

Nueces River Basin Hydrology and Water Supply Dashboard

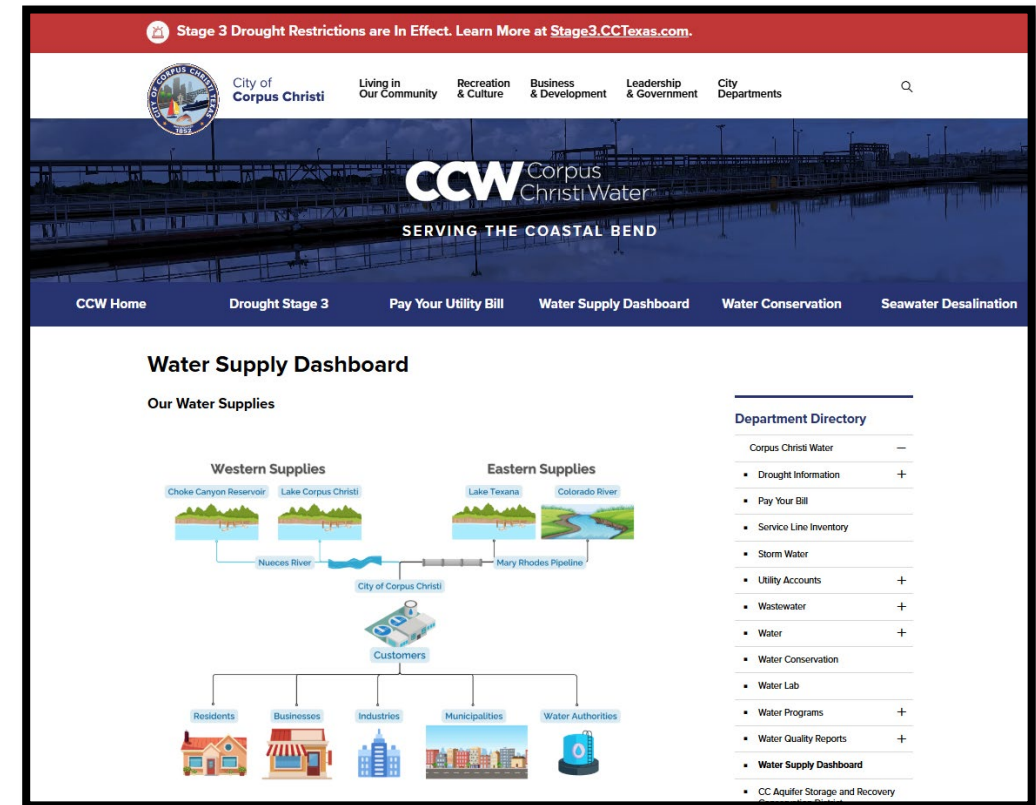
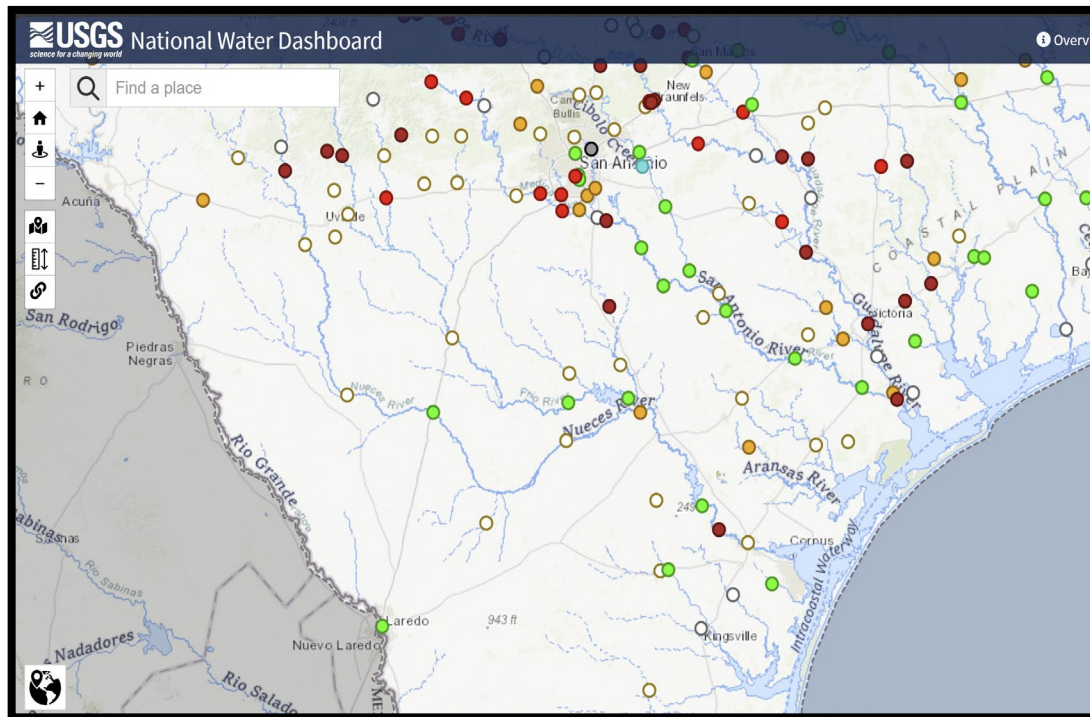
Drew Molly, P.E.
Chief Operations Officer

Corpus Christi City Council
April 15, 2025



Briefing Overview

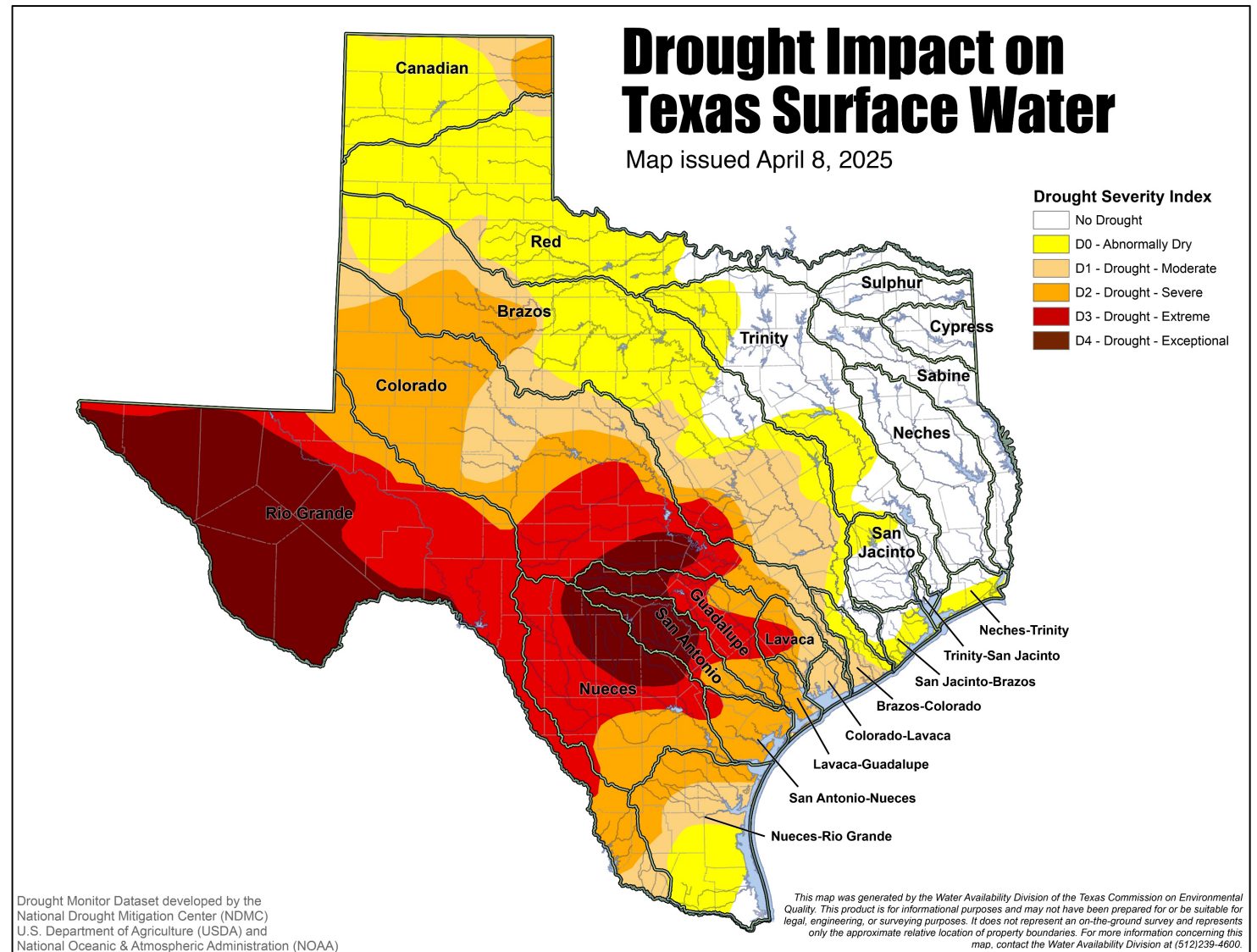
- Current Drought Monitor Map
- Nueces River Hydrology
 - Overview of the inflows into the Nueces River Basin
- Introduction to the City's new Water Supply Dashboard
- Instructions on how to access the Dashboard



Drought Monitor

As of April 8, 2025, 82% of Texas is in some level of drought.

- 14% of Texas is in an Exceptional Drought
- The entire Nueces River Basin is in Severe to Exceptional Drought



Nueces River Basin Hydrology

Presentation to City Council

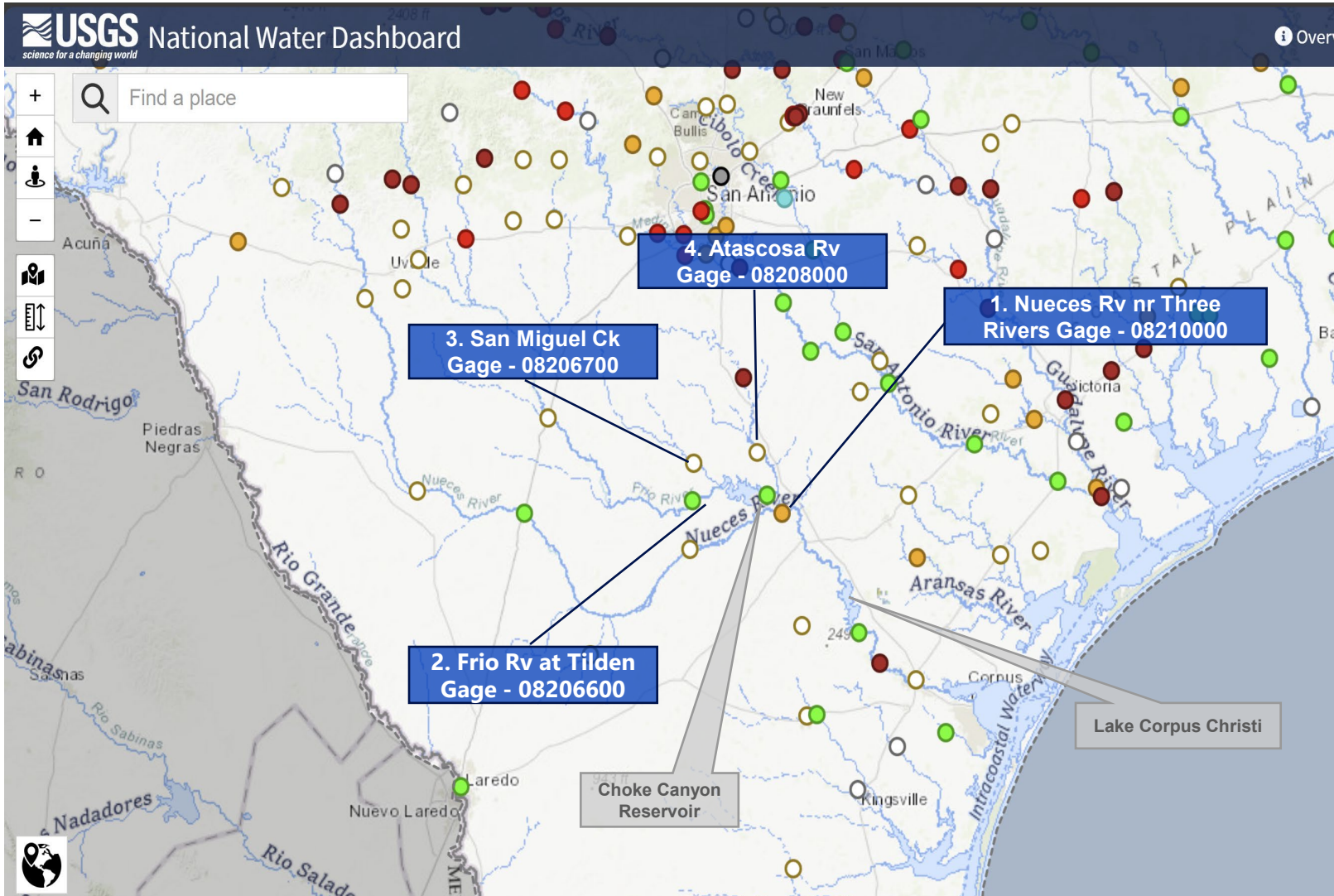
Michael Pinckney, PE, CFM

Jeff Stovall, PhD, PE

April 15, 2025



Stream Flows in the Nueces River Basin

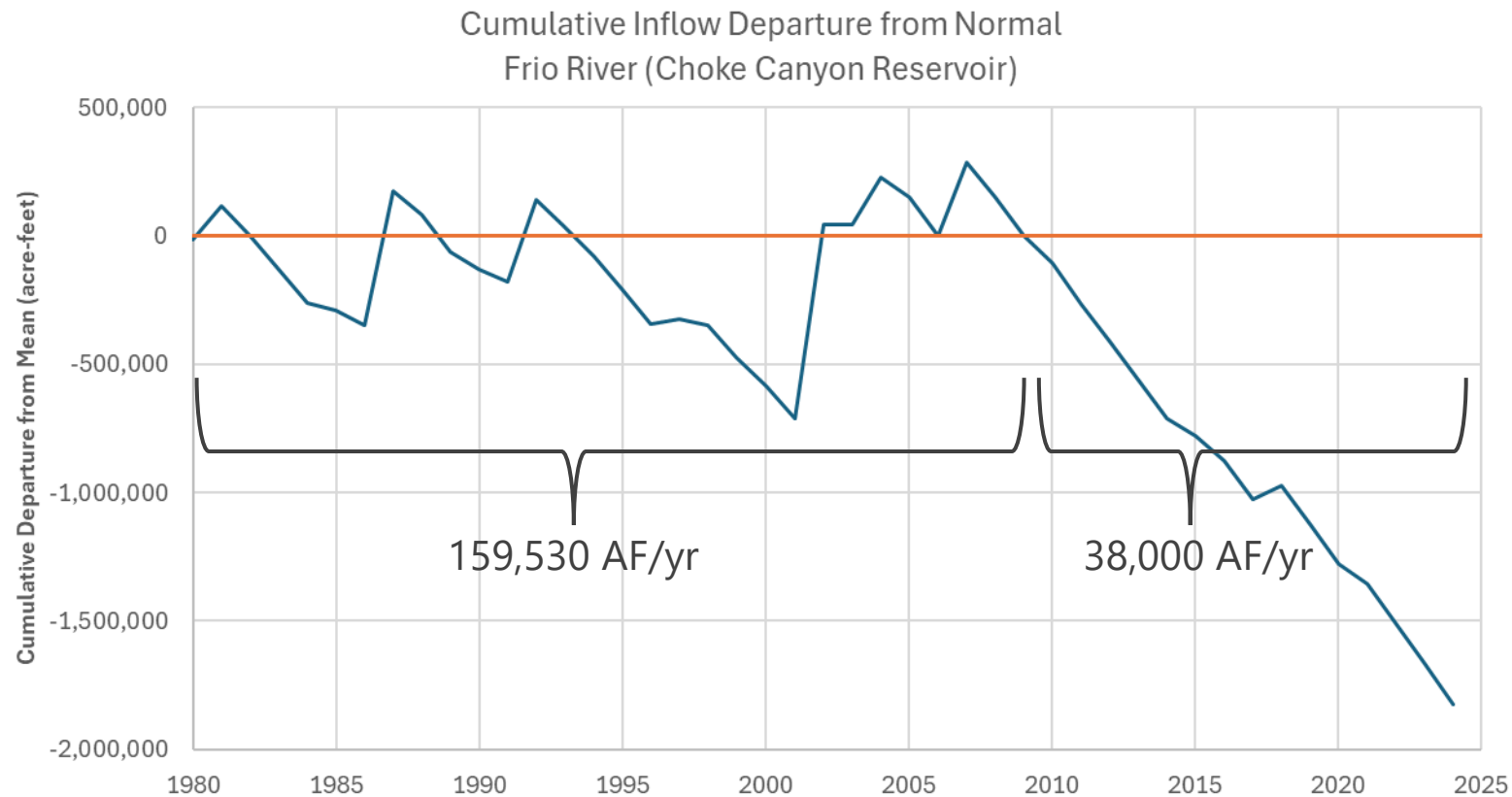


The City uses multiple USGS gages to monitor conditions upstream of the City's reservoirs.

- Choke Canyon Reservoir
- Frio River near Tilden
- San Miguel Creek near Tilden
- Lake Corpus Christi
- Nueces River at Three Rivers
- Includes releases from Choke Canyon dam (less channel losses)

Frio River near Tilden

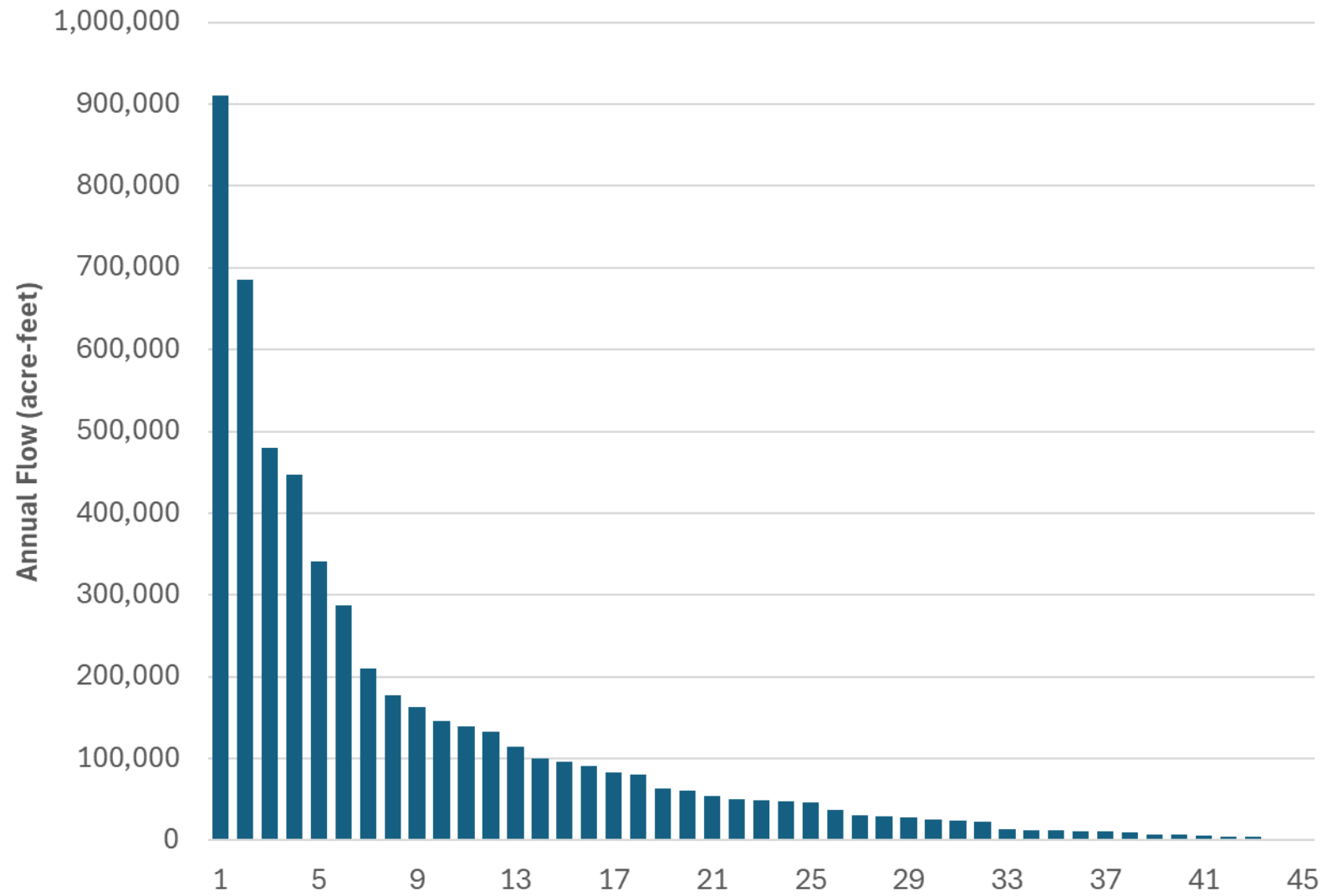
- 30-year (1980–2009) average annual discharge:
 - » 159,530 acre-feet (orange line)



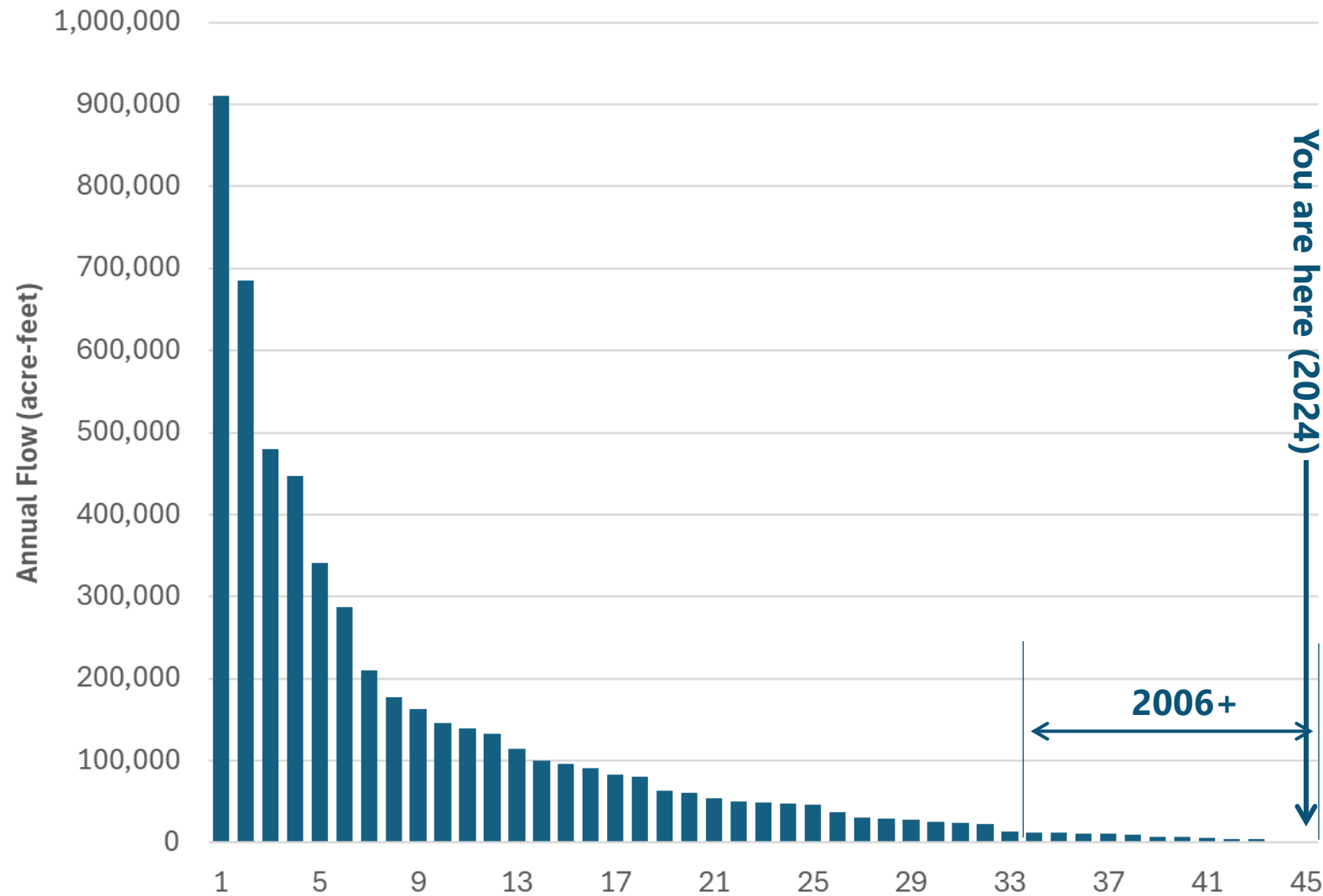
Choke Canyon Reservoir
Capacity: 662,820 acre-feet

Frio River near Tilden (1980-2024)

- 45 years of total annual streamflow



Frio River near Tilden (1980-2024)

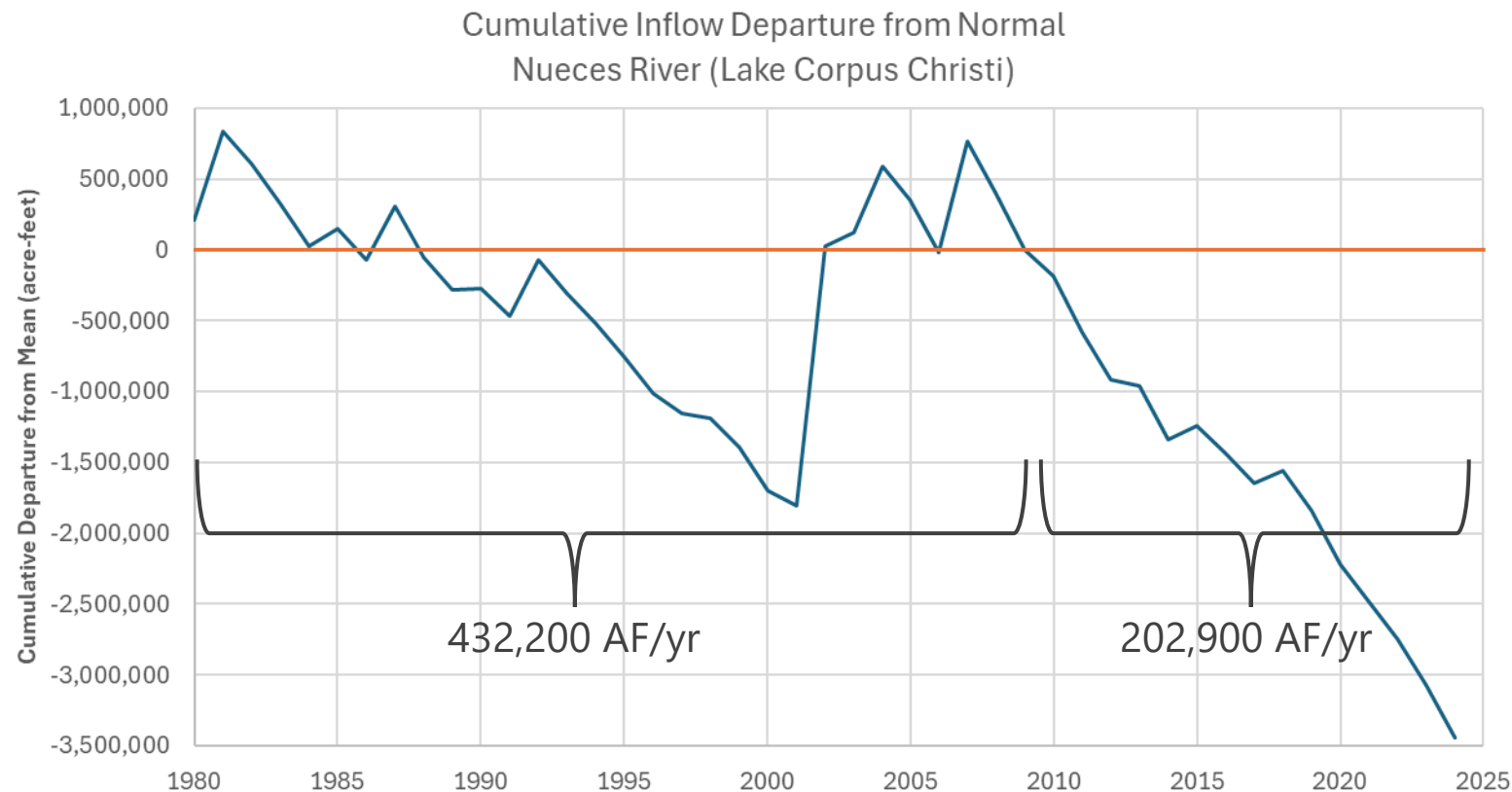


- 2024 ranked last in 45 years of recorded streamflow since 1980
 - » 2011: 462 AF
 - » 2024: 431 AF
 - » Order of magnitude less than next lowest year
 - 3,937 AF in 2022
- 10th-percentile flow: 5,632 AF

The 12 lowest flow years have occurred since 2006.

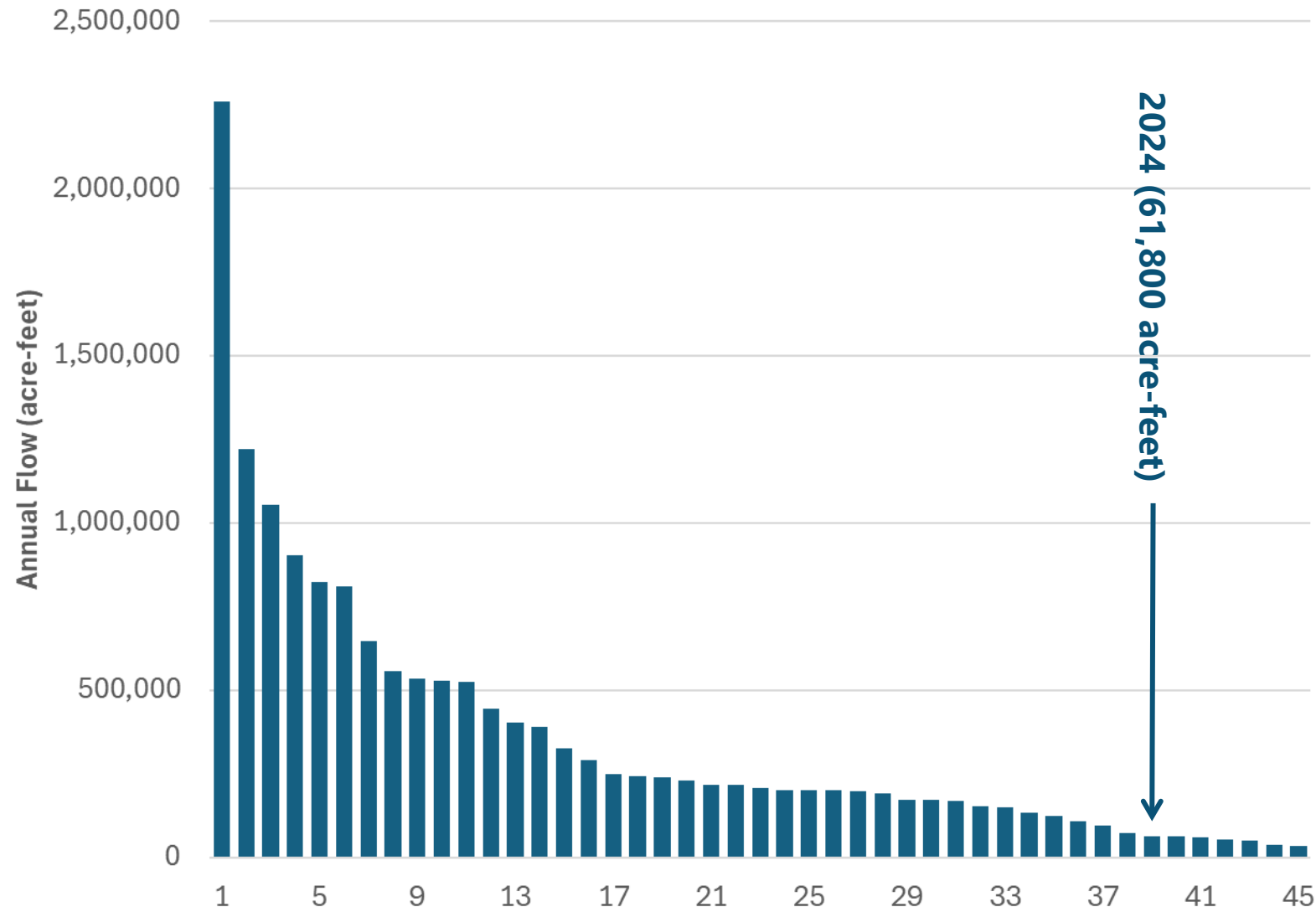
Nueces River at Three Rivers

- 30-year (1980–2009) average annual discharge:
 - » 432,200 acre-feet (orange line)
 - » Includes releases from Choke Canyon (~21,000 acre-feet/year)



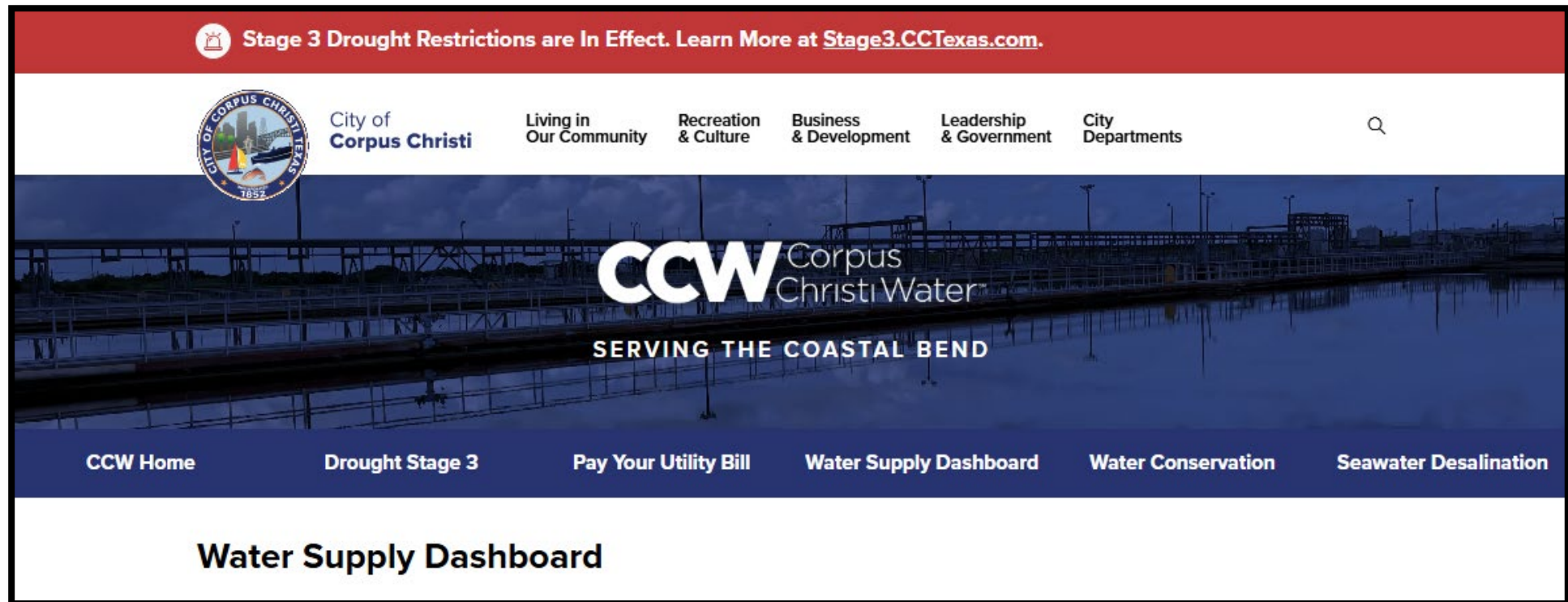
Lake Corpus Christi
Capacity: 256,340 acre-feet

Nueces River at Three Rivers (1980-2024)



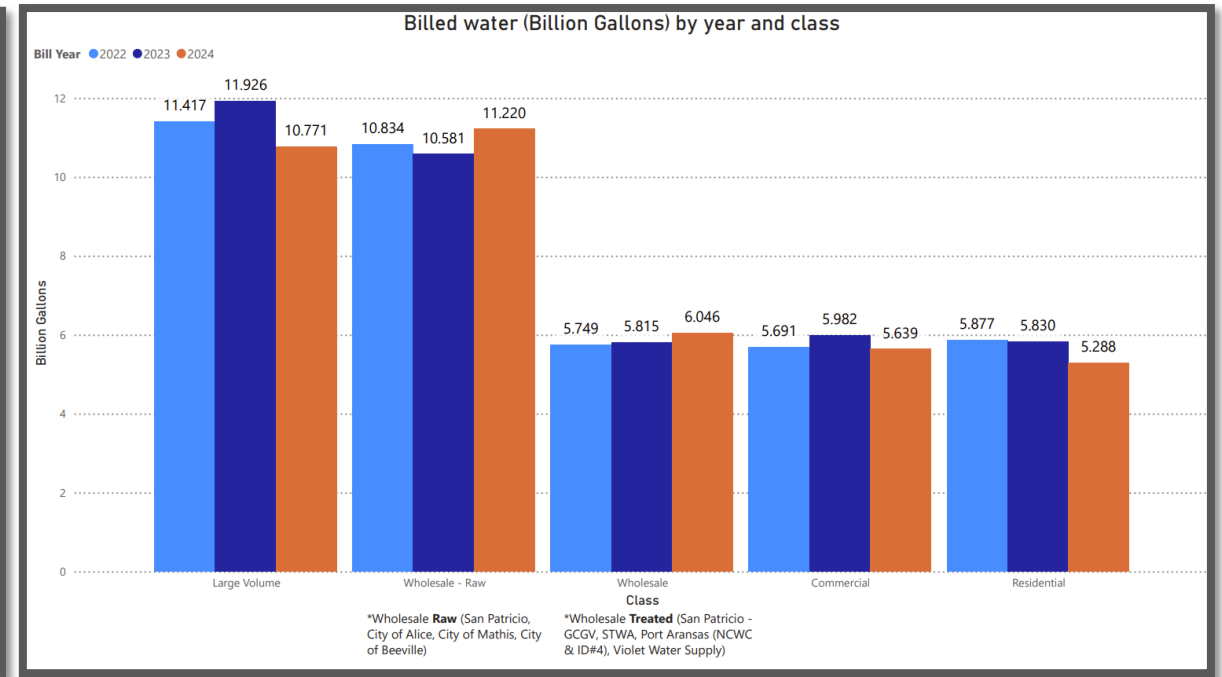
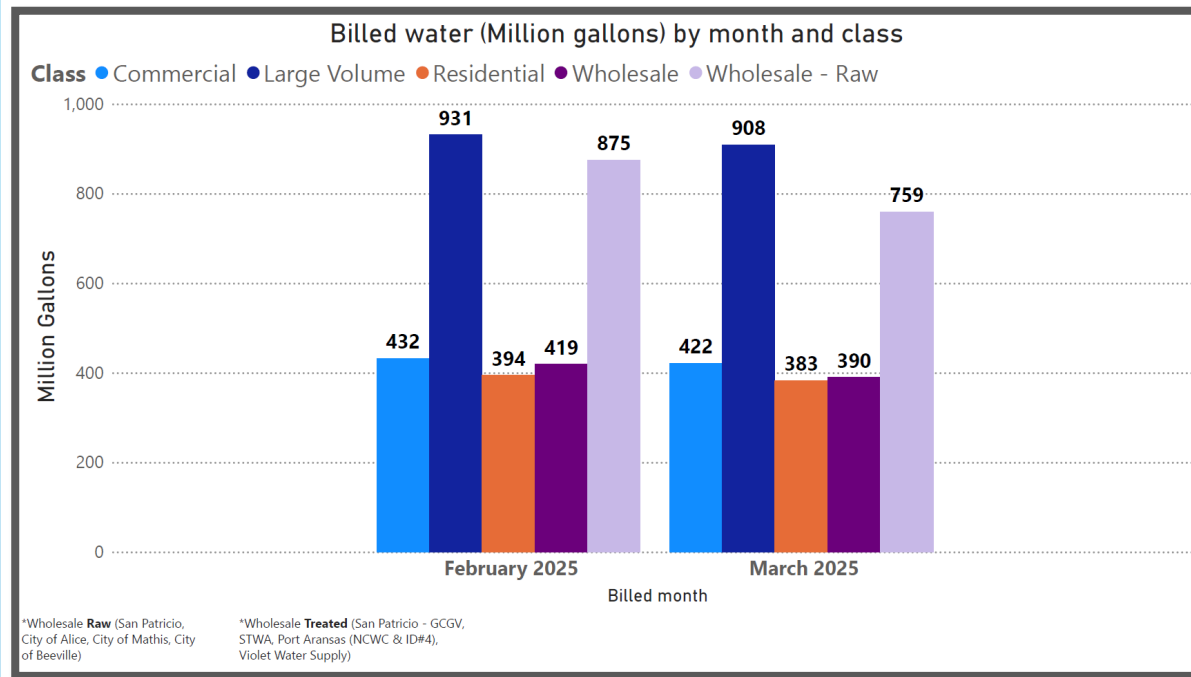
- 9 of 10 lowest flow years have occurred since 2006
- 2024 ranked 40th of 45 years of recorded streamflow since 1980
 - » 2011: 33,300 AF
 - » 2024: 61,800 AF
- 10th-percentile flow: 57,800 AF

Water Supply Dashboard and Published Water Information



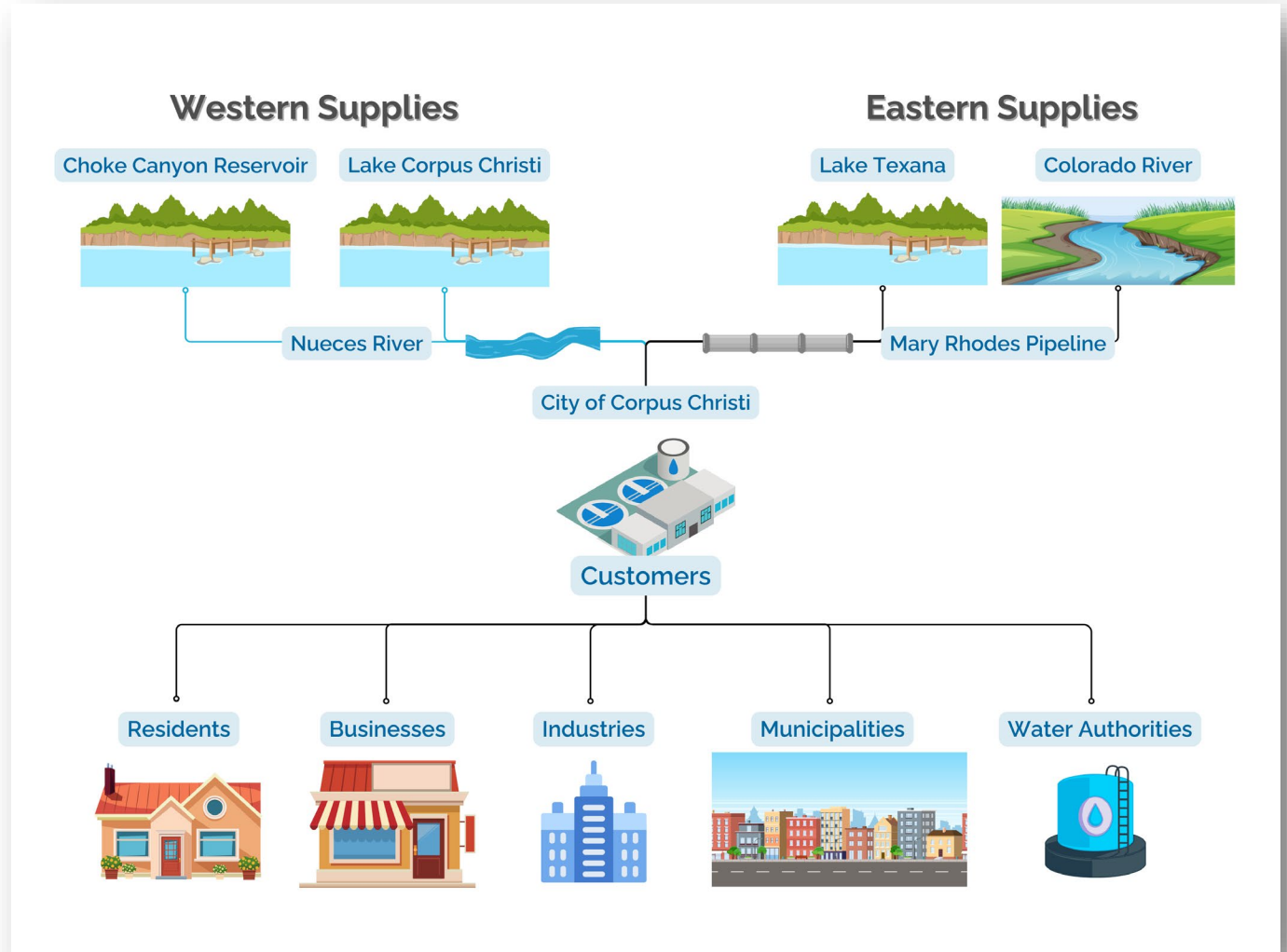
Published Water Information

- CCW began publishing water consumption graphs by customer class to the City website.
- The existing information has been added to the bottom of the Water Supply Dashboard page as “Helpful Links”.
- The helpful links include:
 - Water Consumption Graphs by Customer Class
 - More Water Data and Stage 3 Watering Days
 - 2025 Adopted Drought Contingency Plan



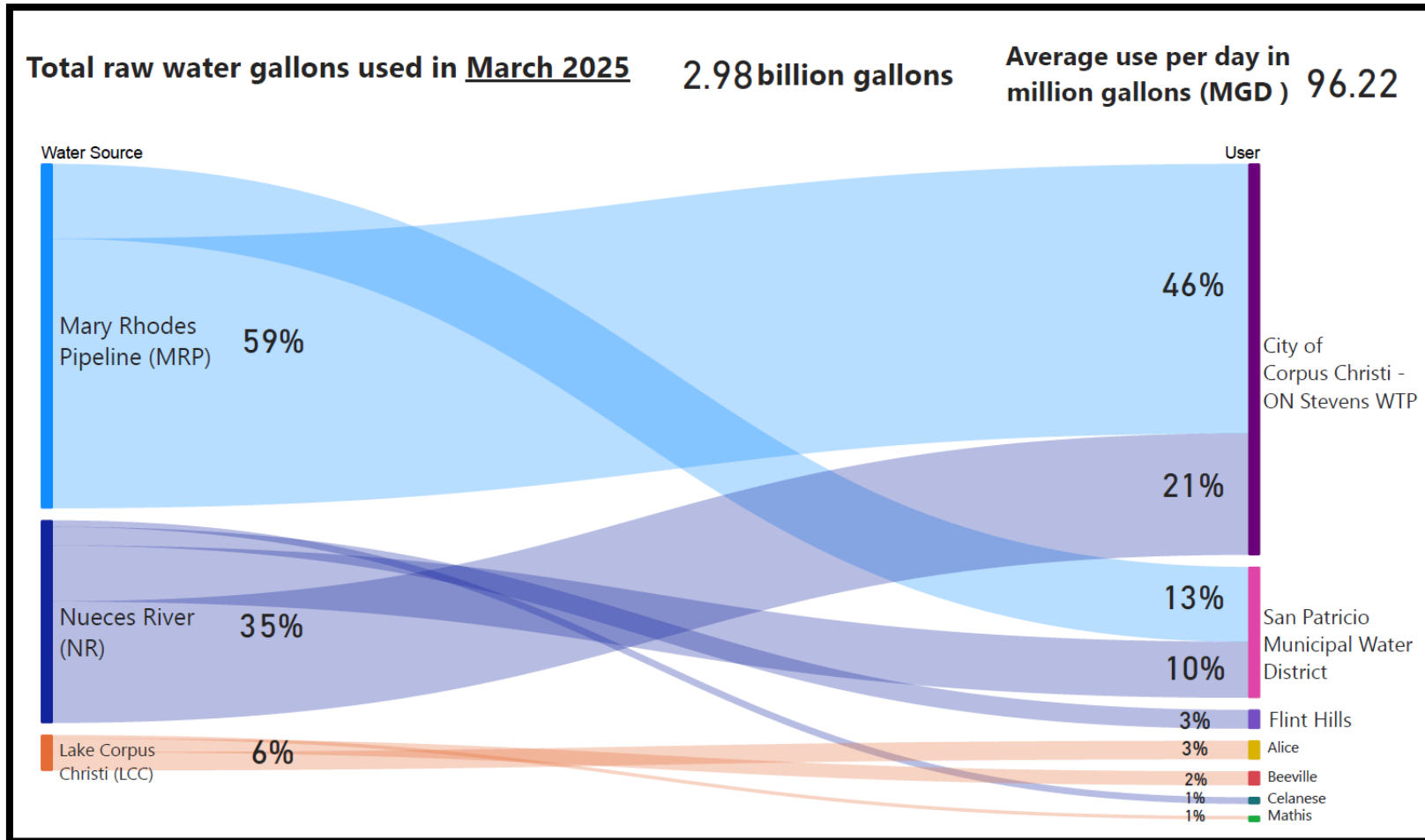
Water Supply Dashboard

- The City of Corpus Christi and Corpus Christi Water (CCW) have launched a new online water dashboard webpage.
- CCW supplies water for municipal and industrial use in a seven-county service area covering 140 square miles.
- From the west of Corpus Christi, the City takes water from the Lake Corpus Christi and Choke Canyon Reservoir System, both within the Nueces River Basin
- To the east of Corpus Christi, water is transferred from the Colorado River via Mary Rhodes Pipeline Phase II and Lake Texana via the Mary Rhodes Pipeline Phase I and sent to the O.N. Stevens Water Treatment Plant.



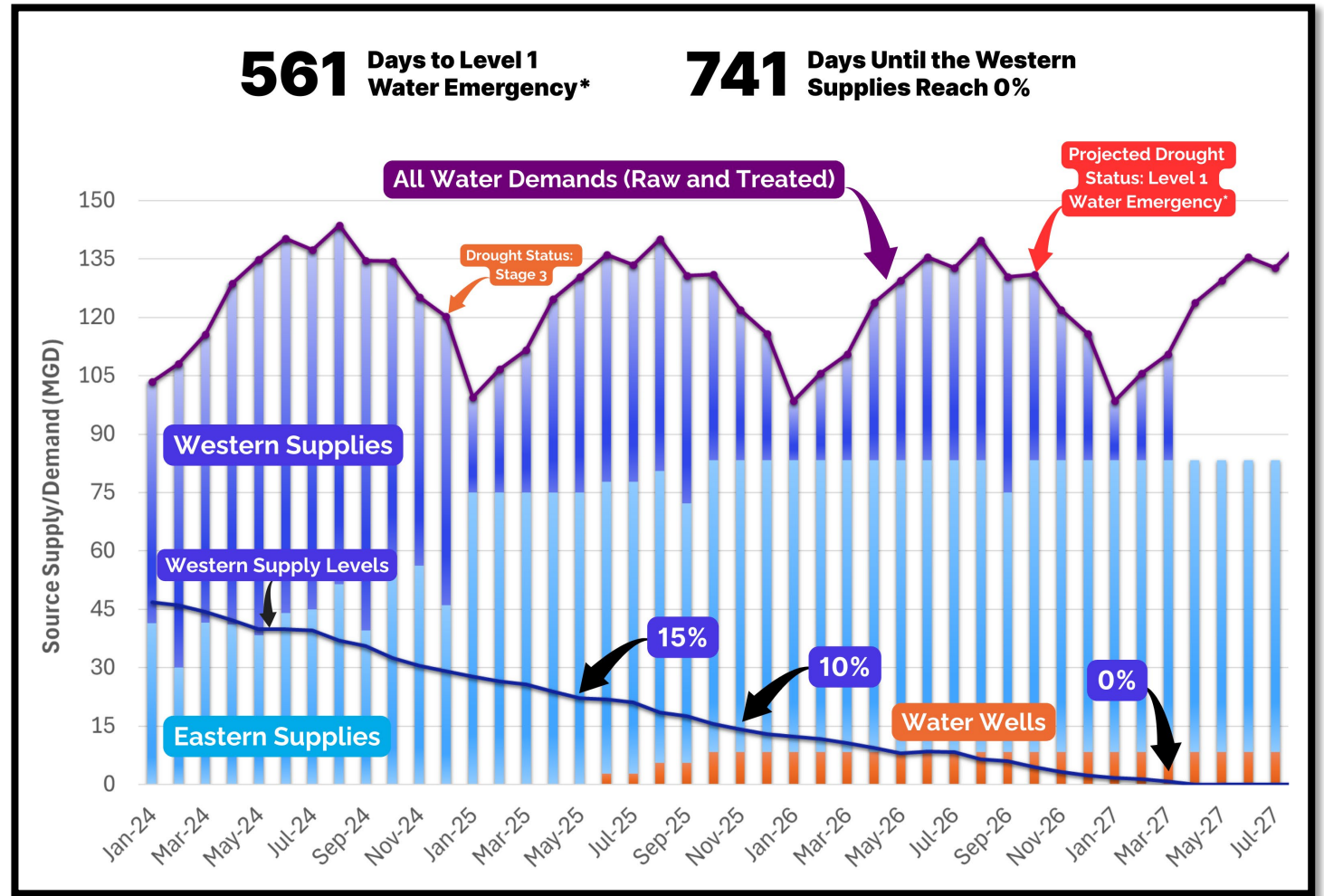
Water Supply Dashboard

This webpage provides information about our water sources, water availability, and water use by source and user. The raw water usage graph will be updated monthly.



Water Supply Dashboard

- This graph illustrates the water sources used, as well as the water demand for all City customers.
- The City has modeled the amount of water remaining in the western reservoir system, as well as all other available supplies.
- Based on current and projected demands, the model estimates that with no change to demands, and a repeat of 2024 rain, the City has approximately 561 days before reaching a Level 1 Water Emergency and 741 days before the western supplies run dry.



The top half of the slide features four horizontal, wavy bands of different shades of blue, creating a water-like effect. The bands are set against a light gray background.

Thank you!

