

# Post Oak Savannah Groundwater Conservation District

*Serving the citizens of Milam and Burleson Counties*

## Annual Update

*Presented at*

Milam Co. Commissioner's Court

November 14, 2011

*By Gary Westbrook, POSGCD General Manager*

# District Education Program

- Public presentations (service clubs, etc.)
- Local Water Utilities
  - 4 annual workshops, 2 in each county
- Schools- Public and private
  - Water Wise- 4<sup>th</sup> and 5<sup>th</sup> grades
  - In person presentations- 7<sup>th</sup> grade science
  - Additional resources- Water IQ for all levels

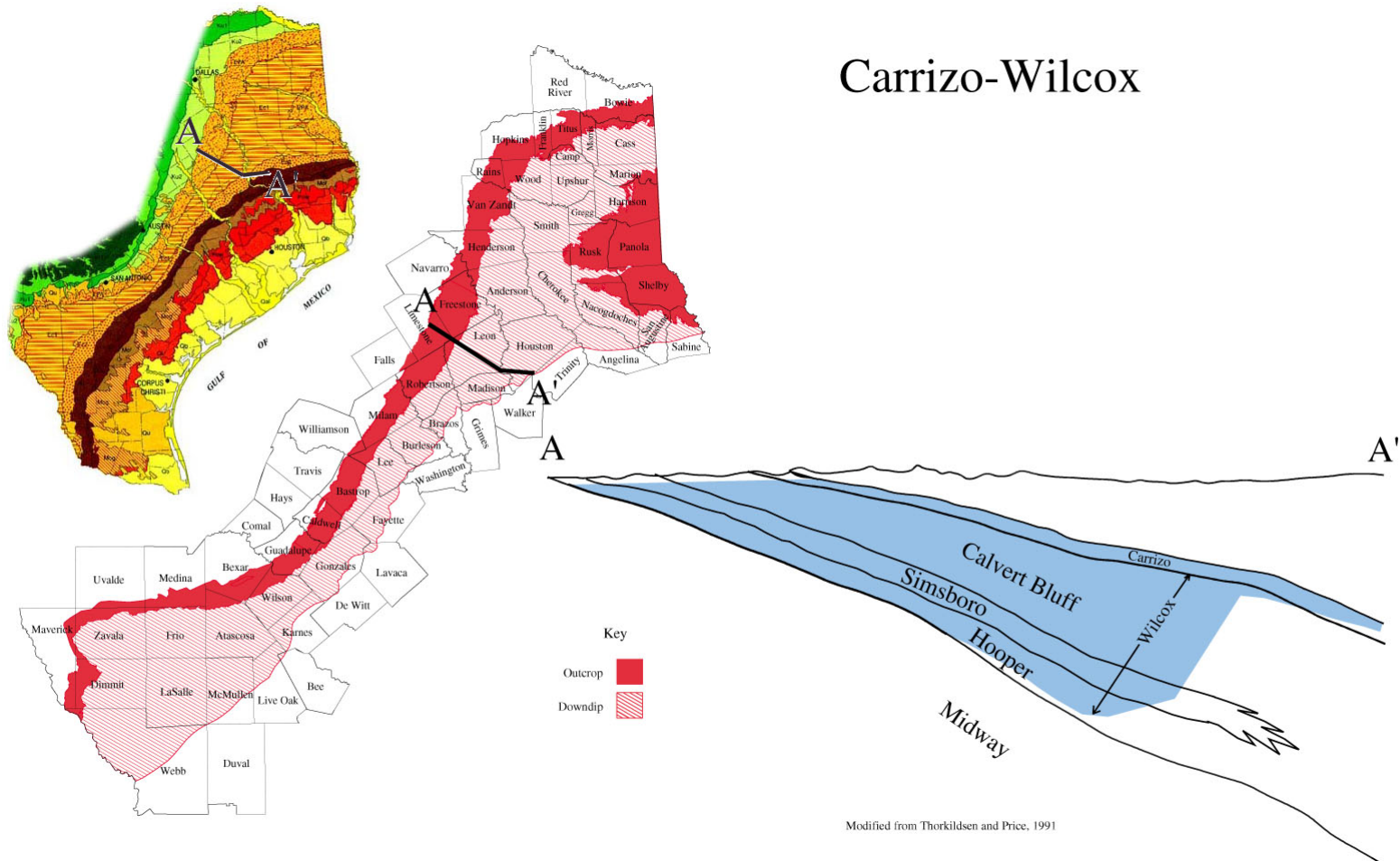
# District Groundwater Conservation Grants

- History (since 2006)
  - Awarded 41 grants
  - 19 different Local Water Utilities
  - Approximately \$4.5 Million
  - 2012 Budgeted amount of \$1 Million

# Groundwater Management

- Protection of water levels
- Permitted production v. Actual production
- Respect for Property Rights
  - To produce
  - When not producing

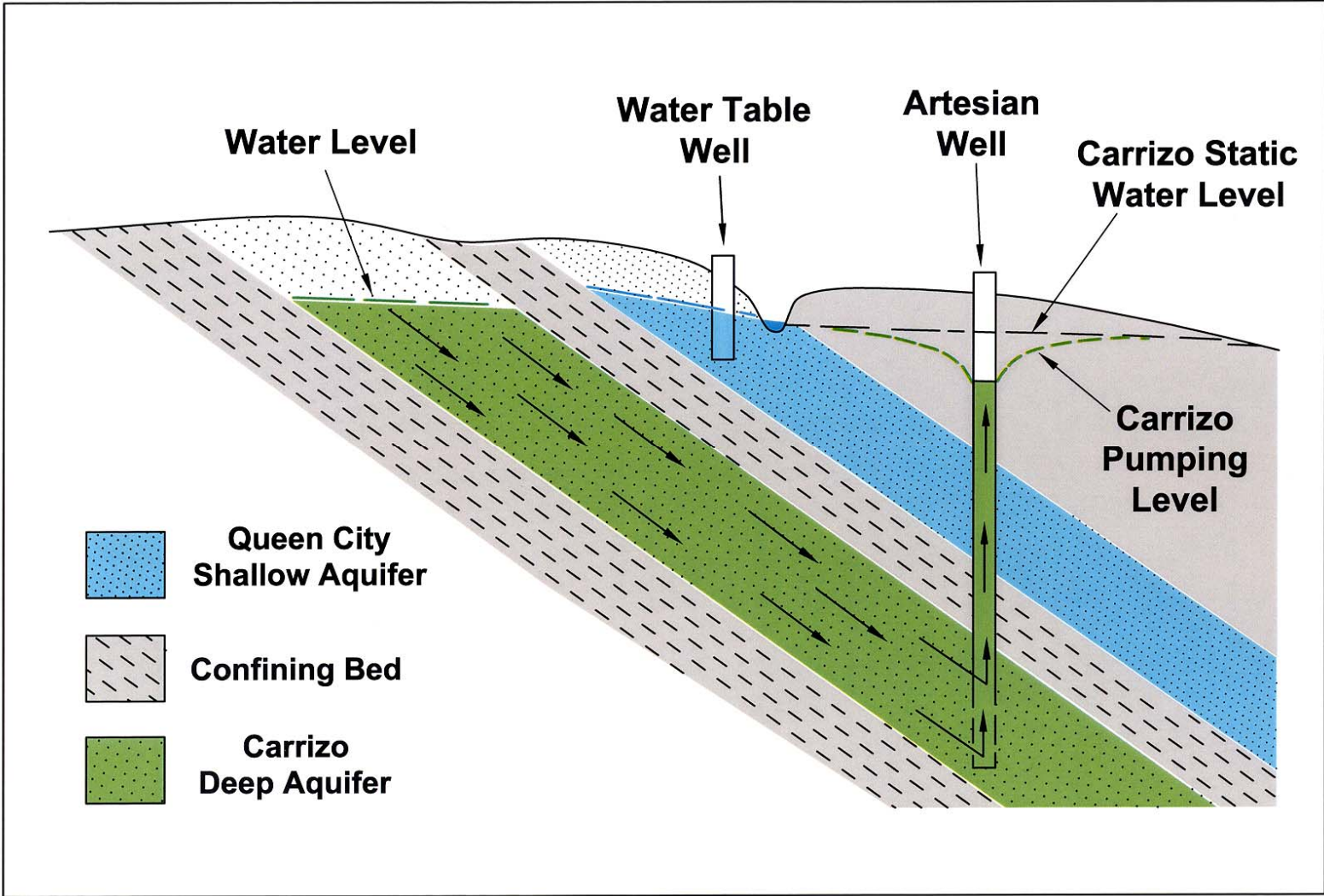
# Carrizo-Wilcox Aquifer



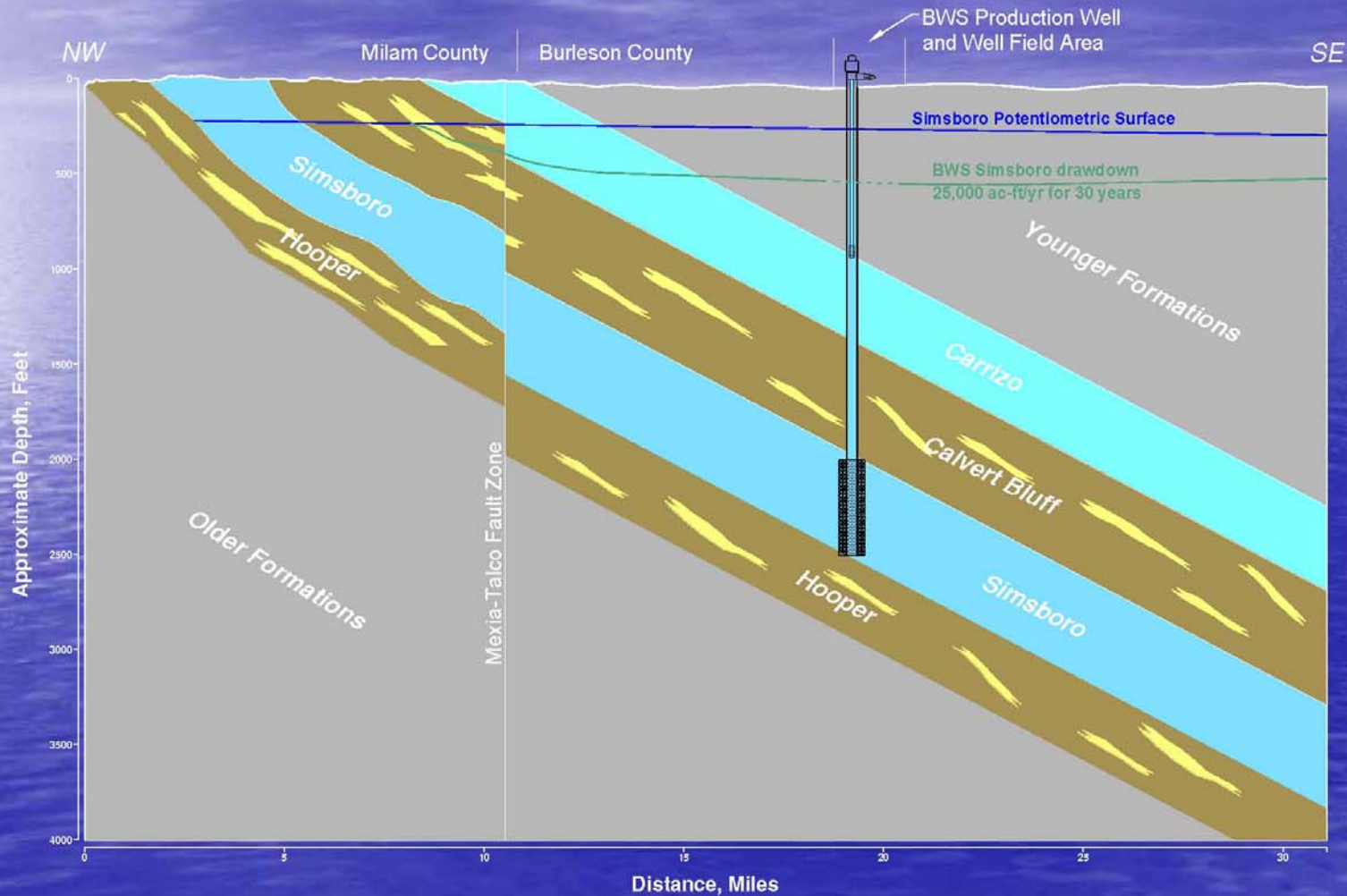
Carrizo-Wilcox

Modified from Thorkildsen and Price, 1991

# Aquifer Schematic



# Schematic Cross Section Simsboro Drawdown

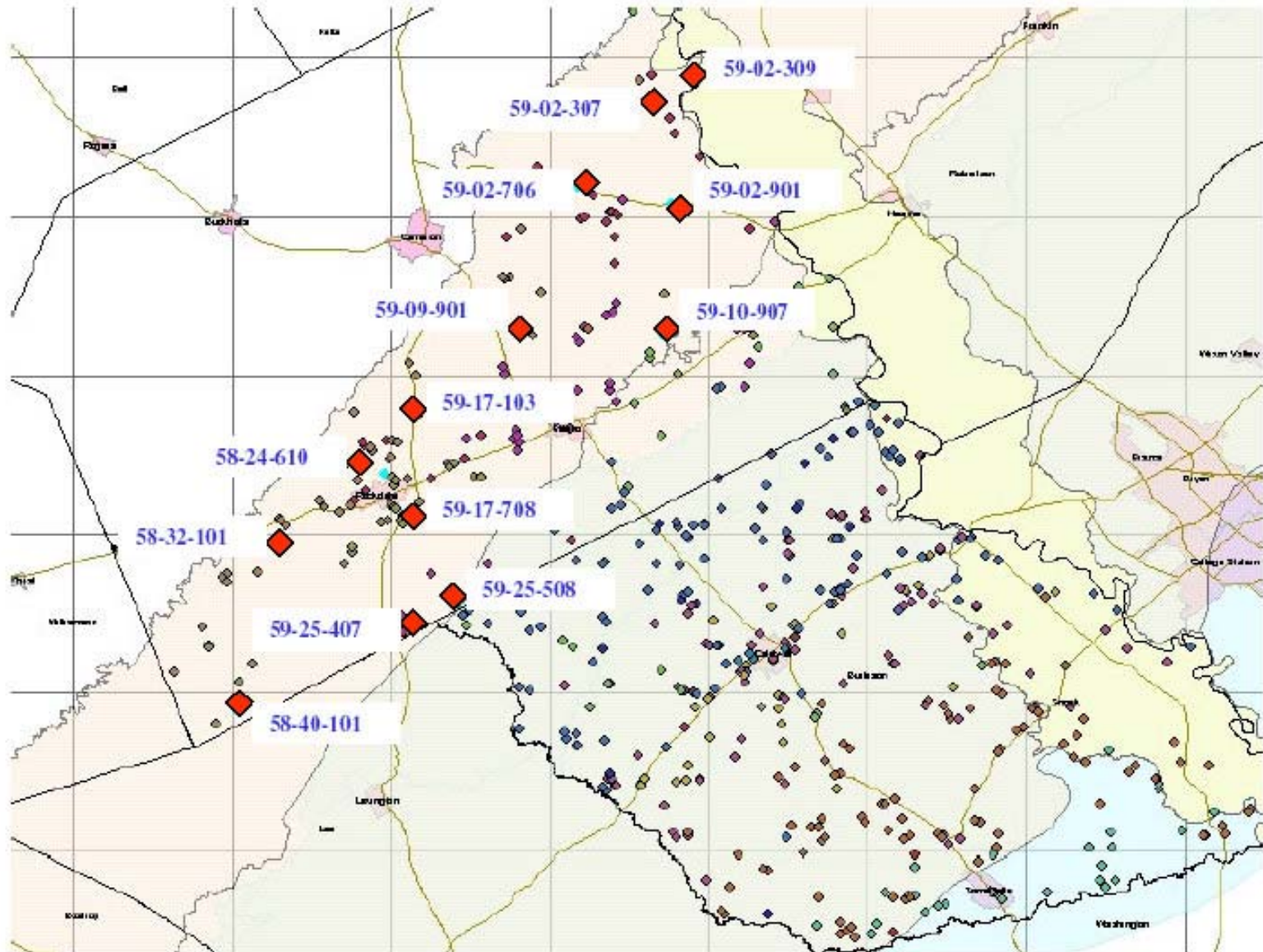


Note: The simulated drawdown shown represents artesian pressure decline in the Simsboro aquifer.

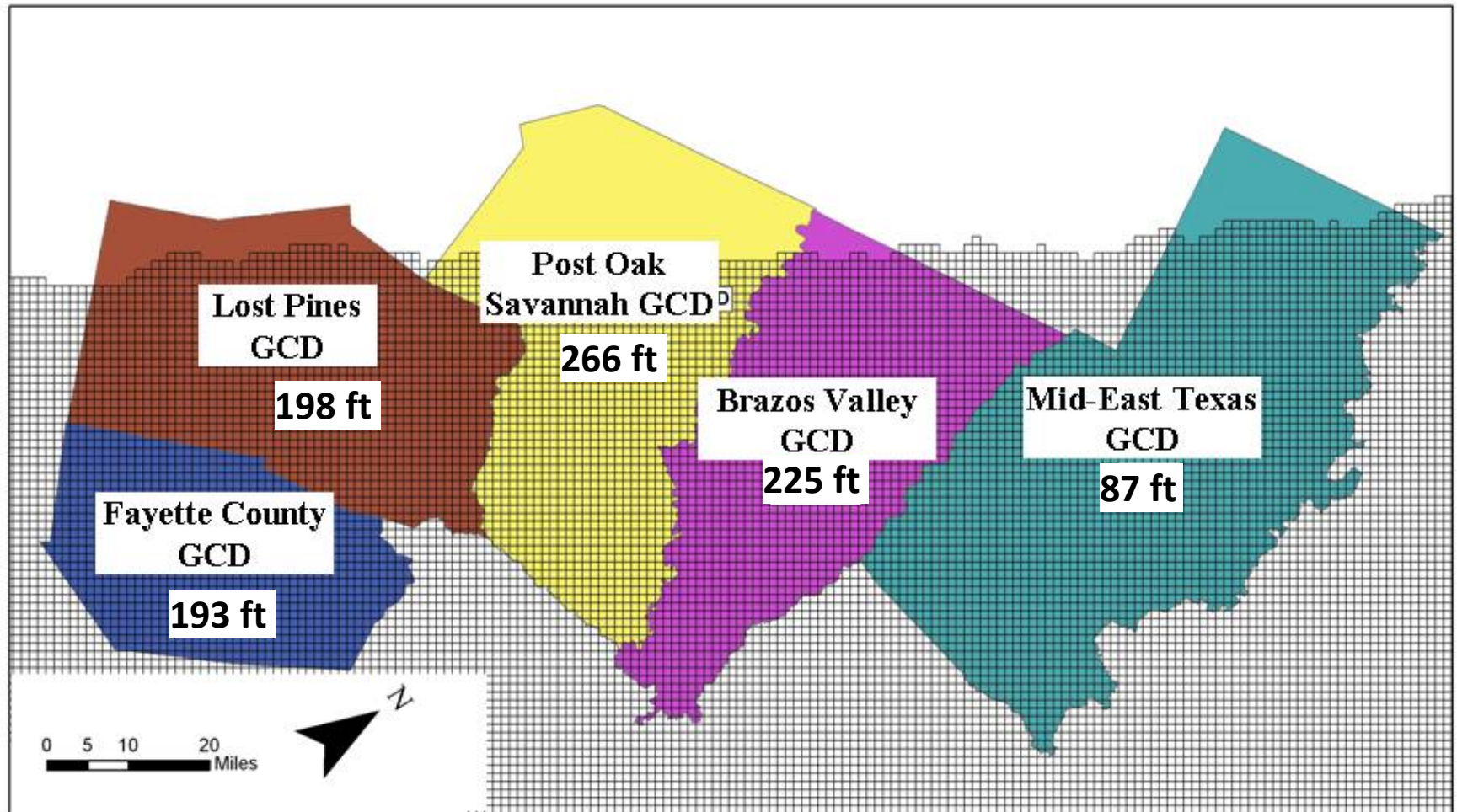
# Example DFC Calculations: Simsboro

Conditions			Desired Future Conditions - Drawdown
			Aquifer
DD in Unconfined Area	% Decline in artesian pressure	Max DD in Confined Area	Simsboro
10	0.25	450	312
15	0.25	450	313
20	0.25	450	313
25	0.25	450	314
20	0.25	350	260
20	0.25	400	288
20	0.25	450	313
20	0.25	500	336
20	0.25	550	357
20	0.33	350	273
20	0.33	400	305
20	0.33	450	335
20	0.33	500	364
20	0.33	550	390

# Shallow Carrizo-Wilcox Monitoring Wells



# Predicted Average Drawdown: Simsboro (2010 to 2060)



# Section 17 from POSGCD Management Plan

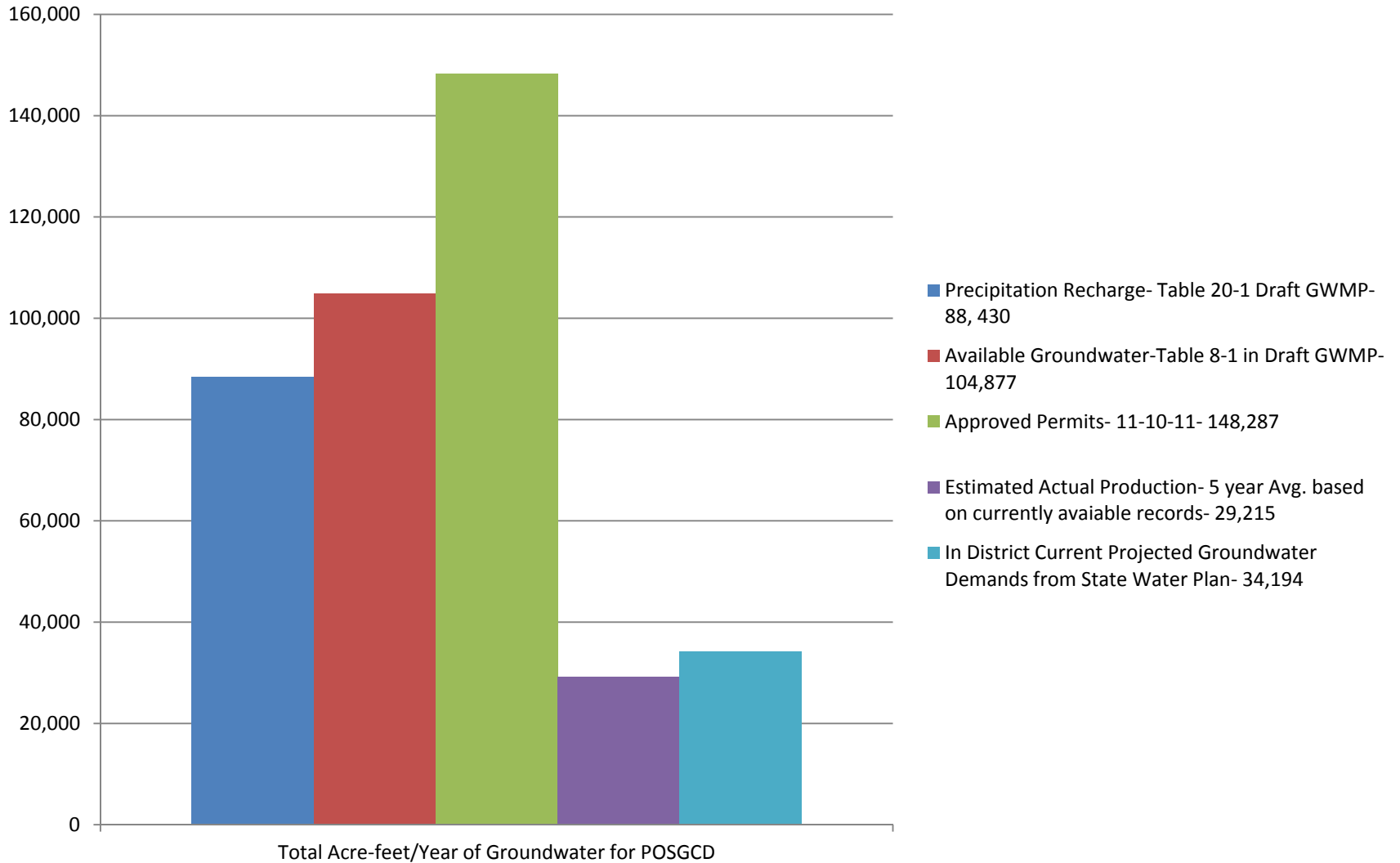
Aquifer	Drawdown Criteria		Location in Management Plan (Description of Value)
	Description	Amount	
Simsboro	Average drawdown in the unconfined regions of the aquifer (feet)	50 feet	Section 17- Shallow Carrizo-Wilcox Management Zone (Measured drawdown value that will trigger an evaluation )
	Reduction in the artesian pressure in the confined regions of the aquifer that is expressed as a percent of the total artesian pressure.	25%	Section 17- Deep Simsboro Management Zone (reduction in artesian pressure head used to support an estimate of total useable groundwater in the Deep Simsboro Management Zone)
	Maximum reduction in the artesian pressure (expressed as drawdown in feet )	400	Section 17- Deep Simsboro Management Zone (maximum drawdown value that occurred in the GAM simulation used to estimate the total useable groundwater in the Deep Simsboro Management Zone)
Carrizo	Average drawdown in the unconfined regions of the aquifer (feet)	50 feet	Section 17 - Shallow Carrizo-Wilcox Management Zone (Measured drawdown value that will trigger an evaluation )
	Reduction in the artesian pressure in the confined regions of the aquifer that is expressed as a percent of the total artesian pressure.	25%	Section 17 - Deep Carrizo-Wilcox Management Zone (reduction in artesian pressure head used to support an estimate of total useable groundwater in the Deep Carrizo-Wilcox Management Zone)
	Maximum reduction in the artesian pressure (expressed as drawdown in feet )	250	Section 17 - Deep Carrizo-Wilcox Management Zone (maximum drawdown value that occurred in the GAM simulation used to estimate the total useable groundwater in the Deep Carrizo-Wilcox Management Zone)

# Predicted Drawdown Over Time

Zone/Aquifer		Sparta	Queen City	Carrizo	Calvert Bluff	Simsboro	Hooper
Post Oak GCD	2020	19	28	89	96	196	108
	2040	24	37	109	128	254	147
	2060	27	42	122	154	306	184
Lost Pines GCD	2020	4	10	33	57	151	74
	2040	6	15	49	79	191	105
	2060	6	18	63	102	238	135
Brazos Valley GCD	2020	7	8	35	66	161	104
	2040	11	12	51	94	222	144
	2060	12	13	61	117	273	178
Mid-East Texas GCD	2020	-1	-2	34	40	68	56
	2040	-2	-3	46	57	93	78
	2060	-3	-5	55	70	115	97
Fayette County	2020	30	27	26	73	139	99
	2040	48	46	47	105	182	138
	2060	60	60	63	133	226	174

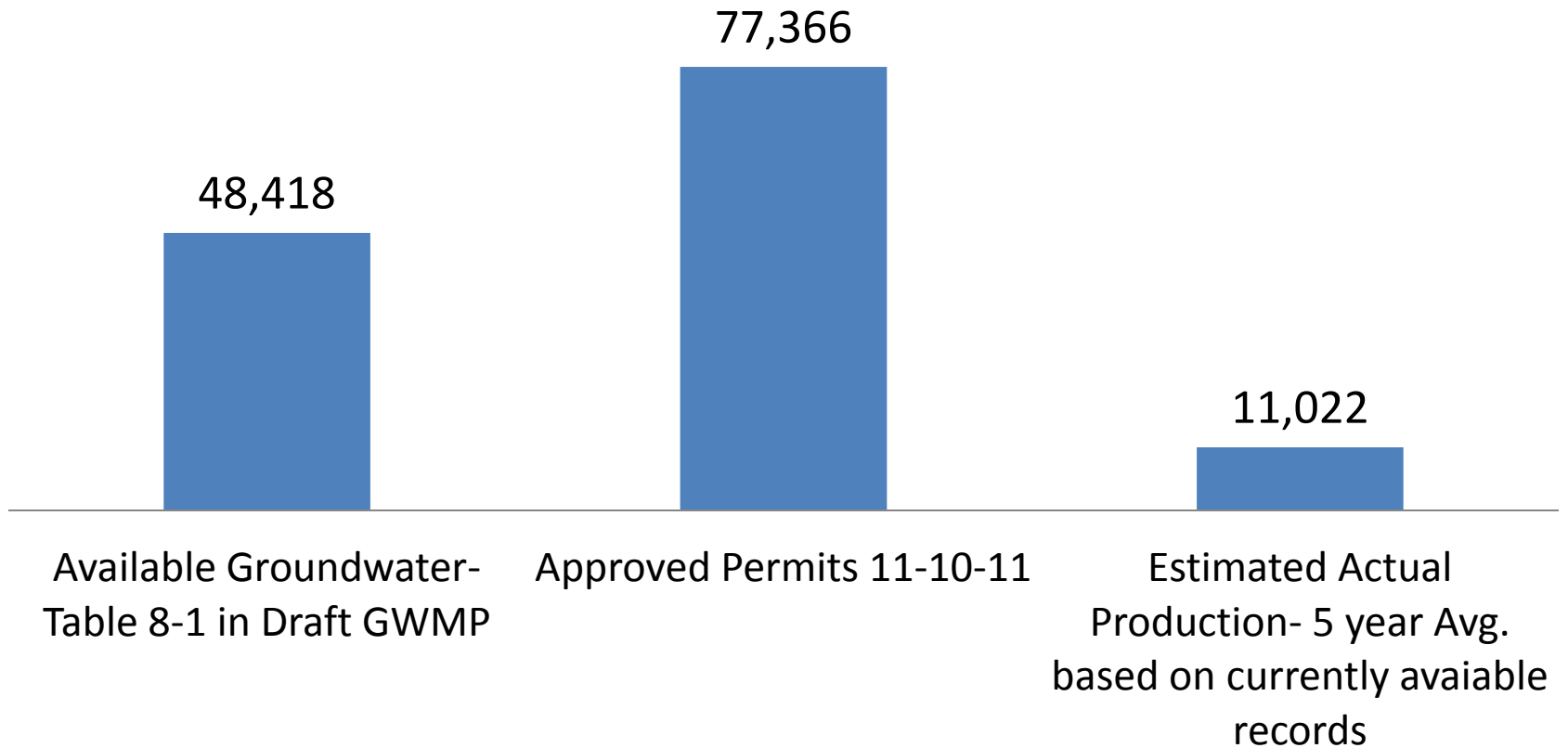
Note: Work in progress, all results are preliminary

# POSGCD Total A-F/Year Evaluation



# POSGCD Simsboro A-F/Year Evaluation

**Total Acre-feet/Year of Groundwater for Simsboro**



# Questions?

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