



A Roundtable Discussion on Drought

B P U B A N N E X B U I L D I N G B O A R D R O O M

1425 ROBINHOOD DRIVE

JULY 11, 2024, 9-11 A.M.

Welcome & Roundtable Introductions



CONSTANZA MINER, CHIEF ADMINISTRATIVE OFFICER

Drought Roundtable Agenda

- Welcome and Roundtable Introductions
- Brownsville Public Utilities Board Overview
- Current Drought Conditions
- Partnerships and Roles
- Efforts to Address Drought
- Coffee Break
- Perspectives from the Roundtable
- Roundtable Discussion

Welcome Roundtable Members



Rep. Janie Lopez
District 37



Rep. Erin Gámez
District 38



John F. Cowen
Brownsville Mayor



Esteban Guerra
Port of Brownsville
Chairman



Marilyn D. Gilbert
BPUB General Manager
& CEO



Brownsville Public Utilities Board Overview

MIKE PEREZ, CHIEF FINANCIAL OFFICER

Brownsville Public Utilities Board

Board of Directors

- Arthur “Art” Rendon – Chairperson
- Joseph Hollmann, Ph.D. – Vice Chairperson
- Daisy Zamora, Ph.D. – Secretary/Treasurer
- Alex Najera – Member
- Gerado Martinez – Member
- Al Villarreal – Member
- Mayor John F. Cowen – Ex-Officio Member

History

- Electrification in Brownsville began in the early 1900s when City leaders voted and approved to build, own and operate a utility system
- As the City and utility system grew, it gained the attention of private companies that made offers to purchase it
- After several attempts from larger corporations to acquire the system, Brownsville’s City Commission authorized a charter amendment election proposing the creation of a public utilities board in 1960
- Under the charter, management, operation, and control of the city’s combined water, wastewater, and electric utility systems were delegated to the BPUB Board of Directors
- The Board is composed of seven members: six appointed by the City Commission to four-year terms and the city’s mayor serving as the seventh member (ex-officio)

BPUB Services

Electrical

53,138 customers⁽¹⁾ - 68 square mile service area - 2,000 miles of lines - 355 MW generation⁽²⁾

Wastewater

55,065 customers⁽¹⁾ - 156 square mile service area - 2 treatment plants - 27 MGD capacity

Water

54,310 customers⁽¹⁾ - 148 square mile service area - 2 sources of water - 50 MGD capacity

(1) As of September 30, 2023

(2) Represents name plate capacity

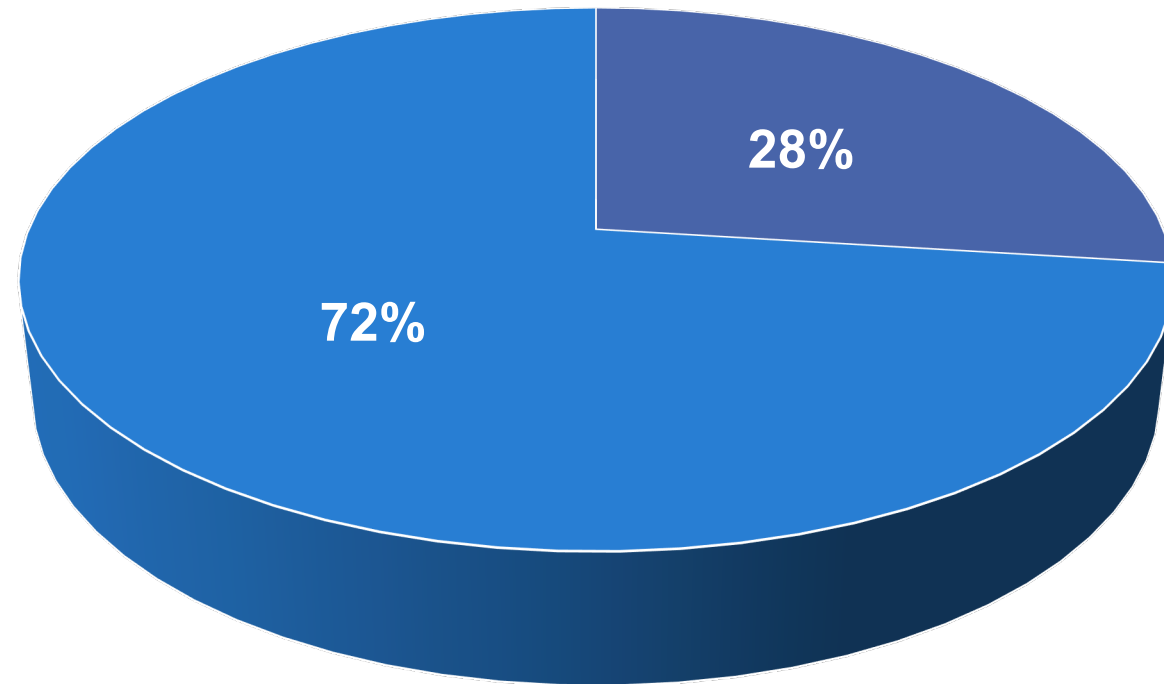
Brownsville Public Water Supply



FY2023 AVERAGE WATER DEMAND:

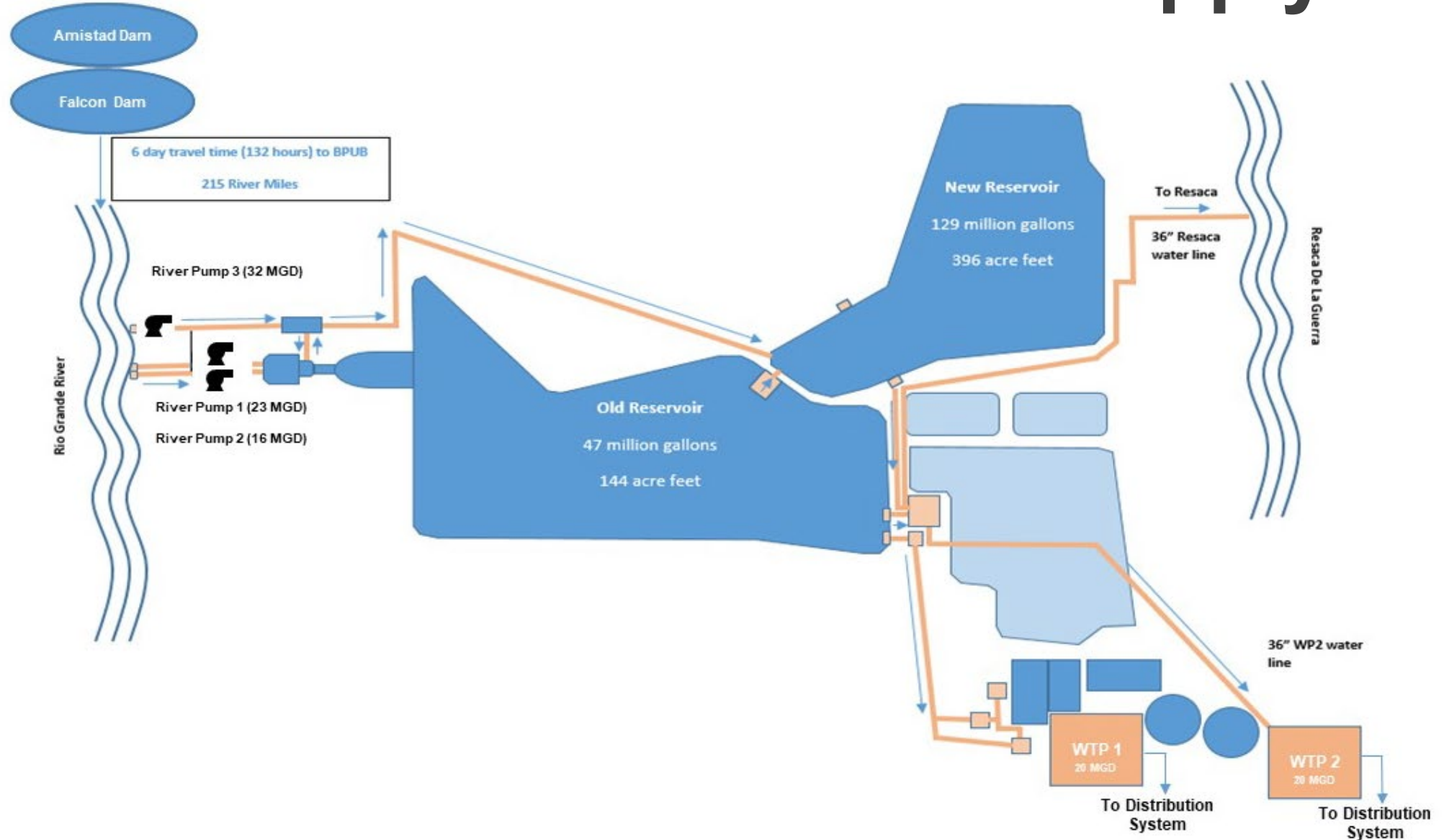
22.0

Million Gallons/Day (MGD)



■ Groundwater (SRWA) ■ Surface Water Plants

Brownsville Public Water Supply



BPUB Water Treatment Plants

Treatment Plant 1, 20 MGD, Rio Grande



Treatment Plant 2, 20 MGD, Rio Grande, Resaca



Southmost Regional Water Authority



- 10 MGD reverse osmosis plant produces approximately 7.5 MGD of potable water using brackish groundwater from 20 wells
- Construction completed in April 2004
- Partnership interest:
 - 92.91% BPUB
 - 2.51% Valley Municipal Utility District No. 2
 - 2.28% City of Los Fresnos
 - 2.10% Port of Brownsville
 - 0.20% Town of Indian Lake

Southmost Regional Water Authority

PLANT OPTIMIZATION

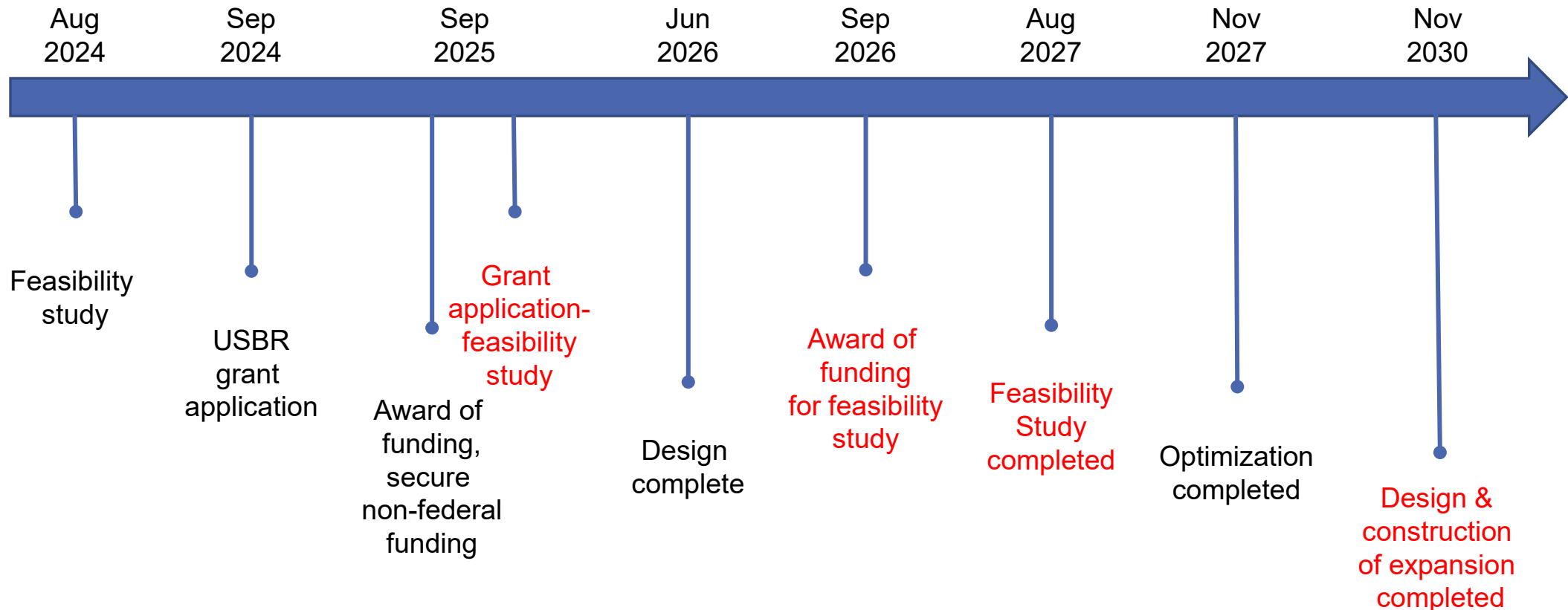
- Optimize plant production, treatment, and reliability to achieve and maintain the nameplate capacity of 10 MGD.
- The scope includes an optimization study completed in Jan. 2024, projects include:
 - \$23.2M, 8 replacement wells
 - \$4.2M, 2 additional microfiltration trains
 - \$4.4M, SCADA and infrastructure upgrades
 - \$0.6M, RO membranes
 - \$7.6M, backup power generator
- Projected cost of \$40.0M

PLANT EXPANSION

- Expand the plant's production capacity from 10 MGD to 20 MGD.
- The scope of the project includes:
 - Additional wells
 - Raw water transmission line and intermediate pump station
 - Pretreatment system
 - RO trains
 - Pumps and ancillary equipment
 - Backup generators
- Projected cost of \$213M

SRWA Desalination Plant Potential Project Timeline and Key Milestones

Optimization and **Expansion:**

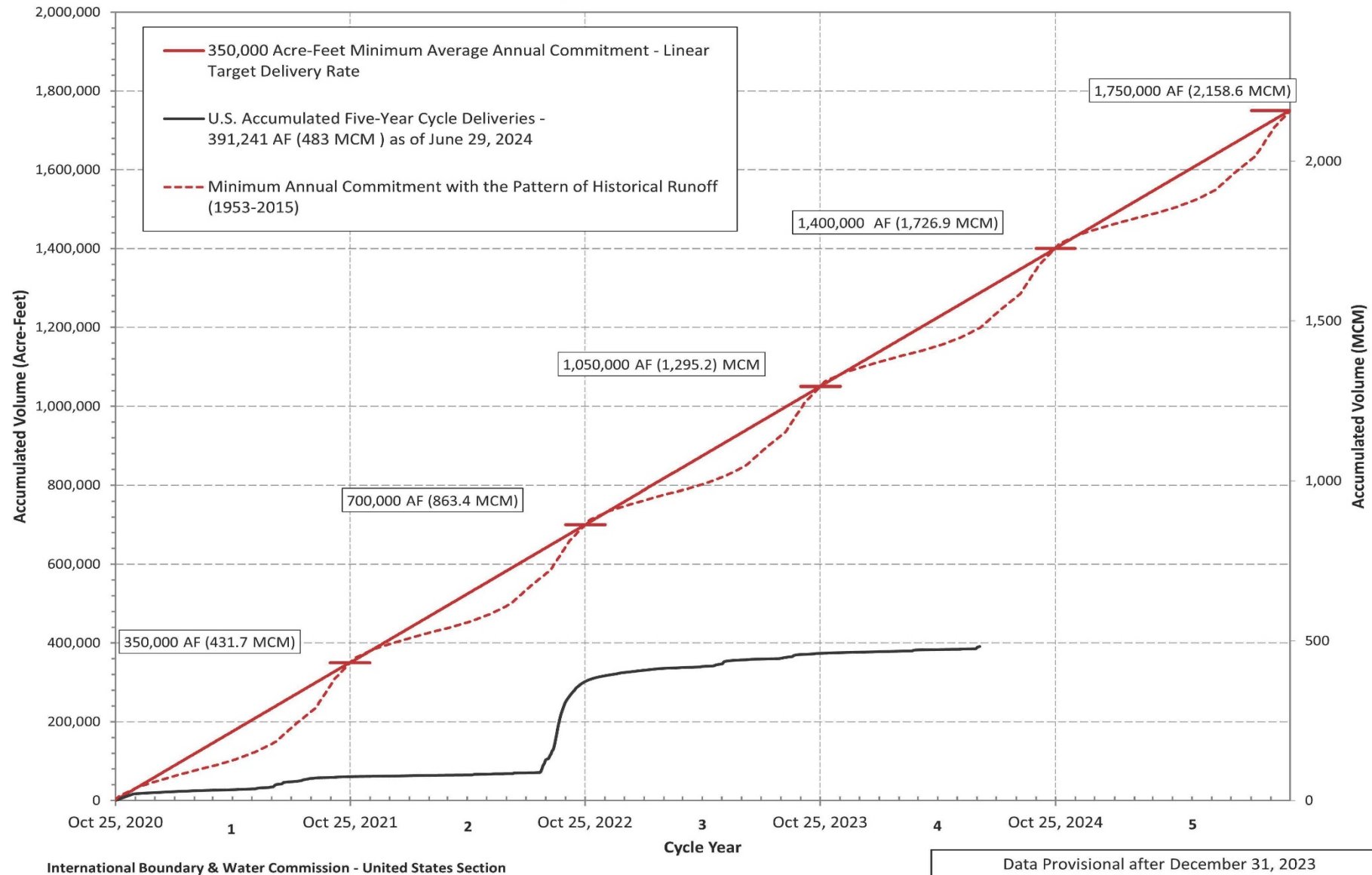




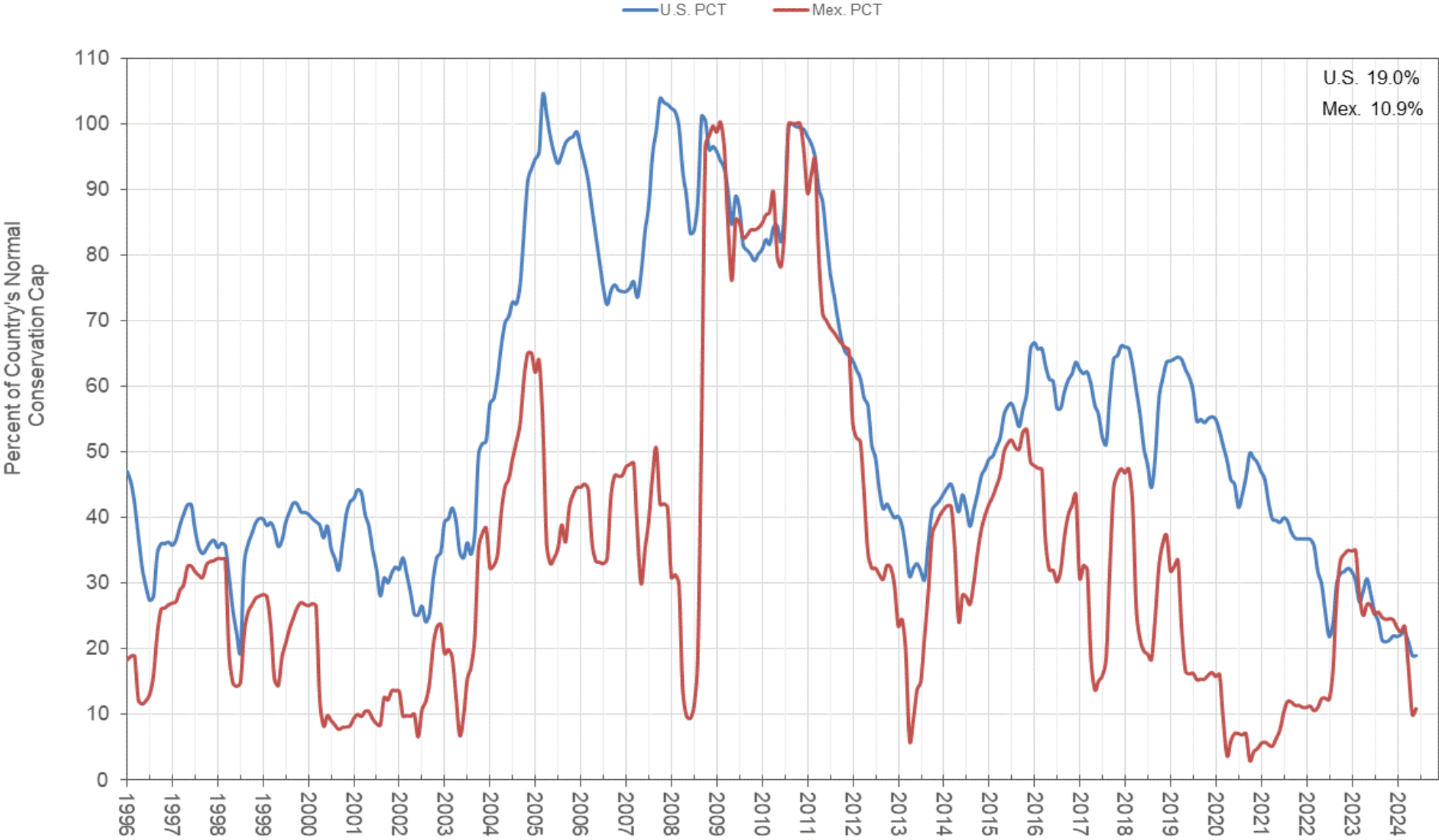
Current Drought Conditions

GUADALUPE GARCIA, WATER RESOURCES
ADMINISTRATOR

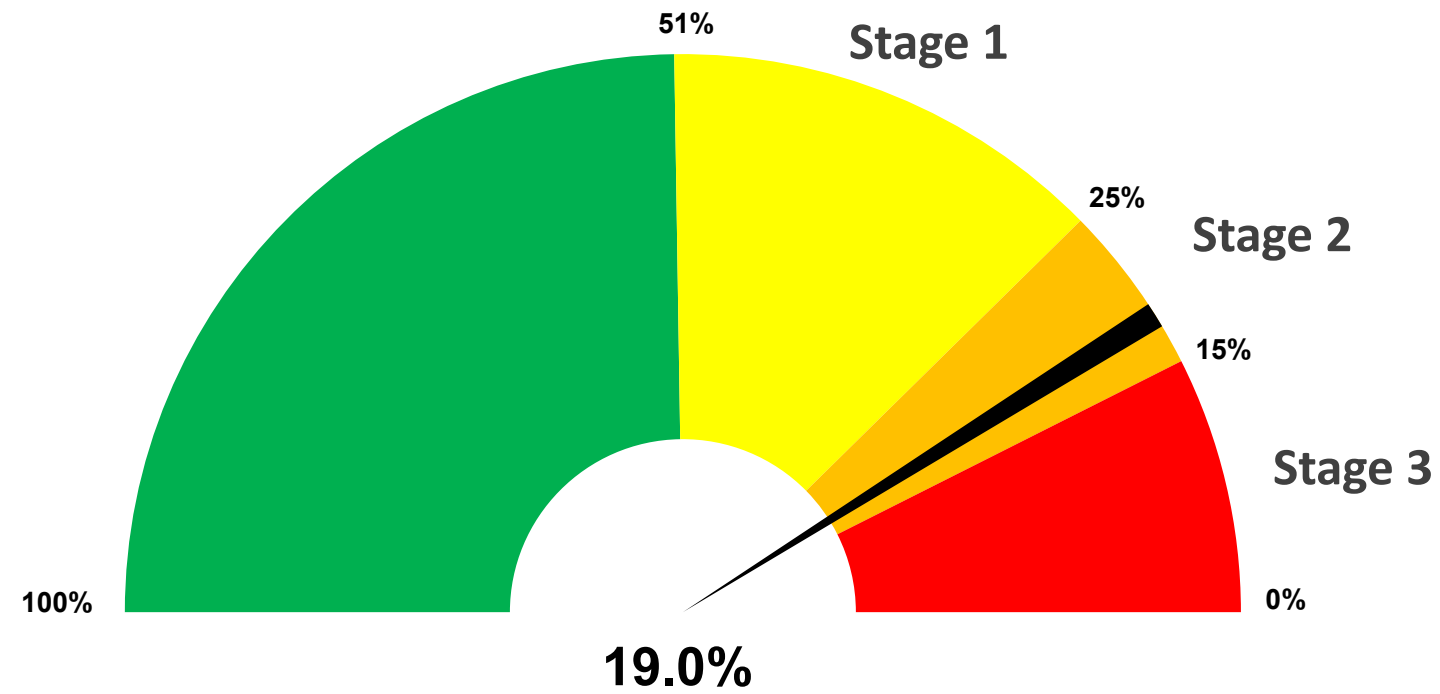
Rio Grande River Basin
Estimated Volumes Allotted to the United States by Mexico from Six Named Mexican Tributaries
and Other Accepted Sources* under the 1944 Water Treaty
Current Cycle: October 25, 2020 thru June 29, 2024



Amistad-Falcon Percent of Conservation Capacity



BPUB Drought Stage Meter



U.S. Combined ownership at Amistad and Falcon Reservoirs
June 29, 2024 = 19.0%

U.S. Combined Ownership at Amistad/Falcon

Previous 3 Readings

18.5%

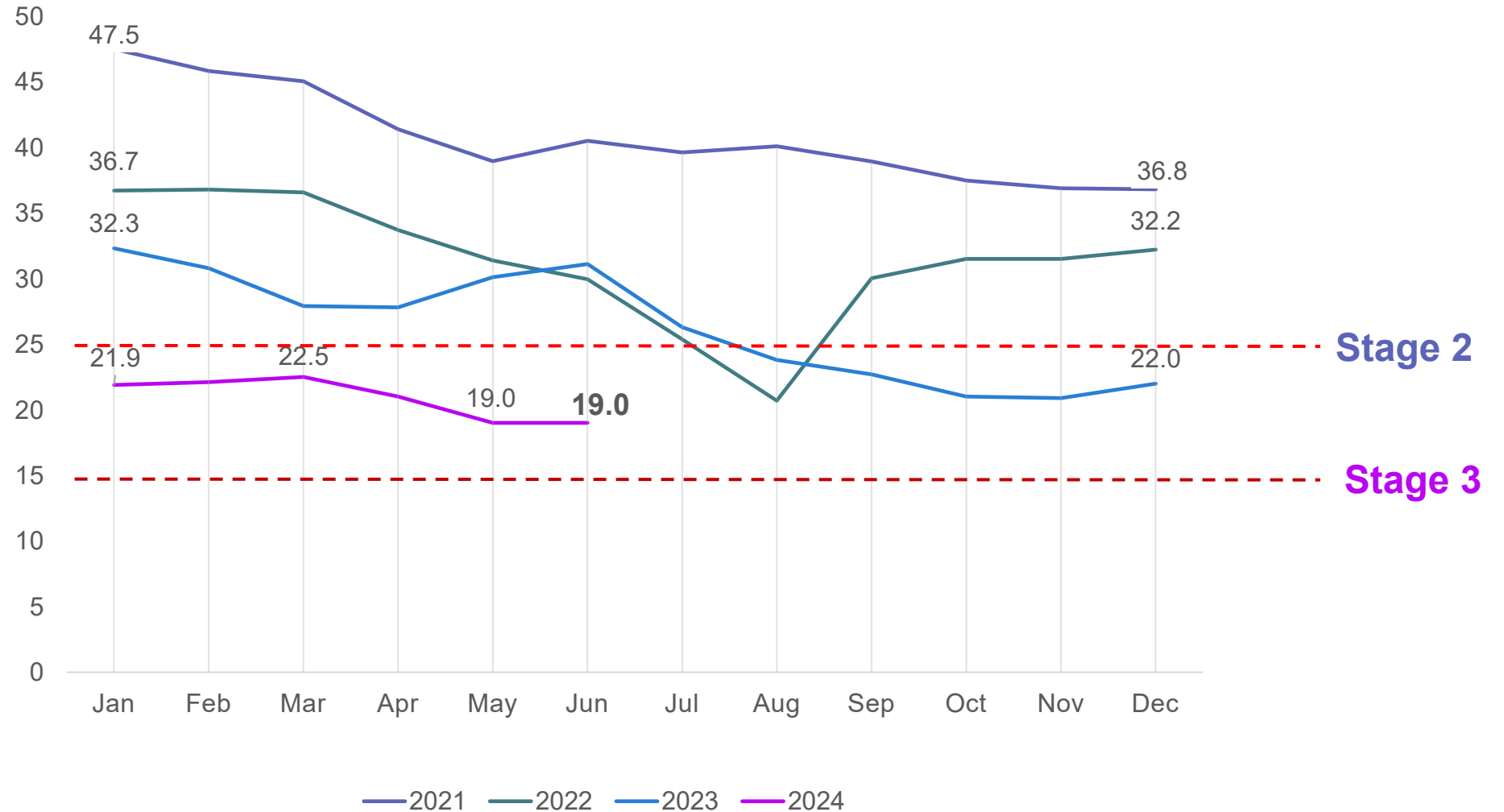
June 22, 2024

18.2%

June 15, 2024

18.5%

June 8, 2024



Stage 2 – Guidelines for Initiation

| | |
|-------------|---|
| Condition 1 | U.S. water stored in Amistad and Falcon International reservoirs reaches 25% or 834,600 acre-feet as reported by TCEQ Watermaster. |
| Condition 2 | Analyses of water supply indicates City of Brownsville/BPUB annual allotment may be exhausted. |
| Condition 3 | Line breaks, or pump or system failure due to hurricanes, flooding, freezes, and/or some other natural or man-made cause will result in unprecedented loss of capability to provide service. |
| Condition 4 | Peak demands on the BPUB's water distribution and/or treatment plants are nearing capacity levels for and will place a strain on the system. |
| Condition 5 | Contamination of the water supply and/or transmission & distribution system due to hurricanes, freezes, and/or some other natural or man-made cause will result in unprecedented loss of capability to provide service. |

Stage 3 – Guidelines for Initiation

| | |
|-------------|---|
| Condition 1 | U.S. water stored in Amistad and Falcon International reservoirs reaches 15% or 504,600 acre-feet as reported by TCEQ Watermaster. |
| Condition 2 | Analyses of water supply indicates City of Brownsville/BPUB annual allotment may be exhausted. |
| Condition 3 | Major line breaks, pump or system failure due to hurricanes, flooding, freezes, and/or some other natural or man-made cause may result in unprecedented loss of capability to provide service. |
| Condition 4 | Peak demands on the BPUB's water distribution and/or treatment plants has exceeded capacity levels for 3 days and has place a strain on the system. Without restraint, service to all utility customers cannot be guaranteed. |
| Condition 5 | Contamination of the water supply and/or transmission & distribution system due to hurricanes, freezes, and/or some other natural or man-made cause will result in unprecedented loss of capability to provide service. |
| Condition 6 | The inability to maintain or replenish adequate volumes of water in storage to provide for public health and safety. |

Restrictions Permitted by Code

STAGE 2

- Bi-weekly landscape irrigation
- Landscape variance
- Bi-weekly lawn watering
- Weekly residential car washing
- Golf course Water Management Plan
- Water on request only at restaurants
- No non-essential washing, dust control, or gutter flushing
- Must repair water leaks
- Notices for violations

STAGE 3

- Weekly landscape irrigation
- Weekly lawn watering
- Weekly residential car washing
- Using water from Resacas
- Pumping water into Resacas
- Surcharges for commercial and residential
- Enforcement for violations

Amistad Reservoir in Del Rio, Texas



Credit: Omar Ornelas / El Paso Times, June 6, 2024



Partnerships and Roles

RENE MARISCAL, DIVISION MANAGER FOR WATER
RESOURCES, CONSERVATION & COMPLIANCE

Partnerships and Roles

| Agency | Role |
|---|--|
| U.S International Boundary Water Commission | Responsible for applying the boundary and water treaties between the United States and Mexico and settling differences that may arise in their application. |
| Texas Commission on Environmental Quality | Manages state surface water in Texas, reviews applications for appropriations of State Water, amends to increase the appropriation of State Water, or an amends to change the place or purpose of use. The TCEQ Rio Grande Watermaster administers water rights in the Rio Grande River Basin, from Fort Quitman to the Gulf of Mexico. |
| Texas Water Development Board | Collects and disseminates water-related data; assists with regional water supply and flood planning that contributes to preparing the state water plan and state flood plan; and administers cost-effective financial programs for constructing water supply, wastewater treatment, flood control, and agricultural water conservation projects. |
| Rio Grande Regional Water Planning Group (Region M) | Collaborates with state agencies and stakeholders and works to develop and update a Regional Water Plan for TWDB Region M, which guides the development and stewardship of the region's water resources. |
| City of Brownsville | Enacts, implements and enforces water conservation and drought related city ordinances. Formally adopts Water Conservation & Drought Contingency Plan. Provides drought information to the community and coordinates communications. |
| Cameron County | Supports local governments in preventing, preparing for, responding to, and recovering from natural disasters or evolving emergencies such as drought. |



Efforts to Address Drought

MARK DOMBROSKI, ASSISTANT GENERAL MANAGER &
CHIEF OPERATING OFFICER

Solutions to Address Needs

Supply Side

BPUB is actively working to increase raw water sources while investing in infrastructure and technology to efficiently treat and distribute the highest quality water to its customers.

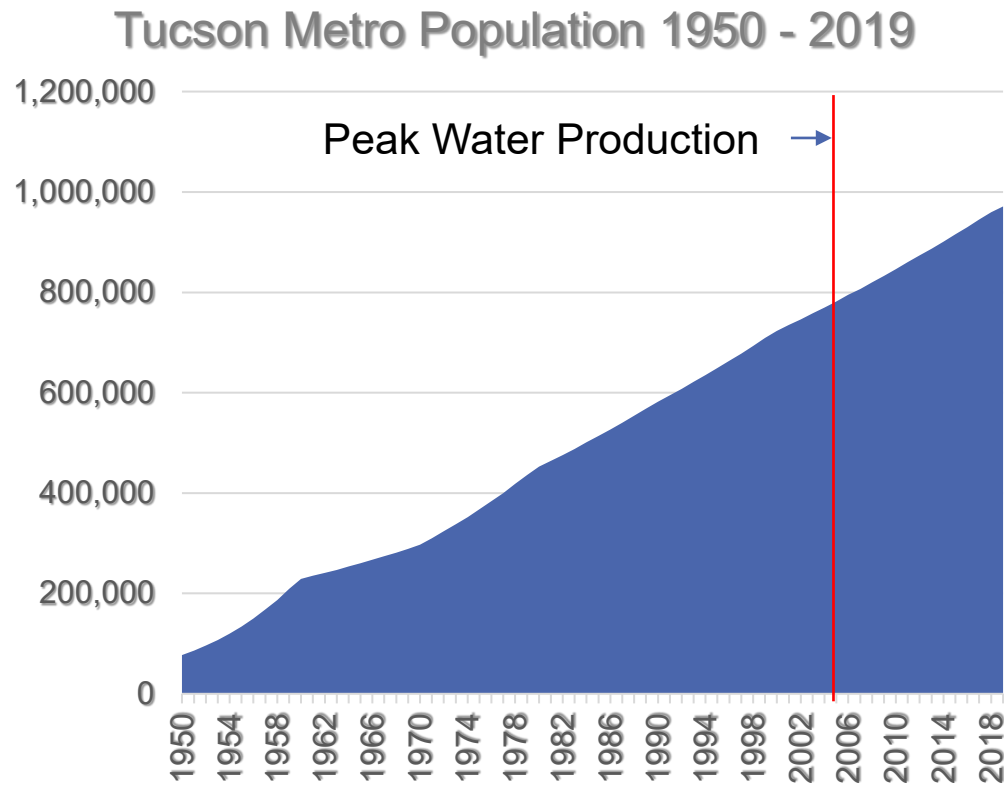
- U.S. – Mexico water treaty compliance
- SRWA plant optimization and expansion
- Indirect Potable Re-use (IPR) Pilot Project
- Resaca dredging
- Water loss audit
- Leak detection and repair program

Demand Side

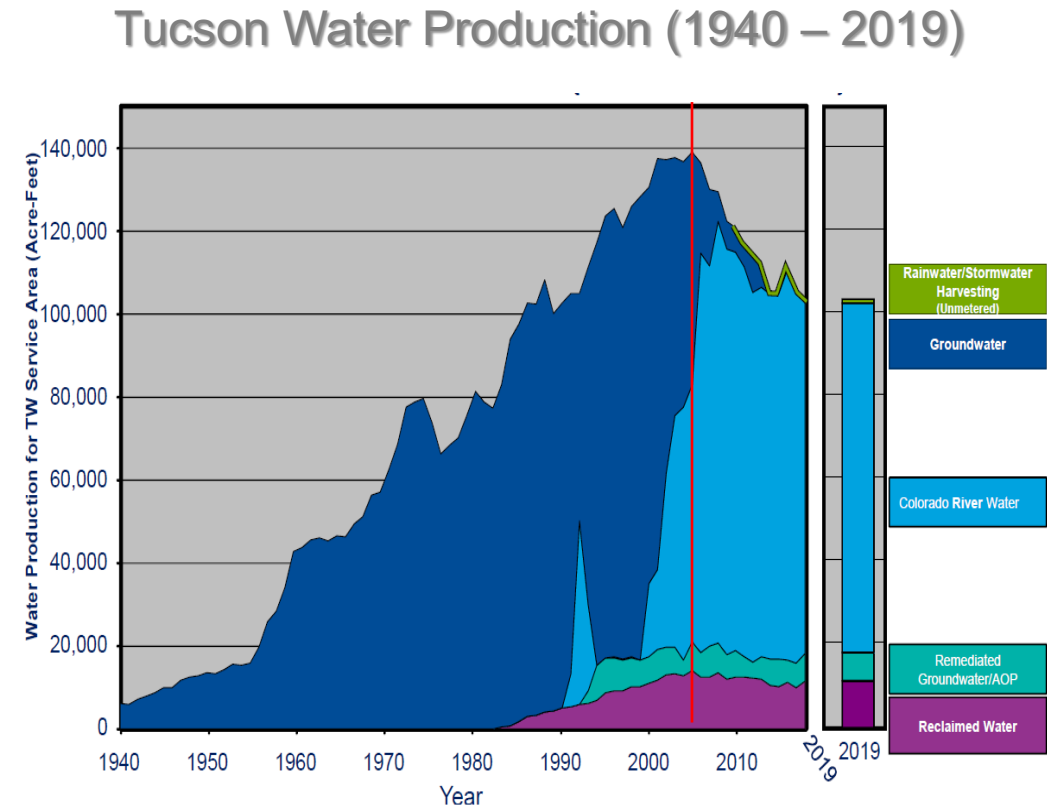
BPUB has and continues to develop programs to inform and assist customers and the public on effective ways to conserve water while improving the efficiency of its use.

- Advanced Metering Infrastructure
- Update to Water Conservation and Drought Contingency Plan
- Drought Messaging and Public Awareness
- Water Conservation Programs

Population Growth ≠ Increase in Water Production



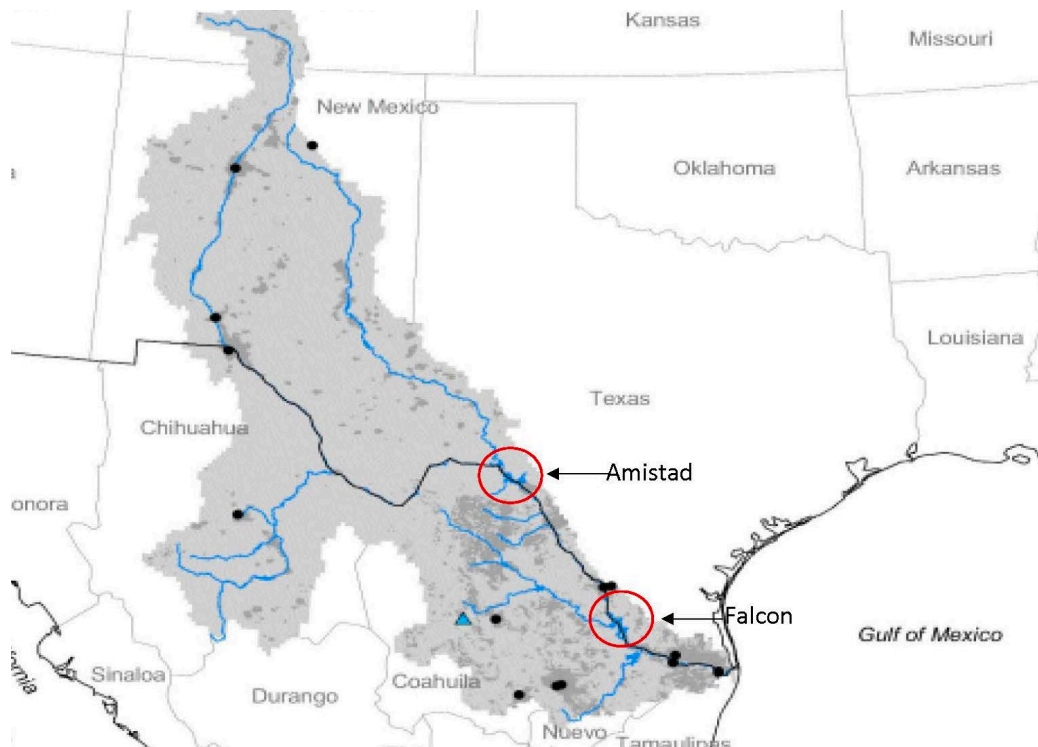
Tucson Metro Area Population 1950-2024
Original Source: United Nations - World Population Prospects



Tucson Water Drought Preparedness and Response Plan
June 2021 Update, Figure 21, page 7

U.S. – Mexico Water Treaty Compliance

Rio Grande Watershed



- U.S International Boundary Water Commission applies treaties between the US and Mexico
 - International body with US/Mexican Engineer Commissioner
- 1944 Treaty
 - Mexico obligation = 1,750,000 acre-feet/5 year cycle (= 350,000 acre-feet/year)
 - As of June 29, 2024, delivered 391,241 acre-feet (at year 4 of the 5-year cycle)
- Resolutions/Communications
 - Lower Rio Grande Valley Development Council
 - IBWC
 - U.S. Department of State

Resaca Dredging and Restoration Project

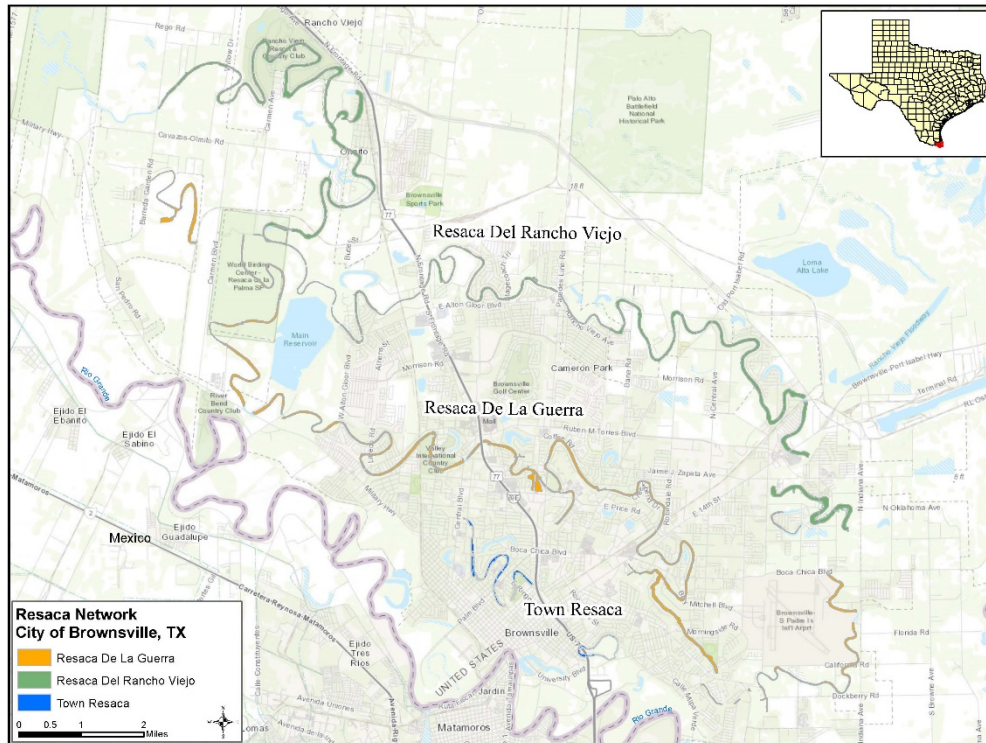
- Dredging Operation
 - Resaca Fee
- RESTORE ⁽¹⁾ Project
 - U.S Treasury/TCEQ Grant
- USACE⁽²⁾ Project
 - 65/35 Federal/Non-Federal

*(1) Resources and Ecosystems Sustainability,
Tourist Opportunities, and Revived Economies
of the Gulf Coast States Act*

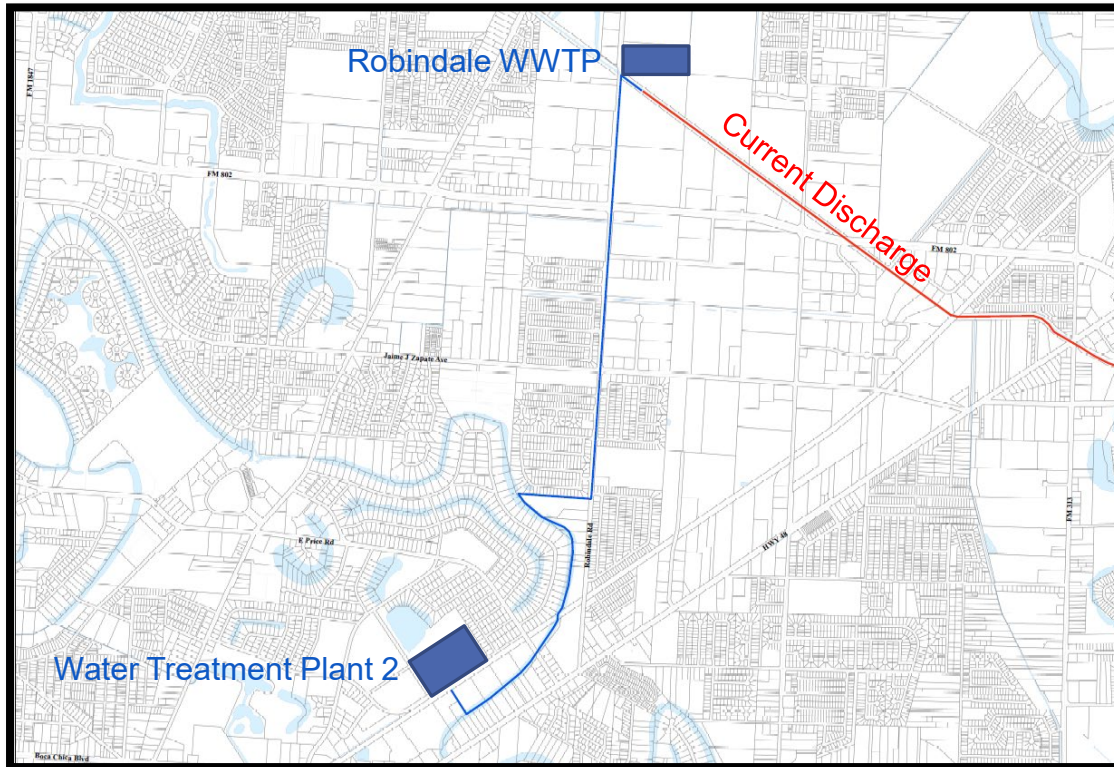
(2) U.S. Army Corps of Engineers

| Resaca System | Resaca Length (miles) | Estimated Sediment Volume to be Dredged (cu-yds) | Gallon Equivalent |
|-------------------------|-----------------------|--|--------------------|
| Town Resaca | 5.0 | 380,000 | 76,750,130 |
| Resaca De La Guerra | 21.5 | 1,918,000 | 387,386,182 |
| Resaca Del Rancho Viejo | 19.4 | 1,185,000 | 239,339,220 |
| Bancos | 5.3 | 562,000 | 113,509,403 |
| Total | 51.2 | 4,045,000 | 816,984,935 |

Resaca Dredging and Restoration Project



Indirect Potable Re-use (IPR) Pilot Project



- Robindale Wastewater Treatment Plant currently discharges 8 MGD of unused effluent discharge, which flows via a channel to the Gulf via San Martin Lake
- BPUB is analyzing the opportunity to divert the water to Resaca De La Guerra to augment as a raw water supply
- Water Treatment Plant 2 can source water from Resaca De La Guerra and treat it to potable water standards
- An engineering firm has been retained to assist with planning, permitting, and grant applications for the US Bureau of Reclamation (USBR) Drought Response Program

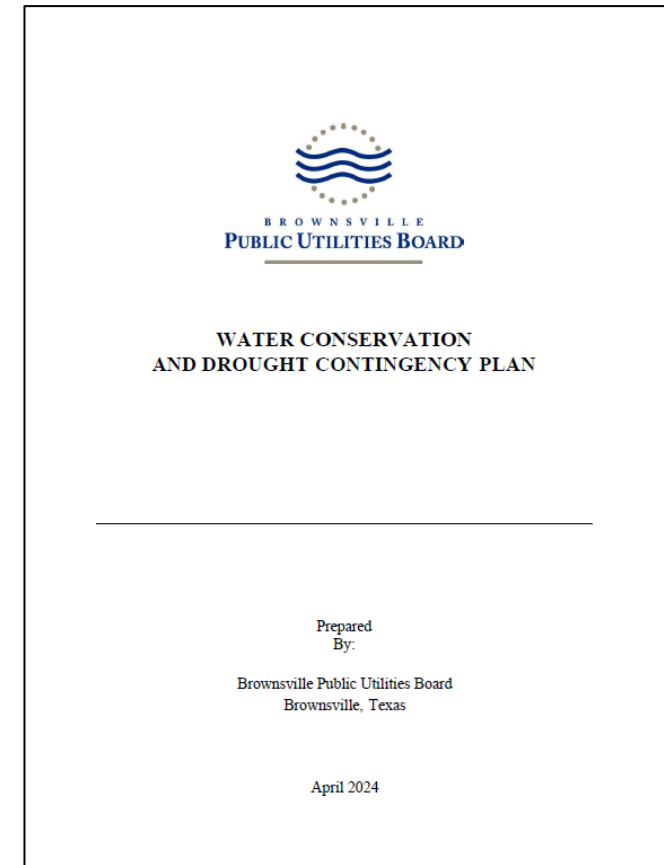
Advanced Metering Infrastructure



- BPUB is investing \$29.7 million to install and utilize Advanced Metering Infrastructure (AMI) on over 100,000 electric and water meters
- Water meter installation will begin March 2025 and is expected to be complete Feb 2027
- Supports water conservation efforts:
 - Leak detection and isolation
 - Malfunctioning meter detection
 - Consumption data for customer behavior programs
 - Better rate design to encourage and reward water conservation

Water Conservation & Drought Contingency Plan (WCDCP)

- WCDCP is state-mandated
 - Must be updated every five years (30 TAC 288)
 - Submitted to Texas Water Development Board, Texas Commission on Environmental Quality, Region M Water Planning Group
 - Submitted May 1, 2024
- Water Conservation Plan
 - Conservation goals and strategies
- Drought Contingency Plan
 - Water restrictions, surcharges, enforcement



Water Conservation & Drought Contingency Plan

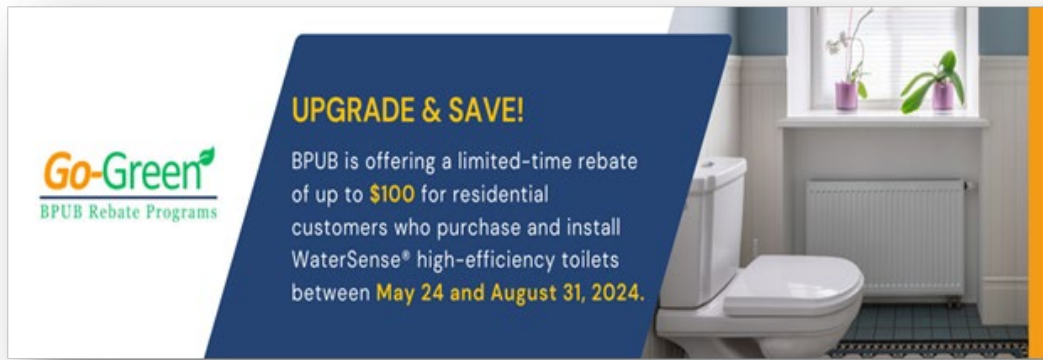
BPUB and the City of Brownsville are making the first major update to the Water Conservation & Drought Contingency Plan in over 20 years.

- Shifting from a compliance-driven WCDCP to an enhanced Water Strategy Plan
- Engaged leading engineering firm to assist in developing the Water Strategy Plan to meet U.S. Bureau of Reclamation grant requirements as well as the State of Texas statutory requirements
- Utilize the best available science and industry best practices to revise effective strategies for drought response:
 - Vulnerability assessment and mitigation approaches
 - Conservation strategies and specific targets
 - Leak detection and response
 - Drought stage criteria, measurement, and response planning
 - Recommended drought restrictions
 - Public awareness and communication strategy

Water Conservation Programs

Toilet Rebate Summer Promotion

- Toilets are the home's main source of water use, accounting for almost 30 % of an average home's indoor consumption. High-efficiency toilets save you money by reducing your water and wastewater costs



(In Development) Water Eco-Kit

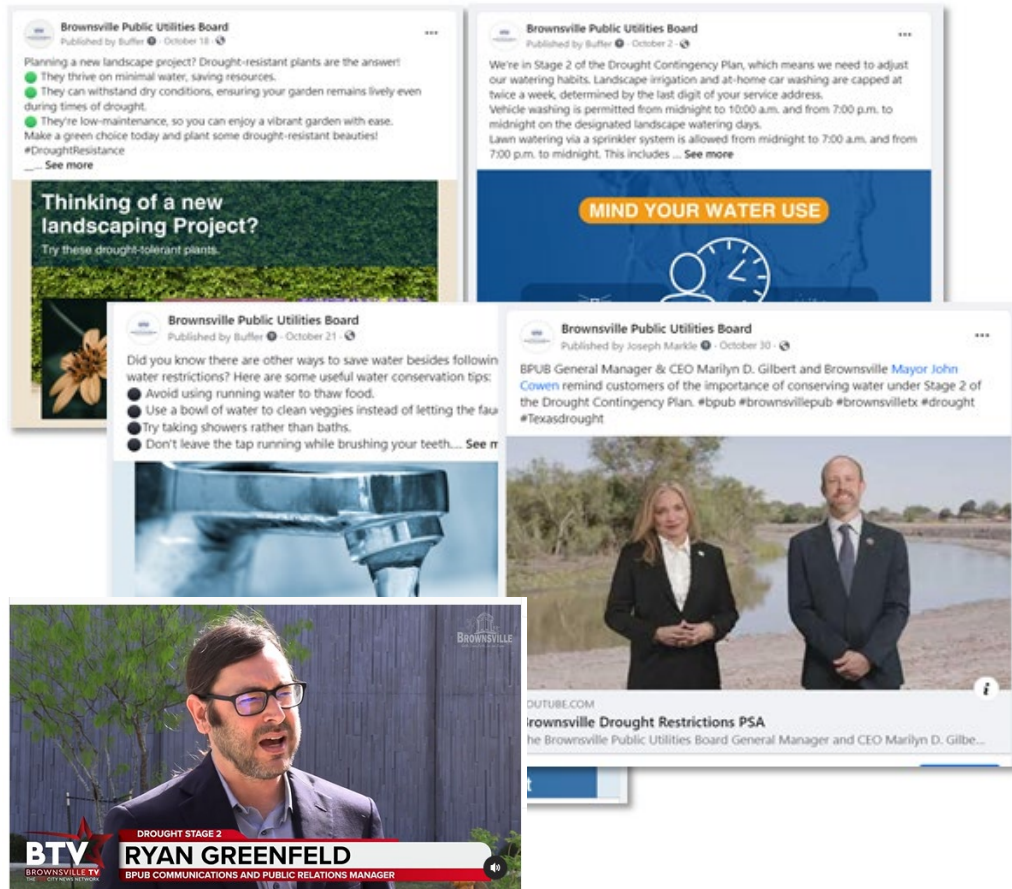
- Educational giveaways to assist customers with water conservation, leak detection, and low-flow devices for the home

Rebates Under Evaluation:

- High – Efficiency Washer
- Irrigation System
- Rain Water Collection
- Xeriscaping



Drought Messaging and Public Awareness



- **Digital**

- Enhanced website with drought-related content, actively posting on social media and producing educational videos.

- **Traditional Media**

- Utilized traditional media channels by engaging with local media, placing drought-related advertising, and broadcasting messages on the radio.

- **Outreach**

- Engaged the community and internal stakeholders with targeted outreach campaigns.



Coffee Break



Perspectives from the Roundtable

PAUL GONZALEZ, CHIEF LEGAL OFFICER



Roundtable Discussion

PAUL GONZALEZ, CHIEF LEGAL OFFICER