

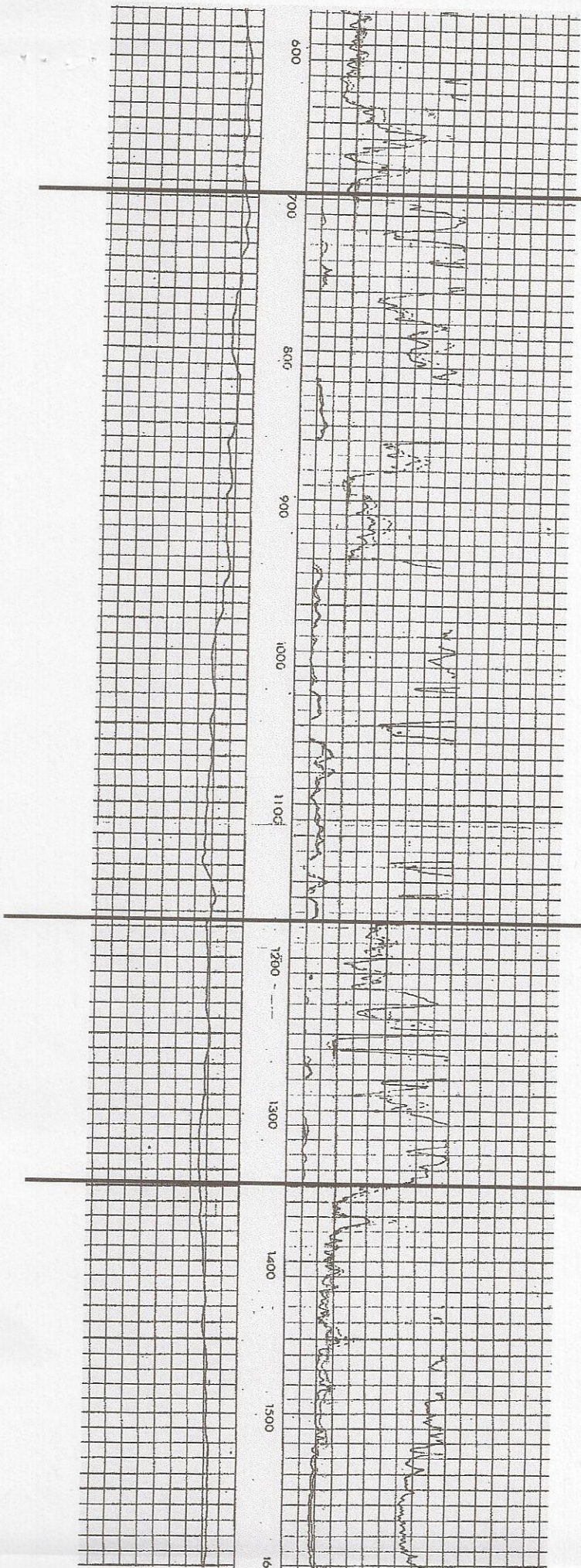
Reklaw

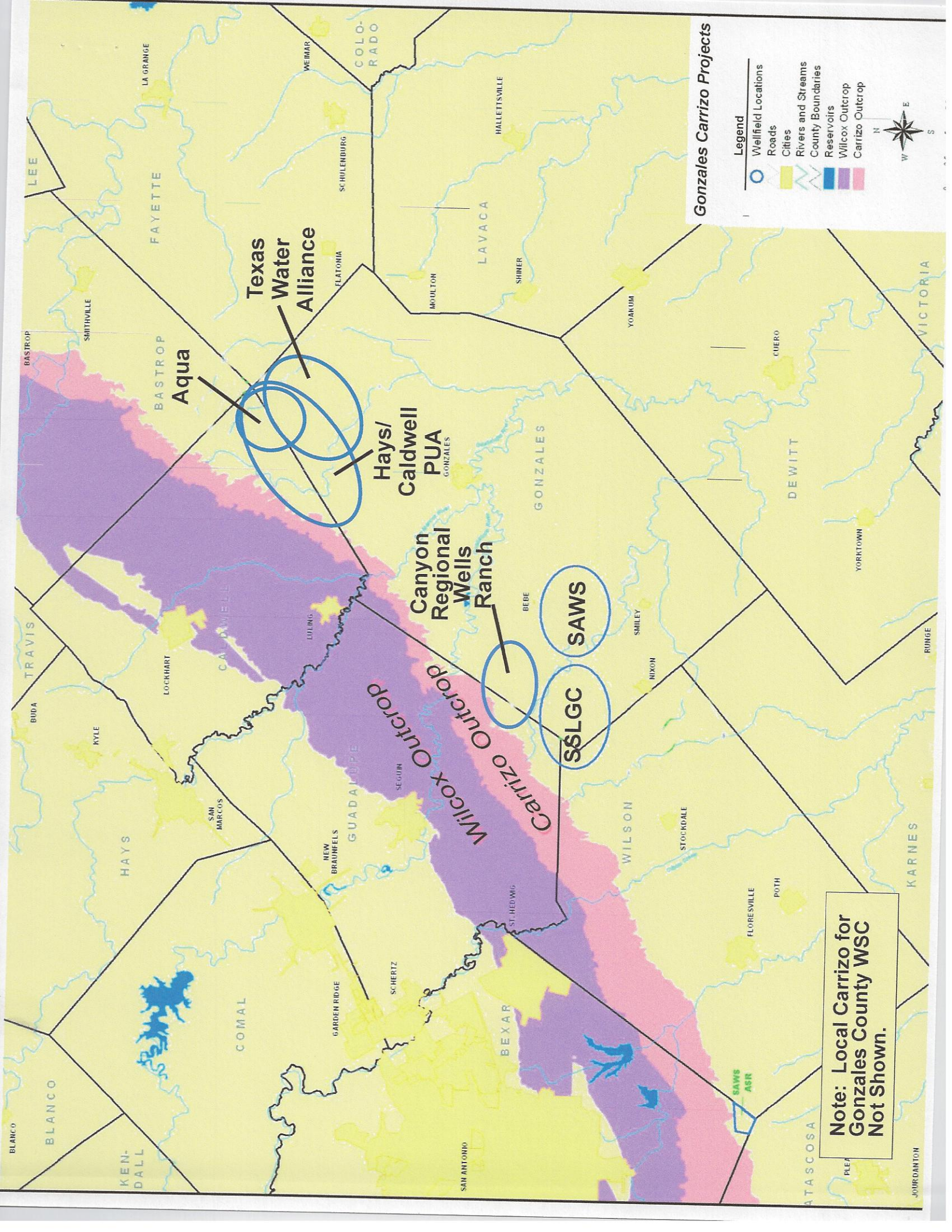
Carrizo ~ 475'

Wilcox

Yoakum Channel

Bar-M 1-Boerrer





**Gonzales Carrizo Projects**

- Legend**
- Wellfield Locations
  - Roads
  - Cities
  - Rivers and Streams
  - County Boundaries
  - Reservoirs
  - Milcox Outcrop
  - Carrizo Outcrop



**Texas Water Alliance**

**Aqua**

**Hays/  
Caldwell  
PUA**

**Canyon  
Regional  
Wells  
Ranch**

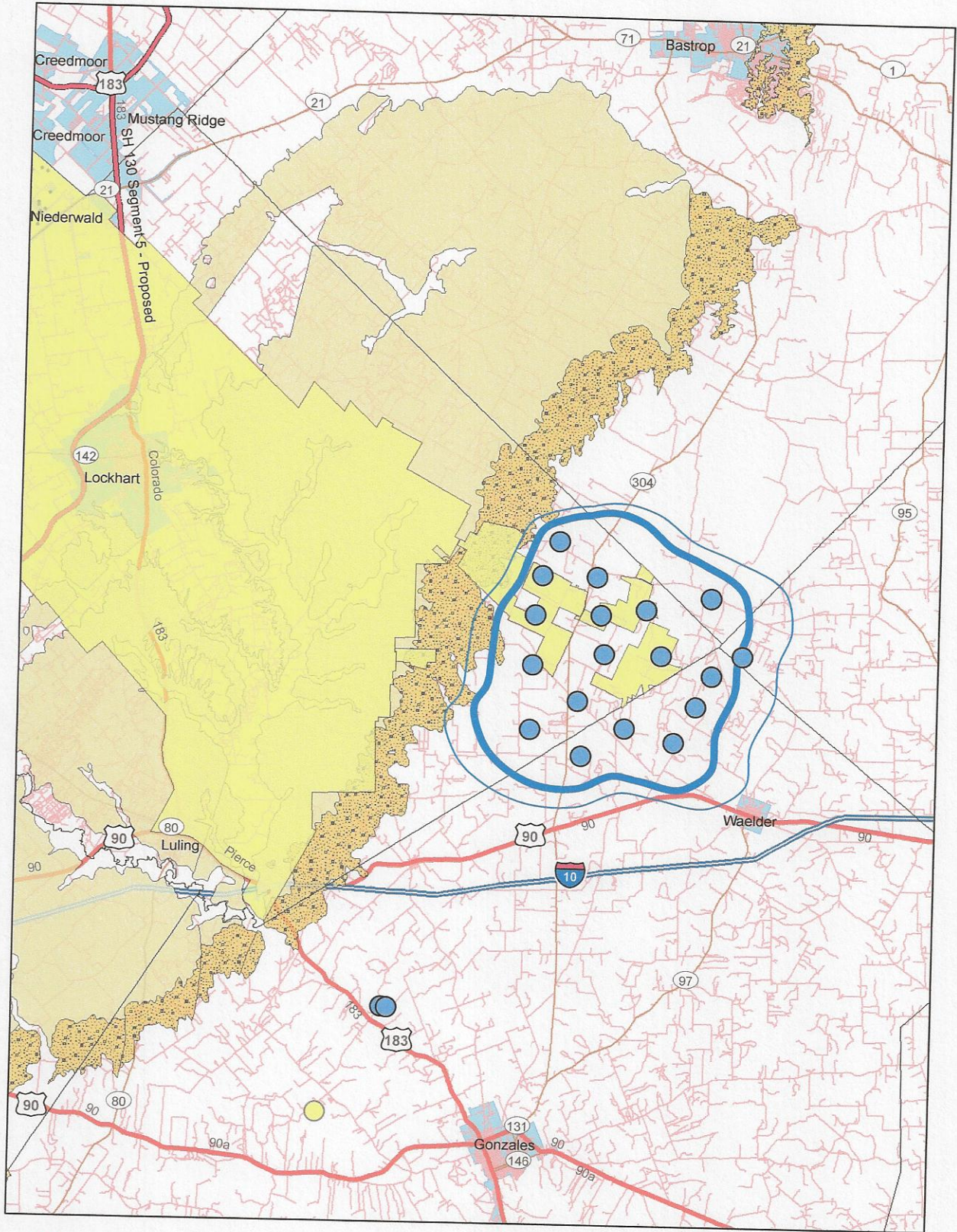
**SAWS**

**S6LGC**

**Milcox Outcrop**

**Carrizo Outcrop**

**Note: Local Carrizo for  
Gonzales County WSC  
Not Shown.**



# 60,000 Acre Feet - Drawdown Area

Estimated Regional Carrizo Drawdown > 300'  
 ~8.5 Times Annual Recharge

1 in = 5 miles



2,000' radius of influence  
 for each well



Wilcox Recharge Inches/year	Wilcox Outcrop Acres	Acre Feet/Year Recharge
1	152,459	12,704
2	152,459	25,409
3	152,459	38,114
Carizzo Recharge Inches/year	Carizzo Outcrop Acres	Acre Feet/Year Recharge
1	28,342	2,361
2	28,342	4,723
3	28,342	7,085
4	28,342	9,447
5	28,342	11,809

Caldwell County estimated groundwater annual recharge rates in acre feet per year are presented above. These numbers represent estimates of sustainable discharge pumpage or discharge rate ranges. The average Wilcox recharge rate is about 2" of rainfall per year. The average Carizzo recharge rate is about 3" of rainfall per year. The 60,000 acre feet/year supply in NE Gonzales/SE Caldwell = ~ 8.5 times the annual estimated Carizzo recharge.

*William Feathergail Wilson, PG 21 September, 2011*

Major Aquifer	Location (County/Area)	Aquifer	Recharge rate (mm/yr)	Recharge rate (in/yr)	Total recharge (af/yr)	Reference	Technique	Notes
Carizzo Wilcox	Atascosa, Frio	Carizzo sand	45.7	1.8		Alexander and White, 1966	<sup>14</sup> C, Darcy's Law	
	Sabine, San Augustine	undifferentiated	50.8	2.0		Anders, 1967	Darcy's Law	
	Sabine, San Augustine	undifferentiated	25.4	1.0		Anders, 1967	baseflow discharge	
	Camp, Franklin, Morris, Titus	Carizzo Wilcox			12,000	Broom et al., 1966	baseflow discharge	
	Harrison	Cypress	7.9	0.3	15,000	Broom and Meyers, 1966	Darcy's Law	
	Harrison	Cypress	7.9	0.3	40,000	Broom and Meyers, 1966	baseflow discharge	
	Wood	Carizzo	12.7	0.5	3,000	Broom, 1966	Darcy's Law	
	Freestone	Calvert Bluff sands	100	3.9		Dutton, 1990	soil water budget	
	Bastrop, Lee, Milam	Simsboro, Carizzo	51 - 102	2.0 - 4.0		Dutton, 1999	groundwater modeling	
	Bastrop	Carizzo, Wilcox sand	38	1.5		Follett, 1991	Darcy's Law	
	Winter Garden area	undifferentiated	5 - 127	0.2 - 5.0		Gluyton & Assoc. and HDR, 1998	modeling, water budget	
	Bastrop, Lee, Milam, Robertson, Falls, Limestone, Freestone, Navarro	Carizzo, Simsboro	76 - 127	3.0 - 5.0		Harden, 2000	groundwater modeling	
	Bastrop, Lee, Milam, Robertson, Falls, Limestone, Freestone, Navarro	Calvert Bluff, Hooper	12.7	0.5		Harden, 2000	groundwater modeling	
	Bexar	Hooper, Simsboro, Calvert Bluff	45.7	1.8		HDR Engineering Inc., 2000	groundwater modeling	
	Winter Garden area	undifferentiated			100,000	Klemm et al., 1976	groundwater modeling	
	Atascosa	Carizzo	147	5.8		Ogfil and Eisler, 1978	neutron probe logging	
	Rusk	Carizzo	<25.4	< 1.0		Sandeen, 1987	Darcy's Law	
	Navarro	Carizzo Wilcox	12.7	0.5		Thompson, 1972	estimate	
	Caldwell, Bastrop, Lee, Milam, Robertson, Limestone, Freestone	undifferentiated	25.4	1.0		Thorkildsen and Price, 1991	groundwater modeling	
	Bastrop, Lee, Fayette	undifferentiated	25.4	1.0		Thorkildsen et al., 1989	groundwater modeling	
	Atascosa, Bexar, Dimmit, Frio, Gonzales, Guadalupe, Medina, Uvalde, Wilson, Zavala	undifferentiated			25,000	Turner et al., 1990	Darcy's Law	
	Rains, Van Zandt	Carizzo Wilcox	3	0.1	5,000	White, 1973	Darcy's Law	

Groundwater Recharge in Texas  
 B.R. Scanlon, A. Dutton, M. Sophocleous  
 Bureau of Economic Geology, UT @ Austin

# Carrizo Recharge Studies

*William Feathergail Wilson, PG 21*

*September, 2011*

