



# Water Resources Research Center Webinar

Post-2026 Colorado River Operational Guidelines: An Overview of the Lower Basin's Alternative

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# Post-2026: Proposed Schedule

**COMPLETED**

Public Scoping Period –  
opportunity for public to provide  
input on scope of EIS and Purpose  
and Need for Proposed Action

**JUNE – AUGUST 2023**

Development of EIS Operational  
Alternatives by Reclamation,  
partners, and stakeholders

**FALL 2023 – SPRING 2024**

Publication of Draft EIS with  
public comment period to follow

**DECEMBER 2024**

**JUNE 2023**

Reclamation publishes  
NOI to Prepare EIS -  
initiates NEPA Process -  
Begins public Scoping  
Period

**FALL 2023**

Reclamation develops Scoping  
Summary Report with  
anticipated Purpose & Need

**SPRING – FALL 2024**

Reclamation prepares  
Draft EIS

**2025 – 2026**

Publication of Final EIS and  
Record of Decision issued

**COMPLETED**

**COMPLETED**



# 2007 Guideline Vulnerabilities and Paradigm Shifts

Operational decisions based on forecasts

## Paradigm Shift

Rely on measured conditions, incorporating hydrology that has happened, rather than what could happen

Single reservoir contents determining reductions

## Paradigm Shift

Base operations and reduction determinations on a **system contents approach**, which is a more holistic indicator of system health and allows for proactive instead of reactive responses to risk

Use of tiers for operations and shortage determinations

## Paradigm Shift

Base reduction determinations on a **continuous function**, instead of categorized tiers

Insufficient reduction volumes

## Paradigm Shift

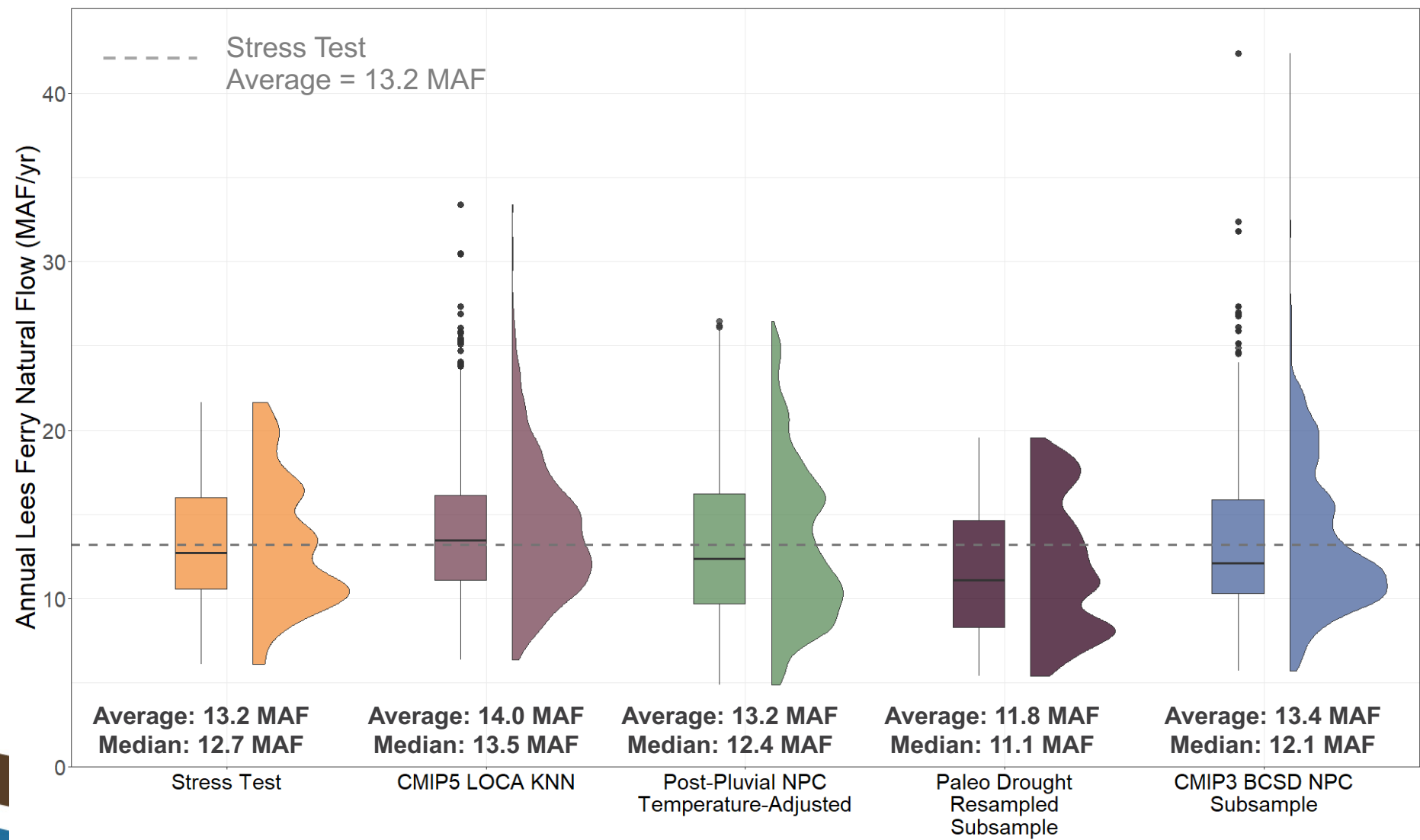
Take proactive reductions before the system is at higher risk and take larger basin-wide reductions if needed to avert crisis

# Reclamation Provided Hydrologies

- Reclamation selected a wide range of future hydrologies to explore system robustness under different operational strategies.
- The hydrologies represent a historical natural flow record in addition to incorporating impacts of climate change, a warming future, and extended droughts.
- One of the 'wetter' hydrologies selected is the Stress Test, which is the natural flow record from 1988 to 2020, with an average flow of 13.2 MAF.
- Overall, the hydrologies cover a wide range of minimum and maximum flow sequences that extend beyond the historical records, especially for the minimum flows.

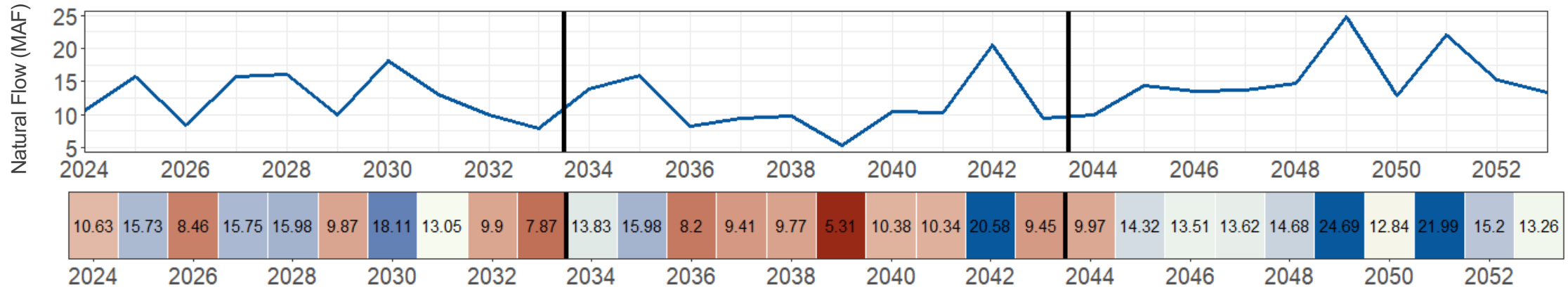


# Reclamation Provided Hydrologies

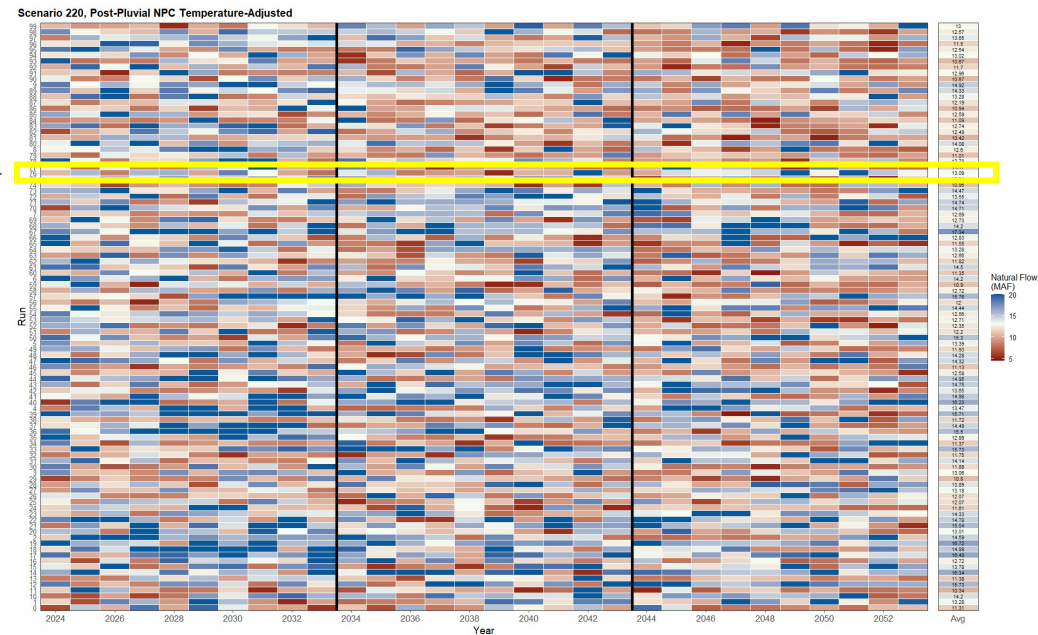


# Heat maps:

## Post-Pluvial NPC Temperature-Adjusted, 100 Traces/Runs



Trace/Run 76

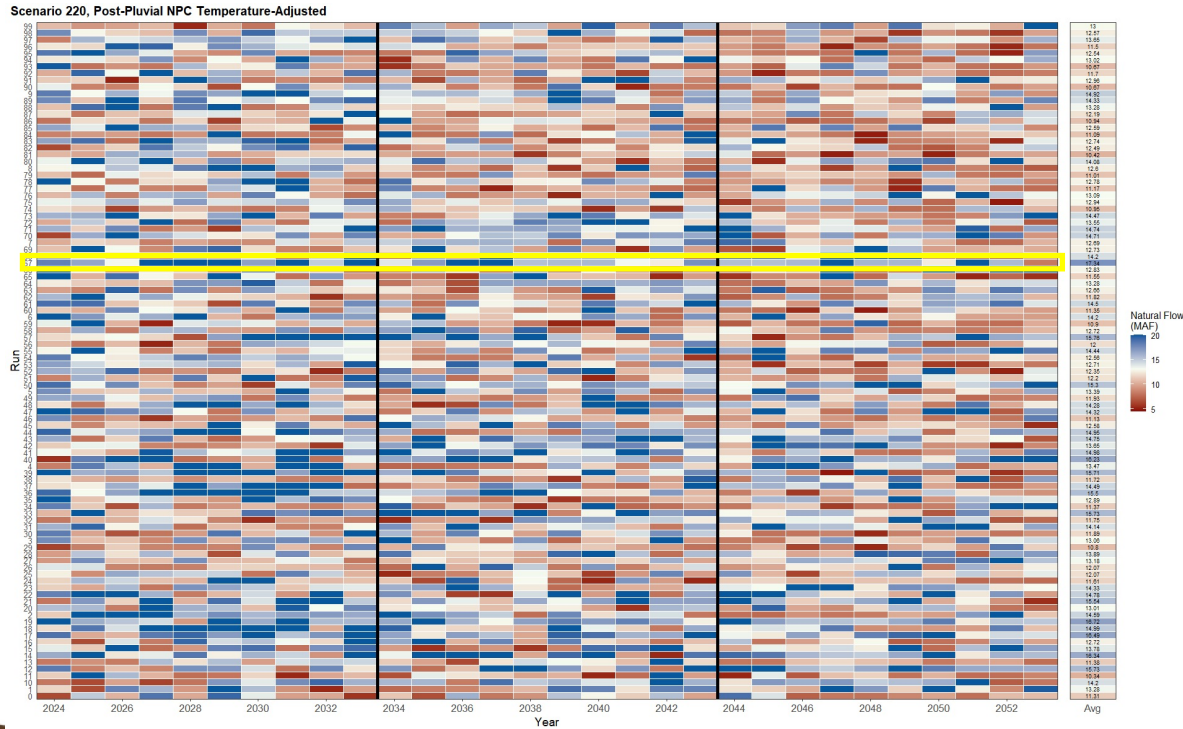


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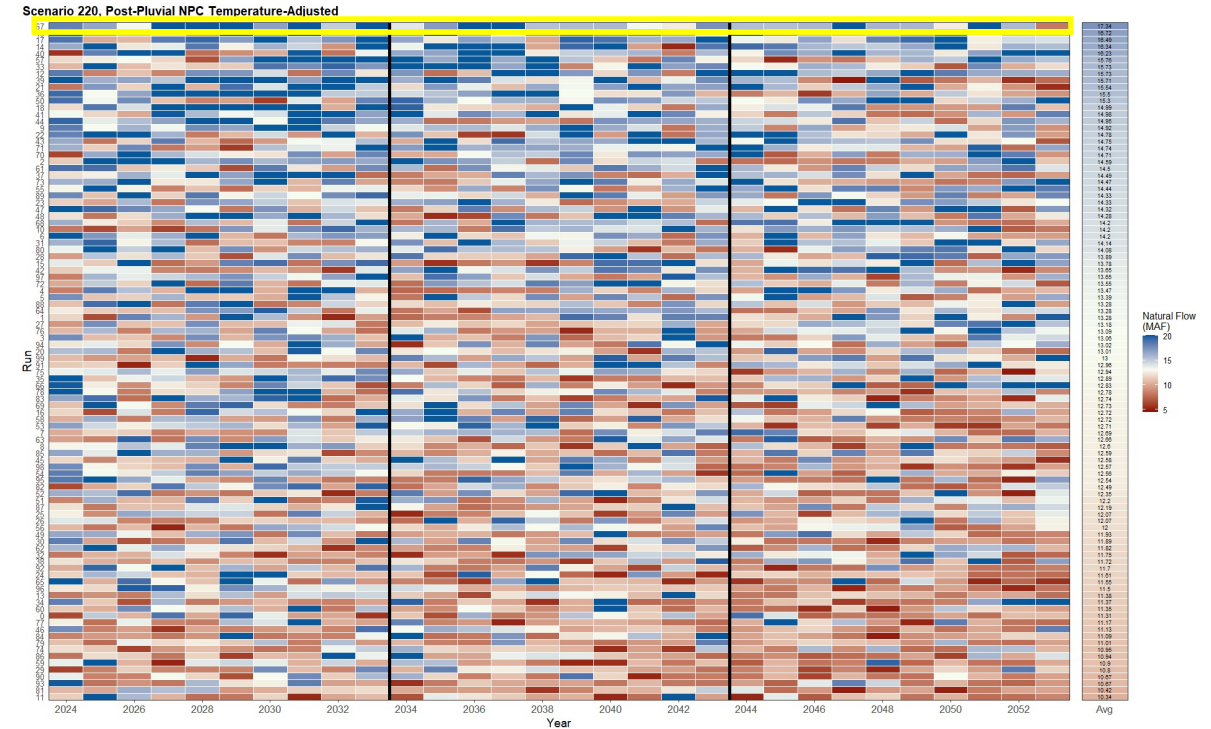
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# Heat maps: Post-Pluvial NPC Temperature-Adjusted, 100 Traces/Runs

UNSORTED

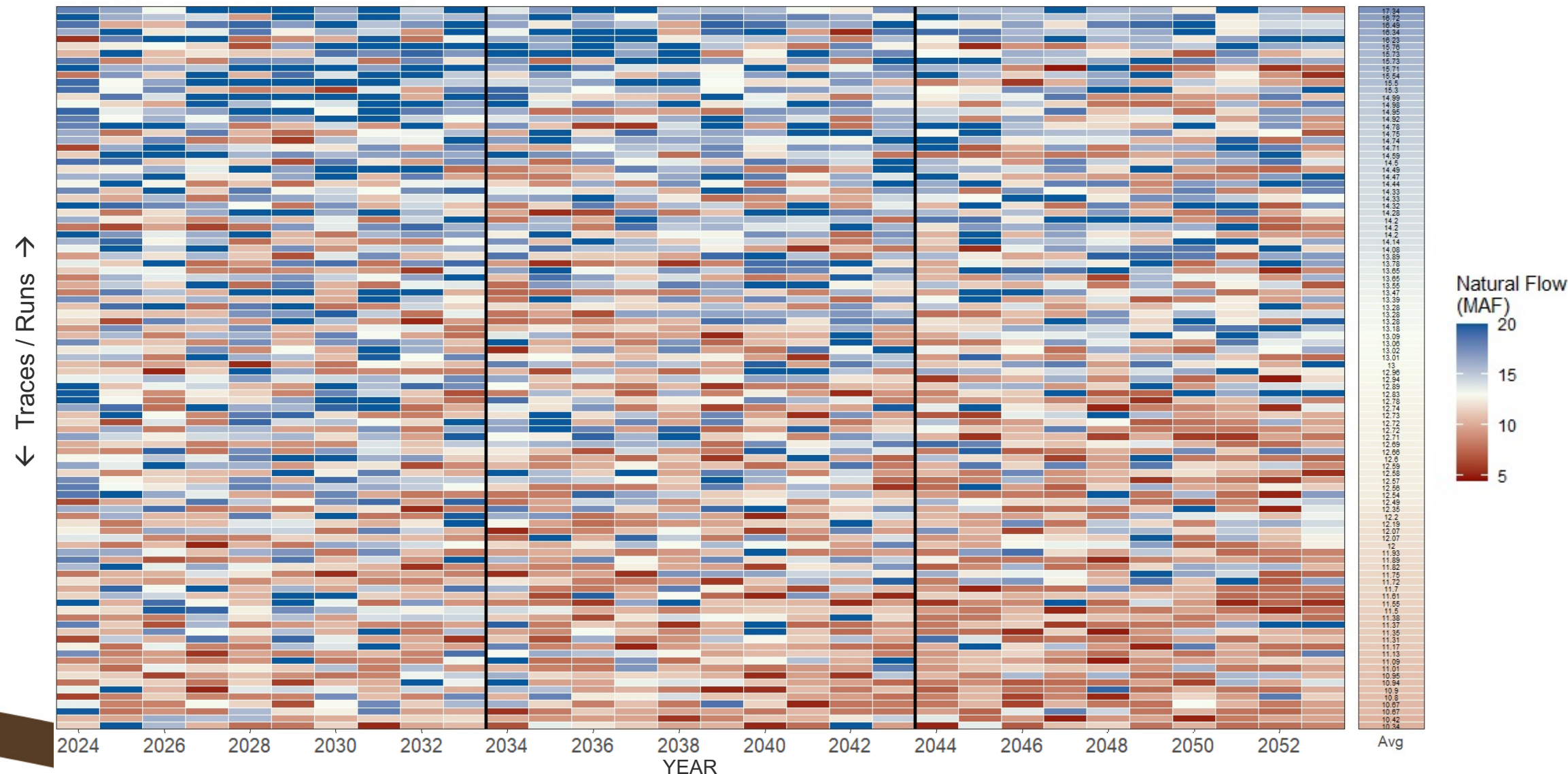


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# Input Hydrology\* (Traces Sorted by Average Natural Flow)



\* Scenario 220; Post-Pluvial NPC Temperature-Adjusted



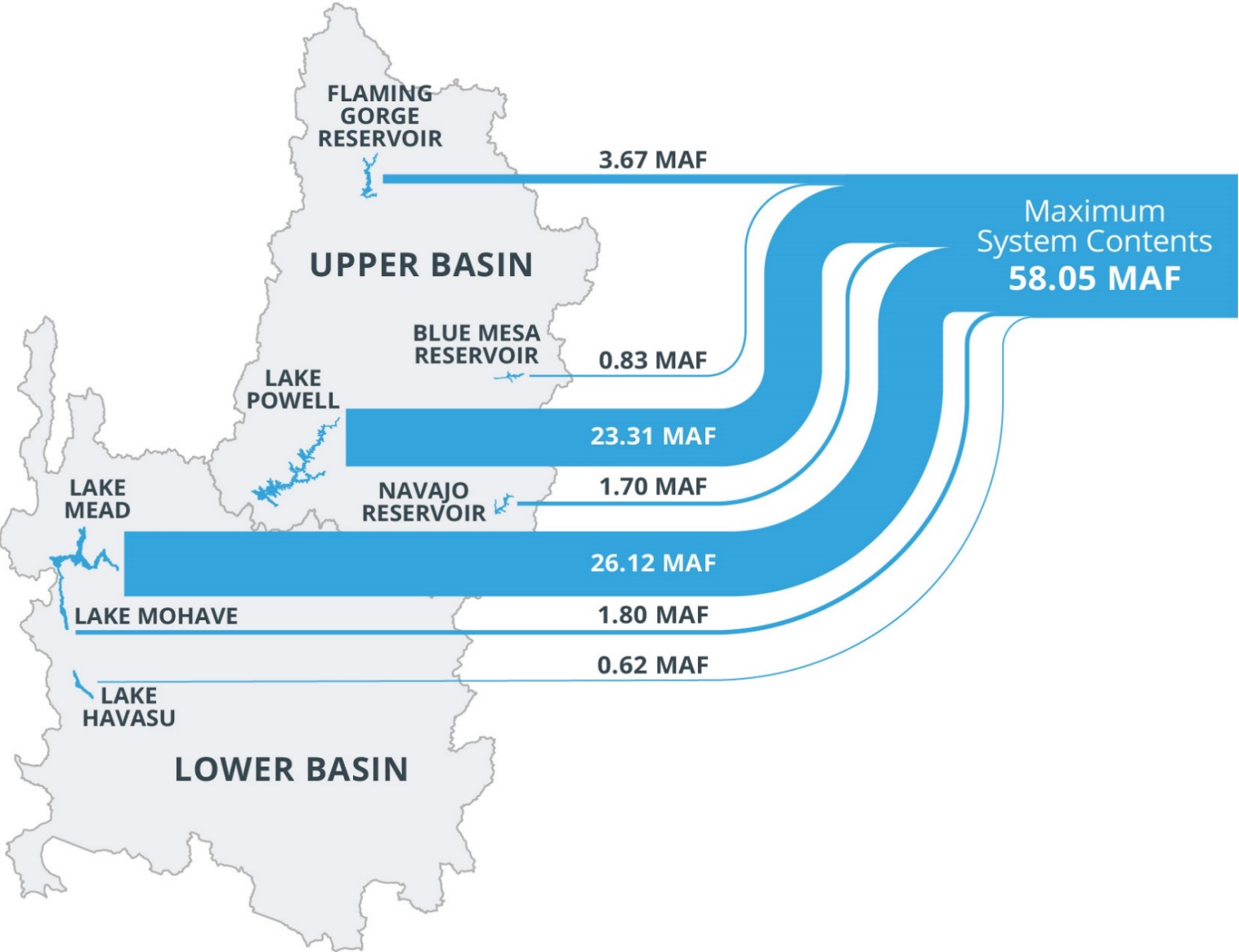
# Post-2026 Lower Basin Alternative Goals

- Improve Colorado River reliability over a broad but plausible range of future conditions
- Address the structural deficit and more in the lower basin by reducing 1.5 MAF of use in the Lower Basin
- Sharing the risks and benefits of the system within and between the basins
- Improving predictability of reductions to stabilize Lake Mead

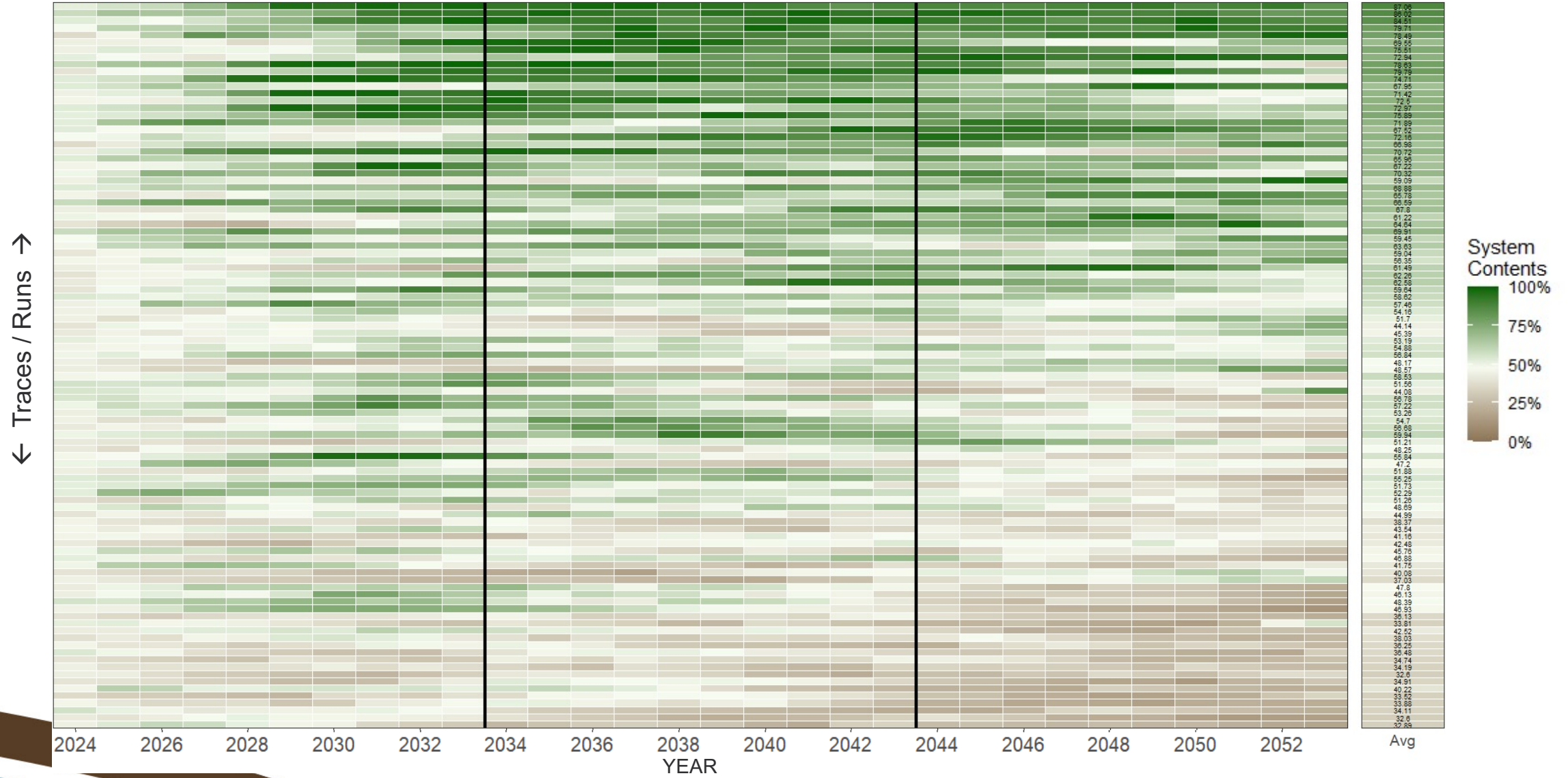


# Lower Basin Alternative: Reduction Determination

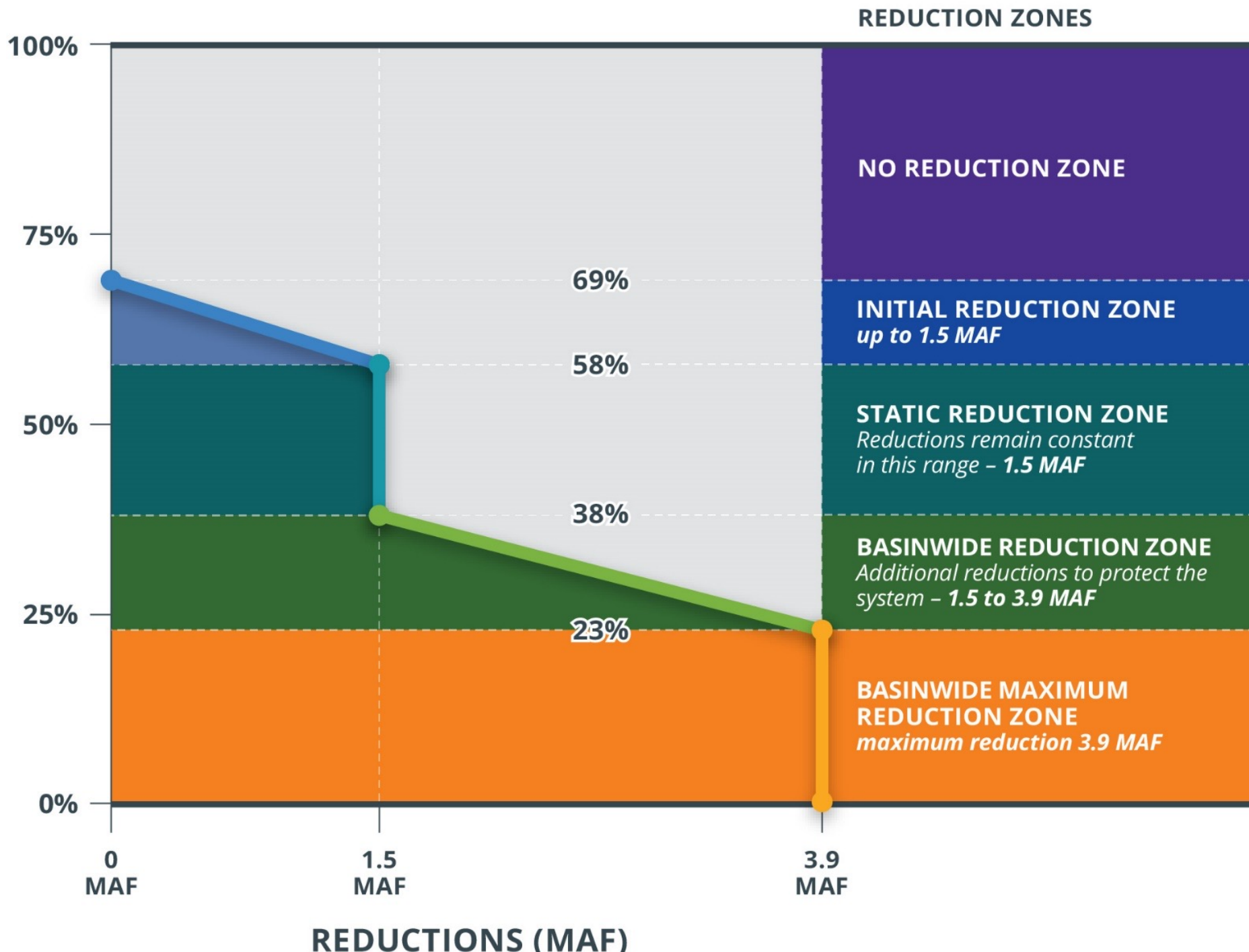
System contents are based on the volume in each reservoir that is available for release, in millions of acre-feet (MAF).



## Total System Contents (Traces Sorted by Average Natural Flow)







# Lower Basin Alternative: Reduction Determination



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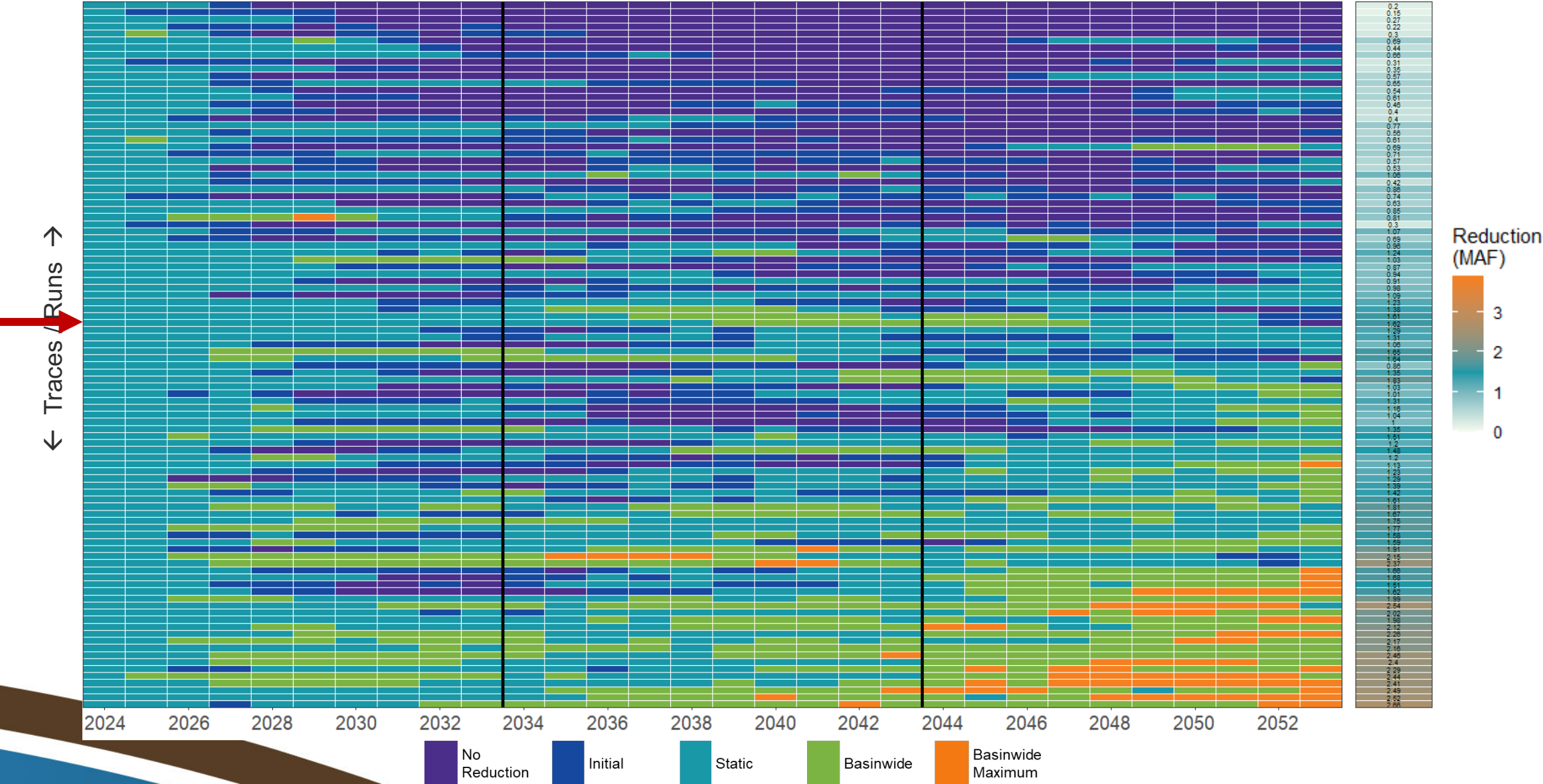
# Reduction Sharing among Basin States and Mexico

	Total Reduction Volumes	Upper Basin	Arizona	California	Nevada	Mexico*
Initial Reduction Zone	Up to 300 KAF	0	80%	0	3.33%	16.67%
	300 KAF-1.5 MAF	0	43.33%	36.67%	3.33%	16.67%
Static Reduction Zone	1.5 MAF	0	760,000	440,000	50,000	250,000
Basin-wide Reduction Zone	1.5 – 3.9 MAF	Shared among Upper Division states, Lower Division States and Mexico				
Basin-wide Maximum Reduction Zone	3.9 MAF					

\* Reductions to Mexico will be determined in a separate binational process

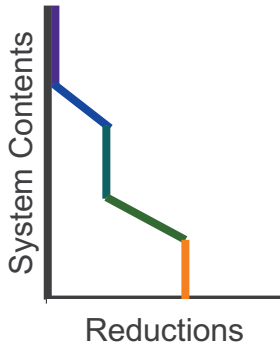
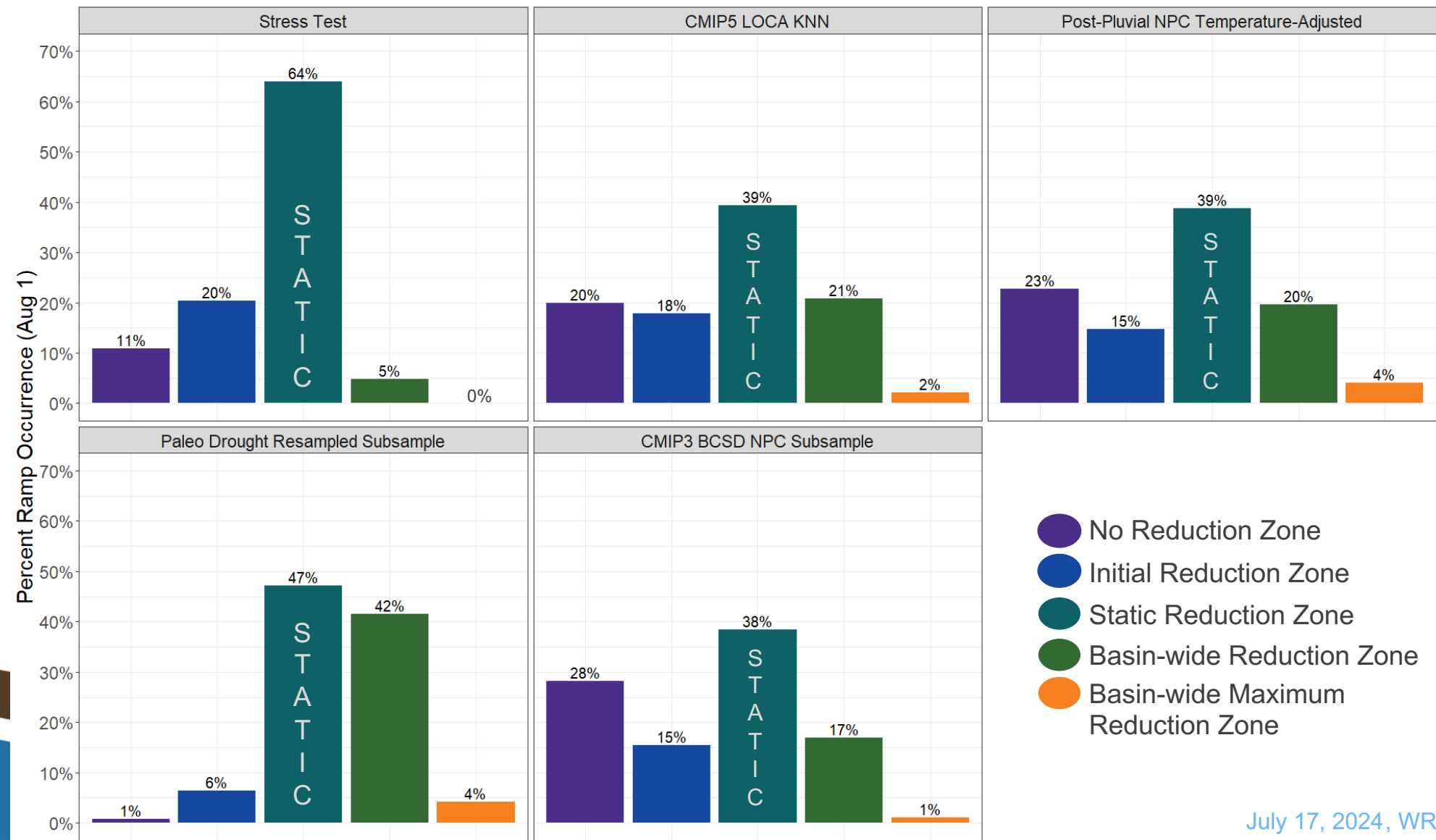


# Lower Basin Reduction Zones (Traces Sorted by Average Natural Flow)



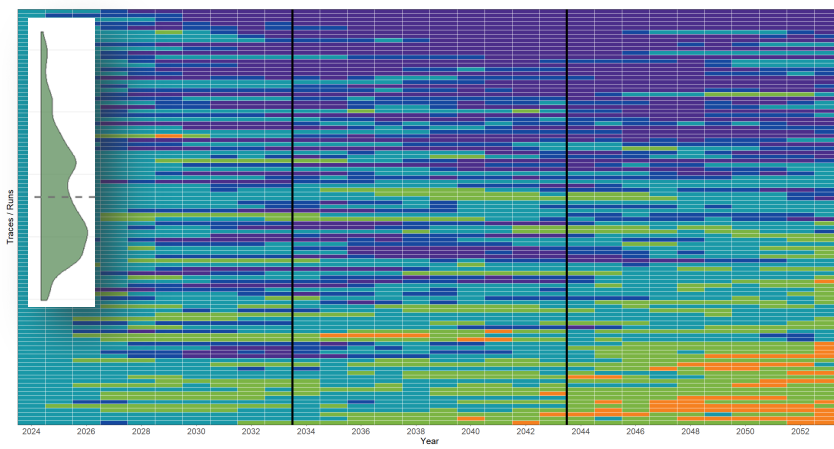


# Technical Analysis

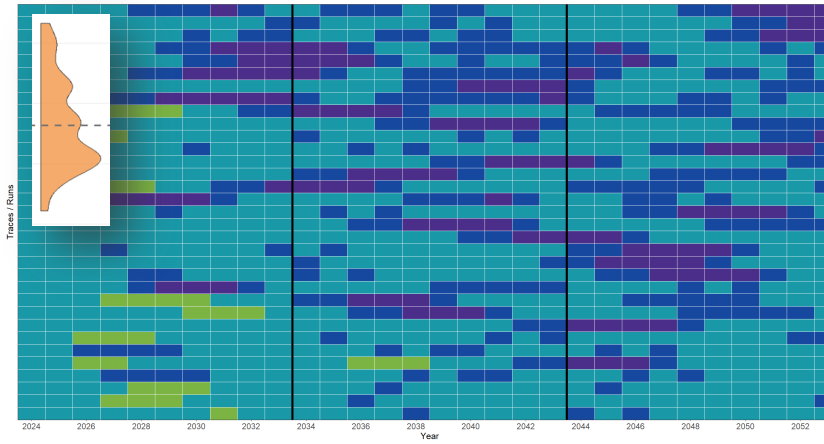


# Reduction Zone Maps by Hydrology

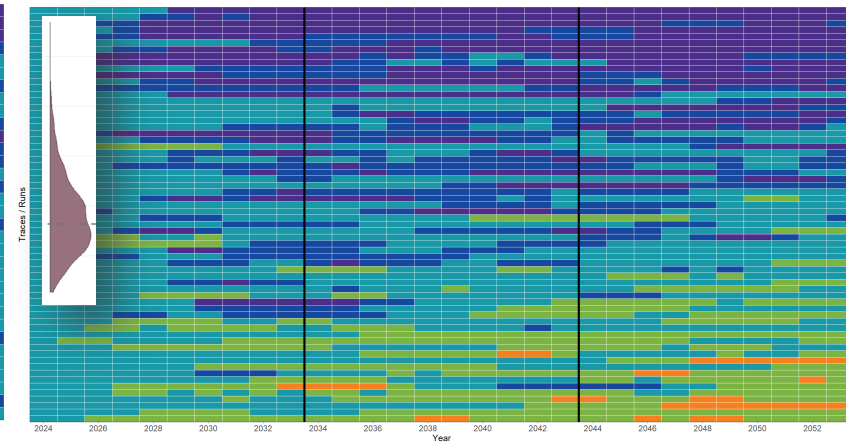
Post-Pluvial NPC Temperature-Adjusted



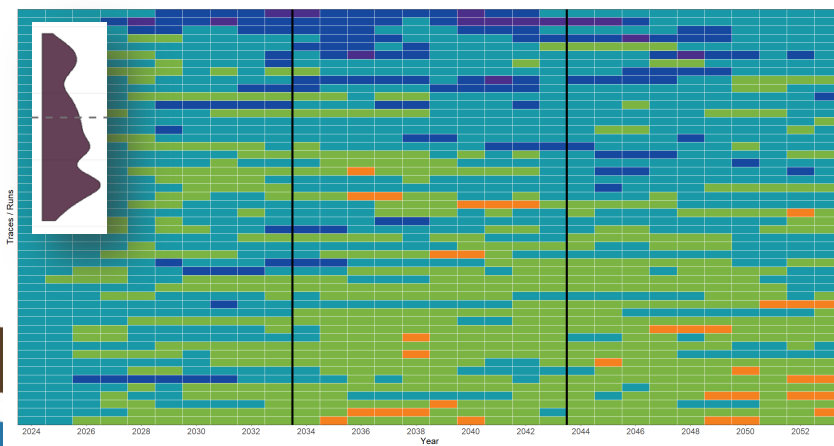
Stress Test



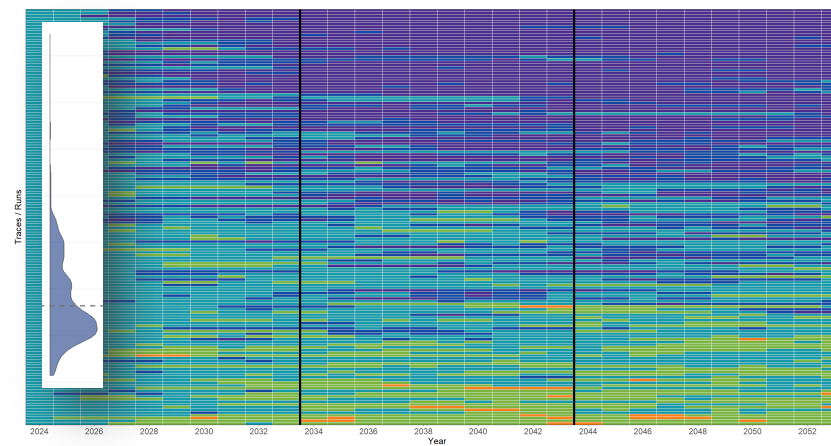
CMIP5 LOCA KNN



Paleo Drought Resampled Subsample

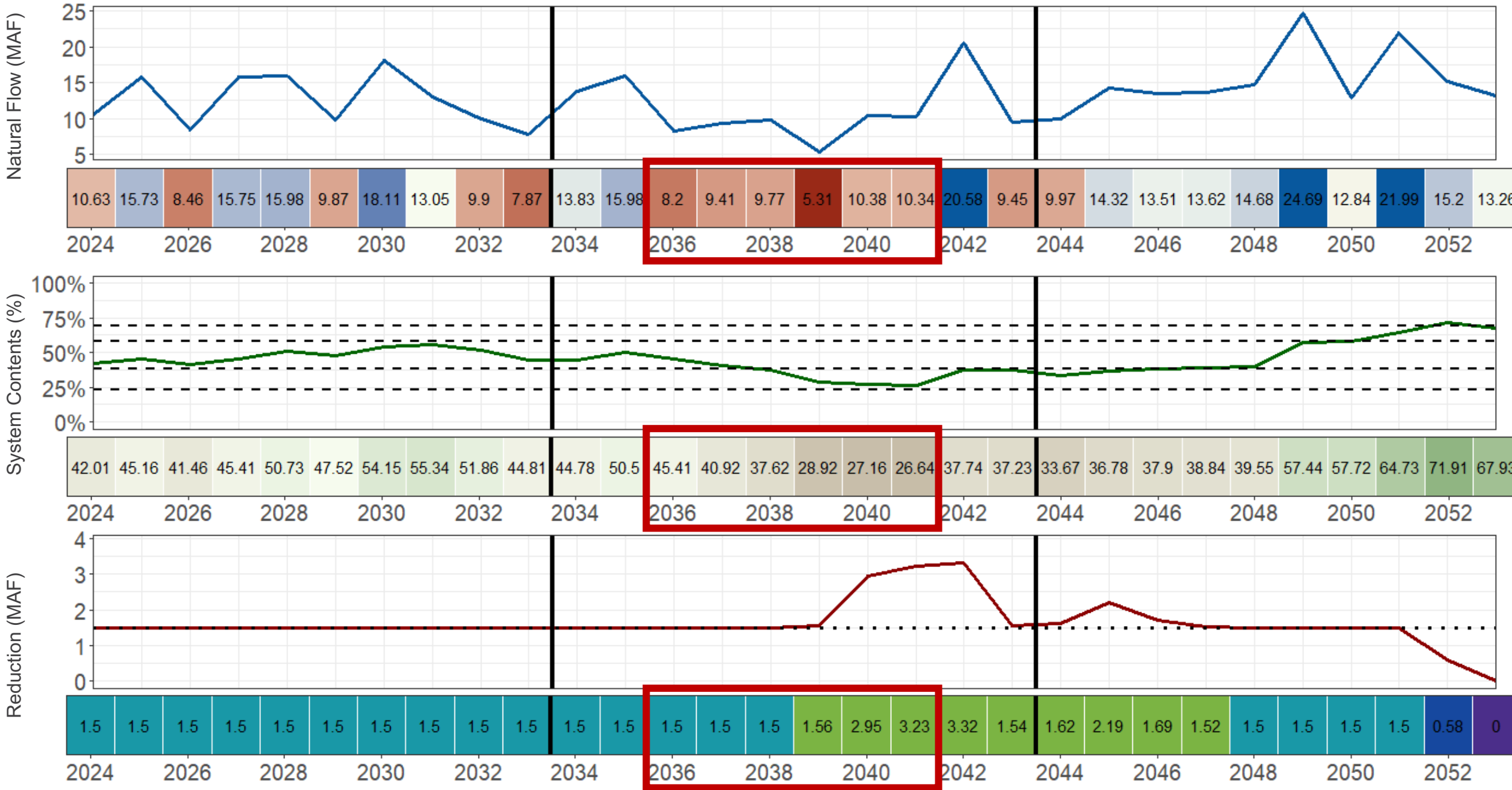


CMIP3 BCSD NPC Subsample



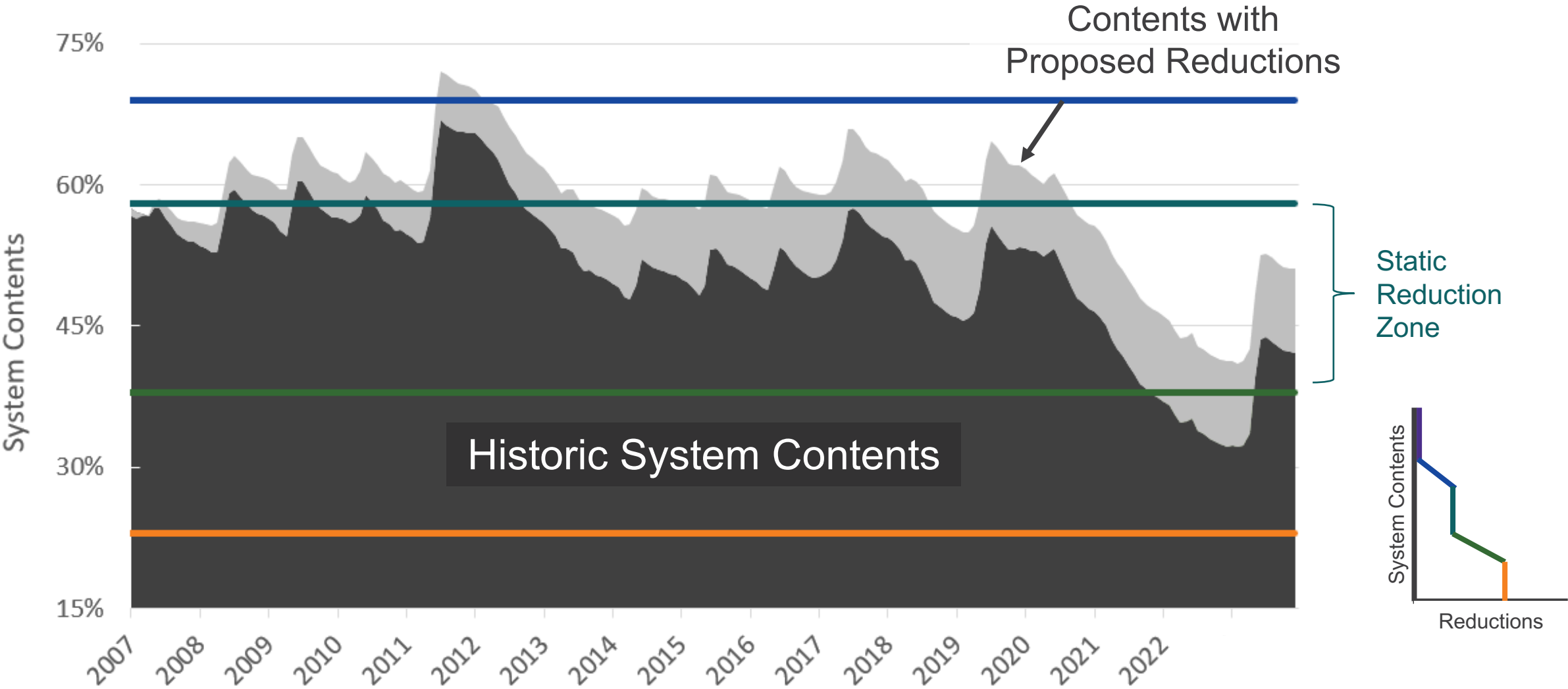
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# Single Trace Example Post-Pluvial NPC Temperature-Adjusted (Run = 76)





# Proposed Alternative Implemented in 2007



# Post-2026 Guidelines Update

- Following the Lower Basin's March 6, 2024, submission to Reclamation of its alternative, Reclamation has been working with the Lower Basin to round out some of the modeling assumptions that are needed to be fed into the model.
- Lower Basin requested, and Reclamation has agreed to model reductions to the LB in two primary ways:
  - Pro-rata to all users
  - By priority
- Request was also made to allocate the remaining (up to) 2.4 maf of reductions contemplated in the Basinwide Reduction Zone & Basinwide Max. Reduction Zone:
  - to the UB
  - Split between the LB and the UB



# Discussions/Questions

