



### ***Subcommittee on CAMP4W***

May 26, 2026 CAMP4W Subcommittee Meeting

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3b

#### **Subject**

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CAMP4W Assessments, Lessons Learned, and Low-Regret Recommendations

#### **Executive Summary**

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Extreme weather conditions in recent years have presented Southern Californians with an unsettling preview of the challenges ahead, where climate change is resulting in weather whiplash. This is putting mounting pressure on water and power management within the region. In response, the Board directed staff to integrate water resources, climate, and financial planning into a Climate Adaptation Master Plan for Water (CAMP4W) and, in October 2023, chartered a Joint Task Force of Board Members and Member Agency Managers to facilitate the development of CAMP4W in a timely and transparent process. CAMP4W includes: (1) Climate and Growth Scenarios, (2) Time-Bound Targets, (3) A Framework for Climate Decision-Making and Reporting, (4) Policies, Initiatives, and Partnerships, and (5) Business Models and Funding Strategies. CAMP4W increases Metropolitan's understanding of the risks to water supplies, water and energy infrastructure reliability, operations, and workforce, and ensures Metropolitan is mitigating those risks to ultimately strengthen its ability to fulfill its mission.

In April 2025, the CAMP4W Implementation Strategy was unanimously approved by the Board. The Implementation Strategy built out several of the core components of CAMP4W, including the evaluative criteria and assessment methodology for projects and programs, policy directives and timelines for implementing key initiatives, as well as tracking and reporting frameworks for scenario planning tools and time-bound targets. The plan was developed through extensive engagement with water leaders, business interests, environmental groups, community-based organizations and the public across the region, and engagement continues through implementation.

A key outcome of the CAMP4W Implementation Strategy involved the development of a project and program assessment methodology that requires consideration of the effect of the project or program on **reliability, resilience, financial sustainability and affordability, adaptability and flexibility, equity, and the environment. These assessments are intended to help the Board decide which projects and programs to support, at what scale, and when.**

In the year since the CAMP4W Implementation Strategy was adopted, staff continued to develop assessments for several proposed projects, including Pure Water Southern California, Sites Reservoir, Delta Conveyance Project and new potential storage investments. Many, but not yet all, of these assessments have been presented in stages to Metropolitan's member agencies, Board and the public since late 2025 and are continuing throughout 2026.

This item presents Working Memorandum 11, which includes an overview of the progress to date, lessons learned, and upcoming steps in developing low-regret options to move forward under the adaptive management process described in the CAMP4W Implementation Strategy.

#### **Fiscal Impact**

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None

## Applicable Policy

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Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

By Minute Item 52776, dated April 12, 2022, the Board adopted the 2020 Integrated Water Resources Plan Needs Assessment.

By Minute Item 52946, dated August 15, 2022, the Board adopted a resolution affirming Metropolitan's call to action and commitment to regional reliability for all member agencies.

By Minute Item 53381, dated September 12, 2023, the Board approved the use of Representative Concentration Pathway (RCP) 8.5 for planning purposes in the Climate Adaptation Master Plan for Water.

By Minute Item 53630, dated May 14, 2024, the Board concurred with the CAMP4W: Draft Year One Progress Report and Next Steps, with the understanding that staff would provide the Board updated data and other information before consideration and approval of any CAMP4W projects.

By Minute Item 53436, dated April 8, 2025, the Board approved the Climate Adaptation Master Plan for Water Five-year Implementation Strategy.

## Related Board Action/Future Action

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Information presented in Working Memorandum 11 will inform future board decision-making on investments assessed using the CAMP4W Decision-Making Framework.

## Details and Background

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### CAMP4W Assessments Under Review

As an initial step in implementing the CAMP4W Implementation Strategy, staff focused on the use and refinement of the CAMP4W Decision-Making Framework and Assessment Form. Staff conducted individual project and program assessments using the CAMP4W Decision-Making Framework as a first comprehensive test of the evaluation process. These assessments involved collaboration across multiple departments to evaluate projects through the lenses of the criteria—water supply reliability, climate resilience, system flexibility and adaptability, equity, environmental co-benefits, financial considerations, and implementation feasibility. This cross-functional assessment effort provided valuable insight into both the strengths of individual projects and programs and the practical application of the framework.

Project and Portfolio Assessments initiated to date are listed below, and lessons learned are included in Working Memorandum 11 (**Attachment 1**). Member Agency comments on Memorandum 11 are reflected in **Attachment 2**. Staff are working to refine these assessments and the methodology for integrating complementary investments to inform board decision-making in late 2026 and early 2027.

### *Individual Project Assessments*

- Pure Water Southern California
  - at 45 MGD stage
  - at 75 MGD stage
  - Full 150 MGD project
- Sites Reservoir
  - Assuming Metropolitan's current share in the program of 22 percent
- Delta Conveyance Project
  - Assuming Metropolitan's current share in the program of 47 percent

- Partial assessments: significant information for the additional projects presented in Sequences 1 and 2 were compiled to inform the portfolio analysis. Future project assessments may involve complete individual assessments for those projects.

### ***Portfolio Assessments***

- Major Projects (modeled for reliability benefits and potential rate impacts)
  - Pure Water Southern California (150 MGD project)
  - Sites Reservoir
  - Delta Conveyance Project
  - AVEK Expansion
  - South of Delta Storage
- Sequence 1
  - Sepulveda Pump Station Stage 2
  - Pure Water Southern California (45 MGD stage)
  - Regional Conveyance
- Sequence 2
  - In Delta Investments (not modeled for reliability)
  - AVEK Expansion
  - South of Delta Storage Reservoir
  - Sites Reservoir
  - Delta Conveyance Project

### **Initial Low-Regret Recommendations**

Based on the initial CAMP4W Assessments and ongoing planning and development work, staff developed a set of low-regret recommendations. Staff recommendations are not intended to pre-determine future decisions. Rather, the following recommendations are intended to support an adaptive planning and development process that helps ensure Metropolitan and its member agencies are prepared as real-world conditions evolve.

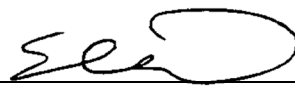
Low-regret options are near-term, relatively low-cost actions that can provide significant benefits under multiple future climate scenarios, and in some cases, can also allow for partial investment now, which would inform or prepare for subsequent, and likely more consequential decisions. It is critical to understand that implementation lead times for significant projects range from years to decades, so decisions in the short term have a significant impact on the options available in the future. Additional information about the characteristics of low-regret options is included in Working Memorandum 11 (**Attachment 1**).

Staff have identified the following initial low-regret recommendations:


- *Operational resilience through increasing capital improvement program investments and supporting robust asset management:* Although traditional replacement and refurbishment projects are not evaluated using the CAMP4W framework, portfolio assessments make clear that future water supply challenges will increase if Metropolitan's baseline of service and reliability deteriorates. Maintaining existing infrastructure and facilities is foundational to maintaining long-term resilience. In response to this need, as part of Metropolitan's FY 2026/27 and FY 2027/28 biennial budget, the Board increased the two-year expenditure plan for the Capital Investment Plan to \$875 million to facilitate the timely implementation of critical infrastructure reliability projects.

- Improving system flexibility to effectively distribute available supplies:* Developing drought mitigation solutions to achieve equitable supply reliability targets throughout Metropolitan’s system remains a near-term priority to address challenges experienced in past severe droughts. As part of Metropolitan’s FY 2026/27 and FY 2027/28 biennial budget, the Board included funding to complete the Diamond Valley Lake to Rialto project as well as to continue funding the implementation of the Sepulveda Feeder Pump Station Project Stage 1.
- Planning and development of new supply and storage projects:* Planning and design of projects less vulnerable to a changing climate helps prepare Metropolitan for future decision-making. Initiating or continuing the planning and design of these project types now is critical to ensure these options exist as conditions change. As part of Metropolitan’s FY 2026/27 and FY 2027/28 biennial budget, the Board included \$150 million to continue the planning and design efforts related to Pure Water Southern California Stage 1 45 MGD. The adopted budget also included funds to advance the conceptual planning work related to south of the delta surface water storage projects.
- Imported supply resilience:* Climate stressors and regulatory uncertainty impact the reliability of the State Water Project and the Colorado River Aqueduct. Investments in watershed protection and nature-based solutions may help retain water supply, build resilience and deliver meaningful co-benefits. Metropolitan’s Board and staff are actively monitoring three pilot investigations associated with forest restoration programs in the northern Sierra Nevada, for example, to evaluate benefits including water volume from reduced evapotranspiration, wildfire risk reduction, direct economic benefits, and avoided carbon emissions.
- Enhanced flexible supply opportunities:* Tools (e.g., Local Supply Exchange Program), partnerships (e.g., water transfers) and strategic water efficiency programs that can quickly activate water savings and/or additional supplies are critical for flexibility and adaptation to extreme events and can also provide meaningful co-benefits to partners and member agencies. As part of FY 2026/27 and FY 2027/28 biennial budget, the Board included funding for ongoing water efficiency programs and continues to authorize execution of exchange and transfer programs.

At this initial stage of CAMP4W implementation, low-regret actions are more focused on evaluation (planning/design) than on implementation, aligning with Metropolitan’s adaptive management strategy, which emphasizes incremental decisions that allow for course correction over time.

  
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 Liz Crosson  
 Chief Sustainability, Resiliency, &  
 Innovation Officer

5/26/2026  
Date

  
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 Shivaji Deshmukh  
 General Manager

5/26/2026  
Date

**Attachment 1 – Draft Working Memorandum 11**

**Attachment 2 – Member Agency Comments on Working Memorandum 11**

# Climate Adaptation Master Plan for Water (CAMP4W)

## WORKING MEMORANDUM 11

### CAMP4W ASSESSMENTS, LESSONS LEARNED, AND LOW REGRET RECOMMENDATIONS

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May 2026

## 1 Introduction

Extreme weather has become an ongoing reality in California and across the Western United States, offering a continued and evolving preview of the challenges ahead as climate change drives increasing “weather whiplash”. This is putting mounting pressure on water and power management within the region. In response, the Board directed staff to integrate water resources, climate, and financial planning into a Climate Adaptation Master Plan for Water (CAMP4W), and in October 2023, chartered a Joint Task Force of Board Members and Member Agency Managers to facilitate the development of CAMP4W in a timely and transparent process. CAMP4W comprises multiple components which together form a living master planning program. Those components include: (1) IRP-informed Needs and Climate and Growth Scenarios, (2) Time-Bound Targets, (3) A Framework for Climate Decision-Making and Reporting, (4) Policies, Initiatives, and Partnerships, and (5) Business Models and Funding Strategies. CAMP4W increases Metropolitan’s understanding of the risks to water supplies, water and energy infrastructure reliability, operations, and workforce, and ensures Metropolitan is mitigating those risks to ultimately strengthen its ability to fulfill its mission.

In April 2025, the CAMP4W Implementation Strategy was unanimously approved by the Board. The Implementation Strategy built out several of the core components of CAMP4W, including the evaluative criteria and assessment methodology for projects and programs, policy directives and timelines for implementing key initiatives, as well as tracking and reporting frameworks for scenario planning tools and time-bound targets. The plan was developed through extensive engagement with water leaders, business interests, environmental groups, community-based organizations and the public across the region, and engagement continues through implementation.

A key outcome of the CAMP4W Implementation Strategy involved the development of a project and program assessment methodology that requires consideration of the following evaluative criteria: **reliability, resilience, financial sustainability and affordability, adaptability and flexibility, equity, and the environment. These assessments are intended to help the Board decide which projects and programs to support, at what scale, and when.** The assessments will facilitate Board decisions at each stage of a project or program, from funding early planning phases, through design phases, and ultimately determining whether to construct projects. Data presented in the assessments will become more accurate as the project moves through each phase and details such as costs, benefits, and constraints are refined.

In the year since the CAMP4W Implementation Strategy was adopted, staff have continued to develop assessments for several proposed projects, including Pure Water Southern California, Sites Reservoir, Delta Conveyance Project and new potential storage investments. Many, but not yet all, of these assessments have been presented in stages to Metropolitan's member agencies, Board and the public since late 2025 and are continuing throughout 2026.

This Working Memorandum 11 provides an overview of the progress to date, lessons learned, and upcoming steps in developing low regret options to move forward under the adaptive management process described in the CAMP4W Implementation Strategy.

## 2 Understanding Risk and the Role of Low Regret Options

Preparing for a future impacted by a changing climate requires planning for an uncertain future. Historical planning processes founded on looking to the past to predict the future are not enough. Metropolitan's advancement into this new reality began with the 2020 Integrated Resources Plan (IRP) Needs Assessment, which presented four scenarios (A, B, C, and D) and identified a range of potential core supply, flexible supply, and storage that Metropolitan may need to invest in to remain reliable.

The intent of this work is to provide the Board with the information needed to thoughtfully weigh the risks of either **over-development** (constructing projects or at a scale that are unnecessary and result in stranded assets and the associated undue financial burden) or **under-development** (not developing enough projects, resulting in regional water shortages). Both ends of the spectrum (Figure 1) present **significant risks**. To mitigate these risks, Metropolitan developed and presented in the CAMP4W Implementation Strategy an adaptive management approach that seeks to balance the two ends of the spectrum. In alignment with this concept, the Board directed staff to focus on *planning* towards the more severe hydrologic futures associated with RCP 8.5 (IRP Scenarios C and D). Other scenarios and potential climate futures can be considered as necessary. Board investment decisions regarding *implementation* (i.e. construction of projects) will weigh the spectrum of risk by basing actual decisions on real-world trends, funding and partnership opportunities, and an evaluation of potential tradeoffs at the time when those decisions are made.



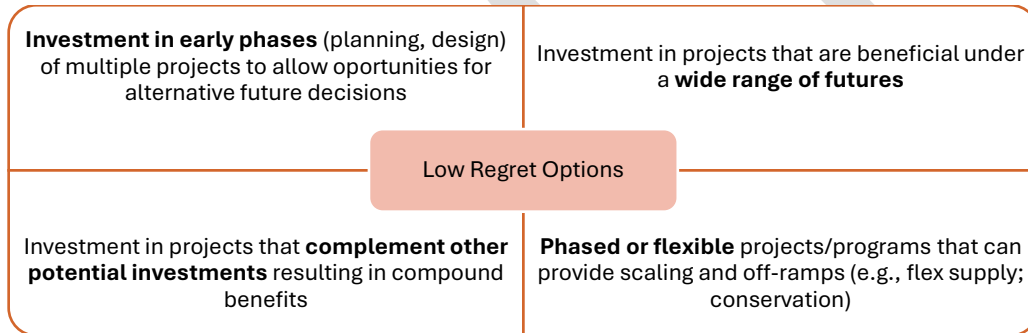
**Figure 1. Relationships Between Risk Elements**

Adaptive management in the context of CAMP4W project development means making incremental decisions, while allowing for course corrections if conditions change from what was initially expected.

Low regret options are near-term, relatively low-cost actions that can provide significant benefits under multiple future climate scenarios, and in some cases, can also allow for partial investment now, which would inform or prepare for subsequent, and likely more consequential decisions. It is critical to understand that implementation lead times for significant projects range from years to decades, so decisions in the short term have a significant impact on the options available in the future.

Low regret options often have at least some of the following characteristics, summarized in Figure 2:

- Provide opportunities for future decisions by investing in near-term, lower-cost planning or development phases to gain additional information that will inform future actions
- Provide benefits across a range of future scenarios
- Can be scaled, phased, or adjusted over time based on feedback from changing conditions
- Improve system performance without committing to a single future
- Strengthen existing investments and maintain decision-making flexibility
- Pair well with other potential investments and result in compound benefits



**Figure 2. Key Elements of Low Regret Options**

Progress since the approval of the CAMP4W Implementation Strategy has revealed a series of low regret options available to Metropolitan. Those are discussed below in Section 4, following a summary of CAMP4W Assessments under review.

**Having Options Reduces Risk**

Making the decision to move into the construction phase of a project (i.e. project implementation phase) will incur costs that far exceed planning and design costs. The financial risk, and impact on rates, to plan and design projects is relatively minimal compared to construction. In addition, advancing multiple projects and programs through the planning and design phases provides opportunities to assess multiple projects simultaneously at early stages of a project's life cycle. This approach is especially useful for large projects that can take years to decades to implement. Planning and design phases also refine what we know about each project and program, supporting more informed decisions about which will ultimately be the best for the region.

Advancing planning and design phases for all viable projects and programs expands the number of viable alternatives Metropolitan will have to consider when (or if) implementation is needed. If Metropolitan were to decide today on a narrow list of investments to conduct planning and design, this would amount to prematurely deciding which projects can be constructed 10-20+ years from now, eliminating options in the future. Being flexible and funding the planning and design of more projects than may be deemed necessary now is a low regret, adaptive approach that allows Metropolitan to remain flexible.

Flexibility is key in an uncertain future. With more options available, in the coming years and decades, Metropolitan will have the flexibility to pause or halt projects if they become infeasible, are found to conflict with preferred or already implemented projects or are found to be unnecessary due to evolving conditions.

## 3 CAMP4W Assessments Under Review

### 3.1 Progress to Date: Individual and Portfolio Assessments Performed

As an initial step in implementing the CAMP4W Implementation Strategy, staff focused on the use and refinement of the CAMP4W Decision-Making Framework and Assessment Form. Staff conducted individual project and program assessments using the CAMP4W Decision-Making Framework as a first comprehensive test of the evaluation process. These assessments involved collaboration across multiple departments to evaluate projects through the lenses of the criteria – water supply reliability, climate resilience, system flexibility and adaptability, equity, environmental co-benefits, financial considerations, and implementation feasibility. This cross-functional assessment effort provided valuable insight into both the strengths of individual projects and programs and the practical application of the framework.

In parallel, Metropolitan incorporated standard updates to the 2020 IRP Needs Assessment's baseline conditions to ensure the reliability analyses reflect current 2025 information and system conditions. These updates included revised demand projections, local supply and imported supply outlooks, current storage levels, system flexibility measures taken since the 2020-2022 drought, and updated demand management measures. The foundational assumptions of the 2020 IRP Needs Assessment were not changed. Scenarios C and D still reflect the higher climate change impacts associated with RCP 8.5 which is consistent with prior Board direction to evaluate more severe hydrologic futures in the CAMP process.

This initial assessment process primarily involved evaluating the select individual projects listed below. It also incorporated a preliminary set of assessments for project portfolios to test how the methodology may be used to evaluate projects working in combination. These initial assessments are informing process refinement and will be reflected in assessments presented to Member Agencies and Board in the coming months. Several lessons learned in this process are presented in the next section.

CAMP4W Project and Portfolio Assessments initiated to date included the following:

### ***Individual Project Assessments***

- Pure Water Southern California
  - at 45 MGD stage
  - at 75 MGD stage,
  - Full 150 MGD project
- Sites Reservoir
  - Assuming Metropolitan's current share in program of 22%
- Delta Conveyance Project
  - Assuming Metropolitan's current share in the program of 47%
- Partial assessments: significant information for the additional projects presented in Sequences 1 and 2 were compiled to inform the portfolio analysis. Future project assessments may involve complete individual assessments for those projects.

### ***Portfolio Assessments***

- Major Projects (modeled for reliability benefits and potential rate impacts)
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  - Sites Reservoir
  - Delta Conveyance Project

Staff first analyzed the Major Projects Portfolio as an initial step to address the shortages identified in Scenarios C and D. This analysis focused only on the water supply reliability criterion. While the Major Projects Portfolio eliminated the shortages seen in Scenario C, significant shortages persisted in Scenario D. This finding underscores the need for an adaptive management approach to address reliability under conditions of severe climate change and high growth and suggests that achieving full reliability may not

be feasible under all future conditions. As such, this finding provides a basis for continued discussion with the Board on acceptable levels of risk and reliability. By monitoring the signposts on a regular basis, trends that may impact the region's supply, demand, and storage, can be identified early and response actions can be planned. Metropolitan continues to track changing conditions and plans towards a range of futures to identify the actions that may be needed over time, while helping to reduce the risk of over-investment in the near term.

Using the 2025 Updates to the 2020 IRP's refined Scenario C and D baselines, Metropolitan evaluated Sequence 1 and Sequence 2 portfolios under both expected project start dates and a "fully built" condition to assess near-term risks and long-term reliability value. The modeling demonstrated that, while the sequences reduce the severity and frequency of shortages by shifting impacts into more manageable ranges, shortages persist, underscoring the continued need for additional core supplies, storage investments, and demand management actions. At the same time, the analysis identifies increasing volumes of unmanaged surplus water, even where shortages are not fully eliminated. This suggests that the benefits of certain projects may not be fully realized within the existing system and could require additional investments, such as new or expanded storage, operational changes, or adjustments to project scale, to better align supply with system needs. Together, this work advances both the individual and portfolio-level analyses under CAMP4W and provides a clearer understanding of trade-offs, risk exposure, and policy considerations for the Board's ongoing deliberations.

## 3.2 Assessment Lessons Learned

Metropolitan staff evaluated the process for developing the assessment forms both at a project level and portfolio level. The following presents the most significant lessons learned and takeaways that will be carried forward for future assessments and refinements to the methodology.

### ***CAMP4W Individual Project Assessments: Lessons Learned***

- The Decision-Making Framework and evaluative criteria work well for individual projects and programs. Assessments highlight the strengths and areas for improvement for each potential investment. The comprehensiveness of the form helps communicate a project or program's values across the six criteria categories.
- Assessments can vary for projects and programs at different levels of maturity, which can make comparisons challenging. The type (qualitative vs. quantitative) and level of detail presented will depend on the stage of development, for example, early-stage projects may rely more on qualitative information, while more advanced projects can be evaluated with greater specificity.
- To support more meaningful and consistent evaluations, projects should reach a sufficient level of definition before being assessed within CAMP4W. Rather than reassessing at each project phase, updates may be more appropriate when significant changes in project assumptions or new information could materially affect outcomes.
- Assessment forms and scoring approach could be simplified to improve readability and standardization. The team is working on refinements to improve the digestibility of information without compromising the quality of the assessment or oversimplifying the opportunities or challenges.
- Delineating the roles of the project lead and the assessment team in conducting the assessment is important. To ensure an objective, standardized approach, it is important to have the assessment

team of subject matter experts conduct each assessment based on information provided by project proponents.

### ***CAMP4W Portfolio Assessments: Lessons Learned***

- A combined set of projects and/or programs can be assessed using the methodology. However, the type of results and appropriate level of detail and confidence in the results will depend on factors such as:
  - The stage and/or maturity level of the project or program (e.g., in planning, design, etc.)
  - The criterion against which the set of projects and/or programs are being evaluated (reliability, resilience, financial sustainability, etc.)
  - Consistency between each project's and/or program's phases (conceptual planning vs. complete design package) included in that portfolio and how the differences are reconciled
- Given inconsistencies in project and program development stages, completed portfolio assessments were most beneficial in this first round when used to assess high-level reliability benefits and cost impact over time, demonstrating the combined project/program effectiveness in reducing shortages across various future scenarios. Future analyses of project pairings will benefit from integration of projects that strategically align to support a more deliberate approach to strengthen the analysis and improve decision-making support.

## **4 Next Steps: Low Regret Recommendations and Assessment Methodology Refinement**

### **4.1 Initial Low Regret Recommendations**

Over the first year following the adoption of the CAMP4W Implementation Strategy, staff developed a set of low regret recommendations. Staff's recommendations are not intended to pre-determine future decisions. Rather, the following recommendations are intended to support an adaptive planning and development process that helps ensure Metropolitan and its member agencies are prepared as real world conditions evolve.

Key low regret recommendations include the following:

- *Operational resilience through increasing capital improvement program investments and supporting robust asset management:* Although traditional R&R projects are not evaluated using the CAMP4W framework, portfolio assessments make clear that future water supply challenges will increase if Metropolitan's baseline of service and reliability deteriorates. Maintaining existing infrastructure and facilities is foundational to maintaining long-term resilience.
- *Improving system flexibility to effectively distribute available supplies:* Developing drought mitigation solutions to achieve equitable supply reliability targets throughout Metropolitan's system remains a near-term priority to address challenges experienced in past severe droughts.

- *Planning and development of new supply and storage projects:* Planning and design of projects less vulnerable to a changing climate helps prepare Metropolitan for future decision making. Initiating or continuing the planning and design of these project types now is critical to ensure these options exist as conditions change.
- *Imported supply resilience:* Climate stressors and regulatory uncertainty impact the reliability of the State Water Project and the Colorado River Aqueduct. Investments in watershed protection and nature-based solutions may help retain water supply, build resilience and deliver meaningful co-benefits.
- *Enhanced flexible supply opportunities:* Tools (e.g. Local Supply Exchange Program), partnerships (e.g. water transfers) and strategic water efficiency programs that can quickly activate water savings and/or additional supplies are critical for flexibility and adaptation to extreme events and can also provide meaningful co-benefits to partners and member agencies.

At this initial stage of CAMP4W implementation, low-regret actions are more focused on evaluation (planning/design) than on implementation, aligning with Metropolitan's adaptive management strategy, which emphasizes incremental decisions that allow for course correction over time.

## 4.2 Assessment Methodology Refinement

Based on lessons learned in the assessment process presented above, Metropolitan will be making refinements to the overall process for assessing projects and programs, with a focus on developing a methodology for integrating analyses to consider potential synergies and/or tradeoffs between investments to inform decision-making. This methodology will be presented to Member Agencies and the Board in the coming months and will be followed by refined assessments and documentation intended to support near-term decision-making.



May 20, 2026

**Liz Crosson**, Chief Sustainability, Resilience, and Innovation Officer  
**Brad Coffey**, Lead, CAMP4W Assessment Team  
Metropolitan Water District of Southern California  
P.O. Box 54153  
Los Angeles, CA 90054-0153

**RE: Metropolitan’s Climate Adaptation Master Plan for Water (CAMP4W) Working Memorandum 11**

Dear Ms. Crosson and Mr. Coffey,

The San Diego County Water Authority submits the following comments on CAMP4W.

**An Opportunity for Refinements**

The Water Authority supports General Manager Deshmukh’s efforts to meet with the member agencies and assess the CAMP4W planning process. This moment represents an important inflection point for a process initiated three years ago to provide the Board with essential information for decision-making. During the FY 27 and FY 28 biennial budget process, the Water Authority had significant concerns about supporting further funding for Pure Water Southern California, not because of the merits of the project, but because CAMP4W did not sufficiently inform the Board’s decision. Until this evaluation is complete, the Water Authority requests a measured pause to reflect on the work completed to date and to clarify the goals of the planning process going forward.

**Consideration of More Than Just Scenarios C and D is Critical**

The Metropolitan Board’s 2023 decision to plan toward the more severe hydrologic futures associated with RCP 8.5 effectively limited CAMP4W’s forward analysis to Scenarios C and D of the 2020 Integrated Water Resources Plan Needs Assessment (IRP-NA). While this aligned with direction to evaluate higher-risk climate futures, it also narrowed Metropolitan’s evaluation of risk by excluding half of the scenario framework originally developed to balance the risks of over- and underdevelopment. Both the IRPNA and CAMP4W were designed to benefit from testing decisions across a wider range of plausible futures, including futures where demographic, hydrologic, and supply conditions differ substantially from Scenarios C and D.

Through the Water Authority’s firsthand experience, we have gained insight into how actual conditions can diverge from initial expectations when planning for long-term supplies. Significant investments in supply development were made during a period of expected long-term growth in demand and population, yet actual conditions diverged, creating affordability challenges for the region. This experience underscores the importance of assessing risk across a range of potential futures, including those that depart significantly from expectations. For this reason, an evaluation limited only to Scenarios C and D needs to be reconsidered.



RCP 8.5 is only one assumption embedded within the four IRPNA scenarios. Excluding Scenarios A and B also eliminates important variables such as demographic trajectories, household growth, agricultural demand, and State Water Project supply outlooks—factors that have a material influence on both reliability and affordability. Narrowing the analytical frame reduces the robustness of CAMP4W’s risk assessment and diminishes the Board’s ability to make informed decisions grounded in a complete set of planning futures.

Working Memo 11 states that “other scenarios and potential climate futures can be considered as necessary” under Section 2, Understanding Risk and the Role of Low Regret Options. To ensure CAMP4W continues to function as a comprehensive and adaptive planning tool, this language should be strengthened: other scenarios **must** be considered, updated regularly, and evaluated against real-world conditions. This will provide the Board with a fuller understanding of both the risk of stranded assets and the risk of supply shortfalls, two risks the memo itself identifies as central to CAMP4W’s mission.

### **Discussion of Risk Needs to Continue**

The Water Authority agrees that the Board should continue discussing acceptable levels of risk and reliability. CAMP4W evaluations should more robustly analyze the risk and its impacts on rates of being 100% reliable 100% of the time.

### **Analysis Should be Broadened Beyond Water Supply Reliability Criterion**

Working Memorandum 11 presents several conclusions identified as low regret actions, yet the basis for these conclusions is not clear from the information provided in the memo or in earlier presentations. The memo emphasizes water supply reliability as the sole criterion, but relying on a single criterion is not consistent with the CAMP4W process established by the Board and the Task Force of Member Agency General Managers, which requires evaluation across multiple criteria.

The Water Authority does not oppose several of the policy directions described as low regret. However, recommendations cannot be fully understood or supported without clear analysis that demonstrates why they meet the standard of a low regret action. The Water Authority requests that Metropolitan provide the supporting information and evaluation that led to these conclusions before they are advanced to the Board to ensure the analytical basis for each recommendation is clearly understood.

It is worth noting that Low Regrets Recommendation 3 does not align with the CAMP4W process as envisioned by the Board. Continuing planning and design work on any project simply to preserve optionality should occur only when the CAMP4W assessments show that the project continues to provide value to Metropolitan and its member agencies. An “all of the above” approach may be appropriate in some circumstances, but it **must** be justified by the analysis produced through CAMP4W, not adopted by default.

At some point, Metropolitan must determine that enough information exists to support either a “go” or “no go” decision for projects under evaluation. CAMP4W was designed to bring clarity to



these decisions. The Water Authority believes that the planning process should lead to meaningful points of decision rather than open-ended project continuation.

**The Water Authority is Invested in CAMP4W**

The Water Authority has been deeply involved in shaping CAMP4W and remains committed to a process that produces clear, defensible information for upcoming decisions. Drawing on our own experience with large supply investments, we have offered input intended to strengthen the analysis and consider a broader range of futures.

As General Manager Deshmukh engages member agencies on CAMP4W priorities, this is an appropriate moment to confirm that the process provides the information agencies need and reflects what they can reasonably afford. It is essential to confirm that CAMP4W provides the full range of analysis required to support the significant investments ahead.

We appreciate the continued opportunities to collaborate with Metropolitan and its member agencies on the CAMP4W process.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dan Denham", with a horizontal line extending to the right.

Dan Denham  
General Manager, San Diego County Water Authority

Cc: Brandon Goshi, Group Manager, Water Resource Management  
John Bednarski, Assistant General Manager, Water Resources and Technical Services  
Jon Rubin, Interim Board Executive Officer & Executive Advisor, Water Resources & Capital Improvements  
Shivaji Deshmukh, General Manager, Metropolitan Water District



Western Municipal Water District  
14205 Meridian Parkway  
Riverside, CA 92518  
General Business | 951.571.7100  
Customer Service | 951.571.7104

Craig D. Miller  
General Manager

Mike Gardner  
Division 1

Gracie Torres  
Division 2

Brenda Dennstedt  
Division 3

Laura Roughton  
Division 4

Fauzia Rizvi  
Division 5

May 19, 2026

Metropolitan Water District of Southern California  
700 N. Alameda Street  
Los Angeles, California 90012

Liz Crosson, Chief Sustainability, Resilience, and Innovation Officer  
Brad Coffey, Lead, CAMP4W Assessment Team

**Subject: Comments on CAMP4W Working Memorandum 11**

Dear CAMP4W Assessment Team,

Thank you for the continued work and engagement associated with the Climate Adaptation Master Plan for Water (CAMP4W) process and the release of Working Memorandum 11. The memorandum reflects the significant effort invested to date and provides an important opportunity to help shape long-term strategic decisions that will influence regional water reliability, affordability, and resiliency for decades to come.

As CAMP4W advances into the next phase of portfolio development and implementation considerations, Western Municipal Water District (Western Water) believes this is an appropriate and valuable point in the process to refine how alternatives are developed, evaluated, and advanced. We appreciate the collaborative dialogue occurring to date and offer the following recommendations for consideration.

**1. Refinements to the CAMP4W Process**

- Clearly define the CAMP4W process, including goals, milestones, key inputs, decision points, engagement opportunities, and the steps for moving from individual project evaluation to the development and selection of preferred portfolio-based planning options.
- Incorporate core elements of integrated resources planning (IRP), including needs assessment, modeling to demonstrate benefits, and robust project and portfolio analysis. This will better inform decision-making and support the development of short-, mid-, and long-term implementation projects.
- CAMP4W should align Metropolitan's internal water resources planning with Capital Improvement Program investments.

## 2. Portfolio Development

- In January, member agencies were provided draft “Sequences” to support portfolio development and participated in meetings to review and provide input. While Working Memorandum #11 includes a brief reference to the Sequences, it does not provide a clear path forward on their refinement, intended use, or next steps, and there has been limited follow-up on how agency input has been incorporated into the process.
- The current materials appear to restate general concepts while emphasizing adaptability, however a clearly articulated process, timeline, and evolution of these sequences has not been maintained. Greater clarity is needed to ensure the work remains connected and decision-relevant.
- More comprehensive portfolios should be developed that ensure a full range of viable options are considered, including opportunities such as new opportunities for exchanges and other regional supply arrangements that may provide cost-effective reliability benefits.

## 3. Near-Term Priorities Requiring Focused Attention

Timing is of the essence. The next few years will be particularly important for advancing several critical, high-impact efforts that will significantly influence long-term system reliability, operational flexibility, and affordability outcomes for the region, including, but not limited to:

- Delta Conveyance Project
- Sites Reservoir
- Storage south of the Delta
- Pure Water Southern California

## 4. Timeline and Strategic Engagement Opportunities

- Going forward, Western Water respectfully requests more proactive scheduling, providing sufficient time for review and coordination, and establishing a clearly defined process timeline to maintain alignment and strengthen collaboration. Establishing and sharing this timeline early will help ensure member agencies can engage at the right points in the process. The recent business model effort was a successful example of how this approach improves review, collaboration, and outcomes.

Western Water remains committed to supporting a CAMP4W process that builds alignment, strengthens regional collaboration, and improves long-term resiliency for communities across Southern California. Clearly defining the CAMP4W process paired with the development of comprehensive, portfolio-based planning options will improve the usefulness of the outcomes.

Thank you again for your leadership and continued commitment to advancing a water-resilient future.

Sincerely,

A handwritten signature in blue ink that reads "Craig Miller". The signature is written in a cursive style with a large, looping initial "C".

Craig D. Miller, P.E.  
General Manager

# Climate Adaptation Master Plan for Water (CAMP4W)

## WORKING MEMORANDUM 11

### CAMP4W ASSESSMENTS, LESSONS LEARNED, AND LOW REGRET RECOMMENDATIONS

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May 2026

## 1 Introduction

Extreme weather has become an ongoing reality in California and across the Western United States, offering a continued and evolving preview of the challenges ahead as climate change drives increasing “weather whiplash”. This is putting mounting pressure on water and power management within the region. In response, the Board directed staff to integrate water resources, climate, and financial planning into a Climate Adaptation Master Plan for Water (CAMP4W), and in October 2023, chartered a Joint Task Force of Board Members and Member Agency Managers to facilitate the development of CAMP4W in a timely and transparent process. CAMP4W comprises multiple components which together form a living master planning program. Those components include: (1) IRP-informed Needs and Climate and Growth Scenarios, (2) Time-Bound Targets, (3) A Framework for Climate Decision-Making and Reporting, (4) Policies, Initiatives, and Partnerships, and (5) Business Models and Funding Strategies. CAMP4W increases Metropolitan’s understanding of the risks to water supplies, water and energy infrastructure reliability, operations, and workforce, and ensures Metropolitan is mitigating those risks to ultimately strengthen its ability to fulfill its mission.

In April 2025, the CAMP4W Implementation Strategy was unanimously approved by the Board. The Implementation Strategy creates a standardized methodology that ensures a more informed and transparent decision-making process. The plan was developed through extensive engagement with water leaders, business interests, environmental groups, community-based organizations and the public across the region, and engagement continues through implementation.

A key outcome of the CAMP4W Implementation Strategy involved the development of a project and program assessment methodology that requires consideration of the following evaluative criteria: **reliability, resilience, financial sustainability and affordability, adaptability and flexibility, equity, and the environment. These assessments are intended to help the Board decide which projects and programs to support, at what scale, and when.** The assessments will facilitate Board decisions at each stage of a project or program, from funding early planning phases, through design phases, and ultimately determining whether to construct projects. Data presented in the assessments will become more accurate as the project moves through each phase and details such as costs, benefits, and constraints are refined.

In the year since the CAMP4W Implementation Strategy was adopted, staff have continued to develop assessments for several proposed projects, including Pure Water Southern California, Sites Reservoir, Delta Conveyance Project and new potential storage investments. Many, but not yet all, of these assessments have been presented in stages to Metropolitan's member agencies, Board and the public since late 2025 and are continuing throughout 2026.

This Working Memorandum 11 provides an overview of the progress to date, lessons learned, and upcoming steps in developing low regret options to move forward under the adaptive management process described in the CAMP4W Implementation Strategy.

## 2 Understanding Risk and the Role of Low Regret Options

Preparing for a future impacted by a changing climate requires planning for an uncertain future. Historical planning processes founded on looking to the past to predict the future are not enough. Metropolitan's advancement into this new reality began with the 2020 Integrated Resources Plan (IRP) Needs Assessment, which presented four scenarios (A, B, C, and D) and identified a range of potential core supply, flexible supply, and storage that Metropolitan may need to invest in to remain reliable.

The intent of this work is to provide the Board with the information needed to thoughtfully weigh the risks of either **over-development** (constructing projects or at a scale that are unnecessary and result in stranded assets and the associated undue financial burden) or **under-development** (not developing enough projects, resulting in regional water shortages). Both ends of the spectrum (Figure 1) present **significant risks**. To mitigate these risks, Metropolitan developed and presented in the CAMP4W Implementation Strategy an adaptive management approach that seeks to balance the two ends of the spectrum. In alignment with this concept, the Board directed staff to focus on *planning* towards the more severe hydrologic futures associated with RCP 8.5 (IRP Scenarios C and D). Other scenarios and potential climate futures can be considered as necessary. Board investment decisions regarding *implementation* (i.e. construction of projects) will weigh the spectrum of risk by basing actual decisions on real-world trends, funding and partnership opportunities, and an evaluation of potential tradeoffs at the time when those decisions are made.



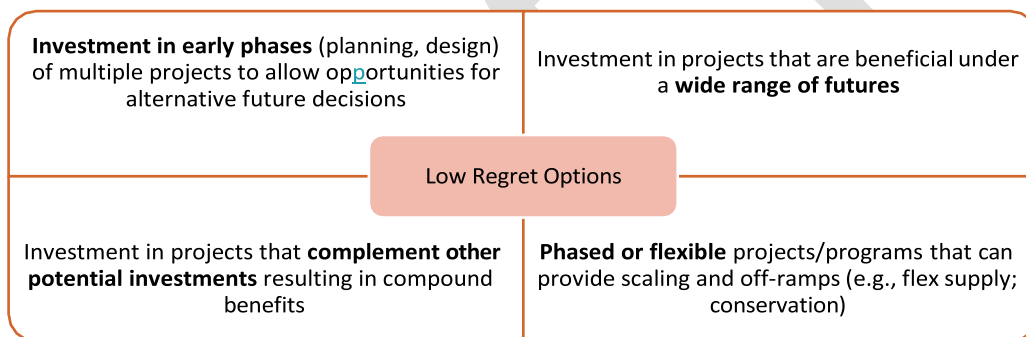
**Figure 1. Relationships Between Risk Elements**

Adaptive management in the context of CAMP4W project development means making incremental decisions, while allowing for course corrections if conditions change from what was initially expected.

Low regret options are near-term, relatively low-cost actions that can provide significant benefits under multiple future climate scenarios, and in some cases, can also allow for partial investment now, which would inform or prepare for subsequent, and likely more consequential decisions. It is critical to understand that implementation lead times for significant projects range from years to decades, so decisions in the short term have a significant impact on the options available in the future.

Low regret options often have at least some of the following characteristics, summarized in Figure 2:

- Provide opportunities for future decisions by investing in near-term, lower-cost planning or development phases to gain additional information that will inform future actions
- Provide benefits across a range of future scenarios
- Can be scaled, phased, or adjusted over time based on feedback from changing conditions
- Improve system performance without committing to a single future
- Strengthen existing investments and maintain decision-making flexibility
- Pair well with other potential investments and result in compound benefits



**Figure 2. Key Elements of Low Regret Options**

Progress since the approval of the CAMP4W Implementation Strategy has revealed a series of low regret options available to Metropolitan. Those are discussed below in Section 4, following a summary of CAMP4W Assessments under review.

**Having Options Reduces Risk**

Making the decision to move into the construction phase of a project (i.e. project implementation phase) will incur costs that far exceed planning and design costs. The financial risk, and impact on rates, to plan and design projects is relatively minimal compared to construction. In addition, advancing multiple projects and programs through the planning and design phases provides opportunities to assess multiple projects simultaneously at early stages of a project's life cycle. This approach is especially useful for large projects that can take years to decades to implement. Planning and design phases also refine what we know about each project and program, supporting more informed decisions about which will ultimately be the best for the region.

Advancing planning and design phases for all viable projects and programs expands the number of viable alternatives Metropolitan will have to consider when (or if) implementation is needed. If Metropolitan were to decide today on a narrow list of investments to conduct planning and design, this would amount to prematurely deciding which projects can be constructed 10-20+ years from now, eliminating options in the future. Being flexible and funding the planning and design of more projects than may be deemed necessary now is a low regret, adaptive approach that allows Metropolitan to remain flexible.

Flexibility is key in an uncertain future. With more options available, in the coming years and decades, Metropolitan will have the flexibility to pause or halt projects if they become infeasible, are found to conflict with preferred or already implemented projects or are found to be unnecessary due to evolving conditions.

## 3 CAMP4W Assessments Under Review

### 3.1 Progress to Date: Individual and Portfolio Assessments Performed

As an initial step in implementing the CAMP4W Implementation Strategy, staff focused on the use and refinement of the CAMP4W Decision-Making Framework and Assessment Form. Staff conducted individual project and program assessments using the CAMP4W Decision-Making Framework as a first comprehensive test of the evaluation process. These assessments involved collaboration across multiple departments to evaluate projects through the lenses of the criteria – water supply reliability, climate resilience, system flexibility and adaptability, equity, environmental co-benefits, financial considerations, and implementation feasibility. This cross-functional assessment effort provided valuable insight into both the strengths of individual projects and programs and the practical application of the framework.

In parallel, Metropolitan incorporated standard updates to the 2020 IRP Needs Assessment's baseline conditions to ensure the reliability analyses reflect current 2025 information and system conditions. These updates included revised demand projections, local supply and imported supply outlooks, current storage levels, system flexibility measures taken since the 2020-2022 drought, and updated demand management measures. The foundational assumptions of the 2020 IRP Needs Assessment were not changed. Scenarios C and D still reflect the higher climate change impacts associated with RCP 8.5 which is consistent with prior Board direction to evaluate more severe hydrologic futures in the CAMP process.

This initial assessment process primarily involved evaluating the select individual projects listed below. It also incorporated a preliminary set of assessments for project portfolios to test how the methodology may be used to evaluate projects working in combination. These initial assessments are informing process refinement and will be reflected in assessments presented to Member Agencies and Board in the coming months. Several lessons learned in this process are presented in the next section.

CAMP4W Project and Portfolio Assessments initiated to date included the following:

### ***Individual Project Assessments***

- Pure Water Southern California
  - at 45 MGD stage
  - at 75 MGD stage,
  - Full 150 MGD project
- Sites Reservoir
  - Assuming Metropolitan's current share in program of 22%
- Delta Conveyance Project
  - Assuming Metropolitan's current share in the program of 47%
- Partial assessments: significant information for the additional projects presented in Sequences 1 and 2 were compiled to inform the portfolio analysis. Future project assessments may involve complete individual assessments for those projects.

### ***Portfolio Assessments***

- Major Projects (modeled for reliability benefits and potential rate impacts)
  - Pure Water Southern California (150 MGD project)
  - Sites Reservoir
  - Delta Conveyance Project
  - AVEK Expansion
  - South of Delta Storage
- Sequence 1
  - Sepulveda Pump Station Stage 2
  - Pure Water Southern California (45 MGD stage)
  - Regional Conveyance
- Sequence 2
  - In Delta Investments (not modeled for reliability)
  - AVEK Expansion
  - South of Delta Storage Reservoir
  - Sites Reservoir
  - Delta Conveyance Project

Staff first analyzed the Major Projects Portfolio as an initial step to address the shortages identified in Scenarios C and D. This analysis focused only on the water supply reliability criterion. While the Major Projects Portfolio eliminated the shortages seen in Scenario C, significant shortages persisted in Scenario D. This finding underscores the need for an adaptive management approach to address reliability under conditions of severe climate change and high growth and suggests that achieving full reliability may not

be feasible under all future conditions. As such, this finding provides a basis for continued discussion with the Board on acceptable levels of risk and reliability. By monitoring the signposts on a regular basis, trends that may impact the region's supply, demand, and storage, can be identified early and response actions can be planned. Metropolitan continues to track changing conditions and plans towards a range of futures to identify the actions that may be needed over time, while helping to reduce the risk of over-investment in the near term.

Using the 2025 Updates to the 2020 IRP's refined Scenario C and D baselines, Metropolitan evaluated Sequence 1 and Sequence 2 portfolios under both expected project start dates and a "fully built" condition to assess near-term risks and long-term reliability value. The modeling demonstrated that, while the sequences reduce the severity and frequency of shortages by shifting impacts into more manageable ranges, shortages persist, underscoring the continued need for additional core supplies, storage investments, and demand management actions. At the same time, the analysis identifies increasing volumes of unmanaged surplus water, even where shortages are not fully eliminated. This suggests that the benefits of certain projects may not be fully realized within the existing system and could require additional investments, such as new or expanded storage, operational changes, or adjustments to project scale, to better align supply with system needs. Together, this work advances both the individual and portfolio-level analyses under CAMP4W and provides a clearer understanding of trade-offs, risk exposure, and policy considerations for the Board's ongoing deliberations.

## 3.2 Assessment Lessons Learned

Metropolitan staff evaluated the process for developing the assessment forms both at a project level and portfolio level. The following presents the most significant lessons learned and takeaways that will be carried forward for future assessments and refinements to the methodology.

### ***CAMP4W Individual Project Assessments: Lessons Learned***

- The Decision-Making Framework and evaluative criteria work well for individual projects and programs. Assessments highlight the strengths and areas for improvement for each potential investment. The comprehensiveness of the form helps communicate a project or program's values across the six criteria categories.
- Assessments can vary for projects and programs at different levels of maturity, which can make comparisons challenging. The type (qualitative vs. quantitative) and level of detail presented will depend on the stage of development, for example, early-stage projects may rely more on qualitative information, while more advanced projects can be evaluated with greater specificity.
- To support more meaningful and consistent evaluations, projects should reach a sufficient level of definition before being assessed within CAMP4W. Rather than reassessing at each project phase, updates may be more appropriate when significant changes in project assumptions or new information could materially affect outcomes.
- Assessment forms and scoring approach could be simplified to improve readability and standardization. The team is working on refinements to improve the digestibility of information without compromising the quality of the assessment or oversimplifying the opportunities or challenges.
- Delineating the roles of the project lead and the assessment team in conducting the assessment is important. To ensure an objective, standardized approach, it is important to have the assessment

team of subject matter experts conduct each assessment based on information provided by project proponents.

### ***CAMP4W Portfolio Assessments: Lessons Learned***

- A combined set of projects and/or programs can be assessed using the methodology. However, the type of results and appropriate level of detail and confidence in the results will depend on factors such as:
  - The stage and/or maturity level of the project or program (e.g., in planning, design, etc.)
  - The criterion against which the set of projects and/or programs are being evaluated (reliability, resilience, financial sustainability, etc.)
  - Consistency between each project's and/or program's phases (conceptual planning vs. complete design package) included in that portfolio and how the differences are reconciled
- Given inconsistencies in project and program development stages, completed portfolio assessments were most beneficial in this first round when used to assess high-level reliability benefits and cost impact over time, demonstrating the combined project/program effectiveness in reducing shortages across various future scenarios.
- Future analyses of project pairings will benefit from exploring combinations-integration of projects that strategically align to support a more deliberate approach ~~to~~ strengthening the analysis and improving decision-making ~~support~~.

## 4 Next Steps: Low Regret Recommendations and Assessment Methodology Refinement

### 4.1 Initial Low Regret Recommendations

Metropolitan's long-term planning under CAMP4W accounts for current uncertainties, including the unresolved future of Colorado River allocations post-2026, evolving state regulatory requirements, unpredictable hydrology-driven climate variability, and fiscal constraints balancing investments with rate affordability. This makes it difficult to commit to a single preferred portfolio while maintaining strategic flexibility across multiple supply and demand scenarios. For this reason, taking a low regret approach is prudent.

Over the first year following the adoption of the CAMP4W Implementation Strategy, staff developed a set of low regret guiding recommendations. Staff's recommendations are not intended to pre-determine future portfolio or project decisions. Rather, the following recommendations are intended to guide and support ~~an~~ adaptive planning and-of project and portfolio development ~~process~~ that helps ensure Metropolitan and its member agencies are prepared as real world conditions evolve.

Key foundational low regret recommendations include the following:

- *Operational resilience through increasing capital improvement program investments and supporting robust asset management:* Although traditional R&R projects are not evaluated using the CAMP4W framework, portfolio assessments make clear that future water supply challenges

will increase if Metropolitan's baseline of service and reliability deteriorates. Maintaining existing infrastructure and facilities is foundational to maintaining long-term resilience.

- *Improving system flexibility to effectively distribute available supplies:* Developing drought mitigation solutions to achieve equitable supply reliability targets throughout Metropolitan's system remains a near-term priority to address challenges experienced in past severe droughts.

#### Low regret activity and action recommendations:

- *A mix of Planning-planning and development of new supply and storage projects:* Planning and design of projects less vulnerable to a changing climate helps prepare Metropolitan for future decision making. Initiating or continuing the planning and design of these project types now is critical to ensure these options exist as conditions change. Development of relatively low-cost projects and programs that provide benefits across a range of future scenarios.
- *Imported supply resilience:* Climate stressors and regulatory uncertainty impact the reliability of the State Water Project and the Colorado River Aqueduct. Investments in watershed protection, and nature-based solutions, and flexible imported supply strategies (e.g. rotational fallowing programs) may help retain water supply, build resilience and deliver meaningful co-benefits.
- *Enhanced flexible supply opportunities:* Tools (e.g. Local Supply Exchange Program), partnerships (e.g. water transfers) and strategic water efficiency programs that can quickly activate water savings and/or additional supplies are critical for flexibility and adaptation to extreme events and can also provide meaningful co-benefits to partners and member agencies.

At this initial stage of CAMP4W implementation, low-regret activities are more focused on evaluation and (planning/design), than on portfolio and/or project implementation, aligning This aligns with Metropolitan's adaptive management strategy, which emphasizes incremental decisions that allow for course correction over time.

To balance the risks of over- and under-investment during times of uncertainty, it remains imperative to continue advancing low regret activities and initial actions, including relatively low-cost projects that can address near-term reliability gaps and help meet Needs Assessment targets.

## 4.2 Assessment Methodology Refinement

Based on lessons learned in the assessment process presented above, Metropolitan will be making refinements to the overall process for assessing projects and programs, with a focus on developing a methodology for integrating analyses to consider potential synergies and/or tradeoffs, including how certain projects may be more effective when paired or sequenced together, between investments to enable more deliberate and informed decision-making.

This methodology will be presented to Member Agencies and the Board in the coming months and will be followed by refined assessments and documentation intended to support near-term decision-making.

### **MWDOC Questions and Considerations for CAMP4W Process**

In addition to providing specific edits to “Working Memorandum 11 – CAMP4W Assessments, Lessons Learned, and Low Regret Recommendations” (WM11), MWDOC offers the following input regarding the overall CAMP4W decision-making framework.

#### ***What are the steps that will advance CAMP4W from the evaluation of individual projects to preferred portfolio-based planning?***

WM11 discusses evaluating individual projects and initial project sequences. To guide decisions toward a preferred portfolio, the process should include project evaluation and sequencing, as well as iterative portfolio analysis to refine baseline portfolios that integrate local supply, imported system optimization, and storage.

#### ***Should the criteria for determining “low regret” project and program recommendations in CAMP4W be more clearly defined to help better focus investments?***

As currently presented in WM11, the concept of “low regret” actions appears to be focused primarily on planning and design investments for major projects. MWD should distinguish projects and programs that are truly “low regret” because they are modular, flexible, lower cost, and reversible; in comparison to low regret project activities that may reduce flexibility by requiring significant early phase investment, creating sunk costs, institutional momentum, and pressure to proceed regardless of changing conditions.

#### ***Should a process be put in place with the member agencies and the Board to determine acceptable levels of shortage risk if it is economically infeasible to achieve full reliability under the current planning scenarios?***

WM11 appropriately recognizes that complete reliability under the most extreme climate scenarios and high-growth assumptions (IRP Scenarios C and D) may not be feasible; however, the CAMP4W process offers no insight as to how the reliability target policy decision should be framed. MWD should consider engaging its member agencies on the development of explicit criteria for acceptable shortage risk and affordability tradeoffs.

#### ***Should MWD consider using project “risk weighting” as a method to evaluate portfolios with projects in different stages of development?***

WM11 notes that a lesson learned from CAMP4W portfolio assessments is that confidence in results can be impacted by inconsistency between projects’ stages of development (e.g., conceptual planning vs. complete design). To address this, in its portfolio analysis process, MWD should consider incorporating “risk weighting” of expected yield and implementation timing of projects in various stages of development to enhance the validity of portfolio modeling and analysis results.

**From:** [Crosson,Elizabeth K](#)  
**To:** [Dunbar,Steven R](#)  
**Subject:** Fw: CAMP4W Working Memorandum 11 – For Your Review and Comments  
**Date:** Wednesday, May 20, 2026 9:13:40 AM  
**Attachments:** [image002.png](#)

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Liz Crosson  
Chief Sustainability, Resilience and Innovation Officer  
Metropolitan Water District of Southern California

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**From:** Tom Love <tom@usgvmwd.org>  
**Sent:** Monday, May 18, 2026 3:56:37 PM  
**To:** Chief Sustainability, Resilience and Innovation Officer  
<SustainabilityResilienceInnovation@mwdh2o.com>; Coffey,Brad <bcoffey@mwdh2o.com>;  
Crosson,Elizabeth K <ECrosson@mwdh2o.com>  
**Cc:** Patty Cortez <patty@usgvmwd.org>  
**Subject:** RE: CAMP4W Working Memorandum 11 – For Your Review and Comments

Liz and Brad.

Thank you for the opportunity to review and comment on CAMP4W Working Memorandum 11. With the budget successfully adopted, we now have the opportunity to leverage the strong working relationships between the member agencies and the MWD team to focus on and advance the project and portfolio assessments.

To ensure our future work is effective, we must first establish clear consensus on the core needs we are trying to solve. I suggest we focus our immediate efforts on the following strategic areas:

### **1. Build Consensus on IRP Findings**

Last year's updated Integrated Water Resources Plan (IRP) data clearly demonstrated a need for both new core supplies and expanded storage. However, we have not yet had a robust discussion to align MWD and member agencies on these findings. Recent conversations suggest some agencies believe that additional storage alone will eliminate future shortages. We should facilitate a targeted discussion on the forecasted supply and storage gaps to secure regional alignment before evaluating further solutions.

### **2. Comprehensive Portfolio-Based Evaluation (Sequences)**

To date, projects have largely been evaluated in isolation rather than in the context of our comprehensive regional needs. We need to identify a combined portfolio of core supply and

storage projects that collectively eliminate or significantly reduce the probability of shortages between 2035 and 2045.

While the analysis of Sequences 1 and 2 was a strong step forward, shortages still persist under both scenarios. We should explore optimizing these sequences by moving projects between them. For example, we could test a hybrid sequence that combines core supply and storage, such as pairing the Pure Water Southern California (PWSC) project with the Delta Conveyance Project (DCP) and South-of-Delta storage.

### **3. Streamline Project Comparison**

As the memorandum notes, it is difficult to compare projects at vastly different stages of maturity. To resolve this, we should implement a high-level screening process for less developed concepts. This will serve as a practical guide to prioritize the most promising projects for deeper assessment.

### **4. Implement a Pragmatic, Signpost-Driven Climate Strategy**

A true "no-regrets" strategy should account for the fact that extreme climate models may not materialize within our current planning horizon. It is more practical to base our baseline planning on realistic, near-term climate effects while establishing clear operational "signposts." These signposts will allow us to pivot and adapt if data shows more severe impacts are becoming likely.

### **5. Elevate and Re-Evaluate In-Region Groundwater Storage**

In-region groundwater storage warrants much greater prioritization in these evaluations. Historically, some groundwater programs have underperformed when MWD called upon dry-year supplies. We need to re-evaluate these programs to establish the specific parameters and conditions required to guarantee their reliability during future droughts.

Thank you again to the entire MWD staff for their excellent work. I look forward to collaborating on these critical planning efforts.

*Tom Love*

General Manager

Upper San Gabriel Valley MWD

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