

**DRAFT**

# **TECHNICAL MEMORANDUM**

## 2026 Rio Grande Regional Water Plan

**B&V PROJECT NO. 411250**

**PREPARED FOR**

**Rio Grande Regional Water Planning Group &  
Texas Water Development Board**

**13 FEBRUARY 2024**

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## List of Abbreviations

AcFt	Acre-Feet
AcFt/Yr	Acre-Feet per Year
ASR	Aquifer Storage and Recovery
DB27	TWDB 2027 State Water Planning Database
DFC	Desired Future Condition
GMA	Groundwater Management Area
IBWC	International Boundary and Water Commission
MAG	Modeled Available Groundwater
Region M	Rio Grande Region
RGRWPG	Rio Grande Regional Water Planning Group
RWPG	Regional Water Planning Group
SV/SA	Storage volume – surface area
TAC	Texas Administrative Code
TCEQ	Texas Commission on Environmental Quality
TWDB	Texas Water Development Board
WAM	Water Availability Model
WMS	Water Management Strategy
WMSP	Water Management Strategy Project
WUG	Water User Group
WWP	Wholesale Water Provider
WWTP	Wastewater Treatment Plant

## 1.0 INTRODUCTION

This Technical Memorandum is a compilation of the task work performed to date as part of the regional water planning process to develop the 2026 Rio Grande (Region M) Regional Water Plan. It is prepared for the Texas Water Development Board (TWDB) as a deliverable associated with Task 4C. At its meeting on February 21, 2024, the Rio Grande Regional Water Planning Group (RGRWPG) reviewed the information pertinent to this Technical Memorandum, allotted additional time for its technical consultant, Black & Veatch, to continue updating the 2027 State Water Planning Database (DB27), as needed, and approved the submittal of the Technical Memorandum to the TWDB.

*Appendix A* of this Technical Memorandum includes the draft TWDB DB27 Database Reports that provide data on population, water demand, water availability and supplies, water needs/surpluses, and a comparison of data to the 2021 Rio Grande Regional Water Plan. The data provided in this Technical Memorandum is draft and may be subject to change prior to final adoption of the 2026 Rio Grande Regional Water Plan.

This Technical Memorandum also includes information regarding surface water and groundwater methodologies, water availability model versions and dates, infeasible water management strategies (WMSs) and water management strategy projects (WMSPs) from the 2021 Rio Grande Regional Water Plan, the documented process used by Region M to identify potentially feasible WMSs, a list of potentially feasible WMSs identified to date, and a description of interregional coordination efforts during this cycle.

## 2.0 SUMMARY OF PUBLIC COMMENTS

Rules in Title 31 of the Texas Administrative Code (31 TAC) Chapter 357.21(g)(2) describe notice requirements when a regional water planning group (RWPG) approves submittal of the Technical Memorandum. Specifically, notice must be provided at least 14 days prior to the meeting, written comment must be accepted for 14 days prior to the meeting and considered by the RWPG members prior to taking the associated action, and meeting materials must be made available on the RWPG website for a minimum of seven days prior to and 14 days following the meeting.

The following summarizes comments received during the required comment period.

## 3.0 TWDB DB27 REPORTS

The following reports have been generated from DB27 and are included in *Appendix A*.

1. Population Projections
2. Water Demand Projections
3. Source Water Availability
4. Existing Water Supplies
5. Identified Water Needs/Surpluses

6. Comparison of Supply, Demand, and Needs to 2021 RWP
7. Comparison of Source Availability to 2021 RWP

## 4.0 SOURCE WATER AVAILABILITY ASSUMPTIONS

The following describes the models and assumptions used to estimate the availability of water for surface water, groundwater, and other sources.

### 4.1. SURFACE WATER

#### 4.1.1. Water Availability Models and Associated Hydrologic Variances

The RGRWPG reviewed, considered, and approved hydrologic assumptions and needed hydrologic variances for submittal to the TWDB at the August 2, 2023, RGRWPG meeting. Region M submitted a Hydrologic Variance Request letter to TWDB on September 5, 2023. The letter included hydrologic variance checklists for the Rio Grande Basin and the Nueces-Rio Grande Basin. The TWDB approved the variances in a letter dated November 9, 2023. *Appendix B* includes copies of correspondence with TWDB regarding hydrologic variance requests for the 2026 Regional Water Plan, including a copy of the TWDB's approval of hydrologic variances to date.

As described in the hydrologic variance checklists, the RGRWPG intends to use the Texas Commission on Environmental Quality (TCEQ) Water Availability Model (WAM) Run 3 to determine surface water availabilities, existing and future supplies, and strategy supplies. The RGRWPG requested variances to use a modified WAM for determining surface water availabilities for existing supplies as follows:

- Nueces-Rio Grande Coastal WAM
  - Incorporate updated water rights data as of July 2023
- Rio-Grande WAM
  - Incorporate updated water rights data as of July 2023
  - Use modified irrigation patterns above Fort Quitman
  - Model the San Solomon Springs as cut off from the rest of the Rio Grande basin

The TWDB subsequently approved use of the modified Rio Grande WAM and Nueces-Rio Grande WAM in their correspondence dated November 9, 2023. In between when the hydrologic variances were requested and when approval from TWDB was received, the TCEQ released updated versions of the Rio Grande WAM and Nueces-Rio Grande Coastal WAM, both dated October 1, 2023. Because of these updated models, the original variance and modification to the WAM to incorporate updated water rights was no longer necessary. Therefore, for supply analysis, the unmodified Nueces-Rio Grande Coastal WAM, dated October 1, 2023, was suitable for use.

*Table 1* provides the firm yield for the Amistad-Falcon Reservoir System and Casa Blanca Lake/Reservoir using the original, unmodified Rio Grande WAM Run 3 and the modified Rio Grande WAM Run 3 utilized as the basis for planning. All estimates are shown in acre-feet per year (AcFt/Yr). While these firm yield estimates incorporate sedimentation, the methodology for estimating area-capacity curves and

subsequent model results may change prior to adoption of the 2026 Region M Regional Water Plan. More information regarding sedimentation is provided in Section 4.1.2.

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

SOURCE	FIRM YIELD FROM UNMODIFIED WAM RUN 3 <sup>A</sup> (ACFT/YR)		FIRM YIELD FROM MODIFIED WAM RUN 3 <sup>A</sup> (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:**

<sup>A</sup> Firm yields incorporate sedimentation

Table 2 includes details for hydrologic models used, including the model name, version date, model input/output files used, date model used and any relevant comments. Modeling was performed by Kennedy Resource Company. Appendix C is an electronic appendix that includes all model input/output or other model files used to date in determining water availability.

**Table 2 Details for Hydrologic Models Used**

MODEL NAME	VERSION DATE	INPUT/OUTPUT FILES USED	DATE MODEL USED	COMMENTS
TCEQ Rio Grande Run 3	10/1/2023	RG3.dat, RG3.dis, RG3.flo, RG3.his, RG3.fad, RG3.eva RG3.out then numerous Tables *.tou July 2022 version of the SIM and TABLES executables.	11/1/23	TCEQ Authorized Diversion Amounts and Authorized Reservoir Capacities – No sedimentation
			12/10/23	Amistad/Falcon and Casa Blanca set to Firm Yield – No sedimentation
			12/15/23	TCEQ Authorized Diversion Amounts and Authorized Reservoir Capacities – sedimentation for 2030 and 2080
			2/8/24	Amistad/Falcon and Casa Blanca set to Firm Yield – sedimentation for 2030 and 2080

TCEQ Rio Grande Run 3 Modified	10/1/2023	RG3.dat, RG3.dis, RG3.flo, RG3.his, RG3.fad, RG3.eva RG3.out then numerous Tables *.tou July 2022 version of the SIM and TABLES executables.	12/15/2023-2/10/2024	Altered to incorporate TWDB Region M Planning Variance  Evaluated to determine TCEQ authorized diversions for Run of River water rights and firm yields for Amistad/Falcon and Casa Blanca (2030-2080)
TCEQ Nueces-Rio Grande Coastal WAM Run 3	10/1/2023	NRG3.dat, NRG3.dis, NRG3.flo, NRG3.his, NRG3.fad, NRG3.eva NRG3.out then numerous Tables *.tou July 2022 version of the SIM and TABLES executables.	12/2023	Evaluated to determine TCEQ authorized diversions for Run of River water rights – no reservoirs in WAM, so no sedimentation incorporated

### 4.1.2. Sedimentation Methodology

Sedimentation is the anticipated decreases in a reservoir’s area-capacity condition, resulting in projected firm yield decreases in each decade. Sedimentation must be performed by RWPGs and incorporated into the unmodified and modified WAM Run 3 models for evaluating the firm yields of major reservoirs (capacity greater than 5,000 AcFt).

Sedimentation was incorporated in the Rio Grande WAM for major reservoirs within the Region M boundary. Sedimentation was not performed for major reservoirs upstream and outside of the Region M boundary because it is more conservative to assume sedimentation will not occur and more water will be captured in those upstream reservoirs. Because there are no major reservoirs modeled in the Nueces-Rio Grande Coastal WAM that are authorized to use Nueces-Rio Grande Coastal waters, no sedimentation was incorporated in that model.

On February 1, 2024, the International Boundary and Water Commission (IBWC) released new reservoir sedimentation surveys for the Amistad-Falcon Reservoir System. The survey represents the best available data and is based on surveys deemed complete in early 2014. In addition, sedimentation analyses were conducted for Casa Blanca Lake/Reservoir. The following summarizes the methodology used for estimating and incorporating sedimentation into the WAMs.

#### 4.1.2.1. Amistad Reservoir

The sedimentation rate for Amistad Reservoir was estimated by comparing the sedimentation observed between the survey conducted in 2014 and the previous survey conducted in 2005. The resulting sedimentation rate is slightly greater than the rate used in previous Region M Regional Water Plans. Because the most-recent sedimentation rate represents the latest information and is more conservative, this sedimentation rate information was imposed on the 2014 storage volume - surface area (SV/SA) tables for Amistad Reservoir to estimate projected firm yields in future decades.

#### 4.1.2.2. Falcon Reservoir

The 2014 SV/SA tables for Falcon Reservoir demonstrate greater capacity than previous surveys, which indicates that there are data inconsistencies. These inconsistencies are likely an artifact due to the significantly increased resolution of the survey in 2014 when compared to previous surveys. In order to accurately estimate the sedimentation rate, surveys of similar resolution must be used. Therefore, for Falcon Reservoir, the sedimentation rate was estimated by comparing the sedimentation observed between a previous survey conducted in 2005 and a survey conducted in 1992. This sedimentation rate was imposed on the 2014 SV/SA tables for Falcon Reservoir to estimate projected firm yields in future decades.

#### 4.1.2.3. Casa Blanca Lake/Reservoir

Sedimentation estimates for Casa Blanca Lake/Reservoir were determined based on a report by Espey and the City of Laredo during the 2007 timeframe. The sedimentation rate was calculated using the 2007 estimate and the sedimentation estimate that was done in the original WAM for the year 2000 condition, and then the resulting annual sedimentation rate was extrapolated out to 2030 through 2080.

### 4.2. GROUNDWATER

The most recent work from Groundwater Management Areas (GMAs) are detailed in Modeled Available Groundwater (MAG) reports, prepared by the TWDB. Region M intersects two GMAs, GMA 13 and GMA 16. The MAG reports, which show groundwater availability for each decade of the planning horizon for most of the aquifers in Region M, include the following:

- GR21-018 MAG (GMA 13)
- GR21-021 MAG (GMA 16)

Availability for existing and future supplies from the Carrizo-Wilcox Aquifer and Gulf Coast Aquifer System has been developed in accordance with MAG estimates. Additionally, the non-relevant Desired Future Condition (DFC)-compatible aquifer availabilities provided by TWDB for the Yegua-Jackson Aquifer (Jim Hogg, Starr, Webb, and Zapata Counties) and portions of the Gulf Coast Aquifer System (Cameron, Willacy, and Zapata Counties) were included as groundwater available for current and future use.

At present, the RGRWPG has not reallocated annual MAG volumes, nor identified the need to use MAG Peak Factors. Furthermore, the RGRWPG determined that RWPG-estimated groundwater availabilities are not warranted at this time for inclusion in the 2026 Regional Water Plan.

### 4.3. REUSE/RECYCLE WATER SUPPLIES

As described in the hydrologic variance request correspondence in *Appendix B*, TWDB approved the RGRWPG's request to estimate reuse source water availability based on the estimated amount of water returned to a utility's wastewater treatment plant (WWTP) for each decade, less the amount of reuse water already being utilized as existing supplies. The amount of water returned to a utility's WWTP will be estimated at 50% of the utility's projected water demands, adjusted for water conservation and drought management strategies, unless site-specific information is available.



#### 4.4. LIVESTOCK LOCAL SUPPLIES

Livestock local supplies are dispersed supplies that are available only at the point of use and do not impact firm yield. These supplies are generally runoff collection, such as livestock supply ponds, and are assumed to be fresh water. Livestock is managed in such a way that livestock populations will be maintained at a level that can be supported by a combination of known groundwater supplies and livestock local supplies available during drought conditions.

#### 5.0 INFEASIBLE WATER MANAGEMENT STRATEGIES FROM THE 2021 RWP

The RGRWPG conducted a one-time, mid-cycle analysis of the 2021 Rio Grande Regional Water Plan to identify any newly infeasible WMSs and WMSPs. The RGRWPG reviewed a list of WMSs and WMSPs from TWDB that were feasible and recommended at the time of adoption of the previous plan but which could potentially have become infeasible since. Information from WMS and WMSP sponsors was gathered to determine whether they have taken affirmative steps to implement projects with a near-term online decade (2020, 2030, and 2040).

On November 1, 2023, the RGRWPG held a public meeting to receive results of the analysis. These results were presented at the same public meeting in which the methodology for identifying potentially feasible WMSs for the current plan were presented and approved. At the meeting, after asking for public comments, the planning group considered the results and agreed that two WMSs should be identified as infeasible for the 2020 and 2030 decade, respectively.

As a result, an amendment to the 2021 Rio Grande Regional Water Plan is necessary in order to revise the online decades for the following two WMSs:

##### **Non-Potable Reuse WMS for Edinburg:**

- No action has been taken to move this WMS towards implementation, so the original online decade will be moved from 2020 to 2030. This revision results in Unmet Needs in 2020 for Edinburg.

##### **North WWTP Potable Reuse Phase 1 WMS for McAllen:**

- No action has been taken to move this WMS towards implementation, so the original online decade will be moved from 2030 to 2040. This revision does not result in Unmet Needs for McAllen or other Water User Groups (WUGs).

It is anticipated that the amendment to the 2021 Rio Grande Regional Water Plan will be adopted by the RGRWPG at its RWPG meeting in May 2024.

#### 6.0 DOCUMENTED PROCESS TO IDENTIFY POTENTIALLY FEASIBLE WATER MANAGEMENT STRATEGIES FOR THE 2026 PLANNING CYCLE

On November 1, 2023, the RGRWPG, after asking for public comments, considered and approved a documented process to identify potentially feasible WMSs for the 2026 Regional Water Planning Cycle. The approved process is as follows:

1. Current water planning information, including specific WMSs of interest, will be solicited from WUGs and Wholesale Water Providers (WWPs) in Fall 2023.
  - a. Solicitation of planning information will include the recommended WMSs in the 2021 Regional Water Plan.
  - b. WUGs/WWPs will be encouraged to classify each WMS on their 2021 Plan list as included or rejected for the 2026 Planning Cycle and provide comments, and also to list additional WMSs that will be new for the 2026 Planning Cycle.
2. A list of potential WMSs will be prepared based on an initial technical evaluation and needs analysis and the comments received, which will be available for consideration by the RWPG by early 2024.
3. Additional WMSs may be brought forth to the RWPG for consideration until May 2024.
4. The list of potential WMSs will be further considered to identify “potentially feasible” or “not potentially feasible” WMSs for WUGs and WWPs with identified water needs.

## 7.0 POTENTIALLY FEASIBLE WATER MANAGEMENT STRATEGIES IDENTIFIED BY THE RWPG

The RGRWPG has identified potentially feasible WMSs for meeting needs in the region. Over the next two RGRWPG meetings, the RGRWPG may consider additional WMSs, review scope and fee of each, and submit the information to TWDB for notice to proceed. *Appendix D* provides the potentially feasible WMSs identified to date for WUGs specifically with needs. There have also been other strategies identified through the process that may not be specifically for WUGs with needs but have been requested for inclusion in the plan or are carried over from the last cycle. In summary, the potentially feasible WMSs identified to date include the following:

1. Advanced Municipal Conservation
2. Irrigation District Conservation
3. Agricultural Conservation
4. Industrial Conservation
5. Conversion of Water Right Classification
6. New or Expanded Surface Water Treatment
7. New or Expanded Distribution and Transmission Facilities Resulting in Increased Supplies
8. Update to Off-Channel Storage
9. New or Expanded Fresh Groundwater Supply
10. New or Expanded Brackish Groundwater Desalination
11. Seawater Desalination
12. Reuse

13. Biological Control of *Arundo Donax*
14. Drought Management
15. Aquifer Storage and Recovery
16. Regional Water Supply Facilities

## 8.0 INTERREGIONAL COORDINATION EFFORTS TO DATE

Region M is bordered by three regional water planning areas, including the Plateau (Region J), South Central Texas (Region L), and Coastal Bend (Region N). Region M does not share any WUGs with any other region, so there is limited coordination with other regions related to data entry associated with the planning process. Region M has a liaison for each of the neighboring RWPGs, and there is an agenda item during each Region M meeting to hear reports from those liaisons. Additionally, RGRWPG planning members engage and participate in the Interregional Planning Council and the Regional Water Planning Chairs' meetings.

**Appendix A DB27 Reports**

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## DRAFT Region M Water User Group (WUG) Population

	WUG Population					
	2030	2040	2050	2060	2070	2080
<b>Cameron County Total</b>	<b>453,325</b>	<b>465,039</b>	<b>469,300</b>	<b>468,071</b>	<b>466,828</b>	<b>465,573</b>
<b>Cameron County / Nueces-Rio Grande Basin Total</b>	<b>450,904</b>	<b>462,555</b>	<b>466,796</b>	<b>465,573</b>	<b>464,338</b>	<b>463,091</b>
Brownsville	189,772	194,663	196,412	195,834	195,241	194,634
Combes	3,041	3,120	3,146	3,135	3,124	3,111
East Rio Hondo WSC	26,908	31,911	37,034	40,909	43,001	45,200
El Jardin WSC	12,586	12,910	13,028	12,991	12,954	12,915
Harlingen	85,744	87,959	88,766	88,532	88,296	88,057
La Feria	6,210	6,369	6,425	6,403	6,379	6,353
Laguna Madre Water District	11,100	11,384	11,484	11,445	11,405	11,362
Los Fresnos	7,486	7,678	7,745	7,717	7,689	7,660
Military Highway WSC	28,087	28,807	29,060	28,957	28,850	28,740
North Alamo WSC	4,317	4,428	4,467	4,450	4,434	4,418
Olmito WSC	7,329	7,534	7,643	7,706	7,778	7,864
Palm Valley	1,308	1,341	1,353	1,349	1,342	1,337
Primera	6,782	8,749	10,061	11,067	12,174	12,783
Rio Hondo	1,711	1,755	1,770	1,764	1,758	1,751
San Benito	25,980	26,650	26,890	26,810	26,730	26,646
Santa Rosa	2,947	3,023	3,049	3,039	3,026	3,014
Valley MUD 2	2,884	2,959	2,985	2,974	2,963	2,952
County-Other	26,712	21,315	15,478	10,491	7,194	4,294
<b>Cameron County / Rio Grande Basin Total</b>	<b>2,421</b>	<b>2,484</b>	<b>2,504</b>	<b>2,498</b>	<b>2,490</b>	<b>2,482</b>
Brownsville	1,917	1,966	1,984	1,978	1,972	1,966
El Jardin WSC	91	94	94	94	94	94
Military Highway WSC	218	224	225	225	224	223
Valley MUD 2	195	200	201	201	200	199
<b>Hidalgo County Total</b>	<b>975,403</b>	<b>1,041,413</b>	<b>1,084,465</b>	<b>1,107,185</b>	<b>1,130,153</b>	<b>1,153,373</b>
<b>Hidalgo County / Nueces-Rio Grande Basin Total</b>	<b>947,949</b>	<b>1,022,712</b>	<b>1,075,714</b>	<b>1,097,744</b>	<b>1,119,999</b>	<b>1,142,493</b>
Agua SUD	62,952	67,587	70,581	71,937	73,306	74,688
Alamo	19,549	20,026	20,404	21,105	21,819	22,550
Donna	17,377	18,378	19,045	19,500	19,962	20,430
Edcouch	2,552	2,349	2,246	2,415	2,588	2,765
Edinburg	85,768	93,195	97,911	99,436	100,966	102,501
Elsa	4,659	4,231	4,010	4,334	4,669	5,013
Hidalgo	11,899	12,558	12,998	13,319	13,643	13,972
Hidalgo County MUD 1	5,256	5,449	5,590	5,759	5,931	6,107

\*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## DRAFT Region M Water User Group (WUG) Population

	WUG Population					
	2030	2040	2050	2060	2070	2080
La Joya	3,859	4,115	4,282	4,373	4,466	4,560
La Villa	2,092	2,491	2,731	2,704	2,676	2,646
McAllen	165,587	184,057	201,554	206,901	212,332	217,849
Mercedes	14,571	14,784	14,985	15,549	16,125	16,714
Military Highway WSC	15,817	15,510	15,418	16,188	16,976	17,783
Mission	88,336	93,383	96,747	99,076	101,437	103,831
North Alamo WSC	212,974	235,887	250,160	252,649	255,098	257,509
Pharr	85,215	91,086	94,908	96,862	98,836	100,833
San Juan	23,805	24,380	24,837	25,693	26,565	27,455
Sharyland WSC	88,944	97,326	102,604	103,989	105,371	106,749
Weslaco	32,414	33,279	33,948	35,089	36,253	37,441
County-Other	4,323	2,641	755	866	980	1,097
<b>Hidalgo County / Rio Grande Basin Total</b>	<b>27,454</b>	<b>18,701</b>	<b>8,751</b>	<b>9,441</b>	<b>10,154</b>	<b>10,880</b>
Agua SUD	3,035	3,259	3,403	3,469	3,535	3,601
Hidalgo	173	182	189	193	198	203
La Joya	905	965	1,004	1,026	1,048	1,070
Military Highway WSC	94	92	92	96	101	106
County-Other	23,247	14,203	4,063	4,657	5,272	5,900
<b>Jim Hogg County Total</b>	<b>4,676</b>	<b>4,622</b>	<b>4,508</b>	<b>4,391</b>	<b>4,273</b>	<b>4,154</b>
<b>Jim Hogg County / Nueces-Rio Grande Basin Total</b>	<b>4,599</b>	<b>4,546</b>	<b>4,434</b>	<b>4,318</b>	<b>4,202</b>	<b>4,085</b>
Jim Hogg County WCID 2	3,482	3,440	3,353	3,261	3,170	3,079
County-Other	1,117	1,106	1,081	1,057	1,032	1,006
<b>Jim Hogg County / Rio Grande Basin Total</b>	<b>77</b>	<b>76</b>	<b>74</b>	<b>73</b>	<b>71</b>	<b>69</b>
County-Other	77	76	74	73	71	69
<b>Maverick County Total</b>	<b>62,424</b>	<b>66,814</b>	<b>70,294</b>	<b>72,996</b>	<b>75,728</b>	<b>78,490</b>
<b>Maverick County / Nueces Basin Total</b>	<b>20</b>	<b>13</b>	<b>9</b>	<b>6</b>	<b>4</b>	<b>3</b>
County-Other	20	13	9	6	4	3
<b>Maverick County / Rio Grande Basin Total</b>	<b>62,404</b>	<b>66,801</b>	<b>70,285</b>	<b>72,990</b>	<b>75,724</b>	<b>78,487</b>
Eagle Pass	58,692	62,688	65,889	68,762	71,614	74,461
Maverick County	2,404	3,243	3,817	3,830	3,836	3,838
County-Other	1,308	870	579	398	274	188

\*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## DRAFT Region M Water User Group (WUG) Population

	WUG Population					
	2030	2040	2050	2060	2070	2080
<b>Starr County Total</b>	<b>70,499</b>	<b>75,394</b>	<b>79,002</b>	<b>81,275</b>	<b>83,573</b>	<b>85,896</b>
<b>Starr County / Nueces-Rio Grande Basin Total</b>	<b>906</b>	<b>922</b>	<b>955</b>	<b>1,048</b>	<b>1,142</b>	<b>1,235</b>
County-Other	906	922	955	1,048	1,142	1,235
<b>Starr County / Rio Grande Basin Total</b>	<b>69,593</b>	<b>74,472</b>	<b>78,047</b>	<b>80,227</b>	<b>82,431</b>	<b>84,661</b>
Agua SUD	244	242	240	243	245	247
El Sauz WSC	1,708	1,868	1,979	2,022	2,066	2,109
El Tanque WSC	1,385	1,207	1,054	939	836	744
La Grulla	8,309	8,878	9,298	9,569	9,842	10,119
Rio Grande City	17,880	19,073	19,959	20,549	21,147	21,751
Rio WSC	8,102	9,597	10,564	10,561	10,547	10,523
Roma	21,305	22,518	23,450	24,213	24,986	25,771
Union WSC	7,207	7,574	7,864	8,134	8,409	8,687
County-Other	3,453	3,515	3,639	3,997	4,353	4,710
<b>Webb County Total</b>	<b>292,999</b>	<b>304,635</b>	<b>308,179</b>	<b>305,094</b>	<b>301,977</b>	<b>298,824</b>
<b>Webb County / Nueces Basin Total</b>	<b>1,936</b>	<b>2,492</b>	<b>2,991</b>	<b>2,962</b>	<b>2,932</b>	<b>2,903</b>
Webb County	1,635	2,291	2,896	2,867	2,837	2,808
County-Other	301	201	95	95	95	95
<b>Webb County / Nueces-Rio Grande Basin Total</b>	<b>2,856</b>	<b>1,908</b>	<b>896</b>	<b>897</b>	<b>898</b>	<b>899</b>
County-Other	2,856	1,908	896	897	898	899
<b>Webb County / Rio Grande Basin Total</b>	<b>288,207</b>	<b>300,235</b>	<b>304,292</b>	<b>301,235</b>	<b>298,147</b>	<b>295,022</b>
Laredo	267,373	277,989	281,208	278,353	275,465	272,541
Mirando City WSC	268	279	282	279	275	272
Webb County	11,219	15,723	19,868	19,669	19,469	19,265
County-Other	9,347	6,244	2,934	2,934	2,938	2,944
<b>Willacy County Total</b>	<b>19,933</b>	<b>19,647</b>	<b>19,083</b>	<b>18,366</b>	<b>17,641</b>	<b>16,908</b>
<b>Willacy County / Nueces-Rio Grande Basin Total</b>	<b>19,933</b>	<b>19,647</b>	<b>19,083</b>	<b>18,366</b>	<b>17,641</b>	<b>16,908</b>
Lyford	1,992	1,905	1,829	1,766	1,719	1,690
North Alamo WSC	4,517	4,527	4,553	4,607	4,699	4,841
Port Mansfield PUD	358	428	519	660	822	1,011
Raymondville	6,991	6,822	6,681	6,580	6,534	6,555
Sebastian MUD	1,410	1,285	1,175	1,104	1,045	998
County-Other	4,665	4,680	4,326	3,649	2,822	1,813

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## DRAFT Region M Water User Group (WUG) Population

	WUG Population					
	2030	2040	2050	2060	2070	2080
<b>Zapata County Total</b>	<b>14,075</b>	<b>14,288</b>	<b>14,295</b>	<b>14,158</b>	<b>14,019</b>	<b>13,878</b>
<b>Zapata County / Rio Grande Basin Total</b>	<b>14,075</b>	<b>14,288</b>	<b>14,295</b>	<b>14,158</b>	<b>14,019</b>	<b>13,878</b>
Falcon Rural WSC	377	305	246	205	172	146
Siesta Shores WCID	1,552	1,576	1,576	1,558	1,542	1,523
Zapata County	10,099	10,249	10,251	10,146	10,038	9,925
Zapata County San Ygnacio & Ramireño	338	286	243	213	187	166
Zapata County WCID-Hwy 16 East	547	556	555	549	543	537
County-Other	1,162	1,316	1,424	1,487	1,537	1,581
<b>Region M Population Total</b>	<b>1,893,334</b>	<b>1,991,852</b>	<b>2,049,126</b>	<b>2,071,536</b>	<b>2,094,192</b>	<b>2,117,096</b>

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## DRAFT Region M Water User Group (WUG) Demand

	WUG Demand (acre-feet per year)					
	2030	2040	2050	2060	2070	2080
<b>Cameron County Total</b>	<b>594,958</b>	<b>579,086</b>	<b>562,344</b>	<b>544,747</b>	<b>527,184</b>	<b>509,652</b>
<b>Cameron County / Nueces-Rio Grande Basin Total</b>	<b>563,163</b>	<b>548,315</b>	<b>532,605</b>	<b>516,044</b>	<b>499,517</b>	<b>483,020</b>
Brownsville	31,890	32,579	32,872	32,775	32,676	32,574
Combes	275	280	282	281	280	279
East Rio Hondo WSC	3,636	4,290	4,978	5,499	5,781	6,076
El Jardin WSC	1,355	1,381	1,394	1,390	1,386	1,382
Harlingen	14,830	15,149	15,288	15,248	15,208	15,166
La Feria	787	802	810	807	804	800
Laguna Madre Water District	4,638	4,745	4,787	4,771	4,754	4,736
Los Fresnos	503	516	521	519	517	515
Military Highway WSC	4,148	4,234	4,272	4,257	4,241	4,224
North Alamo WSC	687	702	708	705	703	700
Olmito WSC	1,326	1,358	1,377	1,389	1,402	1,417
Palm Valley	236	241	243	242	241	240
Primera	570	730	840	924	1,016	1,067
Rio Hondo	118	120	121	121	120	120
San Benito	3,249	3,316	3,346	3,336	3,326	3,315
Santa Rosa	247	252	254	253	252	251
Valley MUD 2	910	931	939	936	932	928
County-Other	4,244	3,371	2,448	1,659	1,138	679
Manufacturing	460	477	495	513	532	552
Livestock	281	281	281	281	281	281
Irrigation	488,773	472,560	456,349	440,138	423,927	407,718
<b>Cameron County / Rio Grande Basin Total</b>	<b>31,795</b>	<b>30,771</b>	<b>29,739</b>	<b>28,703</b>	<b>27,667</b>	<b>26,632</b>
Brownsville	322	329	332	331	330	329
El Jardin WSC	10	10	10	10	10	10
Military Highway WSC	32	33	33	33	33	33
Valley MUD 2	61	63	63	63	63	63
Steam Electric Power	165	165	165	165	165	165
Livestock	6	6	6	6	6	6
Irrigation	31,199	30,165	29,130	28,095	27,060	26,026
<b>Hidalgo County Total</b>	<b>839,322</b>	<b>828,481</b>	<b>814,820</b>	<b>796,632</b>	<b>778,493</b>	<b>760,402</b>
<b>Hidalgo County / Nueces-Rio Grande Basin Total</b>	<b>809,576</b>	<b>800,649</b>	<b>789,020</b>	<b>771,629</b>	<b>754,283</b>	<b>736,984</b>
Agua SUD	6,773	7,230	7,550	7,695	7,842	7,990
Alamo	2,638	2,688	2,739	2,833	2,929	3,027

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## DRAFT Region M Water User Group (WUG) Demand

	WUG Demand (acre-feet per year)					
	2030	2040	2050	2060	2070	2080
Donna	2,192	2,308	2,391	2,449	2,507	2,565
Edcouch	219	200	192	206	221	236
Edinburg	11,209	12,114	12,727	12,925	13,124	13,323
Elsa	508	459	435	470	507	544
Hidalgo	1,512	1,585	1,641	1,682	1,722	1,764
Hidalgo County MUD 1	515	529	543	559	576	593
La Joya	483	513	533	544	556	568
La Villa	225	266	292	289	286	283
McAllen	38,276	42,409	46,441	47,673	48,924	50,195
Mercedes	1,593	1,605	1,627	1,688	1,751	1,815
Military Highway WSC	2,336	2,279	2,267	2,380	2,495	2,614
Mission	18,065	19,030	19,716	20,190	20,672	21,159
North Alamo WSC	33,888	37,393	39,656	40,051	40,439	40,821
Pharr	9,135	9,698	10,105	10,313	10,523	10,736
San Juan	3,324	3,388	3,451	3,570	3,691	3,815
Sharyland WSC	15,541	16,948	17,867	18,108	18,349	18,589
Weslaco	5,500	5,624	5,737	5,930	6,127	6,327
County-Other	505	306	88	100	114	127
Manufacturing	3,878	4,021	4,170	4,324	4,484	4,650
Mining	232	257	283	309	334	357
Steam Electric Power	10,325	10,325	10,325	10,325	10,325	10,325
Livestock	633	633	633	633	633	633
Irrigation	640,071	618,841	597,611	576,383	555,152	533,928
<b>Hidalgo County / Rio Grande Basin Total</b>	<b>29,746</b>	<b>27,832</b>	<b>25,800</b>	<b>25,003</b>	<b>24,210</b>	<b>23,418</b>
Agua SUD	327	349	364	371	378	385
Hidalgo	22	23	24	24	25	26
La Joya	113	120	125	128	131	133
Military Highway WSC	14	14	13	14	15	16
County-Other	2,715	1,647	471	540	611	684
Manufacturing	48	50	52	54	56	58
Mining	2	3	3	3	3	4
Livestock	16	16	16	16	16	16
Irrigation	26,489	25,610	24,732	23,853	22,975	22,096

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## DRAFT Region M Water User Group (WUG) Demand

	WUG Demand (acre-feet per year)					
	2030	2040	2050	2060	2070	2080
<b>Jim Hogg County Total</b>	<b>1,432</b>	<b>1,413</b>	<b>1,387</b>	<b>1,364</b>	<b>1,337</b>	<b>1,312</b>
<b>Jim Hogg County / Nueces-Rio Grande Basin Total</b>	<b>1,299</b>	<b>1,282</b>	<b>1,258</b>	<b>1,238</b>	<b>1,213</b>	<b>1,191</b>
Jim Hogg County WCID 2	474	466	454	442	429	417
County-Other	130	128	124	123	119	116
Manufacturing	42	44	46	48	50	52
Mining	9	9	9	9	9	9
Livestock	362	362	362	362	362	362
Irrigation	282	273	263	254	244	235
<b>Jim Hogg County / Rio Grande Basin Total</b>	<b>133</b>	<b>131</b>	<b>129</b>	<b>126</b>	<b>124</b>	<b>121</b>
County-Other	9	9	9	8	8	8
Livestock	58	58	58	58	58	58
Irrigation	66	64	62	60	58	55
<b>Maverick County Total</b>	<b>75,277</b>	<b>73,970</b>	<b>72,556</b>	<b>71,025</b>	<b>69,497</b>	<b>63,076</b>
<b>Maverick County / Nueces Basin Total</b>	<b>175</b>	<b>174</b>	<b>173</b>	<b>173</b>	<b>173</b>	<b>64</b>
County-Other	3	2	1	1	1	0
Mining	108	108	108	108	108	0
Livestock	64	64	64	64	64	64
<b>Maverick County / Rio Grande Basin Total</b>	<b>75,102</b>	<b>73,796</b>	<b>72,383</b>	<b>70,852</b>	<b>69,324</b>	<b>63,012</b>
Eagle Pass	9,579	10,192	10,713	11,180	11,644	12,107
Maverick County	335	450	529	531	532	532
County-Other	166	109	73	50	34	24
Manufacturing	98	102	106	110	114	118
Mining	4,790	4,790	4,790	4,790	4,790	2
Livestock	409	409	409	409	409	409
Irrigation	59,725	57,744	55,763	53,782	51,801	49,820
<b>Starr County Total</b>	<b>35,435</b>	<b>35,364</b>	<b>35,152</b>	<b>34,757</b>	<b>34,365</b>	<b>33,979</b>
<b>Starr County / Nueces-Rio Grande Basin Total</b>	<b>391</b>	<b>396</b>	<b>403</b>	<b>418</b>	<b>432</b>	<b>445</b>
County-Other	111	113	117	128	140	151
Mining	97	100	103	107	109	111
Livestock	183	183	183	183	183	183
<b>Starr County / Rio Grande Basin Total</b>	<b>35,044</b>	<b>34,968</b>	<b>34,749</b>	<b>34,339</b>	<b>33,933</b>	<b>33,534</b>
Agua SUD	26	26	26	26	26	26

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## DRAFT Region M Water User Group (WUG) Demand

	WUG Demand (acre-feet per year)					
	2030	2040	2050	2060	2070	2080
El Sauz WSC	167	181	192	196	200	204
El Tanque WSC	201	174	152	136	121	108
La Grulla	1,460	1,554	1,628	1,675	1,723	1,771
Rio Grande City	4,200	4,468	4,676	4,814	4,954	5,096
Rio WSC	809	953	1,049	1,049	1,047	1,045
Roma	2,475	2,603	2,711	2,799	2,888	2,979
Union WSC	1,233	1,291	1,341	1,387	1,434	1,481
County-Other	425	430	445	490	533	577
Manufacturing	81	84	87	90	93	96
Mining	96	100	104	106	109	112
Livestock	762	762	762	762	762	762
Irrigation	23,109	22,342	21,576	20,809	20,043	19,277
<b>Webb County Total</b>	<b>60,066</b>	<b>61,310</b>	<b>61,539</b>	<b>60,738</b>	<b>59,934</b>	<b>55,000</b>
<b>Webb County / Nueces Basin Total</b>	<b>2,535</b>	<b>2,600</b>	<b>2,659</b>	<b>2,658</b>	<b>2,658</b>	<b>771</b>
Webb County	189	263	332	329	326	322
County-Other	34	22	10	10	10	10
Manufacturing	34	36	37	38	40	41
Mining	1,894	1,895	1,896	1,897	1,898	14
Livestock	384	384	384	384	384	384
<b>Webb County / Nueces-Rio Grande Basin Total</b>	<b>422</b>	<b>314</b>	<b>202</b>	<b>202</b>	<b>202</b>	<b>202</b>
County-Other	319	211	99	99	99	99
Livestock	103	103	103	103	103	103
<b>Webb County / Rio Grande Basin Total</b>	<b>57,109</b>	<b>58,396</b>	<b>58,678</b>	<b>57,878</b>	<b>57,074</b>	<b>54,027</b>
Laredo	41,831	43,292	43,794	43,349	42,899	42,444
Mirando City WSC	29	30	30	30	30	29
Webb County	1,294	1,805	2,281	2,258	2,235	2,212
County-Other	1,043	689	324	324	325	326
Manufacturing	44	45	47	49	50	52
Mining	2,248	2,249	2,251	2,252	2,253	17
Steam Electric Power	131	131	131	131	131	131
Livestock	399	399	399	399	399	399
Irrigation	10,090	9,756	9,421	9,086	8,752	8,417

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## DRAFT Region M Water User Group (WUG) Demand

	WUG Demand (acre-feet per year)					
	2030	2040	2050	2060	2070	2080
<b>Willacy County Total</b>	<b>99,105</b>	<b>95,891</b>	<b>92,659</b>	<b>89,421</b>	<b>86,188</b>	<b>82,963</b>
<b>Willacy County / Nueces-Rio Grande Basin Total</b>	<b>99,105</b>	<b>95,891</b>	<b>92,659</b>	<b>89,421</b>	<b>86,188</b>	<b>82,963</b>
Lyford	186	177	170	164	160	157
North Alamo WSC	719	718	722	730	745	767
Port Mansfield PUD	138	165	200	254	317	390
Raymondville	796	773	757	746	740	743
Sebastian MUD	95	86	79	74	70	67
County-Other	560	558	515	435	336	216
Mining	2	2	2	2	2	2
Livestock	197	197	197	197	197	197
Irrigation	96,412	93,215	90,017	86,819	83,621	80,424
<b>Zapata County Total</b>	<b>7,788</b>	<b>7,646</b>	<b>7,478</b>	<b>7,286</b>	<b>7,095</b>	<b>6,904</b>
<b>Zapata County / Rio Grande Basin Total</b>	<b>7,788</b>	<b>7,646</b>	<b>7,478</b>	<b>7,286</b>	<b>7,095</b>	<b>6,904</b>
Falcon Rural WSC	70	56	45	38	32	27
Siesta Shores WCID	207	209	209	206	204	202
Zapata County	1,829	1,850	1,851	1,832	1,812	1,792
Zapata County San Ygnacio & Ramireño	63	53	45	39	35	31
Zapata County WCID-Hwy 16 East	161	163	163	161	160	158
County-Other	157	177	191	200	206	212
Mining	6	6	6	6	6	6
Livestock	359	359	359	359	359	359
Irrigation	4,936	4,773	4,609	4,445	4,281	4,117
<b>Region M Demand Total</b>	<b>1,713,383</b>	<b>1,683,161</b>	<b>1,647,935</b>	<b>1,605,970</b>	<b>1,564,093</b>	<b>1,513,288</b>

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## DRAFT Region M Source Total Availability

				Source Availability (acre-feet per year)					
Source Name	County	Basin	Salinity*	2030	2040	2050	2060	2070	2080
<b>Groundwater Source Availability Total</b>				<b>188,413</b>	<b>200,494</b>	<b>212,513</b>	<b>224,588</b>	<b>225,342</b>	<b>225,342</b>
Carrizo-Wilcox Aquifer	Maverick	Nueces	Fresh	542	544	542	542	273	273
Carrizo-Wilcox Aquifer	Maverick	Rio Grande	Fresh/ Brackish	3	3	3	3	3	3
Carrizo-Wilcox Aquifer	Webb	Nueces	Fresh	890	892	890	890	890	890
Carrizo-Wilcox Aquifer	Webb	Rio Grande	Fresh/ Brackish	20	20	20	20	20	20
Gulf Coast Aquifer System	Cameron	Nueces- Rio Grande	Fresh/ Brackish	49,931	54,592	59,252	63,914	63,914	63,914
Gulf Coast Aquifer System	Cameron	Rio Grande	Fresh/ Brackish	1,235	1,439	1,641	1,842	1,842	1,842
Gulf Coast Aquifer System	Hidalgo	Nueces- Rio Grande	Fresh/ Brackish	91,421	96,658	101,867	107,103	107,171	107,171
Gulf Coast Aquifer System	Hidalgo	Rio Grande	Fresh/ Brackish	2,041	2,447	2,854	3,260	3,260	3,260
Gulf Coast Aquifer System	Jim Hogg	Nueces- Rio Grande	Fresh/ Brackish	5,230	5,230	5,230	5,230	6,008	6,008
Gulf Coast Aquifer System	Jim Hogg	Rio Grande	Fresh/ Brackish	937	937	937	937	1,076	1,076
Gulf Coast Aquifer System	Starr	Nueces- Rio Grande	Fresh/ Brackish	1,958	2,366	2,772	3,180	3,180	3,180
Gulf Coast Aquifer System	Starr	Rio Grande	Fresh/ Brackish	2,839	3,431	4,022	4,615	4,615	4,615
Gulf Coast Aquifer System	Webb	Nueces	Fresh/ Brackish	22	27	32	37	37	37
Gulf Coast Aquifer System	Webb	Nueces- Rio Grande	Fresh/ Brackish	642	780	918	1,056	1,056	1,056
Gulf Coast Aquifer System	Webb	Rio Grande	Fresh/ Brackish	125	152	179	206	206	206
Gulf Coast Aquifer System	Willacy	Nueces- Rio Grande	Fresh/ Brackish	2,557	2,951	3,324	3,718	3,756	3,756
Gulf Coast Aquifer System	Zapata	Rio Grande	Fresh	0	0	0	0	0	0

\* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.

\*\* Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

## DRAFT Region M Source Total Availability

				Source Availability (acre-feet per year)					
Source Name	County	Basin	Salinity*	2030	2040	2050	2060	2070	2080
Yegua-Jackson Aquifer	Jim Hogg	Rio Grande	Fresh	0	0	0	0	0	0
Yegua-Jackson Aquifer	Starr	Rio Grande	Fresh	33	38	43	48	48	48
Yegua-Jackson Aquifer	Webb	Nueces	Fresh	11,969	11,969	11,969	11,969	11,969	11,969
Yegua-Jackson Aquifer	Webb	Rio Grande	Fresh	8,031	8,031	8,031	8,031	8,031	8,031
Yegua-Jackson Aquifer	Zapata	Rio Grande	Fresh	7,987	7,987	7,987	7,987	7,987	7,987

Reuse Source Availability Total				45,342	59,410	63,971	69,981	76,456	79,256
Direct Reuse	Cameron	Nueces-Rio Grande	Fresh	9,064	13,737	15,782	15,782	16,782	16,782
Direct Reuse	Cameron	Rio Grande	Fresh	112	112	112	112	112	112
Direct Reuse	Hidalgo	Nueces-Rio Grande	Fresh	31,856	33,526	34,646	39,446	41,686	41,686
Direct Reuse	Hidalgo	Rio Grande	Fresh	2,887	4,887	6,283	7,493	7,493	7,493
Direct Reuse	Maverick	Rio Grande	Fresh	650	650	650	650	650	650
Direct Reuse	Webb	Rio Grande	Fresh	773	6,498	6,498	6,498	9,733	12,533

Surface Water Source Availability Total				1,046,637	1,046,129	1,045,621	1,044,414	1,042,644	1,040,536
Amistad-Falcon Lake/Reservoir System	Reservoir**	Rio Grande	Fresh	1,001,776	1,001,268	1,000,760	999,553	997,821	995,863
Casa Blanca Lake/Reservoir	Reservoir**	Rio Grande	Fresh	600	600	600	600	562	412
Livestock Local Supply	Jim Hogg	Nueces-Rio Grande	Fresh	260	260	260	260	260	260
Livestock Local Supply	Jim Hogg	Rio Grande	Fresh	14	14	14	14	14	14
Livestock Local Supply	Maverick	Nueces	Fresh	64	64	64	64	64	64

\* Salinity field indicates whether the source availability is considered 'fresh' (less than 1,000 mg/L), 'brackish' (1,000 to 10,000 mg/L), 'saline' (10,001 mg/L to 34,999 mg/L), or 'seawater' (35,000 mg/L or greater). Sources can also be labeled as 'fresh/brackish' or 'brackish/saline', if a combination of the salinity types is appropriate.

\*\* Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

## DRAFT Region M Source Total Availability

				Source Availability (acre-feet per year)					
Source Name	County	Basin	Salinity*	2030	2040	2050	2060	2070	2080
Livestock Local Supply	Maverick	Rio Grande	Fresh	409	409	409	409	409	409
Livestock Local Supply	Starr	Rio Grande	Fresh	75	75	75	75	75	75
Livestock Local Supply	Webb	Nueces	Fresh	413	413	413	413	413	413
Livestock Local Supply	Webb	Nueces-Rio Grande	Fresh	72	72	72	72	72	72
Livestock Local Supply	Webb	Rio Grande	Fresh	434	434	434	434	434	434
Livestock Local Supply	Zapata	Rio Grande	Fresh	249	249	249	249	249	249
Loma Alta Lake/Reservoir	Reservoir**	Nueces-Rio Grande	Fresh	0	0	0	0	0	0
Nueces-Rio Grande Run-of-River	Cameron	Nueces-Rio Grande	Fresh	3,115	3,115	3,115	3,115	3,115	3,115
Nueces-Rio Grande Run-of-River	Hidalgo	Nueces-Rio Grande	Fresh	37,100	37,100	37,100	37,100	37,100	37,100
Nueces-Rio Grande Run-of-River	Willacy	Nueces-Rio Grande	Fresh	68	68	68	68	68	68
Rio Grande Run-of-River	Maverick	Rio Grande	Fresh	1,988	1,988	1,988	1,988	1,988	1,988
<b>Region M Source Availability Total</b>				<b>1,280,392</b>	<b>1,306,033</b>	<b>1,322,105</b>	<b>1,338,983</b>	<b>1,344,442</b>	<b>1,345,134</b>

\* Salinity field indicates whether the source availability is considered ‘fresh’ (less than 1,000 mg/L), ‘brackish’ (1,000 to 10,000 mg/L), ‘saline’ (10,001 mg/L to 34,999 mg/L), or ‘seawater’ (35,000 mg/L or greater). Sources can also be labeled as ‘fresh/brackish’ or ‘brackish/saline’, if a combination of the salinity types is appropriate.

\*\* Since reservoir sources can exist across multiple counties, the county field value, ‘reservoir’ is applied to all reservoir sources.



## DRAFT Region M Water User Group (WUG) Existing Water Supply

WUG Name	Source	Source Description	Existing Supply (acre-feet per year)					
	Region		2030	2040	2050	2060	2070	2080
<b>Cameron County WUG Total</b>			<b>279,211</b>	<b>279,848</b>	<b>280,948</b>	<b>281,310</b>	<b>281,901</b>	<b>282,140</b>
<b>Cameron County / Nueces-Rio Grande Basin WUG Total</b>			<b>267,966</b>	<b>268,604</b>	<b>269,703</b>	<b>270,065</b>	<b>270,657</b>	<b>270,897</b>
Brownsville	M	Amistad-Falcon Lake/Reservoir System	33,241	33,241	33,240	33,241	33,240	33,240
Brownsville	M	Gulf Coast Aquifer System   Cameron County	9,930	9,931	9,930	9,931	9,931	9,930
Combes	M	Amistad-Falcon Lake/Reservoir System	677	677	677	677	677	677
East Rio Hondo WSC	M	Amistad-Falcon Lake/Reservoir System	4,364	4,364	4,364	4,364	4,364	4,364
East Rio Hondo WSC	M	Gulf Coast Aquifer System   Cameron County	536	566	598	629	662	662
El Jardin WSC	M	Amistad-Falcon Lake/Reservoir System	1,457	1,457	1,457	1,456	1,457	1,457
Harlingen	M	Amistad-Falcon Lake/Reservoir System	19,838	19,837	19,837	19,840	19,840	19,839
Harlingen	M	Direct Reuse	1,120	1,120	1,120	1,120	1,120	1,120
La Feria	M	Amistad-Falcon Lake/Reservoir System	1,300	1,400	1,500	1,700	2,000	2,200
Laguna Madre Water District	M	Amistad-Falcon Lake/Reservoir System	7,513	7,513	7,513	7,513	7,513	7,513
Los Fresnos	M	Amistad-Falcon Lake/Reservoir System	715	715	715	715	715	715
Los Fresnos	M	Gulf Coast Aquifer System   Cameron County	267	267	267	267	267	267
Military Highway WSC	M	Amistad-Falcon Lake/Reservoir System	399	399	399	399	399	399
Military Highway WSC	M	Gulf Coast Aquifer System   Cameron County	1,265	1,265	1,265	1,265	1,265	1,265
Military Highway WSC	M	Gulf Coast Aquifer System   Hidalgo County	2,435	2,435	2,435	2,435	2,435	2,435
North Alamo WSC	M	Amistad-Falcon Lake/Reservoir System	329	330	331	332	332	332
North Alamo WSC	M	Gulf Coast Aquifer System   Cameron County	2	2	2	2	2	2
North Alamo WSC	M	Gulf Coast Aquifer System   Hidalgo County	228	229	230	230	230	231
North Alamo WSC	M	Gulf Coast Aquifer System   Willacy County	30	35	36	36	36	36
Olmito WSC	M	Amistad-Falcon Lake/Reservoir System	1,251	1,251	1,251	1,251	1,251	1,251

\*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## DRAFT Region M Water User Group (WUG) Existing Water Supply

WUG Name	Source	Source Description	Existing Supply (acre-feet per year)					
	Region		2030	2040	2050	2060	2070	2080
Palm Valley	M	Amistad-Falcon Lake/Reservoir System	266	266	266	266	266	266
Primera	M	Amistad-Falcon Lake/Reservoir System	340	340	340	380	450	523
Primera	M	Gulf Coast Aquifer System   Cameron County	205	205	205	205	205	205
Rio Hondo	M	Amistad-Falcon Lake/Reservoir System	712	712	712	712	712	712
San Benito	M	Amistad-Falcon Lake/Reservoir System	3,846	4,346	5,326	5,426	5,626	5,626
Santa Rosa	M	Amistad-Falcon Lake/Reservoir System	612	612	612	612	612	612
Valley MUD 2	M	Amistad-Falcon Lake/Reservoir System	737	737	737	737	737	737
Valley MUD 2	M	Direct Reuse	90	103	103	103	103	103
Valley MUD 2	M	Gulf Coast Aquifer System   Cameron County	342	361	378	397	415	415
County-Other	M	Amistad-Falcon Lake/Reservoir System	1,753	1,753	1,753	1,753	1,753	1,753
Manufacturing	M	Amistad-Falcon Lake/Reservoir System	543	543	543	543	543	543
Manufacturing	M	Gulf Coast Aquifer System   Cameron County	426	426	426	426	426	426
Livestock	M	Amistad-Falcon Lake/Reservoir System	411	411	411	411	411	411
Irrigation	M	Amistad-Falcon Lake/Reservoir System	166,864	166,833	166,802	166,769	166,740	166,708
Irrigation	M	Direct Reuse	0	0	0	0	0	0
Irrigation	M	Gulf Coast Aquifer System   Cameron County	817	817	817	817	817	817
Irrigation	M	Nueces-Rio Grande Run-of-River	3,105	3,105	3,105	3,105	3,105	3,105
<b>Cameron County / Rio Grande Basin WUG Total</b>			<b>11,245</b>	<b>11,244</b>	<b>11,245</b>	<b>11,245</b>	<b>11,244</b>	<b>11,243</b>
Brownsville	M	Amistad-Falcon Lake/Reservoir System	202	202	203	202	203	202
Brownsville	M	Gulf Coast Aquifer System   Cameron County	61	60	61	60	60	61
El Jardin WSC	M	Amistad-Falcon Lake/Reservoir System	43	43	43	44	43	43

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## DRAFT Region M Water User Group (WUG) Existing Water Supply

WUG Name	Source	Source Description	Existing Supply (acre-feet per year)					
	Region		2030	2040	2050	2060	2070	2080
Military Highway WSC	M	Amistad-Falcon Lake/Reservoir System	3	3	3	3	3	3
Military Highway WSC	M	Gulf Coast Aquifer System   Cameron County	8	8	8	8	8	8
Military Highway WSC	M	Gulf Coast Aquifer System   Hidalgo County	15	15	15	15	15	15
Valley MUD 2	M	Amistad-Falcon Lake/Reservoir System	61	61	61	61	61	61
Valley MUD 2	M	Direct Reuse	8	9	9	9	9	9
Valley MUD 2	M	Gulf Coast Aquifer System   Cameron County	29	30	32	33	35	35
Steam Electric Power	M	Amistad-Falcon Lake/Reservoir System	125	125	125	125	125	125
Livestock	M	Amistad-Falcon Lake/Reservoir System	25	25	25	25	25	25
Irrigation	M	Amistad-Falcon Lake/Reservoir System	10,621	10,619	10,616	10,616	10,613	10,612
Irrigation	M	Direct Reuse	0	0	0	0	0	0
Irrigation	M	Gulf Coast Aquifer System   Cameron County	41	41	41	41	41	41
Irrigation	M	Nueces-Rio Grande Run-of-River	3	3	3	3	3	3
<b>Hidalgo County WUG Total</b>			<b>431,970</b>	<b>432,723</b>	<b>429,371</b>	<b>429,199</b>	<b>429,723</b>	<b>429,887</b>
<b>Hidalgo County / Nueces-Rio Grande Basin WUG Total</b>			<b>417,337</b>	<b>418,109</b>	<b>414,759</b>	<b>414,604</b>	<b>415,116</b>	<b>415,283</b>
Agua SUD	M	Amistad-Falcon Lake/Reservoir System	7,148	7,148	7,149	7,147	7,148	7,148
Alamo	M	Amistad-Falcon Lake/Reservoir System	1,694	1,694	1,694	1,694	1,694	1,694
Alamo	M	Gulf Coast Aquifer System   Hidalgo County	522	522	522	522	522	522
Donna	M	Amistad-Falcon Lake/Reservoir System	3,126	3,125	3,125	3,125	3,125	3,125
Edcouch	M	Amistad-Falcon Lake/Reservoir System	262	262	262	262	262	262
Edinburg	M	Amistad-Falcon Lake/Reservoir System	6,139	6,139	4,222	4,222	4,222	4,222
Elsa	M	Amistad-Falcon Lake/Reservoir System	568	568	568	567	567	567
Hidalgo	M	Amistad-Falcon Lake/Reservoir System	136	136	136	136	136	136

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## DRAFT Region M Water User Group (WUG) Existing Water Supply

WUG Name	Source	Source Description	Existing Supply (acre-feet per year)					
	Region		2030	2040	2050	2060	2070	2080
Hidalgo	M	Gulf Coast Aquifer System   Hidalgo County	1,602	1,766	1,766	1,766	1,766	1,766
Hidalgo County MUD 1	M	Amistad-Falcon Lake/Reservoir System	604	604	604	604	604	604
La Joya	M	Amistad-Falcon Lake/Reservoir System	288	288	288	288	288	288
La Villa	M	Amistad-Falcon Lake/Reservoir System	236	236	236	236	236	236
McAllen	M	Amistad-Falcon Lake/Reservoir System	33,544	33,544	31,744	31,744	31,744	31,744
McAllen	M	Direct Reuse	2,251	2,251	2,251	2,251	2,251	2,251
McAllen	M	Gulf Coast Aquifer System   Hidalgo County	1,120	1,120	1,120	1,120	1,120	1,120
Mercedes	M	Amistad-Falcon Lake/Reservoir System	2,267	2,267	2,267	2,267	2,267	2,267
Mercedes	M	Gulf Coast Aquifer System   Hidalgo County	626	626	626	626	626	626
Military Highway WSC	M	Amistad-Falcon Lake/Reservoir System	327	327	327	327	327	327
Military Highway WSC	M	Gulf Coast Aquifer System   Cameron County	1,034	1,034	1,034	1,034	1,034	1,034
Military Highway WSC	M	Gulf Coast Aquifer System   Hidalgo County	1,991	1,991	1,991	1,991	1,991	1,991
Mission	M	Amistad-Falcon Lake/Reservoir System	11,550	11,550	11,550	11,550	11,550	11,550
North Alamo WSC	M	Amistad-Falcon Lake/Reservoir System	11,707	11,744	11,772	11,789	11,805	11,817
North Alamo WSC	M	Gulf Coast Aquifer System   Cameron County	65	66	66	66	66	66
North Alamo WSC	M	Gulf Coast Aquifer System   Hidalgo County	8,132	8,159	8,178	8,191	8,201	8,208
North Alamo WSC	M	Gulf Coast Aquifer System   Willacy County	1,070	1,264	1,266	1,268	1,269	1,271
Pharr	M	Amistad-Falcon Lake/Reservoir System	7,978	7,978	7,978	7,978	7,978	7,978
Pharr	M	Direct Reuse	991	1,192	1,401	1,617	1,841	2,060
Pharr	M	Gulf Coast Aquifer System   Hidalgo County	1,399	1,399	1,399	1,399	1,399	1,399
San Juan	M	Amistad-Falcon Lake/Reservoir System	3,166	3,166	3,166	3,166	3,166	3,166

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## DRAFT Region M Water User Group (WUG) Existing Water Supply

WUG Name	Source	Source Description	Existing Supply (acre-feet per year)					
	Region		2030	2040	2050	2060	2070	2080
San Juan	M	Gulf Coast Aquifer System   Cameron County	662	662	662	662	662	662
San Juan	M	Gulf Coast Aquifer System   Hidalgo County	1,120	1,120	1,120	1,120	1,120	1,120
Sharyland WSC	M	Amistad-Falcon Lake/Reservoir System	13,195	13,195	13,195	13,195	13,195	13,195
Weslaco	M	Amistad-Falcon Lake/Reservoir System	5,408	5,408	5,408	5,408	5,408	5,408
Weslaco	M	Direct Reuse	770	971	1,052	1,052	1,052	1,052
County-Other	M	Amistad-Falcon Lake/Reservoir System	428	428	428	428	428	428
County-Other	M	Gulf Coast Aquifer System   Hidalgo County	78	78	78	78	78	78
Manufacturing	M	Amistad-Falcon Lake/Reservoir System	2,167	2,167	2,167	2,167	2,167	2,167
Manufacturing	M	Gulf Coast Aquifer System   Hidalgo County	2,500	2,500	2,500	2,500	2,500	2,500
Mining	M	Amistad-Falcon Lake/Reservoir System	1,203	1,203	1,202	1,202	1,202	1,201
Mining	M	Gulf Coast Aquifer System   Hidalgo County	466	466	466	466	466	466
Steam Electric Power	M	Amistad-Falcon Lake/Reservoir System	465	465	465	465	465	465
Steam Electric Power	M	Direct Reuse	7,270	7,270	7,270	7,270	7,270	7,270
Steam Electric Power	M	Gulf Coast Aquifer System   Hidalgo County	2,200	2,200	2,300	2,300	2,300	2,300
Livestock	M	Amistad-Falcon Lake/Reservoir System	4	20	20	20	20	20
Livestock	M	Gulf Coast Aquifer System   Hidalgo County	686	686	686	686	686	686
Irrigation	M	Amistad-Falcon Lake/Reservoir System	261,605	261,537	261,465	261,065	261,325	261,253
Irrigation	M	Gulf Coast Aquifer System   Hidalgo County	5,567	5,567	5,567	5,567	5,567	5,567
<b>Hidalgo County / Rio Grande Basin WUG Total</b>			<b>14,633</b>	<b>14,614</b>	<b>14,612</b>	<b>14,595</b>	<b>14,607</b>	<b>14,604</b>
Agua SUD	M	Amistad-Falcon Lake/Reservoir System	1,357	1,357	1,357	1,358	1,358	1,357
Hidalgo	M	Amistad-Falcon Lake/Reservoir System	1	1	1	1	1	1

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## DRAFT Region M Water User Group (WUG) Existing Water Supply

WUG Name	Source	Source Description	Existing Supply (acre-feet per year)					
	Region		2030	2040	2050	2060	2070	2080
Hidalgo	M	Gulf Coast Aquifer System   Hidalgo County	15	16	16	16	16	16
La Joya	M	Amistad-Falcon Lake/Reservoir System	76	76	76	76	76	76
Military Highway WSC	M	Amistad-Falcon Lake/Reservoir System	6	6	6	6	6	6
Military Highway WSC	M	Gulf Coast Aquifer System   Cameron County	20	20	20	20	20	20
Military Highway WSC	M	Gulf Coast Aquifer System   Hidalgo County	39	39	39	39	39	39
County-Other	M	Amistad-Falcon Lake/Reservoir System	1,596	1,596	1,596	1,596	1,596	1,596
County-Other	M	Gulf Coast Aquifer System   Hidalgo County	154	154	154	154	154	154
Manufacturing	M	Amistad-Falcon Lake/Reservoir System	66	66	66	66	66	66
Mining	M	Amistad-Falcon Lake/Reservoir System	95	95	95	95	95	95
Mining	M	Gulf Coast Aquifer System   Hidalgo County	4	4	4	4	4	4
Livestock	M	Amistad-Falcon Lake/Reservoir System	67	51	51	51	51	51
Livestock	M	Gulf Coast Aquifer System   Hidalgo County	20	20	20	20	20	20
Irrigation	M	Amistad-Falcon Lake/Reservoir System	10,885	10,881	10,879	10,861	10,873	10,871
Irrigation	M	Gulf Coast Aquifer System   Hidalgo County	232	232	232	232	232	232
<b>Jim Hogg County WUG Total</b>			<b>2,413</b>	<b>2,413</b>	<b>2,413</b>	<b>2,413</b>	<b>2,413</b>	<b>2,413</b>
<b>Jim Hogg County / Nueces-Rio Grande Basin WUG Total</b>			<b>2,257</b>	<b>2,257</b>	<b>2,257</b>	<b>2,257</b>	<b>2,257</b>	<b>2,257</b>
Jim Hogg County WCID 2	M	Gulf Coast Aquifer System   Jim Hogg County	1,412	1,412	1,412	1,412	1,412	1,412
County-Other	M	Gulf Coast Aquifer System   Jim Hogg County	137	137	137	137	137	137
Manufacturing	M	Gulf Coast Aquifer System   Jim Hogg County	52	52	52	52	52	52
Mining	M	Gulf Coast Aquifer System   Jim Hogg County	9	9	9	9	9	9
Livestock	M	Gulf Coast Aquifer System   Jim Hogg County	105	105	105	105	105	105

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## DRAFT Region M Water User Group (WUG) Existing Water Supply

WUG Name	Source	Source Description	Existing Supply (acre-feet per year)					
	Region		2030	2040	2050	2060	2070	2080
Livestock	M	Local Surface Water Supply	260	260	260	260	260	260
Irrigation	M	Gulf Coast Aquifer System   Jim Hogg County	282	282	282	282	282	282
<b>Jim Hogg County / Rio Grande Basin WUG Total</b>			<b>156</b>	<b>156</b>	<b>156</b>	<b>156</b>	<b>156</b>	<b>156</b>
County-Other	M	Gulf Coast Aquifer System   Jim Hogg County	16	16	16	16	16	16
Livestock	M	Gulf Coast Aquifer System   Jim Hogg County	60	60	60	60	60	60
Livestock	M	Local Surface Water Supply	14	14	14	14	14	14
Irrigation	M	Gulf Coast Aquifer System   Jim Hogg County	66	66	66	66	66	66
<b>Maverick County WUG Total</b>			<b>58,322</b>	<b>58,310</b>	<b>58,297</b>	<b>58,285</b>	<b>58,145</b>	<b>58,156</b>
<b>Maverick County / Nueces Basin WUG Total</b>			<b>451</b>	<b>451</b>	<b>451</b>	<b>451</b>	<b>347</b>	<b>347</b>
County-Other	M	Amistad-Falcon Lake/Reservoir System	1	1	1	1	1	1
County-Other	M	Carrizo-Wilcox Aquifer   Maverick County	5	5	5	5	5	5
Mining	M	Amistad-Falcon Lake/Reservoir System	277	277	277	277	277	277
Mining	M	Carrizo-Wilcox Aquifer   Maverick County	64	64	64	64	0	0
Livestock	M	Carrizo-Wilcox Aquifer   Maverick County	40	40	40	40	0	0
Livestock	M	Local Surface Water Supply	64	64	64	64	64	64
<b>Maverick County / Rio Grande Basin WUG Total</b>			<b>57,871</b>	<b>57,859</b>	<b>57,846</b>	<b>57,834</b>	<b>57,798</b>	<b>57,809</b>
Eagle Pass	M	Amistad-Falcon Lake/Reservoir System	10,613	10,613	10,613	10,613	10,613	10,613
Eagle Pass	M	Rio Grande Run-of-River	1,180	1,180	1,180	1,180	1,180	1,180
Maverick County	M	Amistad-Falcon Lake/Reservoir System	607	607	606	606	606	606
Maverick County	M	Rio Grande Run-of-River	111	111	111	111	111	111
County-Other	M	Amistad-Falcon Lake/Reservoir System	175	175	175	175	175	175
Manufacturing	M	Amistad-Falcon Lake/Reservoir System	74	74	74	74	50	74

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## DRAFT Region M Water User Group (WUG) Existing Water Supply

WUG Name	Source		Existing Supply (acre-feet per year)					
	Region	Source Description	2030	2040	2050	2060	2070	2080
Manufacturing	M	Carrizo-Wilcox Aquifer   Maverick County	3	3	3	3	3	3
Mining	M	Amistad-Falcon Lake/Reservoir System	1,107	1,107	1,106	1,106	1,106	1,105
Livestock	M	Local Surface Water Supply	409	409	409	409	409	409
Irrigation	M	Amistad-Falcon Lake/Reservoir System	43,592	43,580	43,569	43,557	43,545	43,533
<b>Starr County WUG Total</b>			<b>14,347</b>	<b>14,351</b>	<b>14,354</b>	<b>14,359</b>	<b>14,357</b>	<b>14,357</b>
<b>Starr County / Nueces-Rio Grande Basin WUG Total</b>			<b>454</b>	<b>454</b>	<b>454</b>	<b>454</b>	<b>454</b>	<b>454</b>
County-Other	M	Gulf Coast Aquifer System   Starr County	103	103	103	103	103	103
Mining	M	Amistad-Falcon Lake/Reservoir System	111	111	111	111	111	111
Livestock	M	Gulf Coast Aquifer System   Starr County	240	240	240	240	240	240
<b>Starr County / Rio Grande Basin WUG Total</b>			<b>13,893</b>	<b>13,897</b>	<b>13,900</b>	<b>13,905</b>	<b>13,903</b>	<b>13,903</b>
Agua SUD	M	Amistad-Falcon Lake/Reservoir System	40	40	39	40	39	40
El Sauz WSC	M	Amistad-Falcon Lake/Reservoir System	105	105	105	105	105	105
El Tanque WSC	M	Amistad-Falcon Lake/Reservoir System	177	177	177	177	177	177
La Grulla	M	Amistad-Falcon Lake/Reservoir System	600	600	600	600	600	600
Rio Grande City	M	Amistad-Falcon Lake/Reservoir System	3,118	3,118	3,118	3,118	3,118	3,118
Rio WSC	M	Amistad-Falcon Lake/Reservoir System	616	616	616	616	616	616
Roma	M	Amistad-Falcon Lake/Reservoir System	3,377	3,377	3,377	3,377	3,377	3,377
Union WSC	M	Amistad-Falcon Lake/Reservoir System	542	542	542	542	542	542
County-Other	M	Gulf Coast Aquifer System   Starr County	185	185	185	185	185	185
County-Other	M	Yegua-Jackson Aquifer   Starr County	33	38	43	48	48	48
Manufacturing	M	Gulf Coast Aquifer System   Starr County	96	96	96	96	96	96

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## DRAFT Region M Water User Group (WUG) Existing Water Supply

WUG Name	Source		Existing Supply (acre-feet per year)					
	Region	Source Description	2030	2040	2050	2060	2070	2080
Mining	M	Amistad-Falcon Lake/Reservoir System	91	91	91	91	91	91
Mining	M	Gulf Coast Aquifer System   Starr County	57	57	57	57	57	57
Livestock	M	Gulf Coast Aquifer System   Starr County	687	687	687	687	687	687
Livestock	M	Local Surface Water Supply	75	75	75	75	75	75
Irrigation	M	Amistad-Falcon Lake/Reservoir System	3,974	3,973	3,972	3,971	3,970	3,969
Irrigation	M	Gulf Coast Aquifer System   Starr County	120	120	120	120	120	120
<b>Webb County WUG Total</b>			<b>79,659</b>	<b>79,680</b>	<b>79,701</b>	<b>79,715</b>	<b>79,734</b>	<b>79,731</b>
<b>Webb County / Nueces Basin WUG Total</b>			<b>3,063</b>	<b>3,074</b>	<b>3,084</b>	<b>3,093</b>	<b>3,105</b>	<b>3,076</b>
Webb County	M	Amistad-Falcon Lake/Reservoir System	265	265	265	266	265	265
County-Other	M	Gulf Coast Aquifer System   Webb County	6	6	6	6	6	6
County-Other	M	Yegua-Jackson Aquifer   Webb County	6	6	6	6	6	6
Manufacturing	M	Amistad-Falcon Lake/Reservoir System	30	30	30	30	30	30
Manufacturing	M	Carrizo-Wilcox Aquifer   Webb County	44	44	44	44	44	44
Mining	M	Amistad-Falcon Lake/Reservoir System	2,165	2,165	2,163	2,163	2,163	2,136
Mining	M	Carrizo-Wilcox Aquifer   Webb County	29	29	29	29	29	29
Mining	M	Gulf Coast Aquifer System   Webb County	103	114	126	134	147	145
Livestock	M	Gulf Coast Aquifer System   Webb County	2	2	2	2	2	2
Livestock	M	Local Surface Water Supply	413	413	413	413	413	413
<b>Webb County / Nueces-Rio Grande Basin WUG Total</b>			<b>224</b>	<b>224</b>	<b>224</b>	<b>224</b>	<b>223</b>	<b>223</b>
County-Other	M	Gulf Coast Aquifer System   Webb County	121	121	121	121	120	120
Livestock	M	Gulf Coast Aquifer System   Webb County	31	31	31	31	31	31

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## DRAFT Region M Water User Group (WUG) Existing Water Supply

WUG Name	Source		Existing Supply (acre-feet per year)					
	Region	Source Description	2030	2040	2050	2060	2070	2080
Livestock	M	Local Surface Water Supply	72	72	72	72	72	72
<b>Webb County / Rio Grande Basin WUG Total</b>			<b>76,372</b>	<b>76,382</b>	<b>76,393</b>	<b>76,398</b>	<b>76,406</b>	<b>76,432</b>
Laredo	M	Amistad-Falcon Lake/Reservoir System	59,201	59,201	59,201	59,201	59,201	59,201
Laredo	M	Direct Reuse	773	773	773	773	773	773
Mirando City WSC	M	Gulf Coast Aquifer System   Webb County	70	70	70	70	70	70
Webb County	M	Amistad-Falcon Lake/Reservoir System	2,046	2,046	2,046	2,045	2,046	2,046
County-Other	M	Carrizo-Wilcox Aquifer   Webb County	20	20	20	20	20	20
County-Other	M	Gulf Coast Aquifer System   Webb County	19	19	19	19	15	15
County-Other	M	Yegua-Jackson Aquifer   Webb County	107	107	107	107	107	107
Manufacturing	M	Amistad-Falcon Lake/Reservoir System	128	128	128	128	128	128
Mining	M	Amistad-Falcon Lake/Reservoir System	2,636	2,635	2,635	2,634	2,633	2,659
Mining	M	Carrizo-Wilcox Aquifer   Webb County	63	63	63	63	63	63
Mining	M	Gulf Coast Aquifer System   Webb County	122	136	149	160	174	176
Steam Electric Power	M	Amistad-Falcon Lake/Reservoir System	131	131	131	131	131	131
Livestock	M	Amistad-Falcon Lake/Reservoir System	50	50	50	50	50	50
Livestock	M	Gulf Coast Aquifer System   Webb County	2	2	2	2	2	2
Livestock	M	Local Surface Water Supply	434	434	434	434	434	434
Irrigation	M	Amistad-Falcon Lake/Reservoir System	10,570	10,567	10,565	10,561	10,559	10,557
<b>Willacy County WUG Total</b>			<b>27,191</b>	<b>27,123</b>	<b>26,969</b>	<b>26,929</b>	<b>26,896</b>	<b>26,869</b>
<b>Willacy County / Nueces-Rio Grande Basin WUG Total</b>			<b>27,191</b>	<b>27,123</b>	<b>26,969</b>	<b>26,929</b>	<b>26,896</b>	<b>26,869</b>
Lyford	M	Amistad-Falcon Lake/Reservoir System	588	588	588	588	588	588

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## DRAFT Region M Water User Group (WUG) Existing Water Supply

WUG Name	Source	Source Description	Existing Supply (acre-feet per year)					
	Region		2030	2040	2050	2060	2070	2080
North Alamo WSC	M	Amistad-Falcon Lake/Reservoir System	460	422	392	374	358	346
North Alamo WSC	M	Gulf Coast Aquifer System   Cameron County	3	2	2	2	2	2
North Alamo WSC	M	Gulf Coast Aquifer System   Hidalgo County	320	292	272	259	249	241
North Alamo WSC	M	Gulf Coast Aquifer System   Willacy County	42	45	42	40	39	37
Port Mansfield PUD	M	Amistad-Falcon Lake/Reservoir System	98	98	98	98	98	98
Raymondville	M	Amistad-Falcon Lake/Reservoir System	3,402	3,402	3,402	3,402	3,402	3,402
Raymondville	M	Gulf Coast Aquifer System   Willacy County	4	5	5	5	5	5
Sebastian MUD	M	Amistad-Falcon Lake/Reservoir System	204	204	204	204	204	204
County-Other	M	Amistad-Falcon Lake/Reservoir System	486	486	486	485	485	485
County-Other	M	Gulf Coast Aquifer System   Willacy County	561	561	561	561	561	561
Mining	M	Gulf Coast Aquifer System   Willacy County	2	2	2	2	2	2
Livestock	M	Amistad-Falcon Lake/Reservoir System	235	235	140	140	140	140
Livestock	M	Gulf Coast Aquifer System   Willacy County	74	74	74	74	74	74
Irrigation	M	Amistad-Falcon Lake/Reservoir System	20,631	20,626	20,620	20,614	20,608	20,603
Irrigation	M	Gulf Coast Aquifer System   Willacy County	81	81	81	81	81	81
<b>Zapata County WUG Total</b>			<b>6,169</b>	<b>6,169</b>	<b>6,168</b>	<b>6,168</b>	<b>6,167</b>	<b>6,167</b>
<b>Zapata County / Rio Grande Basin WUG Total</b>			<b>6,169</b>	<b>6,169</b>	<b>6,168</b>	<b>6,168</b>	<b>6,167</b>	<b>6,167</b>
Falcon Rural WSC	M	Amistad-Falcon Lake/Reservoir System	309	309	309	309	309	309
Siesta Shores WCID	M	Amistad-Falcon Lake/Reservoir System	369	369	369	369	369	369
Zapata County	M	Amistad-Falcon Lake/Reservoir System	2,084	2,084	2,084	2,084	2,084	2,084
Zapata County San Ygnacio & Ramireño	M	Amistad-Falcon Lake/Reservoir System	284	284	284	284	284	284

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## DRAFT Region M Water User Group (WUG) Existing Water Supply

WUG Name	Source	Source Description	Existing Supply (acre-feet per year)					
	Region		2030	2040	2050	2060	2070	2080
Zapata County WCID-Hwy 16 East	M	Amistad-Falcon Lake/Reservoir System	502	502	502	502	502	502
County-Other	M	Amistad-Falcon Lake/Reservoir System	63	63	63	63	63	63
County-Other	M	Yegua-Jackson Aquifer   Zapata County	117	117	117	117	117	117
Mining	M	Amistad-Falcon Lake/Reservoir System	6	6	6	6	6	6
Mining	M	Yegua-Jackson Aquifer   Zapata County	2	2	2	2	2	2
Livestock	M	Local Surface Water Supply	145	145	145	145	145	145
Livestock	M	Yegua-Jackson Aquifer   Zapata County	214	214	214	214	214	214
Irrigation	M	Amistad-Falcon Lake/Reservoir System	1,994	1,994	1,993	1,993	1,992	1,992
Irrigation	M	Yegua-Jackson Aquifer   Zapata County	80	80	80	80	80	80
<b>Region M WUG Existing Water Supply Total</b>			<b>899,282</b>	<b>900,617</b>	<b>898,221</b>	<b>898,378</b>	<b>899,336</b>	<b>899,720</b>

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## DRAFT Region M Water User Group (WUG) Needs or Surplus

WUG supplies and projected demands are entered for each of a WUG’s region-county-basin divisions. The needs shown in the WUG Needs/Surplus report are calculated by first deducting the WUG split’s projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Surplus volumes are shown as positive values, and needs are shown as negative values in parentheses.

			<b>Water Supply Needs or Surplus (acre-feet per year)</b>					
<b>WUG Name</b>	<b>County</b>	<b>Basin</b>	<b>2030</b>	<b>2040</b>	<b>2050</b>	<b>2060</b>	<b>2070</b>	<b>2080</b>
Brownsville	Cameron	Nueces-Rio Grande	11,281	10,593	10,298	10,397	10,495	10,596
Combes	Cameron	Nueces-Rio Grande	402	397	395	396	397	398
East Rio Hondo WSC	Cameron	Nueces-Rio Grande	1,264	640	(16)	(506)	(755)	(1,050)
El Jardin WSC	Cameron	Nueces-Rio Grande	102	76	63	66	71	75
Harlingen	Cameron	Nueces-Rio Grande	6,128	5,808	5,669	5,712	5,752	5,793
La Feria	Cameron	Nueces-Rio Grande	513	598	690	893	1,196	1,400
Laguna Madre Water District	Cameron	Nueces-Rio Grande	2,875	2,768	2,726	2,742	2,759	2,777
Los Fresnos	Cameron	Nueces-Rio Grande	479	466	461	463	465	467
Military Highway WSC	Cameron	Nueces-Rio Grande	(49)	(135)	(173)	(158)	(142)	(125)
North Alamo WSC	Cameron	Nueces-Rio Grande	(98)	(106)	(109)	(105)	(103)	(99)
Olmito WSC	Cameron	Nueces-Rio Grande	(75)	(107)	(126)	(138)	(151)	(166)
Palm Valley	Cameron	Nueces-Rio Grande	30	25	23	24	25	26
Primera	Cameron	Nueces-Rio Grande	(25)	(185)	(295)	(339)	(361)	(339)
Rio Hondo	Cameron	Nueces-Rio Grande	594	592	591	591	592	592
San Benito	Cameron	Nueces-Rio Grande	597	1,030	1,980	2,090	2,300	2,311
Santa Rosa	Cameron	Nueces-Rio Grande	365	360	358	359	360	361
Valley MUD 2	Cameron	Nueces-Rio Grande	259	270	279	301	323	327
County-Other	Cameron	Nueces-Rio Grande	(2,491)	(1,618)	(695)	94	615	1,074
Manufacturing	Cameron	Nueces-Rio Grande	509	492	474	456	437	417

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## DRAFT Region M Water User Group (WUG) Needs or Surplus

			Water Supply Needs or Surplus (acre-feet per year)					
WUG Name	County	Basin	2030	2040	2050	2060	2070	2080
Livestock	Cameron	Nueces-Rio Grande	130	130	130	130	130	130
Irrigation	Cameron	Nueces-Rio Grande	(317,987)	(301,805)	(285,625)	(269,447)	(253,265)	(237,088)
Brownsville	Cameron	Rio Grande	(59)	(67)	(68)	(69)	(67)	(66)
El Jardin WSC	Cameron	Rio Grande	33	33	33	34	33	33
Military Highway WSC	Cameron	Rio Grande	(6)	(7)	(7)	(7)	(7)	(7)
Valley MUD 2	Cameron	Rio Grande	37	37	39	40	42	42
Steam Electric Power	Cameron	Rio Grande	(40)	(40)	(40)	(40)	(40)	(40)
Livestock	Cameron	Rio Grande	19	19	19	19	19	19
Irrigation	Cameron	Rio Grande	(20,534)	(19,502)	(18,470)	(17,435)	(16,403)	(15,370)
Agua SUD	Hidalgo	Nueces-Rio Grande	375	(82)	(401)	(548)	(694)	(842)
Alamo	Hidalgo	Nueces-Rio Grande	(422)	(472)	(523)	(617)	(713)	(811)
Donna	Hidalgo	Nueces-Rio Grande	934	817	734	676	618	560
Edcouch	Hidalgo	Nueces-Rio Grande	43	62	70	56	41	26
Edinburg	Hidalgo	Nueces-Rio Grande	(5,070)	(5,975)	(8,505)	(8,703)	(8,902)	(9,101)
Elsa	Hidalgo	Nueces-Rio Grande	60	109	133	97	60	23
Hidalgo	Hidalgo	Nueces-Rio Grande	226	317	261	220	180	138
Hidalgo County MUD 1	Hidalgo	Nueces-Rio Grande	89	75	61	45	28	11
La Joya	Hidalgo	Nueces-Rio Grande	(195)	(225)	(245)	(256)	(268)	(280)
La Villa	Hidalgo	Nueces-Rio Grande	11	(30)	(56)	(53)	(50)	(47)
McAllen	Hidalgo	Nueces-Rio Grande	(1,361)	(5,494)	(11,326)	(12,558)	(13,809)	(15,080)
Mercedes	Hidalgo	Nueces-Rio Grande	1,300	1,288	1,266	1,205	1,142	1,078
Military Highway WSC	Hidalgo	Nueces-Rio Grande	1,016	1,073	1,085	972	857	738
Mission	Hidalgo	Nueces-Rio Grande	(6,515)	(7,480)	(8,166)	(8,640)	(9,122)	(9,609)

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## DRAFT Region M Water User Group (WUG) Needs or Surplus

			Water Supply Needs or Surplus (acre-feet per year)					
WUG Name	County	Basin	2030	2040	2050	2060	2070	2080
North Alamo WSC	Hidalgo	Nueces-Rio Grande	(12,914)	(16,160)	(18,374)	(18,737)	(19,098)	(19,459)
Pharr	Hidalgo	Nueces-Rio Grande	1,233	871	673	681	695	701
San Juan	Hidalgo	Nueces-Rio Grande	1,624	1,560	1,497	1,378	1,257	1,133
Sharyland WSC	Hidalgo	Nueces-Rio Grande	(2,346)	(3,753)	(4,672)	(4,913)	(5,154)	(5,394)
Weslaco	Hidalgo	Nueces-Rio Grande	678	755	723	530	333	133
County-Other	Hidalgo	Nueces-Rio Grande	1	200	418	406	392	379
Manufacturing	Hidalgo	Nueces-Rio Grande	789	646	497	343	183	17
Mining	Hidalgo	Nueces-Rio Grande	1,437	1,412	1,385	1,359	1,334	1,310
Steam Electric Power	Hidalgo	Nueces-Rio Grande	(390)	(390)	(290)	(290)	(290)	(290)
Livestock	Hidalgo	Nueces-Rio Grande	57	73	73	73	73	73
Irrigation	Hidalgo	Nueces-Rio Grande	(372,899)	(351,737)	(330,579)	(309,751)	(288,260)	(267,108)
Agua SUD	Hidalgo	Rio Grande	1,030	1,008	993	987	980	972
Hidalgo	Hidalgo	Rio Grande	(6)	(6)	(7)	(7)	(8)	(9)
La Joya	Hidalgo	Rio Grande	(37)	(44)	(49)	(52)	(55)	(57)
Military Highway WSC	Hidalgo	Rio Grande	51	51	52	51	50	49
County-Other	Hidalgo	Rio Grande	(965)	103	1,279	1,210	1,139	1,066
Manufacturing	Hidalgo	Rio Grande	18	16	14	12	10	8
Mining	Hidalgo	Rio Grande	97	96	96	96	96	95
Livestock	Hidalgo	Rio Grande	71	55	55	55	55	55
Irrigation	Hidalgo	Rio Grande	(15,372)	(14,497)	(13,621)	(12,760)	(11,870)	(10,993)
Jim Hogg County WCID 2	Jim Hogg	Nueces-Rio Grande	938	946	958	970	983	995
County-Other	Jim Hogg	Nueces-Rio Grande	7	9	13	14	18	21
Manufacturing	Jim Hogg	Nueces-Rio Grande	10	8	6	4	2	0
Mining	Jim Hogg	Nueces-Rio Grande	0	0	0	0	0	0
Livestock	Jim Hogg	Nueces-Rio Grande	3	3	3	3	3	3

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## DRAFT Region M Water User Group (WUG) Needs or Surplus

			Water Supply Needs or Surplus (acre-feet per year)					
WUG Name	County	Basin	2030	2040	2050	2060	2070	2080
Irrigation	Jim Hogg	Nueces-Rio Grande	0	9	19	28	38	47
County-Other	Jim Hogg	Rio Grande	7	7	7	8	8	8
Livestock	Jim Hogg	Rio Grande	16	16	16	16	16	16
Irrigation	Jim Hogg	Rio Grande	0	2	4	6	8	11
County-Other	Maverick	Nueces	3	4	5	5	5	6
Mining	Maverick	Nueces	233	233	233	233	169	277
Livestock	Maverick	Nueces	40	40	40	40	0	0
Eagle Pass	Maverick	Rio Grande	2,214	1,601	1,080	613	149	(314)
Maverick County	Maverick	Rio Grande	383	268	188	186	185	185
County-Other	Maverick	Rio Grande	9	66	102	125	141	151
Manufacturing	Maverick	Rio Grande	(21)	(25)	(29)	(33)	(61)	(41)
Mining	Maverick	Rio Grande	(3,683)	(3,683)	(3,684)	(3,684)	(3,684)	1,103
Livestock	Maverick	Rio Grande	0	0	0	0	0	0
Irrigation	Maverick	Rio Grande	(16,133)	(14,164)	(12,194)	(10,225)	(8,256)	(6,287)
County-Other	Starr	Nueces-Rio Grande	(8)	(10)	(14)	(25)	(37)	(48)
Mining	Starr	Nueces-Rio Grande	14	11	8	4	2	0
Livestock	Starr	Nueces-Rio Grande	57	57	57	57	57	57
Agua SUD	Starr	Rio Grande	14	14	13	14	13	14
El Sauz WSC	Starr	Rio Grande	(62)	(76)	(87)	(91)	(95)	(99)
El Tanque WSC	Starr	Rio Grande	(24)	3	25	41	56	69
La Grulla	Starr	Rio Grande	(860)	(954)	(1,028)	(1,075)	(1,123)	(1,171)
Rio Grande City	Starr	Rio Grande	(1,082)	(1,350)	(1,558)	(1,696)	(1,836)	(1,978)
Rio WSC	Starr	Rio Grande	(193)	(337)	(433)	(433)	(431)	(429)
Roma	Starr	Rio Grande	902	774	666	578	489	398
Union WSC	Starr	Rio Grande	(691)	(749)	(799)	(845)	(892)	(939)
County-Other	Starr	Rio Grande	(207)	(207)	(217)	(257)	(300)	(344)
Manufacturing	Starr	Rio Grande	15	12	9	6	3	0
Mining	Starr	Rio Grande	52	48	44	42	39	36
Livestock	Starr	Rio Grande	0	0	0	0	0	0
Irrigation	Starr	Rio Grande	(19,015)	(18,249)	(17,484)	(16,718)	(15,953)	(15,188)
Webb County	Webb	Nueces	76	2	(67)	(63)	(61)	(57)
County-Other	Webb	Nueces	(22)	(10)	2	2	2	2
Manufacturing	Webb	Nueces	40	38	37	36	34	33
Mining	Webb	Nueces	403	413	422	429	441	2,296
Livestock	Webb	Nueces	31	31	31	31	31	31

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## DRAFT Region M Water User Group (WUG) Needs or Surplus

			Water Supply Needs or Surplus (acre-feet per year)					
WUG Name	County	Basin	2030	2040	2050	2060	2070	2080
County-Other	Webb	Nueces-Rio Grande	(198)	(90)	22	22	21	21
Livestock	Webb	Nueces-Rio Grande	0	0	0	0	0	0
Laredo	Webb	Rio Grande	18,143	16,682	16,180	16,625	17,075	17,530
Mirando City WSC	Webb	Rio Grande	41	40	40	40	40	41
Webb County	Webb	Rio Grande	752	241	(235)	(213)	(189)	(166)
County-Other	Webb	Rio Grande	(897)	(543)	(178)	(178)	(183)	(184)
Manufacturing	Webb	Rio Grande	84	83	81	79	78	76
Mining	Webb	Rio Grande	573	585	596	605	617	2,881
Steam Electric Power	Webb	Rio Grande	0	0	0	0	0	0
Livestock	Webb	Rio Grande	87	87	87	87	87	87
Irrigation	Webb	Rio Grande	480	811	1,144	1,475	1,807	2,140
Lyford	Willacy	Nueces-Rio Grande	402	411	418	424	428	431
North Alamo WSC	Willacy	Nueces-Rio Grande	106	43	(14)	(55)	(97)	(141)
Port Mansfield PUD	Willacy	Nueces-Rio Grande	(40)	(67)	(102)	(156)	(219)	(292)
Raymondville	Willacy	Nueces-Rio Grande	2,610	2,634	2,650	2,661	2,667	2,664
Sebastian MUD	Willacy	Nueces-Rio Grande	109	118	125	130	134	137
County-Other	Willacy	Nueces-Rio Grande	487	489	532	611	710	830
Mining	Willacy	Nueces-Rio Grande	0	0	0	0	0	0
Livestock	Willacy	Nueces-Rio Grande	112	112	17	17	17	17
Irrigation	Willacy	Nueces-Rio Grande	(75,700)	(72,508)	(69,316)	(66,124)	(62,932)	(59,740)
Falcon Rural WSC	Zapata	Rio Grande	239	253	264	271	277	282
Siesta Shores WCID	Zapata	Rio Grande	162	160	160	163	165	167
Zapata County	Zapata	Rio Grande	255	234	233	252	272	292
Zapata County San Ygnacio & Ramireño	Zapata	Rio Grande	221	231	239	245	249	253
Zapata County WCID-Hwy 16 East	Zapata	Rio Grande	341	339	339	341	342	344
County-Other	Zapata	Rio Grande	23	3	(11)	(20)	(26)	(32)

\*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## DRAFT Region M Water User Group (WUG) Needs or Surplus

			Water Supply Needs or Surplus (acre-feet per year)					
WUG Name	County	Basin	2030	2040	2050	2060	2070	2080
Mining	Zapata	Rio Grande	2	2	2	2	2	2
Livestock	Zapata	Rio Grande	0	0	0	0	0	0
Irrigation	Zapata	Rio Grande	(2,862)	(2,699)	(2,536)	(2,372)	(2,209)	(2,045)

\*A single asterisk next to a WUG's name denotes that the WUG is split by two or more planning regions.

## DRAFT Region M 2026 Regional Water Plan (RWP) Water User Group (WUG) Data Comparison to 2021 RWP

Water Volumes Shown in Acre-Feet per year

	2030 Planning Decade*			2070 Planning Decade*		
	2021 RWP	2026 RWP	Difference (%)	2021 RWP	2026 RWP	Difference (%)
<b>Cameron County  Municipal WUG Type</b>						
Existing WUG supply total	96,937	96,230	-0.7%	99,361	99,052	-0.3%
Projected demand total	93,300	74,074	-20.6%	148,708	75,213	-49.4%
Water supply needs total**	4,149	2,803	-32.4%	50,286	1,586	-96.8%
<b>Cameron County  Manufacturing WUG Type</b>						
Existing WUG supply total	1,029	969	-5.8%	1,029	969	-5.8%
Projected demand total	1,846	460	-75.1%	1,846	532	-71.2%
Water supply needs total**	817	0	-100.0%	817	0	-100.0%
<b>Cameron County  Mining WUG Type</b>						
Existing WUG supply total	661	0	-100.0%	661	0	-100.0%
Projected demand total	277	0	-100.0%	28	0	-100.0%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Cameron County  Steam Electric Power WUG Type</b>						
Existing WUG supply total	125	125	0.0%	125	125	0.0%
Projected demand total	3,550	165	-95.4%	3,550	165	-95.4%
Water supply needs total**	3,425	40	-98.8%	3,425	40	-98.8%
<b>Cameron County  Livestock WUG Type</b>						
Existing WUG supply total	436	436	0.0%	436	436	0.0%
Projected demand total	436	287	-34.2%	436	287	-34.2%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Cameron County  Irrigation WUG Type</b>						
Existing WUG supply total	177,972	181,451	2.0%	177,840	181,319	2.0%
Projected demand total	519,972	519,972	0.0%	450,987	450,987	0.0%
Water supply needs total**	342,000	338,521	-1.0%	273,147	269,668	-1.3%
<b>Hidalgo County  Municipal WUG Type</b>						
Existing WUG supply total	137,316	136,468	-0.6%	134,676	134,414	-0.2%

\*The 2030 and 2070 planning decades are used in this comparison because they represent the earliest and latest planning decades in both the 2021 and 2026 RWPs

\*\*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Data Comparison to 2021 RWP report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG county and category level, calculated surpluses are updated to zero so that only the WUGs with needs in the decade are included with the water supply needs totals.

## DRAFT Region M 2026 Regional Water Plan (RWP) Water User Group (WUG) Data Comparison to 2021 RWP Water Volumes Shown in Acre-Feet per year

	2030 Planning Decade*			2070 Planning Decade*		
	2021 RWP	2026 RWP	Difference (%)	2021 RWP	2026 RWP	Difference (%)
Projected demand total	195,306	157,628	-19.3%	340,317	184,515	-45.8%
Water supply needs total**	58,236	29,831	-48.8%	205,641	57,873	-71.9%
<b>Hidalgo County  Manufacturing WUG Type</b>						
Existing WUG supply total	2,915	4,733	62.4%	2,915	4,733	62.4%
Projected demand total	2,721	3,926	44.3%	2,721	4,540	66.9%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Hidalgo County  Mining WUG Type</b>						
Existing WUG supply total	1,933	1,768	-8.5%	1,931	1,767	-8.5%
Projected demand total	3,620	234	-93.5%	6,434	337	-94.8%
Water supply needs total**	1,687	0	-100.0%	4,503	0	-100.0%
<b>Hidalgo County  Steam Electric Power WUG Type</b>						
Existing WUG supply total	9,935	9,935	0.0%	10,035	10,035	0.0%
Projected demand total	11,538	10,325	-10.5%	11,538	10,325	-10.5%
Water supply needs total**	1,603	390	-75.7%	1,503	290	-80.7%
<b>Hidalgo County  Livestock WUG Type</b>						
Existing WUG supply total	777	777	0.0%	777	777	0.0%
Projected demand total	777	649	-16.5%	777	649	-16.5%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Hidalgo County  Irrigation WUG Type</b>						
Existing WUG supply total	278,217	278,289	0.0%	277,923	277,997	0.0%
Projected demand total	666,560	666,560	0.0%	578,127	578,127	0.0%
Water supply needs total**	388,343	388,271	0.0%	300,204	300,130	0.0%
<b>Jim Hogg County  Municipal WUG Type</b>						
Existing WUG supply total	1,698	1,565	-7.8%	1,698	1,565	-7.8%
Projected demand total	834	613	-26.5%	1,015	556	-45.2%
Water supply needs total**	0	0	0.0%	0	0	0.0%

\*The 2030 and 2070 planning decades are used in this comparison because they represent the earliest and latest planning decades in both the 2021 and 2026 RWPs

\*\*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Data Comparison to 2021 RWP report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG county and category level, calculated surpluses are updated to zero so that only the WUGs with needs in the decade are included with the water supply needs totals.

## DRAFT Region M 2026 Regional Water Plan (RWP) Water User Group (WUG) Data Comparison to 2021 RWP Water Volumes Shown in Acre-Feet per year

	2030 Planning Decade*			2070 Planning Decade*		
	2021 RWP	2026 RWP	Difference (%)	2021 RWP	2026 RWP	Difference (%)
<b>Jim Hogg County  Manufacturing WUG Type</b>						
Existing WUG supply total	2	52	2500.0%	2	52	2500.0%
Projected demand total	2	42	2000.0%	2	50	2400.0%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Jim Hogg County  Mining WUG Type</b>						
Existing WUG supply total	97	9	-90.7%	22	9	-59.1%
Projected demand total	97	9	-90.7%	22	9	-59.1%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Jim Hogg County  Livestock WUG Type</b>						
Existing WUG supply total	436	439	0.7%	436	439	0.7%
Projected demand total	376	420	11.7%	376	420	11.7%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Jim Hogg County  Irrigation WUG Type</b>						
Existing WUG supply total	360	348	-3.3%	360	348	-3.3%
Projected demand total	348	348	0.0%	302	302	0.0%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Maverick County  Municipal WUG Type</b>						
Existing WUG supply total	11,512	12,692	10.3%	11,511	12,691	10.3%
Projected demand total	11,621	10,083	-13.2%	16,840	12,211	-27.5%
Water supply needs total**	562	0	-100.0%	5,666	0	-100.0%
<b>Maverick County  Manufacturing WUG Type</b>						
Existing WUG supply total	65	77	18.5%	65	53	-18.5%
Projected demand total	65	98	50.8%	65	114	75.4%
Water supply needs total**	0	21	100.0%	0	61	100.0%
<b>Maverick County  Mining WUG Type</b>						
Existing WUG supply total	1,394	1,448	3.9%	1,392	1,383	-0.6%

\*The 2030 and 2070 planning decades are used in this comparison because they represent the earliest and latest planning decades in both the 2021 and 2026 RWPs

\*\*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Data Comparison to 2021 RWP report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG county and category level, calculated surpluses are updated to zero so that only the WUGs with needs in the decade are included with the water supply needs totals.

## DRAFT Region M 2026 Regional Water Plan (RWP) Water User Group (WUG) Data Comparison to 2021 RWP Water Volumes Shown in Acre-Feet per year

	2030 Planning Decade*			2070 Planning Decade*		
	2021 RWP	2026 RWP	Difference (%)	2021 RWP	2026 RWP	Difference (%)
Projected demand total	2,737	4,898	79.0%	1,217	4,898	302.5%
Water supply needs total**	1,343	3,683	174.2%	0	3,684	100.0%
<b>Maverick County  Livestock WUG Type</b>						
Existing WUG supply total	388	513	32.2%	388	473	21.9%
Projected demand total	371	473	27.5%	371	473	27.5%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Maverick County  Irrigation WUG Type</b>						
Existing WUG supply total	44,000	43,592	-0.9%	43,953	43,545	-0.9%
Projected demand total	59,725	59,725	0.0%	51,801	51,801	0.0%
Water supply needs total**	15,725	16,133	2.6%	7,848	8,256	5.2%
<b>Starr County  Municipal WUG Type</b>						
Existing WUG supply total	8,709	8,896	2.1%	8,709	8,910	2.3%
Projected demand total	12,877	11,107	-13.7%	17,445	13,066	-25.1%
Water supply needs total**	4,864	3,127	-35.7%	8,736	4,714	-46.0%
<b>Starr County  Manufacturing WUG Type</b>						
Existing WUG supply total	86	96	11.6%	86	96	11.6%
Projected demand total	116	81	-30.2%	116	93	-19.8%
Water supply needs total**	30	0	-100.0%	30	0	-100.0%
<b>Starr County  Mining WUG Type</b>						
Existing WUG supply total	276	259	-6.2%	276	259	-6.2%
Projected demand total	697	193	-72.3%	1,091	218	-80.0%
Water supply needs total**	421	0	-100.0%	815	0	-100.0%
<b>Starr County  Livestock WUG Type</b>						
Existing WUG supply total	1,192	1,002	-15.9%	1,192	1,002	-15.9%
Projected demand total	1,192	945	-20.7%	1,192	945	-20.7%
Water supply needs total**	0	0	0.0%	0	0	0.0%

\*The 2030 and 2070 planning decades are used in this comparison because they represent the earliest and latest planning decades in both the 2021 and 2026 RWPs

\*\*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Data Comparison to 2021 RWP report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG county and category level, calculated surpluses are updated to zero so that only the WUGs with needs in the decade are included with the water supply needs totals.

## DRAFT Region M 2026 Regional Water Plan (RWP) Water User Group (WUG) Data Comparison to 2021 RWP

Water Volumes Shown in Acre-Feet per year

	2030 Planning Decade*			2070 Planning Decade*		
	2021 RWP	2026 RWP	Difference (%)	2021 RWP	2026 RWP	Difference (%)
<b>Starr County   Irrigation WUG Type</b>						
Existing WUG supply total	4,293	4,094	-4.6%	4,289	4,090	-4.6%
Projected demand total	23,109	23,109	0.0%	20,043	20,043	0.0%
Water supply needs total**	18,816	19,015	1.1%	15,754	15,953	1.3%
<b>Webb County   Municipal WUG Type</b>						
Existing WUG supply total	62,617	62,634	0.0%	62,627	62,629	0.0%
Projected demand total	52,898	44,739	-15.4%	84,883	45,924	-45.9%
Water supply needs total**	153	1,117	630.1%	22,256	433	-98.1%
<b>Webb County   Manufacturing WUG Type</b>						
Existing WUG supply total	391	202	-48.3%	391	202	-48.3%
Projected demand total	296	78	-73.6%	296	90	-69.6%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Webb County   Mining WUG Type</b>						
Existing WUG supply total	5,542	5,118	-7.7%	5,608	5,209	-7.1%
Projected demand total	8,047	4,142	-48.5%	1,343	4,151	209.1%
Water supply needs total**	2,505	0	-100.0%	0	0	0.0%
<b>Webb County   Steam Electric Power WUG Type</b>						
Existing WUG supply total	695	131	-81.2%	695	131	-81.2%
Projected demand total	152	131	-13.8%	152	131	-13.8%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Webb County   Livestock WUG Type</b>						
Existing WUG supply total	1,079	1,004	-7.0%	1,079	1,004	-7.0%
Projected demand total	963	886	-8.0%	963	886	-8.0%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Webb County   Irrigation WUG Type</b>						
Existing WUG supply total	10,607	10,570	-0.3%	10,597	10,559	-0.4%

\*The 2030 and 2070 planning decades are used in this comparison because they represent the earliest and latest planning decades in both the 2021 and 2026 RWPs

\*\*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Data Comparison to 2021 RWP report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG county and category level, calculated surpluses are updated to zero so that only the WUGs with needs in the decade are included with the water supply needs totals.

## DRAFT Region M 2026 Regional Water Plan (RWP) Water User Group (WUG) Data Comparison to 2021 RWP Water Volumes Shown in Acre-Feet per year

	2030 Planning Decade*			2070 Planning Decade*		
	2021 RWP	2026 RWP	Difference (%)	2021 RWP	2026 RWP	Difference (%)
Projected demand total	10,090	10,090	0.0%	8,752	8,752	0.0%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Willacy County   Municipal WUG Type</b>						
Existing WUG supply total	5,551	6,168	11.1%	5,432	5,991	10.3%
Projected demand total	3,571	2,494	-30.2%	5,001	2,368	-52.6%
Water supply needs total**	548	40	-92.7%	1,313	316	-75.9%
<b>Willacy County   Mining WUG Type</b>						
Existing WUG supply total	0	2	100.0%	20	2	-90.0%
Projected demand total	51	2	-96.1%	12	2	-83.3%
Water supply needs total**	51	0	-100.0%	0	0	0.0%
<b>Willacy County   Livestock WUG Type</b>						
Existing WUG supply total	235	309	31.5%	235	214	-8.9%
Projected demand total	235	197	-16.2%	235	197	-16.2%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Willacy County   Irrigation WUG Type</b>						
Existing WUG supply total	20,626	20,712	0.4%	20,723	20,689	-0.2%
Projected demand total	96,412	96,412	0.0%	83,621	83,621	0.0%
Water supply needs total**	75,786	75,700	-0.1%	62,898	62,932	0.1%
<b>Zapata County   Municipal WUG Type</b>						
Existing WUG supply total	3,614	3,728	3.2%	3,614	3,728	3.2%
Projected demand total	3,489	2,487	-28.7%	5,831	2,449	-58.0%
Water supply needs total**	568	0	-100.0%	2,574	26	-99.0%
<b>Zapata County   Manufacturing WUG Type</b>						
Existing WUG supply total	5	0	-100.0%	5	0	-100.0%
Projected demand total	9	0	-100.0%	9	0	-100.0%
Water supply needs total**	4	0	-100.0%	4	0	-100.0%

\*The 2030 and 2070 planning decades are used in this comparison because they represent the earliest and latest planning decades in both the 2021 and 2026 RWPs

\*\*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Data Comparison to 2021 RWP report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG county and category level, calculated surpluses are updated to zero so that only the WUGs with needs in the decade are included with the water supply needs totals.



## DRAFT Region M 2026 Regional Water Plan (RWP) Water User Group (WUG) Data Comparison to 2021 RWP Water Volumes Shown in Acre-Feet per year

	2030 Planning Decade*			2070 Planning Decade*		
	2021 RWP	2026 RWP	Difference (%)	2021 RWP	2026 RWP	Difference (%)
<b>Zapata County  Mining WUG Type</b>						
Existing WUG supply total	1,332	8	-99.4%	1,332	8	-99.4%
Projected demand total	954	6	-99.4%	214	6	-97.2%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Zapata County  Livestock WUG Type</b>						
Existing WUG supply total	479	359	-25.1%	479	359	-25.1%
Projected demand total	398	359	-9.8%	398	359	-9.8%
Water supply needs total**	0	0	0.0%	0	0	0.0%
<b>Zapata County  Irrigation WUG Type</b>						
Existing WUG supply total	2,074	2,074	0.0%	2,072	2,072	0.0%
Projected demand total	4,936	4,936	0.0%	4,281	4,281	0.0%
Water supply needs total**	2,862	2,862	0.0%	2,209	2,209	0.0%
<b>Region M Total</b>						
Existing WUG supply total	897,608	899,282	0.2%	896,997	899,336	0.3%
Projected demand total	1,796,571	1,713,383	-4.6%	1,853,358	1,564,093	-15.6%
Water supply needs total**	924,498	881,554	-4.6%	969,629	728,171	-24.9%

\*The 2030 and 2070 planning decades are used in this comparison because they represent the earliest and latest planning decades in both the 2021 and 2026 RWPs

\*\*WUG supplies and projected demands are entered for each of a WUG's region-county-basin divisions. The needs shown in the WUG Data Comparison to 2021 RWP report are calculated by first deducting the WUG split's projected demand from its total existing water supply volume. If the WUG split has a greater existing supply volume than projected demand in any given decade, this amount is considered a surplus volume. Before aggregating the difference between supplies and demands to the WUG county and category level, calculated surpluses are updated to zero so that only the WUGs with needs in the decade are included with the water supply needs totals.

## DRAFT Region M 2026 Regional Water Plan (RWP) Source Availability Comparison to 2021 RWP Water Volumes Shown in Acre-Feet per year

	2030 Planning Decade*			2070 Planning Decade*		
	2021 RWP	2026 RWP	Difference (%)	2021 RWP	2026 RWP	Difference (%)
<b>Cameron County</b>						
Groundwater availability total	51,166	51,166	0.0%	65,756	65,756	0.0%
Reuse availability total	13,849	9,176	-33.7%	16,894	16,894	0.0%
Surface Water availability total	350	3,115	790.0%	350	3,115	790.0%
<b>Hidalgo County</b>						
Groundwater availability total	93,851	93,462	-0.4%	111,044	110,431	-0.6%
Reuse availability total	38,413	34,743	-9.6%	49,179	49,179	0.0%
Surface Water availability total	7,522	37,100	393.2%	7,522	37,100	393.2%
<b>Jim Hogg County</b>						
Groundwater availability total	6,174	6,167	-0.1%	6,174	7,084	14.7%
Surface Water availability total	271	274	1.1%	271	274	1.1%
<b>Maverick County</b>						
Groundwater availability total	2,042	545	-73.3%	1,531	276	-82.0%
Reuse availability total	650	650	0.0%	650	650	0.0%
Surface Water availability total	439	2,461	460.6%	439	2,461	460.6%
<b>Reservoir** County</b>						
Surface Water availability total	1,079,175	1,002,376	-7.1%	1,078,349	998,383	-7.4%
<b>Starr County</b>						
Groundwater availability total	12,714	4,830	-62.0%	15,652	7,843	-49.9%
Surface Water availability total	65	75	15.4%	65	75	15.4%
<b>Webb County</b>						
Groundwater availability total	21,705	21,699	0.0%	22,215	22,209	0.0%
Reuse availability total	6,498	773	-88.1%	12,533	9,733	-22.3%
Surface Water availability total	919	919	0.0%	919	919	0.0%
<b>Willacy County</b>						
Groundwater availability total	2,866	2,557	-10.8%	4,258	3,756	-11.8%
Surface Water availability total	350	68	-80.6%	350	68	-80.6%
<b>Zapata County</b>						
Groundwater availability total	7,987	7,987	0.0%	7,987	7,987	0.0%
Surface Water availability total	249	249	0.0%	249	249	0.0%

\*The 2030 and 2070 planning decades are used in this comparison because they represent the earliest and latest planning decades in both the 2021 and 2026 RWPs.

\*\*Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

## DRAFT Region M 2026 Regional Water Plan (RWP) Source Availability Comparison to 2021 RWP Water Volumes Shown in Acre-Feet per year

Region M Total						
Groundwater availability total	198,505	188,413	-5.1%	234,617	225,342	-4.0%
Reuse availability total	59,410	45,342	-23.7%	79,256	76,456	-3.5%
Surface Water availability total	1,089,340	1,046,637	-3.9%	1,088,514	1,042,644	-4.2%

\*The 2030 and 2070 planning decades are used in this comparison because they represent the earliest and latest planning decades in both the 2021 and 2026 RWPs.

\*\*Since reservoir sources can exist across multiple counties, the county field value, 'reservoir' is applied to all reservoir sources.

**Appendix B Correspondence with TWDB  
Regarding Hydrologic Variance Requests**

DRAFT

**APPENDIX B.1**

**TWDB Hydrologic Variance Request Approval Letter**

November 9, 2023

Mr. James Darling  
Chair  
Region M Regional Water Planning Group  
c/o Rio Grande Regional Water Authority  
322 S. Missouri Ave  
Weslaco, TX 78596

Dear Chairman Darling:

I have reviewed your request dated August 31, 2023, for approval of alternative water supply assumptions to be used in determining existing and future surface water availability. This letter confirms that the TWDB approves the following assumptions:

1. Incorporate updated water rights as of July 2023 in the Rio Grande WAM in the assessment of existing and future supply.
2. Use modified irrigation patterns above Fort Quitman in the Rio Grande WAM so that diversions only occur from March through October in the assessment of existing and future supply.
3. Model the San Solomon Springs as cut off from the rest of the basin in the Rio Grande WAM in the assessment of existing and future supply.
4. Estimate source water available for a reuse water management strategy based on the estimated amount of water returned to a utility's wastewater treatment plant for each decade, less the amount of reuse water already being utilized as existing supply. The amount of water returned to a utility's wastewater treatment plant will be estimated at 50% of the utility's projected water demands, adjusted for water conservation and drought management strategies, unless site-specific information is available. This method will be applied in the Rio Grande WAM and the Nueces-Rio Grande Coastal Basin WAM in the assessment of future reuse supply.
5. Incorporate updated water rights as of July 2023 in the Nueces-Rio Grande Coastal Basin WAM in the assessment of existing and future supply.

James Darling  
November 9, 2023  
Page 2

6. Modify the priority dates for the three reservoirs included in the Delta Region Water Management Strategy when assessing strategy supply using the Nueces-Rio Grande Coastal Basin WAM.

While the use of these modified conditions may be reasonable for planning purposes, WAM RUN3 would be utilized by the Texas Commission on Environmental Quality for analyzing permit applications. It is acceptable to use the modified conditions for WMS supply evaluations only if the yield produced is more conservative (less) for surface water appropriations than WAM RUN3.

While the TWDB authorizes these modification to evaluate existing and future water supplies for development of the 2026 Region M RWP, it is the responsibility of the RWPG to ensure that the resulting estimates of water availability are reasonable for drought planning purposes and will reflect conditions expected in the event of actual drought conditions; and in all other regards will be evaluated in accordance with the most recent version of regional water planning contract Exhibit C, *General Guidelines for Development of the 2026 Regional Water Plans*.

If you have any questions, please do not hesitate to contact Kevin Smith of our Regional Water Planning staff at 512-771-8797 or [kevin.smith@twdb.texas.gov](mailto:kevin.smith@twdb.texas.gov) if you have any questions.

Sincerely,

Jeff Walker Digitally signed by Jeff Walker  
Date: 2023.11.16 09:21:01  
-06'00

Jeff Walker  
Executive Administrator

- c: Manuel Cruz, Lower Rio Grande Valley Development Council  
Jaime Burke, P.E., Black & Veatch, Corp.  
Jennifer Jackson, WSP (Region E)  
Kevin Smith, Water Supply Planning  
Nelun Fernando, Ph.D., Surface Water

**APPENDIX B.2**

**Region M Hydrologic Variance Request Submittal**





\*Jim Darling, *Chairman*  
Rio Grande Regional Water Authority

August 31, 2023

\*Sonny Hinojosa, *Vice-Chairman*  
HCID #2, San Juan,

\*Donald K. McGhee, *Secretary*  
Hydro Systems, Inc., Harlingen

\*Frank Schuster  
Val Verde Vegetable Co., McAllen

\*Nick Benavides  
Nick Benavides, Company, Laredo

Glenn Jarvis  
Attorney, McAllen

Marilyn D. Gilbert, MBA  
Brownsville PUB

Tomas Rodriguez  
Public, Laredo

Carlos Garza, P.E.  
AEC Engineering, LLC., Edinburg

Joe Rathmell  
Zapata County Judge

Jaime Flores  
Arroyo Colorado Partnership, Weslaco

Dale Murden  
Texas Citrus Mutual, Mission

Neal Wilkins, Ph.D.  
East Foundation

Jorge Flores  
Eagle Pass Water Works

David L. Fuentes  
Hidalgo County Commissioner

Tom McLemore  
Harlingen Irrigation District

Debbie Farmer  
Wintergarden GCD, GMA 13

Robert Latham  
Magic Valley Generating Station

Steven Sanchez  
North Alamo Water Supply Corp

Louie Pena  
Brush Country GCD, Falfurrias

\*Executive Committee

Mr. Jeff Walker  
Executive Administrator  
Texas Water Development Board  
P.O. Box 13231  
1700 North Congress Avenue  
Austin, Texas 78711-3231

**Subject: Submittal of hydrologic variance checklists by the Rio Grande Regional Water Planning Group (Region M)**

Dear Mr. Walker:

The Rio Grande Regional Water Planning Group (RGRWPG) approved hydrologic assumptions and needed hydrologic variances for submittal to the TWDB at the August 2, 2023, RGRWPG meeting. The RGRWPG's hydrologic variance checklists for the Rio Grande Basin and the Nueces-Rio Grande Basin are attached for your consideration.

We appreciate your consideration of this request. Should you have any questions regarding this submittal, please contact our Consultant, Jaime Burke, via phone at (512) 271-4472 or via email at [burkej@bv.com](mailto:burkej@bv.com). If further evaluation is necessary, the RGRWPG would welcome the TWDB's support in this effort.

Very Truly Yours,

  
James Darling, Chairman  
Rio Grande Regional Water Planning Group

Enclosures: Hydrologic Variance Checklists for Rio Grande and Nueces-Rio Grande (PDF)

C: Mr. Kevin Smith, TWDB (electronically)  
Mr. Manuel Cruz, LRGVDC (electronically)

*Stewards of water resources from Amistad to the Gulf*

## Surface Water Hydrologic Variance Request Checklist

Texas Water Development Board (TWDB) rules<sup>1</sup> require that regional water planning groups (RWPG) use most current Water Availability Models (WAM) from the Texas Commission on Environmental Quality (TCEQ) and assume full utilization of existing water rights and no return flows for surface water supply analysis. Additionally, evaluation of existing stored surface water available during Drought of Record conditions must be based on Firm Yield using anticipated sedimentation rates. However, the TWDB rules also allow, and **we encourage**, RWPGs to use more representative, water availability modeling assumptions; better site-specific information; or justified operational procedures other than Firm Yield with written approval (via a Hydrologic Variance) from the Executive Administrator in order to better represent and therefore prepare for expected drought conditions.

RWPGs must use this checklist, which is intended to save time and reduce effort, to request a Hydrologic Variance for estimating the availability of surface water sources. For Questions 4 – 10, please indicate whether the requested variance is for determining Existing Supply, Strategy Supply, or both. Please complete a separate checklist for each river basin in which variances are being requested.

**Water Planning Region:** M

1. Which major river basin does the request apply to? Please specify if the request only applies part of the basin or only to certain reservoirs.

Rio-Grande Basin

2. Please give a brief, bulleted, description of the requested hydrologic variances including how the alternative availability assumptions vary from rule requirements, how the modifications will affect the associated annual availability volume(s) in the regional water plan, and why the variance is necessary or provides a better basis for planning. You must provide more-detailed descriptions in the subsequent checklist questions. Attach any available documentation supporting the request.
  - Updated water rights data as of July 2023 will be incorporated into the WAM, as available.
    - a. This variance provides more up-to-date data for the model.
  - The Rio Grande WAM will be run to be consistent with Region E with respect to the following:
    - a. Irrigation demand patterns above Fort Quitman will be modified so that diversions only occur March through October, which is consistent with the operations of the Rio Grande Project. This demand pattern change does not have a discernible impact on the firm yield of the Amistad-Falcon system in Region M.
    - b. Modeling the San Solomon Springs (within Region E) to be cut off from the rest of the basin (impact to Region F). This should not have a discernible impact on the firm yield of the Amistad-Falcon system in Region M.

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<sup>1</sup> 31 Texas Administrative Code (TAC) §§ 357.10(14) and 357.32(c)

- Source water available for a reuse water management strategy will be determined based on the estimated amount of water returned to a utility's WWTPs for each decade, less the amount of reuse water already being utilized as existing supply.
  - a. The amount of water returned to a utility's WWTP will be estimated at 50% of the utility's projected water demands, adjusted for water conservation and drought management strategies, unless site-specific information is available.

- i. Direct Reuse does not require WAM modeling, since there are no return flows
    - ii. Indirect Reuse would be entered as a return flow to assess downstream availability

3. Was this request submitted in a previous planning cycle? If yes, please indicate which cycle and note how it is different, if at all, from the previous request?

Yes

These variances were requested last cycle, with the exception of the San Solomon Springs cut off variance. Region E let us know about that variance this cycle, and we thought we should include it as well for consistency.

4. Are you requesting to extend the period of record beyond the current applicable WAM hydrologic period? If yes, please describe the proposed methodology. Indicate whether you believe there is a new drought of record in the basin.

No

Choose an item.

Click or tap here to enter text.

5. Are you requesting to use a reservoir safe yield? If yes, please describe in detail how the safe yield would be calculated and defined, which reservoir(s) it would apply to, and why the modification is needed or preferable for drought planning purposes.

No

Choose an item.

Click or tap here to enter text.

6. Are you requesting to use a reservoir yield other than firm yield or safe yield? If yes, please describe, in a bulleted list, each modification requested including how the alternative yield was calculated, which reservoir(s) it applies to, and why the modification is needed or preferable for drought planning purposes. Examples of alternative reservoir yield analyses may include using an alternative reservoir level, conditional reliability, or other special reservoir operations.

No

Choose an item.

Click or tap here to enter text.

7. Are you requesting to use a different model (such as a RiverWare or Excel-based models) than RUN 3 of the applicable TCEQ WAM? If yes, please describe the model being considered including how it incorporates water rights and prior appropriation and how it is more conservative than RUN 3 of the applicable TCEQ WAM.

No

Choose an item.

Click or tap here to enter text.

8. Are you requesting to use a modified TCEQ WAM? If yes, please describe in a bulleted list all modifications in detail including all specific changes to the WAM and whether the modified WAM is more conservative than the TCEQ WAM RUN 3. Examples of WAM modifications may include adding subordination agreements, contracts, updated water rights, modified spring flows, updated lake evaporation, updated sedimentation<sup>2</sup>, system or reservoir operations, or special operational procedures into the WAM.

Yes

Existing and Strategy Supply

- Sedimentation will be incorporated for major reservoirs for 2030 and 2080, based on IBWC data, and the decades in between will be interpolated.
- Updated water rights data as of July 2023 will be incorporated into the Rio Grande WAM, as available.
- The Rio Grande WAM will be run to be consistent with Region E with respect to the following:
  - a. Irrigation demand patterns above Fort Quitman will be modified so that diversions only occur March through October, which is consistent with the operations of the Rio Grande Project. This demand pattern change does not have a discernible impact on the firm yield of the Amistad-Falcon system in Region M.
  - b. Modeling the San Solomon Springs (within Region E) to be cut off from the rest of the basin (impact to Region F). This should not have a discernible impact on the firm yield of the Amistad-Falcon system in Region M.
- Source water available for a reuse water management strategy will be determined based on the estimated amount of water returned to a utility's WWTPs for each decade, less the amount of reuse water already being utilized as existing supply.

---

<sup>2</sup> Updating anticipated sedimentation rates does not require a hydrologic variance under 31 TAC § 357.10(14). The Technical Memorandum will require providing details regarding the sedimentation methodology utilized. Please consider providing that information with this request.

- a. The amount of water returned to a utility's WWTP will be estimated at 50% of the utility's projected water demands, adjusted for water conservation and drought management strategies, unless site-specific information is available.

- i. Direct Reuse does not require WAM modeling, since there are no return flows
- ii. Indirect Reuse would be entered as a return flow to assess downstream availability

9. Are you requesting to include return flows in the modeling? If yes, are you doing so to model an indirect reuse water management strategy (WMS)? Please provide complete details regarding the proposed methodology for determining reuse WMS availability.

Yes

Strategy Supply

- a. The amount of water returned to a utility's WWTP will be estimated at 50% of the utility's projected water demands, adjusted for water conservation and drought management strategies, unless site-specific information is available.

- i. Direct Reuse does not require WAM modeling, since there are no return flows
- ii. Indirect Reuse would be entered as a return flow to assess downstream availability

10. Are any of the requested Hydrologic Variances also planned to be used by another region for the same basin? If yes, please indicate the other Region. Please indicate if unknown.

Yes

Region E, as described above.

11. Please describe any other variance requests not captured on this checklist or add any other information regarding the variance requests on this checklist.

[Click or tap here to enter text.](#)



## Surface Water Hydrologic Variance Request Checklist

Texas Water Development Board (TWDB) rules<sup>1</sup> require that regional water planning groups (RWPG) use most current Water Availability Models (WAM) from the Texas Commission on Environmental Quality (TCEQ) and assume full utilization of existing water rights and no return flows for surface water supply analysis. Additionally, evaluation of existing stored surface water available during Drought of Record conditions must be based on Firm Yield using anticipated sedimentation rates. However, the TWDB rules also allow, and **we encourage**, RWPGs to use more representative, water availability modeling assumptions; better site-specific information; or justified operational procedures other than Firm Yield with written approval (via a Hydrologic Variance) from the Executive Administrator in order to better represent and therefore prepare for expected drought conditions.

RWPGs must use this checklist, which is intended to save time and reduce effort, to request a Hydrologic Variance for estimating the availability of surface water sources. For Questions 4 – 10, please indicate whether the requested variance is for determining Existing Supply, Strategy Supply, or both. Please complete a separate checklist for each river basin in which variances are being requested.

**Water Planning Region:** M

1. Which major river basin does the request apply to? Please specify if the request only applies part of the basin or only to certain reservoirs.

Nueces-Rio Grande Coastal Basin

2. Please give a brief, bulleted, description of the requested hydrologic variances including how the alternative availability assumptions vary from rule requirements, how the modifications will affect the associated annual availability volume(s) in the regional water plan, and why the variance is necessary or provides a better basis for planning. You must provide more-detailed descriptions in the subsequent checklist questions. Attach any available documentation supporting the request.
  - Updated water rights data as of July 2023 will be incorporated into the WAM, as available.
    - a. This variance provides more up-to-date data for the model.
  - When modeling the Delta Region Water Management Strategy using the Nueces-Rio Grande Coastal Basin WAM, the priority dates for the three reservoirs will be modified to reflect one or more reservoirs as senior, and the others as more junior, with respect to one another.
    - a. This variance allowed for better analysis of how the reservoirs could be operated to obtain the most storage.
  - Source water available for a reuse water management strategy will be determined based on the estimated amount of water returned to a utility's WWTPs for each decade, less the amount of reuse water already being utilized as existing supply.

---

<sup>1</sup> 31 Texas Administrative Code (TAC) §§ 357.10(14) and 357.32(c)

- a. The amount of water returned to a utility's WWTP will be estimated at 50% of the utility's projected water demands, adjusted for water conservation and drought management strategies, unless site-specific information is available.
  - i. Direct Reuse does not require WAM modeling, since there are no return flows
  - ii. Indirect Reuse would be entered as a return flow to assess downstream availability
  
3. Was this request submitted in a previous planning cycle? If yes, please indicate which cycle and note how it is different, if at all, from the previous request?

Yes

This was included as part of an Amendment to the 2021 Region M Plan submitted in 2022.

4. Are you requesting to extend the period of record beyond the current applicable WAM hydrologic period? If yes, please describe the proposed methodology. Indicate whether you believe there is a new drought of record in the basin.

No

Choose an item.

Click or tap here to enter text.

5. Are you requesting to use a reservoir safe yield? If yes, please describe in detail how the safe yield would be calculated and defined, which reservoir(s) it would apply to, and why the modification is needed or preferable for drought planning purposes.

No

Choose an item.

Click or tap here to enter text.

6. Are you requesting to use a reservoir yield other than firm yield or safe yield? If yes, please describe, in a bulleted list, each modification requested including how the alternative yield was calculated, which reservoir(s) it applies to, and why the modification is needed or preferable for drought planning purposes. Examples of alternative reservoir yield analyses may include using an alternative reservoir level, conditional reliability, or other special reservoir operations.

No

Choose an item.

Click or tap here to enter text.

7. Are you requesting to use a different model (such as a RiverWare or Excel-based models) than RUN 3 of the applicable TCEQ WAM? If yes, please describe the model being considered including how it incorporates water rights and prior appropriation and how it is more conservative than RUN 3 of the applicable TCEQ WAM.

No

Choose an item.

Click or tap here to enter text.

8. Are you requesting to use a modified TCEQ WAM? If yes, please describe in a bulleted list all modifications in detail including all specific changes to the WAM and whether the modified WAM is more conservative than the TCEQ WAM RUN 3. Examples of WAM modifications may include adding subordination agreements, contracts, updated water rights, modified spring flows, updated lake evaporation, updated sedimentation<sup>2</sup>, system or reservoir operations, or special operational procedures into the WAM.

Yes

Existing and Strategy Supply

- Updated water rights data as of July 2023 will be incorporated into the WAM, as available.
  - a. This variance provides more up-to-date data for the model.
- When modeling the Delta Region Water Management Strategy using the Nueces-Rio Grande Coastal Basin WAM, the priority dates for the three reservoirs will be modified to reflect one or more reservoirs as senior, and the others as more junior, with respect to one another. (Strategy only)
  - a. This variance allowed for better analysis of how the reservoirs could be operated to obtain the most storage.
- Source water available for a reuse water management strategy will be determined based on the estimated amount of water returned to a utility's WWTPs for each decade, less the amount of reuse water already being utilized as existing supply. (Strategy only)
  - a. The amount of water returned to a utility's WWTP will be estimated at 50% of the utility's projected water demands, adjusted for water conservation and drought management strategies, unless site-specific information is available.
    - i. Direct Reuse does not require WAM modeling, since there are no return flows
    - ii. Indirect Reuse would be entered as a return flow to assess downstream availability
- Because there are no major reservoirs in this basin, no sedimentation will be incorporated.

---

<sup>2</sup> Updating anticipated sedimentation rates does not require a hydrologic variance under 31 TAC § 357.10(14). The Technical Memorandum will require providing details regarding the sedimentation methodology utilized. Please consider providing that information with this request.



9. Are you requesting to include return flows in the modeling? If yes, are you doing so to model an indirect reuse water management strategy (WMS)? Please provide complete details regarding the proposed methodology for determining reuse WMS availability.

Yes

### Strategy Supply

- Source water available for a reuse water management strategy will be determined based on the estimated amount of water returned to a utility's WWTPs for each decade, less the amount of reuse water already being utilized as existing supply.
  - a. The amount of water returned to a utility's WWTP will be estimated at 50% of the utility's projected water demands, adjusted for water conservation and drought management strategies, unless site-specific information is available.
    - i. Direct Reuse does not require WAM modeling, since there are no return flows
    - ii. Indirect Reuse would be entered as a return flow to assess downstream availability

10. Are any of the requested Hydrologic Variances also planned to be used by another region for the same basin? If yes, please indicate the other Region. Please indicate if unknown.

No

Click or tap here to enter text.

11. Please describe any other variance requests not captured on this checklist or add any other information regarding the variance requests on this checklist.

Click or tap here to enter text.

**Appendix C Model Input/Output Files (Electronic)**

DRAFT

**Appendix D Potentially Feasible  
Water Management Strategies Identified to Meet Needs**

DRAFT

Appendix D: Potentially Feasible Water Management Strategies Identified to Meet Needs

Every WUG Entity with an Identified Need			WMSs to be considered by statute <sup>1</sup>													Additional WMSs to be considered by rule									
No.	WUG Name	Maximum need 2030-2080 (af/yr)	conservation - water use reduction	conservation - water loss mitigation	drought management	reuse	management of existing supplies	development of large-scale marine seawater or brackish groundwater	conjunctive use	acquisition of available existing supplies	development of new supplies	development of regional water supply or regional management of water supply facilities	voluntary transfer of water (including regional water banks, sales, leases, options, subordination agreements, and financing agreements)	emergency transfer of water under Section 11.1.139	system optimization, reallocation of reservoir storage to new uses, contracts, water marketing, enhancement of yield, improvement of water quality	new surface water supply	new groundwater supply	brush management; precipitation enhancement	inter-basin transfers of surface water	aquifer storage and recovery	cancellation of water rights	rainwater harvesting	other (biological control of Arundo Donax)		
1	Alamo	-811	PF	PF	PF	nPF	nPF	PF	nPF	nPF	PF	nPF	PF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF		
2	Eagle Pass	-314	PF	PF	PF	nPF	nPF	PF	nPF	nPF	PF	nPF	PF	nPF	nPF	nPF	PF	nPF	nPF	PF	nPF	nPF	nPF		
3	East Rio Hondo WSC	-1,050	PF	PF	PF	nPF	PF	PF	nPF	PF	PF	nPF	PF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF		
4	Edinburg	-9,101	PF	PF	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
5	El Sauz WSC	-99	PF	PF	PF	nPF	PF	nPF	nPF	PF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
6	El Tanque WSC	-24	PF	PF	PF	nPF	PF	nPF	nPF	PF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
7	La Grulla	-1,171	PF	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
8	La Joya	-337	PF	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
9	La Villa	-56	PF	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
10	McAllen	-15,080	PF	PF	PF	PF	PF	PF	nPF	PF	PF	nPF	PF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF		
11	Mission	-9,609	PF	PF	PF	PF	nPF	PF	nPF	nPF	PF	nPF	PF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF		
12	North Alamo WSC	-19,699	PF	PF	PF	nPF	PF	PF	nPF	PF	PF	nPF	PF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF		
13	Olmito WSC	-166	PF	PF	PF	nPF	PF	nPF	nPF	PF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
14	Port Mansfield PUD	-292	PF	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
15	Primera	-361	PF	PF	PF	nPF	nPF	PF	nPF	nPF	PF	nPF	PF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF		
16	Rio Grande City	-1,978	PF	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
17	Rio WSC	-433	PF	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
18	Sharyland WSC	-5,394	PF	PF	PF	nPF	PF	PF	nPF	PF	PF	nPF	PF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF		
19	Union WSC	-939	PF	PF	PF	nPF	PF	nPF	nPF	PF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
20	Webb County	-302	PF	PF	PF	nPF	nPF	nPF	nPF	nPF	PF	nPF	PF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF		
21	County-Other, Cameron	-2,491	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF	nPF	PF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF		
22	Irrigation, Cameron	-338,521	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF		
23	Steam Electric Power, Cameron	-40	PF	PF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
24	County-Other, Hidalgo	-964	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF	nPF	PF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF		
25	Steam Electric Power, Hidalgo	-390	PF	PF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
26	Irrigation, Hidalgo	-388,271	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF		
27	Mining, Maverick	-3,515	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		
28	Manufacturing, Maverick	-61	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF		

Every WUG Entity with an Identified Need			WMSs to be considered by statute <sup>1</sup>												Additional WMSs to be considered by rule										
No.	WUG Name	Maximum need 2030-2080 (af/yr)	conservation - water use reduction	conservation - water loss mitigation	drought management	reuse	management of existing supplies	development of large-scale marine seawater or brackish groundwater	conjunctive use	acquisition of available existing supplies	development of new supplies	development of regional water supply or regional management of water supply facilities	voluntary transfer of water (including regional water banks, sales, leases, options, subordination agreements, and financing agreements)	emergency transfer of water under Section 11.139	system optimization, reallocation of reservoir storage to new uses, contracts, water marketing, enhancement of yield, improvement of water quality	new surface water supply	new groundwater supply	brush management; precipitation enhancement	interbasin transfers of surface water	aquifer storage and recovery	cancellation of water rights	rainwater harvesting	other (biological control of Arundo Donax)		
29	Irrigation, Maverick	-16,133	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF	
30	County-Other, Starr	-392	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF	nPF	PF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF
31	Irrigation, Starr	-19,015	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF
32	County-Other, Webb	-1,117	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF
33	Irrigation, Willacy	-75,700	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF
34	County-Other, Zapata	-32	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF
35	Irrigation, Zapata	-2,862	PF	PF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	nPF	PF

<sup>1</sup> Texas Water Code §16.053(e)(5)

nPF = considered but determined 'not potentially feasible' (may include WMSs that were initially identified as potentially feasible)

PF = considered 'potentially feasible' and therefore evaluated