

Socio-Economic Impact of DFC Groundwater Over-draft - Bastrop & Lee Counties

Based on a Bureau of Economic Geology Study of the Carrizo-Wilcox Aquifer - Final Summary Report for Task 5¹

TCEQ Carrizo-Wilcox Study: Project 582-8-75374-119

Bastrop County Sector		Total Monetary Losses Per Acre-Foot of Water Supply Needed (Deficit) ¹					
		2010	2020	2030	2040	2050	2060
Municipal		\$576	\$4,277	\$7,214	\$11,737	\$14,765	\$21,624
Irrigation		\$125	\$125	\$125	\$125	\$125	\$125
Manufacturing		\$63,229	\$63,229	\$63,229	\$63,229	\$63,229	\$126,458
Steam-Electric		\$0	\$0	\$0	\$27,719	\$27,719	\$27,719
Total		\$63,930	\$67,631	\$70,568	\$102,810	\$105,838	\$175,926

OVER-DRAFT AMOUNT	-25,750	-21,295	-16,670	-16,568	-11,556	-10,876
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Bastrop County Demand ²		Percent (%) of Demand in each Segment					
Municipal		49%	55%	45%	61%	64%	68%
Irrigation		6%	4%	24%	2%	2%	1%
Manufacturing		0%	0%	0%	0%	0%	0%
Steam-Electric		44%	41%	31%	37%	35%	31%
Total		100%	100%	100%	100%	100%	100%

Socio-Economic Costs of Water Needs (Groundwater Over-drafting)

Assumptions: The total quantity of over-draft is distributed across the segments even though Bastrop County does not have a demand for the total quantity of the over-draft and currently takes steam-electric from surface water.

Therefore the Socio-Economic impact may be over-estimated. Does Not include economic costs of ecological impacts.

Bastrop County Sector		Total Monetary Losses Per Acre-Foot of Water Supply Needed (Deficit)					
		2010	2020	2030	2040	2050	2060
Municipal		-\$7,298,617	-\$49,677,359	-\$53,811,194	-\$118,580,992	-\$108,364,572	-\$159,512,924
Irrigation		-\$192,097	-\$109,709	-\$496,413	-\$45,067	-\$23,895	-\$17,371
Manufacturing		-\$5,552,489	-\$4,378,031	-\$2,669,984	-\$3,189,816	-\$2,186,989	-\$3,950,873
Steam-Electric		\$0	\$0	\$0	-\$167,806,241	-\$110,625,629	-\$92,280,056
Total		-\$13,043,203	-\$54,165,099	-\$56,977,591	-\$289,622,117	-\$221,201,085	-\$255,761,224

Ecological Services Economic Costs of Over-drafting the Aquifers (To be Developed)

Rivers, Streams & Springs	N/A	N/A	N/A	N/A	N/A	N/A
Surface Vegetation (Pine Forests)	N/A	N/A	N/A	N/A	N/A	N/A
Wastewater Assimilation	N/A	N/A	N/A	N/A	N/A	N/A
Stormwater Assimilation	N/A	N/A	N/A	N/A	N/A	N/A
Eco-Tourism	N/A	N/A	N/A	N/A	N/A	N/A
Total Ecological Costs						

Lost Pines GCD Managed Available Groundwater³ (MAG-12/2010)

Aquifer	2010	2020	2030	2040	2050	2060
Calvert Bluff	1,507	1,889	2,225	2,694	3,321	3,264
Carrizo	6,514	7,502	8,217	9,094	11,596	11,803
Hooper	1,061	1,290	1,550	1,897	2,349	2,300
Queen City	1,146	1,023	2,659	890	838	785
Simsboro	29,479	32,637	31,249	34,780	36,380	37,049
Sparta	2,177	1,998	5,062	1,709	1,590	1,553
TOTAL	41,884	46,339	50,962	51,064	56,074	56,754

Region K Groundwater Demand⁴ - Bastrop County

Carrizo-Wilcox	28,000	28,000	28,000	28,000	28,000	28,000
Trinity	12	12	10	10	8	8
Queen City	2,756	2,756	2,756	2,756	2,756	2,756
Sparta	5,389	5,389	5,389	5,389	5,389	5,389
Bastrop County Total	36,157	36,157	36,155	36,155	36,153	36,153

Region G Groundwater Demand⁵ - Lee County

Carrizo-Wilcox	27,533	27,533	27,533	27,533	27,533	27,533
Queen City	99	99	99	99	99	99
Sparta	145	145	145	145	145	145
Yegua-Jackson	3,700	3,700	3,700	3,700	3,700	3,700
Lee County Total	31,477	31,477	31,477	31,477	31,477	31,477

OVER -DRAFT AMOUNT	-25,750	-21,295	-16,670	-16,568	-11,556	-10,876
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¹ BEG Final Summary Report for Task 5, <http://www.beg.utexas.edu/cswr/aquiferstudy/>

² Region K 2011 Water Plan - Chapter 2

³ Managed Available Groundwater (MAG) from TWDB GAM Run 10-044 MAG; GAM Run 10-045 MAG; GAM Run 10-046 MAG; Bastrop & Lee Co.

⁴ Region K 2011 Water Plan Chapter 3

⁵ Region G 2011 Water Plan Chapter 3