

FF # 410-8-3

CITY OF VACAVILLE

SB 610 Water Supply Assessment



Report for Lower Lagoon Valley,
Southtown, and Rice McMurry

February 24, 2004

SB 610 Background

- Legislation effective January 1, 2002
- Requires an addendum to the Urban Water Management Plan, previously approved by council and filed with DWR prior to December 31, 2001
- Requires preparation of a Water Supply Assessment (WSA) for development projects with over 500 residential dwelling units that are subject to CEQA
- Lower Lagoon Valley, Southtown, and Rice McMurtry EIRs trigger WSA determination by City Council
- WSA requires reporting categories for water supply availability – Normal Year, Single-dry Year, and Multiple-dry Years



SB 610 Water Supply Assessment Report

Report Elements:

- I. Groundwater Supply Sufficiency
- II. Surface Water Availability
- III. Water Demands
- IV. Determination of Sufficient Supply



REPORT ELEMENT I

Groundwater Supply Sufficiency



I. Groundwater Supply Sufficiency

Report prepared by Luhdorff & Scalmanini Consulting Engineers.
Report Elements:

- A. Mapped well sites and developed a geologic cross-section of the service area
- B. Analyzed historical pumping and groundwater levels
- C. Includes six future wells for additional groundwater supply
- D. Ran computer simulations to predict impacts of increased pumping
- E. Determined groundwater supply sufficiency 2005-2025



GROUNDWATER SUPPLY 2005-2025

Water Supply Year	Normal Year (acre-feet/year)	Single-Dry Year (acre-feet/year)	Multiple-Dry Year (acre-feet/year)
2005	7,000	8,400	7,700
2010	7,500	9,000	9,000
2015	7,500	9,000	9,000
2020	8,000	9,600	9,600
2025	8,000	9,600	9,600



REPORT ELEMENT II

Surface Water Availability



II. Surface Water Availability

City of Vacaville Total Water Supply in Year 2025

Sources of Supply	100% Allocations (acre-feet/year)
Solano Project	
Vacaville Entitlement	5,750
SID Agreement	10,050
State Water Project	
Vacaville Table A	6,100
KCWA Agreement	2,878
Settlement Water	9,320
Groundwater Pumping	8,000
Recycled Water	<u>880</u>
Total	42,978

City of Vacaville



II. Surface Water Availability (Continued)

Solano Project Water Supply Availability

15,800 acre feet

- A. Categorized historical supply by year type (based on DWR's Sacramento Valley hydrologic classifications) – Normal Year, Single-dry Year, and Multiple-dry Years
- B. Averaged the supply for each category, resulting in:

Category	% of Supply Available
Normal Year	100
Single-Dry Year	100
Multiple-Dry Years	100



II. Surface Water Availability (Continued)

State Water Project Water Supply Availability

8,978 acre feet

- A. Categorized historical supply by year type (based on DWR's Sacramento Valley hydrologic classifications) – Normal Year, Single-dry Year, and Multiple-dry Years
- B. Averaged the supply for each category, resulting in:

Category	% of Supply Available
Normal Year	89
Single-Dry Year	64
Multiple-Dry Years	47



Water Supply in Year 2025

Sources of supply	100% Entitlement	Normal Year		Single-Dry Year		Multiple-Dry Year	
		% Avail.	ac-ft/yr	% Avail.	ac-ft/yr	% Avail.	ac-ft/yr
Solano Project							
Vacaville Entitlement	5,750	100	5,750	100	5,750	100	5,750
SID Agreement	10,050	100	10,050	100	10,050	100	10,050
State Water Project							
Vacaville Table A	6,100	89	5,429	64	3,904	47	2,867
KCWA Agreement	2,878	89	2,561	64	1,842	47	1,353
Settlement Water	9,320	100	9,320	100	9,320	100	9,320
Groundwater	8,000	100	8,000	120	9,600	120	9,600
Recycled Water	880	100	880	100	880	100	880
TOTAL	42,978		41,990		41,346		39,820

City of Vacaville

REPORT ELEMENT III

Water Demands



III. Water Demands

Water Demand Calculations

- A. Prepare a Land-Use Zone Map
- B. Land-Use Database built by Community Development
- C. Water demands are established for each land use
- D. Computer model calculates water demand for each land use zone



III. Water Demands (Continued)

Water Demand in 2025

DEMAND	NORMAL YEAR	SINGLE-DRY YEAR 10% Reduction	MULTIPLE-DRY YEARS 20% Reduction
Existing City (Baseline)	17,524	15,772	14,019
Lower Lagoon Valley	1,738	1,564	1,390
Southtown	831	748	665
Rice McMurtry	194	175	155
Other Future Development in City	11,044	9,940	8,835
Total Demand	31,331	28,197	25,065



REPORT ELEMENT IV

Determination of Sufficient Supply



IV. Determination of Sufficient Supply

Year	<u>Normal Year</u>		<u>Single Dry Year</u>		<u>Multiple Dry Year</u>	
	Projected Demand	Available Supply	Projected Demand	Available Supply	Projected Demand	Available Supply
2005	18,780	33,060	16,902	32,216	15,024	29,990
2010	21,917	38,560	19,726	37,816	17,533	36,290
2015	25,055	41,440	22,549	40,696	20,043	39,170
2020	28,193	41,990	25,374	41,346	22,554	39,820
2025	31,331	41,990	28,197	41,346	25,065	39,820



For the purposes of the City of Vacaville SB 610 Water Supply Assessment, three separate hydrologic conditions are defined as follows:

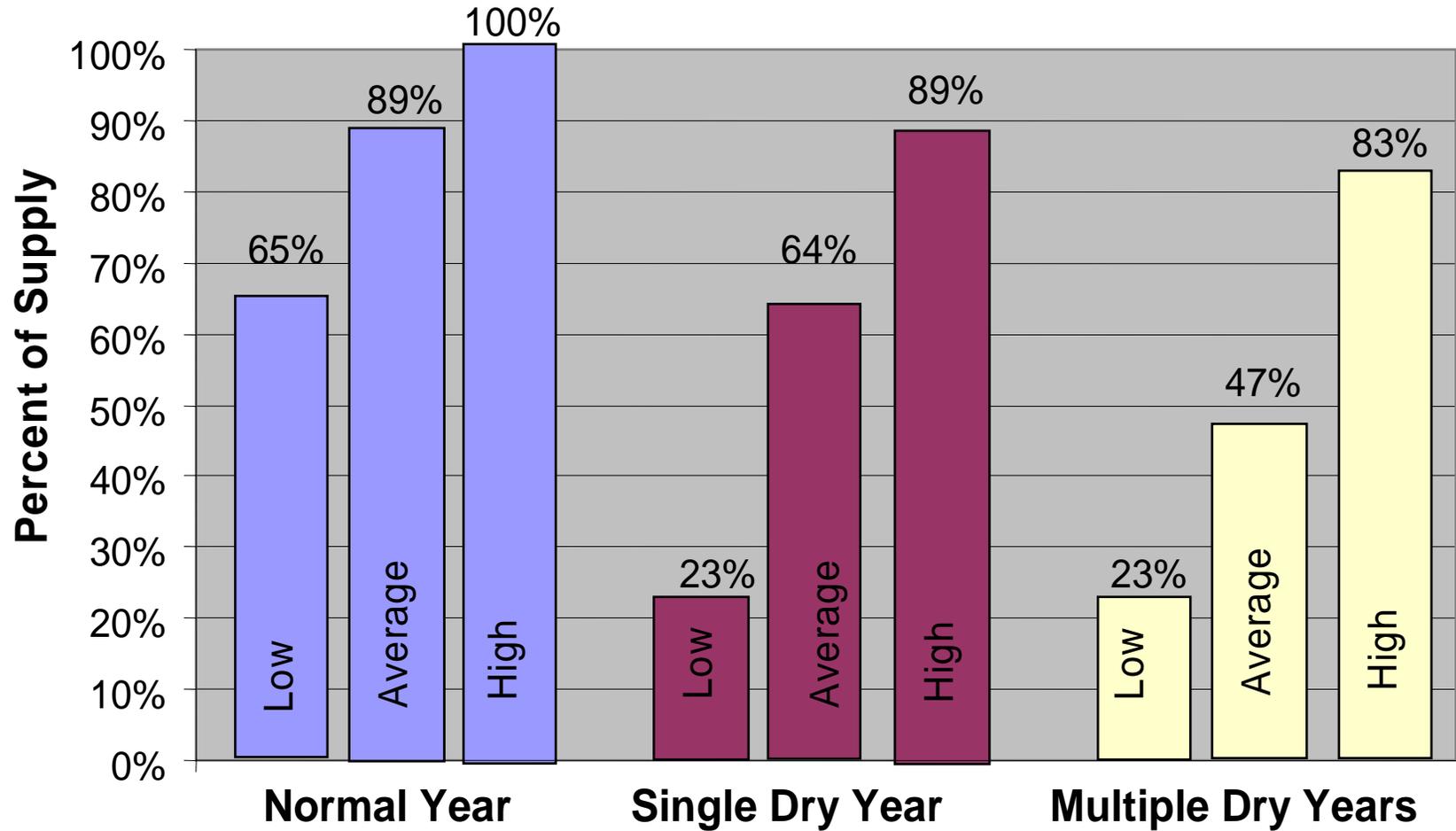
Normal Year This is a year when average rainfall has been received. During a normal year, the water availability from some sources may be less than the allocated amount.

Single Dry Year This is a solitary dry or critical dry year and may be the first year of a multiple year drought.

Multiple Dry Years This is a series of four consecutive dry and/or critical dry years. This is consistent with the City of Vacaville 2000 Urban Water Management Plan Update



State Water Project Water Supply Availability



Based On Data From 1922 Thru 1993, Appendix D

Reduction in Water Demand During Drought (1990-1993)

Year	Population	<u>Water Production</u>		Per Capita Demand gpd/person	Demand Change
		Ac-ft/yr	Mgd		
1990	71,476	14,511	13.0	181	0%
1991	75,103	11,672	10.4	139	-23%
1992	77,504	12,036	10.7	139	-23%
1993	79,956	12,764	11.4	142	-22%

