

Groundwater Management Area 16 Joint Planning Cycle: 2019-2022

Virtual Meeting

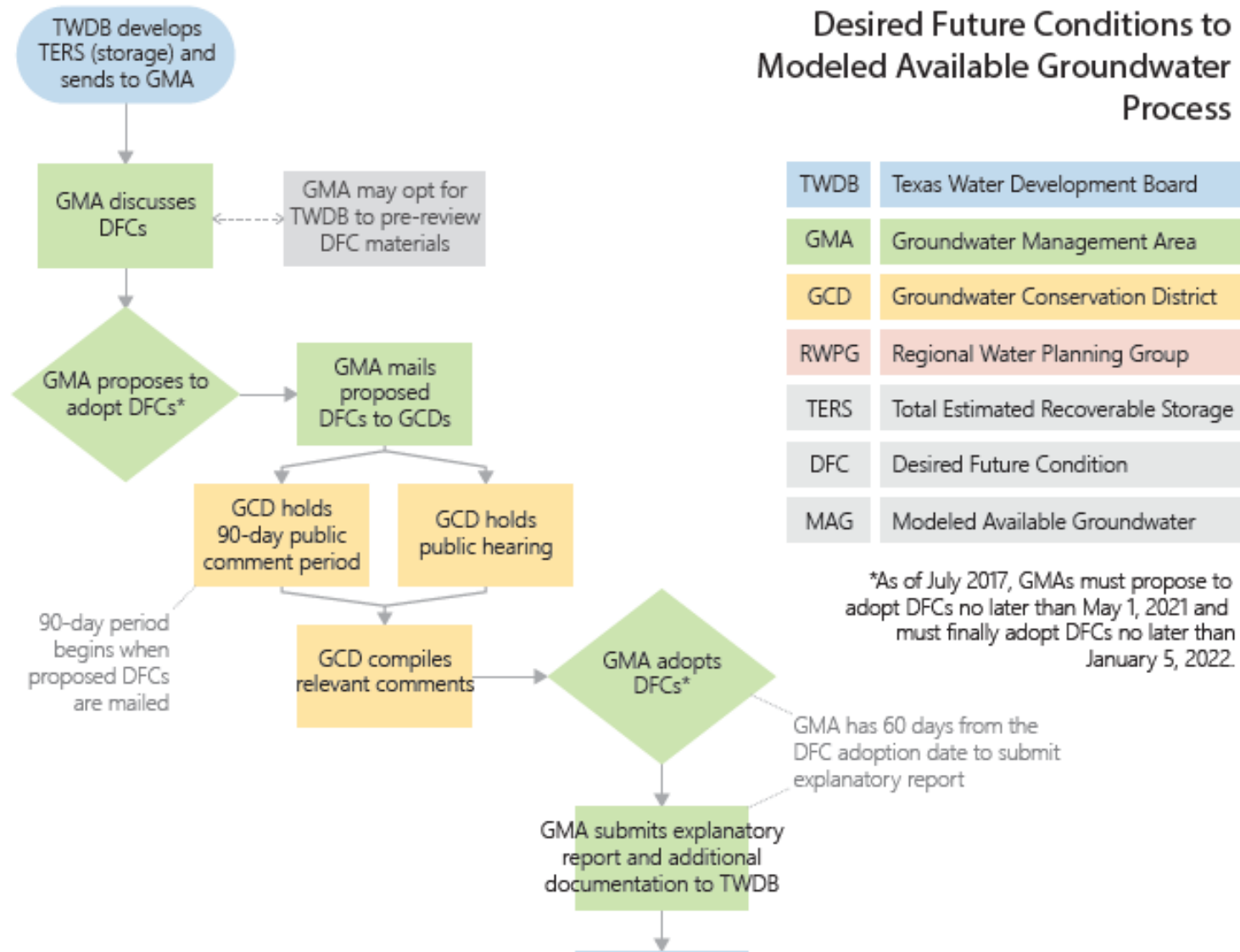
March 23, 2021

Steve Young, Ph.D., P.G., P.E.

Agenda

- Flowchart of DFC to MAG Process
- Average Drawdowns for Pumping Scenario #2
 - Summary
 - Bee GCD
 - Brush Country GCD
 - Duval County GCD
 - Kenedy County GCD
 - Live Oak UWCD
 - McMullen GCD
 - Red Sands GCD
 - San Patricio GCD
 - Starr County GCD

DFC to MAG Process

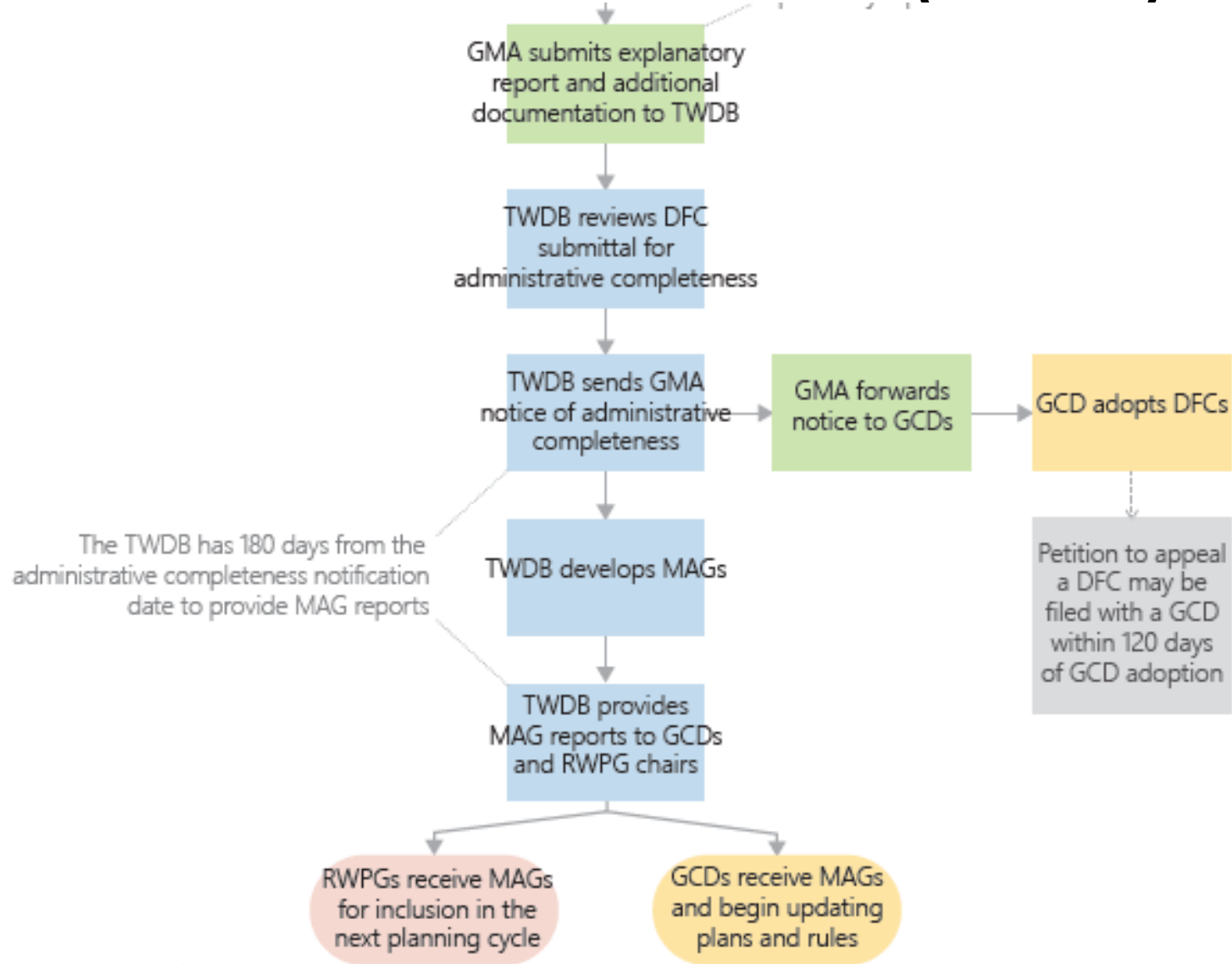


Desired Future Conditions to Modeled Available Groundwater Process

TWDB	Texas Water Development Board
GMA	Groundwater Management Area
GCD	Groundwater Conservation District
RWPG	Regional Water Planning Group
TERS	Total Estimated Recoverable Storage
DFC	Desired Future Condition
MAG	Modeled Available Groundwater

*As of July 2017, GMAs must propose to adopt DFCs no later than May 1, 2021 and must finally adopt DFCs no later than January 5, 2022.

DFC to MAG Process (con't)

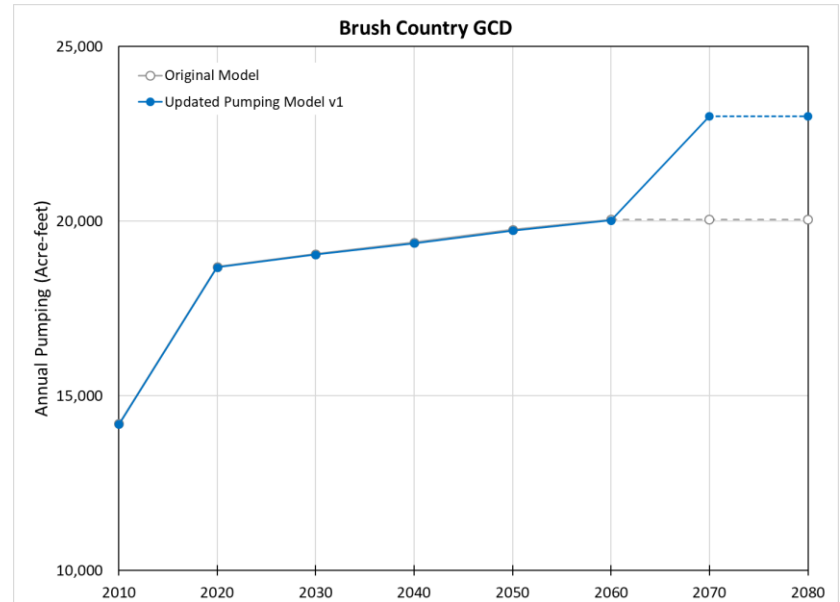
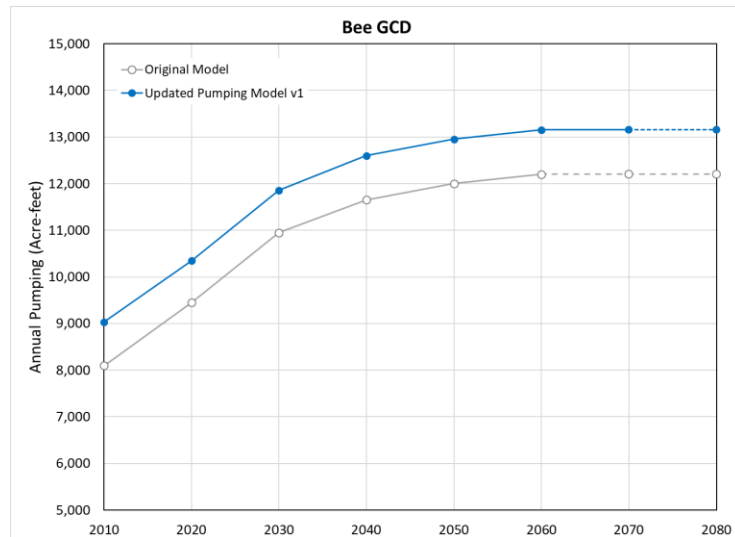
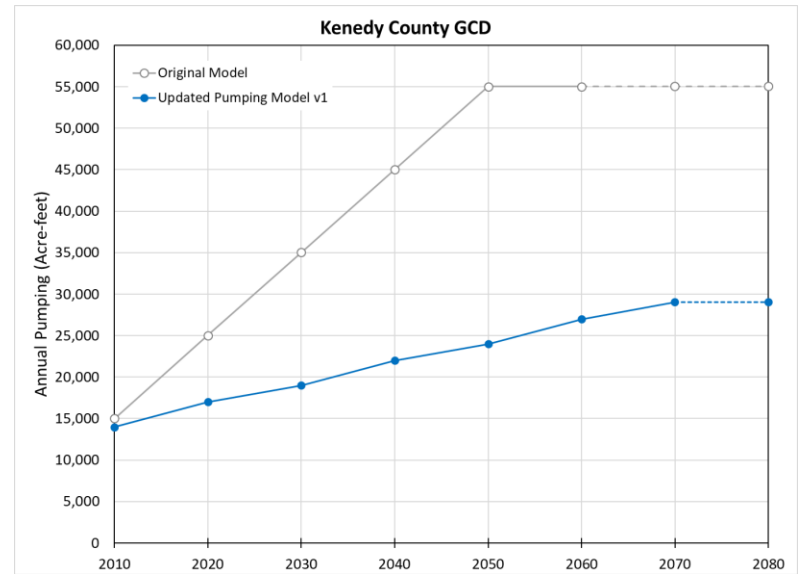
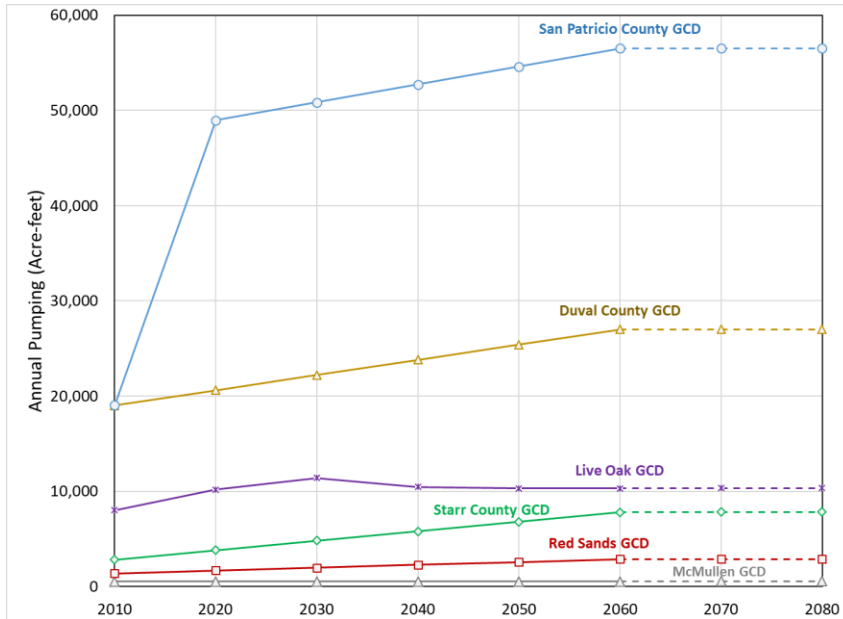


Average Drawdowns From Pumping Scenario #2

GCD or Region	Simulated Drawdown (ft) 2010-2080				
	Chicot	Evangeline	Burkeville	Jasper	Gulf Coast Aquifer
Bee GCD	125	101	89	74	91
Brush County GCD	60	100	88	90	90
Duval County	98	181	120	107	136
Kenedy County GCD	18	56	18	18	28
Live Oak UWCD	100	83	78	25	44
McMullen GCD	na	na	na	12	12
Red Sands GCD	48	63	61	61	61
San Patricio County GCD	114	84	40	40	69
Starr County GCD	na	112	100	76	94
Non-district Cameron	126	196	78	78	120
Non-district Hidalgo	154	171	120	118	139
Non-district Kleberg	15	47	11	11	21
Non-district Nueces	33	40	16	16	26
Non-district Webb	0	228	0	89	161
Non-district Willacy	47	85	23	23	45
GMA 16 TOTAL	61	110	67	65	78

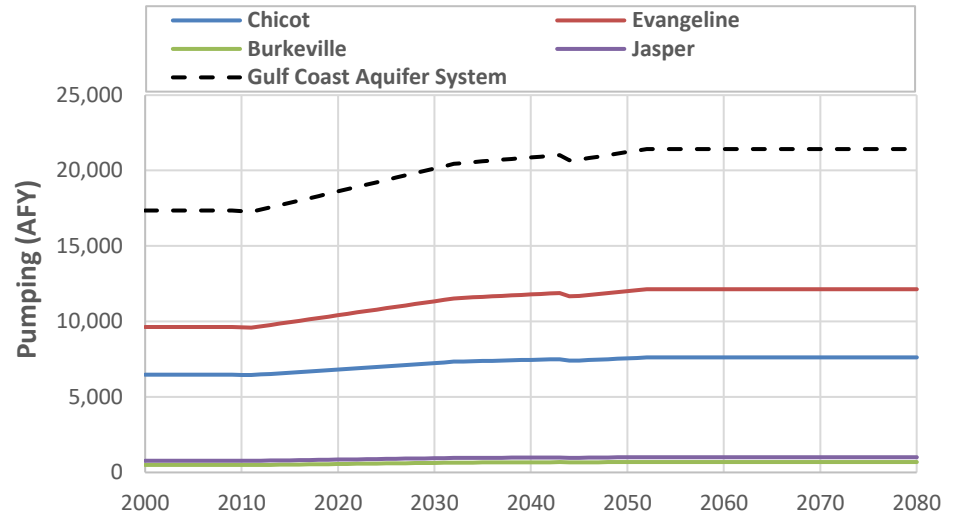
*1/1/2010 to 1/1/2080

Pumping Scenario #2

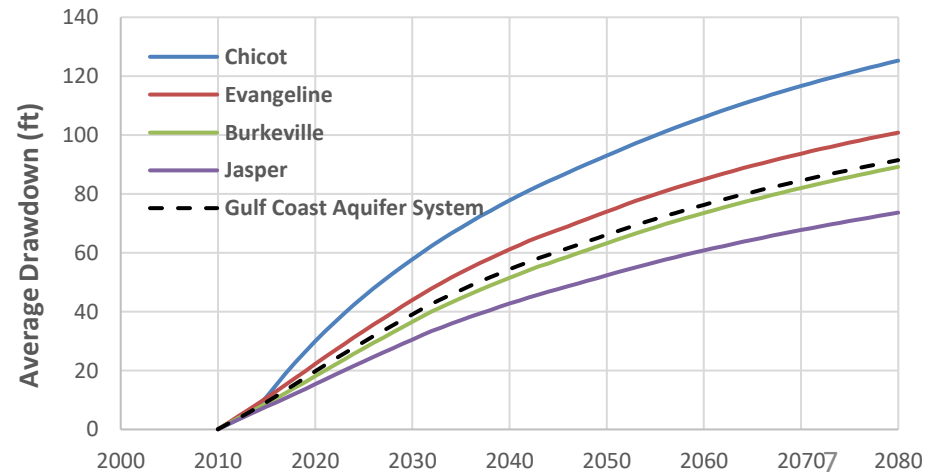


Bee County GCD

Unit	Pumping (acre-ft/year)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	6818	7241	7449	7548	7604	7604	7604
Evangeline	10410	11333	11786	12000	12123	12123	12123
Burkeville	548	624	661	679	689	689	689
Jasper	839	930	975	996	1008	1008	1008
Total	18615	20128	20871	21223	21423	21423	21423

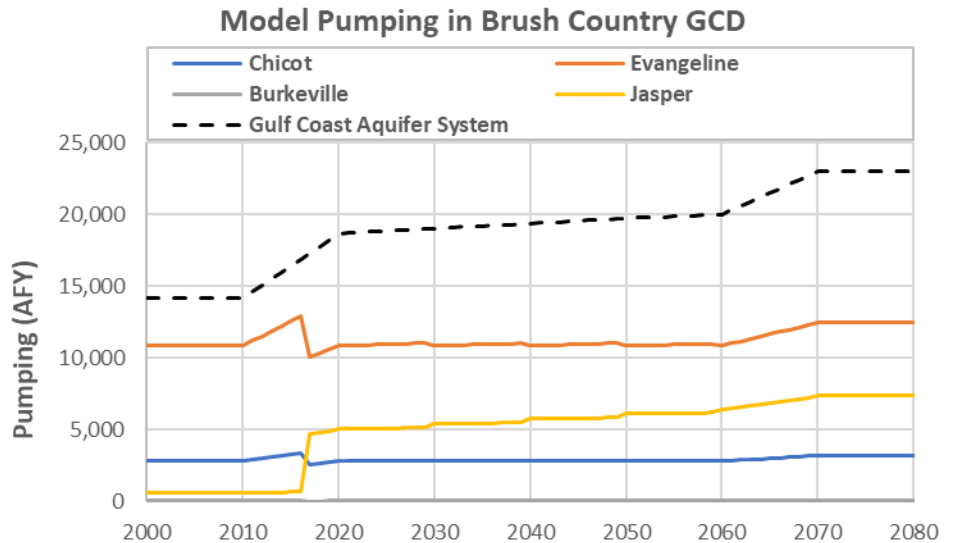


Unit	Average Decadal Drawdown (begin 2010)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	30	58	78	93	106	117	125
Evangeline	22	44	61	74	85	94	101
Burkeville	18	37	51	63	74	82	89
Jasper	15	31	43	52	61	68	74
Average	20	39	54	66	76	85	91

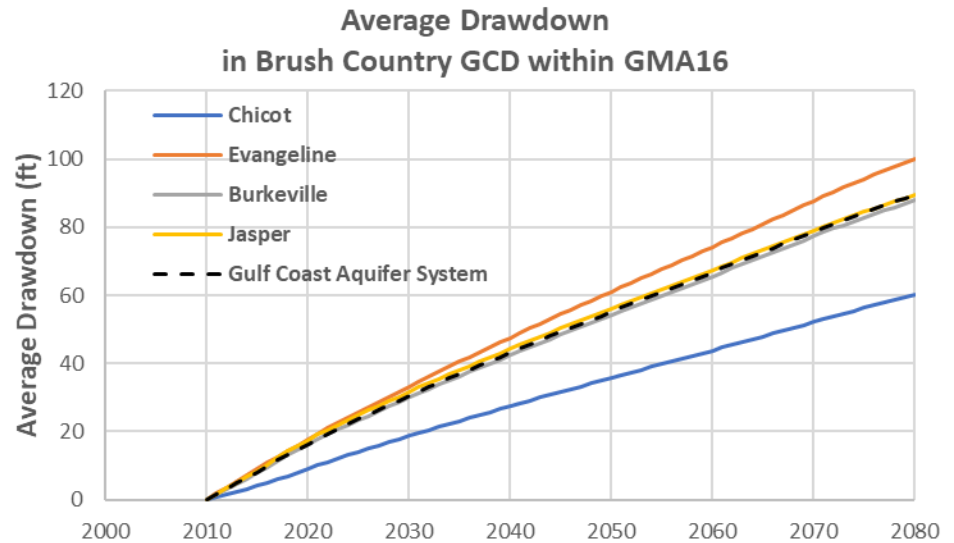


Brush Country GCD

Unit	Pumping (acre-ft/year)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	2787	2787	2787	2787	2787	3201	3201
Evangeline	10843	10843	10843	10843	10843	12455	12455
Burkeville	7	7	7	7	7	9	9
Jasper	5035	5399	5728	6093	6385	7335	7335
Total	18672	19037	19365	19730	20022	23000	23000

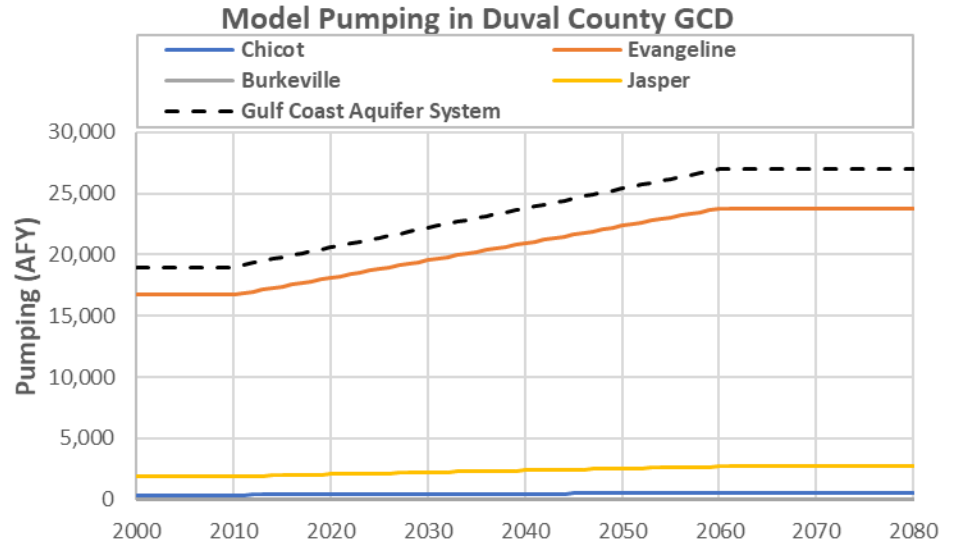


Unit	Average Decadal Drawdown(ft) (begin 2010)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	9	19	27	36	44	52	60
Evangeline	18	33	48	61	74	88	100
Burkeville	16	30	42	54	66	77	88
Jasper	18	32	44	56	67	79	90
Average	16	30	43	55	67	79	90

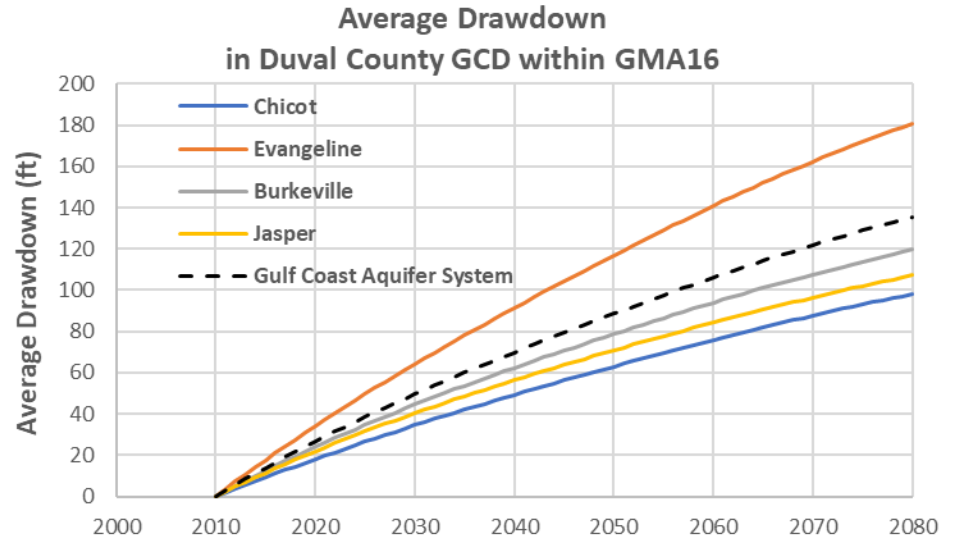


Duval County CGD

Unit	Pumping (acre-ft/year)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	412	444	476	508	540	540	540
Evangeline	18129	19537	20944	22353	23760	23760	23760
Burkeville	0	0	0	0	0	0	0
Jasper	2059	2220	2379	2540	2701	2701	2701
Total	20600	22201	23800	25401	27001	27001	27001

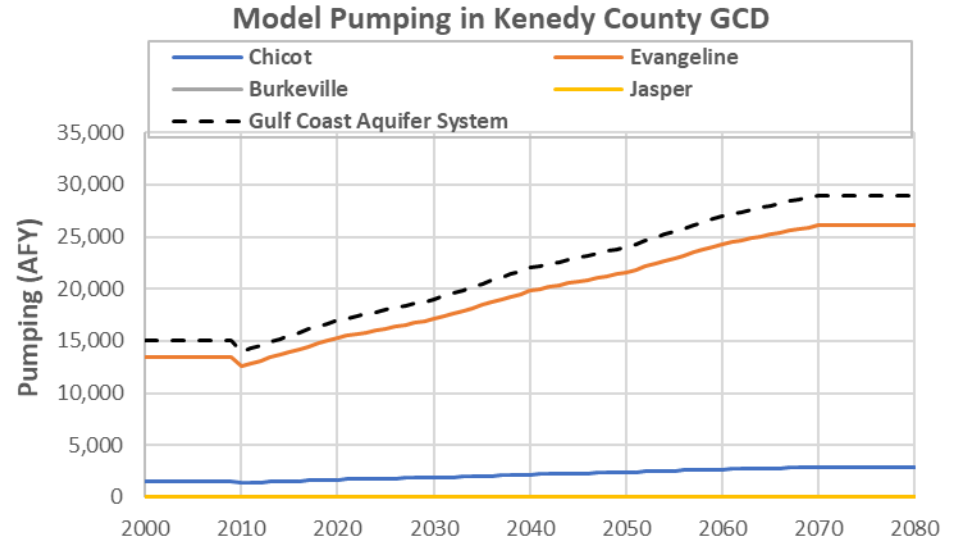


Unit	Average Decadal Drawdown(ft) (begin 2010)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	18	35	49	63	76	88	98
Evangeline	34	64	91	117	141	162	181
Burkeville	24	44	62	79	94	108	120
Jasper	22	40	56	71	84	96	107
Average	27	50	70	89	106	122	136

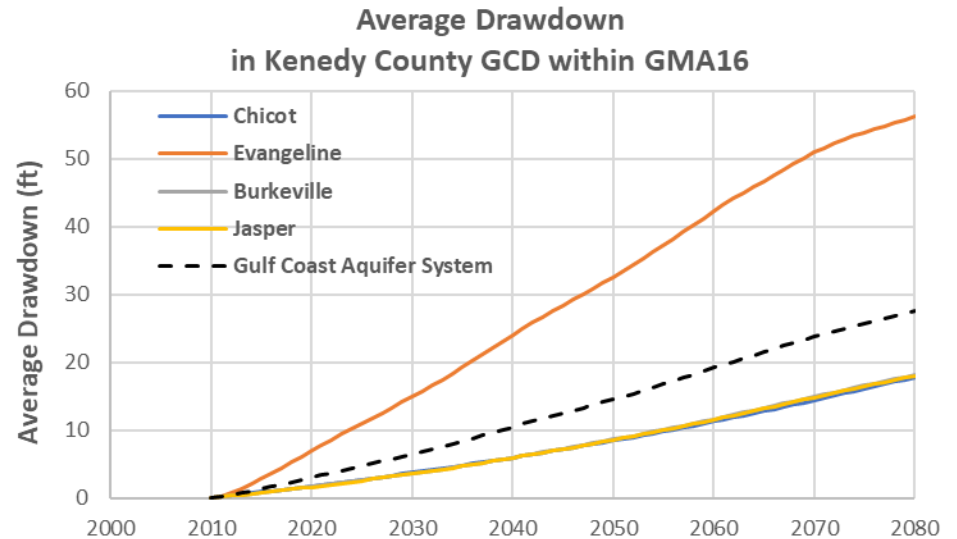


Kenedy County GCD

Unit	Pumping (acre-ft/year)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	1697	1897	2196	2396	2695	2895	2895
Evangeline	15303	17103	19804	21604	24305	26105	26105
Burkeville	0	0	0	0	0	0	0
Jasper	0	0	0	0	0	0	0
Total	17000	19000	22000	24000	27000	29000	29000

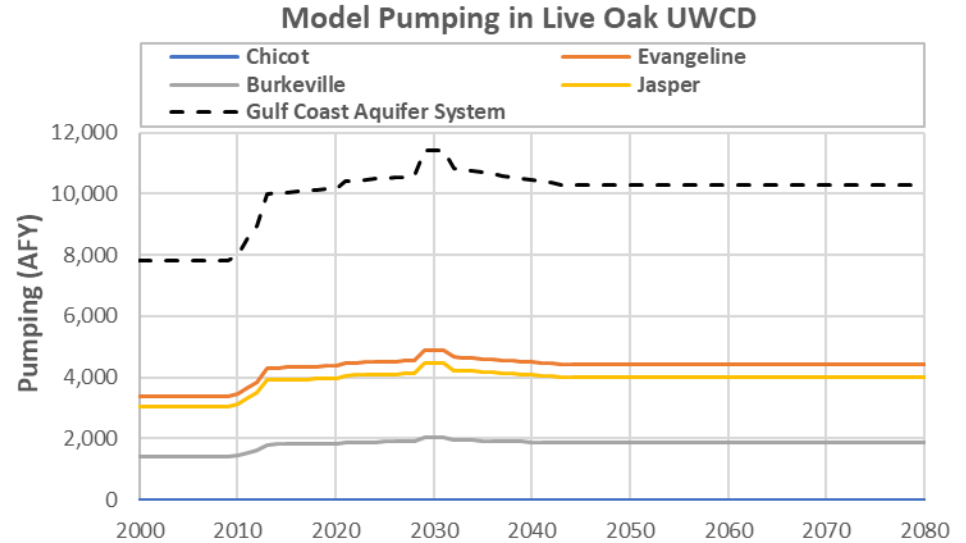


Unit	Average Decadal Drawdown(ft) (begin 2010)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	2	4	6	8	11	14	18
Evangeline	7	15	24	32	42	51	56
Burkeville	2	4	6	9	12	15	18
Jasper	2	4	6	9	12	15	18
Average	3	6	10	15	19	24	28

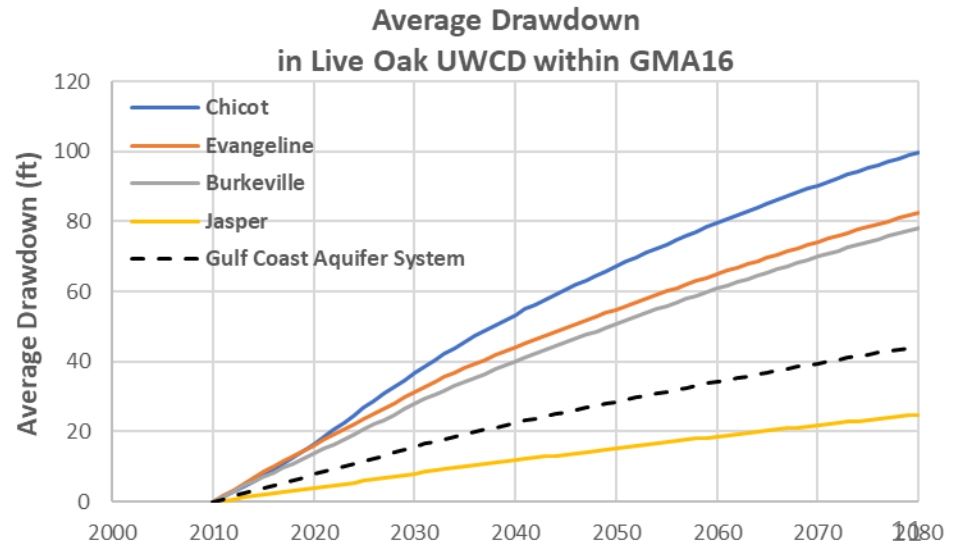


Live Oak UWCD

Unit	Pumping (acre-ft/year)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	0	0	0	0	0	0	0
Evangeline	4375	4902	4494	4429	4429	4429	4429
Burkeville	1832	2052	1881	1854	1854	1854	1854
Jasper	3968	4446	4076	4017	4017	4017	4017
Total	10175	11401	10450	10300	10300	10300	10300

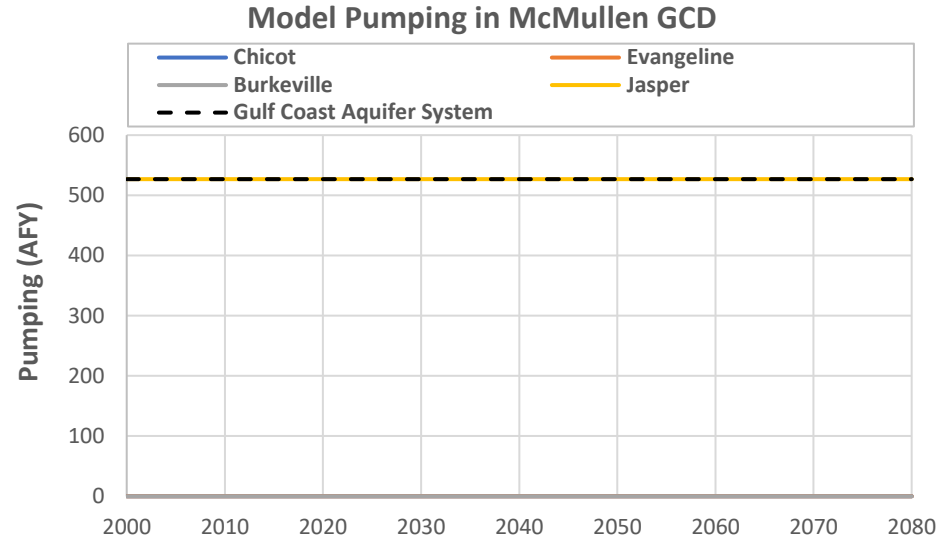


Unit	Average Decadal Drawdown(ft) (begin 2010)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	17	37	53	67	80	90	100
Evangeline	16	31	44	55	65	74	83
Burkeville	14	28	40	51	61	70	78
Jasper	4	8	12	15	19	22	25
Average	8	16	23	29	34	40	44

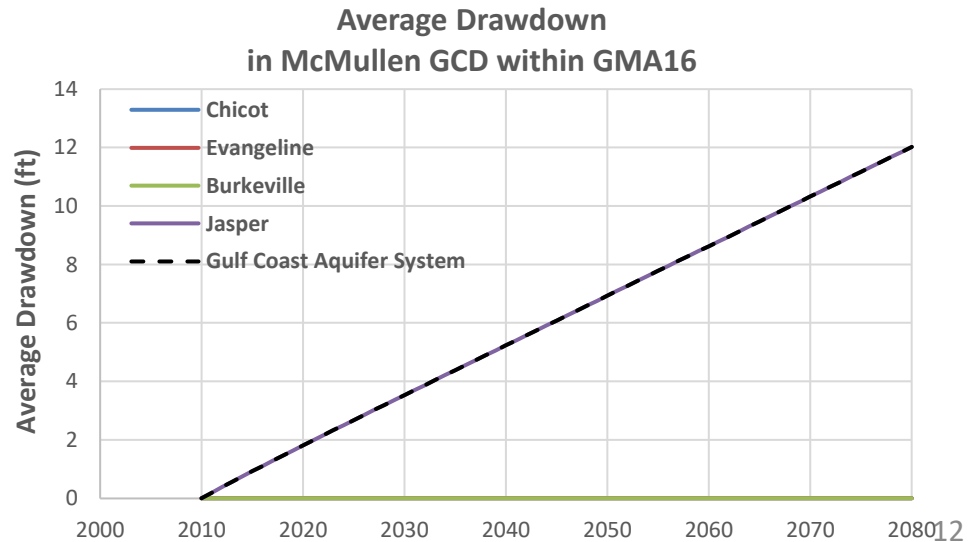


McMullen GCD

Unit	Pumping (acre-ft/year)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	0	0	0	0	0	0	0
Evangeline	0	0	0	0	0	0	0
Burkeville	0	0	0	0	0	0	0
Jasper	527	527	527	527	527	527	527
Total	527	527	527	527	527	527	527

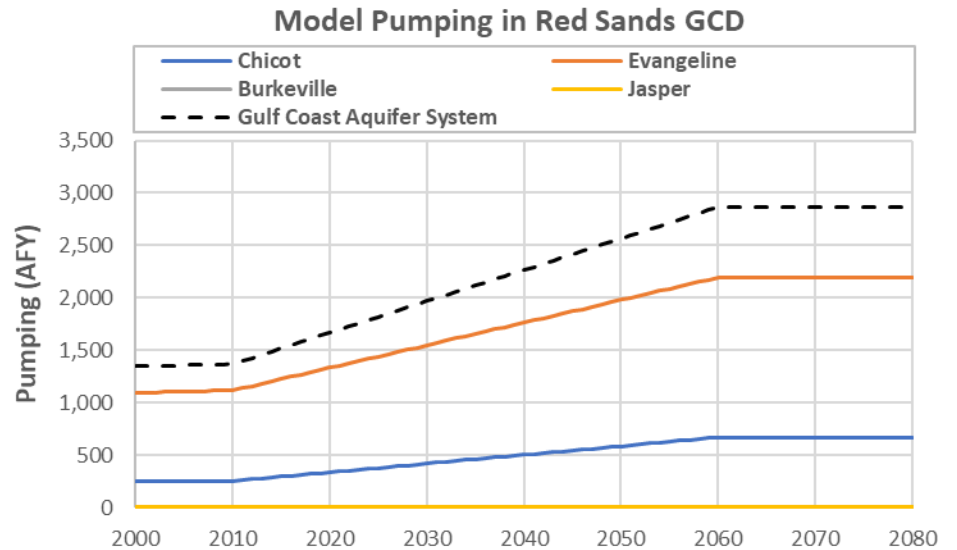


Unit	Average Decadal Drawdown(ft) (begin 2010)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	na	na	na	na	na	na	na
Evangeline	na	na	na	na	na	na	na
Burkeville	na	na	na	na	na	na	na
Jasper	2	4	5	7	9	10	12
Average	2	4	5	7	9	10	12

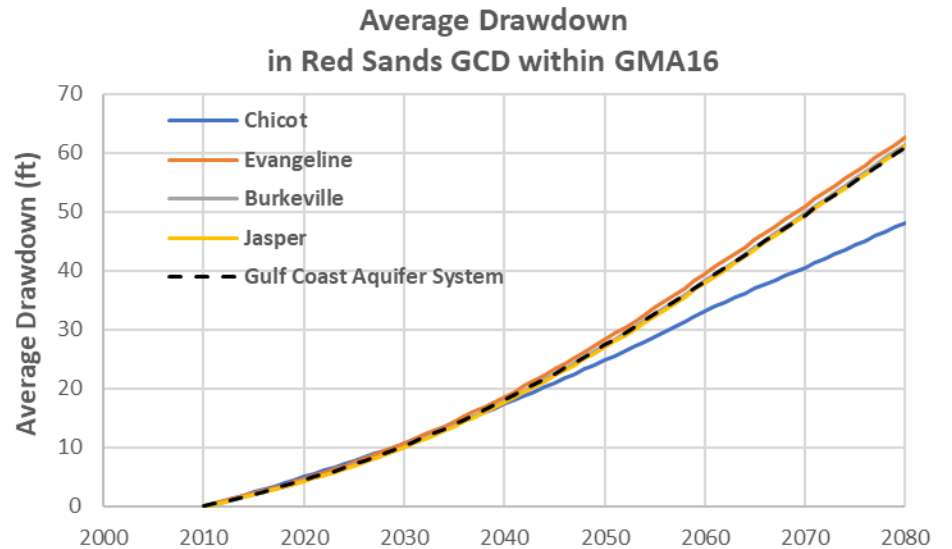


Red Sands GCD

Unit	Pumping (acre-ft/year)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	335	419	502	586	669	669	669
Evangeline	1332	1548	1764	1980	2195	2195	2195
Burkeville	0	0	0	0	0	0	0
Jasper	0	0	0	0	0	0	0
Total	1668	1967	2266	2565	2865	2865	2865

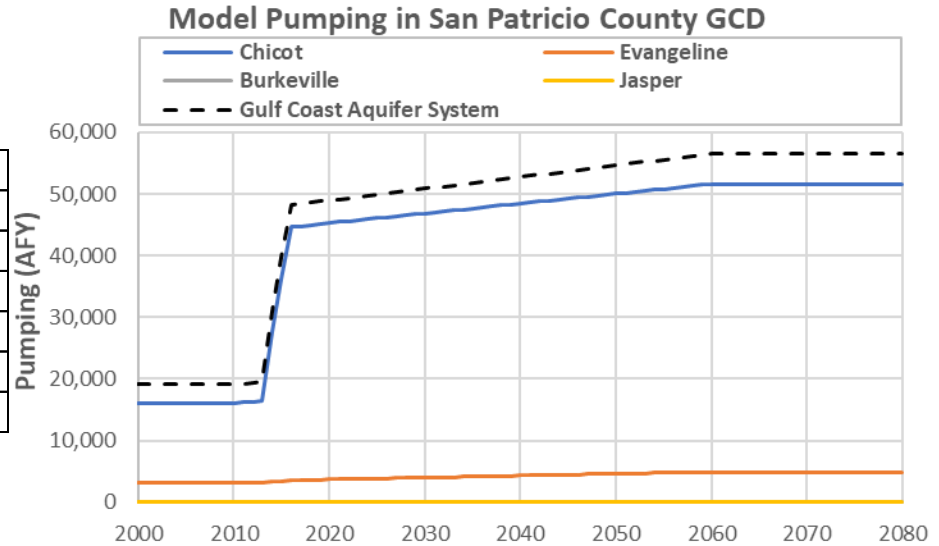


Unit	Average Decadal Drawdown(ft) (begin 2010)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	5	11	17	25	33	41	48
Evangeline	5	11	19	28	39	51	63
Burkeville	4	10	18	27	38	50	61
Jasper	4	10	18	27	38	49	61
Average	4	10	18	27	38	50	61

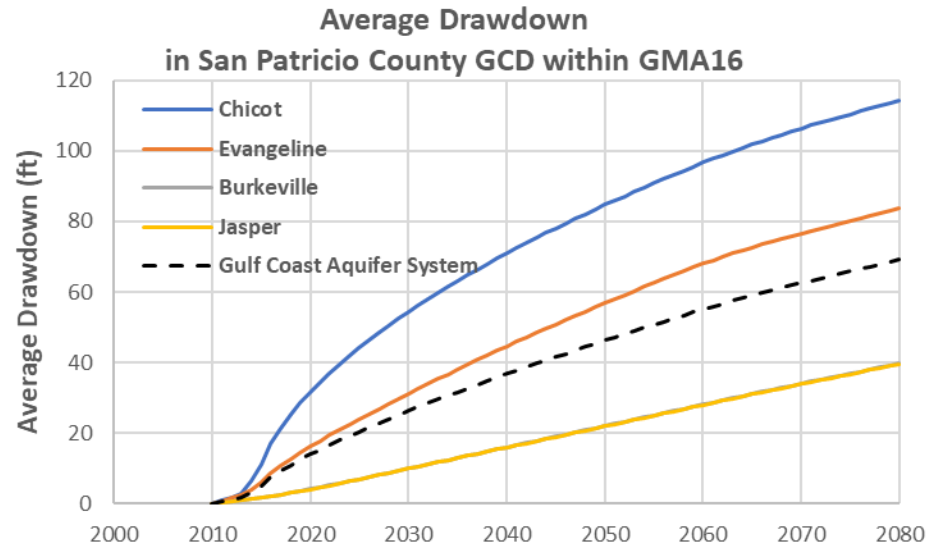


San Patricio CGD

Unit	Pumping (acre-ft/year)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	45272	46858	48441	50026	51611	51611	51611
Evangeline	3695	3996	4298	4600	4902	4902	4902
Burkeville	0	0	0	0	0	0	0
Jasper	0	0	0	0	0	0	0
Total	48967	50854	52739	54626	56513	56513	56513

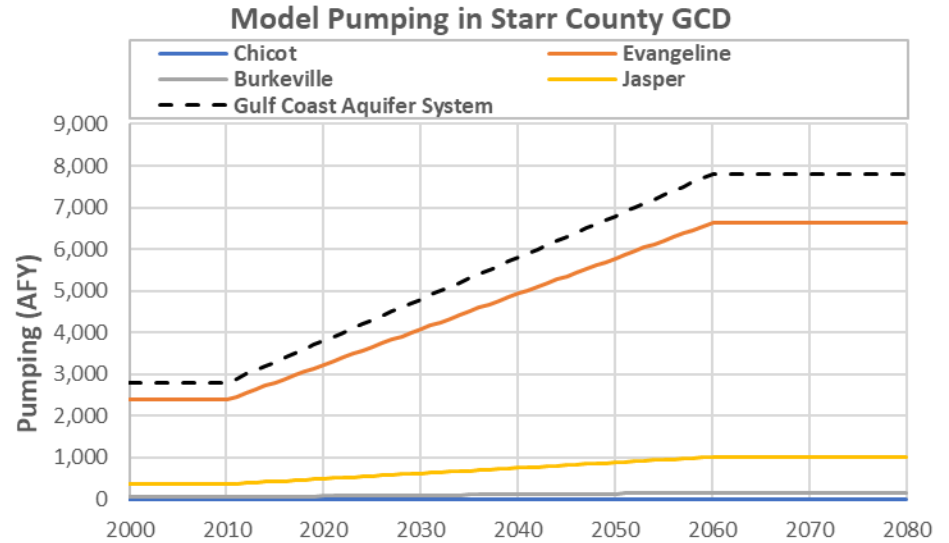


Unit	Average Decadal Drawdown(ft) (begin 2010)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	32	54	71	85	97	106	114
Evangeline	16	31	45	57	68	77	84
Burkeville	4	10	16	22	28	34	40
Jasper	4	10	16	22	28	34	40
Average	14	26	37	46	55	63	69

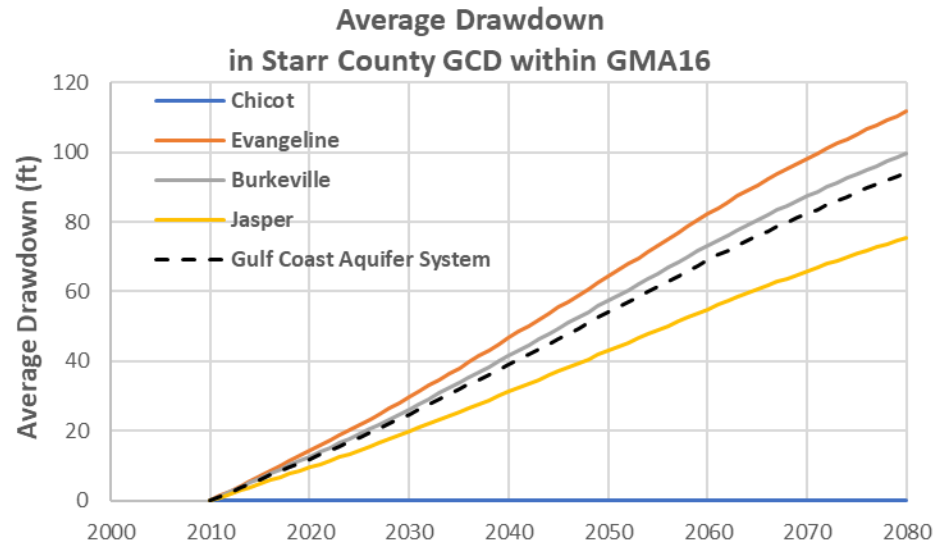


Starr County CGD

Unit	Pumping (acre-ft/year)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	0	0	0	0	0	0	0
Evangeline	3230	4080	4930	5780	6630	6630	6630
Burkeville	76	96	116	136	156	156	156
Jasper	494	624	754	884	1014	1014	1014
Total	3800	4801	5801	6800	7800	7800	7800



Unit	Average Decadal Drawdown(ft) (begin 2010)						
	2020	2030	2040	2050	2060	2070	2080
Chicot	na	na	na	na	na	na	na
Evangeline	14	30	47	64	82	98	112
Burkeville	13	26	42	57	73	87	100
Jasper	10	20	31	43	55	66	76
Average	12	25	39	54	69	82	94



Questions?