

DRAFT

TECHNICAL MEMORANDUM

2021 Rio Grande Regional Water Plan

B&V PROJECT NO. 123456

PREPARED FOR

Texas Water Development Board

6 SEPTEMBER 2018

September 6, 2018

Mr. Jeff Walker
Executive Administrator
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711

Re: Technical Memorandum

Dear Mr. Walker,

At its meeting on August 1, 2018, the Rio Grande Regional Water Planning Group (RWPG) reviewed the information pertinent to the Technical Memorandum, and approved the submittal of this information. The enclosed memorandum and attachments serve as the Technical Memorandum for Region M.

The Technical Memorandum is intended to be a snapshot of the Region's progress in updating the Regional Water Plan, and the data included are preliminary. Black & Veatch will continue to work with stakeholders and the Regional Water Planning Group to refine the data over the remainder of the planning cycle.

Please contact me with any questions you may have.

Sincerely,

Sara Eatman
Region M Technical Consultant, Black & Veatch

Cc:

Tomas Rodriguez, Region M Chair
Sara Eatman, Technical Consultant, Black & Veatch
William Alfaro, Regional Water Planning, Texas Water Development Board
Ron Garza, Executive Administrator, Lower Rio Grande Valley Development Council

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- Appendix A: DB22 Reports
- Appendix B: Region M Hydrologic Variance Request
- Appendix C: Region E Hydrologic Variance Request
- Appendix D: Rio Grande WAM files (electronic)
- Appendix E: Nueces-Rio Grande WAM files (electronic)

Simplified Planning

Simplified Planning is an option provided in Senate Bill 1511, 85th Legislative Session, which Regional Water Planning Groups may pursue if there are “no significant changes to the water availability, water supplies, or water demands in the regional water planning area” (Second Amended Exhibit C (2017-2021), General Guidelines for Fifth Cycle of Regional Water Plan Development, April 2018, TWDB).

The Rio Grande Regional Water Planning Group (Region M) does not intend to pursue simplified planning.

Summary of Public Comments

A 14-day public comment period is required by the TWDB after the Region M meeting, held on August 1, 2018. As of August 16, 2018, no comments were received.

TWDB DB22 Reports

The following reports have been generated from the TWDB 2022 State Water Planning database (DB22), and are included in Appendix A: DB22 Reports:

1. Population Projections
2. Water Demand Projections
3. Source Water Availability
4. Existing Water Supplies
5. Identified Water Needs/Surpluses
6. WUG Category Summary
7. Source Water Balance
8. Comparison of Availability, Supply, Demands, and Needs to 2017 RWP

Source Water Availability Assumptions

The following discussion describes the models and assumptions that have been used to estimate the availability of water from groundwater, surface water, and other sources. Region M has submitted a Hydrologic Variance (Appendix B: Region M Hydrologic Variance Request) on August 17 2018, which has not yet been approved by the TWDB Executive Administrator.

SURFACE WATER

Region M relies on two hydrologic models for surface water availability: the Rio Grande WAM and to a much lesser extent, the Nueces-Rio Grande WAM. For regional water planning purposes, the most current WAM Run 3 is used to estimate existing and future water supplies, with the following assumptions:

1. Full exercise of existing surface water rights;
2. Zero effluent discharges unless specifically required by a surface water right (hydropower, industrial rights, etc.);

Modeling versions, assumptions, and results are included here.

Rio Grande WAM

The Rio Grande WAM models the Rio Grande Basin in Texas and Mexico over a 61-year period of record of 1940 to 2000.

The 2016 Region M Water Plan relied on a modified Rio Grande WAM which consolidated the water rights diversions to 14 aggregated demands, 7 diverted from the Middle Rio Grande Basin, and 7 from the Lower Rio Grande Basin (“abbreviated WAM”). These modifications and several other corrections were made in close coordination with the water modeling staff at TCEQ, and have been adopted in revisions to the TCEQ’s current Rio Grande WAM.

The TCEQ staff has since performed a detailed review and update to the abbreviated Rio Grande WAM, which was posted August 7, 2018. This version is the “current” Rio Grande WAM, which includes revisions based on feedback from Region E, F and M. If further revisions are made to the Rio Grande WAM input files, the Technical Consultant will evaluate the feasibility of reevaluating the firm yield with guidance from the Region M Planning Group.

Region M has worked closely with TECQ to update the distribution of municipal, and irrigation Class A and B water rights as water rights ownership and classification have changed.

The hydrologic variance request submitted by Region E (Appendix C: Region E Hydrologic Variance Request) on February 22, 2018 describes some of the updates and revisions that were requested to the modeling assumptions and structure in the upper Rio Grande basin. TCEQ corrected flows from San Solomon and Griffin Springs so that they’re modeled to enter upstream of Balmorhea in the Pecos Basin rather than downstream of water right diversion points; and three water rights for three users in the Upper Rio Grande Basin were removed because the right was not recognized for these claimants in adjudication. These revisions are a part of the current WAM input files as of 8/7/18.

The Region M Planning Group has requested a hydrologic variance that includes a modification to the Rio Grande WAM consistent with the approved Region E hydrologic variance. The irrigation demand patterns above Fort Quitman are modified so that diversions only occur March through October, which is consistent with the operations of the Rio Grande Project.

In order to establish decadal firm yield estimates over the planning horizon, the rate of sedimentation was estimated. Reservoir capacities for Amistad and Falcon will be based on the current estimates for sedimentation in 2020 and 2070, and a linear interpolation is used to determine capacity for the decades between.

Table 1 Rio Grande WAM Versions, Firm Supply Evaluation Results

VERSION	MODEL RUN	KEY CHANGES	2020 FIRM YIELD (ACFT/YR)	2070 FIRM YIELD (ACFT/YR)
2016 RWP "abbreviated"	Approved by EA 6/2/2014 Run by Kennedy Resources Company 11/13/2013	<ul style="list-style-type: none"> 14 aggregated representative water rights at two diversion points Updated sedimentation 	1,060,616	1,053,834
2021 RWP "current"	Downloaded 8/19/18 Run by Black & Veatch 8/21/18	<ul style="list-style-type: none"> Revisions consistent with Region E's Hydrologic Variance Updated water right class distribution Updated sedimentation 	1,079,381	1,078,349

Projections of water rights classification conversion due to urbanization can impact the yield from the Amistad-Falcon system as a result of demands being met from different storage pools. The Firm Yield of the system used as the basis for the existing water supplies and water management strategies uses current water right class distribution and does not include an assumption of urbanization in the yield calculation. As the rate of conversion from irrigation to municipal lands, and therefore water rights, is projected to continue over the planning horizon, the impact to the firm yield may be estimated and reported under the discussion of cumulative effects of the proposed projects and strategies on the planning area.

The Rio Grande WAM files are included as Appendix D (electronic).

Nueces Rio Grande WAM

The Nueces-Rio Grande WAM (downloaded from TCEQ 6/21/18) has been run by Black & Veatch on 6/27/18 without any modifications to estimate firm yield. Nueces-Rio Grande WAM has a period of record from 1948 through 1998. There are only 58 water rights in total, and only 4 that have a

firm yield on a monthly basis. The two water rights in Region M with a firm yield are shown in Table 2.

Table 2 Nueces-Rio Grande WAM, Firm Yield Evaluation Results

WR NUMBER	OWNER	COUNTY	USE TYPE	PERMITTED DIVERSION (ACFT/YR)	FIRM YIELD (ACFT/YR)
22-4527	Adams Gardens Irrigation District #19	Cameron	IRR	50	50
22-4552	Cameron Co Irrigation District #16	Cameron	IRR	300	300

Nueces-Rio Grande WAM files are included as Appendix E.

GROUNDWATER

The most recent reports from Groundwater Management Areas (GMA) 16 (GR17-025 MAG) and GMA 13 (GR17-027 MAG) show the Modeled Available Groundwater (MAG) availabilities for each decade of the planning horizon.

Availability for existing and future supplies for the Carrizo-Wilcox, Yegua Jackson, Gulf Coast, and other minor aquifers has been developed in accordance with Modeled Available Groundwater estimates, as calculated by TWDB on or before June 1, 2018. Additionally, the non-relevant DFC-compatible aquifer availabilities provided by TWDB (May 16, 2018) are included as groundwater available for current and future use.

Identification of Potentially Feasible Water Management Strategies¹

The following documented process used by the RWPG to identify potentially feasible WMS was Approved by the Rio Grande Regional Water Planning Group meeting unanimously January 24 , 2018

In the development of the 2021 Rio Grande Regional Water Plan (Region M Plan), the process for Identification of Potentially Feasible Water Management Strategies outlined below will be followed.²

The 2021 Region M Plan is an update of the 2016 Region M Plan, but will require some modification as a result of updated projections and changes in planning rules:

- i. There are updated projections for population, GPCD, and municipal water demand based on the data from the State Demographer’s Office, the Water Use Survey, and local input.
- ii. The Texas Water Development Board (TWDB) has shifted population and water demand projections from city-based WUGs to utility-based WUGs.
- iii. There are updated non-municipal water demand projections based on updated data and revised methodologies.
- iv. Groundwater availability will be based the Modeled Available Groundwater (MAG) values from the Groundwater Management Area (GMA) process where those projections exist.
- v. Non-relevant aquifers (aquifers or portions of aquifers considered non-relevant in the GMA process) may be evaluated as sources.
- vi. The Rio Grande WAM Run 3 adopted by the TCEQ as the current WAM will be used to determine Firm Yield from the Amistad-Falcon Reservoir System.³

These changes will affect the demand projections, existing supplies, and/or new supplies from Water Management Strategies (WMS). Hence, the RWPG will be evaluating WMS from the 2016 Region M Plan to determine if they are still viable in the 2021 Region M Plan and soliciting feedback from WWPs and WUGs in Region M.

¹ Schedule shown is subject to change based on the availability of the fundamental data/decisions in Item 1 and/or TWDB discretion.

² Pursuant to the regional water planning rules which state: “Before a regional water planning group begins the process of identifying potentially feasible water management strategies, it shall document the process by which it will list all possible water management strategies and identify the water management strategies that are potentially feasible for meeting a need in the region.”

1. Current water planning information, including specific WMS of interest, will be solicited from Water User Groups (WUGs) and Wholesale Water Providers (WWPs) in Summer 2018.
 - a. Solicitation of planning information will include a draft list of WMS deemed potentially feasible to meet projected needs.
 - b. Draft list will generally include the recommended WMS in the 2016 Region M Plan, WMSs in local water plans, and/or other strategies perceived to be of interest to WUGs/WWPs.
 - c. WUGs/WWPs will be encouraged to classify each water management strategy on their draft list as recommended, alternative, or rejected and provide comments.
2. A list of potentially feasible WMSs will be prepared based on an initial technical evaluation and the comments received, which will be available for consideration by the RWPG by early 2019.
3. Additional WMS may be brought forth to the RWPG for consideration until March of 2019.
4. Potentially Feasible WMS will then be evaluated by metrics developed and weighted by the RWPG.

Potentially Feasible WMS Identified by the RWPG

The following potentially feasible Water Management Strategies have been identified by the RWPG at this time.

Table 3 Potentially Feasible Water Management Strategies identified by RWPG as of 7/25/18

WMS
Advanced Conservation, including: <ul style="list-style-type: none"> • Advanced municipal conservation • Irrigation District conservation (loss prevention) • Agricultural conservation • Industrial conservation
Drought Management
Reuse <ul style="list-style-type: none"> • Direct, non-potable • Indirect non-potable • Direct potable
Management of Existing Water Supplies
Conjunctive use
Acquisition of Available Existing Water Supplies
Development of New Water Supplies
Developing Regional Water Supply Facilities or Providing Regional Management of Water Supply Facilities
Developing large-scale desalination facilities for seawater or brackish groundwater that serve local or regional brackish groundwater production zones identified and designated under TWC §16.060(b)(5)36
Developing large-scale desalination facilities for marine seawater that serve local or regional entities
Voluntary transfer of water within the region using, but not limited to, contracts, water marketing, regional water banks, sales, leases, options, subordination agreements, and financing agreements <ul style="list-style-type: none"> • Rio Grande water market for one-time sales • Conversion and transfer of water rights
Emergency transfer of water under TWC §11.139
Interbasin transfers of surface water
System optimization
Reallocation of reservoir storage to new uses
Enhancements of yields

WMS

Improvements to water quality

New surface water supply

New groundwater supply

Brush control

- Biological control of Arrundo Donax/Carrizo Cane
- Salt Cedar

Precipitation enhancement

Aquifer storage and recovery

Cancellation of water rights

Rainwater harvesting

Appendix A: DB22 Reports

- A-1: Population Projections
- A-2: Water Demand Projections
- A-3: Source Water Availability
- A-4: Existing Water Supplies
- A-5: Identified Water Needs/ Surpluses
- A-6: WUG Category Summary
- A-7: Source Water Balance
- A-8: Comparison to 2016 RWP

Region M Water User Group (WUG) Population

	WUG POPULATION					
	2020	2030	2040	2050	2060	2070
BROWNSVILLE	206,346	245,513	285,245	328,173	372,056	417,176
COMBES	3,411	3,986	4,567	5,195	5,840	6,501
EAST RIO HONDO WSC	27,978	32,687	33,340	37,155	40,906	45,540
EL JARDIN WSC	13,117	15,325	17,565	19,977	22,458	25,002
HARLINGEN	89,171	104,179	118,211	131,729	145,037	161,462
LA FERIA	8,610	10,059	11,530	13,113	14,742	16,411
LAGUNA MADRE WATER DISTRICT	18,783	21,944	25,150	28,603	32,157	35,798
LOS FRESNOS	6,573	7,679	8,801	10,009	11,253	12,528
MILITARY HIGHWAY WSC	23,315	28,060	32,845	37,795	42,809	47,806
NORTH ALAMO WSC	4,578	5,661	6,747	7,837	8,926	9,986
OLMITO WSC	6,275	7,331	8,404	9,558	10,746	11,962
PALM VALLEY	1,350	1,364	1,377	1,391	1,405	1,419
PRIMERA	4,758	5,560	6,373	7,247	8,148	9,070
RIO HONDO	2,777	3,244	3,718	4,229	4,755	5,292
SAN BENITO	29,602	34,583	39,638	45,082	50,682	56,421
SANTA ROSA	3,407	3,981	4,563	5,189	5,833	6,493
VALLEY MUD 2	2,832	3,308	3,791	4,313	4,849	5,397
COUNTY-OTHER	23,312	22,015	25,893	28,748	32,801	33,557
NUECES-RIO GRANDE BASIN TOTAL	476,195	556,479	637,758	725,343	815,403	907,821
BROWNSVILLE	1,257	1,496	1,738	1,999	2,267	2,542
EL JARDIN WSC	404	472	541	616	692	771
MILITARY HIGHWAY WSC	144	173	203	233	264	295
VALLEY MUD 2	235	275	315	358	402	448
COUNTY-OTHER	739	698	821	912	1,040	1,064
RIO GRANDE BASIN TOTAL	2,779	3,114	3,618	4,118	4,665	5,120
CAMERON COUNTY TOTAL	478,974	559,593	641,376	729,461	820,068	912,941
AGUA SUD	57,800	71,745	85,741	99,765	113,788	127,418
ALAMO	23,259	28,881	34,525	40,181	45,837	51,335
DONNA	20,021	24,860	29,719	34,587	39,456	44,189
EDCOUCH	3,837	4,765	5,696	6,629	7,562	8,469
EDINBURG	96,678	120,046	143,507	167,015	190,523	213,378
ELSA	7,362	9,140	10,927	12,717	14,508	16,248
HIDALGO	14,063	17,462	20,875	24,295	27,715	31,039
HIDALGO COUNTY MUD 1	7,909	8,937	9,912	10,843	11,737	12,576
LA JOYA	3,995	4,961	5,930	6,901	7,873	8,817
LA VILLA	2,508	3,114	3,723	4,332	4,942	5,536
MCALLEN	169,099	209,972	251,008	292,126	333,245	373,221
MERCEDES	19,732	24,501	29,290	34,088	38,886	43,551
MILITARY HIGHWAY WSC	19,071	22,951	26,865	30,915	35,017	39,103
MISSION	96,925	120,352	143,872	167,440	191,010	213,922
NORTH ALAMO WSC	162,960	201,502	240,156	278,948	317,715	355,415

Region M Water User Group (WUG) Population

	WUG POPULATION					
	2020	2030	2040	2050	2060	2070
PHARR	89,197	110,756	132,402	154,091	175,780	196,866
SAN JUAN	34,508	42,849	51,223	59,614	68,005	76,163
SHARYLAND WSC	72,459	89,974	107,558	125,178	142,798	159,928
WESLACO	44,194	57,073	68,676	80,515	92,319	103,339
COUNTY-OTHER	22,513	28,252	35,350	42,122	48,936	55,924
NUECES-RIO GRANDE BASIN TOTAL	968,090	1,202,093	1,436,955	1,672,302	1,907,652	2,136,437
AGUA SUD	10,978	13,626	16,285	18,949	21,612	24,201
HIDALGO	128	159	190	221	252	283
LA JOYA	1,055	1,310	1,566	1,823	2,079	2,329
MILITARY HIGHWAY WSC	376	453	530	610	690	771
MISSION	53	66	79	92	104	117
PHARR	23	29	34	40	46	51
COUNTY-OTHER	1,187	1,489	1,863	2,220	2,580	2,948
RIO GRANDE BASIN TOTAL	13,800	17,132	20,547	23,955	27,363	30,700
HIDALGO COUNTY TOTAL	981,890	1,219,225	1,457,502	1,696,257	1,935,015	2,167,137
JIM HOGG COUNTY WCID 2	4,589	4,984	5,324	5,703	6,032	6,336
COUNTY-OTHER	1,226	1,331	1,422	1,524	1,612	1,694
NUECES-RIO GRANDE BASIN TOTAL	5,815	6,315	6,746	7,227	7,644	8,030
COUNTY-OTHER	38	41	44	47	50	52
RIO GRANDE BASIN TOTAL	38	41	44	47	50	52
JIM HOGG COUNTY TOTAL	5,853	6,356	6,790	7,274	7,694	8,082
COUNTY-OTHER	24	22	20	18	16	15
NUECES BASIN TOTAL	24	22	20	18	16	15
EAGLE PASS	57,119	66,607	75,457	84,618	93,399	101,833
MAVERICK COUNTY	1,671	1,920	2,152	2,392	2,622	2,843
COUNTY-OTHER	4,293	3,942	3,614	3,276	2,951	2,636
RIO GRANDE BASIN TOTAL	63,083	72,469	81,223	90,286	98,972	107,312
MAVERICK COUNTY TOTAL	63,107	72,491	81,243	90,304	98,988	107,327
COUNTY-OTHER	1,219	1,371	1,509	1,647	1,767	1,876
NUECES-RIO GRANDE BASIN TOTAL	1,219	1,371	1,509	1,647	1,767	1,876
AGUA SUD	317	393	470	547	623	698
EL SAUZ WSC	1,617	1,829	2,025	2,218	2,391	2,548
EL TANQUE WSC	1,858	2,102	2,326	2,548	2,747	2,928
LA GRULLA	7,314	8,273	9,158	10,031	10,815	11,522
RIO GRANDE CITY	20,304	22,966	25,418	27,848	30,022	31,991
RIO WSC	6,224	7,040	7,791	8,535	9,202	9,806
ROMA	20,613	23,314	25,803	28,271	30,476	32,476
UNION WSC	7,215	8,161	9,032	9,894	10,667	11,367
COUNTY-OTHER	4,122	4,636	5,101	5,568	5,977	6,343
RIO GRANDE BASIN TOTAL	69,584	78,714	87,124	95,460	102,920	109,679
STARR COUNTY TOTAL	70,803	80,085	88,633	97,107	104,687	111,555

Region M Water User Group (WUG) Population

	WUG POPULATION					
	2020	2030	2040	2050	2060	2070
WEBB COUNTY	1,572	1,944	2,298	2,621	2,926	3,200
COUNTY-OTHER	49	61	72	82	91	100
NUECES BASIN TOTAL	1,621	2,005	2,370	2,703	3,017	3,300
COUNTY-OTHER	1,033	1,278	1,511	1,723	1,923	2,104
NUECES-RIO GRANDE BASIN TOTAL	1,033	1,278	1,511	1,723	1,923	2,104
LAREDO	301,124	372,380	440,247	502,142	560,482	613,020
MIRANDO CITY WSC	620	766	906	1,033	1,153	1,261
WEBB COUNTY	12,127	14,995	17,728	20,222	22,571	24,687
COUNTY-OTHER	1,503	1,860	2,198	2,507	2,799	3,061
RIO GRANDE BASIN TOTAL	315,374	390,001	461,079	525,904	587,005	642,029
WEBB COUNTY TOTAL	318,028	393,284	464,960	530,330	591,945	647,433
EAST RIO HONDO WSC	37	41	46	50	55	59
LYFORD	2,981	3,360	3,723	4,110	4,485	4,851
NORTH ALAMO WSC	6,406	7,220	8,000	8,832	9,637	10,424
PORT MANSFIELD PUD	592	668	740	817	891	964
RAYMONDVILLE	12,619	14,224	15,762	17,401	18,986	20,538
SEBASTIAN MUD	2,213	2,494	2,763	3,051	3,329	3,601
COUNTY-OTHER	416	472	525	579	629	684
NUECES-RIO GRANDE BASIN TOTAL	25,264	28,479	31,559	34,840	38,012	41,121
WILLACY COUNTY TOTAL	25,264	28,479	31,559	34,840	38,012	41,121
FALCON RURAL WSC	863	990	1,119	1,225	1,321	1,408
SAN YGNACIO MUD	1,002	1,174	1,363	1,571	1,786	2,010
SIESTA SHORES WCID	1,617	1,910	2,240	2,582	2,936	3,304
ZAPATA COUNTY	12,126	14,250	16,547	19,142	21,780	24,627
ZAPATA COUNTY WCID-HWY 16 EAST	345	404	469	541	615	692
COUNTY-OTHER	866	981	1,138	1,304	1,538	1,701
RIO GRANDE BASIN TOTAL	16,819	19,709	22,876	26,365	29,976	33,742
ZAPATA COUNTY TOTAL	16,819	19,709	22,876	26,365	29,976	33,742
REGION M TOTAL POPULATION	1,960,738	2,379,222	2,794,939	3,211,938	3,626,385	4,029,338

Region M Water User Group (WUG) Demand

	WUG DEMAND (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
BROWNSVILLE	35,262	40,949	46,882	53,560	60,613	67,922
COMBES	321	357	396	444	497	553
EAST RIO HONDO WSC	3,895	4,452	4,483	4,963	5,452	6,065
EL JARDIN WSC	1,480	1,677	1,887	2,125	2,383	2,650
HARLINGEN	15,797	17,992	20,088	22,212	24,412	27,160
LA FERIA	1,125	1,274	1,432	1,612	1,808	2,011
LAGUNA MADRE WATER DISTRICT	7,930	9,179	10,461	11,865	13,330	14,835
LOS FRESNOS	442	516	592	673	756	842
MILITARY HIGHWAY WSC	3,534	4,151	4,791	5,475	6,189	6,907
NORTH ALAMO WSC	742	900	1,062	1,227	1,395	1,560
OLMITO WSC	1,159	1,321	1,490	1,682	1,888	2,100
PALM VALLEY	250	246	244	244	246	248
PRIMERA	418	467	521	585	655	728
RIO HONDO	203	224	250	284	320	356
SAN BENITO	3,733	4,195	4,688	5,267	5,906	6,570
SANTA ROSA	296	326	360	402	450	500
VALLEY MUD 2	903	1,042	1,186	1,344	1,509	1,680
COUNTY-OTHER	3,810	3,507	4,048	4,449	5,065	5,179
MANUFACTURING	714	800	800	800	800	800
MINING	264	277	191	126	61	28
STEAM ELECTRIC POWER	3,423	3,423	3,423	3,423	3,423	3,423
LIVESTOCK	411	411	411	411	411	411
IRRIGATION	505,075	488,862	472,647	456,433	440,218	424,004
NUECES-RIO GRANDE BASIN TOTAL	591,187	586,548	582,333	579,606	577,787	576,532
BROWNSVILLE	215	249	286	326	369	414
EL JARDIN WSC	46	52	58	66	73	82
MILITARY HIGHWAY WSC	22	26	30	34	38	43
VALLEY MUD 2	75	87	98	111	125	139
COUNTY-OTHER	121	111	128	141	161	164
MANUFACTURING	933	1,046	1,046	1,046	1,046	1,046
STEAM ELECTRIC POWER	127	127	127	127	127	127
LIVESTOCK	25	25	25	25	25	25
IRRIGATION	32,142	31,110	30,078	29,046	28,015	26,983
RIO GRANDE BASIN TOTAL	33,706	32,833	31,876	30,922	29,979	29,023
CAMERON COUNTY TOTAL	624,893	619,381	614,209	610,528	607,766	605,555
AGUA SUD	6,198	7,465	8,781	10,138	11,533	12,904
ALAMO	3,230	3,908	4,607	5,326	6,064	6,786
DONNA	2,610	3,126	3,659	4,218	4,802	5,374
EDCOUCH	343	401	463	531	603	675
EDINBURG	12,974	15,730	18,573	21,484	24,459	27,374
ELSA	832	987	1,150	1,322	1,504	1,683
HIDALGO	1,841	2,233	2,637	3,051	3,473	3,888
HIDALGO COUNTY MUD 1	816	896	979	1,063	1,147	1,228
LA JOYA	515	619	727	839	955	1,068
LA VILLA	277	332	388	448	509	570
MCCALLEN	39,787	48,510	57,403	66,492	75,765	84,820
MERCEDES	2,222	2,648	3,090	3,558	4,048	4,530

Region M Water User Group (WUG) Demand

	WUG DEMAND (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
MILITARY HIGHWAY WSC	2,891	3,395	3,919	4,479	5,062	5,650
MISSION	20,059	24,519	29,070	33,699	38,393	42,978
NORTH ALAMO WSC	26,417	32,031	37,785	43,670	49,653	55,513
PHARR	9,920	11,930	14,016	16,178	18,410	20,601
SAN JUAN	4,947	5,990	7,063	8,166	9,298	10,407
SHARYLAND WSC	12,901	15,628	18,421	21,302	24,263	27,160
WESLACO	7,697	9,711	11,550	13,443	15,391	17,218
COUNTY-OTHER	2,729	3,384	4,217	5,010	5,808	6,632
MANUFACTURING	2,236	2,721	2,721	2,721	2,721	2,721
MINING	2,636	3,355	3,891	4,467	5,127	5,963
STEAM ELECTRIC POWER	7,569	7,569	7,569	7,569	7,569	7,569
LIVESTOCK	706	706	706	706	706	706
IRRIGATION	661,160	639,936	618,710	597,485	576,261	555,035
NUECES-RIO GRANDE BASIN TOTAL	833,513	847,730	862,095	877,365	893,524	909,053
AGUA SUD	1,177	1,418	1,668	1,926	2,191	2,451
HIDALGO	17	20	24	28	32	35
LA JOYA	136	164	192	221	252	282
MILITARY HIGHWAY WSC	57	67	77	88	100	111
MISSION	11	13	16	18	21	24
PHARR	3	3	4	4	5	5
COUNTY-OTHER	144	178	222	264	306	350
MINING	208	265	307	352	405	471
STEAM ELECTRIC POWER	3,969	3,969	3,969	3,969	3,969	3,969
LIVESTOCK	71	71	71	71	71	71
IRRIGATION	27,507	26,624	25,741	24,858	23,975	23,092
RIO GRANDE BASIN TOTAL	33,300	32,792	32,291	31,799	31,327	30,861
HIDALGO COUNTY TOTAL	866,813	880,522	894,386	909,164	924,851	939,914
JIM HOGG COUNTY WCID 2	643	675	702	743	783	822
COUNTY-OTHER	148	154	160	169	178	187
MANUFACTURING	2	2	2	2	2	2
MINING	84	88	65	48	31	20
LIVESTOCK	282	282	282	282	282	282
IRRIGATION	288	278	270	260	251	242
NUECES-RIO GRANDE BASIN TOTAL	1,447	1,479	1,481	1,504	1,527	1,555
COUNTY-OTHER	5	5	5	5	6	6
MINING	9	9	7	5	3	2
LIVESTOCK	94	94	94	94	94	94
IRRIGATION	72	70	67	65	63	60
RIO GRANDE BASIN TOTAL	180	178	173	169	166	162
JIM HOGG COUNTY TOTAL	1,627	1,657	1,654	1,673	1,693	1,717
COUNTY-OTHER	3	3	3	2	2	2
MINING	398	548	587	461	335	244
LIVESTOCK	93	93	93	93	93	93
NUECES BASIN TOTAL	494	644	683	556	430	339
EAGLE PASS	9,545	10,839	12,074	13,429	14,795	16,122
MAVERICK COUNTY	241	268	295	324	355	384
COUNTY-OTHER	573	511	460	414	372	332

Region M Water User Group (WUG) Demand

	WUG DEMAND (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
MANUFACTURING	65	65	65	65	65	65
MINING	1,590	2,189	2,346	1,841	1,339	973
LIVESTOCK	278	278	278	278	278	278
IRRIGATION	61,706	59,725	57,744	55,763	53,782	51,801
RIO GRANDE BASIN TOTAL	73,998	73,875	73,262	72,114	70,986	69,955
MAVERICK COUNTY TOTAL	74,492	74,519	73,945	72,670	71,416	70,294
COUNTY-OTHER	155	168	179	193	207	219
MINING	131	160	178	197	220	250
LIVESTOCK	179	179	179	179	179	179
NUECES-RIO GRANDE BASIN TOTAL	465	507	536	569	606	648
AGUA SUD	34	41	48	56	63	71
EL SAUZ WSC	163	177	191	207	222	237
EL TANQUE WSC	276	305	332	360	388	413
LA GRULLA	1,308	1,445	1,575	1,712	1,842	1,962
RIO GRANDE CITY	4,850	5,386	5,889	6,413	6,905	7,355
RIO WSC	643	706	767	832	894	952
ROMA	2,466	2,681	2,890	3,124	3,359	3,577
UNION WSC	1,261	1,402	1,535	1,672	1,800	1,917
COUNTY-OTHER	524	566	606	653	699	742
MANUFACTURING	95	116	116	116	116	116
MINING	440	537	597	661	741	841
LIVESTOCK	1,013	1,013	1,013	1,013	1,013	1,013
IRRIGATION	23,875	23,109	22,342	21,576	20,809	20,043
RIO GRANDE BASIN TOTAL	36,948	37,484	37,901	38,395	38,851	39,239
STARR COUNTY TOTAL	37,413	37,991	38,437	38,964	39,457	39,887
WEBB COUNTY	185	221	257	291	323	354
COUNTY-OTHER	6	7	8	9	10	11
MANUFACTURING	47	56	56	56	56	56
MINING	3,099	2,414	1,811	1,233	554	403
LIVESTOCK	432	432	432	432	432	432
NUECES BASIN TOTAL	3,769	3,130	2,564	2,021	1,375	1,256
COUNTY-OTHER	121	142	165	188	210	229
MINING	517	403	302	206	92	67
LIVESTOCK	59	59	59	59	59	59
NUECES-RIO GRANDE BASIN TOTAL	697	604	526	453	361	355
LAREDO	42,028	50,530	58,812	66,591	74,190	81,096
MIRANDO CITY WSC	69	83	96	108	121	132
WEBB COUNTY	1,429	1,708	1,982	2,241	2,496	2,728
COUNTY-OTHER	175	207	241	274	305	333
MANUFACTURING	204	240	240	240	240	240
MINING	6,715	5,230	3,925	2,673	1,200	873
STEAM ELECTRIC POWER	152	152	152	152	152	152
LIVESTOCK	472	472	472	472	472	472
IRRIGATION	10,425	10,090	9,756	9,421	9,086	8,752
RIO GRANDE BASIN TOTAL	61,669	68,712	75,676	82,172	88,262	94,778
WEBB COUNTY TOTAL	66,135	72,446	78,766	84,646	89,998	96,389

Region M Water User Group (WUG) Demand

	WUG DEMAND (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
EAST RIO HONDO WSC	5	6	6	7	7	8
LYFORD	290	314	338	367	399	431
NORTH ALAMO WSC	1,038	1,148	1,259	1,383	1,506	1,628
PORT MANSFIELD PUD	231	259	285	313	342	369
RAYMONDVILLE	1,490	1,618	1,747	1,904	2,072	2,239
SEBASTIAN MUD	157	168	186	205	224	242
COUNTY-OTHER	52	58	65	71	77	84
MINING	49	51	38	28	18	12
LIVESTOCK	235	235	235	235	235	235
IRRIGATION	99,610	96,412	93,215	90,017	86,819	83,621
NUECES-RIO GRANDE BASIN TOTAL	103,157	100,269	97,374	94,530	91,699	88,869
WILLACY COUNTY TOTAL	103,157	100,269	97,374	94,530	91,699	88,869
FALCON RURAL WSC	163	183	205	222	240	255
SAN YGNACIO MUD	189	216	247	283	321	361
SIESTA SHORES WCID	222	254	291	333	377	424
ZAPATA COUNTY	2,247	2,582	2,956	3,396	3,857	4,359
ZAPATA COUNTY WCID-HWY 16 EAST	102	118	136	156	177	199
COUNTY-OTHER	122	136	157	180	211	233
MANUFACTURING	9	9	9	9	9	9
MINING	911	954	707	525	332	214
LIVESTOCK	398	398	398	398	398	398
IRRIGATION	5,100	4,936	4,773	4,609	4,445	4,281
RIO GRANDE BASIN TOTAL	9,463	9,786	9,879	10,111	10,367	10,733
ZAPATA COUNTY TOTAL	9,463	9,786	9,879	10,111	10,367	10,733
REGION M TOTAL DEMAND	1,783,993	1,796,571	1,808,650	1,822,286	1,837,247	1,853,358

Region M Source Availability

GROUNDWATER SOURCE TYPE				SOURCE AVAILABILITY (ACRE-FEET PER YEAR)					
SOURCE NAME	COUNTY	BASIN	SALINITY *	2020	2030	2040	2050	2060	2070
CARRIZO-WILCOX AQUIFER	MAVERICK	NUECES	FRESH	777	777	777	777	472	472
CARRIZO-WILCOX AQUIFER	MAVERICK	RIO GRANDE	FRESH/ BRACKISH	1,265	1,265	1,224	1,137	1,097	1,059
CARRIZO-WILCOX AQUIFER	WEBB	NUECES	FRESH	92	92	92	92	92	92
CARRIZO-WILCOX AQUIFER	WEBB	RIO GRANDE	FRESH/ BRACKISH	824	824	824	824	824	824
GULF COAST AQUIFER SYSTEM	CAMERON	NUECES-RIO GRANDE	FRESH/ BRACKISH	6,301	7,536	8,771	10,005	11,241	11,241
GULF COAST AQUIFER SYSTEM	CAMERON	RIO GRANDE	FRESH/ BRACKISH	387	463	540	615	691	691
GULF COAST AQUIFER SYSTEM	HIDALGO	NUECES-RIO GRANDE	FRESH/ BRACKISH	86,405	91,810	97,216	102,620	107,784	107,784
GULF COAST AQUIFER SYSTEM	HIDALGO	RIO GRANDE	FRESH/ BRACKISH	1,634	2,041	2,447	2,854	3,260	3,260
GULF COAST AQUIFER SYSTEM	JIM HOGG	NUECES-RIO GRANDE	FRESH/ BRACKISH	5,236	5,236	5,236	5,236	5,236	5,236
GULF COAST AQUIFER SYSTEM	JIM HOGG	RIO GRANDE	FRESH/ BRACKISH	938	938	938	938	938	938
GULF COAST AQUIFER SYSTEM	STARR	NUECES-RIO GRANDE	FRESH/ BRACKISH	1,497	1,891	2,285	2,678	3,072	3,072
GULF COAST AQUIFER SYSTEM	STARR	RIO GRANDE	FRESH/ BRACKISH	2,225	2,810	3,396	3,981	4,567	4,567
GULF COAST AQUIFER SYSTEM	WEBB	NUECES	FRESH/ BRACKISH	18	22	27	32	37	37
GULF COAST AQUIFER SYSTEM	WEBB	NUECES-RIO GRANDE	FRESH/ BRACKISH	504	642	780	918	1,056	1,056
GULF COAST AQUIFER SYSTEM	WEBB	RIO GRANDE	FRESH/ BRACKISH	98	125	152	179	206	206
GULF COAST AQUIFER SYSTEM	WILLACY	NUECES-RIO GRANDE	FRESH/ BRACKISH	1,146	1,459	1,772	2,084	2,205	2,205
GULF COAST AQUIFER SYSTEM	ZAPATA	RIO GRANDE	FRESH	0	0	0	0	0	0
YEGUA-JACKSON AQUIFER	JIM HOGG	RIO GRANDE	FRESH	0	0	0	0	0	0
YEGUA-JACKSON AQUIFER	STARR	RIO GRANDE	FRESH	8,013	8,013	8,013	8,013	8,013	8,013
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
GROUNDWATER TOTAL SOURCE AVAILABILITY				145,347	153,931	162,477	170,970	178,778	178,740

REUSE SOURCE TYPE				SOURCE AVAILABILITY (ACRE-FEET PER YEAR)					
SOURCE NAME	COUNTY	BASIN	SALINITY *	2020	2030	2040	2050	2060	2070
DIRECT REUSE	CAMERON	NUECES-RIO GRANDE	FRESH	9,064	13,065	14,890	14,890	15,890	15,890
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
REUSE TOTAL SOURCE AVAILABILITY				45,342	58,738	63,079	69,089	75,564	78,364

*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.

Region M Source Availability

SURFACE WATER SOURCE TYPE				SOURCE AVAILABILITY (ACRE-FEET PER YEAR)					
SOURCE NAME	COUNTY	BASIN	SALINITY *	2020	2030	2040	2050	2060	2070
AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	RESERVOIR	RIO GRANDE	FRESH	1,079,381	1,079,175	1,078,968	1,078,762	1,078,555	1,078,349
LIVESTOCK LOCAL SUPPLY	JIM HOGG	NUECES-RIO GRANDE	FRESH	222	222	222	222	222	222
LIVESTOCK LOCAL SUPPLY	JIM HOGG	RIO GRANDE	FRESH	49	49	49	49	49	49
LIVESTOCK LOCAL SUPPLY	MAVERICK	NUECES	FRESH	49	49	49	49	49	49
LIVESTOCK LOCAL SUPPLY	MAVERICK	RIO GRANDE	FRESH	147	147	147	147	147	147
LIVESTOCK LOCAL SUPPLY	STARR	RIO GRANDE	FRESH	65	65	65	65	65	65
LIVESTOCK LOCAL SUPPLY	WEBB	NUECES	FRESH	413	413	413	413	413	413
LIVESTOCK LOCAL SUPPLY	WEBB	NUECES-RIO GRANDE	FRESH	55	55	55	55	55	55
LIVESTOCK LOCAL SUPPLY	WEBB	RIO GRANDE	FRESH	451	451	451	451	451	451
LIVESTOCK LOCAL SUPPLY	ZAPATA	RIO GRANDE	FRESH	249	249	249	249	249	249
NUECES-RIO GRANDE RUN-OF-RIVER	CAMERON	NUECES-RIO GRANDE	FRESH	350	350	350	350	350	350
NUECES-RIO GRANDE RUN-OF-RIVER	HIDALGO	NUECES-RIO GRANDE	FRESH	7,522	7,522	7,522	7,522	7,522	7,522
NUECES-RIO GRANDE RUN-OF-RIVER	WILLACY	NUECES-RIO GRANDE	FRESH	0	0	0	0	0	0
RIO GRANDE RUN-OF-RIVER	MAVERICK	RIO GRANDE	FRESH	243	243	243	243	243	243
RIO GRANDE RUN-OF-RIVER	WEBB	RIO GRANDE	FRESH	0	0	0	0	0	0
SURFACE WATER TOTAL SOURCE AVAILABILITY				1,089,196	1,088,990	1,088,783	1,088,577	1,088,370	1,088,164
REGION M TOTAL SOURCE AVAILABILITY				1,279,885	1,301,659	1,314,339	1,328,636	1,342,712	1,345,268

*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.

Region M Water User Group (WUG) Existing Water Supply

WUG NAME	SOURCE REGION	SOURCE DESCRIPTION	EXISTING SUPPLY (ACRE-FEET PER YEAR)					
			2020	2030	2040	2050	2060	2070
BROWNSVILLE	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	32,459	32,440	32,419	32,420	32,420	32,419
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	366	366	397	445	498	554
EAST RIO HONDO WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	3,394	3,246	3,096	3,096	3,096	3,096
EAST RIO HONDO WSC	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	369	369	369	368	369	369
EL JARDIN WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	1,457	1,457	1,457	1,457	1,457	1,457
HARLINGEN	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	18,408	19,583	19,527	19,439	19,316	19,187
HARLINGEN	M	DIRECT REUSE	1,120	1,120	1,120	1,120	1,120	1,120
HARLINGEN	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	352	352	352	352	352	352
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	4,869	4,869	4,869	4,869	4,869	4,869
LAGUNA MADRE WATER DISTRICT	M	DIRECT REUSE	403	403	403	403	403	403
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	397
MILITARY HIGHWAY WSC	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	1,267	1,267	1,267	1,267	1,267	1,266
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	415	383	365	365	365	366
NORTH ALAMO WSC	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	23	24	24	24	24	24
NORTH ALAMO WSC	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	202	203	204	204	204	204
NORTH ALAMO WSC	M	GULF COAST AQUIFER SYSTEM WILLACY COUNTY	35	35	36	36	36	36
OLMITO WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	1,152	1,137	1,122	1,122	1,122	1,122
OLMITO WSC	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	4	4	4	4	4	4
PALM VALLEY	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	266	266	266	266	266	266
PRIMERA	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	545	535	525	565	635	708
PRIMERA	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	20	20	20	20	20	20
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	508	507	508	508	508	508
COUNTY-OTHER	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	2,352	2,352	2,352	2,352	2,352	2,352
COUNTY-OTHER	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	219	219	219	219	219	219
MANUFACTURING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	97	97	97	97	97	97
MANUFACTURING	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	434	434	434	434	434	434
MINING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	11	11	11	11	11	11
STEAM ELECTRIC POWER	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	121	121	121	121	121	121
LIVESTOCK	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	57	57	57	57	57	57
IRRIGATION	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	160,954	160,891	160,829	160,763	163,524	160,639
IRRIGATION	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	2,660	2,660	2,660	2,660	2,660	2,660
IRRIGATION	M	NUECES-RIO GRANDE RUN-OF-RIVER	282	282	282	282	282	282
NUECES-RIO GRANDE BASIN TOTAL			255,864	257,367	258,148	258,383	261,645	258,956
BROWNSVILLE	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	198	197	198	197	197	198
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	43	43	43

Region M Water User Group (WUG) Existing Water Supply

WUG NAME	SOURCE REGION	SOURCE DESCRIPTION	EXISTING SUPPLY (ACRE-FEET PER YEAR)					
			2020	2030	2040	2050	2060	2070
MILITARY HIGHWAY WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	3	3	3	3	3	5
MILITARY HIGHWAY WSC	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	8	8	8	8	8	9
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	42	43	42	42	42	42
COUNTY-OTHER	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	177	177	177	177	177	177
COUNTY-OTHER	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	7	7	7	7	7	7
MANUFACTURING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	128	128	128	128	128	128
MANUFACTURING	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	566	566	566	566	566	566
STEAM ELECTRIC POWER	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	4	4	4	4	4	4
LIVESTOCK	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	3	3	3	3	3	3
IRRIGATION	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	10,243	10,239	10,235	10,232	10,407	10,223
IRRIGATION	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	460	460	460	460	460	460
IRRIGATION	M	NUECES-RIO GRANDE RUN-OF-RIVER	18	18	18	18	18	18
RIO GRANDE BASIN TOTAL			12,045	12,041	12,038	12,033	12,208	12,029
CAMERON COUNTY TOTAL			267,909	269,408	270,186	270,416	273,853	270,985
AGUA SUD	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	7,437	7,437	7,437	7,436	7,436	7,437
ALAMO	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	1,806	1,806	1,806	1,806	1,806	1,806
ALAMO	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	522	522	522	522	522	522
DONNA	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	3,126	3,126	3,126	3,126	3,126	3,126
EDCOUCH	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	263	263	263	263	263	263
EDINBURG	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	11,205	10,205	9,205	9,205	9,205	9,205
ELSA	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	784	784	784	783	783	783
HIDALGO	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	149	149	149	149	149	8
HIDALGO	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	1,368	1,369	1,369	1,368	1,368	1,369
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	33,235	33,235	33,235	33,235	33,235	33,235
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	324	324	324	324	324	322
MILITARY HIGHWAY WSC	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	1,035	1,035	1,035	1,035	1,035	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	14,047	13,049	11,550	11,550	11,550	11,550
NORTH ALAMO WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	14,683	13,656	12,960	12,980	12,997	13,008
NORTH ALAMO WSC	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	836	838	840	841	842	843
NORTH ALAMO WSC	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	7,208	7,231	7,248	7,259	7,269	7,276
NORTH ALAMO WSC	M	GULF COAST AQUIFER SYSTEM WILLACY COUNTY	1,260	1,264	1,266	1,268	1,269	1,271
PHARR	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	8,709	8,610	8,510	8,510	8,510	8,510
PHARR	M	DIRECT REUSE	992	1,193	1,402	1,618	1,841	2,060
SAN JUAN	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	2,724	2,674	2,624	2,624	2,624	2,624
SAN JUAN	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	25	25	25	25	25	25
SAN JUAN	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	2,107	2,107	2,107	2,107	2,107	2,107

Region M Water User Group (WUG) Existing Water Supply

WUG NAME	SOURCE REGION	SOURCE DESCRIPTION	EXISTING SUPPLY (ACRE-FEET PER YEAR)					
			2020	2030	2040	2050	2060	2070
SHARYLAND WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	11,896	11,746	11,596	11,596	11,596	11,596
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	177	177	177	177	177	177
COUNTY-OTHER	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	243	238	238	238	238	238
MANUFACTURING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	2,300	2,300	2,300	2,300	2,300	2,300
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	330	330	330	330	330	330
MINING	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	635	635	635	635	635	635
STEAM ELECTRIC POWER	M	DIRECT REUSE	4,769	4,769	4,769	4,769	4,769	4,769
STEAM ELECTRIC POWER	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	1,443	1,443	1,443	1,443	1,443	1,443
LIVESTOCK	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	580	580	580	580	580	580
IRRIGATION	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	254,776	255,118	255,021	254,596	254,834	254,740
IRRIGATION	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	5,768	5,768	5,768	5,768	5,768	5,768
NUECES-RIO GRANDE BASIN TOTAL			414,823	412,268	408,987	408,809	409,299	409,303
AGUA SUD	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	1,412	1,412	1,412	1,413	1,413	1,412
HIDALGO	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	1	1	1	1	1	0
HIDALGO	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	13	12	12	13	13	12
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	8
MILITARY HIGHWAY WSC	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	20	20	20	20	20	21
MILITARY HIGHWAY WSC	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	39	39	39	39	39	39
MISSION	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	9	7	6	6	6	6
PHARR	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	3	2	2	2	2	2
PHARR	M	DIRECT REUSE	0	0	0	0	1	1
COUNTY-OTHER	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	8	8	8	8	8	8
COUNTY-OTHER	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	2	7	7	7	7	7
MINING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	27	27	27	27	27	27
STEAM ELECTRIC POWER	M	DIRECT REUSE	2,501	2,501	2,501	2,501	2,501	2,501
STEAM ELECTRIC POWER	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	757	757	757	757	757	757
LIVESTOCK	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	20	20	20	20	20	20
IRRIGATION	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	10,601	10,614	10,611	10,593	10,603	10,598
IRRIGATION	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	240	240	240	240	240	240
RIO GRANDE BASIN TOTAL			15,735	15,749	15,745	15,729	15,740	15,735
HIDALGO COUNTY TOTAL			430,558	428,017	424,732	424,538	425,039	425,038
JIM HOGG COUNTY WCID 2	M	GULF COAST AQUIFER SYSTEM STARR COUNTY	900	900	900	900	900	900
COUNTY-OTHER	M	GULF COAST AQUIFER SYSTEM JIM HOGG COUNTY	272	273	273	272	272	273
MANUFACTURING	M	GULF COAST AQUIFER SYSTEM JIM HOGG COUNTY	1	1	1	1	1	1
MINING	M	GULF COAST AQUIFER SYSTEM JIM HOGG COUNTY	84	87	65	48	31	20
LIVESTOCK	M	GULF COAST AQUIFER SYSTEM JIM HOGG COUNTY	105	105	105	105	105	105
LIVESTOCK	M	LOCAL SURFACE WATER SUPPLY	222	222	222	222	222	222
IRRIGATION	M	GULF COAST AQUIFER SYSTEM JIM HOGG COUNTY	140	140	140	140	140	140
NUECES-RIO GRANDE BASIN TOTAL			1,724	1,728	1,706	1,688	1,671	1,661
COUNTY-OTHER	M	GULF COAST AQUIFER SYSTEM JIM HOGG COUNTY	14	13	13	14	14	13
MINING	M	GULF COAST AQUIFER SYSTEM JIM HOGG COUNTY	9	10	7	5	3	2
LIVESTOCK	M	GULF COAST AQUIFER SYSTEM JIM HOGG COUNTY	60	60	60	60	60	60
LIVESTOCK	M	LOCAL SURFACE WATER SUPPLY	49	49	49	49	49	49

Region M Water User Group (WUG) Existing Water Supply

WUG NAME	SOURCE REGION	SOURCE DESCRIPTION	EXISTING SUPPLY (ACRE-FEET PER YEAR)					
			2020	2030	2040	2050	2060	2070
IRRIGATION	M	GULF COAST AQUIFER SYSTEM JIM HOGG COUNTY	60	60	60	60	60	60
RIO GRANDE BASIN TOTAL			192	192	189	188	186	184
JIM HOGG COUNTY TOTAL			1,916	1,920	1,895	1,876	1,857	1,845
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	66	66	66	66	66	66
LIVESTOCK	M	CARRIZO-WILCOX AQUIFER MAVERICK COUNTY	15	15	15	15	15	15
LIVESTOCK	M	LOCAL SURFACE WATER SUPPLY	49	49	49	49	49	49
LIVESTOCK	M	RIO GRANDE RUN-OF-RIVER	61	61	61	61	61	61
NUECES BASIN TOTAL			197	197	197	197	197	197
EAGLE PASS	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	7,898	7,898	7,898	7,898	7,898	7,898
MAVERICK COUNTY	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	406	405	405	505	605	704
COUNTY-OTHER	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	175	175	175	175	175	175
MANUFACTURING	M	CARRIZO-WILCOX AQUIFER MAVERICK COUNTY	10	10	10	10	10	10
MINING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	265	265	264	264	263	262
LIVESTOCK	M	CARRIZO-WILCOX AQUIFER MAVERICK COUNTY	45	45	45	45	45	45
LIVESTOCK	M	LOCAL SURFACE WATER SUPPLY	147	147	147	147	147	147
LIVESTOCK	M	RIO GRANDE RUN-OF-RIVER	182	182	182	182	182	182
IRRIGATION	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	41,079	41,068	41,058	41,047	41,036	41,025
IRRIGATION	M	CARRIZO-WILCOX AQUIFER MAVERICK COUNTY	420	420	420	420	420	420
RIO GRANDE BASIN TOTAL			50,627	50,615	50,604	50,693	50,781	50,868
MAVERICK COUNTY TOTAL			50,824	50,812	50,801	50,890	50,978	51,065
COUNTY-OTHER	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	11	11	11	11	11	11
COUNTY-OTHER	M	GULF COAST AQUIFER SYSTEM STARR COUNTY	6	6	6	6	6	6
COUNTY-OTHER	M	YEGUA-JACKSON AQUIFER STARR COUNTY	1	1	1	1	1	1
MINING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	4	4	4	4	4	4
LIVESTOCK	M	GULF COAST AQUIFER SYSTEM STARR COUNTY	240	240	240	240	240	240
NUECES-RIO GRANDE BASIN TOTAL			262	262	262	262	262	262
AGUA SUD	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	41	41	41	41	41	41
EL SAUZ WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	163	163	163	163	163	163
EL TANQUE WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	276	276	276	276	276	276
LA GRULLA	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	900	750	600	600	600	600
RIO GRANDE CITY	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	4,380	3,480	2,580	2,580	2,580	2,580
RIO WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	884	874	864	864	864	864
ROMA	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	2,627	2,802	2,977	3,177	3,377	3,377
UNION WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	954	704	454	454	454	454
COUNTY-OTHER	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	238	238	238	238	238	238
COUNTY-OTHER	M	GULF COAST AQUIFER SYSTEM STARR COUNTY	113	113	113	113	113	113
COUNTY-OTHER	M	YEGUA-JACKSON AQUIFER STARR COUNTY	14	14	14	14	14	14
MANUFACTURING	M	GULF COAST AQUIFER SYSTEM STARR COUNTY	74	74	74	74	74	74
MINING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	13	13	13	13	13	13
MINING	M	GULF COAST AQUIFER SYSTEM STARR COUNTY	200	200	200	200	200	200
LIVESTOCK	M	GULF COAST AQUIFER SYSTEM STARR COUNTY	640	640	640	640	640	640
LIVESTOCK	M	LOCAL SURFACE WATER SUPPLY	65	65	65	65	65	65
LIVESTOCK	M	YEGUA-JACKSON AQUIFER STARR COUNTY	160	160	160	160	160	160
IRRIGATION	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	8,676	8,661	8,646	8,631	8,617	8,602
IRRIGATION	M	GULF COAST AQUIFER SYSTEM STARR COUNTY	280	280	280	280	280	280

Region M Water User Group (WUG) Existing Water Supply

WUG NAME	SOURCE REGION	SOURCE DESCRIPTION	EXISTING SUPPLY (ACRE-FEET PER YEAR)					
			2020	2030	2040	2050	2060	2070
IRRIGATION	M	YEGUA-JACKSON AQUIFER STARR COUNTY	40	40	40	40	40	40
RIO GRANDE BASIN TOTAL			20,738	19,588	18,438	18,623	18,809	18,794
STARR COUNTY TOTAL			21,000	19,850	18,700	18,885	19,071	19,056
WEBB COUNTY	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	265	265	265	266	265	265
COUNTY-OTHER	M	GULF COAST AQUIFER SYSTEM WEBB COUNTY	0	0	0	0	13	25
MANUFACTURING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	1	2	2	2	2	2
MINING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	1,771	1,769	1,767	1,764	1,764	1,762
MINING	M	CARRIZO-WILCOX AQUIFER WEBB COUNTY	149	149	149	149	149	149
MINING	M	GULF COAST AQUIFER SYSTEM WEBB COUNTY	264	264	264	264	264	264
LIVESTOCK	M	CARRIZO-WILCOX AQUIFER WEBB COUNTY	34	34	34	34	34	34
LIVESTOCK	M	GULF COAST AQUIFER SYSTEM WEBB COUNTY	15	15	15	15	15	15
LIVESTOCK	M	LOCAL SURFACE WATER SUPPLY	413	413	413	413	413	413
NUECES BASIN TOTAL			2,912	2,911	2,909	2,907	2,919	2,929
COUNTY-OTHER	M	CARRIZO-WILCOX AQUIFER WEBB COUNTY	3	3	3	3	3	3
COUNTY-OTHER	M	GULF COAST AQUIFER SYSTEM WEBB COUNTY	90	90	90	90	77	65
MINING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	295	295	295	295	293	293
MINING	M	CARRIZO-WILCOX AQUIFER WEBB COUNTY	20	20	20	20	20	20
MINING	M	GULF COAST AQUIFER SYSTEM WEBB COUNTY	44	44	44	44	44	44
LIVESTOCK	M	CARRIZO-WILCOX AQUIFER WEBB COUNTY	5	5	5	5	5	5
LIVESTOCK	M	GULF COAST AQUIFER SYSTEM WEBB COUNTY	3	3	3	3	3	3
LIVESTOCK	M	LOCAL SURFACE WATER SUPPLY	55	55	55	55	55	55
NUECES-RIO GRANDE BASIN TOTAL			515	515	515	515	500	488
LAREDO	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	58,759	58,759	58,759	58,759	58,759	58,759
LAREDO	M	DIRECT REUSE	773	773	773	773	773	773
MIRANDO CITY WSC	M	GULF COAST AQUIFER SYSTEM WEBB COUNTY	60	60	60	60	60	60
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	5	5	5	5	5	5
COUNTY-OTHER	M	GULF COAST AQUIFER SYSTEM WEBB COUNTY	88	88	88	88	88	88
MANUFACTURING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	7	6	6	6	6	6
MINING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	3,838	3,833	3,829	3,825	3,821	3,816
MINING	M	CARRIZO-WILCOX AQUIFER WEBB COUNTY	323	323	323	323	323	323
MINING	M	GULF COAST AQUIFER SYSTEM WEBB COUNTY	573	573	573	573	573	573
STEAM ELECTRIC POWER	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	2,195	2,195	2,195	2,195	2,195	2,195
LIVESTOCK	M	CARRIZO-WILCOX AQUIFER WEBB COUNTY	36	36	36	36	36	36
LIVESTOCK	M	GULF COAST AQUIFER SYSTEM WEBB COUNTY	17	17	17	17	17	17
LIVESTOCK	M	LOCAL SURFACE WATER SUPPLY	451	451	451	451	451	451
IRRIGATION	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	13,765	13,756	13,746	13,737	13,727	13,718
IRRIGATION	M	CARRIZO-WILCOX AQUIFER WEBB COUNTY	40	40	40	40	40	40
RIO GRANDE BASIN TOTAL			82,976	82,961	82,947	82,933	82,920	82,906
WEBB COUNTY TOTAL			86,403	86,387	86,371	86,355	86,339	86,323
EAST RIO HONDO WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	7	5	5	5	5	5
EAST RIO HONDO WSC	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	0	0	0	1	0	0
LYFORD	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	290	314	338	367	399	431
NORTH ALAMO WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	579	488	431	411	394	382
NORTH ALAMO WSC	M	GULF COAST AQUIFER SYSTEM CAMERON COUNTY	33	30	28	27	26	25
NORTH ALAMO WSC	M	GULF COAST AQUIFER SYSTEM HIDALGO COUNTY	283	259	241	230	220	213
NORTH ALAMO WSC	M	GULF COAST AQUIFER SYSTEM WILLACY COUNTY	49	45	42	40	39	37

Region M Water User Group (WUG) Existing Water Supply

WUG NAME	SOURCE REGION	SOURCE DESCRIPTION	EXISTING SUPPLY (ACRE-FEET PER YEAR)					
			2020	2030	2040	2050	2060	2070
PORT MANSFIELD PUD	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	90	90	90	90	90	90
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	5	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	183	183	183	183	183	183
COUNTY-OTHER	M	GULF COAST AQUIFER SYSTEM WILLACY COUNTY	18	18	18	18	18	18
MINING	M	GULF COAST AQUIFER SYSTEM WILLACY COUNTY	20	20	20	20	20	20
LIVESTOCK	M	GULF COAST AQUIFER SYSTEM WILLACY COUNTY	95	95	95	95	95	95
IRRIGATION	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	20,332	20,326	20,320	20,315	20,309	20,303
IRRIGATION	M	GULF COAST AQUIFER SYSTEM WILLACY COUNTY	120	120	120	120	120	120
NUECES-RIO GRANDE BASIN TOTAL			25,710	25,604	25,542	25,533	25,529	25,533
WILLACY COUNTY TOTAL			25,710	25,604	25,542	25,533	25,529	25,533
FALCON RURAL WSC	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	287	272	257	307	307	307
SAN YGNACIO MUD	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	284	284	284	284	284	284
SIESTA SHORES WCID	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	200	200	200	200	200	200
ZAPATA COUNTY	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	1,980	1,940	1,900	1,900	1,900	1,900
ZAPATA COUNTY WCID-HWY 16 EAST	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	152	152	202	202	252	252
COUNTY-OTHER	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	63	63	63	63	63	63
COUNTY-OTHER	M	YEGUA-JACKSON AQUIFER ZAPATA COUNTY	3	3	3	3	3	3
MANUFACTURING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	5	5	5	5	5	5
MINING	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	142	142	142	142	142	142
MINING	M	YEGUA-JACKSON AQUIFER ZAPATA COUNTY	884	884	884	884	884	884
LIVESTOCK	M	LOCAL SURFACE WATER SUPPLY	249	249	249	249	249	249
LIVESTOCK	M	YEGUA-JACKSON AQUIFER ZAPATA COUNTY	230	230	230	230	230	230
IRRIGATION	M	AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	3,396	3,391	3,385	3,380	3,374	3,369
IRRIGATION	M	YEGUA-JACKSON AQUIFER ZAPATA COUNTY	80	80	80	80	80	80
RIO GRANDE BASIN TOTAL			7,955	7,895	7,884	7,929	7,973	7,968
ZAPATA COUNTY TOTAL			7,955	7,895	7,884	7,929	7,973	7,968
REGION M TOTAL EXISTING WATER SUPPLY			892,275	889,893	886,111	886,422	890,639	887,813

Region M Water User Group (WUG) Needs/Surplus*

	(NEEDS)/SURPLUS (ACRE-FEET PER YEAR)					
	2020	2030	2040	2050	2060	2070
CAMERON COUNTY - NUECES-RIO GRANDE BASIN						
BROWNSVILLE	7,127	1,422	(4,533)	(11,209)	(18,262)	(25,573)
COMBES	45	9	1	1	1	1
EAST RIO HONDO WSC	(132)	(837)	(1,018)	(1,499)	(1,987)	(2,600)
EL JARDIN WSC	(23)	(220)	(430)	(668)	(926)	(1,193)
HARLINGEN	4,083	3,063	911	(1,301)	(3,624)	(6,501)
LA FERIA	175	126	68	88	192	189
LAGUNA MADRE WATER DISTRICT	(2,658)	(3,907)	(5,189)	(6,593)	(8,058)	(9,563)
LOS FRESNOS	540	466	390	309	226	140
MILITARY HIGHWAY WSC	567	(50)	(690)	(1,374)	(2,088)	(2,809)
NORTH ALAMO WSC	(67)	(255)	(433)	(598)	(766)	(930)
OLMITO WSC	(3)	(180)	(364)	(556)	(762)	(974)
PALM VALLEY	16	20	22	22	20	18
PRIMERA	147	88	24	0	0	0
RIO HONDO	509	488	462	428	392	356
SAN BENITO	113	151	638	159	(280)	(944)
SANTA ROSA	316	286	252	210	162	112
VALLEY MUD 2	432	305	162	4	(161)	(332)
COUNTY-OTHER	(1,239)	(936)	(1,477)	(1,878)	(2,494)	(2,608)
MANUFACTURING	(183)	(269)	(269)	(269)	(269)	(269)
MINING	(253)	(266)	(180)	(115)	(50)	(17)
STEAM ELECTRIC POWER	(3,302)	(3,302)	(3,302)	(3,302)	(3,302)	(3,302)
LIVESTOCK	(354)	(354)	(354)	(354)	(354)	(354)
IRRIGATION	(341,179)	(325,029)	(308,876)	(292,728)	(273,752)	(260,423)
CAMERON COUNTY - RIO GRANDE BASIN						
BROWNSVILLE	44	8	(27)	(69)	(112)	(155)
EL JARDIN WSC	(3)	(9)	(15)	(23)	(30)	(39)
MILITARY HIGHWAY WSC	4	0	(4)	(8)	(12)	(14)
VALLEY MUD 2	36	26	14	1	(13)	(27)
COUNTY-OTHER	63	73	56	43	23	20
MANUFACTURING	(239)	(352)	(352)	(352)	(352)	(352)
STEAM ELECTRIC POWER	(123)	(123)	(123)	(123)	(123)	(123)
LIVESTOCK	(22)	(22)	(22)	(22)	(22)	(22)
IRRIGATION	(21,421)	(20,393)	(19,365)	(18,336)	(17,130)	(16,282)
HIDALGO COUNTY - NUECES-RIO GRANDE BASIN						
AGUA SUD	1,239	(28)	(1,344)	(2,702)	(4,097)	(5,467)
ALAMO	(902)	(1,580)	(2,279)	(2,998)	(3,736)	(4,458)
DONNA	516	0	(533)	(1,092)	(1,676)	(2,248)
EDCOUCH	(80)	(138)	(200)	(268)	(340)	(412)
EDINBURG	(1,769)	(5,525)	(9,368)	(12,279)	(15,254)	(18,169)
ELSA	(48)	(203)	(366)	(539)	(721)	(900)
HIDALGO	(324)	(715)	(1,119)	(1,534)	(1,956)	(2,511)
HIDALGO COUNTY MUD 1	(212)	(292)	(375)	(459)	(543)	(624)
LA JOYA	(227)	(331)	(439)	(551)	(667)	(780)
LA VILLA	(41)	(96)	(152)	(212)	(273)	(334)

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Region M Water User Group (WUG) Needs/Surplus*

MCALLEN	(3,181)	(11,904)	(20,797)	(29,886)	(39,159)	(48,214)
MERCEDES	671	245	(197)	(665)	(1,155)	(1,637)
MILITARY HIGHWAY WSC	459	(45)	(569)	(1,129)	(1,712)	(2,303)
MISSION	(6,012)	(11,470)	(17,520)	(22,149)	(26,843)	(31,428)
NORTH ALAMO WSC	(2,430)	(9,042)	(15,471)	(21,322)	(27,276)	(33,115)
PHARR	(219)	(2,127)	(4,104)	(6,050)	(8,059)	(10,031)
SAN JUAN	(91)	(1,184)	(2,307)	(3,410)	(4,542)	(5,651)
SHARYLAND WSC	(1,005)	(3,882)	(6,825)	(9,706)	(12,667)	(15,564)
WESLACO	(1,519)	(3,332)	(5,090)	(6,983)	(8,931)	(10,758)
COUNTY-OTHER	(2,309)	(2,969)	(3,802)	(4,595)	(5,393)	(6,217)
MANUFACTURING	2,564	2,079	2,079	2,079	2,079	2,079
MINING	(1,671)	(2,390)	(2,926)	(3,502)	(4,162)	(4,998)
STEAM ELECTRIC POWER	(1,357)	(1,357)	(1,357)	(1,357)	(1,357)	(1,357)
LIVESTOCK	(126)	(126)	(126)	(126)	(126)	(126)
IRRIGATION	(400,616)	(379,050)	(357,921)	(337,121)	(315,659)	(294,527)
HIDALGO COUNTY - RIO GRANDE BASIN						
AGUA SUD	235	(6)	(256)	(513)	(778)	(1,039)
HIDALGO	(3)	(7)	(11)	(14)	(18)	(23)
LA JOYA	(60)	(88)	(116)	(145)	(176)	(206)
MILITARY HIGHWAY WSC	8	(2)	(12)	(23)	(35)	(43)
MISSION	(2)	(6)	(10)	(12)	(15)	(18)
PHARR	0	(1)	(2)	(2)	(2)	(2)
COUNTY-OTHER	(134)	(163)	(207)	(249)	(291)	(335)
MINING	(181)	(238)	(280)	(325)	(378)	(444)
STEAM ELECTRIC POWER	(711)	(711)	(711)	(711)	(711)	(711)
LIVESTOCK	(51)	(51)	(51)	(51)	(51)	(51)
IRRIGATION	(16,666)	(15,770)	(14,890)	(14,025)	(13,132)	(12,254)
JIM HOGG COUNTY - NUECES-RIO GRANDE BASIN						
JIM HOGG COUNTY WCID 2	257	225	198	157	117	78
COUNTY-OTHER	124	119	113	103	94	86
MANUFACTURING	(1)	(1)	(1)	(1)	(1)	(1)
MINING	0	(1)	0	0	0	0
LIVESTOCK	45	45	45	45	45	45
IRRIGATION	(148)	(138)	(130)	(120)	(111)	(102)
JIM HOGG COUNTY - RIO GRANDE BASIN						
COUNTY-OTHER	9	8	8	9	8	7
MINING	0	1	0	0	0	0
LIVESTOCK	15	15	15	15	15	15
IRRIGATION	(12)	(10)	(7)	(5)	(3)	0
MAVERICK COUNTY - NUECES BASIN						
COUNTY-OTHER	3	3	3	4	4	4
MINING	(332)	(482)	(521)	(395)	(269)	(178)
LIVESTOCK	32	32	32	32	32	32
MAVERICK COUNTY - RIO GRANDE BASIN						
EAGLE PASS	(1,647)	(2,941)	(4,176)	(5,531)	(6,897)	(8,224)
MAVERICK COUNTY	165	137	110	181	250	320
COUNTY-OTHER	(398)	(336)	(285)	(239)	(197)	(157)

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Region M Water User Group (WUG) Needs/Surplus*

MANUFACTURING	(55)	(55)	(55)	(55)	(55)	(55)
MINING	(1,325)	(1,924)	(2,082)	(1,577)	(1,076)	(711)
LIVESTOCK	96	96	96	96	96	96
IRRIGATION	(20,207)	(18,237)	(16,266)	(14,296)	(12,326)	(10,356)
STARR COUNTY - NUECES-RIO GRANDE BASIN						
COUNTY-OTHER	(137)	(150)	(161)	(175)	(189)	(201)
MINING	(127)	(156)	(174)	(193)	(216)	(246)
LIVESTOCK	61	61	61	61	61	61
STARR COUNTY - RIO GRANDE BASIN						
AGUA SUD	7	0	(7)	(15)	(22)	(30)
EL SAUZ WSC	0	(14)	(28)	(44)	(59)	(74)
EL TANQUE WSC	0	(29)	(56)	(84)	(112)	(137)
LA GRULLA	(408)	(695)	(975)	(1,112)	(1,242)	(1,362)
RIO GRANDE CITY	(470)	(1,906)	(3,309)	(3,833)	(4,325)	(4,775)
RIO WSC	241	168	97	32	(30)	(88)
ROMA	161	121	87	53	18	(200)
UNION WSC	(307)	(698)	(1,081)	(1,218)	(1,346)	(1,463)
COUNTY-OTHER	(159)	(201)	(241)	(288)	(334)	(377)
MANUFACTURING	(21)	(42)	(42)	(42)	(42)	(42)
MINING	(227)	(324)	(384)	(448)	(528)	(628)
LIVESTOCK	(148)	(148)	(148)	(148)	(148)	(148)
IRRIGATION	(14,879)	(14,128)	(13,376)	(12,625)	(11,872)	(11,121)
WEBB COUNTY - NUECES BASIN						
WEBB COUNTY	80	44	8	(25)	(58)	(89)
COUNTY-OTHER	(6)	(7)	(8)	(9)	3	14
MANUFACTURING	(46)	(54)	(54)	(54)	(54)	(54)
MINING	(915)	(232)	369	944	1,623	1,772
LIVESTOCK	30	30	30	30	30	30
WEBB COUNTY - NUECES-RIO GRANDE BASIN						
COUNTY-OTHER	(28)	(49)	(72)	(95)	(130)	(161)
MINING	(158)	(44)	57	153	265	290
LIVESTOCK	4	4	4	4	4	4
WEBB COUNTY - RIO GRANDE BASIN						
LAREDO	17,504	9,002	720	(7,059)	(14,658)	(21,564)
MIRANDO CITY WSC	(9)	(23)	(36)	(48)	(61)	(72)
WEBB COUNTY	617	338	64	(196)	(450)	(682)
COUNTY-OTHER	(82)	(114)	(148)	(181)	(212)	(240)
MANUFACTURING	(197)	(234)	(234)	(234)	(234)	(234)
MINING	(1,981)	(501)	800	2,048	3,517	3,839
STEAM ELECTRIC POWER	2,043	2,043	2,043	2,043	2,043	2,043
LIVESTOCK	32	32	32	32	32	32
IRRIGATION	3,380	3,706	4,030	4,356	4,681	5,006
WILLACY COUNTY - NUECES-RIO GRANDE BASIN						
EAST RIO HONDO WSC	2	(1)	(1)	(1)	(2)	(3)
LYFORD	0	0	0	0	0	0
NORTH ALAMO WSC	(94)	(326)	(517)	(675)	(827)	(971)
PORT MANSFIELD PUD	(141)	(169)	(195)	(223)	(252)	(279)

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Region M Water User Group (WUG) Needs/Surplus*

RAYMONDVILLE	1,917	1,789	1,660	1,503	1,335	1,168
SEBASTIAN MUD	47	36	18	(1)	(20)	(38)
COUNTY-OTHER	149	143	136	130	124	117
MINING	(29)	(31)	(18)	(8)	2	8
LIVESTOCK	(140)	(140)	(140)	(140)	(140)	(140)
IRRIGATION	(79,158)	(75,966)	(72,775)	(69,582)	(66,390)	(63,198)
ZAPATA COUNTY - RIO GRANDE BASIN						
FALCON RURAL WSC	124	89	52	85	67	52
SAN YGNACIO MUD	95	68	37	1	(37)	(77)
SIESTA SHORES WCID	(22)	(54)	(91)	(133)	(177)	(224)
ZAPATA COUNTY	(267)	(642)	(1,056)	(1,496)	(1,957)	(2,459)
ZAPATA COUNTY WCID-HWY 16 EAST	50	34	66	46	75	53
COUNTY-OTHER	(56)	(70)	(91)	(114)	(145)	(167)
MANUFACTURING	(4)	(4)	(4)	(4)	(4)	(4)
MINING	115	72	319	501	694	812
LIVESTOCK	81	81	81	81	81	81
IRRIGATION	(1,624)	(1,465)	(1,308)	(1,149)	(991)	(832)

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Region M Water User Group (WUG) Category Summary*

MUNICIPAL	2020	2030	2040	2050	2060	2070
POPULATION	1,898,198	2,310,773	2,713,858	3,119,661	3,521,675	3,915,579
DEMAND (acre-feet per year)	307,001	364,759	422,648	482,865	544,405	605,337
EXISTING SUPPLIES (acre-feet per year)	321,174	318,553	315,016	315,910	317,016	317,424
NEEDS (acre-feet per year)	24,376	64,960	113,693	170,235	230,244	290,400

COUNTY-OTHER	2020	2030	2040	2050	2060	2070
POPULATION	62,540	68,449	81,081	92,277	104,710	113,759
DEMAND (acre-feet per year)	8,688	9,137	10,664	12,022	13,617	14,703
EXISTING SUPPLIES (acre-feet per year)	4,488	4,488	4,488	4,488	4,488	4,488
NEEDS (acre-feet per year)	4,548	4,995	6,492	7,823	9,385	10,463

MANUFACTURING	2020	2030	2040	2050	2060	2070
DEMAND (acre-feet per year)	4,305	5,055	5,055	5,055	5,055	5,055
EXISTING SUPPLIES (acre-feet per year)	6,123	6,123	6,123	6,123	6,123	6,123
NEEDS (acre-feet per year)	746	1,011	1,011	1,011	1,011	1,011

MINING	2020	2030	2040	2050	2060	2070
DEMAND (acre-feet per year)	17,051	16,480	14,952	12,823	10,458	10,361
EXISTING SUPPLIES (acre-feet per year)	9,967	9,964	9,932	9,906	9,880	9,860
NEEDS (acre-feet per year)	7,199	6,589	6,565	6,563	6,679	7,222

STEAM ELECTRIC POWER	2020	2030	2040	2050	2060	2070
DEMAND (acre-feet per year)	15,240	15,240	15,240	15,240	15,240	15,240
EXISTING SUPPLIES (acre-feet per year)	11,790	11,790	11,790	11,790	11,790	11,790
NEEDS (acre-feet per year)	5,493	5,493	5,493	5,493	5,493	5,493

LIVESTOCK	2020	2030	2040	2050	2060	2070
DEMAND (acre-feet per year)	4,748	4,748	4,748	4,748	4,748	4,748
EXISTING SUPPLIES (acre-feet per year)	4,303	4,303	4,303	4,303	4,303	4,303
NEEDS (acre-feet per year)	841	841	841	841	841	841

IRRIGATION	2020	2030	2040	2050	2060	2070
DEMAND (acre-feet per year)	1,426,960	1,381,152	1,335,343	1,289,533	1,243,724	1,197,914
EXISTING SUPPLIES (acre-feet per year)	534,430	534,672	534,459	533,902	537,039	533,825
NEEDS (acre-feet per year)	895,910	850,186	804,914	759,987	711,366	669,095

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Region M Source Water Balance (Availability - WUG Supply)

GROUNDWATER SOURCE TYPE				SOURCE WATER BALANCE (ACRE-FEET PER YEAR)					
SOURCE NAME	COUNTY	BASIN	SALINITY*	2020	2030	2040	2050	2060	2070
CARRIZO-WILCOX AQUIFER	MAVERICK	NUECES	FRESH	312	312	312	312	7	7
CARRIZO-WILCOX AQUIFER	MAVERICK	RIO GRANDE	FRESH/ BRACKISH	1,235	1,235	1,194	1,107	1,067	1,029
CARRIZO-WILCOX AQUIFER	WEBB	NUECES	FRESH	0	0	0	0	0	0
CARRIZO-WILCOX AQUIFER	WEBB	RIO GRANDE	FRESH/ BRACKISH	301	301	301	301	301	301
GULF COAST AQUIFER SYSTEM	CAMERON	NUECES-RIO GRANDE	FRESH/ BRACKISH	(15,231)	(13,996)	(12,761)	(11,527)	(10,291)	(10,291)
GULF COAST AQUIFER SYSTEM	CAMERON	RIO GRANDE	FRESH/ BRACKISH	(273)	(197)	(120)	(45)	31	31
GULF COAST AQUIFER SYSTEM	HIDALGO	NUECES-RIO GRANDE	FRESH/ BRACKISH	58,119	63,524	68,930	74,334	79,498	79,498
GULF COAST AQUIFER SYSTEM	HIDALGO	RIO GRANDE	FRESH/ BRACKISH	(197)	210	616	1,023	1,429	1,429
GULF COAST AQUIFER SYSTEM	JIM HOGG	NUECES-RIO GRANDE	FRESH/ BRACKISH	4,885	4,881	4,906	4,925	4,944	4,956
GULF COAST AQUIFER SYSTEM	JIM HOGG	RIO GRANDE	FRESH/ BRACKISH	544	544	544	544	544	544
GULF COAST AQUIFER SYSTEM	STARR	NUECES-RIO GRANDE	FRESH/ BRACKISH	138	532	926	1,319	1,713	1,713
GULF COAST AQUIFER SYSTEM	STARR	RIO GRANDE	FRESH/ BRACKISH	1,131	1,716	2,302	2,887	3,473	3,473
GULF COAST AQUIFER SYSTEM	WEBB	NUECES	FRESH/ BRACKISH	(63)	(59)	(54)	(49)	(44)	(44)
GULF COAST AQUIFER SYSTEM	WEBB	NUECES-RIO GRANDE	FRESH/ BRACKISH	(216)	(78)	60	198	336	336
GULF COAST AQUIFER SYSTEM	WEBB	RIO GRANDE	FRESH/ BRACKISH	(255)	(228)	(201)	(174)	(147)	(147)
GULF COAST AQUIFER SYSTEM	WILLACY	NUECES-RIO GRANDE	FRESH/ BRACKISH	(456)	(143)	170	482	603	603
GULF COAST AQUIFER SYSTEM	ZAPATA	RIO GRANDE	FRESH	0	0	0	0	0	0
YEGUA-JACKSON AQUIFER	JIM HOGG	RIO GRANDE	FRESH	0	0	0	0	0	0
YEGUA-JACKSON AQUIFER	STARR	RIO GRANDE	FRESH	7,798	7,798	7,798	7,798	7,798	7,798
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	6,790	6,790	6,790	6,790	6,790	6,790
GROUNDWATER TOTAL SOURCE WATER BALANCE				84,562	93,142	101,713	110,225	118,052	118,026

REUSE SOURCE TYPE				SOURCE WATER BALANCE (ACRE-FEET PER YEAR)					
SOURCE NAME	COUNTY	BASIN	SALINITY*	2020	2030	2040	2050	2060	2070
DIRECT REUSE	CAMERON	NUECES-RIO GRANDE	FRESH	7,541	11,542	13,367	13,367	14,367	14,367
DIRECT REUSE	CAMERON	RIO GRANDE	FRESH	14	0	0	0	0	0
DIRECT REUSE	HIDALGO	NUECES-RIO GRANDE	FRESH	20,573	21,841	22,671	27,255	29,271	29,052
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	0	5,725	5,725	5,725	8,960	11,760
REUSE TOTAL SOURCE WATER BALANCE				31,665	44,645	48,696	54,490	60,741	63,322

*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.

Region M Source Water Balance (Availability - WUG Supply)

SURFACE WATER SOURCE TYPE				SOURCE WATER BALANCE (ACRE-FEET PER YEAR)					
SOURCE NAME	COUNTY	BASIN	SALINITY*	2020	2030	2040	2050	2060	2070
AMISTAD-FALCON LAKE/RESERVOIR SYSTEM	RESERVOIR	RIO GRANDE	FRESH	9,010	10,747	12,988	13,054	13,117	13,183
LIVESTOCK LOCAL SUPPLY	JIM HOGG	NUECES-RIO GRANDE	FRESH	0	0	0	0	0	0
LIVESTOCK LOCAL SUPPLY	JIM HOGG	RIO GRANDE	FRESH	0	0	0	0	0	0
LIVESTOCK LOCAL SUPPLY	MAVERICK	NUECES	FRESH	0	0	0	0	0	0
LIVESTOCK LOCAL SUPPLY	MAVERICK	RIO GRANDE	FRESH	0	0	0	0	0	0
LIVESTOCK LOCAL SUPPLY	STARR	RIO GRANDE	FRESH	0	0	0	0	0	0
LIVESTOCK LOCAL SUPPLY	WEBB	NUECES	FRESH	0	0	0	0	0	0
LIVESTOCK LOCAL SUPPLY	WEBB	NUECES-RIO GRANDE	FRESH	0	0	0	0	0	0
LIVESTOCK LOCAL SUPPLY	WEBB	RIO GRANDE	FRESH	0	0	0	0	0	0
LIVESTOCK LOCAL SUPPLY	ZAPATA	RIO GRANDE	FRESH	0	0	0	0	0	0
NUECES-RIO GRANDE RUN-OF-RIVER	CAMERON	NUECES-RIO GRANDE	FRESH	50	50	50	50	50	50
NUECES-RIO GRANDE RUN-OF-RIVER	HIDALGO	NUECES-RIO GRANDE	FRESH	7,522	7,522	7,522	7,522	7,522	7,522
NUECES-RIO GRANDE RUN-OF-RIVER	WILLACY	NUECES-RIO GRANDE	FRESH	0	0	0	0	0	0
RIO GRANDE RUN-OF-RIVER	MAVERICK	RIO GRANDE	FRESH	0	0	0	0	0	0
RIO GRANDE RUN-OF-RIVER	WEBB	RIO GRANDE	FRESH	0	0	0	0	0	0
SURFACE WATER TOTAL SOURCE WATER BALANCE				16,582	18,319	20,560	20,626	20,689	20,755

REGION M TOTAL SOURCE WATER BALANCE				132,809	156,106	170,969	185,341	199,482	202,103
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*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.

Region M Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)*

	2020 PLANNING DECADE			2070 PLANNING DECADE		
	2016 RWP	2021 RWP	DIFFERENCE (%)	2016 RWP	2021 RWP	DIFFERENCE (%)
CAMERON COUNTY COUNTY-OTHER WUG TYPE						
EXISTING WUG SUPPLY TOTAL	2,632	2,755	4.7%	2,632	2,755	4.7%
PROJECTED DEMAND TOTAL	7,749	3,931	-49.3%	10,176	5,343	-47.5%
WATER SUPPLY NEEDS TOTAL	5,117	1,239	-75.8%	7,544	2,608	-65.4%
CAMERON COUNTY IRRIGATION WUG TYPE						
EXISTING WUG SUPPLY TOTAL	161,027	174,617	8.4%	159,630	174,282	9.2%
PROJECTED DEMAND TOTAL	355,962	537,217	50.9%	288,601	450,987	56.3%
WATER SUPPLY NEEDS TOTAL	194,935	362,600	86.0%	128,971	276,705	114.5%
CAMERON COUNTY LIVESTOCK WUG TYPE						
EXISTING WUG SUPPLY TOTAL	3,814	60	-98.4%	3,814	60	-98.4%
PROJECTED DEMAND TOTAL	334	436	30.5%	334	436	30.5%
WATER SUPPLY NEEDS TOTAL	0	376	100.0%	0	376	100.0%
CAMERON COUNTY MANUFACTURING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	4,021	1,225	-69.5%	4,021	1,225	-69.5%
PROJECTED DEMAND TOTAL	4,708	1,647	-65.0%	6,829	1,846	-73.0%
WATER SUPPLY NEEDS TOTAL	687	422	-38.6%	2,808	621	-77.9%
CAMERON COUNTY MINING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	492	11	-97.8%	488	11	-97.7%
PROJECTED DEMAND TOTAL	264	264	0.0%	28	28	0.0%
WATER SUPPLY NEEDS TOTAL	0	253	100.0%	0	17	100.0%
CAMERON COUNTY MUNICIPAL WUG TYPE						
EXISTING WUG SUPPLY TOTAL	81,741	89,116	9.0%	81,601	92,527	13.4%
PROJECTED DEMAND TOTAL	73,644	77,848	5.7%	137,756	143,365	4.1%
WATER SUPPLY NEEDS TOTAL	4,251	2,886	-32.1%	56,404	51,654	-8.4%
CAMERON COUNTY STEAM ELECTRIC POWER WUG TYPE						
EXISTING WUG SUPPLY TOTAL	487	125	-74.3%	487	125	-74.3%
PROJECTED DEMAND TOTAL	1,523	3,550	133.1%	3,428	3,550	3.6%
WATER SUPPLY NEEDS TOTAL	1,036	3,425	230.6%	2,941	3,425	16.5%
HIDALGO COUNTY COUNTY-OTHER WUG TYPE						
EXISTING WUG SUPPLY TOTAL	3,587	430	-88.0%	3,587	430	-88.0%
PROJECTED DEMAND TOTAL	4,952	2,873	-42.0%	10,691	6,982	-34.7%
WATER SUPPLY NEEDS TOTAL	1,365	2,443	79.0%	7,104	6,552	-7.8%
HIDALGO COUNTY IRRIGATION WUG TYPE						
EXISTING WUG SUPPLY TOTAL	247,454	271,385	9.7%	245,007	271,346	10.8%
PROJECTED DEMAND TOTAL	639,676	688,667	7.7%	502,563	578,127	15.0%
WATER SUPPLY NEEDS TOTAL	392,222	417,282	6.4%	257,556	306,781	19.1%
HIDALGO COUNTY LIVESTOCK WUG TYPE						
EXISTING WUG SUPPLY TOTAL	1,725	600	-65.2%	1,725	600	-65.2%
PROJECTED DEMAND TOTAL	830	777	-6.4%	830	777	-6.4%
WATER SUPPLY NEEDS TOTAL	0	177	100.0%	0	177	100.0%
HIDALGO COUNTY MANUFACTURING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	3,714	4,800	29.2%	3,714	4,800	29.2%
PROJECTED DEMAND TOTAL	5,461	2,236	-59.1%	7,836	2,721	-65.3%

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Region M Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)*

	2020 PLANNING DECADE			2070 PLANNING DECADE		
	2016 RWP	2021 RWP	DIFFERENCE (%)	2016 RWP	2021 RWP	DIFFERENCE (%)
WATER SUPPLY NEEDS TOTAL	1,747	0	-100.0%	4,122	0	-100.0%
HIDALGO COUNTY MINING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	1,462	992	-32.1%	1,449	992	-31.5%
PROJECTED DEMAND TOTAL	2,844	2,844	0.0%	6,434	6,434	0.0%
WATER SUPPLY NEEDS TOTAL	1,382	1,852	34.0%	4,985	5,442	9.2%
HIDALGO COUNTY MUNICIPAL WUG TYPE						
EXISTING WUG SUPPLY TOTAL	121,406	142,881	17.7%	121,793	137,400	12.8%
PROJECTED DEMAND TOTAL	153,677	157,878	2.7%	325,125	333,335	2.5%
WATER SUPPLY NEEDS TOTAL	33,234	18,125	-45.5%	203,332	195,935	-3.6%
HIDALGO COUNTY STEAM ELECTRIC POWER WUG TYPE						
EXISTING WUG SUPPLY TOTAL	12,203	9,470	-22.4%	12,203	9,470	-22.4%
PROJECTED DEMAND TOTAL	14,151	11,538	-18.5%	32,507	11,538	-64.5%
WATER SUPPLY NEEDS TOTAL	1,948	2,068	6.2%	20,304	2,068	-89.8%
JIM HOGG COUNTY COUNTY-OTHER WUG TYPE						
EXISTING WUG SUPPLY TOTAL	286	286	0.0%	286	286	0.0%
PROJECTED DEMAND TOTAL	100	153	53.0%	126	193	53.2%
WATER SUPPLY NEEDS TOTAL	0	0	0.0%	0	0	0.0%
JIM HOGG COUNTY IRRIGATION WUG TYPE						
EXISTING WUG SUPPLY TOTAL	200	200	0.0%	200	200	0.0%
PROJECTED DEMAND TOTAL	439	360	-18.0%	451	302	-33.0%
WATER SUPPLY NEEDS TOTAL	239	160	-33.1%	251	102	-59.4%
JIM HOGG COUNTY LIVESTOCK WUG TYPE						
EXISTING WUG SUPPLY TOTAL	436	436	0.0%	436	436	0.0%
PROJECTED DEMAND TOTAL	436	376	-13.8%	436	376	-13.8%
WATER SUPPLY NEEDS TOTAL	0	0	0.0%	0	0	0.0%
JIM HOGG COUNTY MANUFACTURING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	0	1	100.0%	0	1	100.0%
PROJECTED DEMAND TOTAL	0	2	100.0%	0	2	100.0%
WATER SUPPLY NEEDS TOTAL	0	1	100.0%	0	1	100.0%
JIM HOGG COUNTY MINING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	93	93	0.0%	22	22	0.0%
PROJECTED DEMAND TOTAL	93	93	0.0%	22	22	0.0%
WATER SUPPLY NEEDS TOTAL	0	0	0.0%	0	0	0.0%
JIM HOGG COUNTY MUNICIPAL WUG TYPE						
EXISTING WUG SUPPLY TOTAL	592	900	52.0%	592	900	52.0%
PROJECTED DEMAND TOTAL	592	643	8.6%	745	822	10.3%
WATER SUPPLY NEEDS TOTAL	0	0	0.0%	153	0	-100.0%
MAVERICK COUNTY COUNTY-OTHER WUG TYPE						
EXISTING WUG SUPPLY TOTAL	6,950	181	-97.4%	6,950	181	-97.4%
PROJECTED DEMAND TOTAL	4,269	576	-86.5%	6,523	334	-94.9%
WATER SUPPLY NEEDS TOTAL	0	398	100.0%	0	157	100.0%
MAVERICK COUNTY IRRIGATION WUG TYPE						
EXISTING WUG SUPPLY TOTAL	39,285	41,499	5.6%	38,968	41,445	6.4%
PROJECTED DEMAND TOTAL	52,993	61,706	16.4%	49,076	51,801	5.6%

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Region M Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)*

	2020 PLANNING DECADE			2070 PLANNING DECADE		
	2016 RWP	2021 RWP	DIFFERENCE (%)	2016 RWP	2021 RWP	DIFFERENCE (%)
WATER SUPPLY NEEDS TOTAL	14,112	20,207	43.2%	10,516	10,356	-1.5%
MAVERICK COUNTY LIVESTOCK WUG TYPE						
EXISTING WUG SUPPLY TOTAL	499	499	0.0%	499	499	0.0%
PROJECTED DEMAND TOTAL	499	371	-25.7%	499	371	-25.7%
WATER SUPPLY NEEDS TOTAL	0	0	0.0%	0	0	0.0%
MAVERICK COUNTY MANUFACTURING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	14	10	-28.6%	14	10	-28.6%
PROJECTED DEMAND TOTAL	93	65	-30.1%	121	65	-46.3%
WATER SUPPLY NEEDS TOTAL	79	55	-30.4%	107	55	-48.6%
MAVERICK COUNTY MINING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	404	331	-18.1%	399	328	-17.8%
PROJECTED DEMAND TOTAL	1,988	1,988	0.0%	1,217	1,217	0.0%
WATER SUPPLY NEEDS TOTAL	1,584	1,657	4.6%	818	889	8.7%
MAVERICK COUNTY MUNICIPAL WUG TYPE						
EXISTING WUG SUPPLY TOTAL	7,947	8,304	4.5%	7,947	8,602	8.2%
PROJECTED DEMAND TOTAL	6,004	9,786	63.0%	10,215	16,506	61.6%
WATER SUPPLY NEEDS TOTAL	0	1,647	100.0%	2,268	8,224	262.6%
STARR COUNTY COUNTY-OTHER WUG TYPE						
EXISTING WUG SUPPLY TOTAL	938	383	-59.2%	938	383	-59.2%
PROJECTED DEMAND TOTAL	3,640	679	-81.3%	5,276	961	-81.8%
WATER SUPPLY NEEDS TOTAL	2,702	296	-89.0%	4,338	578	-86.7%
STARR COUNTY IRRIGATION WUG TYPE						
EXISTING WUG SUPPLY TOTAL	8,829	8,996	1.9%	8,689	8,922	2.7%
PROJECTED DEMAND TOTAL	13,483	23,875	77.1%	3,714	20,043	439.7%
WATER SUPPLY NEEDS TOTAL	4,654	14,879	219.7%	0	11,121	100.0%
STARR COUNTY LIVESTOCK WUG TYPE						
EXISTING WUG SUPPLY TOTAL	1,105	1,105	0.0%	1,105	1,105	0.0%
PROJECTED DEMAND TOTAL	1,018	1,192	17.1%	1,018	1,192	17.1%
WATER SUPPLY NEEDS TOTAL	0	148	100.0%	0	148	100.0%
STARR COUNTY MANUFACTURING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	14	74	428.6%	14	74	428.6%
PROJECTED DEMAND TOTAL	14	95	578.6%	19	116	510.5%
WATER SUPPLY NEEDS TOTAL	0	21	100.0%	5	42	740.0%
STARR COUNTY MINING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	560	217	-61.3%	557	217	-61.0%
PROJECTED DEMAND TOTAL	571	571	0.0%	1,091	1,091	0.0%
WATER SUPPLY NEEDS TOTAL	49	354	622.4%	534	874	63.7%
STARR COUNTY MUNICIPAL WUG TYPE						
EXISTING WUG SUPPLY TOTAL	7,217	10,225	41.7%	7,209	8,355	15.9%
PROJECTED DEMAND TOTAL	6,957	11,001	58.1%	10,413	16,484	58.3%
WATER SUPPLY NEEDS TOTAL	587	1,185	101.9%	3,250	8,129	150.1%
WEBB COUNTY COUNTY-OTHER WUG TYPE						
EXISTING WUG SUPPLY TOTAL	191	186	-2.6%	191	186	-2.6%
PROJECTED DEMAND TOTAL	912	302	-66.9%	1,732	573	-66.9%

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Region M Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)*

	2020 PLANNING DECADE			2070 PLANNING DECADE		
	2016 RWP	2021 RWP	DIFFERENCE (%)	2016 RWP	2021 RWP	DIFFERENCE (%)
WATER SUPPLY NEEDS TOTAL	721	116	-83.9%	1,541	401	-74.0%
WEBB COUNTY IRRIGATION WUG TYPE						
EXISTING WUG SUPPLY TOTAL	6,314	13,805	118.6%	6,255	13,758	120.0%
PROJECTED DEMAND TOTAL	7,612	10,425	37.0%	7,612	8,752	15.0%
WATER SUPPLY NEEDS TOTAL	1,298	0	-100.0%	1,357	0	-100.0%
WEBB COUNTY LIVESTOCK WUG TYPE						
EXISTING WUG SUPPLY TOTAL	1,129	1,029	-8.9%	1,129	1,029	-8.9%
PROJECTED DEMAND TOTAL	1,129	963	-14.7%	1,129	963	-14.7%
WATER SUPPLY NEEDS TOTAL	0	0	0.0%	0	0	0.0%
WEBB COUNTY MANUFACTURING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	21	8	-61.9%	21	8	-61.9%
PROJECTED DEMAND TOTAL	21	251	1095.2%	30	296	886.7%
WATER SUPPLY NEEDS TOTAL	0	243	100.0%	9	288	3100.0%
WEBB COUNTY MINING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	8,056	7,277	-9.7%	8,056	7,244	-10.1%
PROJECTED DEMAND TOTAL	10,331	10,331	0.0%	1,343	1,343	0.0%
WATER SUPPLY NEEDS TOTAL	2,275	3,054	34.2%	0	0	0.0%
WEBB COUNTY MUNICIPAL WUG TYPE						
EXISTING WUG SUPPLY TOTAL	60,075	61,903	3.0%	60,324	61,903	2.6%
PROJECTED DEMAND TOTAL	42,842	43,711	2.0%	82,611	84,310	2.1%
WATER SUPPLY NEEDS TOTAL	0	9	100.0%	22,287	22,407	0.5%
WEBB COUNTY STEAM ELECTRIC POWER WUG TYPE						
EXISTING WUG SUPPLY TOTAL	2,725	2,195	-19.4%	2,725	2,195	-19.4%
PROJECTED DEMAND TOTAL	1,298	152	-88.3%	2,981	152	-94.9%
WATER SUPPLY NEEDS TOTAL	0	0	0.0%	256	0	-100.0%
WILLACY COUNTY COUNTY-OTHER WUG TYPE						
EXISTING WUG SUPPLY TOTAL	168	201	19.6%	168	201	19.6%
PROJECTED DEMAND TOTAL	67	52	-22.4%	107	84	-21.5%
WATER SUPPLY NEEDS TOTAL	0	0	0.0%	0	0	0.0%
WILLACY COUNTY IRRIGATION WUG TYPE						
EXISTING WUG SUPPLY TOTAL	19,949	20,452	2.5%	19,785	20,423	3.2%
PROJECTED DEMAND TOTAL	69,253	99,610	43.8%	68,741	83,621	21.6%
WATER SUPPLY NEEDS TOTAL	49,304	79,158	60.6%	48,956	63,198	29.1%
WILLACY COUNTY LIVESTOCK WUG TYPE						
EXISTING WUG SUPPLY TOTAL	438	95	-78.3%	438	95	-78.3%
PROJECTED DEMAND TOTAL	261	235	-10.0%	261	235	-10.0%
WATER SUPPLY NEEDS TOTAL	0	140	100.0%	0	140	100.0%
WILLACY COUNTY MANUFACTURING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	120	0	-100.0%	120	0	-100.0%
PROJECTED DEMAND TOTAL	136	0	-100.0%	136	0	-100.0%
WATER SUPPLY NEEDS TOTAL	16	0	-100.0%	16	0	-100.0%
WILLACY COUNTY MINING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	49	20	-59.2%	49	20	-59.2%
PROJECTED DEMAND TOTAL	49	49	0.0%	12	12	0.0%

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Region M Water User Group (WUG) Data Comparison to 2016 Regional Water Plan (RWP)*

	2020 PLANNING DECADE			2070 PLANNING DECADE		
	2016 RWP	2021 RWP	DIFFERENCE (%)	2016 RWP	2021 RWP	DIFFERENCE (%)
WATER SUPPLY NEEDS TOTAL	0	29	100.0%	0	0	0.0%
WILLACY COUNTY MUNICIPAL WUG TYPE						
EXISTING WUG SUPPLY TOTAL	7,606	4,942	-35.0%	7,365	4,794	-34.9%
PROJECTED DEMAND TOTAL	3,190	3,211	0.7%	4,875	4,917	0.9%
WATER SUPPLY NEEDS TOTAL	56	235	319.6%	1,022	1,291	26.3%
ZAPATA COUNTY COUNTY-OTHER WUG TYPE						
EXISTING WUG SUPPLY TOTAL	187	66	-64.7%	187	66	-64.7%
PROJECTED DEMAND TOTAL	391	122	-68.8%	767	233	-69.6%
WATER SUPPLY NEEDS TOTAL	204	56	-72.5%	580	167	-71.2%
ZAPATA COUNTY IRRIGATION WUG TYPE						
EXISTING WUG SUPPLY TOTAL	3,432	3,476	1.3%	3,378	3,449	2.1%
PROJECTED DEMAND TOTAL	4,717	5,100	8.1%	3,800	4,281	12.7%
WATER SUPPLY NEEDS TOTAL	1,285	1,624	26.4%	422	832	97.2%
ZAPATA COUNTY LIVESTOCK WUG TYPE						
EXISTING WUG SUPPLY TOTAL	479	479	0.0%	479	479	0.0%
PROJECTED DEMAND TOTAL	479	398	-16.9%	479	398	-16.9%
WATER SUPPLY NEEDS TOTAL	0	0	0.0%	0	0	0.0%
ZAPATA COUNTY MANUFACTURING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	0	5	100.0%	0	5	100.0%
PROJECTED DEMAND TOTAL	0	9	100.0%	0	9	100.0%
WATER SUPPLY NEEDS TOTAL	0	4	100.0%	0	4	100.0%
ZAPATA COUNTY MINING WUG TYPE						
EXISTING WUG SUPPLY TOTAL	983	1,026	4.4%	982	1,026	4.5%
PROJECTED DEMAND TOTAL	911	911	0.0%	214	214	0.0%
WATER SUPPLY NEEDS TOTAL	0	0	0.0%	0	0	0.0%
ZAPATA COUNTY MUNICIPAL WUG TYPE						
EXISTING WUG SUPPLY TOTAL	2,402	2,903	20.9%	2,402	2,943	22.5%
PROJECTED DEMAND TOTAL	2,605	2,923	12.2%	4,989	5,598	12.2%
WATER SUPPLY NEEDS TOTAL	297	289	-2.7%	2,587	2,760	6.7%
REGION M						
EXISTING WUG SUPPLY TOTAL	835,458	892,275	6.8%	831,030	887,813	6.8%
PROJECTED DEMAND TOTAL	1,505,168	1,783,993	18.5%	1,605,919	1,853,358	15.4%
WATER SUPPLY NEEDS TOTAL	717,386	939,113	30.9%	797,344	984,525	23.5%

*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 2016 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 Needs totals.

Region M Source Data Comparison to 2016 Regional Water Plan (RWP)

	2020 PLANNING DECADE			2070 PLANNING DECADE		
	2016 RWP	2021 RWP	DIFFERENCE (%)	2016 RWP	2021 RWP	DIFFERENCE (%)
CAMERON COUNTY						
GROUNDWATER AVAILABILITY TOTAL (acre-feet per year)	50,560	6,688	-86.8%	50,560	11,932	-76.4%
REUSE AVAILABILITY TOTAL (acre-feet per year)	9,176	9,176	0.0%	16,002	16,002	0.0%
SURFACE WATER AVAILABILITY TOTAL (acre-feet per year)	50	350	600.0%	50	350	600.0%
HIDALGO COUNTY						
GROUNDWATER AVAILABILITY TOTAL (acre-feet per year)	41,926	88,039	110.0%	41,926	111,044	164.9%
REUSE AVAILABILITY TOTAL (acre-feet per year)	34,743	34,743	0.0%	49,179	49,179	0.0%
SURFACE WATER AVAILABILITY TOTAL (acre-feet per year)	7,522	7,522	0.0%	7,522	7,522	0.0%
JIM HOGG COUNTY						
GROUNDWATER AVAILABILITY TOTAL (acre-feet per year)	24,414	6,174	-74.7%	24,414	6,174	-74.7%
SURFACE WATER AVAILABILITY TOTAL (acre-feet per year)	271	271	0.0%	271	271	0.0%
MAVERICK COUNTY						
GROUNDWATER AVAILABILITY TOTAL (acre-feet per year)	2,043	2,042	0.0%	1,532	1,531	-0.1%
REUSE AVAILABILITY TOTAL (acre-feet per year)	650	650	0.0%	650	650	0.0%
SURFACE WATER AVAILABILITY TOTAL (acre-feet per year)	439	439	0.0%	439	439	0.0%
RESERVOIR COUNTY						
SURFACE WATER AVAILABILITY TOTAL (acre-feet per year)	1,060,616	1,079,381	1.8%	1,053,834	1,078,349	2.3%
STARR COUNTY						
GROUNDWATER AVAILABILITY TOTAL (acre-feet per year)	9,526	11,735	23.2%	9,526	15,652	64.3%
SURFACE WATER AVAILABILITY TOTAL (acre-feet per year)	65	65	0.0%	65	65	0.0%
WEBB COUNTY						
GROUNDWATER AVAILABILITY TOTAL (acre-feet per year)	23,917	21,536	-10.0%	23,917	22,215	-7.1%
REUSE AVAILABILITY TOTAL (acre-feet per year)	773	773	0.0%	12,533	12,533	0.0%
SURFACE WATER AVAILABILITY TOTAL (acre-feet per year)	919	919	0.0%	919	919	0.0%
WILLACY COUNTY						
GROUNDWATER AVAILABILITY TOTAL (acre-feet per year)	20,013	1,146	-94.3%	20,013	2,205	-89.0%
ZAPATA COUNTY						
GROUNDWATER AVAILABILITY TOTAL (acre-feet per year)	7,999	7,987	-0.2%	7,999	7,987	-0.2%
SURFACE WATER AVAILABILITY TOTAL (acre-feet per year)	249	249	0.0%	249	249	0.0%
REGION M						
GROUNDWATER AVAILABILITY TOTAL (acre-feet per year)	180,398	145,347	-19.4%	179,887	178,740	-0.6%
REUSE AVAILABILITY TOTAL (acre-feet per year)	45,342	45,342	0.0%	78,364	78,364	0.0%
SURFACE WATER AVAILABILITY TOTAL (acre-feet per year)	1,070,131	1,089,196	1.8%	1,063,349	1,088,164	2.3%

Appendix B:
Region M
Hydrologic Variance
Request



August 17, 2018

Jeff Walker,
Executive Administrator
Texas Water Development Board
1700 North Congress
Austin, TX 78711-3234

Re: Hydrologic Variance Request for the 2021 Rio Grande Regional Water Plan (Region M)

Mr. Walker,

The Rio Grande Planning Region intends to rely on current Water Availability Model (WAM) Run 3 estimates of Firm Yield and Modeled Available Groundwater to establish availabilities in the 2021 Rio Grande Regional Water Plan. The following assumptions **have been approved by the Rio Grande Regional Water Planning Group at the August 1, 2018 scheduled Board Meeting** and are submitted here for your review.

Surface Water

1. The most current WAM Run 3 will be used for all Surface Water Rights Modeling for existing supplies and future WMS, which includes:
 - a. Full exercise of existing surface water rights;
 - b. Zero effluent discharges unless specifically required by a surface water right (hydropower, industrial rights, etc.); and
 - c. Best available water rights information as of June 2018.
 - d. In the evaluation of the cumulative effects of water management strategies, the Rio Grande WAM Run 3 may be used to estimate the impacts of future urbanization (and the resulting reclassification of water rights) on the firm yield of the system. The results of these analyses will be limited to the discussion of cumulative effects.
2. Reservoir capacities for Amistad and Falcon will be based on the current estimates for sedimentation in 2020 and 2070, and a linear interpolation will be used to determine capacity for the decades between.
 - a. Existing supplies will be based on the 2020 Firm Yield; and
 - b. Projected supplies and WMS will rely on estimated decadal averages of Firm Yield.

3. Period of record for simulations:
 - a. Rio Grande WAM: 1940 – 2000
 - b. Nueces-Rio Grande WAM: 1948 – 1998
4. The Rio Grande WAM will be run to be consistent with the variance submitted by Region E and approved April 18, 2018 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.

Reuse/Recycle Water

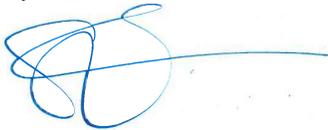
1. Source water available for a reuse water management strategy will be determined based on the estimated amount of water returned to a utility's WWTPs for each decade, less the amount of reuse water already being utilized as existing supply.
 - a. The amount of water returned to a utility's WWTP will 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
Example: $[50\% * (\text{projected water demands for a utility} - \text{conservation WMS volumes} - \text{drought management WMS volumes})] - \text{existing reuse supply}$
 - i. For Direct Reuse, this calculation will set an upper limit to the volume of reuse water available, and will not require any WAM modeling, since Run 3 assumes no return flows.
 - ii. For Indirect reuse, treated effluent discharge volumes returned to the Rio Grande would be limited by this calculation, and the effluent could be entered as a return flow in the WAM to assess downstream availability. There are no current or proposed future indirect reuse project in Region M.
2. Existing and future non-potable reuse supplies will be shown to meet no more than **10%** of municipal demands. Manufacturing and steam-electric use of non-potable water will be considered on a case-by-case basis.

Hydrologic Models

- Rio Grande WAM (downloaded from TCEQ 8/15/18, may be updated as TCEQ posts additional updates)
- Nueces – Rio Grande WAM (downloaded from TCEQ 6/21/18)
- Southern Carrizo-Wilcox-Queen City-Sparta GAM
- Gulf Coast Aquifer System (southern portion) GAM
- Yegua-Jackson Aquifer GAM
- Any additional currently-approved WAM or GAM necessary

Please contact me if you have any questions.

Sincerely,

A handwritten signature in blue ink, consisting of several loops and a long horizontal stroke extending to the right.

Sara Eatman

Technical Consultant, Rio Grande Regional Water Planning Group

Cc: Tomas Rodriguez, Chairman, Rio Grande Regional Water Planning Group
Ron Garza, Lower Rio Grande Development Council
William Alfaro, TWDB Project Manager

Appendix C:
Region E Hydrologic
Variance Request



February 22, 2018

Jeff Walker
Texas Water Development Board
1700 North Congress
Austin, Texas 78711-3231

Re: Hydrologic Variance Requests for Water Availability Determination of Current Surface Water Supplies in Far West Texas (Region E)

Dear Mr. Walker:

The Far West Texas Region is located within the Rio Grande Basin. Surface water supplies are obtained from the Rio Grande River and Pecos River, a tributary of the Rio Grande.

As intended by Senate Bill 1, the assessment of surface water availability in the Far West Texas Region will be conducted to accurately reflect water supplies that are available for use. This assessment will include updates to new water right permits and current operating policies and/or contractual agreements. As required by the planning guidelines, we will provide information on firm yields for all water supply sources.

In accordance with regional planning rules and guidelines, the Far West Texas Region intends to use the Full Authorization Run (Run 3) of the TCEQ-approved WAM for determining surface water availability in the region. However, to most accurately reflect the current conditions and operations of the region, the following variances are requested. Please note that most of the requested variances are identical to the assumptions used in previous Region E water plans.

Far West Texas (Region E) Variance Requests

1. The supply from the Bureau of Reclamation's Rio Grande Project, which includes releases from Elephant Butte and Caballo Reservoirs, as well as run-of-the-river flows entering Texas from New Mexico, will be based on the lowest annual historical allotment delivered and available to these entities. Please note that this does not include return flows, which will be evaluated separately. Entities include El Paso Water Utilities and El Paso County Water Improvement District #1.
2. The demand pattern for irrigation rights above Fort Quitman will be modified so that diversions only occur from March through October. This change is to be consistent with actual operation of the Rio Grande Project.
3. The 2018 Rio Grande WAM has not been updated to reflect adjudicated water rights above Fort Quitman. As a result, some claims and permits that were abandoned or cancelled in the adjudication process are still in the WAM. All cancelled or abandoned claims and permits will be removed from the WAM. At this time we are verifying with TCEQ which water rights should be

taken out of the WAM or modified to reflect adjudicated amounts. We do not anticipate any water rights will be added to the WAM.

Also, the Far West Texas Region proposes including variances and error corrections proposed by Region F in the Balmorhea area in Reeves County in the Pecos Basin. These changes are related to San Solomon Springs and Giffin Springs flows, which in the current TCEQ WAM are currently being passed downstream instead of being used by the water rights dependent on those springs. Correcting this error could potentially impact the available supplies in Terrell County in Region E. These changes have not been included in previous water plans for the Far West Texas Region.

No other variances are anticipated at this time.

Please call me if you have any questions regarding our request.

Sincerely,



Jesus Reyes
Chair, Far West Texas Water Planning Group

cc: Tom Barnett, TWDB Project Manager
Jennifer Herrera, WSP
John Ashworth, WSP
Keeley Kirksey, Freese and Nichols, Inc.
John Albright, Freese and Nichols, Inc.