



Subcommittee on Long-Term Regional Planning
Processes and Business Modeling

Review Draft Climate Adaptation Master Plan Implementation Strategy

Item 3b

March 26, 2025

Item 6a

CAMP4W Draft Implementation Strategy Discussion

Subject

Discuss the Climate Adaptation Master Plan for Water Implementation Strategy slated for Board Approval in April 2025.

Purpose

Seek Committee input on the Climate Adaptation Master Plan for Water Implementation Strategy to culminate this current planning phase and lay out implementation timelines for the next five years.

Next Steps

The Draft CAMP4W Implementation Strategy will be brought to the Board for approval in April.

CAMP4W Implementation Strategy Updates Since February Task Force Meeting

- ✓ Five-Year Implementation Timelines
- ✓ Forward from the Chair providing context and past accomplishments
- ✓ New Water Quality Section and updates throughout
- ✓ Elevating Water Efficiency Program to show CAMP4W Assessment in
Timeline
- ✓ Annual Report Update: Adding overall demand trends

Additional Requested Clarifications

Board Decisions Should be Based on Current Information and Data

Water Supply Reliability Criteria is Paramount

Range of Potential Water Supply Gaps Should be Considered in
Project and Program Assessments

Account for Planned Local Agency Projects and Anticipated
Conservation Mandates

Identify Location and Extent of Supply Gaps

CAMP4W...Not your typical Master Plan.

Iterative

refining and improving over time

Adaptive

adjusting to changing conditions

Innovative

introducing new approaches

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- Review and update data annually
- Employ best available climate science and methodologies
- Annual reports track signposts, targets and progress
- Continual improvement through regular review of Implementation Strategy to adjust polices, tools, and timelines, as needed

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- Project and program assessments consider potential phasing of implementation
- Scenario planning facilitates development of a range of potential solutions
- Adjustments based on real world conditions helps prevent stranded assets

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- Integrates water resources, climate adaptation and financial planning
- Provides standardized and comprehensive assessment methodology using Board-identified evaluative criteria
- Holistically addresses water and energy resources, infrastructure, workforce, and operations
- Collaboratively developed under Board leadership in a Task Force model with Member Agency Manager participation

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- Updated data, Member Agency input, and Board direction keep targets current
- Project and program assessments consider potential phasing of implementation
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Climate Adaptation Master Plan for Water

IRP Regional
Needs Assessment

Climate Risk and
Vulnerability
Assessments

Infrastructure
Studies and
Assessments

Public & Partners
Engagement

Implementation Strategy

Time-Bound
Targets

Policy Framework

Implementation
Timelines

Climate Decision-Making Framework

Evaluative Criteria

Project/Program
Assessments

CIP Integration

Adaptive Management

Signposts

Annual Reports

Long-Term
Reviews

Business Model Alignment

Water Resources
Strategies

Financial
Strategies

Affordability
Strategies

Financial Forecast
and Budget

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Assess Climate Risks and Vulnerabilities

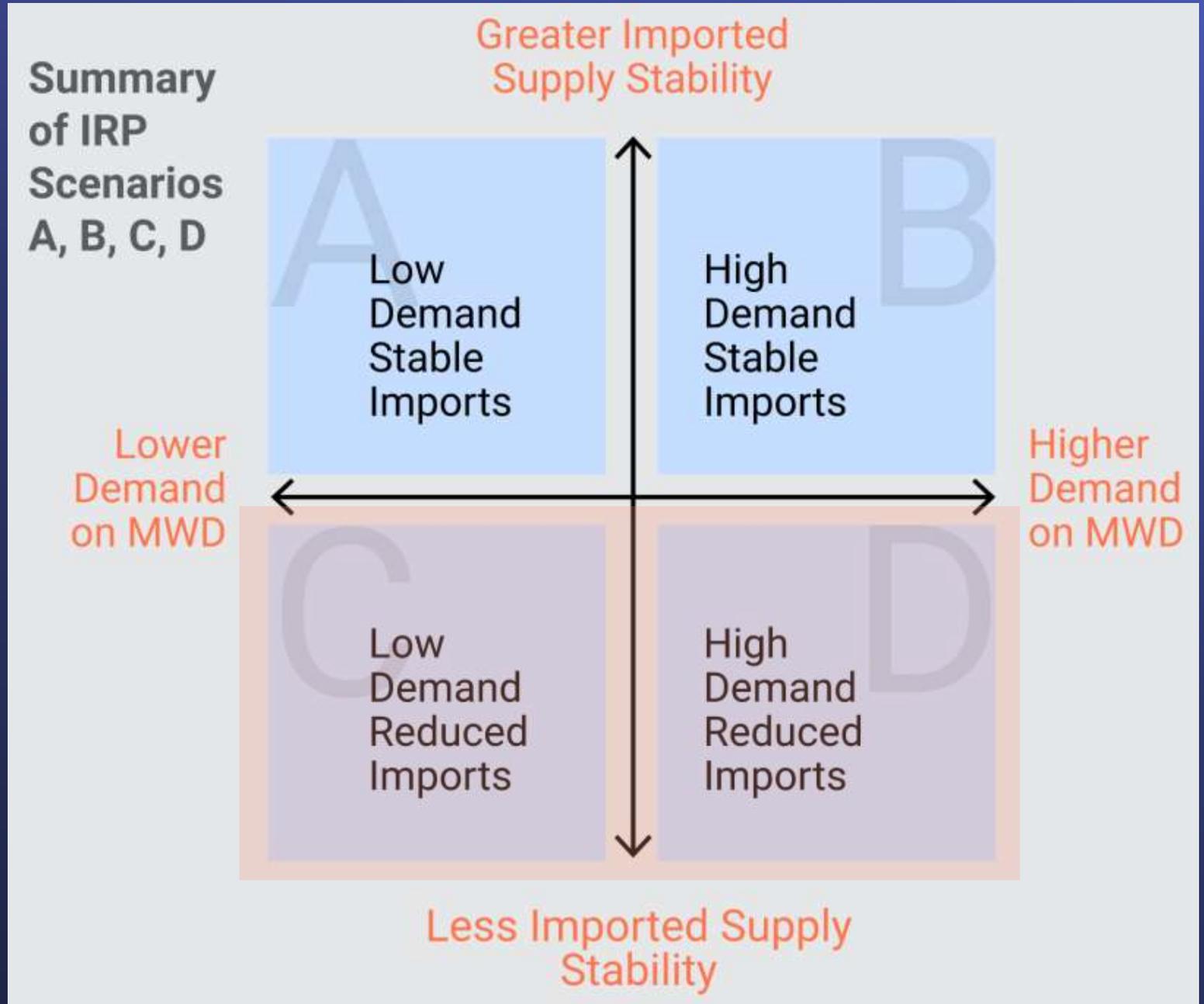
- IRP Regional Needs Assessment
- System Reliability Studies and planning processes (supply, capacity, infrastructure, flexibility, emergency response)
- SWP-DA Studies and Call to Action
- February 2023 Board Retreat
- Board Climate Training Workshop
- Climate Risk and Vulnerability Assessment

Working Memos 1, 2, 3



Planning for Uncertainty

The scenarios in Metropolitan's IRP Needs Assessment provide the foundation of climate adaptation planning



Set Time-Bound Targets and Policy Framework

- **Resource-Based Targets**

- Core Supply
- Storage
- Flex Supply

- **Policy-Based Targets**

- Equitable Supply Reliability
- Local Agency Supply
- Demand Management
- Regional Water Use Efficiency
- Greenhouse Gas Reduction
- Surplus Water Management

- **Climate Adaptation Policy Framework**



Working Memos 6, 10

Resource-Based Time-Bound Targets

	CATEGORY	NEAR TERM	MID TERM	LONG TERM
 <p>Resource-Based Targets Numbers reflect additional supplies unless indicated otherwise</p>	 <p>Core Supply</p>	N/A	<p>Identify 300 TAF for potential implementation by 2035.</p> <p>Alternatively, 250 TAF of new storage will reduce core supply need to 200 TAF</p>	<p>Identify 350 TAF for potential implementation by 2045. Alternatively, 250 TAF of new storage will reduce core supply need to 550 TAF or, 500 TAF of new storage will reduce core supply need to 500 TAF</p>
	 <p>Storage</p>	Identify up to 500 TAF for potential implementation by 2035		
	 <p>Flex Supply (Dry Year Equivalent)</p>	Acquire capability for up to 100 TAFY		

Policy-Based Time-Bound Targets

	CATEGORY	NEAR TERM	MID TERM	LONG TERM
 <p>Policy-Based Targets</p>	 <p>Equitable Supply Reliability</p>	<p>Add 160 CFS capacity to the SWPDA by 2026</p>	<p>Implement additional 130 CFS capacity to SWPDA by 2032</p>	<p>Implement capacity, conveyance, supply, and programs for SWPDA by 2045</p>
	 <p>Local Agency Supply¹</p>	<p>Maintain 2.09 to 2.32 MAF (under average year conditions)</p>	<p>2.12 to 2.37 MAF (under average year conditions)</p>	<p>2.14 to 2.40 MAF (under average year conditions)</p>
	 <p>Demand Management²</p>	<p>Implement structural conservation programs to achieve 300 TAF by 2045</p>		
	 <p>Regional Water Use Efficiency</p>	<p>Assist Retail Agencies to achieve, or exceed, compliance with SWRCB Water Use Efficiency Standards³</p>		
		<p>GPCD target for 2030⁴</p>	<p>GPCD target for 2035</p>	<p>GPCD target for 2045</p>
	 <p>Greenhouse Gas Reduction</p>	<p>N/A</p>	<p>40% below 1990 emission levels by 2030</p>	<p>Carbon Neutral by 2045</p>
	 <p>Surplus Water Management</p>	<p>Develop capability to manage up to 500 TAFY of additional wet year surplus above Metropolitan's Storage Portfolio and WSDM action</p>		
	 <p>Community Equity*</p>			
	 <p>Water Quality*</p>			
	 <p>Imported Water Source Resilience*</p>			

CAMP4W Themes Inform Policy Framework and Initiatives

Themes	Policy Framework
Reliability	➤ Metropolitan will consider climate risks and integrate climate adaptation strategies into water supply programs, policies, planning, implementation and operations
Resilience	➤ Metropolitan will integrate climate risk and vulnerability assessments for climate-related hazards including drought, extreme heat and precipitation, sea level rise, flooding, and wildfire using the best available climate science and climate change information into planning, implementation and operations
Financial Sustainability	➤ Metropolitan will reduce short-term and long-term climate-related financial risks through periodic reviews and potential refinement of its business model, active monitoring and managing of financial conditions, and by maintaining flexible financing alternatives
Affordability	➤ Metropolitan will continue to support retail user affordability efforts that support our mission to provide regional wholesale water service in the most economically responsible way
Equity	➤ Metropolitan will engage with the diverse communities we serve to listen, communicate transparently, and co-create solutions for greater equity in climate adaptation planning and implementation

Climate Adaptation Policy Framework

Themes	Policy Framework
Resilience	<ul style="list-style-type: none">➤ Metropolitan will integrate climate risk and vulnerability assessments for climate-related hazards including drought, extreme heat and precipitation, sea level rise, flooding, and wildfire using the best available climate science and climate change information into planning, implementation and operations

Example Initiatives:



Establish Resilient Infrastructure Guidelines



Assess power system vulnerabilities



Develop response indicators and action plans for primary climate threats to water quality



Review workforce safety measures for climate risks



Update fire management plans for critical facilities

Identify Adaptation Strategies

- Review existing planning processes and projects for consistency with CAMP4W
- Identify new projects, programs, policies to address:
 - Specific climate and/or infrastructure vulnerability
 - CAMP4W Time-Bound Target
 - CAMP4W Policy directive



Working Memos 6, 7, 10

Identify Potential Adaptation Strategies

Projects	Studies	Programs, Policies, Initiatives
AVEK Phase II	Forest Watershed Restoration Pilot	Resilient Infrastructure Guidelines
Delta Conveyance Project	Surface Water Storage Study	Local Resources Program Review
Sites Reservoir	System Overview Study	Member Agency Exchange Program
Webb Tract Restoration	System Flexibility Study	Fire Management Planning
Pure Water Southern California	Energy Sustainability Plan Update	Landscape Guidelines
Battery Energy Storage Systems	Regional E-W Conveyance Study	Affordability Policy
Sepulveda Feeder Stage 2	DVL Pumped Storage Expansion Study	Climate Vulnerability Assessments
DVL Pumped Storage w/ Existing	Brackish GW Desal Study	Community Engagement Standards
Forebay	Seawater Desal Study	Turf Replacement Programs
	CRA Transmission Strategic Plan	Leak Detection Subsidies Program

Evaluate Projects & Programs

- Developed Evaluative Criteria and method for evaluating projects and programs
- Determined thresholds for CAMP4W projects
- Tested the Comprehensive Assessment Approach using quantitative and qualitative information



Working Memos 5, 7, 9

CAMP4W Comprehensive Assessment

Proposed Rubric Includes Quantitative and Qualitative Measures

Evaluative Criteria	<p>Each project or program would be considered through a robust narrative description of how project attributes achieve each objective</p> <p>Descriptions could include:</p> <ul style="list-style-type: none">✓ Quantitative metrics✓ Qualitative information✓ Gaps in information available
Reliability	
Resilience	
Financial Sustainability & Affordability	
Adaptability & Flexibility	
Equity	
Environmental Co-benefits	

Key

Exceptional	Significant	Moderate	Limited	Very Limited	Undetermined or Not Applicable
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Ranking Guidelines at the Attribute Level

Defining to which level a project, program or portfolio will deliver CAMP4W objectives for each attribute category.

Exceptional	The project/program/portfolio directly and completely addresses the benefits being assessed by the question/statement.
Significant	The project/program/portfolio directly addresses most elements of the benefits being assessed by the question/statement.
Moderate	The project/program/portfolio only addresses some elements of the benefits being assessed by the question/statement or addresses them indirectly.
Limited	The project/program/portfolio only addresses few or minor elements of the benefits being assessed by the question/statement or provides minor indirect benefits.
Very Limited	The project/program/portfolio does not provide any or very limited benefits to those being assessed by the question/statement.
Undetermined or Not Applicable	The ranking for this project/program/portfolio is not determined at this time or the attribute is not applicable.

Integrate and Implement

- Board review and approval will result in implementation of a project, program or policy
- Implementation may include integration into existing or future CIP and budget cycle
- Each approved project, program, or policy will include key milestones for implementation



Implementation Strategy

Adaptation Strategies: Water and Energy Projects Planned for CAMP4W Assessment

Timelines are subject to change based on new and evolving information.

Key

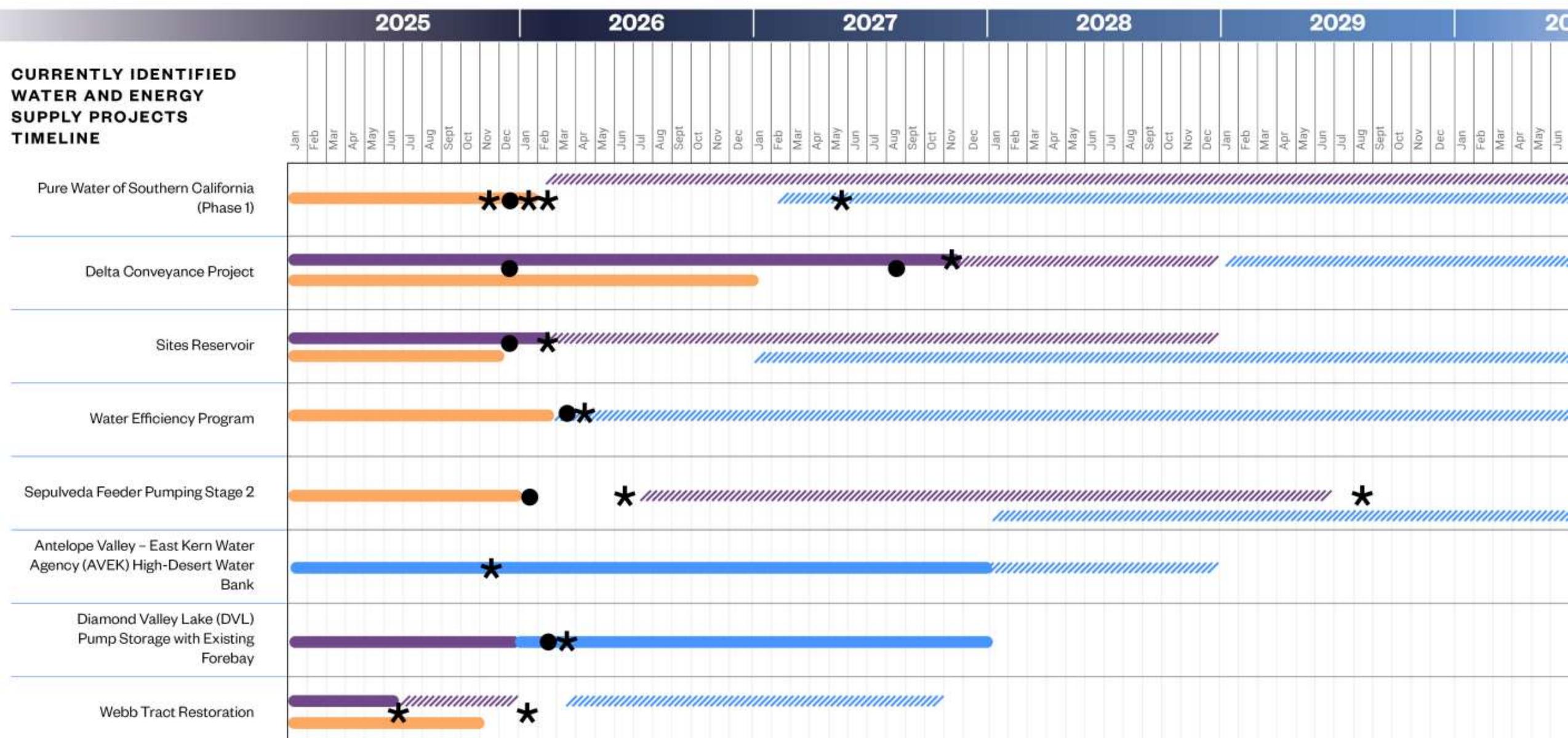
- ◆ Annual Report
- ★ Board Decision Point
- Budget Approval (CIP/other elements)
- CAMP4W Assessment
- 💧 Needs Assessment Update

Board Authorized Phase

- Planning (Orange)
- Design (Purple)
- Implementation/Construction (Blue)

Phase Pending Board Decision

- Planning (Hatched Orange)
- Design (Hatched Purple)
- Implementation/Construction (Hatched Blue)



Monitor and Report Signposts and Adaptation Strategies

- ✓ Identified Water Supply, Infrastructure, and Financial Signposts
- ✓ Drafted 2024 Annual Report



Working Memo 8, CAMP4W Annual Report



Water Supply Reliability Signpost Metrics

Demographics



Trends in population, housing, and employment

Climate Change



Industry understanding of climate change impacts and emissions

Local Agency Supply



Trends in local agency supply production and capability

Imported Supply (Risks & Regulations)



Resulting supply impacts from climate change and regulations

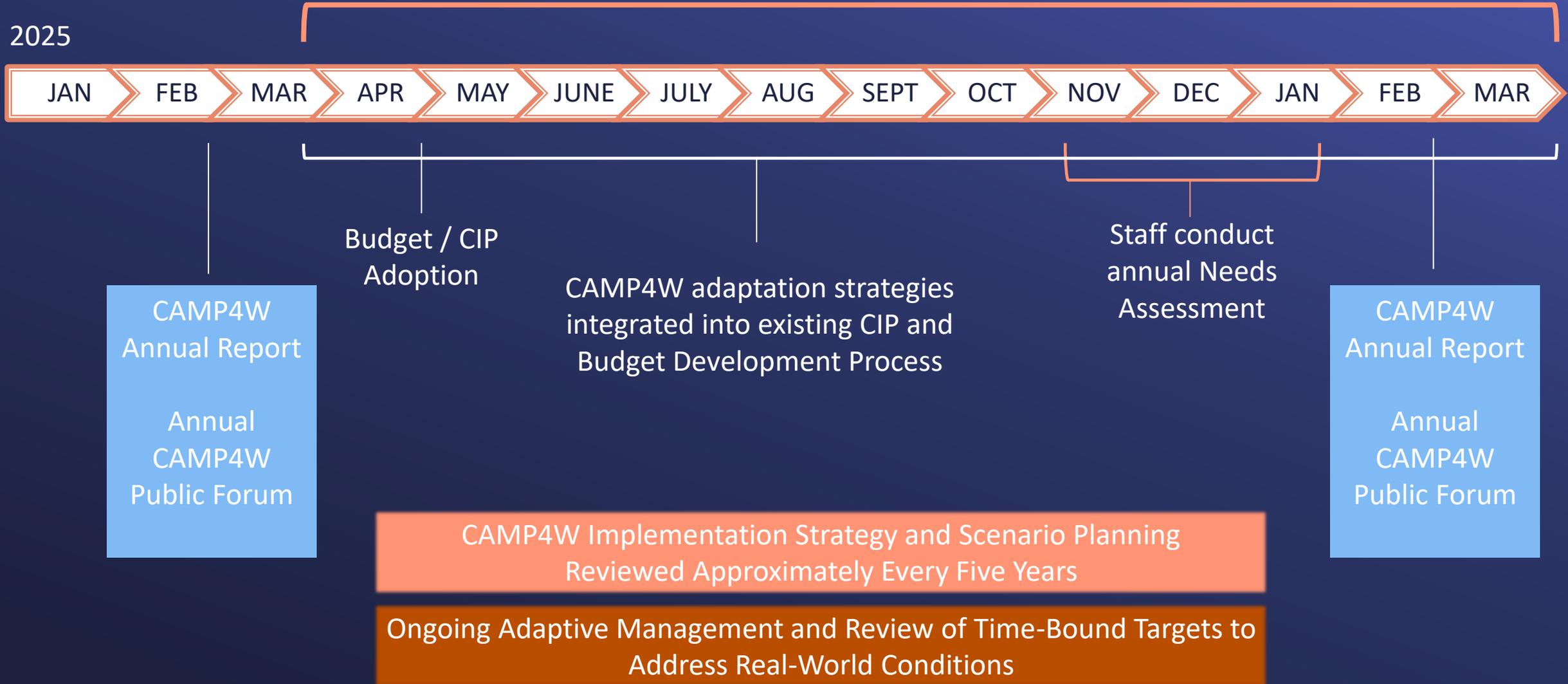
Storage



Storage capability and accessibility

Schedule of CAMP4W Reports and Updates

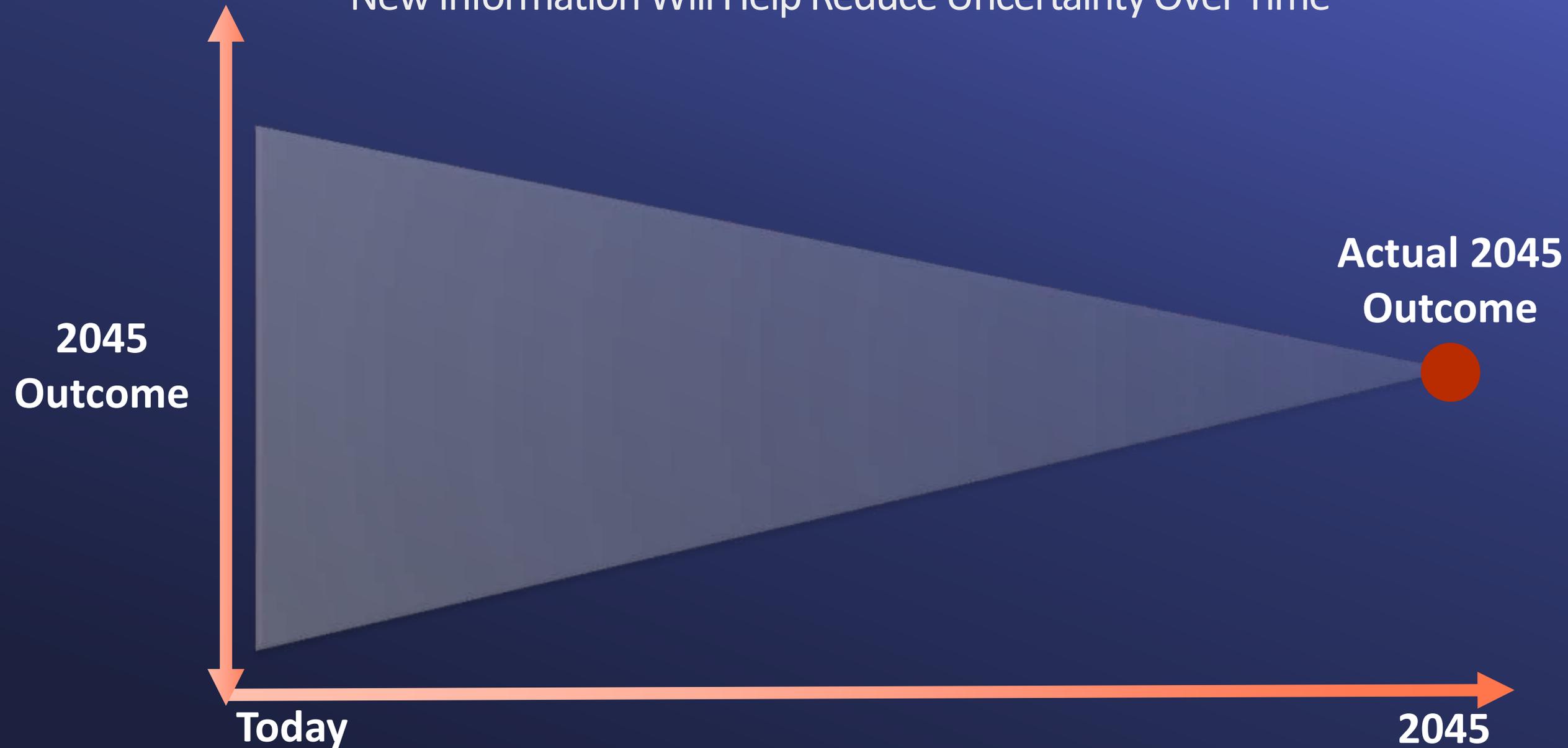
BI-ANNUAL BUDGET AND CIP DEVELOPMENT



Adaptive Management Framework
Incorporating the Needs Assessment Scenarios for
Long-Term Planning

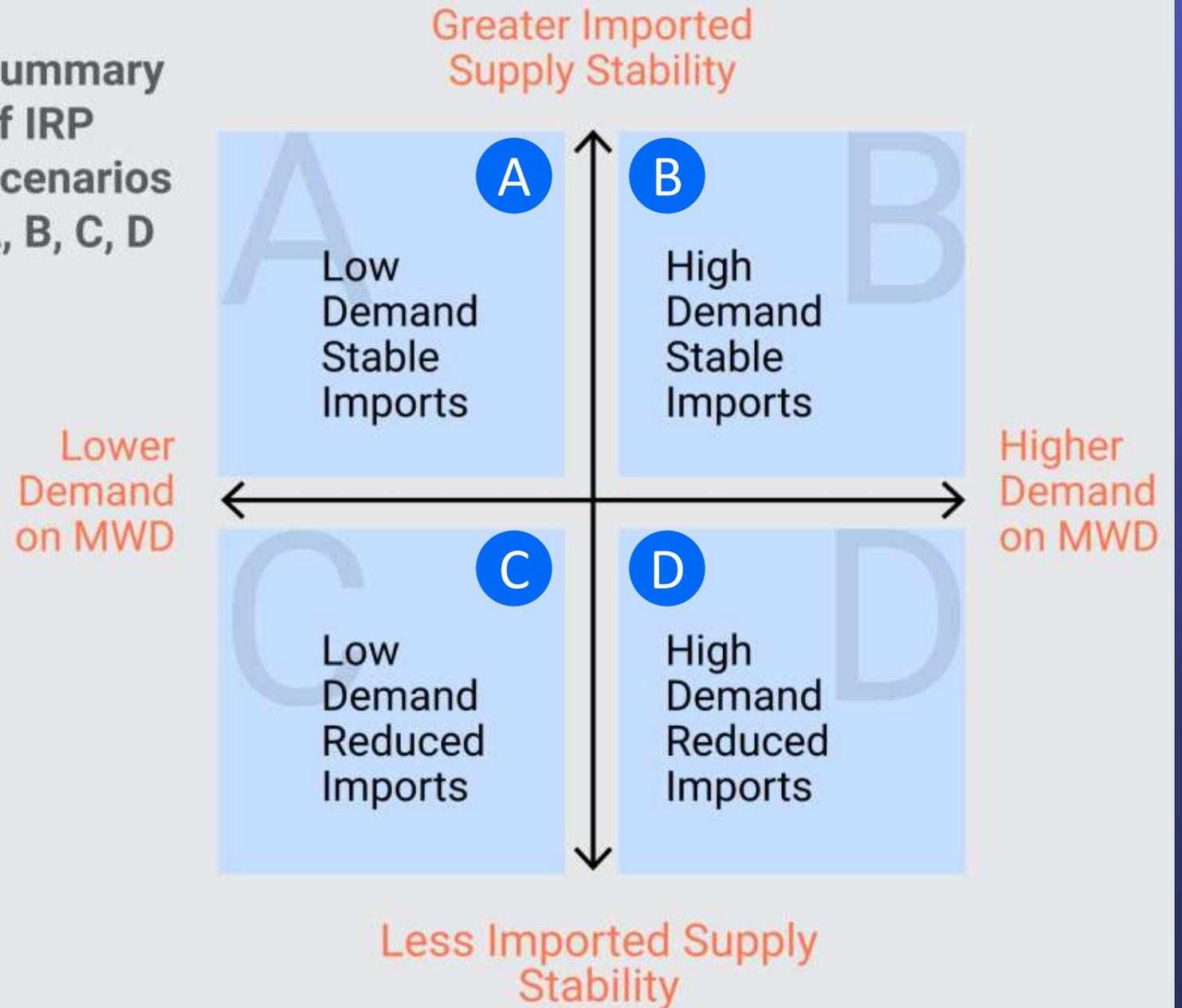
Adaptive Management Framework

New Information Will Help Reduce Uncertainty Over Time



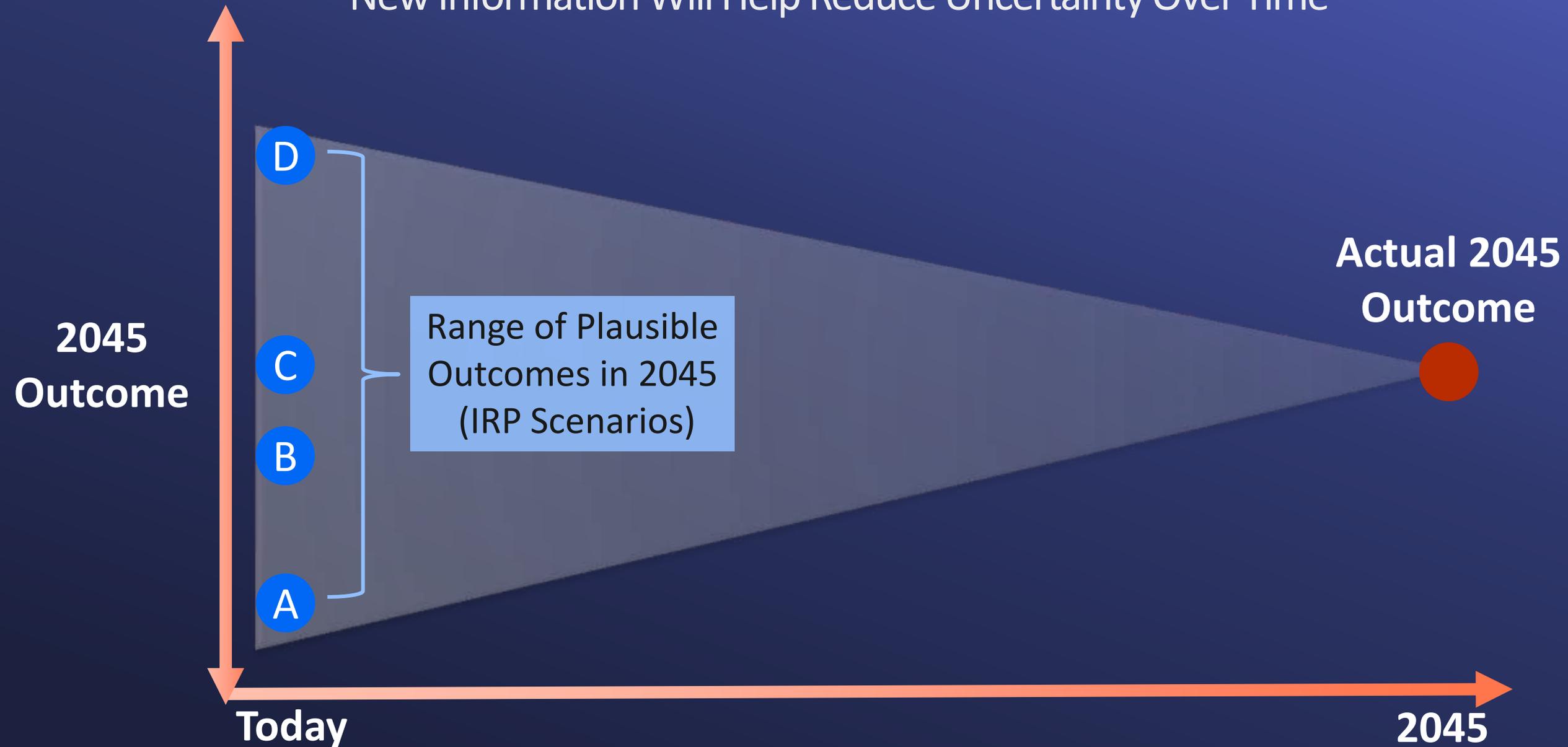
2020 IRP Scenarios

Summary of IRP Scenarios A, B, C, D



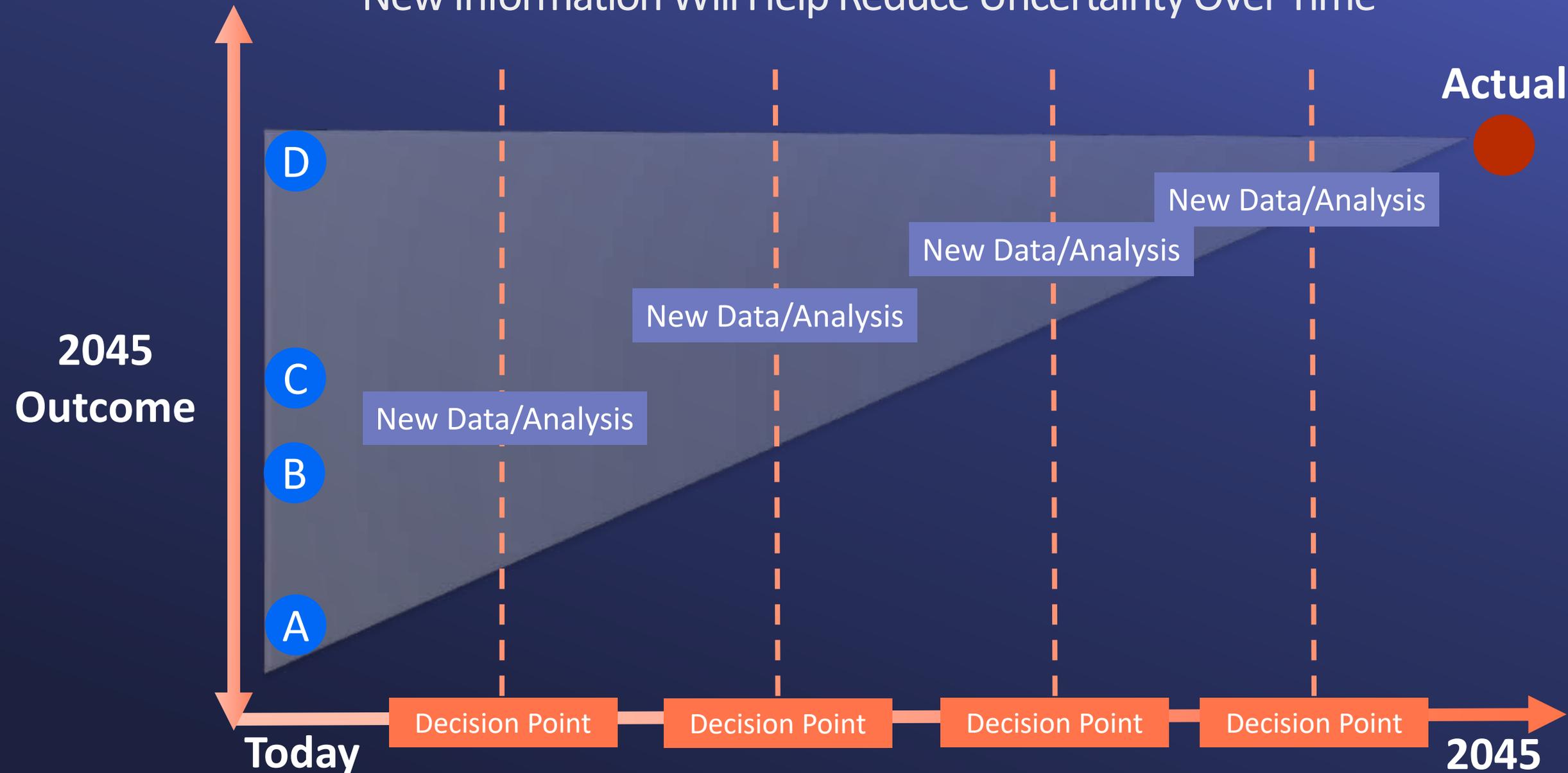
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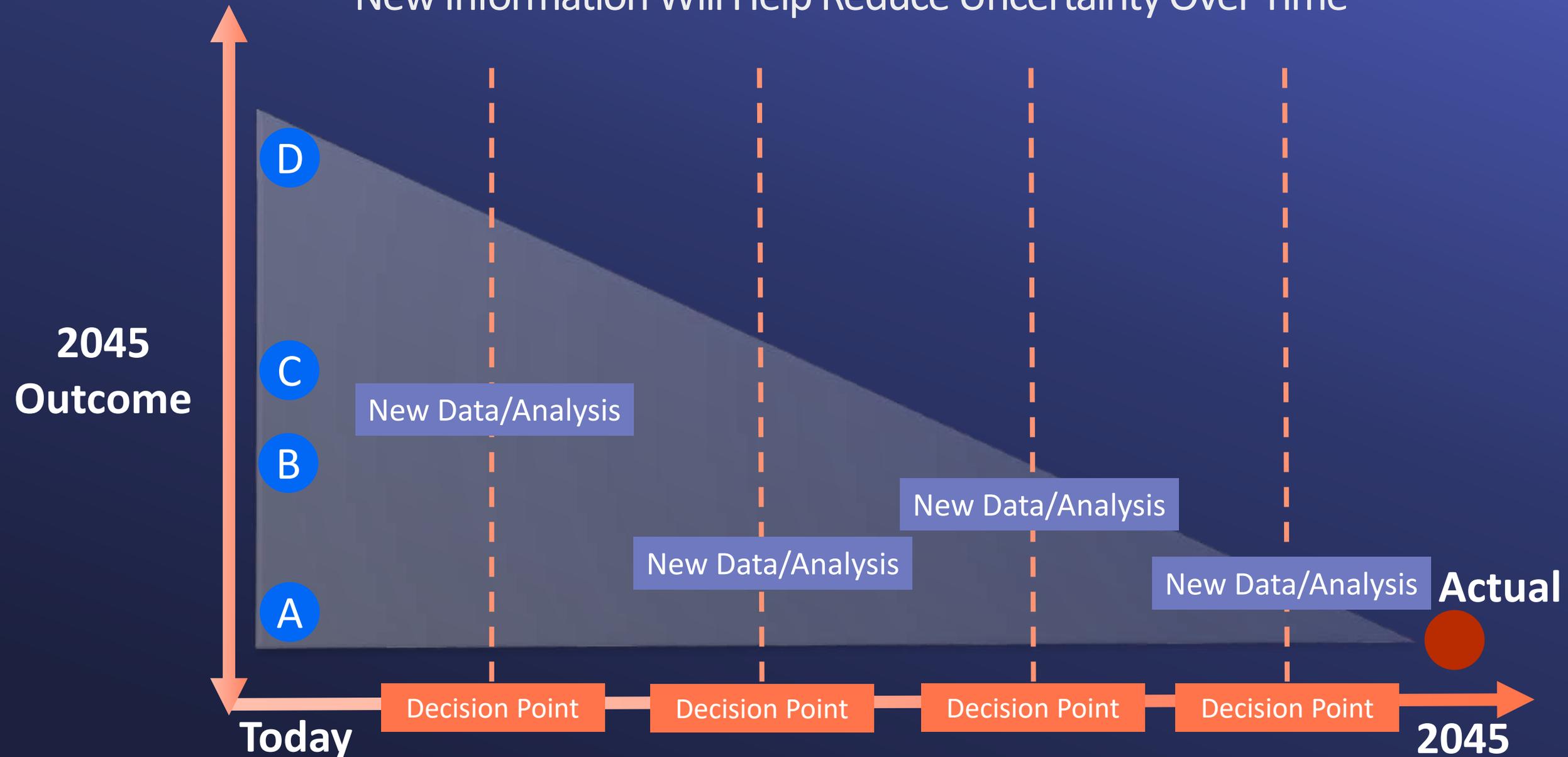
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Adaptive Management

Scenario Planning Informs Decision Making

- Distinct difference between planning and implementation decisions
 - Planning identifies risks and options for the range of uncertainty, including the “worst case”
- Implementation decisions will be made over time and informed by real world data provided at that time
 - Signpost evaluation and updated analyses will inform Board implementation decisions
- Adaptive management framework provides guardrails
 - These guardrails provide a balance between adequately planning for future risks while avoiding overinvestment or stranded assets

Additional Requested Clarifications

Board Decisions Should be Based on Current Information and Data

Water Supply Reliability Criteria is Paramount

Range of Potential Water Supply Gaps Should be Considered in
Project and Program Assessments

Account for Planned Local Agency Projects and Anticipated
Conservation Mandates

Identify Location and Extent of Supply Gaps

2025 Q1 CAMP4W Activities

- Submit Comments on Implementation Strategy by March 28, 2025

- March 11, 2025: FAAME
 - Info Item: Draft CAMP4W Implementation Strategy
 - Documents:
 - Draft CAMP4W Implementation Strategy

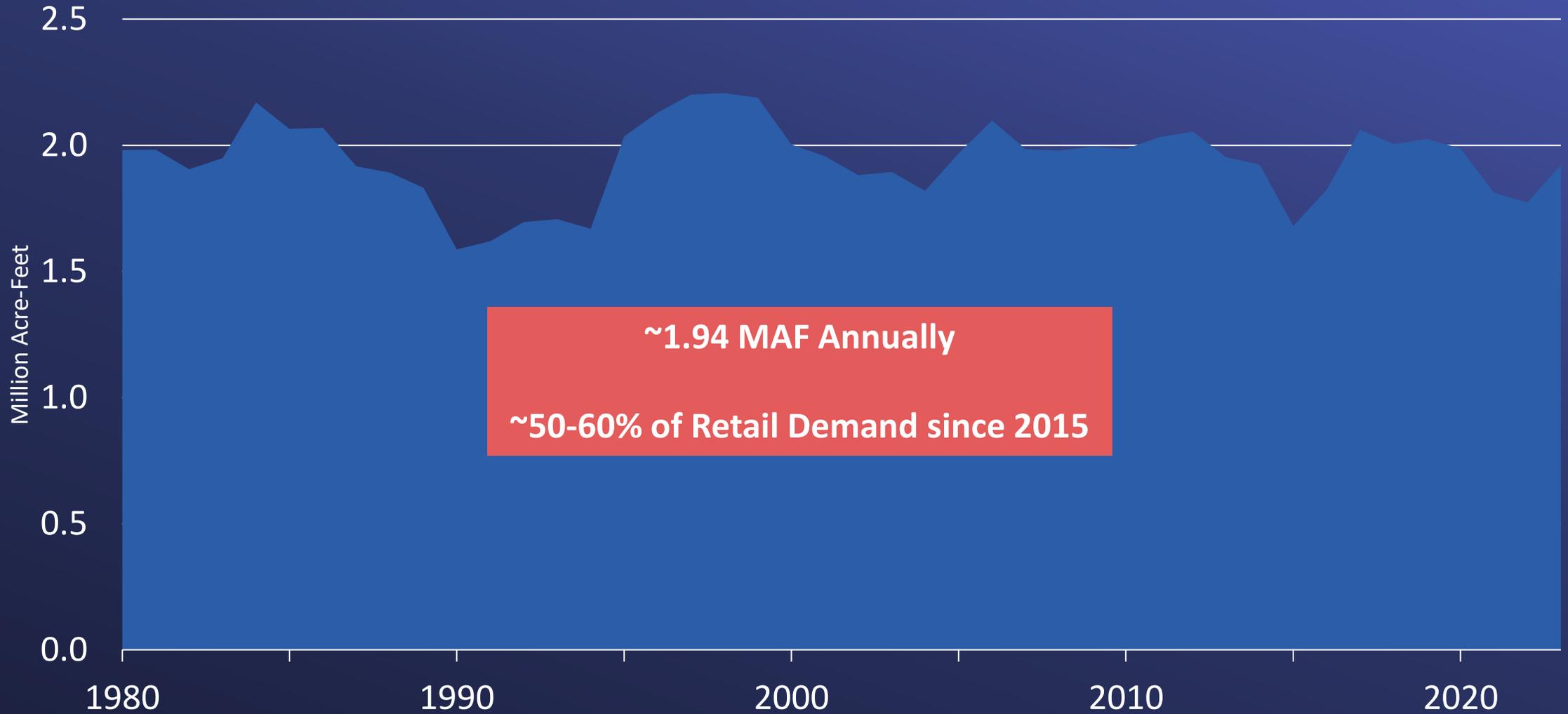
- March 26, 2025: CAMP4W Task Force
 - Present 2024 CAMP4W Annual Report Data
 - Review CAMP4W Implementation Strategy
 - Documents:
 - Draft CAMP4W Implementation Strategy

- April 8, 2025: FAAME and Board
 - Seek Board Approval of CAMP4W Implementation Strategy
 - Documents:
 - Final CAMP4W Implementation Strategy

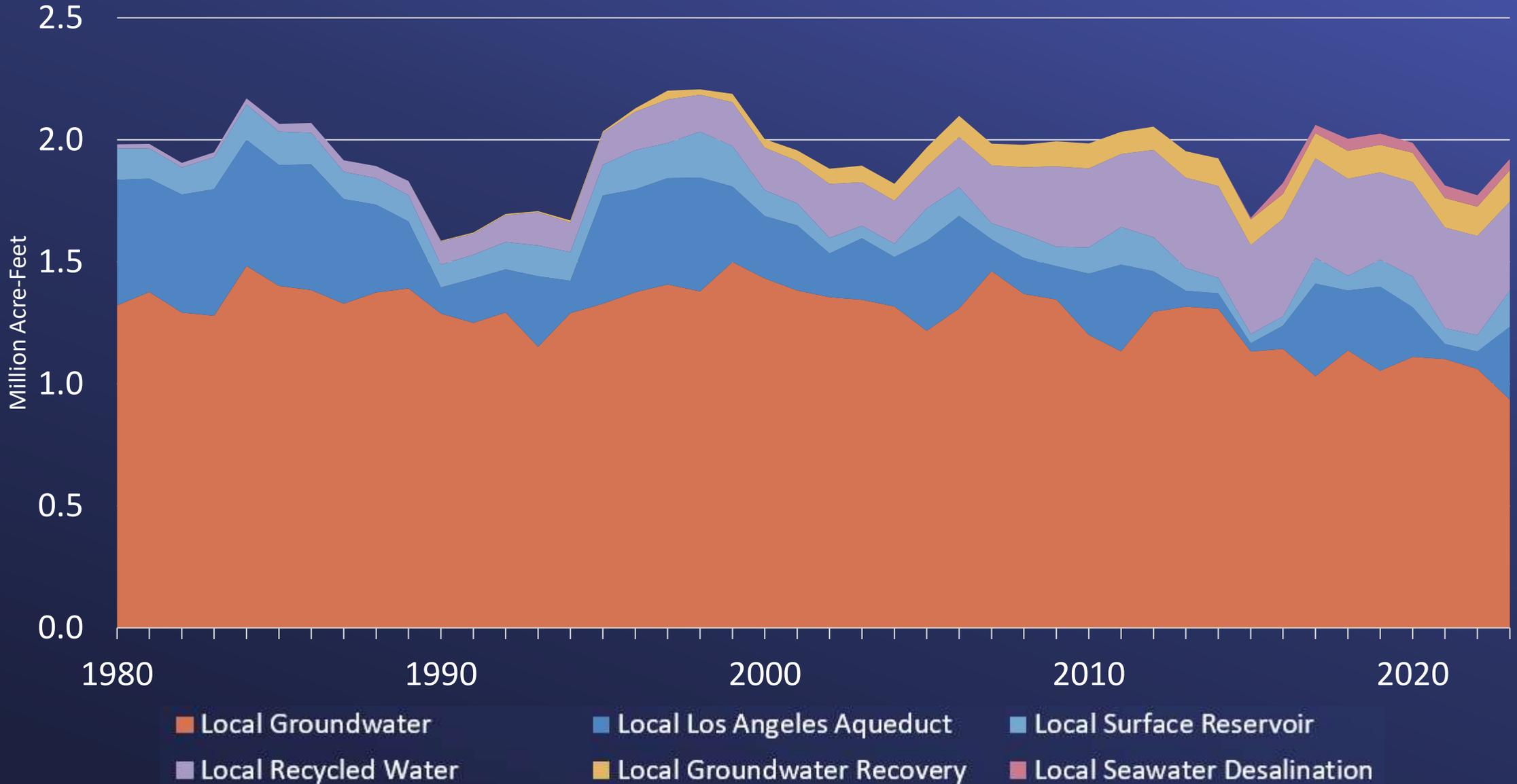


Local Supply Production & Potential Projects

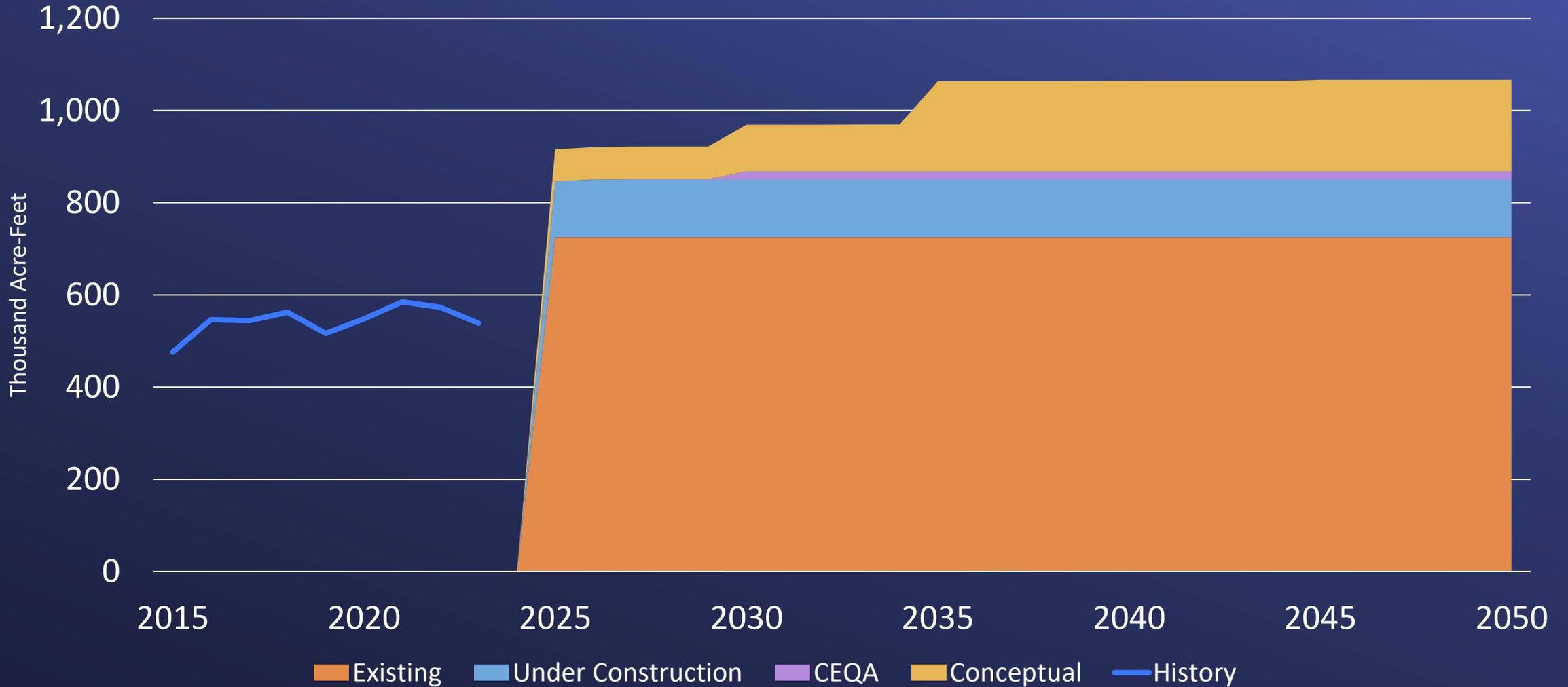
Total Local Production (1980-2023)



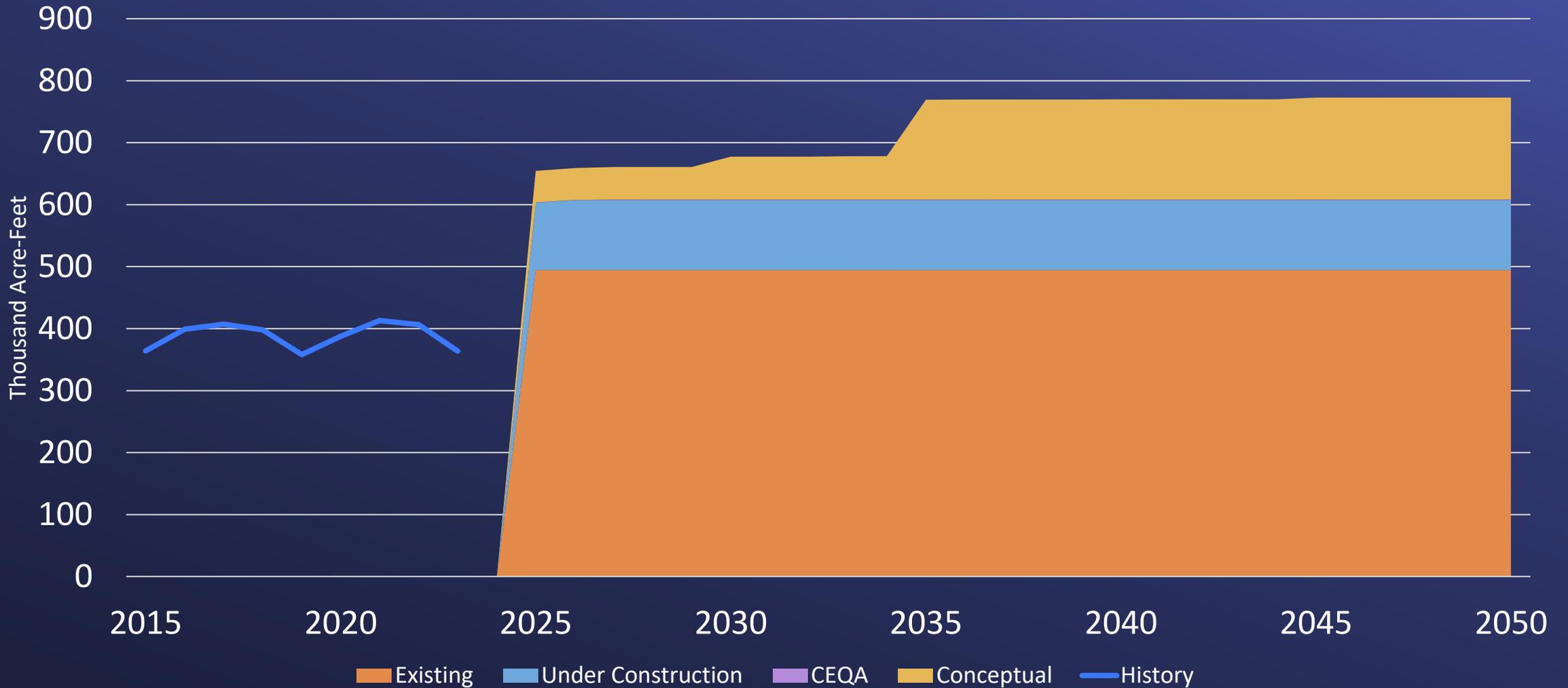
Total Local Production by Type (1980-2023)



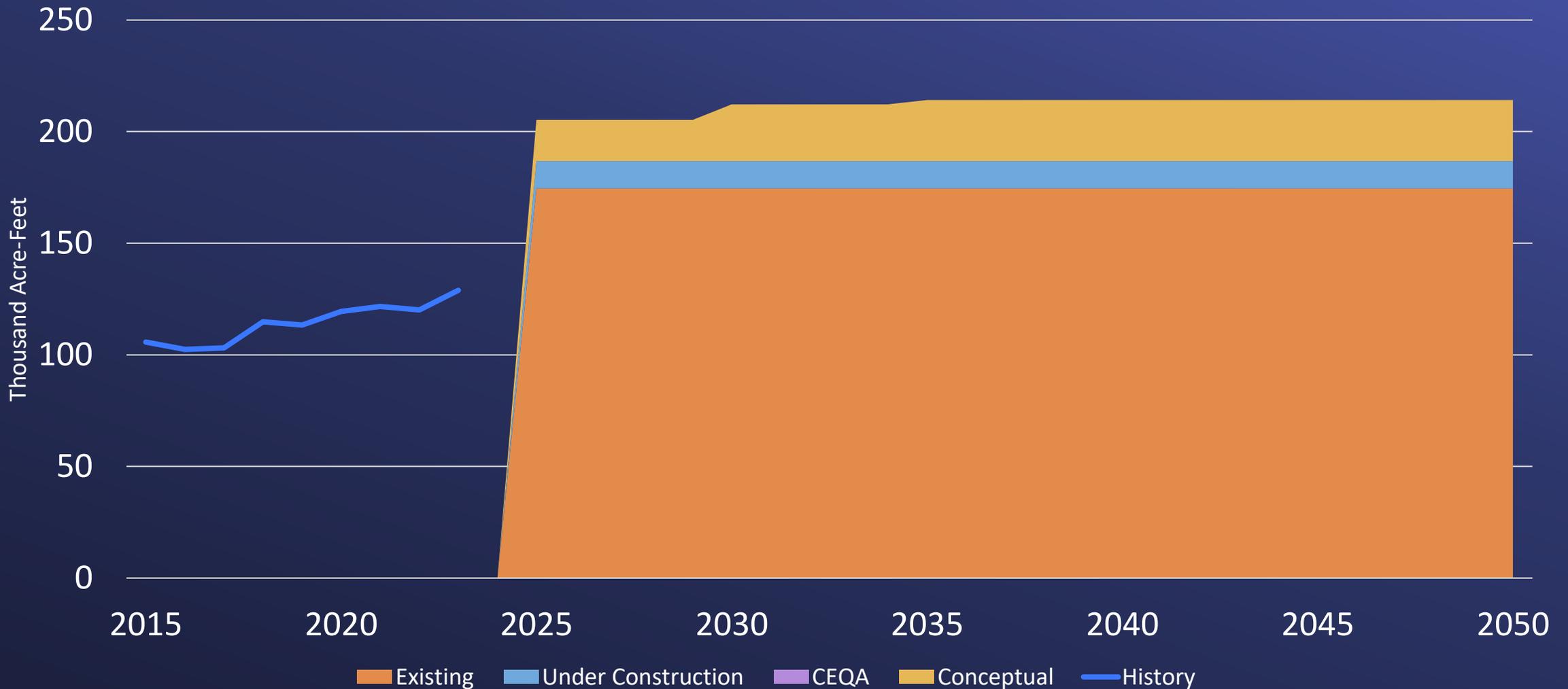
Inventory of Potential Local Projects by Planning Category



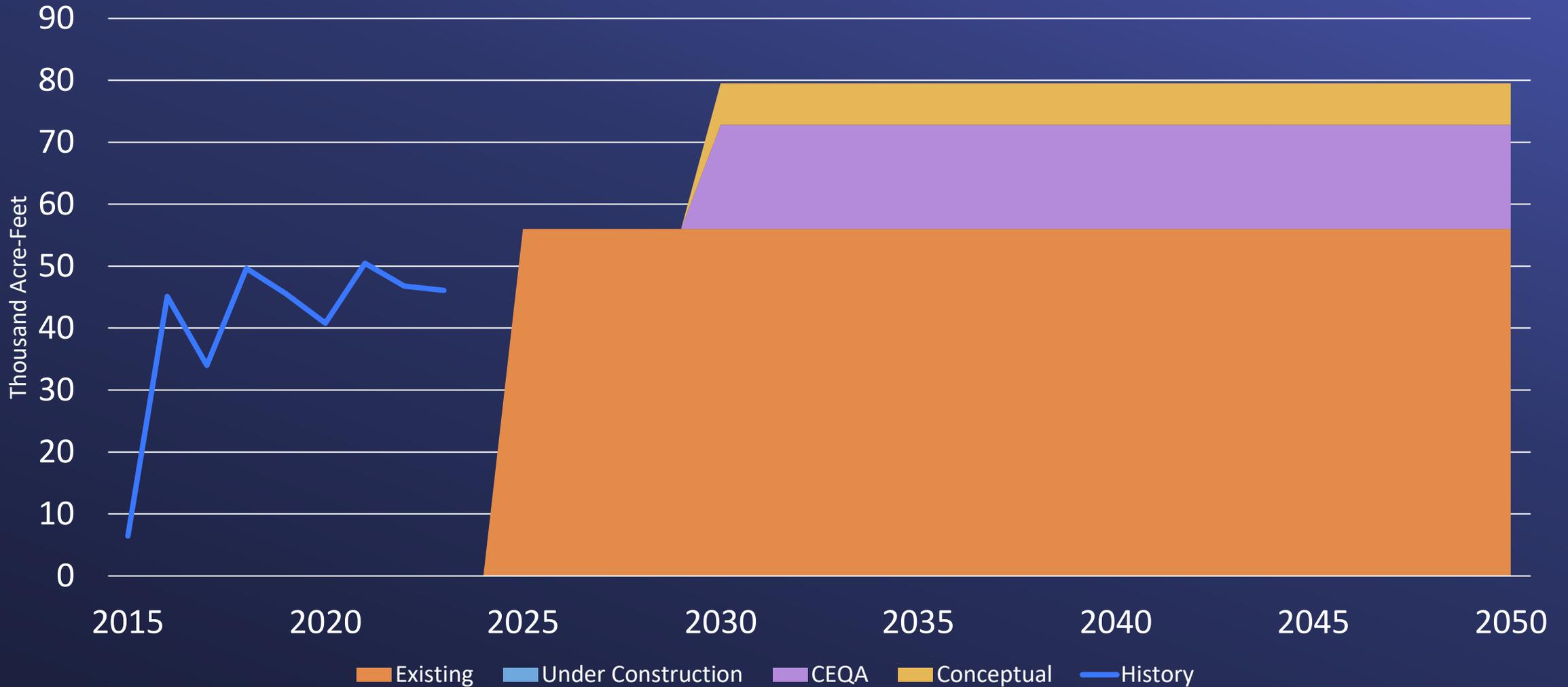
Potential Local Projects by Planning Category – Recycled Water



Potential Local Projects by Planning Category – Groundwater Recovery



Potential Local Projects by Planning Category – Seawater Desalination



Local Resources Program (LRP) Performance

Background

Why are LRP Contractual Commitments Higher than Actual Project Production?

- Contracts are typically developed based on maximum project production capacity
 - Set at member agency request and may reflect future phasing of projects
- Changes to project design and use may occur after the LRP agreement is executed
- LRP performance provisions reflect short and mid-term production levels

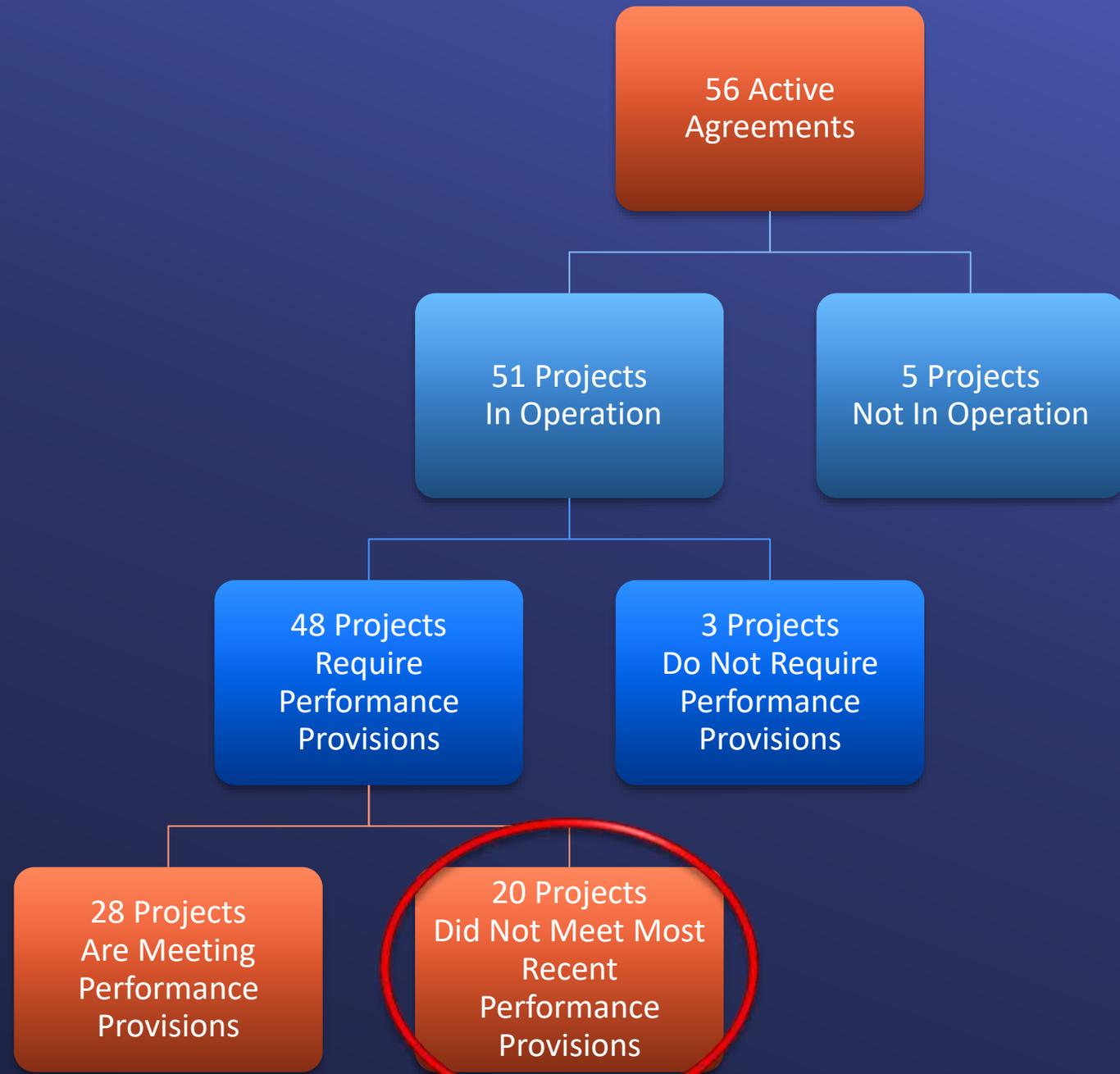
Performance Provisions Ensure Project Continued Participation in LRP

How do we determine performance?

- Project must meet performance provisions in LRP agreement
 - Start of construction and operation
 - Production targets every four years

Production Target	Timeline (full fiscal year)	What happens if the production target is not achieved
50 % of contractual yield	Years 1 – 4 of production	Reduce the ultimate yield by shortfall to meet production target using the highest annual yield in the 4-year period
75 % of contractual yield**	Years 5 - 8 and every four years thereafter until the 25 th year of production	

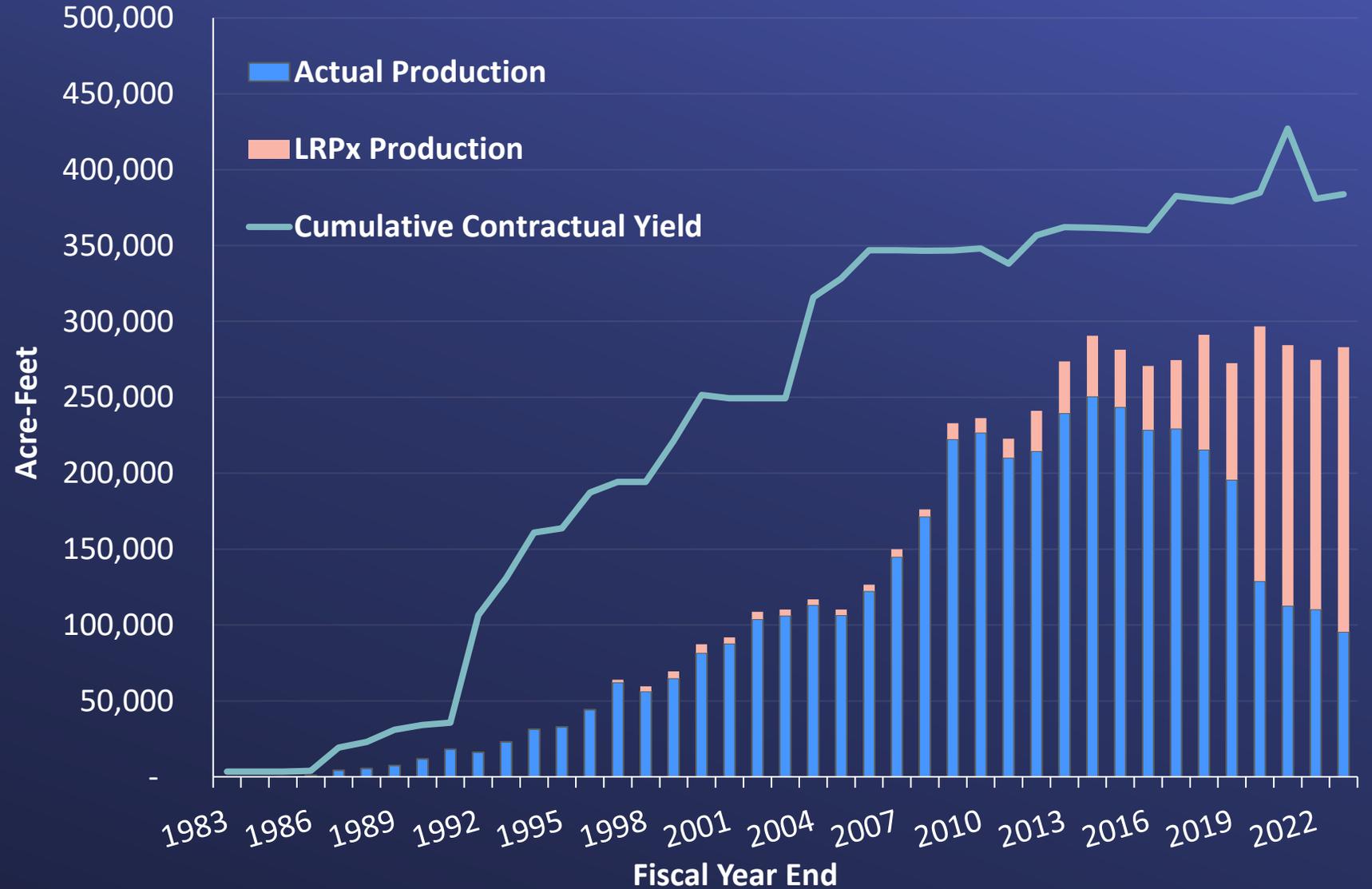
How are current LRP projects performing?



How Projects Have Performed Over Time



Cumulative Contractual Yield vs. Actual Production (AF)



Challenges Identified by Member Agencies to Meet Contractual Yield

- Demand
 - Lower irrigation demands due to conservation
 - Reduced wet-year water demand
 - End-user participation lower than anticipated
- Supply
 - Declining flows to wastewater treatment plants
 - Restrictions on groundwater pumping
- Construction
 - Equipment failure and supply chain issues
 - Changes to project during construction