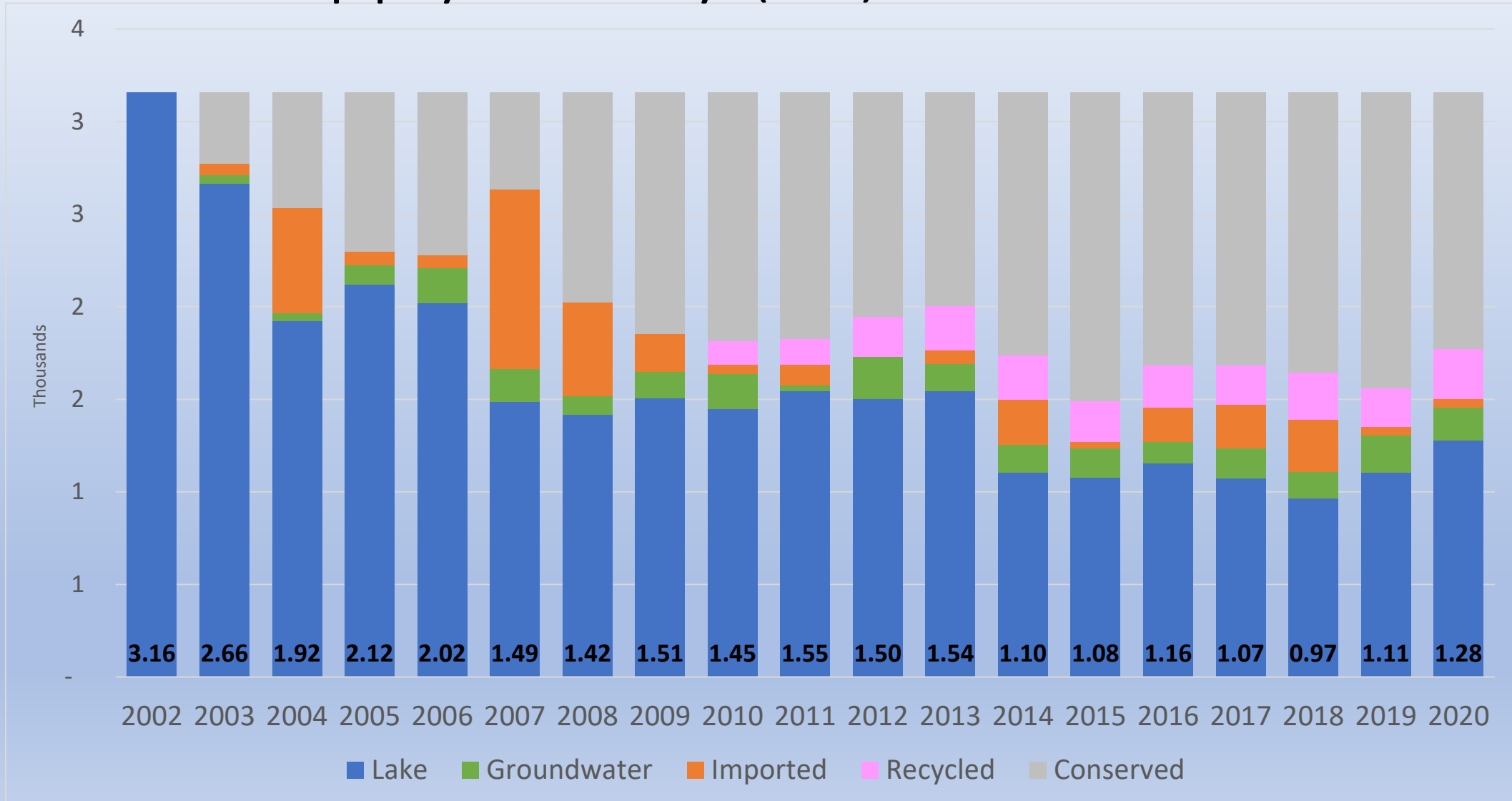
	Target	Actual
Baseline*		229
Interim (2015)	206	115
Final (2020)	183	121

**Average use from 1995 - 2004*

Water Supply, Chapter 6

- Supply Sources, Current and Future Quantities
- Imported Water
- Groundwater
- Surface Water
- Wastewater and Recycled Water
- Energy Use

Water Supply History (AF)



Water Deliveries and Supplies

2016 – 2020 Potable

<u>Supply</u>	Surface	Ground	Imported	Total
AFY	1,566	160	600	2,326
%	67%	7%	26%	100%

<u>Delivered</u>	Surface	Ground	Imported	Total
AFY	1,115	160	158	1,433
%	78%	11%	11%	100%
Surplus	451	-	442	893

Future

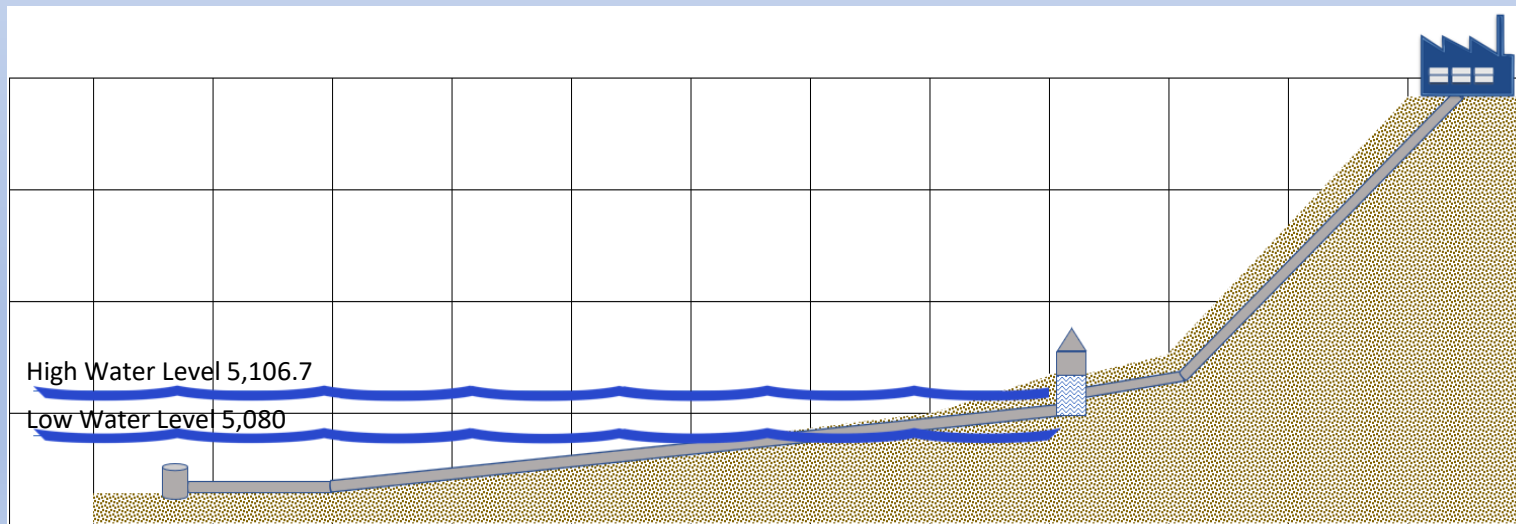
Source	2025	2030	2035	2040	2045
Surface	1,566	1,566	1,566	1,566	1,566
Groundwater	285	315	375	405	435
Imported	50	50	50	50	50
Recycled	1,123	1,123	1,123	1,123	1,123
Total	3,024	3,054	3,114	3,144	3,174

Water Source Energy Use

	<u>Usage kWh</u>	<u>Volume (AF)</u>	<u>kWh/AF</u>	<u>kWh/MG</u>
Groundwater Extraction	268,874	180	1,494	4,586
Water Conveyance	731,280	1,277	573	1,757
Water Treatment	450,393	1,277	353	1,082
Water Distribution	360,941	1,459	247	759
Total Water	1,811,488	1,459	1,242	3,811

	<u>Usage kWh</u>	<u>Volume (AF)</u>	<u>kWh/AF</u>	<u>kWh/MG</u>
North Bay PS	529,260	979	541	1,659
Emerald Bay PS	202,020	298	677	2,079
Total Conveyance	731,280	1,277	573	1,757

Elevation Profile North Bay Raw Waterline



Water Reliability and Drought Risk, Chapter 7

Current Supply Under Varying Conditions

Supply	Normal	Single Dry	Multi-Dry 1	Multi-Dry 2	Multi-Dry 3	Multi-Dry 4	Multi-Dry 5
Surface	1,566	1,488	1,488	1,253	1,175	1,096	940
Ground	225	225	225	203	180	158	135
Imported	50	50	50	50	50	50	100
Potable	1,841	1,763	1,763	1,506	1,405	1,304	1,175
Recycled	1,102	1,102	1,102	1,102	992	950	900
Total	2,943	2,865	2,865	2,700	2,410	2,253	2,158

Future Supply Under Varying Conditions

OPTIONAL Table 7 3 Retail: Single Dry Year Supply and Demand Comparison Potable					
	2025	2030	2035	2040	2045
Supply totals	1,823	1,853	1,913	1,943	1,973
Demand totals	1,274	1,298	1,322	1,340	1,360
Difference	549	555	591	603	613

DRAFT OPTIONAL Table 7 4 Retail: Multiple Dry Years Supply and Demand Comparison - Potable						
		2025	2030	2035	2040	2045 (Opt)
First year	Supply totals	1,823	1,853	1,913	1,943	1,973
	Demand totals	1,274	1,298	1,322	1,340	1,360
	Difference	549	555	591	603	612
Second year	Supply totals	1,559	1,586	1,640	1,667	1,694
	Demand totals	1,278	1,303	1,325	1,344	1,364
	Difference	281	284	315	323	330
Third year	Supply totals	1,453	1,477	1,525	1,549	1,573
	Demand totals	1,158	1,181	1,201	1,219	1,238
	Difference	295	296	324	329	334
Fourth year	Supply totals	1,346	1,367	1,409	1,430	1,451
	Demand totals	1,094	1,117	1,134	1,152	1,170
	Difference	252	250	274	278	281
Fifth year	Supply totals	1,161	1,179	1,215	1,233	1,251
	Demand totals	1,098	1,121	1,137	1,156	1,174
	Difference	62	57	77	77	77

Water Shortage Contingency Plan, Chapter 8

Potable Supply and Demand During Multiple Dry Years

Year	Supply	Demand	Surplus/ (Shortfall)	DMM*	Revised Surplus/ (Shortfall)
2021	1,763	1,463	300	73	373
2022	1,505	1,436	70	72	142
2023	1,405	1,405	-	198	198
2024	1,304	1,374	(70)	198	128
2025	1,175	1,336	(161)	258	97

*Demand Management Measures

Water Shortage Level Actions

Level	Permanent Restrictions	Irrigation Days	Turf	Enforcement	Public Info	Drought Rates	Connection Moratorium	Reduction
1	X	3	No new	Maintain	Maintain			10%
2	X	3	Reduce	Maintain	Maintain			20%
3	X	3	Reduce	Increased	Increased			30%
4	X	2	Reduce	Increased	Increased			40%
5	X	1	Reduce	Strict	Persistent	X		50%
6	X	0	No Irrig	Strict	Persistent	X	X	50%+

Water Supply and Demand Assessment

- New Annual Reporting Requirement
- Requires Board Approval

Potable (AF)	Normal	Prior Year -1	Prior Year	Current Year	Next Year
	2016-19	2019	2020	2021	2022
Total Supply	1,827	1,811	1,792	1,813	1,819
Unconstrained Demand	(1,366)	(1,277)	(1,507)	(1,462)	(1,435)
Surplus/(Shortage)	461	533	285	351	383

Managed Supply	1,417	1,351	1,503	1,763	1,505
Unconstrained Demand	(1,366)	(1,277)	(1,507)	(1,462)	(1,435)
Surplus/(Shortage)	51	73	(4)	301	70

Is there an anticipated shortage?	No	No	No	No	No
Lake level (Dec 31)		5103.98	5103.14	5099.30	5094.80
Is Lake level a concern?		No	No	Yes	Yes

Demand Management Measures				(73)	(73)
Revised Surplus/(Shortage)	51	73	(4)	374	143

Water Conservation Activities, Chapter 9

- Water Waste Prevention Ordinances
- Metering
- Conservation Pricing
- Public Education and Outreach
- Distribution System Real Loss Mitigation
- Water Conservation Program Staffing
- Winterizing

UWMP Adoption and Submittal, Chapter 10

- Public Hearing
- Notice to County and Public
- Adoption
- Submittal
- Public Availability

Appendices

- Resolution Adopting UWMP
- Water Code Checklist
- Crosswalk from 2015 UWMP
- Demonstration of Consistency with the Delta Plan
- DWR Submittal Tables
- SB X7-7 Compliance Forms
- Ordinance 83
- SWRCB Order 2006-0001
- Annual Water Supply and Demand Assessment
- AWWA Water Audits
- Coordination and Outreach



Lake Arrowhead Community Services District

