Board of Directors Workshop on Long-Term Planning

Member Agency Alignment and Gap Analysis

Item 5a

June 27, 2023

Today's Agenda

Climate Adaptation Master Plan for Water

Today's Agenda

1. Agenda Review; Workshop Objectives
2. Draft CAMP4W Timeline and Process Chart (20 min)
3. Alignment of Member Agency Needs and Planning
   - MA Questionnaire Feedback (5 min)
   - Member Agency Panel (25 min)
   - IRP Needs Assessment Review (15 min)
   - Board Discussion (30 min)
4. Ad Hoc Groups Report Back (10 min)
5. Next Steps (5 min)

Climate Adaptation Master Plan for Water

Today's Agenda

Objectives

- Discuss the Draft CAMP4W Timeline and Framework integrating the Board's planning, policy and technical input, member agency manager involvement, and public engagement
- Utilize the IRP Needs Assessment to define the range of water supply needs for potential climate change scenarios and as a tool for evaluating water supply and storage solutions
- Increase alignment of member agencies through the Needs Assessment and the draft CAMP4W Themes

Draft CAMP4W Timeline and Process Chart

Potential Climate Adaptation Master Planning Process

Defining the Problem
- **Board Retreat**
- Initiate mutual understanding of climate vulnerabilities, MA needs and interests, values and challenges

Readiness & Structure
- Discuss planning and schedule
- Start to discuss key terms
- Hire climate, planning consultants

Resilience & Reliability
- **Board Workshop**
- Mutual understanding of terms
- Discuss climate risks
- Water Supply Gap Analyses
- Align MWD planning with MA plans
- Consider evaluative criteria

Affordability & Financial Sustainability
- **Board Workshop**
- Mutual understanding of terms
- Test criteria
- Identify vulnerable / high risk areas
- Discuss tradeoffs and co-benefits

Resilient Water Supply Pathways
- **Board Workshop**
- Consider potential pathways
- Discuss tradeoffs and co-benefits
- Estimate costs associated with potential pathways

Water Resilience & Business Model
- Consider potential pathways
- Explore financing models for regional and local projects

Water Resilience & Financial Sustainability
- Test pathways
- Consider "no regrets" projects
- Explore connection to CIP and Biennial Budget

Decision Making Framework
- Consider an adaptive framework for decision-making
- Refine CIP and Biennial Budget

Member Agency and Public Engagement

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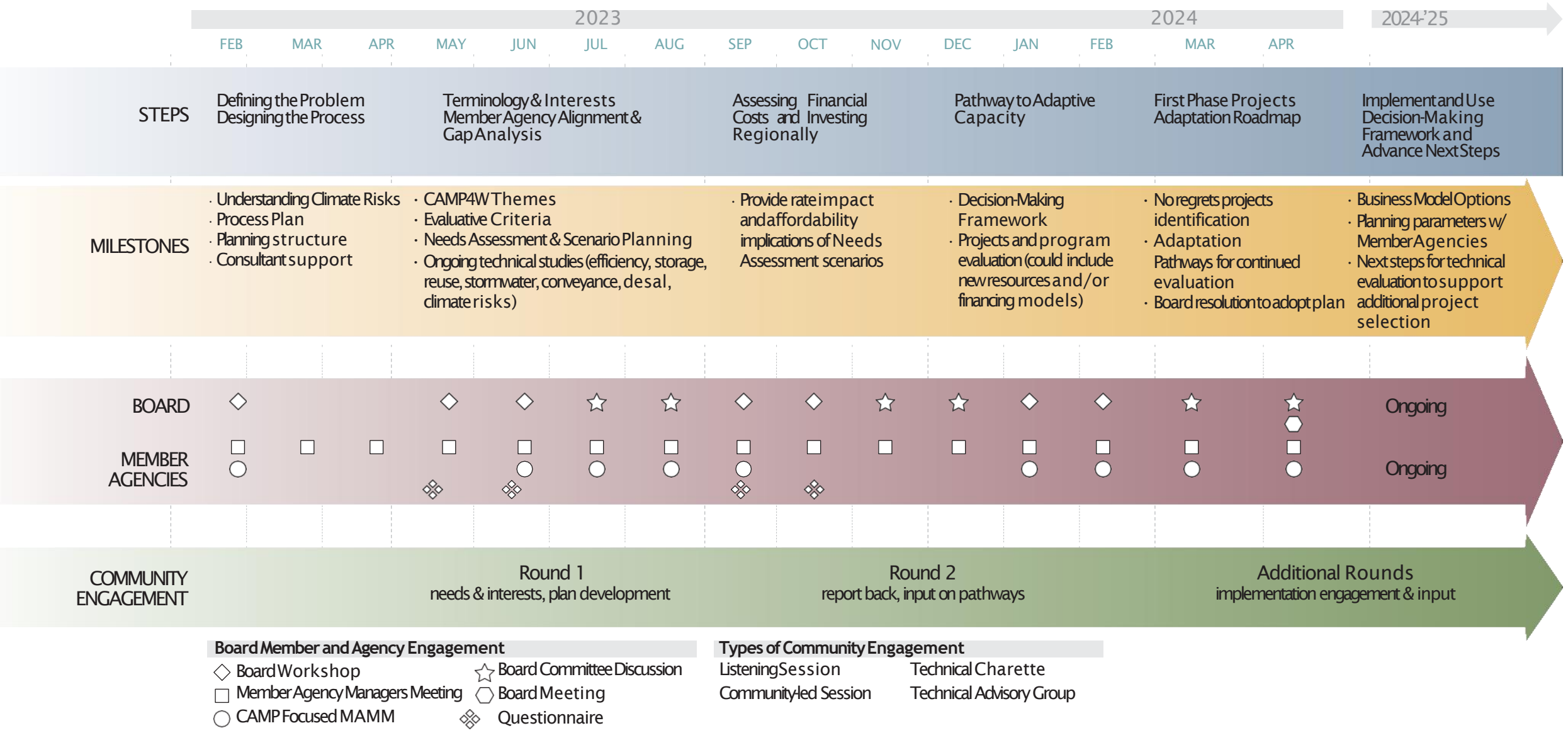
Climate Adaptation Master Plan for Water: Timeline & Framework



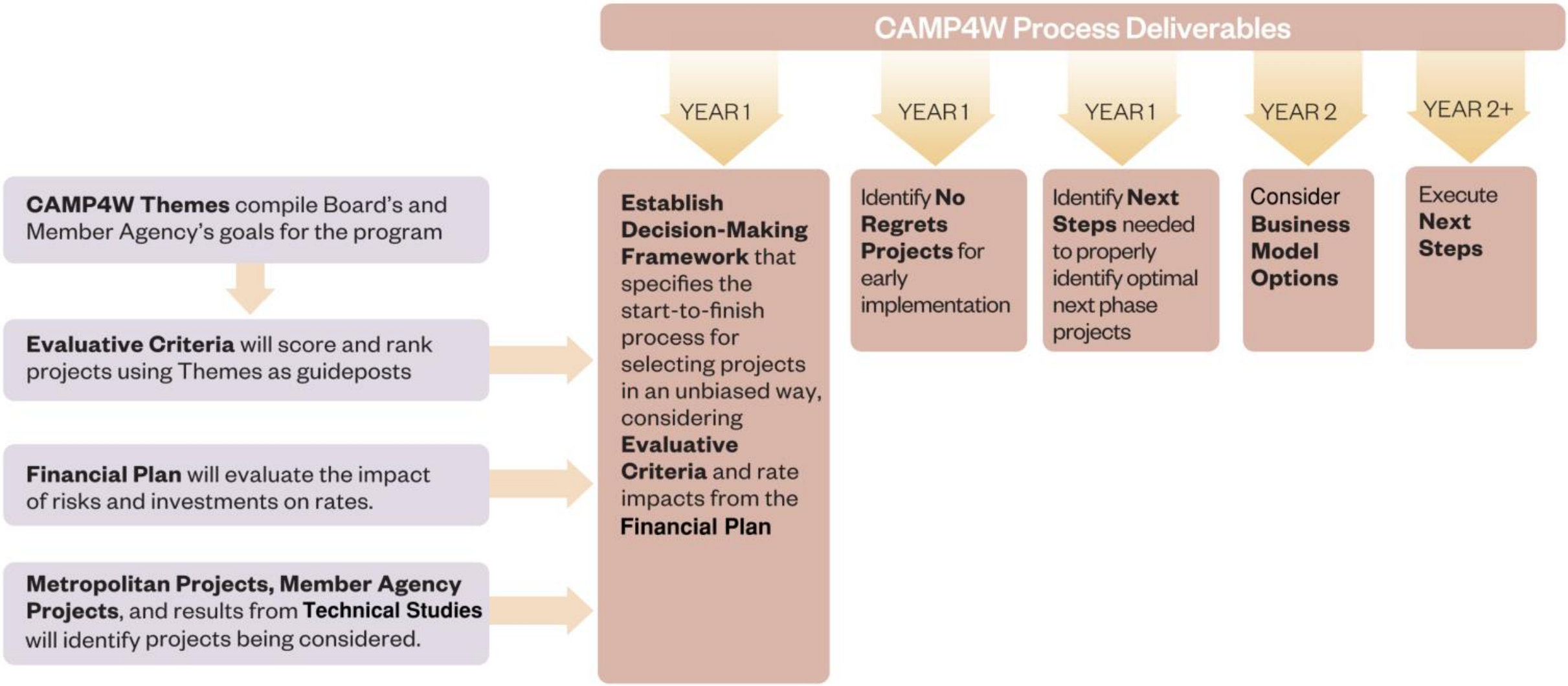
Board Member and Agency Engagement

- ◇ Board Workshop
- ☆ Board Committee Discussion
- □ Member Agency Managers Meeting
- ⬡ Board Meeting
- ◯ CAMP Focused MAMM
- ❖ Questionnaire

Types of Community Engagement

- Listening Session
- Technical Charette
- Community-led Session
- Technical Advisory Group

CAMP4W Process Flow



Alignment of Member Agency Needs and Planning: MA Questionnaire

Member Agency Questionnaire #2

Member Agency Alignment

Climate Planning: To assist in understanding how each agency is addressing climate change in its planning processes and identify additional resources, analyses and information that could feed into Metropolitan's climate mitigation efforts and climate vulnerability assessment or vice versa.

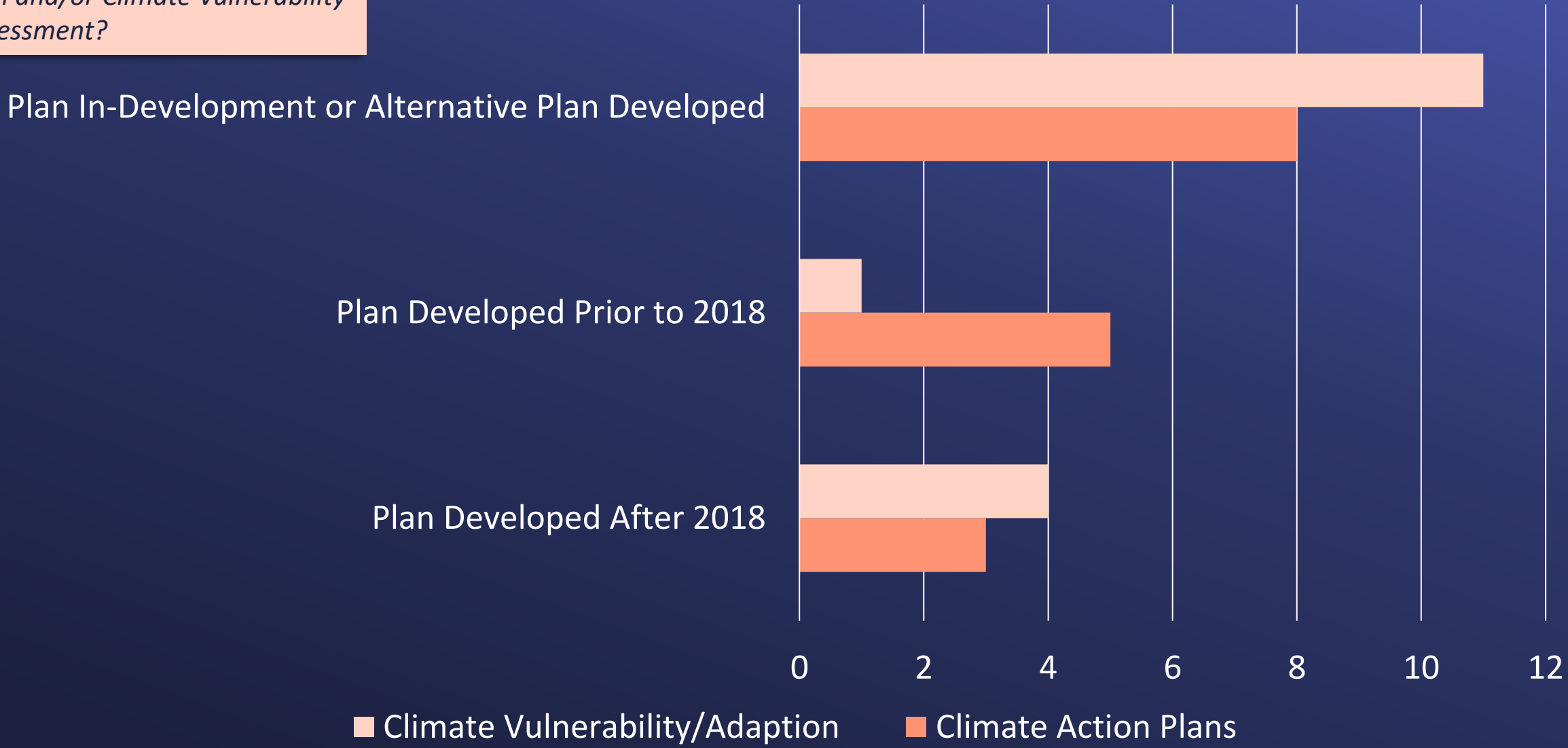
Water Resource Planning: To inform our current and future water supply gap analyses and development of evaluative criteria. These questions compliment ongoing annual surveys on each agency's water supply sources and project planning.

Financial Planning: To help understand each Member Agency's specific challenges related to financial planning and inform future conversations around the business model.

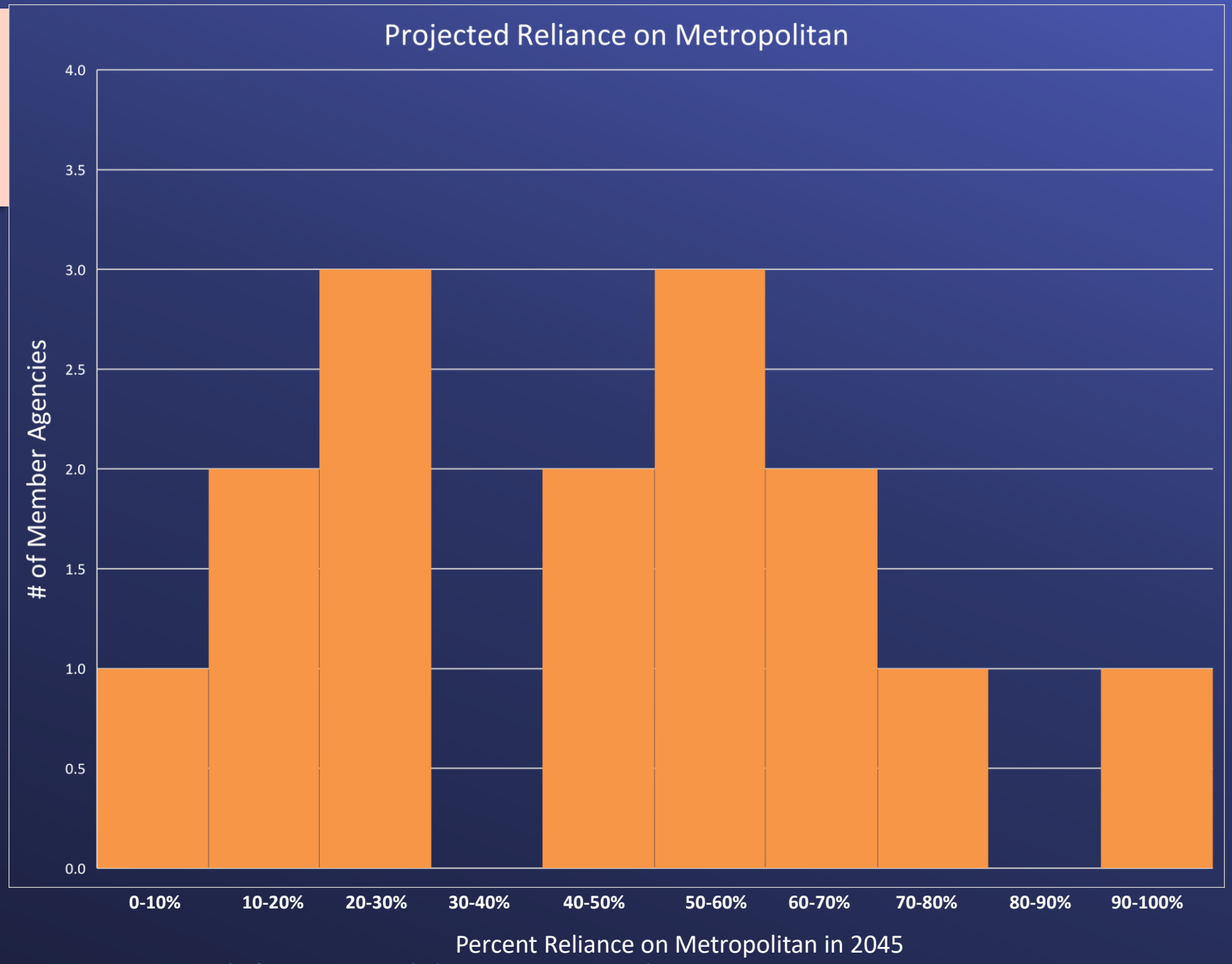
***Question**: Please describe your agency's progress or intentions to develop a Climate Adaptation Plan and/or Climate Vulnerability Assessment?*

Member Agency Climate Planning Status

Member Agency Questionnaire #2



***Question**: What level of reliability (i.e. meet 100% peak demand 100% of the time) do you anticipate needing from Metropolitan in the future?*



***Question**: How would you rank these potential financial constraints and/or concerns for your agency?*

Member Agency Questionnaire #2

Financial Planning

1. Bonding and financial capacity
2. Needs of low-income customers
3. Ability to recover costs of infrastructure investments
4. Public and political will to raise rates
5. Ability to meet the scale of needed investment
6. Other financial concerns expressed:
    - Equity in Metropolitan financial model
    - Cost recovery for fixed and variable expenses
    - Political will to invest in large infrastructure projects
    - Availability of viable groundwater sources

Alignment of Member Agency Needs and Planning: Member Agency Panel

Climate Adaptation Master Plan for Water

Member Agency Alignment

Member Agency Panel

- Henry Graumlich, Calleguas Municipal Water District
- Joe Mouawad, Eastern Municipal Water District
- Craig Parker, City of Anaheim
- Sunny Wang, City of Santa Monica
- Sabrina Tsui, LA Department of Water and Power

IRP Needs Assessment: An Analytical Foundation for the Climate Adaptation Master Plan for Water

1. What is the IRP Needs Assessment?

What is the IRP Needs Assessment?

- Phase l of the 2020 Integrated Water Resource Plan (IRP)
- Initiated in 2020 and adopted by the Board in April 2022
- Developed in collaboration with member agencies utilizing area experts in climate change and water demand and public stakeholder involvement
- Guided by the Integrated Resources Plan Special Committee of the Board
- Outcomes and findings supported by a comprehensive scenario planning approach

Informs Decision-Making in CAMP4W

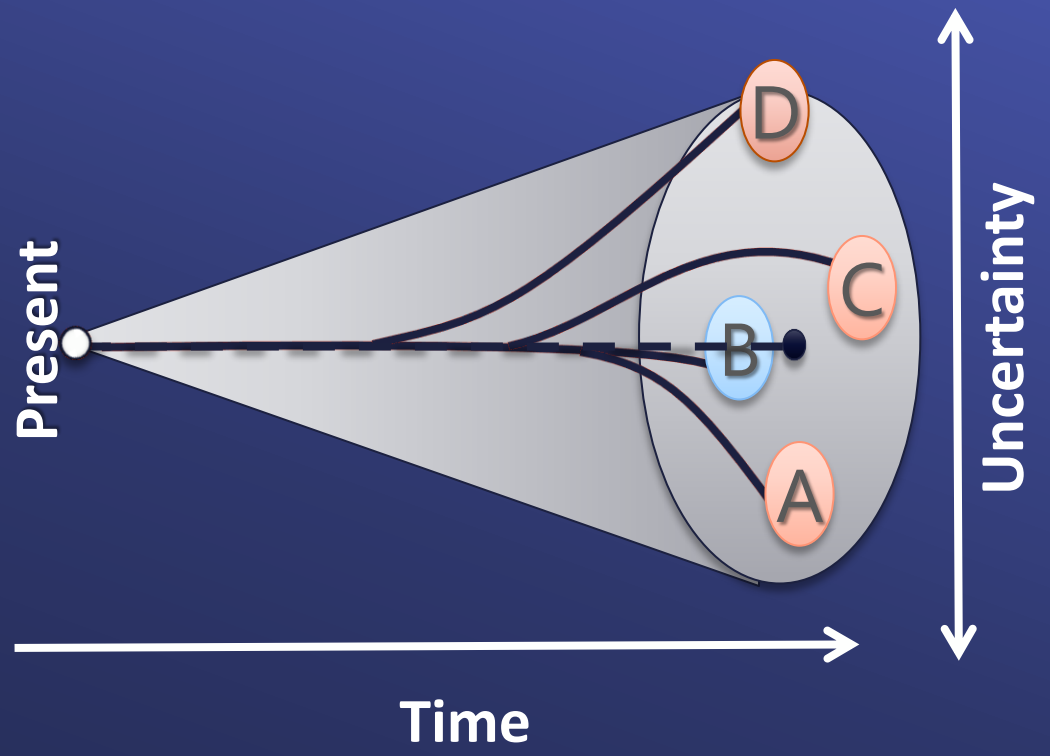
Needs Assessment

Defining the problem

- In water resource planning, we want to plan comprehensively and implement adaptively

- **Comprehensive Planning** –Needs Assessment addressed limitations of fixed assumptions for an uncertain future with a scenario planning approach

- **Adaptive Implementation** – Because the future is uncertain, we want to incorporate changing conditions and trends into the implementation decision-making process



Climate Adaptation Master Plan for Water

Key Assumptions – A Collaborative Open Process

Collaboration and Feedback

- Member Agencies
- Groundwater Basin Managers
- Climate Experts
- Demand Experts
- Demographer
- Public

Four Scenario Projections

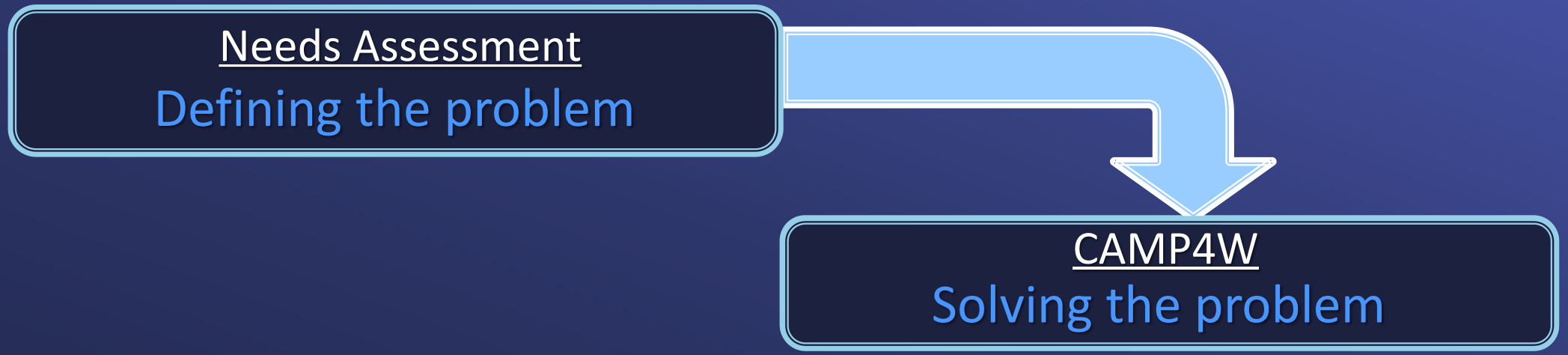
- **MWD Supply**
  - Imported Water
- **Demand on MWD**
  - Retail Demand
  - MA Local Supply Production

Four Baseline Conditions

Modeling Tool

- Resource supply and demand simulation tool
- 25-year planning horizon
- Stores surplus water to meet shortages
- Encompasses a range of hydrologic conditions across a range of climate impacts

Informs Decision-Making in CAMP4W



- The CAMP4W process will use the results and findings from Phase I as a basis for the identification of specific projects that can solve anticipated problems
  - Develop CAMP4W Themes and Evaluative Criteria
  - Identify specific resource investments
  - Develop a more fine-tuned cost analysis
  - Iterative process to address affordability

2. What were the Findings and How Can They Inform CAMP4W

Portfolio Categories – High-Level Assessment of Needs

Category

Core Supply

Generally available and used every year to meet demands under normal conditions

- Examples: Colorado River apportionment, IID/MWD conservation agreement, water recycling, seawater desal, other structural conservation

Flexible Supply*

Acquired on an as-needed basis; may or may not be available for use each year

- Examples: SWP Dry-Year Transfers, Palo Verde Land Management (increased calls)

Storage

The capability to store water supply to meet demands at a later time

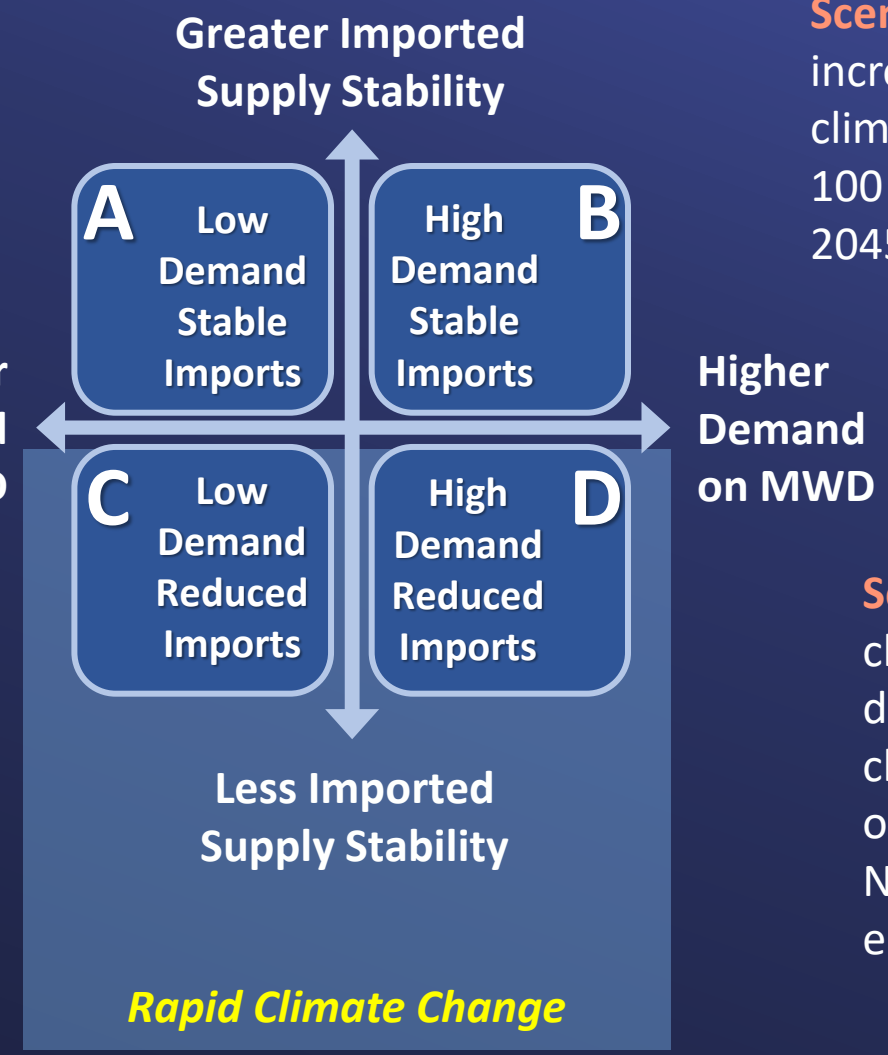
- Examples: DVL, SWP flexible storage, AVEK High Desert Water Bank

**Flex supply was capped at 100 TAF*

Four Planning Scenarios – Defining Potential Problems

Scenario A shows no unmanaged shortages under conditions of continued low demand growth and stable climate change.

Scenario B reveals implications of increased demands even without rapid climate change. Without new storage, 100 TAF of new core supply needed by 2045.



Scenario C underscores the impacts of rapid climate change even with minimal growth pressures on demands. Without new storage, 50 TAF of new core supply needed by 2045.

Scenario D warns of critical reliability challenges when faced with both demand growth and rapid climate change. Without new storage, 650 TAF of new core supply needed by 2045. No amount of new storage would eliminate net shortage.

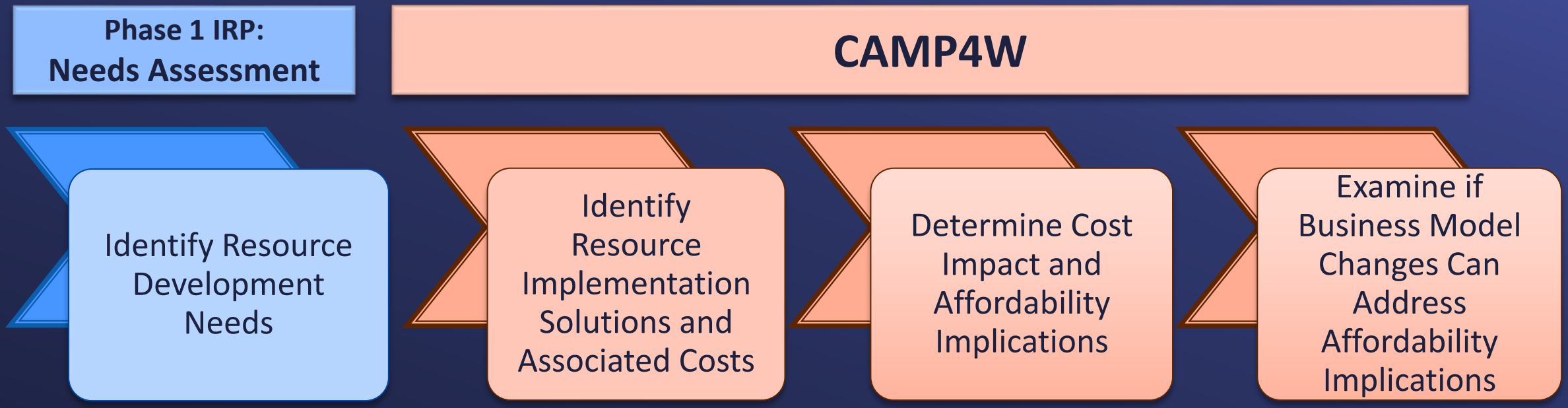
Needs Assessment Findings

- By 2045, the region would need to develop up to 650 TAF of new core supply and conservation with no new storage, or up to 500 TAF of new core supply and conservation with 500 TAF of new storage
- That amount of development eliminates the frequency and magnitude of shortages under conditions of strong demographic and economic growth and rapid climate change in a world of increasing regulatory constraints
- This range of development basically increases reliability and manages those uncertainties

Foundation for CAMP4W

- The Regional Needs Assessment identified resource development needs
- The CAMP4W process should identify specific potential programs and approaches to fill these needs
- The Needs Assessment quantified how much may be needed by category, but to what extent and exactly how to achieve it are implementation decisions
- An adaptive management strategy provides decision-making support for actual implementation

Continuum of Resource Planning



3. How the Needs Assessment Was Done

The 2020 IRP Scenario Planning Process

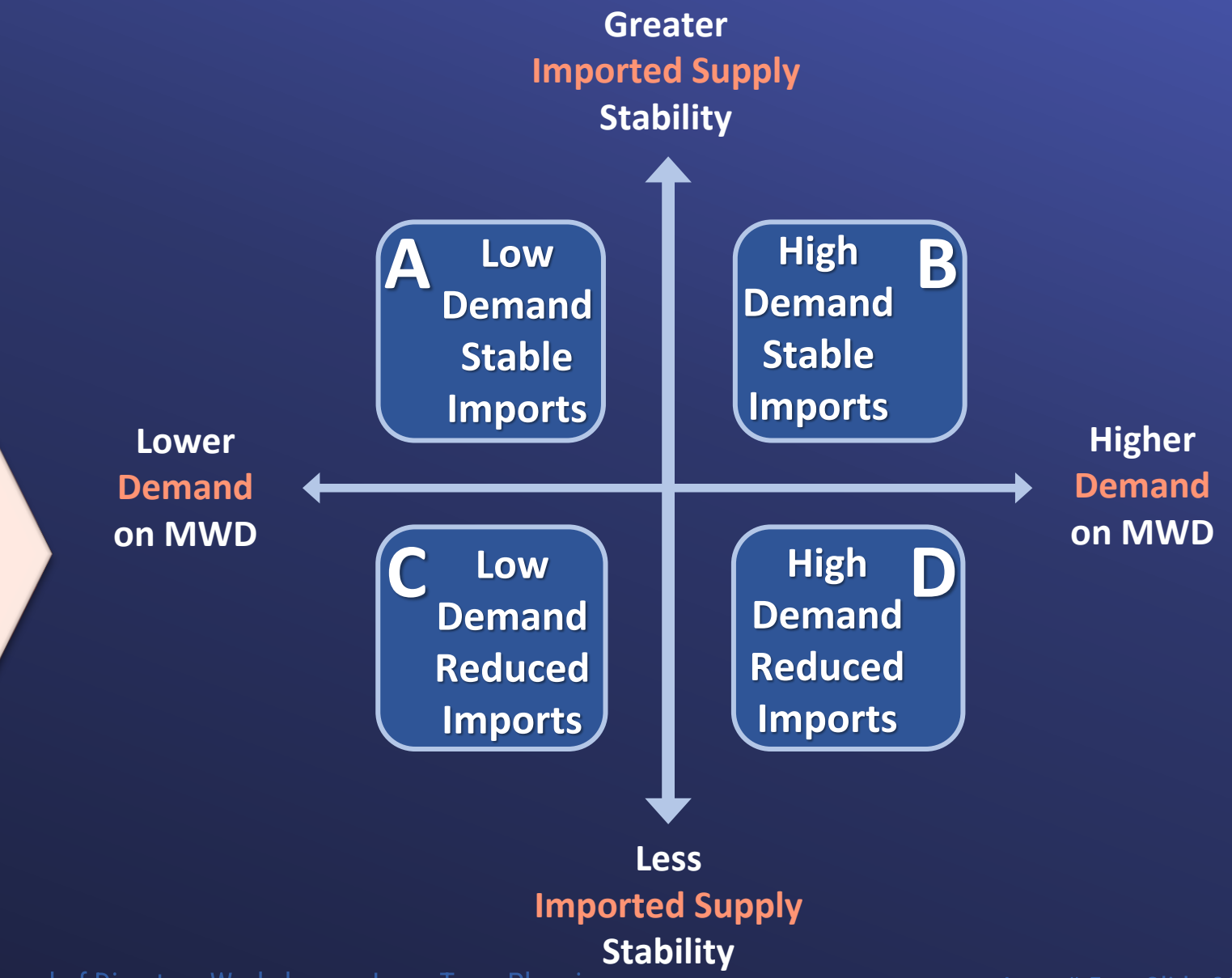
Why Did We Choose a Scenario Planning Approach?

- Scenarios broaden our view of uncertain conditions allowing us to develop a flexible long-term plan
- A disciplined method for imagining possible futures, examining more than hydrologic variability to reveal different challenges to reliability
- An approach to assess how policy options may work under future conditions and their tradeoffs

Collaborative Process – Far-Reaching Feedback

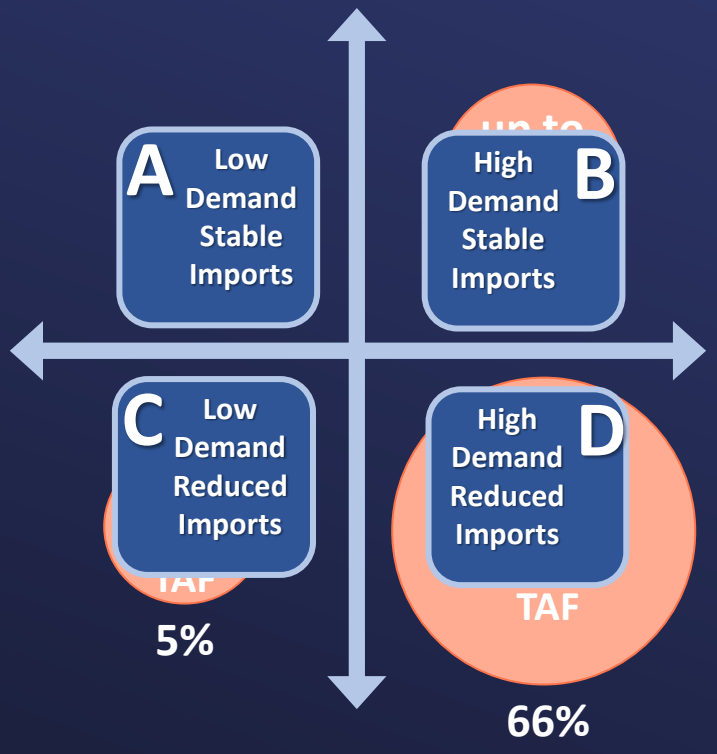
Collaboration and Feedback

- Member Agencies
- Groundwater Basin Managers
- Climate Experts
- Demand Experts
- Demographer
- Public

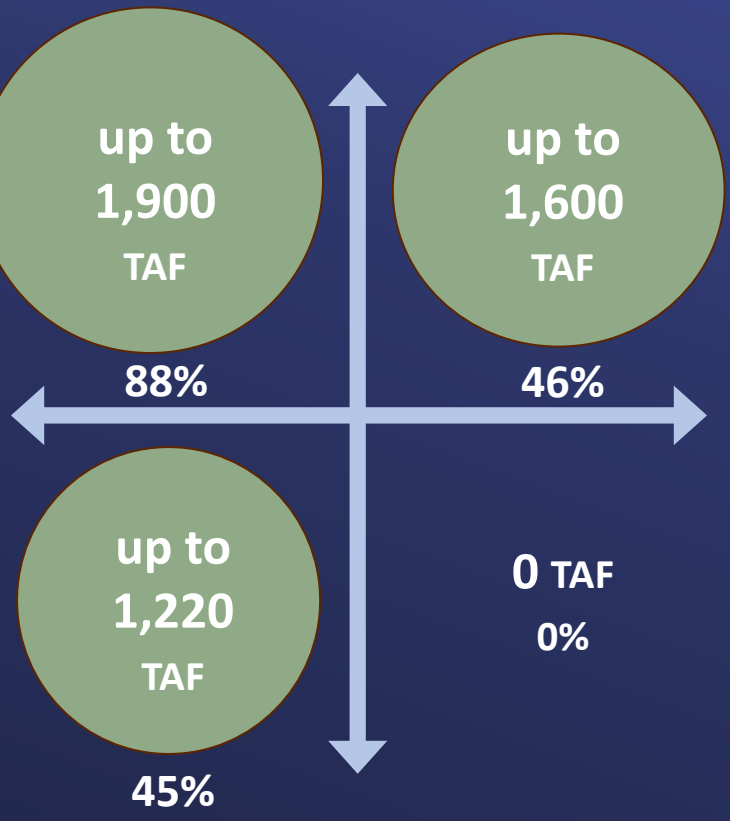


Quantification – Modeling Shortage and Surplus

Maximum Magnitude (TAF) and Frequency (%) of a Net Shortage in (Forecast Year 2045)



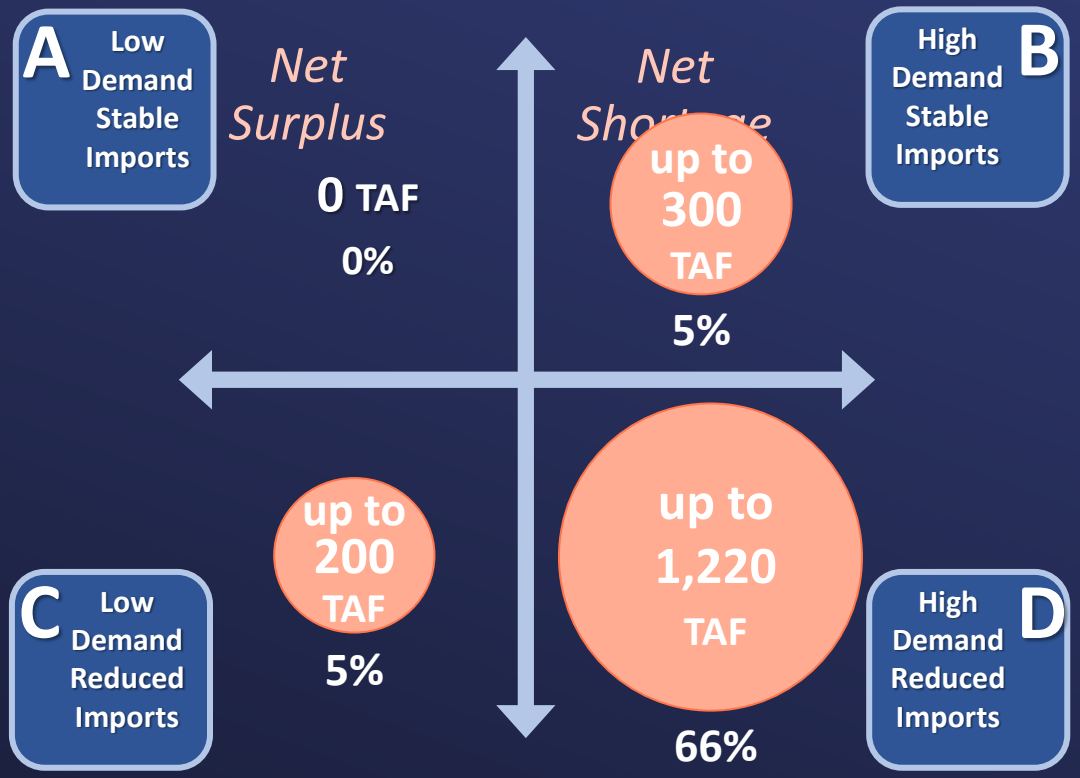
Maximum Magnitude (TAF) and Frequency (%) of a Net Surplus in (Forecast Year 2045)



Scenario C Portfolio Category Results

Quantification - Effectiveness of Portfolio Categories

Maximum Magnitude (TAF) and Frequency (%) of a Net Shortage in (Forecast Year 2045)



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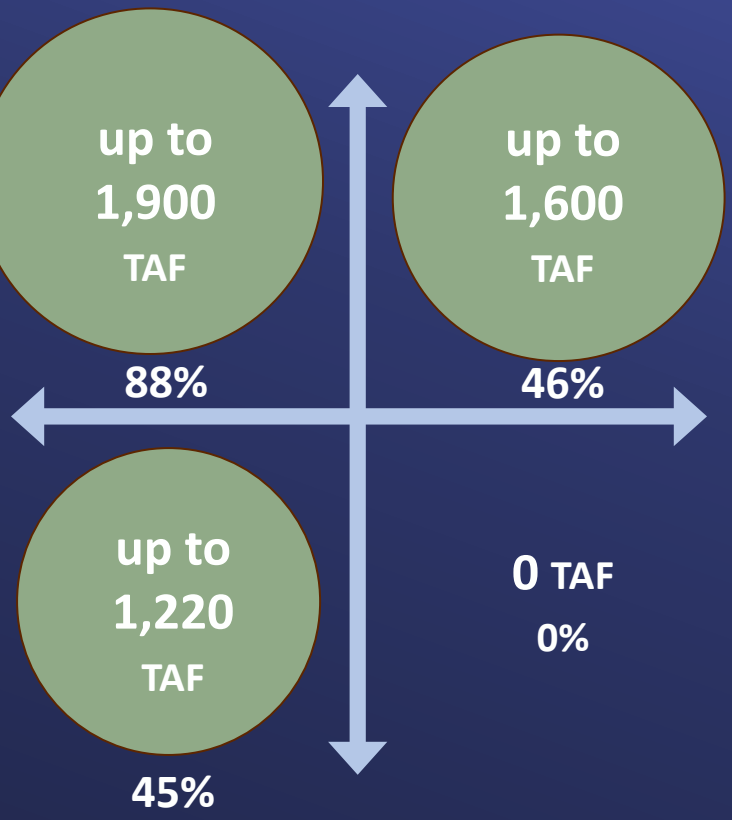
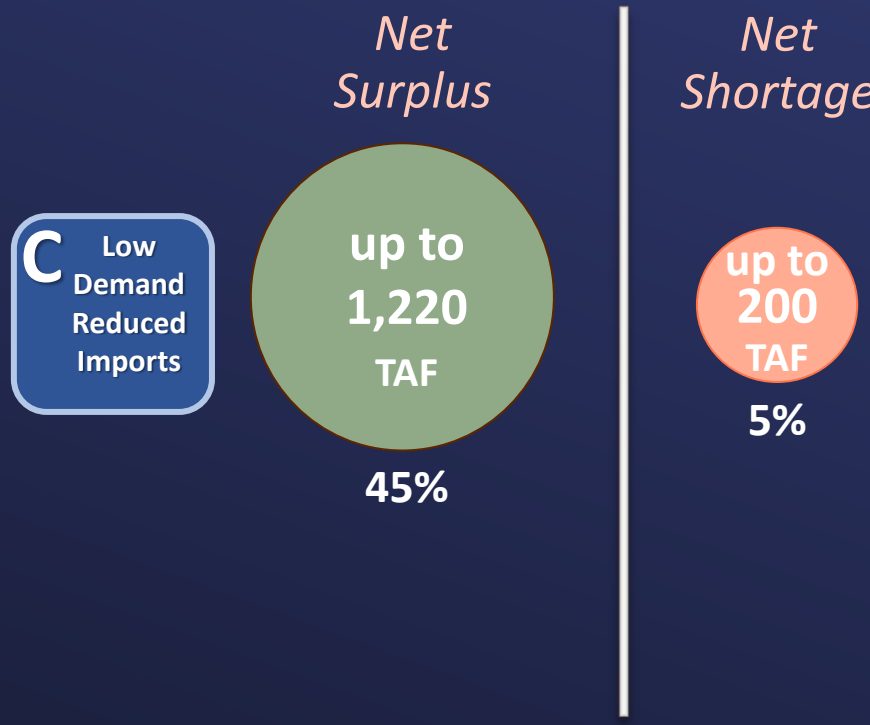


Quantification - Effectiveness of Portfolio Categories

Reliability Assessment
Forecast Year 2045



Scenario C Portfolio Category Need - Combined
Forecast Year 2045

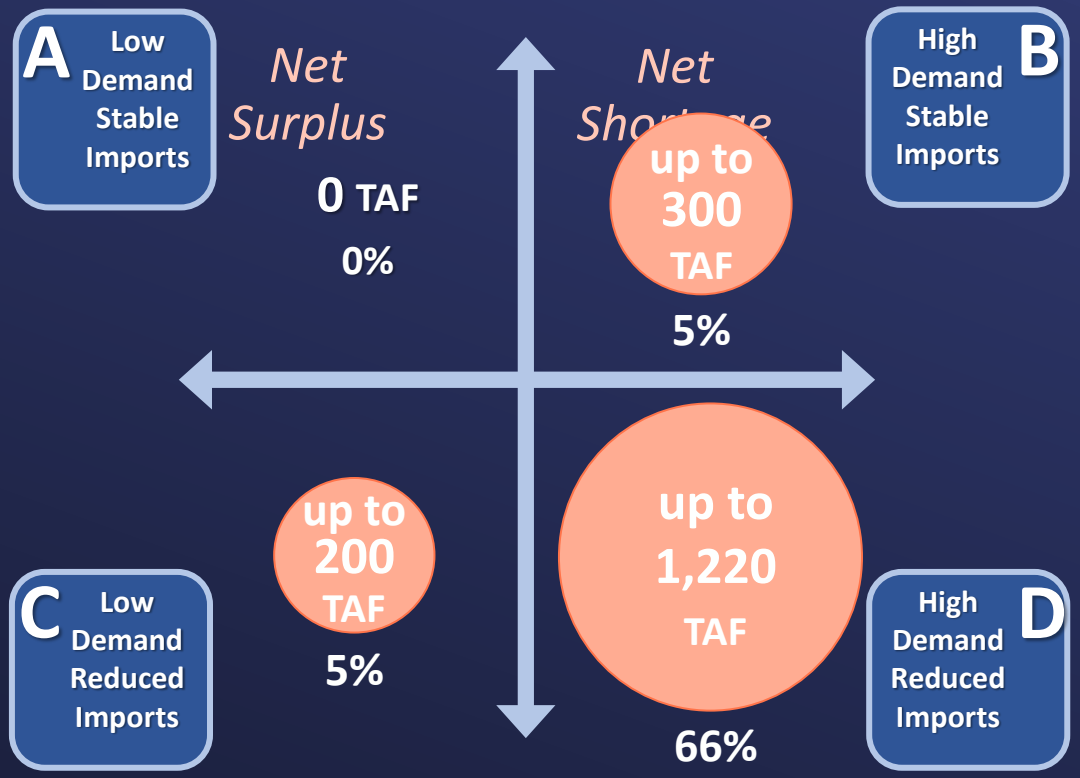
New Storage Capacity (TAF)	Core Supply Needed by 2045 (TAF)
0	50
100	15
250	15
500	15

No additional reduction in core supply if new storage capacity is above 100 TAF

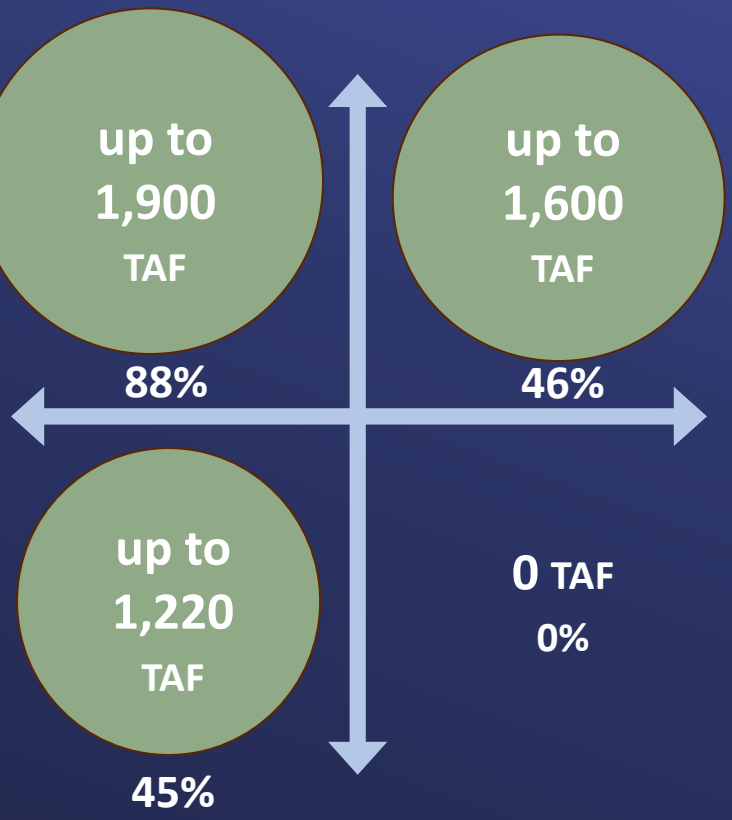
Scenario D Portfolio Category Results

Quantification - Effectiveness of Portfolio Categories

Maximum Magnitude (TAF) and Frequency (%) of a Net Shortage in (Forecast Year 2045)



Maximum Magnitude (TAF) and Frequency (%) of a Net Surplus in (Forecast Year 2045)



Quantification - Effectiveness of Portfolio Categories

Reliability Assessment
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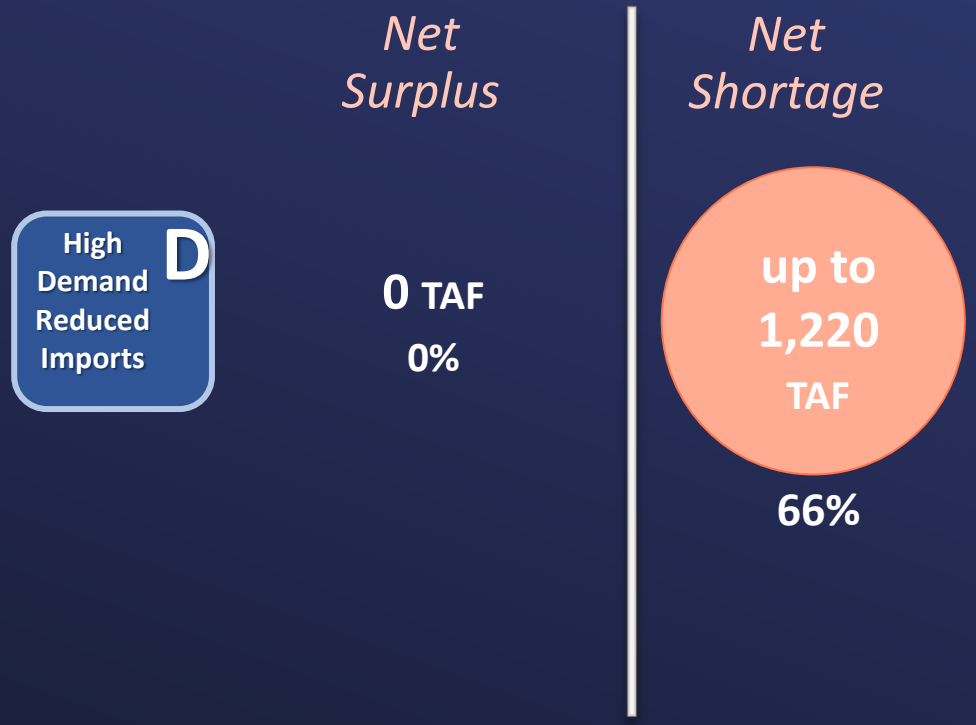

Scenario D Portfolio Category Need - Combined
Forecast Year 2045

New Storage Capacity (TAF)	Core Supply Needed by 2045 (TAF)
0	650
100	600
250	550
500	500

Significant amount of core supply is needed in Scenario D as compared to Scenarios B and C

4. Summary

The Needs Assessment provides a strong analytical foundation for the CAMP4W Process

Summary

- The Needs Assessment offers insights into the increasing regional water reliability vulnerabilities from moderate to severe climate change
- The Needs Assessment identified solution sets of portfolio categories (core, flexible, and storage) that can meet reliability needs under each of the scenarios
- The CAMP4W process will evaluate and identify what specific projects, actions, and adaptive strategies to pursue to better ensure reliability, resilience, sustainability, and affordability
- Cost estimates for the specific projects and actions will be prepared in the CAMP4W process to evaluate impacts on rates and regional/local affordability issues
- Planning efforts will continue as an open and collaborative process

Ad Hoc Groups Report Back

Next Steps

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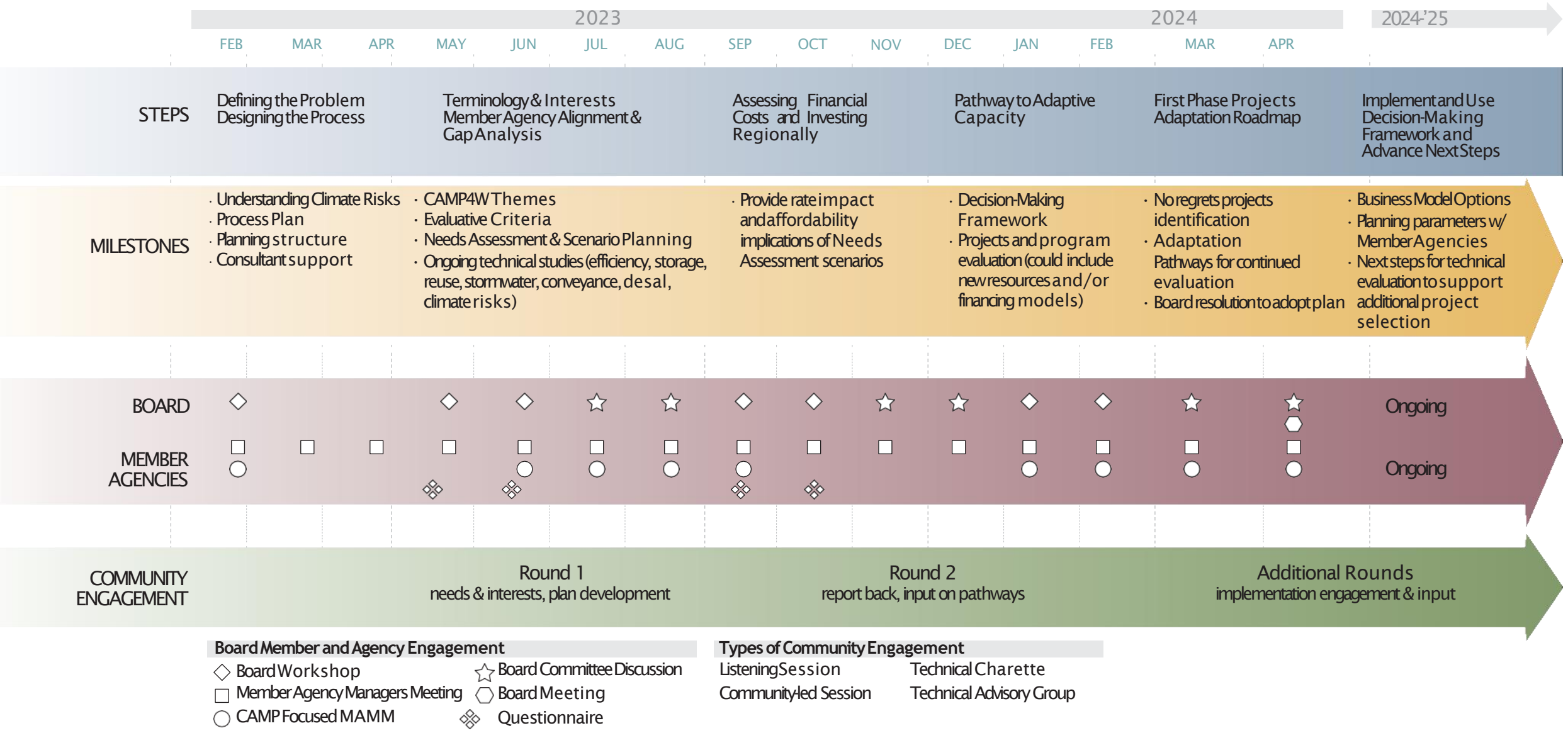
Climate Adaptation Master Plan for Water: Timeline & Framework



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THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928