
Technical Memorandum

To: Bruce Reznik, Executive Director – Los Angeles Waterkeeper

From: Sanjay Gaur, Principal Consultant – Water Resources Economics, LLC

Date: April 19, 2024

Re: Metropolitan Water District of Southern California Business Model Evaluation

1. Introduction

BACKGROUND

The Metropolitan Water District of Southern California (MWD) is currently developing a Climate Adaptation Master Plan for Water (CAMP4W) as part of its 2020 Integrated Water Resources Plan (IRP) process. A key goal of CAMP4W is to help MWD better integrate water resources, financial, and climate planning efforts in order to promote water supply reliability and financial sustainability in light of uncertain future climate change impacts.

Among other topics, the CAMP4W will include a discussion of MWD’s current business model and an evaluation of business model alternatives. This business model evaluation will consider both MWD’s revenue structure (i.e., how MWD recovers costs from its member agencies), as well as MWD’s broader role within its service area. Recent volatility in MWD’s imported water supply reliability and reduction in water delivery demand from member agencies have posed major challenges to MWD’s current business model, which relies heavily on volumetric water sales revenue.

BUSINESS MODEL EVALUATION GOALS

The CAMP4W process represents a clear opportunity for MWD to adapt its business model to meet the needs of the region well into the future. Los Angeles Waterkeeper therefore engaged Water Resources Economics¹ to conduct an independent evaluation of MWD’s business model that may help guide and inform key policy discussions among MWD’s Board of Directors, staff, and the broader public. Based on input from Los Angeles Waterkeeper staff, the overall goal of this business model evaluation is as follows:

The goal is to identify and evaluate potential changes to MWD’s business model that incentivize the development of environmentally responsible local water supplies, including water efficiency, by maximizing the utilization and integration of existing regionwide infrastructure and reducing reliance on imported water supplies while supporting affordability for residential households.

¹ Water Resources Economics is a private consulting firm based in Los Angeles that specializes in conducting financial planning analyses, cost-of-service analyses, and rate design studies for public water and wastewater agencies in the United States.

While we acknowledge the need for imported water to provide sufficient water supply reliability to MWD's service area into the foreseeable future, our intent is to identify potential changes to MWD's business model that will enhance local water supply resiliency by promoting:

1. **Reduced water waste** (including direct install programs that make indoor and outdoor water conservation more accessible to low-income residents)
2. **Reuse of urban and stormwater runoff** (with a priority for multi-benefit, nature-based solutions)
3. **Recycled wastewater** (predominantly for potable uses)
4. **Restoration of contaminated groundwater**

BUSINESS MODEL EVALUATION PROCESS

Water Resources Economics' evaluation of MWD's business model included the following steps, with guidance and feedback provided by Los Angeles Waterkeeper staff throughout:

1. Conduct background research and identify challenges with MWD's current business model
2. Develop a high-level evaluation of alternative MWD business models
3. Conduct one-on-one virtual interviews with five members of MWD's Board of Directors and five independent California water policy experts²
4. Solicit additional input from the California water policy experts, previously interviewed individually in Step 3, during a full day in-person convening (*held on Jan. 11, 2024 in Los Angeles*)
5. Present findings and receive input from MWD staff during a virtual meeting (*held on Jan. 26, 2024*)
6. Document findings and recommendations in a technical memorandum (*this document*)

Please note that this business model evaluation did not include any detailed financial modeling and is best characterized as a high-level analysis based on publicly available information. We acknowledge that any potential business model changes may face significant barriers due to administrative, legal, and political considerations and that any changes to MWD's business model will need to align with the MWD Act, California Proposition 26, and other relevant legal requirements.

2. Current Business Model

CURRENT REVENUE STRUCTURE

MWD's current revenue structure consists of volumetric rates paid by member agencies per acre-foot of water delivered, fixed charges paid by member agencies (which include Capacity Charges and Readiness-to-Serve Charges),³ property taxes paid by property owners within MWD's service area, and other miscellaneous revenue sources (such as hydropower sales and interest earnings). The current revenue structure is predominantly variable (i.e., varies in proportion to water deliveries to member agencies), as volumetric rates comprise about 80% of total revenues.⁴ However, approximately 80% of MWD's expenditures are fixed (i.e., do not vary in proportion to water deliveries to member agencies). The key implication is that MWD is reliant on stable water deliveries in order to generate sufficient revenues to recover costs and ensure financial stability.

² A list of the water policy experts consulted is included at the end of this technical memorandum.

³ Please note that the term "fixed charges" refers specifically to Capacity Charges and Readiness-to-Serve Charges, while "fixed revenues" refers more broadly to fixed charges, property taxes, and some miscellaneous revenues.

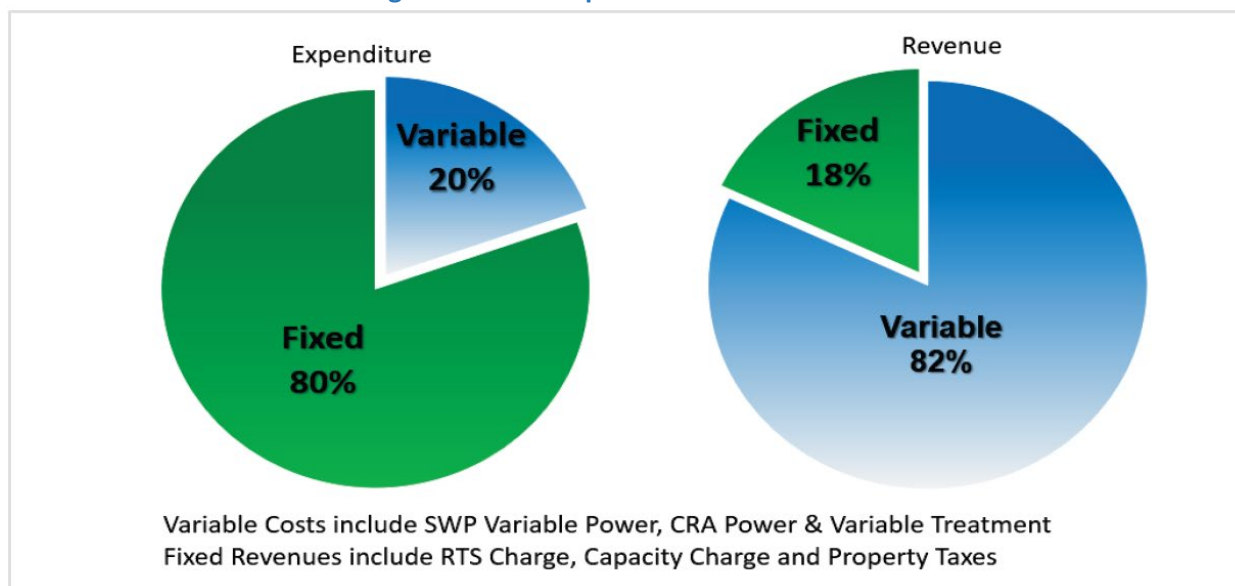
⁴ Per MWD's adopted biennial budget for Fiscal Years 2022/23 and 2023/24.

MWD has gradually and consistently modified its revenue structure throughout its nearly one hundred year history. MWD was initially funded entirely by property taxes after its founding in 1928. Once MWD water deliveries from the Colorado River Aqueduct commenced in 1941, the revenue structure began to gradually shift away from property taxes towards volumetric rates. Fixed charges were first introduced in 1992 to provide greater revenue stability in light of MWD’s gradual shift towards a predominantly variable revenue structure. The current revenue structure was implemented in 2003 as a result of a five-year strategic planning process and was intended to provide water supply flexibility to member agencies and incentivize demand management.⁵

CURRENT ROLE OF MWD

MWD’s primary role within its service area has traditionally been to serve as a provider of imported water and guarantor of water supply reliability to a growing population and economy. Due to drought and other water supply constraints, MWD has expanded upon its primary role as a water importer by acting as a leader in incentivizing water efficiency/conservation and promoting local water supply development. This is evidenced by MWD’s funding of the SoCal WaterSmart Rebate program, Local Resources Program (LRP), and other financial incentive programs as well as leading (along with LA County Sanitation Districts) the planned Pure Water Southern California recycled water project. However, what MWD’s role should be moving forward – particularly in light of climate change and the increasing unreliability of MWD’s traditional sources of water – seems to be somewhat of an open question, with broad differences in opinion among MWD’s twenty-six member agencies.

Figure 1: MWD Expenditures vs. Revenues⁶



⁵ Per “Overview of Metropolitan’s Finances” presentation (Item 7a) from the agenda packet for MWD’s Subcommittee on Finance, Audit, Insurance, and Real Property meeting on July 11, 2023.

⁶ Chart shown is from “Board Letter: Review of the applicability of the Metropolitan Water District Act Section 124.5 ad valorem property tax limitation for fiscal years 2022/23 through 2025/26” (Item 9-2) from agenda packet for MWD’s Board of Directors meeting on March 8, 2022.

Figure 2: Current MWD Revenue Structure

Current Revenue Structure	% of FY 2023/24 Budgeted Revenue	Assessment Basis	Costs Recovered
Volumetric Rates	≈79%		
Tier 1 & Tier 2 Supply Rates		Per acre-foot delivered	Supply and demand management costs
System Power Rate		Per acre-foot delivered	Power costs to pump water
System Access Rate		Per acre-foot delivered	Conveyance, distribution, and storage costs under base demand conditions
Treatment Surcharge		Per acre-foot delivered (treated water only)	Treatment costs
Fixed Charges & Taxes	≈18%		
Capacity Charge		Per rolling 3-year peak day demand (in cubic feet per second)	Conveyance, distribution, and storage costs under peak demand conditions
Readiness-To-Serve Charge		Allocated based on 10-year rolling average deliveries	Conveyance, distribution, and storage costs to provide emergency capacity during outages
Property Taxes		Assessed Valuation	General Obligation Bond debt service and a portion of State Water Project costs
All Other Revenue	≈3%		
Interest Income, Power Sales, Other Miscellaneous		N/A	N/A

3. Current Business Model Challenges

REVENUE INSTABILITY DUE TO VARIABLE REVENUE STRUCTURE

The most pressing challenge regarding MWD’s current business model relates to insufficient revenue generation during periods of reduced water sales. This is due to MWD’s heavy reliance on volumetric rates to recover expenditures, even though MWD’s cost structure is mostly fixed. This imbalance between predominantly variable revenues and fixed costs is typical for retail water agencies in California. However, this imbalance is far more pronounced for MWD compared to other State Water Project contractors, which commonly generate over 50% of total revenues from fixed sources (as opposed to approximately 20% for MWD).⁷

MWD experienced a water sales revenue shortfall of \$254 million in FY 2023/24 through January 2024 due to water deliveries falling over 25% below budgeted levels.⁸ Although MWD maintains cash reserves to help address short-term revenue shortfalls, increased volatility in imported water availability or member agency water demand from MWD continues to pose major challenges to MWD’s financial sustainability under the current business model; a point made explicitly by many member agencies during the Board of Directors’ consideration of MWD’s proposed FY 2024/25 and FY 2025/26 biennial budget. Reduced imported water supply availability over the past five to ten years has particularly exacerbated the issue, as State Water Project allocations dropped to historic lows of 5% in 2021-2022 and the Colorado River Aqueduct has continued to face serious constraints on water supply availability. Increased local storage of imported water supplies within MWD’s service area would improve water

⁷ San Bernardino Valley Municipal Water District, San Gorgonio Pass Water Agency, Mojave Water Agency, and Antelope Valley-East Kern Water Agency all generate more than 50% of total agency revenues from fixed sources.

⁸ Per MWD’s “Finance and Administrative Services Section Activities Report for January 2024 and February 2024” dated March 12, 2024.

supply reliability and provide greater flexibility and local control compared to storage outside of Southern California. However, local storage development remains costly and challenging.

OTHER CHALLENGES

Additional factors may further exacerbate revenue instability and create other challenges. Substantial upcoming capital project funding requirements to repair and replace existing infrastructure will place additional pressure on MWD's existing revenue structure. Furthermore, potential spending on new capital projects, such as the Pure Water Southern California recycled water project or investments in the Delta Conveyance Project or Sites Reservoir, will increase capital funding requirements. More generally, any new water supply development that MWD undertakes will be costly. Capital expenditures are typically considered to be fixed costs, at least in the short term. Significant capital funding requirements into the future may therefore place even greater stress on MWD's current revenue structure.

MWD's member agencies, many of which are retail rather than wholesale water agencies, face additional pressures. New statewide water conservation mandates currently being considered by the State Water Resources Control Board (per SB 606 and AB 1668) could be expensive and challenging for urban retail water suppliers in Southern California to comply with. Many affected retail agencies are already grappling with affordability and equity concerns raised by ratepayers, as retail water rates increase to cover rising costs. One question that requires further research is whether Proposition 26 and Proposition 218 reform could meaningfully aid in promoting a more sustainable business model that facilitates greater investment in conservation, efficiency, and environmentally responsible local water supply development while enhancing affordability for the most vulnerable ratepayers. It is inherently difficult for MWD to address the various challenges faced by all twenty-six of its member agencies, as the member agencies vary based on demographics, reliance on MWD water supplies, size, complexity, and level of commitment to demand management and local supply development.

4. Business Model Concepts and Framework

CUSTOMER AFFORDABILITY

The following discussion on customer affordability pertains to the cost of water service paid for by retail customers in MWD's service area (i.e., residential and non-residential end users). As previously noted, MWD's member agencies are dealing with growing affordability concerns within their respective service areas, especially in light of high inflation across the broader U.S. economy. MWD's costs are ultimately passed on to retail customers in the form of retail water rates and property taxes, and therefore impact retail customer affordability.

Access to clean and reliable water is undeniably a critical service and, under groundbreaking state legislation, a recognized human right in California. Defining affordability of water service, however, is a subjective process. A commonly cited U.S. EPA metric deems residential water bills to be unaffordable if they exceed 2.5% of median household income, but this is generally considered to be a blunt measure of affordability. Other more refined affordability metrics have been developed since, such as the number of hours working at minimum wage required to pay for residential water service or examining water bills for residential customers at the 20th percentile of household income.⁹ Overall, evaluating water affordability remains a challenge.

⁹ Manuel Teodoro, "Water and Sewer Affordability in the United States," AWWA Water Science. January 2019. https://mannyteodoro.com/wp-content/uploads/MTeodoro-2019-Water-Affordability-in-US_pre-print.pdf.

Water agencies in California are limited in their ability to address customer affordability and equity concerns. This is largely due to Proposition 26 and Proposition 218, which severely restrict how agencies may recover costs from customers via water rates and charges. Due to these constraints, an alternative approach is to address affordability and equity via property taxes. The overall cost burden of a property tax rate increase is lesser for lower income homeowners compared to wealthy property owners because property taxes are assessed based on property value. Furthermore, property owners are generally better off financially than renters. The burden of any property tax increase would be shared by landlords and renters, but landlords would likely bear a significant portion of the tax burden because rents are determined primarily based on market conditions. Water affordability for low-income homeowners and renters will therefore be less impacted by increases to property taxes than by increases to fixed charges. A water agency may be able to improve customer affordability and equity by increasing its cost recovery from property taxes because the increase will primarily impact the property owner.

ADDITIONAL BUSINESS MODEL CONSIDERATIONS

In the context of customer affordability and other business model considerations, it is important to define and distinguish between the following interrelated terms:

- **Rates** are the prices that a water agency charges its customers for water service.
- **Revenue** is the total amount of money generated by the agency to recover costs and to ensure sound financial management.
- **Bills** are the total amount that an individual retail water customer pays to receive water service.

Retail customers tend to focus on bills rather than rates or revenue, as bills represent the overall financial burden on the customer. All else equal, an increase in rates will lead to a subsequent increase in agency revenues and customer bills. However, it is critical to recognize that if rates increase, customers can avoid bill increases by reducing water use to a sufficient degree. Overall, the primary goal in promoting customer affordability is to minimize customer bill increases.

Another key consideration relates to the nature of water agency revenue needs. Most water agencies, including MWD, already have substantial repair and replacement capital needs just to maintain existing infrastructure. The associated capital funding revenue requirements already strain customer affordability. Furthermore, a water agency will need to increase revenues to an even greater degree when it develops new infrastructure (as opposed to repair or replacement of existing infrastructure). This typically results in higher rates and higher customer bills. However, if customers reduce water consumption to offset bill increases, the agency will eventually need to increase rates to ensure sufficient revenue recovery. Over a broader period, customers are therefore unable to mitigate bill impacts due to new infrastructure development.

The critical implication is that building new infrastructure will inevitably result in decreased customer affordability. Thus, prioritizing and minimizing new infrastructure development is critical in the context of promoting affordability. By reducing overall water demands, an agency can improve water supply reliability and minimize the need to develop new infrastructure. To the extent new infrastructure is funded, it should be prioritized based on the benefits such projects could provide to communities within MWD's service area (e.g., local water reliability, improved health of inland and coastal waterways, community and ecological health benefits associated with green infrastructure, local workforce development, etc.).

5. Business Model Recommendations

REVENUE STRUCTURE RECOMMENDATIONS

The following revenue structure recommendations are intended to address MWD's current revenue instability challenges resulting from a highly variable revenue structure and volatility in annual water deliveries. Please note that the alternative revenue structure shown in Table 2 is simply intended to provide a high-level example to illustrate how the recommended revenue structure changes could be implemented. We acknowledge that any revenue structure changes will result in distributional impacts to MWD's member agencies, which would require detailed financial modeling to adequately evaluate. Additionally, any revenue structure changes will need to align with Proposition 26 and other relevant legal requirements.

Recommendation #1: Increase the Proportion of Revenues from Fixed Sources

An increase in the proportion of total revenues from fixed sources is recommended to improve revenue stability and minimize revenue shortfalls during periods of reduced water deliveries to member agencies. Increased fixed revenues could be achieved through an increase in the property tax rate and fixed charges. Overall, an increase from 20% fixed revenues (i.e., MWD's current revenue structure) to somewhere in the range of 40-60% fixed revenues would improve revenue stability and align MWD more closely with other State Water Project contractors' revenue structures.

MWD property taxes currently recover a small proportion of total State Water Project costs compared to other State Water Project contractors. Many other State Water Project contractors recover the majority of State Water Project costs via property taxes. At a minimum, MWD may wish to consider recovering more State Water Project fixed costs via property taxes. A proposed property tax rate increase may be administratively and politically challenging. However, a shift in revenue collection from volumetric rates towards property taxes would improve customer affordability by reducing the overall cost burden on low-income customers (as previously demonstrated in Section 4). Despite the practical challenges associated with adjusting tax rates, we recommend prioritizing an increase in property taxes revenues to address both revenue stability and customer affordability.

An increase in fixed charges would also improve revenue stability but, unlike an increase in property taxes, would not likely benefit customer affordability.¹⁰ MWD's current fixed charges include Capacity Charges and Readiness-To-Serve Charges. We believe it may be most appropriate to increase fixed charge revenues by adjusting the existing Readiness-To-Serve Charges. Current Readiness-To-Serve Charges are assessed in proportion to each member agency's ten-year rolling average of water deliveries from MWD and are designed to recover MWD's costs associated with providing system capacity during emergencies and service outages. We believe it may be appropriate to recover additional costs from Readiness-To-Serve Charges that reflect the "water supply insurance" provided by MWD to member agencies. Under this potential change, it may be more justifiable for Readiness-To-Serve Charges to be assessed in proportion to member agencies' peak annual demand rather than average annual demand to reflect such water supply insurance.

¹⁰ Fixed charges are generally passed on to retail customers in a manner that does not vary based on income level or ability to pay. Therefore, fixed charges are similar to regressive taxes in that they disproportionately impact low-income households.

Recommendation #2: Modify the Volumetric Tiered Rate Structure

MWD’s current volumetric rates are based on a two-tiered rate structure. Member agencies may purchase water at the lower Tier 1 rate up to a certain threshold, and then must pay the higher Tier 2 rate for any additional purchases. The 2024 full service treated Tier 1 rate (\$1,256 per acre-foot) is about 14% lower than the corresponding Tier 2 rate (\$1,455 per acre-foot). Member agencies can increase their Tier 1 purchase limit by placing purchase orders, which effectively function as take-or-pay contracts.

The current volumetric rate structure is intended to incentivize demand management (by sending a price signal via higher Tier 2 rates) and to improve revenue stability (by guaranteeing a minimum level of volumetric rate revenue via purchase orders). The current volumetric rate structure’s effectiveness in promoting these goals is limited, however, due to two reasons. Firstly, the current price differential between Tier 1 and Tier 2 of \$199 per acre-foot water is relatively small. Secondly, the overall amount of volumetric rate revenue guaranteed by purchase orders is limited.¹¹ Furthermore, it is uncertain whether member agency “take-or-pay” obligations will actually be enforced at the end of the current purchase order period. A potential solution to these limitations is to develop a revised two-tier volumetric rate structure with significantly greater price differentiation between Tier 1 and Tier 2 rates.

We believe there would be clear benefits to introducing a revised Tier 1 rate that is significantly lower than the existing Tier 1 rate. This would incentivize member agencies to purchase all available Tier 1 water, which would stabilize water deliveries and potentially improve revenue stability. Tier 1 purchase limits would likely need to be reduced in order to ensure sufficient Tier 1 supply availability, even in constrained water supply years. We believe that the most equitable manner in which to allocate Tier 1 water to member agencies may be in proportion to total financial contributions over a multi-year period (such as a 3-5 year rolling average). Even if member agencies did not require their full Tier 1 allotment to meet current retail water demands, there would be an incentive to purchase remaining available Tier 1 water to store locally (either to meet future demands or to sell to other agencies). This may further incentivize local storage development and improve water supply reliability.

In addition to decreasing the Tier 1 rate, we believe that increasing the Tier 2 rate would provide added benefits. Higher volumetric rates create greater incentives to reduce water demand or to develop alternative water supply sources. Member agencies would likely respond to higher Tier 2 rates with additional demand management measures or by exploring local water supply alternatives. Increasing the Tier 2 rate would effectively increase the marginal cost of MWD water and improve the cost competitiveness of environmentally responsible local water supply alternatives. It is critical however that Tier 2 rates do not increase too drastically, as prohibitively expensive alternative supply options (such as ocean desalination) may begin to artificially appear economically viable.

¹¹ Water Resources Economics’ rough estimates based on publicly available data suggest that purchase orders likely secure about 15-20% of total volumetric rate revenues, as purchase orders only commit member agencies to paying the “Supply” component of the Tier 1 volumetric rate for the full purchase order amount. Furthermore, not all member agencies have purchase orders.

Figure 3: Alternative Revenue Structure Example

Recommended Revenue Structure	Recommended % of Total Revenue	Assessment Basis	Recommended Change
Volumetric Rates	≈40-60%		
Tier 1 Full Service		Per acre-foot delivered	Decrease rate and limit allocation to stabilize base demand and incentivize local storage development
Tier 2 Full Service		Per acre-foot delivered	Increase rate to reflect marginal water supply cost and to incentivize demand management
Fixed Charges & Taxes	≈37-57%		
Capacity Charge		Per rolling 3-year peak day demand (in cubic feet per second)	N/A
Readiness-To-Serve Charge		Per rolling 10-year peak annual demand (in acre-feet per year)	Increase charge to reflect supply insurance provided by MWD and to improve revenue stability
Property Taxes		Assessed Valuation	Increase tax rate to improve revenue stability
All Other Revenue	≈3%		
Interest Income, Power Sales, Other Miscellaneous		N/A	N/A

OTHER BUSINESS MODEL RECOMMENDATIONS

Additional business model recommendations unrelated to MWD’s revenue structure are discussed below. These recommendations relate to MWD’s broader role within its service area in serving member agencies, addressing affordability concerns, and promoting conservation, efficiency, and responsible local water supply development.

Recommendation #3: Prioritize and Minimize Future Infrastructure Development

As previously discussed in Section 4, new infrastructure development inevitably impacts customer affordability by increasing an agency’s overall revenue needs. To support affordability of water service for retail customers, MWD should prioritize and minimize future infrastructure development. The simplest way to minimize future infrastructure development is to maximize the utilization of existing system infrastructure. This may require sustained efforts by MWD to support the integration and interconnectivity of its member agencies’ water transmission and distribution systems.

In terms of new infrastructure, developing expanded water storage capacity locally should be prioritized ahead of conveyance/storage projects outside of the region (such as the Delta Conveyance Project and Sites Reservoir). Local storage projects will more directly benefit water supply reliability within MWD’s service area and provide more local control and autonomy to MWD’s member agencies. Increased local storage will allow MWD to build up local water supply inventory more effectively and flexibly during periods of increased imported water availability. Environmentally responsible local supply projects, such as stormwater capture/reuse and new recycled water development, should also be prioritized ahead of conveyance/storage projects outside of the region for the same reasons.

Expanding the scale of water conservation and efficiency efforts is another straightforward way to minimize the need for future infrastructure needs. The first step towards more effectively advancing conservation and efficiency may be for MWD to reevaluate and increase its conservation/efficiency rebates and other financial incentives. MWD’s base rebate of \$195 per acre-foot clearly undervalues the

avoided costs resulting from reduced water use.¹² Increasing conservation and efficiency incentives to align with the true economic benefits is an economically efficient solution. Overall, water conservation and efficiency should be valued at least on par with new supply development. From a customer affordability perspective, conservation and efficiency should be prioritized ahead of new supply development. Other strategies that should be considered by MWD moving forward to maximize conservation and efficiency include water demand forecasting that is realistic/conservative (for appropriate financial planning purposes) and exploring debt financing for conservation programs to expedite these efforts on a much larger scale.

Recommendation #4: Enhance MWD’s Role as a “Service Provider” to Member Agencies

Finally, we recommend that MWD’s leadership continue to evaluate and reframe the agency’s overall role within its service area. As climate change and other challenges continue to threaten water supply reliability and water system resiliency, MWD’s historically limited role as an imported water supplier and guarantor of regional water supply reliability needs to evolve. We envision MWD adapting its current role to function as a regional resource center and service provider to its member agencies. In this role, MWD’s goal would be to maximize its reach and effectiveness in assisting member agencies with what they alone cannot accomplish.

In this role, for example, MWD could expand efforts to facilitate the integration of existing regional distribution infrastructure or to support member agency development of new environmentally responsible local water supply sources. MWD has proven it can function effectively in this role, evidenced by its leadership in regional demand management efforts during periods of severe drought over the past few decades. A key benefit would be increased support for member agencies with more limited resources. For example, MWD’s existing LRP program has disproportionately benefited larger member agencies with greater financial resources.¹³ In this new envisioned role, MWD would reevaluate its programs and services provided in order to benefit all member agencies more equitably. Other areas in which MWD can demonstrate regional leadership as a service provider is by helping foster workforce development in the water sector through investment and training (particularly around nature-based conservation and stormwater programs), as well as exploring opportunities to reduce energy demand of water infrastructure.

6. Conclusion

MWD’s evaluation of its business model, as part of the CAMP4W process, represents an important opportunity to realign its revenue structure and redefine its broader role in the region. The current revenue structure was implemented in 2003 and was designed to address specific policy objectives. Twenty years on, there is a clear need to adapt MWD’s business model due to increasingly challenging imported water supply constraints, which will continue to be exacerbated by climate change impacts.

¹² Peter Mayer and Bill Gauley, “A Peer Review of the Conservation Programs of the Metropolitan Water District of Southern California,” Alliance for Water Efficiency, April 2017. <https://www.mwdh2o.com/media/16214/awe-peer-review-of-the-conservation-programs-of-mwd-april-2017.pdf>.

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Technical Memorandum - MWD Business Model Evaluation

The recommendations outlined above represent high-level business model alternatives based on review of publicly available information and discussions with MWD’s Board of Directors, MWD staff, Los Angeles Waterkeeper, and independent water policy experts. Our recommendations include specific examples of how certain business model goals may be achieved. However, these examples are not a comprehensive list of potential solutions. Ultimately, we believe that MWD’s member agencies may benefit most from an updated business model that:

- Enhances revenue stability, financial resiliency, and customer affordability
- Reduces imported water demand volatility
- Prioritizes conservation and efficiency
- Maximizes the utilization of existing regional infrastructure
- Focuses new infrastructure development on environmentally responsible local supply and storage projects
- Supports all member agencies as equitably as possible

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List of Water Policy Experts Consulted

The following California water policy experts were consulted during one-on-one virtual interviews and a full day in-person convening in Los Angeles. Please note that the recommendations presented in this technical memorandum are those of Water Resources Economics and do not necessarily reflect the views of the individuals listed below:

- **Heather Cooley** – Director of Research, Pacific Institute
- **Mary Ann Dickinson** – Chief Executive Officer, Dickinson Associates (past President and CEO of the Alliance for Water Efficiency)
- **Caroline Koch** – Water Policy Director, WaterNow Alliance
- **Gregory Pierce, Ph.D.** – Research and Co-Executive Director / Director of UCLA Human Right to Water Solutions Lab, UCLA Luskin Center for Innovation