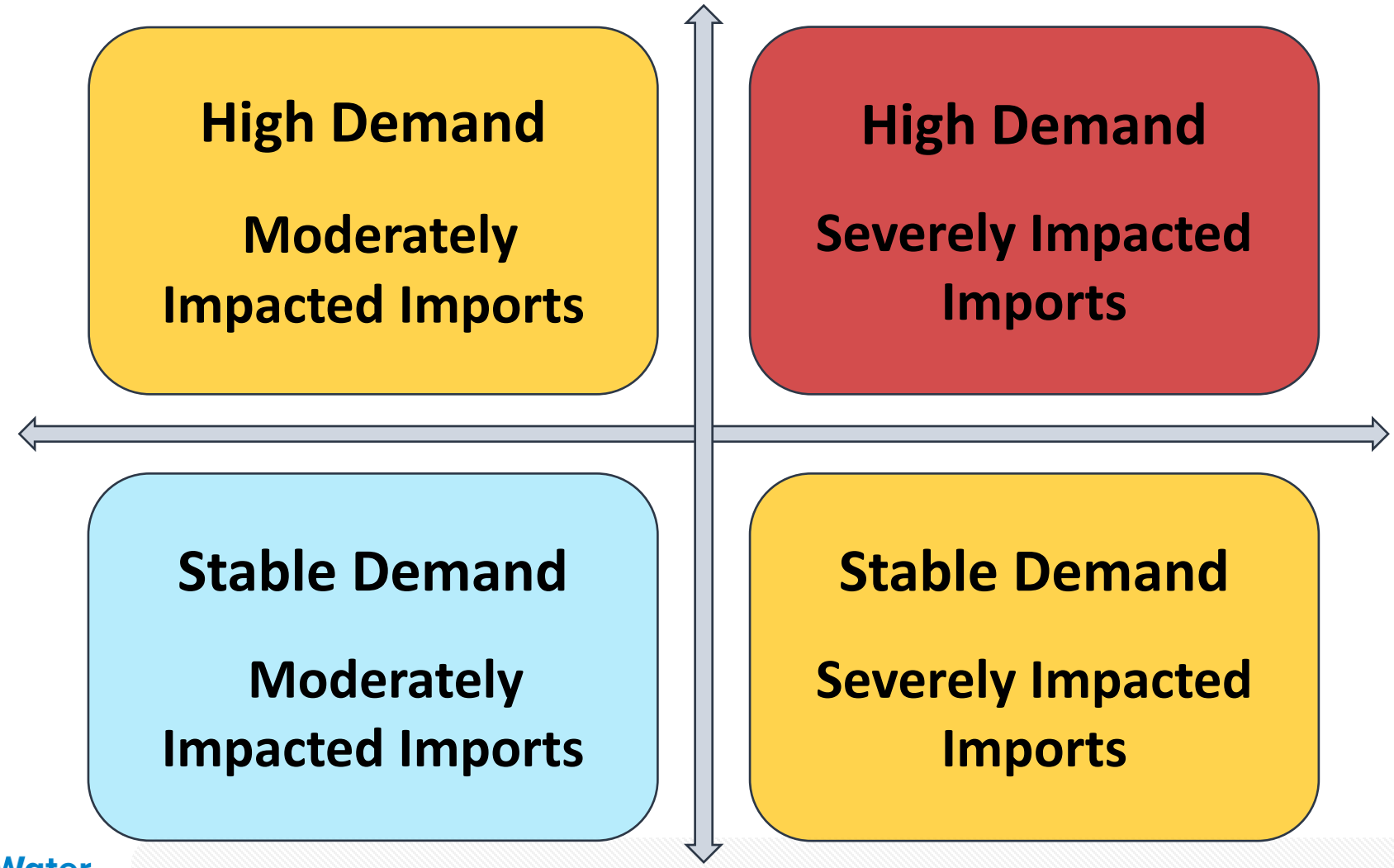
Water Supply Master Plan 2050 Development Update

Board of Directors Meeting, June 25, 2024

WSMP 2050 Updates

- Goals
- Planning horizon
- Wider range of values
- Portfolio approach
- Recognition of uncertainty

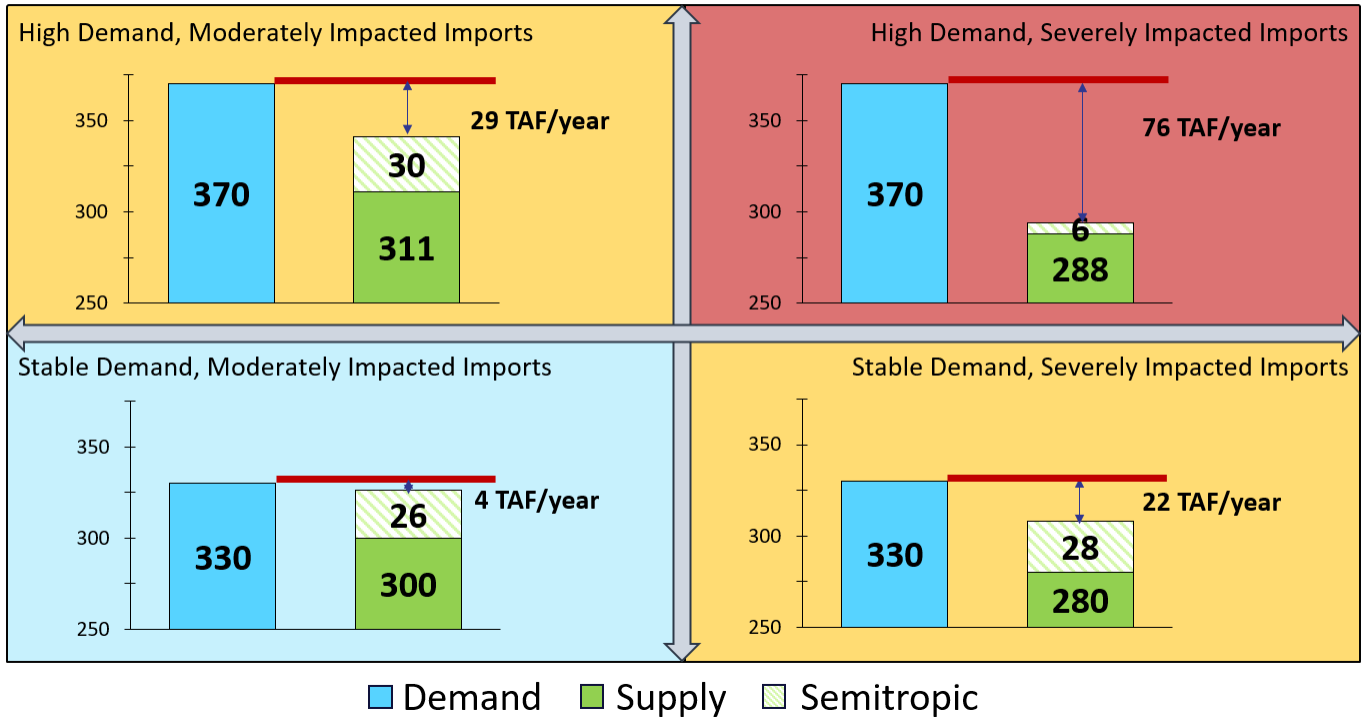
Planning for Multiple Future Conditions



Water Supply Needs and Challenges

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

Annual Shortage in Six-year Drought in 2050



Project List Grouped by Primary Benefits

Alternative Supply

Palo Alto Potable Reuse

San José Direct Potable Reuse

Refinery Recycled Water Exchange

Local Seawater Desalination

Surface Supply

Delta Conveyance Project

Sites Reservoir

Stormwater – Agricultural Land Recharge (FloodMAR)

Stormwater Capture

Storage

Pacheco Reservoir Expansion

Los Vaqueros Expansion

Groundwater Banking

B.F. Sisk Dam Raise

Recharge and Pipelines

Coyote Valley Recharge Pond

Lexington Pipeline

Lexington-Montevina Water Treatment Plant Connection

Butterfield Channel Managed Aquifer Recharge

Madrone Channel Expansion

San Pedro Ponds Improvement Project

Project Evaluation

- Water supply benefits
- Cost

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

Benefits of Major Projects

- Drought supply
- Storage diversification
- Increased system reliability and flexibility
- Emergency storage
- Ability to capture excess CVP and SWP water
- Environmental benefits

Project Risks and Challenges

- Affordability
- Environmental impacts
- Contingent on agreement with other agencies
- Implementation complexity
- Operational and institutional complexity
- Public acceptance

Cost Analysis

- Project cost estimates
  - Total lifecycle cost
  - Unit cost
- Cost of portfolios
- Impact on water rate
- Cost of shortage

Cost of Major Supply Projects

All costs are in 2023 dollars

Project	Average Annual Supply (AF)	Capital Cost (Millions)	Annual O&M (Millions)	Present Value Lifecycle Cost* (Millions)	Lifecycle Cost PV/ Yield PV ($/AF)	Annualized Unit cost ($/AF)
Palo Alto Potable Reuse	8,000	$780	$13	$1,570	$10,200	$9,000
San José Direct Potable Reuse	24,000	$2,140	$30	$2,610	$6,400	$5,000
Local Seawater Desalination	24,000	$2,140	$30	$2,610	$6,400	$5,000
Refinery Recycled Water Exchange	8,000	$250	$9	$430	$2,800	$2,500
Delta Conveyance Project	14,000	$650	$2	$720	$2,700	$1,800
Sites Reservoir	5,000	$140	$0.6	$130	$1,200	$1,000

* Project lifecycles vary

Cost of Major Storage Projects

All costs are in 2023 dollars

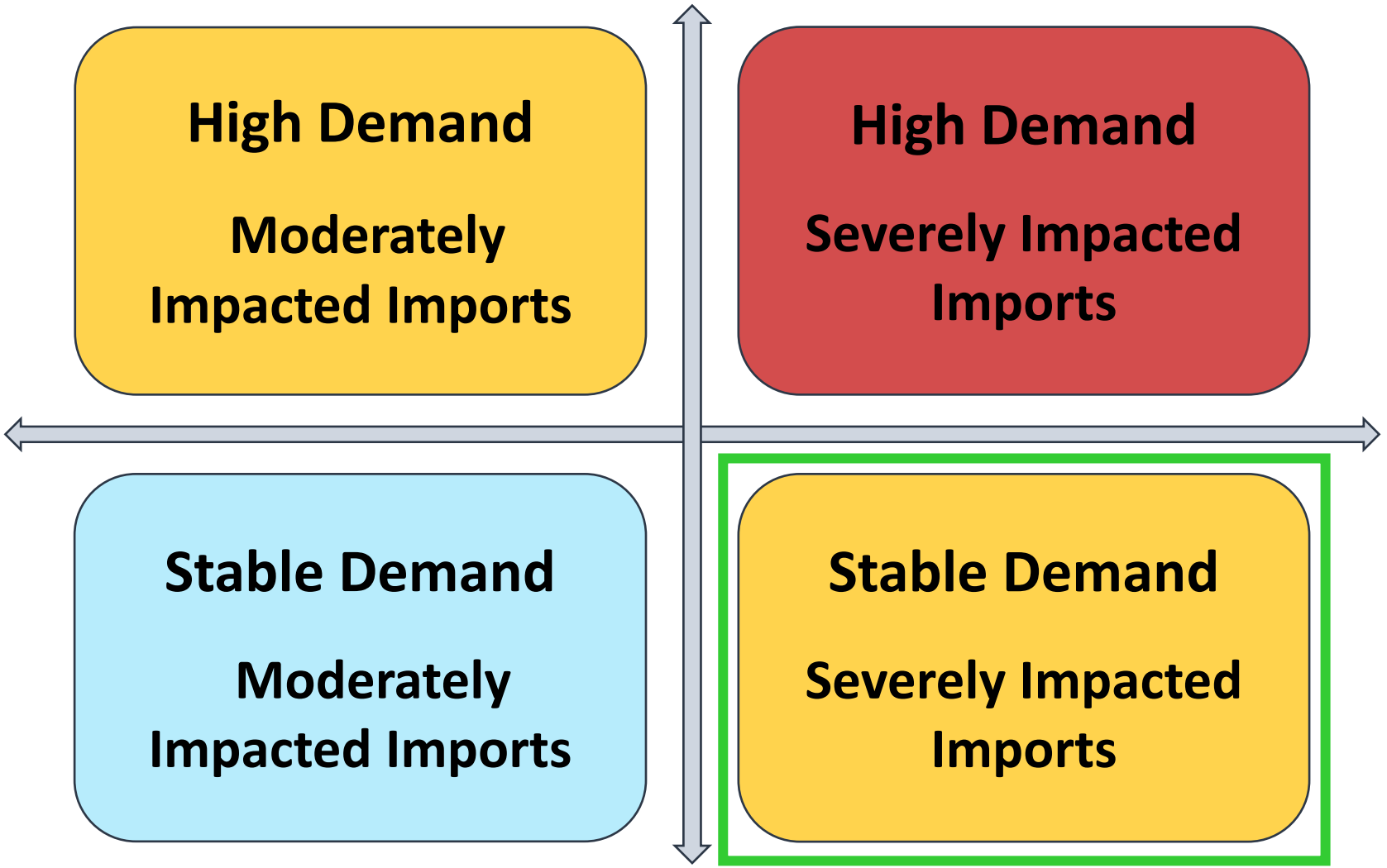
Project	Storage (AF)	Capital Cost (Millions)	Annual O&M (Millions)	Present Value Lifecycle Cost (Millions)	Lifecycle Cost PV /Storage Capacity ($/AF)
Pacheco	140,000	$2,210	$2.5	$1,590	$11,400
B.F. Sisk Dam Raise	60,000	$440	$1.8	$470	$7,900
Los Vaqueros Expansion	30,000	$260	$3.2	$350	$11,700
Groundwater Banking	350,000	$280	$2.8	$350	$1,000

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 in the county

Focusing on Middle-of-Road Condition



Portfolio Analysis

- Developed three themes to outline options and tradeoffs
  - Lower cost
  - Local control
  - Diversified
- Multiple feasible portfolios under each theme

Strategies for Water Supply Reliability

Lower Cost ($4 Billion)

Local Control ($5.9 Billion)

Diversified ($5.5 Billion)

Valley Water

Total cost represents Present Value of lifecycle cost in 2023 dollars

Rate Impact of Water Supply Strategies

Strategy *	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 2024-25 Adopted Rates & PAWS Report	*$2,985 / AF or $102.81 / month*	*$4,786 / AF or $164.82 / month*	*$7,385 / AF or $254.35 / month*	*$7,956 / AF or $273.99 / month*	*$7,956 / AF or $273.99 / month*
Lower Cost	**$2,866 / AF or $98.71 / month**	**$4,296 / AF or $147.96 / month**	**$6,581 / AF or $226.65 / month**	**$7,068 / AF or $243.42 / month**	**$7,068 / AF or $243.42 / month**
Local Control	**$3,359 / AF or $115.70 / month**	**$5,627 / AF or $193.80 / month**	**$8,134 / AF or $280.14 / month**	**$8,731 / AF or $300.69 / month**	**$8,835 / AF or $304.28 / month**
Diversified	**$3,100 / AF or $106.75 / month**	**$5,153 / AF or $177.45 / month**	**$7,686 / AF or $264.71 / month**	**$8,344 / AF or $287.37 / month**	**$8,377 / AF or $288.51 / month**

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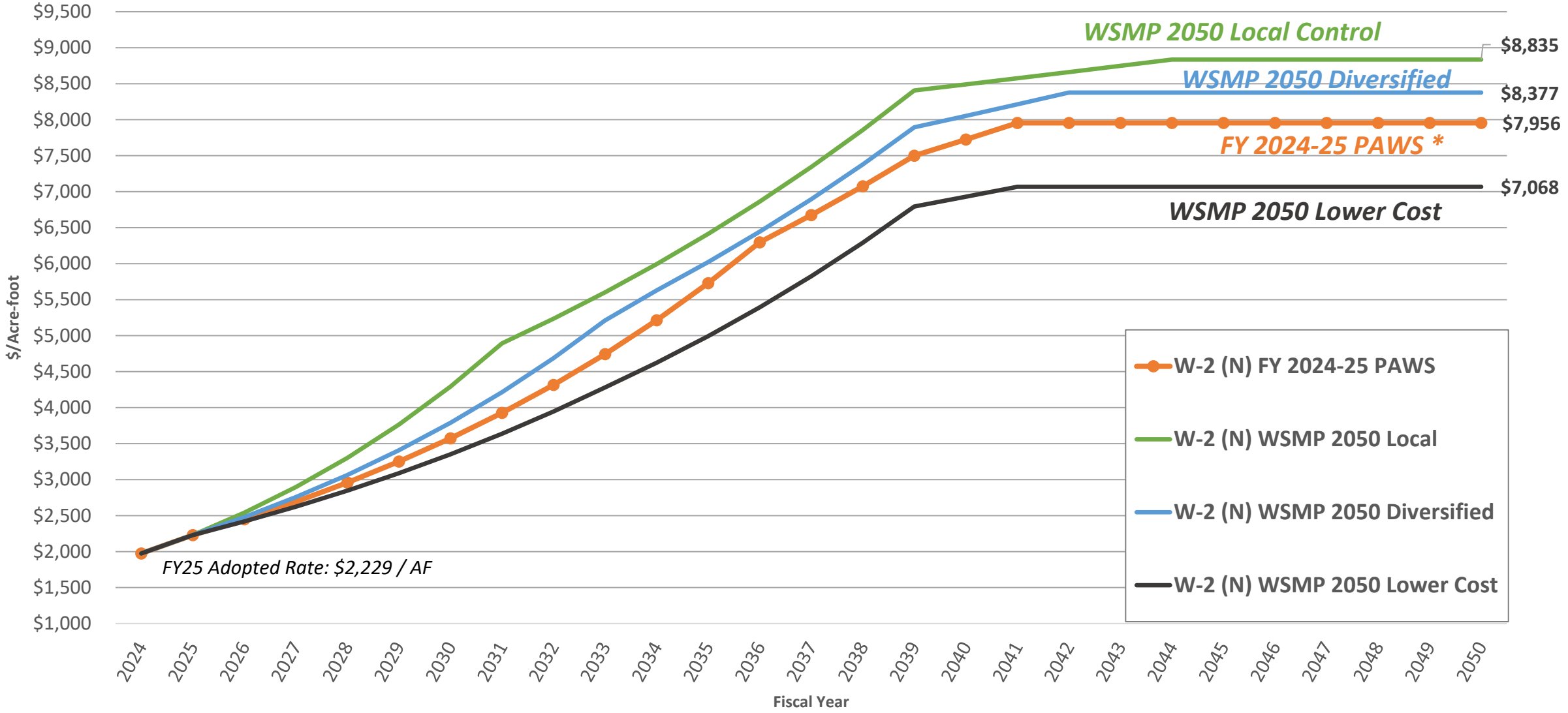
** Translation of portfolio costs to North County Zone W-2 Municipal & Industrial rate ($/AF), or average monthly impact to an average household (15 hundred cubic feet for purposes of this analysis). The FY 2024-25 PAWS Report can be found online at www.valleywater.org.*

WSMP 2050 Strategies

North County Groundwater Production Charge Projection M&I ($/Acre-Foot)



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** FY 2024-25 PAWS represents long-range rate projections as presented to the Board March 26, 2024, and is equivalent to Diversified portfolio excluding Groundwater Banking (350,000 AF) and increased DCP costs.*

Portfolio Evaluation Summary

- No single project can address all future needs
- Different strategies to achieve water supply reliability, with tradeoffs
- Importance of drought resilient supplies and diversifying storage

Adaptive Management Framework

- 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

Projects	Estimated Decision Points					Project Online Date
	2024	2025	2026	2027	2028	
San José Direct Potable Reuse						**2033**
Los Vaqueros Expansion		Final Funding Decision				**2033**
B.F. Sisk Dam Raise	Planning Funding Decision	Final Construction Funding				**2032**
Pacheco			Final EIR/EIS Certification	Final Partnership Negotiations		**2035**
Sites Reservoir		Final Funding Decision				**2032**
Delta Conveyance Project	Funding Decision			Final Contract Decision		**2045**

Sisk negotiation
San José agreement
Project decisions

Triggers

Now

- Prioritize DPR
- Secure storage
- Continue planning for other projects

Near-term (2-3 years)

- Make project decisions based on triggers
- Continue planning for other projects

Mid-term (5 years)

- Project implementation
- Update WSMP

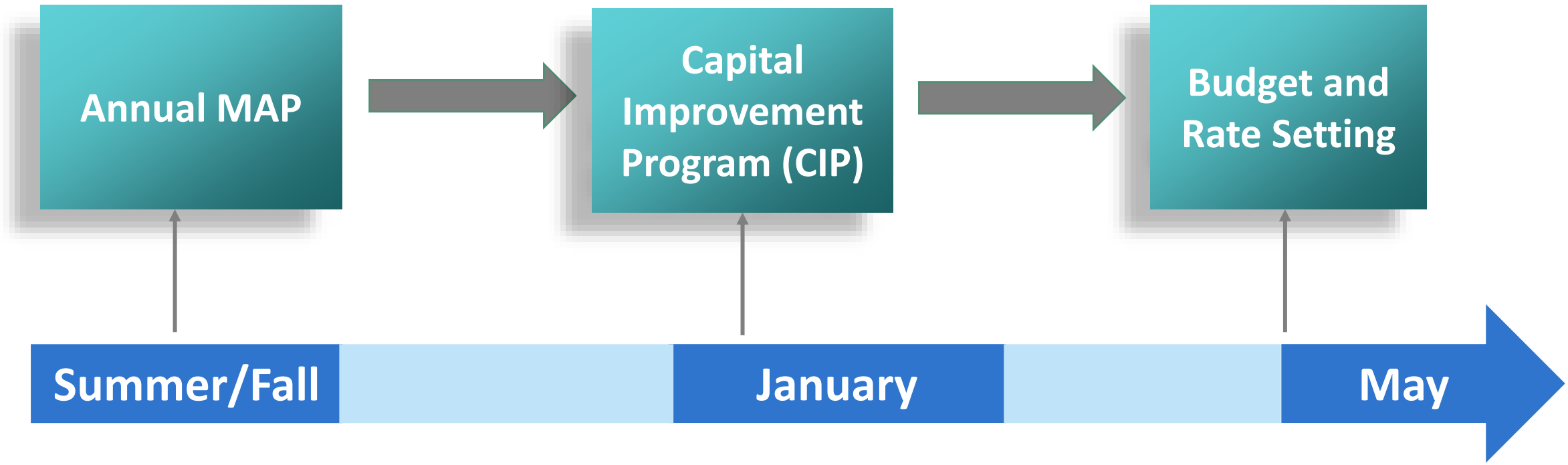
Annual MAP to report progress, triggers, metrics

Example Triggers and Metrics to Track

- **Key triggers**
  - Sisk negotiation
  - San José agreement
  - Upcoming project decisions
  - Groundwater Bank negotiation

- **Metrics to track**
  - Annual supply
  - Annual water use
  - Conservation progress
  - Growth trend/demand

Annual MAP to Support Decision-Making



Stakeholder Engagement

- Water Retailer meeting
- Water Commission meeting
- Environmental Water Resources Committee
- Newsletter/blog/social media

Expert Engagement

- Conservation targets and programs
- Recycled and purified water projects
- Project evaluation
- Adaptive management framework

Next Steps

- Roadmap and recommendations
- Plan development
- Stakeholder outreach
- Plan adoption

Questions and Answers

1. Do we need Pacheco for future water supply reliability?

- Portfolio analysis suggests there are different ways to achieve future water supply reliability, some with Pacheco and others not
- Pacheco provides for local control, and has unique water supply benefits that include providing emergency storage and the ability to capture excess Delta water
- Uncertainty in other projects which are still under negotiation necessitates an adaptive management approach
- Recommend continued planning for Pacheco and making decision through the adaptive management framework

Questions and Answers

2. Why do we continue to include additional imported water projects instead of working to reduce/replace imported water with new local supply?

- Local control strategy has the highest cost
- Imported water is among the cheapest supply. A diversified portfolio with mixed local and imported supply helps minimize future water rate increases and is more resilient and reliable
- Delta Conveyance Project (DCP) will help secure our existing State Water Project supply and is an affordable project option
- Prudent to plan for a variety of options because uncertainty in other WSMP Projects

Questions and Answers

3. How do we plan for affordable water rates?

- Need to balance between reliability and affordability. There is economic consequence of not having water in the future
- The three water supply strategies present the tradeoffs between cost and other considerations
- Adaptive management framework provides flexibility to make incremental investment decisions to reduce the risk of over- or under-investing
- A new study undergoing to review water use projections and analyze demand elasticity as well as water rate affordability

Questions and Answers

4. With conservation as a way of life regulation, demand may go down. Can we focus on conservation/reuse to address our future needs, and stop the rebound of water use after a drought to pre-drought levels?

- Used 2 demand forecasts - a stable and a high demand, both within historic water use
- Actively pursuing water conservation and potable reuse, but they alone may not address large future shortages
- Long-term water conservation goals for 2030, 2040, and 2050, and short-term drought reduction, both factored into baseline demand assumptions
- Potable reuse is needed in almost all situations, but other supply and/or storage projects also needed. Water reuse is constrained by wastewater availability
- Water conservation can help reduce the rate and magnitude of drought rebound, but some water use reduction during drought is not sustainable, including for agriculture, parks, etc.

Questions and Answers

5. What is our strategy for South County which is highly dependent on groundwater?

- Actively manage the groundwater basins to ensure continued sustainable supplies
- Take appropriate actions to protect groundwater-dependent communities such as prioritizing South County recharge during droughts
- Evaluate several recharge projects, including expansion of the Madrone Channel, Coyote Valley recharge pond, San Pedro Ponds Improvement Project, and Agricultural Land Recharge (FloodMAR)
- Identify opportunities for additional water reuse

Questions and Answers

6. What is the full cost for imported water?

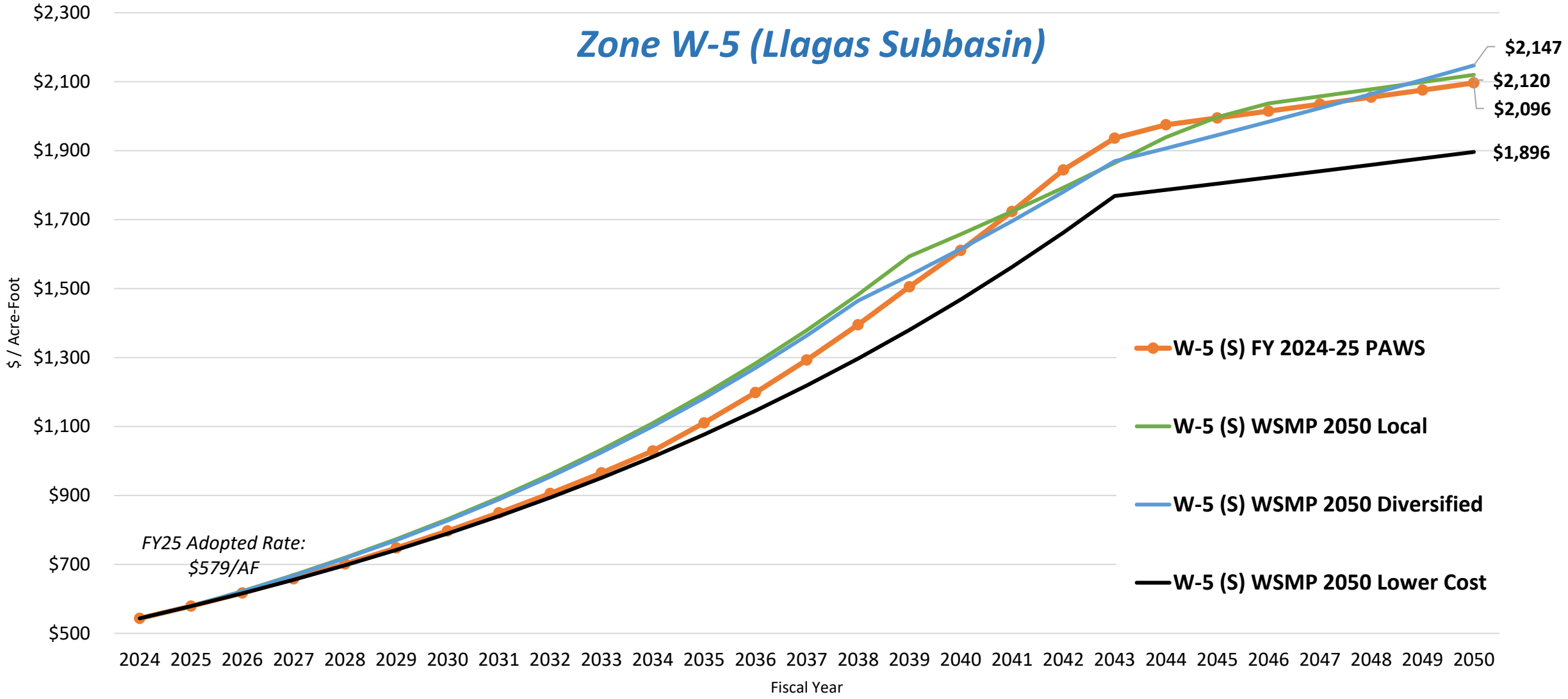
- SWP/CVP current unit cost, averaging past 5 years (drought period): **$450/AF**
- Modeled 50-year Present Value lifecycle cost/Present Value Yield including climate change: **$514/AF**
  - Includes Delta-Mendota Canal and California Aqueduct subsidence and South Bay Aqueduct long-term repair costs
- New imported supply projects (i.e., DCP and Sites) evaluated as part of WSMP process
- Storage, including existing Semitropic storage, provides support for all Valley Water's water supply sources through integrated water supply operation

Feedback Requested

- Approval of water conservation and potable reuse goals
- Water supply strategy
- Adaptive management framework
- Information to help inform decisions

Backup

WSMP 2050 Strategies
South County Groundwater Production Charge Projection M&I ($/Acre-Foot)



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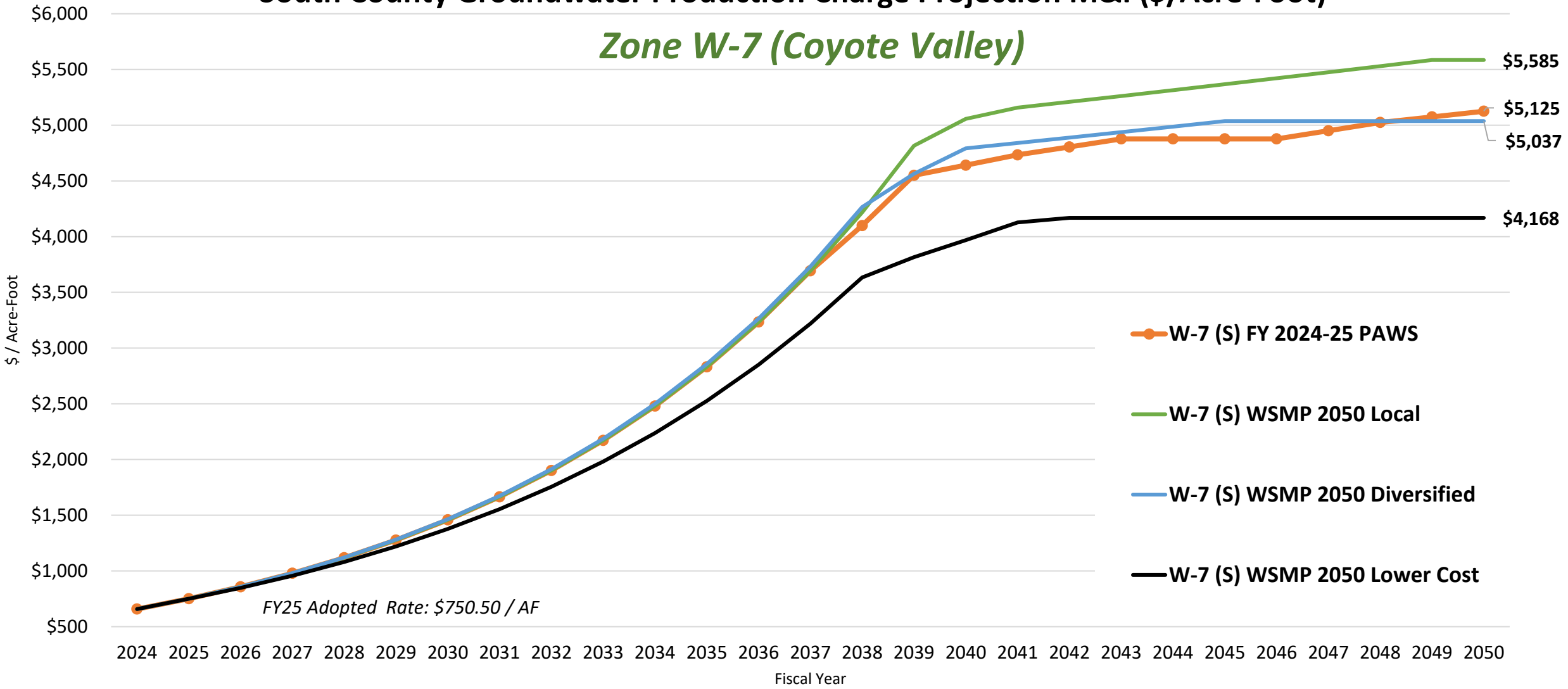

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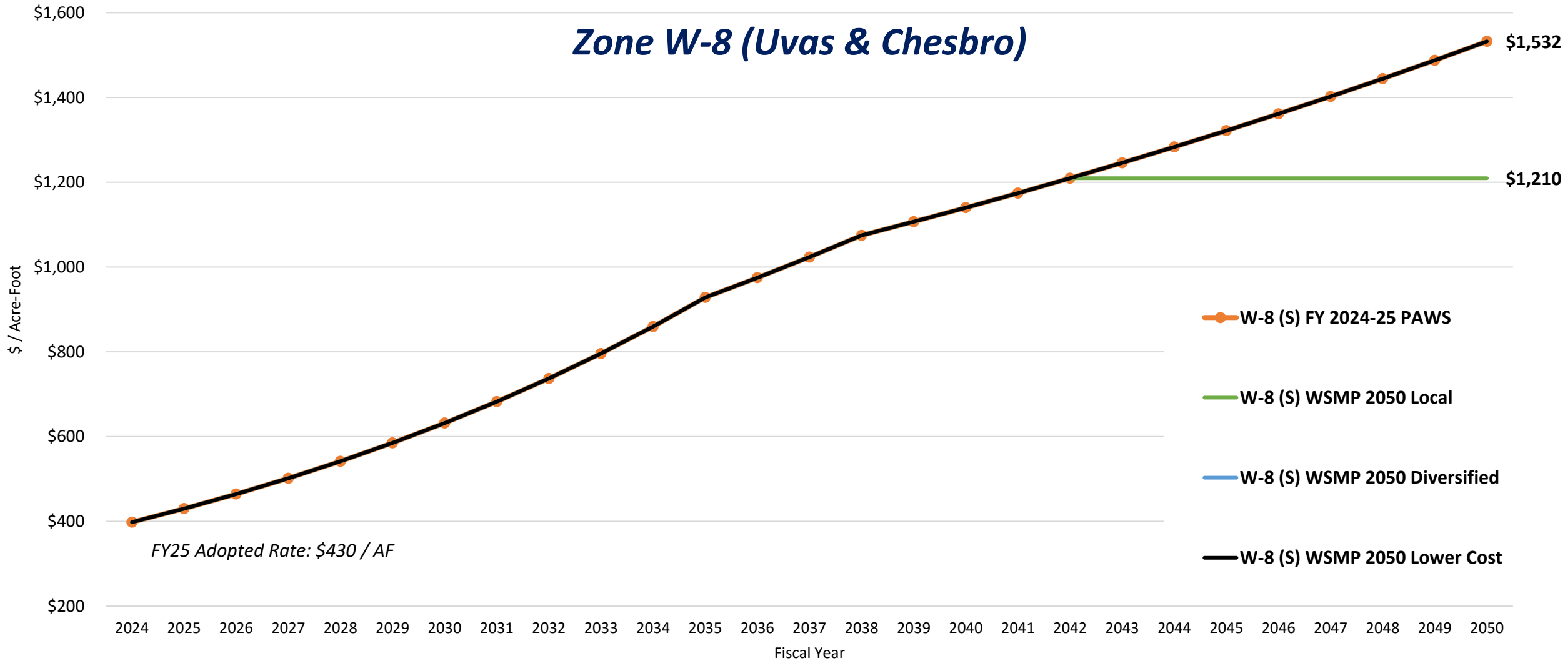

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