



Evaluation of Regional Storage Portfolio Metropolitan's Emergency Storage Objective

Water Planning and Stewardship Committee

Item 9-3

May 13, 2019

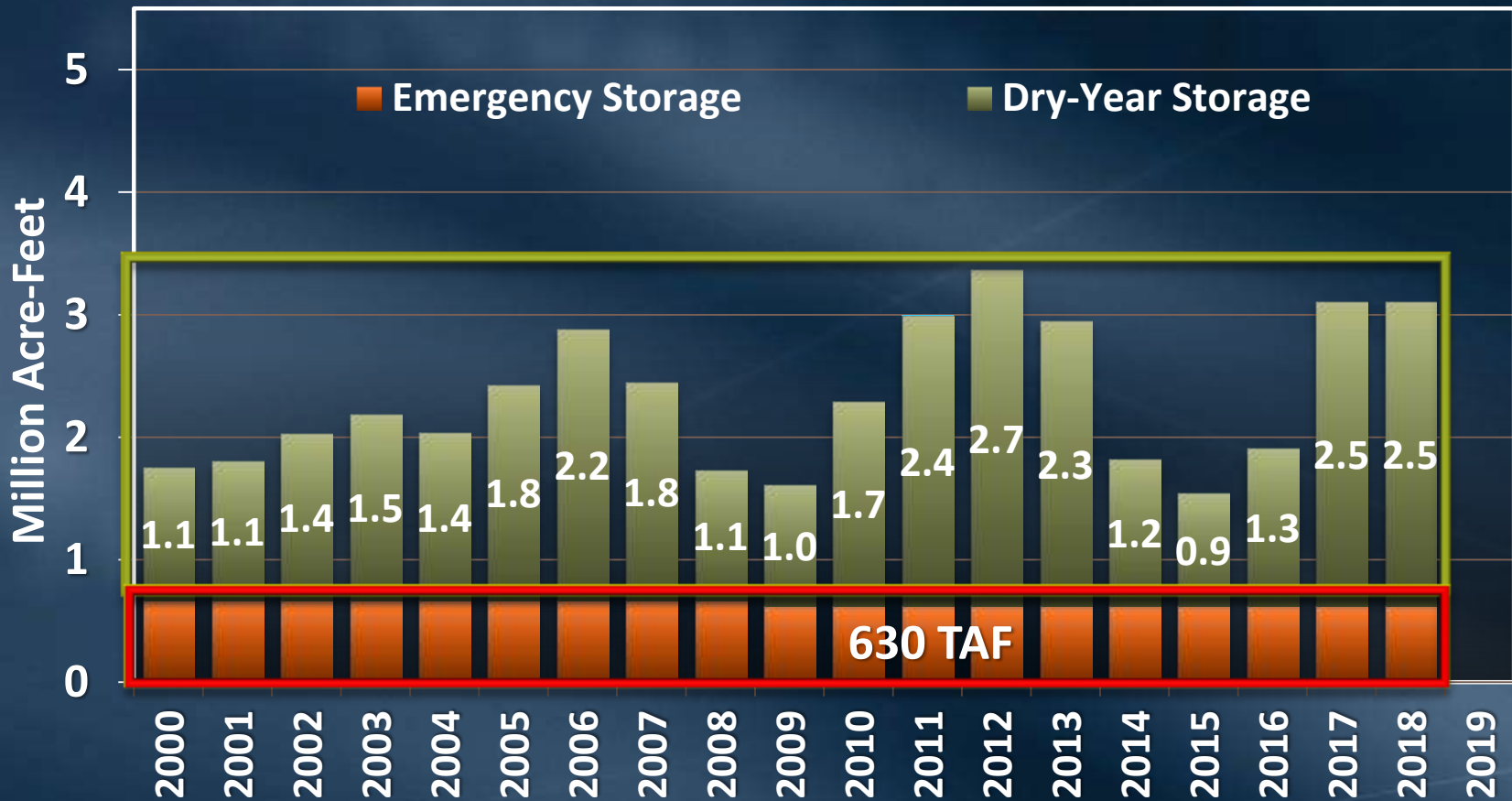
Evaluation of Regional Storage Portfolio

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**Emergency
Storage Objective**

**Existing Dry-Year
Storage Programs**

Historic Metropolitan Dry-Year and Emergency Storage



Aqueducts cross San Andreas Fault to deliver imported supplies to the region



Los Angeles Aqueduct

California Aqueduct West Branch

California Aqueduct East Branch

Colorado River Aqueduct

San Andreas Fault

- Susceptible to:**
 - Fault rupture
 - Ground failure
 - Shaking damage

Imported Water

- Metropolitan
- CA DWR
- Los Angeles
- MWD Service Area

What the emergency storage objective is and what it is not

- Regional planning objective for storage
 - Prepares region for catastrophic earthquake
 - Planning estimate for the amount of water that Metropolitan will store for the region
 - Allows delivery of supplemental water to member agencies during emergency outage
 - Prevent severe water shortages to the region
- Not intended to set a policy for allocating or apportioning storage per member agency

Our collaboration process accomplished important goals

- Developed Member Agency workgroup for emergency storage evaluation
- Updated emergency criteria based on
 - New information and lessons learned
 - Member Agency input
- Updated recommendation for Metropolitan's Emergency Storage Objective
 - Based on new methodology that takes into account practicable member agency actions during outage

We reviewed emergency criteria and recommended updates



Outage Period

Period of time imported water aqueducts are out of service

- Current criteria is 6 months outage for all imported water aqueducts
- Update considered:
 - New vulnerability assessments point to longer repair times
 - Mitigating factor is added flexibility gained from investments in Metropolitan's system
- New criteria:
 - **6 months:** Areas served by CRA and most areas served by East Branch
 - **12 months:** Areas served by West Branch and Los Angeles Aqueduct



Retail Demand Cutback

Cutback on retail demand during
outage period

Cutback from retail demands in 2015 IRP

- Current criteria is 25% cutback
- Update focused on reducing outdoor use
- New criteria:
 - **25% to 35%** to be reasonable range



Local Supply Production

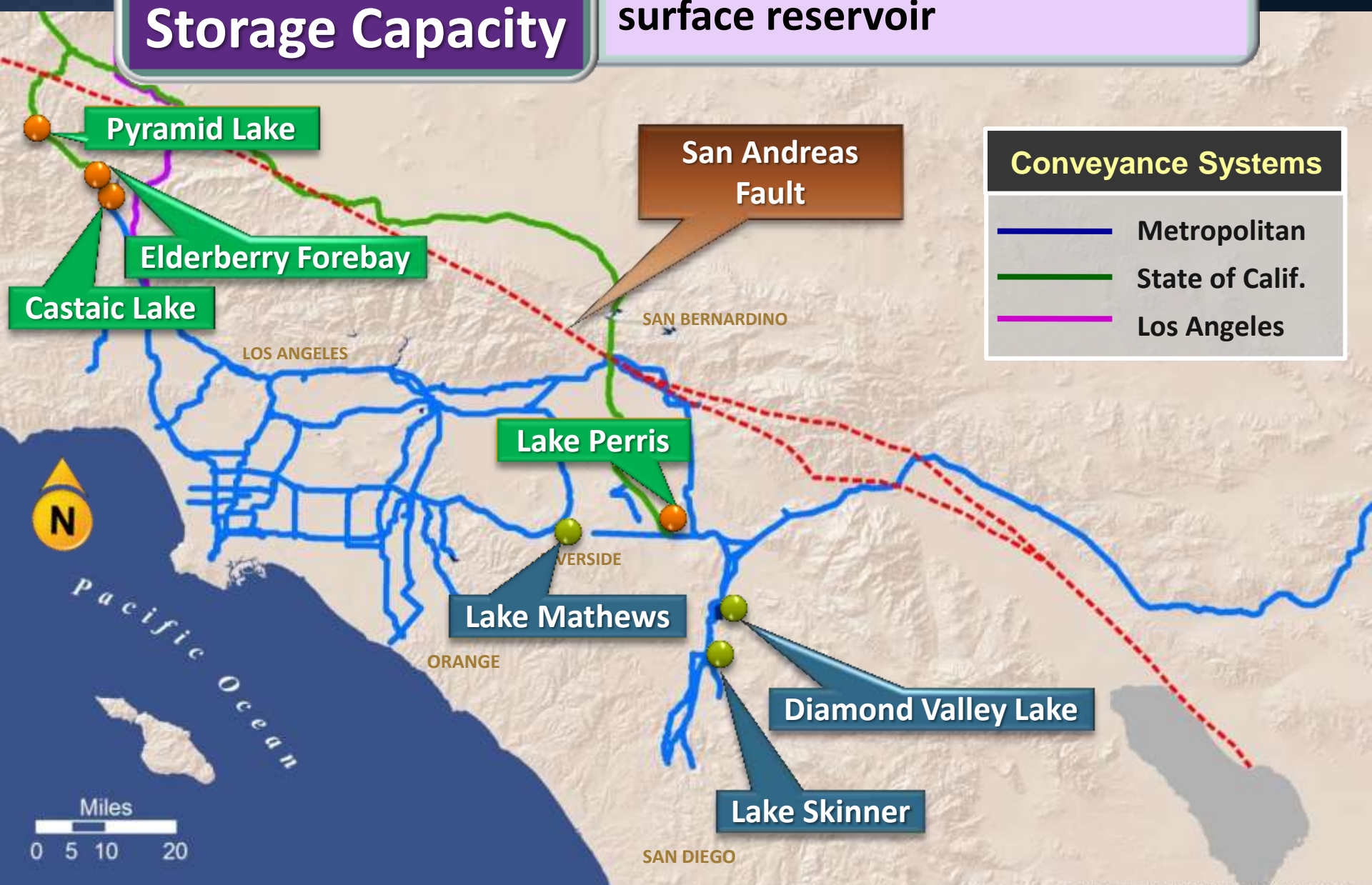
Level of local supply production by MAs during outage period

- Current criteria is 100% local production
 - Member agencies' projections in the IRP
- Update recognized:
 - Uncertainties and potential damage to local facilities
 - Variable durations of local repair
- New criteria:
 - Local production level at **80% to 100%**



Emergency Storage Capacity

Existing DWR and Metropolitan surface reservoir



Conveyance Systems

- Metropolitan
- State of Calif.
- Los Angeles

We updated methodology to allow flexibility during emergency outage

- Recognizes uncertainties within a large service area
 - Range in local production from different potential local damages
 - Range in retail demand cutback from different levels of additional conservation that could be achievable
- Allows for an envelope of solutions that yields an acceptable range of emergency storage
 - Recommended emergency storage planning level is selected from this envelope
 - Prevent severe shortages to the region during outage

Emergency Storage at various ranges of cutback and local production

Emergency Storage Objective in AF (for Year 2018)				
	Retail Demand Cutback			
Local Supply	0%	25%	35%	50%
80%				
90%				
100%	1,180,000			

Emergency Storage at various ranges of cutback and local production

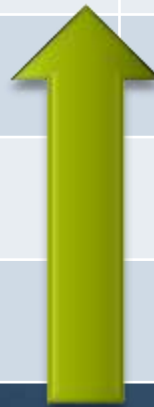
Emergency Storage Objective in AF (for Year 2018)				
	Retail Demand Cutback			
Local Supply	0%	25%	35%	50%
80%	1,420,000			
90%	1,290,000			
100%	1,180,000			

Emergency Storage at various ranges of cutback and local production

Emergency Storage Objective in AF (for Year 2018)				
	Retail Demand Cutback			
Local Supply	0%	25%	35%	50%
80%	1,420,000			
90%	1,290,000	750,000	570,000	330,000
100%	1,180,000			

Emergency Storage at various ranges of cutback and local production

Emergency Storage Objective in AF (for Year 2018)				
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Local Supply	0%	25%	35%	50%
80%	1,420,000	830,000	640,000	380,000
90%	1,290,000	750,000	570,000	330,000
100%	1,180,000	690,000	520,000	290,000

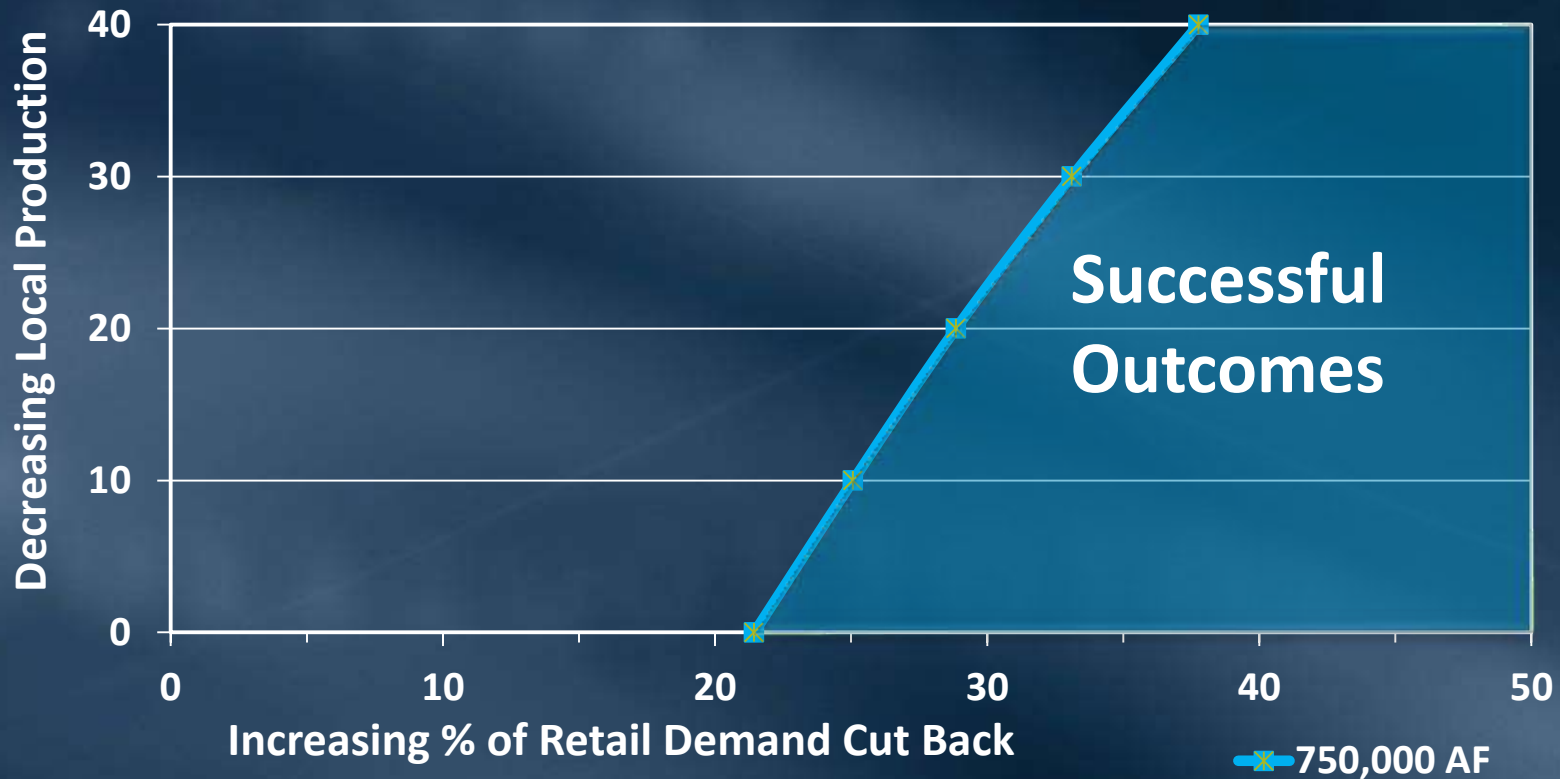


Direction of increasing Emergency Storage

Recommended planning level for Emergency Storage is 750 TAF

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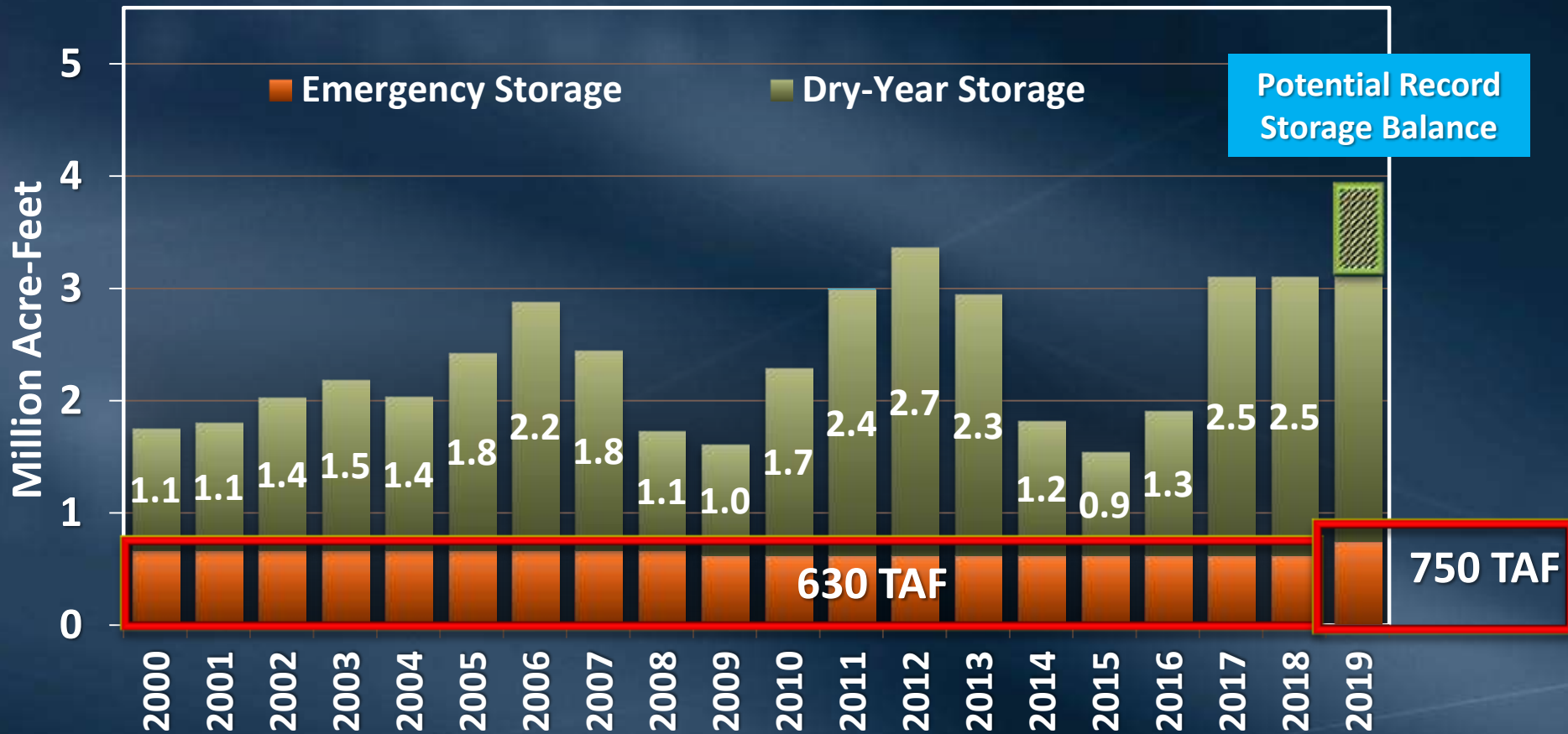
Recommended emergency storage of 750 TAF provides flexibility



Metropolitan's emergency storage objective will increase to 750 TAF

- Staff recommends increasing emergency storage objective from 630 TAF to 750 TAF
 - Stored within the region in existing DWR and Metropolitan reservoirs
 - Will be reflected in the next WSDM cycle
- Proposed to periodically revisit objective
 - Assess if update is needed, possibly following completion of a new IRP

Emergency Storage Objective will increase in 2019



Next Steps on the Evaluation of Regional Storage Portfolio

- Emergency Storage Objective
 - Review and incorporate additional feedback
 - Finalize White Paper
 - Transmit Final White Paper to Board and Member Agencies
- Dry-Year Storage Programs
 - Review of spatial considerations and distribution system
 - Assess existing Metropolitan storage programs

