LOCATED IN THE RIO GRANDE-ALBUQUERQUE SUBWATERSHED WITHIN THE RIO GRANDE WATERSHED CLIMATE P1 AVERAGE HIGH & LOW TEMPERATURES ¹ 1914–2013													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
°F HIGH	47.2	53.2	60.8	70.1	79.5	89.5	91.7	88.9	82.3	71.0	57.0	47.6	69.9
°F LOW		27.8	33.2	41.0	50.3	59.5	64.8	63.1	56.2	44.2	31.7	24.5	43.3
°С нібн	8.4	11.8	16.0	21.2	26.4	31.9	33.2	31.6	27.9	21.7	13.9	8.7	21.1
°C LOW	-4.7	-2.3	0.7	5.0	10.2	15.3	18.2	17.3	13.4	6.8	-0.2	-4.2	6.3
RECC	DRD HI	GH1 1(D7° F	41.7° C	June 26	5 <mark>, 1994</mark>	RECO	RD LOV	V¹ <mark>-17°</mark>	<mark>'F</mark> -2	27.2° C	January	<mark>, 7, 1971</mark>
	SUN		₽2							MAR 21	JUN 21	SEP 21	DEC 21
					DEGREE	S N or S o	f DUE EA	ST THE SU	JN RISES ²	0°	30°N	0°	28°S
LAT	ITUDE	35.1°			DEGREE	S N or S c	of DUE WE	ST THE S	UN SETS ²	0°	30°N	0°	28°S
				SOLAR-N	IOON ALT	TTUDE A	NGLE (AB	OVE HOR	IZON) ^{a,2,3}	55°	78°	55°	31°
ELEV	ATION		FT	SOLAR-NO			ΤΙCΕ SHA		τιο ^{^b 1:}	1.63	AND AZ	IMUTH	0°
		1,560	m ²										420
				9AM & 3	3PM WINT	ER-SOLS	FICE SHAD	DOW RAT	10 ^{b,2} 1:	3.14	AND AZ	(IMUTH ^{c,2}	43°
١	WIN	C	F 3								MAX	SPEED ⁵	77 124
								-) & AVE				MPH km/h
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC	
	NNW	NW	W	W	W	S	S	S	NNW	S	NNW	NNW	
MPH	7.1	7.9	9.0	10.6	9.5	8.6	7.0	6.2	7.0	6.5	6.5	6.1	7.7
km/h	11	13	14	17	15	14	11	10	11	10	10	10	12.4
WATER			P4 AVERAGE RAINFALL (GAIN) ¹ 1914–2013										
			1			AVER	age ra	INFALL	(GAIN)	12	914–20	13	
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC	ANNUAL
INCHES	JAN 0.36	0.39	0.50	0.54	0.61	JUN 0.61	JUL 1.41	AUG 1.46	SEP 0.95	OCT 0.88	NOV 0.44	DEC 0.49	8.64
INCHES	JAN 0.36				-	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC	
	JAN 0.36	0.39	0.50 12.7	0.54 13.7	0.61 15.5	JUN 0.61 15.5	JUL 1.41 35.8	AUG 1.46 37.1	SEP 0.95 24.1	OCT 0.88 22.4	NOV 0.44	DEC 0.49 12.4	8.64
	JAN 0.36 9.1	0.39	0.50 12.7	0.54 13.7	0.61 15.5	JUN 0.61 15.5	JUL 1.41 35.8	AUG 1.46 37.1	SEP 0.95	OCT 0.88 22.4	NOV 0.44 11.2	DEC 0.49 12.4	8.64
mm	JAN 0.36 9.1 1.87	0.39 9.9	0.50 12.7 AVER	0.54 13.7 AGE PA	0.61 15.5 N EVAP	JUN 0.61 15.5 ORATIC	JUL 1.41 35.8 N (POT	AUG 1.46 37.1 NTIAL	SEP 0.95 24.1 LOSS) ^{d,6}	OCT 0.88 22.4	NOV 0.44 11.2 923–200	DEC 0.49 12.4	8.64 219.5
mm INCHES mm	JAN 0.36 9.1 1.87 47.5	0.39 9.9 2.81 71.4	0.50 12.7 AVER 5.27 133.9	0.54 13.7 AGE PA 7.77	0.61 15.5 N EVAP 9.74 247.4	JUN 0.61 15.5 ORATIO 10.49 266.4	JUL 1.41 35.8 N (POT 10.06 255.5	AUG 1.46 37.1 NTIAL 8.67 220.2	SEP 0.95 24.1 LOSS) ^{d,6} 6.58	OCT 0.88 22.4 1! 4.64 117.9	NOV 0.44 11.2 923–200 2.75 69.9	DEC 0.49 12.4 05 2.45	8.64 219.5 73.10
mm INCHES mm	JAN 0.36 9.1 1.87 47.5 EST YEA	0.39 9.9 2.81 71.4 AR'S RA	0.50 12.7 AVER 5.27 133.9 AIN ¹ 15.5	0.54 13.7 AGE PA 7.77 197.4 9 INCHES	0.61 15.5 N EVAP 9.74 247.4 403 mr	JUN 0.61 15.5 ORATIC 10.49 266.4 n 194 ⁻	JUL 1.41 35.8 N (POT 10.06 255.5 1 DRII	AUG 1.46 37.1 ENTIAL 8.67 220.2 EST YEA	SEP 0.95 24.1 LOSS) ^{d,6} 6.58 167.1 R'S RAIN	OCT 0.88 22.4 1! 4.64 117.9	NOV 0.44 11.2 923–200 2.75 69.9	DEC 0.49 12.4 05 2.45 62.2	8.64 219.5 73.10 1,856.7
mm INCHES mm	JAN 0.36 9.1 1.87 47.5 EST YE/ LONG	0.39 9.9 2.81 71.4 AR'S RA EST PEI	0.50 12.7 AVER 5.27 133.9 AIN ¹ 15.9 RIOD W	0.54 13.7 AGE PA 7.77 197.4 FINCHES	0.61 15.5 N EVAP 9.74 247.4 403 mr MEASU	JUN 0.61 15.5 ORATIC 10.49 266.4 n 194 ⁻ RABLE F	JUL 1.41 35.8 N (POT 10.06 255.5 DRII PRECIPIT	AUG 1.46 37.1 ENTIAL 8.67 220.2 EST YEA ATION ⁷	SEP 0.95 24.1 LOSS) ^{d,6} 6.58 167.1 R'S RAIN	OCT 0.88 22.4 1! 4.64 117.9	NOV 0.44 11.2 923–200 2.75 69.9	DEC 0.49 12.4 05 2.45 62.2 84 mm	8.64 219.5 73.10 1,856.7 1917 GPCD
INCHES mm WETT	JAN 0.36 9.1 1.87 47.5 EST YE/ LONG	0.39 9.9 2.81 71.4 AR'S RA EST PEI 108 DA	0.50 12.7 AVER 5.27 133.9 AIN ¹ 15.9 RIOD W AYS: Sep	0.54 13.7 AGE PA 7.77 197.4 NCHES TTH NO	0.61 15.5 N EVAP 9.74 247.4 403 mr MEASU 4, 1917	JUN 0.61 15.5 ORATIC 10.49 266.4 n 194 ⁻ RABLE F <i>– January</i>	JUL 1.41 35.8 N (POT 10.06 255.5 DRII RECIPIT 710, 191	AUG 1.46 37.1 ENTIAL 8.67 220.2 EST YEA ATION ⁷ 8	SEP 0.95 24.1 LOSS) ^{d,6} 6.58 167.1 R'S RAIN RAIN	OCT 0.88 22.4 1: 4.64 117.9 N ¹ 3.3 IN	NOV 0.44 11.2 923–200 2.75 69.9 NCHES COME ^e	DEC 0.49 12.4 2.45 62.2 84 mm 140 529	8.64 219.5 73.10 1,856.7 1917 GPCD lpcd
mm INCHES mm	JAN 0.36 9.1 1.87 47.5 EST YEA LONG	0.39 9.9 2.81 71.4 AR'S RA EST PE 108 DA	0.50 12.7 AVER 5.27 133.9 AIN ¹ 15.9 RIOD W AYS: <i>Sep</i> Q MILES	0.54 13.7 AGE PA 7.77 197.4 NCHES TTH NO tember 2	0.61 15.5 N EVAP 9.74 247.4 403 mr MEASU	JUN 0.61 15.5 ORATIC 10.49 266.4 n 194 ⁻ RABLE P - January	JUL 1.41 35.8 N (POT 10.06 255.5 D RII PRECIPIT 710, 191 552,80	AUG 1.46 37.1 ENTIAL 8.67 220.2 EST YEA ATION ⁷ 8 4	SEP 0.95 24.1 LOSS) ^{d,6} 6.58 167.1 R'S RAIN RAIN	OCT 0.88 22.4 1! 4.64 117.9	NOV 0.44 11.2 923–200 2.75 69.9 NCHES COME ^e	DEC 0.49 12.4 2.45 62.2 84 mm 140 529 150	8.64 219.5 73.10 1,856.7 1917 GPCD lpcd GPCD
mm INCHES mm WETT	JAN 0.36 9.1 1.87 47.5 EST YEA LONG	0.39 9.9 2.81 71.4 AR'S RA EST PEI 108 DA 37.7 S0 86 ki	0.50 12.7 AVER 5.27 133.9 AIN ¹ 15.9 RIOD W AYS: <i>Sep</i> Q MILES m ²	0.54 13.7 AGE PA 7.77 197.4 NCHES INCHES INCHES	0.61 15.5 N EVAP 9.74 247.4 403 mr MEASU 4, 1917 OPULAT	JUN 0.61 15.5 ORATIC 10.49 266.4 n 194 ⁻ RABLE F – January	JUL 1.41 35.8 N (POT 10.06 255.5 D RII PRECIPIT 7 10, 191 552,80 2011 estin	AUG 1.46 37.1 ENTIAL 8.67 220.2 EST YEA ATION ⁷ 8 4 hate	SEP 0.95 24.1 LOSS) ^{d,6} 6.58 167.1 R'S RAIN RAIN UTILIT	OCT 0.88 22.4 19 4.64 117.9 N ¹ 3.3 IN FALL IN	NOV 0.44 11.2 923–200 2.75 69.9 NCHES COME ^e	DEC 0.49 12.4 2.45 62.2 84 mm 140 529 150 568	8.64 219.5 73.10 1,856.7 1917 GPCD Ipcd GPCD Ipcd
INCHES mm WETT	JAN 0.36 9.1 1.87 47.5 EST YEA LONG A ^{f,8} 18 4 RICAL 2	0.39 9.9 2.81 71.4 AR'S RA EST PE 108 DA 37.7 S0 86 ki 0–30 FT	0.50 12.7 AVER 5.27 133.9 AIN ¹ 15.9 RIOD W AYS: <i>Sep</i> Q MILES m ² 6.1–9.1 m	0.54 13.7 AGE PA 7.77 197.4 NCHES INCHES ITH NO tember 2 P(1960	0.61 15.5 N EVAP 9.74 247.4 403 mr MEASU 4, 1917 OPULAT	JUN 0.61 15.5 ORATIC 10.49 266.4 n 194 ⁻ RABLE F – January TON ^{f.8}	JUL 1.41 35.8 N (POT) 10.06 255.5 D RII 255.5 1 DRII 270, 191 552,80 2011 estin COUNDV	AUG 1.46 37.1 ENTIAL 8.67 220.2 EST YEA ATION ⁷ 8 4 hate VATER ^{g,}	SEP 0.95 24.1 LOSS) ^{d,6} 6.58 167.1 R'S RAIN RAIN UTILIT	OCT 0.88 22.4 19 4.64 117.9 N ¹ 3.3 IN FALL IN FALL IN FY-WATI	NOV 0.44 11.2 923–200 2.75 69.9 NCHES NCHES COME ^e ER USE ⁹ 2.8 m	DEC 0.49 12.4 2.45 62.2 84 mm 140 529 150 568 2013	8.64 219.5 73.10 1,856.7 1917 GPCD lpcd GPCD
mm INCHES mm WETT	JAN 0.36 9.1 1.87 47.5 EST YEA LONG A ^{f,8} 18 4 RICAL 2	0.39 9.9 2.81 71.4 AR'S RA EST PE 108 DA 37.7 S0 86 ki 0–30 FT	0.50 12.7 AVER 5.27 133.9 AIN ¹ 15.9 RIOD W AYS: <i>Sep</i> Q MILES m ² 6.1–9.1 m	0.54 13.7 AGE PA 7.77 197.4 NCHES INCHES INCHES	0.61 15.5 N EVAP 9.74 247.4 403 mr MEASU 4, 1917 OPULAT	JUN 0.61 15.5 ORATIC 10.49 266.4 n 194 ⁻ RABLE F – January TON ^{f.8}	JUL 1.41 35.8 N (POT) 10.06 255.5 D RII 255.5 1 DRII 270, 191 552,80 2011 estin COUNDV	AUG 1.46 37.1 ENTIAL 8.67 220.2 EST YEA ATION ⁷ 8 4 hate VATER ^{g,}	SEP 0.95 24.1 LOSS) ^{d,6} 6.58 167.1 R'S RAIN RAIN UTILIT	OCT 0.88 22.4 19 4.64 117.9 N ¹ 3.3 IN FALL IN FALL IN FY-WATI	NOV 0.44 11.2 923–200 2.75 69.9 NCHES NCHES COME ^e ER USE ⁹ 2.8 m	DEC 0.49 12.4 2.45 62.2 84 mm 140 529 150 568 2013	8.64 219.5 73.10 1,856.7 1917 GPCD Ipcd GPCD Ipcd
mm INCHES mm WETT ARE HISTOI	JAN 0.36 9.1 1.87 47.5 EST YEA LONG A ^{f,8} 18 4 RICAL 2	0.39 9.9 2.81 71.4 AR'S RA EST PE 108 DA 37.7 St 86 ki 0–30 FT NT GR	0.50 12.7 AVER 5.27 133.9 AIN ¹ 15.9 RIOD W AYS: <i>Sep</i> Q MILES m ² 6.1–9.1 m OUNDW	0.54 13.7 AGE PA 7.77 197.4 NCHES INCHES INCHES ITH NO tember 2 PC 1960 VATER E	0.61 15.5 N EVAP 9.74 247.4 403 mr MEASU 4, 1917 OPULAT DEPTH XTRACT	JUN 0.61 15.5 ORATIC 10.49 266.4 m 194 ⁻ RABLE F – January 10N ^{f8} 2 H TO GR FION	JUL 1.41 35.8 N (POT 10.06 255.5 D RII PRECIPIT 7 10, 191 552,80 2011 estin COUNDV NATI	AUG 1.46 37.1 ENTIAL 8.67 220.2 EST YEA ATION ⁷ 8 4 hate VATER ^{g,}	SEP 0.95 24.1 LOSS) ^{d,6} 6.58 167.1 R'S RAIN RAIN UTILIT	OCT 0.88 22.4 1: 4.64 117.9 N ¹ 3.3 IN FALL IN FALL IN TY-WATI TY-WATI WATER	NOV 0.44 11.2 923–200 2.75 69.9 NCHES COME ^e ER USE ⁹ 2.8 m RECHAI	DEC 0.49 12.4 2.45 62.2 84 mm 140 529 150 568 2013 GE ^{h,11}	8.64 219.5 73.10 1,856.7 1917 GPCD Ipcd GPCD Ipcd
mm INCHES mm WETT ARE HISTOI	JAN 0.36 9.1 1.87 47.5 EST YEA LONG Af. ⁸ 18 4 RICAL 2 CURRE ATER	0.39 9.9 2.81 71.4 AR'S RA EST PEI 108 DA 37.7 St 86 ki 0–30 FT NT GR	0.50 12.7 AVER 5.27 133.9 AIN ¹ 15.9 RIOD W AYS: <i>Sep</i> Q MILES m ² 6.1–9.1 m OUNDV	0.54 13.7 AGE PA 7.77 197.4 NCHES INCHES INCHES ITH NO tember 2 PO 1960 VATER E	0.61 15.5 N EVAP 9.74 247.4 403 mr MEASU 4, 1917 ОРULAT OPULAT DEPTI XTRACT	JUN 0.61 15.5 ORATIC 10.49 266.4 n 194 ⁻ RABLE F – January 10N ^{f8} 2 H TO GR FION	JUL 1.41 35.8 N (POT 10.06 255.5 D RII PRECIPIT 7 10, 191 552,80 2011 estin COUNDV NATU BE POWERE	AUG 1.46 37.1 ENTIAL 8.67 220.2 EST YEA ATION ⁷ 8 4 Mate VATER ^{g,} JRAL G	SEP 0.95 24.1 LOSS) ^{d,6} 6.58 167.1 R'S RAIN RAIN UTILIT ¹⁰ 42 I ROUND ¹ ¹⁰ 42 I	OCT 0.88 22.4 12 4.64 117.9 V ¹ 3.3 IN FALL IN TY-WATI FT 12 WATER WOVE & TRI	NOV 0.44 11.2 923–200 2.75 69.9 NCHES COME ^e ER USE ⁹ 2.8 m RECHAI	DEC 0.49 12.4 2.45 62.2 84 mm 140 529 150 568 2013 GE ^{h,11}	8.64 219.5 73.10 1,856.7 1917 GPCD Ipcd GPCD Ipcd CURRENT
mm INCHES mm WETT ARE HISTOI	JAN 0.36 9.1 1.87 47.5 EST YEA LONG A ^{f,8} 18 47.5 CURRE ATER M SPE	0.39 9.9 2.81 71.4 AR'S RA EST PEI 108 DA 37.7 SO 86 ki 0-30 FT NT GR GY ECIES	0.50 12.7 AVER 5.27 133.9 AIN ¹ 15.9 RIOD W AYS: <i>Sep</i> Q MILES m ² 6.1–9.1 m OUNDV P5 P6 P	0.54 13.7 AGE PA 7.77 197.4 9 INCHES 7 ITH NO 197.4 9 INCHES 7 ITH NO 197.4 9 INCHES 7 ITH NO 197.4 9 INCHES 7 ITH NO 197.4 197.4 9 INCHES 7 ITH NO 197.4 197.4 9 INCHES 7 ITH NO 197.4 197.4 9 INCHES 7 ITH NO 197.4 197.4 9 INCHES 7 ITH NO 197.4 197.4 197.4 9 INCHES 7 ITH NO 10 ITH N	0.61 15.5 N EVAP 9.74 247.4 403 mr MEASU 4, 1917 ОРULAT OPULAT DEPTI XTRACT	JUN 0.61 15.5 ORATIC 10.49 266.4 m 194 ⁻ RABLE F – January TON ^{f,8} TON ^{f,8}	JUL 1.41 35.8 N (POT) 10.06 255.5 D RII 255.5 D RII 2011 estin 2011	AUG 1.46 37.1 ENTIAL 8.67 220.2 EST YEA ATION ⁷ 8 4 MATER ^{g,} VATER ^{g,} URAL GI D W/ENERC doxus) M	SEP 0.95 24.1 LOSS) ^{d,6} 6.58 167.1 R'S RAIN UTILIT 10 42 ROUND iy used to / LOSS)	OCT 0.88 22.4 12 4.64 117.9 V ¹ 3.3 IN FALL IN FALL IN FY-WATI FT 12 WATER WOVE & TRI A:	NOV 0.44 11.2 923–200 2.75 69.9 NCHES COME ^e ER USE ⁹ 2.8 m RECHAI EAT ABCWU	DEC 0.49 12.4 05 2.45 62.2 84 mm 140 529 150 568 2013 CGE ^{h,11}	8.64 219.5 73.10 1,856.7 1917 GPCD Ipcd GPCD Ipcd CURRENT
mm INCHES mm WETT ARE HISTOI	JAN 0.36 9.1 1.87 47.5 EST YEA LONG Af. ⁸ 18 40 CURRE ATER Silvery M	0.39 9.9 2.81 71.4 AR'S RA EST PEI 108 DA 37.7 SC 86 ki 0–30 FT NT GR GY CIES innow (H	0.50 12.7 AVER 5.27 133.9 AIN ¹ 15.9 RIOD W AYS: <i>Sep</i> Q MILES m ² 6.1–9.1 m OUNDV P5 P6 P ybognathu	0.54 13.7 AGE PA 7.77 197.4 9 INCHES (ITH NO tember 2 PO 1960 VATER E # of AVG NA LANT: s amarus)	0.61 15.5 N EVAP 9.74 247.4 403 mr MEASU 4, 1917 OPULAT OPULAT DEPTH EXTRACT	JUN 0.61 15.5 ORATIC 10.49 266.4 n 194 ⁻ RABLE F January TON ^{f,8} TON ^{f,8} TON ^{f,8} TON TON TON TON TON TON TON TON	JUL 1.41 35.8 N (POT 10.06 255.5 D RII RECIPIT 7 10, 191 552,80 2011 estin COUNDV NATU BE POWERE Fanthus para Mexi	AUG 1.46 37.1 ENTIAL 8.67 220.2 EST YEA ATION ⁷ 8 4 Pate VATER ^{g,} URAL GI D W/ENERC doxus) M can Garter	SEP 0.95 24.1 LOSS) ^{d,6} 6.58 167.1 R'S RAIN RAIN UTILIT 10 42 I ROUND Snake (Thar	OCT 0.88 22.4 12 4.64 117.9 √ ¹ 3.3 IN FALL IN FALL IN FY-WATI FT 12 WATER WOVE & TRI A: mnophis equ	NOV 0.44 11.2 923–200 2.75 69.9 NCHES COME ^e ER USE ⁹ 2.8 m 2.8 m 2.8 m 2.8 m 2.8 m	DEC 0.49 12.4 2.45 62.2 84 mm 140 529 150 568 2013 GE ^{h,11} A WATER ¹²	8.64 219.5 73.10 1,856.7 <i>1917</i> GPCD lpcd GPCD lpcd CURRENT
mm INCHES mm WETT ARE HISTOI	JAN 0.36 9.1 1.87 47.5 EST YEA LONG Af. ⁸ 18 40 CURRE ATER Silvery M	0.39 9.9 2.81 71.4 AR'S RA EST PEI 108 DA 37.7 SC 86 ki 0-30 FT NT GR O-30 FT NT GR GY ECIES innow (H tern Willo	0.50 12.7 AVER 5.27 133.9 AIN ¹ 15.9 RIOD W AYS: <i>Sep</i> Q MILES m ² 6.1–9.1 m OUNDV P5 P6 P ybognathu w Flycatche	0.54 13.7 AGE PA 7.77 197.4 9 INCHES 7 ITH NO 197.4 9 INCHES 7 ITH NO 197.4 197.4 9 INCHES 7 ITH NO 197.4 197.4 9 INCHES 7 ITH NO 197.4	0.61 15.5 N EVAP 9.74 247.4 403 mr MEASU 4, 1917 OPULAT OPULAT DEPTH EXTRACT A HOMES TH Pecos Sunt	JUN 0.61 15.5 ORATIC 10.49 266.4 m 194 ⁻ RABLE F – January 10N ^{f.8} 2 H TO GR FION 1 flower (Heli REPTILE: timus) MA	JUL 1.41 35.8 N (POT 10.06 255.5 D RII PRECIPIT 7 10, 191 552,80 2011 estim COUNDV NATU BE POWERE Fanthus para Mexi WMAL:	AUG 1.46 37.1 ENTIAL 8.67 220.2 EST YEA ATION ⁷ 8 4 MATION ⁷ 8 4 MATER ^{g,} VATER ^{g,} 0 VATER ^{g,} MATER ^{g,} 0 VATER ^{g,} 0 MATER ^{g,} 0	SEP 0.95 24.1 LOSS) ^{d,6} 6.58 167.1 R'S RAIN UTILIT 10 42 ROUND iy used to / LOSS)	OCT 0.88 22.4 1: 4.64 117.9 V ¹ 3.3 IN FALL IN FALL IN FALL IN FALL IN FALL IN VATER WOVE & TRI A: nnophis equ	NOV 0.44 11.2 923–200 2.75 69.9 NCHES COME ^e ER USE ⁹ ER USE ⁹ 2.8 m ER USE ⁹ ER USE ⁹	DEC 0.49 12.4 2.45 62.2 84 mm 140 529 150 568 2013 GE ^{h,11} A WATER ¹²	8.64 219.5 73.10 1,856.7 <i>1917</i> GPCD lpcd GPCD lpcd CURRENT

FOR MORE INFORMATION & HOW TO APPLY IT

- I. For more CLIMATE information, see the introduction, chapters 1, 2, & 4, and appendix 5 of *Rainwater Harvesting for Drylands and Beyond (RWHDB)*, Volume 1, 2nd Edition
- \triangleright **2.** For more SUN information, see chapters 2 & 4 and appendices 5 & 7
- ho**3.** For more WIND information, see chapters 2 & 4 and appendices 5 & 9
- P4. For more WATER information, see the introduction, chapters 1–4, and appendices 1–5
- P**5.** For more WATERGY information, see chapters 2 & 4 and appendix 9
- **6.** For more TOTEM SPECIES information: the ethics, principles, and strategies throughout *RWHDB* help us shift from a negative to a positive impact on these species and their habitats and ecosystems, on which our quality of life also depends.

ALBUQUERQUE PLACE-ASSESSMENT NOTES

- a. Altitude angle (a.k.a., elevation angle) refers to the number of degrees the sun is located above the horizon at a given time and date.
 b. The solar-noon winter-solstice shadow ratio is the object's height : length of object's shadow cast on December 21 at noon (the longest noontime shadow of the year). The ratio is 1 : x, where x = 1 ÷ tangent (90 (latitude + 23.44)).
- **c.** Azimuth is the angle formed between a reference direction (here, due south) to the point on the horizon directly below a given object. Solar noon is the time on any day when the sun's azimuth is 0°. The 9 am & 3 pm winter-solstice azimuth indicates the sun's deviation, in degrees, east/west of due south at those times (-/+ 3 hours from solar noon) on December 21.
- **d.** An evaporation pan holds water whose depth is measured daily as water evaporates. These data allow us to determine evaporation rates at a given location. Compare average rainfall (water gain) to potential water loss via evaporation by looking up pan-evaporation rates for your area. If pan-evaporation rates exceed rainfall rates, you are in a dryland environment, where evaporation-reducing strategies such as mulch, windbreaks, shading, and covered water storage are very important.
- e. Calculated in situ w/ average rainfall, area, & population
- f. City proper
- g. Given groundwater levels are for Downtown Albuquerque. Levels in Albuquerque's Valley, 1926-27, before MRGCD built drains, were 0–3 feet. In the Valley, after drains were built, groundwater levels were typcially 5–10 feet, although in some areas they were less than 5 feet. The water table declined in the Valley 2-4 feet between 1927-1936, and an additional 2 feet from 1936–1960. In 2013, these levels are 29 feet. In the East Mesa, 1961 levels were 10–600 feet; in 2013, they are 705 feet. Looking at one specific well in East Mesa/Foothills, well no. 10.4.34.214, the groundwater levels ranged from 350–616 feet in 1960, and are at 700 feet in 2013.¹⁰
- **h.** We are moving quickly to begin using the San Juan-Chama water because our current system, which relies entirely on pumping groundwater from an underground aquifer, is being seriously depleted. Right now, only about 50 percent of the water pumped from that aquifer is recharged, or replenished. Future project involving putting water into the aquifer, then pumping it out in times of need.¹¹

CREDITS: Brad Lancaster, Resource concept, content oversight | Leslie Buerk, Kalyx Studio, Research | Megan Hartman, Research, Resource creation

ALBUQUERQUE PLACE-ASSESSMENT REFERENCES

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- 2. Rainwater Harvesting for Drylands & Beyond, Vol 1, or esrl.noaa.gov/gmd/grad/solcalc, accessed 5/8/2013
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- 4. Western Regional Climate Center, wrcc.dri.edu, Double Eagle station data, periods of record 1992–2002 (prevailing wind direction) and 1999–2006 (average monthly wind speed), accessed 4/17/2013
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- 8. Census.gov, accessed 4/17/2013
- 9. Albuquerque Bernalillo County Water Utility Authority, www.abcwua.org/content/view/342/555, accessed 4/17/2013
- **10.** Summary of Historic groundwater (Tech report 21, 1961), nm.water.usgs.gov/projects/piezometers/piezometers.city.new, accessed 5/8/2013
- 11. www.abcwua.org/content/view/31/24/, accessed 5/19/2013
- **12.** Per a May 13, 2013, email from David Montgomery, ABCWUA SCADA Manager, the water utility authority, which serves 606,780 water users in greater Albuquerque metro area, used 120,148,069 kWh in 2012 to produce & treat 32,126,000,000 gallons of water. The average NM household uses 632 kWh of energy per month (www.eia.gov/cneaf/electricity/esr/table5.html, accessed 5/13/2013), or 7,584 kWh per year. 120,148,069 kWh/year ÷ 7,584 kWh/household/year = 15,842 households.
- 13. All species selections provided by Leslie Buerk, Kalyx Studio, via email 5/8/2013