



Finance, Affordability, Asset Management and  
Efficiency Committee

# Review Draft Climate Adaptation Master Plan Implementation Strategy

Item 6a

March 11, 2025

Item 6a

# CAMP4W Draft Implementation Strategy Discussion

## Subject

Discuss the development of a Climate Adaptation Master Plan for Water Implementation Strategy 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.

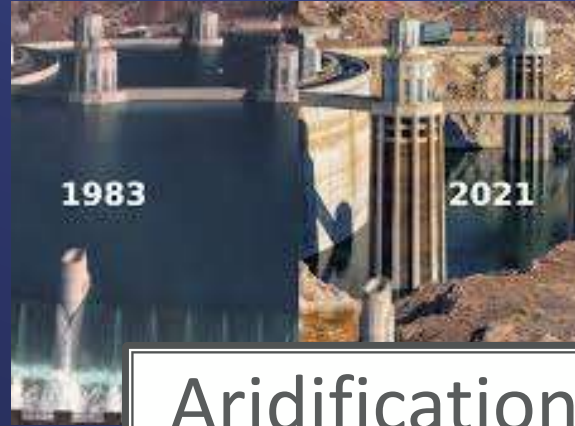
## Next Steps

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

# Experienced Climate Impacts Led to Climate Adaptation Planning Process



Drought



Aridification



Flooding



Extreme Heat



Sea Level Rise



Fire

# 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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*refining and improving over time*

- 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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*adjusting to changing conditions*

## Innovative

*introducing new approaches*

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- Updated data, Member Agency input, and Board direction keep targets current
- 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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*introducing new approaches*

- 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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# 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

# CAMP4W Implementation Strategy Outline

1. Background and Purpose
2. Assessing Metropolitan's Vulnerabilities and Needs
3. Time-Bound Targets
4. Policy Framework
5. Climate Decision Making Framework
6. Adaptation Strategies
7. Implementation Timelines

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1. Background and Purpose
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# Assess Climate Risks and Vulnerabilities

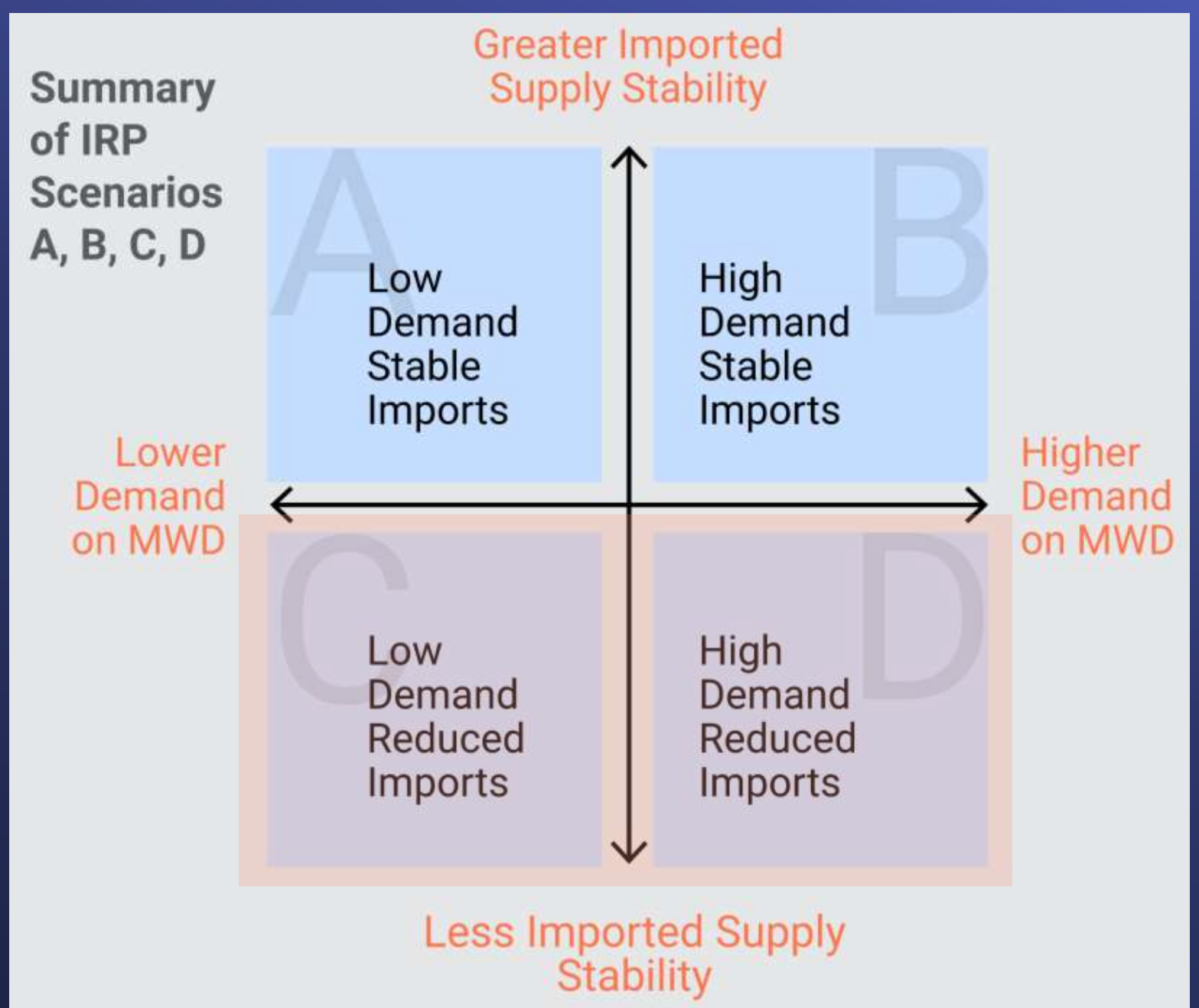
- IRP Regional Needs Assessment
- System Reliability Studies and planning processes (supply, capacity, infrastructure, flexibility, emergency response)
- SWP-DA Studies and Call to Action
- February 2023 Board Retreat
- Board Climate Training Workshop
- Climate Risk and Vulnerability Assessment

*Working Memos 1, 2, 3*



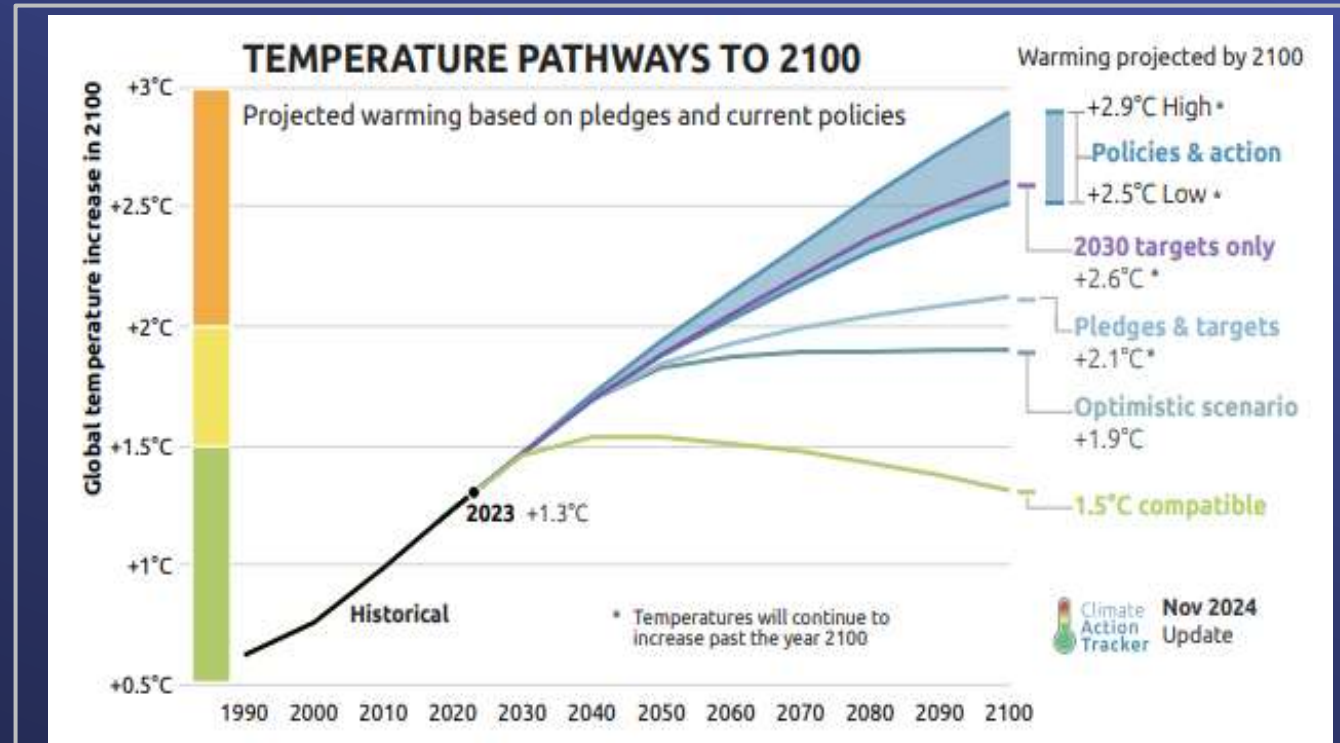
# Planning for various climate scenarios

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



# Climate Change and Metropolitan Scenario Planning

- 2020 IRP Needs Assessment incorporated moderate (RCP 4.5) to severe (RCP 8.5) climate change futures
- Impacts described by RCP 4.5 require successful implementation of policies and actions
- Under Cal-Adapt guidance, Governor's Office recommends using 8.5 for planning purposes because there are minimal differences between emissions scenarios during the first half of the century
- Prime determinants on severity of climate change considered to be carbon emissions and loading



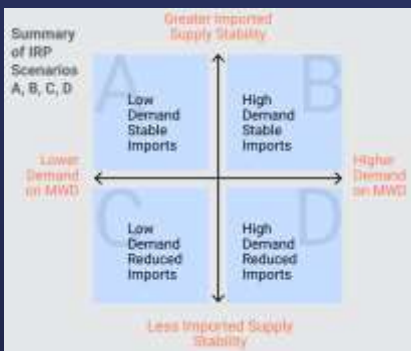
Source: "Warming Projections Global Update" Climate Action Tracker, November 2024.

Note: While the figure above does not directly reference RCP 4.5 and 8.5, generally the temperature increase of "+2.9°C" depicted in the high end of the "Policies & action" projection aligns with year 2100 temperature assumptions consistent with RCP 4.5. RCP 4.5 results in global temperatures increasing up to 3 degrees Celsius above preindustrial levels by the end of the century. The more severe RCP 8.5 exceeds warming of 4 degrees (not shown on chart).

# Scenario Planning and Adaptive Management

## New Information and Investments Will Reduce Uncertainty

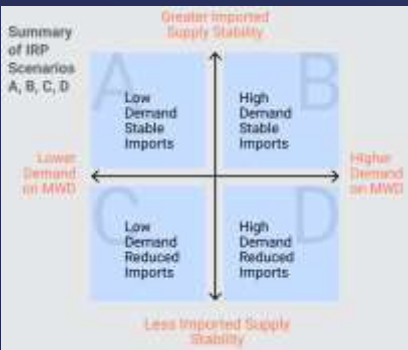
RANGE OF  
UNCERTAINTY /  
MWD NEEDS



# Scenario Planning and Adaptive Management

## New Information and Investments Will Reduce Uncertainty

RANGE OF  
UNCERTAINTY /  
MWD NEEDS



Project & Program Planning,  
Water and Energy Supply and Storage Studies,  
System Overview Study,  
Climate Risk & Vulnerability Assessments

New Data

Decision Point

- Scenario Planning facilitates options for meeting potential range of needs
- Implementation decisions based on actual needs and risk tolerance
- Adaptive management using best available data helps prevent stranded assets

Point







# 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<br/>(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 Supply<sup>1</sup></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 Management<sup>2</sup></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 Standards<sup>3</sup></p>                    |   |   |
|   |  | <p>GPCD target for 2030<sup>4</sup></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"><li>➤ 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</li></ul> |

## Example Initiatives:



Establish infrastructure performance criteria and implement infrastructure projects to achieve climate resilience



Assess power system vulnerabilities



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



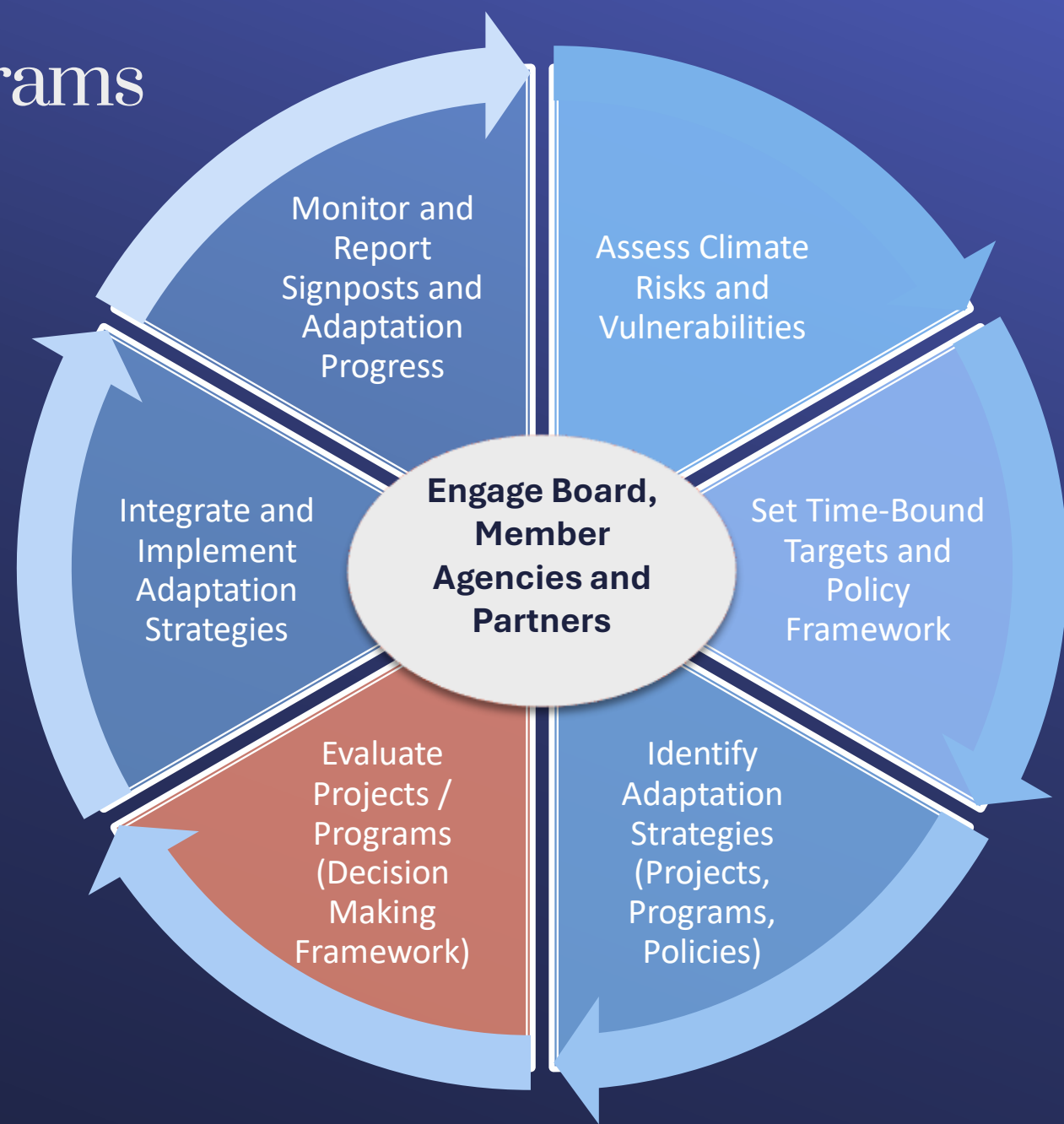
*Working Memos 6, 7, 10*

# 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                      |
|--|
| Reliability                              |
| Resilience                               |
| Financial Sustainability & Affordability |
| Adaptability & Flexibility               |
| Equity                                   |
| Environmental Co-benefits                |

Each **project** or **program** would be considered through a robust narrative description of how project attributes achieve each objective

Descriptions could include:

- ✓ Quantitative metrics
- ✓ Qualitative information
- ✓ Gaps in information available

| Key   | Exceptional  | Significant | Moderate | Limited | Very Limited | Undetermined or Not Applicable |
|---|--|-------------|----------|---------|--------------|--------------------------------|
| <b>Ranking Guidelines at the Attribute Level</b><br>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.  |             |          |         |              |                                |

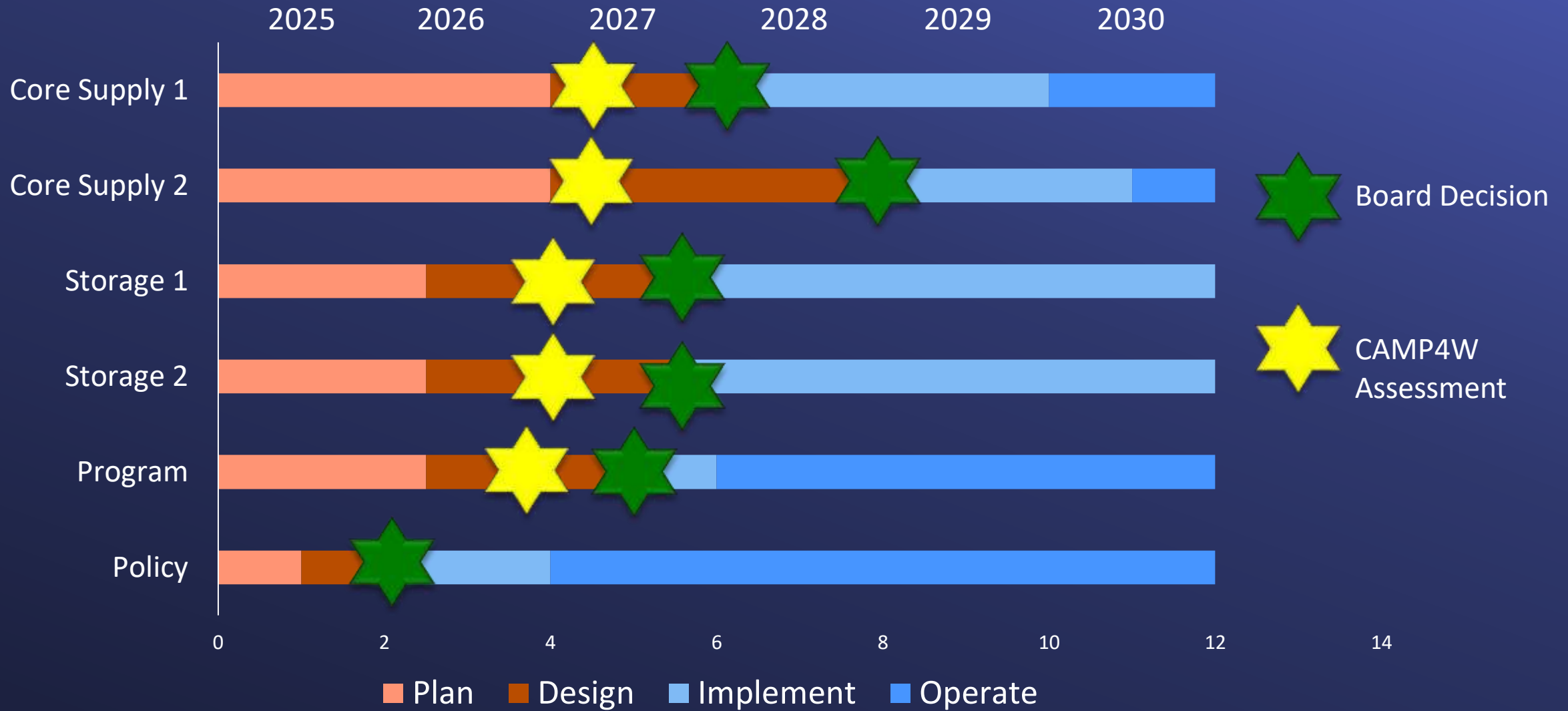
# Integrate and Implement

- 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*

# Implementation Timelines for Projects, Programs, Policies

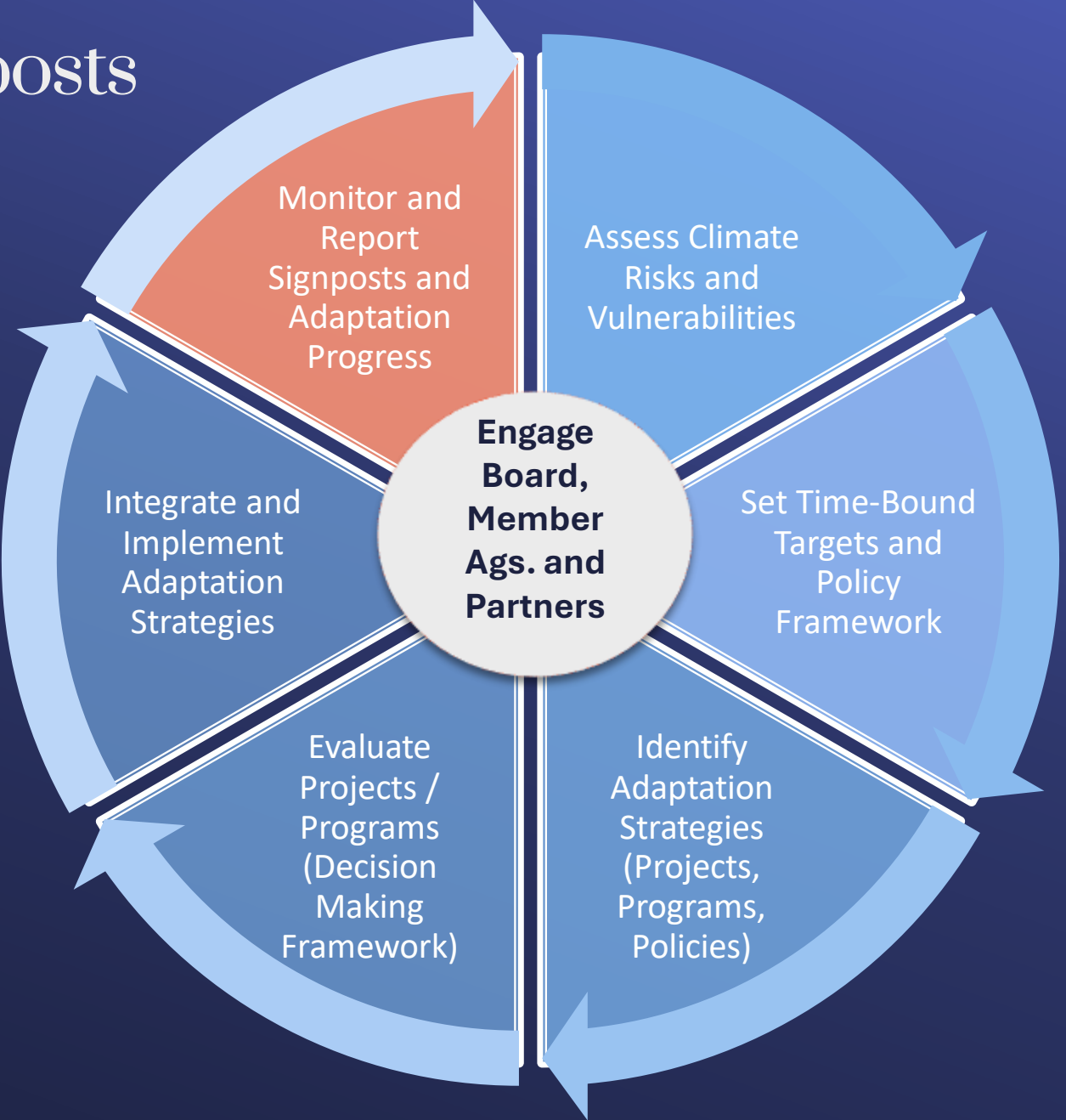


# Monitor and Report Signposts and Adaptation Strategies

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



Working Memo 8, CAMP4W Annual Report



# Water Supply Reliability Signpost Metrics

## *Demographics*



Changes in population, housing, and employment

## *Climate Change*



Industry understanding of climate change impacts and emissions

## *Local Agency Supply*



Changes to local agency supply production and capability

## *Imported Supply (Risks & Regulations)*



Resulting supply impacts from climate change and regulations

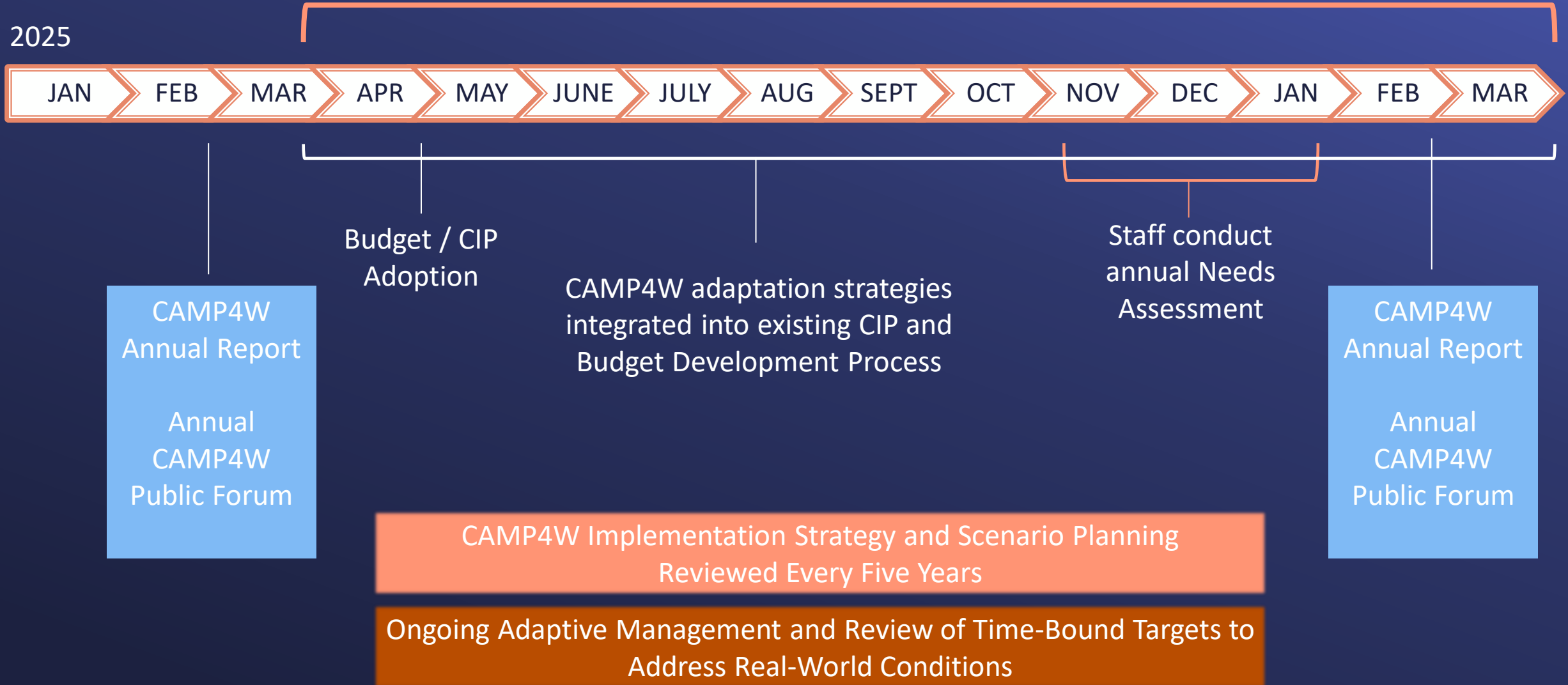
## *Storage*



Storage capability and accessibility

# Schedule of CAMP4W Reports and Updates

## BI-ANNUAL BUDGET AND CIP DEVELOPMENT



# 2025 Q1 CAMP4W Activities

## ➤ Feb. 26, 2025: CAMP4W Task Force

- Climate Adaptation Policy Framework
- Seek Board Input on Draft Master Plan Implementation Strategy
- **Documents:**
  - Final Working Memo #10
  - Draft Implementation Strategy

## ➤ 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

# 2/26/25 CAMP4W Task Force Feedback on Draft Implementation Strategy

- Clearly articulate our starting point for measuring progress
- Ensure adaptation strategies are both reactive and proactive for climate resilience
- Ensure vulnerability assessments address all climate stressors
- Include more information about how we approach risk and prioritize risk reduction strategies
- Explicitly address water quality and public health in the Climate Adaptation Policy Framework
- Develop strategy for engaging larger workforce in development and implementation of climate adaptation priorities
- Build in additional time for Board consultation and deliberation for first round of CAMP4W Assessments
- Develop equity metrics



