



Report on Storage Management Strategy and Implementation

Water Planning and Stewardship Committee

Item 6b

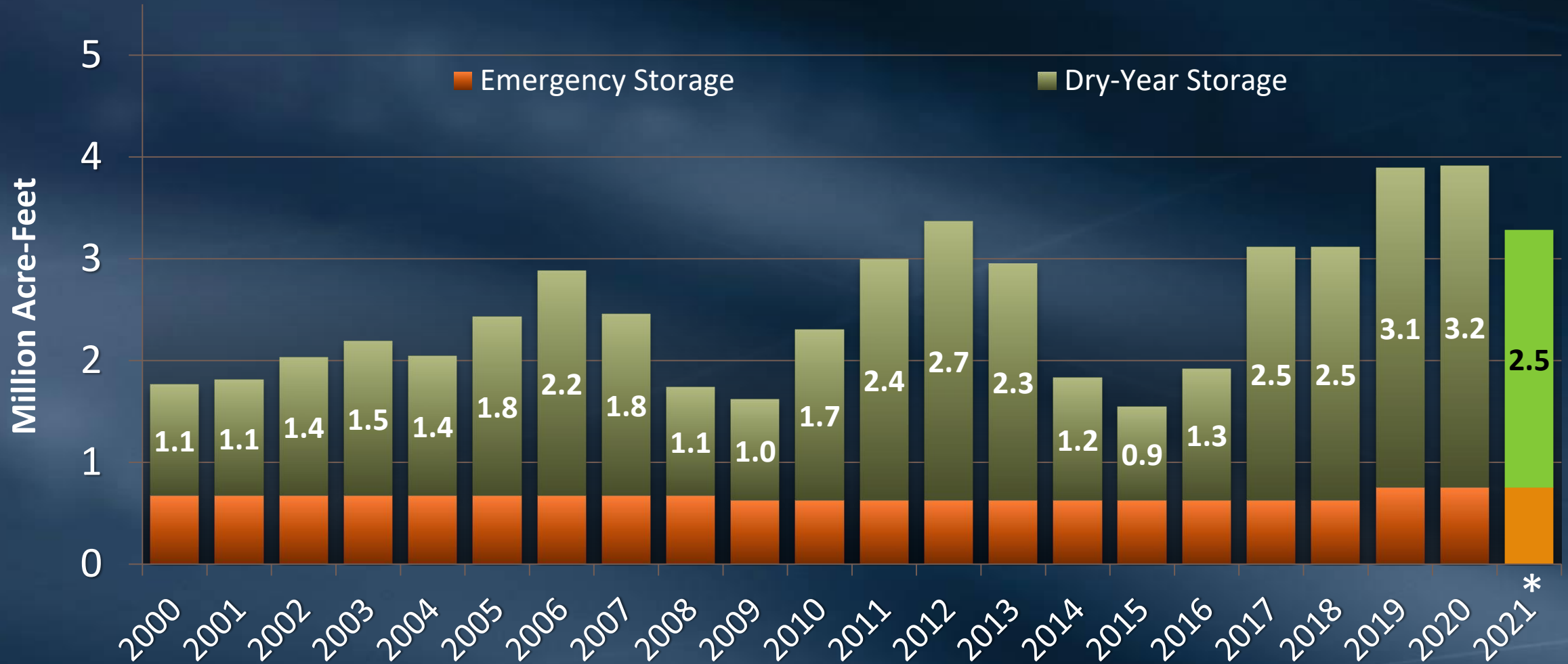
July 12, 2021

Outline

- Storage Portfolio Overview
- Water Surplus Drought Management Plan
- Operational and Other Considerations

Projected Metropolitan Storage Balances

End of Year Balances




* Estimate – May change based on supply/demand conditions


Storage Portfolio Overview

Diverse Storage Portfolio


- In and Out-of-Region
- Groundwater and surface water



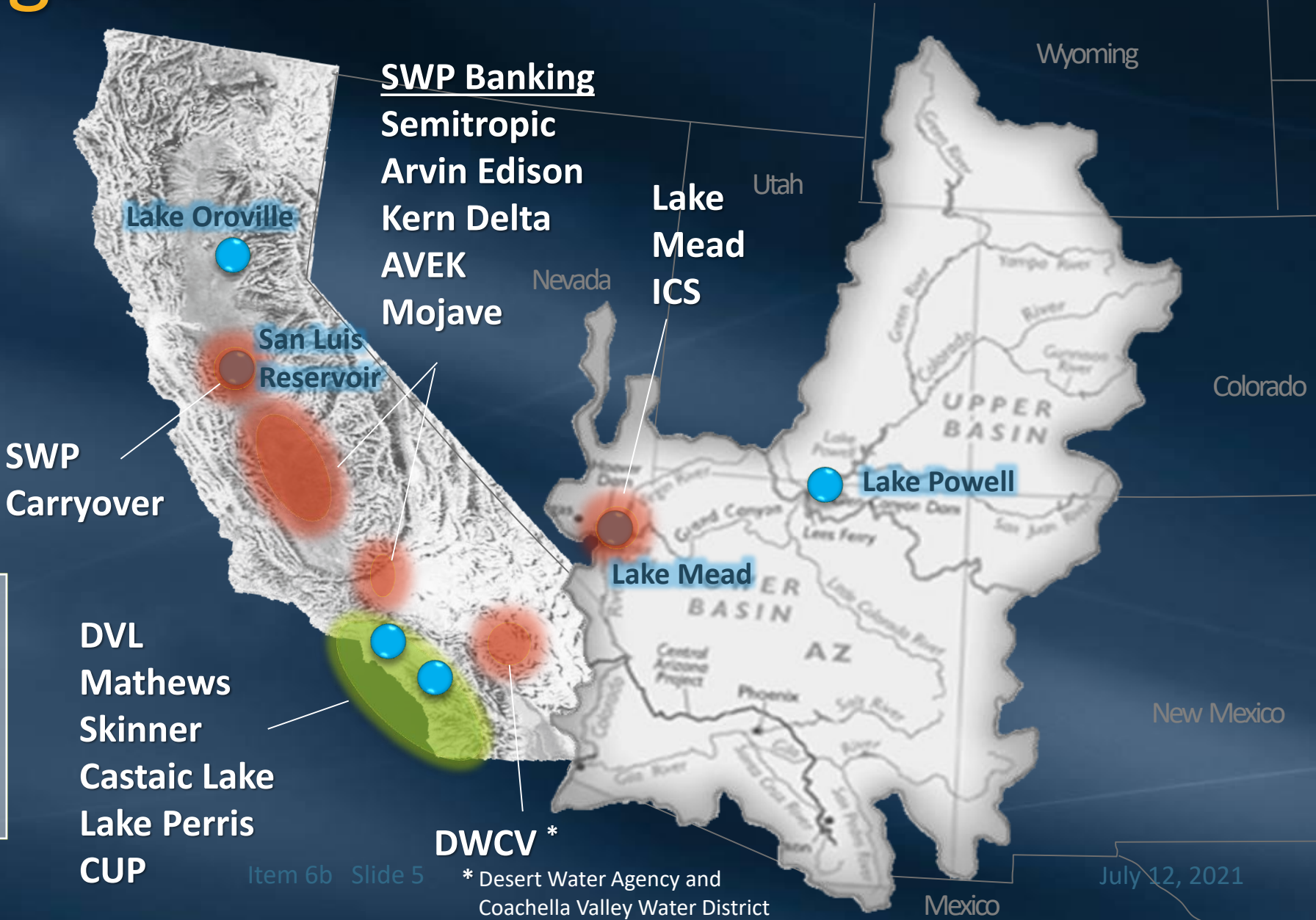
Key imported water supply reservoirs operated by others



MWD In Region Storage

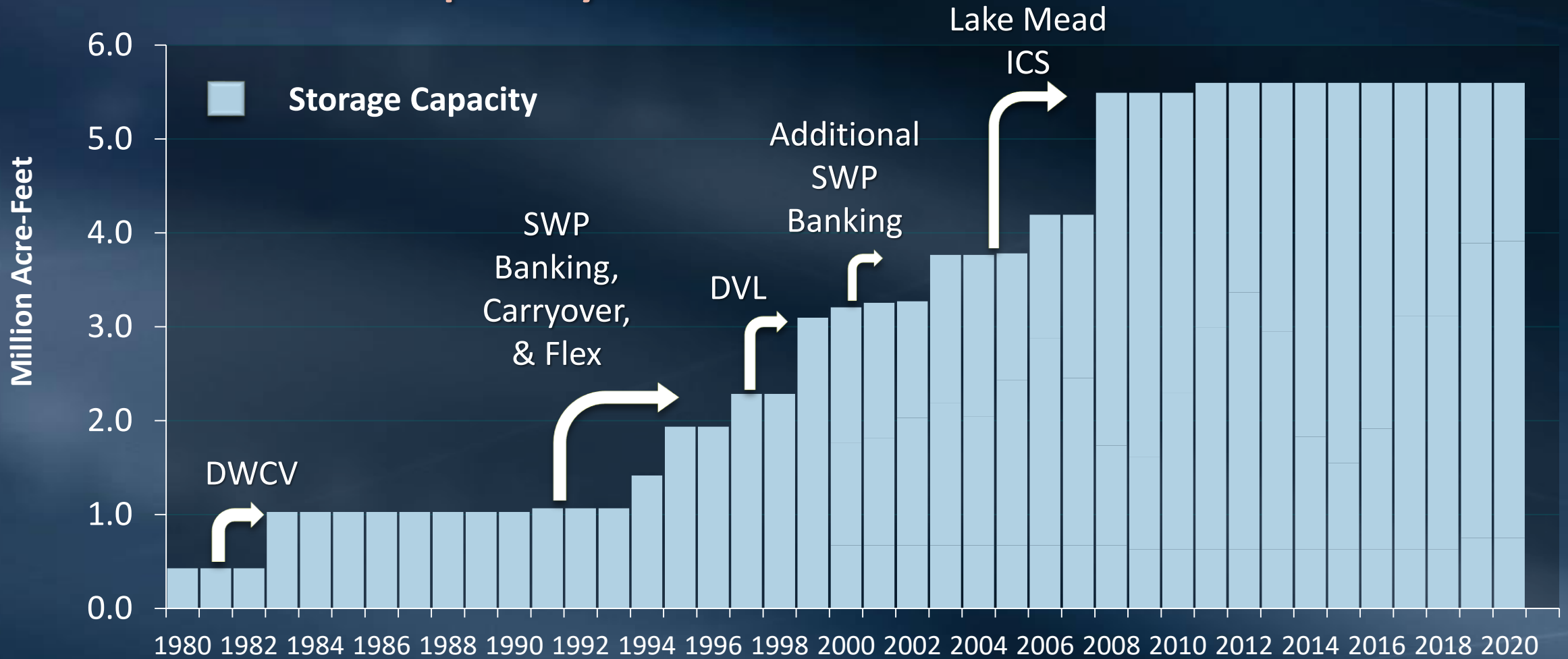


MWD Out of Region Storage



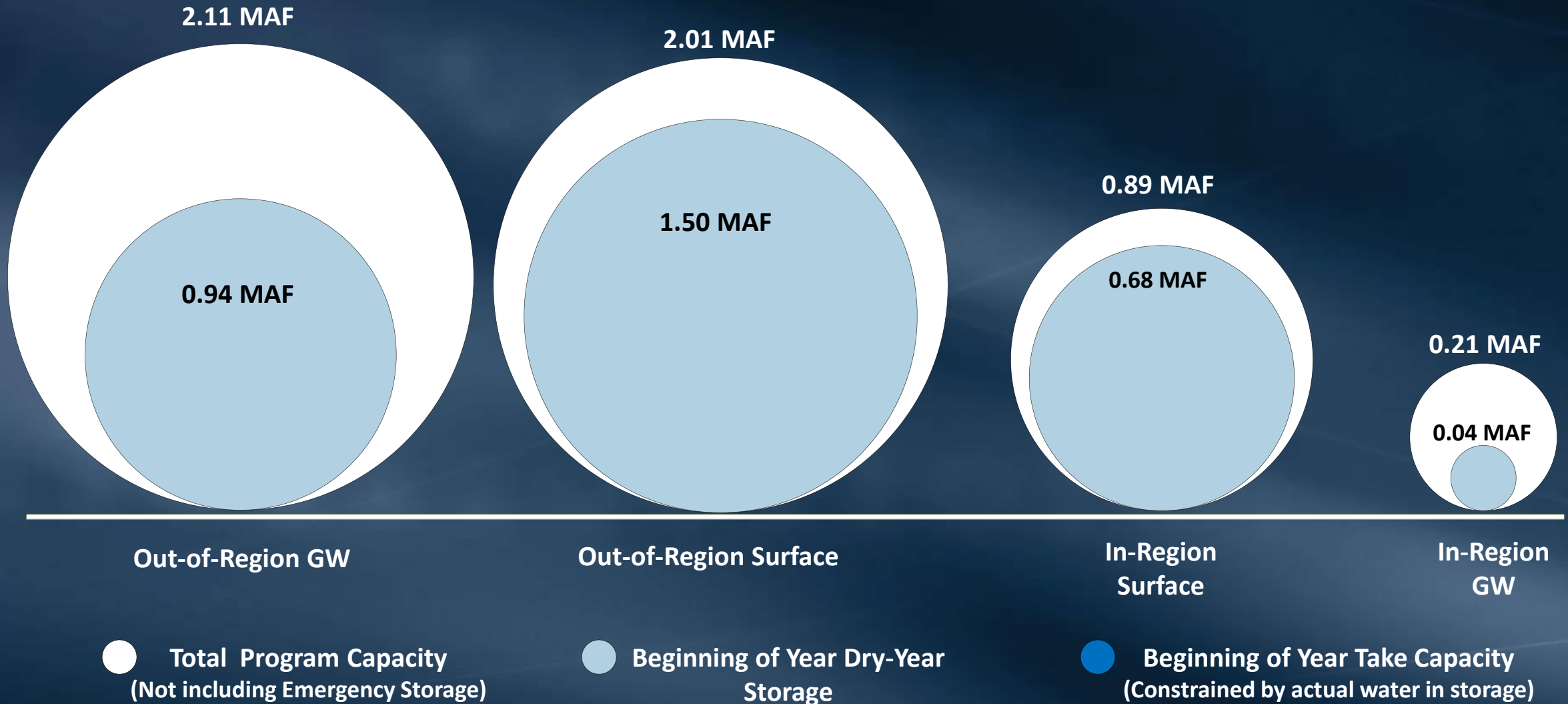
Diversification thru Investment and Partnerships

13x Increased Capacity Since 1980



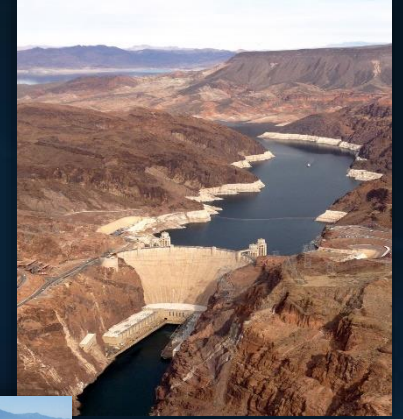
For illustrative purposes only - capacity levels shown are approximate

MWD Beginning of Year Dry-Year Storage Conditions



Not All Storage is Created Equal

- Out-of-Region or In-Region
- Surface water vs. Groundwater
- Direct/indirect control over management and operation
- Water quality considerations
- Contractual arrangements
- Distribution system considerations
- Cost



Lake Mead - Intentionally Created Surplus

Surface Water: Out-of-Region



● Benefits

- Regulate Colorado River diversions and agricultural adjustments
- Helps fill the CRA
- Helps satisfy obligations

● Considerations

- Access (DCP agreement)
- Supply cannot reach entire service area

State Water Project Carryover

Surface Water: Out-of-Region



San Luis Reservoir

● Benefits

- Flexible in-region delivery points
- Contractual flexibility
- Helps manage variable hydrologic conditions
- No losses

● Considerations

- MWD does not own/operate
- Risk of “spill”

State Water Project Banking Programs

Groundwater: Out-of-Region



- Benefits
 - Flexible in-region delivery points
 - Exchange capabilities
 - Helps manage variable hydrologic conditions
- Considerations
 - Water quality
 - Put/take capacities
 - Costs and losses

Exchange and Advanced Delivery (DWCV*)

Groundwater: Out-of-Region



- Benefits
 - Increases SWP supply (Exchange with CRA supply)
 - Operating/contractual flexibility
 - No losses
- Considerations
 - CRA capacity
 - Put/take capacities

*Desert Water Agency and Coachella Valley Water District

Flexible Storage

Surface Water: In-Region



- Benefits
 - Flexible in-region delivery points
 - No losses
- Considerations
 - Contractual requirements
 - Water quality
 - Supplies cannot reach entire service area

Diamond Valley Lake

Surface Water: In-Region



- Benefits

- MWD owns/operates
- Operational flexibility
- Maximizes Inland Feeder capabilities

- Considerations

- No CRA water (quagga mussels)
- Supply cannot reach entire service area
- Water quality

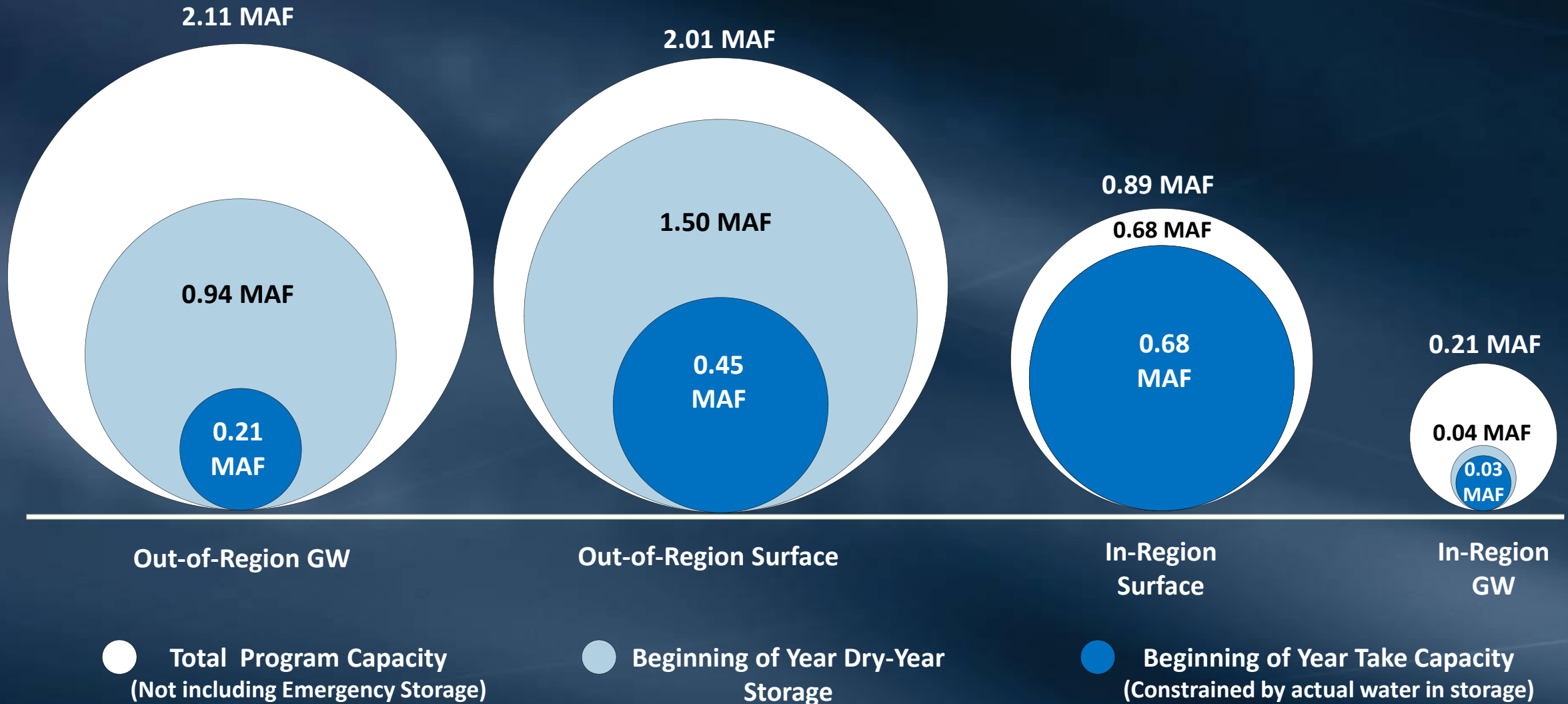
Conjunctive Use Programs

Groundwater: In-Region



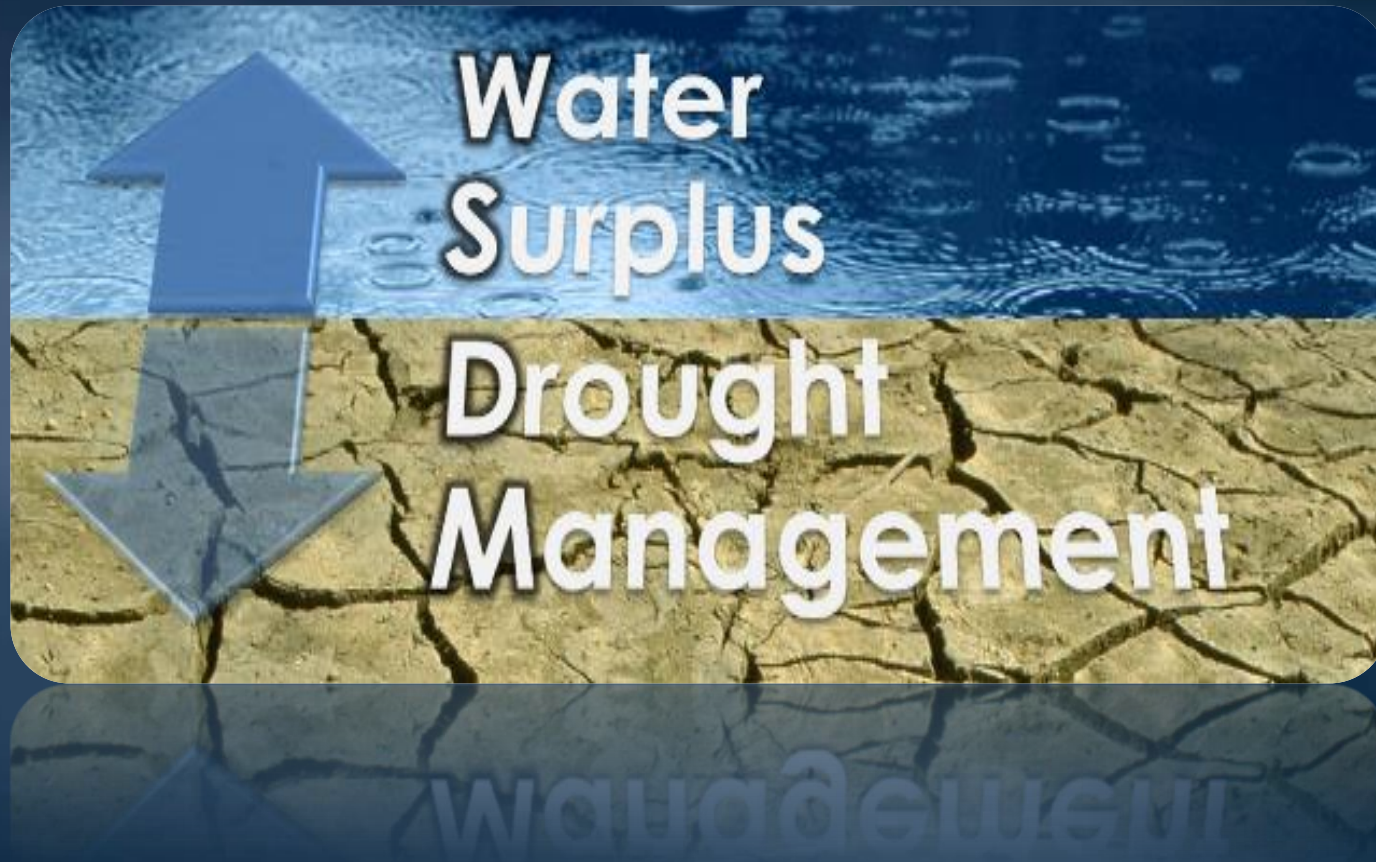
- Benefits
 - Demand management
- Considerations
 - Partnerships/coordination
 - Local basin management

MWD Beginning of Year Dry-Year Storage Conditions



Water Surplus and Drought Management Plan (WSDM Plan)

Guiding Principle for Managing Regional Storage



Encourage storage of water during periods of surplus and work jointly with its member agencies to minimize the impacts of water shortages on the region's retail consumers and economy during periods of shortage

Underlying Objective for Storage Management

- The WSDM framework values security and accessibility



“The overall objective of the WSDM Plan is to ensure that shortage allocation of Metropolitan’s imported water supplies is not required.”

WSDM Plan Action Matrix

Framework for Generally Preferred Actions

Increasing Surplus ←	Actions	→ Increasing Shortages
	Make Cyclic Deliveries Fill SWP Central Valley Storage Store Supplies in SWP Carryover Fill Conjunctive Use Fill Flexible Storage Fill Diamond Valley Lake	
	Conservation Messaging	
	Take from Diamond Valley Lake Take from SWP Central Valley Storage Take from Conjunctive Use Take from Flexible Storage Call for Extraordinary Conservation Call Options Contracts (e.g. PVID) Buy Spot Water (e.g. SWP Buyers Group) Implement Allocation Plan	

Potential Simultaneous Actions

“The resource management framework does not dictate a scripted response to shortage or surplus. The framework recognizes the complexity and variety of conditions that require action.”

Operational and Other Considerations Highlight WSDM Plan Flexibility

Operating Principles that Guide Storage Strategy

OPERATIONAL FLEXIBILITY

Maintain flexibility to manage storage within the total storage portfolio, not individual accounts

- Article 21
- Arvin Edison exchange opportunities

SYSTEM RELIABILITY

Manage storage to meet demands in the entire service area, including exclusive areas

- Maintain storage for areas served by a specific resource
- Preserve SWP supplies in low SWP allocation years

Operating Principles that Guide Storage Strategy

INVASIVE SPECIES

Regional storage managed
to minimize risk of
infestation

- Quagga mussels and DVL operations
- Blending objective
- New and or emerging contaminants

WATER QUALITY

Consider salinity goals
and other constituents
when blending various
supplies

Operating Principles that Guide Storage Strategy

EMERGENCY STORAGE

Reserve emergency storage in Southern California reservoirs to meet demands during catastrophic events

- Avoid use of emergency storage in consecutive dry years
- Balancing storage to maximize takes in multi-year droughts

SUPPLY ALLOCATIONS

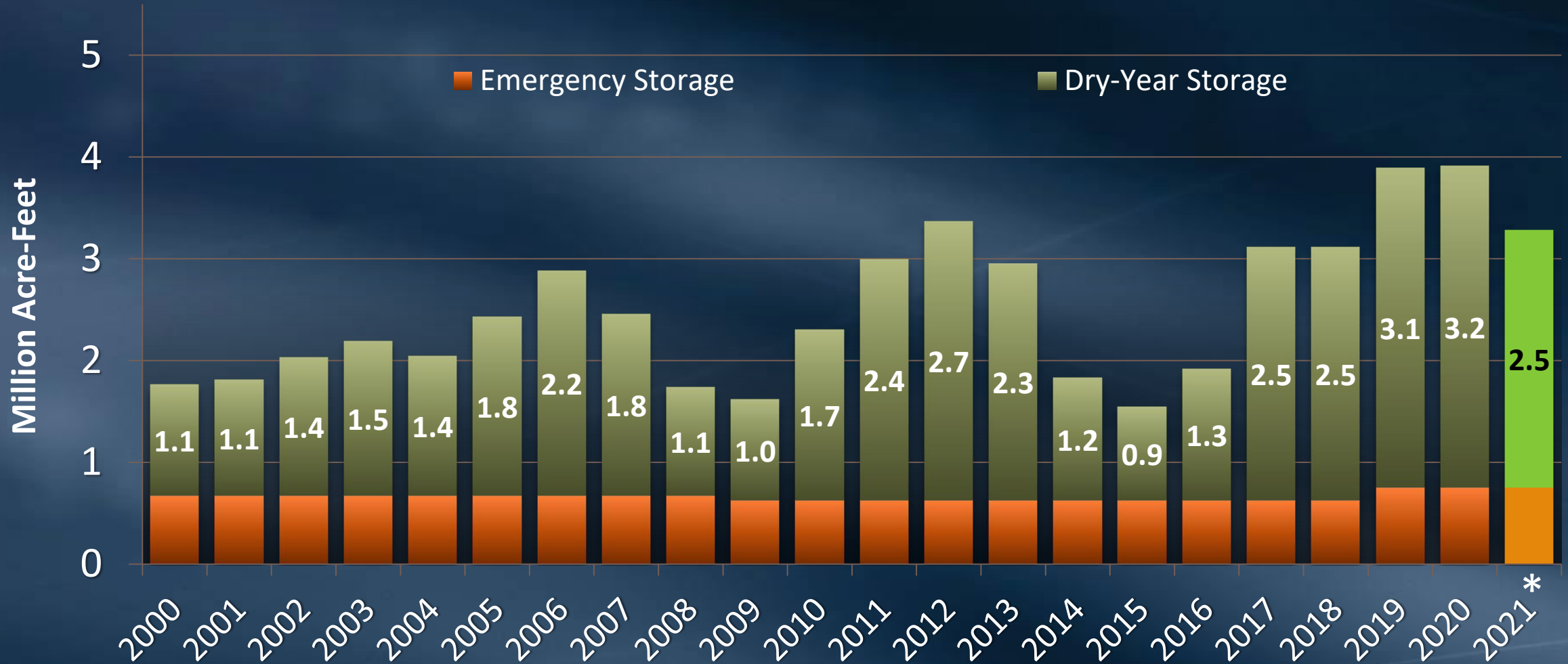
Manage regional storage to avoid or reduce the frequency of severe water supply allocations and avoid large supply allocation increases from year-to-year, to the extent practicable

Flexibility in the WSDM Plan Allows for Adaptation

- Operating Principles
 - Able to respond to changed conditions and implement lessons learned
- Contractual Requirements
 - SWP groundwater banking partnerships
 - Repayment of previously stored water
 - Potential DCP contributions
- Other Considerations
 - Conditions reporting and WSAP implementation

Projected Metropolitan Storage Balances

End of Year Balances



* Estimate – May change based on supply/demand conditions

Summary

- Metropolitan has invested in a diverse storage portfolio
- The WSDM Plan provides guidance for managing storage during periods of surplus and shortage
- Storage programs are not created equally
- Storage levels are critical in water supply condition reporting and implementation of the Water Supply Allocation Plan
- The WSDM Plan provides a flexible framework that has enabled the region to maintain a high degree of water supply reliability

