The Metropolitan Water District of Southern California



Tuesday, September 26, 2023

The mission of the Metropolitan Water District of Southern California is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

LTRPPBM Committee

M. Petersen, Chair
K. Seckel, Vice Chair
D. Alvarez
J. D. Armstrong
D. Erdman
L. Fong-Sakai
T. Quinn
N. Sutley

Subcommittee on Long-Term Regional **Planning Processes and Business** Modeling - Final

Meeting with Board of Directors *

September 26, 2023

2:30 p.m.

08:30 a.m. PWSCRC 10:30 a.m. Sp BOD 12:30 p.m. Break 01:00 p.m. EXEC 02:30 p.m. LTRPPBM Agendas, live streaming, meeting schedules, and other board materials are available here: https://mwdh2o.legistar.com/Calendar.aspx. A listen-only phone line is available at 1-877-853-5257; enter meeting ID: 891 1613 4145. Members of the public may present their comments to the Board on matters within their jurisdiction as listed on the agenda via in-person or

teleconference. To participate via teleconference 1-833-548-0276 and enter meeting ID: 815 2066 4276 or click

https://us06web.zoom.us/j/81520664276pwd=a1RTQWh6V3h3ckFhNmdsUWpK R1c2Zz09.

MWD Headquarters Building • 700 N. Alameda Street • Los Angeles, CA 90012 **Teleconference Locations:** Covina Irrigating Company • 146 E. College Street • Covina, CA 91723 3008 W. 82nd Place • Inglewood, CA 90305 Cedars Sinai Medical Center • 8700 Beverly Blvd • Los Angeles, CA 90048 525 Via La Selva • Redondo Beach, CA 90277

* The Metropolitan Water District's meeting of this Committee is noticed as a joint committee meeting with the Board of Directors for the purpose of compliance with the Brown Act. Members of the Board who are not assigned to this Committee may participate as members of the Board, whether or not a quorum of the Board is present. In order to preserve the function of the committee as advisory to the Board, members of the Board who are not assigned to this Committee will not vote on matters before this Committee.

1. Opportunity for members of the public to address the committee on matters within the committee's jurisdiction (As required by Gov. Code Section 54954.3(a))

** CONSENT CALENDAR ITEMS -- ACTION **

2. **CONSENT CALENDAR OTHER ITEMS - ACTION**

Subcommittee on Long-Term Regional Planning Processes and Business Modeling September 26, 2023 Page 2

 A. Approval of the Minutes of the Subcommittee on Long-Term Regional Planning Process and Business Modeling Meeting for August 22, 2023 (Copies have been submitted to each Director, Any additions, corrections, or omissions)

Attachments: 09262023 LTRPPBM 2A (08222023) Minutes

** END OF CONSENT CALENDAR ITEMS**

3. SUBCOMMITTEE ITEMS

a. Climate Adaptation Master Plan for Water Workshop: Assessing <u>21-2660</u> Financial Costs and Investing Regionally

Review Draft 2023 Long-Range Finance Plan Needs Assessment
 Initiate follow-up from Finance, Audit, Insurance, and Real Property Committee

Attachments: 09262023 LTRPPBM 3a - Working Memorandum 4 09262023 LTRPPBM 3a Presentation

b. General Discussion on Climate Adaptation Master Plan for Water <u>21-2702</u> Memos, Materials and Schedule

Attachments: 09262023 LTRPPBM 3b Presentation Revised

4. FOLLOW-UP ITEMS

NONE

- 5. FUTURE AGENDA ITEMS
- 6. ADJOURNMENT

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

MINUTES

SUBCOMMITTEE ON LONG-TERM REGIONAL PLANNING PROCESS AND BUSINESS MODELING

August 22, 2023

Vice Chair Seckel called the meeting to order at 9:30 a.m.

Members present: Directors Alvarez, Armstrong, Erdman, Fong-Sakai, Petersen (entered after roll call), Quinn (entered after roll call), Seckel.

Member absent: Director Sutley.

Other Board Members present: Directors Abdo, Ackerman, Bryant, Cordero, De Jesus (teleconference posted location), Dennstedt, Dick, Garza, Goldberg, Kurtz, Lefevre (teleconference posted location), McCoy, McMillan, Morris, Ortega, Peterson (teleconference posted location), Pressman (Cedars Sinai Medical Center staff teleconferenced from posted location), Ramos, and Smith.

Committee Staff present: Crosson, Hagekhalil, Kasaine, Quilizapa, Ros, and Upadhyay.

1. OPPORTUNITY FOR MEMBERS OF THE PUBLIC TO ADDRESS THE COMMITTEE ON MATTERS WITHIN THE COMMITTEE'S JURISDICTION

None

CONSENT CALENDAR ITEMS -- ACTION

2. CONSENT CALENDAR OTHER ITEMS - ACTION

A. Approval of the Minutes of the Subcommittee on Long-Term Regional Planning Processes and Business Modeling for April 25, 2023 (Copies have been submitted to each Director, Any additions, corrections, or omissions)

Director Erdman made a motion, seconded by Director Fong-Sakai, to approve the consent calendar consisting of item 2A.

The vote was:

Ayes: Directors Armstrong, Erdman, Fong-Sakai, and Seckel.

Noes: None

Subcommittee on Long-Term Regional -2-Planning Process and Business Modeling

Abstentions: None

Absent: Directors Alvarez, Petersen, Quinn, and Sutley.

The motion for Item 2a failed due to lack of quorum by a vote of 4 ayes, 0 noes, 0 abstain, and 4 absent.

END OF CONSENT CALENDAR ITEMS

Chair Petersen entered the meeting.

Director Quinn entered the meeting.

3. SUBCOMMITTEE ITEMS

a.	Subject:	Climate Adaptation Utility Panel
		Moderator: Kit Batten, Climate Change and Sustainability Innovator, Kit Batten Consulting
		Panelists: - Nathan Bengtsson, Interim Director of Climate Resilience and Adaptation at Pacific Gas & Electric Company - Nolie Templeton, Planning Analyst II at Central Arizona Project - Stephen Torres, Principal Manager at Southern California Edison
	Presenter:	Elizabeth Crosson, Chief Sustainability, Resiliency, and Innovation Officer Kit Batten, Climate Change and Sustainability Innovator, Kit Batten Consulting

Ms. Crosson introduced the item and introduced Ms. Batten, who moderated today's panel discussion. Ms. Batten introduced the panelists: Nathan Bengtsson, Interim Director of Climate Resilience and Adaptation at Pacific Gas & Electric Company; Nolie Templeton, Planning Analyst II at Central Arizona Project, and Stephen Torres, Principal Manager at Southern California Edison.

Ms. Batten asked the panel the following questions: 1. give us a bit more background on your work at your organization beyond your title and briefly share with us the arc of your utility's climate adaptation planning and implementation process to date, for example: a. when did you begin, b. what are your future steps and can you share an example of how your planning and implementation processes have changed as a result of analyzing climate change impacts on your system. c. What are the deliverables and potential outcomes of your process? 2. How do you connect technical/scientific information to your climate adaptation planning tools? a. Which climate scenario(s) is/are your utility using for planning purposes (e.g., RCP 4.5, 8.5) and why? 3. Have you developed evaluative criteria for prioritizing projects and/or portfolios to increase the climate resilience of your infrastructure, operations, employees and/or customers? 4. Affordability is always a top priority – how are you paying for/justifying

additional costs for climate resilience work, from both economic feasibility (afford the technology/infrastructure) and customer affordability perspectives? a. Has your climate adaptation work shifted budget priorities? b. How do you incorporate the costs of inaction into your financial planning? c. Please share your approaches to spreading costs/recovering costs of adaptation measures through raising rates and other approaches

Ms. Crosson provided an overview of the key points from the panel discussion.

The following Directors asked questions and provided comments:

- 1. Petersen
- 2. Morris
- 3. Erdman
- 4. Seckel
- 5. Armstrong
- 6. Fong-Sakai
- 7. Quinn
- 8. Peterson
- 9. Smith
- 10. Ortega
- 11. Goldberg

Staff responded to Directors' comments and questions.

Chair Petersen called for a revote of item 2A.

Director Seckel made a motion, seconded by Director Quinn, to approve the consent calendar consisting of item 2A.

The vote was:

Ayes:	Directors Alvarez, Armstrong, Erdman, Fong-Sakai, Petersen, Quinn, and Seckel.
Noes:	None
Abstentions:	None
Absent:	Directors Sutley.

The motion passed by a vote of 7 ayes, 0 noes, 0 abstain, and 1 absent.

b. Subject: Climate Adaptation Master Plan for Water: Discussion
 Presenter: Elizabeth Crosson, Chief Sustainability, Resiliency, and Innovation Officer

Ms. Crosson provided an overview of the Climate Adaptation Master Plan for Water process.

Chair Petersen directed staff to use Representative Concentration Pathway (RCP) 8.5 as the climate forecast for planning in the Climate Adaptation Master Plan for Water process.

Mr. Hagekhalil acknowledged the direction and confirmed RCP 8.5 will be included in the workplan moving forward.

The following Directors asked questions and provided comments:

- 1. Ortega
- 2. Seckel
- 3. Goldberg
- 4. Smith
- 5. Fong-Sakai
- 6. Petersen
- 7. Armstrong

Staff responded to Directors' comments and questions.

4. FOLLOW-UP ITEMS

None

5. FUTURE AGENDA ITEMS None

Meeting adjourned at 11:49 a.m.

ADJOURNMENT

Matt Petersen

Chair

6.

Climate Adaptation Master Plan for Water (CAMP4W)

WORKING MEMORANDUM #4

IRP 2020 INITIAL FINANCIAL PLAN AND BUSINESS MODEL DISCUSSION

September 2023

Section 1 Overview

In 2022 Metropolitan's Board adopted the 2020 Integrated Water Resources Plan (IRP), which assessed regional water reliability needs through 2045 and incorporated scenario planning to address wide-ranging uncertainties. The IRP was organized into a Regional Needs Assessment (Phase 1) and an implementation phase (Phase 2). Phase 2 is coordinated through the Climate Adaptation Master Plan for Water (CAMP4W) process currently underway.

The CAMP4W process serves to better integrate the resource planning of the IRP with financial planning toward the aims of reliability, resiliency, financial sustainability, affordability, and equity. This planning also integrates the need to respond to challenges presented by climate change. On September 12, 2023, the Board approved the use of climate information and modeling under Representative Concentration Pathway (RCP) 8.5 as a basis for planning purposes in CAMP4W. This action further recognizes the need to adaptively plan towards generally accepted outcomes of a more severe climate change future.

The CAMP4W process is adhering to a streamlined schedule to facilitate the development of a completed CAMP4W Part 1 Report by the first quarter of 2024. To this end, Working Memoranda are being developed to coincide with key topics being discussed with and presented to the Board and Member Agencies. These Working Memoranda will ultimately be compiled to form key chapters of the CAMP4W Part 1 Report. Gathering valuable input from the Board and Member Agencies on these memoranda at set intervals along the way is allowing Metropolitan to maintain the streamlined schedule.

Due to this process, two separate topics have been combined into Working Memorandum 4. One summarizes the Long-Range Financial Plan Needs Assessment (LRFP-NA), which has undergone a lengthy development process that began in 2022. The second portion of Working Memorandum 4 discusses updated business model alternatives. Unlike the LRFP-NA, the business model discussion is in the early conceptual stage. While these two components are on different timelines and are at different levels of development, they are combined herein to facilitate progress and consolidate deliverables to the Board and Member Agencies. It is important to consider this distinction as the document is reviewed.

This Working Memorandum focuses on financial planning and business model discussions, including:

Long-Range Financial Plan (LRFP): To address the reliability gaps identified in the IRP Needs Assessment, Metropolitan has begun the multi-phased, multi-year Long-Range Financial Plan (LRFP) development process. The initial LRFP Needs Assessment (LRFP-NA) (Phase 1) currently underway builds upon the IRP Needs Assessment and is consistent with the goals and objectives of the CAMP4W process pertaining to resiliency, reliability, financial sustainability, affordability, and equity.

Phase 2 of the LRFP will integrate specific capital projects and outline funding and financing strategies based on Board input on policy goals and objectives and the outputs from the CAMP4W planning process. Phase 2 will be developed as the CAMP4W process progresses past the development of the decision-making framework and into the identification of specific proposed capital projects needed to fill the water supply gap as well as infrastructure projects to address vulnerabilities associated with climate change and other hazards and the refurbishment and replacement of Metropolitan's existing facilities and conveyance system. The refinement of the LFRP will be done through an iterative process, where the CAMP4W outcomes are revised based on findings from the LRFP, and the LRFP is adjusted based on the CAMP4W recommendations until a balanced outcome is achieved.

Business Model: The CAMP4W process will also facilitate discussions about Metropolitan's Business Model, which presents an opportunity to deploy shared resources in order to remain *stronger together*. The Business Model considerations include Metropolitan's expanding role within the region and potential revenue alternatives.

The following sections of this Working Memorandum provide an overview of the LRFP-NA (Section 2) and an introduction of possible components of the Business Model that will be further developed in the coming months (Section 3).

Section 2 Long Range Financial Plan Needs Assessment Summary

2.1 Background

Understanding the financial impacts associated with bridging the supply gap identified in the IRP Needs Assessment will facilitate the iterative and adaptive methodology that is the cornerstone of the CAMP4W process. The LRFP-NA is designed as a Phase 1 document that provides high-level guidance on the rate impacts and funding opportunities Metropolitan will need to consider to be resilient and reliable in the future. Phase 2 will see an updated LRFP based on CAMP4W findings, which will include specific projects and additional project types to be pursued. Identifying these specific components may impact the categories of projects needed (supply, storage, conveyance, increased system flexibility, etc.), with the goal of identifying the most cost-effective decisions to meet the region's needs and risk tolerance. Phase 2 of the LRFP will therefore present a refined total cost and associated rate and tax implication analysis.

The LRFP-NA is designed to:

- Provide high-level financial analysis of rate and tax impacts under various resource development scenarios presented in the IRP Needs Assessment and summarized in Figure 1 (see also CAMP4W Working Memorandum 3 for a detailed discussion on the IRP Needs Assessment).
- Discuss the primary capital financing and funding methods Metropolitan has at its disposal.
- Introduce potential financial tools that could become components of a tailored financial strategy.
- Catalogue Metropolitan's key policies related to the capital markets.



Figure 1. IRP Needs Assessment Planning Scenarios A, B, C and D

The LRFP-NA considers the four planning scenarios

identified in the IRP Needs Assessment, which summarized the core supply, flexible supply, and storage needed under each scenario. Only Scenario A avoids shortages without additional water supply and system reliability investments. The remaining scenarios identified potential gaps in core supply and storage for each scenario (acre-feet (AF) needed for each year from 2025 to 2045). It defined high-level actions needed to achieve reliability in each scenario.

The baseline financial forecast was created by taking the 2022/23 and 2023/24 Adopted Budget and 10-Year Financial Forecast and removing the assumed Pure Water Southern California project costs. The baseline, therefore, does not include significant additional resource development but does include ongoing funding for conservation, local resource projects, capital refurbishment and replacement, and various operating assumptions pertaining to cost inflation rates, interest rates, and power and treatment unit costs. Per the 10-Year Financial Forecast, \$300 million of annual capital improvement plan (CIP) funding is included in the base cost assumptions for all LRFP-NA scenarios, escalating at 3% annually over the forecast period. The CIP funding largely reflects the deferral of facility expansion projects and focuses instead on necessary refurbishment and replacement of aging infrastructure and compliance with regulatory requirements. The resource development costs presented in the LRFP-NA analysis are in addition to the baseline CIP funding from the 10-Year Financial Forecast. Additionally, the baseline cost includes \$30.5 million of annual funding for residential, commercial, and outdoor conservation programs, and conservation messaging. The conservation development scenario included in the LRFP-NA and presented in subsequent sections of this Working Memorandum would add funding in addition to the baseline amount of \$30.5 million. Financial plans typically do not project beyond a 10-year period. The LRFP-NA forecasts the average annual rate increases needed to meet the resource development requirements of each scenario over a 10-year period, through 2032, which would include projects to be completed by 2035. Scenario D (Figure 1) requires the most significant resource development to reliably meet projected Member Agency demands 100 percent of the time. This scenario shows that core supply would need to increase by as much as 300 thousand acre-feet (TAF) by 2032 beyond Metropolitan's existing resource portfolio of supplies.

2.2 Key Considerations

The LRFP-NA developed key questions that framed the outline of the document and helped guide the analysis. These questions include:

- What are the rate impacts and how much does it cost to provide 100 percent reliability (i.e., meet Member Agency water resource demands fully) under a heavily stressed climate and demand scenario, while considering Member Agencies' potential changes in demands and local conditions?
- Can Metropolitan address the core supply needs in Scenario D solely through conservation?
- What bond financing options are available and what is Metropolitan's debt capacity to finance the projected capital investments?
- How much outside funding from federal and/or state grants should Metropolitan target?
- What other financing tools or structures can Metropolitan explore to address Scenario D capital investments while balancing the varying needs of its member agencies?

2.3 Rate Impacts for Various Scenarios

To establish a comparative cost metric, the average annual rate¹ increase needed to meet the resource development requirements of each Scenario were developed. Cost assumptions were developed based on estimated unit cost per acre-foot of either core supply or storage. Unit rates were developed as follows (see **Figure 2** for definitions):

- Core supply unit cost: \$3,000/AF (2023\$). The sources used to develop the unit cost for core supply are based on three Southern California desalination and recycling projects. These unit costs are representative of a new core supply that is developed in-region, which operates continuously, and reflects the higher marginal price associated with investing in new conveyance and advanced treatment facilities.
- Storage unit cost: \$300/AF of storage capacity (2023\$). The sources used to develop the unit cost for storage are based on Metropolitan's cost for construction of Diamond Valley Lake and preliminary results of an in-region storage study. The storage unit cost is based on built capacity, not a calculation of anticipated yield. As such, \$300/AF can be interpreted as the annual financing and O&M cost per acre foot of built capacity of new storage.

The IRP Needs Assessment identified three categories of supply:

Core Supply: A supply that is generally available and used every year to meet demands under normal conditions and may include savings from efficiency gains through structural conservation.

Flexible Supply: A supply that is implemented on an as-needed basis and may or may not be available for use each year and may include savings from focused, deliberate efforts to change water use behavior.

Storage: The capability to save water supply to meet demands at a later time. Converts core supply into flexible supply and evens out variability in supply and demand.

Figure 2. Definitions of Core Supply, Flexible Supply and Storage

¹ Average Annual Rate refers to the aggregate rate for full-service treated water.

• Flex supply unit cost: \$600/AF. The sources used to develop the unit cost for flex supply are Metropolitan's current supply programs and recent transfer transactions. Minimal quantities of flex supplies are required on average for each of the IRP scenarios. As such flex supplies do not significantly impact the modeling results.

Figure 3 and **Figure 4** present the net shortages identified in the IRP Needs Assessment, through 2032, based on the projected demands from the IRP Needs Assessment (**Figure 5**). The LRFP-NA modeled multiple scenarios, summarized in **Figure 6**. The LRFP-NA identified multiple findings, including the following:

- Estimated rate increases assuming only core supply for each IRP Needs Assessment Scenario A through D (Figure 7).
- Estimated rate increases for Scenario D assuming both core supply and storage is developed (sensitivity of shortage) (Figure 8).
- Estimated Capital Investment for IRP D Scenario assuming 200 TAF of core supply is developed and 250 TAF of storage (Figure 9).
- Summary of estimated overall annual rate increases from 2025-2032 (Figure 10).
- Sensitivity analysis assuming low demands are experienced when Scenario D is built (Figure 11).



Figure 3. Project Net Shortages Under Different Supply and Demand Conditions through 2032

$\operatorname{Core}\operatorname{Supply}\operatorname{Needs}\operatorname{in}2032$					
	No Storage	250 TAF Storage (182 TAF storage in 2032)	500 TAF Storage (364 TAF storage in 2032)		
IRP A	0 TAF	0 TAF	0 TAF		
IRP B	50 TAF	30 TAF	30 TAF		
IRP C	15 TAF	15 TAF	l5 TAF		
IRP D	300 TAF	200 TAF	200 TAF		

Figure 4. Core Supply Needs in 2023



Figure 5. Projected Water Demands for IRP Scenarios

#	Scenario Short Descriptions	IRP Scenario	Import Reliability	Demands	2035 Core Supply Target (AF)	2045 Storage Target (AF)	2032 Storage Target (AF)
1	IRP A, No Storage	А	High	Low (1.24 MAF ¹¹)	N/A	N/A	N/A
2	IRP B, No Storage	В	High	High (1.46 MAF)	50,000	-	-
3	IRP C, No Storage	С	Low	Low (1.35 MAF)	15,000	.5.	-
4	IRP D, No Storage	D	Low	High (1.66 MAF)	300,000	-	÷
5	IRP D, 250 TAF Storage	D	Low	High (1.66 MAF)	200,000	250,000	181,818
6	IRP D, 500 TAF Storage	D	Low	High (1.66 MAF)	200,000	500,000	363,636
7	IRP D w/ IRP A Demand	D	Low	Low (1.24 MAF)	200,000	250,000	181,818

Note: Footnote 11 in the LRFP-NA states: MAF=Million acre feet

Figure 6. Comparison of Modeled Scenarios (Figure 13 in LRFP-NA)

To achieve 100 percent reliability in 2032 under Scenario D projections, developing a combination of core supply and storage provides the lowest rate increase for that scenario. As summarized in **Figure 10**, at 7.1 percent, this increase is higher than the lowest value of 5.6 percent, but lower than the highest value of 8.4 percent. This configuration was used to calculate a scale of estimated capital investment using the unit rates presented above to estimate capital and O&M costs. Taking the derived capital financing unit rate and multiplying by a resource development target results in an annual financing cost, which was then worked into an estimated total project cost.

To be 100 percent reliable by 2032 under the IRP D scenario with the lowest average annual rate increases (7.1 percent), Metropolitan's preliminary estimate is that \$5.5 billion to \$6.0 billion of capital investment (in 2023 dollars) could be needed to achieve that objective (**Figure 9**). However, this should be considered a **high-level estimate, as numerous factors can affect the overall cost of a project**. Additional distribution infrastructure, economies of scale, inflation, environmental and regulatory compliance, and treatment technology will impact the ultimate cost of a project.

IRP Scenario	IRP A	IRP B	IRP C	IRP D
Core Supply Development	0 TAF	50 TAF	15 TAF	300 TAF
Average Annual Rate Increase through 2032	6.2%	5.6%	5.6%	8.4%

Figure 7. Estimated Rate Increase Under IRP Scenarios for Core Supply Only (Figure 1 in LRFP-NA)

IRP D	300 TAF Core Supply	200 TAF Core Supply	200 TAF Core Supply	
	0 TAF Storage	250 TAF by 2035	500 TAF by 2035	
Average Annual Rate Increase through 2032	8.4%	7.1%	7.4%	

Figure 8. IRP Scenario D Annual Rate Increase Sensitivity of Shortage (Figure 2 in LRFP-NA)

Resource D	Estimated Capital Investment			
Core Supply (TAF)	Core Supply (TAF) Storage Capacity (TAF)			
200	250 ⁴	\$5.5 - \$6.0		

Note: Footnote 4 LRFP-NA): Refer to Figure 10 for supply and storage development requirements by year.

Figure 9. Estimated Capital Investment for IRP D Scenario (Figure 3 in LRFP-NA)



*Increases in different rate elements may vary as a result of the Cost of Service allocation and cost recovery approach for each project. Impacts on a member agency will depend on how and when they take water. For example, the more a project is allocated to supply then the full-service water rate will increase higher than the price for SDCWA exchange agreement deliveries.





*Member agency rate impacts might be substantially higher than the overall rate increase as a result of the Cost of Service allocation and cost recovery approach taken for each project. For example, if a project only impacts the supply function, then the rate increase for full-service water would increase more and the price increase on the SDCWA exchange deliveries would be less.

Figure 11. Sensitivity Analysis – Low Demands for IRP D Scenario – Average Annual Overall Rate Increases (2025-2032) (Figure 2 in LRFP-NA)

2.4 Managing Risk with Development and Conservation Assumptions

As development decisions are made, inherent risks and tradeoffs must be considered. On one hand, if Metropolitan develops resources to meet Scenario D projections, and invests in capital projects equivalent to 200 TAF of core supply and 250 TAF of storage, but future demands are significantly lower, such as projected under Scenario A, Metropolitan would need to raise rates an additional 3.8 percentage points (from 7.1 percent up to 10.9 percent) due to the reduced revenues that would be seen under the current Business Model. On the other hand, if Metropolitan were to develop limited supply by only assuming Scenario A projections, but Scenario D conditions were to occur instead, by 2032 the region could see shortages of up to 300 TAF from 10 to 23 percent of the time. Establishing what risk tolerance the Board is willing to face will be an ongoing decision point as the adaptive process continues into the future.

Another factor to consider is the impact of focusing more heavily on conservation as a potential path towards achieving a balanced water portfolio by reducing demands, rather than developing new core supplies. While conservation programs do have the potential to be significantly beneficial, there is insufficient data on the availability and price of the marginal effectiveness of expanding conservation programs. Further study is needed to identify the available capacity and price elasticity of conservation. Conservation programs require front-loaded expenditures for future water savings realized over the lifetime of the investment. Based on the approach analyzed in the LRFP-NA, implementing a robust conservation program able to reduce demands by 300 TAF by 2032 would require expenditures of more than \$1.1 billion per year. While conservation can be an effective tool to manage demand, it should be evaluated as a part of a multi-pronged approach to solving projected gaps between available supplies and Member Agency demands. Other conservation options will be further considered through the CAMP4W process as conservation provides multiple benefits such as a reduced risk of stranded assets.

2.5 Initial Considerations for Metropolitan's Ability to Fund the Program

Historically, Metropolitan has developed its capital infrastructure predominantly through its own revenues and financing tools. Metropolitan has maintained a highly rated and successful bond program over its history to meet its capital financing needs.

Given the significant investment required to address the impacts of climate change on top of the existing requirements to maintain Metropolitan's existing system infrastructure, Metropolitan may explore additional options. The following discussion addresses Metropolitan's bond program debt capacity and opportunities for funding from federal and state grant and loan programs. A summary of the funding options discussed further in the LRFP-NA is included in **Figure 12**.

2.5.1 Metropolitan's Bond Program Debt Capacity

To maintain its highly rated bond program, Metropolitan has:

- Adopted prudent debt policies and comprehensive financial best practices.
- Issued a variety of debt instruments to lower its cost of capital.
- Balanced the prioritization of key financial metrics consistently in each biennial budget.
- Managed its relationship proactively with the rating agencies and bond investors.

Types of Financing Tools Available to Metropolitan: Federal/State Loans (WIFIA, SRF, CA IEDB) or debt issued • through other entities General Obligation Bonds • Revenue sources such as rates, fixed charges (Readiness-• **Revenue Bonds** • to-Serve charge and Capacity Charge), property taxes, **Certificates of Participation** • and lease or other contractual Payments and Long-Term Tax-Exempt Bonds • Appropriations Short-Term Notes and Certificates • **Floating Rate Notes** Taxable/Tax-Credit Bonds • • Variable Rate Demand Bonds (VRDBs) Fixed Rate Loans • **Commercial Paper** Variable Rates Loans Bank Line of Credit Subsidized Loans • Other options such as: Tax credit bond (TCB) Financing, Federal/State Grants (such as Bureau of Reclamation, •

- FEMA, or State Department of Water Resources grant options)
- Federal/State Legislative Budget Appropriations •
- New Property Tax Secured Bonds, Tax rate increases

Refer to Section 9 of the LRFP-NA for additional information.

Figure 12. Funding Options

It is estimated that Metropolitan has a range of revenue bond debt capacity between \$3.6 billion and \$5.1 billion (assuming debt service target does not fall below 1.50x and other requirements are met).

This analysis indicates that based on previously discussed assumptions, there is *barely sufficient revenue* bond debt capacity to accommodate this new projected capital financing need. In addition, costs may be higher than the preliminarily estimated \$5.5 billion to \$6.0 billion in capital needs because of the following:

- While \$300 million annual costs for CIP projects (mostly refurbishment and replacement of • Metropolitan's existing facilities and conveyance system) are assumed in the rate impact analysis, funding of costs associated with increased refurbishment and replacement need to be considered carefully in the context of debt capacity.
- Projected costs for supply and storage projects are preliminary in nature, based on unit costs, which could be higher when specific projects are identified.
- There may be risk associated with assumptions related to Member Agency demands, if water • sales do not occur as projected. This would negatively impact net operating revenues and potentially debt service coverage.
- Impacts beyond 2032 have not been established to address the 2045 projections presented in the • IRP Needs Assessment, which include significantly more core supply and storage.

Based on these findings, although Metropolitan may be able to finance these capital needs by maximizing its revenue bond capacity, this may not be the only or most advisable approach.

2.5.2 Exploring Federal and State Funding Opportunities

Metropolitan's new Centralized Grants Management team in the Sustainability, Resilience and Innovation (SRI) office will provide a coordinated approach to analyzing, helping secure and complying with grant funding requirements.

Government grants and other legislative support could include:

- Existing federal legislation to address climate change impacts on various capital infrastructure including water-related projects.
- State priorities focused on climate change impacts.
- Water Infrastructure Finance and Innovation Act (WIFIA) loan managed by the U.S. Environmental Protection Agency (EPA).
 - WIFIA can provide loan funding up to 49 percent of Eligible Project Costs at competitively low rates, currently around 4 percent.
 - Potential for Master Loan Agreement with EPA to fund qualifying expenditures for a combination of eligible projects, in addition to funding for specific projects.
 - Would have the potential to provide approximately \$3 billion in loan authorization, depending upon the project(s) submitted and qualifying eligibility (based on the maximum estimate of capital infrastructure needs in IRP D scenario of \$6.0 billion).
- New approaches and/or opportunities to advocate for new tools that could enable Metropolitan to save on the cost of its infrastructure investments.
- Actions that mandate increased water efficiency can reduce Metropolitan costs for incentivebased conservation.

2.6 Metropolitan's Board Direction

Based on the results of the LRFP-NA, Metropolitan staff seek Board feedback on three important questions critical to the undertaking of Phase 2:

- What is an acceptable average annual rate increase on full-service water sales through 2032 to fund water portfolio projects and/or conservation to address expected impacts of climate change as analyzed within the 2020 IRP Needs Assessment?
- What is the desired estimated allocation between core supplies (which includes conservation), flex supplies, and storage in the optimal portfolio mix developed within the acceptable average annual rate increases identified by the Board?
- What alternative financing approaches interest the Board either singularly or in combination to address funding of future capital investments?

The findings of the LRFP-NA financial analysis are dependent on the assumed unit costs for each resource. Although Metropolitan exercised care in selecting appropriate references on which to base the

unit costs, it is anticipated that when Phase 2 of the LRFP concludes, there will be differences between project-specific unit costs and those modeled here in LRFP-NA. During the second phase of the LRFP, staff will provide a refined financial forecast that considers the Board's approved resource development portfolio that emerges from the CAMP4W process.

In addition, the Board will be evaluating Business Model alternatives, which are discussed in **Section 3**. Since each part of the CAMP4W process is interconnected, the iterative and adaptive approach employed by Metropolitan throughout this process will allow for informed decision and refinement. While the Business Model discussion is preliminary, it is important to consider its potential impact on the LRFP and vice versa.

Section 3 Business Model Considerations

While the exact nature of the hazards a utility faces can vary based on geographic location across the United States, one fact that remains constant is that climate change is having a profound impact on water utilities nationwide. Utilities in the water industry are having to reevaluate their strategies for managing available water supplies, often establishing multiple approaches to adapt as conditions evolve over time.

The Board requested during a recent CAMP4W workshop that additional discussion on the Business Model occur early in the CAMP4W process. Therefore, the CAMP4W process will discuss Metropolitan's current Business Model and facilitate discussions and establish recommendations pertaining to updates to the Business Model.

Framework: The CAMP4W process will consider Metropolitan's evolving function within the region and seek to establish how Metropolitan can best serve the region in facilitating reliability and resiliency in the face of a changing climate, while maintaining financial sustainability.

This section provides a discussion of the following components of the Business Model alternatives:

- Metropolitan's core business and potential for an expanded function within the region
- Alternative revenue structures
- Integration of Business Model development into the CAMP4W process

The Board's February 2023 CAMP4W retreat included discussion on the need to consider possible updates to the business model to build resilience, something that has been raised in past evaluations as well. The CAMP4W process will facilitate progressing discussions related to these topics and options that could strengthen Metropolitan's capacity to invest in necessary resource projects and programs.

3.1 Metropolitan's Historical Role as Importer and Potential Evolving Role to Meet the Needs within the Region

Metropolitan's core business is structured around the sale of treated and untreated water through the importation of water. To conduct this core business, Metropolitan must develop and maintain a network of supportive facilities, which includes conveyance facilities, storage facilities, treatment facilities, and other infrastructure. Metropolitan must also undertake additional efforts such as regional planning, design, water quality monitoring, maintenance, permitting, and other tasks associated with providing a reliable supply of treated and untreated water. All these functions have centered around importing water to ensure delivery of wholesale water service.

The Board and Member Agencies have expressed an interest in potentially revising Metropolitan's functions in the region due to an increasing focus on developing local supply options to address the reduced reliability of imported supplies. Considering the need for Metropolitan to continue to serve Member Agencies, an updated Business Model presents an opportunity to deploy shared resources in order to remain *stronger together*.

Metropolitan will be exploring multiple components that could be included in the updated Business Model. These options may include but are not limited to:

• Metropolitan developing its own local supplies.

- Metropolitan facilitating financial or other mechanisms to enable the sharing of water resources between Member Agencies (e.g., Metropolitan developing and owning infrastructure that transfers supplies from one or more Member Agencies to storage owned by another Member Agency, or for direct use by other Member Agencies).
- Metropolitan expanding local capacity and regional benefits through co-investing in local resource development.
- Metropolitan providing support to Member Agencies to develop affordability strategies for their customers across the region, including but not limited to technical or policy guidance, advocacy for state action or funding, and fiscal capacity to facilitate external grants or other funding.

The CAMP4W process can enable discussion and creativity about how Metropolitan can best support the region's future through engagement of the Board and Member Agencies in a collaborative and transparent manner. Section 3.3 provides a discussion on how this process corresponds to the other CAMP4W efforts.

3.2 Alternative Revenue Structures

Across the nation utilities are faced with the challenge of evaluating their ability to maintain financial sustainability in the face of an uncertain climate, increased operational and capital costs, aging infrastructure, and expectations of greater equity, such as the need to invest disproportionally in areas that historically have experienced under investment. Metropolitan also faces similar challenges, but at a wholesale level. As a voluntary cooperative without consistent purchase commitments, Metropolitan may also see reduced water demands due to conservation and/or increased local supply that can impact rates, as discussed in Section 2. These challenges could support a revision to Metropolitan's existing revenue structure or the consideration of new revenue structures to support Metropolitan's continued agility and financial sustainability.

At the October Finance, Audit, Insurance and Real Property Committee, staff will bring forward an analysis of alternative cost recovery options for Pure Water Southern California. This discussion of Pure Water cost recovery options may serve as a foundation for future Board discussion on Metropolitan's Business Model. In addition to the cost recovery options for Pure Water Southern California, other cost recovery alternatives may merit further consideration for revisions to Metropolitan's revenue structure while continuing to ensure fairness across the Member Agencies. These may include, but not be limited to:

- Volumetric model
- Volumetric model with demand commitments
- Tax-based revenue model
- Non-volumetric
- Creating different services with different rates
- Increased fees for new annexations

A key component in the CAMP4W process involves open collaboration with the Board and Member Agencies. Exploring all potential options so that the Board and Member Agencies have the opportunity to consider the pros and cons of each will be critical as Metropolitan makes decisions about future investments. In addition to the financial analysis of each option, other benefits may be weighed, such as an alternative's ability to elicit collaboration and shared goals among Member Agencies and objectives of fairness and equity.

3.3 Integration of Business Model Development into the CAMP4W Process

As is the case with the CAMP4W process in general, the development of a Business Model for Metropolitan that will serve the region in the future is best done through an iterative process. Decisions on the Business Model structure will evolve as the process considers: 1) Member Agency interests in increasing collaboration and maximizing local resources, 2) the establishment of a decision-making framework to allow the selection of specific projects to fill gaps and increase reliability and resiliency, 3) updates to the LRFP based on selected projects, and 4) the establishment of how equity and affordability pertain to Metropolitan as an agency. Since these aspects all inform one another, establishing a framework that is adaptable, flexible, and iterative will allow Metropolitan to establish the most beneficial Business Model heading into the future.

Figure 13 presents the major touch points where the updated Business Model, as well as the LRFP, will be drafted through the CAMP4W process. Beyond these high-level input points, Metropolitan will be discussing the components that go into the Business Model with the Board and Member Agencies throughout the process. This will allow Metropolitan to adjust based on preferences, findings, and opportunities discovered along the way. As a two-directional process, some Business Model decisions will impact other CAMP4W components at the same time as those components will impact the Business Model decisions.

Some key questions that will be presented through the process include the following:

- To what extent should individual Member Agencies' potential for developing local resources be considered in the context of greater regional needs, such that Metropolitan could facilitate that regional benefit?
- How much should Metropolitan be developing its own local resources, such that it evolves from a service dependent upon imported supplies to one with more supply resource diversity?
- What cost recovery alternatives should Metropolitan incorporate?
- What options does Metropolitan have in terms of facilitating affordability programs for retail customers of Metropolitan's Member Agencies, including practical, legal and ethical considerations?

As the CAMP4W process unfolds, Metropolitan will engage in many discussions with the Board and Member Agencies as Metropolitan strives to establish the best path forward for continued long-term sustainability. Metropolitan may also look to engage with other agencies across the nation to gain insight into what options are being implemented and to gain perspective on lessons learned regarding what does and does not achieve the intended goals.

CAMP4W Program Elements



Figure 13. CAMP4W Program Elements



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Review Draft 2023 Long-Range Finance Plan Needs Assessment

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Integrated Planning Processes



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Modeling Overview LRFP Needs Assessment

Modeling Period



- Starts with the adopted rates for calendar year 2023 and 2024 and project overall annual rate increases to 2032
- Public agencies and water utilities commonly use 5 or 10-year financial forecasts. Beyond a 10-year horizon, forecasts become highly uncertain
- The intent of the LRFP Needs Assessment is to estimate average annual overall rate increases over the 10-year forecast period and provide an indication of the trajectory of rates in the longer-term
- The model assumes that costs are recovered <u>exactly</u> as anticipated, allowing the model to focus on the impacts of resource development costs without introducing additional variation from reserves, debt coverage considerations, and other items that will be incorporated into the final LRFP



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2020 IRP Needs Assessment Scenarios

Scenario Descriptions

Scenario A – Low Demand/Stable Imports: Gradual climate change impacts, low regulatory impacts, and slow economic growth.

Scenario B – High Demand/Stable Imports:

Gradual climate change impacts, low regulatory impacts, high economic growth.

Scenario C – Low Demand/Reduced Imports:

Severe climate change impacts, high regulatory impacts, slow economic growth.

Scenario D – High Demand/Reduced Imports:

Severe climate change impacts, high regulatory impacts, and high economic growth.

Summary Matrix of IRP Scenario Results*



*Max Magnitude of Supply Gap (TAF) and Frequency (%) of a Net Shortage in 2045

2020 IRP Needs Assessment Scenarios



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Projected Water Demands



Resource Portfolios Example IRP Scenario D



	Additional storage: 0 AF		Additional storage: 250 TAF		Additional storage: 500 TAF	
	Storage	Core Supply	Storage	Core Supply	Storage	Core Supply
2025	0 TAF	100 TAF	23 TAF	100 TAF	45 TAF	100 TAF
2026	0 TAF	150 TAF	45 TAF	150 TAF	91 TAF	150 TAF
2027	0 TAF	150 TAF	68 TAF	150 TAF	136 TAF	150 TAF
2028	0 TAF	150 TAF	91 TAF	150 TAF	182 TAF	150 TAF
2029	0 TAF	150 TAF	114 TAF	150 TAF	227 TAF	150 TAF
2030	0 TAF	150 TAF	136 TAF	150 TAF	273 TAF	150 TAF
2031	0 TAF	300 TAF	159 TAF	200 TAF	318 TAF	200 TAF
2032	0 TAF	300 TAF	182 TAF	200 TAF	364 TAF	200 TAF
2033	0 TAF	300 TAF	205 TAF	200 TAF	409 TAF	200 TAF
2034	0 TAF	300 TAF	227 TAF	200 TAF	455 TAF	200 TAF
2035	0 TAF	300 TAF	250 TAF	200 TAF	500 TAF	200 TAF
2036	0 TAF	450 TAF	250 TAF	400 TAF	500 TAF	400 TAF
2037	0 TAF	450 TAF	250 TAF	400 TAF	500 TAF	400 TAF
2038	0 TAF	450 TAF	250 TAF	400 TAF	500 TAF	400 TAF
2039	0 TAF	450 TAF	250 TAF	400 TAF	500 TAF	400 TAF
2040	0 TAF	450 TAF	250 TAF	400 TAF	500 TAF	400 TAF
2041	0 TAF	650 TAF	250 TAF	550 TAF	500 TAF	500 TAF
2042	0 TAF	650 TAF	250 TAF	550 TAF	500 TAF	500 TAF
2043	0 TAF	650 TAF	250 TAF	550 TAF	500 TAF	500 TAF
2044	0 TAF	650 TAF	250 TAF	550 TAF	500 TAF	500 TAF
2045	0 TAF	650 TAF	250 TAF	550 TAF	500 TAF	500 TAF

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Resource Portfolios Summary IRP Scenarios



Core Supply Needs in 2032					
	No Storage	250 TAF Storage (182 TAF storage in 2032)	500 TAF Storage (364 TAF storage in 2032)		
IRP A	0 TAF	0 TAF	0 TAF		
IRP B	50 TAF	30 TAF	30 TAF		
IRP C	15 TAF	15 TAF	15 TAF		
IRP D	300 TAF	200 TAF	200 TAF		

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Resource Unit Costs

Resource	Range from sources	Modeled Unit Cost ¹
	Carlsbad Desal = \$2,975/AF	
Core Supply ²	Santa Barbara Desal = \$3,126/AF	\$3,000/AF
	Venture Water Pure = \$3,266/AF	
C	DVL ³ = \$269/AF (\$3.8B @ 30yrs 4%, 800 TAF capacity)	Annual cost = $300/AF$
Storage	Chino Basin Storage Study ⁴ ~ \$275-325/AF	storage capacity
	SWP Transfer = \$605/AF	
Flex Supply ³	Yuba Accord Transfer = \$400/AF	\$600/AF

¹ 2023 unit costs are escalated at 3% to future costs

² From SDCWA publication dated February 2023, Santa Barbara Recycled Water Assessment Oct 2022 Staff Report

Ventura PW cost was estimated by Metropolitan staff assuming \$206 million in total capital costs, \$6.7 million in annual O&M costs, and \$18.2 million in grants, with the remaining capital costs funded from the EPA's WIFIA loan program at a rate of 2.5% for a 30-year term. Sources: 2019-Ventura-Water-Supply-Projects-Final-EIR (civicplus.com); 3069 (ca.gov). Prices were escalated to 2023 dollars from 2019 with 3% escalator.

³ Annual financing cost per AF of capacity constructed based on project cost in today's dollars of \$3.8 billion. Assumes 30-year financing at 4%.

⁴ Annual financing cost per AF of capacity constructed and projected annual O&M costs based on average of Chino Basin Storage Study options. Assumes 30-year financing at 4% for capital costs

⁵ SWP and Yuba Accord transfers based on 2022 prices escalated to 2023 dollars.





Observations:

- 1. Developing core supply to meet demands identified in IRP D will have the largest rate impacts.
- 2. The rate impact shown in IRP A results from lower water sales.

*Increases in different rate elements may vary as a result of the cost-of-service allocation and cost recovery approach for each project. Impacts on a member agency will depend on how and when they take water. For example, the more a project is allocated to supply then the full-service water rate will increase higher than the price for SDCWA exchange agreement deliveries.

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Effect of Adding Storage for IRP D Scenario

Overall Annual Rate Increases (%) 2025-2032*



Observations:

To meet the projected water demand in IRP D, development of 200 TAF of core supply and 250 TAF of storage capacity has lower rate impacts (7.1%) than the no storage and 500 TAF storage options.

*Increases in different rate elements may vary as a result of the cost-of-service allocation and cost recovery approach for each project. Impacts on a member agency will depend on how and when they take water. For example, the more a project is allocated to supply then the full-service water rate will increase higher than the price for SDCWA exchange agreement deliveries.

Sensitivity Analysis for Lower Demand

Plan for IRP D Resource Needs with 250 TAF Storage but realize the lower water demands from IRPA

Overall Annual Rate Increases (%) 2025-2032*



Observations:

If water demand does not materialize as projected in IRP D and instead occurs as projected in IRP A, development of core supply and storage to meet projected demand in IRP D could result in substantially higher rates.

*Increases in different rate elements may vary as a result of the cost-of-service allocation and cost recovery approach for each project. Impacts on a member agency will depend on how and when they take water. For example, the more a project is allocated to supply then the full-service water rate will increase higher than the price for SDCWA exchange agreement deliveries.

Net Shortage Assessment in 2020 IRP

Plan for IRPA (no additional resources developed) but experience the higher demands from IRPD.

Magnitude (TAF) and Frequency (%) of a Net Shortage in Forecast Year 2032



- 1. Water supply shortages will incur economic costs
- 2. What level of resource development does the Board want to pursue in light of reliability, resilience, and affordability objectives?

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Estimated Capital Investment Examples for IRP D Scenario by 2032

Resource D	evelopment	Ectimated Capital *
Core Supply	Storage Capacity	Estimated Capital "
200 TAF	250 TAF **	\$5.5 Billion – \$6.0 Billion
Engineering	g challenge	Financial challenge
1.5x PWSC completed by 2032	~1/3 of Diamond Valley Lake completed by 2032	 Available revenue bond capacity Cashflow constraints for debt coverage

* Assumptions: \$3,000/AF for core supply (2023 \$), 50% costs from O&M
 \$300/AF for storage capacity (2023 \$), 0-50% costs from O&M
 Capital financing @ 4%, 30-yr, 2% debt issuance cost
 ** 182 TAF in 2032

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CAMP4W process Example of projects to consider

- Pure Water of Southern California Project
- Delta Conveyance Project
- Sites Reservoir
- PVID Land Purchases



Can we meet the additional supply needs in IRP D with conservation?

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Current Conservation Initiatives Most Utilized in 2022

Devices	Water Savings (GPD)	Life (Yrs)	Life AF Savings	Rebate	Rate (\$/AF)	2022 Quantity (Units)	Total Lifetime AF Savings	Total \$
	А	В	C = A x B / 892.74*	D	E = D / C	F	G = C x F	H = D x F
High Efficiency Nozzles	2.36	5	0.0132	\$2	\$152	22,312	295 AF	\$44,624
High Efficiency Washer	29.32	14	0.4598	\$85	\$185	11,762	5,408 AF	\$999,770
High Efficiency Toilets	9.37	20	0.2100	0.2100 \$40 \$190 22,62		22,625	4,752 AF	\$905,000
Showerheads	3.76	5	0.0211	\$12	\$570	5,029	106 AF	\$60,348
Flow Control	7.50	10	0.0840	\$5	\$60	5,223	439 AF	\$26,115
Weather Based Irrigation Controller	36.99	10	0.4143	\$80	\$193	9,337	3,869 AF	\$746,960
Weather Based Controller by Station	15.98	10	0.1790	\$35	\$196	19,264	3,448 AF	\$674,240
Commercial Turf Replacement	0.12	30	0.0041	\$2	\$494	2,933,030	11,883 AF	\$5,866,060
Residential Turf Replacement	0.09	30	0.0032	\$2	\$631	3,814,405	12,081 AF	\$7,628,810
Rain Barrel	1.70	5	0.0095	\$35	\$3,676	2,452	23 AF	\$85,820
Total / Weighted Average					\$403 / AF		42,301	\$17,037,747

*892.74 is conversion factor for GPD to AFY



How much conservation is available and at what price?



- Insufficient data on availability of additional conservation and at what price.
- Further study needed to identify the available capacity and price elasticity of conservation.

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Nature of Conservation Investment

Front-loaded expenditures for water savings over the lifetime

Example: Meeting IRP D core supply needs (300 TAF) with turf removal

- Assumes 300 TAF of conservation is available at \$4/sq ft (or ~\$1,000/AF of lifetime savings)
- Cumulative savings must grow by 37,500 AF/yr from 2025 2032 to meet 2032 target of 300 TAF
- \$1,000 saves 1 AF of water over the next 30 years, or 0.033 AF/year. \$30,000 saves 1 AF/yr for the next 30 yrs.
- To achieve 300 TAF of annual water savings by 2032, annual conservation expenditure would be ~\$1.1B/yr through 2032



Annual Expenditures and Water Savings for Turf Removal

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Nature of Conservation Investment ...cont.

Front-loaded expenditures for water savings over the lifetime

If the water demand are lower than the projected, or the water supply situation improves, MWD can adjust or remove the conservation program along the way.

ORIGINAL CONSERVATION PLAN



Annual Expenditures and Water Savings

ADJUSTED CONSERVATION PLAN



Mandatory Conservation Scenario

Mandatory conservation in response to long-term structural imbalance between supply and demand

Scenario Assumptions

- Assumes regulatory action mandating conservation
- No new resource development new supply or incentivized conservation
- Mandatory conservation is no cost to Metropolitan (\$0/AF in the model)
- Begin with projected demand in IRP D and reduce gradually to meet 2032 resource development goal -300 TAF



Overall Annual Rate Increases (%) 2025-2032*

Observations:

- 1. Lowest rate impact as there is no financial cost to Metropolitan for mandatory conservation. However, member agencies and subagencies will incur compliance and enforcement costs.
- 2. What are the implications of mandatory conservation on economic growth and quality of life for region?

*Increases in different rate elements may vary as a result of the cost-of-service allocation and cost recovery approach for each project. Impacts on a member agency will depend on how and when they take water. For example, the more a project is allocated to supply then the full-service water rate will increase higher than the price for SDCWA exchange agreement deliveries.



Projected 2032 Overall Rate by IRP Scenario

Cumulative overall rate increase from 2024 adopted rate



*Increases in different rate elements may vary as a result of the cost-of-service allocation and cost recovery approach for each project. Impacts on a member agency will depend on how and when they take water. For example, the more a project is allocated to supply then the full-service water rate will increase higher than the price for SDCWA exchange agreement deliveries.



Long-Range Finance Plan Needs Assessment Capital Financing Considerations

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Primary means of funding capital

	Benefits	Considerations
Grant Funding	• "Free" money often the cheapest form of funding	 Typically paid on a reimbursement basis Often contain a local-match requirement Federal grants may "federalize" the project receiving grant funds
PAYGO Funding	 Flexible Avoids bond interest expense; but has an opportunity cost of investment earnings No contractual obligations with lenders Lowers rates over time 	 Project costs borne entirely by existing or past customers Project delivery delays may occur if insufficient PAYGO funding exists
Debt Funding	 Allows acceleration of future funds for project capital funding Intergenerational equity 	 Cost of borrowing is interest Contractual obligations to lenders Reduced future flexibility
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Debt Financing Overview

Metropolitan has or can issue several types of debt:

- Revenue Bonds (primary means of debt financing)
- General Obligation Bonds (historically issued for SWP costs)
- Certificates of Participation (JPA financings and/or if Revenue Bond capacity is unavailable)

When issuing debt, Metropolitan takes into consideration several factors:

- Timing of when debt is needed
- Impact on credit ratings
- Current market interest rates
- Compliance with rate covenants and additional bonds tests
- Overall Metropolitan debt capacity

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Next Steps for CAMP4W Process

- Determine what level of resource development the Board wants to pursue in light of resiliency, reliability, financial sustainability, affordability and equity objectives
- Further detailed study is recommended to understand capacity and price elasticity for conservation
- Evaluate rate impacts for specific projects and portfolios of projects to meet the board-approved reliability objectives



LRFP Needs Assessment

Updated LRFP Timeline

- August 2023
 - Draft LRFP Needs Assessment introduced at FAIRP
- September 2023
 - Member Agency / Caucus Workshops
 - FAIRP: Draft LRFP Needs Assessment
 - Member Agency Manager CAMP Workshop (9/21)
 - CAMP4W workshop on LRFP & business model (9/26)
- October 2023
 - FAIRP: Draft LRFP Needs Assessment
- November 2023 & beyond
 - FAIRP: Draft LRFP Needs Assessment
 - Continued feedback loop with CAMP4W & finalize LRFP in FY 2024/25





Subcommittee on Long-Term Regional Planning Processes and Business Modeling General Discussion on Climate Adaptation Master Plan for Water Memos, Materials and Schedule

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						2023								2024		2024-'25	
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MILESTONES	 VInderstanding Climate Risks Process Plan Planning structure Consultant support Consultant support CAMP4W Themes Evaluative Criteria Needs Assessment & Scenario Planning Ongoing technical studies (efficiency storage, reuse, stormwater, conveyance, desal, climate risks) 								 Decision-Making ability implications eds Assessment irios re alternative ue/business Decision-Making Framework Projects and program evaluation (could include new resources and/or financing models) No regrets projects identification No regrets projects identification Adaptation Pathways for continued evaluation adopt plan No regrets projects identification Planning paran Member Agent or continued evaluation adopt plan 				 Business Model Review Planning parameters w/ Member Agencies Next steps for technical evaluation to support additional project selection 			
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Board Member and Agency Engagement ◇ Board Workshop ☆ Board Committee Discuss ○ Member Agency Managers ※ Board Meeting ○ Meeting CAMP Focused ※ Questionnaire MAMM ● ●							ion	Types of Community Engagement Diana Listening Session Technical Charette Technical Community-led Session Advisory Group								

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						2023								2024		2024-'25
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MILESTONES	 Understanding Climate Risks Process Plan Planning structure Consultant support CAMP4W Themes Evaluative Criteria Needs Assessment & Scenario Planning Ongoing technical studies (efficiency storage, reuse, stormwater, conveyance, desal, climate risks) 							 Provide affordation of Nee scenar Explored revenue model 	e rate im ibility imp ds Asses ios e alternat e/busine options	 Prate impact and plity implications is Assessment os alternative e/business options Decision-Making Framework Projects and program evaluation (could include new resources and/or financing models) No regrets projects identification Adaptation Pathways for continued evaluation to support additional project selection 					 Business Model Review Planning parameters w/ Member Agencies Next steps for technical evaluation to support additional project selection 	
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September 26, 2023

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Board Member and Agency Engagement ◇ Board Workshop ☆ Board Committee Discussion ○ Member Agency Managers ※ Board Meeting ○ Meeting CAMP Focused Questionnaire MAMM									Types of Community Engagement Listening Session Technical Charette Technical Community-led Session Advisory Group							

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CAMP4W Year One.

A multi-year, iterative process learning and building from successes/challenges

Year One Goals

- Establish decision-making framework
- Develop evaluative criteria
- Develop financial plan & potential business model update
- Identify "low regrets" projects for early start
- Identify next steps for coming year
- Prepare first year progress report for the board





CAMP4W Working Memos towards Year One Report. A multi-year, iterative process

learning and building from successes/challenges





CAMP4W Working Memos towards Year One Report. A multi-year, iterative process

learning and building from successes/challenges





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CAMP4W What's Coming.

A multi-year, iterative process learning and building from successes/challenges



Sept. 21 MAMM (today)	Long-Range Finance Plan; Adaptive Management
Sept. 26 LRPPBM Workshop	Long-Range Finance Plan; Adaptive Management
Oct. 19 MAMM	Pure Water Cost Recovery; Business Model Alternatives
Oct. 24 LRPPBM Workshop	Pure Water Cost Recovery; Business Model Alternatives
Nov. 2 MAMM Workshop (proposed)	Evaluative Criteria; Working Memo #5
Nov. 14 One Water Committee	Evaluative Criteria: Informational Item
Nov. 16 MAMM	Evaluative Criteria
Dec. MAMM (TBD)	Review Project Lists; Potential Portfolios; Working Memo #6
Jan. MAMM (TBD)	Potential Portfolios and Draft Decision-Making Framework
Jan. EOT/Board	Update on SWPDA Call to Action and Sub-Portfolio: Action Item
Jan. LRPPBM Workshop	Potential Portfolios and Draft Decision-Making Framework
Feb. MAMM (TBD)	Low Regrets Projects; Draft CAMP4W Part One Report
Feb. LRPPBM Workshop	Low Regrets Projects; Draft CAMP4W Part One Report
March EOT Committee	Low Regrets Projects: Informational Item
March FAIRP	Draft CAMP4W Part One Report: Informational Item
April EOT/Board	Low Regrets Projects: Action Item
April FAIRP/Board	CAMP4W Part One Report: Action Item

Subcommittee on Long-Term Regional Planning Processes and Business Modeling

CAMP4W Board Member Questions



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

How we view Adaptive Management



- Adaptive management promotes flexible decisionmaking
 - Adjusts in the face of uncertainties
 - Incorporates outcomes from management actions and other events as they become better understood.
 - Careful monitoring of these outcomes helps adjust policies or implementation investments
- Adaptive management is not a "trial and error" process but rather emphasizes learning while doing
- Adaptive management leads to more effective decisions and enhanced benefits
- It is a flexible means to meet reliability, resilience, affordability, and financial sustainability goals and reduce tension among stakeholders

Adaptive Management Process



Question 1

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



Baseline as a Starting Point

Initial/Current Conditions

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

Question 2

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



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

Questions 3-4

levels

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

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



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

Question 5

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

Metropolitan will provide the following data sets:

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



Summary



Addressing the Board's Questions

- Adaptive Management allows real-world experience and new information to be considered in the decision-making process
- Portfolios with varying levels of demand management, water resource development, storage and infrastructure will be evaluated
- The IRP Needs Assessment remains the foundation for the CAMP4W process because:
 - It includes member agency existing and planned projects
 - It captures uncertainties under various conditions
 - Each scenario launches from common baseline conditions as a starting point
 - It will be updated on regular intervals

