



Subcommittee on Long-Term Regional Planning
Processes and Business Modeling

Summary of Climate Adaptation Master Plan for Water Efforts to Date

Item 3b

November 21, 2023

Item 3b

Summary of Efforts to Date

Subject

Summary of Climate Adaptation Master Plan for Water Efforts to Date

Purpose

The CAMP4W integrates water resources planning, infrastructure development, climate adaptation and finance planning into one interconnected process.

Purpose of CAMP4W

A comprehensive, adaptive planning process

The CAMP4W integrates water resources planning, infrastructure development, climate adaptation and finance planning into one interconnected process.



CAMP4W: Planning for Climate Change and Risks

Climate change is shifting the types of proactive decisions made by Metropolitan



Flood
Fire El Niño
Atmospheric River
Earthquake
Drought
La Niña
Sea-Level Rise
Wind
Heat

In the news

California's Drought



Thousands without power in Southern California as fierce winds fuel potential wildfire threat for 17 million people

By Ann Coonman, CNN
© 2015 CNN Wire - Updated 12:01 AM EDT Tue November 10, 2015



Officials urge California residents to brace for flooding as El Niño looms

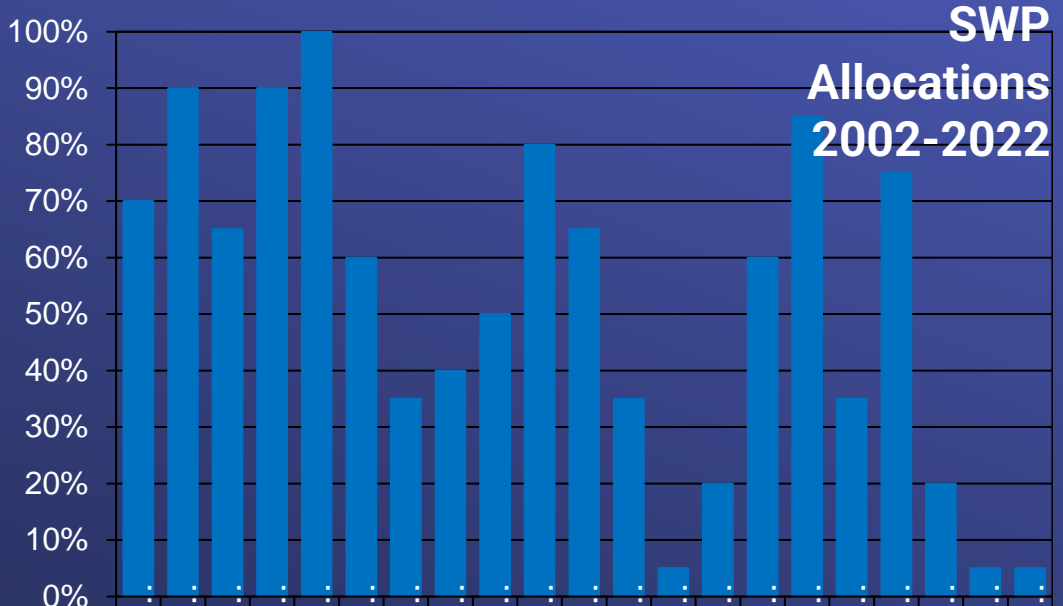
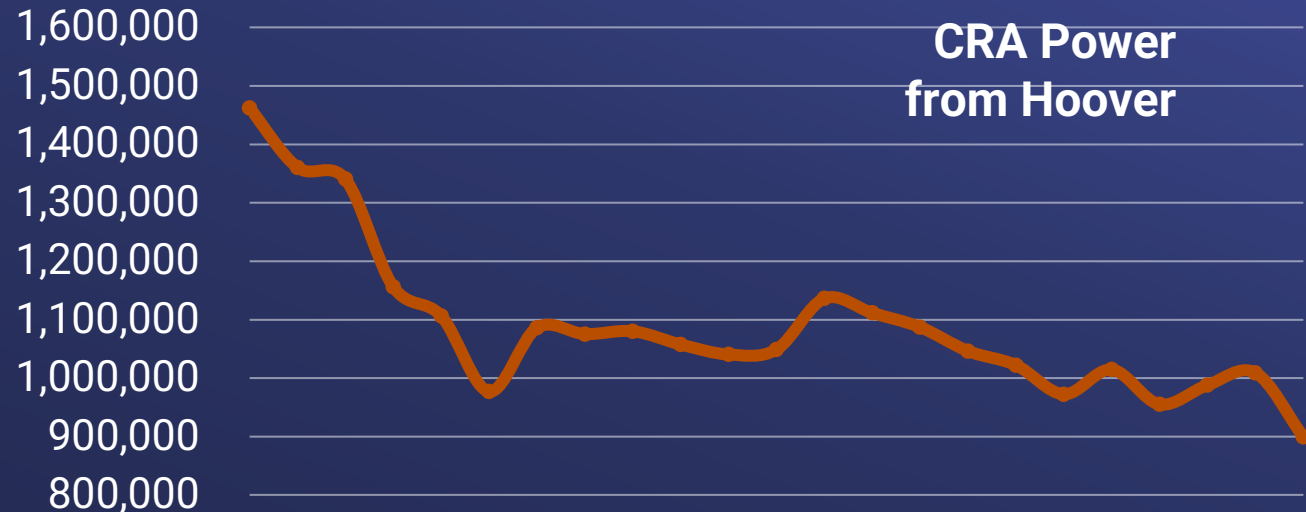


U.N. report warns of catastrophic climate tipping points. California is nearing several

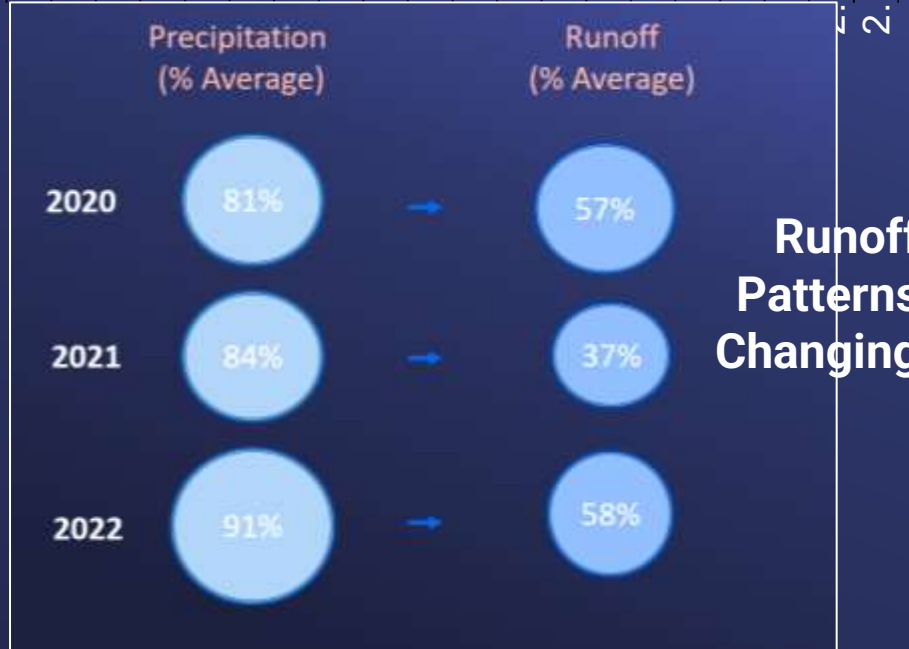


Operational and Supply Climate Impacts

MWh/year from Hoover



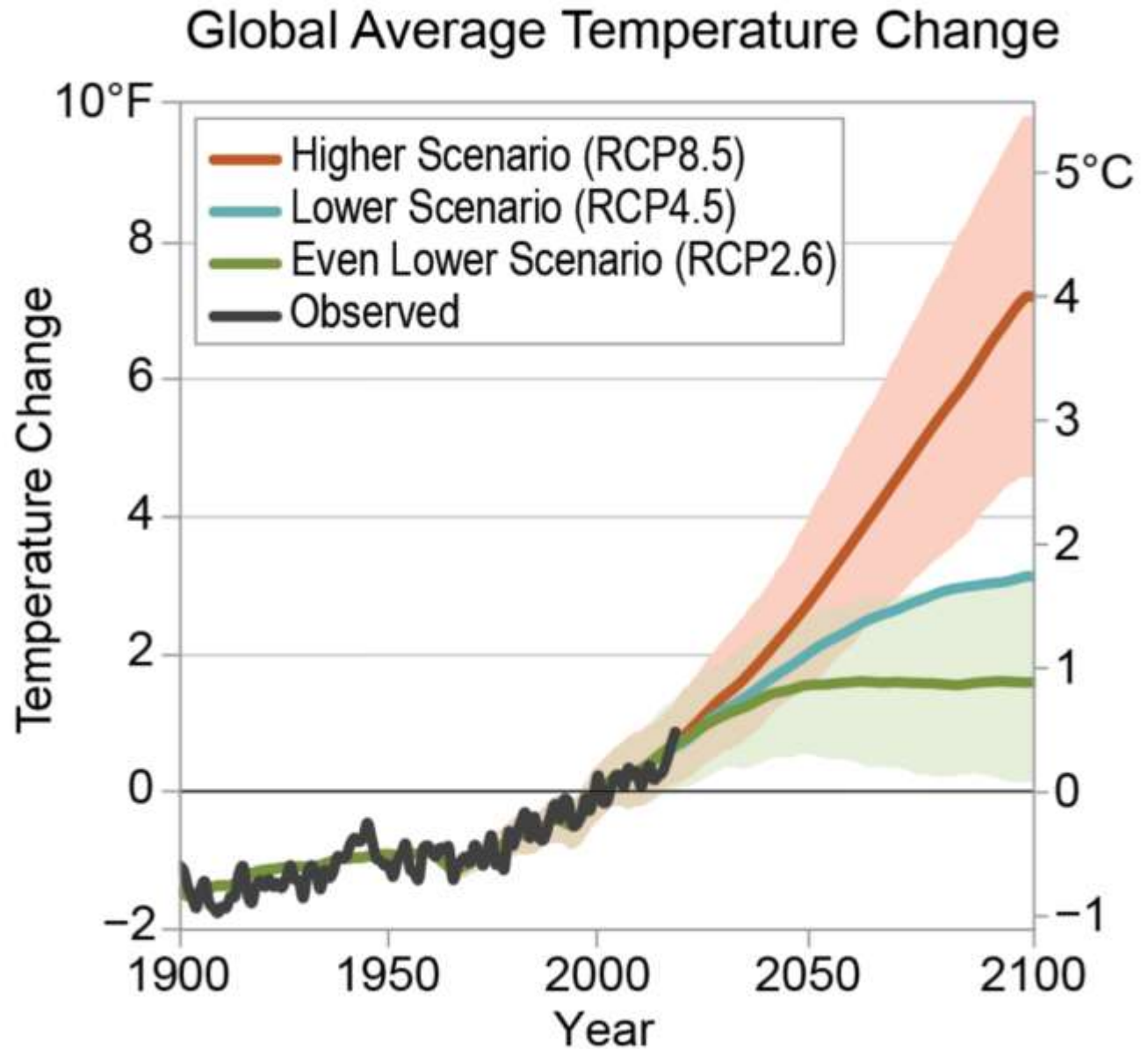
2018 2020 2022



Climate Adaptation
Master Plan for Water

Planning towards RCP 8.5

RCPs illustrate potential future climate conditions (such as changes to snowpack levels, temperature, and precipitation) based on the levels of future greenhouse gas emissions throughout the current century.



CAMP4W: Preparing Metropolitan for the Decisions of Today and Tomorrow

CAMP4W Evolution

Feb-July 2023



Value-Based Foundation

Identify Board Priorities

Aug 2023-
April 2024



Data-Driven decisions

Climate Decision-Making Framework to Support Board Decisions

2024 → Future



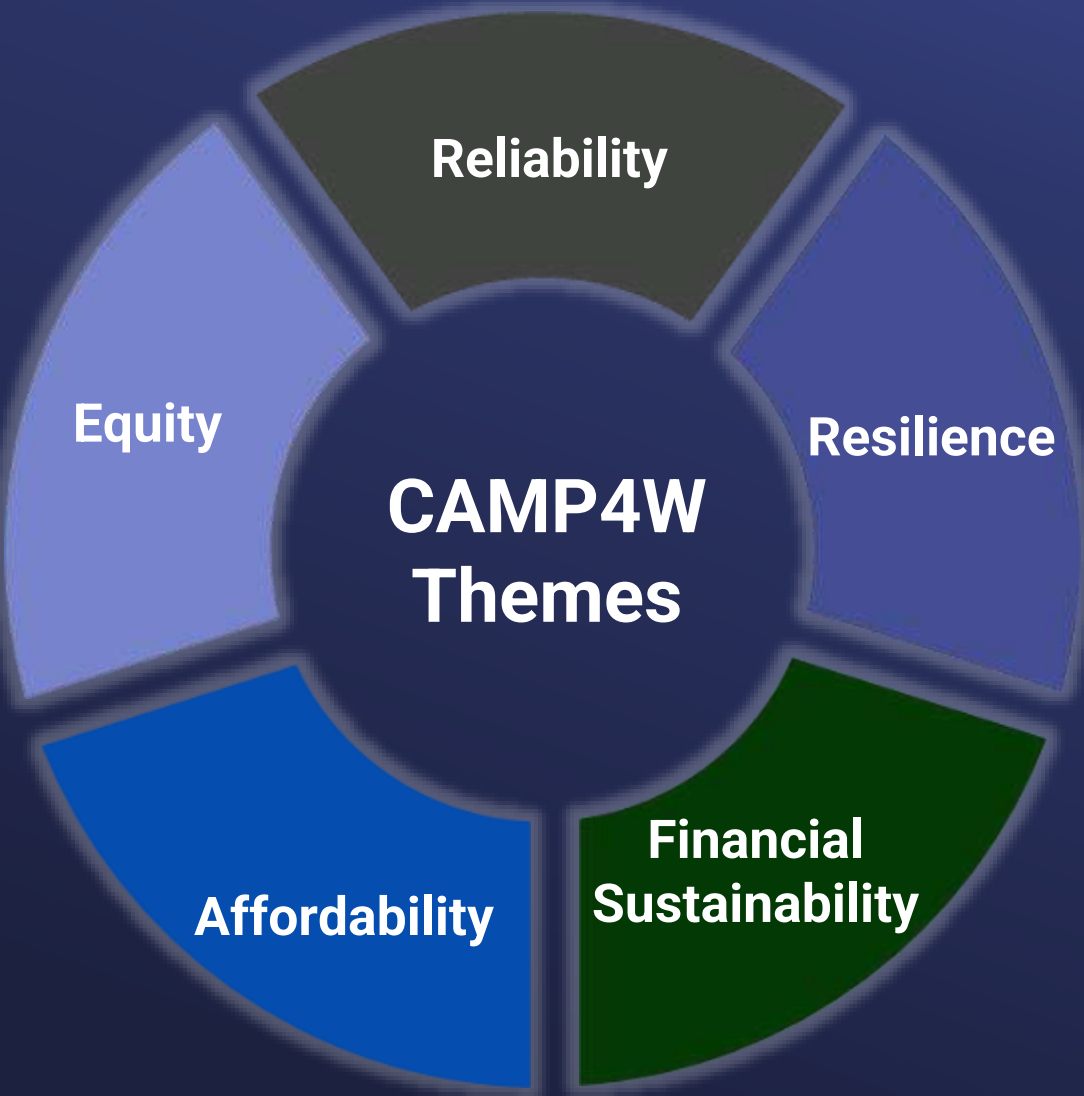
Integrated climate planning across Metropolitan

Implementation-Long-Term Adaptive Management

CAMP4W Themes Capture Board Values and Priorities

Board identified multiple Thematic Actions under each of the five categories

From July 2023 Board presentation



Purpose of CAMP4W Themes

The Climate Adaptation Master Plan for Water (CAMP4W) Themes were developed based on discussions among the Board and Member Agencies regarding what concepts should be considered as the CAMP4W planning process progresses across reliability, resilience, financial sustainability, and affordability. The ideas captured during those discussions were compiled into thematic statements that will serve as guideposts during the next steps. An additional category, equity, was added following the discussions as it was identified as an important theme among participants.

The CAMP4W Themes will inform the development of the Evaluative Criteria so that the scoring of projects reflects these themes. They will also inform the Decision-Making Framework, and the establishment of next steps in the CAMP4W process.

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44 Thematic Actions – Working Memo #2

RESILIENCE

Ability to withstand and recover from disruptions.

- Identify infrastructure at risk of failure or vulnerable to climate impacts and other hazards and establish a methodology to continuously re-evaluate gaps to manage risks and proactively identify risks.
- Identify investments and partnership opportunities that facilitate collaboration among Metropolitan and Member Agencies.

- Improve the regional water supply to reduce redundancy and ensure access to water

- Develop opportunities for power supply,
- Create a cooperative

EQUITY

Fair, just and inclusive.

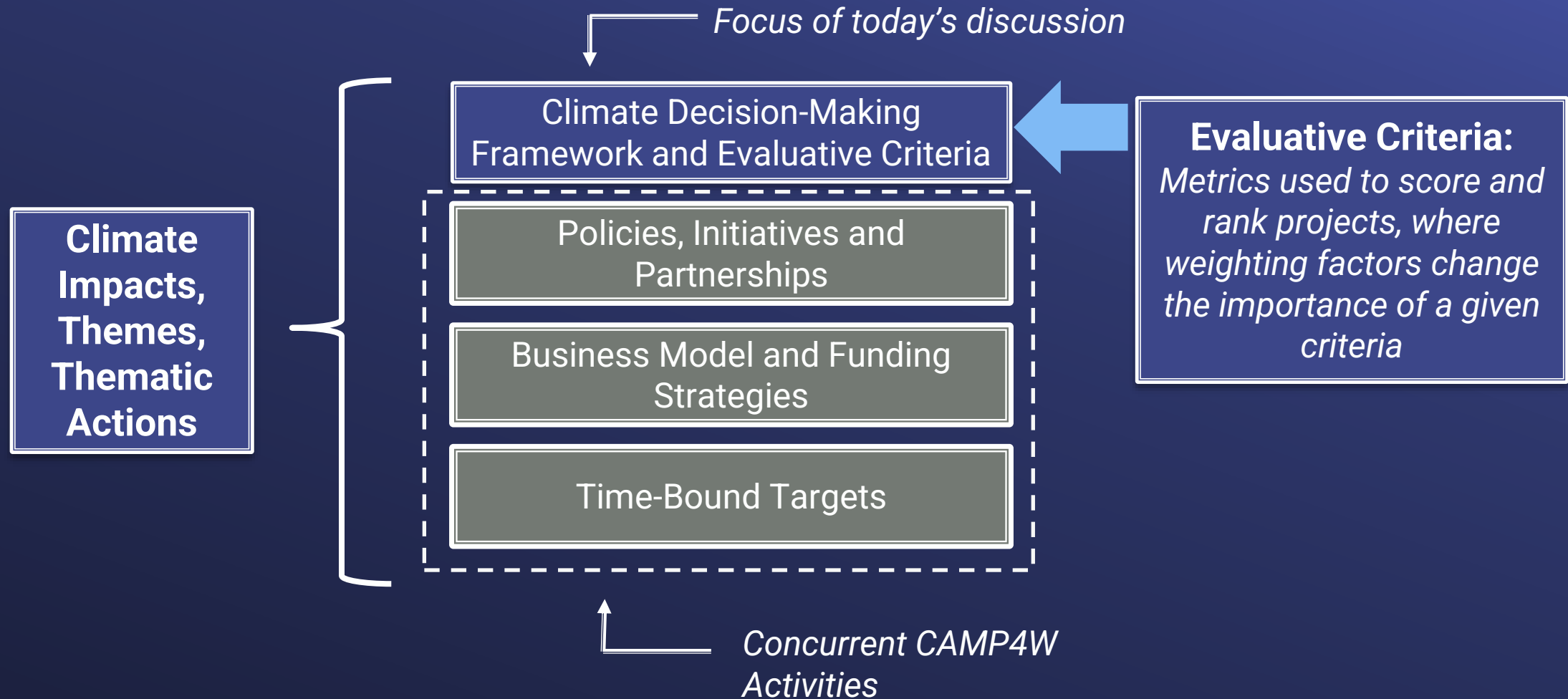
- Metropolitan will promote regional equity among all member agencies by understanding varying individual member agency needs related to:
 - Access to a reliable water supply that achieves an equivalent level of reliability and resiliency experienced across the region.
 - Access to funding options for projects necessary to achieve the standard of reliability and resiliency afforded to the rest of the region.
 - Access to an inventory of assets sufficient to store and convey water to achieve the same level of reliability and resiliency experienced across the region.
- Metropolitan will support member agencies' equity goals by:
 - Supporting member agencies in pursuing the Human Right to Water through affordability and access to water supplies.
 - Evaluating conservation and use efficiency programs for disadvantaged communities (such as access to rebates, direct install, and other programs).
 - Exploring legislative options to prioritize state and federal investments in disadvantaged communities.
 - Supporting member agencies conservation and water use efficiency programs including communication, funding, and program execution.

RELIABILITY

Ability to always meet water demands.

- Develop regional and collaborative solutions that address various climate scenarios and consider:
 - Providing multi-benefits across member agencies,
 - Increasing our water reserves,
 - Serving both current and future customers,
 - Maintaining water quality,
 - Considering system and environmental improvements for imported water assets,
 - Diversifying our portfolio, and
 - Establishing system interconnectivity.
- Identify projects that reduce our regional dependence on imported water and that address areas in our system that rely on a single source of supply.
- Improve the reliability of the State Water Project Dependent Areas by upgrading infrastructure connectivity and access to water supply and storage assets.
- Recognize increased water use efficiency as a critical aspect of reliability regardless of varying climate scenarios and identify implementation methodologies.
- Ensure regional connectivity so that all agencies are able to directly access the region's resources and share equally in the regional benefits as well as the regional risks.

Board Priorities Influence Multiple CAMP4W Outcomes



CAMP4W: Preparing Metropolitan for the Decisions of Today and Tomorrow

CAMP4W Evolution

Feb-July 2023



Value-Based Foundation

Identify Board Priorities

Aug 2023-
April 2024



Data-Driven decisions

Climate Decision-Making Framework to Support Board Decisions

2024 → Future



Integrated climate planning across Metropolitan

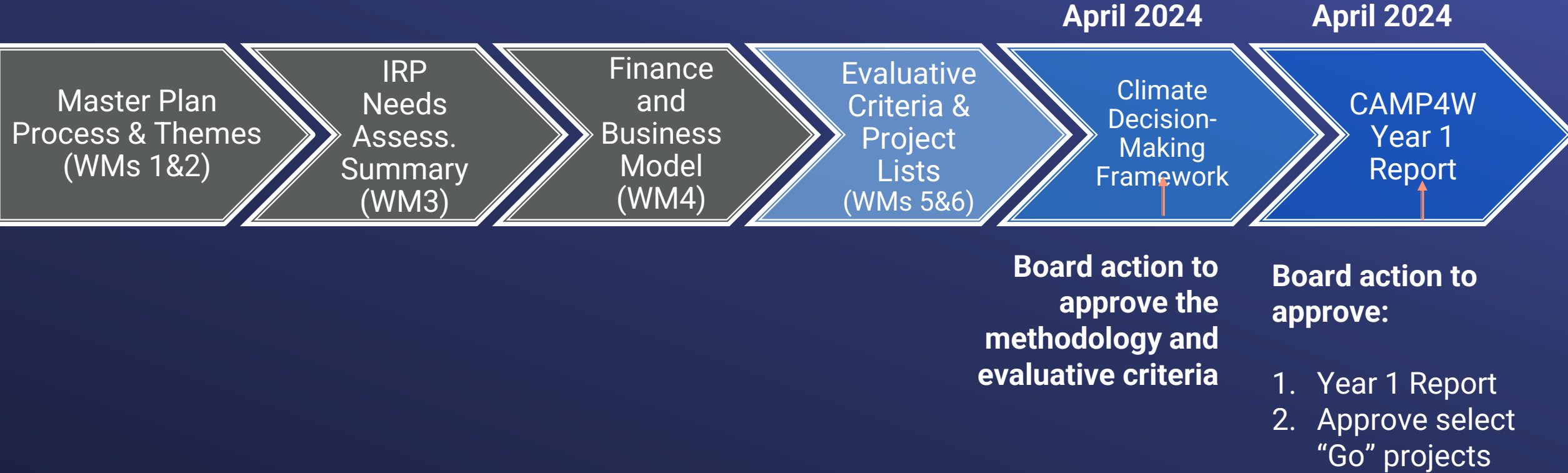
Implementation-Long-Term Adaptive Management

Current Work Efforts Related to CAMP4W

Multiple parallel work efforts are underway

- Master Plan / Climate Decision-Making Framework:** evaluative criteria, scoring methodology, adaptive management tool, project lists
- Climate Vulnerability Assessments:** evaluating vulnerabilities specific to water quality, power supply and emergency response
- Technical studies:** desalination, reuse, efficiency, storage, stormwater, conveyance
- Long-Range Financial Plan-Needs Assessment, Business Model Concepts, Affordability Policy Recommendations**
- Working Memoranda and CAMP4W Year 1 Report Development**
- Public Outreach and Engagement**

Outcomes from Current Work Efforts



Outcomes of Current Work Efforts

Year 1 Report will
capture Board
Direction to staff
for next steps in
Master Plan
development

Year I Report Outline

- I. Revised content from Working Memos
- II. Climate Decision-Making Framework (including evaluative criteria and adaptive management dashboard)
- III. Next steps for Master Plan development (including time-bound targets; policies, initiatives and partnerships; and business model and funding strategies)
- IV. Next steps beyond 2025 for adaptive management through use of climate and growth scenarios
- V. List of “Go” projects

CAMP4W: Preparing Metropolitan for the Decisions of Today and Tomorrow

CAMP4W Evolution

Feb-July 2023

 **Value-Based Foundation**


Identify Board Priorities

Aug 2023-
April 2024

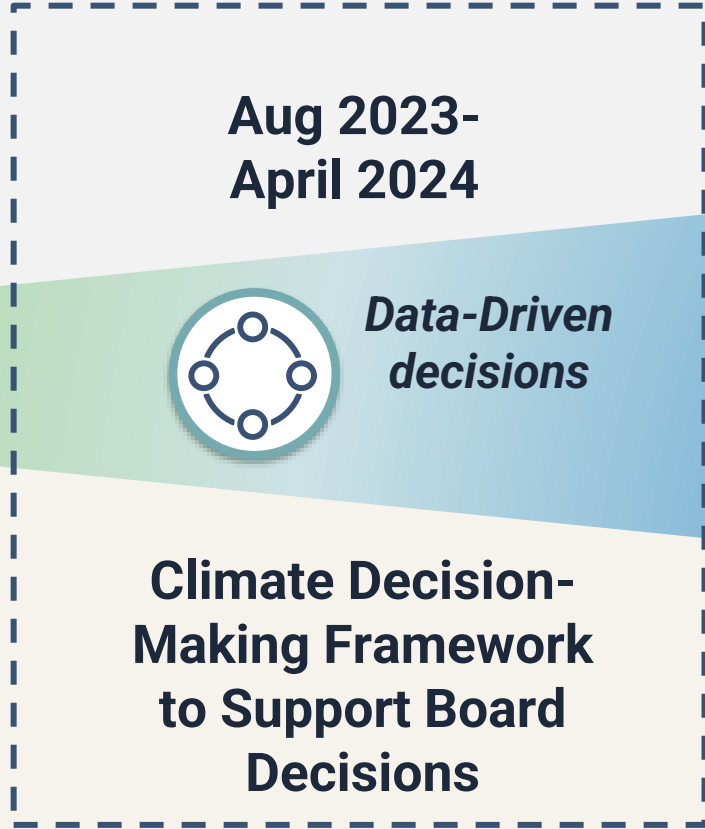
 **Data-Driven decisions**

Climate Decision-Making Framework to Support Board Decisions

2024 → Future

 **Integrated climate planning across Metropolitan**

Implementation-Long-Term Adaptive Management



Anticipated Next Steps from CAMP4W Year 1 Report (to be completed April 2024-2025 and beyond)

Future Action Items

Policies, Initiatives and Partnerships: pursue actions to achieve targets and objectives for reliability, resilience, financial sustainability, affordability and equity

Business Model and Funding Strategies: consider business model options, new models for financing, complete LRFP

Adaptive Management: check the signposts, review assumptions with real-world conditions, refine needs and targets (continuing into the future)

System Assessment: Continue Climate Vulnerability Assessments and Emergency Operations Assessment to Understand Full Climate Risk

Project List Development: Additional projects plus direction on annual goals for identifying/implementing reliability projects (informed by studies)

Integrated Digital Master Plan: integrates CAMP4W report with existing models, potential digital twin, potential AI / machine learning integration

CAMP4W Core Team



Master Plan Components

Joint Task Force of Board Members and Member Agencies has been chartered to produce a regional plan (CAMP4W Plan or Plan) that will develop and establish a master plan that includes:

- Climate and Growth Scenarios
- Time-bound Targets
- Framework for Climate Decision-Making and Reporting
- Policies, Initiatives, and Partnerships
- Business Models and Funding Strategies

Member Agency Dashboard Demo

Outstanding Board Questions from September Subcommittee Meeting

CAMP4W Board Member Questions

- 1) As we plan for future scenarios, what is our starting point/baseline?
- 2) Does the Board's adoption of RCP 8.5 mean we are planning for a future between IRP Needs Assessment Scenarios C and D?
- 3) What are the conservation rebound assumptions in the IRP Needs Assessment scenarios? Are they plausible?
- 4) How would 300 TAF of potential savings from non-functional turf replacement and new state indoor water use efficiency standards impact our planning/water supply gap?
- 5) What is the geographical distribution of our projected supplies and demands?
- 6) Can we define terms to ensure we are all talking about the same thing? (e.g., baseline, adaptive management)

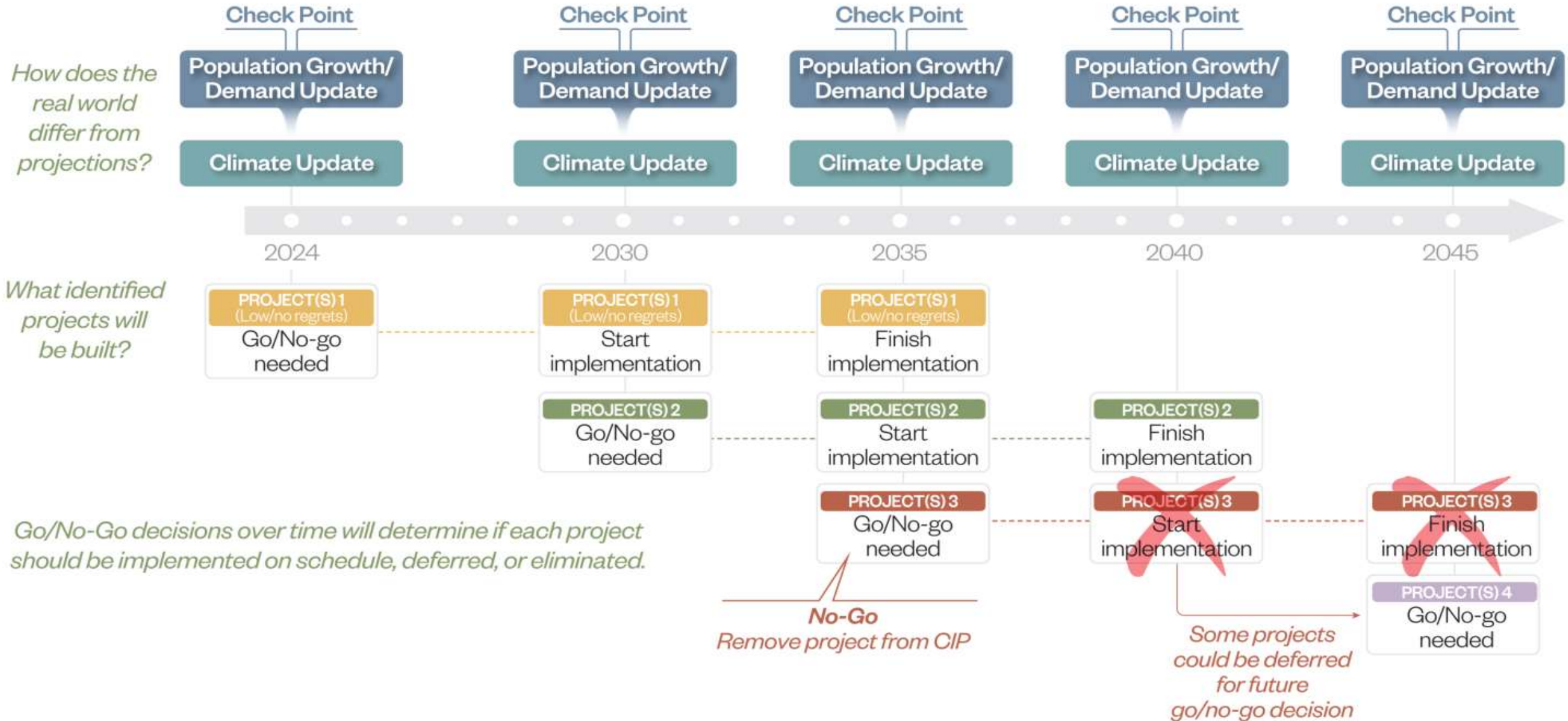
Adaptive Management

A process that promotes flexible decision-making that can be adjusted in the face of uncertainties as outcomes from actions and real-world climate impacts and water demands become better understood.



- Adjusts in the face of uncertainties
- Incorporates outcomes from management actions and other events as they become better understood.
- Careful monitoring of these outcomes helps adjust policies or implementation investments

Adaptive Management Process



Baseline as a Starting Point

Question 1

As we plan for future scenarios, what is our starting point/baseline?

- **Initial/Current Conditions**
 - Storage assets and storage levels
 - Distribution system constraints
 - Demand/supply conditions
 - Member Agency local projects
 - Historical hydrology
 - Demographics (population, housing characteristics)
- **Each scenario launches from this common baseline condition as a starting point**



Question 2

Does the Board's adoption of RCP 8.5 mean we are planning for a future between IRP Needs Assessment Scenarios C and D?

- In the context of the CAMP4W process, the Board reaffirmed the use of RCP 8.5 to reflect a future with more severe climate change impacts
 - Scenarios C and D
- The 2020 Needs Assessment also evaluated less severe climate change impacts that can be used as a comparison
 - Scenarios A and B
- Metropolitan will plan to and adaptively implement actions required to eliminate the gaps for Scenarios C and D



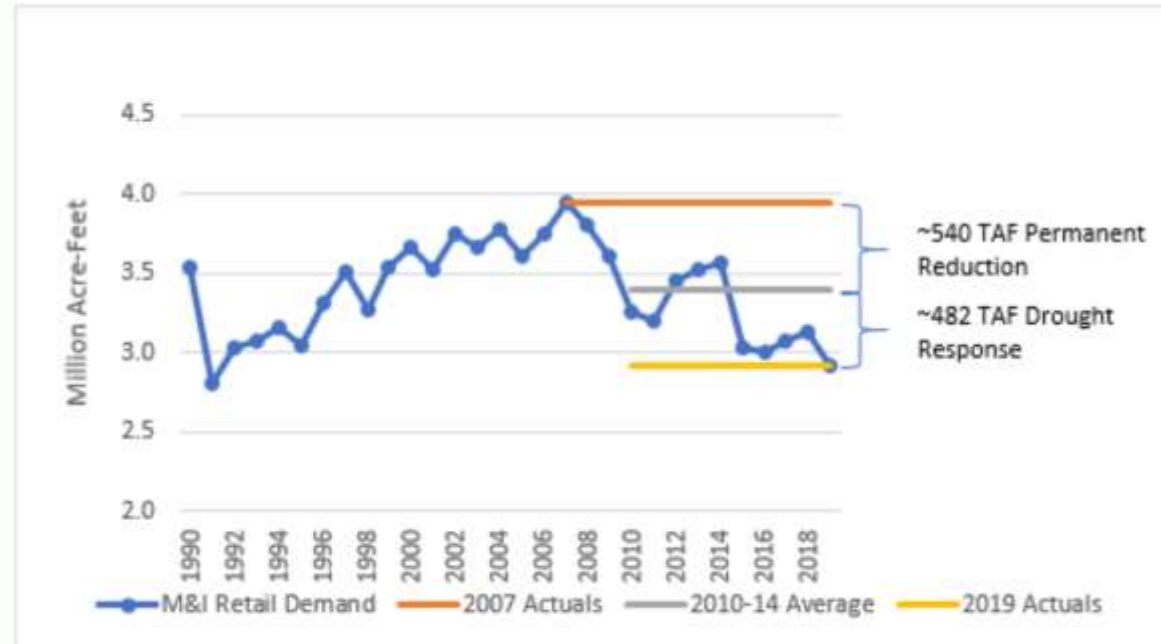
Questions 3-4

What are the conservation rebound assumptions in the IRP Needs Assessment scenarios? Are they plausible?

How would 300 TAF of potential savings from non-functional turf replacement and new state indoor water use efficiency standards impact our planning/water supply gap?



- The scenarios capture a range of behavioral water use efficiency levels



- Scenario A/C retain 90% of the water use ethic observed
- Scenarios B/D retain 50% of the water use ethic observed
- The retail demand forecast incorporates the rebound over a five-year period
- Monitor the implementation and effectiveness of legislation and their impact on demand
- Metropolitan will evaluate different levels of demand management investments

Question 5

What is the geographical distribution of our projected supplies and demands?

Metropolitan will provide the following data sets through a Member Agency Dashboard:

- Retail Demands by member agency per scenario
- Local supply by member agency per scenario
- Demands on Metropolitan by member agency per scenario



Summary

Addressing Board Questions

- Adaptive Management allows real-world experience and new information to be considered in the decision-making process
- Portfolios with varying levels of demand management, water resource development, storage and infrastructure will be evaluated
- We have the foundational data and climate science to continue moving forward in the CAMP4W process



