



Colorado River History & Operations

February 2024

1922 – Colorado River Compact



- There is hereby apportioned to the Upper Basin and the Lower Basin, respectively, the exclusive use of 7,500,000 acre-feet of water per annum



- The Lower Basin is given the right to increase its use by 1,000,000 acre-feet per annum



- The Upper Basin will not cause the flow of the river at Lee Ferry to be depleted below 75,000,000 acre-feet over any period of ten consecutive years



- Present perfected rights to the beneficial use of waters of the Colorado River System are unimpaired by this compact
- If Treaty with Mexico, split between Basins

1922 - Colorado River Compact

1944 - Mexico Treaty

1948 - Upper Colorado Basin Compact

Colorado River Basin Overview

Colorado River Allocations

1922 Colorado River Compact established Upper and Lower Basin States' allocations

UPPER BASIN STATES - 7.5 MAF

1948 Upper Colorado Basin Compact established the Upper Basin States' apportionment

LOWER BASIN STATES - 7.5 MAF

California - 4.4 MAF

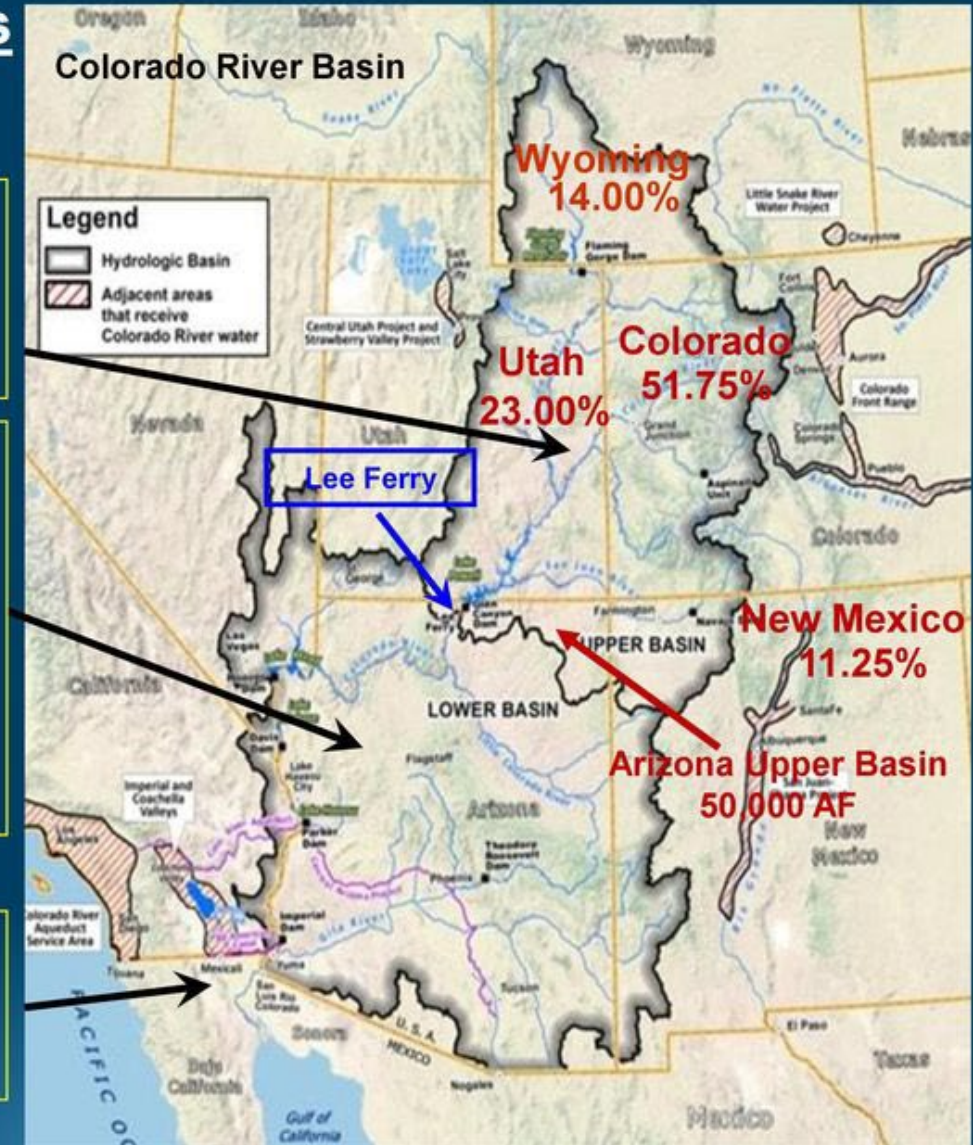
Arizona - 2.8 MAF

Nevada - 0.3 MAF

1928 Boulder Canyon Project Act established the Lower Basin States' apportionment

MEXICO - 1.5 MAF

1944 Treaty with Mexico established Mexico's treaty deliveries

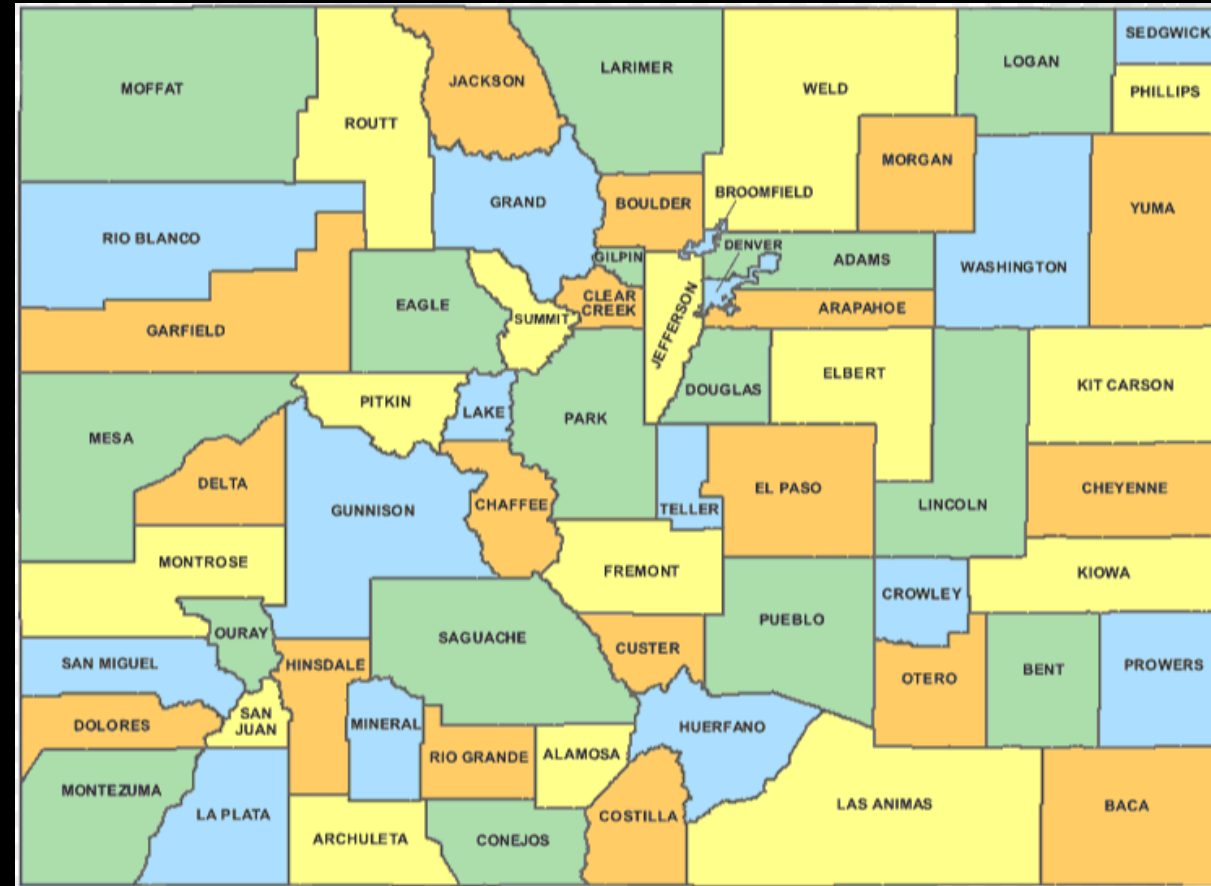
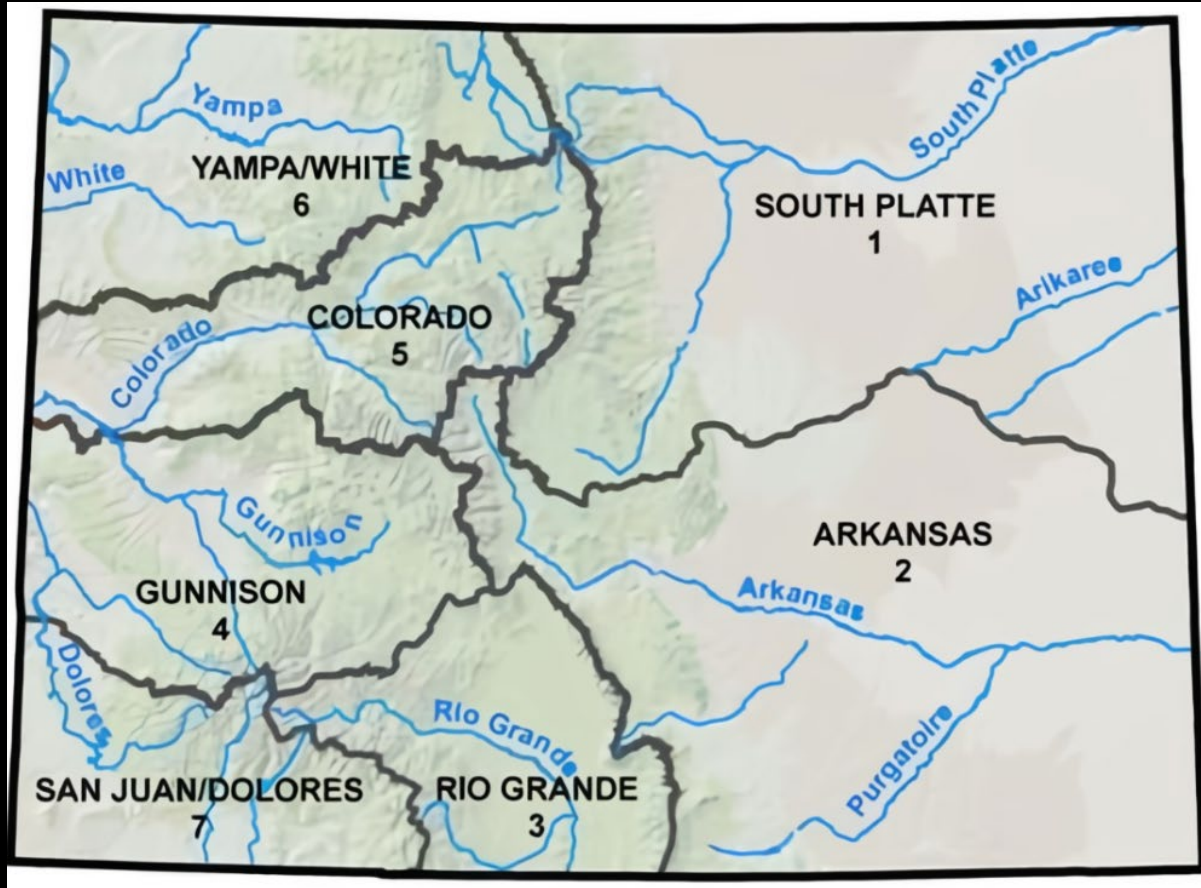


Colorado River "Basin"

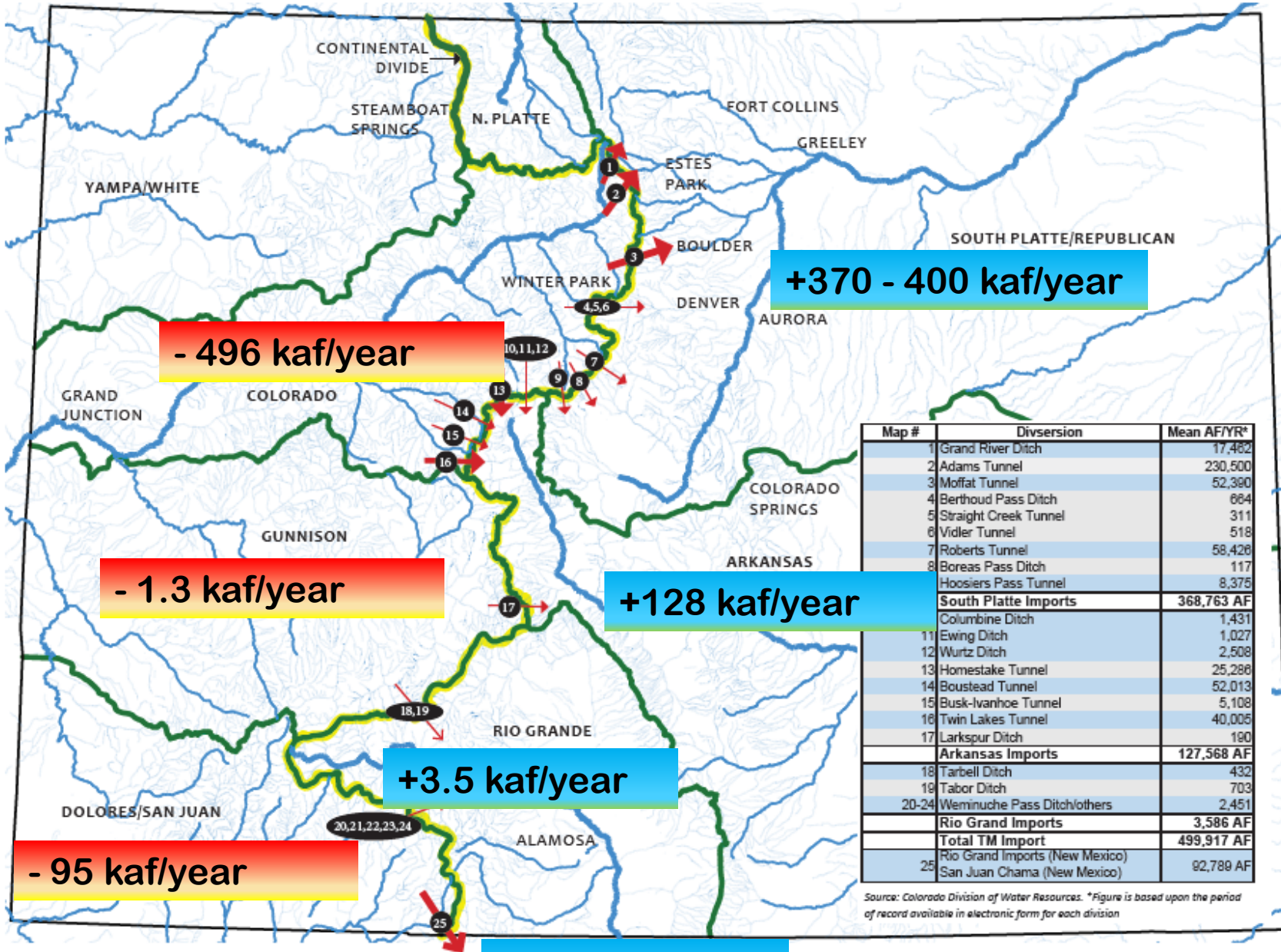


"... all of the drainage area of the Colorado River System and all other territory within the United States of America to which the waters of the Colorado River System shall be beneficially applied."

All Coloradans are Connected to the Colorado River



Colorado's Transmountain Diversions

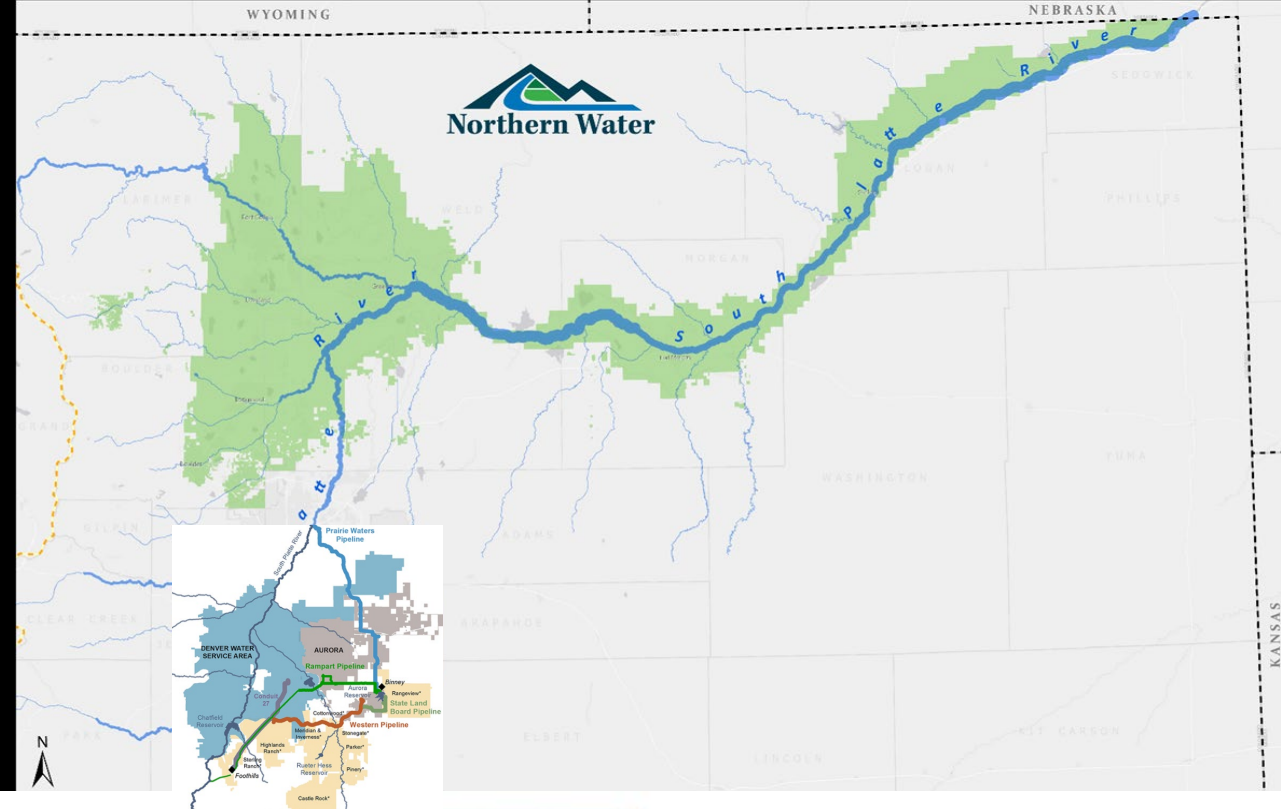


Map #	Diversions	Mean AF/YR*
1	Grand River Ditch	17,462
2	Adams Tunnel	230,500
3	Moffat Tunnel	52,390
4	Berthoud Pass Ditch	664
5	Straight Creek Tunnel	311
6	Vidler Tunnel	518
7	Roberts Tunnel	58,428
8	Boreas Pass Ditch	117
	Hoosiers Pass Tunnel	8,375
	South Platte Imports	368,763 AF
	Columbine Ditch	1,431
11	Ewing Ditch	1,027
12	Wurtz Ditch	2,508
13	Homestake Tunnel	25,286
14	Boustead Tunnel	52,013
15	Busk-Ivanhoe Tunnel	5,108
16	Twin Lakes Tunnel	40,005
17	Larkspur Ditch	190
	Arkansas Imports	127,568 AF
18	Tarbell Ditch	432
19	Tabor Ditch	703
20-24	Weminuche Pass Ditch/others	2,451
	Rio Grand Imports	3,586 AF
	Total TM Import	499,917 AF
	Rio Grand Imports (New Mexico)	
25	San Juan Chama (New Mexico)	92,789 AF

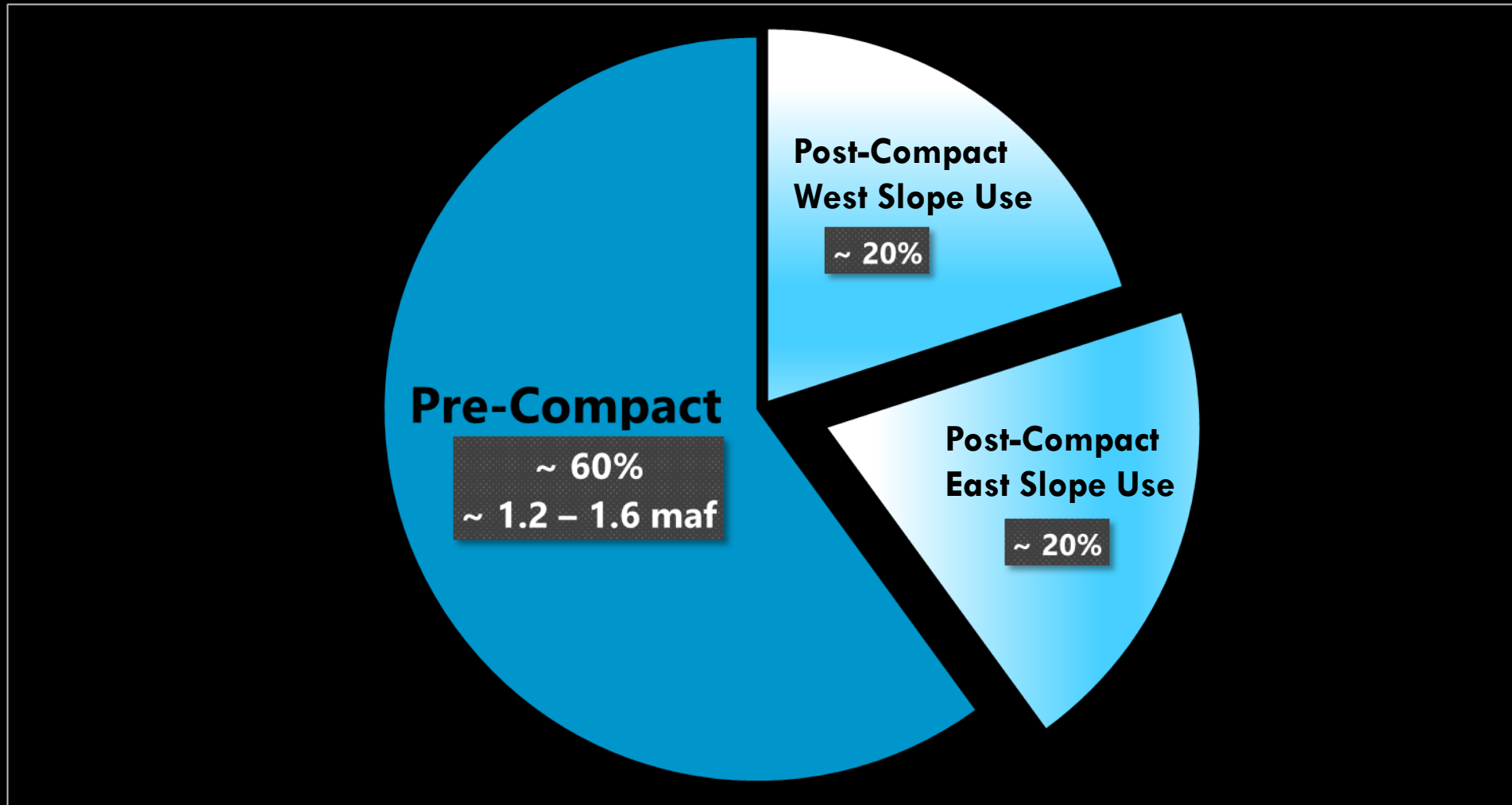
Source: Colorado Division of Water Resources. *Figure is based upon the period of record available in electronic form for each diversion

Benefits of Imports

- 25+ Counties Receive Colorado River Supplies
 - ~ 20% South Platte Basin Supplies
 - ~ 15% Arkansas Basin Supplies
- Irrigated Agriculture
 - ~ 640,000 acres South Platte Basin
 - ~ 265,000 acres Arkansas Basin
- Municipal/Domestic
 - ~3 million South Platte River Basin
 - ~ 900,000 Arkansas River Basin
- Recreation
 - In River/Flowing Water
 - Flat Water
- Environmental/Ecological
 - Riparian
 - Fish & Wildlife



Colorado River Water Use (within Colorado)



South Platte Basin

CBT/WG +230,000 af/year

Denver Water + 110,000 af/year

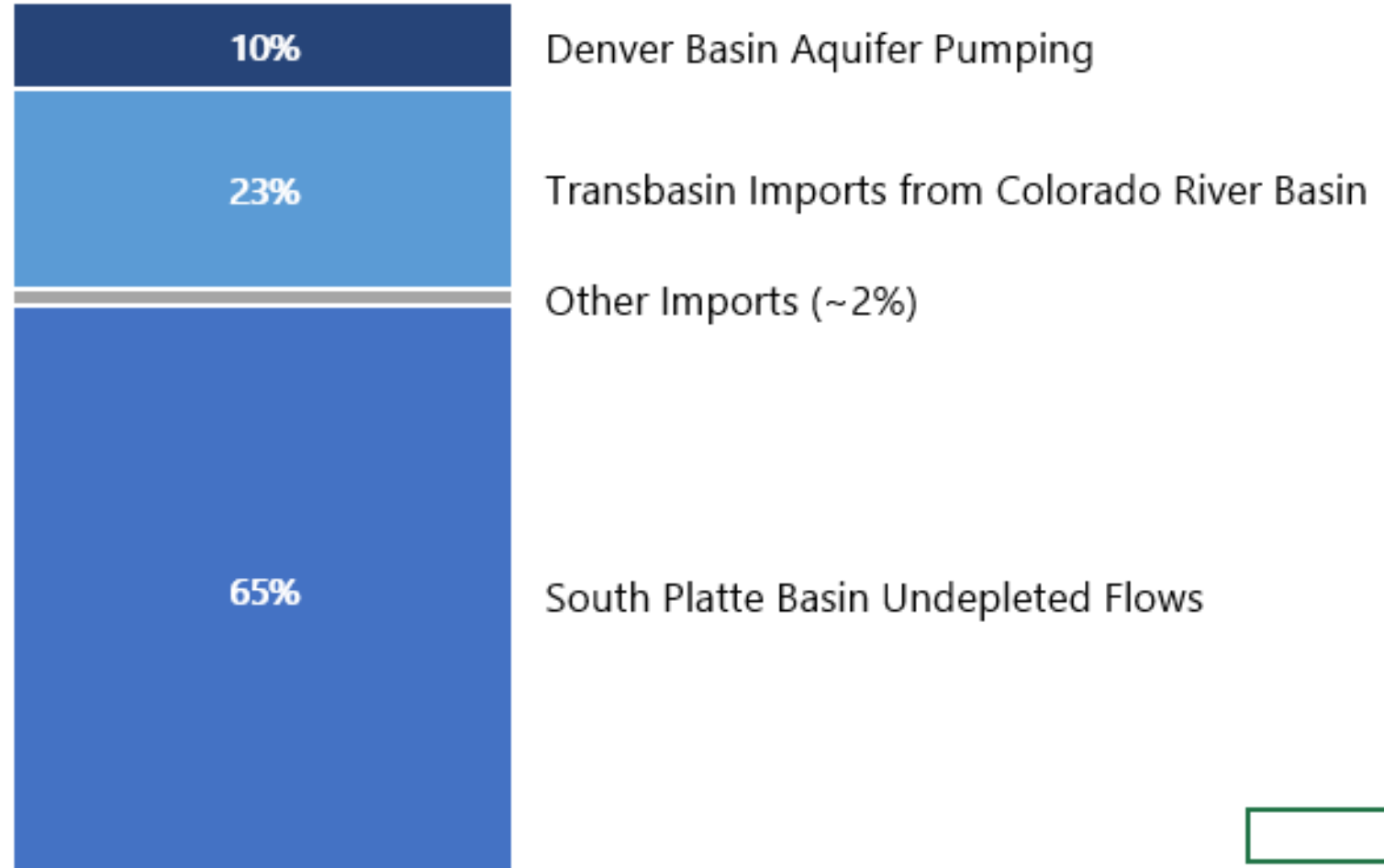
WSSC + 17,000 af/year

Others + 22,000 af/year

Arkansas – S Platte +15,000 af/year

Total +370 -400kaf/year

South Platte Basin Supply



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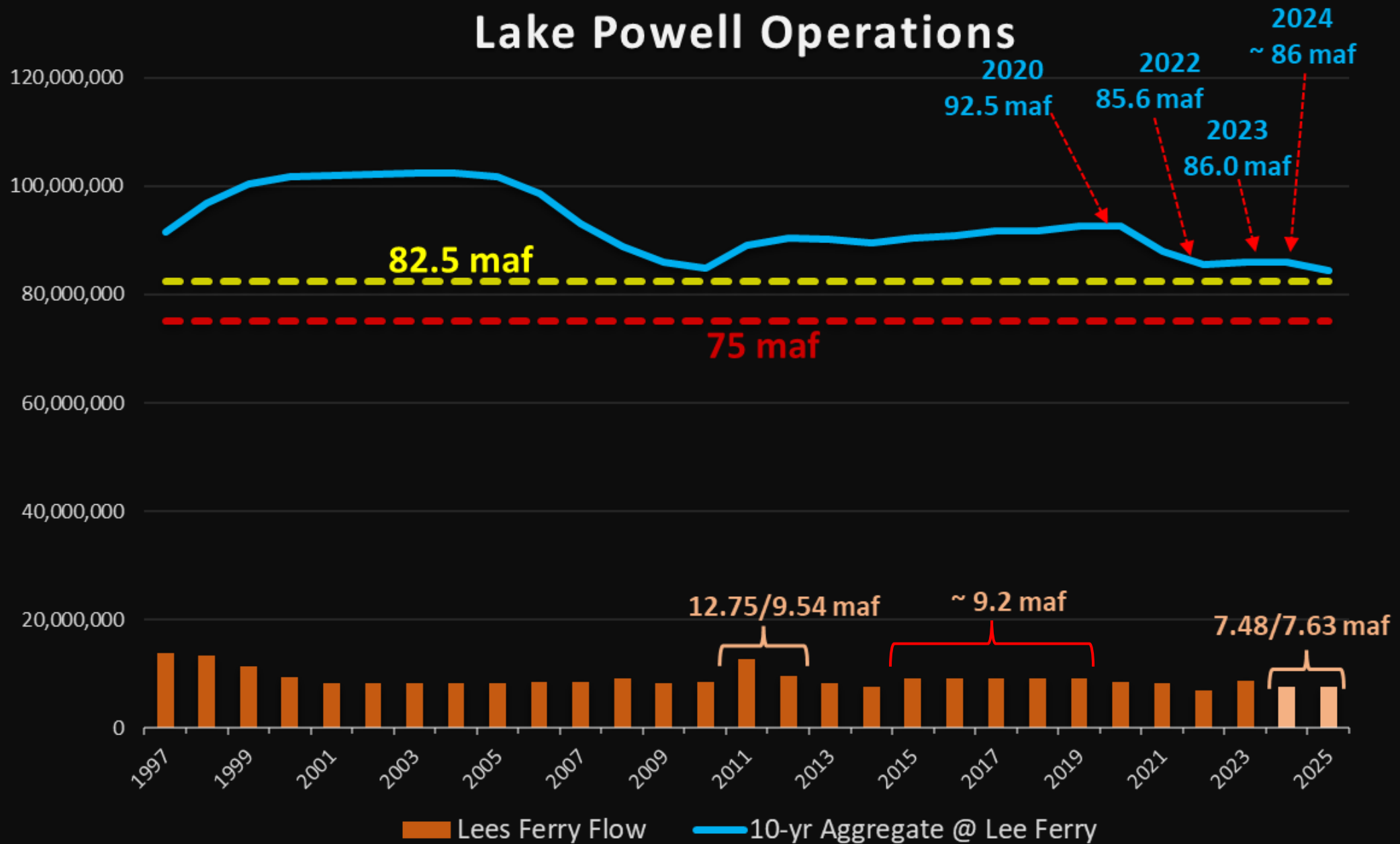


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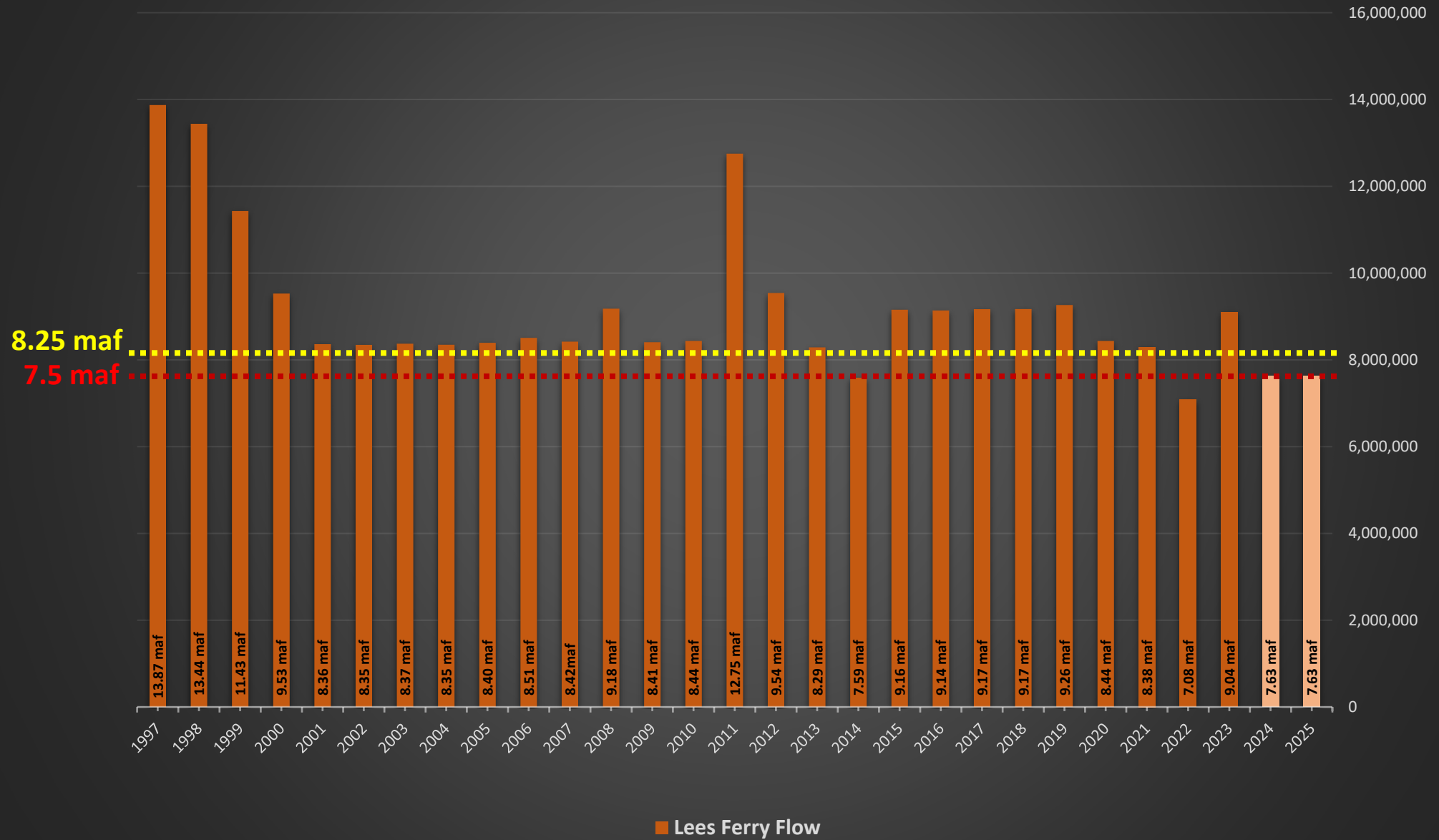


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Lake Powell Operations



Lake Powell Operations

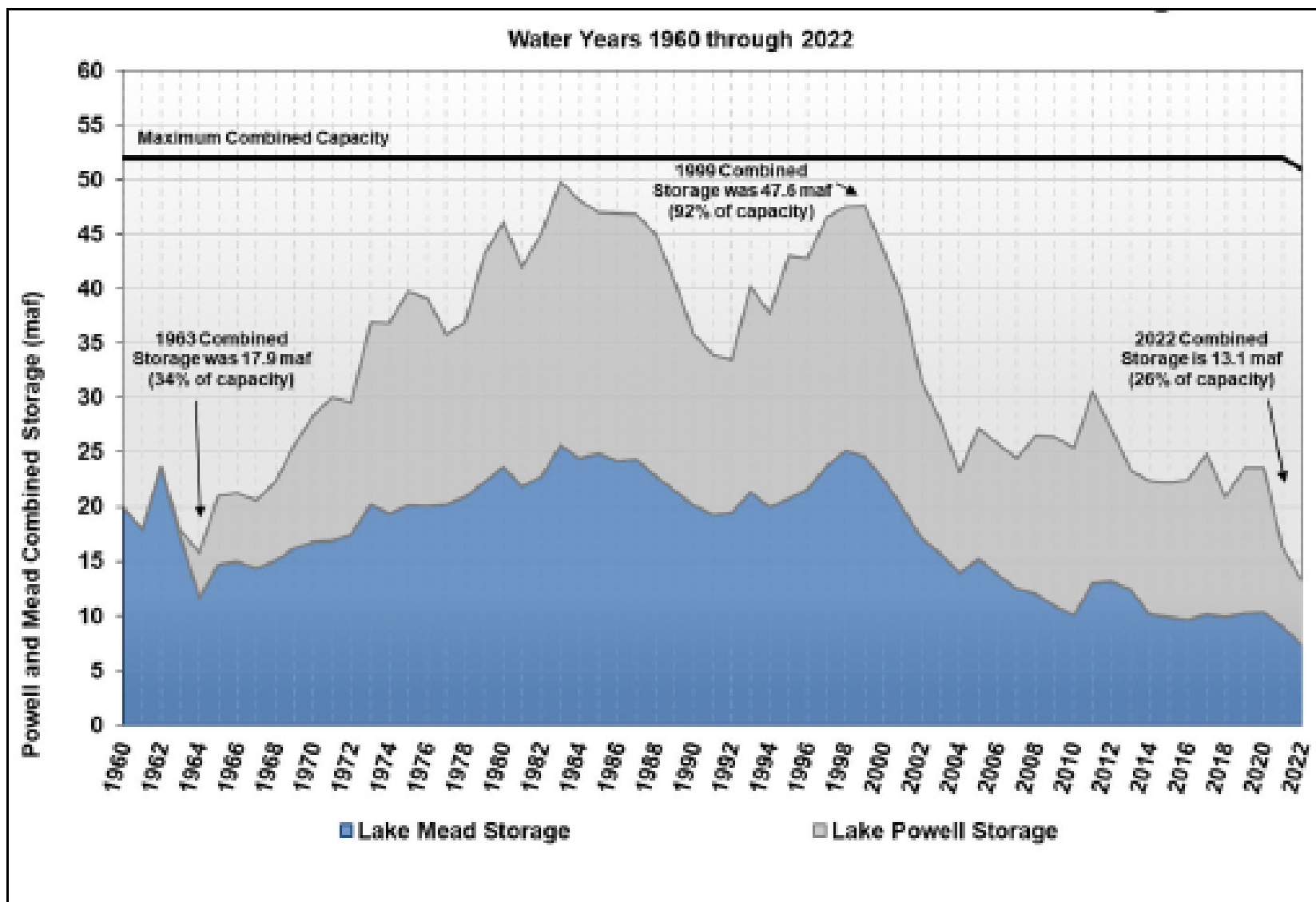


2024 Operations (2007 IGS Operating Tiers)

Lake Powell			Lake Mead		
Elevation (feet)	Operation According to the Interim Guidelines	Live Storage (maf) ¹	Elevation (feet)	Operation According to the Interim Guidelines	Live Storage (maf) ¹
3,700	Equalization Tier Equalize, avoid spills or release 8.23 maf	24.3	1,220	Flood Control Surplus or Quantified Surplus Condition Deliver > 7.5 maf	25.9
3,660 (2022)	Upper Elevation Balancing Tier² Release 8.23 maf; if Lake Mead < 1,075 feet, balance contents with a min/max release of 7.0 and 9.0 maf	18.5 maf (2022)	1,200 (approx.) ²	Domestic Surplus or ICS Surplus Condition Deliver > 7.5 maf	22.9 (approx.) ²
3,575		9.5	1,145		15.9
3,574	Mid-Elevation Release Tier Release 7.48 maf; if Lake Mead < 1,025 feet, release 8.23 maf	8.8 maf	1,105	Normal or ICS Surplus Condition Deliver ≥ 7.5 maf	11.9
3,550		7.5	1,075		9.4
3,525	Lower Elevation Balancing Tier Balance contents with a min/max release of 7.0 and 9.5 maf	5.9	1,065	Shortage Condition Deliver 7.167 ⁴ maf	8.8 maf
3,523		5.5 maf	1,050		7.5
3,490		4.0	1,047		7.5 maf
3,370		0	1,025	Shortage Condition Deliver 7.083 ⁵ maf	5.8
			1,000		Shortage Condition Deliver 7.0 ⁶ maf Further measures may be undertaken ⁷
			895		0

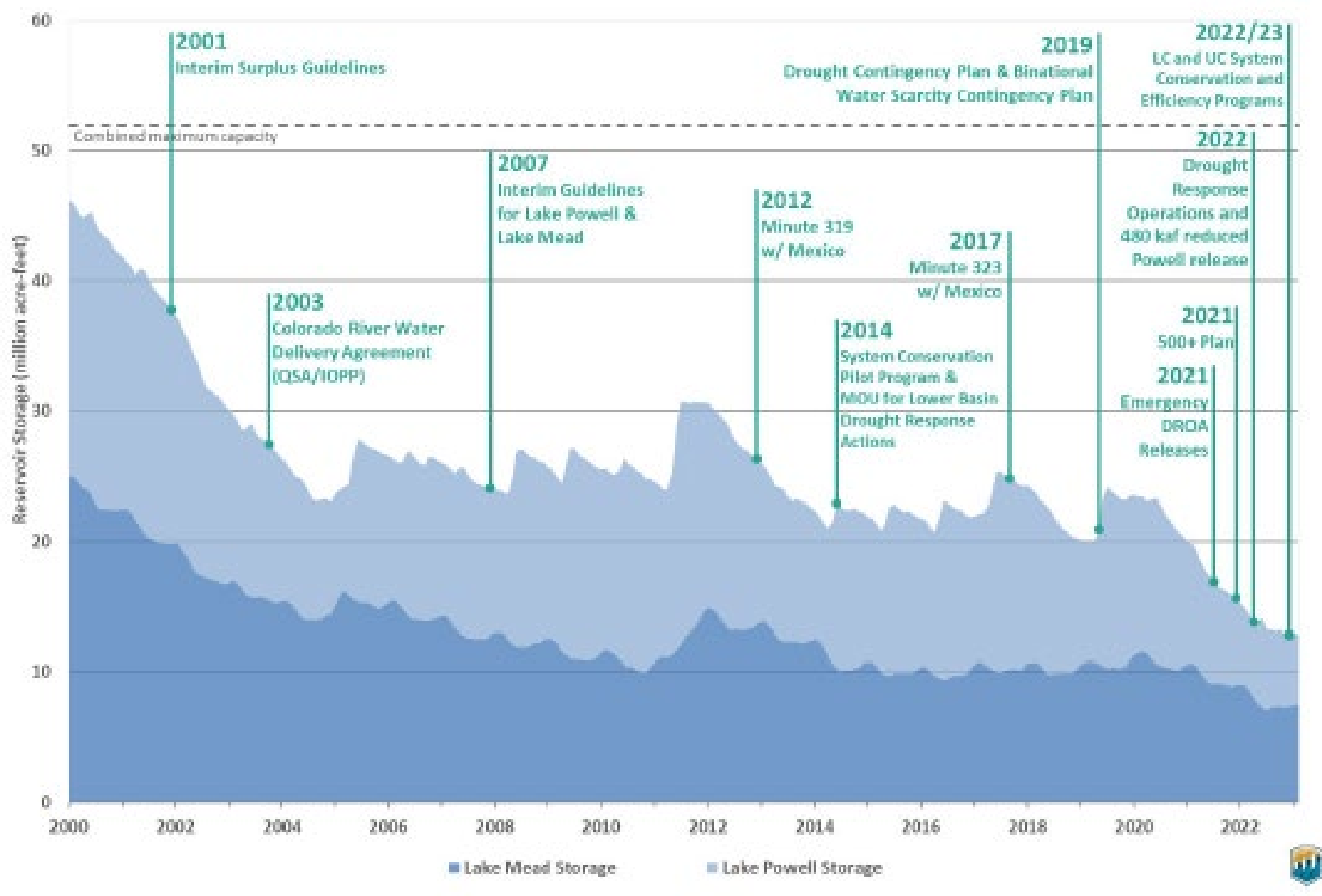
The Problem Statement

Lake Powell and Lake Mead End of Operating Year Storage

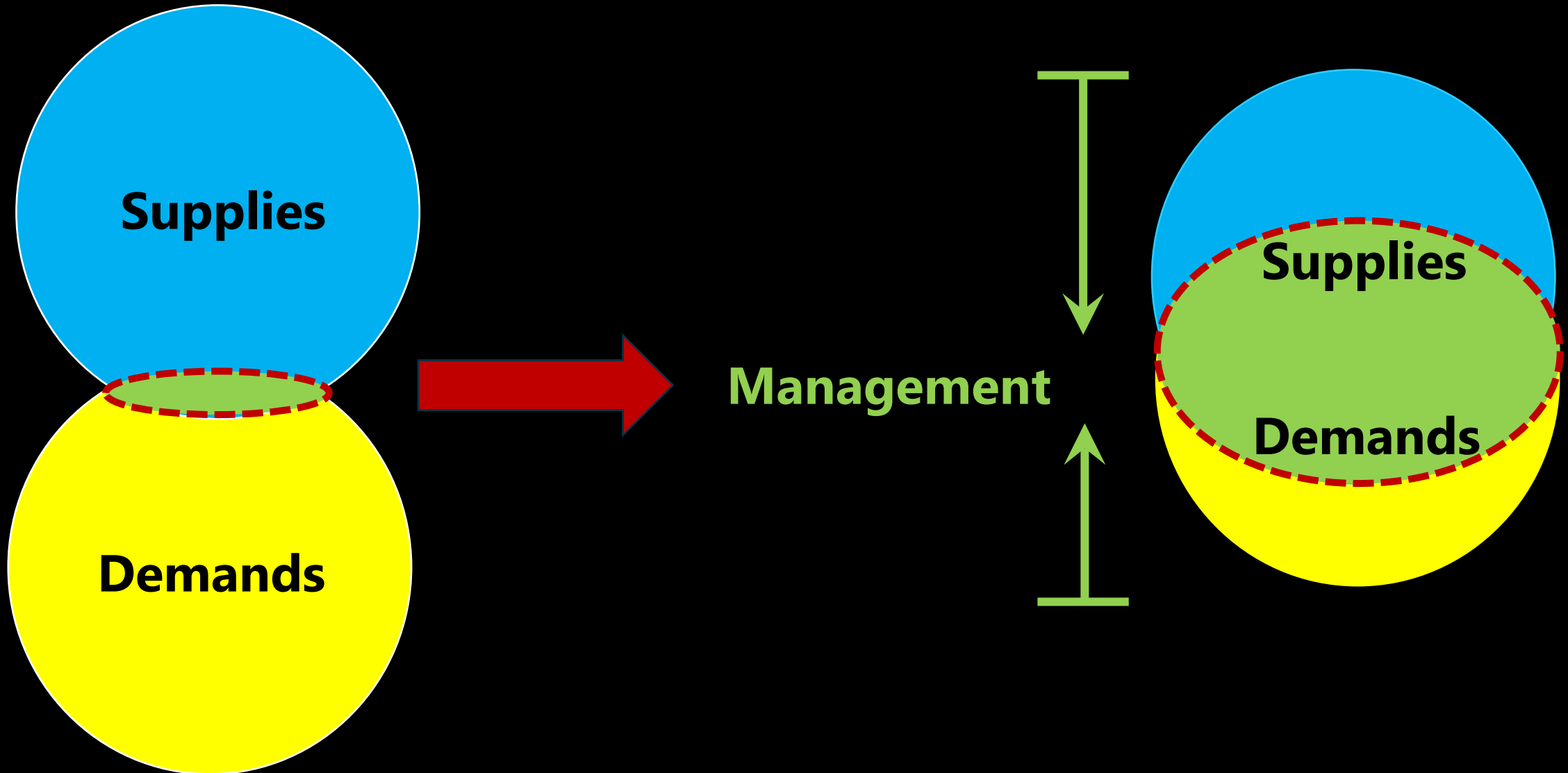


The Problem Statement

Actions and Agreements to Protect Lake Powell and Lake Mead Reservoir Elevations (since 2000)

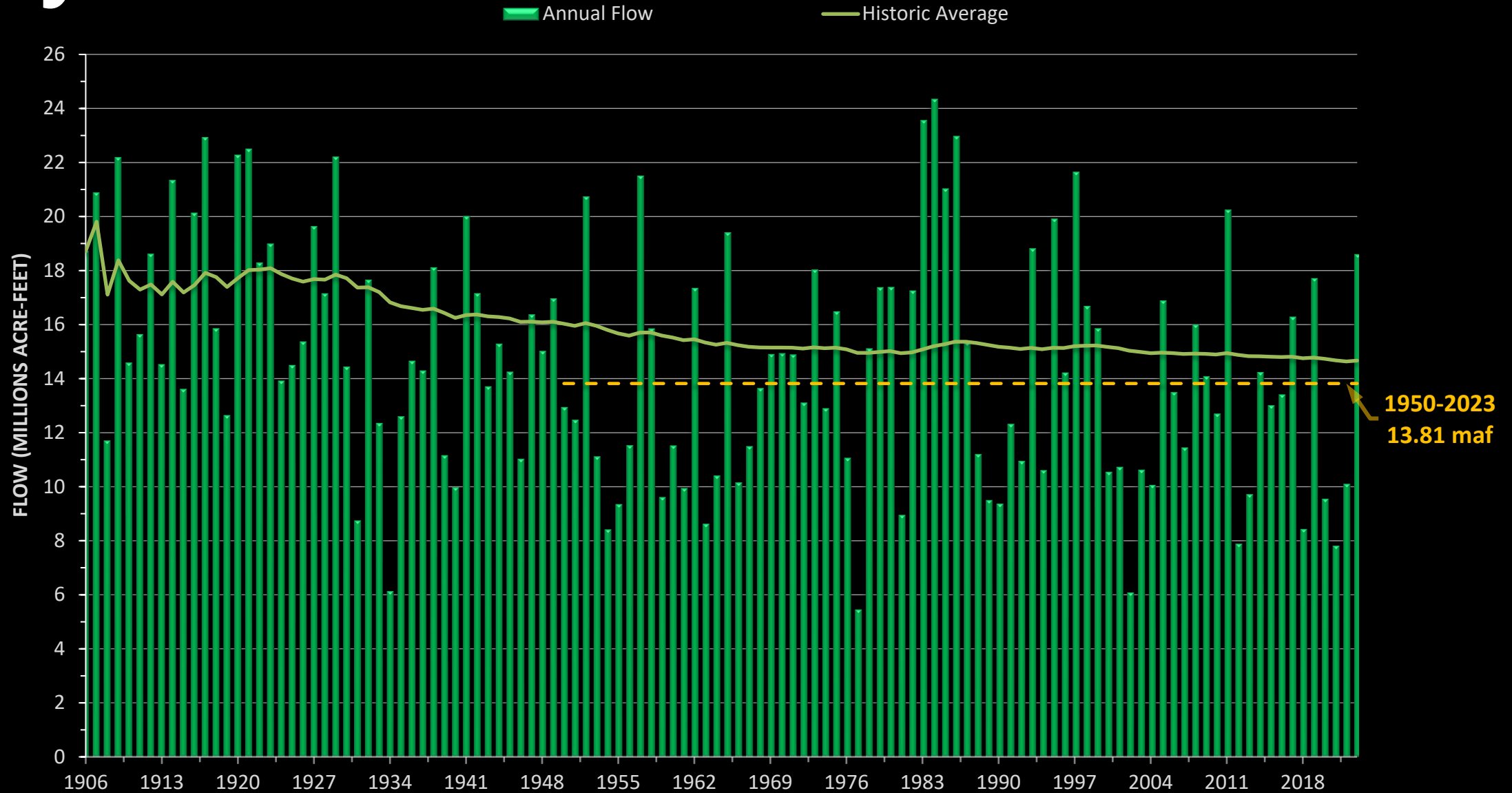


Colorado River Challenge(s)



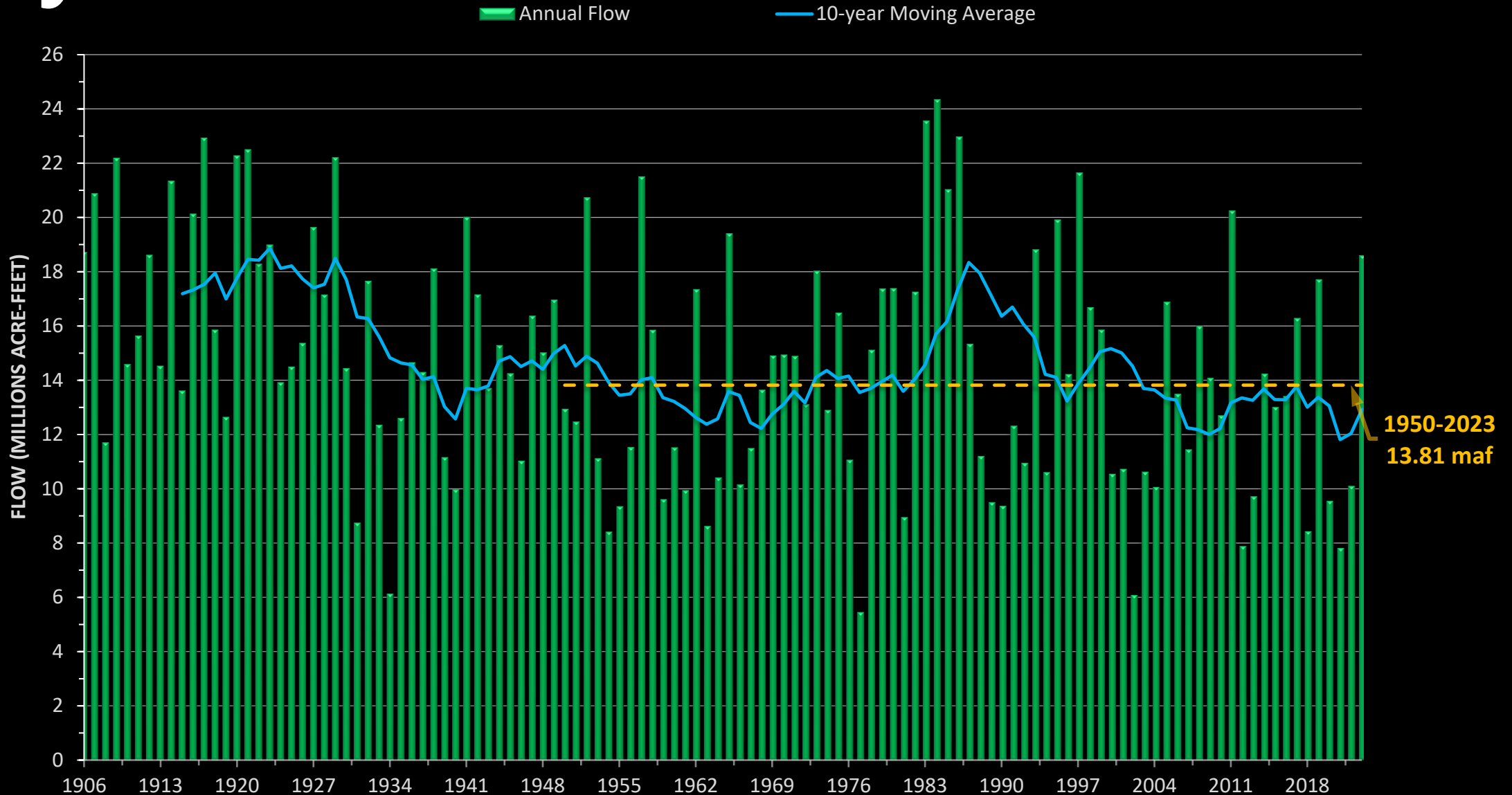
Supply?

Colorado River Natural Flow at Lees Ferry



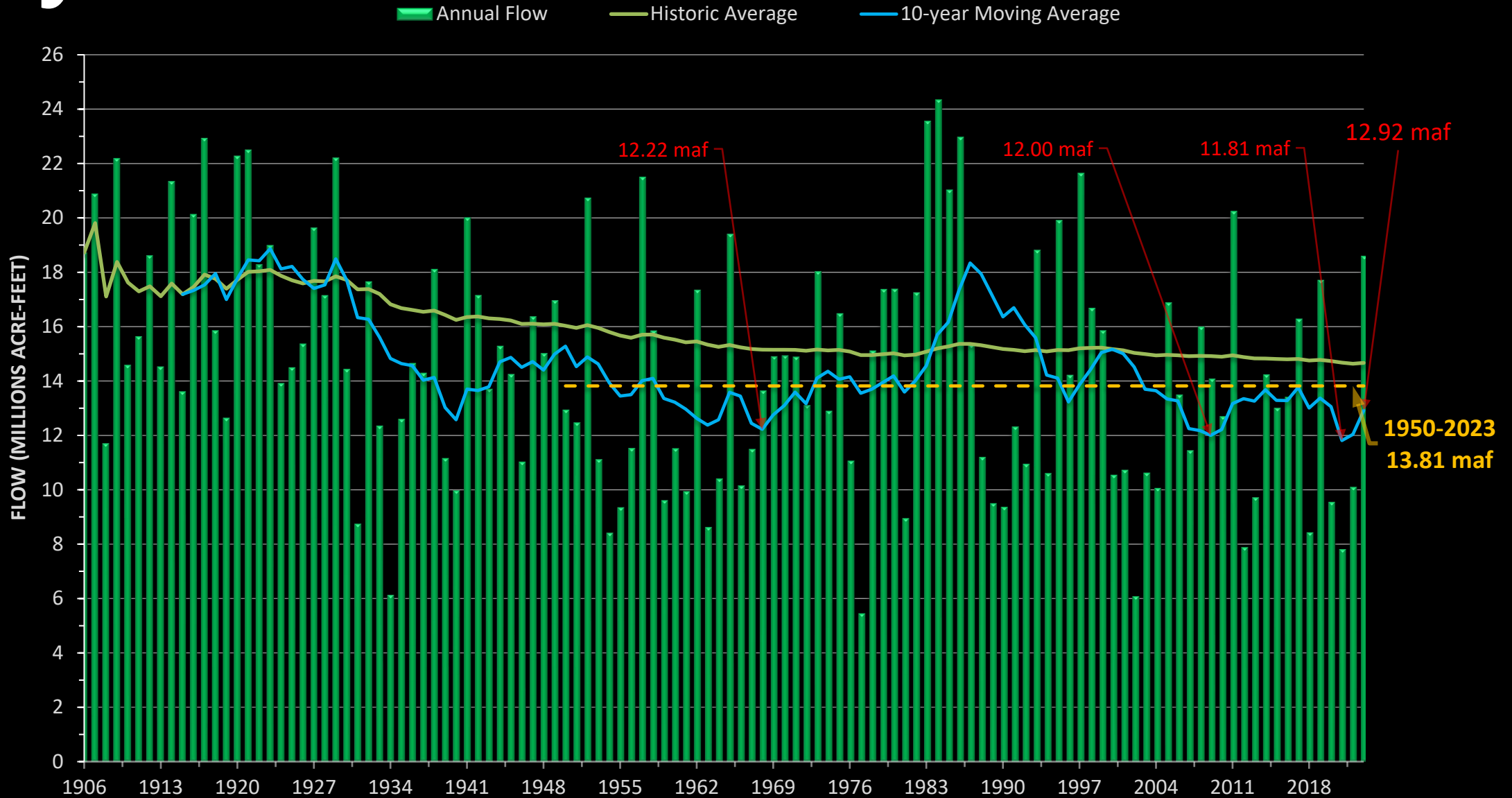
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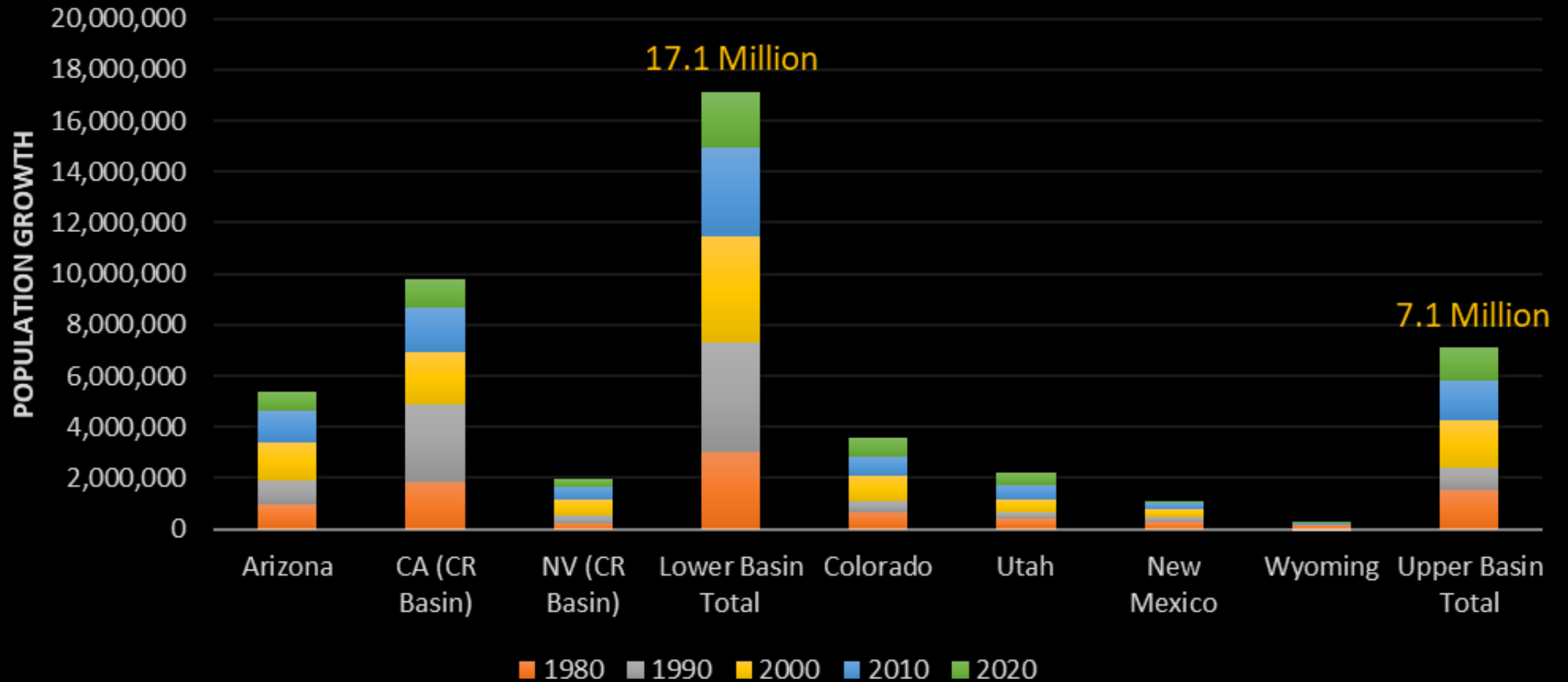
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Colorado River Natural Flow at Lees Ferry



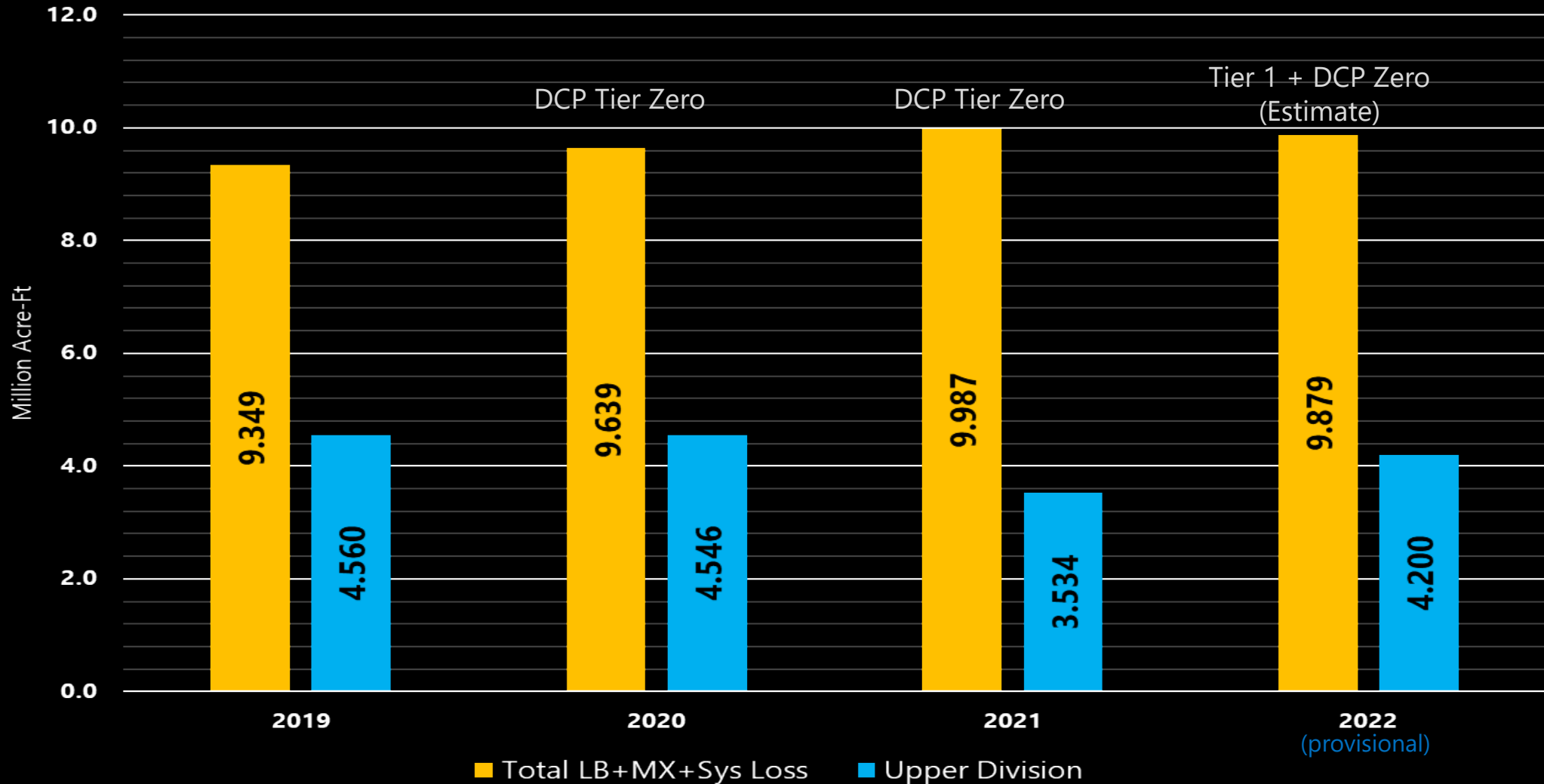
Demands?

Population Growth in Colorado River Basin (1970 - 2020)

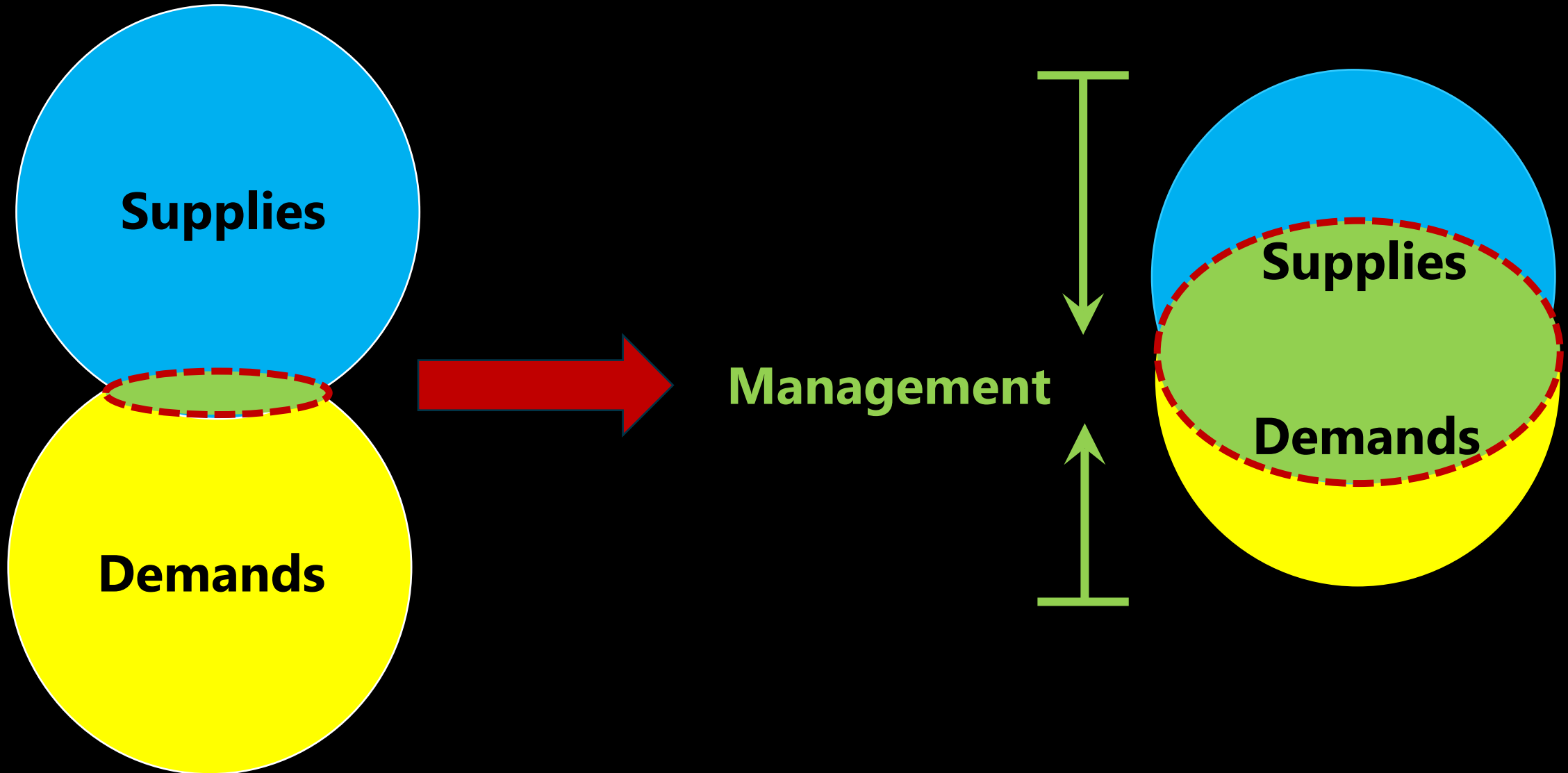


Basin Depletion Trends 2019 - 2022

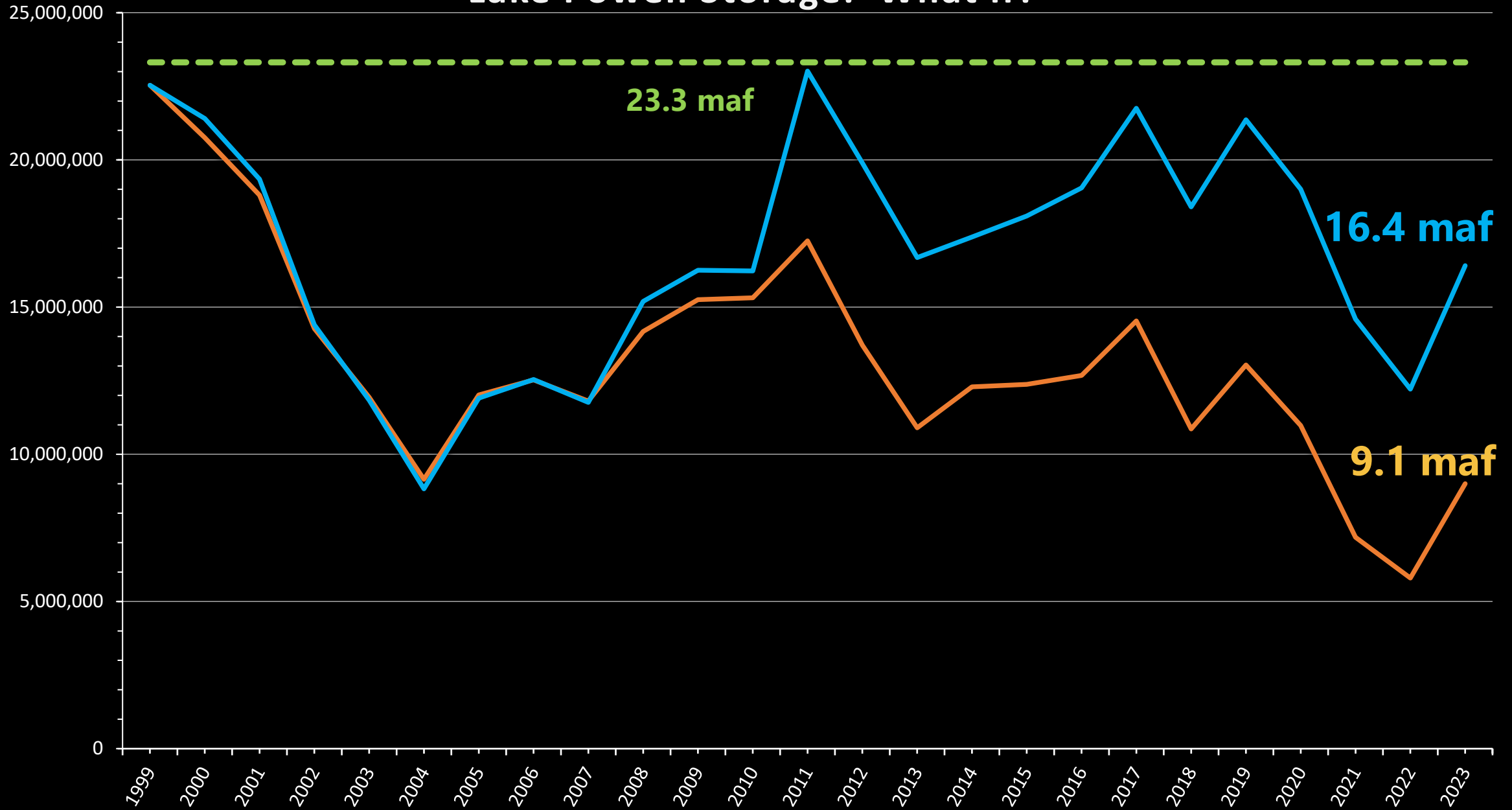
Colorado River Basin Use



Colorado River Challenge(s)



Lake Powell Storage: What if?



Discussion?

