

Title: *HISTORICAL AND CURRENT WATER USE IN THE PLACITAS AREA, SANDOVAL COUNTY, NEW MEXICO*

Author(s): Andrew Sweetman and Reid Bandeen

Publication Date: December 2002

Prepared for: Del Agua Institute

Key Topics: Placitas, consumptive use, irrigated agriculture, community water systems, industrial use, mining, riparian evapotranspiration, domestic wells, shared wells, commercial use.

Summary:

- Figure 2. Estimated Consumptive Use Values for the Placitas area, year 2000.
 - Estimated total consumptive use in Placitas area for 2000 was ~1,747 ac-ft (p. 3)
 - Irrigated agriculture = 41.1%
 - Community water systems (CWS) = 16.0%
 - Self-supplied industrial = 13.2%
 - Self-supplied mining = 11.1%
 - Riparian Evapotranspiration = 9.8%
 - Individual wells = 7.4%
 - Shared wells = 1.2%
 - Self-supplied commercial = 0.2%
- Setting
 - Hydrogeology
 - Sandia Mountains, Placitas foothills (Mesozoic ramp), and Albuquerque Basin
 - High variability of water availability and quality due to geologic variability and complexity (p. 8)
 - Surface Water Hydrology

- 3 principal drainages: Las Huertas Creek, Arroyo Agua Sarca, and Arroyo de San Francisco
 - Intermittent with perennial spring-fed reaches
 - 3 acequias: Las Huertas-La Jara Ditch Association, Las Acequias of the Community of Placitas, and Rosa de Castilla Ditch Association
 - Rely on spring discharge and/or creek flow
 - Population
 - Population growth (p. 9)
 - 1970's – 85% increase
 - 1980's and early 1990's – 20% to 30% increase
 - 1990-2000 – 114% increase (1,611)
 - Reliance primarily on ground water for domestic water supply
 - Figure 4. Number of permitted wells drilled annually in the Placitas area, 1958-2000. (Johnson, 2001)

➤ Water Use

- Individual Domestic Wells
 - 501 permitted (as of 1/21/02) (WATERS) (p. 11)
 - 1/3 of the total households in the area (1,500 built-out lots as of 6/2000) (p. 11)
 - Estimated 50 to 150 gallons per capita daily (NMOSE) (p. 11)
 - Consumptive use estimates are 1.5×10^{-4} and 4.6×10^{-4} af per capita daily (p. 11)
 - Average annual CU ranges between 63.68 and 195.29 af (p. 11)
- Public Water Supply
 - 18 identified community water systems
 - Las Acequias de Placitas (Placitas Village supplier) serves ~190 households (p. 13)
 - Estimated average annual CU ranges between 24.15 and 74.06 af for the Las Acequias de Placitas (p. 13)

- Approximately 8.6 miles of perennial stream reaches that sustain riparian vegetation (determined from maps) (p. 26)
 - Average width of riparian vegetation in the area is 50 feet (p. 26)
 - Estimated annual ET is 171 af (p. 26)
- Estimated Total CU was 1,747.13 af/y for the Placitas area in 2000 (p. 27)
 - Table 4. Use Categories and Estimated Consumptive Use Values for the Placitas Area –Year 2000 (p. 28)
 - CU Percentage by category: Figure 2. Estimated Consumptive Use Values for the Placitas area, year 2000.

Useful Figures:

- Figure 2. Estimated Consumptive Use Values for the Placitas area, year 2000. (p. 3)
- Figure 4. Number of permitted wells drilled annually in the Placitas area, 1958-2000. (Johnson, 2001) (p. 9)
- Table 1. Average Annual Withdrawal and Consumptive Use Values for Placitas area Community Water Systems (1996-2001). (p. 14)
- Table 2. Summary of Agricultural Diversions and Consumptive Use for Placitas Study Area. (p. 18)
- Table 4. Use Categories and Estimated Consumptive Use Values for the Placitas Study Area – Year 2000. (p. 28)

References:

Johnson, P.S., 2000. Phase II Hydrogeologic and Water Resource Assessment for the Placitas Development Area, Sandoval County, New Mexico. Final Technical Reports submitted to the County of Sandoval. New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico. May 2001.

Johnson, P.S., 2001. Geologic Limitations of Ground-Water Availability in the Placitas Area, Sandoval County, New Mexico. Statewide Water Planning – A Progress Report. New Mexico Decision-Makers Field Guide No. 1. New Mexico Bureau of Mines & Mineral Resources, Socorro, New Mexico. May 2001.

*Estimated Total Consumptive Use in Placitas area in year 2000
was approximately 1,747 acre-feet*

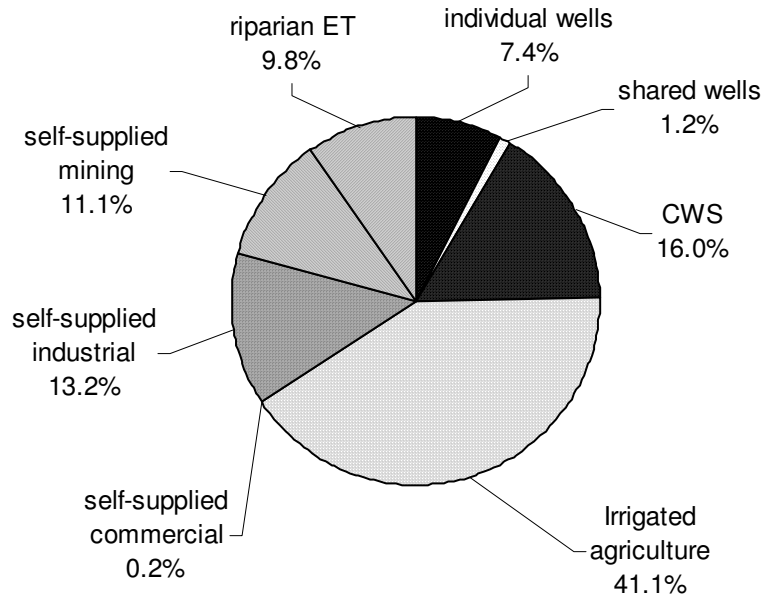


Figure 2. Estimated Consumptive Use Values for the Placitas area, year 2000.

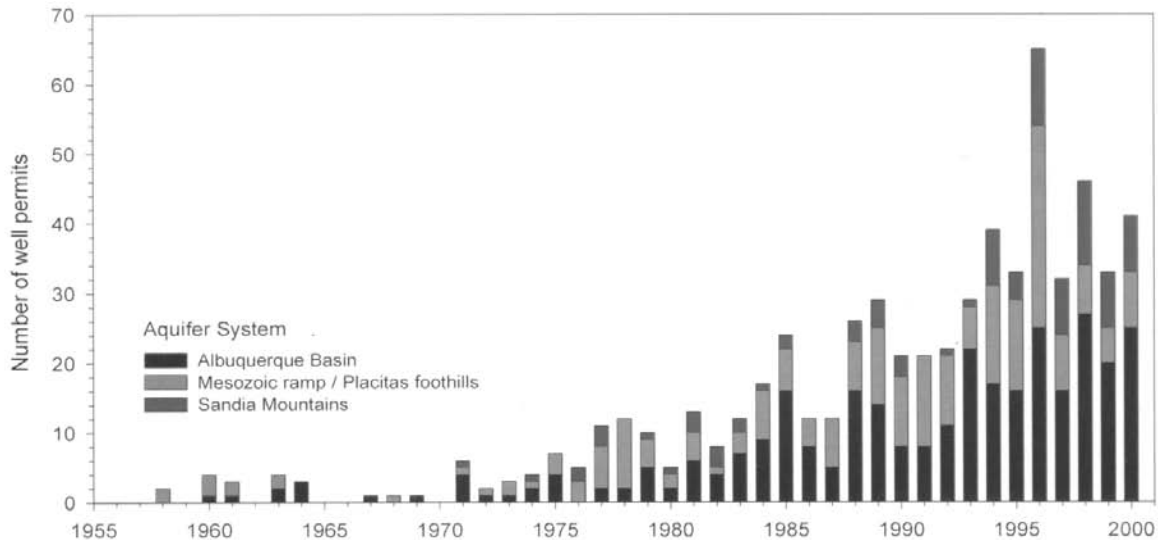


Figure 4. Number of permitted wells drilled annually in the Placitas area, 1958-2000. (Johnson, 2001)

Table 1. Average Annual Withdrawal and Consumptive Use Values for Placitas area Community Water Systems (1996-2001)

Community Water System	Average Annual Withdrawal (af)^a
Calle del Sol	0.07
Cedar creek	7.80
Home Owners Assoc. Corral	0.66
La Mesa - Sundance	58.75
La Puerta	6.11
Ranchos de Placitas Water and Sanitation Dist.	40.62
North Ranchos (units 4,5,6,7)	37.40
Overlook	11.56
Placitas Trails	37.02
Placitas West	13.05
Puesta del Sol	2.97
Tierra Madre well #1	2.09
Tierra Madre well #2 (Los Vecinos)	2.58
Tierra Madre well #3	2.22
Tierra Madre well #4 (Agua Sarca)	NA
Vista de la Montana	2.04
Vista del Oro de Placitas	4.98
Placitas Village Water System ^b	49.1
Total	279.02

^a withdrawal = consumptive use (Tom Morrison, Water Resource Manager of the NMOSE Hydrology Bureau, personal communication, 06 February, 2002).

^b estimated value

NA = Not Available

Table 2. Summary of Agricultural Diversions and Consumptive Use for the Placitas Study Area.

Declaration No.	Diversion (af)	Irrigated Acreage	Priority Date	Source
597	432.96	144.32	1866	Las Huertas-La Jara Community Ditch
949	3.00 ^a	212	1863	Las Acequias de Placitas
1644	^b	3.5		Rosa de Castilla Spring
1644		80.42		Rosa de Castilla Spring
2276		29		San Francisco Springs
4358		5.5	1906	San Francisco Springs
License No.				
1350	40.00	20	1920	March 1 to October 1; Arroyo de las Placitas
Total Declared Irrigated Acreage		494.74		

^aDiversion for Declaration 949 is stated on a per-acre basis.

^bShaded area represents limited or missing information.

Approximate irrigation diversion in planning area: **1484.22 ac-ft per year** (assumes uniform irrigation diversion of 3.0 af per acre per year) less average village domestic use of **49.10 af per year**

Approximate net irrigation requirement in planning area: **717.56 af per year** (assumes uniform on-farm irrigation efficiency of 50%, and a uniform net irrigation requirement of 1.45 af per acre per year).

**Table 4. Use Categories and Estimated Consumptive Use Values
for the Placitas Study Area -Year 2000.**

Water Use	Consumptive Use (af)	Per cent Total
Individual wells	129.48*	7.41
Shared wells	21.71*	1.24
CWS	279.12*	15.97
Irrigated agriculture	717.56*	41.07
Self-supplied commercial	3.1*	0.18
Self-supplied industrial	230.41	13.19
Self-supplied mining	194.75	11.15
Riparian evapotranspiration	171.00*	9.79
Total	1747.13	100

*estimated value