



Engineering, Operations, & Technology Committee

Power Cost Exposure with Lower Lake Mead Storage

Item 6a

November 17, 2025

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Power Cost Exposure with Lower Powell and Mead Storage

Subject

Power Cost Exposure with Lower Lake Mead Storage

Purpose

Update the Board on recent developments related to the risk of loss of a significant portion of Hoover Dam hydroelectric generation, the potential impact on Metropolitan, and potential strategies for mitigation

Next Steps

Continue technical and financial analysis to determine best mitigation strategies

Metropolitan's USBR Hydropower Allocations



Metropolitan receives a 50% share of energy from Parker Dam on Lake Havasu



Metropolitan is the largest power contractor for Hoover Dam on Lake Mead, with a 25% share of energy



Low-Water Operational Impacts

Hoover Dam Generation Uncertainty



Picture source: USBR



Picture source: USBR

Five wide head turbines can operate with reasonable certainty below elevation 1,035 ft to elevation 950 ft

Twelve non-wide head turbines may experience significant cavitation damage if operated at elevations below 1035 ft

Replacement option:

- \$10M-13M per unit
- 4-5 years for up to 5 turbines
- Funding options:
 - Surplus PRB* funds
 - Recovery through energy rates
 - Congressional appropriation

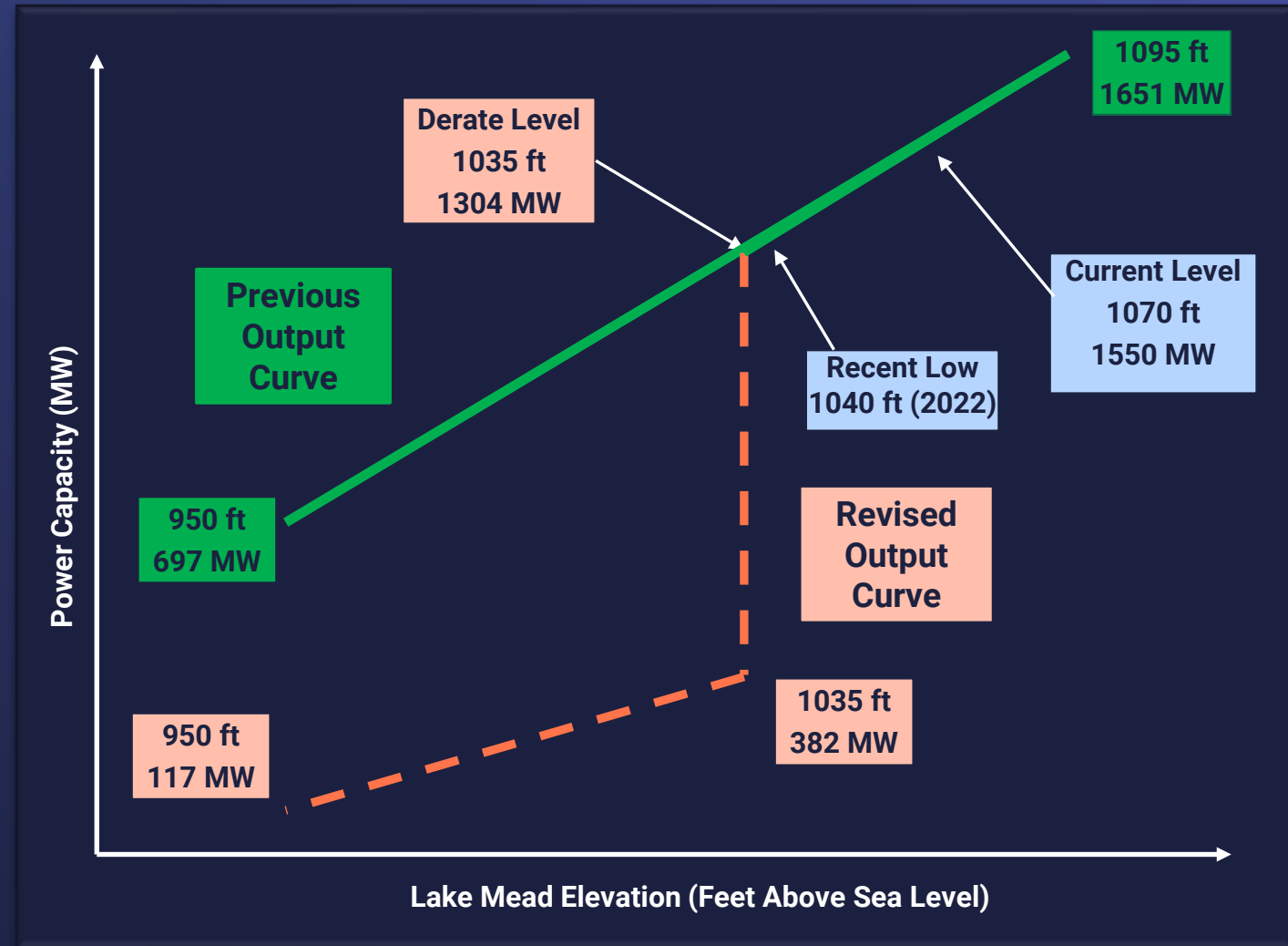
* - Post-Retirement Benefits funds

Loss of 12 of 17 Hoover turbines at Mead levels less than 1,035-foot elevation

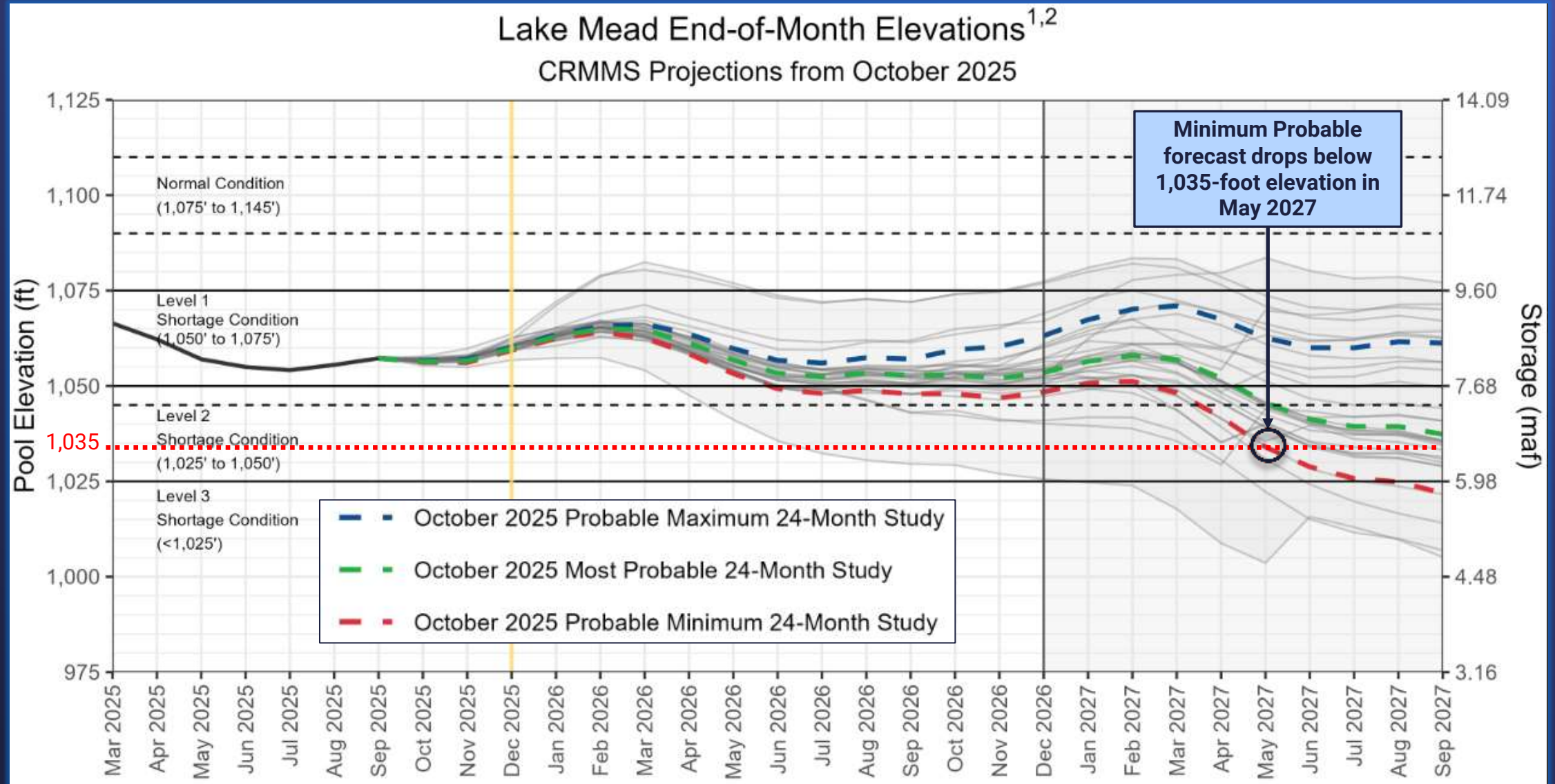
Hoover Dam Generation Uncertainty



Source: USBR



Current USBR 24-Month Mead Level Forecast



Source: USBR

Potential Impacts to Metropolitan



Significant Potential Cost Impacts

- No impacts to Metropolitan water operations
 - CAISO market will provide energy to run the CRA
- Loss of capacity and energy from Hoover
- Loss of scheduling flexibility
 - May lose the ability to optimize Hoover generation schedule to maximize revenue and minimize costs

Potential Impacts to Metropolitan



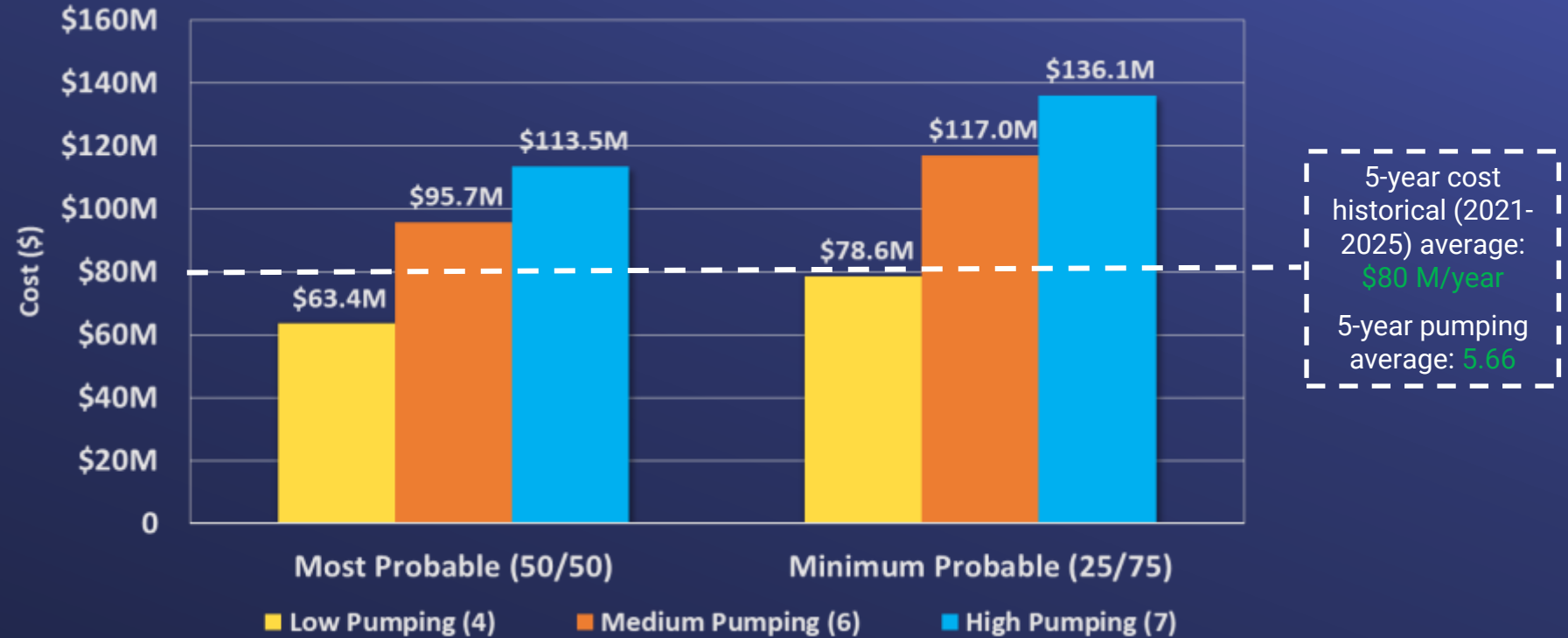
Analyzing the Cost of Potential Impacts

- Inputs to the analysis
 - USBR's 24-month estimate of Lake Mead levels
 - Forward-looking energy cost forecasts
 - CRA operation plan
- Potential cost increase drivers
 - Replacement Resource Adequacy (RA) capacity
 - Additional market-cost supplemental energy
 - Net impact of losing scheduling flexibility

Potential Impacts to Metropolitan



CY 2027 Annual Net Cost Estimates



Potential Mitigations



Short, Medium, and Long-Term

- Short term (0 - 2 years)
 - No action, rely on the CAISO market
 - “Price Insurance” using financial offsets
- Medium Term (2 - 5 years)
 - Fixed-price contracts with existing generation
 - Fixed-price Power Purchase Agreements (PPA’s) with projects currently in near-term development
- Long Term (5+ years)
 - PPA's for projects in long-term development
 - Development of new generation/bulk energy storage system (BESS) or transmission capacity
 - Turbine replacement program

Next Steps

- Complete the technical and financial analysis
- Present results and mitigation options to Risk Oversight Committee
- Return to the Board with updates on conditions and mitigation strategies

