

PATTERNS OF CLIMATE, WATER PER CAPITA, WATERGY, & SUN: ARCADIA, CA¹

CLIMATE	AVERAGE HIGH & LOW TEMPERATURES: 1893-2010												Source: wrcc.dri.edu	
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	
	66.4	67.8	69.9	73.3	76.3	81.7	88.5	89.2	87.1	80.6	73.8	67.2	76.8	°F HIGH
	42.5	44.0	45.8	48.7	52.1	55.7	59.9	60.2	58.4	53.3	47.1	43.1	50.9	°F LOW
	19.1	19.9	21.1	22.9	24.6	27.6	31.4	31.8	30.6	27.0	23.2	19.6	24.9	°C HIGH
5.8	6.7	7.7	9.3	11.2	13.2	15.5	15.7	14.7	11.8	8.4	6.2	10.5	°C LOW	
HIGHEST TEMP ON RECORD:		113	45.0	June 17, 1917		LOWEST TEMP ON RECORD:		17	-8.3	February 21, 2003				
		°F	°C					°F	°C					
													Source: wrcc.dri.edu	

WATER PER CAPITA	AVERAGE RAINFALL: 1893-2010												Source: wrcc.dri.edu	
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	
	4.45	4.57	3.38	1.39	0.43	0.14	0.03	0.09	0.37	0.68	1.67	3.04	20.24	INCHES
	113.0	116.1	85.9	35.3	10.9	3.6	0.8	2.3	9.4	17.3	42.4	77.2	514.1	mm
	WETTEST YEAR'S RAINFALL:		48.47	1231.1	1983		DRIEST YEAR'S RAINFALL:		5.37	136.4	1947			
		INCHES	mm					INCHES	mm					
													Source: wrcc.dri.edu	
LONGEST PERIOD W/O MEASURABLE PRECIPITATION: 222 days (April-November 2007)												Source: see note #2		
AREA:		11.12	SQ MILES	POPULATION:		56,202	RAINFALL INCOME:		191	GPCD				
<i>Wikipedia</i>		28.8	km ²	Source/Year: census.gov / 2009 est					722	¢pcd				

WATERGY	<i>Note: the percentages below are per energy source, and are not to be combined for percent of total energy consumption.</i>											
	% of CA's annual electricity consumption used for water-related purposes: ³		19%	2005	MUNICIPAL USE:		294	GPCD				
	% of CA's annual natural gas consumption used for water-related purposes: ³		32%	2005			1113	¢pcd				
	# of gallons of diesel fuel used annually in CA for water-related purposes: ³		88 mil	2005	Source/Year: see note #4 / projected 2010							

SUN	LATITUDE:	34	WINTER-SOLSTICE SHADOW RATIO:*				
	Source: Google Earth		1:1.57	^ DEGREES N or S of DUE E THE SUN RISES:			
	ELEVATION:	478 FT		^ DEGREES N or S of DUE W THE SUN SETS:			
		146 m		^ # of DEGREES SUN IS ABOVE THE SOUTHERN HORIZON AT NOON:			
				ON MAR 21	ON JUN 21	ON SEP 21	ON DEC 21
				0	28N	0	28S
				0	28N	0	28S
				56	79	56	33

To find current magnetic declination for location: HarvestingRainwater.com/books/volume1/volume-1-resource-pages-appendix-6/#magdec

*Object height:length of shadow cast at noon (Dec 21's is longest noontime shadow of year). The ratio is 1:x, where x = 1/(tangent(90-(latitude+23.44)))

Notes: 1. Climate & rainfall data from Pasadena as per Jim Ashby, Service Climatologist, WRCC, via phone 5/10/2011, as Arcadia does not have weather station. // 2. Michelle Breckner, Service Climatologist, WRCC, via phone 3/7/2010 // 3. CA Energy Commission, Final Staff Report on CA's Water-Energy Relationship, 2005. Data include energy for supply & treatment, ag use, end-users & wastewater // 4. Arcadia General Plan Update (7/19/2010) downloaded 5/7/2011 from www.ci.arcadia.ca.us/docs/deir_4.16_utilities_7-19-10.pdf. This figure projected based on highest average 10-year demand from 1995-2009. A. Rainwater Harvesting for Drylands & Beyond, Vol 1, or www.esrl.noaa.gov/gmd/grad/solcalc/ // B. RWHD Vol 1, or Mar 21 =90-latitude, June 21 =90-(lat-23.44), Sept 21 =90-lat, Dec 21 =90-(lat+23.44)