

Fairfield Water Master Plan Update

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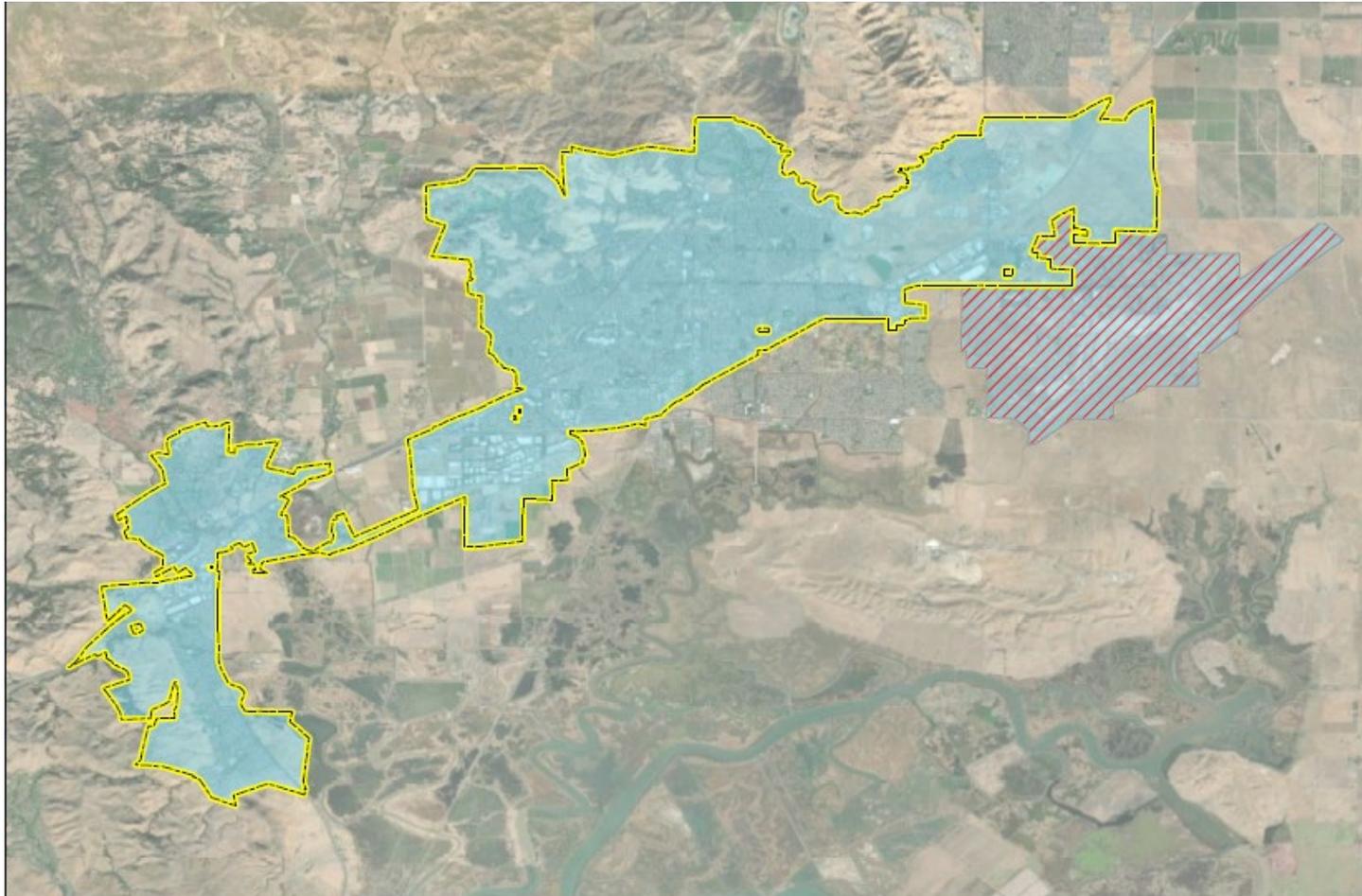
June 13, 2023

Presentation Overview & Purpose

- What is the City's water system?
- Why is a master plan valuable?
- What have we achieved to date?
- What are our next steps?

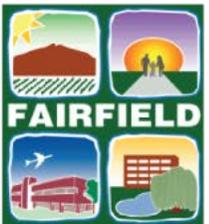


What is the City's Water System?



Legend

-  Service Area Boundaries
-  Travis Air Force Base (not served by City)
-  City of Fairfield Overall Boundaries



What is the City's Water System?

Water System

Treatment Plants
(2)

Storage
(78 MG)

Distribution Network

NBR
(40 MGD)

Waterman
(30 MGD)

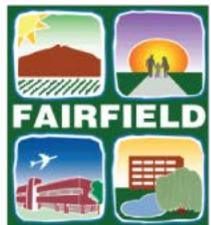
Buried
Reservoirs
(6)

Above-ground
Tanks (6)

Pipelines
(375+ miles)

Pump Station
Facilities
(15)

Water Services
(33,000+)



Why is a Master Plan Valuable?

- Inventory of the current system
- Accommodate City's land use elements
- Provides a framework for decision-making
- Accelerates future work



What Have We Achieved to Date?

- Launched public outreach campaign
- Identified current reliable treatment capacity
- Completed inspections at treatment plants and facilities
- Selected water system design criteria

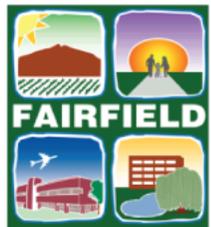


What Are Our Next Steps?

- Continue public outreach campaign
- Update forecasted demands in hydraulic model
- Begin cost of service study
- Begin evaluation of rates



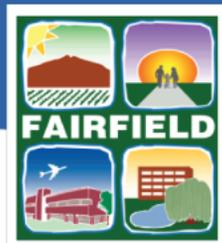
Questions?



Sources & References

1. Fairfield Urban Water Management Plan:
<https://www.fairfield.ca.gov/home/showpublisheddocument/5128/637648843436330000>
2. Fairfield Water Infrastructure:
<https://storymaps.arcgis.com/stories/4e28b2892f5546f89e569a88d4ab6260>
3. Fairfield Public Outreach Campaign: <https://www.fairfield.ca.gov/pump>
4. Past Water Rates:
<https://www.fairfield.ca.gov/home/showpublisheddocument/8019/638064404470570000>

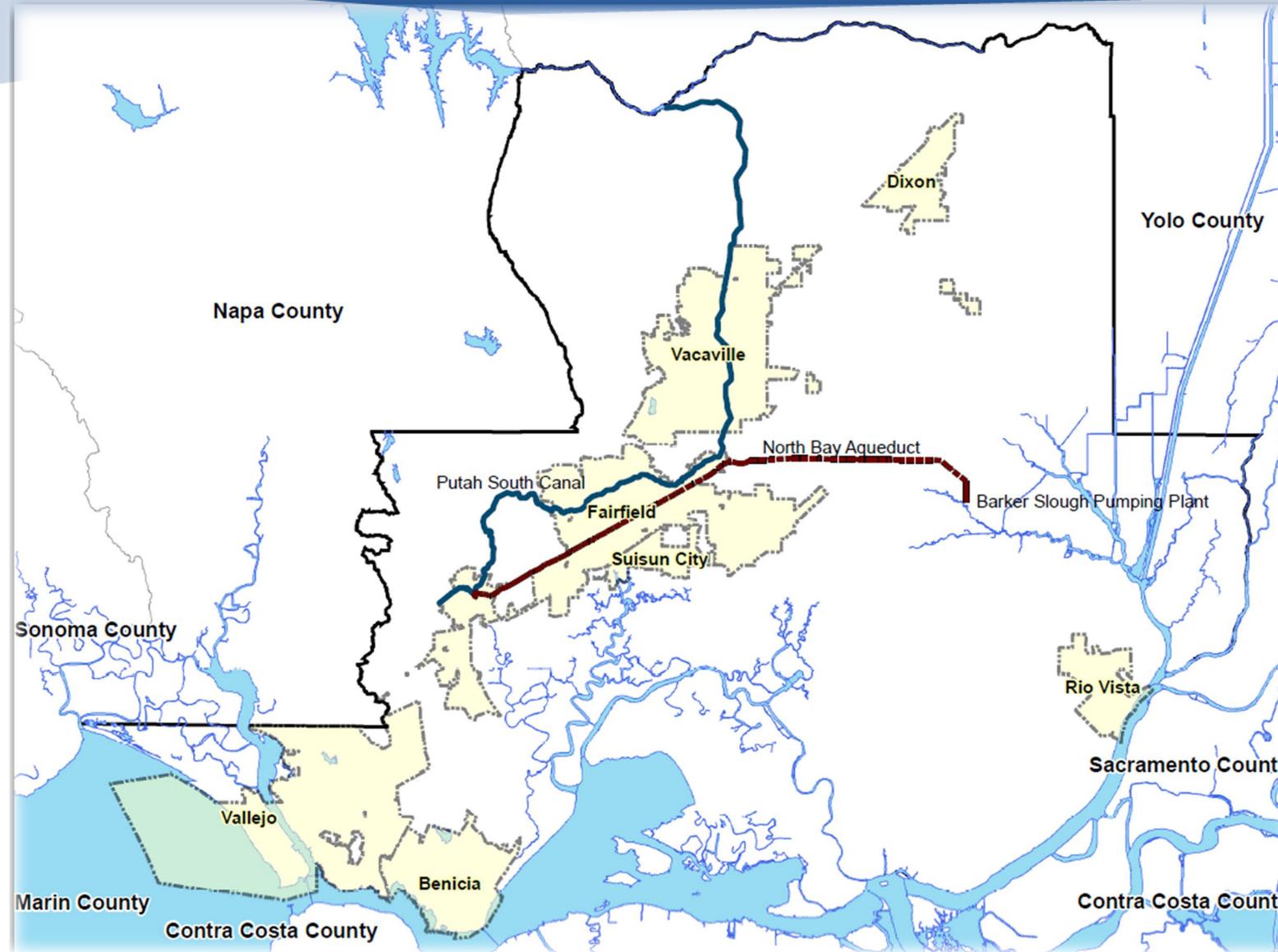




Just in Case

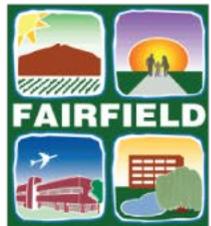


How is Fairfield Different From Other Cities?



Water Sources

- ✓ Delta (State Water Project)
Lake Oroville \approx 100% full
- ✓ Lake Berryessa (Solano Project)
Lake Berryessa \approx 88% full

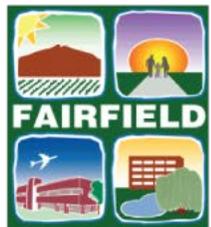
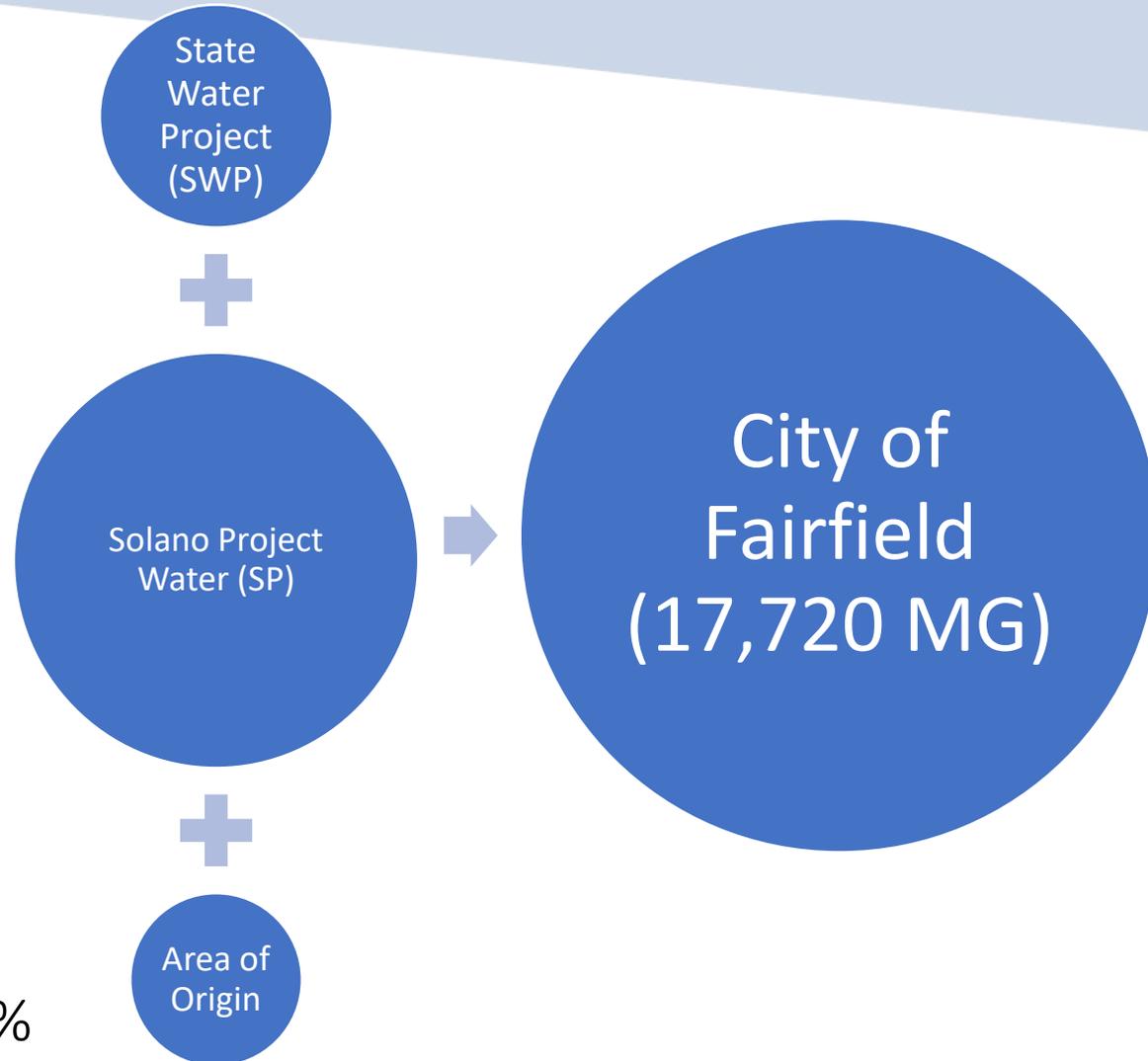


How is Fairfield Different From Other Cities?

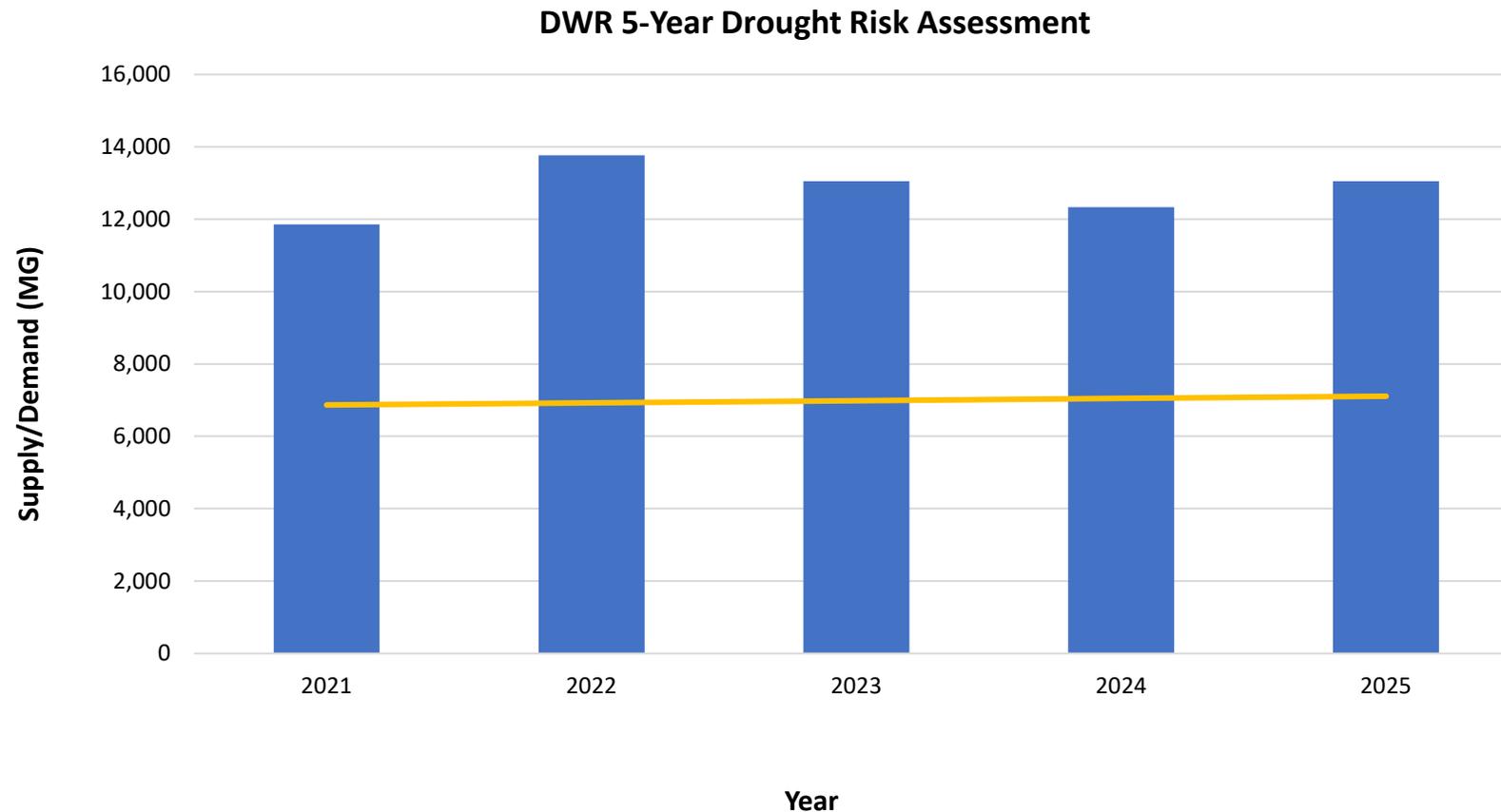
- SWP = 4,843 MG @ 100%

- SP = 8,982 MG @ 100%

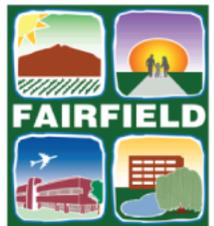
- Area of Origin = 3,894 MG @ 100%



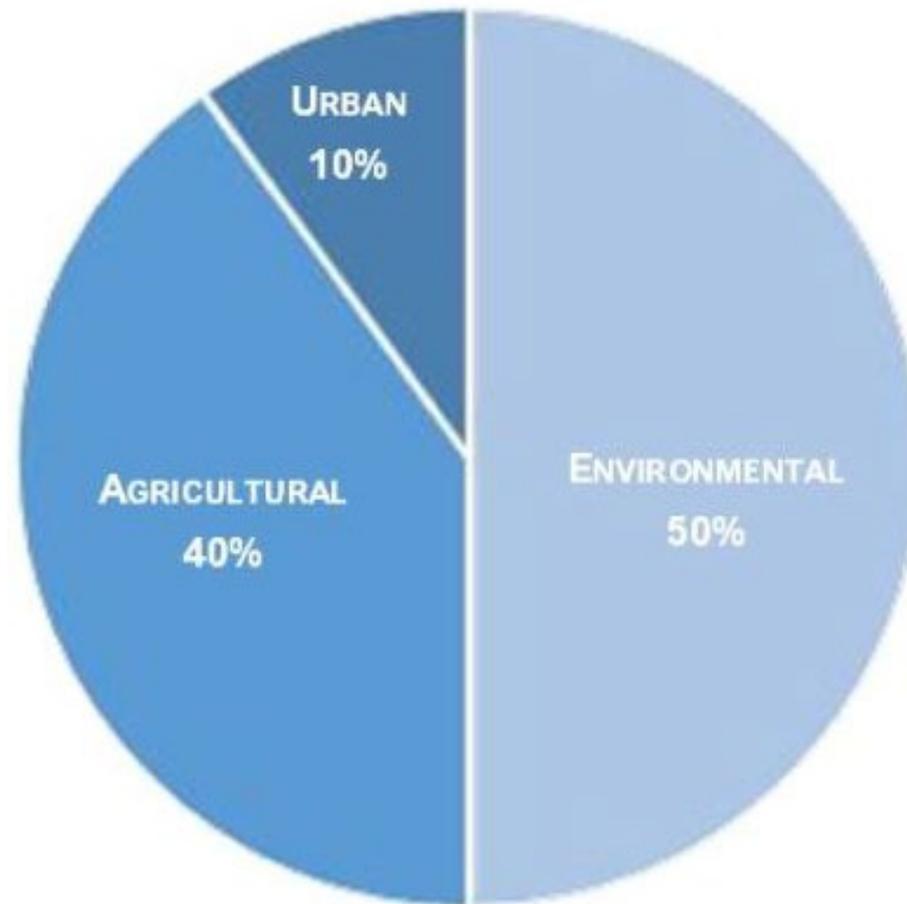
What is the Condition of City's Water Supplies?



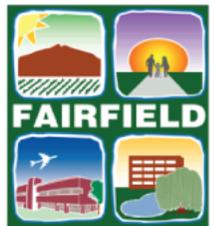
Source: Projections from City of Fairfield 2020 Urban Water Management Plan & Water Shortage Contingency Plan



California Water Usage Breakdown

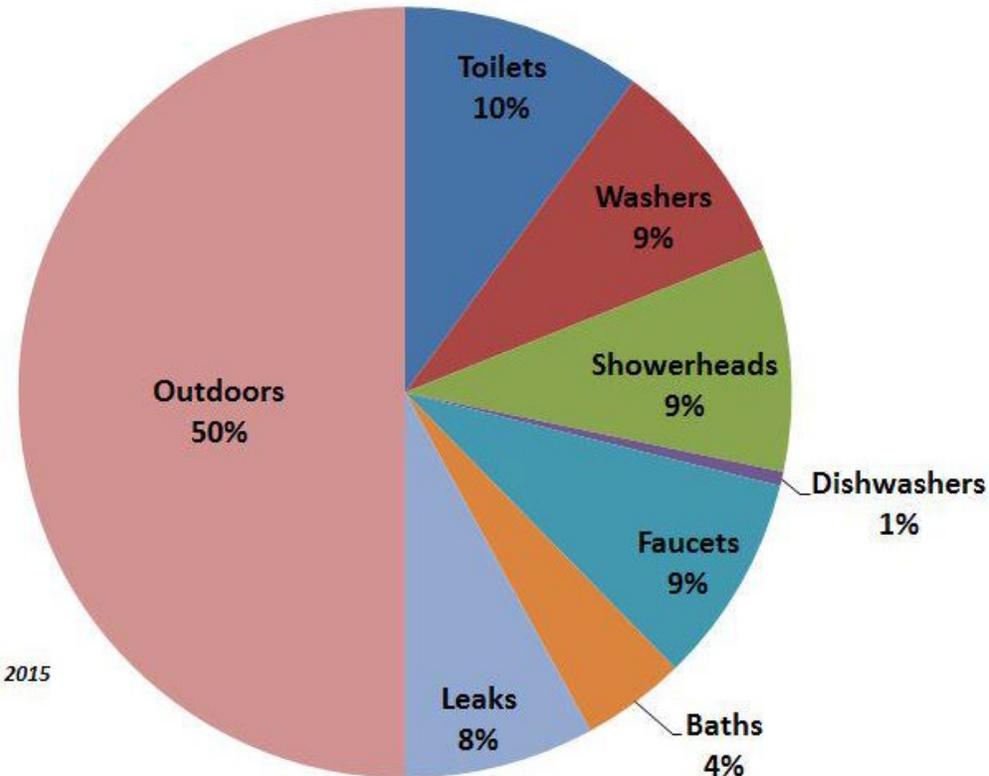


Source: Back to the Basics of Water Use – Coalition for a Sustainable Delta



Average California Household Water Usage

Average California Household Water Use
(Total), percent

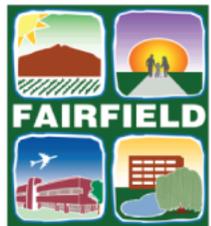


Source: Pacific Institute, 2015



Maximum vs. Available

Supply	Maximum	Available
Solano Project		
Participating Agency Agreement	9,200 AF/yr	≈95%+
Second Amended Agreement	16,020 AF/yr	
Supplemental Purchase	2,000 AF/yr	
State Water Project (North Bay Aqueduct)		
Member Unit Agreement	14,678 AF/yr	≈ 5% - 75%
Settlement Agreement	11,800 AF/yr	≈50%-75%
TOTAL	53,698 AF/yr	



Agency	Curtail Cap (cfs)
Napa	23
Am Canyon	
Calistoga	
Napa County Total	
Benicia	13
Fairfield	11
Vacaville	7
Suisun City	1
Vallejo	4
SCWA Total	
NBA Total =	60

Longfin and Delta Smelt Protection

- ✓ January 15-March 31 (Dry & Critical WYs)
Diversion rates <60 cfs (If larval long-fin smelt detected)

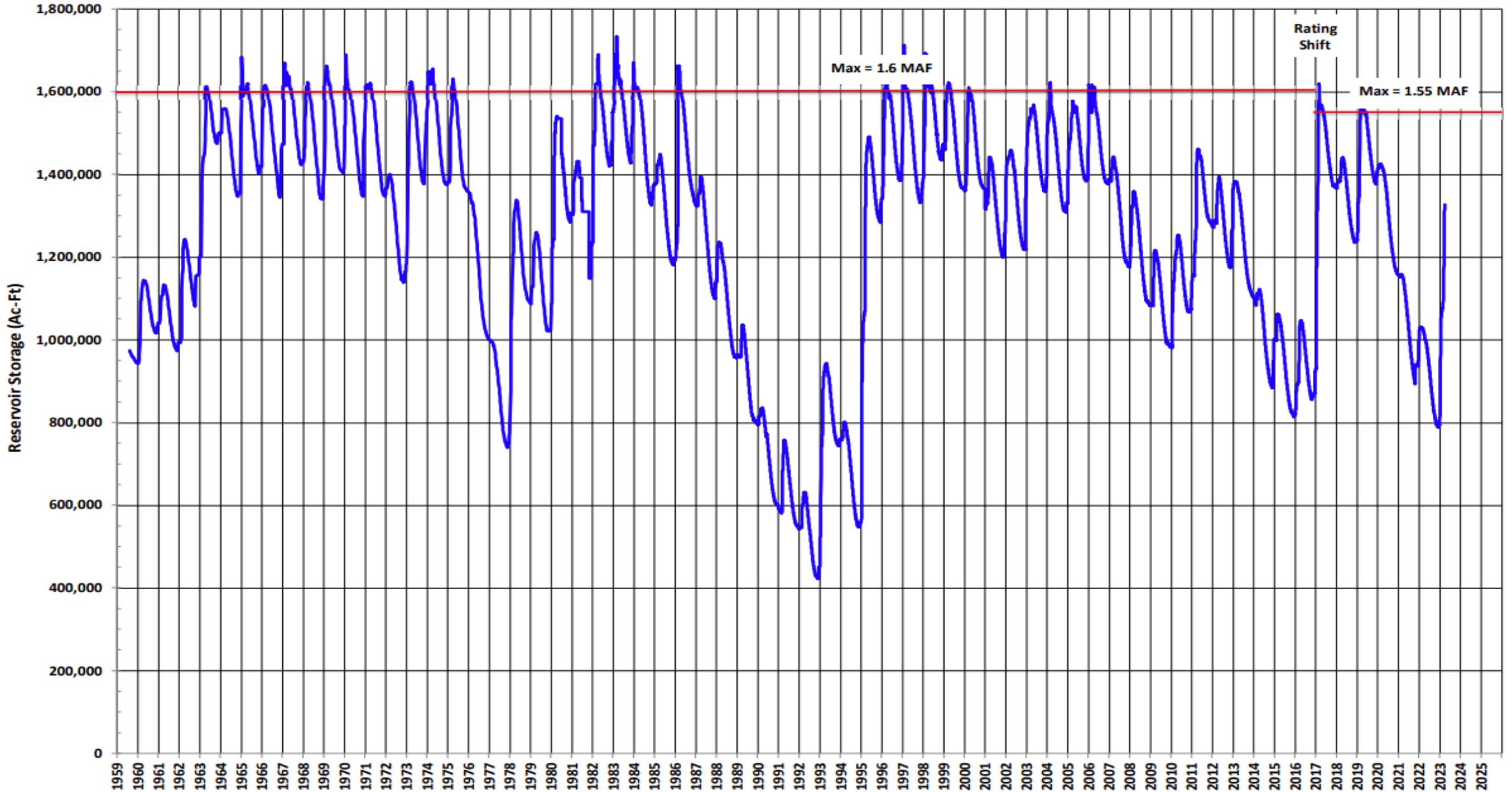
- ✓ March 1-June 30 (Dry & Critical WYs)
Diversion rates <60 cfs (If larval delta smelt detected)

Note: NBA capacity ≈130 cfs



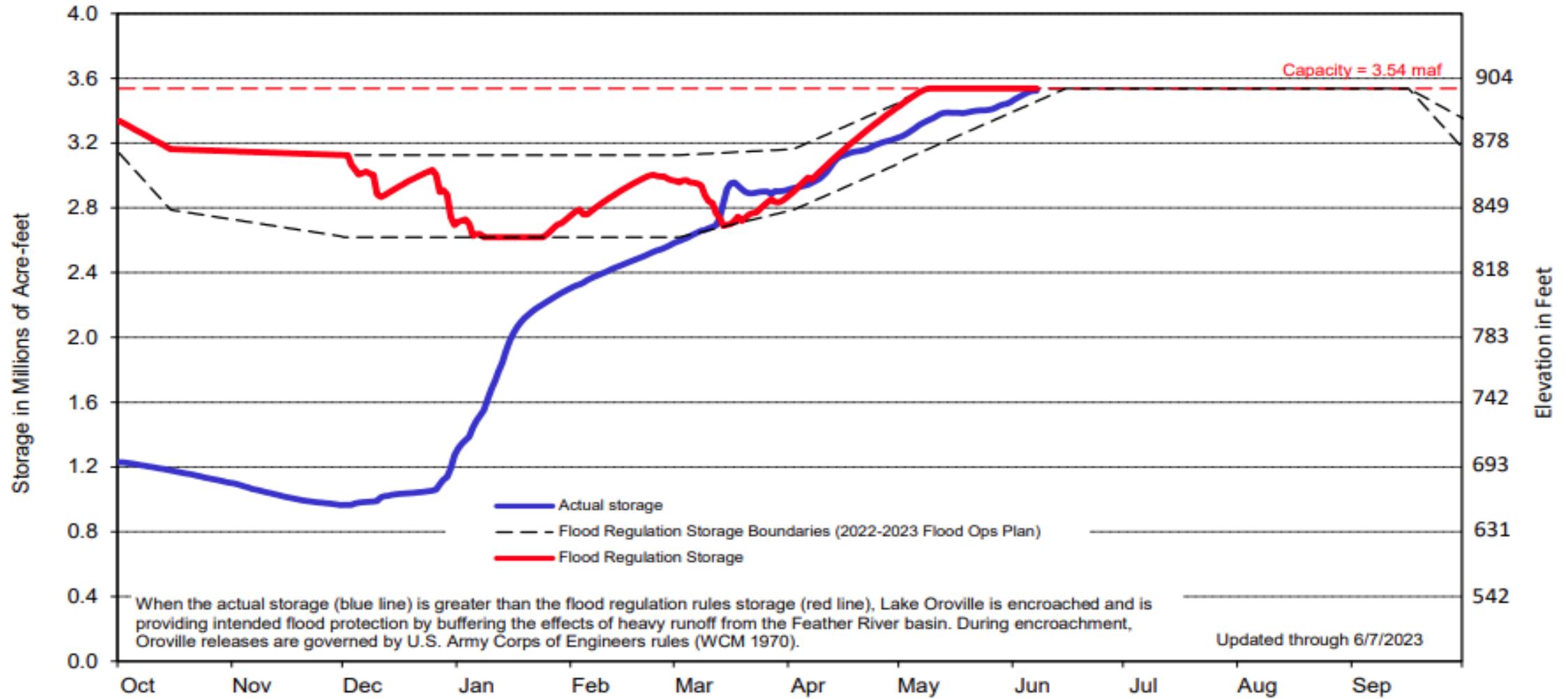
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Anheuser Busch	26	24	28	27	27	28	28	27	27	26	21	26	314
Churches	0	0	0	1	1	1	1	1	1	1	1	0	8
City Offices	1	1	1	1	1	1	1	1	1	1	0	0	10
Construction/Hydrant	0	1		1	0	4	0	8		8		0	22
Construction/Temp	1	0	0	0	0	0	1	1	0	1	0	0	5
Fire Meters	1	1	1	1	0	0	1	1	0	1	0	1	8
Gas Stations	1	1	1	1	2	2	2	2	2	2	2	1	20
General Commercial	12	10	10	14	13	14	19	19	16	19	13	11	171
Hospitals	3	3	2	3	3	3	5	4	4	4	3	2	40
Hotel/Motel	4	3	3	4	4	4	6	4	4	5	3	3	48
Industrial	7	6	6	8	7	7	10	8	8	9	6	6	89
Irrigation	3	2	3	8	9	13	17	13	12	14	5	3	100
Landscape Irrigation	33	22	32	81	106	124	172	136	129	131	39	20	1026
Large Industrial	0	0	0	0	0	0	0	0	0	0	0	0	1
Light Industrial	15	16	14	17	13	11	17	15	15	16	8	7	164
Misc commercial	0	0	0	0	0	0	0	0	0	0	0	0	3
Mobile Home Park	3	2	2	4	4	3	4	4	4	5	2	2	40
Multi Family Res	33	26	27	39	35	39	50	40	38	46	29	28	430
Other commercial	5	3	5	8	9	10	14	11	9	11	4	4	93
Public Offices	2	2	2	3	3	3	3	3	2	3	2	2	28
Res Constr/No Meter	0	0	0	0	0	0	0	0	0	0	0	0	0
Res Volume Charge	1	1	1	1	1	1	1	0	1	1	0	1	7
Restaurant/Bar	3	3	3	4	4	4	5	4	4	6	4	3	46
Retail	3	2	2	3	3	3	4	3	3	4	3	3	37
Schools	1	1	1	2	3	3	4	3	4	3	3	2	30
Single Family Res	184	139	150	245	257	279	368	295	285	324	165	152	2843
Spl Landscape Irr	5	2	8	19	26	28	37	28	24	52	6	2	236
(blank)	27	19	25	28	26	27	34	25	20	19	10	7	267
	375	290	329	525	556	615	803	656	612	712	329	285	6086

LAKE BERRYESSA STORAGE



Lake Oroville Storage

October 1, 2022 to September 30, 2023



<u>Rate Changes by Class</u>	<u>Water Rate Schedule</u>				
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Residential					
Volume Charge/100 cu. ft. Zones 1-2					
Volume Charge/100 cu. ft. Zones 1-2	\$2.10	\$2.18	\$2.27	\$2.36	\$2.45
Volume Charge/100 cu. ft. Zones 3-4	2.60	2.70	2.81	2.92	3.04
Volume Charge/100 cu. ft. Zones 5+	3.11	3.23	3.36	3.49	3.63
Hydropneumatic Pump Surcharge / 100 cu. ft.	0.35	0.36	0.37	0.38	0.40
Service Charge/day/unit	0.83	0.86	0.89	0.93	0.97
General Service					
Volume Charge/HCF	\$2.21	\$2.30	\$2.39	\$2.49	\$2.59
<u>Service Charge / Day by Meter Size / Type:</u>					
5/8 to 3/4" Displacement	1.25	1.3	1.35	1.4	1.46
1" Displacement	2.18	2.27	2.36	2.45	2.55
1 1/2" Displacement	4.81	5.00	5.20	5.41	5.63
2" compound	8.47	8.81	9.16	9.53	9.91
1 1/2" turbine	14.02	14.58	15.16	15.77	16.40
2" turbine and 3" Compound	19.09	19.85	20.64	21.47	22.33
4" compound	33.85	35.20	36.61	38.07	39.59
3" turbine	50.87	52.90	55.02	57.22	59.51
6" compound	76.15	79.20	82.37	85.66	89.09
8" compound	135.70	141.13	146.78	152.65	158.76
4" turbine	181.22	188.47	196.01	203.85	212.00
10" compound	214.58	223.16	232.09	241.37	251.02
6" turbine	419.11	435.87	453.30	471.43	490.29
8" turbine	825.15	858.16	892.49	928.19	965.32
10" turbine	1,425.31	1,482.32	1,541.61	1,603.27	1,667.40
Large Industrial					
Volume Charge/100 cu. ft. Zones 1-2	\$1.57	\$1.63	\$1.70	\$1.77	\$1.84
Service Charge/day/unit	1,453.12	1,511.24	1,571.69	1,634.56	1,699.94
Volume Charge/100 cu. ft. For					
Irrigation	\$2.61	\$2.71	\$2.82	\$2.93	\$3.05
Special Landscape Irrigation	2.27	2.36	2.45	2.55	2.65
Reclaimed Landscape Irrigation	2.10	2.18	2.27	2.36	2.45
Senior / Disabled Credit					
Rebate / Credit Amount	\$135.00	\$140.00	\$146.00	\$152.00	\$158.00
Gross Income Limitation	\$31,050.00				
(Based upon 2016 HUD Very Low Income Limits for Solano County)					

Table A: Existing Water User Class Rate Schedule for 2018-2021⁴

