BLACK & VEATCH

2/21/2024

Agenda Item 5.A.2:

Briefing on 2026 Region M Regional Water Planning Technical Memorandum

Technical Memorandum Deliverable

Task Objective:

Develop a mid-cycle deliverable for the 2026 Regional Water Plan (RWP) with a snapshot of March 2024 data.

The data within the Technical Memorandum (Tech Memo) remains in draft form until the submittal of Adopted Regional Water Plans by the Regional Water Planning Groups in October 2025.

Due to TWDB on March 4, 2024

Technical Memorandum Deliverable

See Handout A for Tech Memo

Tech Memo Section	Required Contents (per 31 TAC §357.12)	Presented to RWPG	Date Presented to RWPG
3.0	Population and Water Demand projections adopted by Board	☑	Various
3.0 & 4.0	Updated **Source Water Availability**, as entered into 2027 State Water Planning Database (DB27)	☐	Today
3.0 & 4.0	Updated **Existing Water Supplies**, as entered into DB27	☐	Today
3.0	Identified Water **Needs and Surpluses**	☐	Today
5.0	List of infeasible WMSs and water management strategy projects (WMSPs) or a **statement that no infeasible WMSs or WMSPs** were identified by the RWPG	☑	11/1/23
6.0	Region M's documented **process to identify potentially feasible WMSs**	☑	11/1/23
7.0	List of **potentially feasible WMSs** identified to date	☐	Today
8.0	Summary of interregional coordination efforts to date	☑	Various

Population and Water Demand Projections

See Handout A, Section 3.0

- Approved by RWPG on March 1, 2023, and August 2, 2023
- Adopted by TWDB on November 9, 2023
- Included in Section 3.0 and Appendix A of Tech Memo

Source Water Availability

See Handout A, Section 3.0 & 4.0

- Surface Water Availability
  - TCEQ water availability models (WAMs) were used to estimate firm yields of reservoirs and surface water availabilities in the Nueces-Rio Grande Coastal Basin and Rio Grande River Basin.
    - Unmodified TCEQ WAM Run 3 for Nueces-Rio Grande Coastal Basin
    - Modified TCEQ WAM Run 3 for Rio Grande River Basin
- Groundwater Availability
  - TWDB Modeled Available Groundwater (MAG) volumes used for majority of the groundwater sources.
  - TWDB Non-MAG volumes used for certain groundwater sources, based on the following methodology/sources of information:
    - Non-MAG/non-relevant aquifers with DFC-compatible supplies calculated by TWDB
  - No RWPG-estimated groundwater availabilities to date
- Source availability included as a DB27 report in Appendix A of Tech Memo

Source Water Availability, Surface Water

See Handout A, Section 4.1

Table 1: Reservoir Firm Yields Using Rio Grande WAM Run 3 and Modified Rio Grande WAM Run 3

SOURCE	FIRM YIELD FROM UNMODIFIED WAM RUN 3 [A] (ACFT/YR)		FIRM YIELD FROM MODIFIED WAM RUN 3 [A] (ACFT/YR)	
	2030	2080	2030	2080
Amistad-Falcon Reservoir System	999,768	990,268	1,001,776	995,863
Casa Blanca Lake/Reservoir	600	412	600	412

Notes:

A Firm yields incorporate sedimentation

Source Water Availability, Groundwater

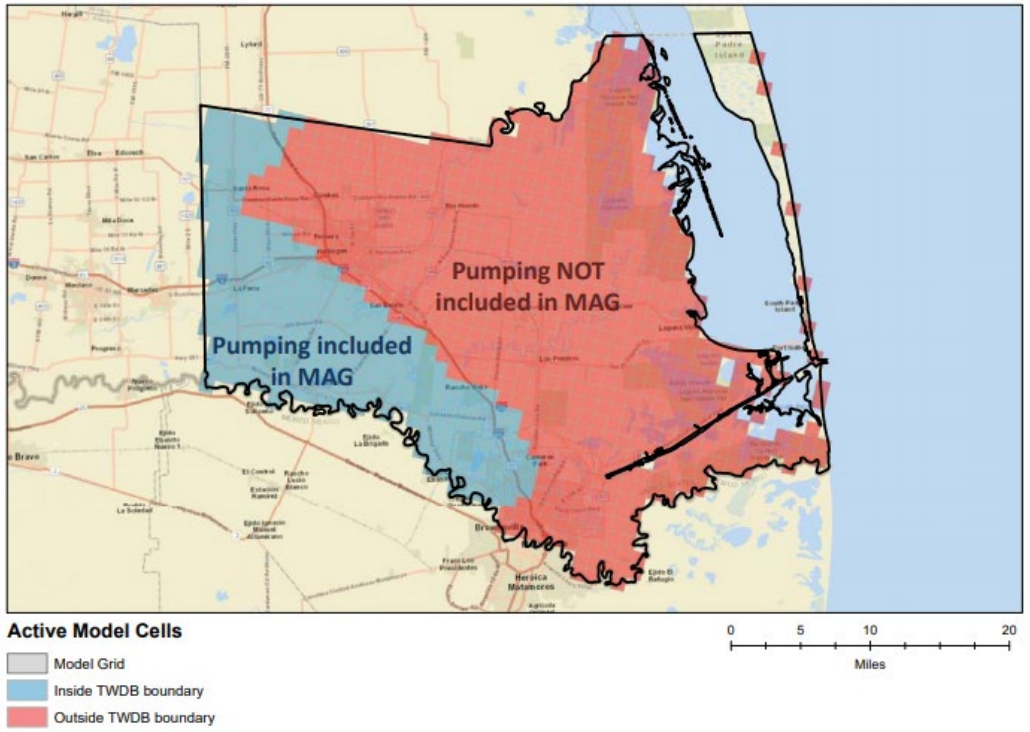
See Handout A, Section 3.0

TWDB-provided MAG Volumes in 2022 State Water Plan vs. 2027 State Water Plan. Red text denotes decreased availability this cycle.

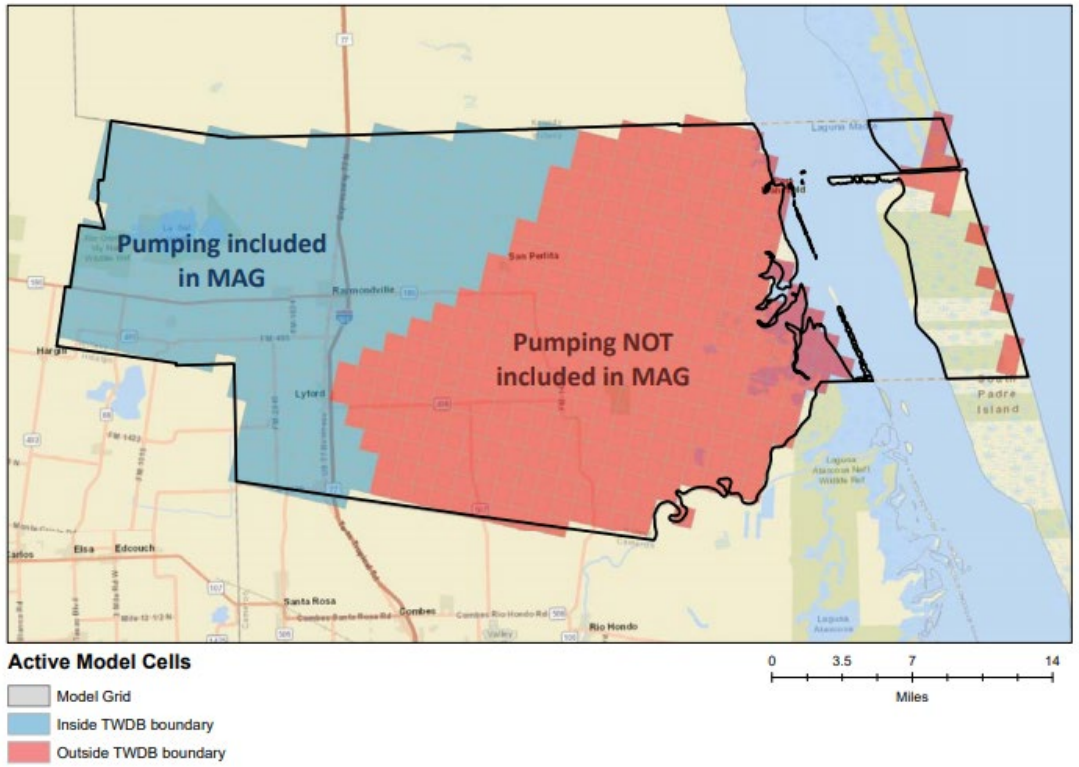
Aquifer Name	County	Basin	2022 SWP MAG Availability 2030	2027 SWP MAG Availability 2030	MAG Availability Difference 2030	Percent Change MAG Availability 2030
Carrizo-Wilcox Aquifer	Maverick	Nueces	777	542	(235)	-30.24%
	Maverick	Rio Grande	1,265	3	(1,262)	-99.76%
	Webb	Nueces	92	890	798	867.39%
	Webb	Rio Grande	824	20	(804)	-97.57%
Gulf Coast Aquifer System	Cameron	Nueces-Rio Grande	7,536	7,536	0	0.00%
	Cameron	Rio Grande	463	463	0	0.00%
	Hidalgo	Nueces-Rio Grande	91,810	91,421	(389)	-0.42%
	Hidalgo	Rio Grande	2,041	2,041	0	0.00%
	Jim Hogg	Nueces-Rio Grande	5,236	5,230	(6)	-0.11%
	Jim Hogg	Rio Grande	938	937	(1)	-0.11%
	Starr	Nueces-Rio Grande	1,891	1,958	67	3.54%
	Starr	Rio Grande	2,810	2,839	29	1.03%
	Webb	Nueces	22	22	0	0.00%
	Webb	Nueces-Rio Grande	642	642	0	0.00%
	Webb	Rio Grande	125	125	0	0.00%
	Willacy	Nueces-Rio Grande	1,459	1,150	(309)	-21.18%

Non-MAG Gulf Coast Aquifer (in red)

Non-District Cameron County



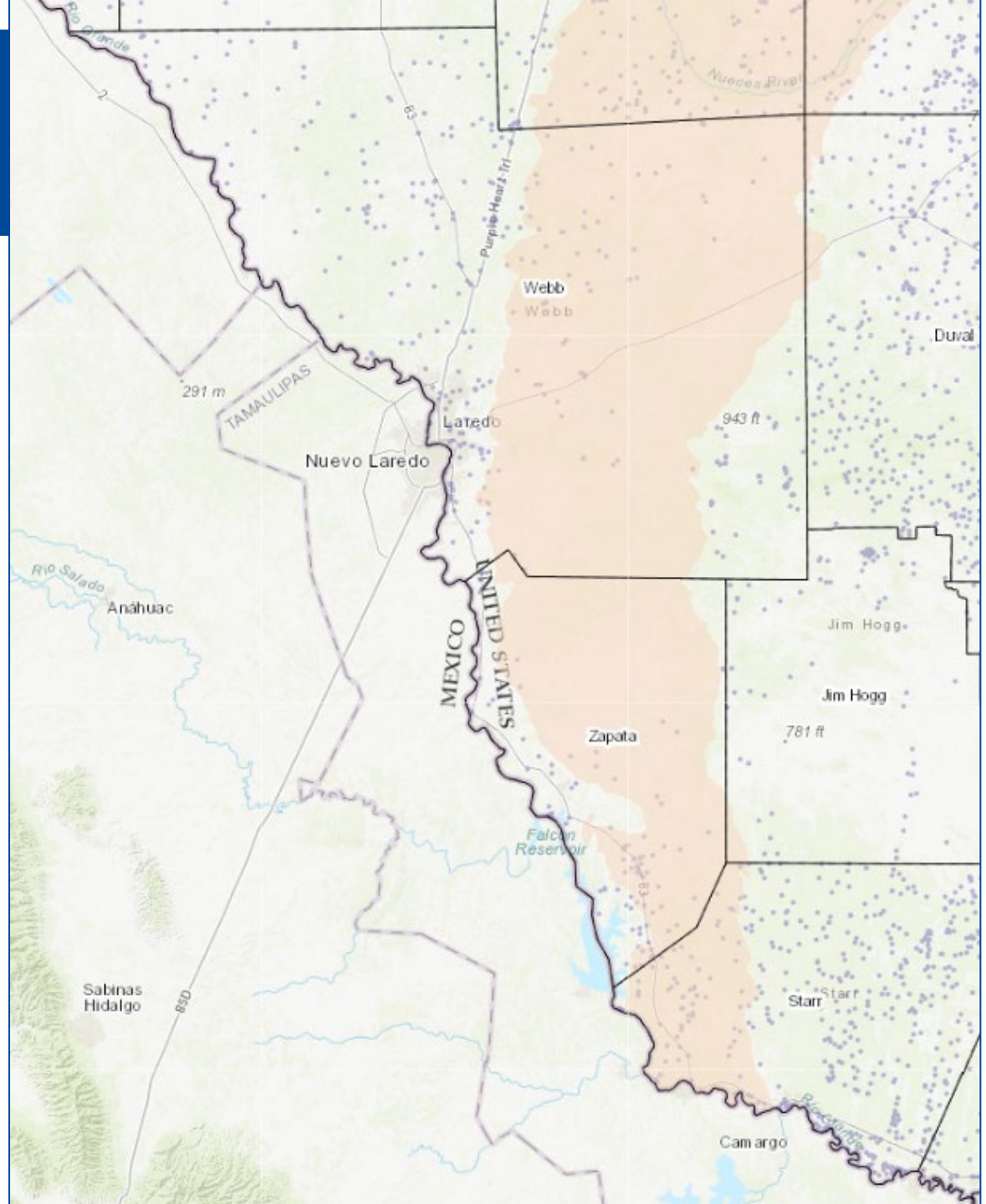
Non-District Willacy County



Aquifer	County	Non-MAG Availability (acft/yr)					
		2030	2040	2050	2060	2070	2080
Gulf Coast Aquifer System	Cameron	43,167	46,720	50,273	53,824	53,824	53,824
	Willacy	1,407	1,622	1,838	2,053	2,053	2,053

Non-MAG Yegua-Jackson (in orange)

Aquifer	County	Non-MAG Availability (acft/yr)					
		2030	2040	2050	2060	2070	2080
Yegua-Jackson Aquifer	Starr	33	38	43	48	48	48
	Webb	20,000	20,000	20,000	20,000	20,000	20,000
	Zapata	7,987	7,987	7,987	7,987	7,987	7,987



Existing Water Supplies: Methodology

See Handout A, Section 3.0

Data Sources

- 2021 Region M Water Plan
- Supplies & Strategies Survey responses from WUGs and WWPs
- Historic TWDB Water Use Survey Detailed Groundwater Pumpage by County
- Historical Water Use Estimates by Industry Type
- TCEQ Drinking Water Watch (DWW)

Compile and Update Data in DB27 (Appendix A of Tech Memo)

Identified Water Needs

See Handout A, Section 3.0

- WUGs with Identified water needs will be included once DB27 is updated.
- Technical Memorandum includes:
  - WUGs with Needs and their decadal volumes are included in a DB27 report in Section 3.0 and Appendix A of Tech Memo
  - Table of Potentially Feasible WMSs for WUGs with Identified Needs will be included in Appendix D of Tech Memo

Infeasible WMSs from 2021 Plan

See Handout A, Section 5.0

Evaluation and Results (Presented to RWPG on November 1, 2023)

- Evaluated WMSs and WMSPs for feasibility
- Reached out to project sponsors via email and phone call to receive updates on project status.

Results of Infeasible WMSs Evaluation

Two projects identified as infeasible, requiring amendment to 2021 Regional Water Plan:

- Non-Potable Reuse WMS for Edinburg: Shift the online decade from 2020 to 2030. This revision results in Unmet Needs in 2020 for Edinburg.
- North WWTP Potable Reuse Phase 1 WMS for McAllen: Shift the online decade from 2030 to 2040. This revision does not result in Unmet Needs for McAllen or other WUGs.

Amendment discussion in subsequent agenda item

Documented Process for Identifying Potentially Feasible WMS

See Handout A, Section 6.0

- RWPG approved process presented on November 1, 2023
- Included in Section 6.0 of Tech Memo

Potentially Feasible Water Management Strategies

See Handout A, Section 7.0 & Appendix D

- Included in Section 7.0 and Appendix D of Tech Memo
- Uses template provided by TWDB to identify categories of strategies that are potentially feasible for WUGs with Needs
- List based on strategies from 2021 Plan and feedback from WUGs and WWPs this cycle

Interregional Coordination Efforts

See Handout A, Section 8.0

- Included in Section 8.0 of Tech Memo
- Interregional coordination efforts to date include:
  - Regular reports from interregional liaisons
  - Engagement and membership in the Interregional Planning Council
  - Engagement in Regional Water Planning Chairs' Meetings

Next Steps

RWPG receives and considers public comments

RWPG approves Tech Memo submittal (action proposed in next agenda Item)

Consultant submits Tech Memo to TWDB by March 4, 2024