California Water Service

City of San Mateo Sustainability & Infrastructure Commission Presentation

March 10, 2021

Introductions

- Ross Moilan, District Manager
- Ken Jenkins, Director of Water Resource Sustainability

Cal Water in Bayshore

- Part of this community since 1931
- 47 local employees
- We are your family and neighbors.
- We drink the water. Our children and grandchildren drink the water.

Bayshore District

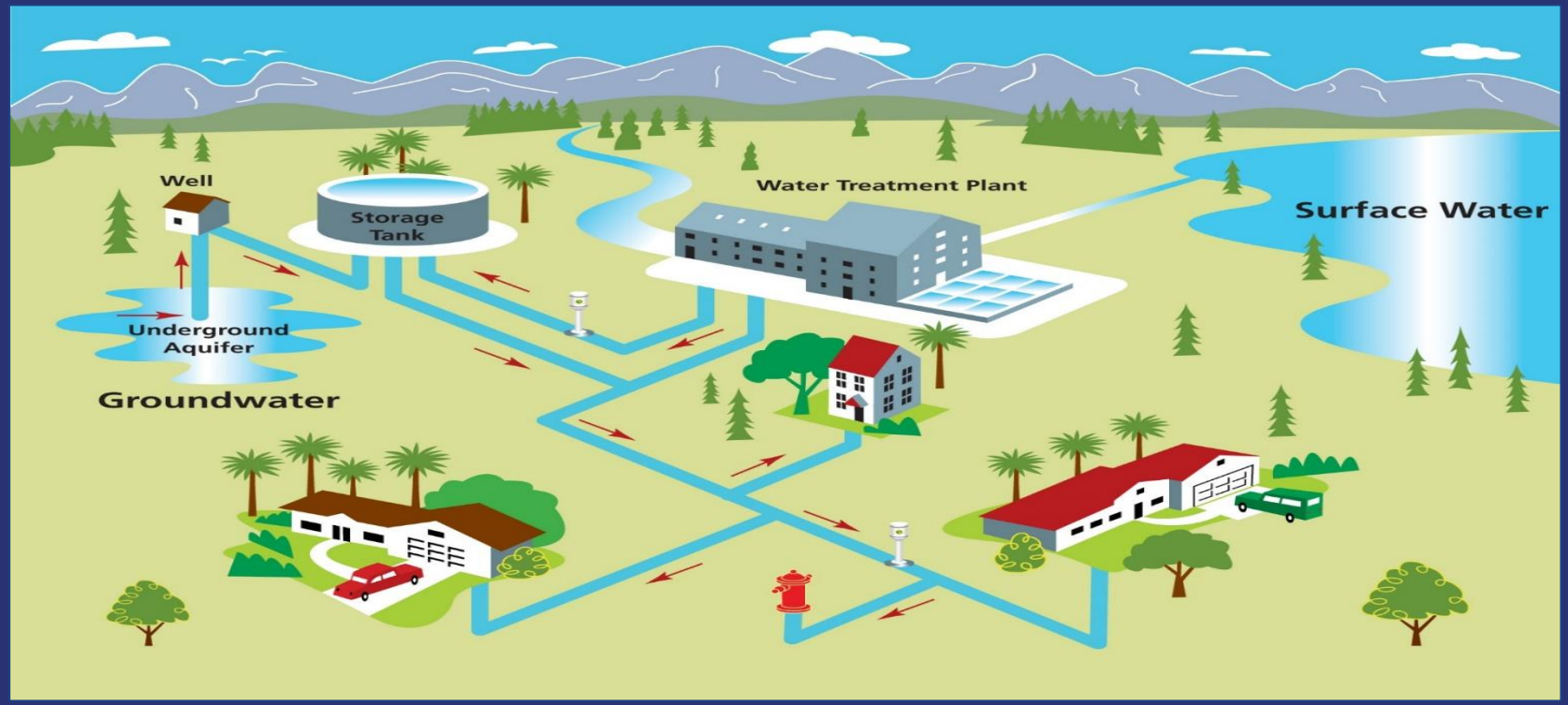
Cities & Communities Served

- Broadmoor
- Colma
- Daly City (portion)
- Redwood City (portion)
- San Carlos
- San Mateo
- South San Francisco

Bayshore Overview

- 522 miles of water pipes
- 6 wells and 1 treatment plant
- 47 storage tanks
- 73 booster pumps
- 4,856 fire hydrants
- Typical residential customer uses 5,984 gallons of water every month (8 units)
- 53,000 service connections
- 47 employees
- Supply is 95% from SFPUC, 5% from SSF groundwater filter plant

Water System



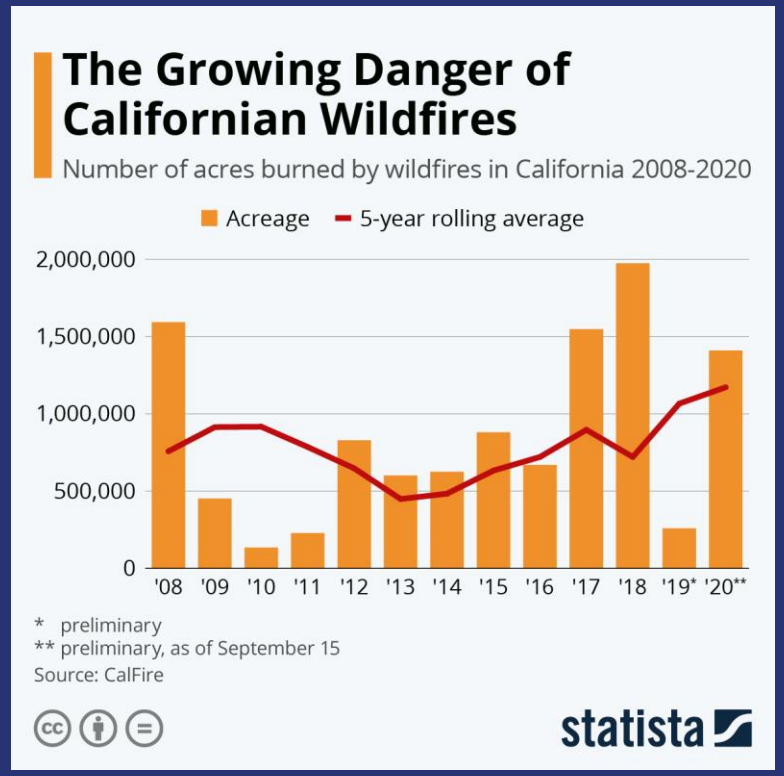
- We conducted 9,912 tests on 1,812 water samples for 112 constituents last year in San Mateo. We met every primary and secondary standard.
- Consumer Confidence Report is provided to customers each year.

Infrastructure Improvements

What is the benefit to you?

- Safety
- Reliability
- Emergency preparedness

San Mateo
PSPS and Wildfire Preparedness



Wildfire season continues to challenge many aspects of our daily lives in California and the statistics suggest an upward trend of intensity. [1]

Yearly acreage burned from 2017 - 2020

2020 – 4,040,935 acres
2019 – 259,823 acres
2018 – 1,975,086 acres
2017 – 1,548,429 acres

1. Buchholz, K., & Richter, F. (2020, September 22). Infographic: The Growing Danger of California Wildfires. Retrieved October 05, 2020, from https://www.statista.com/chart/14462/california-wildfire-deadly/

2. California Department of Forestry and Fire Protection (CAL FIRE), N. N. (2020). Stats and Events. Retrieved October 05, 2020, from https://www.fire.ca.gov/stats-events/

San Mateo
PSPS and Wildfire Preparedness

In 2019, new regulations by the California Public Utilities Commission authorized energy companies to turn off power to avoid or reduce the risk of wildfires.

San Mateo
PSPS and Wildfire Preparedness

At one point in 2019, more than 60 Cal Water stations were without electrical power simultaneously. Despite all of these power shutoffs, Cal Water customers never lost water service.

How?

- Strengthening and maintaining strong communications with PG&E
- Procuring a fleet of mobile generators, booster pumps, and emergency trailers
- Enacting and empowering our EOC groups which include our operational, engineering, water quality, and other expert resources statewide

San Mateo
PSPS and Wildfire Preparedness

City

- 4 permanent gen-sets
- 1 permanent in progress
- 2 future permanent

- 5 portable gen-sets with upgraded automatic transfer switches used as well

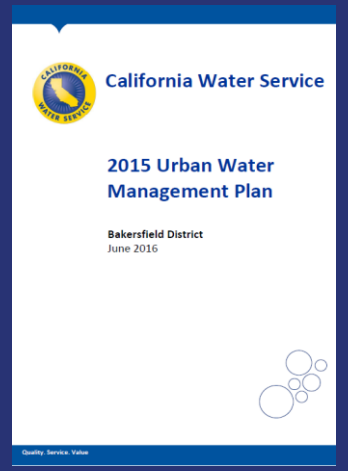
District

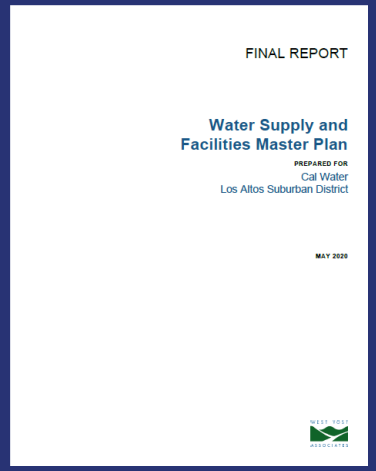
- Ability to martial more gen-sets and 6 booster pumps

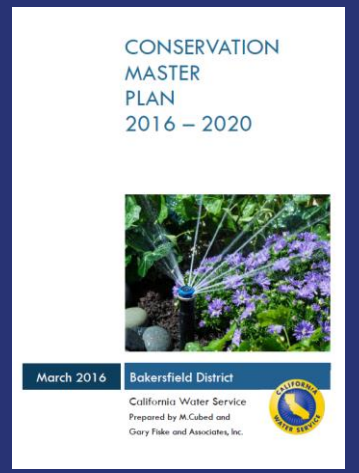
- Wide-reaching company EOC creates the ability to bring in resources including employees and equipment as needed

Water Supply
Integrated Planning

- **Urban Water Management Plan**
- Water Supply & Facility Master Plan
- Conservation Master Plan
- Water Loss Control Plan
- Water Supply Reliability Study
- **Climate Change**
  - **Water Resources Monitoring and Adaptation Plan**







Urban Water Management Plans

- Updated every 5 years pursuant to the Urban Water Management Plan Act
- Threshold: Suppliers with 3,000+ Services or serving 3,000+ AF/year
- Updated Plans Due on July 1, 2021

Urban Water Management Plans

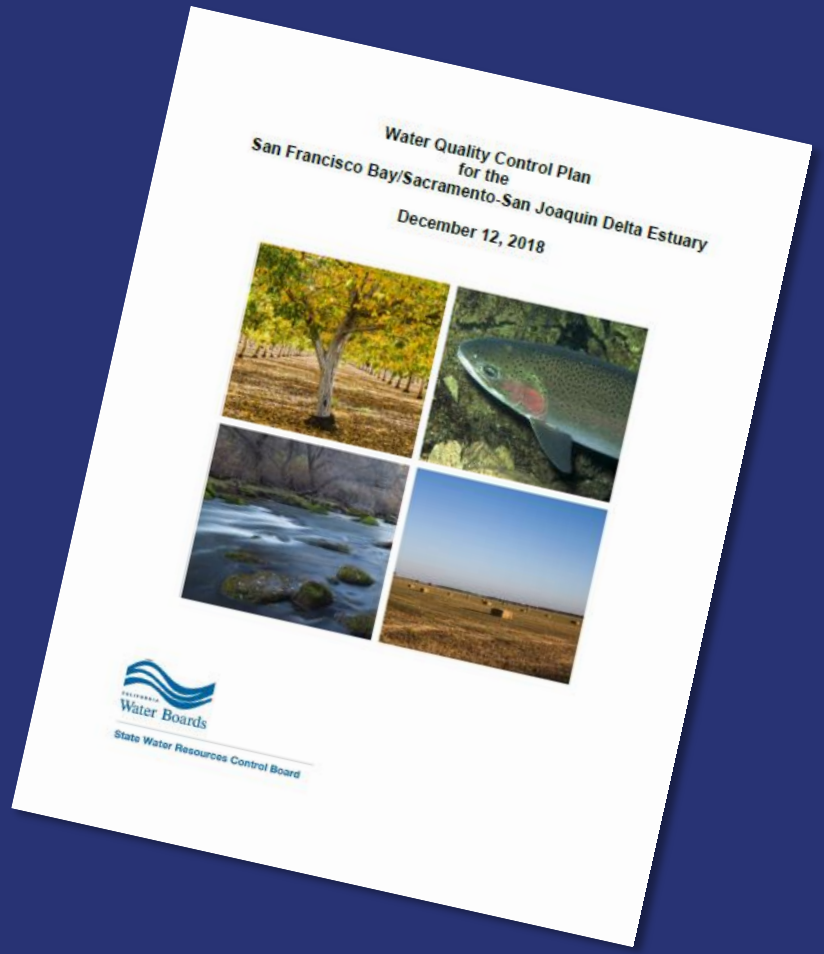
- Long-term supply and demand planning
- 20-year planning horizon
- Wholesalers common language
  - Projections
  - Supply Reliability
  - Projects

Urban Water Management Plans
Chapters

- Introduction and Overview
- Plan Preparation
- System Description
- Water Use Characterization
- SBX7-7 Baseline and Targets
- Water Supply Characterization
- Water Service Reliability and Drought Risk Assessment
- Water Shortage Contingency Plan
- Demand Management Measures
- Plan Adoption, Submittal, and Implementation

Bay-Delta Plan and Water Supplies on Peninsula

- Phase I of State Water Board's Bay Delta Water Quality Control Plan significantly reduces supplies, especially during multiple dry years

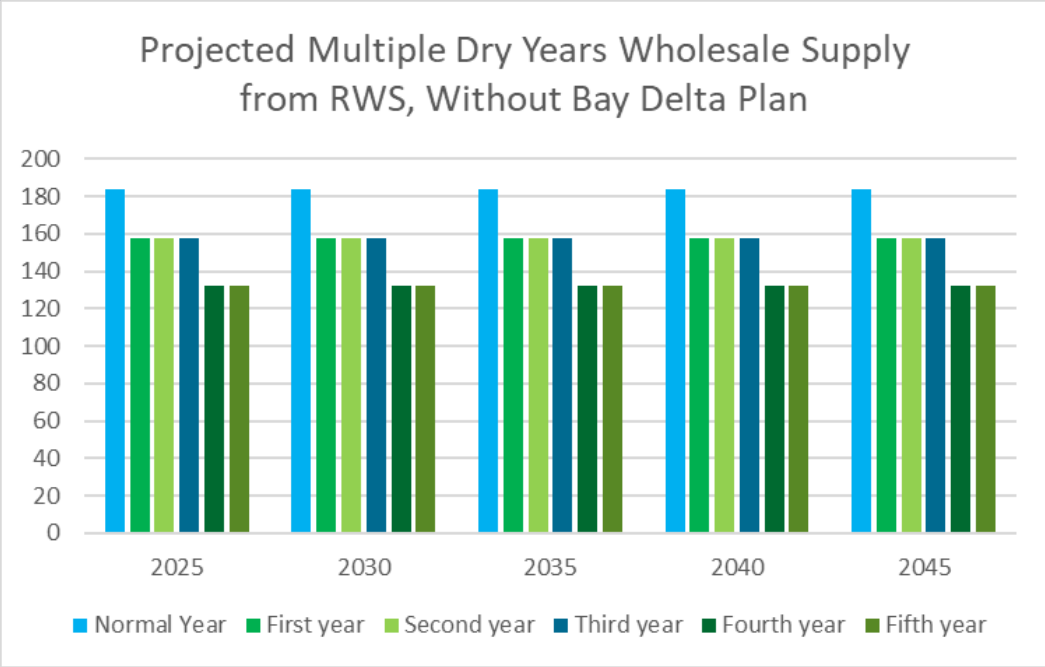


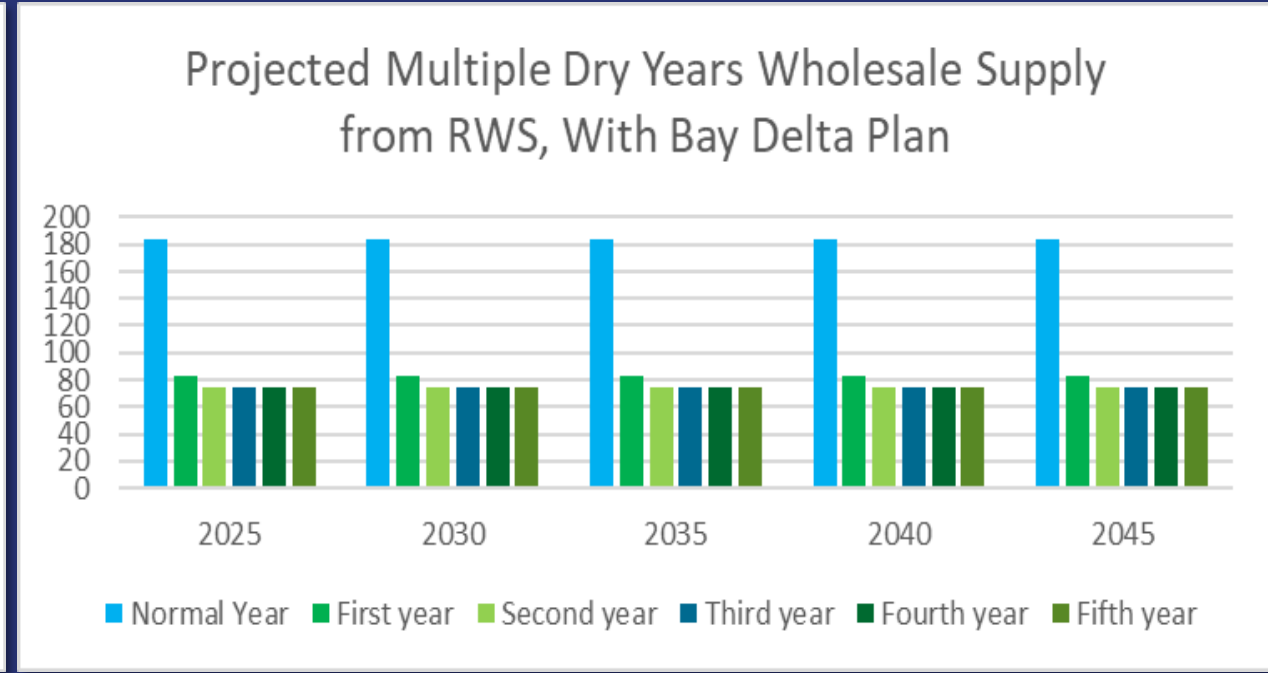
SFPUC
Water Supply Reliability Projections

Projected Multiple Dry Years Wholesale Supply – Without Bay Delta Plan (MGD)					
Year	**2025**	**2030**	**2035**	**2040**	**2045**
First Year	157.5	157.5	157.5	157.5	157.5
Second Year	157.5	157.5	157.5	157.5	157.5
Third Year	157.5	157.5	157.5	157.5	157.5
Fourth Year	132.5	132.5	132.5	132.5	132.5
Fifth Year	132.5	132.5	132.5	132.5	132.5

Projected Multiple Dry Years Wholesale Supply – With Bay Delta Plan (MGD)					
Year	**2025**	**2030**	**2035**	**2040**	**2045**
First Year	82.8	82.8	82.8	82.8	82.8
Second Year	74.5	74.5	74.5	74.5	74.5
Third Year	74.5	74.5	74.5	74.5	74.5
Fourth Year	74.5	74.5	74.5	74.5	74.5
Fifth Year	74.5	74.5	74.5	74.5	74.5

SFPUC
Water Supply Reliability Projections





SFPUC
Water Supply Reliability Projections

Projected SF RWS Wholesale Purchases	146.0 MGD	147.9 MGD	151.9 MGD	156.3 MGD	162.8 MGD
Supply Available to the Wholesale Customers	% Cutback on Wholesale RWS Purchases				
	2025	**2030**	**2035**	**2040**	**2045**
157.5 MGD	0.0%	0.0%	0.0%	0.0%	-3.2%
132.5 MGD	-9.3%	-10.4%	Tier 2 Avg. -14%*	Tier 2 Avg. -16%*	Tier 2 Avg. -19%*
82.8 MGD	-43.3%	-44.0%	-45.5%	-47.0%	-49.1%
74.5 MGD	-49.0%	-49.6%	-51.0%	-52.3%	-54.2%

Bay Area Regional Reliability Study

- Cal Water submitted in 2018 General Rate Case and received CPUC approval in 2020 for study
- Developing innovative, longer-term supply strategy for four districts along the Peninsula
- Study goes beyond the requirements of the UWMP
- SFPUC's new regulatory requirements were identified as part of the justification of the study

Bay Area Regional Reliability Study

- Integrated resource planning approach
- Utilizes range of hydrologic, climate, and regulatory conditions
- Identifies the most cost-effective solutions

Water Supply Projects

- Potable Reuse Exploratory Project (PREP): indirect and direct potable reuse program on the Peninsula
- Daly City Recycled Water Expansion: expansion of existing non-potable reuse project
- Groundwater wells in Bear Gulch and Mid-Peninsula service areas
- Bear Gulch Reservoir Expansion: expansion of Cal Water's existing surface storage facility to capture more runoff and provide operational flexibility

Water Supply Projects

- Brackish Desalination on the Peninsula: brackish desalination project
- Water Transfer: importation of purchased supplies to increase dry year reliability
- Groundwater Banking: storage of excess wet and normal year supplies for eventual delivery to service area in dry years

Climate Change
Cal Water History

2010
Language included in Urban Water Management Plan

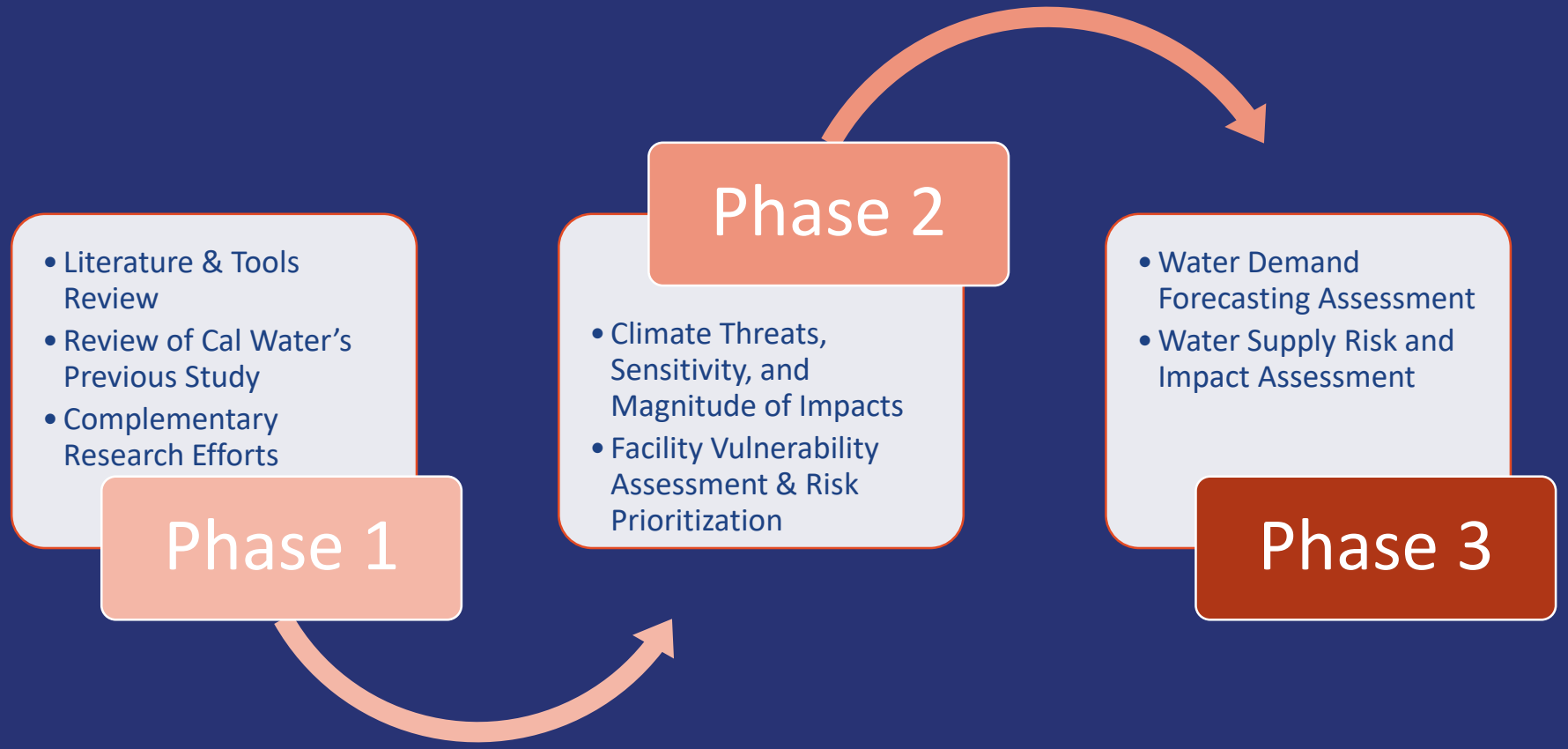
2015
Language included in Urban Water Management Plan

2016
Initial climate change study completed

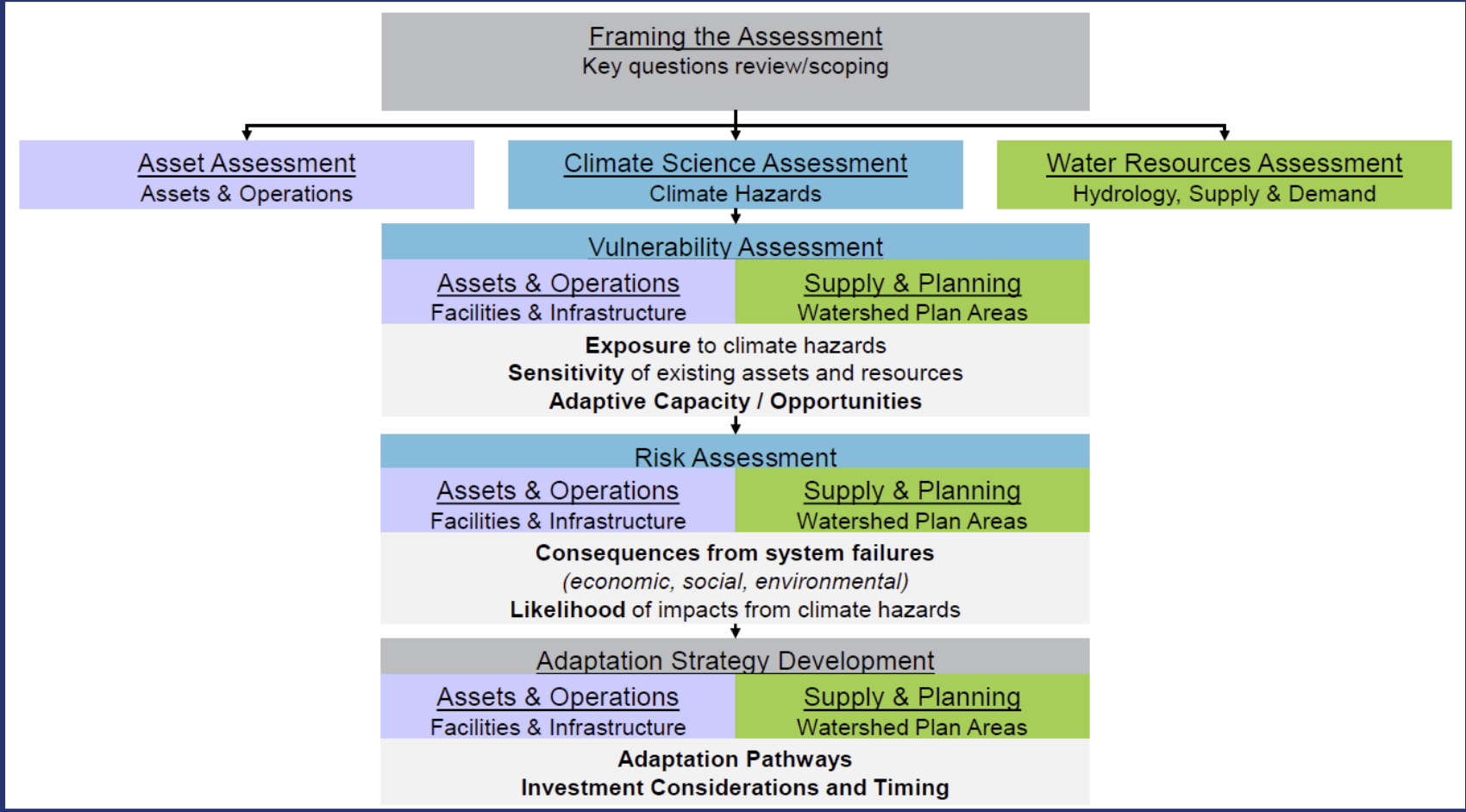
2018
Additional climate change study included in General Rate Case

2020/2021
Development of Water Resources Monitoring and Adaptation Plan

Climate Change
Water Resources Monitoring & Adaptation Plan



Water Resources Monitoring and Adaptation Plan
Overall Process



Water Resources Monitoring & Adaptation Plan
Time Horizons & RCP Scenarios

- 2030 (RCP 8.5) for near-term planning
- 2050 (RCP 8.5) for longer-term planning
- 2100 (RCP 4.5 & RCP 8.5) for long-term outlook and adaptation pathways development

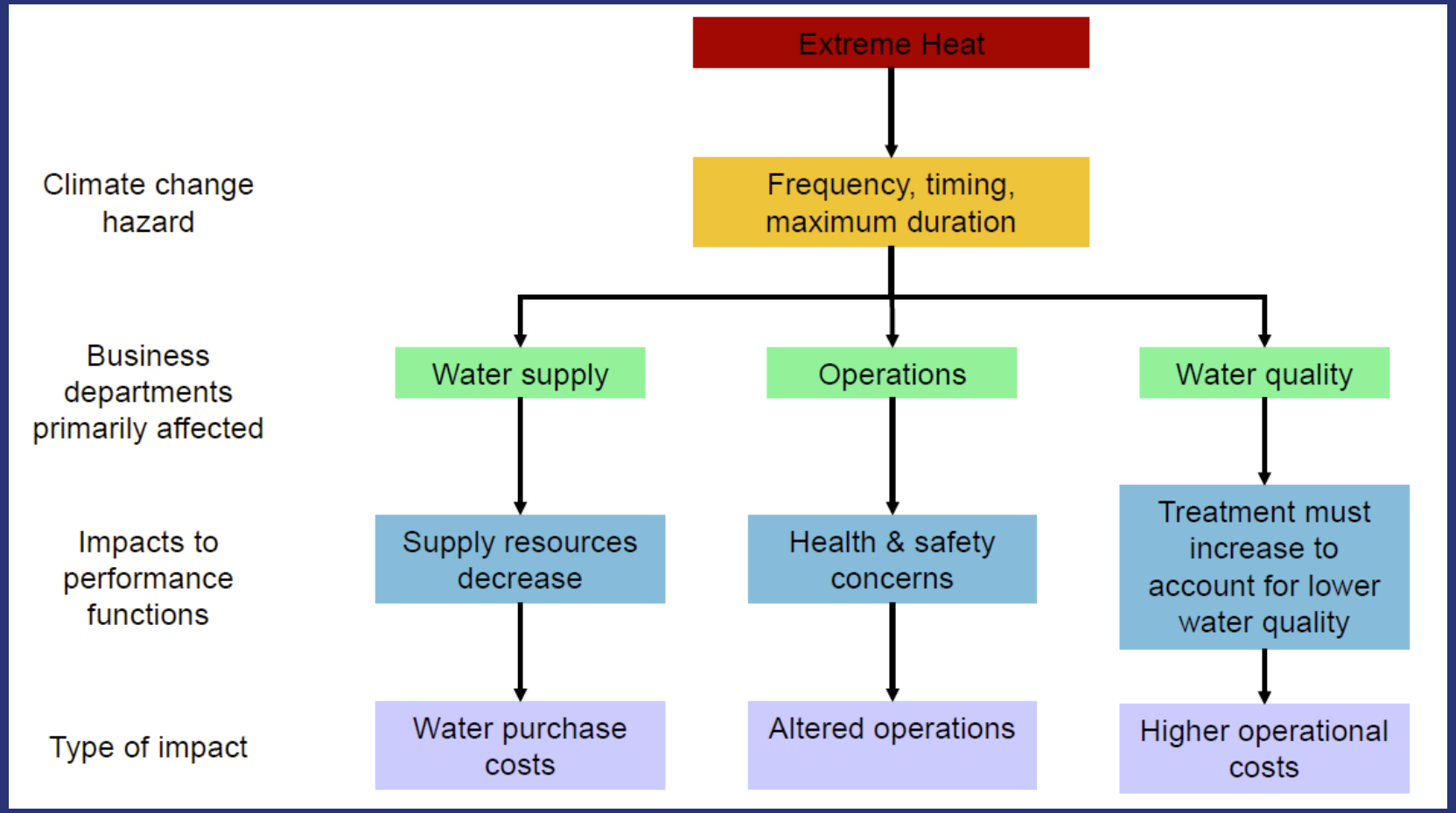
Water Resources Monitoring & Adaptation Plan
Climate Hazard Indicators

Threats	Key Climate Indicator/Projections	Source
Precipitation	• Maximum multiday totals (e.g., 5-day maximum) • Monthly, seasonal, or annual average totals • Extreme precipitation (e.g., 99th percentile)	LOCA
Flooding – Pluvial/ Fluvial	• Runoff and streamflow • Floodplain extent	FEMA flood maps; DWR streamflow factors
Flooding - Coastal	• Sea level rise and storm surge flooding extents • Coastal erosion and shoreline change extent	OCOF flood map; ART shoreline flood explorer
Temperature	• 3-day and 5-day averages • Monthly, seasonal, and annual maxima/minima • Evapotranspiration	LOCA

Water Resources Monitoring & Adaptation Plan
Climate Hazard Indicators

Threats	Key Climate Indicator/Projections	Source
Extreme Heat	• Frequency, timing, maximum duration (e.g., average annual extreme heat days, frequency of consecutive extreme heat days, duration of extreme days)	LOCA
Water Quality	• Temperature • Runoff/streamflow • Coastal groundwater	LOCA; USGS CoSMoS
Wildfire	• Potential area burned (based on temperature, land cover, and population projections)	LOCA/UC Merced wildfire simulations
Snowpack	• Snow water equivalent	LOCA-VIC land surface model
Drought	• Maximum/minimum temperature • Precipitation • Evapotranspiration	LOCA-VIC land surface model
Subsidence	• Groundwater depletion	USGS subsidence mapping
Cascading impacts	TBD	TBD

Water Resources Monitoring & Adaptation Plan
Mapping Impacts to Hazards (Example)



Water Resources Monitoring & Adaptation Plan
Asset & Business Functions

- Priority Asset Categories
  - Treatment Facilities
  - Pump Stations
  - Booster Stations
  - Tanks & Storage
  - Mains

- Business Functions
  - Water Supply
  - Asset Management
  - Engineering
  - Capital Planning
  - Operations
  - Water Quality

Thank You!