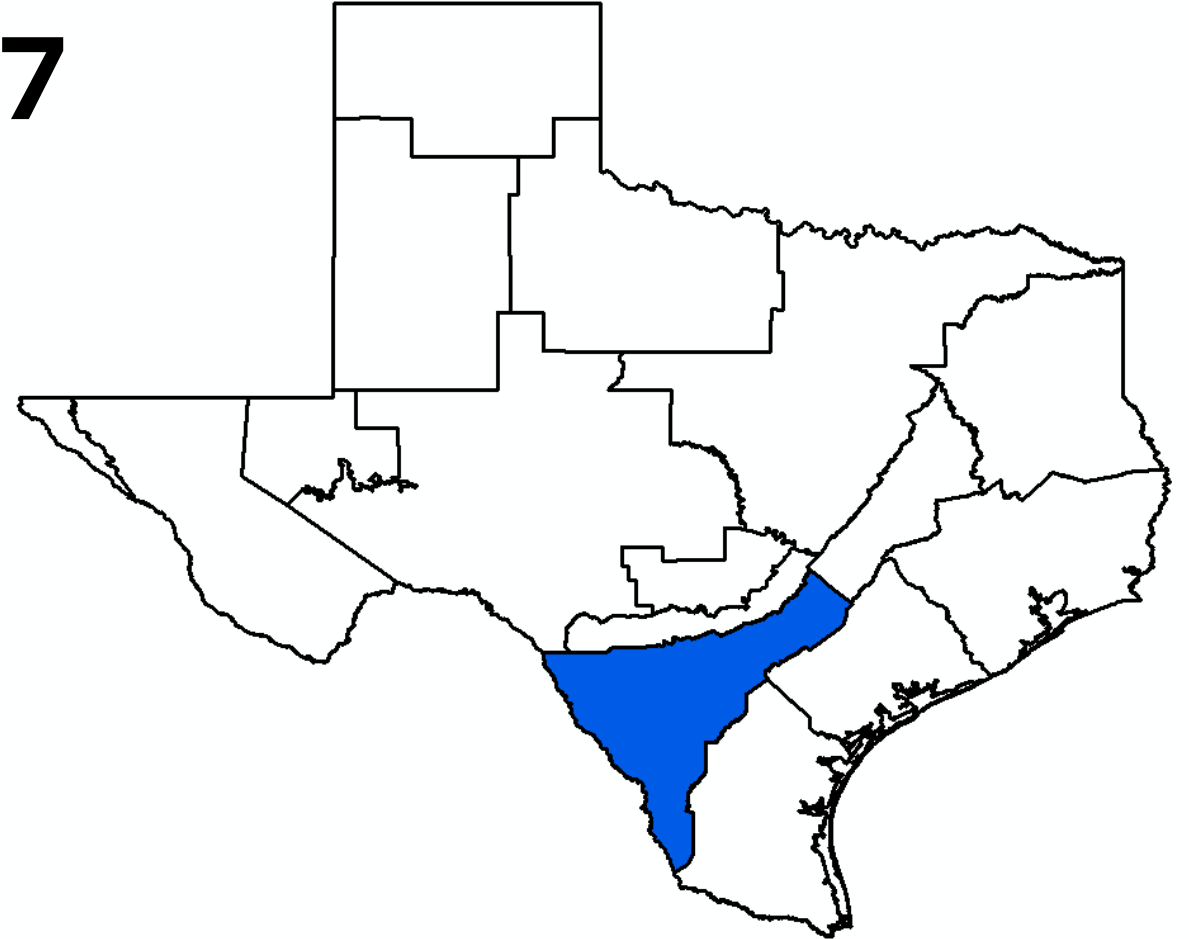


# **GMA 13**

## **Scenarios 26.1 to 26.7**

**Updated with Partial Results**  
**Scenarios 26.8 to 26.12**



Bill Hutchison, Ph.D., P.E., P.G.

GMA 13 Meeting

March 20, 2026

# Topics

- Review of bounding simulations presented on February 13, 2026
- Scenario 26.7 (GCD Input Pumping)
  - Revised version of Scenario 26.1
- Scenarios 26.2 to 26.6 (Pumping Reduction Sensitivity Simulations)
  - Reductions based on Scenario 26.1
- Scenarios 26.8 to 26.12
  - Webb County
- Next Steps
- Budget and Invoice Update

# Bounding Simulations

- Presented at GMA 13 meeting of February 13, 2026
  - Baseline
    - 100% recharge
    - 95% recharge
    - 88% recharge
  - “MAG Simulation”
    - 100% recharge
    - 95% recharge
    - 88% recharge
  - MAG Simulation with Webb pumping = 20,000 AF/yr
  - MAG Simulation with outcrop pumping reduced 50%
  - MAG Simulation with downdip pumping reduced 50%

# Discussion at GMA 13 Meeting

- Focused on developing input from GCDs for next simulation
- Appendix A of 2022 MAG report included model layer-county-GCD splits that were not used in results of bounding simulations
  - Updated simulations use Appendix A type splits
- GCDs provided updates to pumping amounts for simulations

# Overview of Simulations

- All files can be downloaded at:

<https://drive.google.com/drive/folders/10i6AFVt9HzTdAC8yFTI2dN2xb0CFr6JA?usp=sharing>

- Does not include Scenarios 26.8 to 26.12 yet
- All simulations assumed 95% of long-term recharge
  - Discussed at GMA 13 meeting of February 13, 2026
- Tech Memo 26-04 (Scenarios 26.1 to 26.6)
- Tech Memo 26-05 (Scenario 26.7)
- Scenario 26.7 implements the GCD input pumping values
  - Revised from Scenario 26.1
- Scenarios 26.2 to 26.6 were designed to better understand the relative impact of pumping increases on the ability of Guadalupe County to maintain pumping rates in the Carrizo-Upper Wilcox
- Scenario 26.8 to 26.12 – In response to Webb County input yesterday

# Scenario 26.7

- Included GCD input
- Added new well locations as appropriate
  - EUWCD (5 splits)
  - Old GAM predictive simulation (4 splits)
  - Freese and Nichols locations (Caldwell Brackish)
- Includes Wintergarden GCD modification (email of March 11)

Table 1. Summary of GCD Pumping Requests

Split ID	Aquifer	GAM Layer	County	County Code	GCD	GCD Code	2017 Pumping (AF/yr)	Max Current MAG (AF/yr)	Bounding Simulation 2018 pumping (AF/yr)	GCD Input Pumping (AF/yr)	2018 Factor (-999 = use new locations)	Well Locations
1	Sparta	3	Atascosa	7	Evergreen UWCD	6	427	1,218	1,185	932	0.7865	
2	Sparta	3	Frio	82	Evergreen UWCD	6	365	897	680	534	0.7853	
3	Sparta	3	Wilson	247	Evergreen UWCD	6	511	335	511	114	0.2231	
4	Sparta	3	Gonzales	89	Gonzales County UWCD	34	379	3,524	3,368	1,128	0.3349	
5	Sparta	3	Zavala	254	Wintergarden GCD	38	229	0	229	229	1.0000	
6	Queen City	5	Atascosa	7	Evergreen UWCD	6	827	4,537	4,177	5,986	1.4331	
7	Queen City	5	Frio	82	Evergreen UWCD	6	748	6,702	6,293	3,927	0.6240	
8	Queen City	5	Wilson	247	Evergreen UWCD	6	1,267	2,631	2,591	3,333	1.2864	
9	Queen City	5	Caldwell	28	Gonzales County UWCD	34	89	4,842	4,128	0	0.0000	
10	Queen City	5	Gonzales	89	Gonzales County UWCD	34	2,498	4,973	4,880	5,134	1.0520	
11	Queen City	5	McMullen	162	McMullen County GCD	54	6	3	6	12	2.0000	
12	Queen City	5	Caldwell	28	Plum Creek CD	31	9	0	498	498	1.0000	
13	Queen City	5	La Salle	139	Wintergarden GCD	38	198	1	198	198	1.0000	
14	Carrizo-Upper Wilcox	7	Atascosa	7	Evergreen UWCD	6	40,639	58,580	56,092	88,500	-999.0000	EUWCD locations (88,500)
15	Carrizo-Upper Wilcox	7	Bexar	15	None (EAA)	35	7,002	43,433	0	43,433	-999.0000	Old GAM Locations
16	Carrizo-Upper Wilcox	7	Caldwell	28	Plum Creek CD	31	7	9,993	100	100	1.0000	
17	Carrizo-Upper Wilcox	7	Caldwell	28	Gonzales County UWCD	34	745	30,087	5,124	3,818	0.7451	
18	Carrizo-Upper Wilcox	7	Dimmit	64	Wintergarden GCD	38	55,475	3,715	74,825	77,665	1.0380	
19	Carrizo-Upper Wilcox	7	Frio	82	Evergreen UWCD	6	95,798	114,827	108,286	105,503	0.9743	
20	Carrizo-Upper Wilcox	7	Gonzales	89	Gonzales County UWCD	34	53,380	57,166	92,419	69,827	0.7555	
21	Carrizo-Upper Wilcox	7	Guadalupe	94	Guadalupe County GCD	45	3,736	28,943	13,122	14,843	1.1312	
22	Carrizo-Upper Wilcox	7	Karnes	128	Evergreen UWCD	6	674	1,043	1,055	4,529	-999.0000	EUWCD locations (4529)
23	Carrizo-Upper Wilcox	7	La Salle	139	Wintergarden GCD	38	25,704	6,554	33,178	35,986	1.0846	
24	Carrizo-Upper Wilcox	7	Maverick	159	No District-County	999	1,045	543	1,386	550	0.3968	
25	Carrizo-Upper Wilcox	7	McMullen	162	McMullen County GCD	54	4,678	7,789	7,746	7,789	1.0056	
26	Carrizo-Upper Wilcox	7	Medina	163	Medina County GCD	28	1,139	517	857	850	0.9918	
27	Carrizo-Upper Wilcox	7	Webb	240	No District-County	999	6,490	911	39,427	20,000	0.5073	
28	Carrizo-Upper Wilcox	7	Wilson	247	Evergreen UWCD	6	22,884	38,855	106,926	35,000	0.3273	
29	Carrizo-Upper Wilcox	7	Zavala	254	Wintergarden GCD	38	41,029	34,298	53,036	57,440	1.0830	

Table 2. Summary of GCD Pumping Requests

Split ID	Aquifer	GAM Layer	County	County Code	GCD	GCD Code	2017 Pumping (AF/yr)	Max Current MAG (AF/yr)	Bounding Simulation 2018 pumping (AF/yr)	GCD Input Pumping (AF/yr)	2018 Factor (-999 = use new locations)	Well Locations
30	Middle Wilcox	8	Atascosa	7	Evergreen UWCD	6	543	224	744	3,060	-999.0000	EUWCD locations (3060)
31	Middle Wilcox	8	Bexar	15	None (EAA)	35	3,336	58	0	11,827	-999.0000	Old GAM Locations
32	Middle Wilcox	8	Caldwell	28	Plum Creek CD	31	1,480	5,733	20,592	20,000	0.9713	
33	Middle Wilcox	8	Caldwell	28	Gonzales County UWCD	34	261	0	3,182	4,233	-999.0000	FN Locations (13329)
34	Middle Wilcox	8	Caldwell	28	No District-County	999	4	39	28	28	1.0000	
35	Middle Wilcox	8	Dimmit	64	Wintergarden GCD	38	219	142	267	267	1.0000	
36	Middle Wilcox	8	Frio	82	Evergreen UWCD	6	4,882	0	5,495	2,432	0.4426	
37	Middle Wilcox	8	Gonzales	89	Gonzales County UWCD	34	1,184	24,556	2,134	13,600	-999.0000	Old GAM Locations
38	Middle Wilcox	8	Guadalupe	94	Guadalupe County GCD	45	1,816	9,428	12,784	10,206	0.7983	
39	Middle Wilcox	8	Maverick	159	No District-County	999	13	2	17	28	1.6471	
40	Middle Wilcox	8	McMullen	162	McMullen County GCD	54	0	0	1	0	0.0000	
41	Middle Wilcox	8	Medina	163	Medina County GCD	28	474	1,252	352	350	0.9943	
42	Middle Wilcox	8	Uvalde	232	Uvalde County GCD	32	79	0	79	63	0.7975	
43	Middle Wilcox	8	Webb	240	No District-County	999	3	1	16	13	0.8125	
44	Middle Wilcox	8	Wilson	247	Evergreen UWCD	6	843	125	3,939	90,000	-999.0000	EUWCD locations (14 wells equal pumping)
45	Middle Wilcox	8	Zavala	254	Wintergarden GCD	38	5,107	3,683	6,522	6,522	1.0000	
46	Lower Wilcox	9	Atascosa	7	Evergreen UWCD	6	1,755	1,184	2,358	0	0.0000	
47	Lower Wilcox	9	Bexar	15	None (EAA)	35	6,524	26,602	0	26,602	-999.0000	Old GAM Locations
48	Lower Wilcox	9	Caldwell	28	Plum Creek CD	31	862	11,940	11,525	12,000	1.0412	
49	Lower Wilcox	9	Caldwell	28	Gonzales County UWCD	34	165	0	1,821	970	0.5327	
50	Lower Wilcox	9	Caldwell	28	No District-County	999	93	0	943	943	1.0000	
51	Lower Wilcox	9	Dimmit	64	Wintergarden GCD	38	51	38	65	65	1.0000	
52	Lower Wilcox	9	Frio	82	Evergreen UWCD	6	49	0	51	0	0.0000	
53	Lower Wilcox	9	Gonzales	89	Gonzales County UWCD	34	11	21,985	11	11,123	-999.0000	Old GAM Locations
54	Lower Wilcox	9	Guadalupe	94	Guadalupe County GCD	45	2,016	20,085	14,106	11,262	0.7984	
55	Lower Wilcox	9	Maverick	159	No District-County	999	578	2	752	300	0.3989	
56	Lower Wilcox	9	Medina	163	Medina County GCD	28	2,113	866	1,575	2,500	1.5873	
57	Lower Wilcox	9	Uvalde	232	Uvalde County GCD	32	85	0	86	200	2.3256	
58	Lower Wilcox	9	Webb	240	No District-County	999	0	0	2	2	1.0000	
59	Lower Wilcox	9	Wilson	247	Evergreen UWCD	6	1,256	86,690	5,818	15,000	-999.0000	EUWCD locations (13 wells equal pumping)
60	Lower Wilcox	9	Zavala	254	Wintergarden GCD	38	550	322	707	707	1.0000	

# Pumping Summary (Rounded)

- Baseline Scenario (2017 pumping) = 404,000 AF/yr
- 2022 MAGs (maximum values) = 682,000 AF/yr
- Bounding Simulation (MAG) = 718,000 AF/yr
  - Higher than 2022 MAGs (WGCD and Webb County)
- Scenario 26.7 (2080 values) = 742,000 AF/yr
  - Input pumping = 832,000 AF/yr
  - Yellow cells in Tables 3 and 4 represent < 90% of input pumping
- Scenarios 26.8 to 26.12 (2080 values) = 738,000 to 775,000 AF/yr

# Scenario 26.7 Results

- Processed results by 2022  
MAG Report Appendix A  
splits (2017 baseline)
  - Pumping
  - Average drawdown (outcrop)
  - Average drawdown (full area of split)
  - Percent saturated thickness remaining (outcrop)
  - Percent artesian head remaining (downdip)

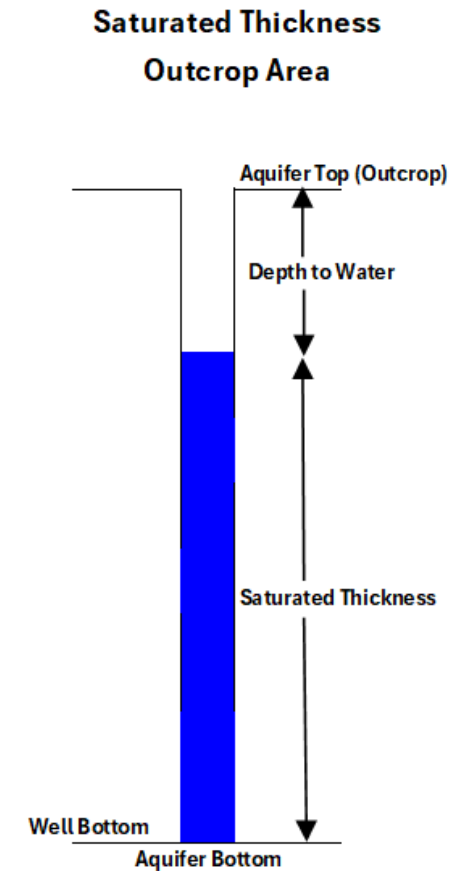
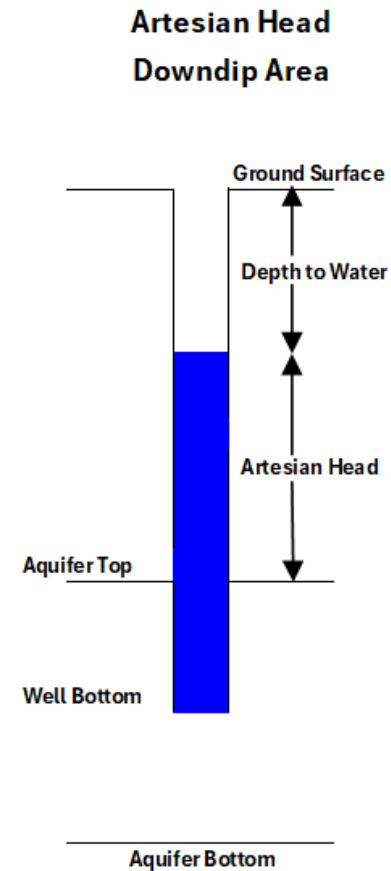


Table 3. Summary of Results for Scenario 26.7

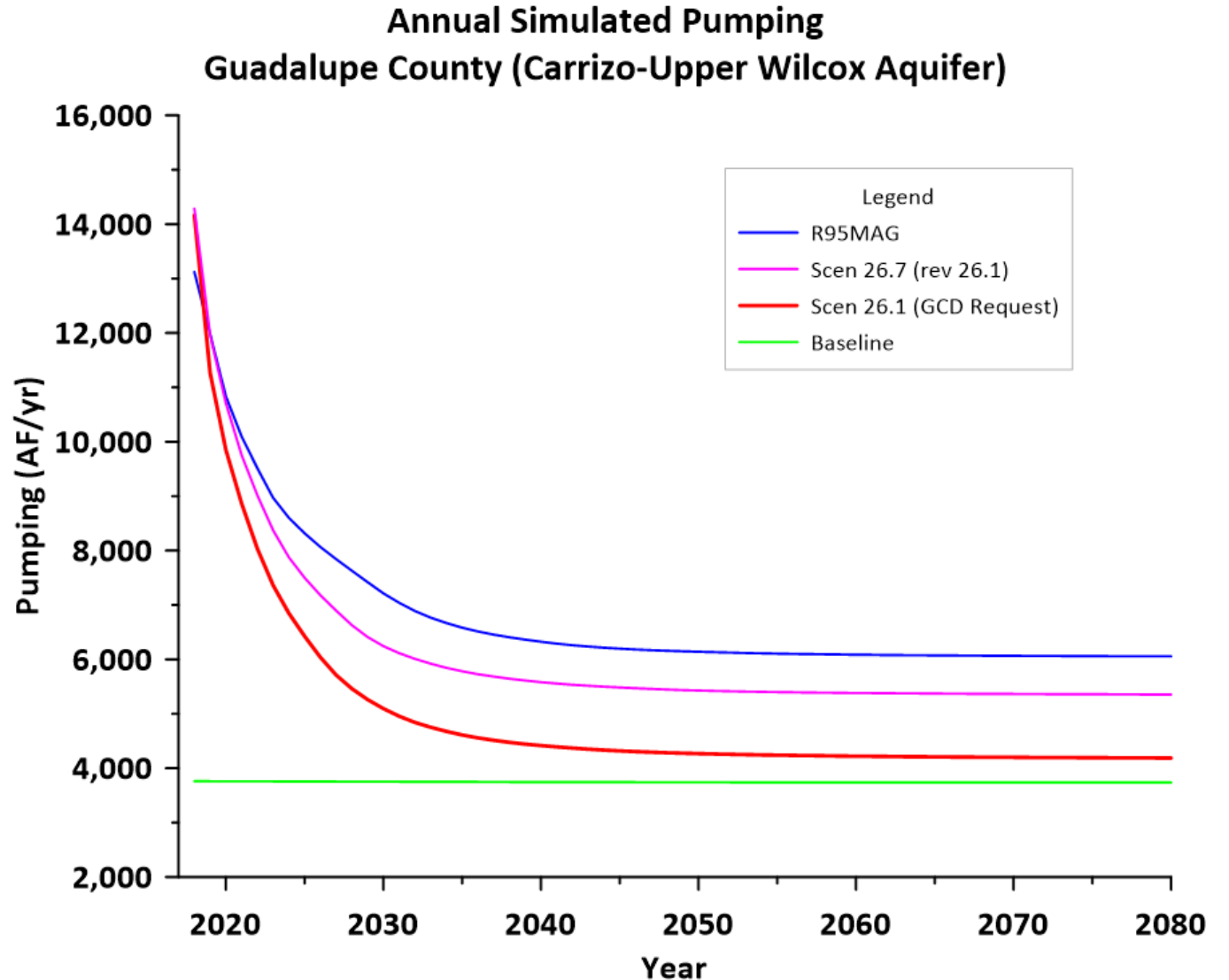
Split ID	Aquifer	GAM Layer	County	County Code	GCD	GCD Code	Max Current MAG (AF/yr)	2017 Pumping (AF/yr)	GCD Input Pumping (AF/yr)	Scen 26.7 2080 Pumping (AF/yr)	2080/ GCD Input (factor)	Avg DD OC (ft - 2018 Baseline)	Avg DD All (ft (2018 Baseline)	Percent Sat Thick Remaining (Outcrop - 2018 Baseline)	Percent Artesian Head Remaining (Downdip - 2018 Baseline)
1	Sparta	3	Atascosa	7	Evergreen UWCD	6	1,218	427	932	785	0.842	147	17	10	97
2	Sparta	3	Frio	82	Evergreen UWCD	6	897	365	534	533	0.998	15	9	81	79
3	Sparta	3	Wilson	247	Evergreen UWCD	6	335	511	114	113	0.991	22	6	67	98
4	Sparta	3	Gonzales	89	Gonzales County UWCD	34	3,524	379	1,128	1,128	1.000	4	1	95	97
5	Sparta	3	Zavala	254	Wintergarden GCD	38	0	229	229	229	1.000	4	4	97	60
6	Queen City	5	Atascosa	7	Evergreen UWCD	6	4,537	827	5,986	5,743	0.959	126	57	57	87
7	Queen City	5	Frio	82	Evergreen UWCD	6	6,702	748	3,927	3,901	0.993	71	69	80	53
8	Queen City	5	Wilson	247	Evergreen UWCD	6	2,631	1,267	3,333	3,206	0.962	58	41	73	83
9	Queen City	5	Caldwell	28	Gonzales County UWCD	34	4,842	89	0	0		16	15	74	31
10	Queen City	5	Gonzales	89	Gonzales County UWCD	34	4,973	2,498	5,134	5,025	0.979	49	61	72	86
11	Queen City	5	McMullen	162	McMullen County GCD	54	3	6	12	12	1.000	0	6	0	100
12	Queen City	5	Caldwell	28	Plum Creek CD	31	0	9	498	498	1.000	20	18	90	6
13	Queen City	5	La Salle	139	Wintergarden GCD	38	1	198	198	198	1.000	0	21	0	96
14	Carizo-Upper Wilcox	7	Atascosa	7	Evergreen UWCD	6	58,580	40,639	88,500	86,966	0.983	135	101	54	87
15	Carizo-Upper Wilcox	7	Bexar	15	None (EAA)	35	43,433	7,002	43,433	30,801	0.709	112	135	58	44
16	Carizo-Upper Wilcox	7	Caldwell	28	Plum Creek CD	31	9,993	7	100	100	1.000	68	59	75	66
17	Carizo-Upper Wilcox	7	Caldwell	28	Gonzales County UWCD	34	30,087	745	3,818	3,443	0.902	84	85	40	56
18	Carizo-Upper Wilcox	7	Dimmit	64	Wintergarden GCD	38	3,715	55,475	77,665	62,076	0.799	196	281	35	36
19	Carizo-Upper Wilcox	7	Frio	82	Evergreen UWCD	6	114,827	95,798	105,503	105,503	1.000	83	165	72	67
20	Carizo-Upper Wilcox	7	Gonzales	89	Gonzales County UWCD	34	57,166	53,380	69,827	69,816	1.000	102	97	63	86
21	Carizo-Upper Wilcox	7	Guadalupe	94	Guadalupe County GCD	45	28,943	3,736	14,843	5,354	0.361	161	197	17	4
22	Carizo-Upper Wilcox	7	Karnes	128	Evergreen UWCD	6	1,043	674	4,529	4,439	0.980	0	73	0	98
23	Carizo-Upper Wilcox	7	La Salle	139	Wintergarden GCD	38	6,554	25,704	35,986	35,986	1.000	0	286	0	85
24	Carizo-Upper Wilcox	7	Maverick	159	No District-County	999	543	1,045	550	550	1.000	59	60	53	12
25	Carizo-Upper Wilcox	7	McMullen	162	McMullen County GCD	54	7,789	4,678	7,789	7,789	1.000	0	202	0	95
26	Carizo-Upper Wilcox	7	Medina	163	Medina County GCD	28	517	1,139	850	833	0.980	37	36	59	58
27	Carizo-Upper Wilcox	7	Webb	240	No District-County	999	911	6,490	20,000	19,995	1.000	85	341	48	72
28	Carizo-Upper Wilcox	7	Wilson	247	Evergreen UWCD	6	38,855	22,884	35,000	34,806	0.994	88	122	63	75
29	Carizo-Upper Wilcox	7	Zavala	254	Wintergarden GCD	38	34,298	41,029	57,440	57,363	0.999	94	194	54	23

Table 4. Summary of Results for Scenario 26.7

Split ID	Aquifer	GAM Layer	County	County Code	GCD	GCD Code	Max Current MAG (AF/yr)	2017 Pumping (AF/yr)	GCD Input Pumping (AF/yr)	Scen 26.7 2080 Pumping (AF/yr)	2080/ GCD Input (factor)	Avg DD OC (ft - 2018 Baseline)	Avg DD All (ft (2018 Baseline)	Percent Sat Thick Remaining (Outcrop - 2018 Baseline)	Percent Artesian Head Remaining (Downdip - 2018 Baseline)
30	Middle Wilcox	8	Atascosa	7	Evergreen UWCD	6	224	543	3,060	3,060	1.000	37	98	64	91
31	Middle Wilcox	8	Bexar	15	None (EAA)	35	58	3,336	11,827	2	0.000	28	51	67	64
32	Middle Wilcox	8	Caldwell	28	Plum Creek CD	31	5,733	1,480	20,000	10,146	0.507	59	56	43	24
33	Middle Wilcox	8	Caldwell	28	Gonzales County UWCD	34	0	261	4,233	2,117	0.500	63	72	70	66
34	Middle Wilcox	8	Caldwell	28	No District-County	999	39	4	28	0	0.000	17	18	59	57
35	Middle Wilcox	8	Dimmit	64	Wintergarden GCD	38	142	219	267	264	0.989	73	261	62	64
36	Middle Wilcox	8	Frio	82	Evergreen UWCD	6	0	4,882	2,432	2,432	1.000	0	164	0	86
37	Middle Wilcox	8	Gonzales	89	Gonzales County UWCD	34	24,556	1,184	13,600	12,867	0.946	69	100	76	93
38	Middle Wilcox	8	Guadalupe	94	Guadalupe County GCD	45	9,428	1,816	10,206	8,407	0.824	122	143	27	22
39	Middle Wilcox	8	Maverick	159	No District-County	999	2	13	28	26	0.929	26	57	24	35
40	Middle Wilcox	8	McMullen	162	McMullen County GCD	54	0	0	0	0		0	200	0	96
41	Middle Wilcox	8	Medina	163	Medina County GCD	28	1,252	474	350	335	0.957	7	24	91	61
42	Middle Wilcox	8	Uvalde	232	Uvalde County GCD	32	0	79	63	63	1.000	14	17	82	67
43	Middle Wilcox	8	Webb	240	No District-County	999	1	3	13	13	1.000	62	336	70	87
44	Middle Wilcox	8	Wilson	247	Evergreen UWCD	6	125	843	90,000	90,000	1.000	53	124	32	86
45	Middle Wilcox	8	Zavala	254	Wintergarden GCD	38	3,683	5,107	6,522	6,522	1.000	30	185	66	65
46	Lower Wilcox	9	Atascosa	7	Evergreen UWCD	6	1,184	1,755	0	0		6	96	98	94
47	Lower Wilcox	9	Bexar	15	None (EAA)	35	26,602	6,524	26,602	4,885	0.184	5	15	96	83
48	Lower Wilcox	9	Caldwell	28	Plum Creek CD	31	11,940	862	12,000	11,282	0.940	27	39	81	45
49	Lower Wilcox	9	Caldwell	28	Gonzales County UWCD	34	0	165	970	991	1.022	17	58	87	80
50	Lower Wilcox	9	Caldwell	28	No District-County	999	0	93	943	523	0.555	17	17	87	44
51	Lower Wilcox	9	Dimmit	64	Wintergarden GCD	38	38	51	65	65	1.000	14	253	92	79
52	Lower Wilcox	9	Frio	82	Evergreen UWCD	6	0	49	0	0		0	164	0	90
53	Lower Wilcox	9	Gonzales	89	Gonzales County UWCD	34	21,985	11	11,123	11,129	1.001	0	102	0	95
54	Lower Wilcox	9	Guadalupe	94	Guadalupe County GCD	45	20,085	2,016	11,262	10,815	0.960	51	83	68	43
55	Lower Wilcox	9	Maverick	159	No District-County	999	2	578	300	300	1.000	9	17	93	58
56	Lower Wilcox	9	Medina	163	Medina County GCD	28	866	2,113	2,500	2,483	0.993	4	14	96	91
57	Lower Wilcox	9	Uvalde	232	Uvalde County GCD	32	0	85	200	187	0.935	4	8	93	85
58	Lower Wilcox	9	Webb	240	No District-County	999	0	0	2	2	1.000	35	335	90	90
59	Lower Wilcox	9	Wilson	247	Evergreen UWCD	6	86,690	1,256	15,000	15,000	1.000	34	120	92	90
60	Lower Wilcox	9	Zavala	254	Wintergarden GCD	38	322	550	707	707	1.000	8	175	89	77

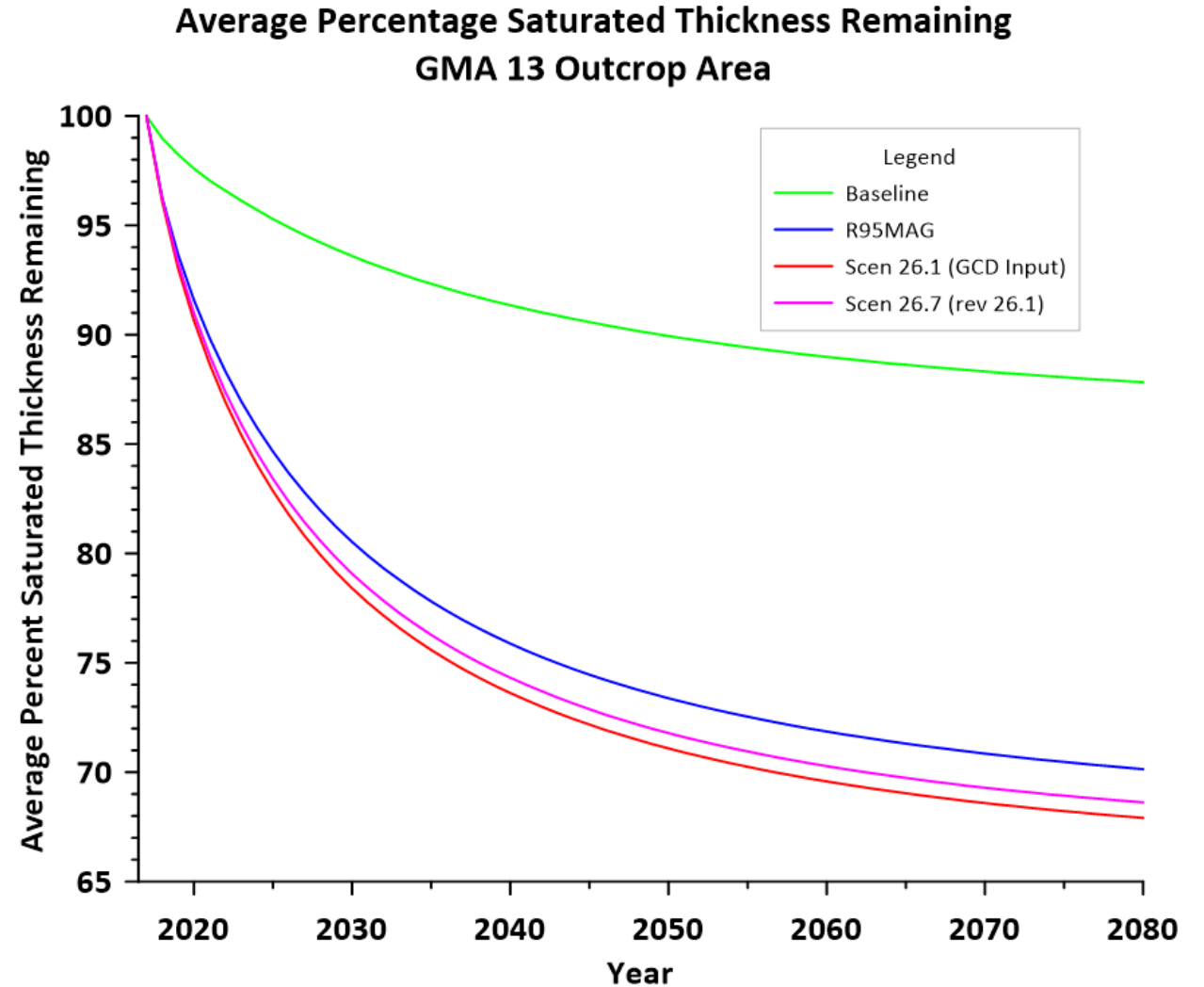
# Split 21 Pumping

- Scenario 26.7
  - Input = 14,800 AF/yr
  - 2080 Output = 5,400 AF/yr
    - 36% of input
- Bounding Simulation (2080)
  - 6,100 AF/yr
- Baseline Scenario
  - 3,700 AF/yr (sustainable)



# GMA 13 Saturated Thickness

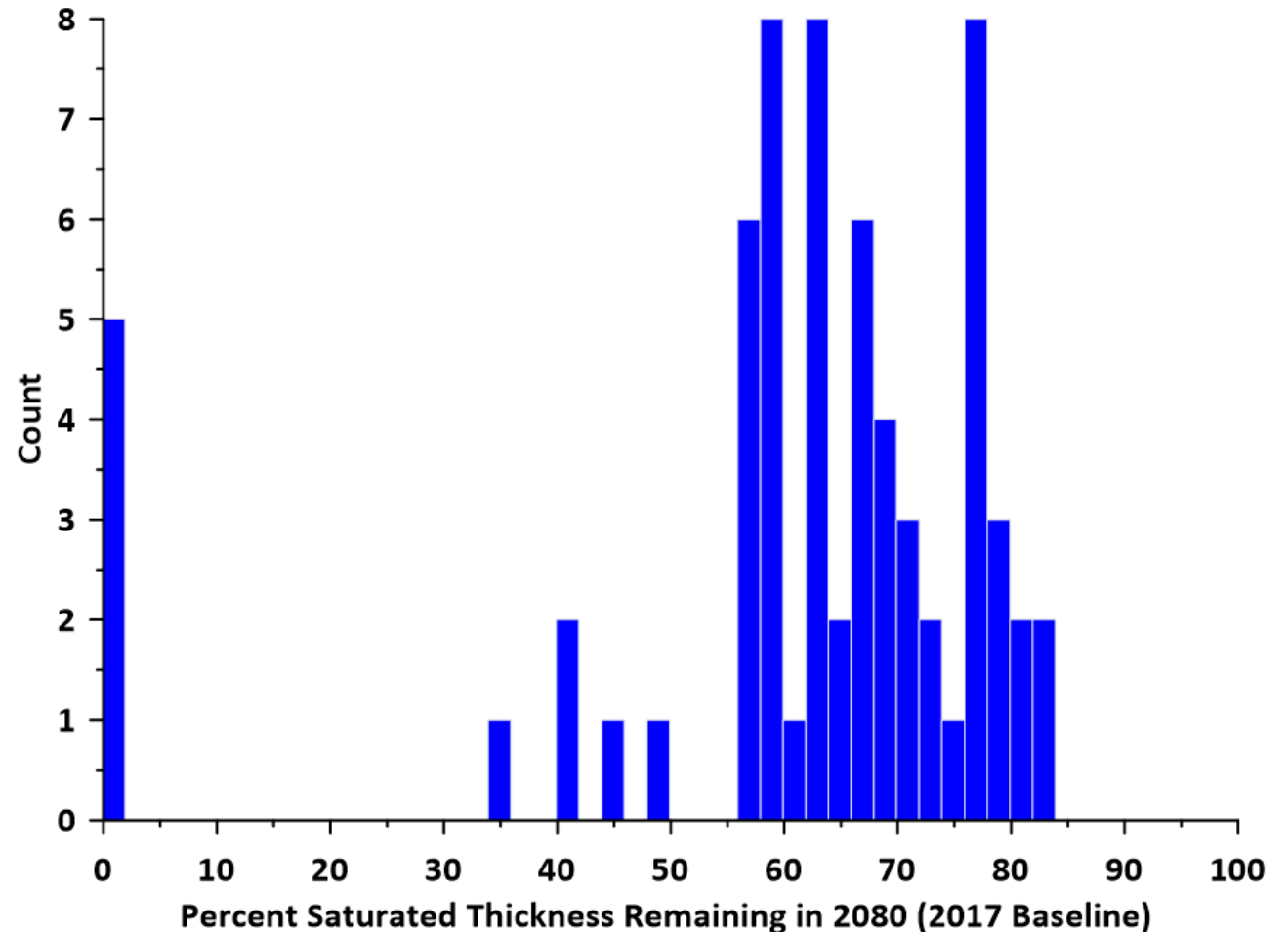
- In 2080 (% of 2017)
  - Baseline = 88%
  - MAG Simulation = 70%
  - Scenario 26.7 = 69%
  - Scenario 26.1 = 68%



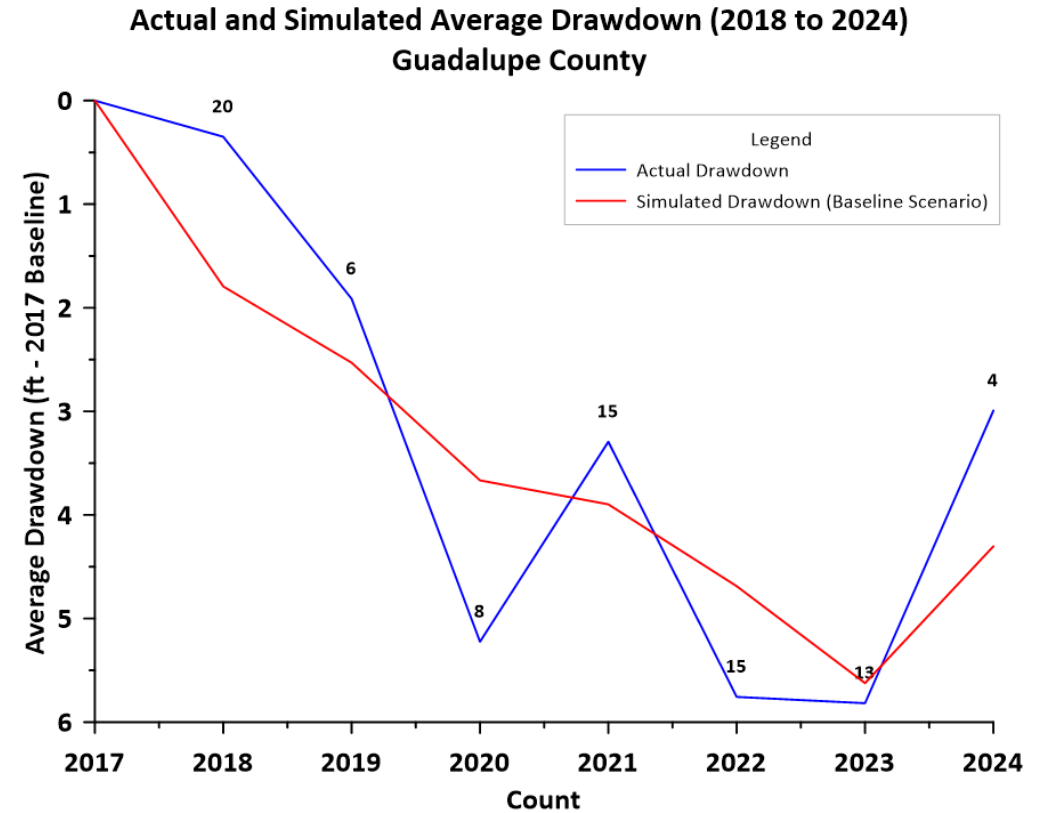
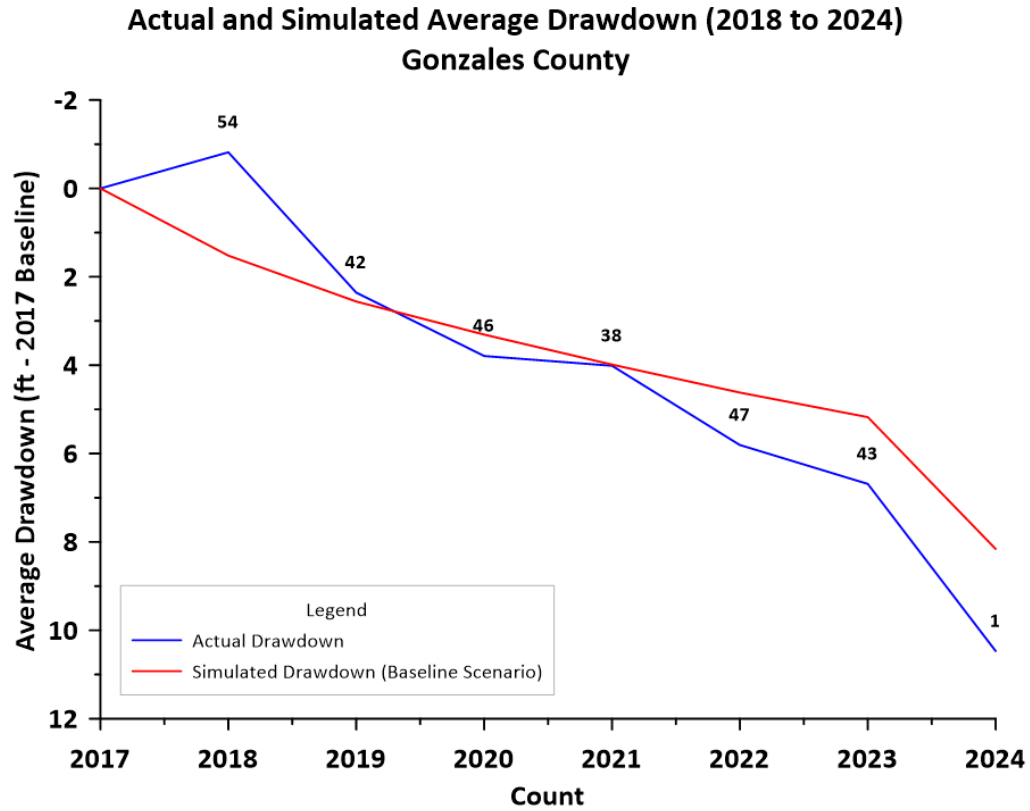
# Interpretation of Saturated Thickness

- Overall average = 68%
- Split 20 (Gonzales County-Carrizo/Upper Wilcox)
  - Scenario 26.7 = 63%
  - Scenario 26.1 = 56%

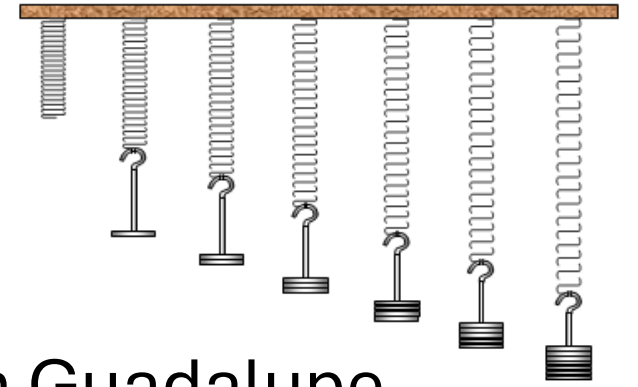
Distribution of Saturated Thickness Remaining in 2080  
Gonzales County (Scenario 26.7)



# Are GMA 13 Model Results Reliable?



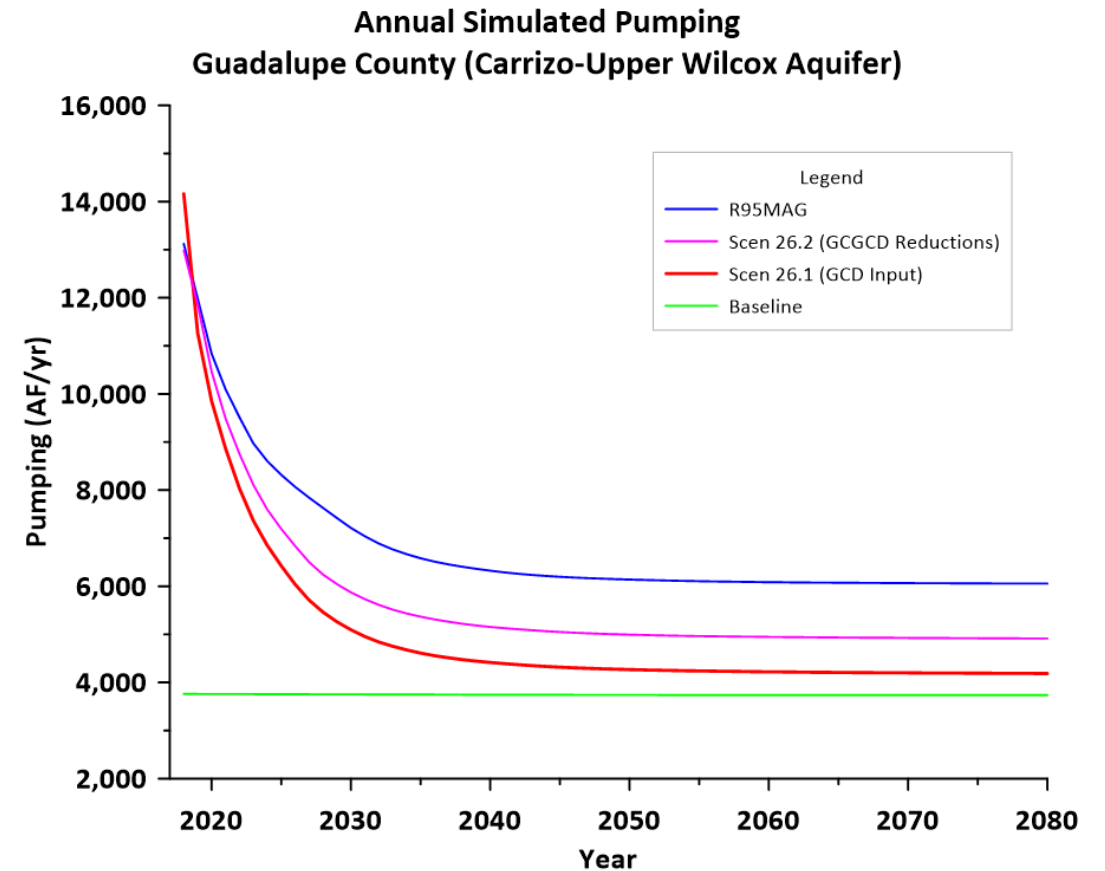
# Scenarios 26.2 to 26.6



- Assess impacts of neighboring county pumping on Guadalupe County (Split 21)
  - Based on Scenario 26.1
- GMA 13 Model is an analytical tool
- Objective: provide information to GCD managers to develop a pumping scenario that represents a compromise solution to Split 21

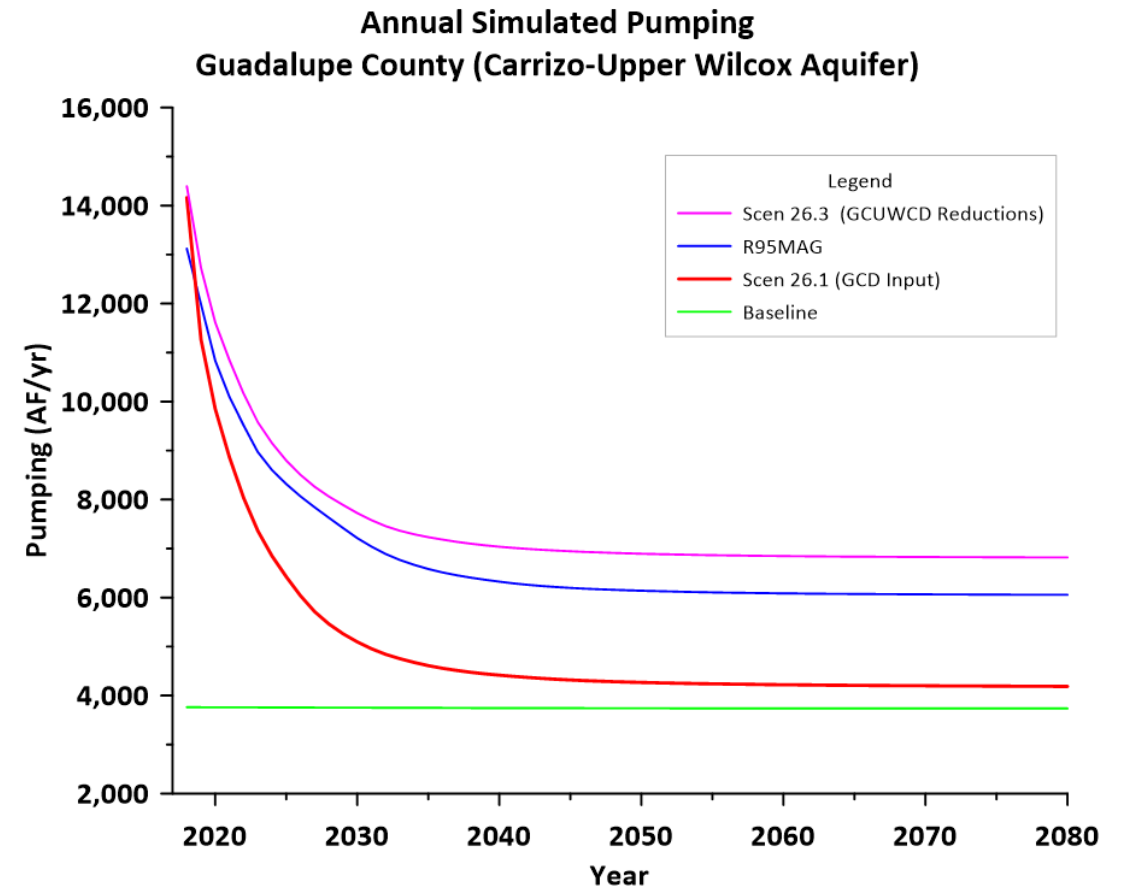
# Scenario 26.2 (Guadalupe County GCD)

- Pumping reductions:
  - Carrizo-Upper Wilcox reduced 10 percent
    - Assess effect of initial pumping input
  - Middle and Lower Wilcox reduced 50 percent
- Results:
  - 2080 pumping is about 4,900 AF/yr
  - Compare to Scen 26.1 (4,200 AF/yr)



# Scenario 26.3 (Gonzales County UWCD)

- Pumping reductions:
  - All Carrizo-Wilcox pumping reduced 50 percent (Caldwell and Gonzales counties)
- Results:
  - 2080 pumping is about 6,800 AF/yr
  - Compare to Scen 26.1 (4,200 AF/yr)

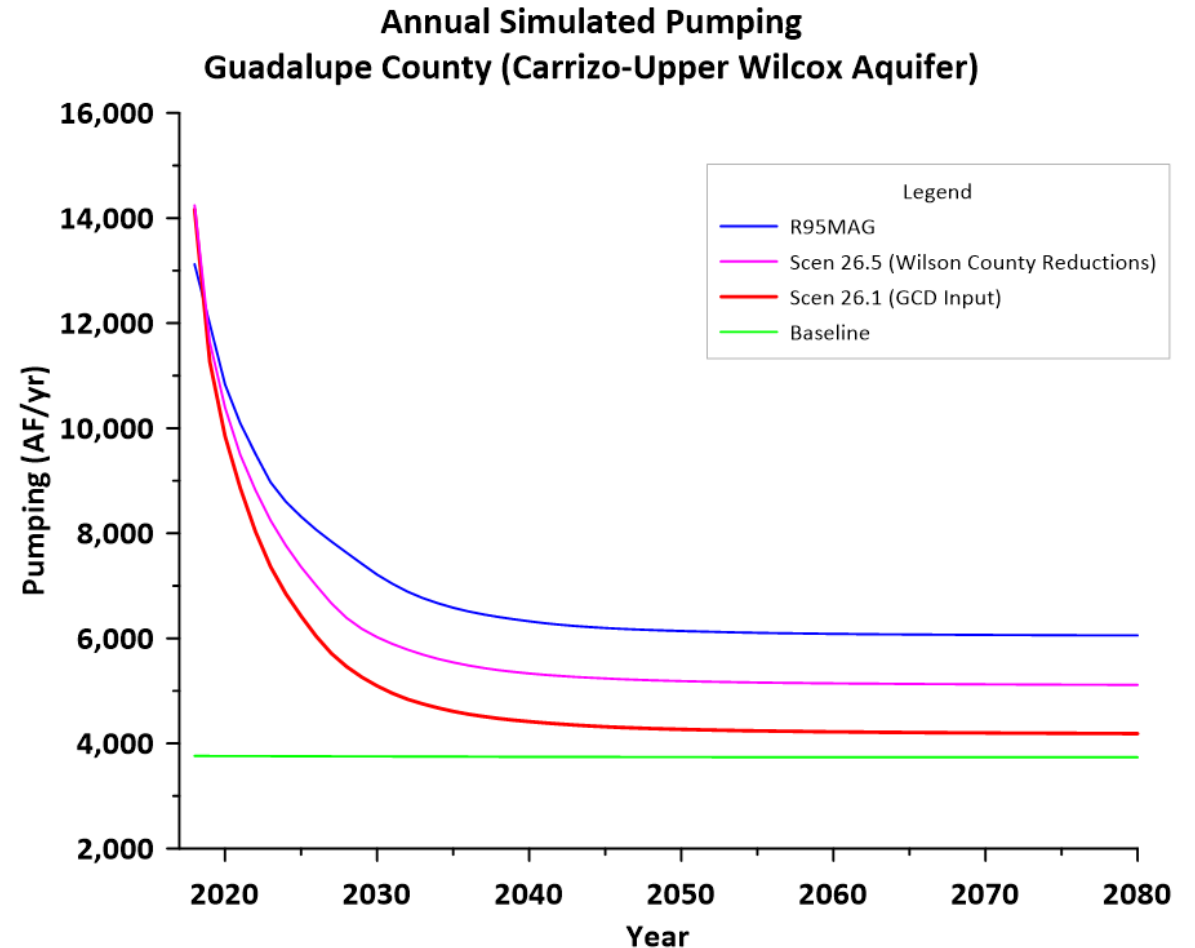


# Scenario 26.4 (Plum Creek CD)

- Pumping reductions:
  - All Carrizo-Wilcox pumping reduced 50 percent (parts of Caldwell County)
- Results:
  - 2080 pumping is about 4,200 AF/yr
  - No change from Scen 26.1 (4,200 AF/yr)

# Scenario 26.5 (Wilson County)

- Pumping reductions:
  - All Carrizo-Wilcox pumping reduced 50 percent
- Results:
  - 2080 pumping is about 5,100 AF/yr
  - No change from Scen 26.1 (4,200 AF/yr)



# Scenario 26.6 (Bexar County)

- Pumping reductions:
  - All Carrizo-Wilcox pumping reduced 50 percent
- Results:
  - 2080 pumping is about 4,200 AF/yr
  - No change from Scen 26.1 (4,200 AF/yr)

# Discussion of Pumping Reductions

- Increasing simulated Guadalupe County pumping in Carrizo-Upper Wilcox will occur with:
  - Decreased simulated pumping in Guadalupe County Middle and Lower Wilcox
  - Decreased simulated pumping in Gonzales County UWCD
  - Wilson County
- Decreasing simulated pumping in Bexar County or Plum Creek CD would have no significant effect

# Webb County (Tech Memo 26-02 Simulations and Scenarios 26.8 to 26.12)

- February 26, 2026
  - Received request from Jordan Furnans
    - Well locations and pumping amounts in Webb County (50,000 AF/yr)
- March 2, 2026
  - Sent Tech Memo 26-02 (Webb Request) to Kelley Cochran (GMA 13 Coordinator)
    - Kelley sent it to Jordan Furnans (responded within 5 minutes: “I’ll go through this asap”)
- March 19, 2026
  - Jordan sent me an email
  - Phone discussion
  - Jordan followed up with an email to Kelley Cochran and me
- I developed Scenarios 26.8 to 26.12 to provide GMA 13 a range of scenarios for discussion
  - Partial results today for discussion

# Tech Memo 26-02

- Baseline simulation plus Legacy WSC request
  - Larger than requested in 2024 and previously simulated
- Objective: identify and characterize potential impacts of Webb County pumping increase
- Requested pumping was added to historic pumping
- Key findings:
  - Pumping in Dimmitt County would be reduced
  - 15% of pumping increase would come from Webb County storage
  - 17% of pumping increase would be sourced from Dimmitt County
  - 35% of pumping increase would be sourced from LaSalle County

# Summary of New Webb Simulations

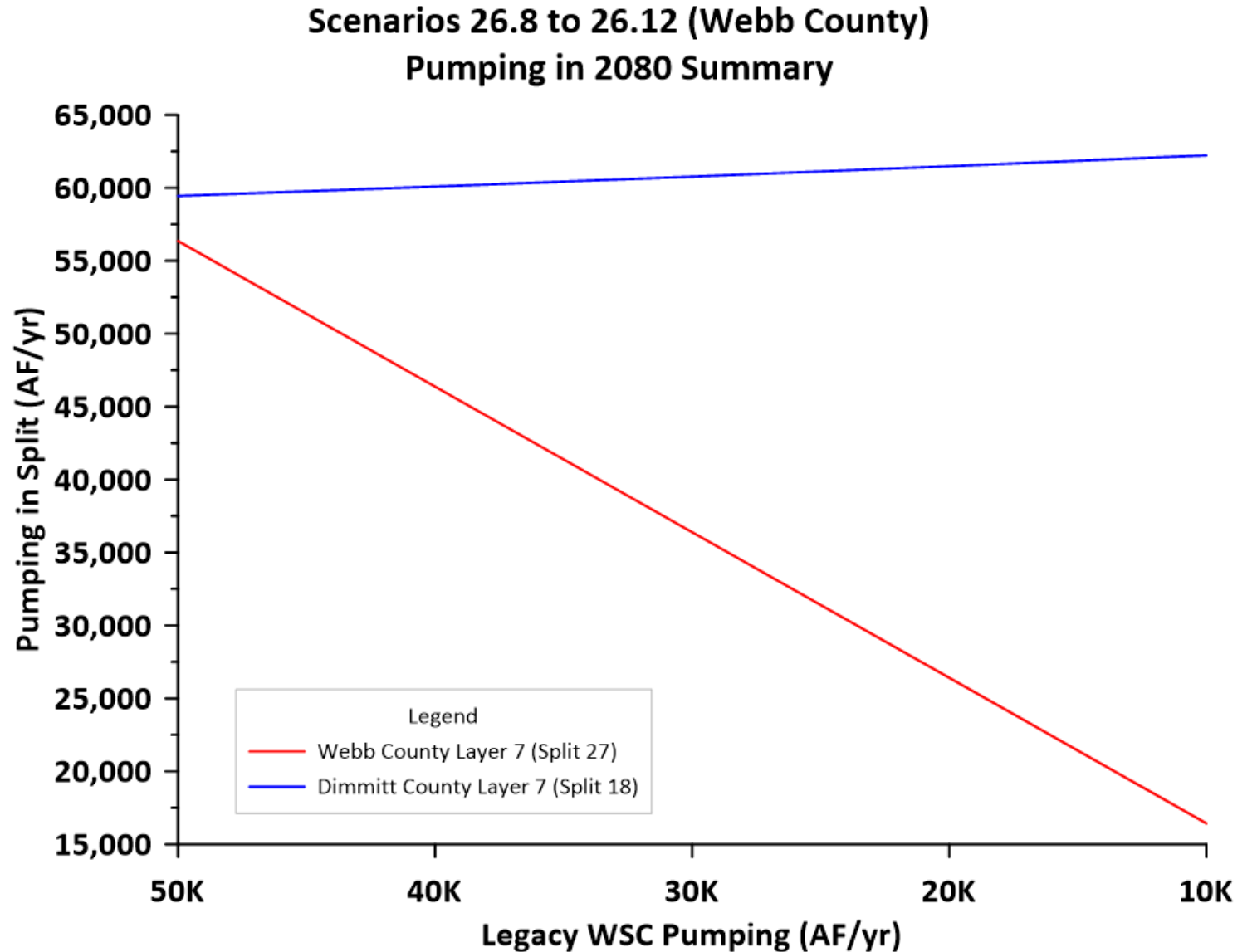
- Started with Scenario 26.7
- Corrected Webb County well locations that I had neglected to include in Scenario 26.7
  - Locations had been included in simulation that simulated Webb County request in isolation (Tech Memo 26-02, March 2, 2026)
- Scenario 26.8 (Webb = 50K)
- Scenario 26.9 (Webb = 40K)
- Scenario 26.10 (Webb = 30K)
- Scenario 26.11 (Webb = 20K)
- Scenario 26.12 (Webb = 10K)

# Impact of Well Locations

- Scen 26.7 (Webb Pumping = 20K and “incorrect” locations)
  - Drawdown in Split 27 (2018 to 2080) = 341 ft
- Scen 26.11 (Webb Pumping = 26K and “correct” locations)
  - Drawdown in Split 27 (2018 to 2080) = 392 ft
- Scen 26.12 (Webb Pumping = 16K and “correct” locations)
  - Drawdown in Split 27 (2018 to 2080) = 293 ft
- Location correction did not make significant difference given model uncertainty with this large a pumping increase

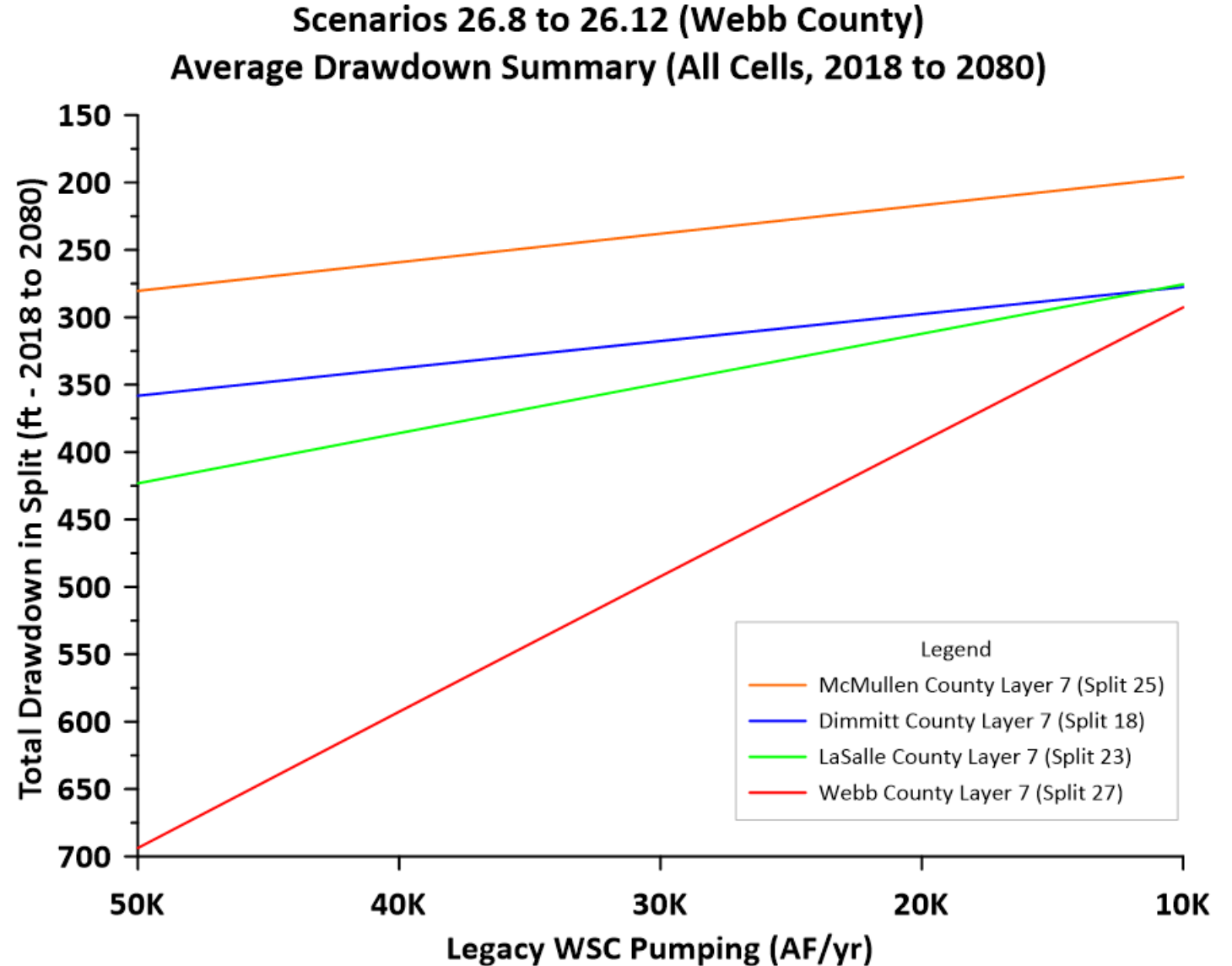
# Pumping

- As Webb County pumping decreases, Dimmitt County pumping increases
  - Increase (50K to 10K) = 2,800 AF/yr
- No other county had significant pumping increases (> 200 AF/yr)



# Drawdown

- As Webb County pumping decreases, drawdown decreases in Webb and three other counties (Dimmitt, LaSalle, McMullen)
  - Decrease (50K to 10K):
    - Dimmitt = 81 ft
    - LaSalle = 148 ft
    - McMullen = 84 ft
    - Webb = 401 ft
- No other county had significant drawdown decrease (> 40 ft)



# Next Steps

- Prepare a new Tech Memo on Scenarios 26.8 to 26.12
  - More complete results
  - Capture analysis and source of pumping will not significantly change sources of pumping from those described in Tech Memo 26-02
- GMA 13 needs to make two major decisions (assumption based on recent phone conversations):
  - Decide on Webb County (26.8 to 26.12)
  - Pumping in Split 21 (Guadalupe County – Layer 7)
    - GCDs could develop compromise pumping and new Scenario
- Meet in April to approve and vote on proposed DFC
  - Draft Explanatory Report will be ready ahead of the meeting scheduled for April 22
  - Need some direction related to how DFCs are expressed (Tables 3 and 4 have four options)
    - Documentation will include all four approaches, but need to decide on official DFC statement

# Budget and Invoice Update

- Invoice for this meeting:
  - Task 1.1 (meeting): \$1,250
  - Task 3.4 (simulations): \$2,500
  - **Total:** **\$3,750**
- Pending:
  - Task 2 (Factor Documentation): \$6,500
  - Task 3.3 (Bounding Simulation Documentation): \$7,500
- Next Meeting:
  - Additional simulation(?): need budget increase if completed
  - Task 4.1 (Initial Draft of Explanatory Report): \$7,500

**GMA 13 Support Task List and Invoicing Schedule**  
**William R. Hutchison, Ph.D, P.E., P.G.**

**Invoice 8 (3/23/2026)**

<b>Task/Sub task</b>	<b>Flat Rate Fee</b>	<b>Number</b>	<b>Sub task Budget Total</b>	<b>Past Invoice Total</b>	<b>Current Invoice Amount</b>	<b>Sub task Budget Remaining</b>	<b>Invoice Date</b>
<b>1.0 GMA 13 Meetings</b>							
1.1 Meeting Preparation, Travel, and Attendance at In-Person Meeting	\$1,250	12	\$15,000	\$8,750	\$1,250	\$5,000	7 of 12
1.2 Meeting Preparation and Attendance at Remote (i.e. Zoom) Meeting	\$500	2	\$1,000	\$0		\$1,000	
<b>2.0 Factor Documentation</b>							
2.1 Aquifer Uses and Conditions	\$1,000	1	\$1,000	\$0		\$1,000	
2.2 Water Supply Needs and Water Management Strategies	\$1,000	1	\$1,000	\$0		\$1,000	
2.3 Hydrologic Conditions	\$1,000	1	\$1,000	\$0		\$1,000	
2.4 Environmental Impacts	\$1,000	1	\$1,000	\$0		\$1,000	
2.5 Subsidence Impacts	\$500	1	\$500	\$0		\$500	
2.6 Socioeconomic Impacts	\$500	1	\$500	\$0		\$500	
2.7 Private Property Impacts	\$500	1	\$500	\$0		\$500	
2.8 Achievement Feasibility	\$500	1	\$500	\$0		\$500	
2.9 Other Information (stakeholder provided)	\$500	1	\$500	\$0		\$500	
<b>3.0 GAM Simulations/Technical Memoranda</b>							
3.1 Preliminary GAM Model Update/Corrections	\$15,000	1	\$15,000	\$15,000		\$0	9/15/2023
3.11 Final GAM Model Update/Corrections	\$10,000	1	\$10,000	\$10,000		\$0	9/23/2024
3.2 TWDB Approval of GAM Updates/Corrections	\$6,500	1	\$6,500	\$6,500		\$0	2/19/2026
3.3 Initial Bounding Simulations as Directed by GMA 13	\$7,500	1	\$7,500	\$0		\$7,500	
3.4 Additional Simulations as Directed by GMA 13	\$2,500	1	\$2,500	\$0	\$2,500	\$0	3/23/2026
3.5 HB 2078 Comparison with Wintergarden GCD Data	\$6,000	1	\$6,000	\$6,000		\$0	8/18/2025
<b>4.0 Explanatory Report</b>							
4.1 Initial Draft (completed prior to voting on Proposed DFC)	\$7,500	1	\$7,500	\$0		\$7,500	
4.2 Revise draft after public comments with proposed comment responses	\$2,000	1	\$2,000	\$0		\$2,000	
4.3 Final Explanatory Report and Submittal to TWDB	\$1,500	1	\$1,500	\$0		\$1,500	
<b>Total</b>			<b>\$81,000</b>	<b>\$46,250</b>	<b>\$3,750</b>	<b>\$31,000</b>	

# Questions and Discussion

Bill Hutchison

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