



● **Board of Directors**

Finance, Audit, Insurance, and Real Property Committee

9/12/2023 Board Meeting

7-6

Subject

Approve use of Representative Concentration Pathway 8.5 for planning purposes in the Climate Adaptation Master Plan for Water; the General Manager has determined that this proposed action is exempt or otherwise not subject to CEQA

Executive Summary

At the August 22, 2023, Subcommittee on Long-Term Regional Planning Processes and Business Modeling meeting, the Subcommittee Chair recommended that Metropolitan utilize Representative Concentration Pathway (RCP) 8.5¹ for planning purposes in the Climate Adaptation Master Plan for Water (CAMP4W). The selection of RCP 8.5 is consistent with water and energy utility practices and is also the recommended approach of the California Governor’s Office of Planning and Research.² Incorporating this direction is also consistent with the underlying assumptions of Scenarios C and D in Metropolitan’s 2020 Integrated Resources Plan Needs Assessment.

RCPs illustrate potential future climate conditions (such as changes to snowpack levels, temperature, and precipitation) based on two levels of future greenhouse gas emissions throughout the current century. RCP 8.5 is used in Metropolitan’s Integrated Resource Plan (IRP) Needs Assessment Scenarios C and D and is considered a high 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 global emissions growth. This letter recommends approval of the use of RCP 8.5 in Metropolitan’s CAMP4W process, which 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 Assessments consistent with this direction.
- 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.

¹ RCPs quantify future greenhouse gas concentrations due to increases in greenhouse gas emissions and additional energy taken up by the Earth expressed as watts per square meter. The two most commonly used scenarios are RCP 4.5 and RCP 8.5. By 2100, RCP 4.5 (slowly declining emissions) will result in a global temperature rise of ~2.4° C and RCP 8.5 (rising emissions) will result in a global temperature rise of 4.3° C.

² [Planning and Investing for a Resilient California: A Guidebook for State Agencies](#)

Timing and Urgency

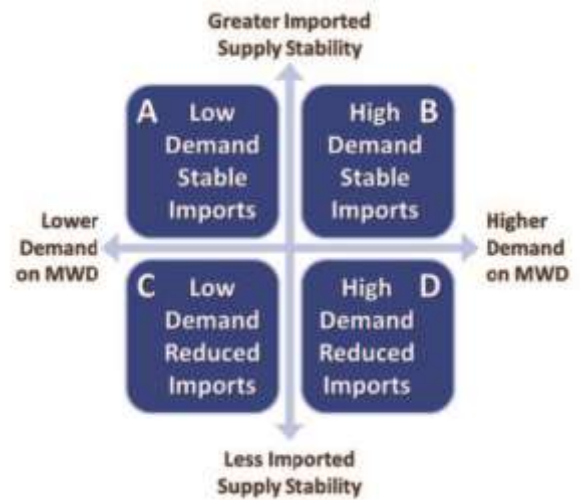
A delay in approval would likely slow the CAMP4W timeline and schedule as this direction is important to future discussions on financial planning, evaluative criteria, investment portfolios, and recommendations for near-term low-regrets projects. While this decision could be made later, the selection of a climate scenario now focuses staff efforts.

Details

Background

Metropolitan is receiving direction from the Board and working with its 26 Member Agencies to integrate planning for water resource availability and financial sustainability, given the rapidly increasing climate impacts on water supplies and operations. Using the [2020 IRP Needs Assessment](#) as a foundational tool in the CAMP4W process, Metropolitan is utilizing scenario planning to address wide-ranging uncertainties.

The 2020 IRP Needs Assessment broadened Metropolitan’s perspectives compared to past IRPs by constructing and modeling four plausible future scenarios. These scenarios explored the water resource development requirements and regional water supply reliability under ranges of future uncertainties related to future climate conditions, population growth, regulatory requirements, and the economy. To develop the scenarios used in the 2020 IRP Needs Assessment, there was extensive coordination and consultation with climate change experts, the Member Agencies, and the Board to integrate their input throughout the process. These scenarios represent divergent outcomes of imported supply stability and demands on Metropolitan and are further discussed in the [CAMP4W Working Memo 3](#).



Four Scenarios Used in the IRP Needs Assessment

The proposed action focuses on the climate-related effects identified in the 2020 IRP Needs Assessment scenarios based on generally accepted outcomes of a more severe climate change future.³ It does not address the uncertainty of other factors such as: population growth, behavioral and structural conservation, regulatory requirements, or the economy. The IRP Needs Assessment climate change assumptions were developed in consultation with an expert panel and based on the Intergovernmental Panel on Climate Change (IPCC) Assessment Reports (and corresponding global climate models) using the most recent projections available at the time.

The IRP Needs Assessment estimates future climate impacts under Representative Concentration Pathways (RCPs) into its four scenarios – RCP 8.5 and RCP 4.5 – corresponding to higher and lower greenhouse gas emissions scenarios. RCPs illustrate potential future climate conditions (such as changes to snowpack levels, temperature, and precipitation) based on two levels of future greenhouse gas emissions throughout the current century. RCP 8.5 is used in Metropolitan’s Needs Assessment Scenarios C and D and is considered a high 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 global emissions growth.

The recently released Sixth Assessment Report from the IPCC, Climate Change 2022: Impacts, Adaptation, and Vulnerability, found that increases in the frequency and intensity of climate and weather extremes, including drought and extreme precipitation, have already had widespread, pervasive impacts on ecosystems, people,

³ Elements affected by climate conditions (such as drought, wildfire, extreme precipitation, etc.) include agricultural demand, seawater barrier demand, local precipitation, groundwater recovery production, Los Angeles aqueduct supply, groundwater supply, SWP supply, and Colorado River supply.

settlements, and infrastructure around the globe.⁴ These impacts have been experienced locally in Southern California, most acutely in the recent whiplash from extended drought to a series of atmospheric river events. The IPCC acknowledges the likelihood of continued impacts given continued emissions and extensive climate modeling. Based on these findings and California's own climate modeling, the Governor's Office of Planning and Research recommends that all state agencies use RCP 8.5 for planning purposes through 2050; adaptive management and continued attention to evolving science and modeling is also recommended.⁵ This is also the approach of other California utilities, including the investor-owned electric utilities mandated to do climate adaptation planning by the California Public Utilities Commission.^{6,7,8}

Planning v. Implementation and Adaptive Management

Climate experts continue to debate and consider emerging science related to atmospheric greenhouse gas concentrations, modeling methodologies and the meaning of various climate scenarios. As mentioned, the State of California as well as California's investor-owned electricity and natural gas utilities use RCP 8.5 to understand what types of investments may be needed if emissions do continue to significantly increase over the next several decades and to plan for the deep uncertainty affiliated with climate change resulting from higher emissions.

To be clear, planning for RCP 8.5 is not the same as committing to implementing infrastructure investments and water resources potentially needed in an RCP 8.5 future. 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. Actual investment decisions, which will be identified based on planning, will be brought to the Board for separate consideration as current conditions develop and as the impact of approaching climate effects becomes more clear.

As shown in the figure below, real-world conditions will inform the process and selection of projects. Because projects often take years to plan and implement, there will be ample time for Metropolitan to reassess decisions based on both global and local assumptions, which will serve to:

1. Reduce the potential of stranded assets due to overdevelopment by having the ability to not construct a project that was preliminarily planned for but not needed, and
2. Reduce the potential of under-preparedness if conditions require more infrastructure in the future by positioning Metropolitan to implement those projects if they are needed.

This adaptive management process provides optimal flexibility, which is critical in the face of a changing climate.

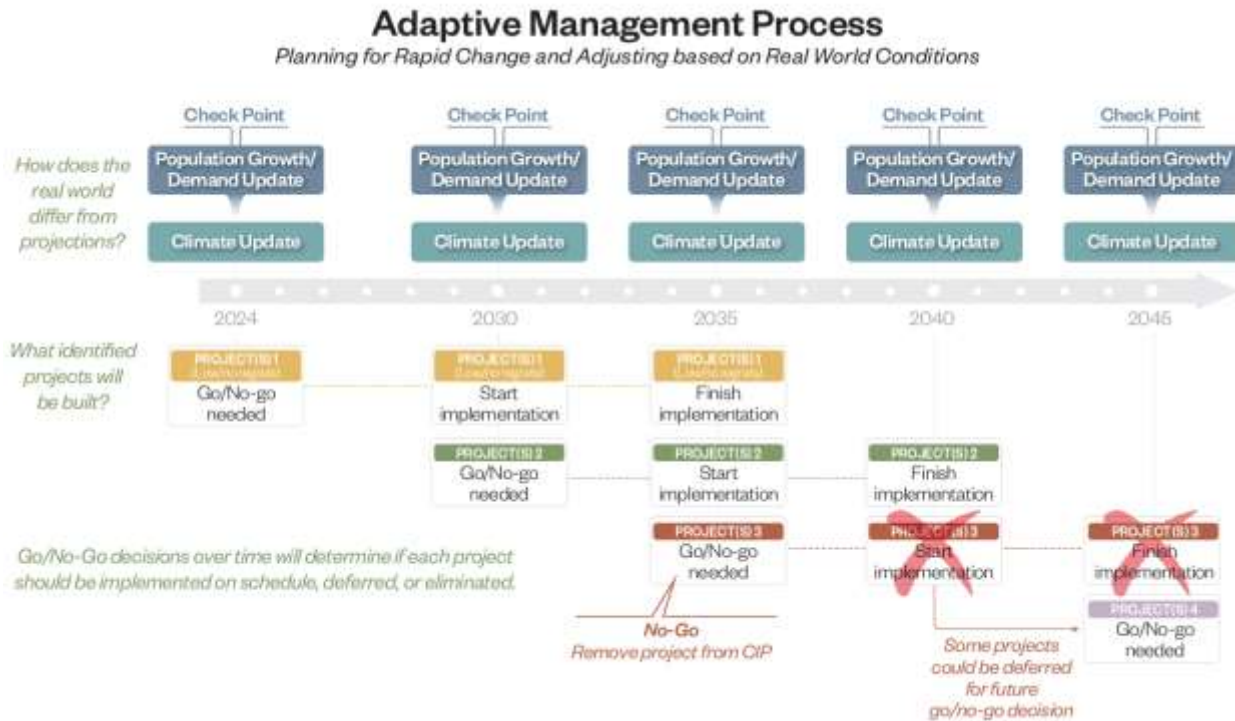
⁴ [Intergovernmental Panel on Climate Change \(IPCC\). Sixth Assessment Report of the IPCC: Climate Change 2022: Impacts, Adaptation and Vulnerability – Summary for Policymakers, pp. SPM-7 – SPM-8.](#)

⁵ [Planning and Investing for a Resilient California: A Guidebook for State Agencies](#)

⁶ [Southern California Edison Company's Climate Change Vulnerability Assessment, May 13, 2022.](#)

⁷ Comments by Nathan Bengtsson, Senior Manager of Climate Resilience at Pacific Gas and Electric, before the August 22, 2023 Metropolitan Water District of Southern California Board Subcommittee on Long-Term Regional Planning Processes and Business Modeling.

⁸ [Joint Comments of San Diego Gas & Electric Company \(U 902 M\) and Southern California Gas \(U 904 G\) on Attachment A Questions in Assigned Commissioner's Phase II Scoping Memo and Ruling, California Public Utilities Commission Order Instituting Rulemaking t.](#)



In summary, Board action today 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 Assessments consistent with this direction.
- 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.

Policy

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

By Minute Item 52776, dated April 12, 2022, the Board adopted the 2020 IRP Needs Assessment that included RCP 8.5 as the severe climate change scenario

By Minute Item 53012, dated October 11, 2022, the Board adopted Bay-Delta policies including “invest in actions that provide seismic and climate resiliency”

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is not subject to CEQA because it involves only feasibility or planning studies for possible future actions which the board has not approved, adopted, or funded. (Public Resources Code Section 21080.21; State CEQA Guidelines Section 15262.)

CEQA determination for Option #2:

None required.

Board Options

Option #1

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

Fiscal Impact: None. No investment decisions will be made with the current proposed Board action.

Business Analysis: Board selection of a climate scenario now would focus staff's CAMP4W efforts. This direction is important to future discussions on financial planning, evaluative criteria, investment portfolios, and recommendations for near-term low-regrets projects.

Option #2

Do not approve use of Representative Concentration Pathway 8.5 for planning purposes in the Climate Adaptation Master Plan for Water.

Fiscal Impact: None. No investment decisions will be made with the current proposed Board action.

Business Analysis: A delay in approval would likely slow the CAMP4W timeline and schedule as this direction is important to future discussions on financial planning, evaluative criteria, investment portfolios, and recommendations for near-term low-regrets projects. While this decision could be made later, the selection of a climate scenario now focuses staff efforts.

Staff Recommendation

Option #1



Elizabeth Crosson
Chief Sustainability, Resilience and
Innovation Officer

9/5/2023
Date



Adel Hagekhalil
General Manager

9/5/2023
Date