



Finance, Audit, Insurance, & Real Property Committee

Approve Use of Representative Concentration Pathway (RCP) 8.5 for Planning Purposes in CAMP4W

Item 7-6

September 12, 2023

Climate Adaptation Master Plan for Water

Purpose of this Action Item

- Explore the staff recommendation to use RCP 8.5 in Metropolitan's CAMP4W process. Doing so would direct staff to:
 - Use climate information and modeling under RCP 8.5 as a basis for planning purposes in CAMP4W – effectively presuming that severe climate change is more likely than moderate climate change;
 - Continue using the analysis and findings from the 2020 IRP Needs Assessment consistent with this direction; and
 - Emphasize the development and implementation of adaptive management in the CAMP4W to ensure continued attention to and input from the best available data, science, and information on an ongoing basis.

Climate Adaptation Master Plan for Water

Representative Concentration Pathways

- RCPs are essentially carbon loading scenarios. The modeling shows climate impacts are more severe with higher carbon loading.
- RCP 8.5 is used in Metropolitan's Needs Assessment Scenarios C and D and is a high greenhouse gas emissions pathway consistent with continued dependence on fossil fuels, with significant declines in emission growth rates over the second half of this century.
- RCP 4.5 is used in Metropolitan's Needs Assessment Scenarios A and B and is an emissions reduction policy-based pathway and can only be achieved by deliberate actions to reduce emissions across the globe.

Climate Adaptation Master Plan for Water

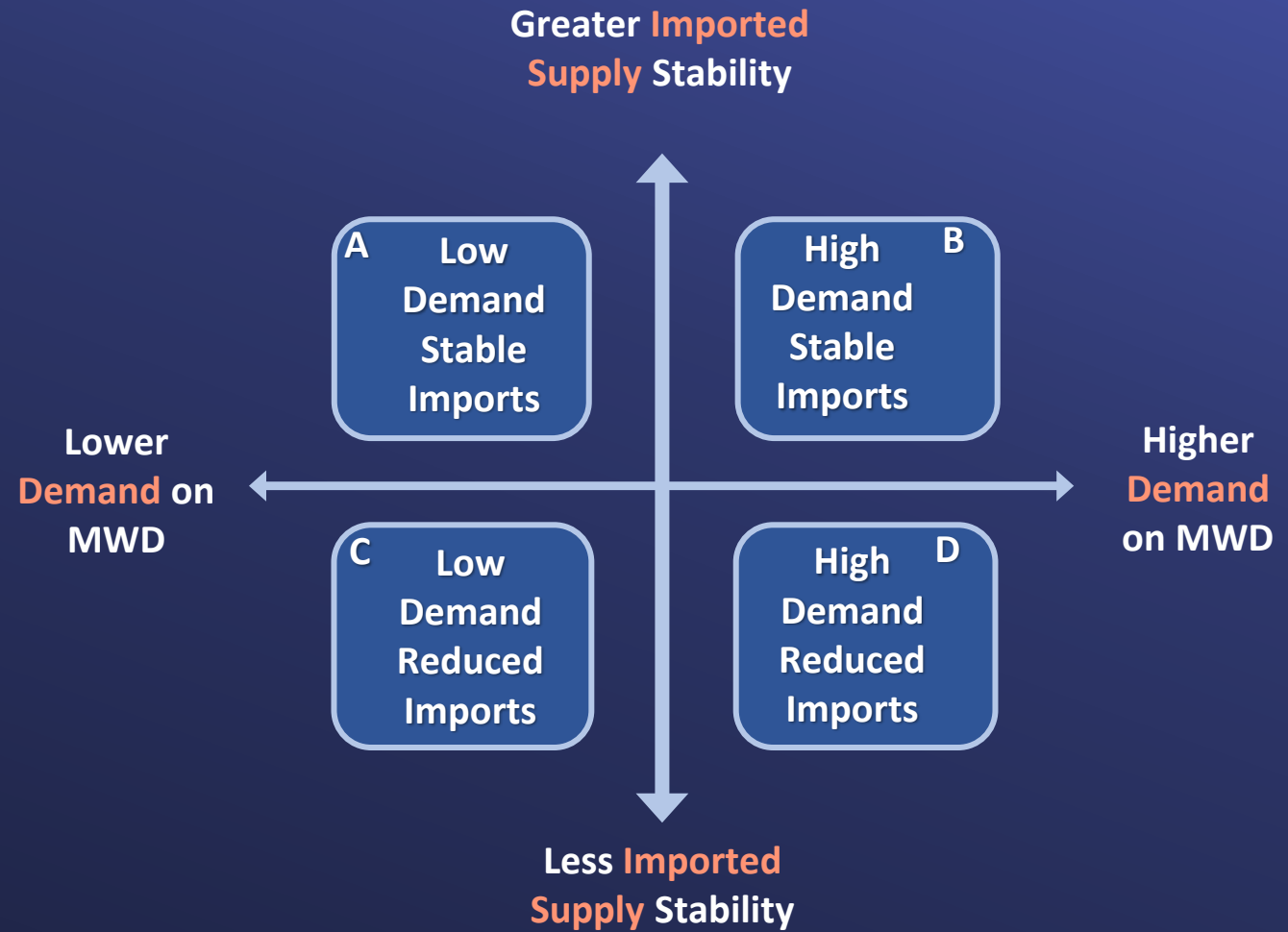
Why Choose RCP 8.5?

- Governor Newsom’s guidance to CA State Agencies is to use RCP 8.5 for planning purposes through 2050.¹
- This is a conservative planning scenario – the globe will likely exceed 1.5 °C of warming in the next 5 years.²
- Other utilities are using RCP 8.5 for planning (e.g., Southern California Edison, Pacific Gas & Electric).
- It builds on the 2020 IRP Needs Assessment

1. [Planning and Investing for a Resilient California: A Guidebook for State Agencies;](#)
2. The Guardian: [“World likely to breach 1.5C climate threshold by 2027, scientists warn.”](#)

Climate Adaptation Master Plan for Water

The Four IRP Needs Assessment Scenarios



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Planning for Climate Impacts – Heat and Precipitation Changes

Changing precipitation patterns (stronger storms, inland flooding, changes from snow to rain, more droughts)

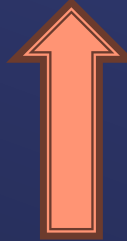
- Impacts to electricity generation/transmission and water conveyance infrastructure; source water supply; Member Agency and customer demand; emergency operations and response; and employee safety.

Higher temperatures and extreme heat events

- Impacts to electricity generation/transmission and water conveyance infrastructure; source water supply; Member Agency and customer demand; emergency operations and response; and employee safety.

Using RCP 8.5 – State Water Project, Peak Streamflow on the Yuba River near Smartville, CA

End of Century (2070-2099)
Peak Streamflow in January-
February

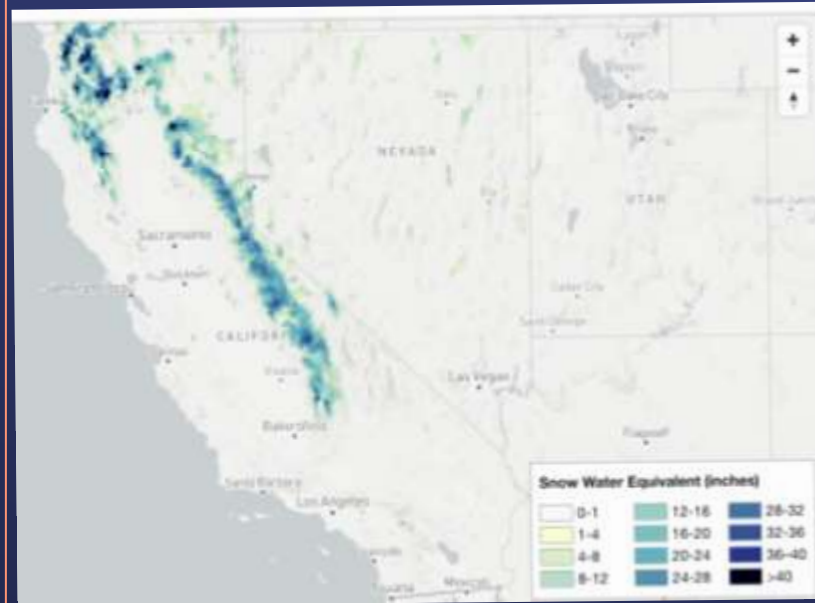


Baseline (1961-1990)
Peak Streamflow in May

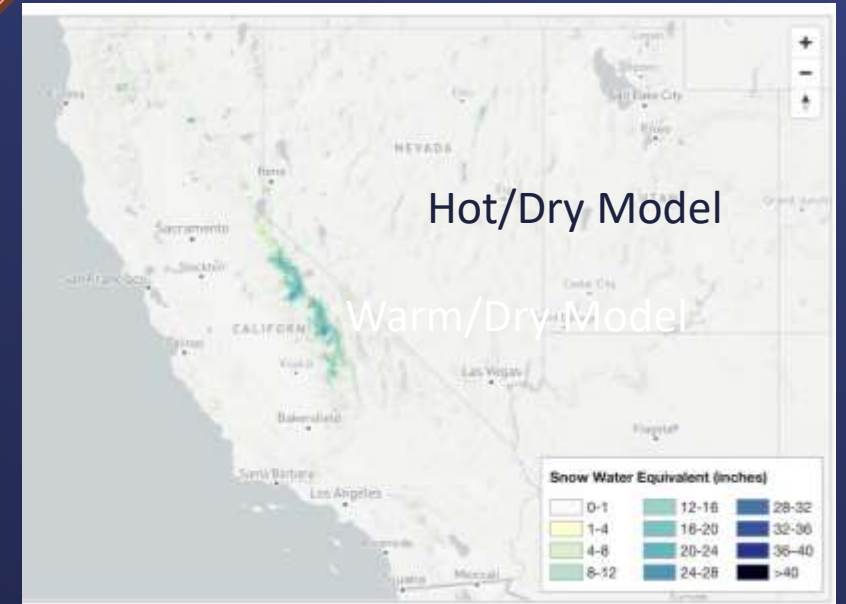
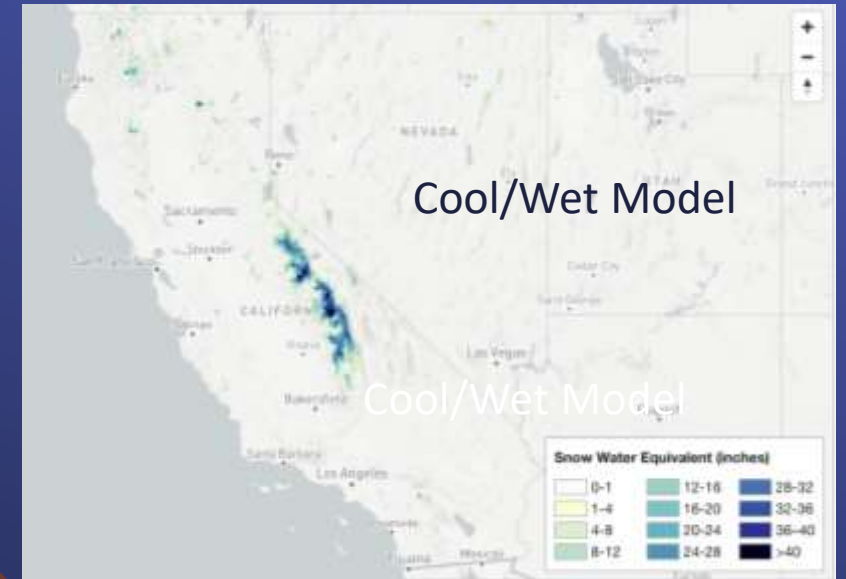


Using RCP 8.5 – State Water Project, February Snowpack

Baseline (1960-1969)



End of Century (2090-2099)



[Cal Adapt Extended Snowpack Scenario Tool](#)

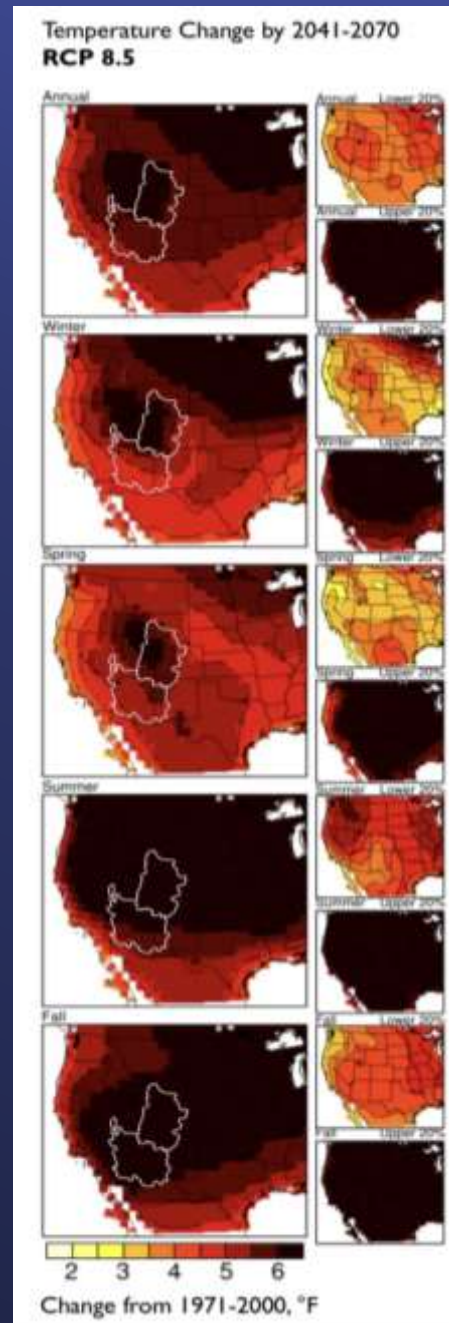
Using RCP 8.5 – Colorado River Basin Temperature & Precipitation Change

2020 Western Water Assessment.
[Colorado River Basin Climate and Hydrology: State of the Science](#)

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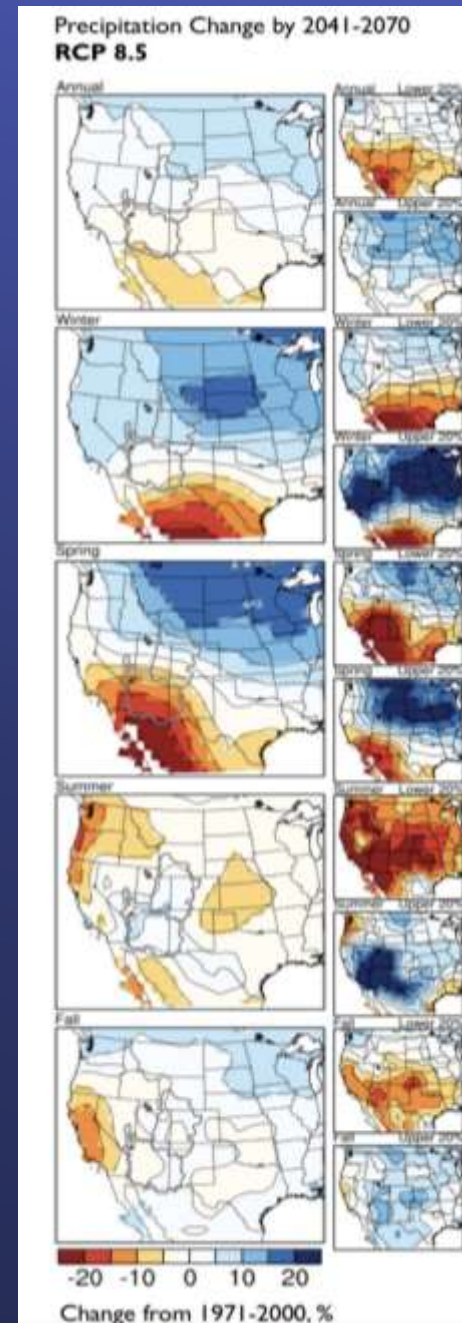
Temperature Change by 2041-2070 Compared to 1971-2000 Baseline.

- **Temperature increases** expected in Upper and Lower Basins of 4-6+ °F.



Precipitation Change by 2041-2070 Compared to 1971-2000 Baseline.

- **Precipitation increases** expected in the **Upper Basin** of 10-15% in the **winter**.
- **Precipitation decreases** expected in the **Lower Basin** of 10-20% in the **spring**.



Climate Adaptation Master Plan for Water

Planning v. Implementation

- Today's action is limited to Metropolitan's planning approach in CAMP4W.
- Actual investment decisions will be brought to the Board for separate consideration as current conditions develop and as the impact of approaching climate effects becomes more clear.
- Metropolitan will use an adaptive management and iterative approach in CAMP4W to systematically re-evaluate the need to implement specific projects and programs to protect the water supply reliability and financial sustainability of Metropolitan and the Member Agencies.

Climate Adaptation Master Plan for Water

Proposed Action

Option #1

Approve use of Representative Concentration Pathway 8.5 for planning purposes in the Climate Adaptation Master Plan for Water

Option #2

Do not approve

Climate
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Staff Recommendation

Option #1

