RESOLUTION NO.

A RESOLUTION OF THE COUNCIL OF THE CITY OF FRESNO. MAKING CALIFORNIA AND ADOPTING EXPRESS FINDINGS THAT MODIFICATIONS OR CHANGES TO THE CALIFORNIA FIRE CODE ARE REASONABLY NECESSARY BECAUSE OF LOCAL TOPOGRAPHICAL CLIMATIC. GEOLOGICAL AND CONDITIONS

WHEREAS, the State of California has adopted the 2018 edition of the International Fire Code, with amendments, which was entitled the 2019 California Fire Code. The 2019 California Fire Code has been incorporated into Title 24, Part 9 of the California Code of Regulations and will take effect on January 1, 2020; and,

WHEREAS, California Health & Safety Code Section 17958.5 authorizes the City, by ordinance, to make changes or modifications to the requirements contained in the provisions of the California Fire Code and other regulations adopted pursuant to California Health & Safety Code Section 17921(a) that result in more stringent local requirements; and,

WHEREAS, California Health & Safety Code Sections 17958, 17958.5 and 17958.7 require more stringent local requirements be supported by express findings made by a city that such modifications or changes are "reasonably necessary because of local climatic, geological or topographical conditions"; and,

WHEREAS, the Council of the City of Fresno intends this Resolution to fulfill the requirements of the California Health & Safety Code regarding modifications or changes to the California Fire Code including express findings of reasonable necessity because of

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Date Adopted: Date Approved: Effective Date: City Attorney Approval:

Resolution No.

local climatic, geological or topographical conditions.

NOW, THEREFORE, BE IT RESOLVED by the Council of the City of Fresno that said Council expressly finds each of the various proposed modifications or changes to the California Fire Code, which are enumerated below, are reasonably necessary because of local climatic, geological and topographical conditions in the area encompassed by the City of Fresno, as follows:

A. LOCAL CONDITIONS:

Pursuant to Health and Safety Code, Sections 17958.7 and 18941.5, local climatic, topographical or geological conditions make the amendments to the California Fire Code reasonably necessary.

1. CLIMATIC – EXTREME TEMPERATURES

1.1 As documented in the 2025 Fresno General Plan and the Master Environmental Impact Report No. 10130 for the General Plan, during the summer months the City of Fresno experiences periods of what can only be described as extreme heat.

The last three years' worth of the "Local Climatological Data Annual Summary with Comparative Data" reports for 2016, 2017, and 2018 promulgated by the United States Department of Commerce, National Oceanic and Atmospheric Administration, National Climatic Data Center demonstrate this condition. In the 2016 summary, the mean daily maximum temperature for Fresno in June, July, August and September is: 96.5°F, 100°F, 98.3°F and 91.3°F respectively. In 2017 the same information is noted as: 95.1°F, 101.9°F, 99.5°F and 90.1°F and in 2018 was: 94.6°F, 102.8°F, 98.5°F and 92.9°F.

1.2 Because of the extreme heat Fresno experiences during the summer months, Fresno firefighters responding to fires and other incidents requiring the evacuation of a building are regularly exposed to temperatures in excess of 105°F degrees, when accounting for their protective gear, exposing them to the probability of heat cramps, heat exhaustion and possibly heat stroke.

2. <u>GEOLOGICAL – LIMITED WATER SUPPLY AND WATER PRESSURE</u>

2.1 The Fresno Metropolitan area is arid area that receives small amounts of rainfall each year. In 2016 Fresno received 13.651 inches of water equivalent precipitation. In 2017, the City received only 11.50 inches and in 2015, only 8.65 inches. Furthermore, the Fresno City Metropolitan Area relies primarily on groundwater for its

municipal water supply. According to the California Department of Water Resources, the Kings basin (our underground aquifer) is in a state of critical overdraft.

2.2 Due to the hot, dry summers in the Fresno area, domestic water demand substantially reduces the ability of the public water system to dependably meet the larger fire flow demand in many areas of the City.

3. <u>CLIMATIC/TOPOGRAPHICAL</u> – POOR AIR QUALITY CAUSED BY <u>TOPOGRAPHY OF SAN JOAQUIN VALLEY AIR BASIN, LARGE NUMBER OF</u> <u>SUNNY DAYS AND INVERSIONS THAT FORM DURING WINTER MONTHS</u>

3.1 As a result of the San Joaquin Valley's climate and topography, the San Joaquin Valley Air Basin (SJVAP) is predisposed to poor air quality. High mountain ranges surrounding the Valley frequently create air layer inversions that prevent mixing of air masses. The large number of sunny days per year, and high temperatures in the summer, favors the formation of ozone. The area is so sunny the City of Fresno was ranked the second highest major California city for sunshine, with an estimated 79% annual average of possible sunshine for more than a forty-year period. In the winter, inversions form that often trap particulate matter.

3.2 The Federal EPA and California Air Resources Board have classified the San Joaquin Valley Air Basin as severe non-attainment for Ozone and serious non-attainment (Federal) non-attainment (State) for PM₁₀. Ozone is formed by a complex series of chemical reactions between reactive organic gases (ROG), oxides of nitrogen and sunlight. PM₁₀ is suspended particulate matter that is less than 10 microns in size. Given its small size, PM₁₀ can remain airborne for long periods and can be inhaled, pass through the respiratory system, and lodge in the lungs. In general, nonattainment means that the Federal standard has been exceeded more than twice per year.

3.3 Smoke is composed primarily of carbon dioxide, water vapor, carbon monoxide, particulate matter, hydrocarbons and other organic chemicals, nitrogen oxides, trace minerals and several thousand other compounds. Particulate matter is the principal pollutant of concern from some for the relatively short-term exposures (hours to weeks) typically experienced by the public. Particulate matter in wood smoke has a size range near the wavelength of visible light (.4-.7 micrometers). Since these particles can be inhaled into the deepest recesses of the lungs they are thought to represent a greater health concern than larger particles. Another pollutant of control District states "Emissions from burning include fine particulate, hydrocarbons, oxides of nitrogen, oxides of sulfur, carbon monoxide, and toxic air contaminants that contribute to our air quality problems."

4. TOPOGRAPHICAL – FRESNO'S DEVELOPMENT PATTERN

4.1 Due to the relatively low density growth pattern in the Fresno area, the City of Fresno's nineteen fire stations are spaced approximately four miles apart resulting in an average of a two mile running distance for the designated first-in engine company.

4.2 This average two mile travel distance increases the response time to fires which result in an increase in the size and intensity of fires.

B. REASONABLE NECESSITY

The Council of the City of Fresno expressly finds the modifications and changes to the California Fire Code are reasonably necessary due to the local conditions set forth above since they reduce the risks to life, property, public health and safety that result from the City of Fresno's climatic, geological and topographical conditions. The modifications and changes are further reasonably necessary and justified for the reasons set forth below.

In adopting the California Fire Code as the City of Fresno Fire Code, the City of Fresno proposes to make certain modifications or changes whose effect is to impose more stringent requirements locally than are mandated by the California Fire Code. These are specifically listed below, but may be generally characterized as relating to (1) fire sprinkler systems; (2) luminous exit markings; (3) additional regulation of lumber yards, woodworking, recycling, and waste handling facilities; (4) and additional regulation of motor fuel dispensing and repair garages, locations of above-ground tanks, the amount of Class I and Class II liquids at farms and construction sites in above-ground tanks and basement storage of flammable liquids. These requirements are reasonably necessary to address risks created by local climatic, geological or topographical conditions set forth above for the following reasons:

1. <u>MORE RESTRICTIVE REQUIREMENTS FOR INSTALLATION OF FIRE</u> <u>SPRINKLERS: FRESNO MUNICIPAL CODE AMENDMENTS TO VARIOUS</u> <u>SECTIONS BEGINNING WITH 10-50903.1 THROUGH 10-50912.2.3</u>

1.1 The Fresno Municipal Code Amendments contain more restrictive requirements for installation of fire sprinklers than those in found in the California Fire Code. The requirements are located at Fresno Municipal Code Section 10-50903.1 (requiring retrofitting of fire sprinklers under prescribed conditions based on fire damage, building additions, a change of use to a higher life safety hazard or condominium conversions, etc.), through 10-50903.6 (requiring more restrictive installation details to assist responding firefighters). The amendments are reasonably necessary to address risks created by local climatic, geological or topographical conditions.

1.2 Approximately thirty percent of all residential fires start in the kitchen. Furthermore, studies and testing performed by the United States Fire Administration has resulted in the United States Fire Administration concluding that a single low flow residential sprinkler in the kitchen was able to control both the cooking oil fire and an appliance fire on the countertop.

1.3 Studies performed by the city of Scottsdale, Arizona established in over 90 percent of the cases where automatic fire sprinklers were activated, the fires were controlled with one fire sprinkler. Those one sprinkler activations deposited an average of 276 gallons of water in the structure, compared to an estimated average of 4,876 gallons that would have been sprayed by fire department hoses had sprinklers not been available. In summary, fires in buildings with sprinkler systems use thousands of gallons of water less to extinguish the fire than fires that occur in non-sprinklered property.

1.4 Fires in non-sprinklered buildings generate orders of magnitude more smoke than fires controlled with automatic fire sprinklers. As set forth above, smoke contains particulate matter and other pollutants which contribute to the San Joaquin Valley's sever non-attainment status relating to PM_{10} and ozone.

1.5 As such, this ordinance mandating more restrictive fire sprinkler installation standards is expressly found to be reasonably necessary to address risks created by local climatic, geological or topographical conditions, including limiting fire personnel's exposure to extreme temperatures, reducing the amount of water necessary to extinguish fires, reducing the amount of smoke generated by such fires and addressing extended run time due to topography-related low density growth pattern in the Fresno.

2. <u>INSTALLATION OF LUMINOUS EXIT PATH MARKINGS SHALL BE PROVIDED</u> <u>IN ALL ENCLOSED STAIRWAYS IN ALL NEW BUILDINGS WITH THREE OR</u> <u>MORE STORIES: FRESNO MUNICIPAL CODE, SECTION 10-51025.1.</u>

2.1 Reports and studies related to building evacuation have concluded that the use of luminous egress markings indicators are effective in guiding occupants out of a building, with or without the use of electrical power. This is because luminous exit path markings are not dependent upon electricity for illumination and they are placed at floor level as this is where the most visibility is in the event of smoke. Traditional electrical exit lighting is located higher (above doorways) which is obscured when smoke fills a room or

hallway.

2.2 By making it easier for individuals to evacuate buildings unassisted, fewer firefighters will have to respond to fires to assist with evacuation and/or firefighter resources can be directed toward fire suppression efforts to reduce fire intensity and duration. Accordingly, fewer firefighters will be exposed to health risks associated with exposure to sustained high temperatures and shorter fire duration can reduce smoke generations affecting air quality and fire suppression water use from such fires. As such, mandating installation of luminous egress path markings in certain occupancies three stories or more is expressly found to be reasonably necessary to protect the health and safety of firefighters and other emergency personnel in light of Fresno's extremely high temperatures, air quality, limited water supply and pressure, and extended run time due to topography-related low density growth pattern in the Fresno.

3. <u>REQUIREMENTS REGARDING LUMBER YARDS, WOODWORKING,</u> <u>RECYCLING, AND WASTE HANDLING FACILITIES: VARIOUS FRESNO</u> <u>MUNICIPAL CODE, SECTIONS BEGINNING WITH 10-2801.1 THROUGH</u> <u>2808.12</u>

3.1 In 2003, the City of Fresno Fire Department was involved in costly and time consuming fire suppression activities at two separate wood waste and green waste recycling facilities. Neither of these two facilities was in compliance with the requirements of Chapter 19 of the California Fire Code. After review of the suppression activities of both incidents, the City of Fresno Fire Department has concluded that even if the facilities had been in compliance with Chapter 19, the City would not have had the necessary equipment to rapidly suppress the fires. As a result, the fires lingered for numerous days, causing health and safety issues for the residents of the City and impacting air quality.

3.2 The City of Fresno currently has a number of wood waste and green waste recycling facilities within its boundaries and anticipates more like facilities as the City endeavors to reduce the amount of solid waste processed in landfills.

3.3 The Fresno Fire Department has concluded that it does not have adequate equipment to quickly engage and control a fire.

3.4 Winter conditions in Fresno and the entire Central Valley include rain and other moisture issues (Tule Fog). The green waste/recycling business is very well known for the problem of spontaneous combustion associated with it when the right amount of moisture creates a chemical reaction that develops heat which in turn, if unchecked, starts fires in the green waste piles. As set forth above, much of the year, Fresno has very hot, dry conditions. This makes all combustible materials more so, which increases the general fire hazard. As set forth above, this causes an obvious heat exposure to the firefighters that are responding to and addressing the emergency.

3.5 The larger the piles of wood product, the more heat retained and the more

likely the piles will spontaneously combust. The larger the piles, the more difficult the fire is to fight, and as a result, the fire will burn longer, causing smoke to linger in the valley, creating a continuous health hazard to the residents and negatively affecting air quality.

3.6 The amendments to the California Fire Code reducing the dimensions of the size of the piles of such wood materials, and imposing additional safety measures, is necessary to ensure the City of Fresno's Fire Department's ability to quickly engage such fires and control them. By requiring pile size restrictions, separation, and access, the fire crews may more readily abate the emergency and/or hazard. On-site water mains and hydrant system will provide a more readily available source of water for firefighting, and will reduce the time it takes the fire crews to set up and extinguish a fire. The less time it takes to start the extinguishment process, the less time the fire has to spread and intensify. Access to a limited-size pile of green waste/recyclable material via all-weather roads will reduce the response time required by the Fire Department to set up and address a fire problem. Perimeter fencing provides a higher level of security for the business site and thereby reduces the threat of a possible arson-caused fire. Wood by-product stored in piles has a tendency to spontaneously combust and spread within a large pile.

3.7 The amendments relating to the storage of wood product are necessary to reduce, or attempt to reduce, air pollution in the San Joaquin Valley caused by wood fires, which is detrimentally enhanced by the above described local climatic, geologic and topographical conditions in the San Joaquin Valley.

4. <u>REGULATION OF MOTOR FUEL DISPENSING AND REPAIR GARAGES,</u> <u>LOCATIONS OF ABOVE-GROUND TANKS, THE AMOUNT OF CLASS I AND</u> <u>CLASS II LIQUIDS AT FARMS AND CONSTRUCTION SITES IN ABOVE-GROUND TANKS AND BASEMENT STORAGE OF FLAMMABLE LIQUIDS:</u> <u>VARIOUS FRESNO MUNICIPAL CODE SECTIONS BEGINNING WITH 10-</u> 52306.2.3, THROUGH 10-52811.9

4.1 The following describes when particle classes of liquids and gases reach boiling if temperatures remain at over 100°F:

<u>Class I flammable liquids</u>: Some of these liquids, such as gasoline and acetone, have boiling points (rapid release of ignitable vapors) at temperatures of 100-130 degrees F. Elevated ambient temperatures for these liquids increases the generation of flammable vapors and increases the chance of ignition.

<u>Class II combustible liquids</u>: These liquids have flash points (the temperature at which a liquid emits ignitable vapors) at or above 100°F. Local climatic conditions in the summer cause many common combustible liquids such as charcoal lighter fluid or paint thinner to be in a state of ready ignition from a spark or open flame.

For flammable and combustible liquids and gasses, the range of ignitability as a percentage of vapor volume in air increases with rise in temperature. For example: gasoline vapor at room temperature will ignite (lower flammability limit or LFL) at 1.07 percent of air volume; at 100°F gasoline will ignite at .94 percent of air volume.

4.2 As set forth above, much of the year Fresno has very hot, dry conditions. This local condition makes all combustible materials (grass, weeds, buildings, roof, etc.) highly combustible, which increases the general fire hazard. High temperatures also make all flammable liquids and gases much more volatile, increasing the fire hazard.

4.3 Therefore, increased regulation of the storage of certain classes of fuels and gases is reasonably necessary to reduce the fire risk associated with the ignition of fuel and gases caused by local conditions.

STATE OF CALIFORNIA)

COUNTY OF FRESNO) ss. CITY OF FRESNO)

I, YVONNE SPENCE, City Clerk of the City of Fresno, certify that the foregoing resolution was adopted by the Council for the City of Fresno, at a regular meeting held on the _____ day of _____ 2019.

AYES : NOES : ABSENT : ABSTAIN :

YVONNE SPENCE, CRM MMC

BY:

Deputy

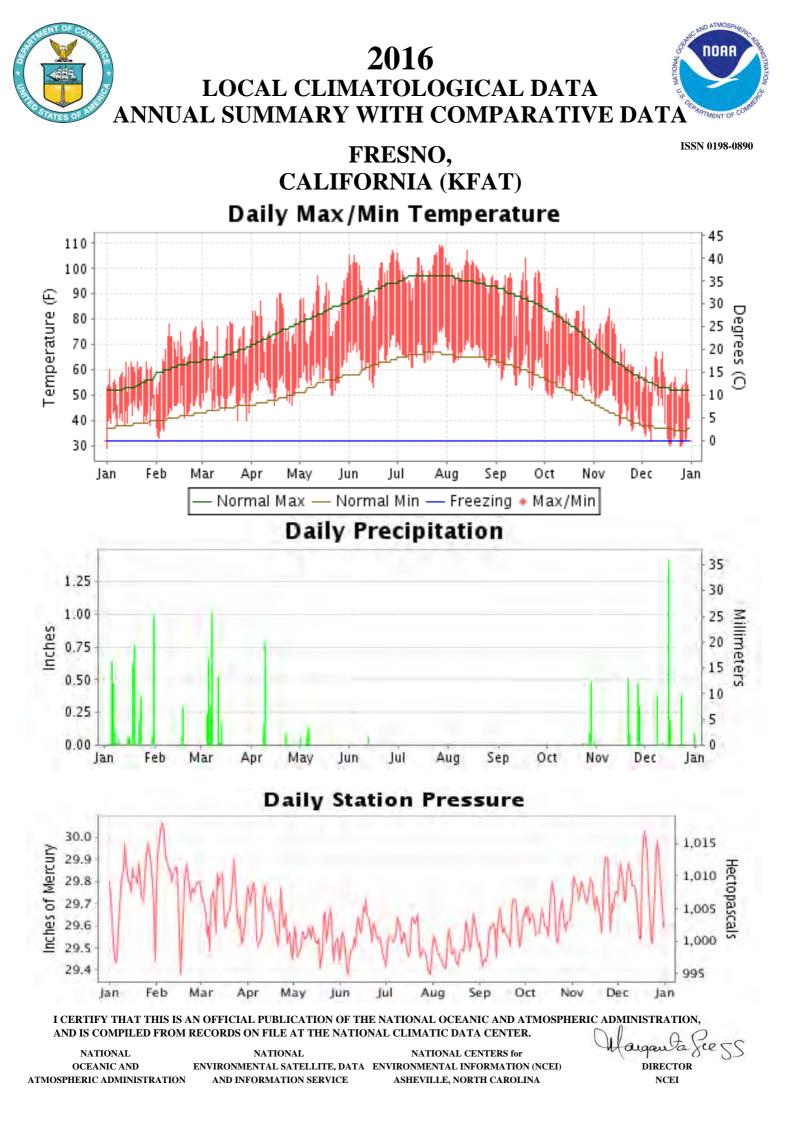
APPROVED AS TO FORM: CITY ATTORNEY'S OFFICE

BY:

Brandon M. Collet Date Senior Deputy City Attorney

Attachment:

 Exhibit "1" – Historical temperature data compiled United States Department of Commerce, National Oceanic and Atmospheric Administration, National Climatic Data Center.



METEOROLOGICAL DATA FOR 2016 FRESNO (KFAT)

	LATITUDE: LONGITUDE: 36° 46'N 119° 43'W		G		TION (I		,			IME ZO ACIFIC	NE: (UTC	(8 - ⁻	v	VBAN: 93193
	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	MEAN DAILY MAXIMUM HIGHEST DAILY MAXIMUM DATE OF OCCURRENCE MEAN DAILY MINIMUM LOWEST DAILY MINIMUM DATE OF OCCURRENCE AVERAGE DRY BULB MEAN WET BULB MEAN DEW POINT NUMBER OF DAYS WITH: MAXIMUM >= 90° MAXIMUM <= 32°	$57.7 \\ 63 \\ 26+ \\ 42.4 \\ 29 \\ 01 \\ 50.0 \\ 46.5 \\ 43.4 \\ 0 \\ 0 $	67.7 78 09 43.4 33 03 55.5 49.5 44.8 0 0	$ \begin{array}{r} 69.2 \\ 79 \\ 18+ \\ 48.2 \\ 40 \\ 29+ \\ 58.7 \\ 52.3 \\ 46.6 \\ 0 \\ 0 \end{array} $	$77.6 \\ 90 \\ 19+ \\ 52.9 \\ 46 \\ 26+ \\ 65.3 \\ 54.5 \\ 45.6 \\ 2 \\ 0$	84.5 98 31 58.2 50 22+ 71.3 57.9 47.2 9 0	96.5 107 28 65.3 53 16 80.9 61.2 45.8 22 0	$ \begin{array}{r} 100.0\\ 109\\ 29+\\ 68.0\\ 61\\ 11+\\ 84.0\\ 63.1\\ 48.1\\ 30\\ 0 \end{array} $	98.3 107 14 66.7 61 27 82.5 62.8 48.7 31 0	91.3 104 19 60.9 52 23 76.1 58.6 44.4 21 0	78.7920954.1481966.455.446.310	68.8 84 11 46.3 36 25 57.6 50.9 45.7 0 0	$55.8 \\ 67 \\ 14+ \\ 38.5 \\ 30 \\ 26+ \\ 47.1 \\ 43.8 \\ 40.5 \\ 0 \\ 0$	78.8 109 JUL 29+ 53.7 29 JAN 01 66.3 54.7 45.6 116 0
C	MINIMUM <= 32° MINIMUM <= 0° HEATING DEGREE DAYS	1 0 456	0 0 268	0 0 189	0 0 47	0 0 10	0 0	0 0	0 0	0 0 2	0 0 23	0 0 226	8 0 544	9 0 1765
H/C	COOLING DEGREE DAYS	450 0	0	1	63	214	487	598	552	344	73	10	0	2342
RH	MEAN (PERCENT) HOUR 04 LST HOUR 10 LST HOUR 16 LST HOUR 22 LST	81 90 77 69 86	72 88 65 51 81	68 86 58 48 74	55 77 44 36 63	47 71 39 27 53	33 55 26 14 38	32 53 25 15 38	35 58 28 15 40	36 56 28 18 42	53 71 43 36 60	70 85 61 54 79	80 90 76 68 85	55 73 48 38 62
0/M	NUMBER OF DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI) THUNDERSTORMS	7 0	2 0	1 2	0 1	0 1	0 1	0 0	0 0	0 0	1 1	3 0	9 0	23 6
PR	MEAN STATION PRESS. (IN.) MEAN SEA-LEVEL PRESS. (IN.)	29.76 30.11	29.82 30.18	29.68 30.03	29.64 29.99	29.54 29.89	29.55 29.89	29.52 29.87	29.51 29.85	29.57 29.91	29.63 29.98	29.74 30.09	29.78 30.14	29.65 29.99
S	RESULTANT SPEED (MPH) RES. DIR. (TENS OF DEGS.) MEAN SPEED (MPH) PREVAIL.DIR.(TENS OF DEGS.) MAXIMUM 2-MINUTE WIND	1.0 09 4.5 10	0.6 05 3.3 11	1.1 35 5.7 11	4.4 31 7.2 32	6.0 31 7.7 31	7.0 30 8.6 31	6.0 31 7.8 30	5.2 31 6.9 31	2.5 31 5.6 31	1.0 29 5.9 31	0.9 32 4.1 11	0.5 02 3.9 30	2.7 32 5.9 31
SUNIW	SPEED (MPH) DIR. (TENS OF DEGS.) DATE OF OCCURRENCE MAXIMUM 3-SECOND WIND: SPEED (MPH) DIR. (TENS OF DEGS.) DATE OF OCCURRENCE	25 15 06 32 14 06	28 09 17 36 08 17	26 29 22 32 30 22	30 31 22 35 29 14	26 30 21 34 25 05	22 30 24 27 30 01	22 31 09 27 32 09	18 29 20 22 01 23	22 31 30 27 30 30	26 18 16 33 14 16	31 27 20 39 27 20	26 29 16 33 29 16	31 27 NOV 20 39 27 NOV 20
PRECIPITATION	WATER EQUIVALENT: TOTAL (IN.) GREATEST 24-HOUR (IN.) DATE OF OCCURRENCE NUMBER OF DAYS WITH: PRECIPITATION 0.01 PRECIPITATION 0.10 PRECIPITATION 1.00	4.42 0.98 31 16 8 0	0.33 0.30 17-18 2 1 0	2.93 1.01 07 7 6 1	1.06 0.95 08-09 4 2 0	0.29 0.23 05-06 3 1 0	0.06 0.06 12 1 0 0	0.00 0.00 0 0 0	0.00 0.00 0 0 0	0.00 0.00 0 0 0	0.67 0.59 27-28 6 2 0	1.38 0.77 26-27 4 4 0	2.51 1.62 15-16 7 4 1	13.65 1.62 DEC 15-16 50 28 2
SNOWFALL	SNOW,ICE PELLETS,HAIL TOTAL (IN.) GREATEST 24-HOUR (IN.) DATE OF OCCURRENCE MAXIMUM SNOW DEPTH (IN.) DATE OF OCCURRENCE	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0
SN	NUMBER OF DAYS WITH: SNOWFALL >= 1.0	0	0	0	0	0	0	0	0	0	0	0	0	0

NORMALS, MEANS, AND EXTREMES FRESNO (KFAT)

	LATITUDE: LONGITUDE: 36° 46'N 119° 43'W			EL	EVATIO): 333 B		,			TIME PACII	ZONE:	U TC -8)		WBAN	N: 93193
	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
	NORMAL DAILY MAXIMUM MEAN DAILY MAXIMUM HIGHEST DAILY MAXIMUM	30 67 67	54.8 54.9 78	61.6 61.8 80	67.6 67.5 91	74.6 74.6 100	84.1 83.6 107	92.0 91.8 110	98.4 98.4 113	97.1 96.5 112	90.9 90.9 111	79.5 79.8 102	65.1 65.4 90	54.9 55.0 77	76.7 76.7 113
۰F	YEAR OF OCCURRENCE MEAN OF EXTREME MAXS.	67	2014 67.6	2014 73.3	2015 80.5	1981 90.2	1984 98.8	2014 105.1	2006 107.2	1996 105.7	1955 102.3	1980 93.7	2010 79.8	2006 67.2	JUL 2006 89.3
	NORMAL DAILY MINIMUM MEAN DAILY MINIMUM LOWEST DAILY MINIMUM	30 67 67	38.3 37.9 19	41.5 41.0 24	45.6 44.2 26	49.4 48.2 32	56.2 54.6 36	62.4 60.8 44	67.6 66.1 50	66.2 64.3 49	61.5 60.0 37	53.0 51.6 27	43.4 42.8 26	38.0 37.5 18	51.9 50.8 18
TEMPERATURE	YEAR OF OCCURRENCE MEAN OF EXTREME MINS. NORMAL DRY BULB	67 30	1963 28.2 46.6	1990 31.7 51.5	1966 34.8 56.6	1982 39.0 62.0	1975 44.9 70.1	1955 51.4 77.2	1955 57.4 83.0	1966 56.9 81.7	1950 51.2 76.2	1972 41.7 66.2	1975 32.8 54.3	1990 28.1 46.5	DEC 1990 41.5 64.3
TEMI	MEAN DRY BULB MEAN WET BULB MEAN DEW POINT	67 33 33	46.4 42.5 42.2	51.4 45.5 44.5	55.8 48.3 47.1	61.4 49.6 47.1	69.1 52.7 49.8	76.4 56.7 53.8	82.2 60.7 57.7	80.4 60.0 57.1	75.4 57.4 54.9	65.7 52.8 50.6	54.1 47.1 45.2	46.2 41.6 41.0	63.7 51.2 49.3
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	1.8	8.7	18.5	28.7	27.1	18.1	3.3	0.0	0.0	106.2
	MAXIMUM <= 32 MINIMUM <= 32 MINIMUM <= 0	30 30 30	0.0 5.6 0.0	0.0 1.6 0.0	0.0 0.1 0.0	$0.0 \\ 0.0 \\ 0.0$	0.0 0.0 0.0	$0.0 \\ 0.0 \\ 0.0$	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.8 0.0	0.0 5.1 0.0	0.0 13.2 0.0
H/C	NORMAL HEATING DEG. DAYS NORMAL COOLING DEG. DAYS	30 30	572 0	377 0	265 5	136 46	30 190	3 369	0 558	0 516	2 338	61 100	325 2	575 0	2346 2124
RH	NORMAL (PERCENT) HOUR 04 LST HOUR 10 LST HOUR 16 LST	30 30 30 30	84 92 85 69	77 90 77 57	70 87 66 49	57 80 51 35	48 71 44 28	43 65 39 24	40 62 38 22	44 66 41 25	49 71 45 28	58 78 52 35	74 88 71 53	83 92 83 67	61 79 58 41
s	HOUR 22 LST	30	89	83	76	62	51	44	42	46	51	63	81	88	65
8 0/M	PERCENT POSSIBLE SUNSHINE MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI) THUNDERSTORMS	46 53 67	47 10.4 0.2	65 4.6 0.4	77 1.3 0.8	85 0.2 0.6	90 0.0 0.6	95 0.0 0.4	97 0.0 0.3	96 0.0 0.3	94 0.0 0.6	88 0.5 0.5	66 4.6 0.3	46 9.9 0.3	79 31.5 5.3
CLOUDINESS	MEAN: SUNRISE-SUNSET (OKTAS) MIDNIGHT-MIDNIGHT (OKTAS) MEAN NO. DAYS WITH: CLEAR PARTLY CLOUDY CLOUDY		0.2	0.1	0.0	0.0	0.0		0.0	0.5	0.0	0.0	0.5	0.0	5.5
PR	MEAN STATION PRESSURE(IN) MEAN SEA-LEVEL PRES. (IN)	33 33	29.80 30.16	29.74 30.09	29.70 30.05	29.65 30.00	29.58 29.93	29.53 29.87	29.53 29.87	29.53 29.87	29.53 29.88	29.63 29.98	29.75 30.10	29.77 30.15	29.65 30.00
	MEAN SPEED (MPH) PREVAIL.DIR(TENS OF DEGS) MAXIMUM 2-MINUTE:	33 41	4.1 12	4.9 32	5.9 32	7.3 32	8.3 31	8.3 31	7.4 31	6.8 31	6.0 31	4.7 31	3.9 31	4.1 12	6.0 31
MINDS	SPEED (MPH) DIR. (TENS OF DEGS) YEAR OF OCCURRENCE MAXIMUM 3-SECOND	21	38 16 2005	36 13 1998	32 31 2007	36 29 1999	32 32 1998	33 30 2012	24 30 2015	26 31 2014	31 29 2013	35 28 2007	31 27 2016	35 28 2008	38 16 JAN 2005
м	SPEED (MPH) DIR. (TENS OF DEGS) YEAR OF OCCURRENCE	21	46 16 2005	43 29 1999	41 18 2006	41 32 2002	39 32 2008	40 31 2012	33 07 2007	41 31 2013	36 29 2013	45 33 2009	39 27 2016	45 01 2011	46 16 JAN 2005
Z	NORMAL (IN) MAXIMUM MONTHLY (IN) YEAR OF OCCURRENCE	30 67	2.19 8.56 1969	2.03 6.12 2000	2.03 7.24 1991	0.95 4.41 1967	0.43 1.65 1990	0.21 1.93 1998	0.01 0.43 2015	0.01 0.25 1964	0.17 1.19 1976	0.63 2.45 2000	1.07 3.50 1972	1.77 6.73 1955	11.50 8.56 JAN 1969
[TATIO]	MINIMUM MONTHLY (IN) YEAR OF OCCURRENCE MAXIMUM IN 24 HOURS (IN)	67 67	0.04 1976 2.74	T 1964 1.99	0.00 1972 2.43	T 2008 1.39	0.00 1982 1.42	0.00 1983 1.80	0.00 1983 0.36	0.00 1981 0.25	0.00 1981 0.97	0.00 1978 1.76	0.00 1959 1.35	0.00 1989 1.82	0.00 DEC 1989 2.74
PRECIPITATION	YEAR OF OCCURRENCE NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01 PRECIPITATION >= 1.00	30 30	2006 7.6 0.2	1969 8.6 0.2	1995 7.5 0.2	1983 4.5 0.1	1990 2.2 0.1	1998 0.7 0.1	2015 0.2 0.0	1964 0.3 0.0	1978 1.0 0.0	1992 2.5 0.1	1953 5.5 0.1	2007 7.5 0.2	JAN 2006 48.1 1.3
╞	NORMAL (IN) MAXIMUM MONTHLY (IN)	30 57	0.0 2.2	0.2 0.0 T	0.2 0.0 T	0.0 T	0.0 T	0.0 T	0.0 0.0 T	0.0	0.0 T	0.0 T	0.0	0.0	0.0
ALL	YEAR OF OCCURRENCE MAXIMUM IN 24 HOURS (IN) YEAR OF OCCURRENCE'	57	1962 1.5 1962	1994 T 1994	2011 T 2011	2010 T 2010	2015 T 2015	2013 T 1995	2013 0.0	2014 0.0	2011 0.0	1974 T 1974	0.0	1968 1.2 1968	JAN 1962 1.5 JAN 1962
SNOWFALL	MAXIMUM SNOW DEPTH (IN) YEAR OF OCCURRENCE NORMAL NO. DAYS WITH:	56	0	0	0	0	0	0	0	0	0	0	0	1968 1 1968	1 DEC 1968
	SNOWFALL >= 1.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PRECIPITATION (inches) 2016 FRESNO (KFAT)

YEAR JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC ANNUAL													
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC	ANNUAL
1987 1988 1989 1990 1991	1.93 1.52 0.48 2.82 0.13	1.36 0.83 1.18 1.33 1.01	2.39 0.27 2.25 0.67 7.24	$\begin{array}{c} 0.07 \\ 2.41 \\ 0.05 \\ 0.92 \\ 0.02 \end{array}$	$\begin{array}{c} 0.87 \\ 0.45 \\ 0.89 \\ 1.65 \\ 0.03 \end{array}$	0.01 0.03 0.00 0.00 T	0.00 0.00 0.00 T 0.00	0.00 0.00 0.03 0.00 T	T 0.00 1.11 0.15 T	$\begin{array}{c} 0.85 \\ 0.00 \\ 0.42 \\ 0.05 \\ 0.80 \end{array}$	$\begin{array}{c} 0.52 \\ 1.42 \\ 0.50 \\ 0.46 \\ 0.04 \end{array}$	1.19 2.46 0.00 0.68 1.22	9.19 9.39 6.91 8.73 10.49
1992 1993 1994 1995 1996	1.94 5.18 1.15 5.42 2.07	4.73 2.44 1.92 0.93 3.57	2.14 1.76 0.52 5.88 1.52	$0.18 \\ 0.20 \\ 1.36 \\ 1.08 \\ 1.17$	T 0.25 1.30 1.19 0.38	T 1.61 0.00 0.66 0.08	0.22 0.00 T 0.01 T	$\begin{array}{c} T \\ 0.00 \\ 0.00 \\ T \\ 0.00 \end{array}$	$\begin{array}{c} T \\ 0.00 \\ 0.20 \\ 0.00 \\ 0.00 \end{array}$	$2.19 \\ 0.12 \\ 0.77 \\ 0.00 \\ 1.97$	T 1.16 1.57 T 1.94	2.68 1.03 1.33 2.12 4.27	14.08 13.75 10.12 17.29 16.97
1997 1998 1999 2000 2001	3.53 3.40 2.82 3.15 2.66	$\begin{array}{c} 0.17 \\ 4.89 \\ 1.18 \\ 6.12 \\ 2.22 \end{array}$	$\begin{array}{c} 0.10 \\ 3.44 \\ 0.49 \\ 1.35 \\ 0.96 \end{array}$	T 1.26 0.93 1.16 1.87	T 1.37 0.03 0.05 0.00	$\begin{array}{c} 0.01 \\ 1.93 \\ 0.20 \\ 0.56 \\ 0.00 \end{array}$	$\begin{array}{c} T \\ 0.00 \\ 0.00 \\ 0.00 \\ 0.08 \end{array}$	0.00 0.00 0.01 T 0.00	0.15 0.15 T 0.32 T	0.07 0.16 T 2.45 0.29	$2.66 \\ 0.43 \\ 0.48 \\ 0.01 \\ 1.99$	0.99 0.62 0.03 0.07 1.95	7.68 17.65 6.17 15.24 12.02
2002 2003 2004 2005 2006	$\begin{array}{c} 0.76 \\ 0.40 \\ 0.88 \\ 2.42 \\ 3.40 \end{array}$	0.40 1.22 1.69 2.30 0.54	0.95 0.63 1.54 2.51 4.73	0.21 2.84 0.03 0.56 3.27	$\begin{array}{c} 0.38 \\ 0.68 \\ 0.07 \\ 1.62 \\ 0.36 \end{array}$	$\begin{array}{c} 0.02 \\ 0.00 \\ 0.00 \\ 0.01 \\ 0.00 \end{array}$	0.00 T 0.00 0.00 T	0.00 0.04 0.00 T 0.00	$\begin{array}{c} T \\ T \\ 0.00 \\ 0.04 \\ 0.00 \end{array}$	0.00 T 2.45 0.05 0.08	$1.78 \\ 0.40 \\ 0.81 \\ 0.17 \\ 0.23$	2.25 2.93 3.16 2.00 1.33	6.75 9.14 10.63 11.68 13.94
2007 2008 2009 2010 2011	0.59 3.32 1.02 2.05 1.71	2.29 2.12 2.43 2.94 1.60	$\begin{array}{c} 0.97 \\ 0.02 \\ 0.24 \\ 0.96 \\ 3.46 \end{array}$	0.49 T 0.72 2.19 0.32	$0.05 \\ 0.30 \\ 0.46 \\ 0.21 \\ 0.35$	$\begin{array}{c} 0.00 \\ 0.00 \\ 0.20 \\ 0.00 \\ 1.91 \end{array}$	T 0.01 0.00 T T	$\begin{array}{c} 0.02 \\ 0.00 \\ T \\ 0.00 \\ 0.00 \end{array}$	0.02 0.00 0.01 0.00 T	$\begin{array}{c} 0.20 \\ 0.23 \\ 1.39 \\ 0.44 \\ 0.90 \end{array}$	$\begin{array}{c} 0.09 \\ 1.37 \\ 0.20 \\ 1.80 \\ 0.67 \end{array}$	2.31 1.09 2.41 5.92 0.00	7.03 8.46 9.08 16.51 10.92
2012 2013 2014 2015 2016	1.38 0.58 0.57 0.21 4.42	$\begin{array}{c} 0.75 \\ 0.89 \\ 2.11 \\ 1.13 \\ 0.33 \end{array}$	$2.43 \\ 0.65 \\ 0.62 \\ 0.06 \\ 2.93$	$2.02 \\ 0.09 \\ 0.74 \\ 1.25 \\ 1.06$	$\begin{array}{c} 0.00 \\ 0.07 \\ 0.04 \\ 0.57 \\ 0.29 \end{array}$	T T 0.00 0.01 0.06	T T 0.01 0.43 0.00	T T 0.00 0.00	$\begin{array}{c} 0.00 \\ 0.01 \\ 0.18 \\ 0.12 \\ 0.00 \end{array}$	$\begin{array}{c} 0.25 \\ 0.03 \\ 0.50 \\ 0.49 \\ 0.67 \end{array}$	$1.11 \\ 0.54 \\ 0.40 \\ 1.74 \\ 1.38$	2.03 0.15 2.29 2.97 2.51	9.97 3.01 7.46 8.98 13.65
POR= 67 YRS	2.07	1.87	1.81	1.03	0.35	0.16	0.02	0.01	0.15	0.52	1.14	1.67	10.80
												WBA	N : 93193

AVERAGE TEMPERATURE (°F) 2016 FRESNO (KFAT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC	ANNUAL
1987	45.3	52.8	55.6	66.7	71.8	78.4	77.0	80.2	75.5	70.1	52.3	44.2	64.2
1988	46.0	52.2	56.8	61.6	67.0	75.6	85.5	81.2	76.4	68.7	54.3	44.5	64.2
1989	42.9	48.8	57.9	67.3	69.6	77.0	82.5	79.3	74.3	65.3	54.3	43.8	63.6
1990	45.5	48.0	57.3	65.7	68.1	76.8	84.0	80.6	75.8	67.7	52.9	41.5	63.7
1991	47.0	55.8	51.5	59.5	66.1	74.7	83.8	78.6	79.9	70.5	55.8	47.0	64.2
1992	42.7	55.5	58.8	66.8	76.0	77.0	81.3	83.2	77.0	68.6	54.3	45.3	65.5
1993	47.1	51.9	60.3	61.7	69.9	75.7	80.2	79.7	75.7	67.8	53.9	45.6	64.1
1994	46.9	49.9	59.3	63.2	68.5	77.7	83.3	82.3	75.4	64.8	48.1	45.3	63.7
1995	51.9	54.1	56.2	60.7	66.2	73.3	80.7	82.6	76.3	66.8	58.7	50.5	64.8
1996	48.3	54.2	57.2	63.6	69.9	77.8	85.4	83.4	74.8	64.1	53.9	49.1	65.1
1997	48.7	50.3	60.0	63.5	75.3	75.8	81.3	80.6	77.3	63.8	56.9	44.7	64.9
1998	49.0	50.0	55.5	59.0	62.0	71.5	82.1	84.1	75.8	63.1	53.1	42.8	62.3
1999	44.7	49.9	53.5	58.5	68.0	75.9	80.6	78.4	77.3	68.7	56.9	47.0	63.3
2000	50.2	53.8	56.5	64.2	71.0	79.8	78.8	81.2	74.5	63.9	49.2	47.8	64.2
2001	46.2	48.7	58.8	58.6	77.3	79.7	81.6	81.9	77.0	68.5	56.4	47.4	65.2
2002	45.0	52.2	55.1	62.8	69.6	78.1	84.1	80.0	77.1	65.2	56.2	49.3	64.6
2003	50.6	51.1	58.1	58.6	69.5	78.4	86.5	81.4	79.2	69.8	52.2	49.3	65.4
2004	46.6	50.5	62.6	65.8	70.9	77.4	83.3	81.3	75.9	64.1	51.7	46.5	64.7
2005	47.4	54.4	57.8	59.6	69.4	73.6	86.8	84.0	73.9	65.9	57.6	51.0	65.1
2006	48.7	52.4	50.1	59.7	71.9	80.7	87.9	80.2	75.8	64.0	55.4	47.1	64.5
2007	43.7	51.4	60.3	63.0	71.5	78.0	83.2	82.8	73.7	64.4	57.4	45.5	64.6
2008	47.0	51.1	57.0	61.7	70.3	79.1	83.8	84.1	78.0	67.1	57.5	44.9	65.1
2009	47.7	51.5	56.0	62.0	75.3	75.7	85.0	81.8	79.7	63.7	54.1	47.2	65.0
2010	48.6	52.2	55.5	57.7	65.2	77.6	83.1	79.9	76.9	68.0	53.8	50.9	64.1
2011	46.6	49.2	55.4	60.7	65.1	75.0	82.0	82.4	80.3	68.0	53.5	45.6	63.7
2012	49.3	52.7	56.2	63.0	72.4	77.9	83.4	86.6	81.4	69.1	58.3	50.9	66.8
2013	47.1	51.0	62.1	67.6	73.0	80.9	87.1	83.0	77.9	66.6	58.5	47.3	66.8
2014	53.2	56.8	62.4	66.8	74.2	80.9	86.9	84.4	80.7	72.0	57.7	51.9	69.0
2015	49.0	57.0	64.0	64.3	68.5	82.0	83.1	82.4	78.7	71.3	52.0	45.8	66.5
2016	50.0	55.5	58.7	65.3	71.3	80.9	84.0	82.5	76.1	66.4	57.6	47.1	66.3
POR= 67 YRS	46.4	51.4	55.8	61.4	69.1	76.4	82.2	80.4	75.4	65.7	54.1	46.2	63.7

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HEATING DEGREE DAYS (base 65°F) 2016 FRESNO (KFAT)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1987-88 1988-89 1989-90 1990-91 1991-92	0 0 0 0 0	0 0 0 0 0	0 0 7 0 0	7 20 73 17 81	374 316 310 356 276	636 629 649 722 551	583 679 598 549 683	366 450 470 253 267	251 213 236 412 183	124 52 35 163 25	69 14 19 65 0	12 0 1 0 1	2422 2373 2398 2537 2067
1992-93 1993-94 1994-95 1995-96 1996-97	0 0 0 0 0	0 0 0 0 0	0 0 0 0	18 12 58 30 148	316 326 500 184 329	602 595 602 444 486	549 553 398 513 500	359 414 298 304 405	145 168 269 238 169	113 97 146 99 97	9 37 60 8 2	12 0 16 0 0	2123 2202 2347 1820 2136
1997-98 1998-99 1999-00 2000-01 2001-02	0 0 0 0 0	0 0 0 0 0	0 7 0 0	92 79 14 103 23	246 351 235 466 251	621 682 550 526 538	490 619 452 577 610	412 418 317 451 352	293 348 259 208 310	226 227 72 222 109	104 35 27 0 30	7 12 3 0 0	2491 2778 1929 2553 2223
2002-03 2003-04 2004-05 2005-06 2006-07	0 0 0 0 0	0 0 0 0 0	0 6 0 2	67 24 124 41 56	256 378 391 217 283	477 482 566 424 546	440 565 537 500 654	382 413 291 345 373	216 113 217 456 158	191 64 158 170 117	49 3 30 9 19	$\begin{array}{c} 0 \\ 0 \\ 1 \\ 0 \\ 1 \end{array}$	2078 2042 2321 2162 2209
2007-08 2008-09 2009-10 2010-11 2011-12	0 0 0 0 0	0 0 0 0 0	6 0 2 0 0	59 39 87 40 29	223 219 322 346 338	600 616 544 432 595	552 531 500 563 478	396 369 352 438 352	243 274 289 292 268	149 145 227 138 129	20 0 62 67 6	0 0 7 2	2248 2193 2385 2323 2197
2012-13 2013-14 2014-15 2015-16 2016-	0 0 0 0 0	0 0 0 0 0	$\begin{array}{c} 0\\ 0\\ 0\\ 0\\ 2 \end{array}$	38 32 5 5 23	205 189 216 385 226	432 540 401 587 544	545 361 487 456	386 223 217 268	107 88 83 189	42 68 85 47	4 3 25 10	0 0 0 0	1759 1504 1519 1947

WBAN : 93193

COOLING DEGREE DAYS (base 65°F) 2016 FRESNO (KFAT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC	TOTAL
1987 1988 1989 1990 1991	0 0 0 0 0	0 0 0 0 0	$\begin{array}{c} 0\\ 3\\ 4\\ 2\\ 0 \end{array}$	114 28 129 61 6	243 139 166 122 107	409 338 366 360 298	379 642 546 595 588	480 511 449 490 428	323 349 291 333 454	172 143 90 108 259	0 3 0 0 5	0 0 0 0	2120 2156 2041 2071 2145
1992 1993 1994 1995 1996	0 0 0 0 0	0 0 0 0 0	$ \begin{array}{c} 0 \\ 3 \\ 1 \\ 0 \\ 4 \end{array} $	88 20 52 25 66	350 168 151 104 162	366 342 389 273 389	511 476 576 494 640	572 462 547 551 579	365 331 318 347 300	135 105 59 91 125	0 0 0 0 0	0 0 0 0	2387 1907 2093 1885 2265
1997 1998 1999 2000 2001	0 0 0 0	0 0 0 0 0	18 6 0 20	61 50 39 54 37	330 18 135 217 389	334 210 348 454 447	514 536 487 434 521	492 600 423 509 533	373 338 373 291 365	61 25 135 81 137	$\begin{array}{c}11\\0\\0\\0\\0\end{array}$	0 0 0 0	2194 1783 1940 2040 2449
2002 2003 2004 2005 2006	0 0 0 0 0	0 0 0 0 0	$9 \\ 7 \\ 45 \\ 4 \\ 0$	50 5 97 2 20	180 192 188 170 231	400 406 376 266 478	599 671 576 682 715	472 518 514 597 475	372 431 341 271 337	81 180 99 79 31	$ \begin{array}{c} 0 \\ 0 \\ 2 \\ 1 \end{array} $	0 0 0 0	2163 2410 2236 2073 2288
2007 2008 2009 2010 2011	0 0 0 0 0	0 0 0 0 0	$20 \\ 0 \\ 1 \\ 0 \\ 1$	64 54 62 15 18	229 192 330 72 81	396 431 328 386 315	569 592 628 563 535	560 599 527 470 546	274 394 451 364 466	50 114 53 144 128	0 1 3 17 0	0 0 0 0	2162 2377 2383 2031 2090
2012 2013 2014 2015 2016	0 0 0 0	0 0 0 0	2 23 12 58 1	77 124 132 70 63	242 260 299 145 214	391 483 485 513 487	577 691 687 568 598	677 565 606 545 552	495 394 479 418 344	172 85 230 205 73	$ \begin{array}{c} 11 \\ 0 \\ 2 \\ 2 \\ 10 \end{array} $	0 0 0 0 0	2644 2625 2932 2524 2342

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SNOWFALL (inches) 2016 FRESNO (KFAT)

YEAR JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN TOTAL													
YEAR	JUL	AUG	SEP	ОСТ	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1988-89 1989-90 1990-91 1991-92 1992-93	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 0.0 T 0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	T T 0.0 T 0.0	0.0 0.0 T 0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	T T T 0.0
1993-94 1994-95 1995-96 1996-97 1997-98	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 0.0 0.0 T 0.0	0.0 T 0.0 0.0 0.0	T 0.0 T 0.0 T	0.0 0.0 0.0 0.0 T	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 T 0.0 0.0 0.0	T T T T T
1998-99 1999-00 2000-01 2001-02 2002-03	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.5 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	T 0.0 0.0 0.0 0.0	$\begin{array}{c} T \\ T \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 0.0 T 0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.5 T T 0.0 0.0
2003-04 2004-05 2005- 2006-07 2007-08	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 T 0.0 0.0 0.0	$\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\end{array}$	0.0 0.0 T 0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 T T 0.0 0.0
2008-09 2009-10 2010-11 2011-12 2012-13	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\end{array}$	T 0.0 0.0 0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 0.0 T 0.0 0.0	0.0 T 0.0 0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	T T 0.0 0.0
2013- 2013-14 2014-15 2015-16 2016-	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$0.0 \\ 0.0 \\ 0.0$	$0.0 \\ 0.0 \\ 0.0$	$0.0 \\ 0.0 \\ 0.0$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 T 0.0	$0.0 \\ 0.0 \\ 0.0$	0.0 T 0.0
POR= 67 YRS	0.0	0.0	0.0	Т	0.0	Т	Т	Т	Т	Т	Т	Т	Т
												WBA	N:93193

REFERENCE NOTES:

PAGE 1

THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL

MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE

ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS). PAGE 2 AND 3:

H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY

W/O INDICATES WEATHER AND OBSTRUCTIONS

S INDICATES SUNSHINE.

PR INDICATES PRESSURE.

CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS). GENERAL:

T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY

BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED.

0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05.

CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET

CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. GENERAL CONTINUED:

WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36' INDICATES TRUE NORTH.

RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION.

AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN

PRECIPITATION, INCLUDING HAIL.

A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65 F.

DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR.

DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY.

WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY

ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.

STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED SATION HISTORY INFORMATION GO TO "Historical Observing Metadata Repository", URL IS:

http://www.ncdc.noaa.gov/homr/ SNOWFALL STOPPED MONTH & YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.

NOTE:

The "Period of Record:(POR)" for all "averages" is based on "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.

2016 FRESNO CALIFORNIA (KFAT)

Fresno is located about midway and toward the eastern edge of the San Joaquin Valley, which is oriented northwest to southeast and has a length of about 225 miles and an average width of 50 miles. The San Joaquin Valley is generally flat. About 15 miles east of Fresno the terrain slopes upward with the foothills of the Sierra Nevada. The Sierra Nevada attain an elevation of more than 14,000 feet 50 miles east of Fresno. West of the city 45 miles lie the foothills of the Coastal Range.

The climate of Fresno is dry and mild in winter and hot in summer. Nearly nine-tenths of the annual precipitation falls in the six months from November to April.

Due to clear skies during the summer and the protection of the San Joaquin Valley from marine effects, the normal daily maximum temperature reaches the high 90s during the latter part of July. The daily maximum temperature during the warmest month has ranged from 76 to 115 degrees. Low relative humidities and some wind movement substantially lower the sensible temperature during periods of high readings. Humidity readings of 15 percent are common on summer afternoons, and readings as low as 8 percent have been recorded. In contrast to this, humidity readings average 90 percent during the morning hours of December and January.

Winds flow with the major axis of the San Joaquin Valley, generally from the northwest. This feature is especially beneficial since, during the warmest months, the northwest winds increase during the evenings. These refreshing breezes and the normally large temperature variation of about 35 degrees between the highest and lowest readings of the day, generally result in comfortable evening and night temperatures. Winter temperatures are usually mild with infrequent cold spells dropping the readings below freezing. Heavy frost occurs almost every year, and the first frost usually occurs during the last week of November. The last frost in spring is usually in early March, however, one year in five will have the last frost after the first of April. The growing season is 291 days.

Although the heaviest rains recorded at Fresno for short periods have occurred in June, usually any rainfall during the summer is very light. Snow is a rare occurrence in Fresno.

Fresno enjoys a very high percentage of sunshine, receiving more than 80 percent of the possible amounts during all but the four months of November, December, January, and February. Reduction of sunshine during these months is caused by fog and short periods of stormy weather.

During foggy periods, at times lasting nearly two weeks, sunshine is reduced to a minimum. This fog frequently lifts to a few hundred feet above the surface of the valley and presents the appearance of a heavy, solid cloud layer.

Spring and autumn are very enjoyable seasons in Fresno, with clear skies, light rainfall and winds and mild temperatures.

Station History FRESNO, CA

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
FRESNO AIR TERMINAL FRESNO AIR TERMINAL FRESNO YOSEMITE INTL AP FRESNO YOSEMITE INTL AP FRESNO AIR TERMINAL FRESNO AIR TERMINAL FRESNO AIR TERMINAL FRESNO AIR TERMINAL FRESNO AIR TERMINAL FRESNO AIR TERMINAL FRESNO AIR TERMINAL	1949-08-31 1961-09-01 1995-11-15 2010-06-24 1949-08-01 1961-01-01 2016-08-22 1985-02-01 1993-11-10 1995-09-01 1947-10-01 1978-01-01	1961-01-01 1978-01-01 2010-06-24 2016-08-22 1949-08-20 1961-09-01 Present 1993-11-10 1995-09-01 1995-09-01 1995-11-15 1949-08-01 1949-08-31	36° 46' 36° 46'	-119° 42' -119° 43' -119° 42'	338 328 333 333 338 328 333 336 336 336 336 336 333 328 338	.9 MI W 1 MI NNE .5 MI WSW 7 MI ENE	AIRWAYS, COOP, USHCN AIRWAYS, COOP, USHCN ASOS, COOP, USHCN ASOS, COOP, USHCN AIRWAYS AIRWAYS, COOP, USHCN COOP, USHCN, WXSVC COOP, USHCN, WXSVC ASOS, COOP, USHCN AIRWAYS COOP, USHCN, WXSVC AIRWAYS, COOP, USHCN

Element History

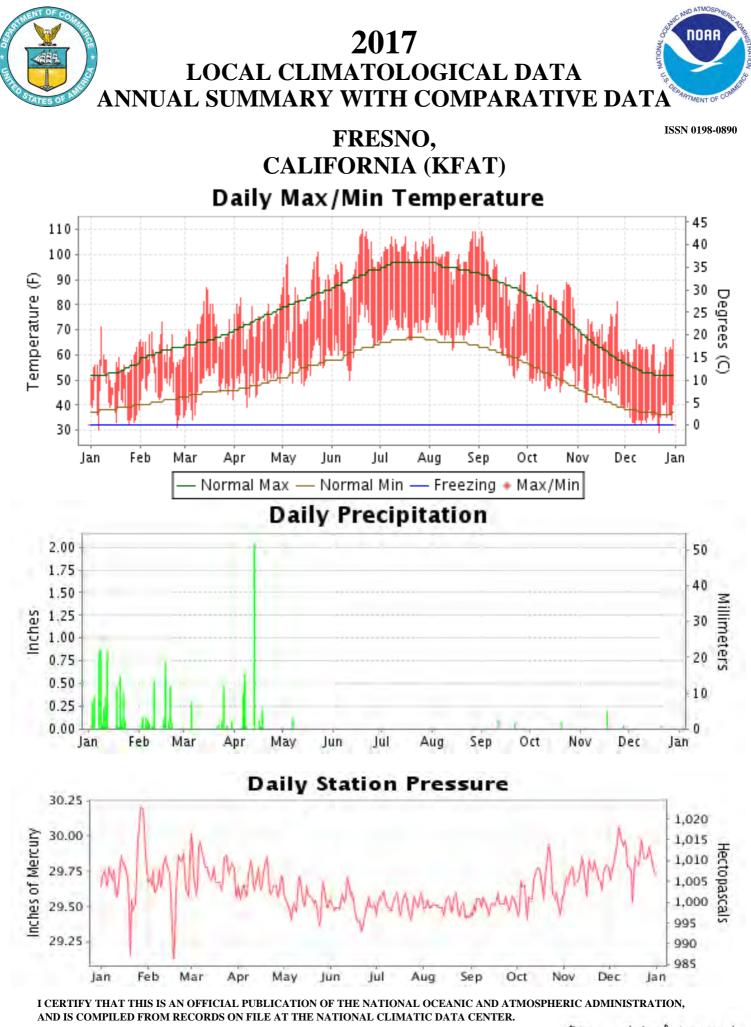
Element	Begin	End	Frequency	Time Of	Equipment *	Equipment *	Equipment
	Date	Date		Observation		Modifications	Exposure
							-
MAX/MINTEM	1969-04-01	1982-01-01	DAILY	0800	PALMER		
TEMP	1969-04-01	1982-01-01	DAILY	2400			
TEMP	1982-01-01	1985-02-01	DAILY	2400			
PRECIP	1985-02-01	1995-07-01	HOURLY	2400			
TEMP	1995-09-01	2000-08-23	DAILY	2400	HYGR		
PRECIP	2007-04-03	2010-06-24	DAILY	2400	AHTB	RCRD; HTD	
WIND	2010-06-24	Present	HOURLY	UNKN	ANEMSONIC	-	
MAX/MINTEM	1969-04-01	1982-01-01	DAILY	0800	PALMER		
PRECIP	1985-02-01	1995-07-01	DAILY	2400	UNIV	RCRD	
TEMP	2000-08-23	2000-08-24	DAILY	2400			
PRECIP	2001-06-04	2007-04-03	HOURLY	2400	AHTB	RCRD; HTD	
WIND	2007-04-03	2010-06-24	HOURLY	UNKN	ANEMSONIC		
PRECIP	2007-04-03	2010-06-24	HOURLY	2400	AHTB	RCRD; HTD	
PRECIP	1969-04-01	1982-01-01	DAILY	2400	UNIV	RCRD	
TEMP	1985-02-01	1995-07-01	DAILY	2400	MXMN		
PRECIP	2000-08-23	2001-06-04	HOURLY	2400	TB	RCRD	
PRECIP	2010-06-24	Present	HOURLY	2400	AWPAG	RCRD; HTD	
PRECIP	2010-06-24	2016-08-22	HOURLY	VAR	AWPAG	RCRD; HTD	
PRECIP	1947-10-01	1969-04-01	DAILY	2400	UNIV	RCRD	
PRECIP	1995-07-01	1995-09-01	HOURLY	2400	UNIV	RCRD	
PRECIP	2010-06-24	Present	DAILY	2400	PCPNX		
WIND	1995-09-01	2000-08-23	HOURLY	UNKN	ANEMCUP		
PRECIP	1995-09-01	2000-08-23	DAILY	2400	ТВ	RCRD	
PRECIP	2000-08-23	2001-06-04	DAILY	2400	TB	RCRD	
WIND	2000-08-23	2001-06-04	HOURLY	UNKN	ANEMCUP	itene	
TEMP	2001-06-04	2007-04-03	DAILY	2400	ATEMP		
TEMP	2010-06-24	2016-08-22	DAILY	1700	ATEMP		
TEMP	1947-10-01	1969-04-01	DAILY	2400			
MAX/MINTEM	1982-01-01	1985-02-01	DAILY	0800	PALMER		
PRECIP	2001-06-04	2007-04-03	DAILY	2400	AHTB	RCRD; HTD	
TEMP	2010-06-24	Present	DAILY	2400	ATEMP	none, mp	
PRECIP	1982-01-01	1985-02-01	HOURLY	2400			
TEMP	2007-04-03	2010-06-24	DAILY	2400	ATEMP		
PRECIP	1982-01-01	1985-02-01	DAILY	2400	UNIV	RCRD	
MAX/MINTEM	1982-01-01	1985-02-01	DAILY	0800	PALMER		
PRECIP	1995-07-01	1995-09-01	DAILY	2400	UNIV	RCRD	
TEMP	1995-07-01	1995-09-01	DAILY	2400	MXMN	I.C.I.D	
PRECIP	1995-09-01	2000-08-23	HOURLY	2400	TB	RCRD	
TEMP	2000-08-23	2000-08-23	DAILY	2400	HYGR	I.C.I.D	
WIND	2000-08-23	2001-08-04	HOURLY	UNKN	ANEMCUP		1
WIND	700T-00-04	2007-04-03	noonur	UIVIUN	FIGHTOF		

* For explanation of codes and abbrevitions see Station Metadata link below.

Other Station Information can be found at: ASOS Implementation by NWS: http://www.nws.noaa.gov/ops2/Surface/asosimplementation.htm Station Metadata website: http://www.ncdc.noaa.gov/homr

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Nary I Wohlpente DIRECTOR NCEI

METEOROLOGICAL DATA FOR 2017 FRESNO (KFAT)

	LATITUDE: LONGITUDE: 36° 46'N 119° 43'W		G		TION (I		,			IME ZO ACIFIC	NE: (UTC	(8-	W	/BAN: 93193
	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	MEAN DAILY MAXIMUM HIGHEST DAILY MAXIMUM DATE OF OCCURRENCE MEAN DAILY MINIMUM LOWEST DAILY MINIMUM DATE OF OCCURRENCE AVERAGE DRY BULB MEAN WET BULB MEAN DEW POINT NUMBER OF DAYS WITH: MAXIMUM >= 90°	$55.6 \\ 71 \\ 08 \\ 40.5 \\ 30 \\ 06 \\ 48.1 \\ 45.0 \\ 41.5 \\ 0$	61.7 73 15 46.1 31 24 53.9 49.6 45.3 0	70.3 87 14 47.2 34 06 58.8 52.4 46.9 0	73.8 84 30 50.3 39 09 62.1 53.1 45.0 0	84.0 101 23 57.9 48 14 71.0 58.1 47.9 12	95.1 110 20 65.9 50 12 80.5 63.8 52.2 23	101.9 107 17+ 71.1 65 01 86.5 65.6 51.5 31	99.5 109 29+ 70.9 62 15 85.2 67.0 56.3 30	90.1 109 02 64.2 51 23 77.2 62.3 51.9	79.9 89 25 51.4 45 21 65.7 53.4 42.7 0	68.3 81 26 47.6 39 30+ 58.0 51.9 46.5 0	$ \begin{array}{r} 60.5 \\ 66 \\ 31+ \\ 35.5 \\ 29 \\ 22 \\ 48.0 \\ 41.7 \\ 35.5 \\ 0 \\ \end{array} $	78.4 110 JUN 20 54.1 29 DEC 22 66.3 55.3 46.9
	MAXIMUM >= 90 MAXIMUM <= 32° MINIMUM <= 32° MINIMUM <= 0°	0 2 0	0 1 0	0 0 0	0 0 0	$\begin{array}{c} 12\\ 0\\ 0\\ 0\\ \end{array}$	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 4 0	112 0 7 0
H/C	HEATING DEGREE DAYS COOLING DEGREE DAYS	514 0	305 0	202 17	94 13	26 221	4 477	0 674	0 637	4 375	45 72	209 4	523 0	1926 2490
RH	MEAN (PERCENT) HOUR 04 LST HOUR 10 LST HOUR 16 LST HOUR 22 LST	80 88 76 69 86	75 86 70 61 79	68 88 60 46 78	59 81 49 38 67	48 72 41 28 54	41 64 33 22 48	33 53 28 16 38	41 63 34 22 47	46 68 37 25 52	49 71 37 30 57	69 84 59 53 78	67 85 57 47 75	56 75 48 38 63
O/M	NUMBER OF DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI) THUNDERSTORMS	3 1	1 0	1 0	0 1	0 0	0 0	0 0	0 0	0 1	0 0	2 0	2 0	9 3
PR	MEAN STATION PRESS. (IN.) MEAN SEA-LEVEL PRESS. (IN.)	29.74 30.10	29.68 30.03	29.75 30.11	29.67 30.02	29.54 29.89	29.50 29.84	29.53 29.87	29.49 29.83	29.52 29.86	29.63 29.98	29.72 30.08	29.85 30.20	29.64 29.98
MINDS	RESULTANT SPEED (MPH) RES. DIR. (TENS OF DEGS.) MEAN SPEED (MPH) PREVAIL.DIR.(TENS OF DEGS.) MAXIMUM 2-MINUTE WIND SPEED (MPH) DIR. (TENS OF DEGS.)	3.0 12 5.5 11 25 12	2.2 11 6.9 12 24 15	1.4 33 5.4 11 36 29	4.0 31 8.2 31 29 31	4.6 31 7.9 31 26 31	7.1 31 8.3 31 29 30	5.4 31 7.4 31 20 31	4.9 31 6.9 30 17 31	4.1 31 6.3 32 25 12	1.4 31 4.1 32 28 32	0.2 03 4.1 11 23 29	0.4 02 2.7 11 25 30	2.3 32 6.1 31 36 29
Δ	DATE OF OCCURRENCE MAXIMUM 3-SECOND WIND: SPEED (MPH) DIR. (TENS OF DEGS.) DATE OF OCCURRENCE	20 33 12 20	17 30 28 22	30 42 29 30	28 38 06 13	05 36 31 05	11 38 28 11	18 30 36 19	06 23 32 14	03 32 32 21	20 37 31 20	27 29 30 27	20 31 30 20	MAR 30 42 29 MAR 30
PRECIPITATION	WATER EQUIVALENT: TOTAL (IN.) GREATEST 24-HOUR (IN.) DATE OF OCCURRENCE NUMBER OF DAYS WITH: PRECIPITATION 0.01 PRECIPITATION 0.10 PRECIPITATION 1.00	5.50 0.94 08-09 14 11 0	2.52 0.73 17 12 7 0	1.08 0.57 24-25 7 2 0	3.42 2.04 13 7 4 1	0.12 0.12 07 1 1 0	0.00 0.00 0 0 0	0.00 0.00 0 0 0	T T 30+ 0 0 0	0.16 0.10 11 2 1 0	0.09 0.09 20 1 0 0	0.28 0.21 17 4 1 0	0.04 0.04 20 1 0 0	13.21 2.04 APR 13 49 27 1
SNOWFALL	SNOW,ICE PELLETS,HAIL TOTAL (IN.) GREATEST 24-HOUR (IN.) DATE OF OCCURRENCE MAXIMUM SNOW DEPTH (IN.) DATE OF OCCURRENCE	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	T T 13 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	T T APR 13 0
S	NUMBER OF DAYS WITH: SNOWFALL >= 1.0	0	0	0	0	0	0	0	0	0	0	0	0	0

NORMALS, MEANS, AND EXTREMES FRESNO (KFAT)

	LATITUDE: LONGITUDE: 36° 46'N 119° 43'W			EL	EVATIO 0:333 B	N (FT):				TIME PACII	ZONE:	UTC -8)		WBAN	N: 93193
	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
	NORMAL DAILY MAXIMUM MEAN DAILY MAXIMUM HIGHEST DAILY MAXIMUM	30 68 68	54.8 55.0 78	61.6 61.8 80	67.6 67.5 91	74.6 74.6 100	84.1 83.6 107	92.0 91.9 110	98.4 98.4 113	97.1 96.6 112	90.9 90.8 111	79.5 79.8 102	65.1 65.5 90	54.9 55.1 77	76.7 76.7 113
۰F	YEAR OF OCCURRENCE MEAN OF EXTREME MAXS.	68	2014 67.6	2014 73.3	2015 80.6	1981 90.1	1984 98.8	2017 105.2	2006 107.2	1996 105.7	1955 102.4	1980 93.6	2010 79.8	2006 67.2	JUL 2006 89.3
	NORMAL DAILY MINIMUM MEAN DAILY MINIMUM	30 68	38.3 37.9	41.5 41.0	45.6 44.2	49.4 48.2	56.2 54.6	62.4 60.9	67.6 66.2	66.2 64.4	61.5 60.1	53.0 51.6	43.4 42.8	38.0 37.4	51.9 50.8
TEMPERATURE	LOWEST DAILY MINIMUM	68	19	24	26	32	36	44	50	49	37	27	26	18	18
RA	YEAR OF OCCURRENCE MEAN OF EXTREME MINS.	68	1963 28.2	1990 31.7	1966 34.8	1982 39.0	1975 45.0	1955 51.4	1955 57.5	1966 56.9	1950 51.2	1972 41.7	1975 32.9	1990 28.1	DEC 1990 41.5
IPE	NORMAL DRY BULB	30	46.6	51.5	56.6	62.0	70.1	77.2	83.0	81.7	76.2	66.2	54.3	46.5	64.3
EV	MEAN DRY BULB MEAN WET BULB	68 34	46.4 42.5	51.4 45.5	55.9 48.2	61.4 49.4	69.1 52.6	76.4 56.5	82.3 60.5	80.5 59.9	75.5 57.2	65.7 52.5	54.2 47.0	46.3 41.4	63.8 51.1
	MEAN DEW POINT NORMAL NO. DAYS WITH:	34	42.3	44.6	47.2	47.3	50.1	54.1	58.0	57.4	55.1	50.7	45.4	41.0	49.4
	MAXIMUM >= 90 MAXIMUM <= 32	30 30	$0.0 \\ 0.0$	0.0	0.0 0.0	1.8 0.0	8.7 0.0	18.5 0.0	28.7 0.0	27.1	18.1 0.0	3.3 0.0	0.0 0.0	0.0 0.0	106.2 0.0
	MAXIMUM <= 32 MINIMUM <= 32	30	0.0 5.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	13.2
	MINIMUM <= 0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H/C	NORMAL HEATING DEG. DAYS NORMAL COOLING DEG. DAYS	30 30	572 0	377 0	265 5	136 46	30 190	3 369	0 558	0 516	2 338	61 100	325 2	575 0	2346 2124
	NORMAL (PERCENT) HOUR 04 LST	30 30	84 92	77 90	70 87	57 80	48 71	43 65	40 62	44 66	49 71	58 78	74 88	83 92	61 79
RH	HOUR 10 LST	30	85	77	66	51	44	39	38	41	45	52	71	83	58
	HOUR 16 LST HOUR 22 LST	30 30	69 89	57 83	49 76	35 62	28 51	24 44	22 42	25 46	28 51	35 63	53 81	67 88	41 65
s	PERCENT POSSIBLE SUNSHINE	46	47	65	77	85	90	95	97	96	94	88	66	46	79
0/M	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI) THUNDERSTORMS	54 68	10.3 0.2	4.6 0.4	1.3 0.8	0.2 0.6	0.0 0.6	0.0 0.4	0.0 0.3	0.0 0.2	0.0 0.6	0.5 0.5	4.6 0.2	9.8 0.3	31.3 5.1
CLOUDINESS	MEAN: SUNRISE-SUNSET (OKTAS) MIDNIGHT-MIDNIGHT (OKTAS) MEAN NO. DAYS WITH: CLEAR PARTLY CLOUDY CLOUDY														
PR	MEAN STATION PRESSURE(IN) MEAN SEA-LEVEL PRES. (IN)	34 34	29.80 30.16	29.74 30.09	29.70 30.05	29.65 30.00	29.58 29.93	29.52 29.87	29.53 29.87	29.53 29.87	29.53 29.88	29.63 29.98	29.75 30.10	29.77 30.15	29.64 30.00
	MEAN SPEED (MPH) PREVAIL.DIR(TENS OF DEGS) MAXIMUM 2-MINUTE:	34 42	4.1 12	5.0 32	5.9 32	7.3 32	8.3 31	8.3 31	7.4 31	6.8 31	6.0 31	4.7 31	3.9 31	4.0 12	6.0 31
	SPEED (MPH)	22	38	36	36	36	32	33	24	26	31	35	31	35	38
DS	DIR. (TENS OF DEGS) YEAR OF OCCURRENCE		16 2005	13 1998	29 2017	29 1999	32 1998	30 2012	30 2015	31 2014	29 2013	28 2007	27 2016	28 2008	16 JAN 2005
MINDS	MAXIMUM 3-SECOND		16	12	10	41	20	40	22	41	26	45	20	45	16
	SPEED (MPH) DIR. (TENS OF DEGS)	22	46 16	43 29	42 29	41 32	39 32	40 31	33 07	41 31	36 29	45 33	39 27	45 01	46 16
	YEAR OF OCCURRENCE		2005	1999	2017	2002	2008	2012	2007	2013	2013	2009	2016	2011	JAN 2005
	NORMAL (IN)	30	2.19	2.03	2.03	0.95	0.43	0.21	0.01	0.01	0.17	0.63	1.07	1.77	11.50
	MAXIMUM MONTHLY (IN) YEAR OF OCCURRENCE	68	8.56 1969	6.12 2000	7.24 1991	4.41 1967	1.65 1990	1.93 1998	0.43 2015	0.25 1964	1.19 1976	2.45 2000	3.50 1972	6.73 1955	8.56 JAN 1969
101	MINIMUM MONTHLY (IN)	68	0.04	T	0.00	T	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TA	YEAR OF OCCURRENCE MAXIMUM IN 24 HOURS (IN)	68	1976 2.74	1964 1.99	1972 2.43	2008 2.04	1982 1.42	1983 1.80	1983 0.36	1981 0.25	1981 0.97	1978 1.76	1959 1.35	1989 1.82	DEC 1989 2.74
CIP	YEAR OF OCCURRENCE		2006	1969	1995	2017	1990	1998	2015	1964	1978	1992	1953	2007	JAN 2006
PRECIPITATION	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	7.6	8.6	7.5	4.5	2.2	0.7	0.2	0.3	1.0	2.5	5.5	7.5	48.1
	PRECIPITATION >= 1.00	30	0.2	0.2	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.2	1.3
	NORMAL (IN) MAXIMUM MONTHLY (IN)	30 58	0.0 2.2	0.0 T	0.0 T	0.0 T	0.0 T	0.0 T	0.0 T	0.0 T	0.0 T	0.0 T	0.0 0.0	0.0 1.2	0.0 2.2
	YEAR OF OCCURRENCE		1962	1994	2011	2017	2015	2013	2013	2017	2011	1974 T	0.0	1968	JAN 1962
IIV.	MAXIMUM IN 24 HOURS (IN) YEAR OF OCCURRENCE'	58	1.5 1962	Т 1994	T 2011	T 2017	T 2015	T 1995	0.0	0.0	0.0	Т 1974	0.0	1.2 1968	1.5 JAN 1962
SNOWFALL	MAXIMUM SNOW DEPTH (IN) YEAR OF OCCURRENCE	57	0	0	0	0	0	0	0	0	0	0	0	1 1968	1 DEC 1968
SN	NORMAL NO. DAYS WITH:	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	SNOWFALL >= 1.0		0.0	5.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
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PRECIPITATION (inches) 2017 FRESNO (KFAT)

INLO			icites) 2			m m m m							
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC	ANNUAL
1988 1989 1990 1991 1992	1.52 0.48 2.82 0.13 1.94	0.83 1.18 1.33 1.01 4.73	$\begin{array}{c} 0.27 \\ 2.25 \\ 0.67 \\ 7.24 \\ 2.14 \end{array}$	$\begin{array}{c} 2.41 \\ 0.05 \\ 0.92 \\ 0.02 \\ 0.18 \end{array}$	0.45 0.89 1.65 0.03 T	0.03 0.00 0.00 T T	$\begin{array}{c} 0.00 \\ 0.00 \\ T \\ 0.00 \\ 0.22 \end{array}$	0.00 0.03 0.00 T T	0.00 1.11 0.15 T T	$\begin{array}{c} 0.00 \\ 0.42 \\ 0.05 \\ 0.80 \\ 2.19 \end{array}$	1.42 0.50 0.46 0.04 T	2.46 0.00 0.68 1.22 2.68	9.39 6.91 8.73 10.49 14.08
1993 1994 1995 1996 1997	5.18 1.15 5.42 2.07 3.53	2.44 1.92 0.93 3.57 0.17	$1.76 \\ 0.52 \\ 5.88 \\ 1.52 \\ 0.10$	0.20 1.36 1.08 1.17 T	0.25 1.30 1.19 0.38 T	$1.61 \\ 0.00 \\ 0.66 \\ 0.08 \\ 0.01$	0.00 T 0.01 T T	$\begin{array}{c} 0.00 \\ 0.00 \\ T \\ 0.00 \\ 0.00 \end{array}$	$\begin{array}{c} 0.00 \\ 0.20 \\ 0.00 \\ 0.00 \\ 0.15 \end{array}$	$\begin{array}{c} 0.12 \\ 0.77 \\ 0.00 \\ 1.97 \\ 0.07 \end{array}$	1.16 1.57 T 1.94 2.66	1.03 1.33 2.12 4.27 0.99	13.75 10.12 17.29 16.97 7.68
1998 1999 2000 2001 2002	3.40 2.82 3.15 2.66 0.76	4.89 1.18 6.12 2.22 0.40	$3.44 \\ 0.49 \\ 1.35 \\ 0.96 \\ 0.95$	$1.26 \\ 0.93 \\ 1.16 \\ 1.87 \\ 0.21$	$1.37 \\ 0.03 \\ 0.05 \\ 0.00 \\ 0.38$	$1.93 \\ 0.20 \\ 0.56 \\ 0.00 \\ 0.02$	$\begin{array}{c} 0.00 \\ 0.00 \\ 0.00 \\ 0.08 \\ 0.00 \end{array}$	0.00 0.01 T 0.00 0.00	0.15 T 0.32 T T	0.16 T 2.45 0.29 0.00	$\begin{array}{c} 0.43 \\ 0.48 \\ 0.01 \\ 1.99 \\ 1.78 \end{array}$	0.62 0.03 0.07 1.95 2.25	17.65 6.17 15.24 12.02 6.75
2003 2004 2005 2006 2007	$\begin{array}{c} 0.40 \\ 0.88 \\ 2.42 \\ 3.40 \\ 0.59 \end{array}$	1.22 1.69 2.30 0.54 2.29	0.63 1.54 2.51 4.73 0.97	2.84 0.03 0.56 3.27 0.49	$\begin{array}{c} 0.68 \\ 0.07 \\ 1.62 \\ 0.36 \\ 0.05 \end{array}$	$\begin{array}{c} 0.00 \\ 0.00 \\ 0.01 \\ 0.00 \\ 0.00 \end{array}$	T 0.00 0.00 T T	$0.04 \\ 0.00 \\ T \\ 0.00 \\ 0.02$	$\begin{array}{c} T \\ 0.00 \\ 0.04 \\ 0.00 \\ 0.02 \end{array}$	T 2.45 0.05 0.08 0.20	$\begin{array}{c} 0.40 \\ 0.81 \\ 0.17 \\ 0.23 \\ 0.09 \end{array}$	2.93 3.16 2.00 1.33 2.31	9.14 10.63 11.68 13.94 7.03
2008 2009 2010 2011 2012	3.32 1.02 2.05 1.71 1.38	2.12 2.43 2.94 1.60 0.75	$\begin{array}{c} 0.02 \\ 0.24 \\ 0.96 \\ 3.46 \\ 2.43 \end{array}$	T 0.72 2.19 0.32 2.02	$\begin{array}{c} 0.30 \\ 0.46 \\ 0.21 \\ 0.35 \\ 0.00 \end{array}$	0.00 0.20 0.00 1.91 T	0.01 0.00 T T T	0.00 T 0.00 0.00 T	0.00 0.01 0.00 T 0.00	$\begin{array}{c} 0.23 \\ 1.39 \\ 0.44 \\ 0.90 \\ 0.25 \end{array}$	$1.37 \\ 0.20 \\ 1.80 \\ 0.67 \\ 1.11$	1.09 2.41 5.92 0.00 2.03	8.46 9.08 16.51 10.92 9.97
2013 2014 2015 2016 2017	$\begin{array}{c} 0.58 \\ 0.57 \\ 0.21 \\ 4.42 \\ 5.50 \end{array}$	$\begin{array}{c} 0.89 \\ 2.11 \\ 1.13 \\ 0.33 \\ 2.52 \end{array}$	$\begin{array}{c} 0.65 \\ 0.62 \\ 0.06 \\ 2.93 \\ 1.08 \end{array}$	$0.09 \\ 0.74 \\ 1.25 \\ 1.06 \\ 3.42$	$\begin{array}{c} 0.07 \\ 0.04 \\ 0.57 \\ 0.29 \\ 0.12 \end{array}$	$\begin{array}{c} T \\ 0.00 \\ 0.01 \\ 0.06 \\ 0.00 \end{array}$	T 0.01 0.43 0.00 0.00	T T 0.00 0.00 T	$\begin{array}{c} 0.01 \\ 0.18 \\ 0.12 \\ 0.00 \\ 0.16 \end{array}$	$\begin{array}{c} 0.03 \\ 0.50 \\ 0.49 \\ 0.67 \\ 0.09 \end{array}$	$\begin{array}{c} 0.54 \\ 0.40 \\ 1.74 \\ 1.38 \\ 0.28 \end{array}$	0.15 2.29 2.97 2.51 0.04	3.01 7.46 8.98 13.65 13.21
POR= 68 YRS	2.12	1.88	1.80	1.07	0.35	0.15	0.01	0.01	0.15	0.52	1.12	1.65	10.83
												WBA	N : 93193

AVERAGE TEMPERATURE (°F) 2017 FRESNO (KFAT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1988	46.0	52.2	56.8	61.6	67.0	75.6	85.5	81.2	76.4	68.7	54.3	44.5	64.2
1989	42.9	48.8	57.9	67.3	69.6	77.0	82.5	79.3	74.3	65.3	54.3	43.8	63.6
1990	45.5	48.0	57.3	65.7	68.1	76.8	84.0	80.6	75.8	67.7	52.9	41.5	63.7
1991	47.0	55.8	51.5	59.5	66.1	74.7	83.8	78.6	79.9	70.5	55.8	47.0	64.2
1992	42.7	55.5	58.8	66.8	76.0	77.0	81.3	83.2	77.0	68.6	54.3	45.3	65.5
1993	47.1	51.9	60.3	61.7	69.9	75.7	80.2	79.7	75.7	67.8	53.9	45.6	64.1
1994	46.9	49.9	59.3	63.2	68.5	77.7	83.3	82.3	75.4	64.8	48.1	45.3	63.7
1995	51.9	54.1	56.2	60.7	66.2	73.3	80.7	82.6	76.3	66.8	58.7	50.5	64.8
1996	48.3	54.2	57.2	63.6	69.9	77.8	85.4	83.4	74.8	64.1	53.9	49.1	65.1
1997	48.7	50.3	60.0	63.5	75.3	75.8	81.3	80.6	77.3	63.8	56.9	44.7	64.9
1998	49.0	50.0	55.5	59.0	62.0	71.5	82.1	84.1	75.8	63.1	53.1	42.8	62.3
1999	44.7	49.9	53.5	58.5	68.0	75.9	80.6	78.4	77.3	68.7	56.9	47.0	63.3
2000	50.2	53.8	56.5	64.2	71.0	79.8	78.8	81.2	74.5	63.9	49.2	47.8	64.2
2001	46.2	48.7	58.8	58.6	77.3	79.7	81.6	81.9	77.0	68.5	56.4	47.4	65.2
2002	45.0	52.2	55.1	62.8	69.6	78.1	84.1	80.0	77.1	65.2	56.2	49.3	64.6
2003	50.6	51.1	58.1	58.6	69.5	78.4	86.5	81.4	79.2	69.8	52.2	49.3	65.4
2004	46.6	50.5	62.6	65.8	70.9	77.4	83.3	81.3	75.9	64.1	51.7	46.5	64.7
2005	47.4	54.4	57.8	59.6	69.4	73.6	86.8	84.0	73.9	65.9	57.6	51.0	65.1
2006	48.7	52.4	50.1	59.7	71.9	80.7	87.9	80.2	75.8	64.0	55.4	47.1	64.5
2007	43.7	51.4	60.3	63.0	71.5	78.0	83.2	82.8	73.7	64.4	57.4	45.5	64.6
2008	47.0	51.1	57.0	61.7	70.3	79.1	83.8	84.1	78.0	67.1	57.5	44.9	65.1
2009	47.7	51.5	56.0	62.0	75.3	75.7	85.0	81.8	79.7	63.7	54.1	47.2	65.0
2010	48.6	52.2	55.5	57.7	65.2	77.6	83.1	79.9	76.9	68.0	53.8	50.9	64.1
2011	46.6	49.2	55.4	60.7	65.1	75.0	82.0	82.4	80.3	68.0	53.5	45.6	63.7
2012	49.3	52.7	56.2	63.0	72.4	77.9	83.4	86.6	81.4	69.1	58.3	50.9	66.8
2013	47.1	51.0	62.1	67.6	73.0	80.9	87.1	83.0	77.9	66.6	58.5	47.3	66.8
2014	53.2	56.8	62.4	66.8	74.2	80.9	86.9	84.4	80.7	72.0	57.7	51.9	69.0
2015	49.0	57.0	64.0	64.3	68.5	82.0	83.1	82.4	78.7	71.3	52.0	45.8	66.5
2016	50.0	55.5	58.7	65.3	71.3	80.9	84.0	82.5	76.1	66.4	57.6	47.1	66.3
2017	48.1	53.9	58.8	62.1	71.0	80.5	86.5	85.2	77.2	65.7	58.0	48.0	66.3
POR= 68 YRS	46.4	51.4	55.9	61.4	69.1	76.4	82.3	80.5	75.5	65.7	54.2	46.3	63.8

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HEATING DEGREE DAYS (base 65°F) 2017 FRESNO (KFAT)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1988-89 1989-90 1990-91 1991-92 1992-93	0 0 0 0 0	0 0 0 0 0	0 7 0 0 0	20 73 17 81 18	316 310 356 276 316	629 649 722 551 602	679 598 549 683 549	450 470 253 267 359	213 236 412 183 145	52 35 163 25 113	14 19 65 0 9	0 1 0 1 12	2373 2398 2537 2067 2123
1993-94 1994-95 1995-96 1996-97 1997-98	0 0 0 0 0	0 0 0 0	0 0 0 0	12 58 30 148 92	326 500 184 329 246	595 602 444 486 621	553 398 513 500 490	414 298 304 405 412	168 269 238 169 293	97 146 99 97 226	37 60 8 2 104	0 16 0 7	2202 2347 1820 2136 2491
1998-99 1999-00 2000-01 2001-02 2002-03	0 0 0 0	0 0 0 0	7 0 0 0 0	79 14 103 23 67	351 235 466 251 256	682 550 526 538 477	619 452 577 610 440	418 317 451 352 382	348 259 208 310 216	227 72 222 109 191	35 27 0 30 49	$\begin{array}{c}12\\3\\0\\0\\0\end{array}$	2778 1929 2553 2223 2078
2003-04 2004-05 2005-06 2006-07 2007-08	0 0 0 0 0	0 0 0 0 0	0 6 0 2 6	24 124 41 56 59	378 391 217 283 223	482 566 424 546 600	565 537 500 654 552	413 291 345 373 396	113 217 456 158 243	64 158 170 117 149	3 30 9 19 20	$\begin{array}{c} 0 \\ 1 \\ 0 \\ 1 \\ 0 \end{array}$	2042 2321 2162 2209 2248
2008-09 2009-10 2010-11 2011-12 2012-13	0 0 0 0 0	0 0 0 0 0	$ \begin{array}{c} 0 \\ 2 \\ 0 \\ 0 \\ 0 \\ 0 \end{array} $	39 87 40 29 38	219 322 346 338 205	616 544 432 595 432	531 500 563 478 545	369 352 438 352 386	274 289 292 268 107	145 227 138 129 42	0 62 67 6 4	0 0 7 2 0	2193 2385 2323 2197 1759
2013-14 2014-15 2015-16 2016-17 2017-	0 0 0 0 0	0 0 0 0 0	$\begin{array}{c} 0\\ 0\\ 0\\ 2\\ 4 \end{array}$	32 5 5 23 45	189 216 385 226 209	540 401 587 544 523	361 487 456 514	223 217 268 305	88 83 189 202	68 85 47 94	3 25 10 26	$\begin{array}{c} 0\\ 0\\ 0\\ 4\end{array}$	1504 1519 1947 1940

WBAN : 93193

COOLING DEGREE DAYS (base 65°F) 2017 FRESNO (KFAT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC	TOTAL
1988 1989 1990 1991 1992	0 0 0 0 0	0 0 0 0 0	$\begin{array}{c}3\\4\\2\\0\\0\end{array}$	28 129 61 6 88	139 166 122 107 350	338 366 360 298 366	642 546 595 588 511	511 449 490 428 572	349 291 333 454 365	143 90 108 259 135	3 0 0 5 0	0 0 0 0	2156 2041 2071 2145 2387
1993 1994 1995 1996 1997	0 0 0 0 0	0 0 0 0 0	$\begin{array}{c}3\\1\\0\\4\\18\end{array}$	20 52 25 66 61	168 151 104 162 330	342 389 273 389 334	476 576 494 640 514	462 547 551 579 492	331 318 347 300 373	105 59 91 125 61	$\begin{array}{c} 0\\ 0\\ 0\\ 0\\ 11 \end{array}$	0 0 0 0	1907 2093 1885 2265 2194
1998 1999 2000 2001 2002	0 0 0 0 0	0 0 0 0 0	6 0 0 20 9	50 39 54 37 50	18 135 217 389 180	210 348 454 447 400	536 487 434 521 599	600 423 509 533 472	338 373 291 365 372	25 135 81 137 81	0 0 0 0 0	0 0 0 0	1783 1940 2040 2449 2163
2003 2004 2005 2006 2007	0 0 0 0	0 0 0 0 0	7 45 4 0 20	5 97 2 20 64	192 188 170 231 229	406 376 266 478 396	671 576 682 715 569	518 514 597 475 560	431 341 271 337 274	180 99 79 31 50	$ \begin{array}{c} 0 \\ 0 \\ 2 \\ 1 \\ 0 \end{array} $	0 0 0 0	2410 2236 2073 2288 2162
2008 2009 2010 2011 2012	0 0 0 0	0 0 0 0 0	$ \begin{array}{c} 0 \\ 1 \\ 0 \\ 1 \\ 2 \end{array} $	54 62 15 18 77	192 330 72 81 242	431 328 386 315 391	592 628 563 535 577	599 527 470 546 677	394 451 364 466 495	114 53 144 128 172	$ \begin{array}{c} 1 \\ 3 \\ 17 \\ 0 \\ 11 \end{array} $	0 0 0 0	2377 2383 2031 2090 2644
2013 2014 2015 2016 2017	0 0 0 0 0	0 0 0 0	23 12 58 1 17	124 132 70 63 13	260 299 145 214 221	483 485 513 487 477	691 687 568 598 674	565 606 545 552 637	394 479 418 344 375	85 230 205 73 72	0 2 2 10 4	0 0 0 0	2625 2932 2524 2342 2490

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SNOWFALL (inches) 2017 FRESNO (KFAT)

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YEAR	JUL	AUG	SEP	ОСТ	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1989-90 1990-91 1991-92 1992-93 1993-94	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 T 0.0 0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	T 0.0 T 0.0 T	0.0 T 0.0 0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	T T 0.0 T
1994-95 1995-96 1996-97 1997-98 1998-99	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 0.0 T 0.0 0.5	T 0.0 0.0 0.0 T	0.0 T 0.0 T T	0.0 0.0 0.0 T 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	T 0.0 0.0 0.0 0.0	T T T 0.5
1999-00 2000-01 2001-02 2002-03 2003-04	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\end{array}$	$\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	T 0.0 0.0 0.0 0.0	$\begin{array}{c} 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\\ 0.0\end{array}$	0.0 T 0.0 0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	T T 0.0 0.0 0.0
2004-05 2005- 2006-07 2007-08 2008-09	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	T 0.0 0.0 0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 T 0.0 0.0 T	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	T T 0.0 0.0 T
2009-10 2010-11 2011-12 2012-13 2013-	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 T 0.0 0.0	T 0.0 0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	T T 0.0 0.0
2013-14 2014-15 2015-16 2016-17 2017-	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 0.0 0.0 T	0.0 T 0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \\ 0.0 \\ 0.0 \end{array}$	0.0 T 0.0 T
POR= 68 YRS	0.0	0.0	0.0	Т	0.0	Т	Т	Т	Т	Т	Т	Т	Т
												WBA	N : 93193

REFERENCE NOTES :

PAGE 1:

THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL

MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).

PAGE 2 AND 3

H/C INDICATES HEATING AND COOLING DEGREE DAYS.

RH INDICATES RELATIVE HUMIDITY

W/O INDICATES WEATHER AND OBSTRUCTIONS

S INDICATES SUNSHINE.

PR INDICATES PRESSURE

CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS). GENERAL:

T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING.

WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED.

0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05.

CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET

CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. GENERAL CONTINUED:

WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH.

RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION.

AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL.

A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65 F.

DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR.

DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY.

WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.

ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.

STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED SATION HISTORY INFORMATION GO TO "Historical Observing Metadata Repository", URL IS:

http://www.ncdc.noaa.gov/homr/ SNOWFALL STOPPED MONTH & YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.

NOTE:

The "Period of Record:(POR)" for all "averages" is based on "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.

2017 FRESNO CALIFORNIA (KFAT)

Fresno is located about midway and toward the eastern edge of the San Joaquin Valley, which is oriented northwest to southeast and has a length of about 225 miles and an average width of 50 miles. The San Joaquin Valley is generally flat. About 15 miles east of Fresno the terrain slopes upward with the foothills of the Sierra Nevada. The Sierra Nevada attain an elevation of more than 14,000 feet 50 miles east of Fresno. West of the city 45 miles lie the foothills of the Coastal Range.

The climate of Fresno is dry and mild in winter and hot in summer. Nearly nine-tenths of the annual precipitation falls in the six months from November to April.

Due to clear skies during the summer and the protection of the San Joaquin Valley from marine effects, the normal daily maximum temperature reaches the high 90s during the latter part of July. The daily maximum temperature during the warmest month has ranged from 76 to 115 degrees. Low relative humidities and some wind movement substantially lower the sensible temperature during periods of high readings. Humidity readings of 15 percent are common on summer afternoons, and readings as low as 8 percent have been recorded. In contrast to this, humidity readings average 90 percent during the morning hours of December and January.

Winds flow with the major axis of the San Joaquin Valley, generally from the northwest. This feature is especially beneficial since, during the warmest months, the northwest winds increase during the evenings. These refreshing breezes and the normally large temperature variation of about 35 degrees between the highest and lowest readings of the day, generally result in comfortable evening and night temperatures. Winter temperatures are usually mild with infrequent cold spells dropping the readings below freezing. Heavy frost occurs almost every year, and the first frost usually occurs during the last week of November. The last frost in spring is usually in early March, however, one year in five will have the last frost after the first of April. The growing season is 291 days.

Although the heaviest rains recorded at Fresno for short periods have occurred in June, usually any rainfall during the summer is very light. Snow is a rare occurrence in Fresno.

Fresno enjoys a very high percentage of sunshine, receiving more than 80 percent of the possible amounts during all but the four months of November, December, January, and February. Reduction of sunshine during these months is caused by fog and short periods of stormy weather.

During foggy periods, at times lasting nearly two weeks, sunshine is reduced to a minimum. This fog frequently lifts to a few hundred feet above the surface of the valley and presents the appearance of a heavy, solid cloud layer.

Spring and autumn are very enjoyable seasons in Fresno, with clear skies, light rainfall and winds and mild temperatures.

Station History

FRESNO, CA

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
FRESNO AIR TERMINAL	1949-08-31	1961-01-01	36° 46'	-119° 42'	338		AIRWAYS, COOP, USHCN
FRESNO AIR TERMINAL	1961-09-01	1978-01-01	36° 46'	-119° 43'	328	.9 MI W	AIRWAYS, COOP, USHCN
FRESNO YOSEMITE INTL AP	1995-09-01	1995-11-15	36° 46'	-119° 43'	333	.5 MI WSW	ASOS, COOP, USHCN
FRESNO AIR TERMINAL	1949-08-20	1949-08-31	36° 46'	-119° 42'	338	7 MI ENE	AIRWAYS, COOP, USHCN
FRESNO AIR TERMINAL	1978-01-01	1985-02-01	36° 46'	-119° 43'	328		COOP, USHCN, WXSVC
FRESNO YOSEMITE INT'L	2016-08-22	Present	36° 46'	-119° 43'	333		ASOS, COOP, USHCN
FRESNO AIR TERMINAL	1985-02-01	1993-11-10	36° 46'	-119° 43'	336	1 MI NNE	COOP, USHCN, WXSVC
FRESNO YOSEMITE INTL AP	1995-11-15	2010-06-24	36° 46'	-119° 43'	333		ASOS, COOP, USHCN
FRESNO AIR TERMINAL	1961-01-01	1961-09-01	36° 46'	-119° 43'	328		AIRWAYS, COOP, USHCN
FRESNO AIR TERMINAL	1947-10-01	1949-08-01	36° 46'	-119° 42'			AIRWAYS
FRESNO AIR TERMINAL	1993-11-10	1995-09-01	36° 46'	-119° 43'	336		COOP, USHCN, WXSVC
FRESNO AIR TERMINAL	1949-08-01	1949-08-20	36° 46'	-119° 42'	338		AIRWAYS
FRESNO YOSEMITE INTL AP	2010-06-24	2016-08-22	36° 46'	-119° 43'	333		ASOS, COOP, USHCN

Element History

Element	Begin	End	Frequency	Time Of	Equipment *	Equipment *	Equipment
	Date	Date		Observation		Modifications	Exposure

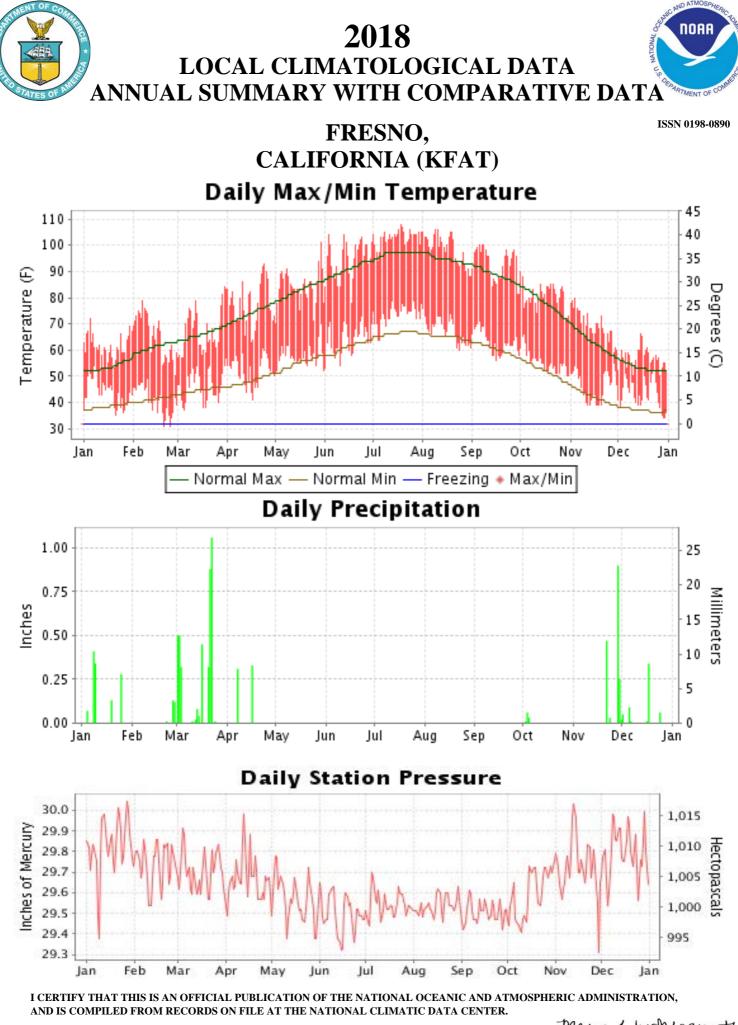
 \ast For explanation of codes and abbrevitions see Station Metadata link below.

Other Station Information can be found at:

ASOS Implementation by NWS: http://www.nws.noaa.gov/ops2/Surface/asosimplementation.htm Station Metadata website: http://www.ncdc.noaa.gov/homr

INQUIRES/COMMENTS CALL: (828) 271-4800, option 2 Fax Number : (828) 271-4876 TDD : (828) 271-4010 Email : ncdc.orders@noaa.gov NOAA/National Centers for Environmental Information Attn: User Engagement & Services Branch 151 Patton Avenue Asheville, NC 28801-5001

Visit our Web Site for other weather data: www.ncdc.noaa.gov





Mary J. Wohlpente DIRECTOR NCEI

METEOROLOGICAL DATA FOR 2018 FRESNO (KFAT)

	LATITUDE: LONGITUDE: 36° 46'N 119° 43'W		G	ELEVA	TION (I		,			IME ZO ACIFIC	NE: (UTC	(8-1)	v	VBAN: 93193
	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	MEAN DAILY MAXIMUM HIGHEST DAILY MAXIMUM DATE OF OCCURRENCE MEAN DAILY MINIMUM LOWEST DAILY MINIMUM DATE OF OCCURRENCE AVERAGE DRY BULB MEAN WET BULB MEAN DEW POINT	61.4 72 05 43.7 35 21 52.5 48.4 45.1	65.6 79 07 40.8 31 24+ 53.2	67.4 84 30 46.3 37 05 56.8 50.2 43.8	77.6 93 24 52.3 41 17 64.9 54.4 45.5	84.1 101 29 57.7 51 01 70.9 57.8 47.2	94.6 104 13+ 64.1 53 01 79.4 61.1 46.9	102.8 108 18 73.7 64 05+ 88.2 66.4 52.2	$98.5 \\106 \\10+ \\67.5 \\60 \\24 \\83.0 \\63.8 \\50.8$	$\begin{array}{r} 92.9\\ 100\\ 08+\\ 63.0\\ 56\\ 16\\ 78.0\\ 60.4\\ 47.5\end{array}$	$\begin{array}{r} 80.7\\ 90\\ 01\\ 55.5\\ 50\\ 31+\\ 68.1\\ 55.8\\ 45.6\end{array}$	69.2 80 04 46.4 39 20+ 57.8 49.4 41.6	$56.8 \\ 66 \\ 15 \\ 43.1 \\ 34 \\ 30+ \\ 50.0 \\ 46.5 \\ 43.1$	79.3 108 JUL 18 54.5 31 FEB 24+ 66.9
TEN	NUMBER OF DAYS WITH: MAXIMUM >= 90° MAXIMUM <= 32° MINIMUM <= 32° MINIMUM <= 0°	0 0 0 0	0 0 2 0	0 0 0 0	3 0 0 0	5 0 0 0	22 0 0 0	31 0 0 0	29 0 0 0	20 0 0 0	1 0 0 0	0 0 0 0	0 0 0 0	111 0 2 0
H/C	HEATING DEGREE DAYS COOLING DEGREE DAYS	376 0	324 0	258 10	70 78	4 193	0 440	0 729	0 566	0 399	9 112	209 2	458 0	1708 2529
RH	MEAN (PERCENT) HOUR 04 LST HOUR 10 LST HOUR 16 LST HOUR 22 LST	79 92 76 64 85	58 78 52 37 64	66 82 58 48 73	54 77 44 32 62	46 69 39 27 52	36 58 29 18 41	32 48 27 17 36	38 59 31 17 43	38 59 30 19 41	49 68 41 30 54	61 74 52 45 70	80 90 76 69 86	53 71 46 35 59
0/M	NUMBER OF DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI) THUNDERSTORMS	6 0	0 0	2 1	0 0	0 0	0 0	0 0	0 0	0 0	0 1	2 0	8 0	18 2
PR	MEAN STATION PRESS. (IN.) MEAN SEA-LEVEL PRESS. (IN.)	29.83 30.18	29.75 30.11	29.70 30.05	29.67 30.02	29.57 29.91	29.50 29.84	29.54 29.89	29.54 29.88	29.50 29.85	29.59 29.94	29.73 30.04	29.80 30.15	29.64 29.99
MINDS	RESULTANT SPEED (MPH) RES. DIR. (TENS OF DEGS.) MEAN SPEED (MPH) PREVAIL.DIR.(TENS OF DEGS.) MAXIMUM 2-MINUTE WIND SPEED (MPH) DIR. (TENS OF DEGS.) DATE OF OCCURRENCE MAXIMUM 3-SECOND WIND: SPEED (MPH) DIR. (TENS OF DEGS.) DATE OF OCCURRENCE	0.8 33 3.9 29 23 13 09 28 13 09	4.4 30 29 30 11 35 30 11	0.3 10 6.3 12 25 15 22 33 11 20	5.1 32 7.6 32 30 29 16 36 30 16	7.2 31 8.5 30 25 28 30 32 28 30	6.1 31 7.9 31 25 30 09 32 31 09	6.2 30 7.7 30 22 31 06 27 31 20	5.9 31 7.3 31 23 30 04 28 30 04	4.3 31 6.0 31 21 31 12 24 31 12	1.5 30 4.3 30 24 31 06 29 31 06	0.4 10 3.0 29 26 14 29 31 14 29	0.4 06 2.9 11 21 30 25 24 30 25	5.8 30 29 APR 16 36 30 APR 16
PRECIPITATION	WATER EQUIVALENT: TOTAL (IN.) GREATEST 24-HOUR (IN.) DATE OF OCCURRENCE NUMBER OF DAYS WITH: PRECIPITATION 0.10 PRECIPITATION 0.10 PRECIPITATION 1.00	$ \begin{array}{c} 1.23 \\ 0.47 \\ 08-09 \\ 5 \\ 4 \\ 0 \end{array} $	0.26 0.25 26-27 3 2 0	4.19 1.36 21-22 12 7 1	0.64 0.33 16 2 2 0	T T 25 0 0 0	0.00 0.00 0 0 0	0.00 0.00 0 0 0	0.00 0.00 0 0 0	0.00 0.00 0 0 0	0.10 0.09 03-04 3 0 0	1.67 1.01 28-29 5 3 0	0.56 0.35 16-17 6 1 0	8.65 1.36 MAR 21-22 36 19 1
SNOWFALL 1	SNOW, ICE PELLETS, HAIL TOTAL (IN.) GREATEST 24-HOUR (IN.) DATE OF OCCURRENCE MAXIMUM SNOW DEPTH (IN.) DATE OF OCCURRENCE NUMBER OF DAYS WITH: SNOWFALL >= 1.0	0.0 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0	0.0 0.0 0

NORMALS, MEANS, AND EXTREMES FRESNO (KFAT)

	LATITUDE: LONGITUDE: 36° 46'N 119° 43'W			EL	EVATIO D: 333 B	N (FT):	,			TIME PACIF	ZONE:	U TC -8)		WBAN	N: 93193
	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
	NORMAL DAILY MAXIMUM MEAN DAILY MAXIMUM HIGHEST DAILY MAXIMUM YEAR OF OCCURRENCE	30 69 69	54.8 55.0 78 2014	61.6 61.8 80 2014	67.6 67.5 91 2015	74.6 74.6 100 1981	84.1 83.6 107 1984	92.0 91.9 110 2017	98.4 98.5 113 2006	97.1 96.6 112 1996	90.9 90.9 111 1955	79.5 79.8 102 1980	65.1 65.5 90 2010	54.9 55.1 77 2006	76.7 76.7 113 JUL 2006
E °F	MEAN OF EXTREME MAXS. NORMAL DAILY MINIMUM MEAN DAILY MINIMUM	69 30 69	67.7 38.3 38.0	73.4 41.5 41.0	80.6 45.6 44.2	90.1 49.4 48.3	98.8 56.2 54.7	105.1 62.4 60.9	107.2 67.6 66.3	105.7 66.2 64.5	102.3 61.5 60.1	93.5 53.0 51.6	79.8 43.4 42.9	67.2 38.0 37.5	89.3 51.9 50.8
TEMPERATURE	LOWEST DAILY MINIMUM YEAR OF OCCURRENCE MEAN OF EXTREME MINS. NORMAL DRY BULB	69 69 30	19 1963 28.3 46.6	24 1990 31.7 51.5	26 1966 34.8 56.6	32 1982 39.0 62.0	36 1975 45.0 70.1	44 1955 51.4 77.2	50 1955 57.6 83.0	49 1966 57.0 81.7	37 1950 51.3 76.2	27 1972 41.8 66.2	26 1975 33.0 54.3	18 1990 28.2 46.5	18 DEC 1990 41.6 64.3
TEMI	MEAN DRY BULB MEAN WET BULB MEAN DEW POINT	69 35 35	46.5 42.5 42.5	51.4 45.5 44.6	55.9 48.1 47.3	61.5 49.3 47.5	69.2 52.4 50.3	76.5 56.3 54.3	82.4 60.2 58.2	80.6 59.6 57.6	75.5 57.0 55.3	65.8 52.3 50.9	54.2 46.9 45.5	46.3 41.5 41.1	63.8 51.0 49.6
	NORMAL NO. DAYS WITH: MAXIMUM >= 90 MAXIMUM <= 32 MINIMUM <= 32 MINIMUM <= 0	30 30 30 30	0.0 0.0 5.6 0.0	0.0 0.0 1.6 0.0	0.0 0.0 0.1 0.0	1.8 0.0 0.0 0.0	8.7 0.0 0.0 0.0	18.5 0.0 0.0 0.0	28.7 0.0 0.0 0.0	27.1 0.0 0.0 0.0	18.1 0.0 0.0 0.0	3.3 0.0 0.0 0.0	0.0 0.0 0.8 0.0	0.0 0.0 5.1 0.0	106.2 0.0 13.2 0.0
H/C	NORMAL HEATING DEG. DAYS NORMAL COOLING DEG. DAYS	30 30	572 0	377 0	265 5	136 46	30 190	3 369	0 558	0 516	2 338	61 100	325 2	575 0	2346 2124
RH	NORMAL (PERCENT) HOUR 04 LST HOUR 10 LST HOUR 16 LST HOUR 22 LST	30 30 30 30	84 92 85 69 89	77 90 77 57 83	70 87 66 49 76	57 80 51 35 62	48 71 44 28 51	43 65 39 24 44	40 62 38 22 42	44 66 41 25 46	49 71 45 28 51	58 78 52 35 63	74 88 71 53 81	83 92 83 67 88	61 79 58 41 65
S	PERCENT POSSIBLE SUNSHINE	46	47	65	77	85	90	95	97	96	94	88	66	46	79
0/M	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI) THUNDERSTORMS	55 69	10.2 0.2	4.5 0.4	1.3 0.8	0.2 0.6	0.0 0.6	0.0 0.4	0.0 0.2	0.0 0.2	0.0 0.6	0.5 0.5	4.5 0.2	9.7 0.3	30.9 5.0
CLOUDINESS	MEAN: SUNRISE-SUNSET (OKTAS) MIDNIGHT-MIDNIGHT (OKTAS) MEAN NO. DAYS WITH: CLEAR PARTLY CLOUDY CLOUDY														
PR	MEAN STATION PRESSURE(IN) MEAN SEA-LEVEL PRES. (IN)	35 35	29.80 30.16	29.74 30.09	29.70 30.05	29.65 30.00	29.58 29.92	29.52 29.87	29.53 29.87	29.53 29.87	29.53 29.88	29.63 29.98	29.75 30.10	29.77 30.15	29.64 30.00
	MEAN SPEED (MPH) PREVAIL.DIR(TENS OF DEGS) MAXIMUM 2-MINUTE:	35 43 23	4.1 12 38	5.0 32 36	5.9 32 36	7.4 32 36	8.3 31 32	8.3 31 33	7.4 31 24	6.9 31 26	6.0 31 31	4.7 31 35	3.9 31 31	4.0 12 35	6.0 31 38
MINDS	SPEED (MPH) DIR. (TENS OF DEGS) YEAR OF OCCURRENCE MAXIMUM 3-SECOND		16 2005	13 1998	29 2017	29 1999	32 32 1998	30 2012	30 2015	31 2014	29 2013	28 2007	27 2016	28 2008	16 JAN 2005
	SPEED (MPH) DIR. (TENS OF DEGS) YEAR OF OCCURRENCE	23	46 16 2005	43 29 1999	42 29 2017	41 32 2002	39 32 2008	40 31 2012	33 07 2007	41 31 2013	36 29 2013	45 33 2009	39 27 2016	45 01 2011	46 16 JAN 2005
NO	NORMAL (IN) MAXIMUM MONTHLY (IN) YEAR OF OCCURRENCE MINIMUM MONTHLY (IN)	30 69 69	2.19 8.56 1969 0.04	2.03 6.12 2000 T	2.03 7.24 1991 0.00	0.95 4.41 1967 T	0.43 1.65 1990 0.00	0.21 1.93 1998 0.00	0.01 0.43 2015 0.00	0.01 0.25 1964 0.00	0.17 1.19 1976 0.00	0.63 2.45 2000 0.00	1.07 3.50 1972 0.00	1.77 6.73 1955 0.00	11.50 8.56 JAN 1969 0.00
PRECIPITATION	YEAR OF OCCURRENCE MAXIMUM IN 24 HOURS (IN) YEAR OF OCCURRENCE	69	1976 2.74 2006	1964 1.99 1969	1972 2.43 1995	2008 2.04 2017	1982 1.42 1990	1983 1.80 1998	1983 0.36 2015	1981 0.25 1964	1981 0.97 1978	1978 1.76 1992	1959 1.35 1953	1989 1.82 2007	DEC 1989 2.74 JAN 2006
PRE	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01 PRECIPITATION >= 1.00	30 30	7.6 0.2	8.6 0.2	7.5 0.2	4.5 0.1	2.2 0.1	0.7 0.1	0.2 0.0	0.3 0.0	1.0 0.0	2.5 0.1	5.5 0.1	7.5 0.2	48.1 1.3
	NORMAL (IN) MAXIMUM MONTHLY (IN) YEAR OF OCCURRENCE	30 59	0.0 2.2 1962	0.0 T 1994	0.0 T 2011	0.0 T 2017	0.0 0.0 2018	0.0 T 2013	0.0 T 2013	0.0 T 2017	0.0 T 2011	0.0 T 1974	0.0 0.0	0.0 1.2 1968	0.0 2.2 JAN 1962
SNOWFALL	MAXIMUM IN 24 HOURS (IN) YEAR OF OCCURRENCE' MAXIMUM SNOW DEPTH (IN) YEAR OF OCCURRENCE	59 58	1.5 1962 0	Т 1994 0	T 2011 0	T 2017 0	T 2015 0	T 1995 0	0.0 0	0.0 0	0.0 0	T 1974 0	0.0 0	1.2 1968 1 1968	1.5 JAN 1962 1 DEC 1968
SNC	NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PRECIPITATION (inches) 2018 FRESNO (KFAT)

			icites) 20			H (H I)							
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC	ANNUAL
1989 1990 1991 1992 1993	0.48 2.82 0.13 1.94 5.18	1.18 1.33 1.01 4.73 2.44	$2.25 \\ 0.67 \\ 7.24 \\ 2.14 \\ 1.76$	$\begin{array}{c} 0.05 \\ 0.92 \\ 0.02 \\ 0.18 \\ 0.20 \end{array}$	0.89 1.65 0.03 T 0.25	0.00 0.00 T T 1.61	0.00 T 0.00 0.22 0.00	0.03 0.00 T T 0.00	1.11 0.15 T T 0.00	$\begin{array}{c} 0.42 \\ 0.05 \\ 0.80 \\ 2.19 \\ 0.12 \end{array}$	0.50 0.46 0.04 T 1.16	0.00 0.68 1.22 2.68 1.03	6.91 8.73 10.49 14.08 13.75
1994 1995 1996 1997 1998	1.15 5.42 2.07 3.53 3.40	1.92 0.93 3.57 0.17 4.89	$\begin{array}{c} 0.52 \\ 5.88 \\ 1.52 \\ 0.10 \\ 3.44 \end{array}$	1.36 1.08 1.17 T 1.26	1.30 1.19 0.38 T 1.37	$\begin{array}{c} 0.00 \\ 0.66 \\ 0.08 \\ 0.01 \\ 1.93 \end{array}$	T 0.01 T T 0.00	0.00 T 0.00 0.00 0.00	$\begin{array}{c} 0.20 \\ 0.00 \\ 0.00 \\ 0.15 \\ 0.15 \end{array}$	$\begin{array}{c} 0.77 \\ 0.00 \\ 1.97 \\ 0.07 \\ 0.16 \end{array}$	1.57 T 1.94 2.66 0.43	1.33 2.12 4.27 0.99 0.62	10.12 17.29 16.97 7.68 17.65
1999 2000 2001 2002 2003	2.82 3.15 2.66 0.76 0.40	$1.18 \\ 6.12 \\ 2.22 \\ 0.40 \\ 1.22$	$\begin{array}{c} 0.49 \\ 1.35 \\ 0.96 \\ 0.95 \\ 0.63 \end{array}$	0.93 1.16 1.87 0.21 2.84	$\begin{array}{c} 0.03 \\ 0.05 \\ 0.00 \\ 0.38 \\ 0.68 \end{array}$	$\begin{array}{c} 0.20 \\ 0.56 \\ 0.00 \\ 0.02 \\ 0.00 \end{array}$	0.00 0.00 0.08 0.00 T	0.01 T 0.00 0.00 0.04	T 0.32 T T T	T 2.45 0.29 0.00 T	$\begin{array}{c} 0.48 \\ 0.01 \\ 1.99 \\ 1.78 \\ 0.40 \end{array}$	0.03 0.07 1.95 2.25 2.93	6.17 15.24 12.02 6.75 9.14
2004 2005 2006 2007 2008	0.88 2.42 3.40 0.59 3.32	1.69 2.30 0.54 2.29 2.12	$1.54 \\ 2.51 \\ 4.73 \\ 0.97 \\ 0.02$	0.03 0.56 3.27 0.49 T	$\begin{array}{c} 0.07 \\ 1.62 \\ 0.36 \\ 0.05 \\ 0.30 \end{array}$	$\begin{array}{c} 0.00 \\ 0.01 \\ 0.00 \\ 0.00 \\ 0.00 \end{array}$	0.00 0.00 T T 0.01	0.00 T 0.00 0.02 0.00	$\begin{array}{c} 0.00 \\ 0.04 \\ 0.00 \\ 0.02 \\ 0.00 \end{array}$	$2.45 \\ 0.05 \\ 0.08 \\ 0.20 \\ 0.23$	$\begin{array}{c} 0.81 \\ 0.17 \\ 0.23 \\ 0.09 \\ 1.37 \end{array}$	3.16 2.00 1.33 2.31 1.09	10.63 11.68 13.94 7.03 8.46
2009 2010 2011 2012 2013	1.02 2.05 1.71 1.38 0.58	2.43 2.94 1.60 0.75 0.89	$\begin{array}{c} 0.24 \\ 0.96 \\ 3.46 \\ 2.43 \\ 0.65 \end{array}$	$\begin{array}{c} 0.72 \\ 2.19 \\ 0.32 \\ 2.02 \\ 0.09 \end{array}$	$\begin{array}{c} 0.46 \\ 0.21 \\ 0.35 \\ 0.00 \\ 0.07 \end{array}$	0.20 0.00 1.91 T T	0.00 T T T T	T 0.00 0.00 T T	0.01 0.00 T 0.00 0.01	$1.39 \\ 0.44 \\ 0.90 \\ 0.25 \\ 0.03$	$0.20 \\ 1.80 \\ 0.67 \\ 1.11 \\ 0.54$	2.41 5.92 0.00 2.03 0.15	9.08 16.51 10.92 9.97 3.01
2014 2015 2016 2017 2018	$\begin{array}{c} 0.57 \\ 0.21 \\ 4.42 \\ 5.50 \\ 1.23 \end{array}$	2.11 1.13 0.33 2.52 0.26	$\begin{array}{c} 0.62 \\ 0.06 \\ 2.93 \\ 1.08 \\ 4.19 \end{array}$	$\begin{array}{c} 0.74 \\ 1.25 \\ 1.06 \\ 3.42 \\ 0.64 \end{array}$	0.04 0.57 0.29 0.12 T	$\begin{array}{c} 0.00 \\ 0.01 \\ 0.06 \\ 0.00 \\ 0.00 \end{array}$	$\begin{array}{c} 0.01 \\ 0.43 \\ 0.00 \\ 0.00 \\ 0.00 \end{array}$	T 0.00 0.00 T 0.00	$\begin{array}{c} 0.18 \\ 0.12 \\ 0.00 \\ 0.16 \\ 0.00 \end{array}$	$\begin{array}{c} 0.50 \\ 0.49 \\ 0.67 \\ 0.09 \\ 0.10 \end{array}$	$\begin{array}{c} 0.40 \\ 1.74 \\ 1.38 \\ 0.28 \\ 1.67 \end{array}$	2.29 2.97 2.51 0.04 0.56	7.46 8.98 13.65 13.21 8.65
POR= 69 YRS	2.11	1.85	1.84	1.06	0.34	0.15	0.01	0.01	0.15	0.51	1.13	1.63	10.79
												wва	N : 93193

AVERAGE TEMPERATURE (°F) 2018 FRESNO (KFAT)

				- (-) -			,						
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC	ANNUAL
1989	42.9	48.8	57.9	67.3	69.6	77.0	82.5	79.3	74.3	65.3	54.3	43.8	63.6
1990	45.5	48.0	57.3	65.7	68.1	76.8	84.0	80.6	75.8	67.7	52.9	41.5	63.7
1991	47.0	55.8	51.5	59.5	66.1	74.7	83.8	78.6	79.9	70.5	55.8	47.0	64.2
1992	42.7	55.5	58.8	66.8	76.0	77.0	81.3	83.2	77.0	68.6	54.3	45.3	65.5
1993	47.1	51.9	60.3	61.7	69.9	75.7	80.2	79.7	75.7	67.8	53.9	45.6	64.1
1994	46.9	49.9	59.3	63.2	68.5	77.7	83.3	82.3	75.4	64.8	48.1	45.3	63.7
1995	51.9	54.1	56.2	60.7	66.2	73.3	80.7	82.6	76.3	66.8	58.7	50.5	64.8
1996	48.3	54.2	57.2	63.6	69.9	77.8	85.4	83.4	74.8	64.1	53.9	49.1	65.1
1997	48.7	50.3	60.0	63.5	75.3	75.8	81.3	80.6	77.3	63.8	56.9	44.7	64.9
1998	49.0	50.0	55.5	59.0	62.0	71.5	82.1	84.1	75.8	63.1	53.1	42.8	62.3
1999	44.7	49.9	53.5	58.5	68.0	75.9	80.6	78.4	77.3	68.7	56.9	47.0	63.3
2000	50.2	53.8	56.5	64.2	71.0	79.8	78.8	81.2	74.5	63.9	49.2	47.8	64.2
2001	46.2	48.7	58.8	58.6	77.3	79.7	81.6	81.9	77.0	68.5	56.4	47.4	65.2
2002	45.0	52.2	55.1	62.8	69.6	78.1	84.1	80.0	77.1	65.2	56.2	49.3	64.6
2003	50.6	51.1	58.1	58.6	69.5	78.4	86.5	81.4	79.2	69.8	52.2	49.3	65.4
2004	46.6	50.5	62.6	65.8	70.9	77.4	83.3	81.3	75.9	64.1	51.7	46.5	64.7
2005	47.4	54.4	57.8	59.6	69.4	73.6	86.8	84.0	73.9	65.9	57.6	51.0	65.1
2006	48.7	52.4	50.1	59.7	71.9	80.7	87.9	80.2	75.8	64.0	55.4	47.1	64.5
2007	43.7	51.4	60.3	63.0	71.5	78.0	83.2	82.8	73.7	64.4	57.4	45.5	64.6
2008	47.0	51.1	57.0	61.7	70.3	79.1	83.8	84.1	78.0	67.1	57.5	44.9	65.1
2009	47.7	51.5	56.0	62.0	75.3	75.7	85.0	81.8	79.7	63.7	54.1	47.2	65.0
2010	48.6	52.2	55.5	57.7	65.2	77.6	83.1	79.9	76.9	68.0	53.8	50.9	64.1
2011	46.6	49.2	55.4	60.7	65.1	75.0	82.0	82.4	80.3	68.0	53.5	45.6	63.7
2012	49.3	52.7	56.2	63.0	72.4	77.9	83.4	86.6	81.4	69.1	58.3	50.9	66.8
2013	47.1	51.0	62.1	67.6	73.0	80.9	87.1	83.0	77.9	66.6	58.5	47.3	66.8
2014	53.2	56.8	62.4	66.8	74.2	80.9	86.9	84.4	80.7	72.0	57.7	51.9	69.0
2015	49.0	57.0	64.0	64.3	68.5	82.0	83.1	82.4	78.7	71.3	52.0	45.8	66.5
2016	50.0	55.5	58.7	65.3	71.3	80.9	84.0	82.5	76.1	66.4	57.6	47.1	66.3
2017	48.1	53.9	58.8	62.1	71.0	80.5	86.5	85.2	77.2	65.7	58.0	48.0	66.3
2018	52.5	53.2	56.8	64.9	70.9	79.4	88.2	83.0	78.0	68.1	57.8	50.0	66.9
POR= 69 YRS	46.5	51.4	55.9	61.5	69.2	76.5	82.4	80.6	75.5	65.8	54.2	46.3	63.8

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HEATING DEGREE DAYS (base 65°F) 2018 FRESNO (KFAT)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1989-90	0	0	7	73	310	649	598	470	236	35	19	$ \begin{array}{c} 1 \\ 0 \\ 1 \\ 12 \\ 0 \end{array} $	2398
1990-91	0	0	0	17	356	722	549	253	412	163	65		2537
1991-92	0	0	0	81	276	551	683	267	183	25	0		2067
1992-93	0	0	0	18	316	602	549	359	145	113	9		2123
1993-94	0	0	0	12	326	595	553	414	168	97	37		2202
1994-95 1995-96 1996-97 1997-98 1998-99	0 0 0 0 0	0 0 0 0 0	0 0 0 7	58 30 148 92 79	500 184 329 246 351	602 444 486 621 682	398 513 500 490 619	298 304 405 412 418	269 238 169 293 348	146 99 97 226 227	60 8 2 104 35	16 0 0 7 12	2347 1820 2136 2491 2778
1999-00	0	0	0	14	235	550	452	317	259	72	27	3	1929
2000-01	0	0	0	103	466	526	577	451	208	222	0	0	2553
2001-02	0	0	0	23	251	538	610	352	310	109	30	0	2223
2002-03	0	0	0	67	256	477	440	382	216	191	49	0	2078
2003-04	0	0	0	24	378	482	565	413	113	64	3	0	2042
2004-05	0	0	6	124	391	566	537	291	217	158	30	$ \begin{array}{c} 1 \\ 0 \\ 1 \\ 0 \\ 0 \end{array} $	2321
2005-06	0	0	0	41	217	424	500	345	456	170	9		2162
2006-07	0	0	2	56	283	546	654	373	158	117	19		2209
2007-08	0	0	6	59	223	600	552	396	243	149	20		2248
2008-09	0	0	0	39	219	616	531	369	274	145	0		2193
2009-10	0	0	$\begin{array}{c}2\\0\\0\\0\\0\end{array}$	87	322	544	500	352	289	227	62	0	2385
2010-11	0	0		40	346	432	563	438	292	138	67	7	2323
2011-12	0	0		29	338	595	478	352	268	129	6	2	2197
2012-13	0	0		38	205	432	545	386	107	42	4	0	1759
2013-14	0	0		32	189	540	361	223	88	68	3	0	1504
2014-15 2015-16 2016-17 2017-18 2018-	0 0 0 0 0	0 0 0 0 0	$\begin{array}{c} 0\\ 0\\ 2\\ 4\\ 0\end{array}$	5 5 23 45 9	216 385 226 209 209	401 587 544 523 458	487 456 514 376	217 268 305 324	83 189 202 258	85 47 94 70	25 10 26 4	$\begin{array}{c} 0\\ 0\\ 4\\ 0\end{array}$	1519 1947 1940 1813

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COOLING DEGREE DAYS (base 65°F) 2018 FRESNO (KFAT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1989 1990 1991 1992 1993	0 0 0 0 0	0 0 0 0 0	4 2 0 0 3	129 61 6 88 20	166 122 107 350 168	366 360 298 366 342	546 595 588 511 476	449 490 428 572 462	291 333 454 365 331	90 108 259 135 105	0 0 5 0 0	0 0 0 0	2041 2071 2145 2387 1907
1994 1995 1996 1997 1998	0 0 0 0	0 0 0 0 0	$\begin{array}{c}1\\0\\4\\18\\6\end{array}$	52 25 66 61 50	151 104 162 330 18	389 273 389 334 210	576 494 640 514 536	547 551 579 492 600	318 347 300 373 338	59 91 125 61 25	$\begin{array}{c} 0 \\ 0 \\ 0 \\ 11 \\ 0 \end{array}$	0 0 0 0	2093 1885 2265 2194 1783
1999 2000 2001 2002 2003	0 0 0 0	0 0 0 0 0	0 0 20 9 7	39 54 37 50 5	135 217 389 180 192	348 454 447 400 406	487 434 521 599 671	423 509 533 472 518	373 291 365 372 431	135 81 137 81 180	0 0 0 0 0	0 0 0 0	1940 2040 2449 2163 2410
2004 2005 2006 2007 2008	0 0 0 0	0 0 0 0 0	$\begin{array}{c} 45\\4\\0\\20\\0\end{array}$	97 2 20 64 54	188 170 231 229 192	376 266 478 396 431	576 682 715 569 592	514 597 475 560 599	341 271 337 274 394	99 79 31 50 114	0 2 1 0 1	0 0 0 0	2236 2073 2288 2162 2377
2009 2010 2011 2012 2013	0 0 0 0	0 0 0 0 0	$\begin{array}{c}1\\0\\1\\2\\23\end{array}$	62 15 18 77 124	330 72 81 242 260	328 386 315 391 483	628 563 535 577 691	527 470 546 677 565	451 364 466 495 394	53 144 128 172 85	$ \begin{array}{r} 3 \\ 17 \\ 0 \\ 11 \\ 0 \end{array} $	0 0 0 0	2383 2031 2090 2644 2625
2014 2015 2016 2017 2018	0 0 0 0	0 0 0 0	12 58 1 17 10	132 70 63 13 78	299 145 214 221 193	485 513 487 477 440	687 568 598 674 729	606 545 552 637 566	479 418 344 375 399	230 205 73 72 112	$\begin{array}{c}2\\2\\10\\4\\2\end{array}$	0 0 0 0	2932 2524 2342 2490 2529

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SNOWFALL (inches) 2018 FRESNO (KFAT)

Site with the (ments) 2010 The Site (mini)													
YEAR	JUL	AUG	SEP	ОСТ	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1990-91	0.0	0.0	0.0	0.0	0.0	Т	0.0	0.0	Т	0.0	0.0	0.0	Т
1991-92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Т	0.0	0.0	0.0	0.0	Т
1992-93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993-94 1994-95	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0\\ 0.0\end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0\\ 0.0\end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	0.0 T	T 0.0	$\begin{array}{c} 0.0\\ 0.0\end{array}$	$\begin{array}{c} 0.0\\ 0.0\end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	0.0 T	T T
1995-96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T	0.0	0.0	0.0	0.0	T T
1996-97 1997-98	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	T 0.0	$\begin{array}{c} 0.0\\ 0.0\end{array}$	0.0 T	0.0 T	$\begin{array}{c} 0.0\\ 0.0\end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	0.0 0.0	T I
1997-98	0.0	0.0	0.0	0.0	0.0	0.0	0.0 T	T	0.0	0.0	0.0	0.0	05^{1}
1999-00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Ť	0.0	0.0	0.0	0.0	0.5 T
2000-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Т	0.0	0.0	
2000-01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T 0.0
2002-03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2003-04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2004-05	0.0	0.0	0.0	Т	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Т
2005-	0.0	0.0	0.0	0.0	0.0	Т	0.0	0.0	0.0	0.0	0.0	0.0	Т
2006-07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T 0.0
2007-08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008-09	0.0	0.0	0.0	0.0	0.0	Т	0.0	0.0	0.0	0.0	0.0	0.0	0.0 T T
2009-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Т	0.0	0.0	
2010-11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Т	0.0	0.0	0.0	Т
2011-12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	$\begin{array}{c} 0.0\\ 0.0\end{array}$
2012-13 2013-	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	0.0 0.0	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0\\ 0.0\end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	$\begin{array}{c} 0.0 \\ 0.0 \end{array}$	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2013-14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2014-15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Т	0.0	Т
2014-13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2015-10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	T.	0.0	0.0	Т
2017-18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2018-	0.0	0.0	0.0	0.0	0.0	0.0							
POR=													
69 YRS	0.0	0.0	0.0	Т	0.0	Т	Т	Т	Т	Т	Т	Т	Т
WBAN : 93193								N : 93193					

REFERENCE NOTES :

PAGE 1:

THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL

MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).

PAGE 2 AND 3:

H/C INDICATES HEATING AND COOLING DEGREE DAYS.

RH INDICATES RELATIVE HUMIDITY

W/O INDICATES WEATHER AND OBSTRUCTIONS

S INDICATES SUNSHINE.

PR INDICATES PRESSURE.

CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS). GENERAL:

T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING.

WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED.

- 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05.
- CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET

CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. GENERAL CONTINUED:

WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH.

RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION.

AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL.

A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65 F.

DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR.

DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY.

WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.

ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.

STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED SATION HISTORY INFORMATION GO TO "Historical Observing Metadata Repository", URL IS:

http://www.ncdc.noaa.gov/homr/ SNOWFALL STOPPED MONTH & YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.

NOTE:

The "Period of Record:(POR)" for all "averages" is based on "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.

2018 FRESNO CALIFORNIA (KFAT)

Fresno is located about midway and toward the eastern edge of the San Joaquin Valley, which is oriented northwest to southeast and has a length of about 225 miles and an average width of 50 miles. The San Joaquin Valley is generally flat. About 15 miles east of Fresno the terrain slopes upward with the foothills of the Sierra Nevada. The Sierra Nevada attain an elevation of more than 14,000 feet 50 miles east of Fresno. West of the city 45 miles lie the foothills of the Coastal Range.

The climate of Fresno is dry and mild in winter and hot in summer. Nearly nine-tenths of the annual precipitation falls in the six months from November to April.

Due to clear skies during the summer and the protection of the San Joaquin Valley from marine effects, the normal daily maximum temperature reaches the high 90s during the latter part of July. The daily maximum temperature during the warmest month has ranged from 76 to 115 degrees. Low relative humidities and some wind movement substantially lower the sensible temperature during periods of high readings. Humidity readings of 15 percent are common on summer afternoons, and readings as low as 8 percent have been recorded. In contrast to this, humidity readings average 90 percent during the morning hours of December and January.

Winds flow with the major axis of the San Joaquin Valley, generally from the northwest. This feature is especially beneficial since, during the warmest months, the northwest winds increase during the evenings. These refreshing breezes and the normally large temperature variation of about 35 degrees between the highest and lowest readings of the day, generally result in comfortable evening and night temperatures. Winter temperatures are usually mild with infrequent cold spells dropping the readings below freezing. Heavy frost occurs almost every year, and the first frost usually occurs during the last week of November. The last frost in spring is usually in early March, however, one year in five will have the last frost after the first of April. The growing season is 291 days.

Although the heaviest rains recorded at Fresno for short periods have occurred in June, usually any rainfall during the summer is very light. Snow is a rare occurrence in Fresno.

Fresno enjoys a very high percentage of sunshine, receiving more than 80 percent of the possible amounts during all but the four months of November, December, January, and February. Reduction of sunshine during these months is caused by fog and short periods of stormy weather.

During foggy periods, at times lasting nearly two weeks, sunshine is reduced to a minimum. This fog frequently lifts to a few hundred feet above the surface of the valley and presents the appearance of a heavy, solid cloud layer.

Spring and autumn are very enjoyable seasons in Fresno, with clear skies, light rainfall and winds and mild temperatures.

Station History FRESNO, CA

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
FRESNO AIR TERMINAL FRESNO AIR TERMINAL FRESNO YOSEMITE INTL AP FRESNO YOSEMITE INT'L FRESNO AIR TERMINAL FRESNO AIR TERMINAL FRESNO YOSEMITE INT'L FRESNO AIR TERMINAL FRESNO AIR TERMINAL FRESNO AIR TERMINAL FRESNO AIR TERMINAL FRESNO AIR TERMINAL	1949-08-31 1961-09-01 2017-10-01 1949-08-20 1978-01-01 2016-08-22 1985-02-01 1995-11-15 1961-01-01 1947-10-01 1949-08-01	1961-01-01 1978-01-01 1995-11-15 Present 1949-08-31 1985-02-01 2017-10-01 1993-11-10 2010-06-24 1961-09-01 1949-08-01 1949-08-20	36° 46' 36° 46'	-119° 42' -119° 43' -119° 43' -119° 43' -119° 43' -119° 43' -119° 43' -119° 43' -119° 43' -119° 43' -119° 42' -119° 42'	338 328 333 338 328 333 336 333 328 336 333 328 336 338	.9 MI W .5 MI WSW 7 MI ENE 1 MI NNE	AIRWAYS, COOP, USHCN AIRWAYS, COOP, USHCN ASOS, COOP, USHCN ASOS, COOP, DLCD, USHCN AIRWAYS, COOP, USHCN COOP, USHCN, WXSVC ASOS, COOP, USHCN COOP, USHCN, WXSVC ASOS, COOP, USHCN AIRWAYS, COOP, USHCN AIRWAYS
FRESNO YOSEMITE INTL AP	2010-06-24	2016-08-22	36° 46'	-119° 43'	333	I	ASOS, COOP, USHCN

Element History

Element	Begin	End	Frequency	Time Of	Equipment *	Equipment *	Equipment
	Date	Date		Observation		Modifications	Exposure
TEMP	1969-04-01	1982-01-01	DAILY	2400			
MAX/MINTEM	1982-01-01	1985-02-01	DAILY	0800	PALMER		
TEMP	2000-08-23	2000-08-24	DAILY	2400			
WIND	2000-08-23	2001-06-04	HOURLY	UNKN	ANEMCUP		
WIND	2001-06-04	2007-04-03	HOURLY	UNKN	ANEMCUP		
PRECIP	2010-06-24	2016-08-22	HOURLY	VAR	AWPAG	RCRD; HTD	
TEMP	1995-07-01	1995-09-01	DAILY	2400	MXMN		
PRECIP	1995-09-01	2000-08-23	HOURLY	2400	TB	RCRD	
PRECIP	2001-06-04	2007-04-03	HOURLY	2400	AHTB	RCRD; HTD	
TEMP	2007-04-03	2010-06-24	DAILY	2400	ATEMP		
TEMP	2010-06-24	Present	DAILY	2400	ATEMP		
MAX/MINTEM	1969-04-01	1982-01-01	DAILY	0800	PALMER		
PRECIP	1985-02-01	1995-07-01	DAILY	2400	UNIV	RCRD	
PRECIP	2000-08-23	2001-06-04	HOURLY	2400	TB	RCRD	
WIND	2010-06-24	Present	HOURLY	UNKN	ANEMSONIC		
PRECIP	1947-10-01	1969-04-01	DAILY	2400	UNIV	RCRD	
PRECIP	2007-04-03	2010-06-24	DAILY	2400	AHTB	RCRD; HTD	
MAX/MINTEM	1969-04-01	1982-01-01	DAILY	0800	PALMER		
PRECIP	1982-01-01	1985-02-01	DAILY	2400	UNIV	RCRD	
TEMP	1947-10-01	1969-04-01	DAILY	2400			
PRECIP	1969-04-01	1982-01-01	DAILY	2400	UNIV	RCRD	
PRECIP	1982-01-01	1985-02-01	HOURLY	2400			
TEMP	1985-02-01	1995-07-01	DAILY	2400	MXMN		
PRECIP	1995-07-01	1995-09-01	HOURLY	2400	UNIV	RCRD	
PRECIP	1995-07-01	1995-09-01	DAILY	2400	UNIV	RCRD	
TEMP	1995-09-01	2000-08-23	DAILY	2400	HYGR		
PRECIP	2001-06-04	2007-04-03	DAILY	2400	AHTB	RCRD; HTD	
TEMP	2010-06-24	2016-08-22	DAILY	1700	ATEMP		
TEMP	1982-01-01	1985-02-01	DAILY	2400			
PRECIP	1985-02-01	1995-07-01	HOURLY	2400			
WIND	1995-09-01	2000-08-23	HOURLY	UNKN	ANEMCUP		
PRECIP	2000-08-23	2001-06-04	DAILY	2400	TB	RCRD	
TEMP	2000-08-23	2001-06-04	DAILY	2400	HYGR		
PRECIP	2007-04-03	2010-06-24	HOURLY	2400	AHTB	RCRD; HTD	
PRECIP	2010-06-24	Present	HOURLY	2400	AWPAG	RCRD;HTD	
MAX/MINTEM	1982-01-01	1985-02-01	DAILY	0800	PALMER		
PRECIP	1995-09-01	2000-08-23	DAILY	2400	TB	RCRD	
TEMP	2001-06-04	2007-04-03	DAILY	2400	ATEMP		
WIND	2007-04-03	2010-06-24	HOURLY	UNKN	ANEMSONIC	1	1
PRECIP	2010-06-24	Present	DAILY	2400	PCPNX		

* For explanation of codes and abbrevitions see Station Metadata link below.

Other Station Information can be found at: ASOS Implementation by NWS: http://www.nws.noaa.gov/ops2/Surface/asosimplementation.htm Station Metadata website: http://www.ncdc.noaa.gov/homr

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