2025 Urban Water Management Plan/ Water Shortage Contingency Plan Workshop

Board of Directors

January 27, 2026

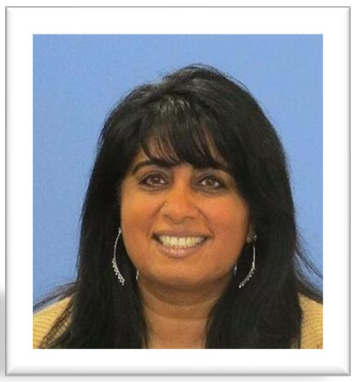
Today's Speakers

Alice Towey
Director of Water & Natural Resources

Brad Ledesma
Manager of Water Resources Planning

Charles Bohlig
Manager of Water Conservation

Bill Maggiore
Senior Civil Engineer of Water Distribution Planning

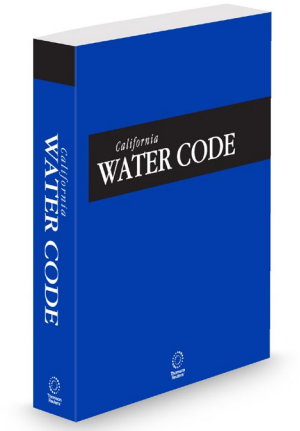


Priyanka Jain
Senior Civil Engineer of Water Resources Projects

Agenda

- Introduction and Purpose
- Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) Overview
- Water Conservation Update
- Water Demand Forecast Update
- Key Analysis for the 2025 Urban Water Management Plan
  - *Seeking Board feedback on key elements in development of UWMP & WSCP*
- Timeline and Key Milestones
- Board and Public Comments

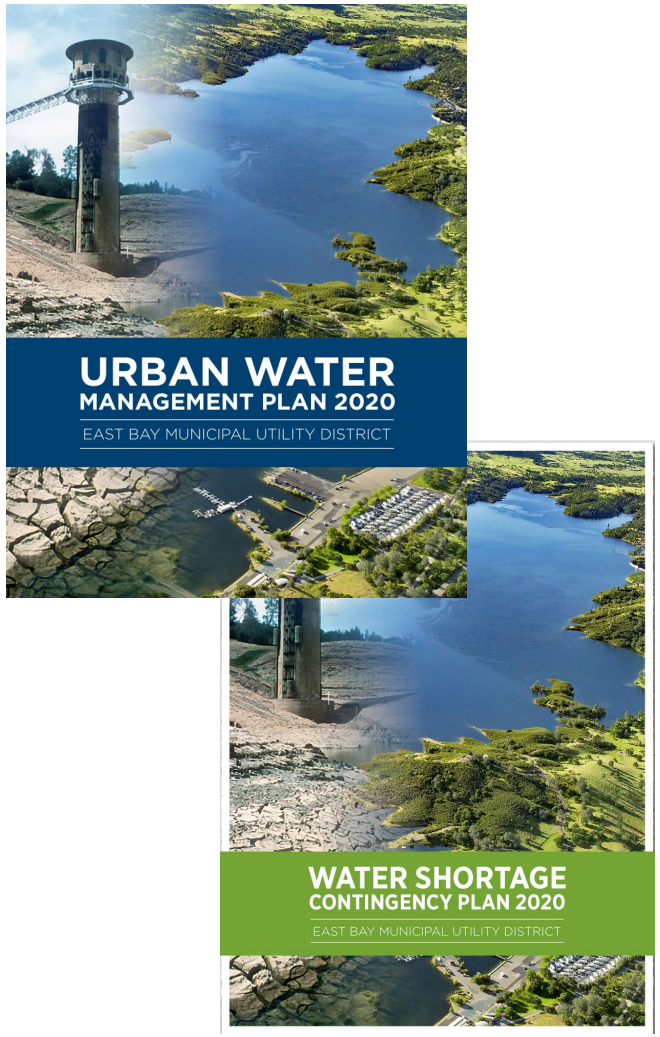
Purpose



Urban Water Management Plans are a Legal Requirement

- In 1983, District sponsored Assembly Bill 797
  (Urban Water Management Planning Act)
- Requirements are in the Water Code
  (§10608, §10610 - §10657)
- UWMPs are updated every 5 years
- Administered by California Department of Water Resources
- Affects eligibility for State Grants and Loans

Purpose



Long-Term Supply Planning for the District

- The document also serves as our future Water Supply Management Program
- Evaluates water supply reliability, incorporating uncertainties
- Provides a framework to address water shortages via the WSCP
- Informs and provides opportunities to engage with the public
- Acts as a general reference for the District

EBMUD

Content and Structure

Chapter 1 General Information

- A summary of the UWMP Act and overview of the organization, watershed, and water supply system

Chapter 2 Water Supply System Reliability

- An overview of the factors that affect the availability of water supplies.

Chapter 3 Water Demand

- A discussion of past, current, and projected demand

Chapter 4 Supplemental Water Supply Portfolio

- Plans and progress for supplemental water supplies

Chapter 5 Wastewater & Recycled Water

- An overview of the wastewater and recycled water programs.

Chapter 6 Water Conservation

- An overview of the water conservation program.

Attachment 1 Water Shortage Contingency Plan

- Outlines the plan for managing shortages – not just droughts, but emergencies too.

EBMUD

Water Supply Strategy

Adapting Today, Securing Tomorrow

- 💧 Diversify portfolio of water supplies
- ⚖️ Respond to legislative and regulatory shifts
- 🌱 Protect and enhance natural ecosystems
- 🌞🌧️ Prepare for climate change impacts

Water Shortage Contingency Plan

Supply and Demand Assessment using Hydrologic Modeling

Evaluates base case, 5-year historical dry period, and several other plausible scenarios

Estimates the need for water to identify supplemental supply needs

Drought Management Program Guidelines

Provides framework to manage customer demand and pursue supplemental water portfolio to reach a goal of providing 85% reliability for customers during droughts or during emergencies.

District Regulations

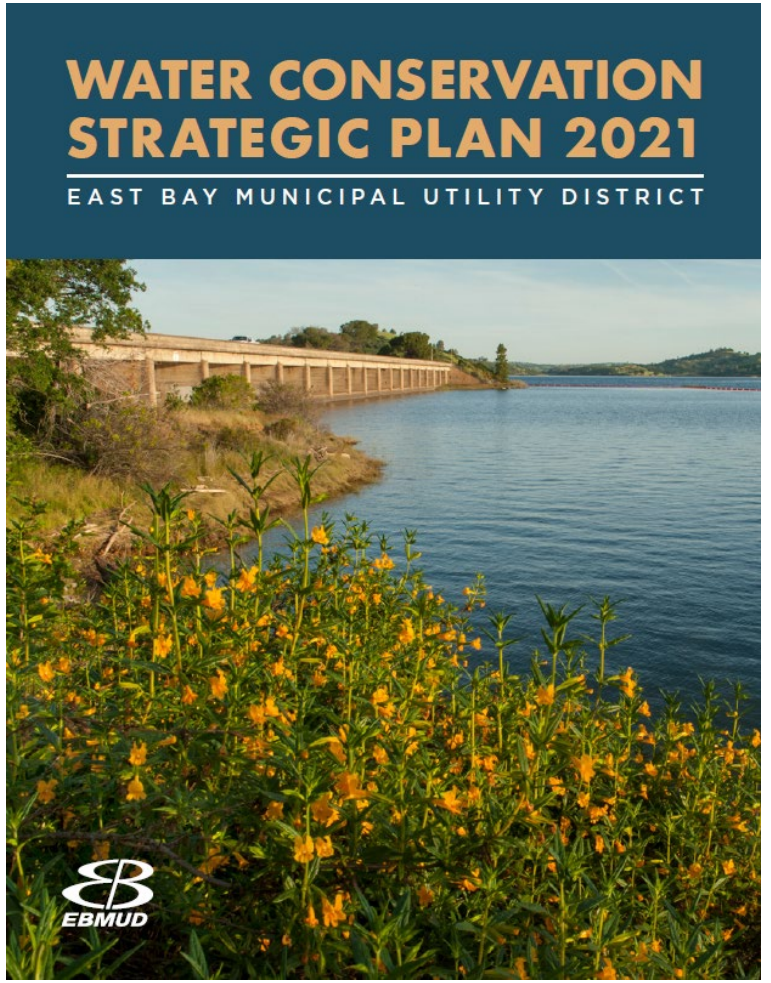
Section 29 – Water Use Restrictions

Section 31 – Water Efficiency Requirements

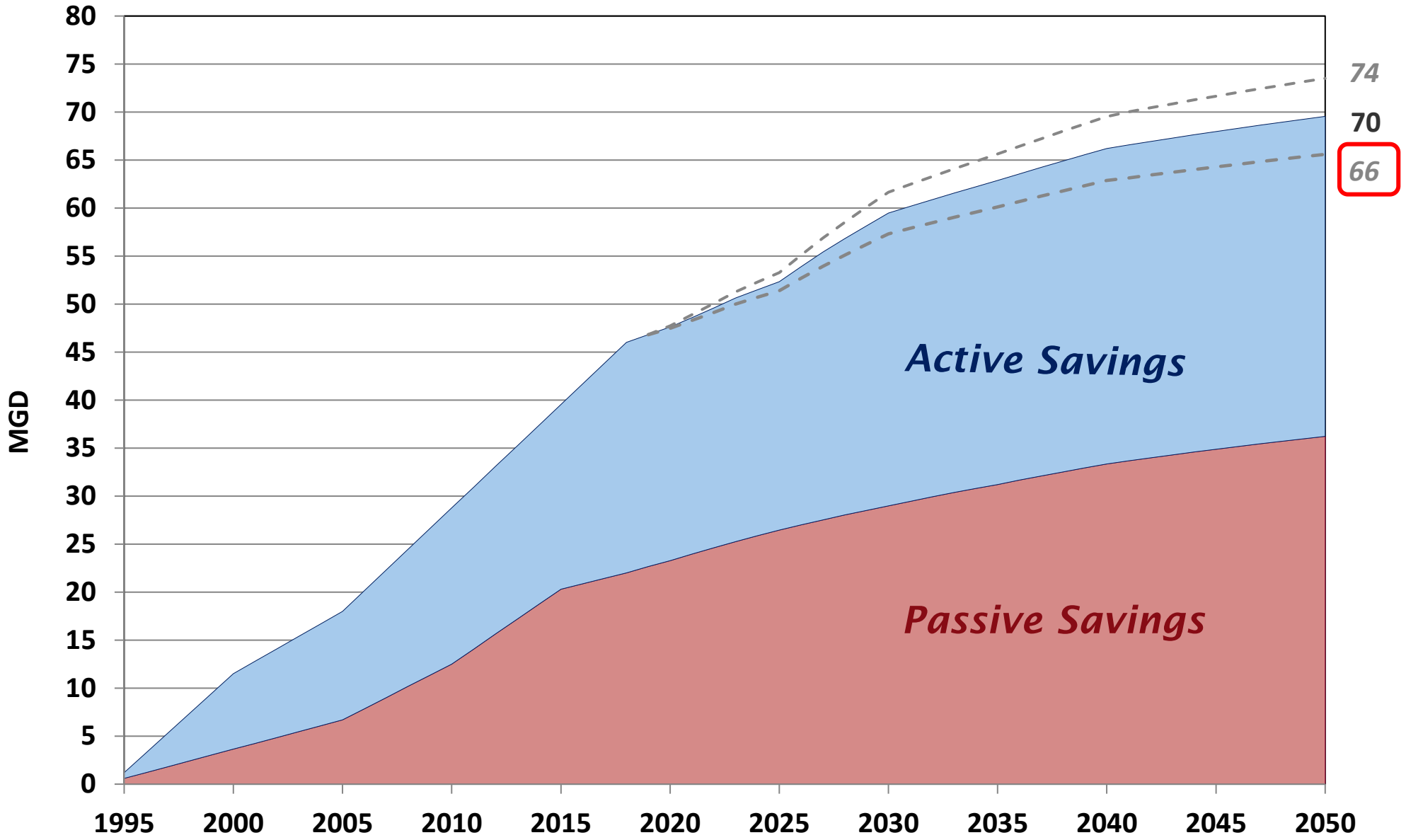
EBMUD

History of Water Conservation Program

- EBMUD's conservation program began in the early 1980s
- In 1995 created its first Water Conservation Strategic Plan
- Through the years the water savings goal has increased and is now targeting 70 MGD savings by 2050



Water Conservation Forecast



Conservation Legislation: Making Conservation a California Way of Life

- In 2018, the California State Legislature passed Assembly Bill 1668 and Senate Bill 606 - "The Long-Term Framework (LTF)"
  - There are four components of this conservation target: Residential indoor and outdoor, dedicated irrigation meters, and utility system water loss
  - EBMUD is still waiting for one measurement to finalize our target
  - The conservation target increases overtime and is to be met by 2040
- EBMUD internal conservation goal and the LTF are different as EBMUD's conservation goal includes all customer's water use and the LTF only effect three customer segments water use (plus water loss)
- We are on track to meet both EBMUD's goal and the LTF target

Tracking Water Savings

- Previous methods to measure progress towards our conservation goals was to count incentives, customer site visits, market transformation, and natural replacement
- As a result of changing conservation programs and regulations, a new tracking methodology became necessary
- Staff is embarking on an *econometric water savings model* that measures water savings by our community instead of counting incentives. This new method supports the tracking of progress in meeting the LTF conservation target

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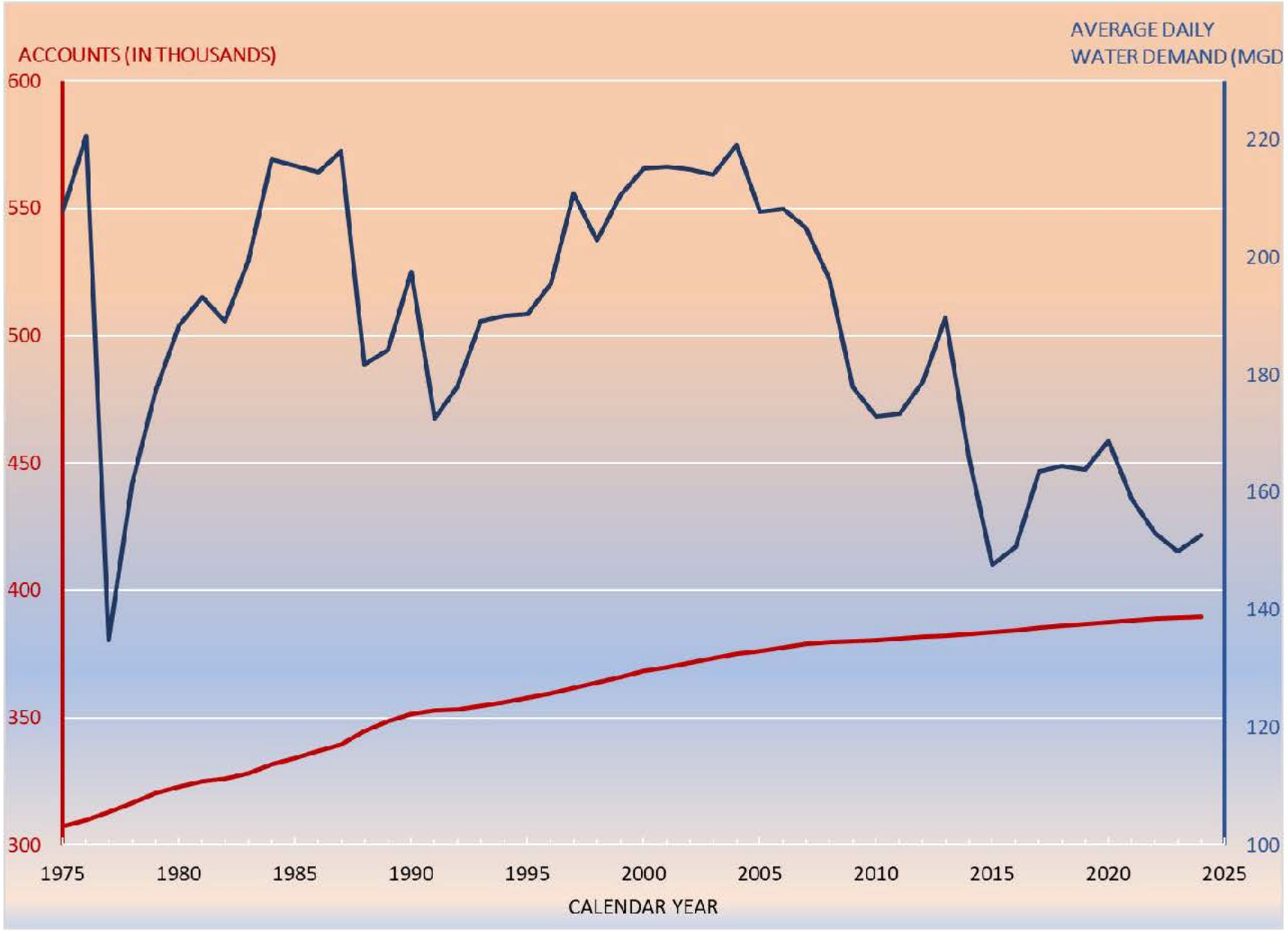
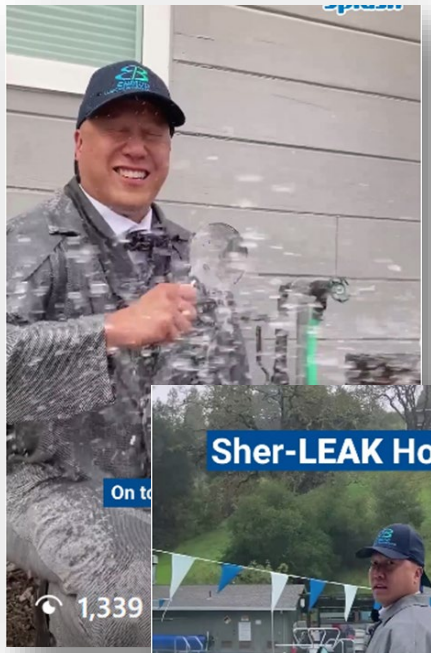
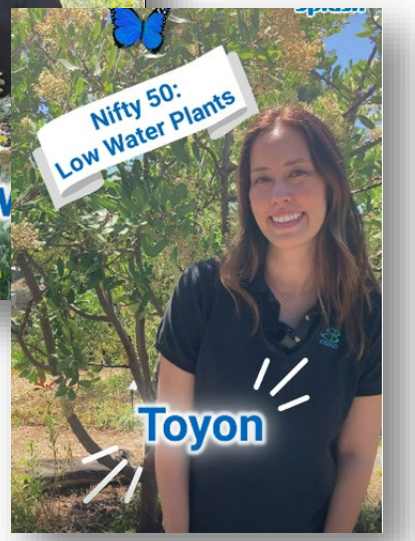
Demand and Accounts



Creating a Conservation Culture

Aligning messaging and tools where our customers get their information





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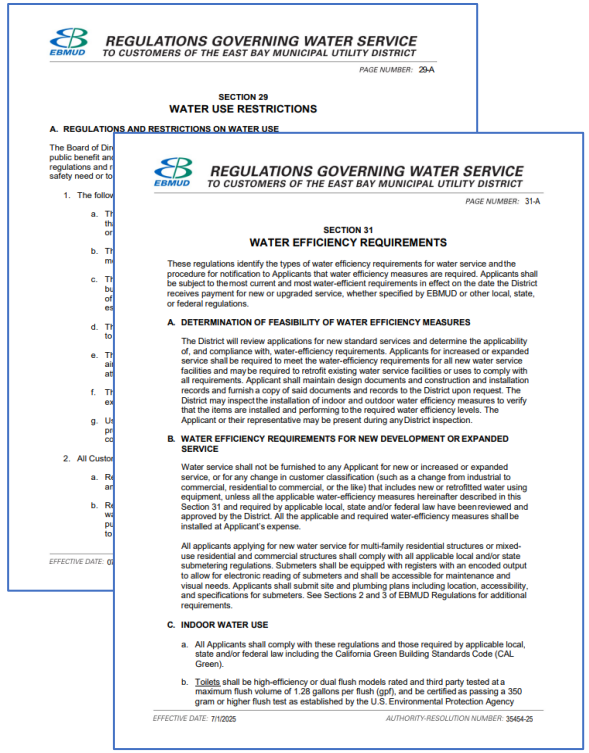
Creating a Conservation Culture

EBMUD

Regulations Governing Water Service

- **Section 29** – Water Use Restrictions
  - Prohibited water use, such as runoff from landscape irrigation, washing of sidewalks and driveways, and irrigating within 48 hours of rain
  - Water saving guidelines indoors, hotels/motels, gyms and restaurants requests for customers to conserve water, ensuring existing trees remain healthy
- **Section 31** – Water Efficiency Requirements
  - New water service applications, expanded service, and customer classifications
  - Efficient indoor plumbing fixtures and outdoor landscape efficiency requirements



REGULATIONS GOVERNING WATER SERVICE
TO CUSTOMERS OF THE EAST BAY MUNICIPAL UTILITY DISTRICT

PAGE NUMBER: 29-A

SECTION 29
WATER USE RESTRICTIONS

A. REGULATIONS AND RESTRICTIONS ON WATER USE

REGULATIONS GOVERNING WATER SERVICE
TO CUSTOMERS OF THE EAST BAY MUNICIPAL UTILITY DISTRICT

PAGE NUMBER: 31-A

SECTION 31
WATER EFFICIENCY REQUIREMENTS

These regulations identify the types of water efficiency requirements for water service and the procedure for notification to Applicants that water efficiency measures are required. Applicants shall be subject to the most current and most water-efficient requirements in effect on the date the District receives payment for new or upgraded service, whether specified by EBMUD or other local, state, or federal regulations.

A. DETERMINATION OF FEASIBILITY OF WATER EFFICIENCY MEASURES

The District will review applications for new standard services and determine the applicability of, and compliance with, water-efficiency requirements. Applicants for increased or expanded service shall be required to meet the water-efficiency requirements for all new water service facilities and may be required to retrofit existing water service facilities or uses to comply with all requirements. Applicant shall maintain design documents and construction and installation records and furnish a copy of said documents and records to the District upon request. The District may inspect the installation of indoor and outdoor water efficiency measures to verify that the items are installed and performing to the required water efficiency levels. The Applicant or their representative may be present during any District inspection.

B. WATER EFFICIENCY REQUIREMENTS FOR NEW DEVELOPMENT OR EXPANDED SERVICE

Water service shall not be furnished to any Applicant for new or increased or expanded service, or for any change in customer classification (such as a change from industrial to commercial, residential to commercial, or the like) that includes new or retrofitted water using equipment, unless all the applicable water-efficiency measures hereinafter described in this Section 31 and required by applicable local, state and/or federal law have been reviewed and approved by the District. All the applicable and required water-efficiency measures shall be installed at Applicant's expense.

All applicants applying for new water service for multi-family residential structures or mixed-use residential and commercial structures shall comply with all applicable local and/or state submetering regulations. Submeters shall be equipped with registers with an encoded output to allow for electronic reading of submeters and shall be accessible for maintenance and visual needs. Applicants shall submit site and plumbing plans including location, accessibility, and specifications for submeters. See Sections 2 and 3 of EBMUD Regulations for additional requirements.

C. INDOOR WATER USE

a. All Applicants shall comply with these regulations and those required by applicable local, state and/or federal law including the California Green Building Standards Code (CAL Green).

b. Toilets shall be high-efficiency or dual flush models rated and third party tested at a maximum flush volume of 1.28 gallons per flush (gpf), and be certified as passing a 350 gram or higher flush test as established by the U.S. Environmental Protection Agency

EFFECTIVE DATE: 7/1/2025 AUTHORITY-RESOLUTION NUMBER: 35454-25

Water Demand Forecast Update

Purpose

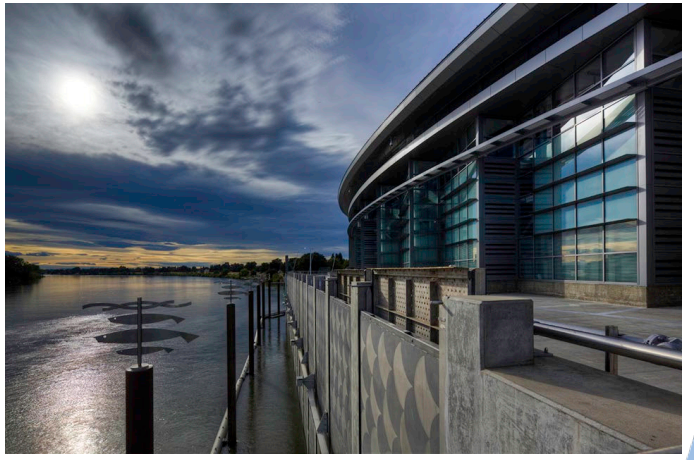
- Water conservation planning
- Recycled water planning
- Water supply planning
- Facility and pipeline sizing

Schedule

- In-depth Demand Study completed every 10 years
- Mid-Cycle Demand Updates in the interim 5 years
  - Adjust forecast to captures changes in development trends, conservation, recycled water, high water users, non-revenue water, and climate change
  - Supports the 2025 Urban Water Management Plan
- Next in-depth Demand Study will begin in 2027

Recycled Water Pipeline

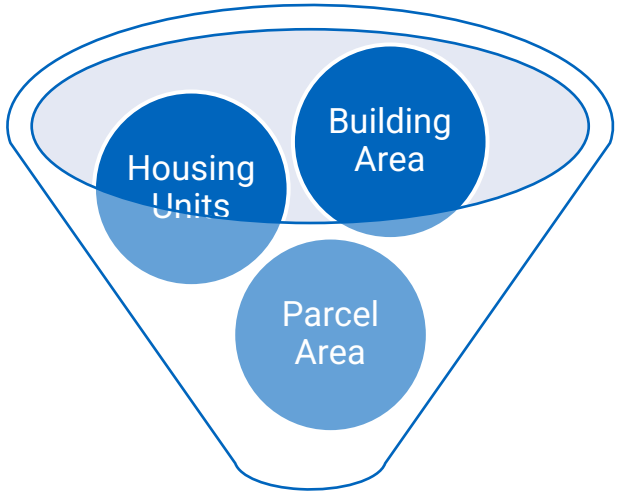
Distribution Reservoir



Freeport Intake Facility

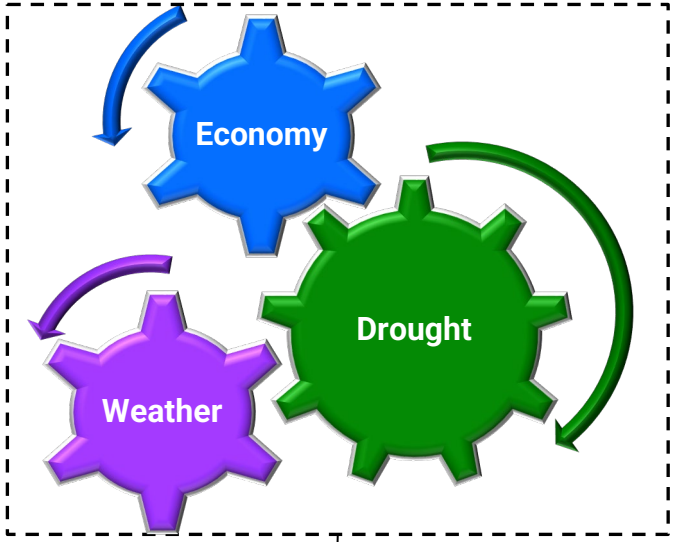
Demand Study Background

Updated Driver Unit Forecasts



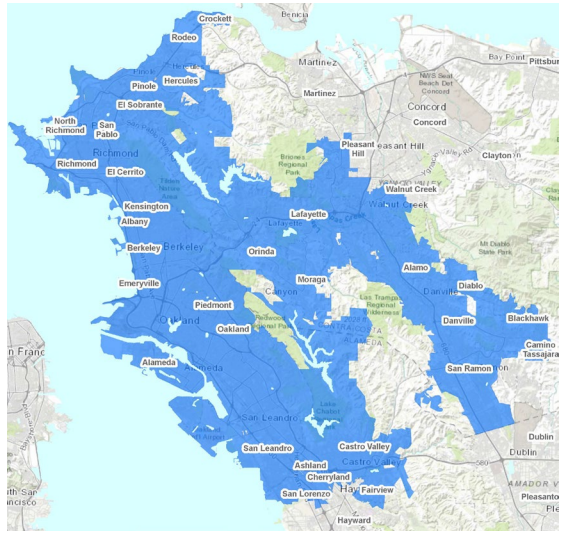
Number of Units

Water Demand Model



Water Demand per Unit

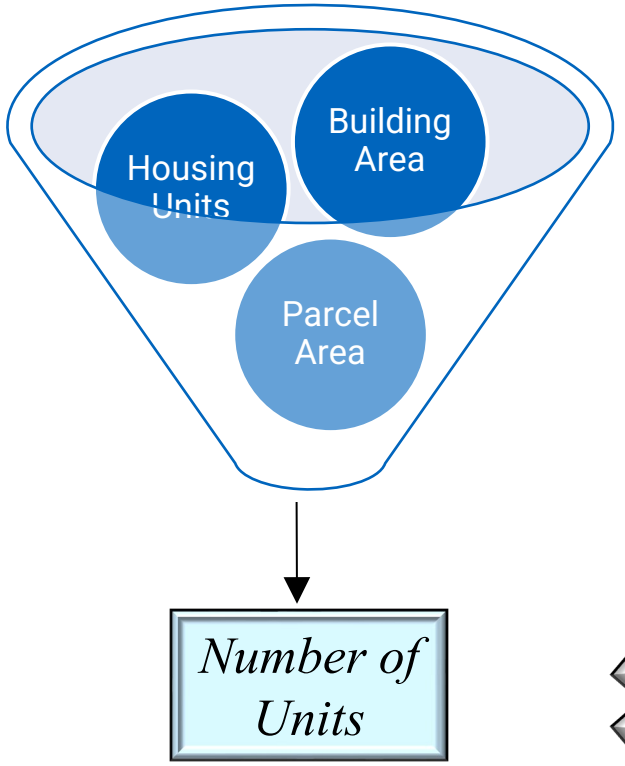
Service Area Forecast



Water Demand

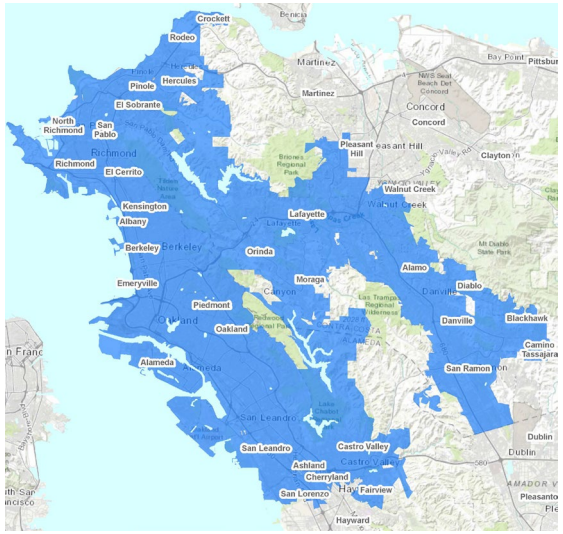
Demand Study Background

Updated Driver Unit Forecasts



Water Demand Model

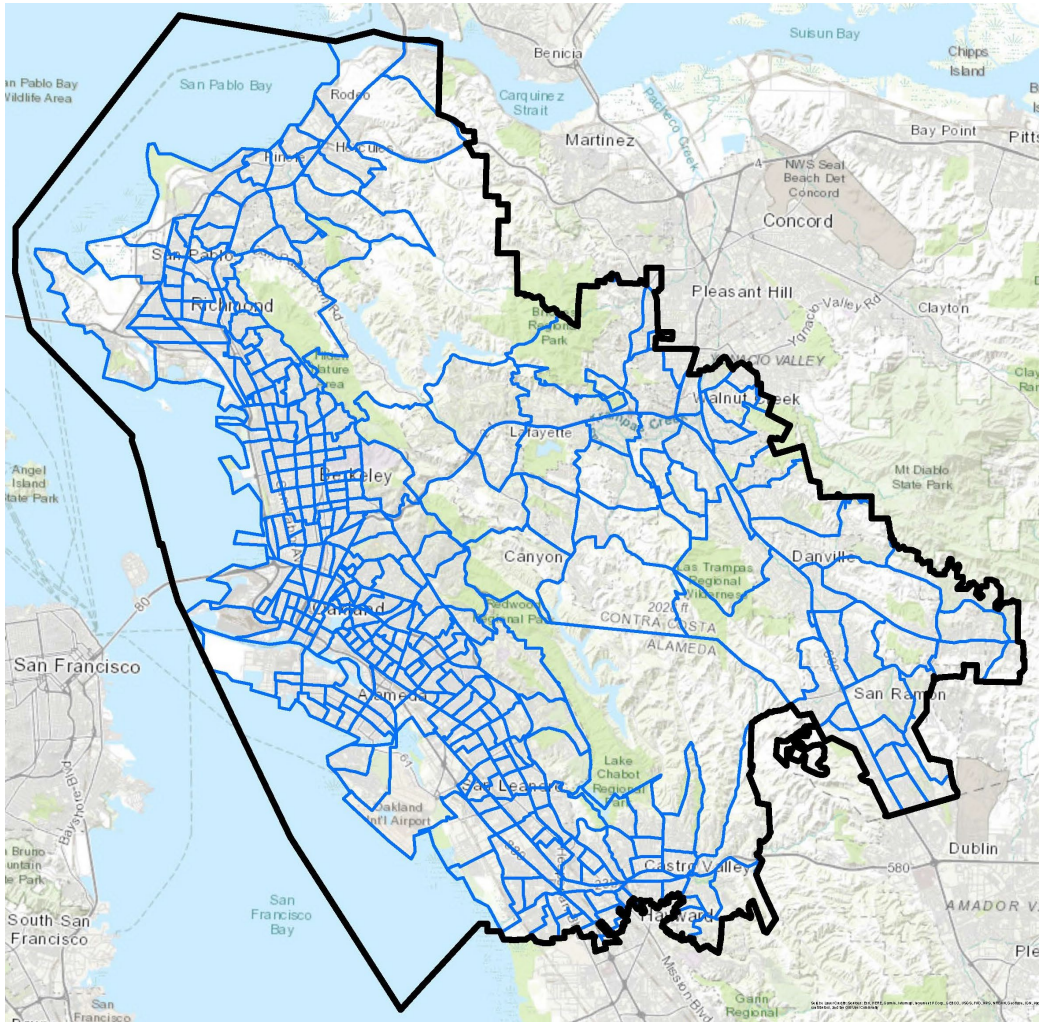
Service Area Forecast



Water Demand

Demand Study Background

345 Census Tracts



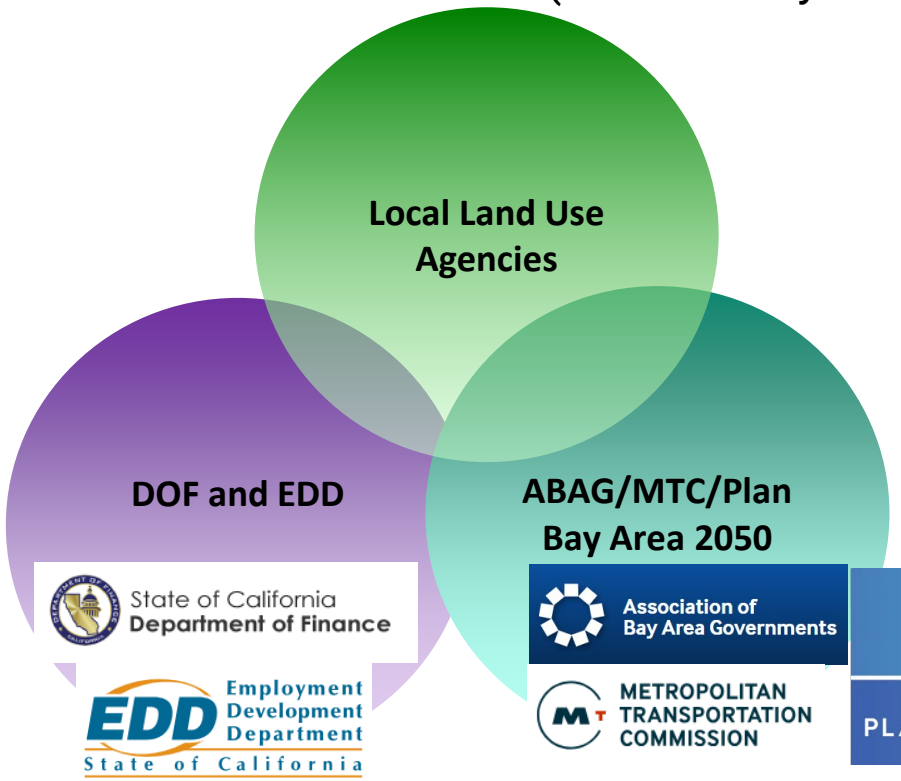
9 Land Use Sectors

Land Use Sector	Number	Driver Unit
Single Family	1	**Housing Units**
Multiple Family (low, medium, high density)	3	
Commercial (offices, shopping, restaurants, etc.)	2	**Building Area** (1,000 square feet)
Industrial (food/beverage processing, biotechnology, warehouses, etc.)	1	
Institutional (healthcare, schools, government, etc.)	1	
Landscape (parks, cemeteries, etc.)	1	**Parcel Area** (Acres)

Water Demand Forecast Update
Driver Units

Surveyed all 22 Agencies
(June to July 2023)

Checked Existing Driver Units



Obtained Forecasts
(Developed in 2021)

2022-2050 Forecast

178,200 residential units

98 million square feet building floor area

Driver Units reflect state-mandated Regional Housing Needs Allocation (RHNA) and recently adopted Housing Element updates

Water Demand Forecast Update
Demand Adjustments

Demand Component	Criteria for Mid-Cyle Update	Mid-Cycle Update for 2050
Recycled Water	Recycled Water Strategic Plan	- 7.6 MGD (20 MGD goal)
Water Conservation	Water Conservation Strategic Plan	- 66 MGD (70 MGD goal)
High Water Users	Historical Consumption and Customer Surveys	+ 14.2 MGD
Climate Change	Warmer/Drier Global Climate Model and Business as Usual Emission Scenario	+ 7 MGD
Water Loss	California Water Audit (1997 to 2022 average)	+ 28 MGD

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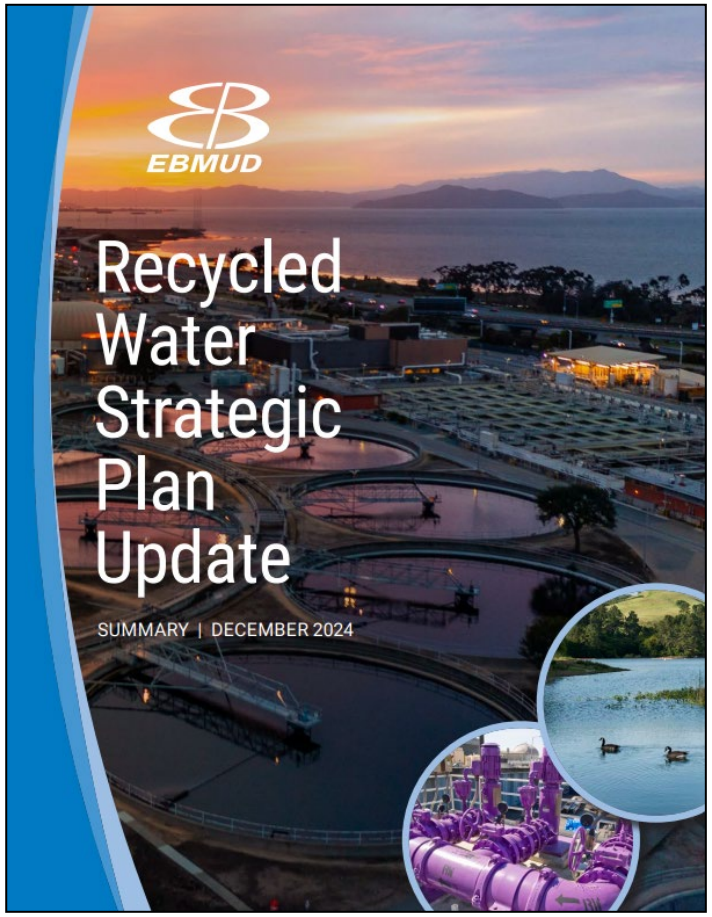
Water Demand Forecast Update
Recycled Water



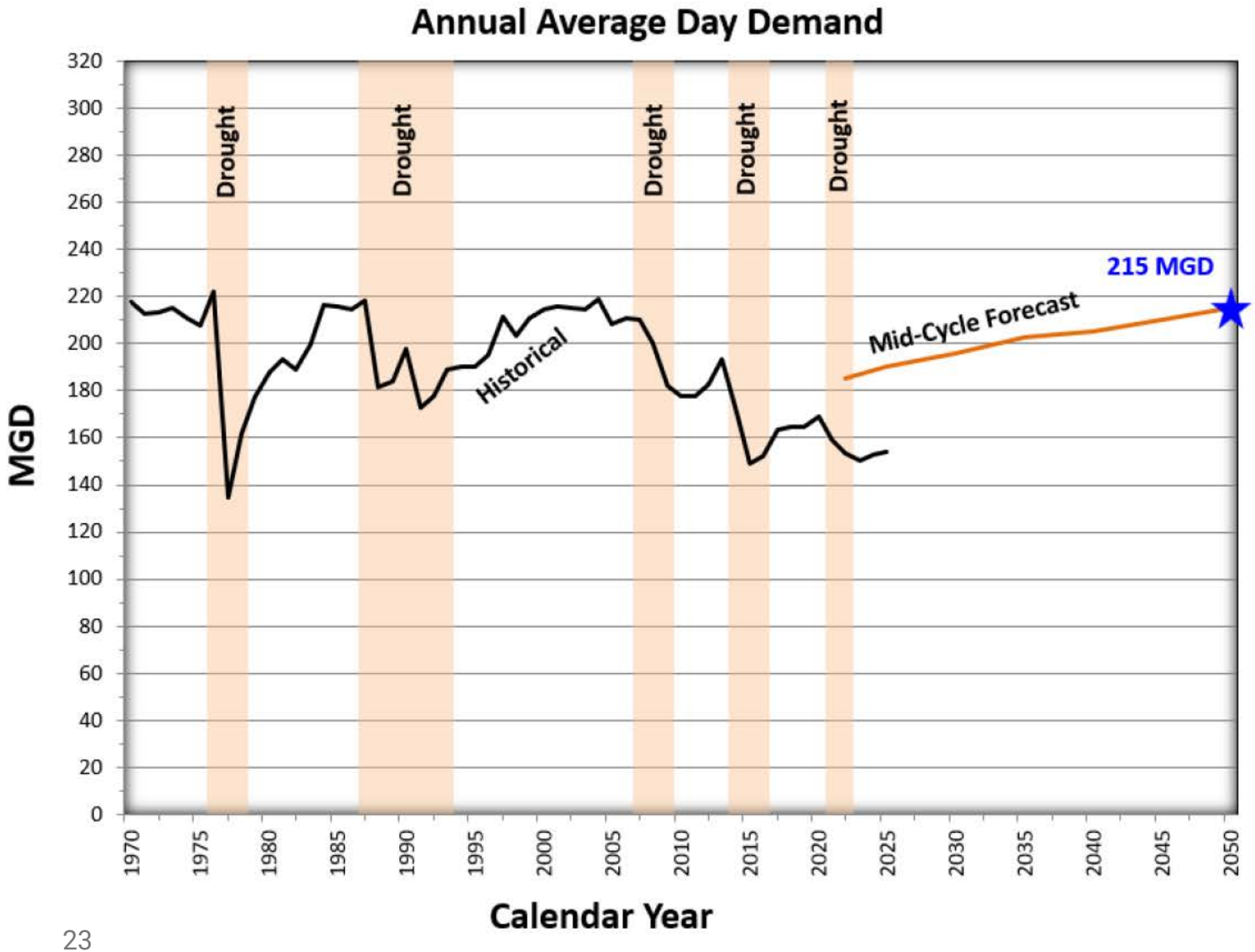
Project	Goal (MGD)	Forecast (MGD)
Chevron (Existing)	6.4	2.9[1]
DERWA (Existing)	0.8	0.8
East Bayshore (Existing)	0.2	0.2
Total (2022)	**7.4**	**3.9**
Chevron (Future)	0.5	--[1]
Phillips 66 (Future)	2.8	1.4[2]
DERWA (Future)	1.6	1.6
East Bayshore (Future)	0.7	0.7
Potable Reuse (Future)	7	--
Total (2050)	**20**	**7.6**

(1) Reflects Richmond Advanced Recycled Expansion (RARE) offline

(2) Reflects uncertainty of available wastewater supply and recycled water demands

DERWA = Dublin San Ramon Services District (DSRSD) East Bay Municipal Utility District (EBMUD) Recycled Water Authority

Water Demand Forecast Update Results



Land Use Agency Growth (2022-2050):

Dwelling Unit Growth (178,200 units):

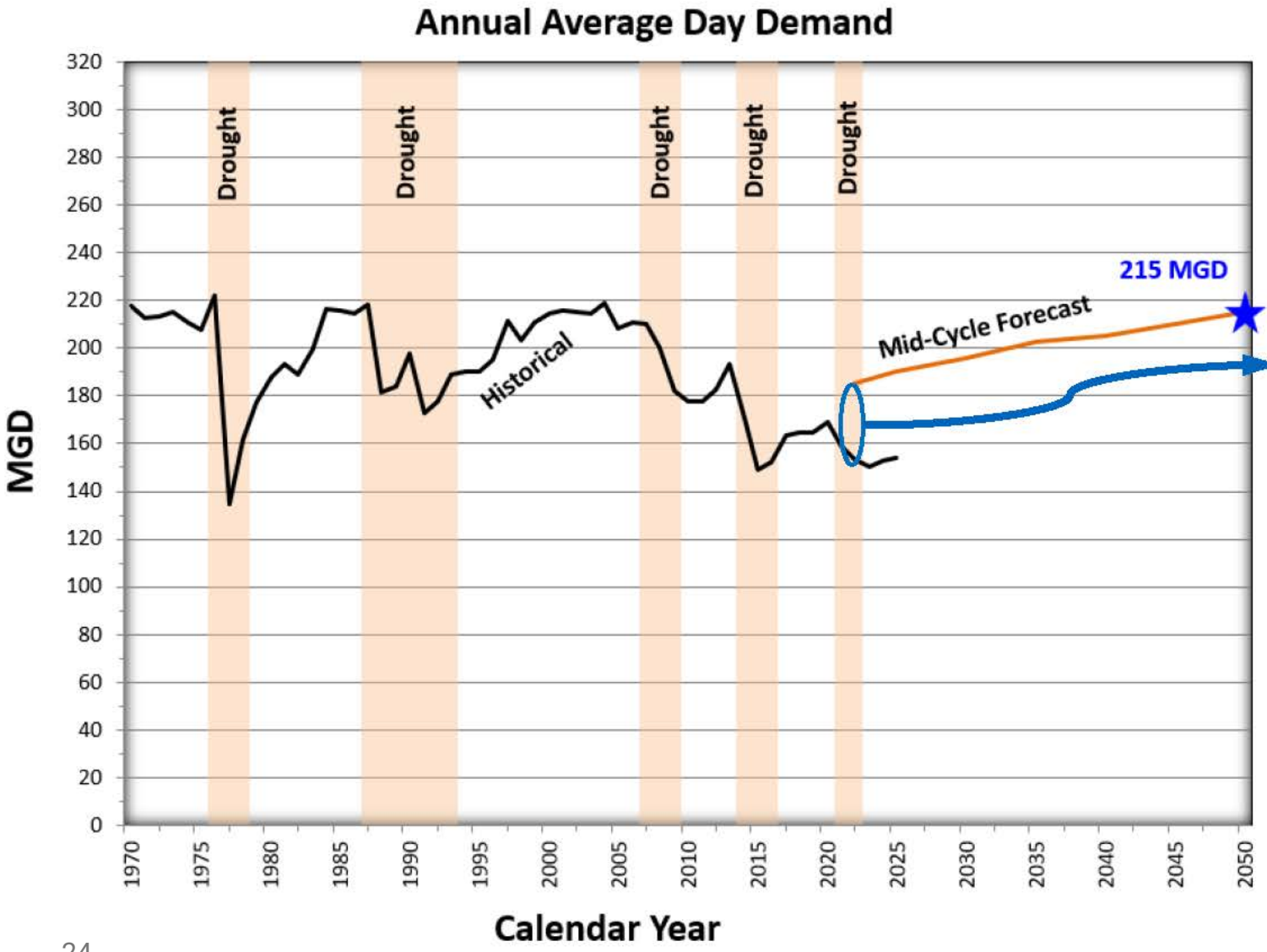
- 12% single family
- 58% multiple family

Building Floor Area Growth (98 Million sf):

- 42% commercial
- 26% industrial
- 45% institutional

sf = Square Feet

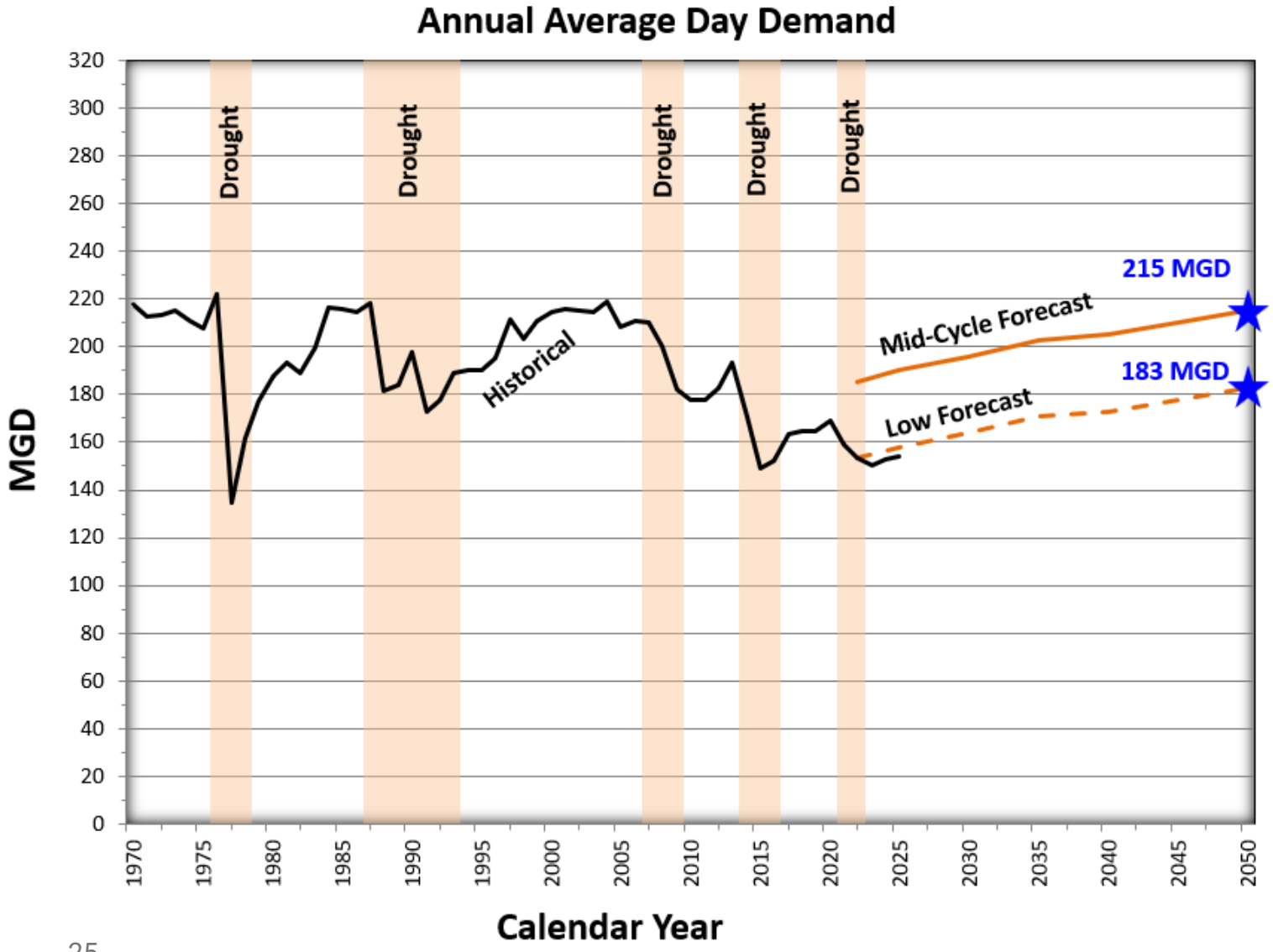
Water Demand Forecast Update Results



32 MGD difference (2022) due to:

- Drought response and rebound
- Short term changes in economy and weather, and water loss
- Uncertainty in recycled water
- Model accuracy

Water Demand Forecast Update Results



Low Forecast:

- Developed for need for water analysis
- Consistent with 2022 demand
- Grows at same long-term rate as forecast
- Next demand study will quantify how much of recent drop is permanent

Water Demand Forecast Update Summary

Forecast methodology:

- Reflects state mandated city/county forecasted growth
- Accounts for recycled water and conservation uncertainty and climate change
- 2060 Demand Study will measure long-term effect of recent drop in demand

Methodology is conservative:

- Ensures we have sufficient supply for customers
- Addresses uncertainty in demand hardening and demands after 2050

Application of forecasts:

- Sizing facilities and pipelines, but projects in Capital Improvement Program are addressing other needs
- Water supply planning will incorporate a low demand forecast scenario

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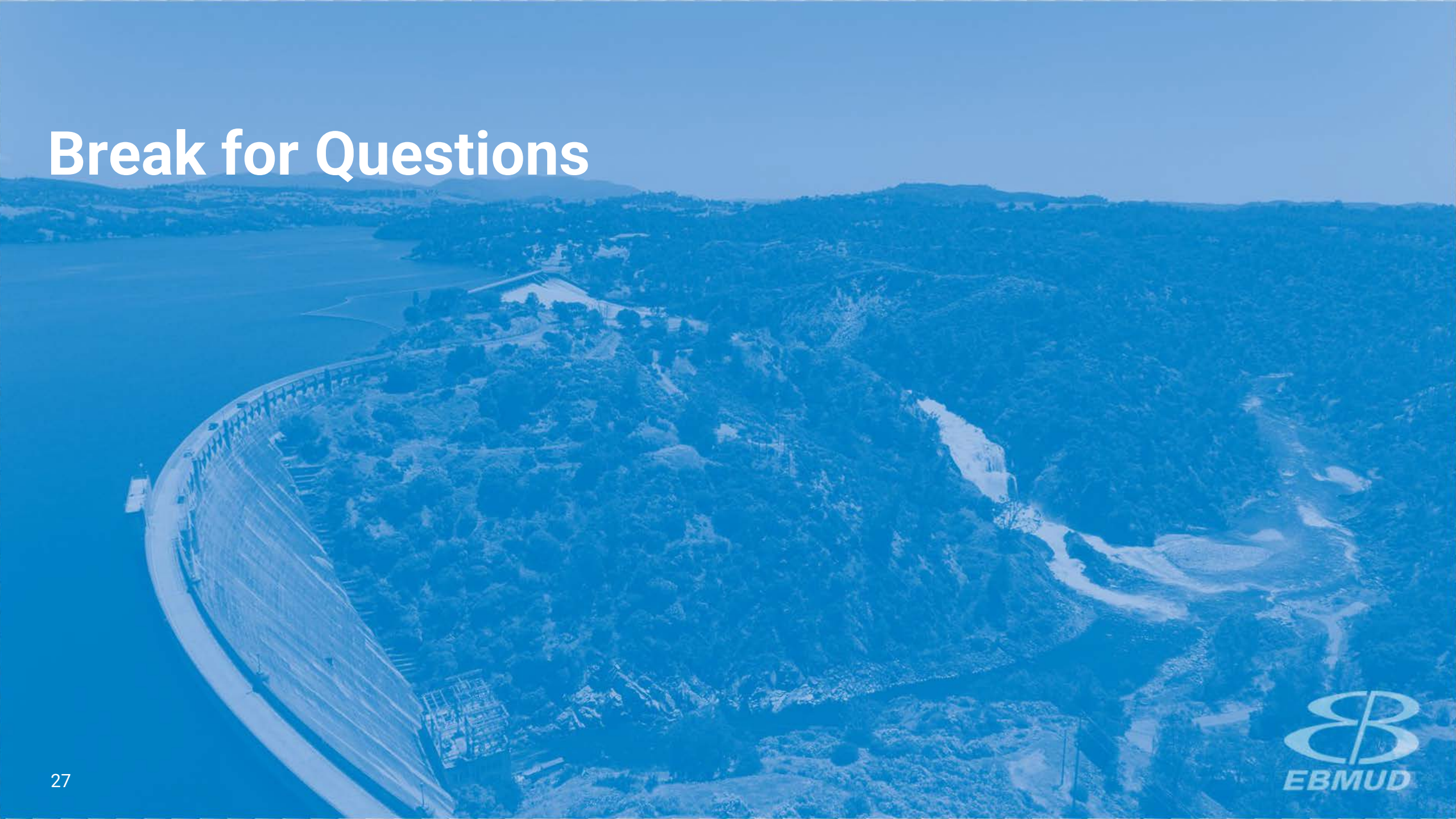
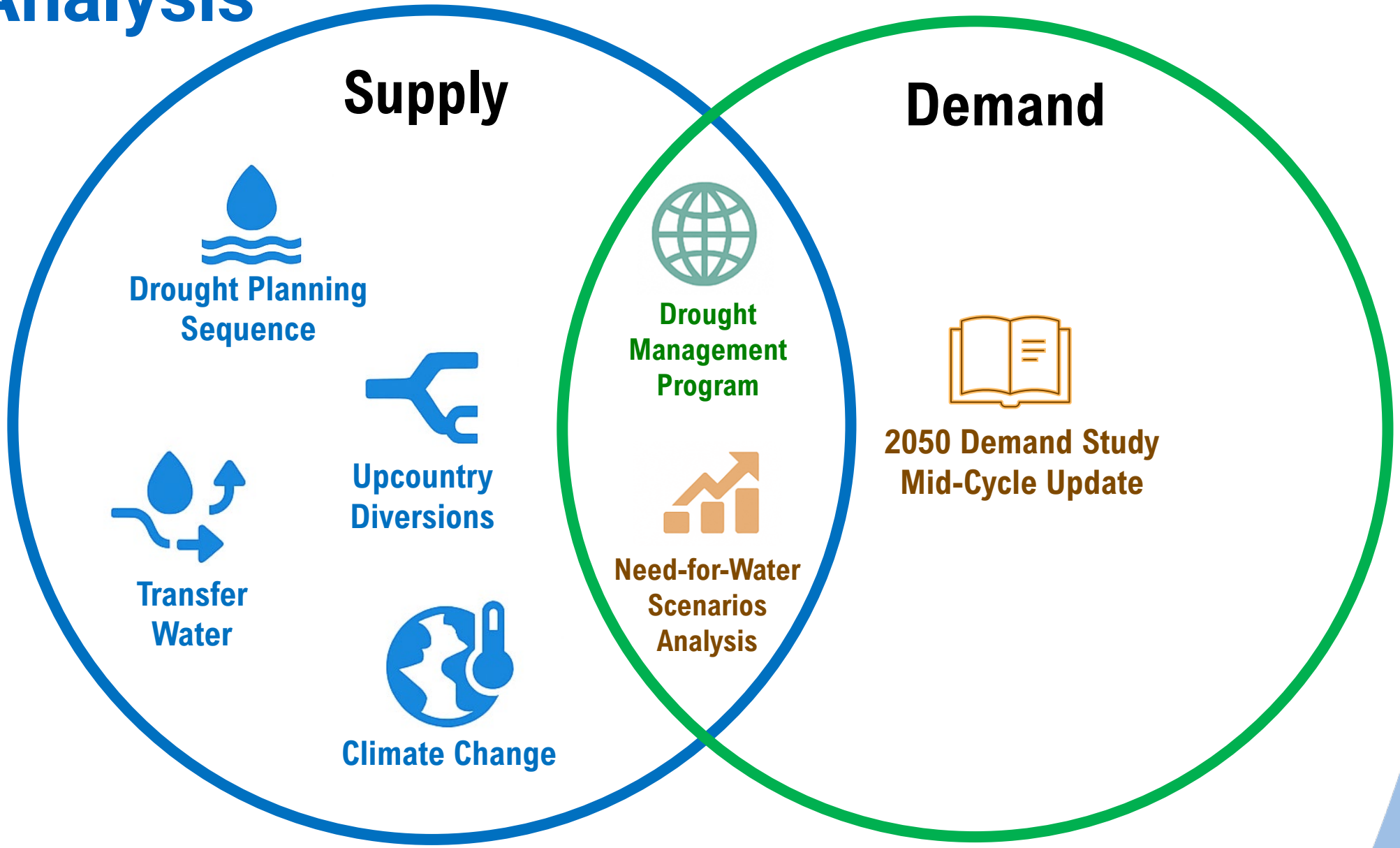
Break for Questions



Long Term Water Resources Planning: Key Analysis



Drought Planning Sequence (DPS)

- District uses a three-year DPS to evaluate water supply reliability under an extreme drought condition
- DPS is based on the driest two-year period on record (1976-77) and a simulated 3rd dry year (1978)
- In 2015, the District assessed the DPS against a long period of reconstructed Mokelumne River runoff, confirming it represents a severe but plausible drought scenario.

Drought Planning Sequence

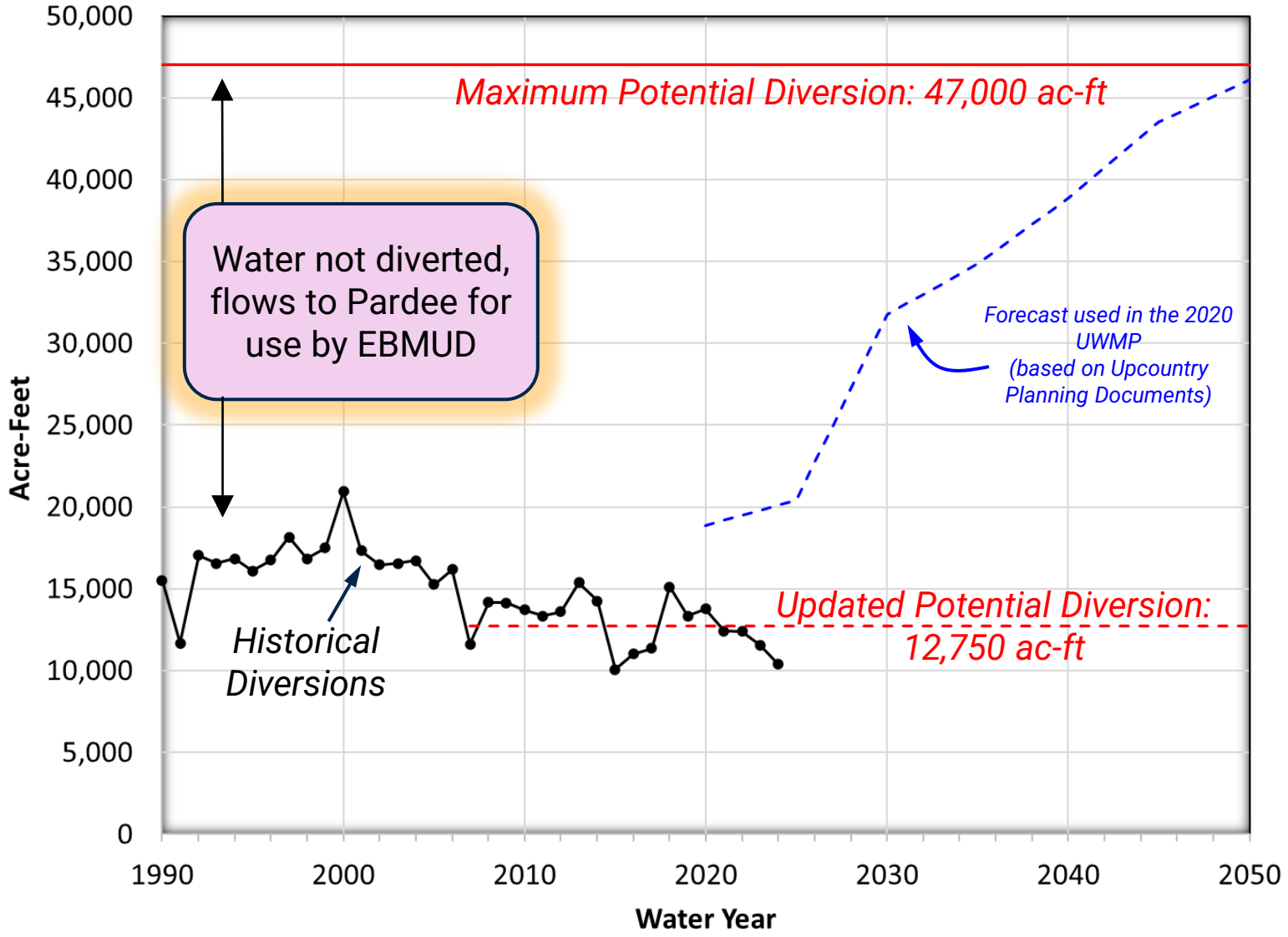
2025 UWMP

Conduct preliminary analysis of the DPS looking at regional historical record studies.

2030 UWMP

Use wide-ranging climate scenarios to evaluate future scenarios for extreme drought periods.

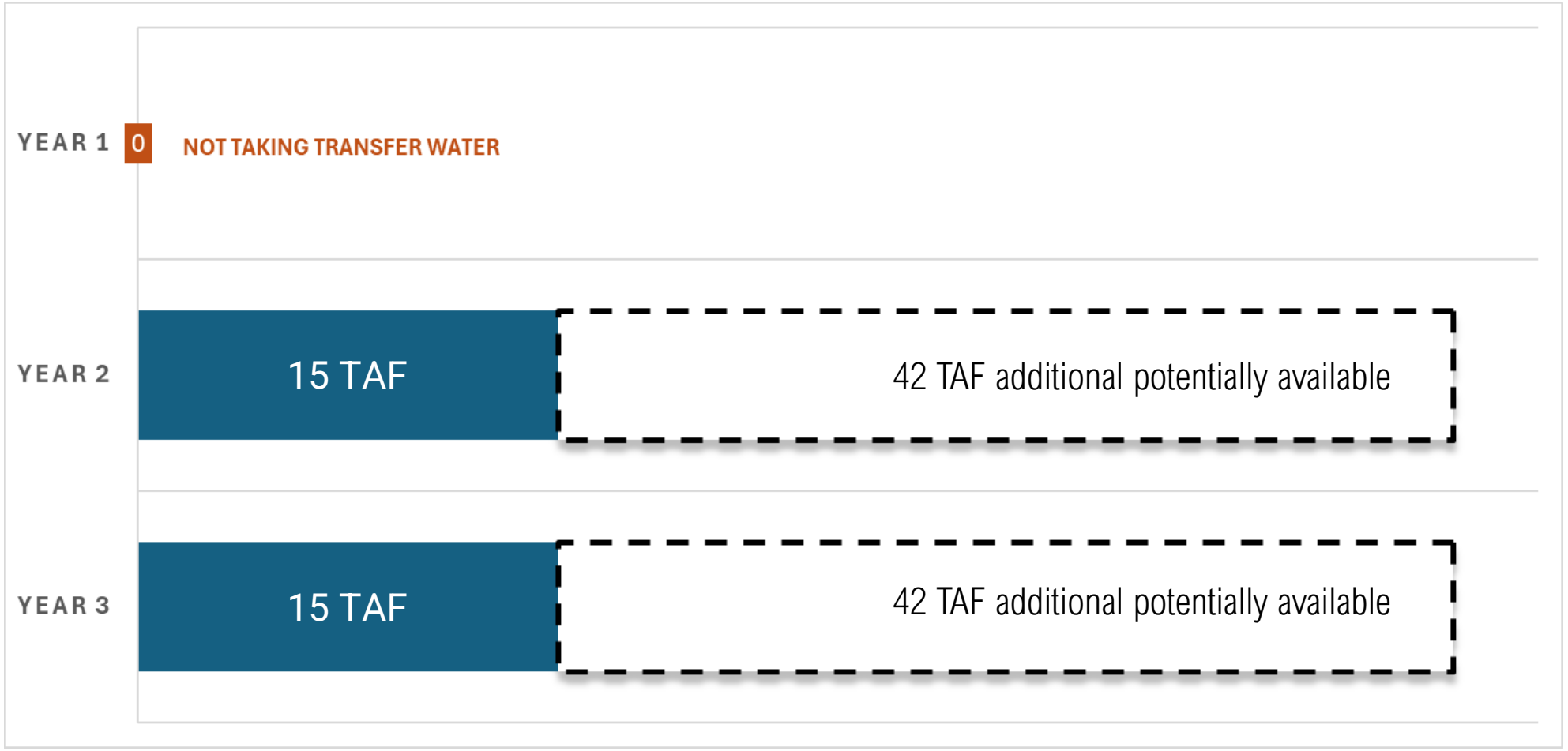
Upcountry Diversions



Agency	Level of Demand (acre-feet)
Amador	8,050
JVID	2,800
CCWD	400
CPUD	1,500
Total	**12,750**

JVID = Jackson Valley Irrigation District
CCWD = Calaveras County Water District
CPUD = Calaveras Public Utilities District

Transfer Water



In the Need-for-Water Analysis, assuming 30 TAF of transfer water can be reliably obtained (from Placer County Water Agency or Yuba County Water Agency) in a multi-year drought period.

Current Drought Management Program

Total System Storage* (TAF)	Drought Stage	Supplemental Supply (CVP/WT)	Customer Demand Reduction
>475	0 Normal	-	Wise Water Use
475 – 425	1 Moderate	✓	Voluntary 0-10%
425 – 390	2 Significant	✓	Mandatory 10-15%
390 – 325	3 Severe	✓	Mandatory 15%
<325	4 Critical	✓	Mandatory >15%

*Total System Storage includes Pardee, Camanche, Upper San Leandro, Briones, Lafayette, Chabot, and San Pablo reservoirs.

TAF = Thousand Acre-Feet
CVP = Central Valley Project
WT = Water Transfers

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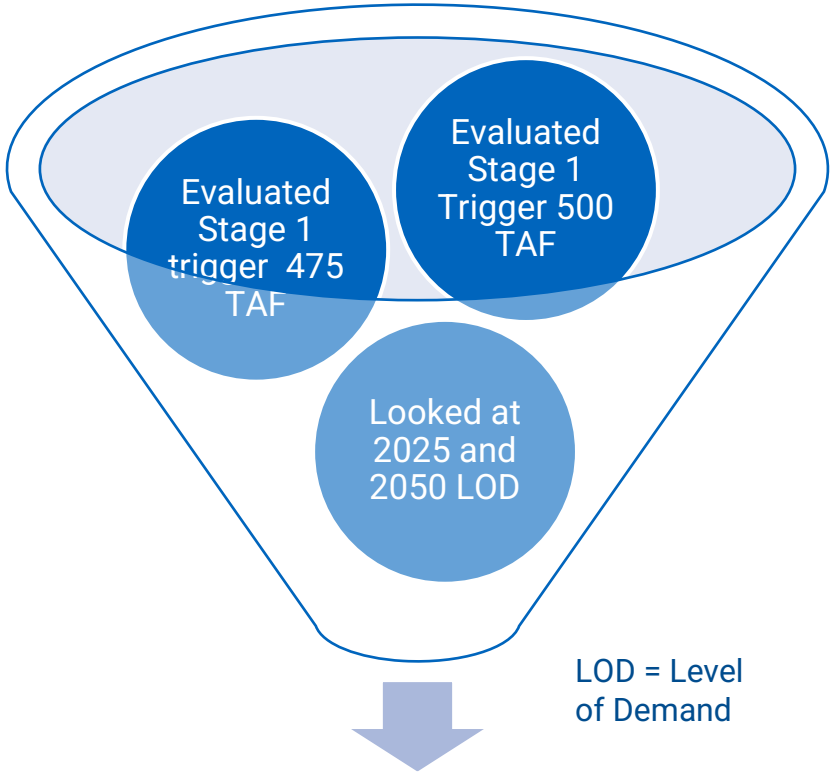
Drought Management Program

Sensitivity Analysis – Stage 1 Trigger

- Results in no significant impacts to: Joint Settlement Agreement water year type or frequency of rationing;
- Does result in a slight increase of Freeport Regional Water Project operations – 4 additional occurrences out of 92 years modeled.



Revised Drought Management Program

Current

Total System Storage* (TAF)	Drought Stage	Supplemental Supply (CVP/WT)	Customer Demand Reduction
>**475**	0 Normal	-	Wise Water Use
475 – 425	1 Moderate	✓	Voluntary 0-10%
425 – 390	2 Significant	✓	Mandatory 10-15%
390 – 325	3 Severe	✓	Mandatory 15%
<325	4 Critical	✓	Mandatory >15%

Proposed

Total System Storage* (TAF)	Drought Stage	Supplemental Supply (CVP/WT)	Customer Demand Reduction
>**500**	0 Normal	-	Wise Water Use
500 – 450	1 Moderate	✓	Voluntary 0-10%
450 – 390	2 Significant	✓	Mandatory 10-15%
390 – 325	3 Severe	✓	Mandatory 15%
<325	4 Critical	✓	Mandatory >15%

*Total System Storage includes Pardee, Camanche, Upper San Leandro, Briones, Lafayette, Chabot, and San Pablo reservoirs.
TAF – Thousand Acre-Feet
CVP – Central Valley Project
WT – Water Transfers

For **consideration**:
Moving to 500 TAF trigger for Stage 1.

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Supply-Demand Assessment
Need for Water Scenarios

	Scenario	Purpose
1	Base	Use District's historic hydrology with DPS to assess historic water supply, mid-cycle forecasted demands, and CVP allocation as per contract
2	Base with Reduced CVP Reliability	Assess potential water need when CVP allocation (50%, 25%, 0%) is subject to Municipal and Industrial (M&I) water shortage policy
3	Base + HRL	Assess potential water need by combining base scenario with District's proposed commitment to HRL Program which reduces EBMUD water supply with increased in-stream flow requirements
4	Base + HRL + Low Demand Forecast	Assess potential water need when demand is low while meeting District's proposed commitment to HRL Program
5	Five-Year Historical Dry Period	Assess water supply and demand for 1987 – 1992 drought period per regulatory requirement

HRL = Healthy Rivers and Landscapes
DPS = Drought Planning Sequence
CVP = Central Valley Project

Supply-Demand Assessment
Need for Water Scenarios

	Scenario	Purpose	Water Supply Shortage
1	Base	Use District's historic hydrology with DPS to assess historic water supply, mid-cycle forecasted demands, and CVP allocation as per contract	No shortage
2	Base with Reduced CVP Reliability	Assess potential water need when CVP allocation (50%, 25%, 0%) is subject to Municipal and Industrial (M&I) water shortage policy	16 TAF (Future Level of Demand)
3	Base + HRL	Assess potential water need by combining base scenario with District's proposed commitment to HRL Program which reduces EBMUD water supply with increased in-stream flow requirements	No shortage
4	Base + HRL + Low Demand Forecast	Assess potential water need when demand is low while meeting District's proposed commitment to HRL Program	No shortage
5	Five-Year Historical Dry Period	Assess water supply and demand for 1987 – 1992 drought period per regulatory requirement	No shortage

HRL = Healthy Rivers and Landscapes
DPS = Drought Planning Sequence
CVP = Central Valley Project

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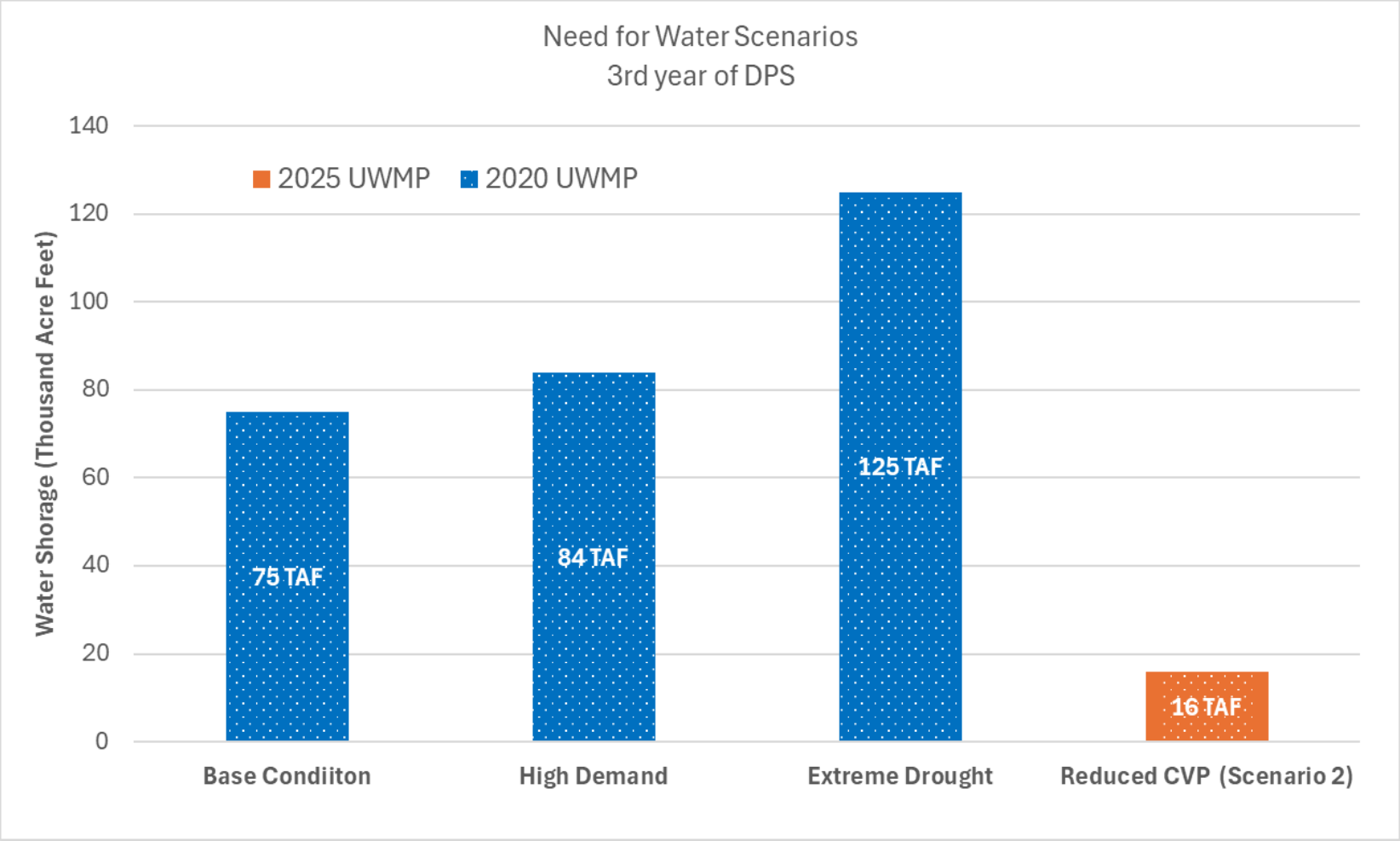
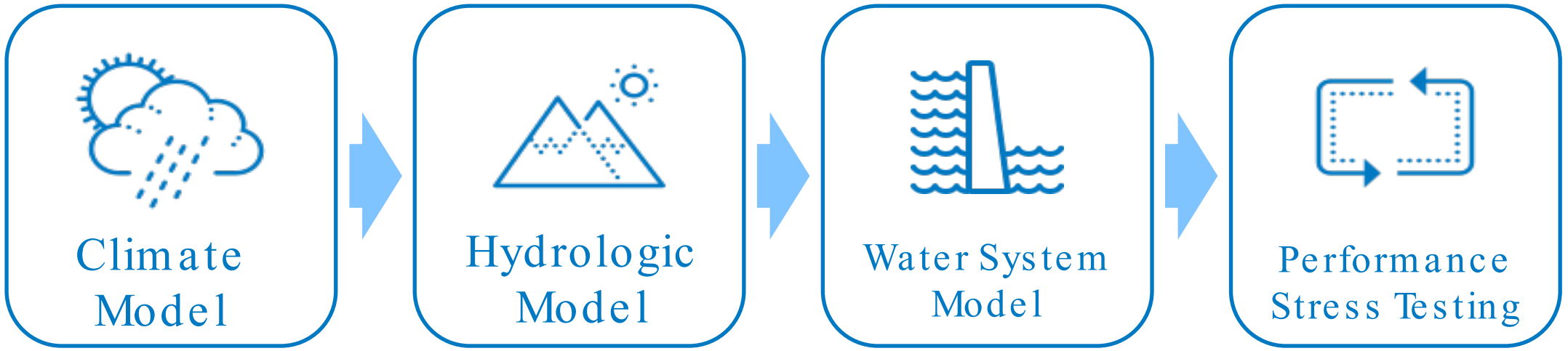
Supply-Demand Assessment
Comparison of 2020 vs 2025 UWMP Need for Water



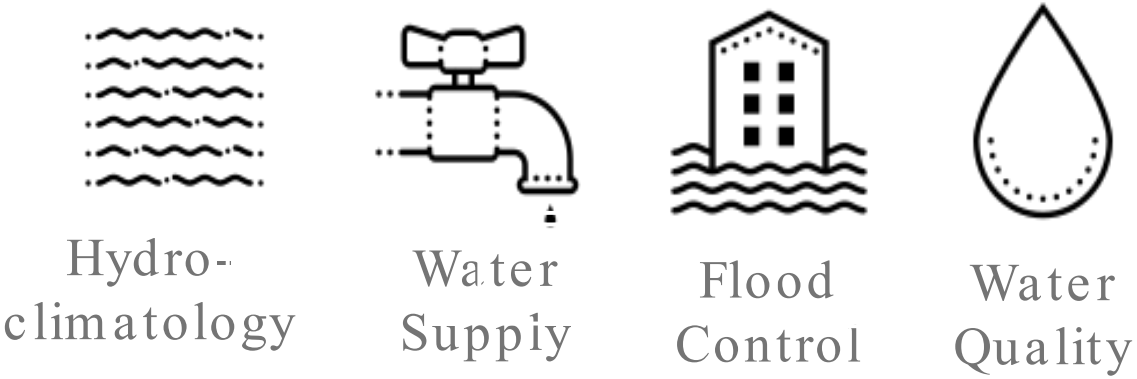
Factors Contributing to Shortage Differences:

- Significant reduction in upcountry diversions
- Water transfers included in 2025 base assumptions
- Lower demand

Climate Change Analysis



Risk and vulnerability are evaluated using 13 system performance metrics, which are quantitative indicators that inform water management decisions.



Climate Change Analysis in UWMP

2025 UWMP

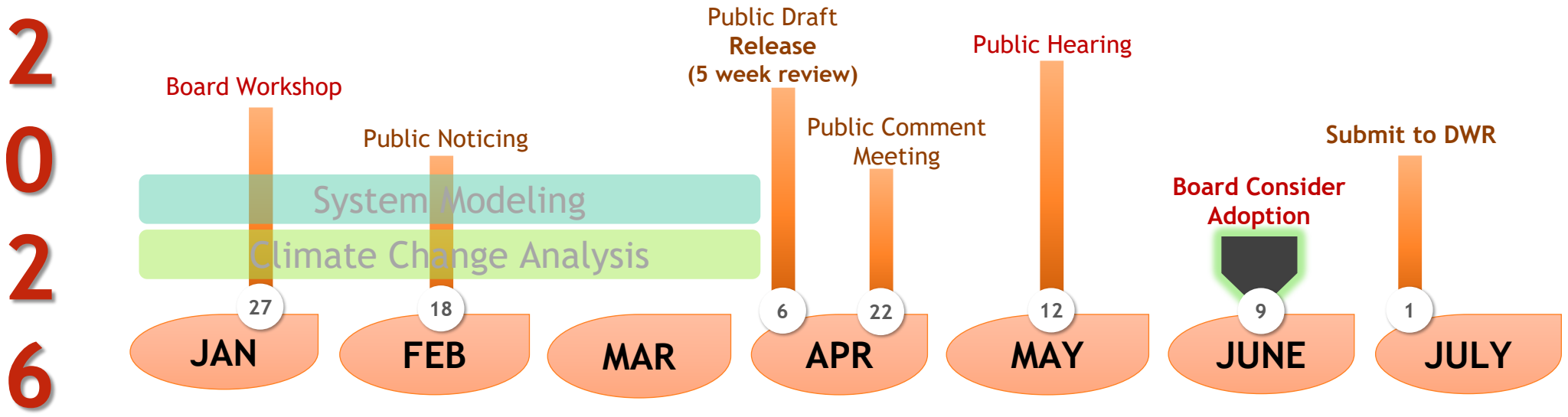
- Summarize projected climate impacts
- Assess potential changes in drought frequency
- Describe approach and performance metrics

2030 UWMP

- Share findings from the drought frequency analysis and update design drought if needed
- Summarize climate impacts, risks, and vulnerabilities
- Provide strategies to adapt to uncertain future

EBMUD

Timeline and Key Milestones



Board and Public Comments