



**Additional Conservation
Measures
for
Mandatory Water Use
Reduction Program**

May 4, 2021

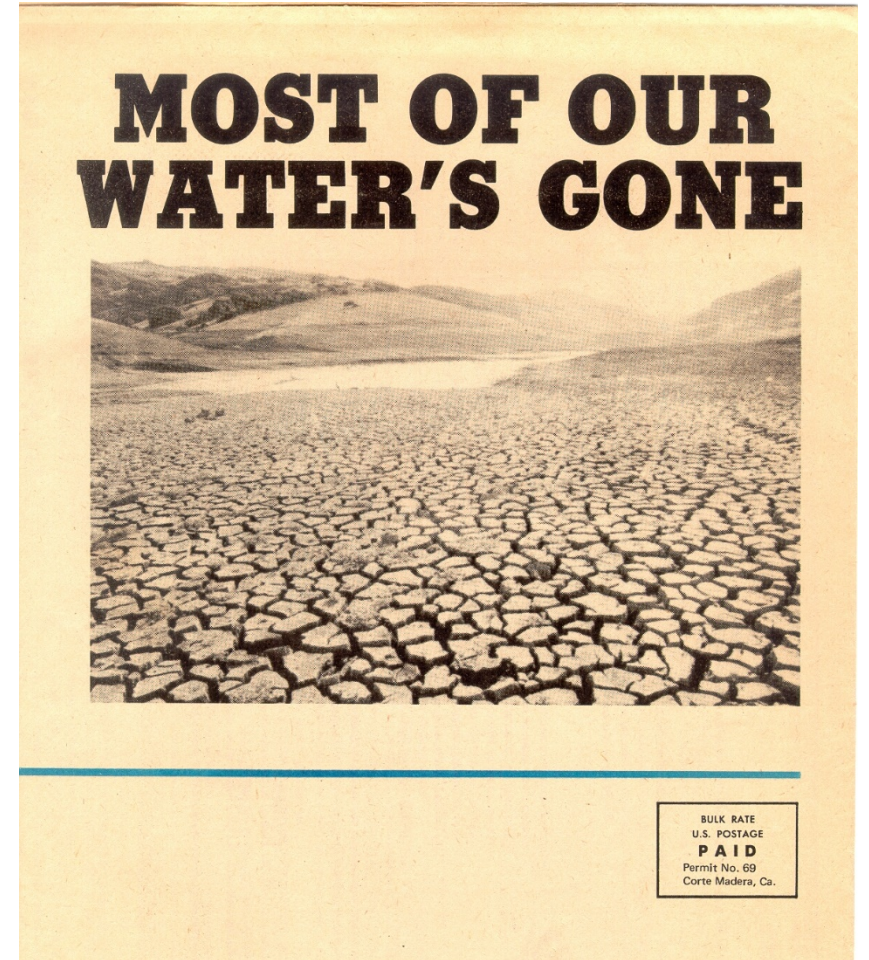


Overview

- Conservation efforts during historical droughts
- Existing Water Conservation Measures and Prohibitions
- Additional Proposed Drought Measures
- Next Steps

Drought of 1976-77

- Drought of record – historically low rainfall and runoff
- Reservoirs essentially emptied
- Water use reduced by over 60%
- Initial deliveries of imported supply (Sonoma Water)
- Pipeline across Richmond- San Rafael Bridge



Drought of 1976-77

1976: 25% Mandatory Water Use Restrictions

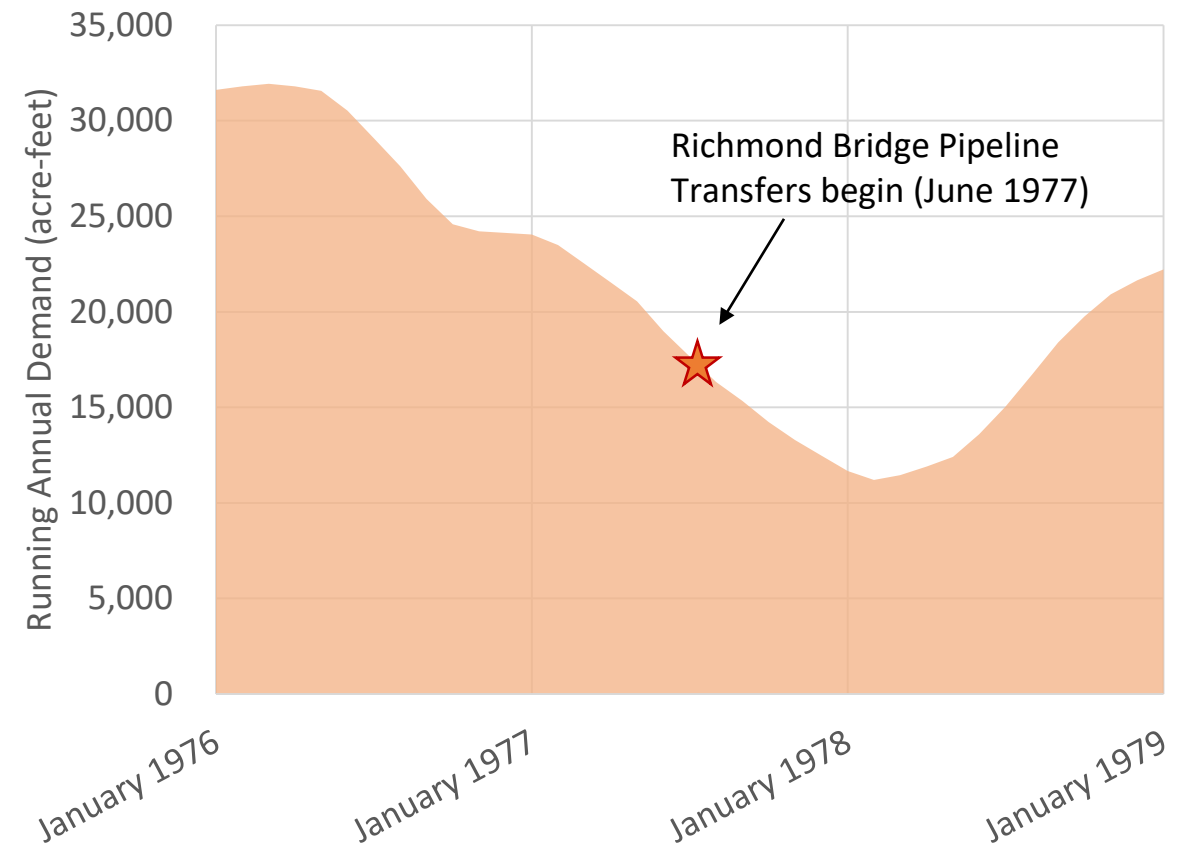
- Declared water shortage emergency
- Prohibition of non-essential water uses (no lawn irrigation, washing hard surfaces, refilling pools)
- Enacted drought rates and penalties
- Achieved 25% savings (Over 1 year)

1977: 57% Mandatory Rationing Program

- Transitioned to allotment per capita
- Enacted additional drought rates
- Achieved 65% savings (Over 2 years)

Drought declared over in February 1978

Demand During Drought, 1976-78

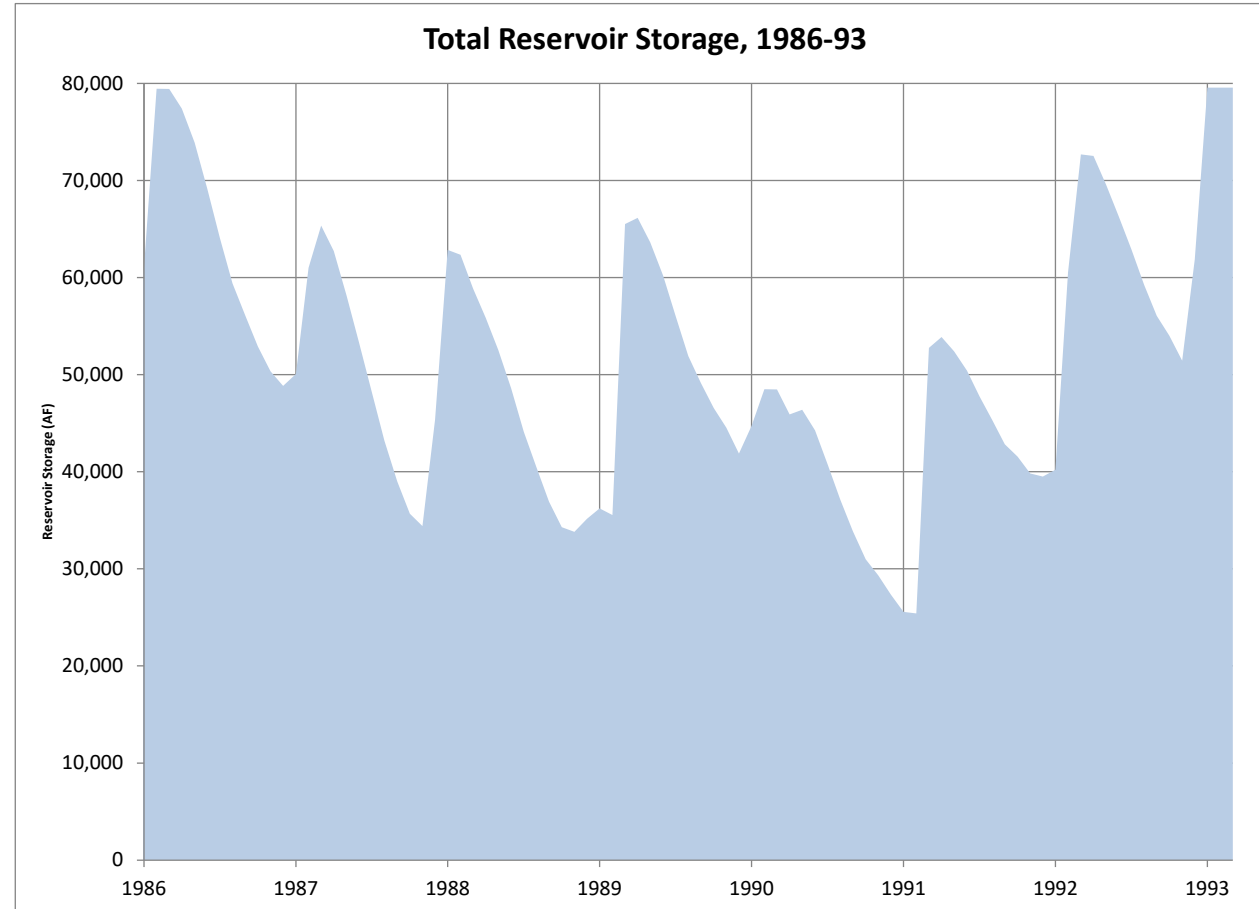


Drought of 1987-92

Longer, but less extreme drought

- Reservoirs did not fill for 6 consecutive years

- 1988:**
- May – 15% Voluntary conservation
 - July – Water Shortage Emergency
Moratorium on new connections
- 1989:**
- Feb – 35% Mandatory Rationing
Drought Rates, penalties
 - Apr – Ended all rationing due to rainfall
- 1990:**
- Mar – 22% Voluntary conservation
- 1991:**
- Feb – 50% Mandatory Rationing
 - Apr – Ended 50%, Transitioned to 25% Voluntary
- 1992:**
- Mar – End 25% Voluntary Conservation & drought ends



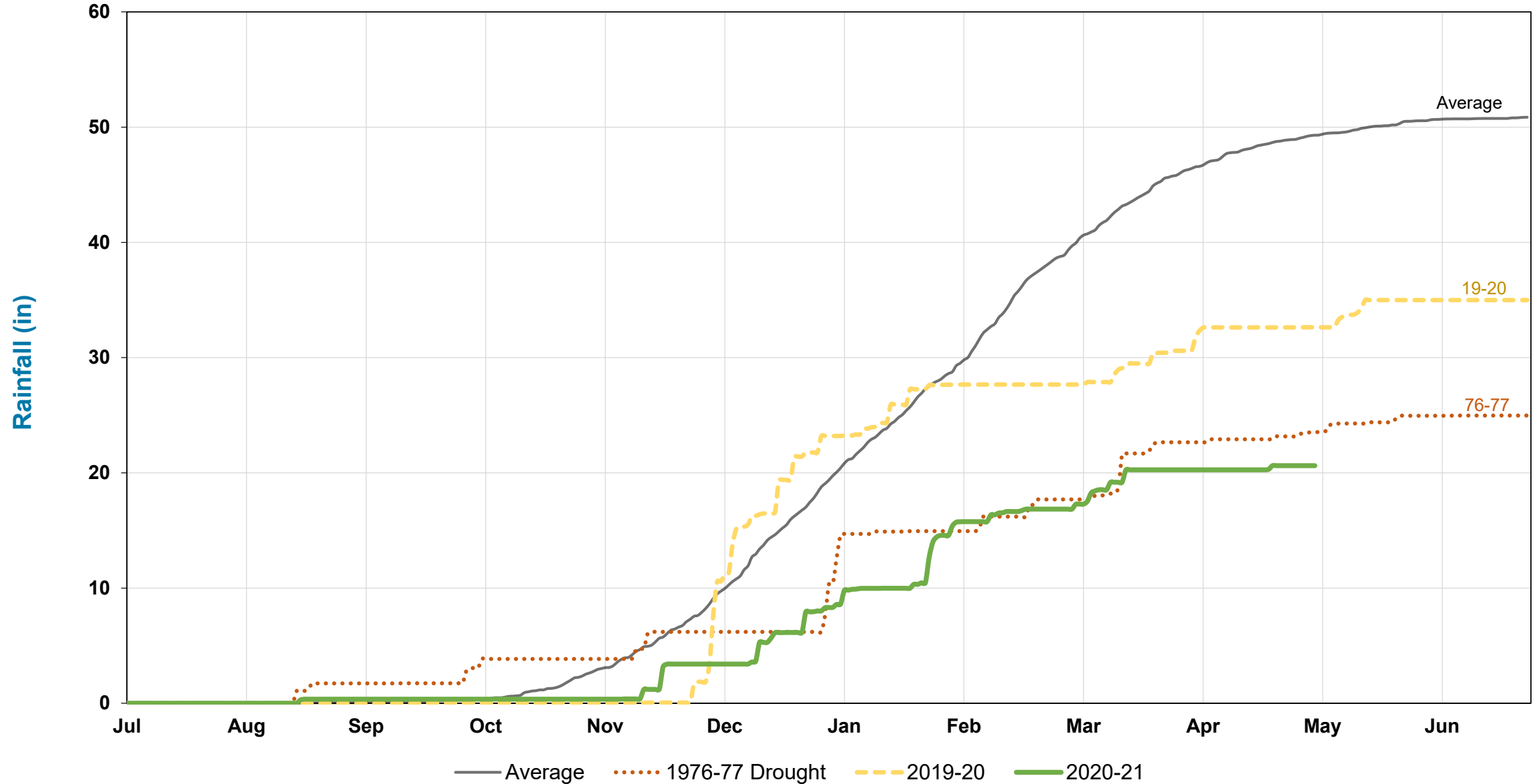
MMWD Water Supply Improvements

- ✓ **Conservation Program** further developed with customers from all sectors – residential, commercial and industrial
 - Outreach
 - Education
 - Incentives
- ✓ **Supplemental water supply** with Sonoma Water developed (1976, 1988, 1996)
- ✓ **Recycled Water Program** (1981) established and expanded
- ✓ **Local storage** volume increased by 51% or 27,000 AF
 - Built Soulajule reservoir (1979)
 - Enlarged Kent Lake (1983) – Doubled storage capacity to 32,900 AF

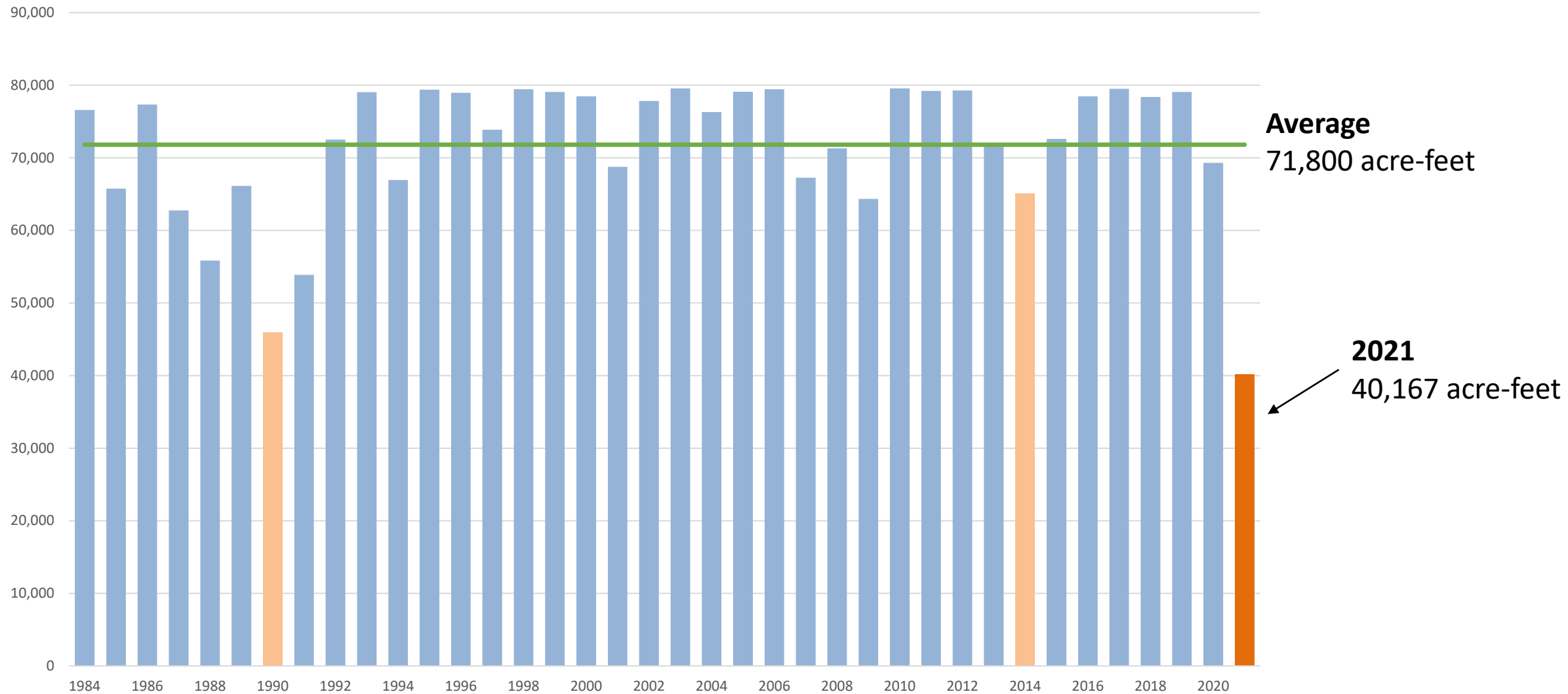


Cumulative Rainfall

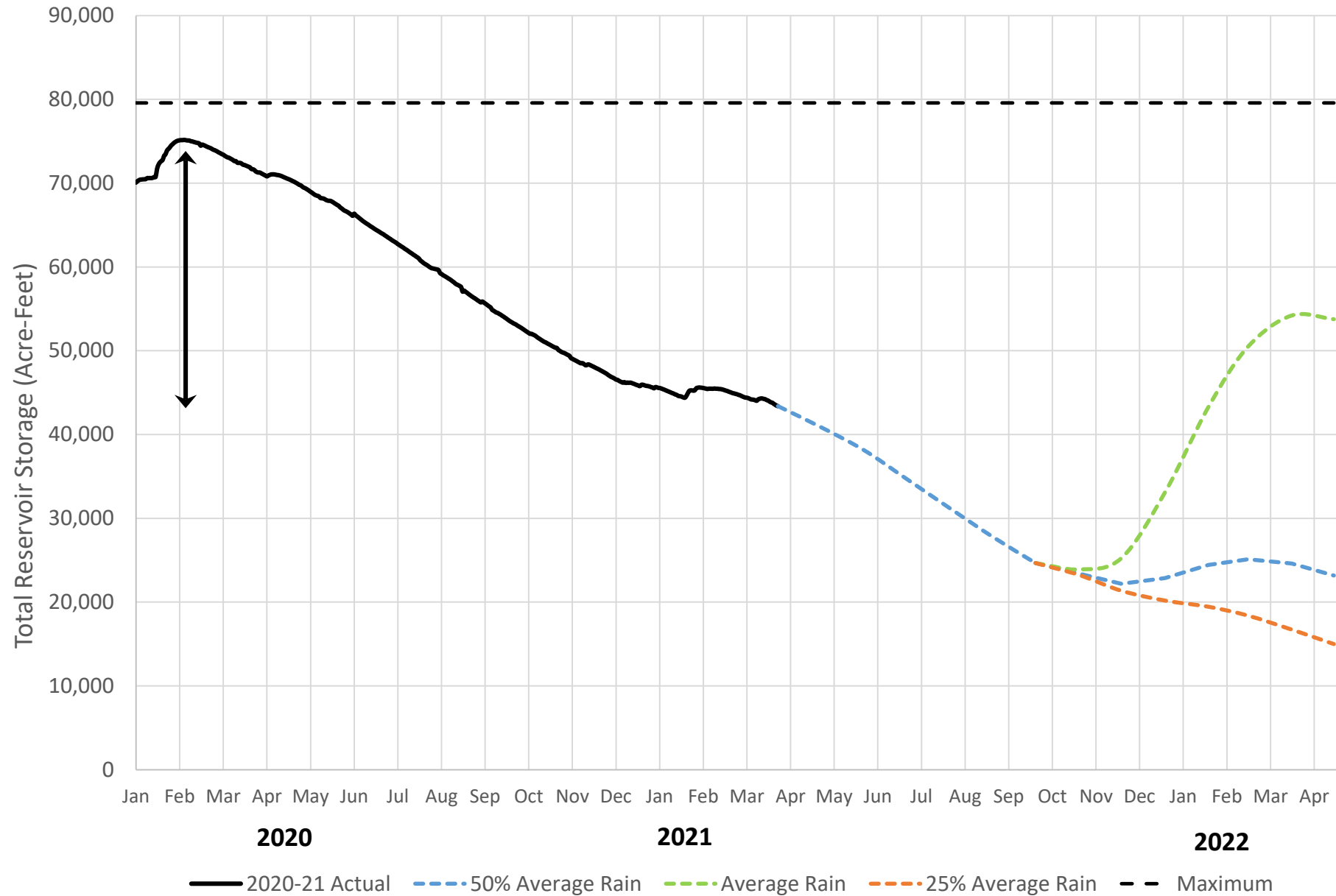
Lake Lagunitas Rain Gauge



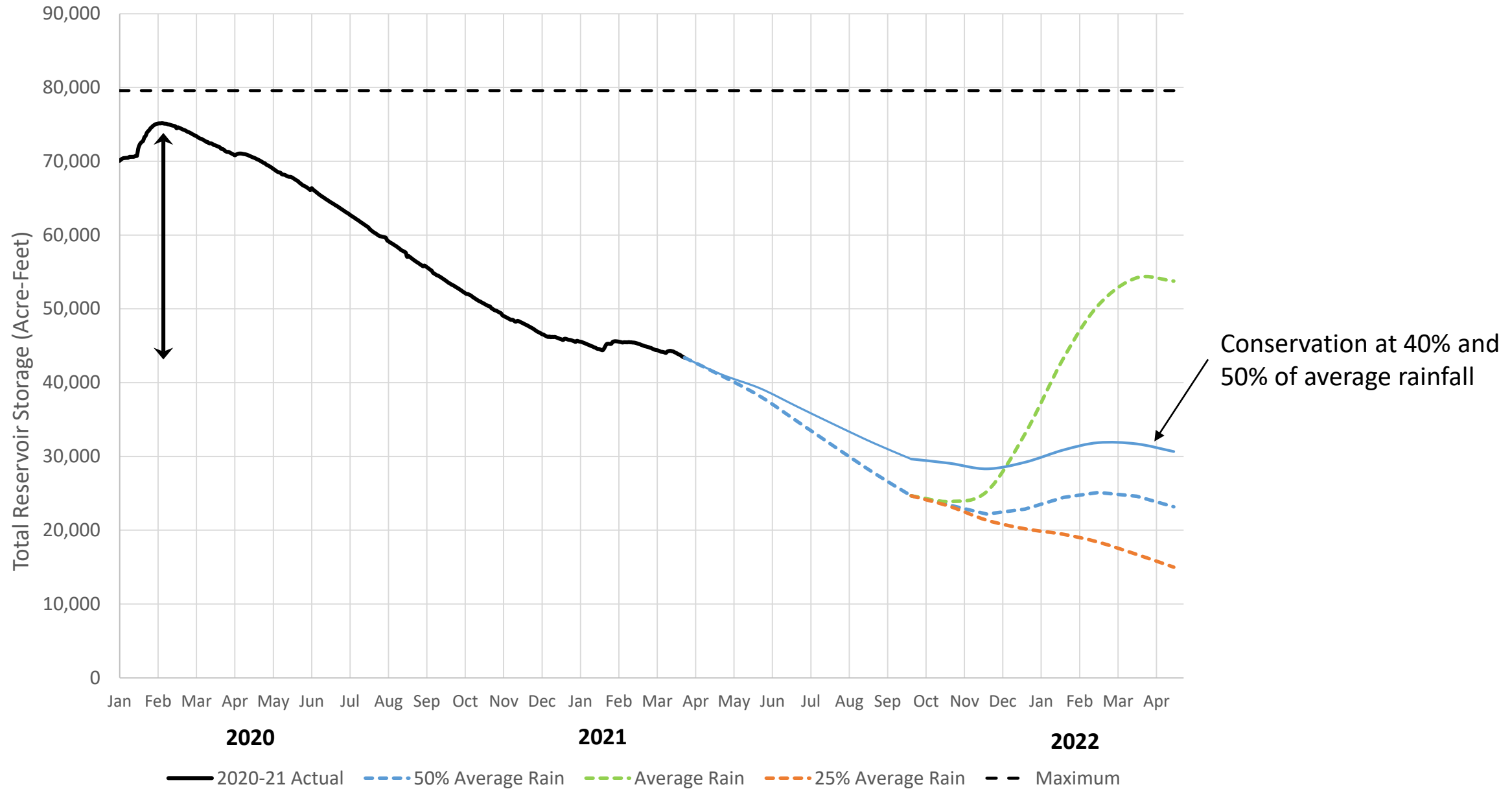
Historical Total Reservoir Storage (May 1st)



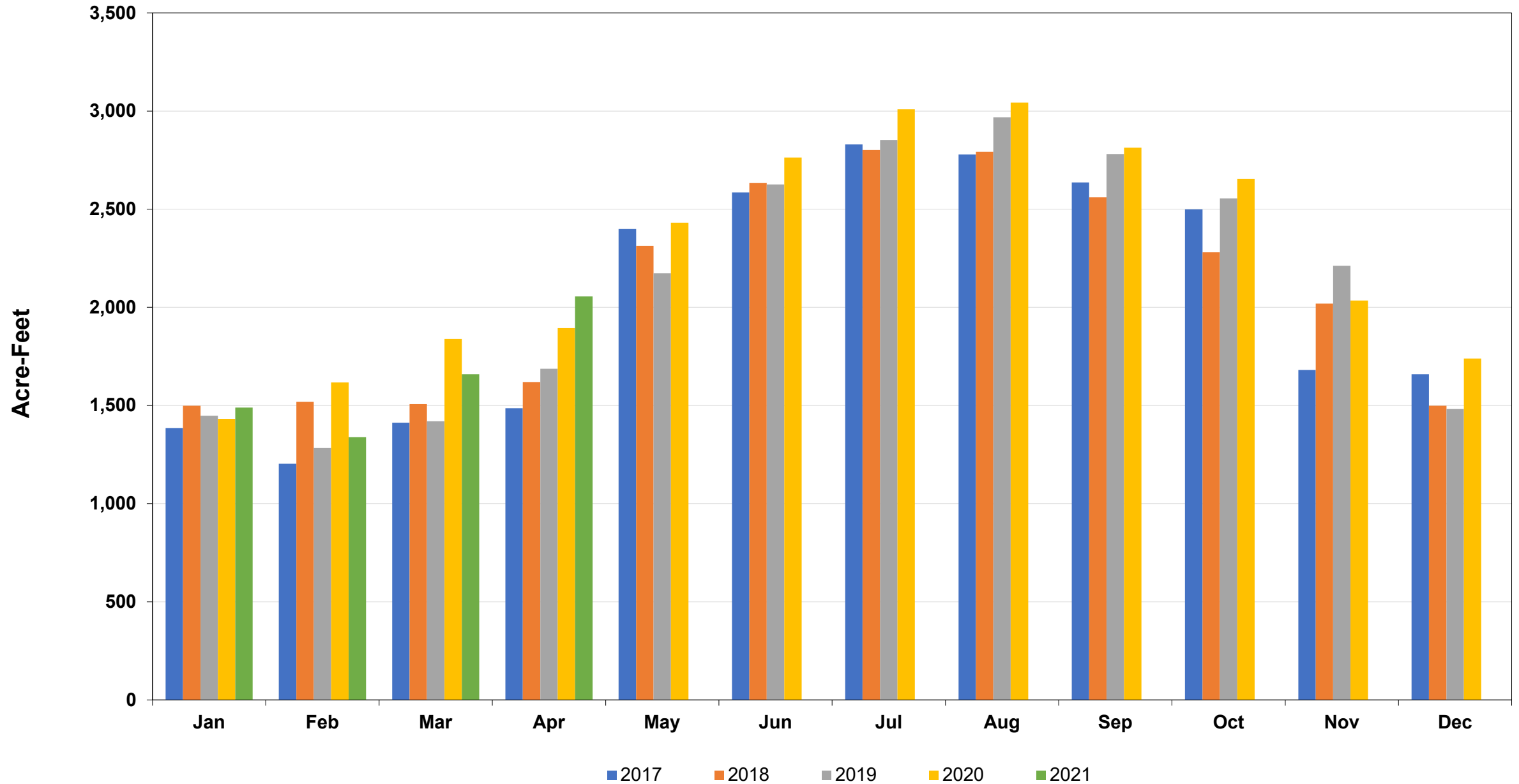
Projected Reservoir Storage



Projected Reservoir Storage



Monthly Potable Water Production



Approach to Drought and Conservation Efforts

- Historic drought conditions
- Continue and enhance voluntary indoor water usage savings
- Water waste restrictions and outdoor irrigation
- Customer outreach, education, and support
 - Preserve water supply due to unknown future rainfall



Comprehensive Conservation Measures

Existing Water Waste Prohibitions

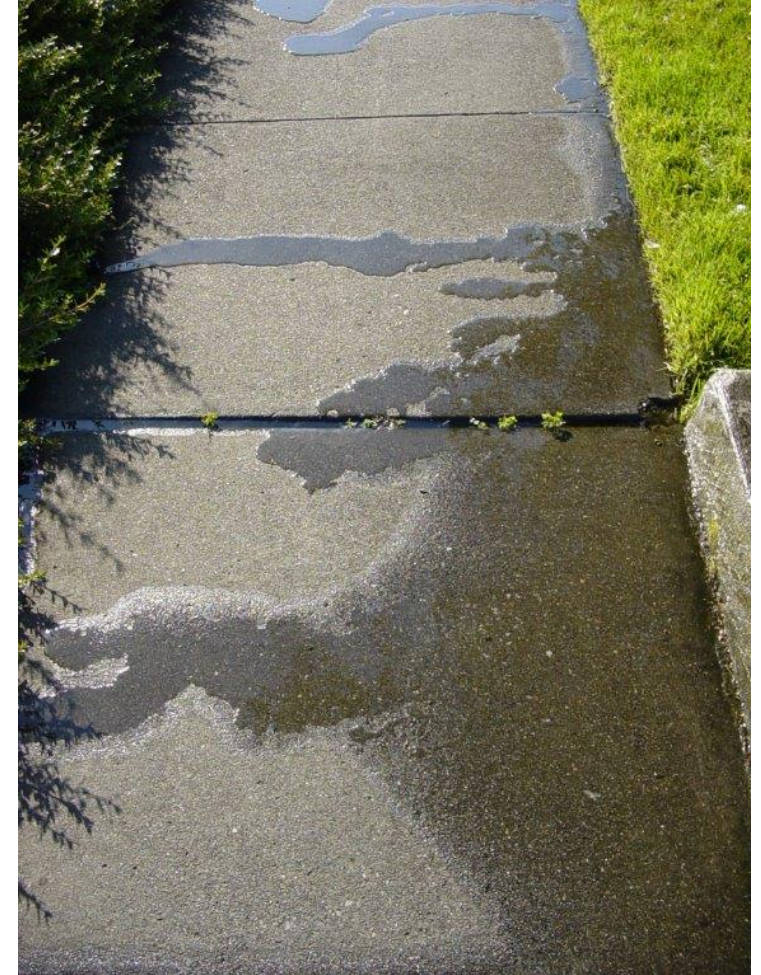
Mandatory Water Use Restrictions

Additional Proposed Drought Measures

Existing (Normal Year) Water Waste Prohibitions

Irrigation Prohibitions

- Between the hours of 9:00 AM and 7:00 PM
- Ornamental landscapes or turf more than three days per week
- Public street medians
- Run off and overspray
- Within 48 hours of rainfall
- Using a garden hose without a shut-off nozzle



Existing Water Waste Prohibitions

Gutter Flooding

- Prohibit excess runoff
- Hosing down hard surfaces

Hospitality

- Linen and towel service only daily upon request
- Drinking water served upon request only

Pools and Fountains

- Pool covers are required for new outdoor swimming pools
- Non-recycling decorative water fountains

Leak Repair



Mandatory Water Use Reduction Program

Adopted per
Ordinance No. 449
at April 20th Board
meeting –
effective May 1st

- Washing of vehicles
- Refilling or adding make-up water for decorative fountains or pools
- Golf course irrigation restricted to greens and tees effective May 20th
- Use of private fire taps, also known as fire service lines, shall solely provide water for fire protection and annual fire service line testing
- Power washing of buildings and homes
- Use of potable water for dust control, compaction, sewer flushing, street cleaning, or any other use that can be met with tertiary recycled water

Additional Proposed Drought Measures

1. Restrict sprinkler irrigation to two days per week
 - Drip irrigation still limited to three days per week
 - Hand-watering is exempt from day restrictions
2. Require use of pool covers to minimize water losses

Implementation Plan

- Customer Outreach and Education
- Drought support programs for customers
 - e.g. Turf Replacement Incentives
- Adaptive approach based on tracking progress in demand reduction



Variances

- Variance and appeal process recognizing these restrictions may not be applicable in all circumstances
- District may grant variances for:
 - Unnecessary and undue hardship on applicant or public adverse economic impacts
 - Emergency condition affecting health, sanitation, fire protection or safety of the applicant or public
 - District will consider alternative compliance proposals that provide comparable conservation savings
- Two-step appeal process

Recommendation

- Adopt Ordinance No. 450
 - Limit overhead sprinkler irrigation to 2 days per week
 - Drip irrigation still limited to 3 days per week
 - Hand-watering exempt
 - Require use of pool covers to minimize water losses

Next Steps

Ongoing updates to the Board regarding progress demand reduction and financial status