

# Water supply outlook and drought response activities





# AGENDA

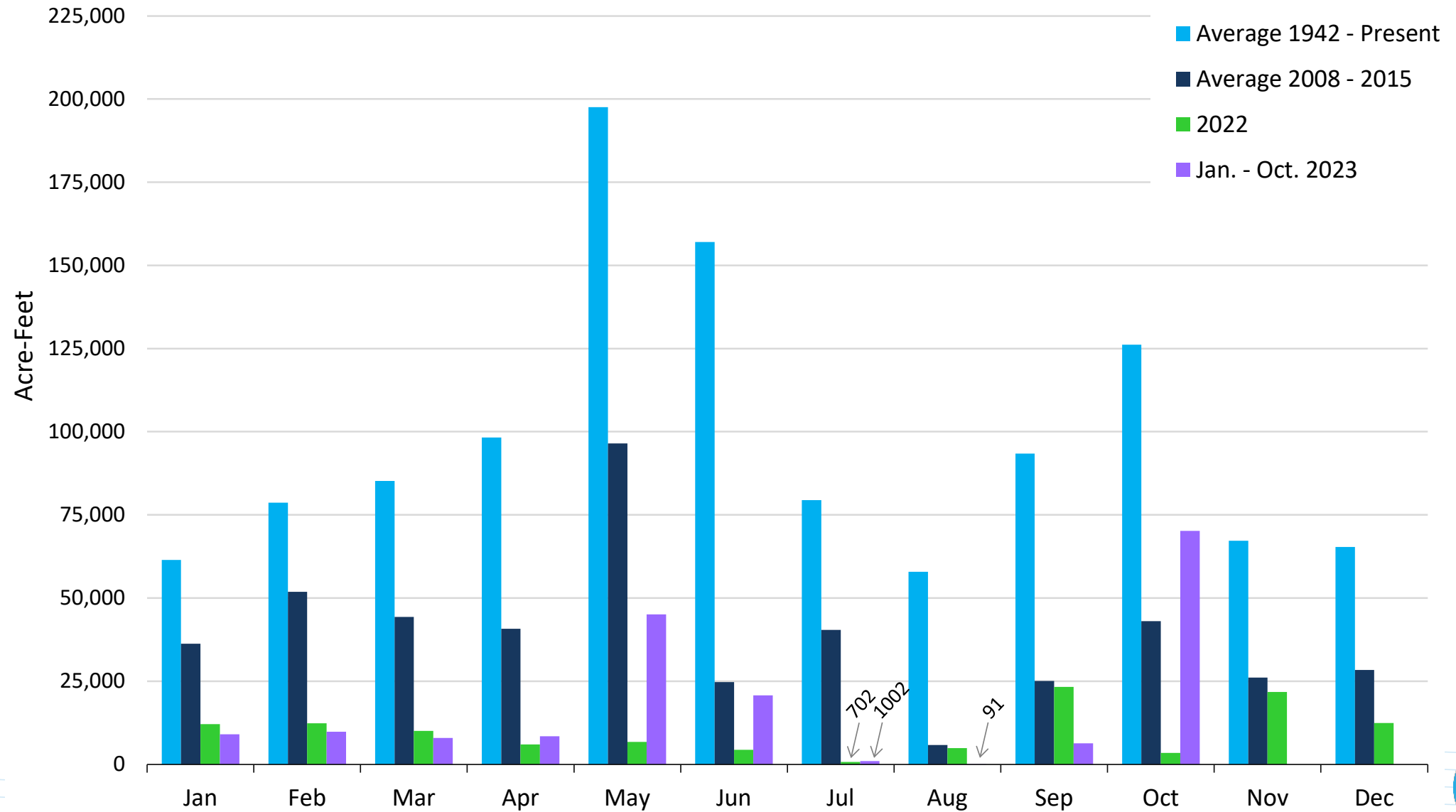
- 1 Water Supply Outlook
- 2 Drought Contingency Plan Implementation
- 3 Indirect Potable Reuse Planning



# Water Supply Outlook

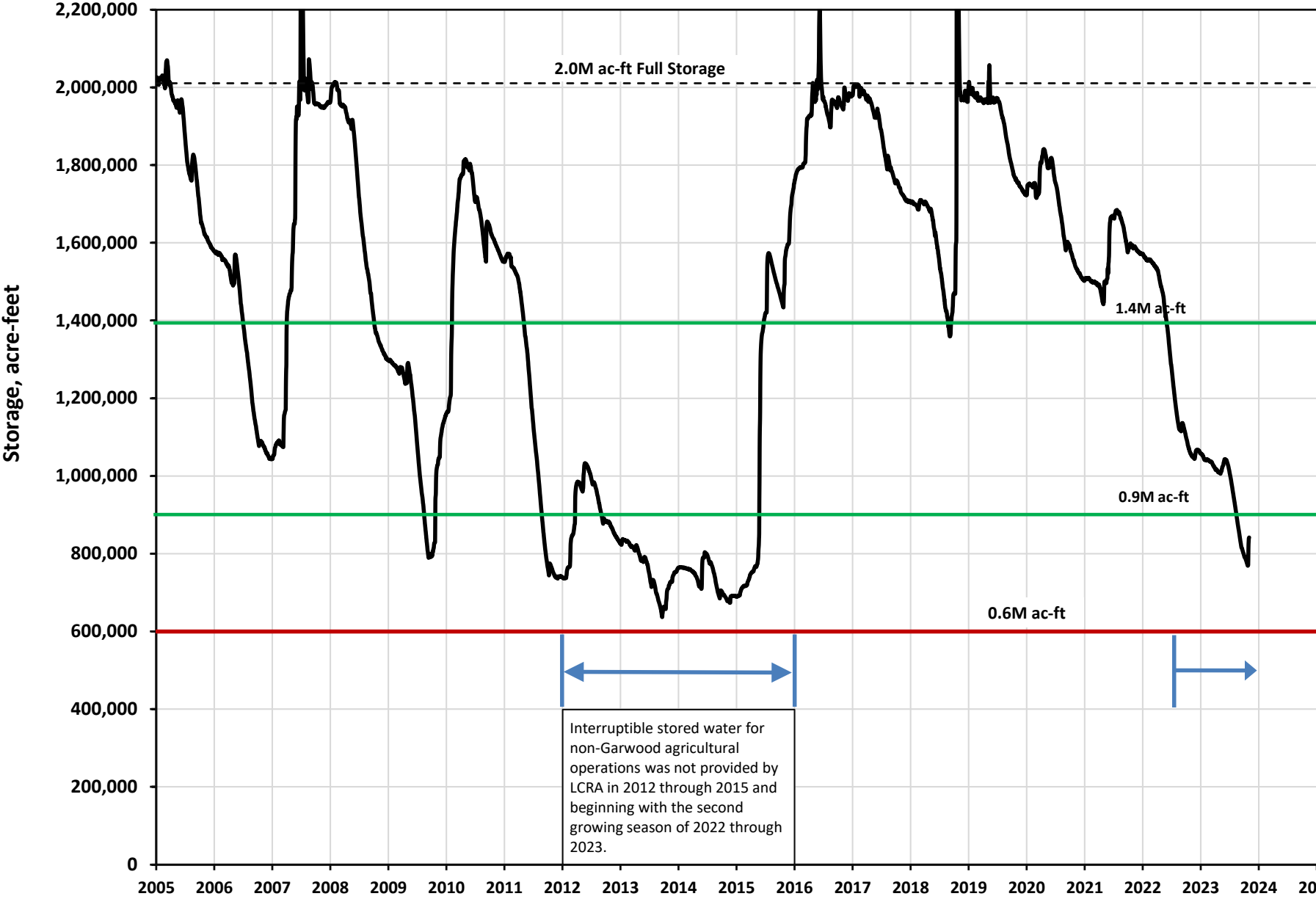


# Highland Lakes Inflows



# Combined Storage of Lakes Buchanan and Travis

January 1, 2005 through November 1, 2023



Austin Drought Contingency Plan (DCP) Storage Volume Trigger Levels



DCP Stage 1

DCP Stage 2

DCP Stage 3



# Water Weekly

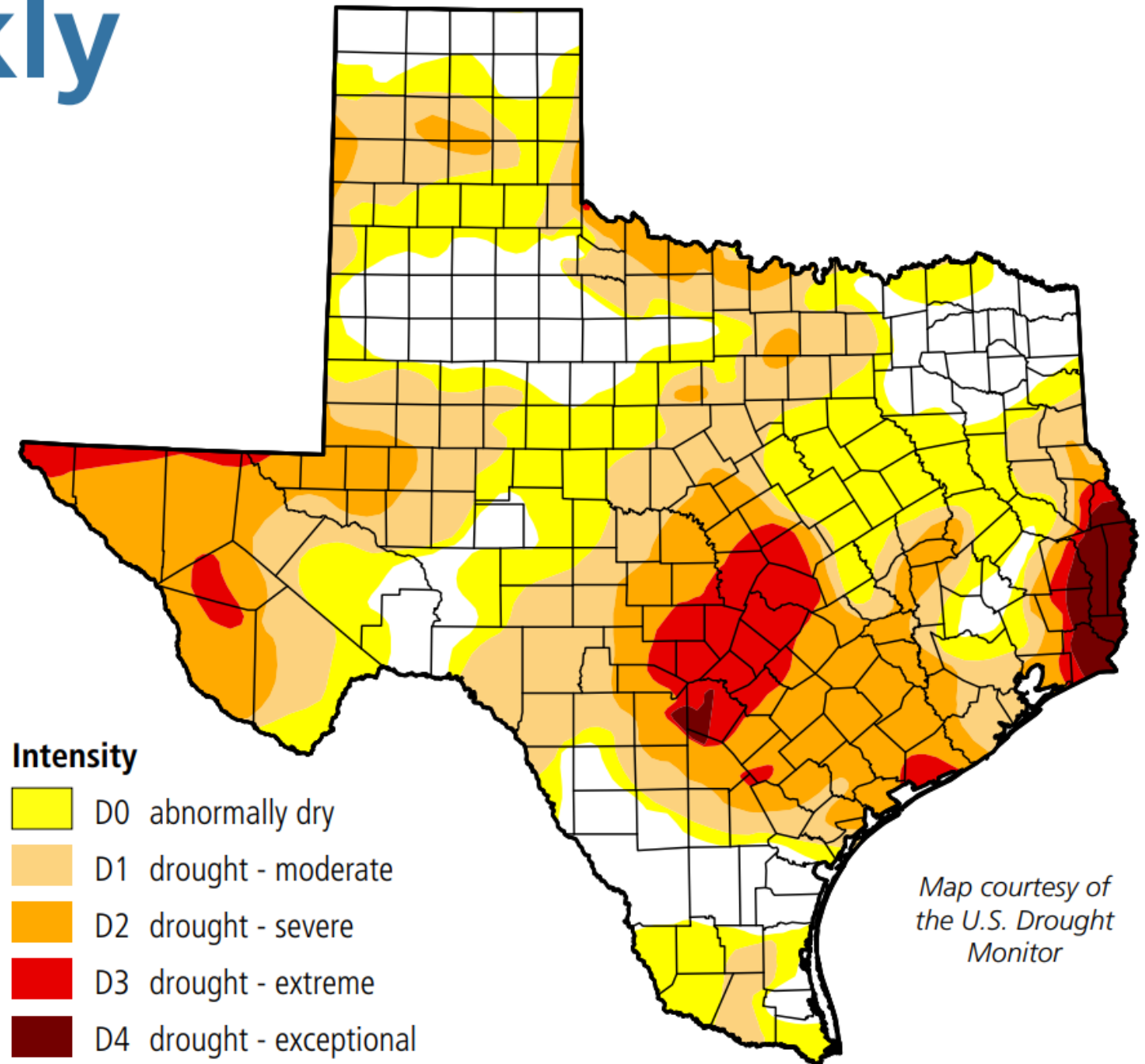
*For the week of 11/20/23*

## Water conditions

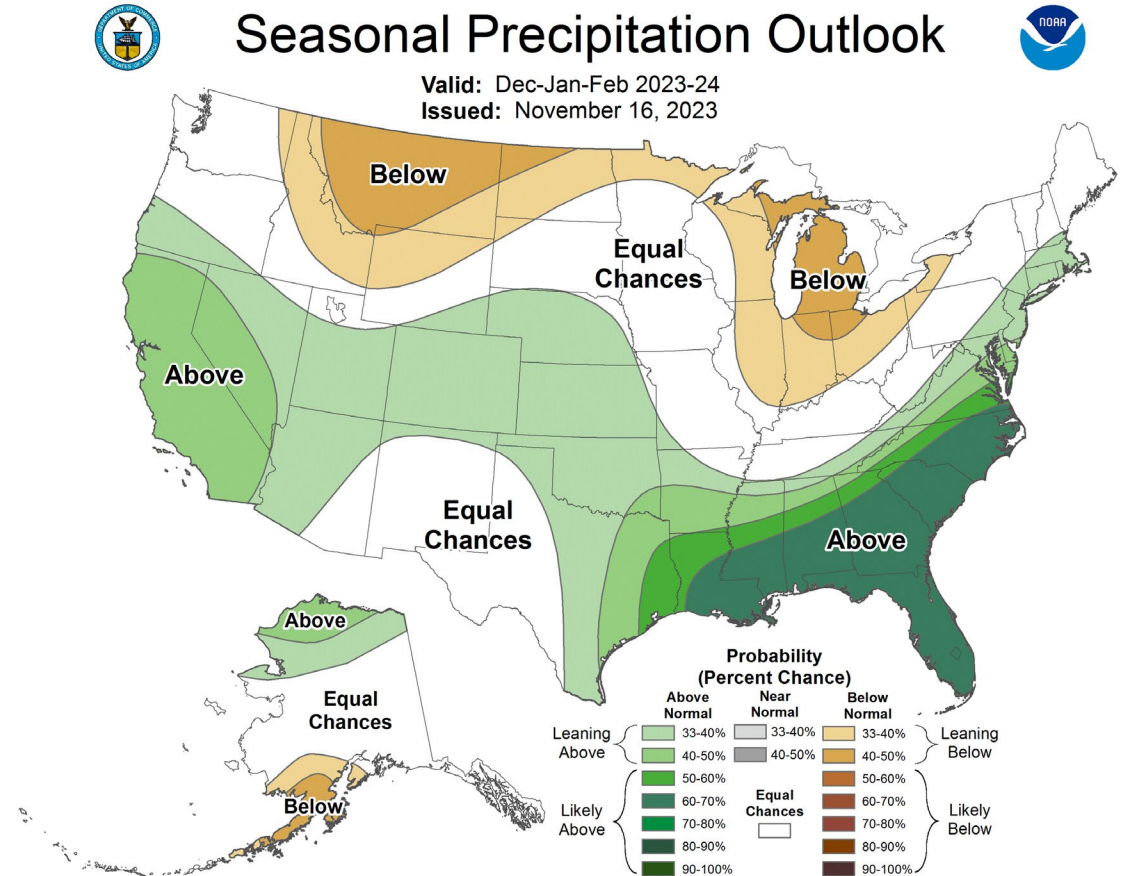
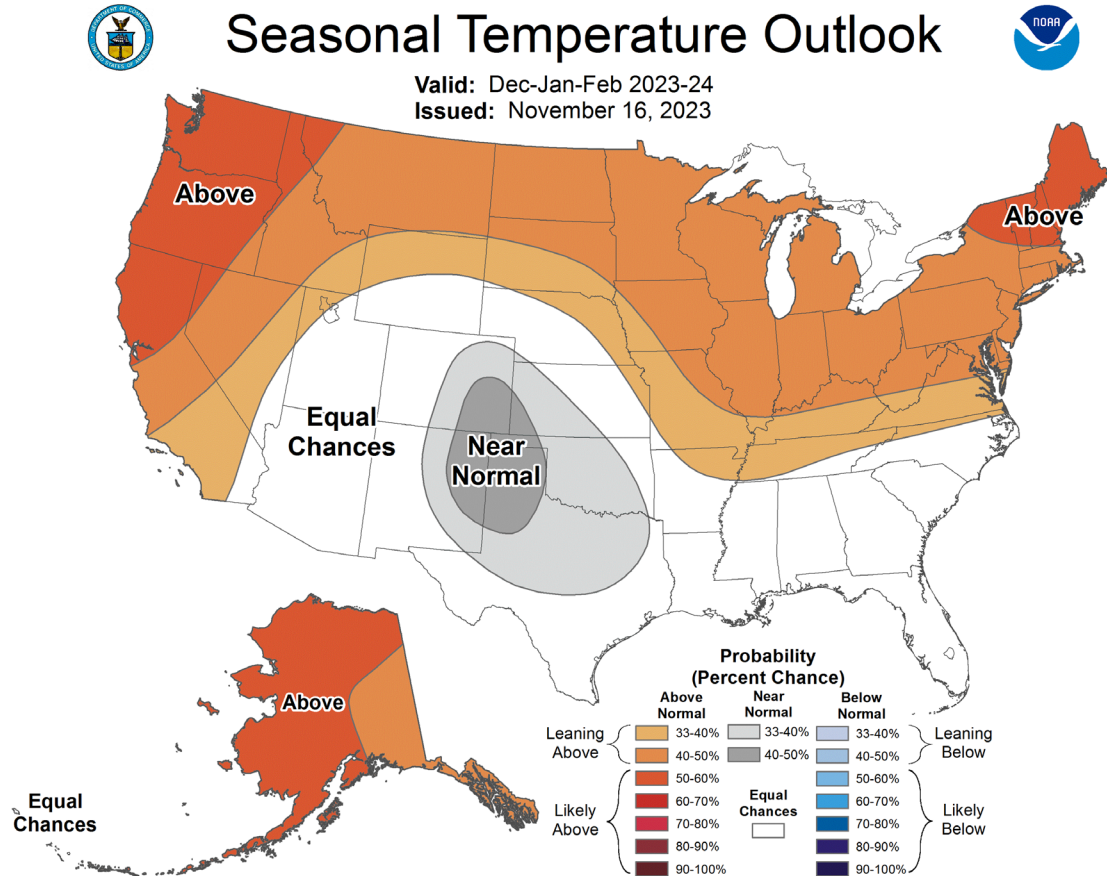
Compared to the previous week, the drought map for conditions as of November 14 shows an 11 percentage point decrease in the area of the state impacted by drought, the largest week-to-week decline in drought area since September 2022. Drought area is at its smallest value since early August 2023.

## Drought conditions

- 💧 54% now
- 💧 65% a week ago
- 💧 71% three months ago
- 💧 64% a year ago



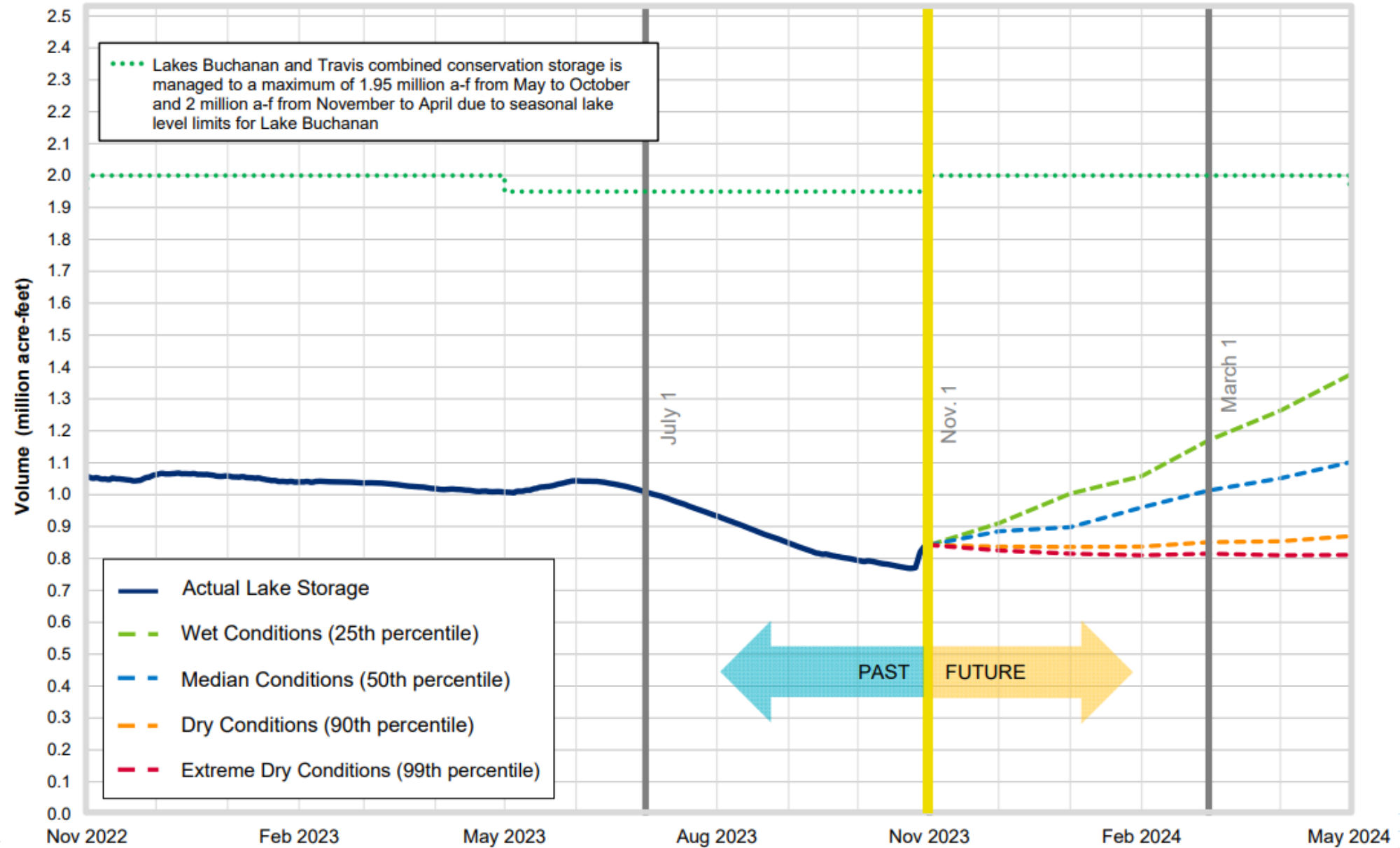
# NOAA 3-month Outlook: Dec - Feb



The seasonal outlooks combine long-term trends, soil moisture, and El Niño/Southern Oscillation.  
There is a greater than 90% chance that El Niño will continue through the winter.



## Lakes Buchanan and Travis Total Combined Storage Projections



Date: Nov. 1, 2023

Note: One acre-foot equals 325,851 gallons





# Drought Contingency Plan Implementation



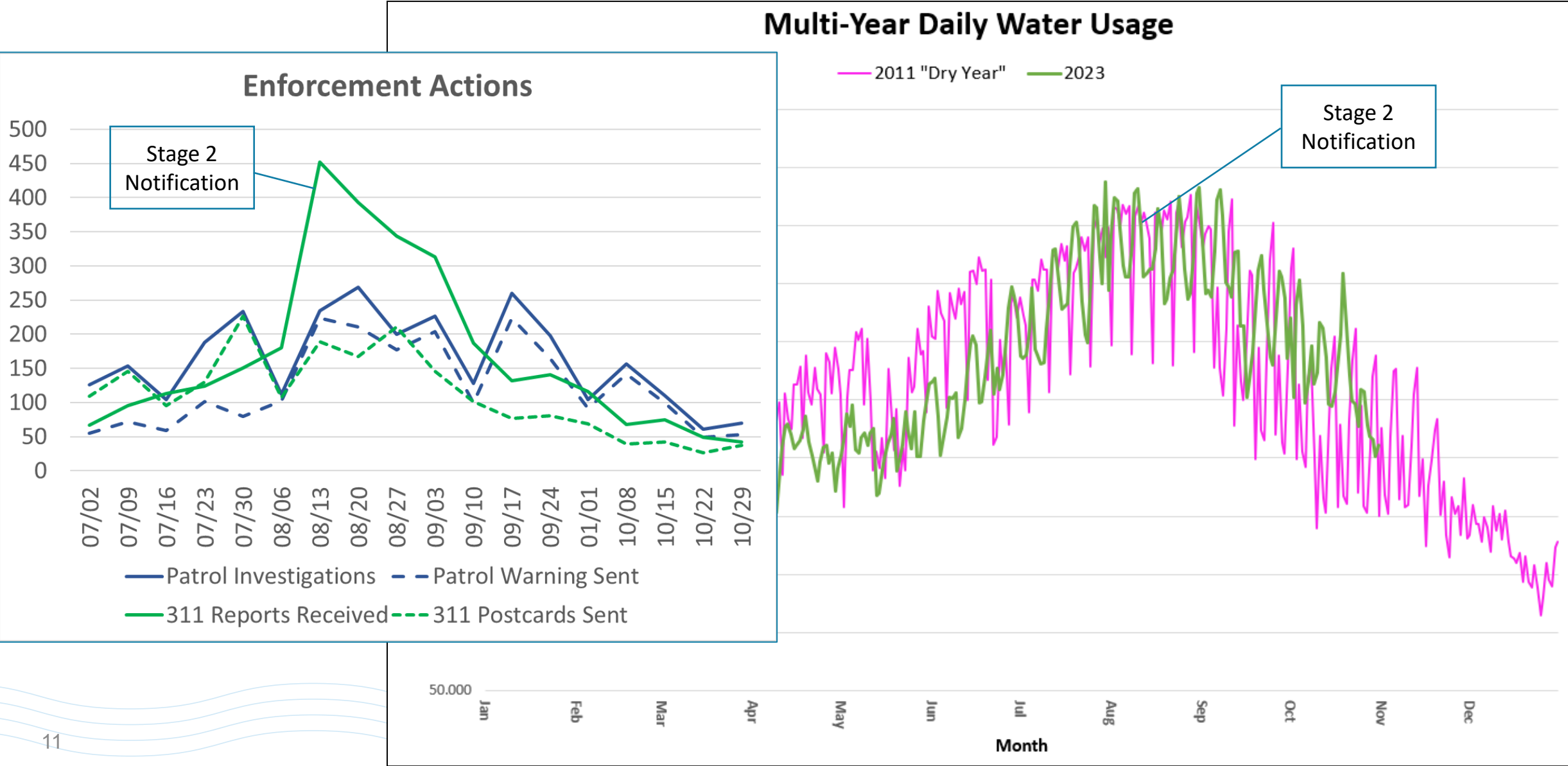
# STAGE 2 DROUGHT

- Trigger – 900,000 acre feet of storage (46%)
- Announced - Friday, August 11
- Restrictions in effect – Tuesday, August 15
- Surge in calls, emails, and 311 reports




- Additional activities
  - Enhanced media messages
  - Additional patrols and staff
  - Yard signs
  - Restaurant outreach

# STAGE 2 USAGE AND RESPONSE



# UPDATE OF 2024 DROUGHT CONTINGENCY PLAN (DCP)

Speak Up Austin > Drought Contingency Plan



Drought Contingency Plan

**Our goal:**

Central Texas is currently experiencing severe to extreme [drought conditions](#). Record high temperatures and low rainfall over the summer have taken a toll on the Lower Colorado River Basin and Lakes Travis and Buchanan, the source of our water supply. To respond to this drought, Austin Water is following its Council-approved [Drought Contingency Plan](#) that was developed with community input in 2016.

**We must update our Drought Contingency Plan next year and projections show that Central Texas can expect more frequent extreme droughts in the future. We want to hear from you about additional ways we could conserve water during times of extreme drought that could be included in the 2024 Drought Contingency Plan**

- Required by May 1, 2024
- Plan contents
  - Stage triggers
  - Demand management measures
  - Variances and enforcement
  - Public information and education

<https://publicinput.com/droughtplanupdate>





# 2024 DROUGHT CONTINGENCY PLAN (DCP) & WATER CONSERVATION PLAN (WCP)

## 💧 November 2023

- DCP Speak Up Austin!

## 💧 December 2023

- DCP Public meeting – Dec 12 (tentative)



## 💧 Feb. 2024

- Austin Water Oversight Committee
- Resource Management Commission
- Water Forward Task Force

## 💧 March 2024 – Water and Wastewater Comm.

## 💧 April 2024 – City Council

## 💧 May 2024 – Submit to TCEQ

# UPDATE OF 2024 WATER CONSERVATION PLAN



- Update due May 1, 2024
- *Strategies for reducing water use and water loss, improving efficiency, and increasing the reuse of water*
- Council-approval timeline similar to DCP timeline
- Required plan contents
  - Historical data (Utility Profile)
  - Per-person water use goals (GPCD): total, residential, water loss
  - Implementation schedule and tracking method for goals
  - Water loss control program
  - Public education

# LANDSCAPE TRANSFORMATION



Task	Anticipated Implementation
Soil and compost requirements in new homes (existing code)	June 2023
Inspection of new irrigation systems (existing code)	Spring 2024
Builder-scale rainwater harvesting rebate for new homes	Spring 2024
Irrigation check ups for new irrigation systems	Summer 2024
Required plant list in new homes	July 2024
Limit irrigation area in new homes (upcoming plumbing code amendment)	January 2025
Require irrigation pressure devices for new irrigation systems (upcoming plumbing code amendment)	January 2025
Require plumbing for laundry to landscape reuse in new homes (upcoming plumbing code amendment)	January 2025



# Indirect Potable Reuse Planning





# INDIRECT POTABLE REUSE PLANNING

1 IPR Drought Context

2 Key Questions

3 Drawdown time estimates

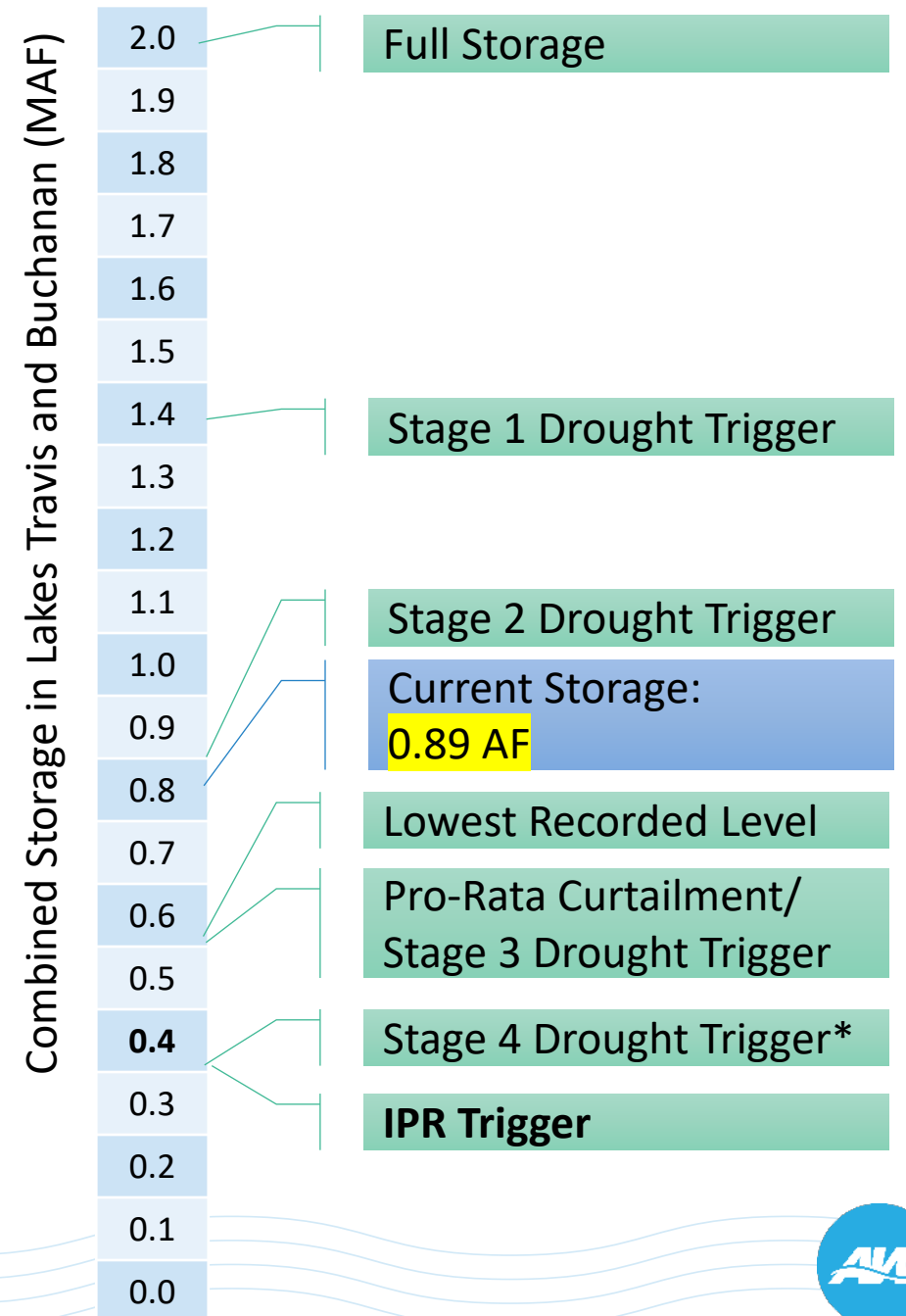
4 Implementation pathways

5 Timeline



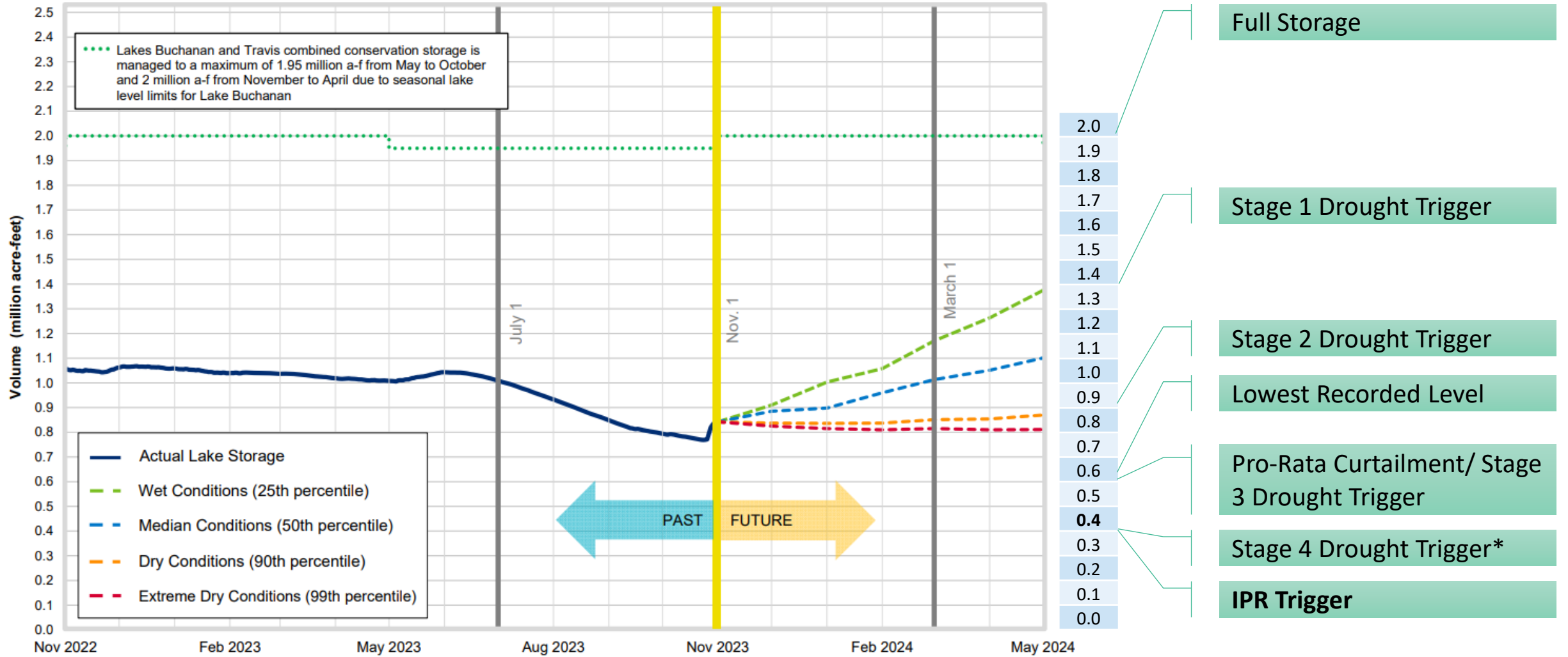
# IPR CONTEXT: EMERGENCY SUPPLY STRATEGY

- Indirect potable reuse (IPR) is included in Water Forward as an emergency strategy to be used infrequently during only the most severe drought situations.
- Implementation of IPR is planned for 2040 in WF18. An emergency implementation alternative has been considered that could be triggered by low projections for Combined Storage levels in the Highland Lakes.
- AW staff have developed a framework for pre-planning, design, construction, and permitting tasks that would also be tied to Combined Storage levels and the supply outlook so that IPR can be ready to supply water in a drought emergency.



\* Assumed 400KAF Stage 4 Drought Trigger for WF18 modeling

# Lakes Buchanan and Travis Total Combined Storage Projections

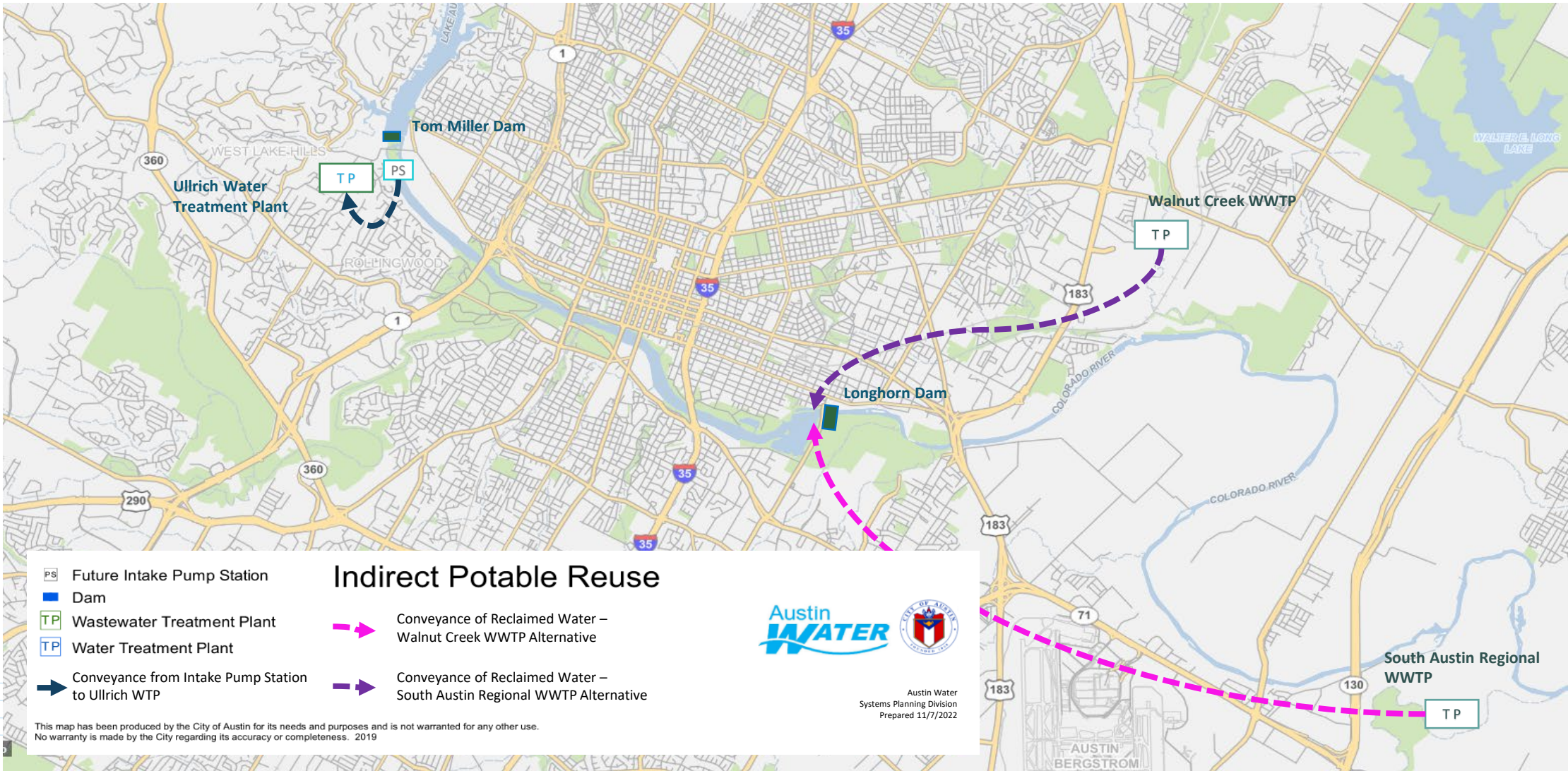


Date: Nov. 1, 2023  
 Note: One acre-foot equals 325,851 gallons



\* Assumed 400KAF Stage 4 Drought Trigger for WF18 modeling

# PRELIMINARY PROJECT LAYOUT





# IPR PRE-PLANNING PROCESS



## 2040 IMPLEMENTATION PATHWAY

- Develop preliminary characterizations for IPR options.
- Evaluate trade-offs in cost, yield, constructability, environmental impact, etc. between project alternatives
- Compare against other possible emergency water supplies

Water Forward  
Update Cycle



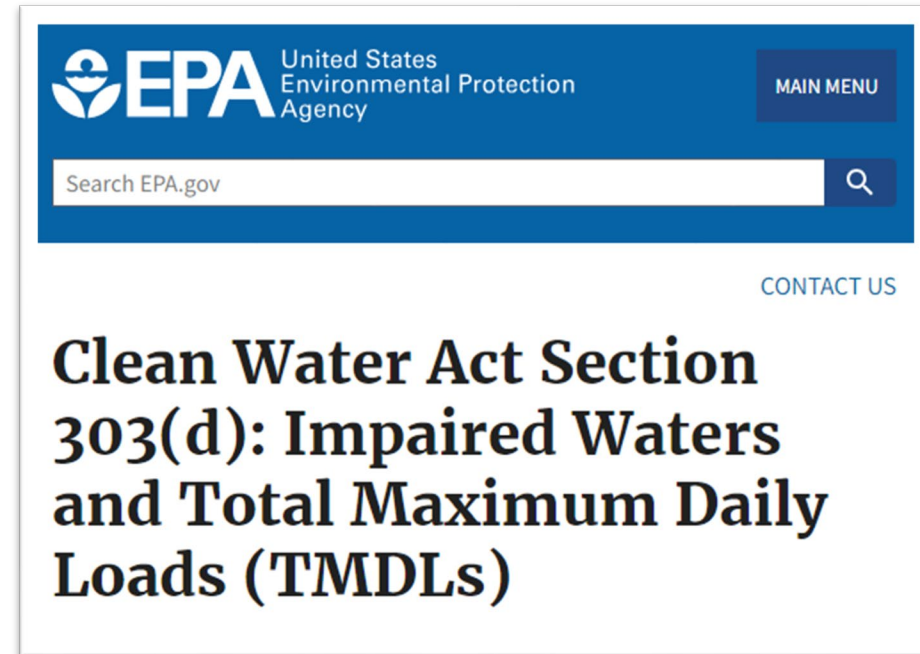
## EMERGENCY IMPLEMENTATION PATHWAY

- Coordinate across AW to develop a plan with drought-related triggers for the implementation of IPR in a supply emergency.
- Identify priorities that need the most lead time and low-cost, low-regret preparatory activities and
- Design and implement multi-beneficial infrastructure components through CIP planning.

Tied to Storage  
Outlook

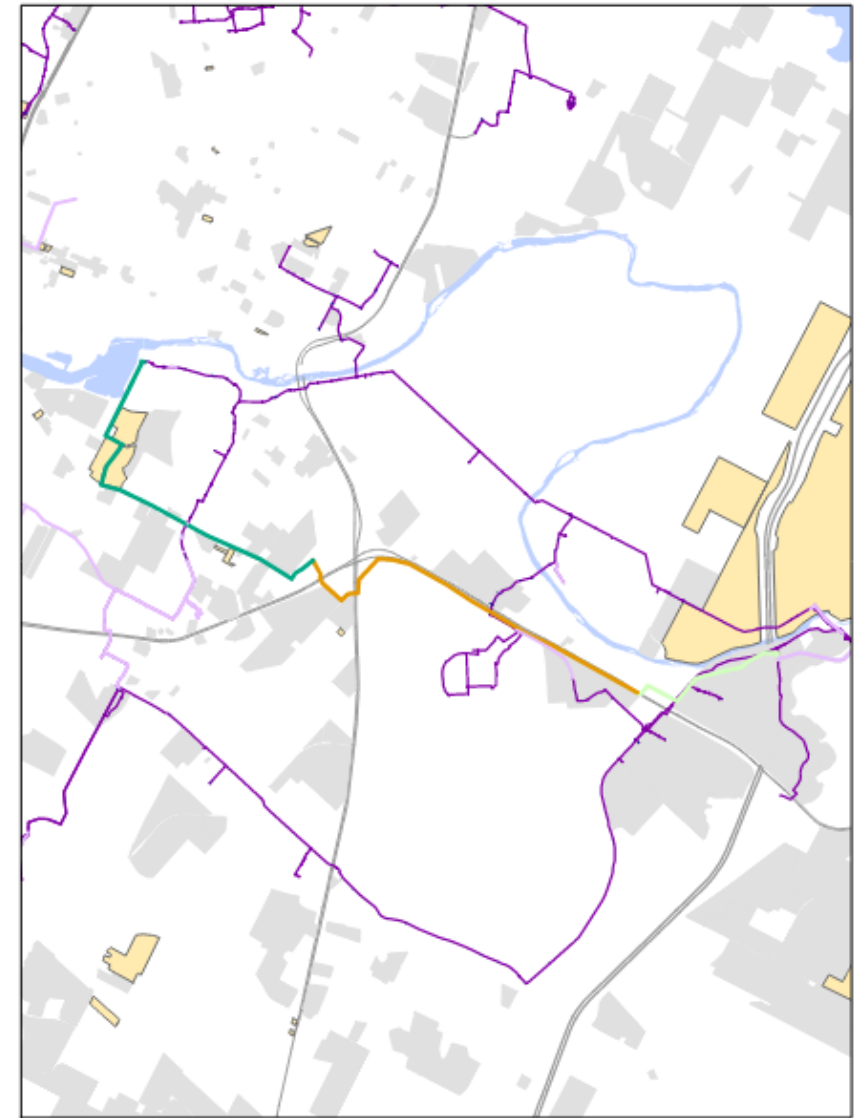
# REGULATORY PLANNING

- ✓ Identify discharge limits in Ladybird Lake under algae impairment through modeling
- ✓ Develop treatment process alternatives, evaluate cost and feasibility
- ✓ Consider Walnut Creek and SAR as potential sources
- ✓ Coordinate with AW staff and TCEQ to include a new outfall on the appropriate WWTP discharge permit



# 2040\* IMPLEMENTATION PATHWAY

- ✓ Integrate outcome of regulatory planning
- ✓ Work with centralized reclaimed system planning to advance multi-beneficial conveyance
- ✓ Planning level cost estimate as a part of WF24 update
- ✓ Accelerate IPR-related projects for readiness before 2040



## Legend

AWGISPUB.AUSTIN.CIP\_Reuse\_CurFYplus20yrPlan

<all other values>

## SPID

5267.059\_IPR

5267.058\_IPR

5267.02\_IPR

AWGISPUB.AUSTIN.ReuseMain

<all other values>

## Subtype

ReuseLeadMain

ReuseWaterMain

# EMERGENCY IMPLEMENTATION PATHWAY

Contingency planning for estimated 4-year emergency implementation:

- ✓ Emergency funding,
- ✓ Preliminary permitting, identify emergency pathways
- ✓ Evaluate alternative project delivery for accelerated implementation
- ✓ Consideration of temporary components like on-ground pipe and a floating barge intake

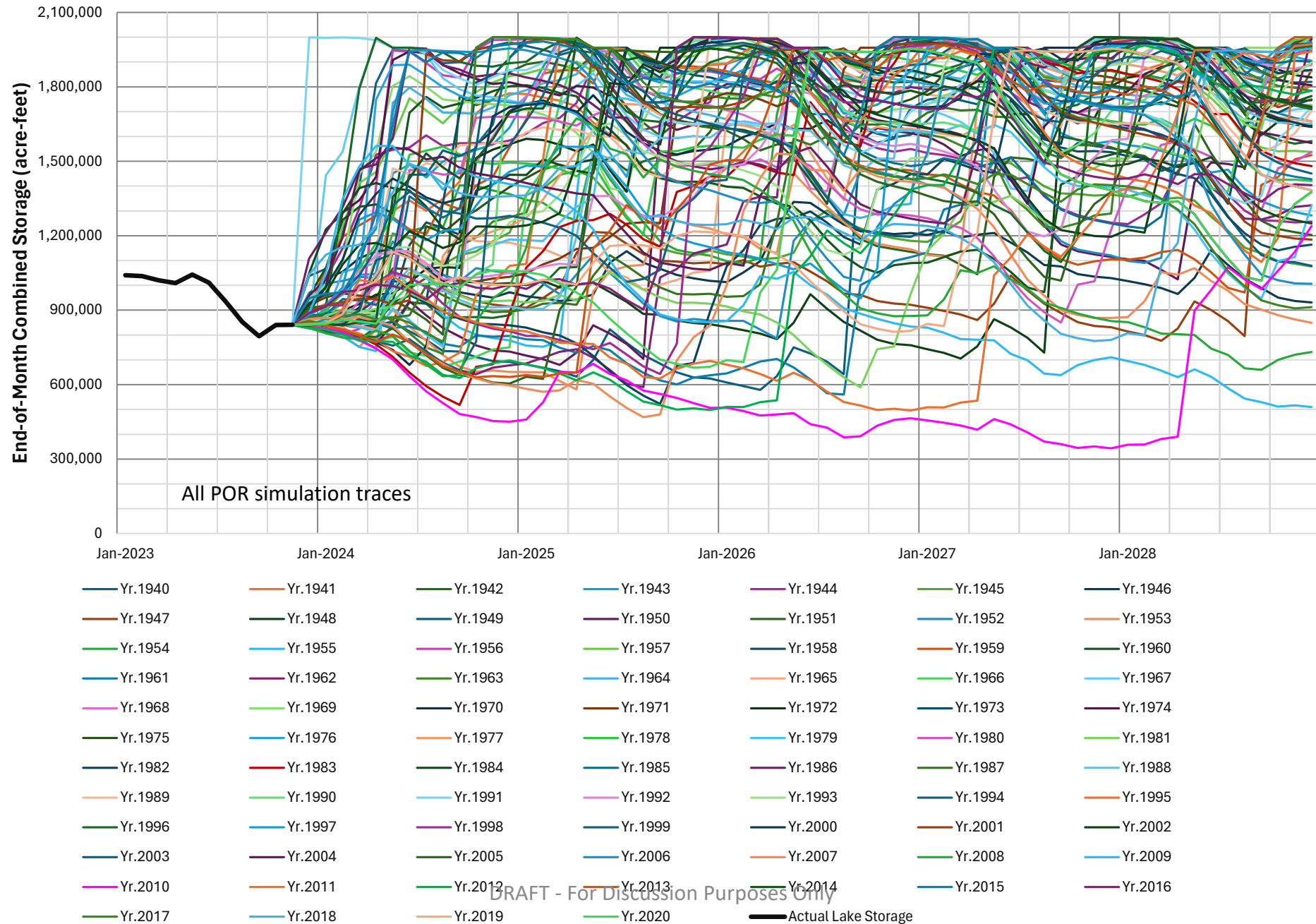
Preliminary Emergency Phases and Timing

Emergency Phase	Combined Storage & Storage Outlook Trigger	Duration	Activities
Pre-Planning	Ongoing	Ongoing	Pre-planning, inter-departmental coordination
Getting Shovel-Ready	800,000 AF, negative storage outlook, ENSO conditions	1.5-year duration	Design and property acquisition
Emergency Construction	700,000 AF	2.5-year duration	Fast-track construction
Implementation	400,000 AF	Online for shortest possible time	IPR is operational



# Combined Storage Projections of Lakes Buchanan and Travis

Updated for 2022 Hot-Dry Demands; Repetitions of Historical Period of Record Hydrology; Storage initialized through December 1, 2023



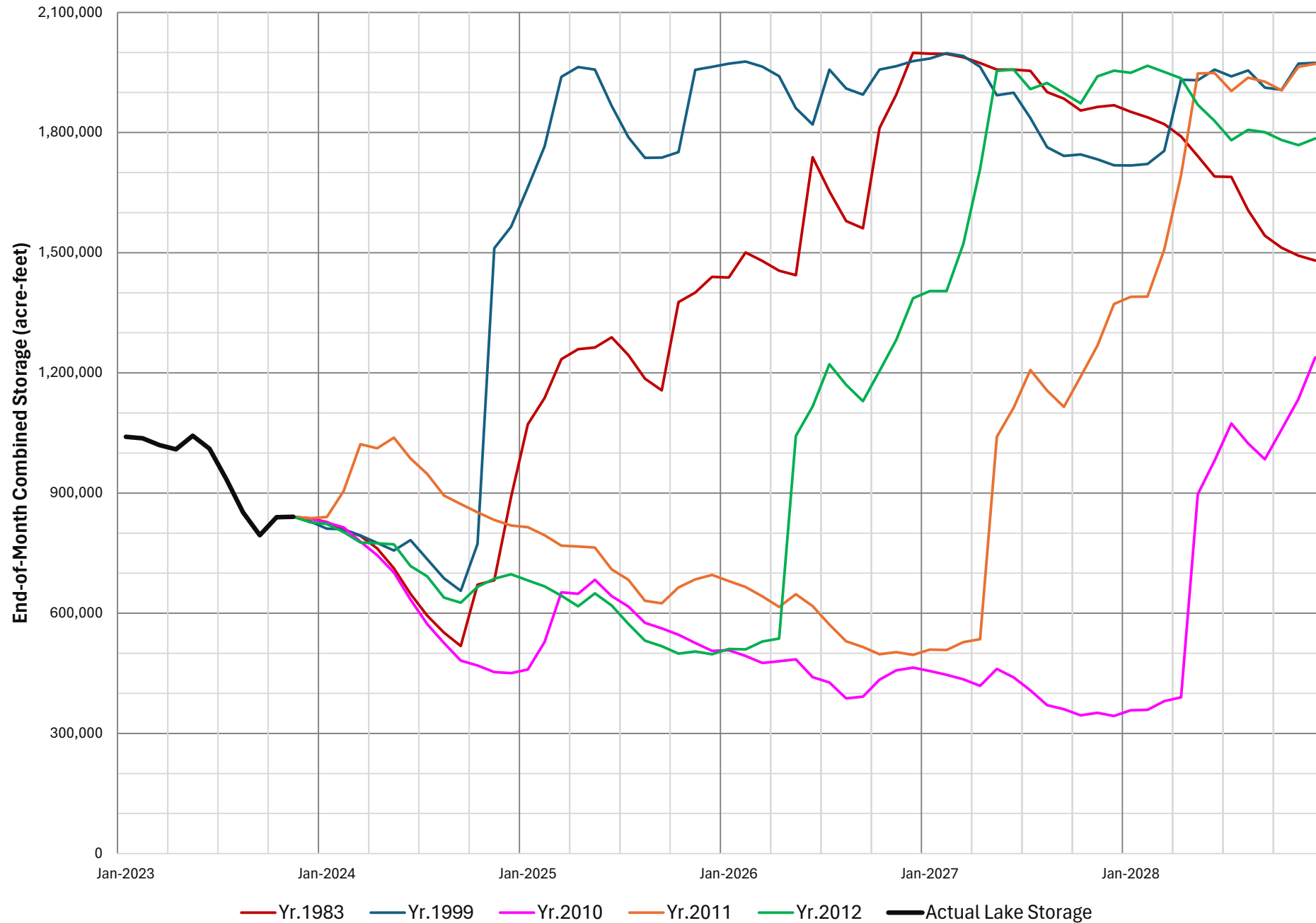
DRAFT - For Discussion Purposes Only



# Combined Storage Projections of Lakes Buchanan and Travis

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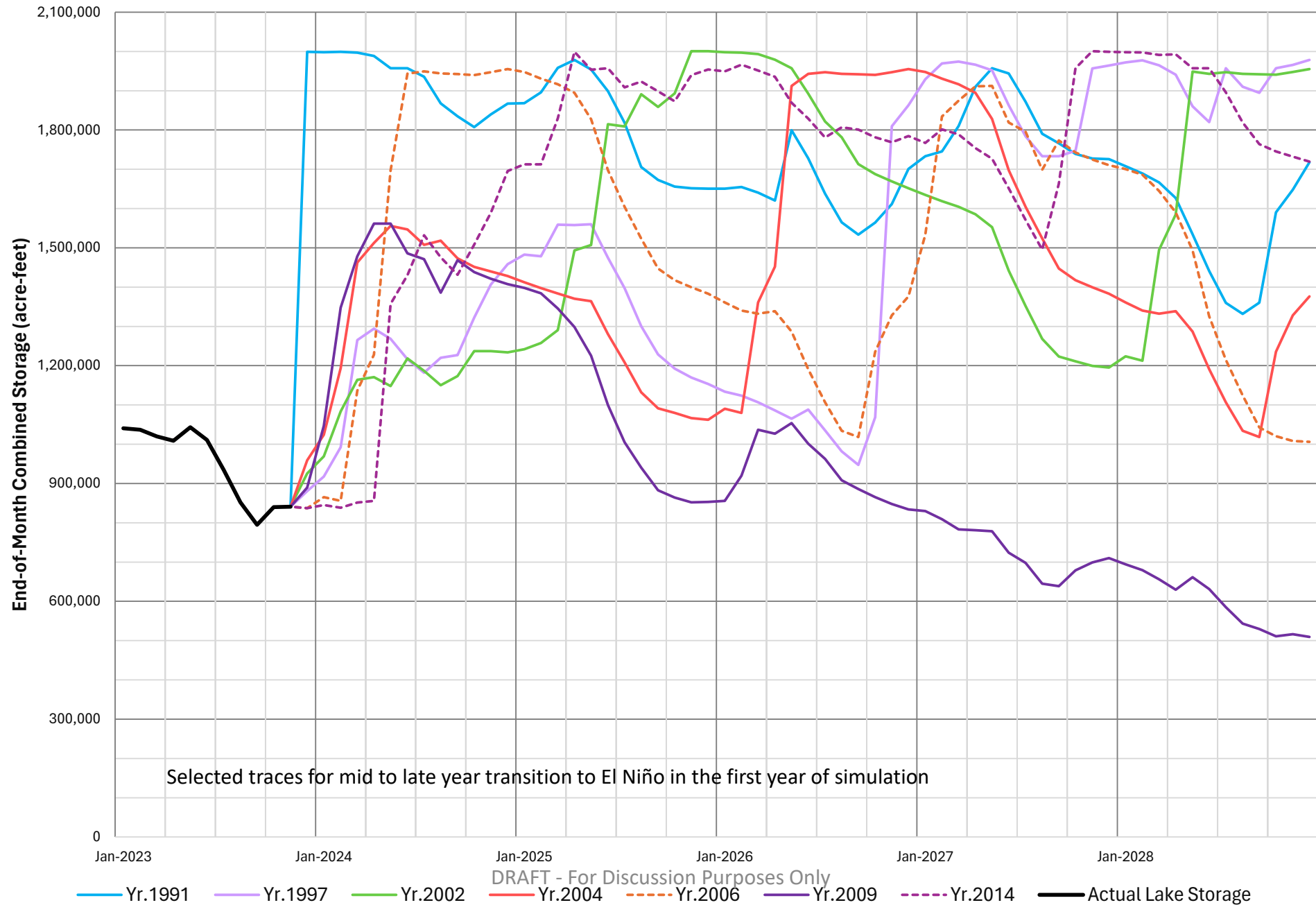
Lowest  
Drawdowns



# Combined Storage Projections of Lakes Buchanan and Travis

Updated for 2022 Hot-Dry Demands; Repetitions of Historical Period of Record Hydrology; Storage initialized through December 1, 2023.

El Niño  
Transitions



# IPR: KEY QUESTIONS

IPR is being evaluated in more detail as a part of the WF24 update. Updated project details will help to guide emergency water supply implementation planning.

Preliminary discharge limits will help us to understand the treatment required for 20 MGD at the WWTP



Adding an outfall would require a major amendment to the discharge permit for the WWTP



Future modeling will estimate the water quality impacts at the Ullrich intake for consideration in drinking water permitting



Planning to use the Centralized Reclaimed system to convey from WWTP to Ladybird Lake; coordinate and review CIP planning and possible DCP measures





# PRE-PLANNING TIMELINE



	Spring/Summer 2023	Fall 2023	Winter 2023	Spring 2024	Summer 2024
<b>Regulatory Pre-Planning</b>	Regulatory Discussions with TCEQ	WMS Consultant update to modeling	Coordination with Regulatory Team for possible Discharge Permit Amendments		SAR Discharge Permit renewal due 6/2024, Walnut Creek 9/2024
<b>WF24 Project Update</b>	Scope development with WMS consultant	Water Quality modeling, preliminary review	IPR/Emergency Supply planning-level evaluation, cost estimation	Water Management Strategy (WMS) evaluation	WMS Portfolio Testing
<b>Drought Response Pre-planning</b>	<ul style="list-style-type: none"><li>Emergency Implementation Pathway planning,</li><li>Monitor and report projected conditions,</li><li>Coordinate across departments: identify supporting staff, provide updates, engage internal stakeholders, advance critical CIP projects</li><li>Ongoing planning for communications and community engagement</li></ul>				Develop Implementation Pathway for preferred Emergency Water Supply



# Questions?



Austin  
**WATER**

