

# Population and Water Demand Subcommittee Meeting: 2/28/2023

## Agenda Items 3, 4, 5, and 6

3. Review Revised Irrigation Projections

4. Review Draft Mining Projections

Discuss why projections changed since last round

Discuss any potential demand revisions

5. Review Manufacturing, Steam electric projections: consider proposed revisions

6. Initial discussion of Population and Municipal Water Demand Projections



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# Proposed Region K Surface Water Irrigation Demands

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Feb. 28, 2023



# Background

- **2021 Region K water plan methodology**
  - Texas Water Development Board methodology based on 2010-2014 historical average
  - TWDB approved Region K's requested modification to irrigation demand based on 2011 water demand, constrained by contract acre-foot per acre duty caps for both seasons
  - Non-rice irrigation demand added for Lakeside Agricultural Division

# Background

- **TWDB irrigation demand projection methodology for 2026 regional water plan**
  - Based on 2015-2019 historical water use average
  - Assumes constant demand throughout 50-year planning cycle, unless constrained by groundwater availability

# **Proposed Methodology for 2026 Regional Water Plan**

- **First season irrigation demand based on 2022 water demand and highest planted acreage since 2011**
  - Apply actual 2022 acre-foot per acre use with a minimum use floor to address conjunctive groundwater use
- **Second season irrigation demand**
  - Based on highest acre-foot per acre use since 2016 with a minimum use floor to address conjunctive groundwater use
- **Supplemental crops irrigation demand**
  - Includes turf, row crops, aquaculture
  - Based on average 2016-2021 acre-foot per acre use

# On-Farm Water Use

(Acre-foot per acre demand)	Garwood Agricultural Division	Lakeside Agricultural Division	Pierce Ranch*	Gulf Coast Agricultural Division
First season**	3.20	2.66	2.66	3.21
Second season***	1.30	1.27	1.27	1.83
Supplemental	1.3	1.6	1.6	1
Canal loss	20%	20%	20%	30%

\*Estimated based on Lakeside Agricultural Division data.

\*\*Based on 2022 water use w/ minimum 1.5 a-f/acre use.

\*\*\*Based on highest water use since 2016

# Region K Surface Water Irrigation Demands

(Acre-foot per acre demand)	Colorado County	Wharton County	Matagorda County	Total
TWDB draft projected 2030 surface water demands*	74,314	74,061	57,432	205,807
2021 Regional Water Plan projected 2030 surface water demands**	134,915	115,466	152,515	402,896
Proposed projected surface water demands***	131,618	120,267	128,528	380,413

\*Based on historical 2015-2019 water use.

\*\*Based on 2011 capped water demand.

\*\*\*Based on 2022 water demand w/ minimum use, highest acreage since 2011, and highest use since 2016 for second season.



# Region K Irrigation Water Demands

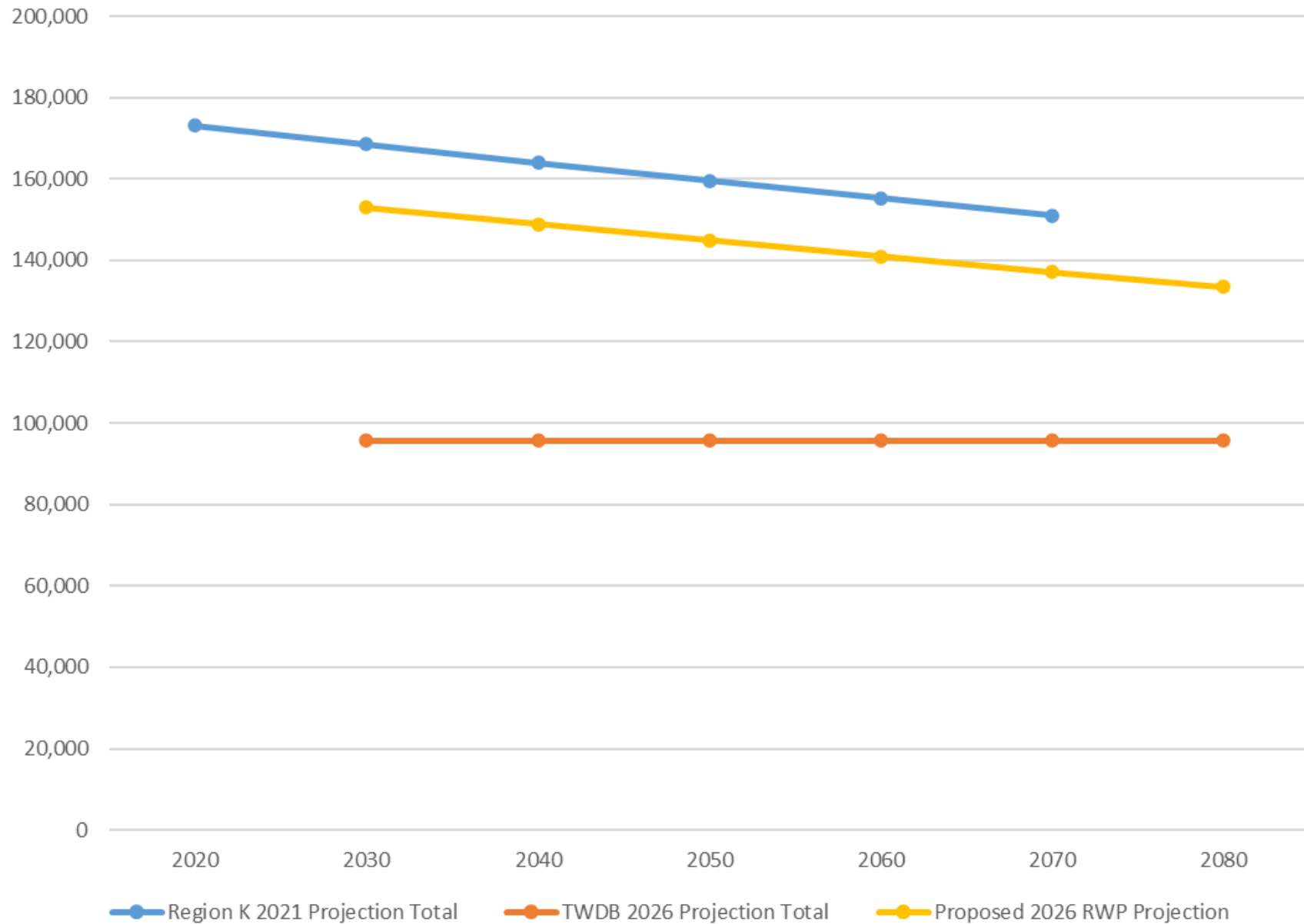
(Acre-foot per acre demand)	Colorado County	Wharton County	Matagorda County	Total
TWDB draft projected 2030 demands*	95,693	124,581	86,951	307,225
2021 Regional Water Plan projected 2030 demands**	168,455	184,023	186,434	538,912
Proposed projected demands***	152,997	170,788	158,048	481,833

\*Based on historical 2015-2019 water use.

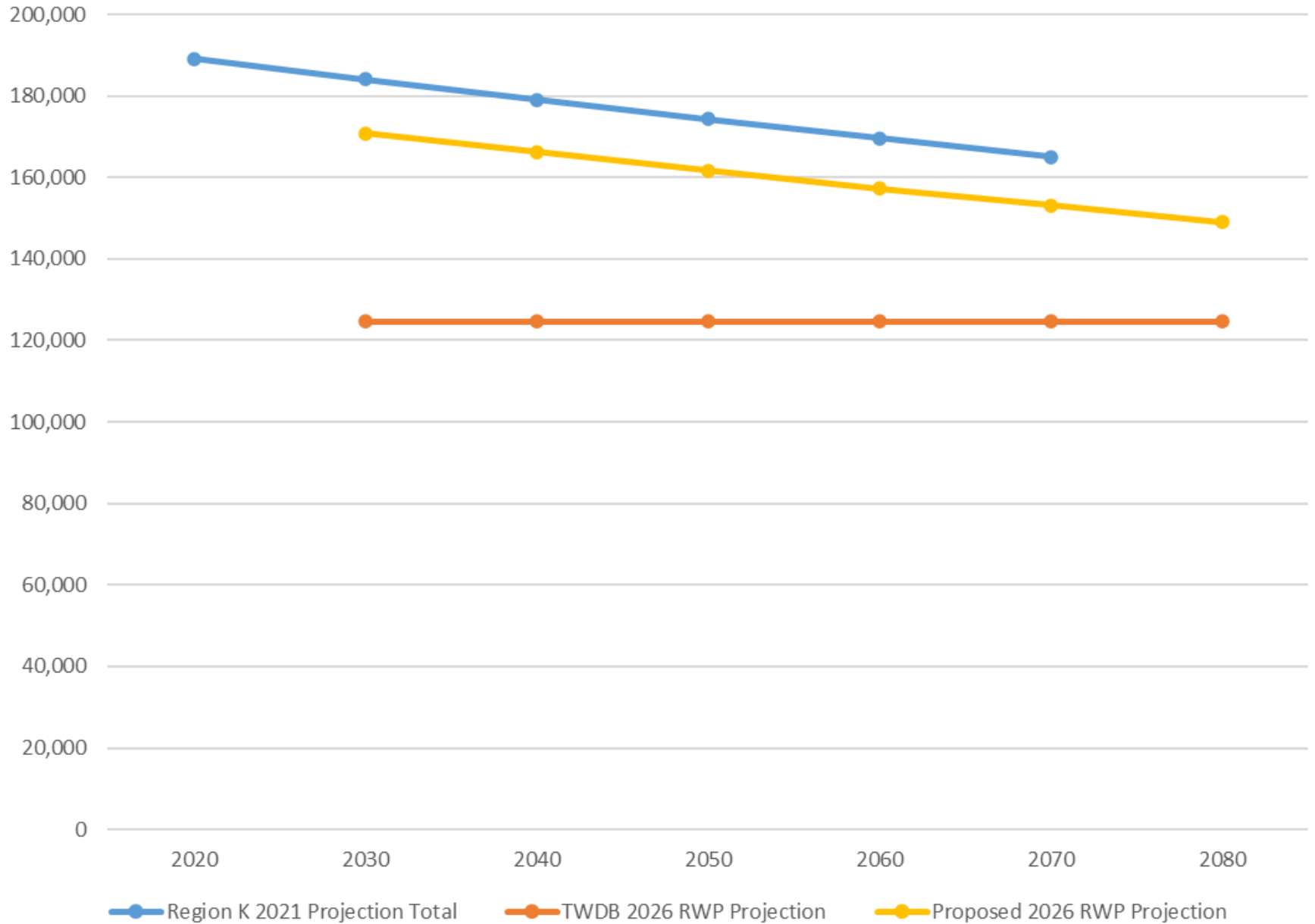
\*\*Based on 2011 capped water demand.

\*\*\*Based on 2022 water demand w/ minimum use, highest acreage since 2011, and highest use since 2016 for second season, assumes no changes to groundwater demands.

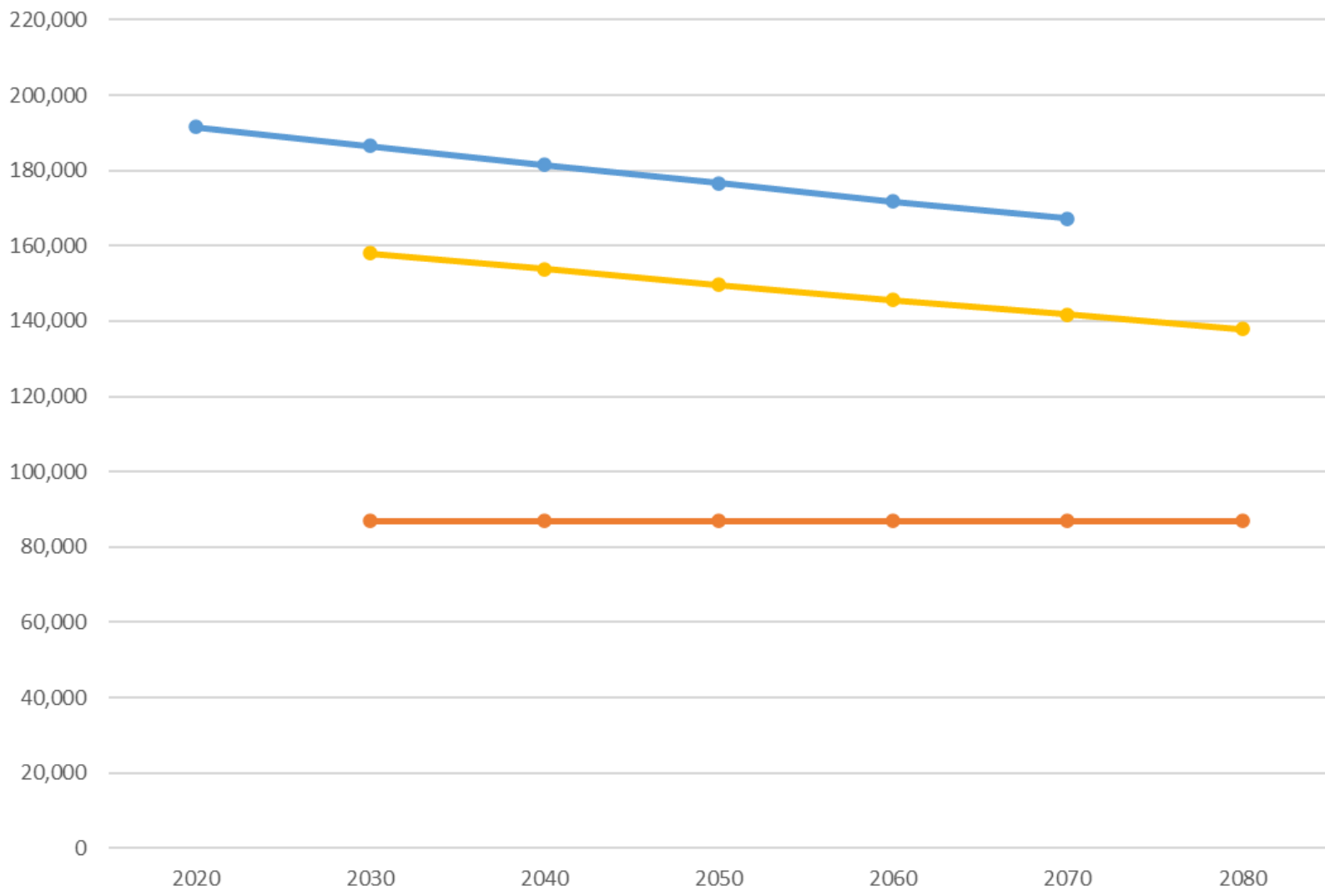
### Region K Irrigation Water Demand Projections Colorado Co



# Region K Irrigation Water Demand Projections Wharton Co

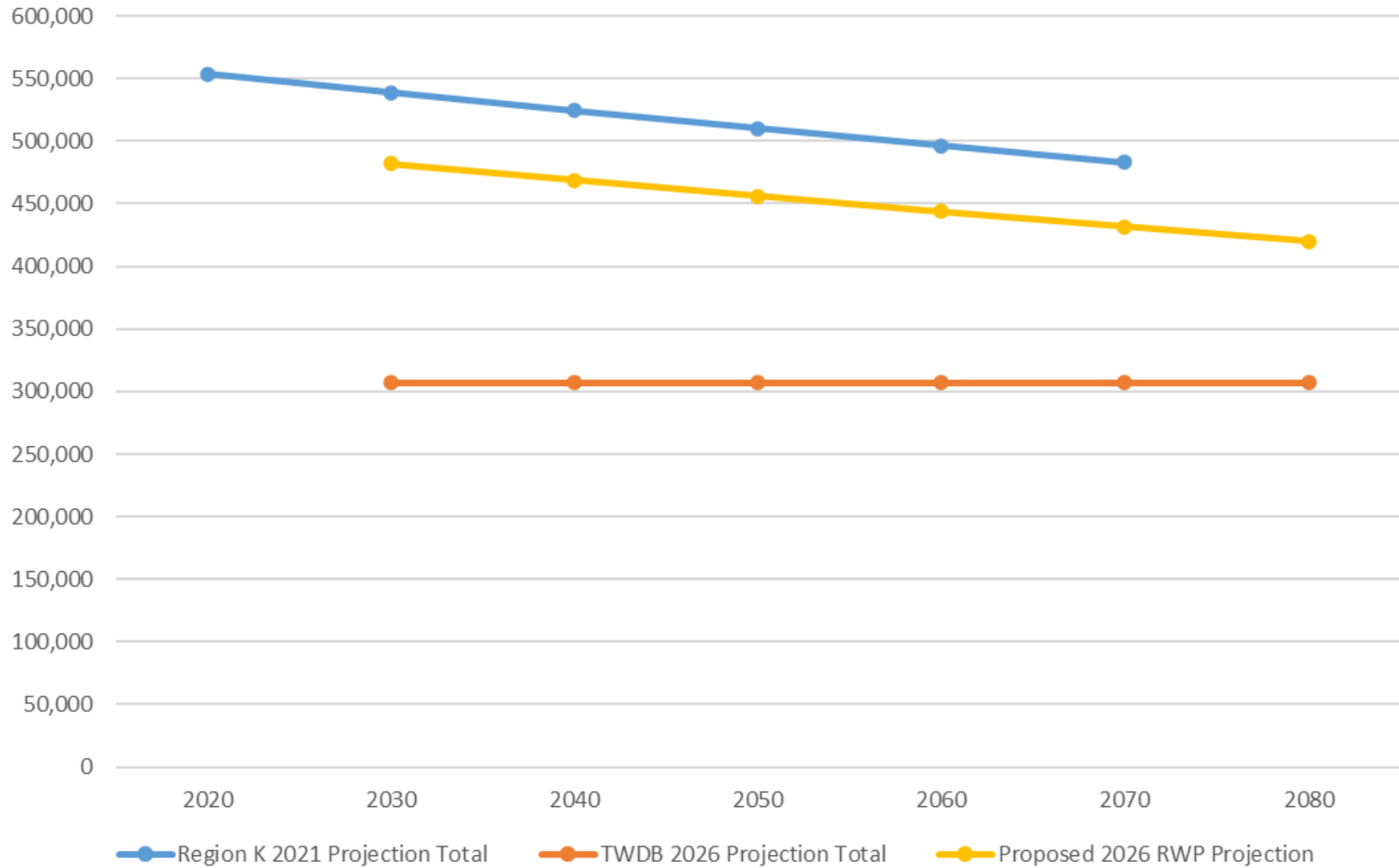


### Region K Irrigation Water Demand Projections Matagorda Co



Region K 2021 Projection Total      TWDB 2026 Projection Total      Proposed 2026 Projection

### Region K Irrigation Water Demand Projections Total



# Questions?



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**Discuss why projections changed since last round**

**Discuss any potential demand revisions**

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# Texas Mining Historical and Projected Water Use



Select Region

K

Select County

All

### 2030 Mining Water Use by Type (ACFT)

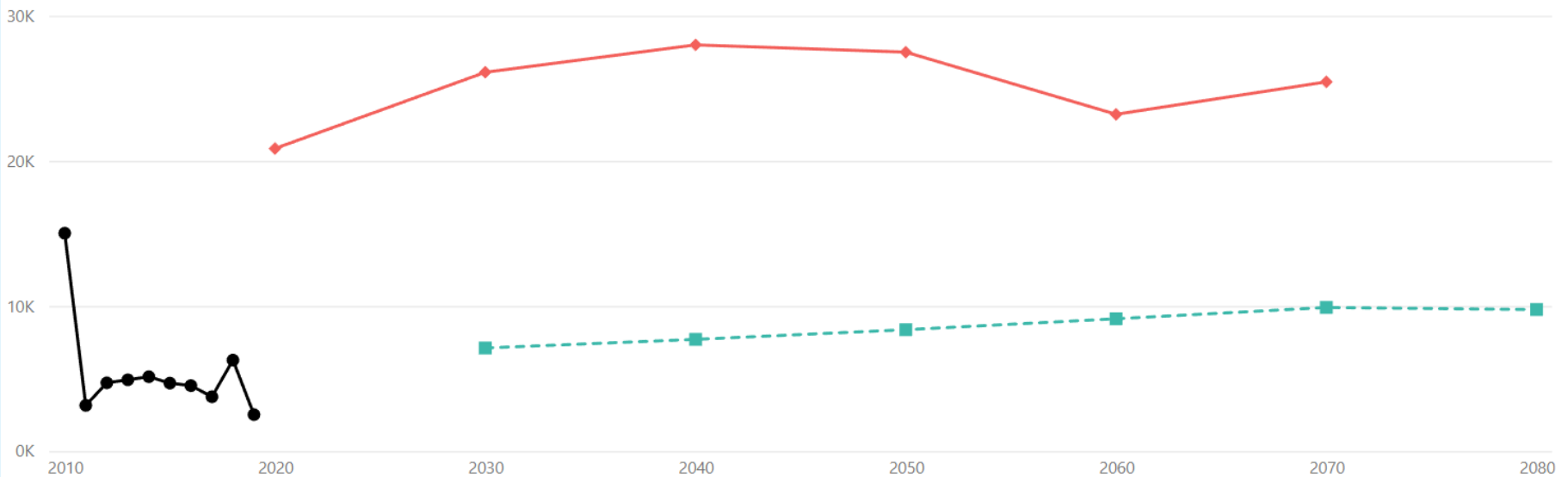


### 2080 Mining Water Use by Type (ACFT)



### Historical and Projected Mining Water Use (ACFT)

Data Set ● Historic Water Use ◆ 2022 State Water Plan ■ 2027 Draft Projections





# Draft Mining Demand Projections for Region K

## Investigation of decreased demands

	Historical Water Use Estimates					2021 RWP Projections						2026 DRAFT RWP Projections					
	2015	2016	2017	2018	2019	2020	2030	2040	2050	2060	2070	2030	2040	2050	2060	2070	2080
<b>Bastrop</b>	44	22	74	47	269	2,884	6,813	7,498	5,998	399	476	388	467	567	694	852	1,050
<b>Blanco</b>	-	-	-	-	4	5	5	5	5	5	5	9	9	10	10	10	10
<b>Burnet</b>	50	88	88	86	195	4,490	5,412	6,379	7,255	8,263	9,412	408	460	510	554	593	625
<b>Colorado</b>	4,009	4,009	3,056	5,339	471	5,325	5,378	5,433	5,487	5,542	5,597	2,773	2,857	2,977	3,078	3,176	3,263
<b>Fayette</b>	269	121	170	484	943	2,526	2,032	1,465	918	359	350	934	934	934	934	934	2
<b>Gillespie</b>	5	4	6	8	16	4	4	4	4	4	4	19	20	21	23	24	25
<b>Hays</b>	300	264	345	303	301	845	1,075	1,361	1,445	1,654	1,893	115	139	161	194	230	269
<b>Llano</b>	-	-	-	-	239	3	3	3	3	3	3	251	250	246	254	262	271
<b>Matagorda</b>	1	-	1	-	-	96	100	75	55	35	22	1	1	1	1	1	1
<b>Mills</b>	-	-	-	-	-	4	4	4	4	4	4	108	111	115	120	124	130
<b>San Saba</b>	-	-	-	-	-	1,088	1,093	944	900	864	838	-	-	-	-	-	-
<b>Travis</b>	-	-	-	-	71	3,502	4,108	4,762	5,374	6,046	6,817	551	622	676	722	772	830
<b>Wharton</b>	2	1	-	-	-	71	74	55	41	26	17	2	2	2	2	2	2
<b>Williamson</b>	-	-	-	-	2	5	3	3	3	3	3	1,544	1,823	2,142	2,530	2,914	3,270
<b>Total</b>	4,680	4,509	3,740	6,267	2,511	20,848	26,104	27,991	27,492	23,207	25,441	7,103	7,695	8,362	9,116	9,894	9,748

# Draft Mining Demand Projections for Region K

**2021 RWP Projections were same as 2016 RWP Projections**

**2021**

**2016**

	2021 RWP Projections					
	2020	2030	2040	2050	2060	2070
<b>Bastrop</b>	2,884	6,813	7,498	5,998	399	476
<b>Blanco</b>	5	5	5	5	5	5
<b>Burnet</b>	4,490	5,412	6,379	7,255	8,263	9,412
<b>Colorado</b>	5,325	5,378	5,433	5,487	5,542	5,597
<b>Fayette</b>	2,526	2,032	1,465	918	359	350
<b>Gillespie</b>	4	4	4	4	4	4
<b>Hays</b>	845	1,075	1,361	1,445	1,654	1,893
<b>Llano</b>	3	3	3	3	3	3
<b>Matagorda</b>	96	100	75	55	35	22
<b>Mills</b>	4	4	4	4	4	4
<b>San Saba</b>	1,088	1,093	944	900	864	838
<b>Travis</b>	3,502	4,108	4,762	5,374	6,046	6,817
<b>Wharton</b>	71	74	55	41	26	17
<b>Williamson</b>	5	3	3	3	3	3
<b>Total</b>	20,848	26,104	27,991	27,492	23,207	25,441

Table 2.12 Mining Water Demand Projections by County\* (ac-ft/yr)

County	2020	2030	2040	2050	2060	2070
Bastrop	2884	6813	7498	8263	9085	9996
Blanco	5	5	5	5	5	5
Burnet	4490	5412	6379	7255	8263	9412
Colorado	5325	5378	5433	5487	5542	5597
Fayette	2526	2032	1465	918	359	350
Gillespie	4	4	4	4	4	4
Hays (p)	845	1075	1361	1445	1654	1893
Llano	3	3	3	3	3	3
Matagorda	96	100	75	55	35	22
Mills	4	4	4	4	4	4
San Saba	1088	1093	944	900	864	838
Travis	3502	4108	4762	5374	6046	6817
Wharton (p)	71	74	55	41	26	17
Williamson (p)	5	3	3	3	3	3
<b>TOTAL</b>	<b>20,848</b>	<b>26,104</b>	<b>27,991</b>	<b>29,757</b>	<b>31,893</b>	<b>34,961</b>

# Draft Mining Demand Projections for Region K

## 2016 RWP Projections based on 2011 BEG study

June 2011

**Current and Projected Water Use in the  
Texas Mining and Oil and Gas Industry**

Prepared for  
**Texas Water Development Board**

under  
Contract No. 0904830939



Jean-Philippe Nicot, P.E., P.G., Anna K. Hebel, Stephanie M. Ritter,  
Steven Walden<sup>1</sup>, Russ Baier<sup>1</sup>, Peter Galusky<sup>2</sup>, P.E., P.G., James Beach<sup>3</sup>, P.G.,  
Richard Kyle<sup>4</sup>, P.G., Leigh Symank<sup>3</sup>, and Cari Breton

June 2011

Prepared for  
**Texas Water Development Board**

Bureau of Economic Geology  
Scott W. Tinker, Director  
Jackson School of Geosciences  
The University of Texas at Austin  
Austin, Texas 78713-8924

2011 JUN 30 AM 10:09  
BEG-0904830939

Bureau of Economic Geology  
Scott W. Tinker Director  
Jackson School of Geosciences  
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Austin, Texas 78713-8924

<sup>1</sup>Steve Walden Consulting, Austin, TX

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<sup>3</sup>LBG-Guyton Associates, Austin, TX

<sup>4</sup>Department of Geological Sciences, The University of Texas at Austin, Austin, TX

0904830939 Final Report



# Draft Mining Demand Projections for Region K

## 2021 BEG study findings significantly different than 2011 BEG study findings

County	Primary Category Decrease	Explanation
BASTROP	Coal	Future market for coal not favorable
BURNET	Aggregate	2011 BEG estimate based primarily on number and type of facilities, 2021 BEG estimate based primarily on user surveys from TCEQ and TWDB
COLORADO	Aggregate, O&G	Same as Burnet for aggregate, O&G decreased to negligible in 2021 BEG estimate
FAYETTE	O&G	2011 BEG estimate for O&G more than twice that of 2021 BEG estimate for O&G
HAYS	Aggregate	Same as Burnet
SAN SABA	Aggregate	Same as Burnet
TRAVIS	Aggregate	Same as Burnet

# Draft Mining Demand Projections for Region K

## Consider other revisions: Llano County

- Llano County one of the counties where aggregate use estimates increase from 2021 to 2026 SWP
- No other forms of data support besides the BEG study are available that we can determine
- Spoke with Mike Reagor, former Mayor of Llano and committee member. He had no proposed changes

	Historical Water Use Estimates					2021 RWP Projections						2026 DRAFT RWP Projections					
	2015	2016	2017	2018	2019	2020	2030	2040	2050	2060	2070	2030	2040	2050	2060	2070	2080
Llano	-	-	-	-	239	3	3	3	3	3	3	251	250	246	254	262	271

### BEG Basis

APO_SITE_NAME	Disturbed Acres	County	Water Use Summary				Year Used
			2019 Water Use (ac-ft)	Groundwater (ac-ft)	Surface Water (ac-ft)	Reuse (ac-ft)	
Azalea Quarry	20	Llano	-	-	-	-	2020
Cold Spring Granite Texas Red Quarry	40	Llano	-	-	-	-	2020
Stolz Quarry	49	Llano	-	-	-	-	2020
Eagles Nest Mine	10	Llano	32.50	-	32.50	-	2019
Tow Site Bluffton Quarry	10	Llano	-	-	-	-	2019
Davidstraube	8	Llano	0.07	0.07	-	-	2020
B & L Construction Highway 16 Pit	8	Llano	-	-	-	-	2019
Llano City Site	224	Llano	205.62	-	205.62	-	2019



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consider proposed revisions**

6. Initial discussion of Population and Municipal Water  
Demand Projections



Agenda Item 5

# Draft Manufacturing, and Steam Electric Demand Projections



# Burnet County Manufacturing



- Southwestern Graphite Co. – add 400 ac-ft/yr all decades.  
Not included in historical use or future demand projections.
- US Fish & Wildlife – potentially add 100 ac-ft/yr.  
Inks Dam National Fish Hatchery is included in the Livestock Demand Projections at 272 ac-ft/yr (2015-2019 average).



# Matagorda County Manufacturing



- Underground Service of Markham – add 9,300 ac-ft/yr to the proposed projections.
- Future Manufacturing Projections  
Needs to be assigned to a user.

# Travis County Manufacturing



- Alamo Concrete Products Co. – add 400 ac-ft/yr all decades.  
Not included in historical use or future demand projections
- TXI Operations, LP – add 62 ac-ft/yr all decades.  
Only included in 2011-2012 data, not 2015-2019 data.
- Future manufacturing/industrial user (Highland Lakes)  
Needs to be assigned to a user.

# Proposed Manufacturing Demand Projections for Region K



County	Historical Water Use Estimates					2021 Regional Water Plan Projections						2026 <b>DRAFT</b> Regional Water Plan Projections					
	2015	2016	2017	2018	2019	2020	2030	2040	2050	2060	2070	2030	2040	2050	2060	2070	2080
BASTROP	99	71	167	245	350	188	215	215	215	215	215	414	429	445	461	478	496
BLANCO	0	0	0	0	0	0	0	0	0	0	0	16	17	18	19	20	21
BURNET	137	101	105	71	92	251	299	299	299	299	299	556	562	568	574	580	587
COLORADO	532	539	500	513	509	960	1,132	1,132	1,132	1,132	1,132	593	615	638	662	686	711
FAYETTE	363	318	277	259	311	396	442	442	442	442	442	399	414	429	445	461	478
GILLESPIE	19	25	321	314	314	77	93	93	93	93	93	388	402	417	432	448	465
HAYS	134	106	119	119	131	277	324	324	324	324	324	181	188	195	202	209	217
LLANO	3	1	2	2	2	3	4	4	4	4	4	3	3	3	3	3	3
MATAGORDA	3,954	4,392	5,464	4,740	6,688	4,199	4,916	4,916	4,916	4,916	4,916	7,378	7,651	7,934	8,228	8,532	8,848
MILLS	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	2	2
SAN SABA	5	5	5	4	17	10	12	12	12	12	12	19	20	21	22	23	24
TRAVIS	12,002	12,424	14,576	13,918	13,816	13,164	14,853	14,853	14,853	14,853	14,853	16,863	17,470	18,099	18,752	19,429	20,131
WHARTON	49	51	57	60	59	156	171	171	171	171	171	79	82	85	88	91	94
WILLIAMSON	10	12	13	13	8	25	30	30	30	30	30	14	15	16	17	18	19
Region Total	17,309	18,046	21,607	20,259	22,298	19,708	22,493	22,493	22,493	22,493	22,493	28,935	29,910	30,920	31,967	33,050	34,176

# Steam Electric Demand Projections



County	Historical Water Use Estimates					2021 Regional Water Plan Projections						2026 <b>DRAFT</b> Regional Water Plan Projections					
	2015	2016	2017	2018	2019	2020	2030	2040	2050	2060	2070	2030	2040	2050	2060	2070	2080
BASTROP	7,764	5,844	6,905	7,118	7,319	10,288	10,288	10,288	10,288	10,288	10,288	7,764	7,764	7,764	7,764	7,764	7,764
BLANCO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BURNET	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COLORADO	0	0	0	0	0	4,971	4,971	4,971	4,971	4,971	4,971	226	226	226	226	226	226
FAYETTE	9,338	8,494	18,575	20,052	14,023	49,211	49,211	49,211	49,211	49,211	49,211	20,052	20,052	20,052	20,052	20,052	20,052
GILLESPIE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HAYS	0	0	0	0	0	1,187	1,187	1,187	1,187	1,187	1,187	0	0	0	0	0	0
LLANO	1,733	1,927	1,762	1,446	1,054	1,748	1,748	1,748	1,748	1,748	1,748	1,927	1,927	1,927	1,927	1,927	1,927
MATAGORDA	67,453	16,715	57,068	46,278	25,134	80,536	80,536	80,536	80,536	80,536	80,536	67,453	67,453	67,453	67,453	67,453	67,453
MILLS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAN SABA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRAVIS	2,321	2,208	2,103	2,680	4,116	10,253	10,253	10,253	10,253	10,253	10,253	4,116	4,116	4,116	4,116	4,116	4,116
WHARTON	3	2,449	1,687	1,696	2,217	7,901	7,901	7,901	7,901	7,901	7,901	7,913	7,913	7,913	7,913	7,913	7,913
WILLIAMSON	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Region Total	88,612	37,637	88,100	79,270	53,863	166,095	166,095	166,095	166,095	166,095	166,095	109,451	109,451	109,451	109,451	109,451	109,451

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Discuss why projections changed since last round

Discuss any potential demand revisions

5. Review Manufacturing, Steam electric projections: consider proposed revisions

**6. Initial discussion of Population and Municipal Water Demand Projections**



Agenda Item 6

# Initial discussion of Population and Municipal Water Demand Projections



## Agenda Item 6

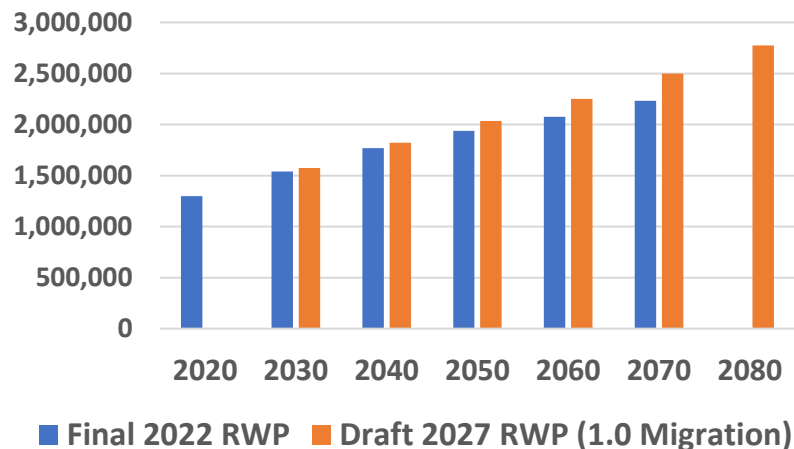
# Initial discussion of Population and Municipal Demand Projections



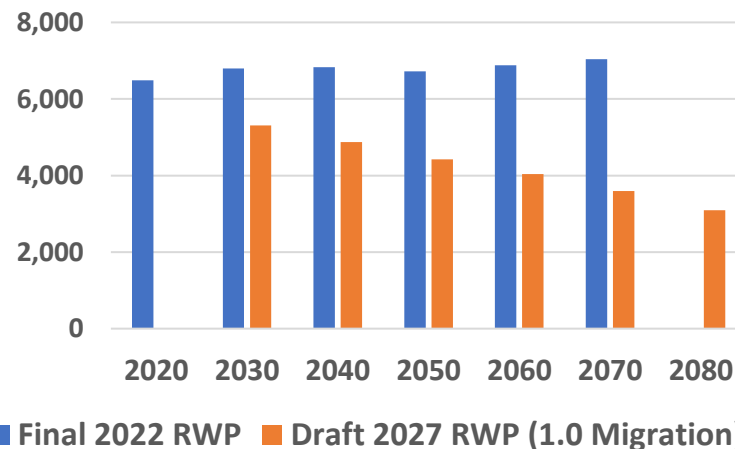
- Progress-to-Date

- Finalized WUG list (July 2022)
  - Public Water Supply (PWS) water usage data
  - Only WUGs that list their **primary region** as Region K
- 0.5 Migration Scenario numbers have been requested of TWDB
- Reviewing draft 1.0 Migration Scenario population and municipal demand projections

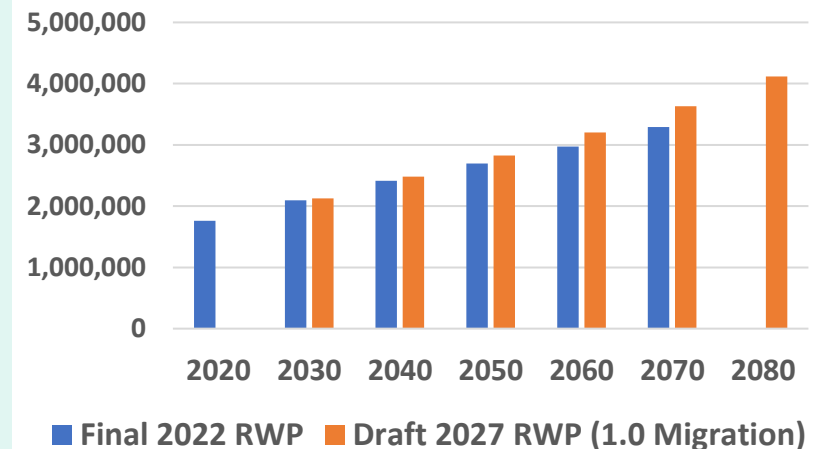
### Travis County Total



### San Saba County Total



### Region K Total

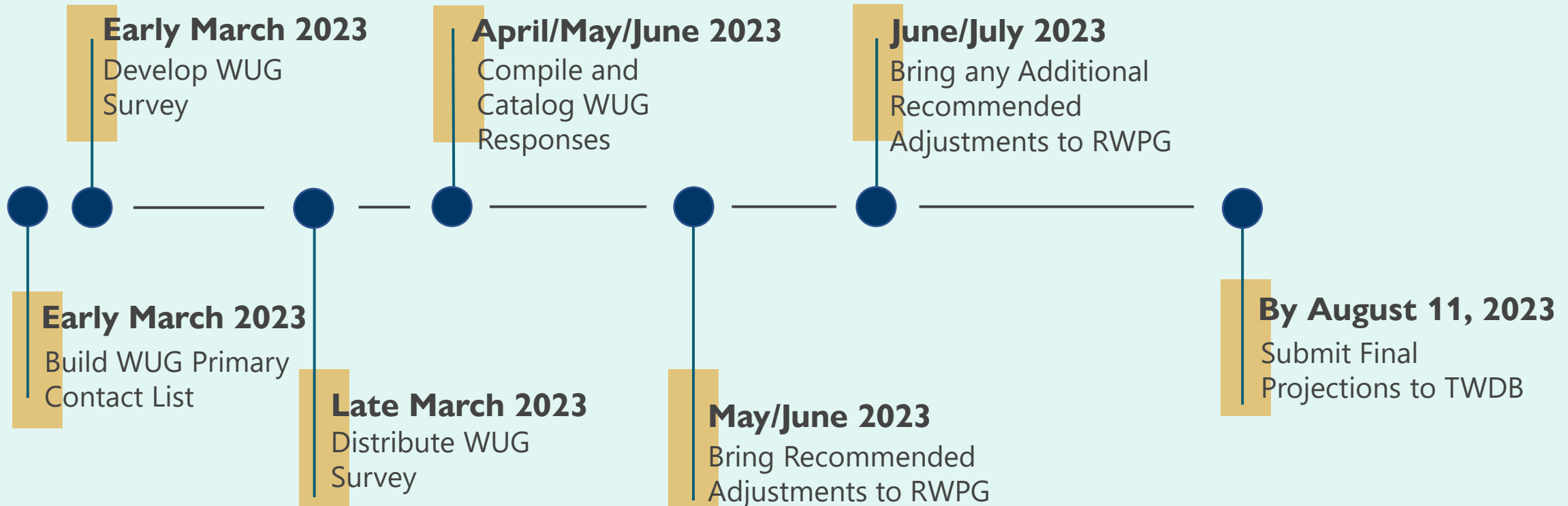


## Agenda Item 6

# Initial discussion of Population and Municipal Demand Projections



- Next Steps





## Agenda Item 6

# Initial discussion of Population and Municipal Demand Projections



- **WUG Survey**

- Population and Demand Projections
- Existing Supply/Interconnects
- Future Water Management Strategies
  - Review WMSs from 2022 RWP
  - Questions addressing new infeasible WMS rule
  - New WMSs
- Water Conservation/Drought Contingency

### Section 1 – Population and Water Demand Projections

Estimation of future population and water demands is a crucial first step for the planning process. Before completing this section, please review the reference document provided to you with the survey request. The reference document includes TWDB population and water demand projections for your entity. Please note that these projections are intended to represent the population within your entity's **WATER UTILITY SERVICE AREA** and may not align with city, town, or district boundaries. If you sell water on a wholesale basis to other cities or districts, projections for those users are included elsewhere.

TWDB requires that you provide supporting documentation for proposed modifications to the population or water demand projections. If you indicate that you wish to modify the projections for your entity, we will contact you for additional information.

1. Do you have significant disagreement with and wish to make modifications to the projected population for the water users directly supplied by your entity?

- Yes  
 No

2. If you answered "Yes" on the item above, please describe the primary reason(s) for the adjustments in population.

- Study conducted by entity  
 Study conducted by other party

Other (please specify)

3. Do you have significant disagreement with and wish to make modifications to the projected water demand for the water users directly supplied by your entity?

- Yes  
 No

## Key Dates/Events in the next 7 months



- 1. Early February:** P&WD Committee – focus on all non-municipal demands
- 2. February:** draft population and municipal demand projections from TWDB – begin review and discussion of requests for changes in each county
- 3. Early March:** P&WD Committee meets - first discussion of draft municipal demands and required changes
- 4. Late April:** Region K meeting – goal is to have non-municipal demands ready to bring forward
- 5. April-June:** work continues on any requests for changes to population and municipal demands in each county, P&WD Committee meetings as needed
- 6. July 14:** Requests for revisions for non-municipal demands are due to the TWDB
- 7. late July:** Region K meeting – goal is to have recommendations for population and municipal demands ready to bring forward
- 8. August:** Requests for revisions for municipal demands are due to the TWDB