Water Supply Master Plan 2050

Board of Directors Meeting, June 10, 2025

Water Supply Needs and Challenges

- Multi-year droughts
- Climate change impact
- Aging infrastructure
- Affordability

Needs and Purpose of WSMP

- Guiding document for long-term water supply investments
- Address existing and emerging challenges and identify strategies to maintain the reliable water supply system
- Adapt to changing conditions

Planning Goals to Achieve Level of Service

Meet 100% of annual water demand during non-drought years and at least 80% of demand in drought years – **Board Policy E.2-2.1**

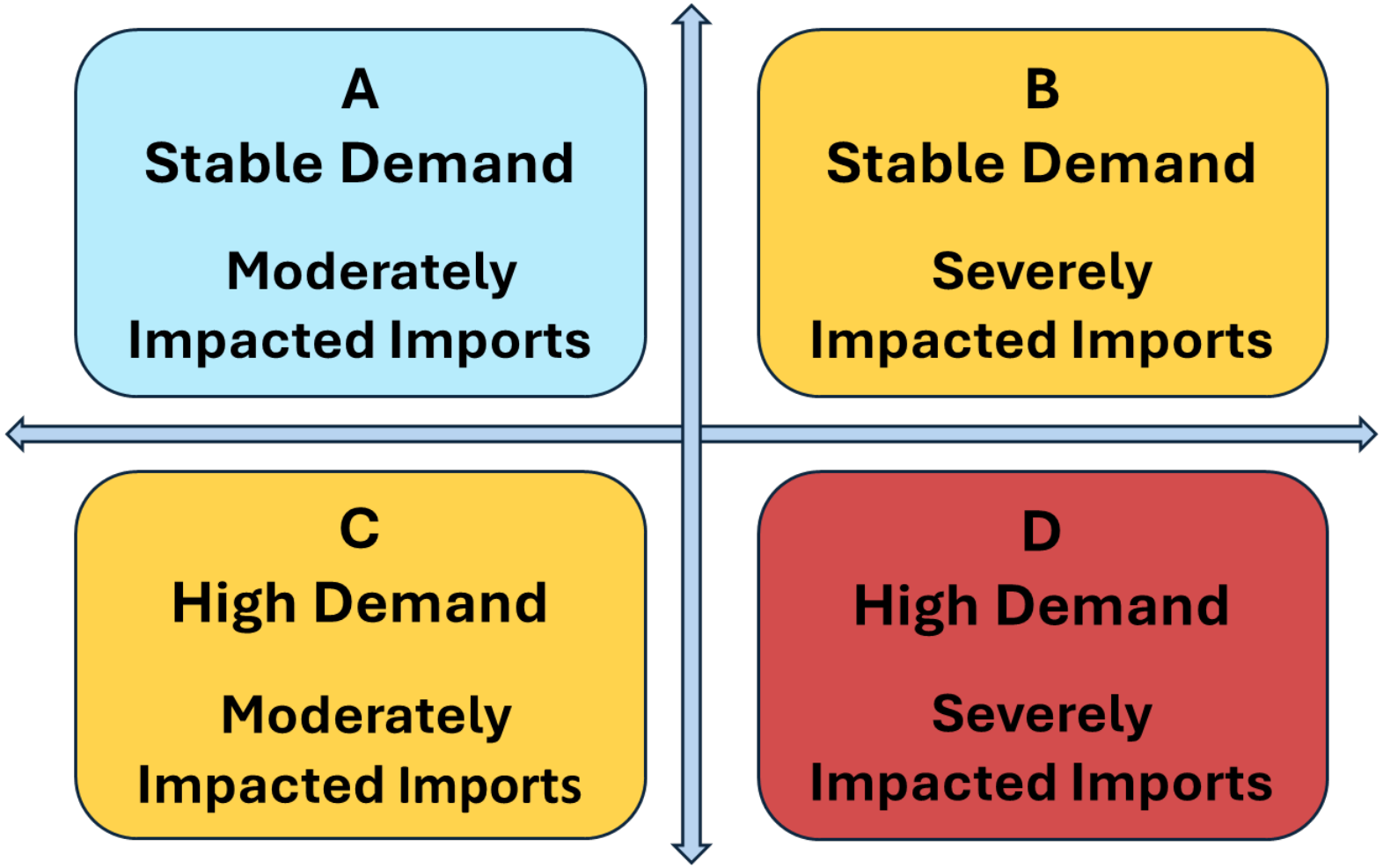
System reliability

Reduced shortage risk

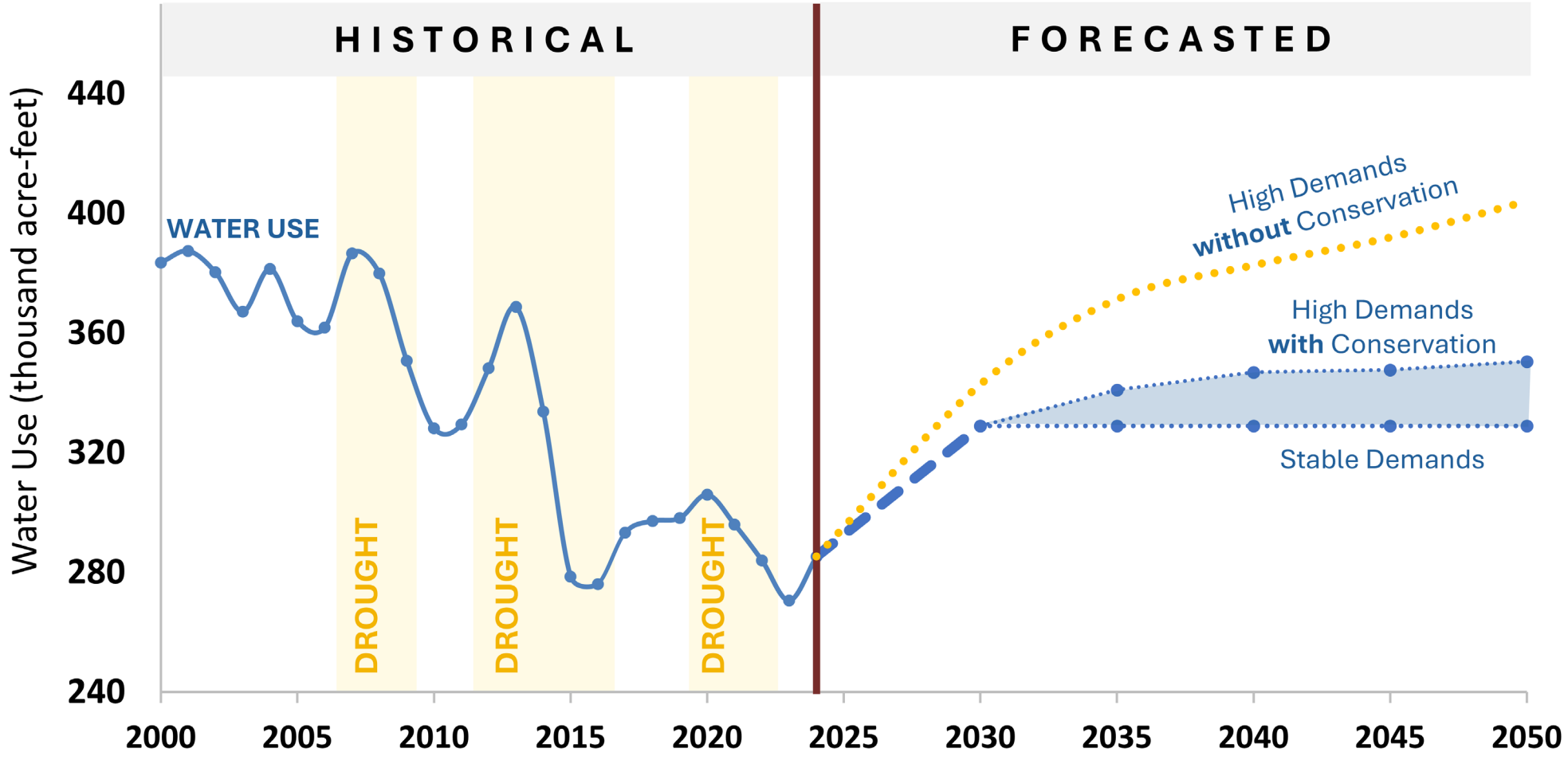
Supply diversification

Affordable rates

Planning for Multiple Future Conditions



Historical and Forecasted Demand



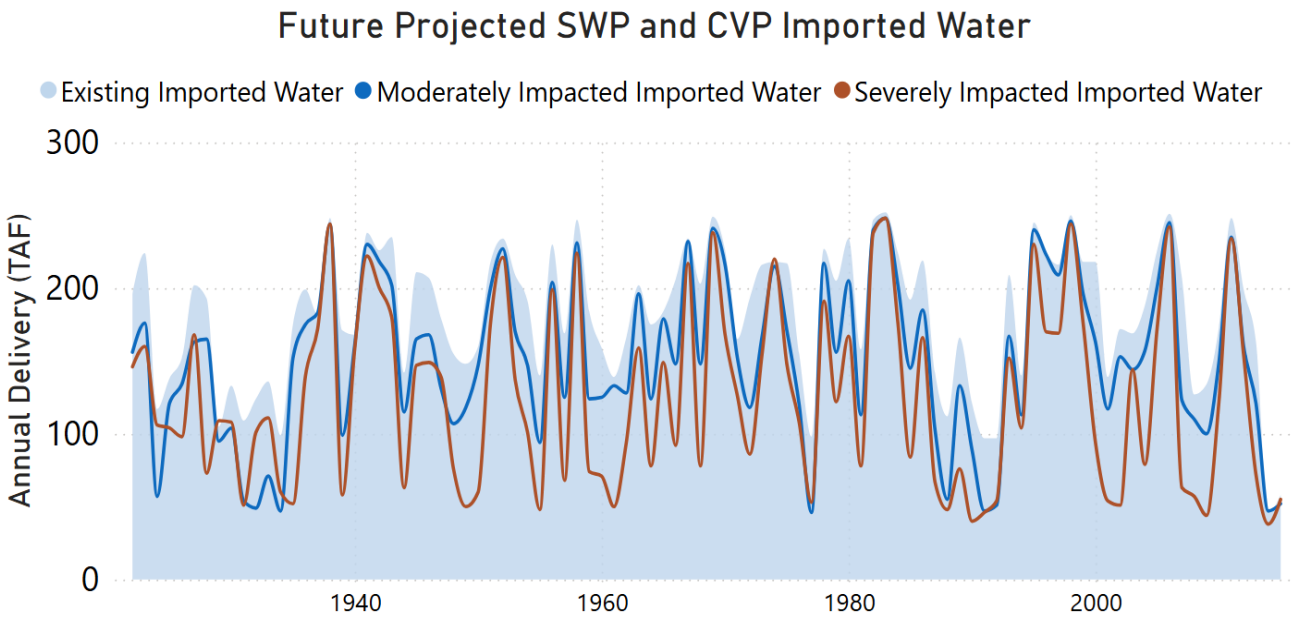
Demand modeling integrates historic water use trends, housing and economic growth, climate change, and post-drought water use rebound.

Imported Water Supply

Two imported water scenarios

- Moderately impacted imports
- Severely impacted imports

Climate change considered



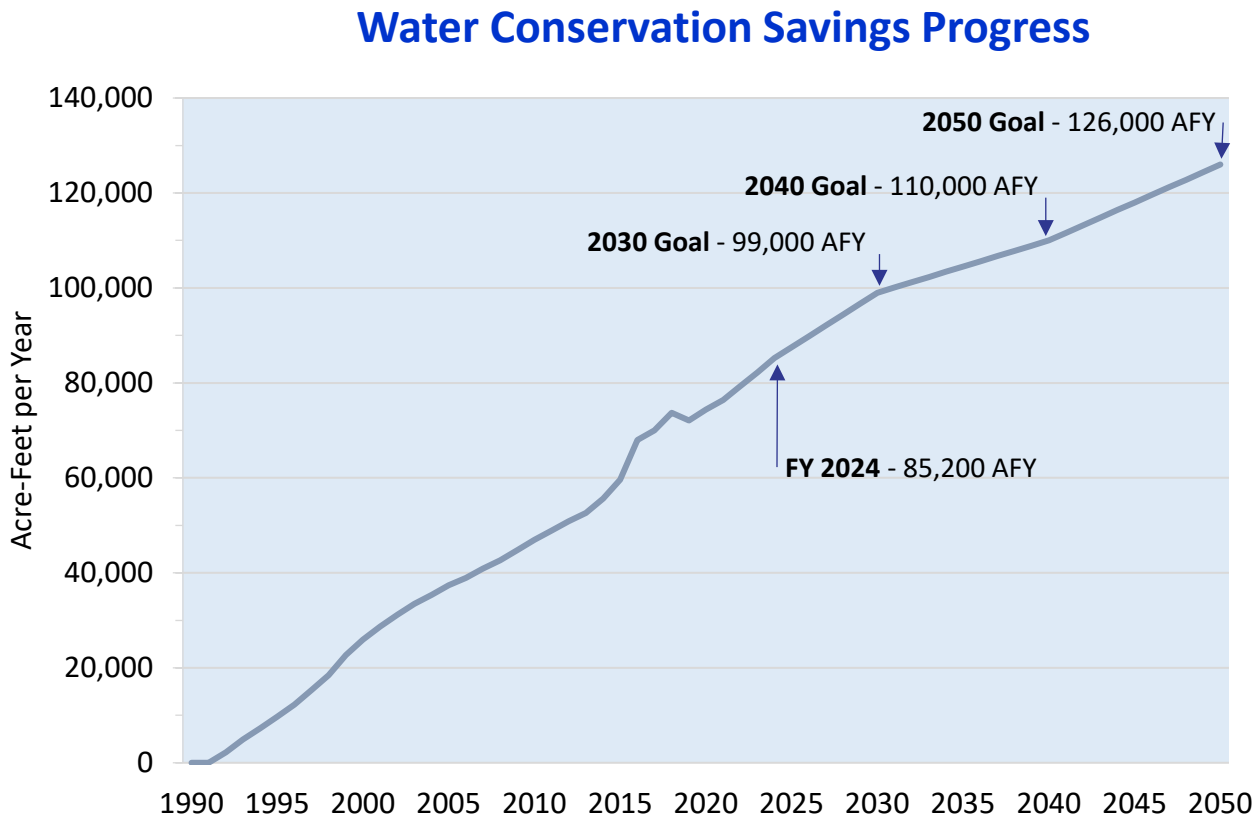
Baseline Assessment - Assumptions

Achieve long-term conservation goals

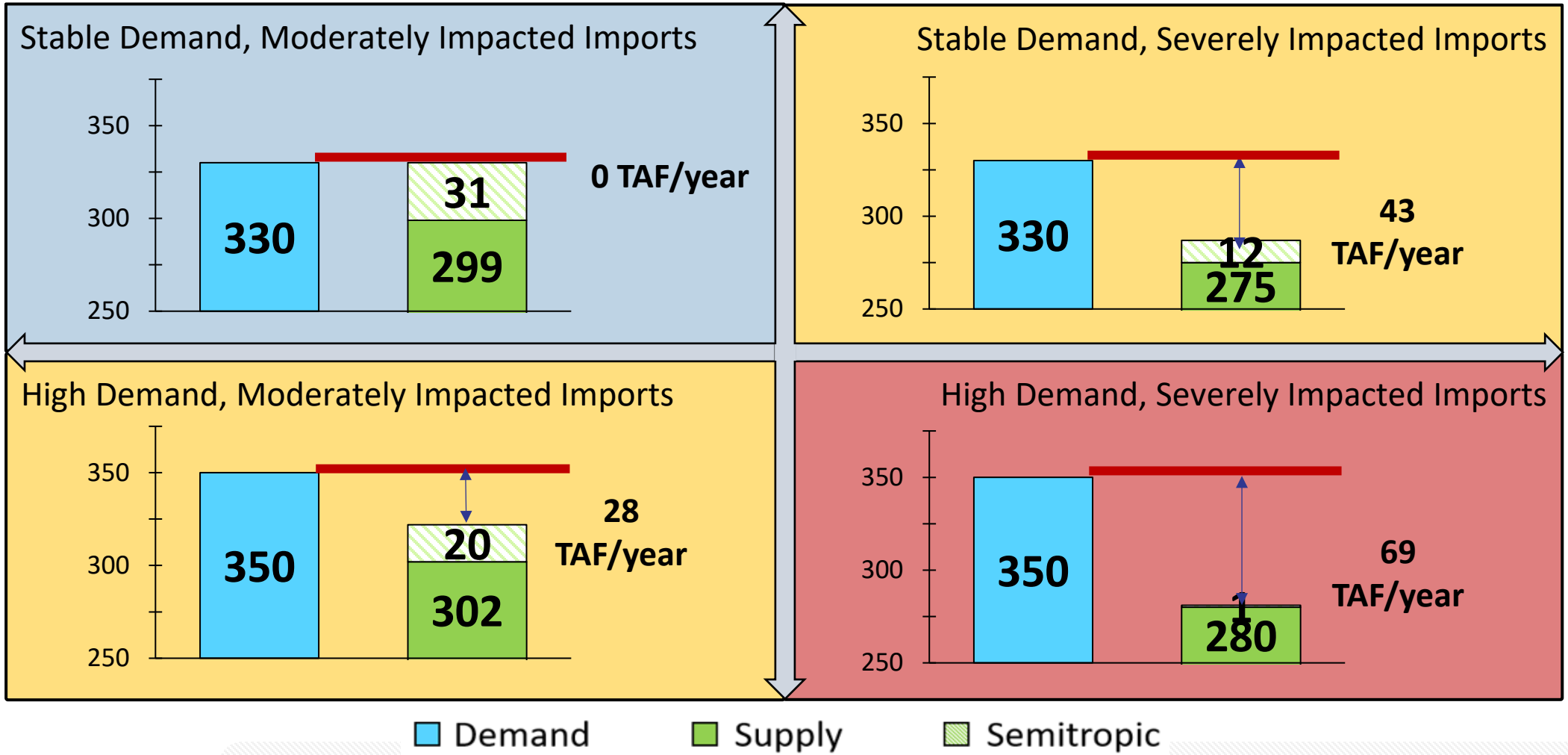
Complete dam seismic retrofits by 2035

Maintain Valley Water assets

Recycled water use



Baseline Assessment – Drought in 2050



Needs for Investment

- Potential impacts of lower level of service
  - Quality of life
  - Economic impact
  - Irrigation for parks and trees
  - Agricultural production
  - Subsidence
- Billions in economic losses

Project Options Grouped by Primary Benefits

Alternative Supply

Palo Alto Potable Reuse

San José Direct Potable Reuse

Refinery Recycled Water Exchange

Local Seawater Desalination

Storage

Pacheco Reservoir Expansion

Groundwater Banking

B.F. Sisk Dam Raise

Surface Supply

Delta Conveyance Project

Sites Reservoir

Recharge

Coyote Valley Recharge Pond

Butterfield Channel Managed Aquifer Recharge

Madrone Channel Expansion

San Pedro Ponds Improvement Project

Conservation and Potable Reuse Goals

- Water conservation goal
  - 126,000 AFY by 2050

- Potable reuse goal
  - 24,000 AFY by 2035
  - Long-term vision to maximize water reuse up to 32,000 AFY by 2050

Project Evaluation

- Water supply benefits
- Cost

- Reliability
- Likelihood of success
- Environmental impacts
- Jurisdiction and partnership
- Public acceptance

Cost of Major Supply Projects

All costs are in 2025 dollars

Project	Average Annual Supply (AF)	Capital Cost (Million)	Annual O&M (Million)	Present Value (PV) Lifecycle Cost* (Million)	Lifecycle Cost PV/Yield PV ($/AF)	Annualized Unit Cost ($/AF)
Palo Alto Potable Reuse	8,000	$800	$13.2	$1,740	$11,620	$10,300
San José Direct Potable Reuse	24,000	$2,190	$31.1	$2,980	$7,120	$5,880
Local Seawater Desalination	24,000	$2,190	$31.1	$2,980	$7,120	$5,880
Refinery Recycled Water Exchange	8,000	$260	$9.5	$470	$2,900	$2,760
Delta Conveyance Project	14,000	$670	$1.8	$780	$2,800	$1,950
Sites Reservoir	5,000	$150	$0.7	$140	$1,280	$1,090

Lifecycle of 50 years for DCP and Sites, and 30 years for all other projects

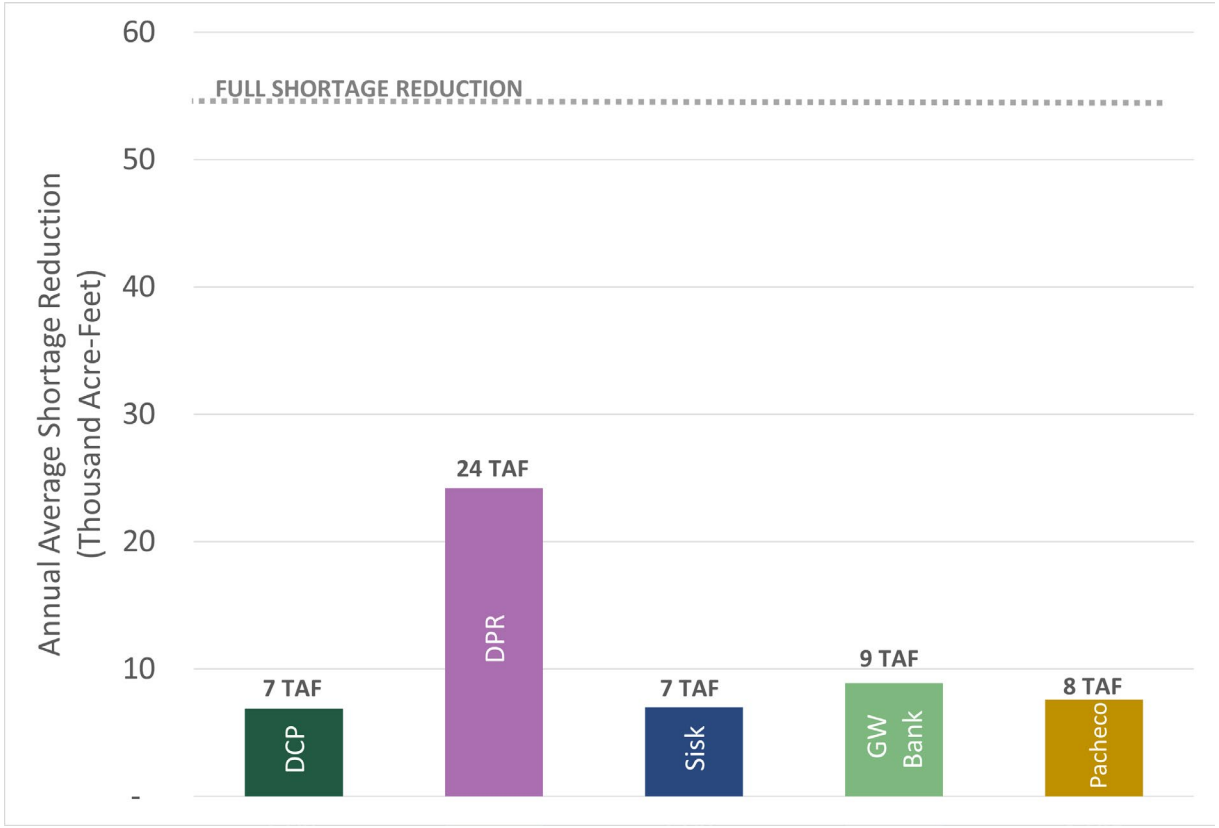
Cost of Storage Projects

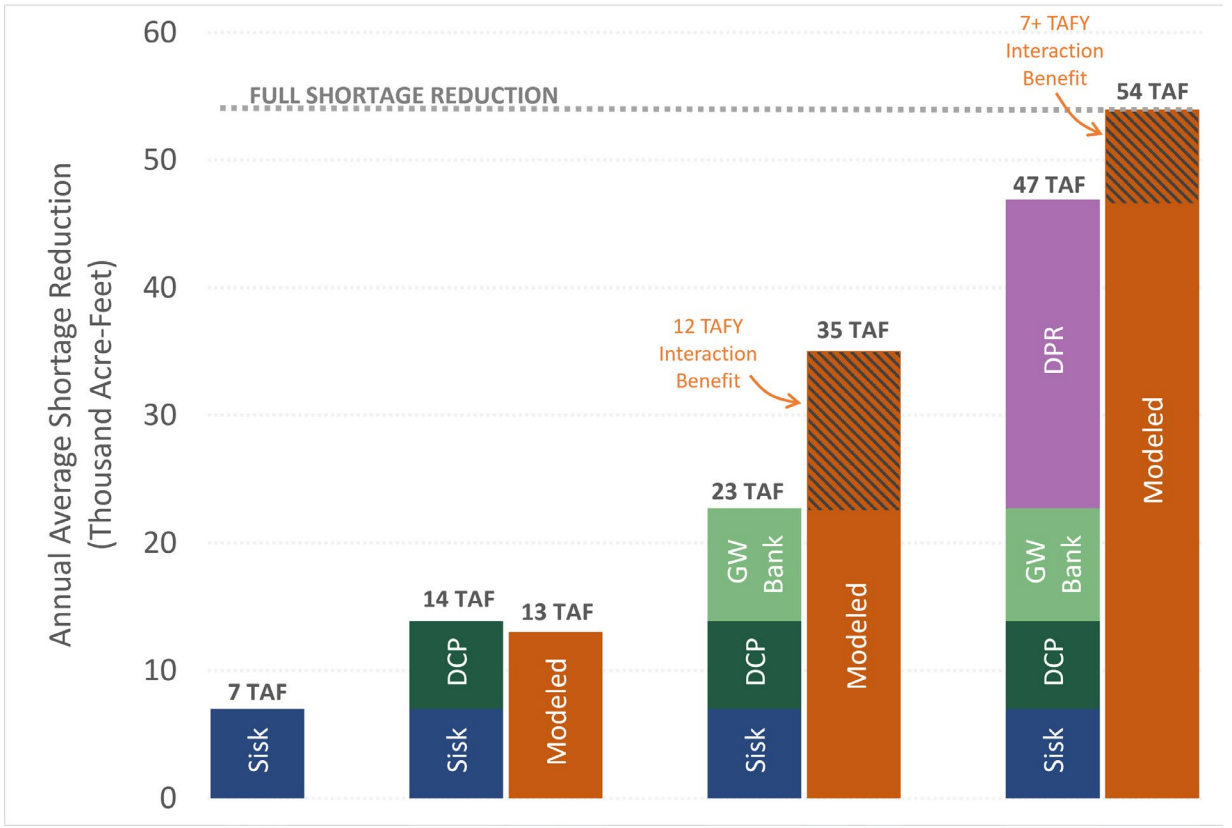
All costs are in 2025 dollars

Project	Storage (AF)	Capital Cost (Million)	Annual O&M (Million)	PV Lifecycle Cost (Million)	Lifecycle Cost PV/Storage Capacity ($/AF)
B.F. Sisk Dam Raise	60,000	$450	$1.9	$540	$8,960
Pacheco Reservoir Expansion	140,000	$2,208	$2.6	$1,820	$12,970
Groundwater Banking	350,000	$290	$2.9	$380	$1,100

Lifecycle of 50 years for storage projects

Portfolio Analysis





- Average annual shortage reduction during a six-year drought in 2050, stable demand and severely impacted imports
- Lower cost strategy
- Pacheco is shown with partners

Summary of Portfolio Analysis

- Drought resilient supply coupled with storage effective
- Maintaining out-of-county groundwater storage critical
- Put and Take capacity critical during drought
- Some projects work better when paired with other projects, while others are independent of each other

Put and Take Capacity

Put – amount of water that can be stored on an annual basis

Take – amount of water that can be retrieved every year

Strategies for Water Supply Reliability

Lower Cost ($4.6 Billion)

- San José Direct Potable Reuse
- Delta Conveyance Project
- B.F. Sisk Dam Raise
- Groundwater Bank (250,000 AF)
- South County Recharge

Local Control ($6.7 Billion)

- San José Direct Potable Reuse
- Palo Alto Potable Reuse
- Pacheco (No Partners)
- Groundwater Bank (150,000 AF)
- South County Recharge

Diversified ($5.9 Billion)

- San José Direct Potable Reuse
- Delta Conveyance Project
- Pacheco (with Partners)
- B.F. Sisk Dam Raise
- Groundwater Bank (350,000 AF)
- South County Recharge

Valley Water

Total cost represents Present Value of lifecycle cost in 2025 dollars

Rate Impact of Water Supply Strategies

Portfolio	FY 26 to FY 30	FY 31 to FY 35	FY 36 to FY 40	FY 41 to FY 45	FY 46 to FY 50
FY 2025-26 Adopted Rates & PAWS Report	$2,986 / AF or $102.82 / month	$4,756 / AF or $163.80 / month	$6,807 / AF or $234.43 / month	$8,074 / AF or $278.08 / month	$8,878 / AF or $305.77 / month
Lower Cost	$2,986 / AF or $102.82 / month	$4,463 / AF or $153.71 / month	$6,225 / AF or $214.40 / month	$7,180 / AF or $247.29 / month	$7,895 / AF or $271.91 / month
Local Control	$3,207 / AF or $110.45 / month	$5,547 / AF or $191.05 / month	$7,339 / AF or $252.77 / month	$8,539 / AF or $294.09 / month	$9,719 / AF or $334.73 / month
Diversified	$2,986 / AF or $102.82 / month	$4,756 / AF or $163.80 / month	$6,814 / AF or $234.68 / month	$8,277 / AF or $285.08 / month	$9,422 / AF or $324.48 / month

** Translation of portfolio costs to North County Zone W-2 Municipal & Industrial rate ($/AF), or average monthly impact to an average household (15 hundred cubic feet for purposes of this analysis). The FY 2025-26 PAWS Report can be found online at www.valleywater.org*

Portfolios for Worst-case Condition

Lower Cost ($4.6 Billion -> $4.8 Billion)

- San José Direct Potable Reuse
- Delta Conveyance Project
- B.F. Sisk Dam Raise
- Groundwater Bank ~~(250,000 AF)~~ **(350,000 AF)**
- South County Recharge
- \+ Sites Reservoir

Local Control ($6.7 Billion -> $9.9 Billion)

- San José Direct Potable Reuse
- Palo Alto Potable Reuse
- Pacheco (No Partners)
- Groundwater Bank ~~(150,000 AF)~~ **(350,000 AF)**
- South County Recharge
- \+ Local Desalination

Diversified ($5.9 Billion)

- San José Direct Potable Reuse
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Valley Water

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Adaptive Management

- Planning under deep uncertainty
  - Projects still evolving
  - Uncertainty with forecasted future supply and demand

- Adaptive management framework to provide flexibility for making incremental investment decisions

- Roadmap and annual reporting

Adaptive Management Roadmap

NOW

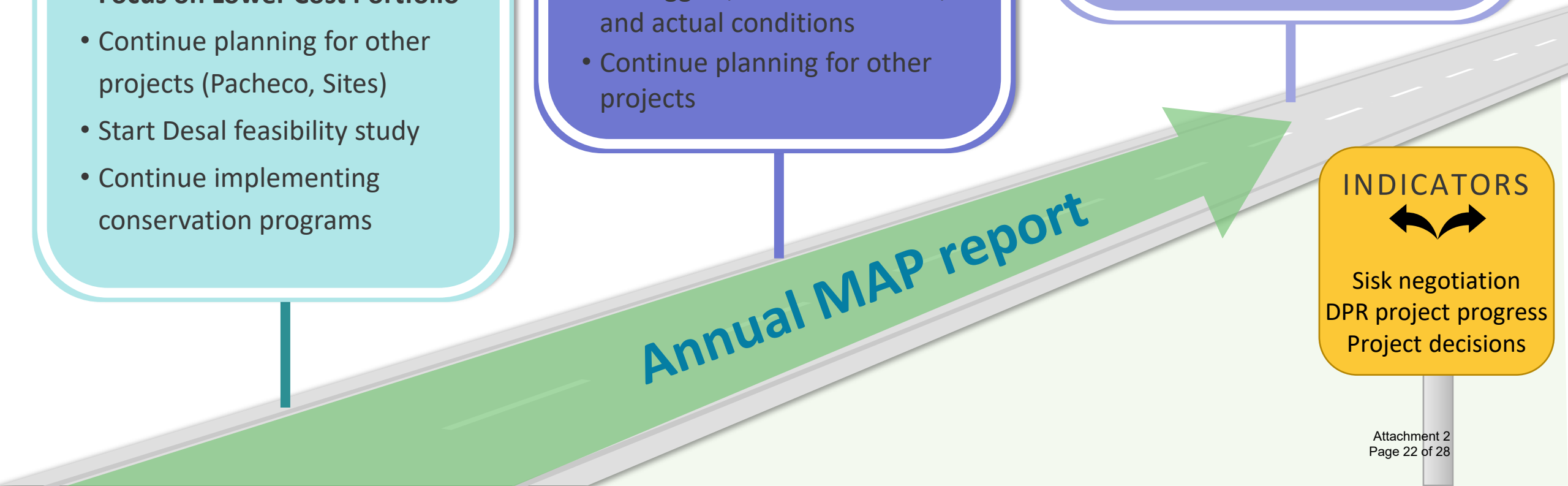
- **Focus on Lower Cost Portfolio**
- Continue planning for other projects (Pacheco, Sites)
- Start Desal feasibility study
- Continue implementing conservation programs

NEAR-TERM (2-3 YEARS)

- Assess progress on project planning and implementation
- Make project decisions based on triggers, new information, and actual conditions
- Continue planning for other projects

MID-TERM (5 YEARS)

- Assess progress on project implementation
- Update demand projections and water supply outlook
- Update WSMP

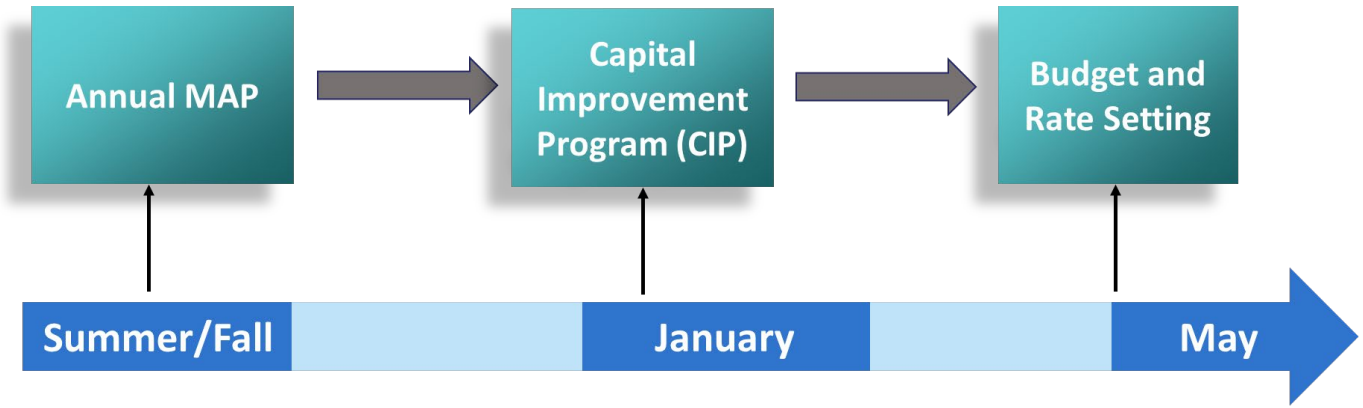


INDICATORS

Sisk negotiation
DPR project progress
Project decisions

Annual Reporting for Adaptive Process

- Track project progress
- Report conditions of indicators
- Recommend actions as needed



- **Indicators**
  - Sisk negotiation
  - DPR project progress
  - Upcoming project decisions
  - Groundwater Bank negotiation
  - Regulatory and permitting issues
  - Annual supply
  - Annual water use
  - Conservation progress
  - Growth trend/demand
  - Regional agreements and decisions by other agencies

Valley Water

Plan Development

- Board
- Recycled Water Committee
- Water Supply and Demand Management Committee
- Agricultural Water Advisory Committee
- Environmental Water Resources Committee
- Joint Water Resources Committee (with South County)
- Water Commission

Stakeholder Engagement

- Board and Committee meetings
- Retailer meetings and review
- Stakeholder meeting and responses
- Newsletter/blog/social media

Expert Panel

- David Sunding - Professor at University of California, Berkeley
- Michael Anderson - State Climatologist, Department of Water Resources
- Newsha Ajami - Chief Development Officer for Research, Lawrence Berkeley National Lab
- Yung-Hsin Sun - Senior Principal Consultant, Sunzi Consulting LLC

Plan Organization

Executive Summary

1 – Introduction

2 – Water Supply System

3 – Water Supply Challenges

4 – Water Supply Needs Assessment

5 – Project Options

6 – Water Supply Strategies

7 – Adaptive Management

8 – Stakeholder Outreach

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B - 2050 Conservation Goal

C - Demand Model Development

D - Water Supply Modeling

E - Water Shortage Impacts

F - Cost Analysis Method and Assumptions

G - Additional Portfolios

Next Steps

- Stakeholder outreach
- Committee updates
- Plan finalization
- Plan adoption in the Fall