Finance, Audit, Insurance, and Real Property Committee

# Review Draft 2023 Long-Range Finance Plan Needs Assessment

Item 9-2

August 15, 2023

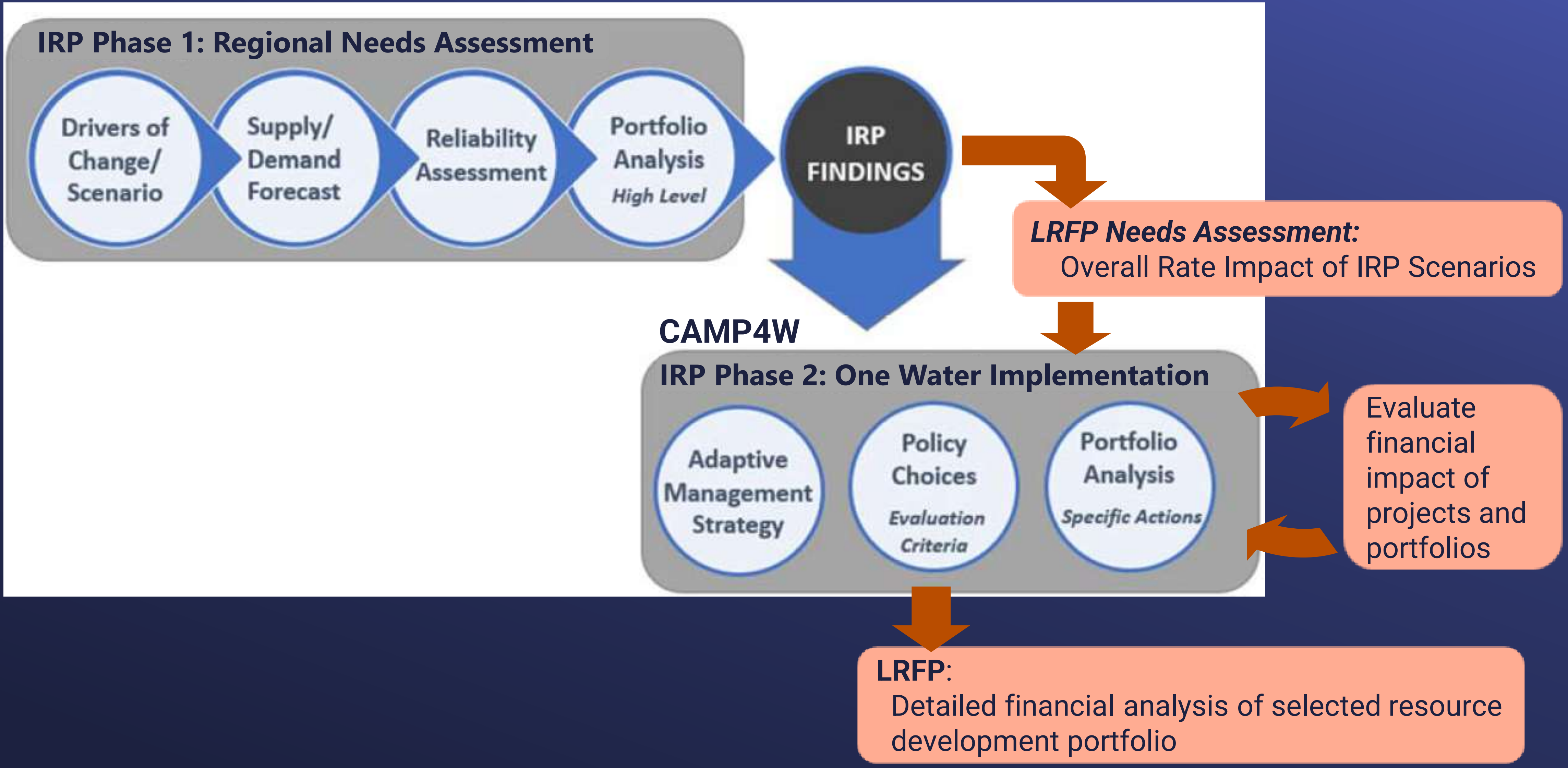
# Agenda

- Overview of LRFP Process
- Rate Impact Modeling Analysis
- Capital Financing Considerations
- Conclusions & Next Steps

Long-Range Finance Plan Needs Assessment

# Overview of LRFP Process

# Integrated Planning Processes



# Long-Range Financial Plan

**LRFP Needs Assessment**: Overall Rate Impact of IRP Scenarios and Capital Financing Considerations

1. Estimate the *rate impact* of various resource development scenarios identified in the IRP needs assessment
2. Discuss the primary capital financing and funding tools Metropolitan has at its disposal, describe the key finance policy considerations, and review alternative financial approaches

***Results*:** Inform the CAMP4W process and assist the Board in selecting the resource development portfolio to pursue while weighing resiliency, reliability, financial sustainability, and affordability objectives

**LRFP:** Detailed Long-Range Financial Plan

As specific projects are identified that meet Board-approved objectives, a more refined rate impact can be developed, including phased project financing, cost recovery methodology, and reserve requirements

Long-Range Finance Plan Needs Assessment

# Rate Impact Modeling Analysis

# 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 exactly 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

# Modeling Overview

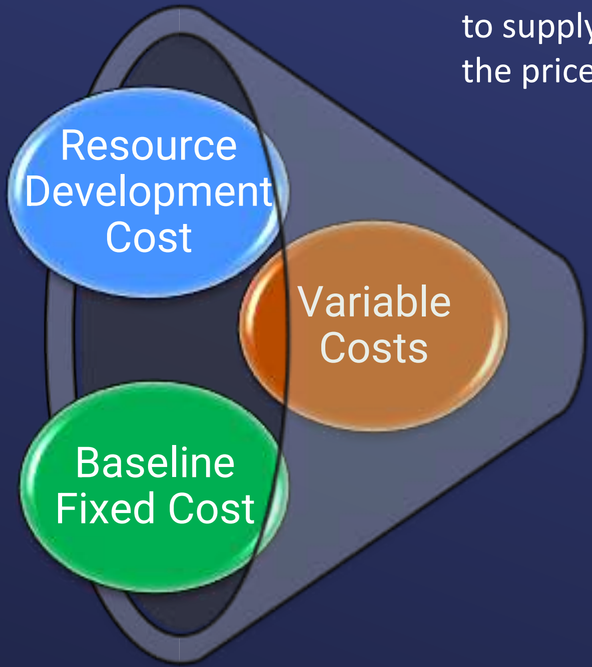
## LRFP Needs Assessment

### Modeling Process

For each IRP Scenario for each year:

*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.

Resource Development (AF)
× Resource Unit Cost ($/AF)
= Resource Development Cost


Revenue Requirement ($)
÷ Water Transactions ($/AF)
= Overall Rate ($/AF)

# 2020 IRP Needs Assessment Scenarios

## Scenario Descriptions

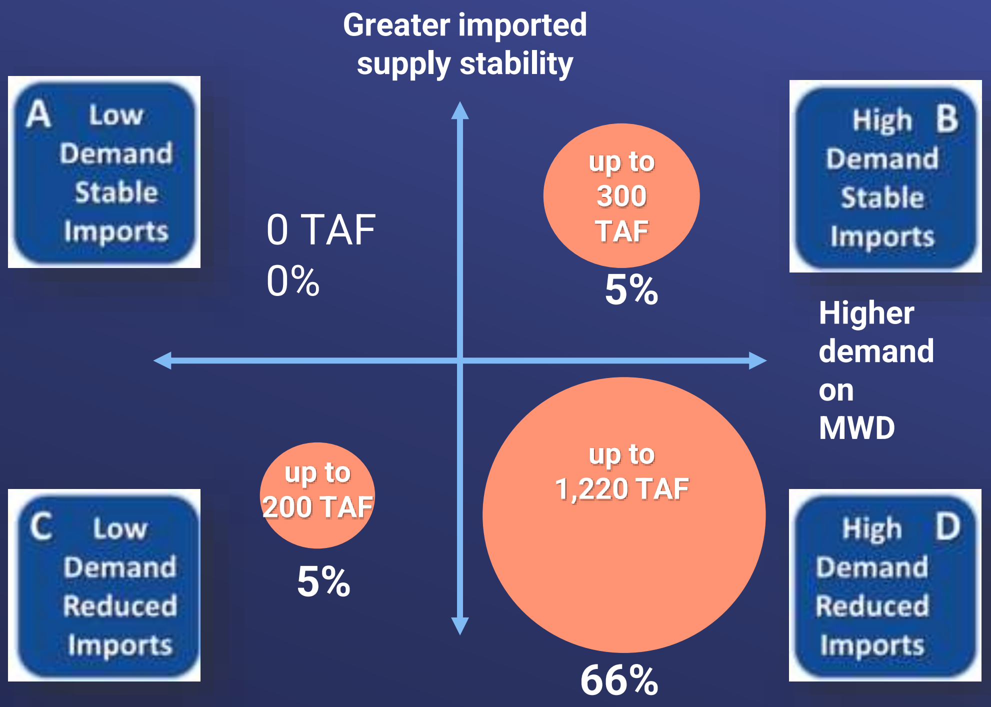
**Scenario A – Low Demand/Stable Imports:**
Gradual climate change impacts, low regulatory impacts, and slow economic growth.

**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*

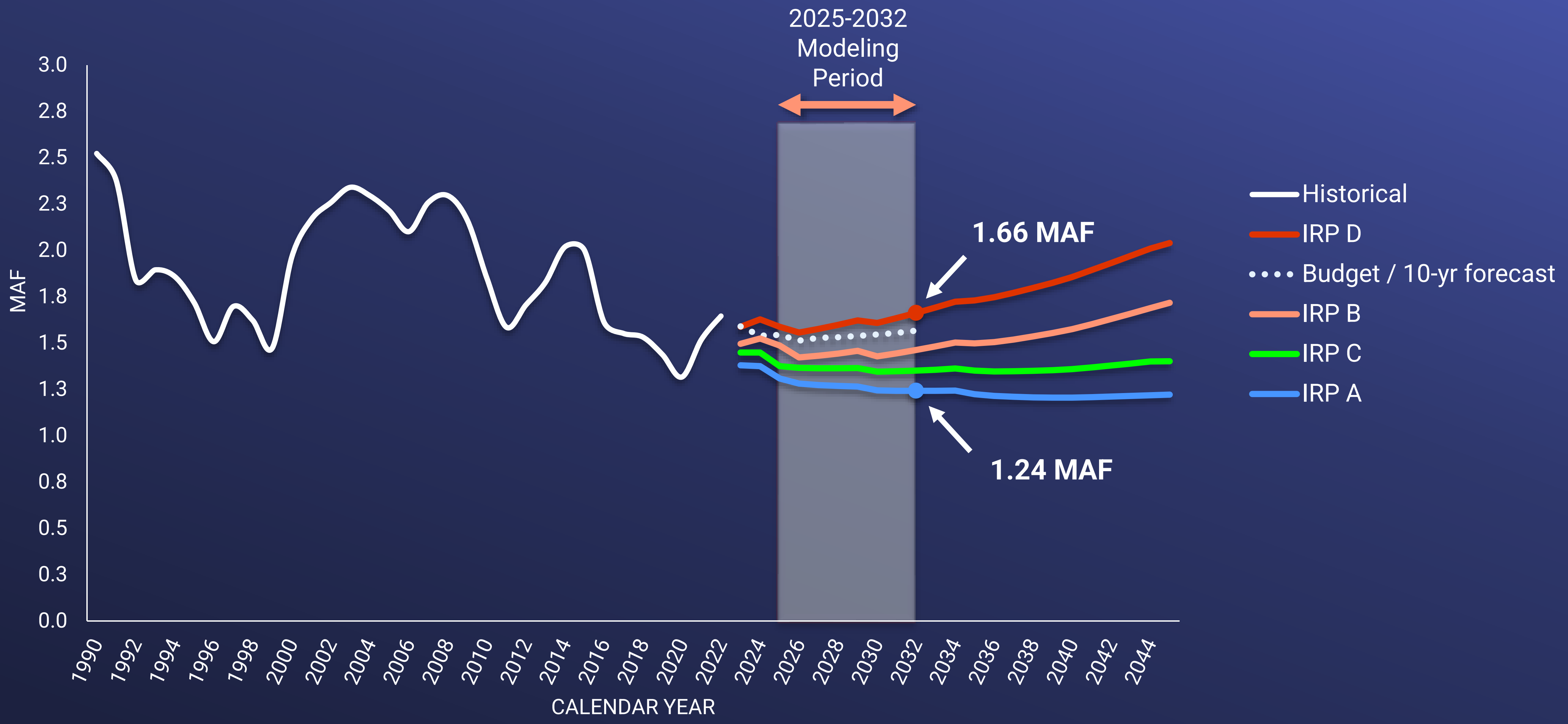



**Max Magnitude of Supply Gap (TAF) and Frequency (%) of a Net Shortage in 2045*

# 2020 IRP Needs Assessment Scenarios

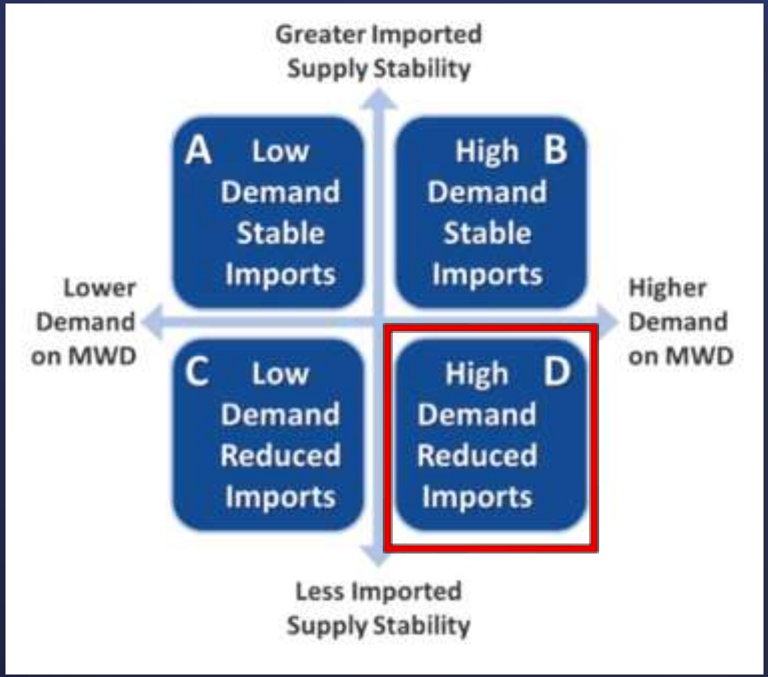
| | *Max Magnitude of Supply Gap (TAF) and Frequency (%) of a Net Shortage in 2045* | |
|---|---|---|
| **Scenario A** | 0 AF | **No additional resource development required** |
| **Scenario C** | up to 200 TAF<br>5% | **_Minimal_ resource development required** |
| **Scenario B** | up to 300 TAF<br>5% | **_Moderate_ resource development required** |
| **Scenario D** | up to 1,220 TAF<br>66% | **_Significant_ resource development required** |

# Projected Water Demands



# Resource Portfolios Example

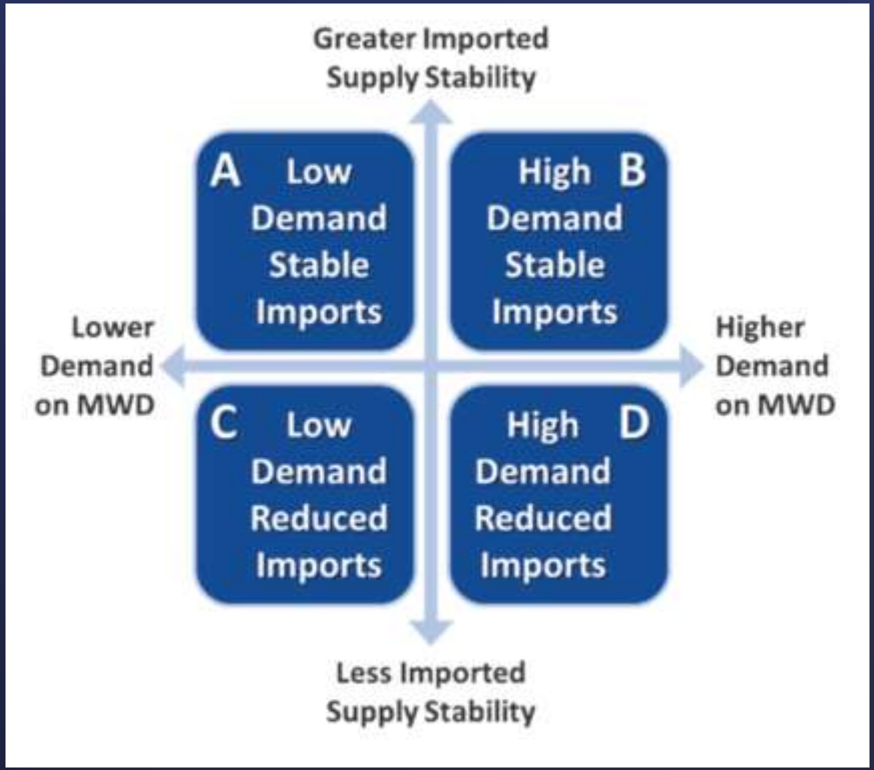
## IRP Scenario D




| | 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 |

# 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 |

# Resource Unit Costs

| Resource | Range from sources | Modeled Unit Cost[1] |
|---|---|---|
| Core Supply[2] | Carlsbad Desal = $2,975/AF<br>Santa Barbara Desal = $3,126/AF<br>Venture Water Pure = $3,266/AF | $3,000/AF |
| Storage | DVL[3] = $269/AF ($3.8B @ 30yrs 4%, 800 TAF capacity)<br>Chino Basin Storage Study[4] ~ $275-325/AF | Annual cost = $300/AF<br>storage capacity |
| Flex Supply[5] | SWP Transfer = $605/AF<br>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.

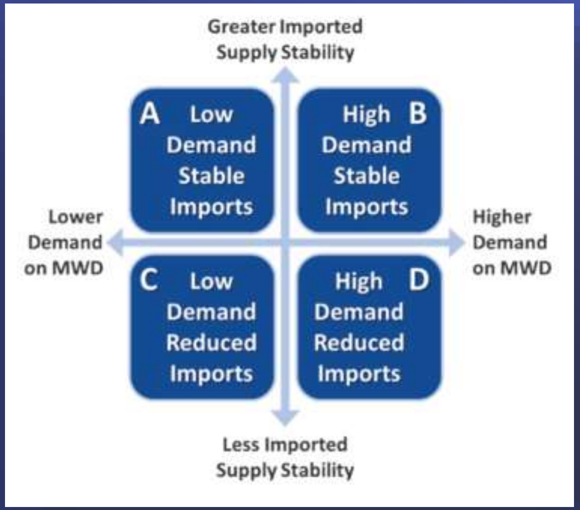
[3] Annual financing cost per AF of capacity constructed based on project cost in today's dollars of $3.8 billion. Assumes 30-year financing at 4%.

[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

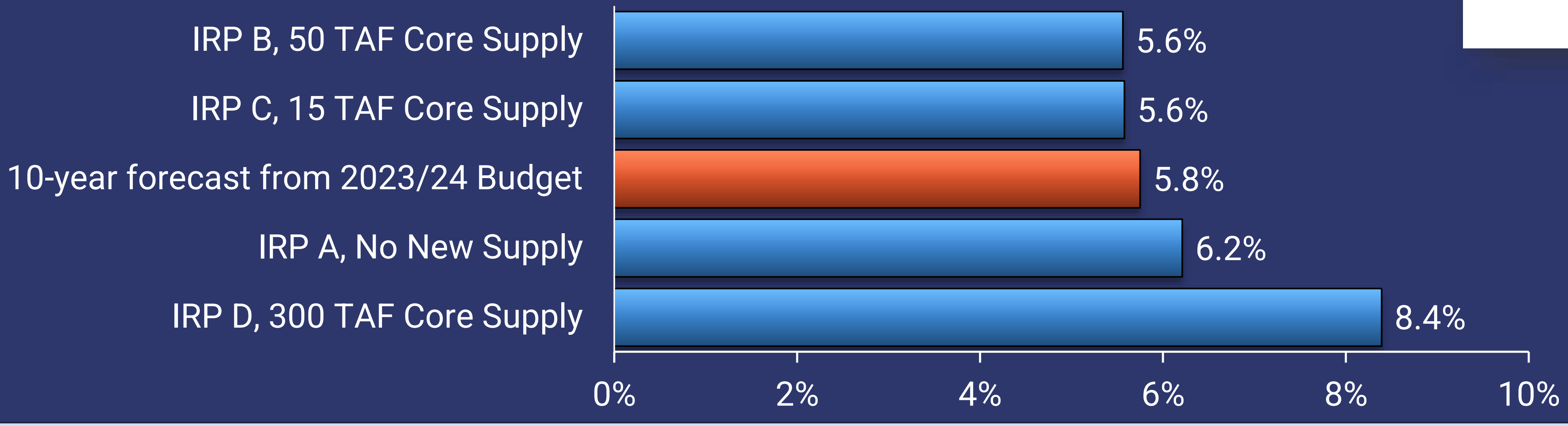
[5] SWP and Yuba Accord transfers based on 2022 prices escalated to 2023 dollars.

# Overall Rate Impact of IRP Scenarios

## No additional storage option




Overall Annual Rate Increases (%)
2025-2032*

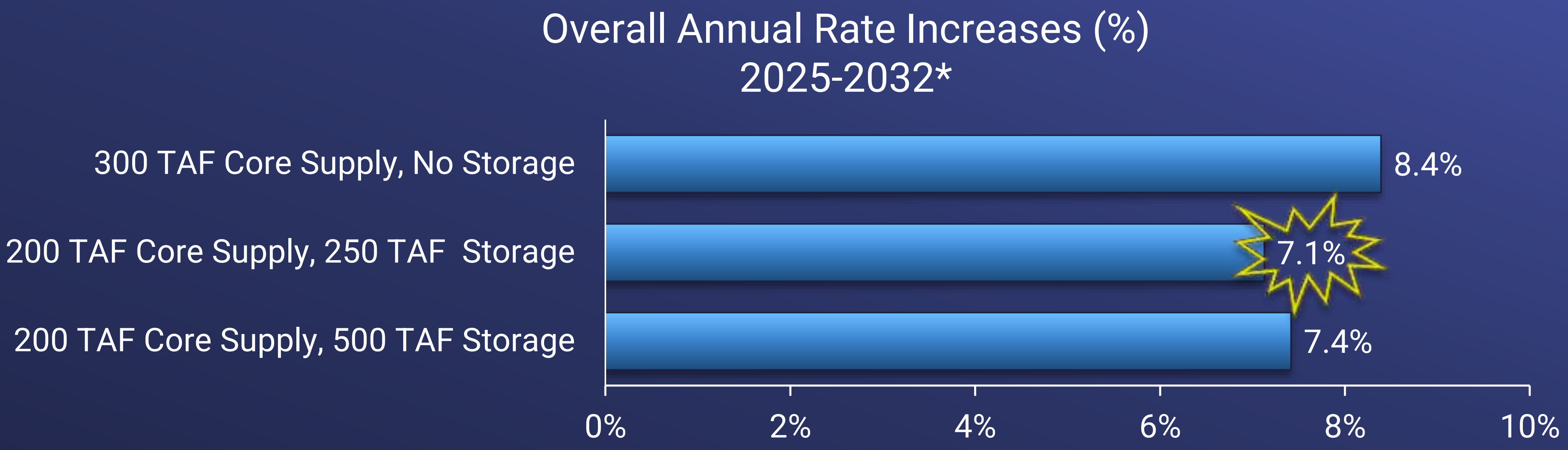



**Observations:**

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.

# Effect of Adding Storage for IRP D Scenario

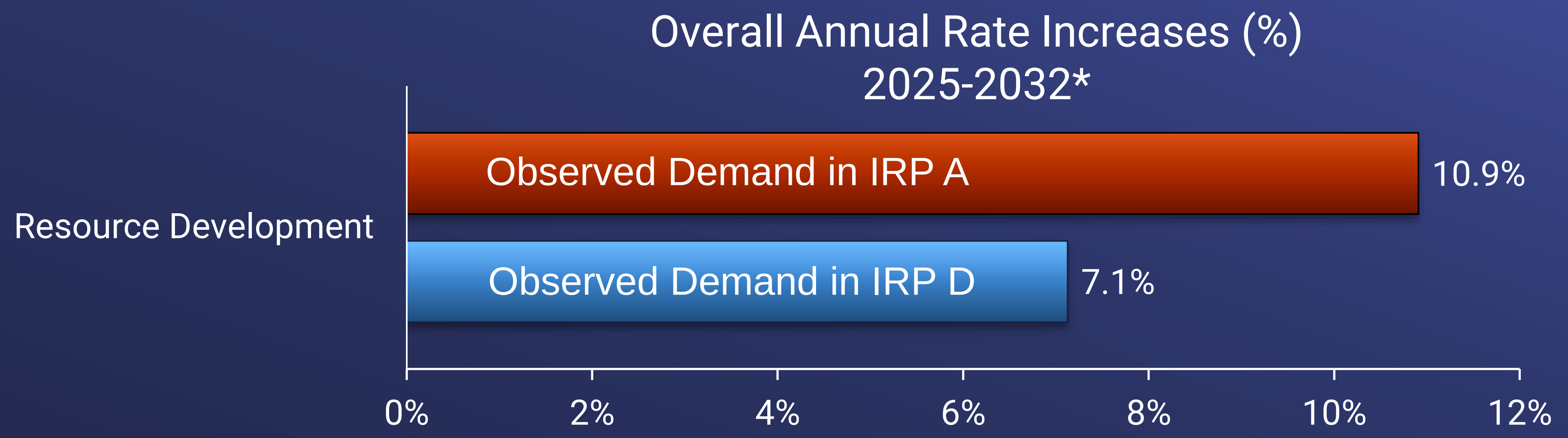



**Observations:**
To meet the projected water demand in IRP D, development of 200 TAF of core supply and 250 TAF of storage capacity has lower rate impacts (7.1%) than the no storage and 500 TAF storage options.

*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 IRP A




**Observations:**

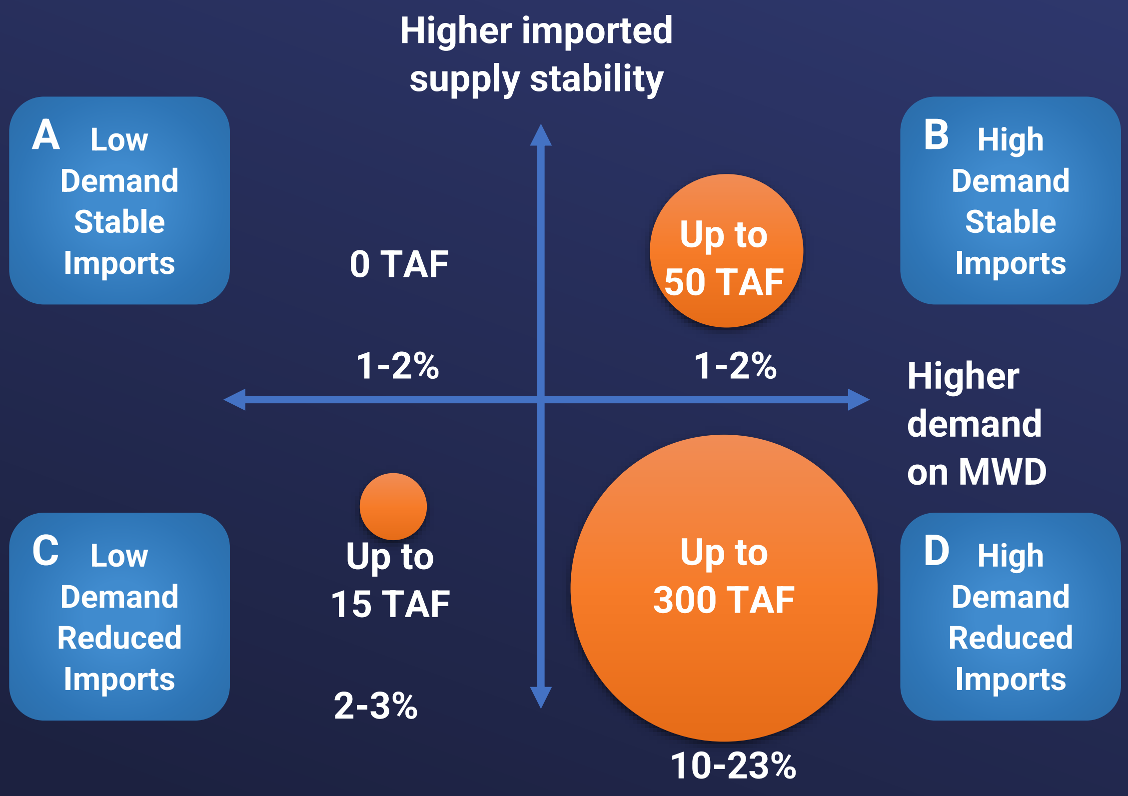
If water demand does not materialize as projected in IRP D and instead occurs as projected in IRP A, development of core supply and storage to meet projected demand in IRP D could result in substantially higher rates.

*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 IRP A (no additional resources developed) but experience the higher demands from IRP D.

**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?

# Estimated Capital Investment
## Examples for IRP D Scenario by 2032

| Resource Development | | Estimated Capital * |
|---|---|---|
| Core Supply | Storage Capacity | |
| 200 TAF | 250 TAF ** | $5.5 Billion – $6.0 Billion |

**Engineering challenge**

1.5x PWSC completed by 2032

~1/3 of Diamond Valley Lake completed by 2032

**Financial challenge**

- 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

# 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?

# Current Conservation Initiatives

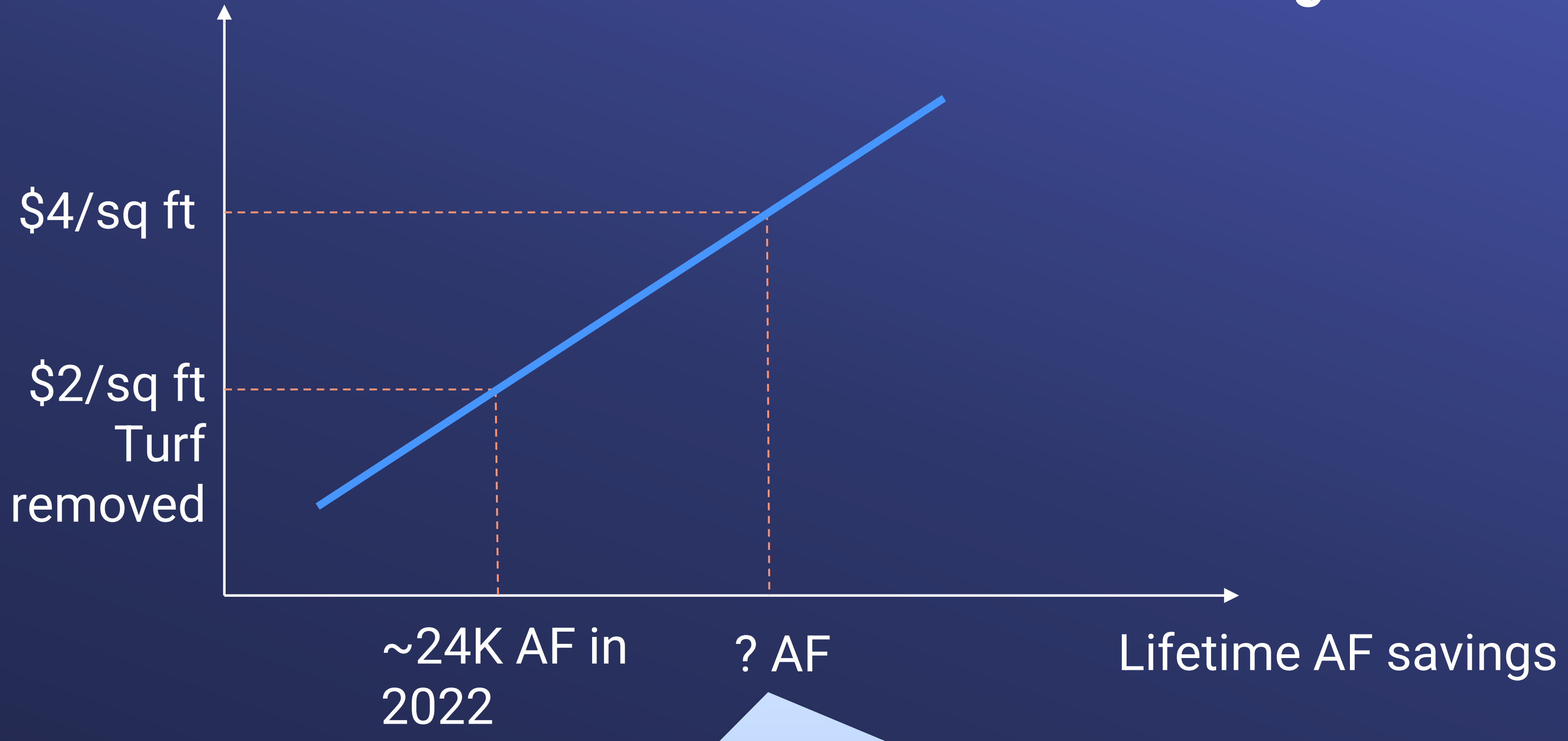
## Most Utilized in 2022

| Devices | Water Savings (GPD) | Life (Yrs) | Life AF Savings | Rebate | Rate ($/AF) | 2022 Quantity (Units) | Total Lifetime AF Savings | Total $ |
|---|---|---|---|---|---|---|---|---|
| | A | B | 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 | $40 | $190 | 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

# Conservation Price Elasticity

How much conservation is available and at what price?



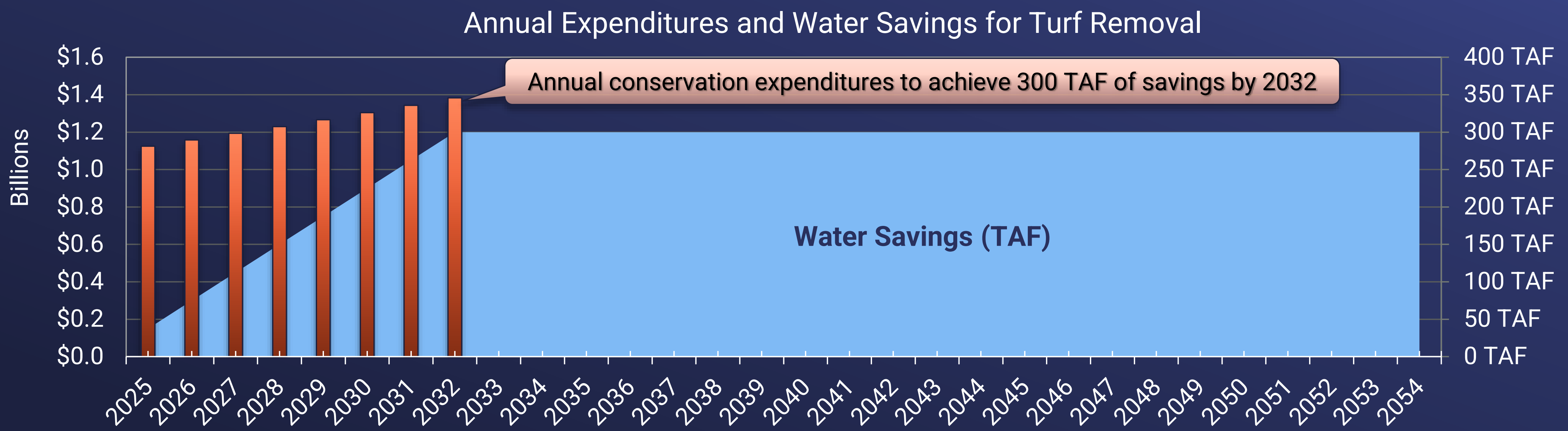

- Insufficient data on availability of additional conservation and at what price.
- Further study needed to identify the available capacity and price elasticity of conservation.

# 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

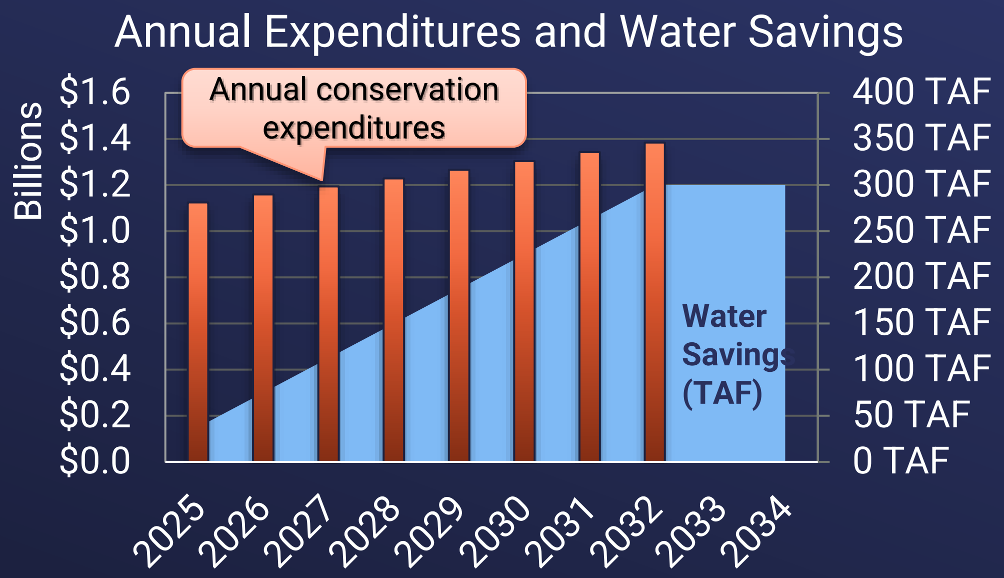


# Nature of Conservation Investment …cont.

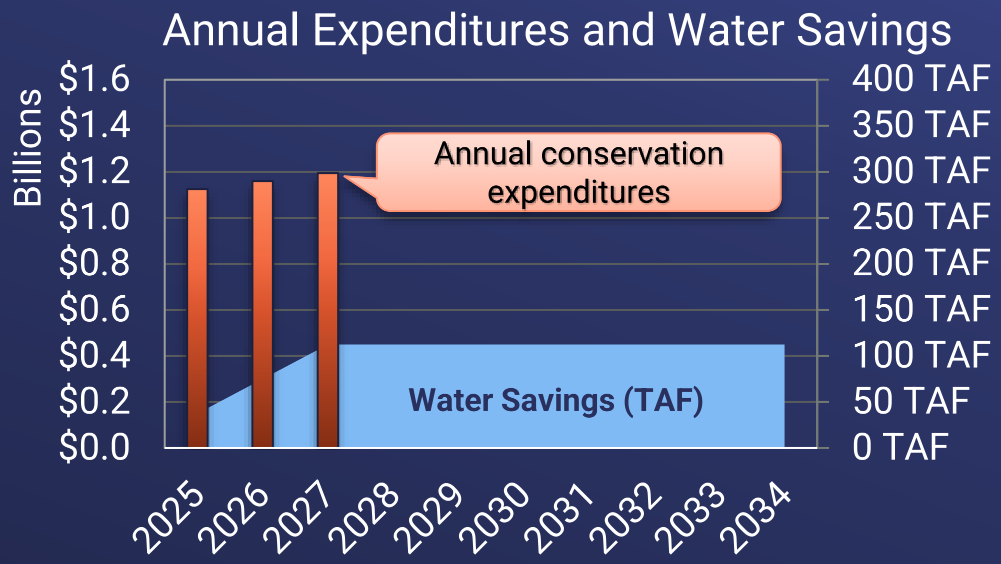
## Front-loaded expenditures for water savings over the lifetime

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




### ADJUSTED CONSERVATION PLAN

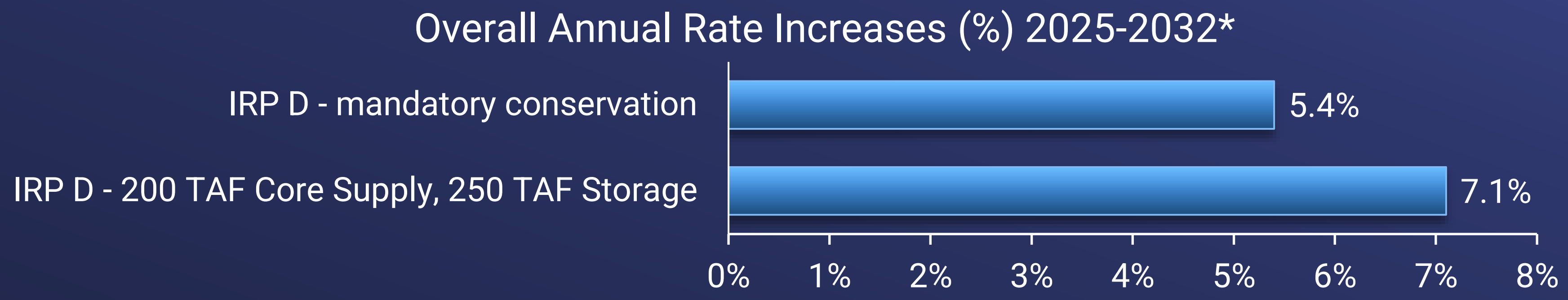


# Mandatory Conservation Scenario

## 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

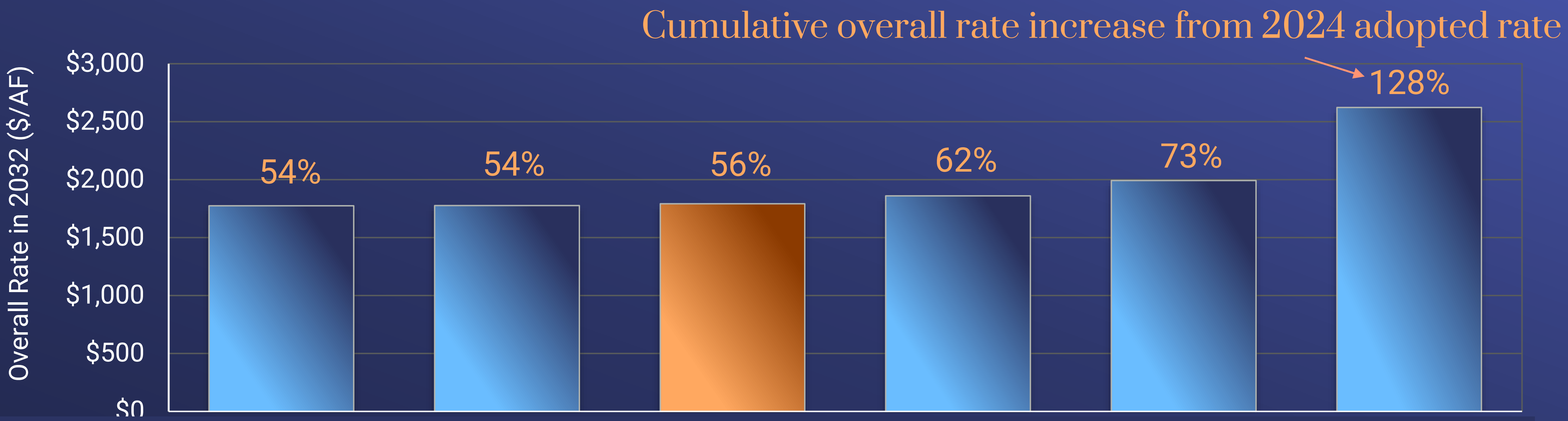



**Observations:**

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




| | IRP B, No Storage | IRP C, No Storage | 10-year forecast from 2023/24 Budget | IRP A, No Storage | IRP D, 250 TAF Storage | Plan for IRP D, Observed IRP A Demand |
|---|---|---|---|---|---|---|
| **Core Supply** | 30 TAF | 15 TAF | N/A | 0 | 200 TAF | 200 TAF |
| **Storage** | 0 | 0 | N/A | 0 | 182 TAF | 182 TAF |
| **Water Demand** | IRP B<br>1.46 MAF | IRP C<br>1.35 MAF | Budget<br>1.58 MAF | IRP A<br>1.24 MAF | IRP D<br>1.66 MAF | IRP A<br>1.24 MAF |

*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

# Development of Financial Plans

- A financial plan needs to consider all of Metropolitan's key financial tenets for success:
  - Affordability
  - Flexibility
  - Compliance with financial policies
  - Financial sustainability
- Feasibility of financial plans is determined by:
  - Fully-funding Metropolitan's CIP
  - Maintenance of minimum credit rating levels
  - Meeting debt service coverage ratio targets
  - Meeting liquidity / reserve targets

# Primary means of funding capital

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

# 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:

- Amount and 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

# Rating Agency Considerations

- Rating are perhaps the single-most important element of determining borrowing costs
- With strong credit ratings, MWD borrows at cost- effective interest rates
- Ratings are assigned by independent Rating Agencies that analyze the fundamentals of a debt issuance representing the likelihood of timely repayment of debt service
- Each Rating Agency has its own specific criteria to measure creditworthiness

| MWD's Credit Ratings | | | |
|---|---|---|---|
| | S&P | Moody's | Fitch |
| Senior Lien | AAA | Aa1 | AA+ |
| Subordinate Lien | AA+ | - | AA+ |
| GO Bonds | AAA | Aaa | - |

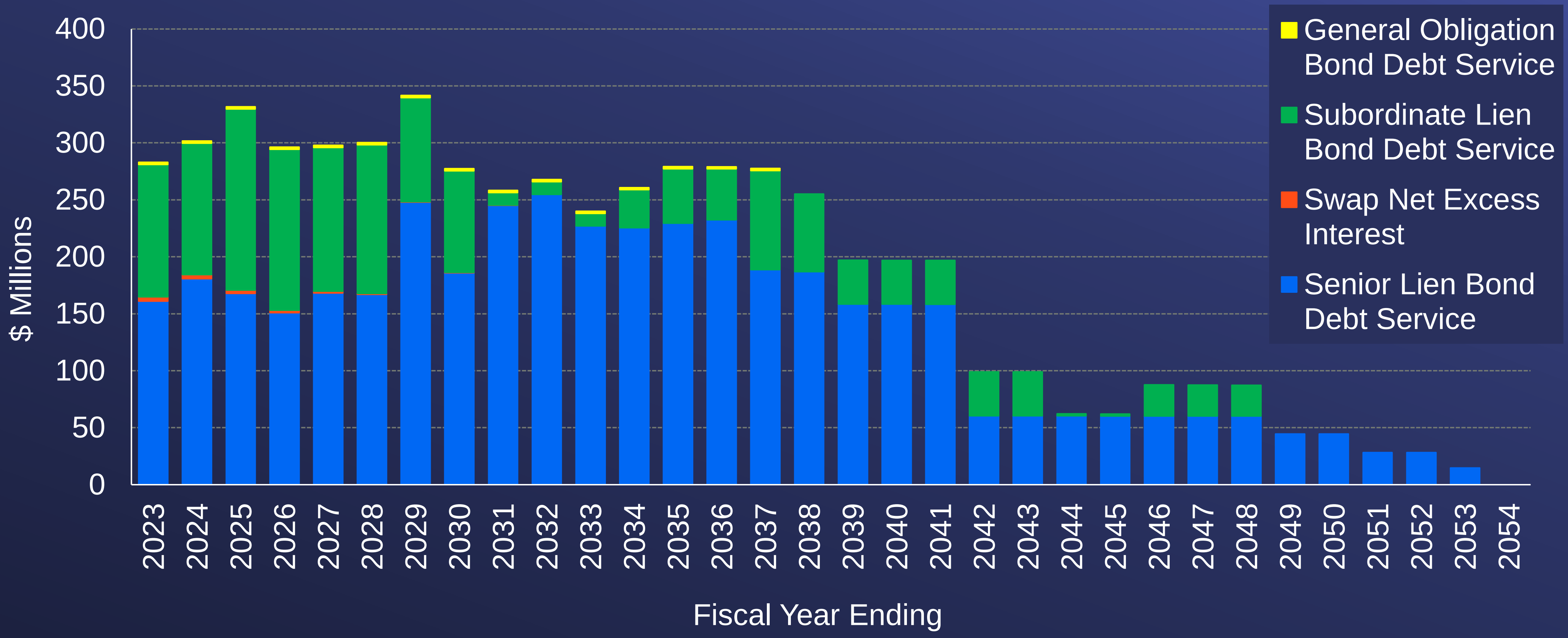
| S&P's Water Utility Scorecard | | | |
|---|---|---|---|
| Enterprise Risk Profile (50% of Final Rating) | | Financial Risk Profile (50% of Final Rating) | |
| Factor | Weight | Factor | Weight |
| Economic Fundamentals | 45% | All-in Coverage | 40% |
| Industry Risk | 20% | Liquidity & Reserves | 40% |
| Market Position | 25% | Debt & Liabilities | 10% |
| Operational Management | 10% | Financial Management | 10% |

# Debt Service Coverage

## Debt service coverage is important to ratings, compliance with legal covenants, and financial health

- Debt service coverage is an important calculation measuring the robustness of Metropolitan's ability to repay debt
  - Debt service coverage is calculated as $\frac{\text{Net Operating Revenues}}{\text{Debt Service}}$
  - Fixed charge coverage is calculated as $\frac{\text{Net Operating Revenues}}{\text{All Debt Service} + \text{SWP Capital Payments}}$
  - Metropolitan targets debt service coverage of 2.0x and fixed charge coverage of 1.2x to support maintenance of strong credit ratings
- Additional Bonds Test ("ABT")
  - In order to issue new money debt, Metropolitan must demonstrate that it will at least meet certain minimum debt service coverage ratios post-issuance

# Metropolitan Existing Debt Portfolio



# Other Funding Options & Approaches

| | Description |
|---|---|
| Federal and State Grants | • Grant funds can potentially be used to offset costs that otherwise would be recovered through rates and charges<br>• Most grants are dispensed on a reimbursement basis; hence, cashflow liquidity is a potential concern for many smaller governmental entities<br>• Some federal and state programs require a local match, which may vary by program but generally range between 10 percent to 50 percent of the eligible project costs for reimbursement<br>• Some federal and state programs provide a matching subsidy to the ultimate customer, such as with conservation programs |
| Federal and State Loans | • WIFIA funding provides low-cost, flexible funding for eligible projects<br>• State loans such as SRF and IEDB loans can provide low-cost funding<br>• Benefits and considerations should be weighed carefully |
| Voter Approved General Obligation Bonds | • Voter-approved general obligation bond would provide property tax secured debt to fund capital projects<br>• Alleviate future pressure on rates |
| Set MWD Property Tax Rate to Fund a Higher Targeted Amount of SWP Costs | • MWD is authorized to levy a property tax to fund State Water Contract (SWC) obligations<br>• Current rate of 0.0035% is the lowest tax rate ever levied but only fund 30% of MWD's SWC expenditures<br>• MWD can explore options of funding more SWC costs with property taxes, as originally intended and approved by voters |

Long-Range Finance Plan Needs Assessment

# Conclusions & Next Steps

# LRFP Needs Assessment

## Conclusions

- Developing additional core supply and storage to meet higher supply reliability identified in Scenario D will result in higher rate increases than the adopted FY 2022/23 and FY 2023/24 budget 10-year forecast
- Underdevelopment of water supply resources while experiencing high water demand will result in water supply shortages
  - Up to 300 TAF with 10-23% probability of shortage in Scenario D
  - Water supply shortages will incur economic costs
- Development of core supply and storage to meet projected demand could result in substantially higher rates if future water demand does not materialize

# LRFP Needs Assessment

# Conclusions… cont.

- A preliminary estimate places annual conservation costs at greater than $1 billion per year through 2032 to be 100% reliable under IRP D scenario
  - Metropolitan's ability to fund this level of conservation is questionable, given financing limitations and potential rate burdens
  - Moreover, it is not clear if the amount of conservation required can be realized at the incentive level assumed
- Investing in conservation also locks in lower water demands that will increase water rates
- However, unlike the construction of additional resources conservation spending does not create a new fixed cost so if Metropolitan observes a natural reduction in demands conservation spending can be reduced
- Mandatory conservation would result in the lowest average rate impacts for IRP D scenario, but member agencies would incur compliance and enforcement costs

# LRFP Needs Assessment

## Conclusions… cont.

- In contrast, capital project investments for core supply and storage can:
  (1) take many years to complete
  (2) have significant upfront costs (although typically can be bond financed to spread these costs over time)
  (3) often have ongoing O&M expenses
  (4) Incur refurbishment and replacement costs over time
- However, capital project investments typically offer predictable supply reliability enhancement opportunities that can be indispensable in periods of protracted drought


# Next Steps: LRFP & CAMP4W Process

- Determine what level of resource development the Board wants to pursue considering resiliency, reliability, financial sustainability, affordability and equity objectives
- Evaluate rate impacts for specific projects and portfolios of projects that meet the board-approved reliability objectives
- Through PWSC lens, evaluate business model options and financing strategies that help to meet Board objectives

# LRFP Needs Assessment

# Updated LRFP Timeline

- August 2023
  - Draft LRFP Needs Assessment introduced at FAIRP
- September 2023
  - Member Agency Manager Meeting
  - CAMP4W workshop on LRFP & business model
- October 2023
  - Incorporate feedback and bring revised LRFP Needs Assessment to FAIRP & Board
- October 2023 & beyond
  - Continued feedback loop with CAMP4W & finalize LRFP in FY 2024/25

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA