

Region J TWDB Update 7-15-22

1. Upcoming contract amendments:

- Will be routing through DocuSign for signature soon.
- Contract amendments will include anticipated total project cost, full scope of work, and updated contract guidance documents (Exhibits C and D).

2. Interregional Planning Council update:

- First meeting scheduled for November 9, 2022. Meeting will be held in Austin with a virtual component.
- Will need a letter from Region J naming new IPC Alternate.

Projections Timeline

Draft Water Demand Projections	Timeline
Livestock, Manufacturing, Steam-Electric Projections + Supporting Data	January 20, 2022
Water User Group List + Historical Population, Connections, Net Use, GPCD	March 16, 2022
DUE: RWPGs review WUG list + historical WUG data	July 29, 2022
Irrigation, Mining Projections + Supporting Data	August 23, 2022
Non-municipal Basin Splits	August 23, 2022
Population Projections + Plumbing Code Savings + Municipal Demand Projections	February 2023
DUE: RWPGs request revisions for non-municipal demand projections	July 14, 2023
DUE: RWPGs request revisions for population and municipal demand projections	August 11, 2023
TWDB Board Meeting to Adopt Projections	Fall 2023
DUE: Technical Memorandum	March 4, 2024

Important Considerations

- All data released thus far is available online
 - Interactive dashboards
 - Underneath each dashboard is Excel file format + methodology summaries
- <https://www.twdb.texas.gov/waterplanning/data/projections/2027/projections.asp>
- Timeframe for reviewing draft population and municipal demand projections is ~6 months
 - Regions should meet soon after release and develop strategy for meeting the deadline
 - Regions are strongly encouraged to submit non-municipal revisions requests before municipal data release
 - Declines in population will be reflected in the draft population projections

Important Considerations (cont.)

- Planning groups must take action to approve submitting revisions requests
- Planning groups encouraged to coordinate with TWDB as early as possible on potential revisions
- Guidance regarding projections revisions provided in RWP contract Exhibit C, Section 2.2
- TWDB staff available for assistance and to provide projections presentations
- RWP grant funds may not be used for revisions to TWDB **Board-adopted** projections

WSP Technical Consultant Presentation

PLATEAU RWPG Meeting

September 15, 2022

**Update on
Regional Water
Planning
Schedule**

**FULLY EXECUTED
CONTRACTS ARE IN
PROGRESS!**

- **AMENDMENTS ARE CURRENTLY BEING PROCESSED BY TWDB CONTRACT STAFF.**

TASK	DESCRIPTION
1	Planning Area Description
2A	Non-Pop Water Demand Projections
2B	Pop Water Demand Projections
3	Water Supply Analyses
4A	Identification of Water Needs
4B	Identification of Potentially Feasible WMSs
4C	Technical Memorandum
5A	Evaluation & Recommendation of WMSs
5B	Water Conservation Recommendations
6	Impacts of Plan & Consistency with Protection of Resources
7	Drought Response Information, Activities & Recommendations
8	Unique Sites & Policy Recommendations
9	Infrastructure Financing Analysis
10	Public Participation & Plan Adoption
11	Implementation & Comparison to Previous Plan
12	Prepare & Submit Prioritization of Projects

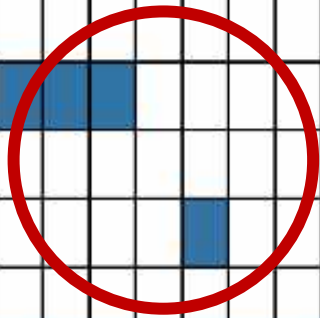
Anticipated timeline of upcoming work in 2022 & 2023

- Aug. 2022 – TWDB to distribute draft irrigation & mining water demand projections
- Feb. 2023 – TWDB to distribute draft population & municipal projections.
- Jul. 14, 2023 – All non-municipal projection revisions are due back to the TWDB.
- Aug. 11, 2023 – All population & municipal projection revisions are due back to the TWDB.

Sixth Cycle of Regional Water Planning (2026 Regional Water Plans)

Working Schedule (as of October 2021)^A

Item	Entity	Activity	Planning SOW Task # ^B	2021												2022											
				Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	TWDB	RFA for regional water planning grant posted and applications due																									
2	TWDB/RWPG	Initial planning contract execution deadline																									
3	TWDB/RWPG	Anticipated additional contracting activities																									
4	TWDB	Regional Water Planning rules update																									
5	TWDB	TWDB/BEG Mining study	2A																								
6	RWPG	RWPGs hold pre-planning & coordination meeting (before technical work begins)	10																								
7	TWDB	Municipal WUG list, GPCD, historical population, and water use released	2B																								
8	RWPG	Review municipal WUG list, GPCD, historical population, and water use; provide feedback to TWDB	2B																								
9	TWDB	Draft Livestock, Manufacturing, and Steam Electric Power demand projections released	2A																								
10	TWDB	Draft Irrigation and Mining projections released	2A																								
11	TWDB	Draft Population and Municipal demand projections released	2B																								
12	RWPG	Review draft projections and finalize adjustments with TWDB staff	2A, 2B																								
13	TWDB	TWDB Board adopts projections	2A, 2B																								
14	TWDB	DB27 prepared for data entry ^{C, D}																									
15	TWDB/RWPG	DB27 individualized training for consultants																									
16	TWDB	Updated MAGs released																									
17	RWPG	Evaluate water availability and existing water supplies																									

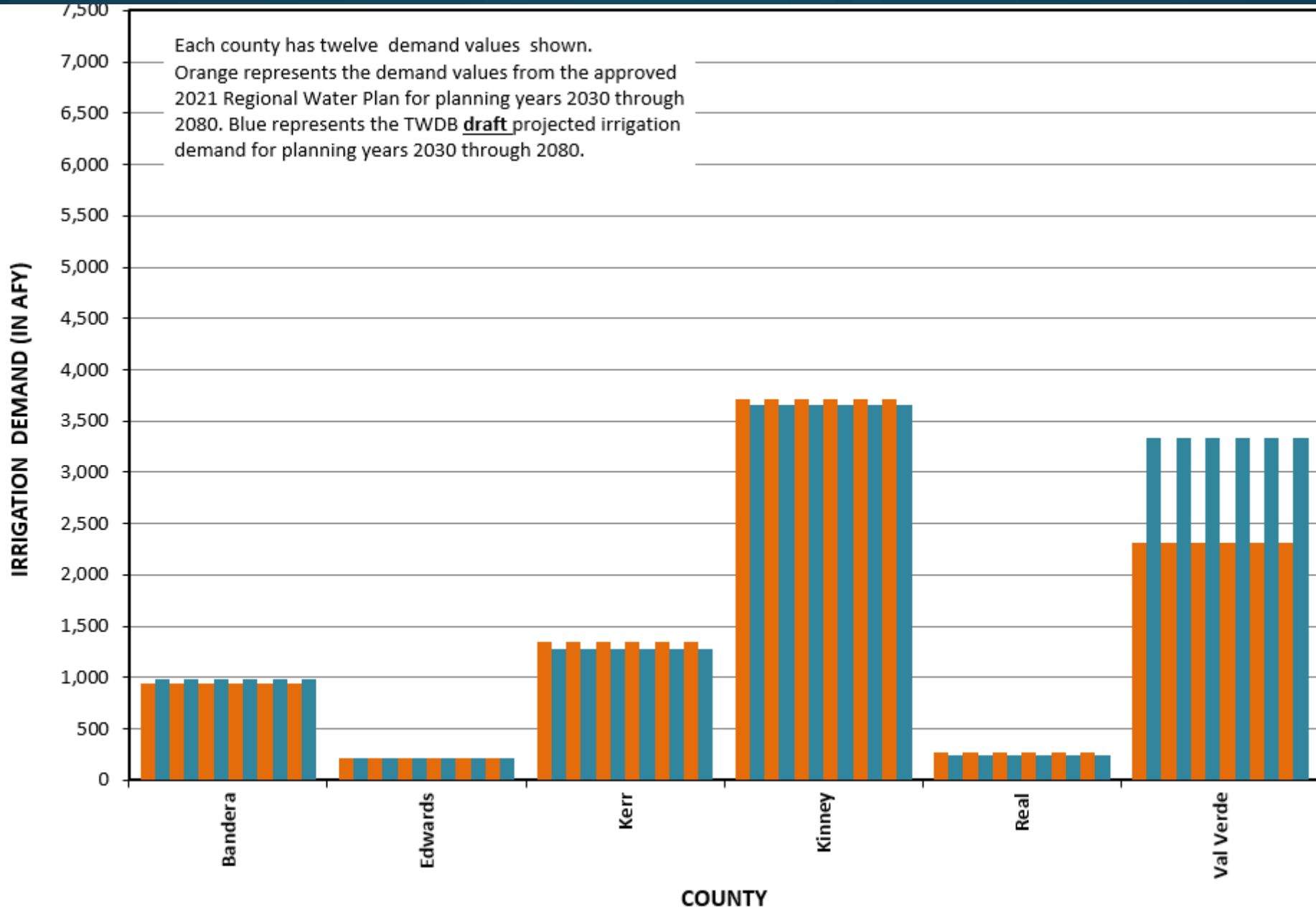


Draft
Non-Municipal
Water Demand
Projections

Irrigation Water Demand Projection Methodology

- No key changes from the previous planning cycle
- Baseline methodology is the five-year average annual water use estimates (2015-2019).
- Held constant between 2030 and 2080 or
- Counties where the total groundwater availability over the planning period is projected to be $<$ than the groundwater portion of the baseline water demand projection, are held constant for ten years (2030 – 2040), then begin to decline depending on the groundwater availability.

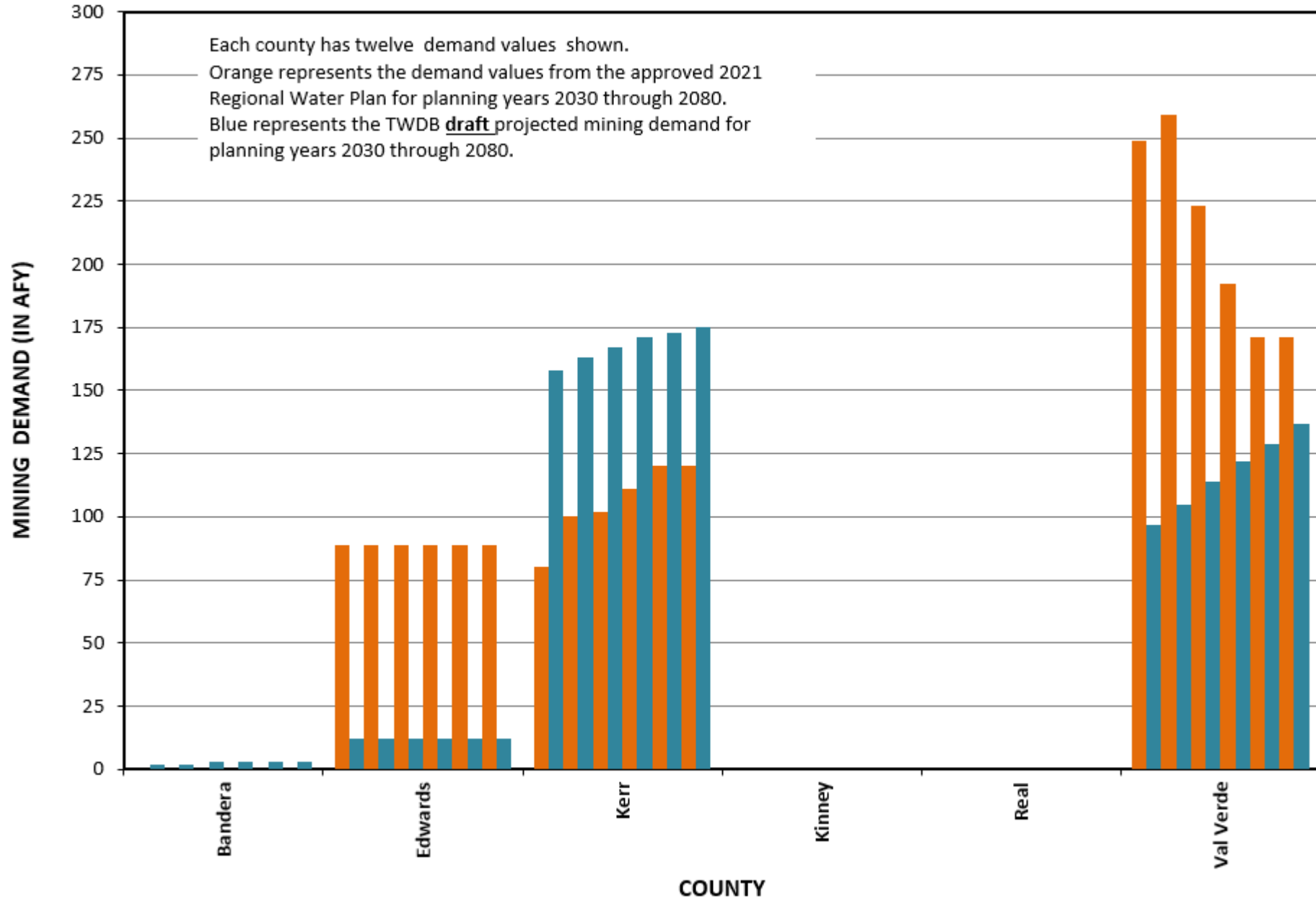
Irrigation Water Demand Projections



Mining Water Demand Projection Methodology

- **2022 Mining Water Use Study – USGS granted funding to the TWDB for a study on mining water use and projections through the Water Use and Research Data Program. Through a contract between TWDB and University of Texas Bureau of Economic Geology, the 2011-2012 study has been updated.**
- **Comprehensive and quantitative assessment of mining water use across Texas. This information will be utilized in the 2026 Regional Water Plans and the 2027 State Water Plan.**
- **<https://www.twdb.texas.gov/waterplanning/data/projections/MiningStudy/index.asp>**

Mining Water Demand Projections



Historical Use by Facility

2010-2019 Historical Water Use Estimates (in acre-feet) | Mining by Facility surveyed through the TWDB Water Use Survey

WUS Survey Number	Year	Survey Name	Region	County	Basin	NAICS	NAICS Definition	Total Net Use
1105488	2019	GIPSON CONSTRUCTION LLC-BUNDY PIT	J	EDWARDS	COLORADO	212319	Other Crushed and Broken Stone Mining and Quarrying	0
1105742	2019	GROOMS DISTRIBUTING	J	EDWARDS	NUECES	212312	Crushed and Broken Limestone Mining and Quarrying	1

2010-2019 Historical Water Use Estimates (in acre-feet) | Mining by Facility surveyed through the TWDB Water Use Survey

WUS Survey Number	Year	Survey Name	Region	County	Basin	NAICS	NAICS Definition	Total Net Use
1102933	2012	WHEATCRAFT INC	J	KERR	GUADALUPE	212321	Construction Sand and Gravel Mining	106
1102933	2013	WHEATCRAFT INC	J	KERR	GUADALUPE	212321	Construction Sand and Gravel Mining	157
1102933	2014	WHEATCRAFT INC	J	KERR	GUADALUPE	212321	Construction Sand and Gravel Mining	167
1102933	2015	WHEATCRAFT INC	J	KERR	GUADALUPE	212321	Construction Sand and Gravel Mining	201
1102933	2016	WHEATCRAFT INC	J	KERR	GUADALUPE	212321	Construction Sand and Gravel Mining	185
1102933	2017	WHEATCRAFT INC	J	KERR	GUADALUPE	212321	Construction Sand and Gravel Mining	179
1102933	2018	WHEATCRAFT INC	J	KERR	GUADALUPE	212321	Construction Sand and Gravel Mining	125
1105438	2019	EDMUND JENSCHKE INC-HWY 27 PIT	J	KERR	GUADALUPE	212312	Crushed and Broken Limestone Mining and Quarrying	0
1105726	2019	MARTIN MARIETTA MATERIALS SOUTHWEST LLC-BEDROCK QUARRY	J	KERR	GUADALUPE	212312	Crushed and Broken Limestone Mining and Quarrying	23
1105727	2019	MARTIN MARIETTA MATERIALS SOUTHWEST LLC-KERRVILLE SAND & GRAVEL	J	KERR	GUADALUPE	212321	Construction Sand and Gravel Mining	5
1105920	2019	R A MATERIALS LLC	J	KERR	GUADALUPE	212321	Construction Sand and Gravel Mining	20

2010-2019 Historical Water Use Estimates (in acre-feet) | Mining by Facility surveyed through the TWDB Water Use Survey

WUS Survey Number	Year	Survey Name	Region	County	Basin	NAICS	NAICS Definition	Total Net Use
1105168	2019	90 WEST CONTRACTORS LTD-BURKS RANCH	J	VAL VERDE	RIO GRANDE	212321	Construction Sand and Gravel Mining	0
1105401	2019	CSA MATERIALS INC-KELLY PIT	J	VAL VERDE	RIO GRANDE	212312	Crushed and Broken Limestone Mining and Quarrying	0
1105573	2019	INGRAM READYMIX INC-DEL RIO GRAVEL PLANT	J	VAL VERDE	RIO GRANDE	212321	Construction Sand and Gravel Mining	88

Next Meeting...

- April 2023

Irrigation Water Demand Projections Methodology for the 2026 Regional and 2027 State Water Plans

Methodology summary

The draft irrigation water demand projections are based upon the average of the most recent five-years of water use estimates (2015 through 2019) for each region-county and either:

- held constant between 2030 and 2080 or
- in counties where the total groundwater availability over the planning period is projected to be less than the groundwater-portion of the baseline water demand projections, the irrigation water demand projections are held constant for 10 years beyond the point that the groundwater availability falls below the baseline demand, in most cases 2030 to 2040, after projected demands will begin to decline, depending on and commensurate with the groundwater availability.

After draft projections (decades 2030 through 2080) for each region-county are provided to the Regional Water Planning Groups (RWPGs), the RWPGs may request alterations to the draft projections, subject to adequate justification, documentation, and EA approval per guidance in *Exhibit C: General Guidelines for Development of the 2026 Regional Water Plans*.

Key changes from the previous planning cycle's projection methodology: None

Major Assumptions/Updates

- Baseline use calculated as average of five years of TWDB annual region-county level estimates (2015 - 2019).
- Irrigation water demands will be held constant unless constrained by modeled available groundwater (MAG), then, after a single decade delay, the demands will decline at the same rate as the groundwater availability. This is to both acknowledge the decline in availability and yet allow for a need to be reflected that can be addressed with strategies such as conservation. This is the same method used to develop irrigation projections for the 2021 Regional Water Plans.

Baseline default projection methodology

Data Sources:

- TWDB historical water use estimates by region and county (2015-2019), including reuse.
- Projected total groundwater availability volumes including the most recent MAG volumes from the 2021 Joint Groundwater Planning process (some MAG data is under review and is subject to change). At the time these draft irrigation projections were developed, updated MAG data was not available from Groundwater Management Areas 1, 8, 9, 10 and 12.

Each year, the TWDB Agricultural Conservation department develops annual irrigation water use estimates at the county level by applying a calculated evapotranspiration-based "crop water need"

estimate to reported irrigated acreage from the Farm Service Agency. These estimates are then adjusted based on surface water release data from the Texas Commission on Environmental Quality and comments from groundwater conservation districts, irrigation districts, and river authorities.

As part of the regional and state water plans, the TWDB Projections and Socioeconomic Analysis department develops irrigation projections. Future water demands for irrigation purposes are significantly impacted by commodity prices, production costs, federal agricultural policies, and federal energy policies. Any attempt to forecast such factors and their impact on water use over a 50-year period would be impractical. A more credible methodology is to focus on recent historical irrigation water use data as an indicator of future use. Therefore, the baseline dry-year irrigation demand projection for most areas will be the average of the annual irrigation water use estimates over the most recent five years of water use data and that average volume will then be held constant over the planning period.

However, much of the projected irrigation demands of the state are supplied by groundwater sources that are projected to decline significantly over 50 years. If the baseline irrigation water demand projections associated with groundwater and summed over 50 years, exceeds the projected groundwater resource (modeled available groundwater volume) summed over 50 years, then the water demand projections will reflect groundwater availability constraints as described below.

Constrained water demand projections

Starting at the year 2030 baseline projection, the demand volume will be held constant for at least one decade. If the annual groundwater availability is lower than the baseline projection at the beginning of the planning period (2030), then beginning in 2040, the subsequent demands will parallel the trend of the groundwater availability (MAG). See Figure 1. If the annual groundwater availability equals or exceeds the default baseline annual groundwater projection at the beginning of the planning period (2030) but then falls below the baseline projection at a later point, then the irrigation water demand projections will not begin to parallel the groundwater availability until the following decade, after the point at which groundwater availability has fallen below the baseline demand projections. See Figure 2.

Figure 1- Potential Draft Irrigation Water Demand Projections: Declining Groundwater Example

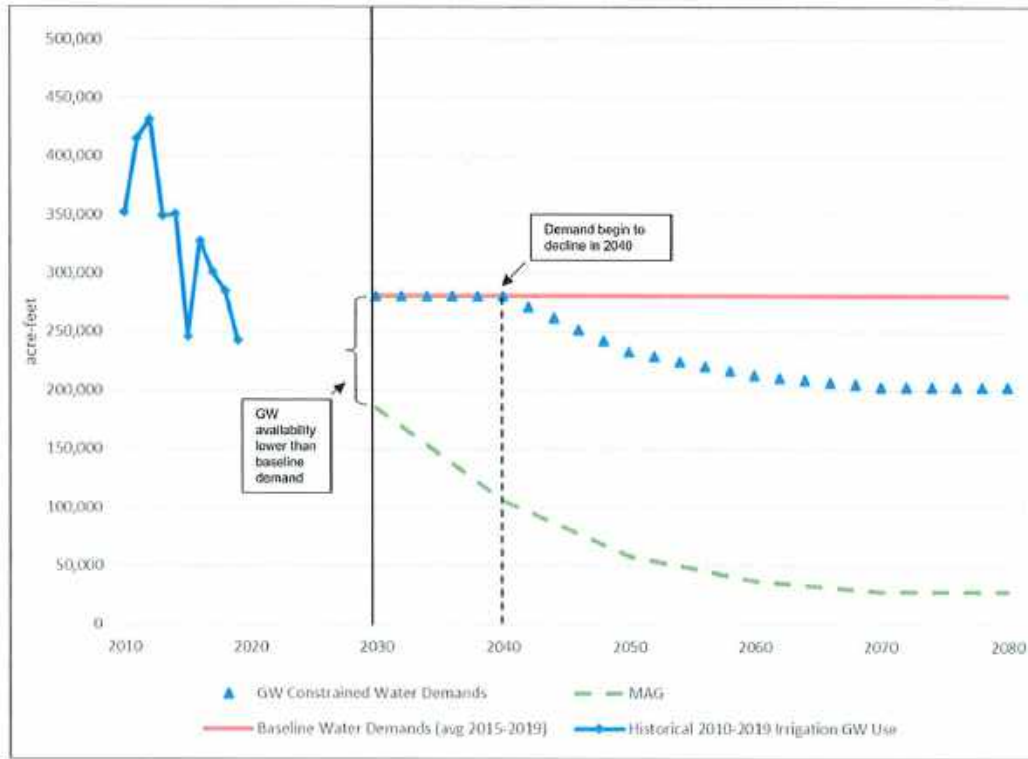
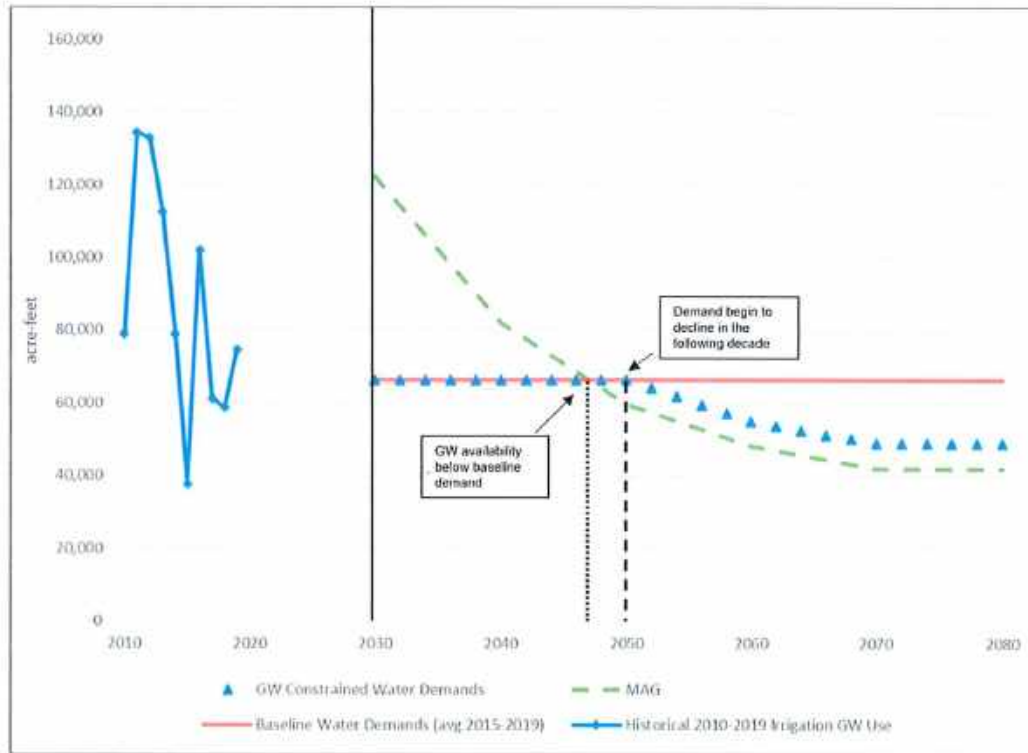


Figure 2- Potential Draft Irrigation Water Demand Projections: Declining Groundwater Example



While constraining water demand projections based on water resource availability would most likely occur in areas primarily utilizing groundwater, such constraints could also occur in areas with limitations of surface water rights or contracts. At this stage however, TWDB does not have sufficient information to attempt to constrain surface water demands and will defer to RWPGs to identify such instances, if appropriate. The portion of the baseline irrigation water demand projection anticipated to be supplied by surface water and reuse, based on recent water use data, will be added to the constrained groundwater demand.

Key Data Sources

Links to the key data sources in developing the projections:

1. Historical water use (county):

https://www3.twdb.texas.gov/apps/reports/WU/SumFinal_CountyReportWithReuse

2. 2021 RWP Projections (county):

https://www3.twdb.texas.gov/apps/reports/Projections/2022%20Reports/demand_county

Table 1. Irrigation Water Demand Projections (2021 & 2026 Plans) in Acre-Feet per Year

Comparison between 2021 Plan & 2026 Plan *Draft* Projections
Irrigation Water Demand Projections for 2030 - 2080 in acre-feet
Region J

		2030	2040	2050	2060	2070	2080
2021	Bandera	946	946	946	946	946	946
2026		983	983	983	983	983	983
Volume Difference		37	37	37	37	37	37
2021	Edwards	215	215	215	215	215	215
2026		211	211	211	211	211	211
Volume Difference		-4	-4	-4	-4	-4	-4
2021	Kerr	1,342	1,342	1,342	1,342	1,342	1,342
2026		1,271	1,271	1,271	1,271	1,271	1,271
Volume Difference		-71	-71	-71	-71	-71	-71
2021	Kinney	3,713	3,713	3,713	3,713	3,713	3,713
2026		3,661	3,661	3,661	3,661	3,661	3,661
Volume Difference		-52	-52	-52	-52	-52	-52
2021	Real	270	270	270	270	270	270
2026		245	245	245	245	245	245
Volume Difference		-25	-25	-25	-25	-25	-25
2021	Val Verde	2,319	2,319	2,319	2,319	2,319	2,319
2026		3,330	3,330	3,330	3,330	3,330	3,330
Volume Difference		1,011	1,011	1,011	1,011	1,011	1,011
2021	Total	8,805	8,805	8,805	8,805	8,805	8,805
2026	Total	9,701	9,701	9,701	9,701	9,701	9,701
Volume Difference	Total	896	896	896	896	896	896
Positive Value							
Negative Value							

RWP 2026 REGION J IRRIGATION DEMAND PROJECTIONS

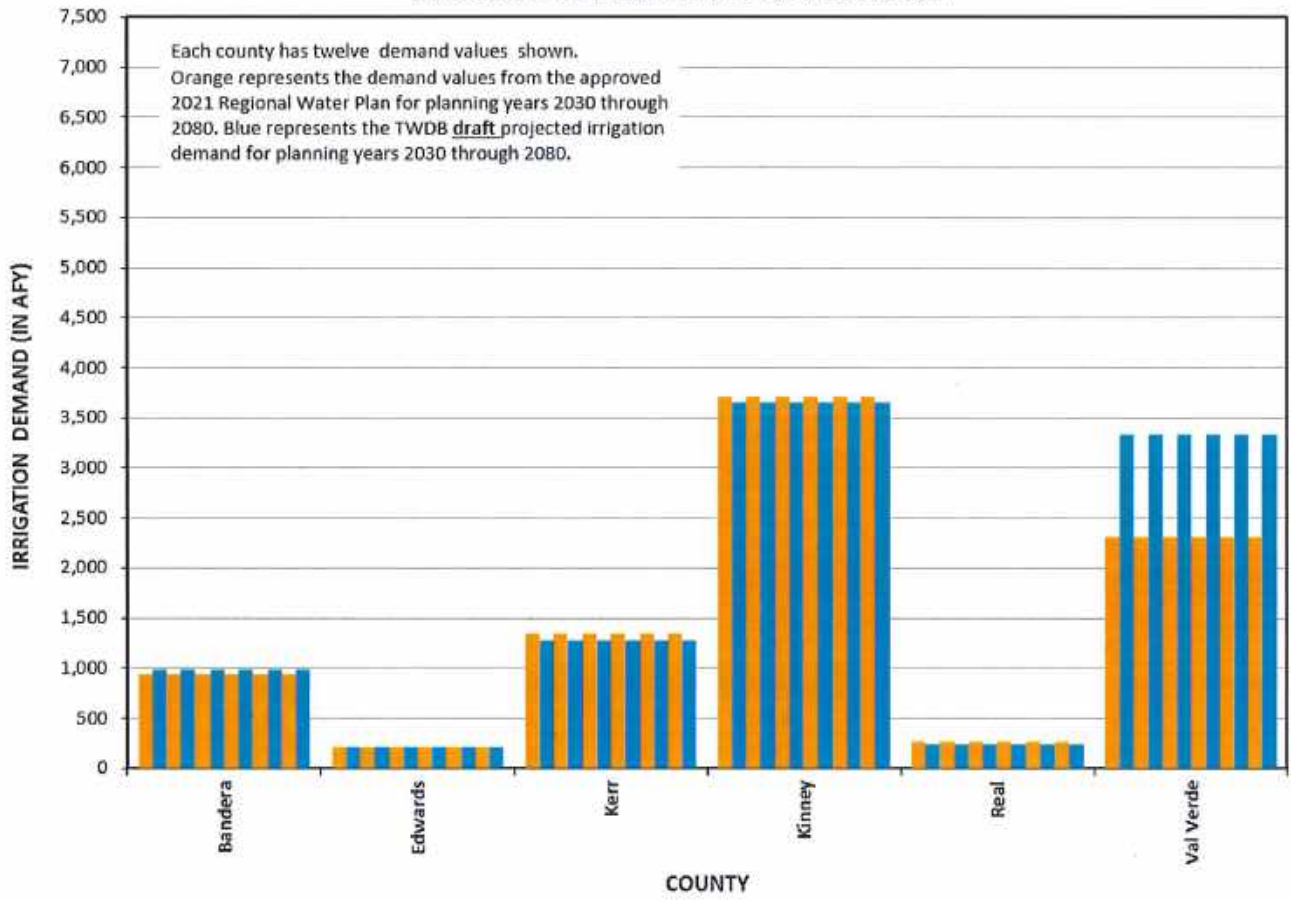
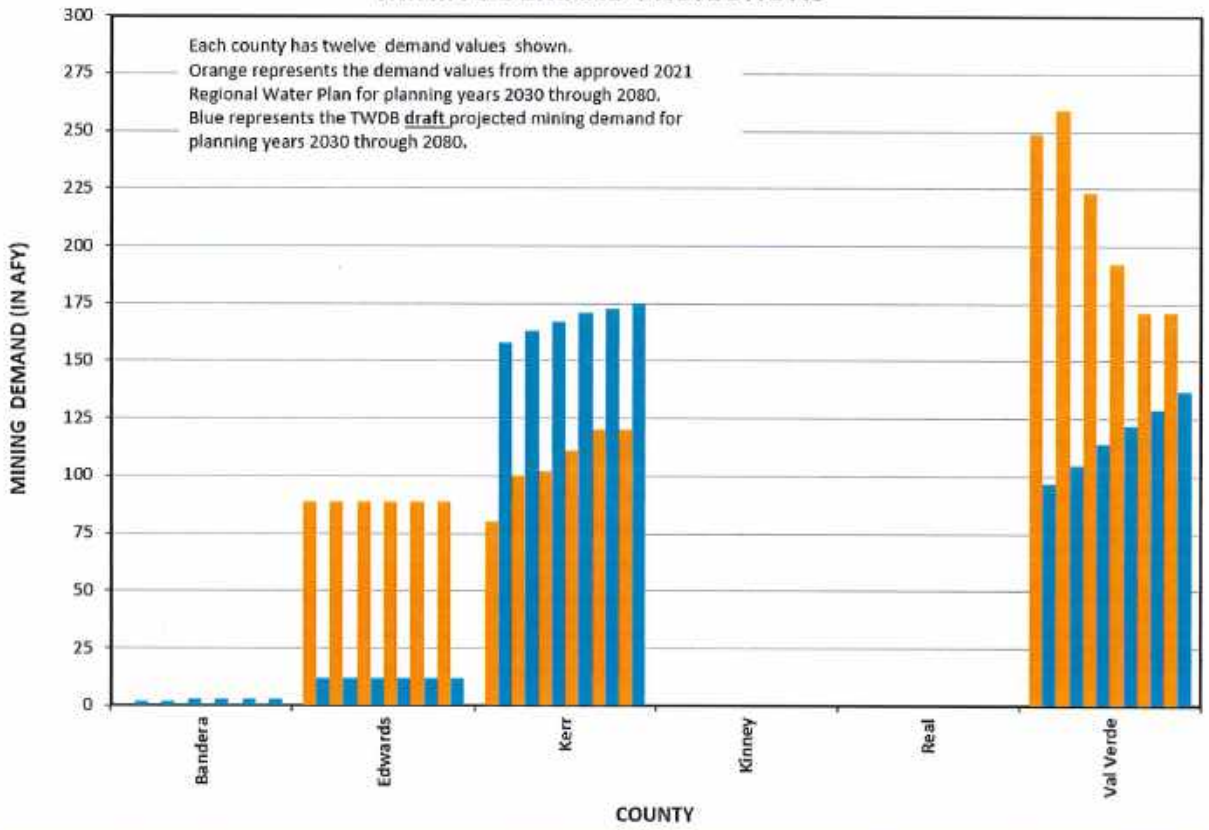


Table 2. Mining Water Demand Projections (2021 & 2026 Plans) in Acre-Feet per Year

Comparison between 2021 Plan & 2026 Plan <i>Draft</i> Projections Mining Water Demand Projections for 2030 - 2080 in acre-feet Region J							
		2030	2040	2050	2060	2070	2080
2021	Bandera	0	0	0	0	0	0
2026		2	2	3	3	3	3
Volume Difference		2	2	3	3	3	3
2021	Edwards	89	89	89	89	89	89
2026		12	12	12	12	12	12
Volume Difference		-77	-77	-77	-77	-77	-77
2021	Kerr	80	100	102	111	120	120
2026		158	163	167	171	173	175
Volume Difference		78	63	65	60	53	55
2021	Kinney	0	0	0	0	0	0
2026		0	0	0	0	0	0
Volume Difference		0	0	0	0	0	0
2021	Real	0	0	0	0	0	0
2026		0	0	0	0	0	0
Volume Difference		0	0	0	0	0	0
2021	Val Verde	249	259	223	192	171	171
2026		97	105	114	122	129	137
Volume Difference		-152	-154	-109	-70	-42	-34
2021	Total	418	448	414	392	380	380
2026	Total	269	282	296	308	317	327
Volume Difference	Total	-149	-166	-118	-84	-63	-53
Positive Value							
Negative Value							

RWP 2026 REGION J MINING DEMAND PROJECTIONS



EXPENSE BUDGET CATEGORY	ORIGINAL BUDGET	REVISED BUDGET	AMOUNT CHANGED
Contractor (Political Subdivision) Other Expenses ¹	\$10,115.00	\$10,115.00	\$0.00
Contractor (Political Subdivision) Salaries and Wages ²	<i>category did not previously exist</i>	\$15,000.00	\$15,000.00
Subcontract Services	\$80,118.00	\$353,615.00	\$273,497.00
Voting Planning Member Travel ³	\$0.00	\$0.00	\$0.00
Contractor (Political Subdivision) Travel ⁴	\$0.00	\$0.00	\$0.00
Total Project Cost	\$90,233.00	\$378,730.00	\$288,497.00