

1999

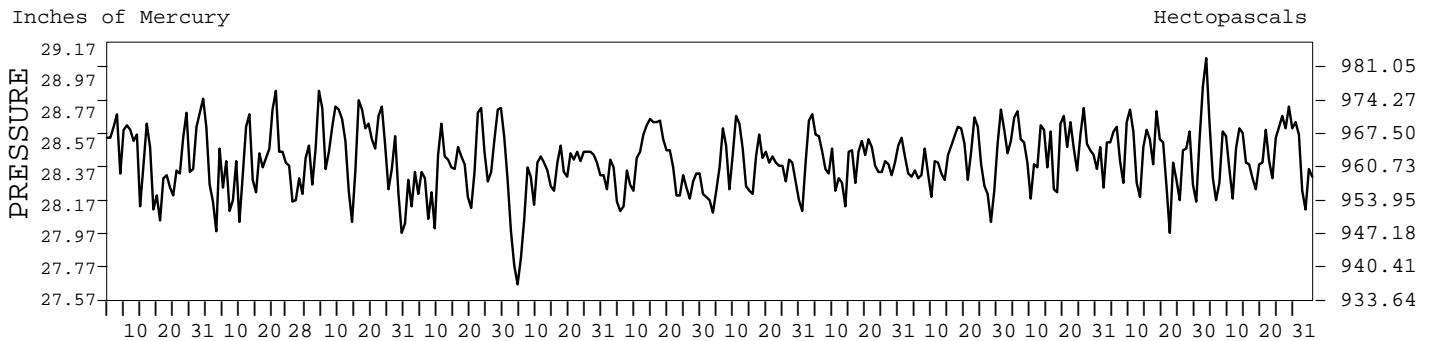
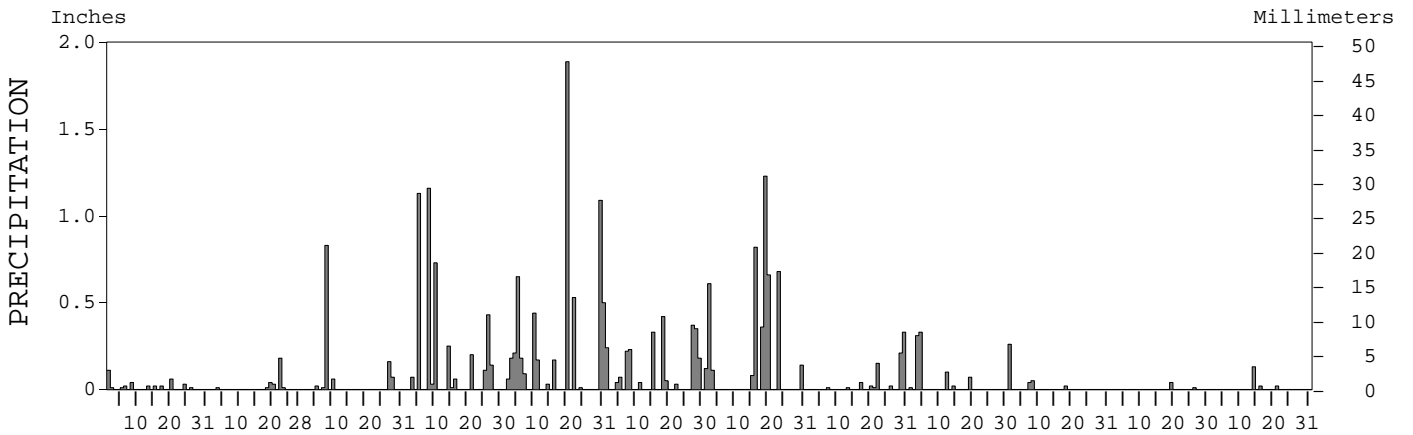
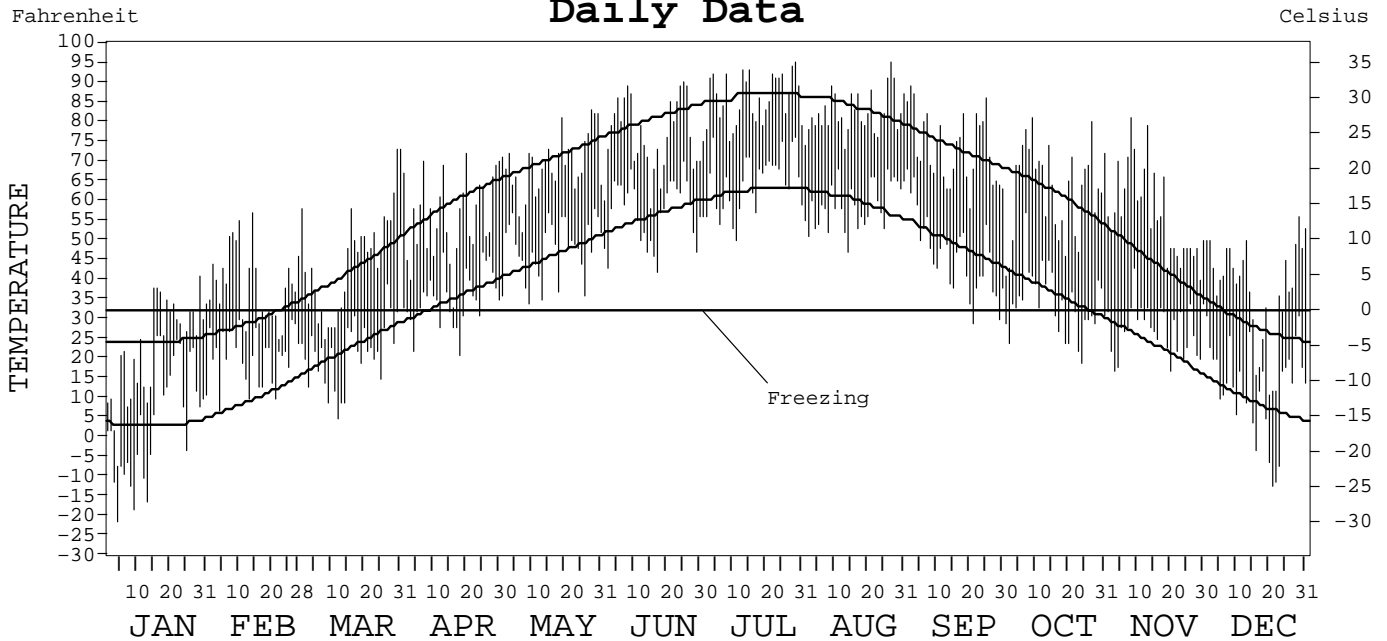
LOCAL CLIMATOLOGICAL DATA  
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-4748

SIOUX FALLS,  
SOUTH DAKOTA (FSD)

Daily Data



I CERTIFY THAT THIS IS AN OFFICIAL PUBLICATION OF THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, AND IS COMPILED FROM RECORDS ON FILE AT THE NATIONAL CLIMATIC DATA CENTER.

*Thomas R. Karl*

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
 NATIONAL ENVIRONMENTAL AND INFORMATION SERVICE  
 NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE  
 NATIONAL CLIMATIC DATA CENTER  
 ASHEVILLE, NORTH CAROLINA  
 DIRECTOR NATIONAL CLIMATIC DATA CENTER

# METEOROLOGICAL DATA FOR 1999

## SIOUX FALLS, SD (FSD)

LATITUDE: 43° 34' 37" N      LONGITUDE: 96° 45' 13" W      ELEVATION (FT): GRND: 1426      BARO: 1426      TIME ZONE: CENTRAL (UTC + 6)      WBAN: 14944

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	23.1	38.7	45.2	56.2	69.2	76.6	85.7	82.3	73.1	63.0	56.7	37.5	58.9	
	HIGHEST DAILY MAXIMUM	41	57	73	72	83	90	95	95	89	81	81	56	95	
	DATE OF OCCURRENCE	29	14	31+	20	28	25	29	27	02	09	08	29	AUG 27	
	MEAN DAILY MINIMUM	4.9	21.0	22.3	35.2	47.8	57.2	64.4	58.8	46.3	34.0	27.4	12.7	36.0	
	LOWEST DAILY MINIMUM	-21	7	5	21	34	42	50	47	29	19	17	-12	-21	
	DATE OF OCCURRENCE	04	04	12	18	09	17	11	14	21	24	20+	21	JAN 04	
	AVERAGE DRY BULB	14.0	29.9	33.8	45.7	58.5	66.9	75.1	70.6	59.7	48.5	42.1	25.1	47.5	
	MEAN WET BULB	13.5	27.6	30.2	41.7	53.5	61.3	69.2	64.8	52.9	41.6	35.9	23.1	42.9	
	MEAN DEW POINT	10.1	23.2	23.6	36.4	49.1	56.9	65.9	61.1	46.9	33.5	27.8	18.0	37.7	
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	1	12	3	0	0	0	0	0	16
	MAXIMUM ≤ 32°	24	10	7	0	0	0	0	0	0	0	0	8	49	
	MINIMUM ≤ 32°	31	28	28	11	0	0	0	0	2	14	23	31	168	
	MINIMUM ≤ 0°	12	0	0	0	0	0	0	0	0	0	0	5	17	
H/C	HEATING DEGREE DAYS	1574	976	961	572	208	72	0	4	199	505	686	1229	6986	
	COOLING DEGREE DAYS	0	0	0	0	14	136	319	185	48	3	0	0	705	
RH	MEAN (PERCENT)	83	77	69	72	73	71	74	73	67	61	62	75	71	
	HOUR 00 LST	85	81	79	82	80	80	84	85	79	71	72	81	80	
	HOUR 06 LST	85	84	85	86	88	86	87	90	89	80	78	83	85	
	HOUR 12 LST	78	70	57	62	64	60	63	58	49	43	46	64	60	
	HOUR 18 LST	83	73	53	59	61	59	59	60	51	48	54	70	61	
S	PERCENT POSSIBLE SUNSHINE	61	62	77	52	58			80	85		71			
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	1	2	3	0	1	0	2	2	0	1	0	4	16	
	THUNDERSTORMS	0	0	1	0	9	8	8	5	3	0	0	0	34	
CLOUDINESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	28.51	28.41	28.55	28.42	28.34	28.42	28.41	28.48	28.47	28.54	28.53	28.49	28.46	
	MEAN SEA-LEVEL PRESS. (IN.)	30.11	29.97	30.11	29.95	29.85	29.92	29.90	29.97	29.98	30.08	30.08	30.07	30.00	
WINDS	RESULTANT SPEED (MPH)	2.4	1.5	2.1	5.5	1.3	4.5	3.1	2.0	3.0	1.4	1.9	2.7	0.7	
	RES. DIR. (TENS OF DEGS.)	34	24	16	05	19	16	19	16	25	30	24	30	21	
	MEAN SPEED (MPH)	10.5	11.9	11.0	13.6	11.6	10.3	9.6	9.4	9.4	9.5	8.8	9.1	10.4	
	PREVAIL. DIR. (TENS OF DEGS.)	31	18	17	35	16	18	20	18	18	35	18	32	18	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	39	41	44	43	33	37	34	31	32	30	38	32	44	
	DIR. (TENS OF DEGS.)	31	34	30	02	30	30	34	18	32	36	32	35	30	
	DATE OF OCCURRENCE	17	11	17	08	07	07	19	15	26	27+	01	27	MAR 17	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	48	48	55	51	44	49	44	40	40	38	48	38	55	
DIR. (TENS OF DEGS.)	30	33	30	03	30	31	34	18	32	36	30	35	30		
DATE OF OCCURRENCE	17	11	17	08	07	07	19	15	26	15	01	27+	MAR 17		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	0.35	0.28	1.15	4.32	6.20	2.57	4.81	0.80	0.84	0.37	0.05	0.17	21.91	
	GREATEST 24-HOUR (IN.)	0.11	0.19	0.83	1.19	1.89	0.47	1.23	0.54	0.64	0.26	0.04	0.13	1.89	
	DATE OF OCCURRENCE	01	22-23	08	08-09	20	18-19	19	29-30	03-04	01	19	14	MAY 20	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	11	6	6	12	15	13	10	9	6	4	2	3	97	
PRECIPITATION ≥ 0.10	1	1	2	8	11	8	9	3	3	1	0	1	48		
PRECIPITATION ≥ 1.00	0	0	0	2	2	0	1	0	0	0	0	0	5		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	9.9	7.9	11.2	2.4	T	0.0	T	0.0	T	2.7	T	3.2	37.3	
	GREATEST 24-HOUR (IN.)	5.9	5.6	9.3	1.8	T	0.0	T	0.0	T	2.7	T	1.6	9.3	
	DATE OF OCCURRENCE	01	22	08	05	30		19		12	01	23+	14	MAR 08	
	MAXIMUM SNOW DEPTH (IN.)	9	6	9	T	0	0	0	0	0	1	T	2	9	
	DATE OF OCCURRENCE	02	23	09	17						02	19	23+	MAR 09	
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0	2	1	2	1	0	0	0	0	0	1	0	2	9		

# NORMALS, MEANS, AND EXTREMES

## SIOUX FALLS, SD (FSD)

LATITUDE: 43° 34' 37" N      LONGITUDE: 96° 45' 13" W      ELEVATION (FT): GRND: 1426      BARO: 1426      TIME ZONE: CENTRAL (UTC + 6)      WBAN: 14944

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	24.3	29.6	42.3	59.0	70.7	80.5	86.3	83.3	73.1	61.2	43.4	28.0	56.8
	MEAN DAILY MAXIMUM	68	24.6	30.1	41.7	58.3	70.9	80.0	85.8	83.5	73.7	61.8	42.8	29.6	56.9
	HIGHEST DAILY MAXIMUM	54	66	70	87	94	100	110	108	108	104	94	81	63	110
	YEAR OF OCCURRENCE		1981	1982	1968	1962	1967	1988	1989	1973	1976	1963	1999	1998	JUN 1988
	MEAN OF EXTREME MAXS.	68	45.3	51.1	67.2	81.8	88.4	94.8	98.6	96.7	90.6	81.8	65.0	50.0	75.9
	NORMAL DAILY MINIMUM	30	3.3	9.7	22.6	34.8	45.9	56.1	62.3	59.4	48.7	36.0	22.6	8.6	34.2
	MEAN DAILY MINIMUM	68	4.6	10.3	22.1	34.8	46.7	56.6	62.2	60.0	49.4	37.4	22.9	10.8	34.8
	LOWEST DAILY MINIMUM	54	-36	-31	-23	5	17	33	38	34	22	9	-17	-28	-36
	YEAR OF OCCURRENCE		1970	1962	1948	1982	1967	1969	1971	1950	1974	1972	1964	1990	JAN 1970
	MEAN OF EXTREME MINS.	68	-19.0	-15.1	-6	18.7	30.3	41.8	49.3	45.9	32.0	20.0	2.5	-12.7	16.1
	NORMAL DRY BULB	30	13.8	19.7	32.5	46.9	58.4	68.3	74.3	71.4	60.9	48.6	33.0	18.3	45.5
	MEAN DRY BULB	68	14.7	20.1	31.8	46.5	58.7	68.4	74.1	71.8	61.7	49.6	32.8	20.3	45.9
	MEAN WET BULB	16	15.7	20.7	29.8	40.8	52.8	61.5	65.8	64.7	55.2	42.8	28.8	19.2	41.5
	MEAN DEW POINT	16	11.1	16.0	24.5	33.7	46.5	56.4	61.7	60.7	50.3	36.5	23.8	15.0	36.3
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.2	0.7	4.3	10.4	7.6	1.8	0.1	0.0	0.0	25.1	
MAXIMUM ≤ 32°	30	20.9	15.5	7.2	0.3	0.0	0.0	0.0	0.0	0.0	*	5.8	19.0	68.7	
MINIMUM ≤ 32°	30	30.9	27.3	25.7	12.6	2.1	0.0	0.0	0.0	1.3	11.2	25.4	30.5	167.0	
MINIMUM ≤ 0°	30	13.4	7.9	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	8.3	32.4	
H/C	NORMAL HEATING DEG. DAYS	30	1587	1268	1008	543	240	50	10	22	165	508	960	1448	7809
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	35	149	298	220	42	0	0	0	744
RH	NORMAL (PERCENT)	30	72	73	72	64	64	65	65	68	70	67	73	76	69
	HOUR 00 LST	30	75	77	78	73	72	75	76	78	79	75	79	78	76
	HOUR 06 LST	30	75	78	82	80	80	82	83	85	86	81	82	80	81
	HOUR 12 LST	30	67	67	64	54	53	55	53	55	57	55	64	70	60
	HOUR 18 LST	30	70	69	63	51	50	51	50	53	56	57	69	75	60
S	PERCENT POSSIBLE SUNSHINE	3	56	45	50	44	47	62	62	69	70	68	56	49	56
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	54	2.4	3.0	2.6	0.9	0.7	0.5	0.7	1.2	1.4	1.5	2.6	3.7	21.2
	THUNDERSTORMS	54	0.0	0.1	0.9	2.8	6.1	8.7	9.5	7.8	5.4	2.0	0.4	0.1	43.8
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)														
	MIDNIGHT-MIDNIGHT (OKTAS)														
	MEAN NO. DAYS WITH:														
CLEAR	1					2.0	11.0								
PARTLY CLOUDY	1					3.0	3.0								
CLOUDY	1					11.0	7.0								
PR	MEAN STATION PRESSURE (IN)	27	28.54	28.54	28.45	28.43	28.42	28.42	28.46	28.49	28.50	28.50	28.49	28.53	28.48
	MEAN SEA-LEVEL PRES. (IN)	16	30.12	30.11	30.04	29.95	29.93	29.91	29.95	29.99	29.99	30.01	30.05	30.12	30.01
WINDS	MEAN SPEED (MPH)	40	10.9	11.0	12.3	12.7	11.6	10.4	9.6	9.5	10.1	10.6	11.5	10.7	10.9
	PREVAIL. DIR (TENS OF DEGS)	25	31	31	34	36	18	18	18	18	18	18	30	30	18
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	3	41	41	44	51	41	39	51	44	43	41	43	39	51
	DIR. (TENS OF DEGS)		34	34	30	31	18	29	32	03	34	19	30	36	32
	YEAR OF OCCURRENCE		1997	1999	1999	1997	1997	1998	1998	1998	1997	1997	1998	1997	JUL 1998
	MAXIMUM 5-SECOND:														
SPEED (MPH)	3	48	48	55	62	53	56	64	54	49	52	54	51	64	
DIR. (TENS OF DEGS)		30	33	30	31	28	27	32	03	34	29	31	34	32	
YEAR OF OCCURRENCE		1999	1999	1999	1997	1998	1998	1998	1998	1997	1997	1998	1997	JUL 1998	
PRECIPITATION	NORMAL (IN)	30	0.51	0.64	1.64	2.52	3.03	3.40	2.68	2.85	3.02	1.78	1.09	0.70	23.86
	MAXIMUM MONTHLY (IN)	54	1.71	4.05	4.08	5.83	8.26	8.43	8.41	9.09	9.26	6.28	2.95	2.62	9.26
	YEAR OF OCCURRENCE		1969	1962	1998	1995	1993	1984	1992	1975	1986	1998	1983	1968	SEP 1986
	MINIMUM MONTHLY (IN)	54	0.05	0.05	0.14	0.17	0.61	0.91	0.25	0.53	0.29	T	0.02	T	T
	YEAR OF OCCURRENCE		1958	1986	1967	1969	1981	1988	1947	1970	1956	1952	1980	1986	DEC 1986
	MAXIMUM IN 24 HOURS (IN)	54	1.61	2.00	2.53	2.64	3.92	4.32	3.39	4.59	4.02	4.54	2.06	1.44	4.59
	YEAR OF OCCURRENCE		1960	1962	1995	1953	1972	1957	1992	1975	1966	1973	1998	1955	AUG 1975
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	6.8	6.8	8.7	10.0	10.8	10.5	9.6	8.6	8.5	6.2	6.6	6.3	99.4	
PRECIPITATION ≥ 1.00	30	*	0.1	0.2	0.4	0.6	0.8	0.6	0.6	1.0	0.4	0.3	0.0	5.0	
SNOWFALL	NORMAL (IN)	30	6.7	7.7	8.0	2.2	0.*	0.0	0.0	0.0	0.*	0.6	5.1	7.8	38.1
	MAXIMUM MONTHLY (IN)	54	19.6	48.4	31.5	18.4	0.2	T	T	0.0	0.9	10.0	21.9	41.1	48.4
	YEAR OF OCCURRENCE		1969	1962	1951	1983	1954	1994	1995		1985	1991	1985	1968	FEB 1962
	MAXIMUM IN 24 HOURS (IN)	54	11.8	26.0	18.9	10.5	0.2	T	T	0.0	0.9	8.8	12.6	16.6	26.0
	YEAR OF OCCURRENCE		1960	1962	1956	1994	1954	1994	1995		1985	1991	1998	1968	FEB 1962
	MAXIMUM SNOW DEPTH (IN)	56	33	34	33	10	1	0	0	0	0	3	13	34	34
	YEAR OF OCCURRENCE		1969	1969	1969	1969	1947					1982	1983	1968	DEC 1968
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	2.2	2.1	2.2	0.6	0.0	0.0	0.0	0.0	0.0	0.2	1.6	2.2	11.1	

PRECIPITATION (inches) 1999 SIOUX FALLS, SD (FSD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0.37	0.10	2.03	3.75	4.83	3.81	2.98	0.53	3.14	3.13	2.17	0.54	27.38
1971	0.13	0.90	0.85	1.59	1.06	6.10	2.92	0.71	3.23	3.06	2.45	0.64	23.64
1972	0.18	0.40	0.97	2.73	7.25	2.09	3.49	2.65	1.75	1.78	1.89	1.25	26.43
1973	0.43	0.43	3.52	2.12	1.93	2.38	3.50	1.05	5.61	5.73	1.01	0.48	28.19
1974	0.13	0.30	1.65	1.33	3.11	2.79	1.27	5.16	0.58	0.34	0.27	0.10	17.03
1975	1.35	0.22	1.95	2.45	1.66	4.48	0.62	9.09	1.35	0.49	2.25	0.19	26.10
1976	0.41	0.48	1.60	2.15	1.02	1.02	1.53	1.31	0.76	0.71	0.07	0.36	11.42
1977	0.19	0.83	3.60	2.17	3.17	1.73	3.64	5.63	5.63	2.36	1.80	0.87	31.62
1978	0.47	0.33	0.56	3.98	3.47	2.91	4.79	3.08	2.45	0.14	0.48	0.51	23.17
1979	1.14	0.41	3.47	2.75	4.90	3.01	3.13	4.35	4.03	3.30	1.72	0.04	32.25
1980	0.18	0.47	0.70	0.77	2.52	2.17	1.63	2.92	0.79	1.36	0.02	0.29	13.82
1981	0.12	0.33	1.86	0.58	0.61	3.90	3.89	2.28	0.50	2.45	1.21	0.38	18.11
1982	0.76	0.13	1.17	1.87	4.72	1.18	4.60	5.23	3.49	5.18	2.94	1.99	33.26
1983	0.52	0.22	3.35	2.88	2.92	6.75	1.82	2.00	1.92	0.71	2.95	0.73	26.77
1984	0.37	1.10	1.83	5.79	2.95	8.43	1.63	0.76	1.62	4.11	0.03	1.02	29.64
1985	0.45	0.05	2.37	5.18	3.29	2.52	2.70	4.07	3.34	0.75	1.97	0.47	27.16
1986	0.72	0.05	1.50	5.15	2.42	3.93	2.59	2.77	9.26	1.22	0.89	T	30.50
1987	0.19	0.26	3.27	0.28	2.94	1.78	3.16	1.36	2.05	0.31	1.66	1.40	18.66
1988	1.54	0.25	0.63	3.00	1.54	0.91	0.49	4.02	4.39	0.02	1.98	0.37	19.14
1989	0.23	0.51	1.07	1.59	1.42	2.50	1.37	2.46	3.38	0.10	0.91	0.25	15.79
1990	0.08	0.31	1.57	1.86	4.07	4.86	1.77	1.17	0.47	1.82	0.61	0.61	19.20
1991	0.22	0.34	0.86	2.21	6.20	6.36	2.26	1.41	3.95	1.65	1.78	0.20	27.44
1992	0.75	1.76	2.36	2.01	1.80	2.44	8.41	5.29	3.06	2.72	1.04	0.83	32.47
1993	0.70	0.81	2.04	2.61	8.26	6.43	7.86	3.10	1.88	0.62	1.50	0.30	36.11
1994	0.97	0.63	0.20	3.34	1.26	6.03	1.70	2.66	2.36	2.36	1.03	0.33	22.87
1995	0.18	0.13	4.06	5.83	4.76	2.70	2.55	5.11	1.86	2.76	0.38	0.10	30.42
1996	0.99	0.16	0.82	0.55	5.27	1.14	0.98	1.79	2.82	1.63	2.91	0.78	19.84
1997	0.41	1.39	0.23	2.43	3.58	3.77	2.94	1.58	1.59	1.75	0.35	0.24	20.26
1998	0.50	0.67	4.08	3.57	1.92	4.52	2.66	3.29	1.19	6.28	2.20	0.24	31.12
1999	0.35	0.28	1.15	4.32	6.20	2.57	4.81	0.80	0.84	0.37	0.05	0.17	21.91
POR= 109 YRS	0.60	0.76	1.47	2.54	3.54	4.10	2.99	3.06	2.66	1.53	1.01	0.70	24.96

WBAN : 14944

AVERAGE TEMPERATURE (°F) 1999 SIOUX FALLS, SD (FSD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	4.7	19.4	26.4	44.8	59.9	69.0	73.3	72.5	61.9	46.2	32.0	15.6	43.8
1971	8.3	18.8	31.2	47.8	55.3	71.3	69.3	73.0	61.5	51.7	33.3	17.4	44.9
1972	8.9	11.5	31.5	43.8	59.1	66.7	70.2	70.5	59.5	44.4	31.9	14.8	42.7
1973	18.5	23.1	39.7	46.4	56.9	68.9	74.4	76.7	60.1	52.9	34.7	17.1	47.5
1974	12.8	24.3	34.5	48.9	55.7	65.9	79.2	67.6	57.7	51.4	33.9	23.6	46.3
1975	17.1	16.5	25.5	41.4	61.1	67.6	78.5	72.7	57.0	52.1	33.5	20.4	45.3
1976	15.6	29.5	34.8	51.0	57.1	71.5	76.7	75.2	62.9	44.3	27.6	16.6	46.9
1977	4.7	25.6	36.0	53.8	66.8	71.1	77.0	68.1	61.9	47.7	31.3	16.3	46.7
1978	1.9	8.6	30.5	44.3	57.7	66.6	70.9	71.1	66.7	47.8	31.3	14.6	42.7
1979	1.8	7.5	28.2	44.1	55.2	67.8	74.0	69.9	64.3	48.2	30.2	27.1	43.2
1980	18.1	18.1	31.7	50.1	58.4	68.8	74.2	71.1	62.0	45.5	36.7	21.2	46.3
1981	22.3	26.0	38.4	53.5	58.3	70.4	75.5	71.1	63.0	48.7	39.5	18.0	48.7
1982	3.8	20.2	32.8	43.9	59.6	62.6	74.4	71.3	60.0	48.8	30.3	24.5	44.4
1983	20.1	26.2	33.1	41.5	55.1	66.7	77.1	78.3	63.5	49.6	34.9	2.1	45.7
1984	17.4	27.8	24.6	45.8	55.9	68.1	73.6	74.2	57.2	50.4	36.2	20.4	46.0
1985	13.4	19.9	37.8	52.8	62.7	64.2	71.5	66.3	58.2	46.6	20.7	9.5	43.6
1986	20.7	16.9	36.9	48.2	58.8	69.6	75.0	66.5	59.6	48.6	28.7	25.2	46.2
1987	24.0	32.8	37.8	52.6	64.9	71.4	77.0	68.8	62.8	43.9	38.1	24.4	49.9
1988	9.6	15.0	36.4	46.4	65.1	76.3	77.4	74.8	62.6	44.6	34.2	22.1	47.0
1989	25.5	9.2	29.8	47.8	58.0	66.9	77.3	72.0	60.2	49.5	29.5	11.5	44.8
1990	28.2	24.9	36.7	46.4	56.4	70.1	71.2	72.9	66.5	48.0	35.6	15.3	47.7
1991	13.7	29.8	37.0	50.0	62.5	73.5	73.1	72.8	62.0	46.1	25.7	26.0	47.7
1992	26.5	30.0	36.7	43.7	60.5	67.0	65.5	66.1	60.3	48.7	30.4	19.2	46.2
1993	14.0	15.0	29.0	44.1	57.1	65.1	71.4	71.4	56.8	47.1	29.9	21.9	43.6
1994	6.2	13.3	36.6	46.5	63.9	71.6	70.8	69.5	65.2	52.4	36.5	21.8	46.2
1995	17.7	23.5	34.8	41.8	55.7	70.0	75.1	76.9	60.4	48.3	29.2	23.7	46.4
1996	10.9	22.6	27.4	42.4	54.9	68.8	69.1	70.0	59.4	47.7	23.5	10.3	42.3
1997	8.6	17.9	30.6	40.6	51.5	68.8	72.4	68.9	62.4	49.4	27.9	26.1	43.8
1998	19.6	31.8	28.0	46.5	61.7	63.1	71.9	71.0	66.3	50.6	35.5	24.0	47.5
1999	14.0	29.9	33.8	45.7	58.5	66.9	75.1	70.6	59.7	48.5	42.1	25.1	47.5
POR= 79 YRS	15.1	20.7	32.2	46.9	58.9	68.4	73.2	71.7	61.8	49.8	33.0	20.5	46.0

HEATING DEGREE DAYS (base 65°F) 1999 SIOUX FALLS, SD (FSD)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	16	3	195	577	986	1526	1754	1288	1041	511	297	17	8211
1971-72	29	12	177	409	945	1470	1737	1551	1031	628	236	50	8275
1972-73	29	43	194	631	984	1555	1440	1166	775	549	256	19	7641
1973-74	1	0	178	373	902	1481	1616	1133	939	477	303	85	7488
1974-75	2	39	240	419	927	1279	1476	1351	1217	701	157	51	7859
1975-76	3	5	271	407	937	1377	1528	1023	929	418	261	23	7182
1976-77	1	0	142	643	1114	1495	1867	1097	891	341	38	4	7633
1977-78	0	22	125	530	1000	1503	1957	1576	1063	613	252	78	8719
1978-79	11	18	104	525	1004	1554	1960	1607	1134	622	321	40	8900
1979-80	0	28	103	512	1038	1168	1448	1349	1027	464	243	32	7412
1980-81	1	14	157	602	841	1354	1318	1087	816	353	230	5	6778
1981-82	5	5	114	497	758	1452	1899	1247	991	632	174	105	7879
1982-83	0	28	188	494	1035	1249	1385	1082	982	699	317	67	7526
1983-84	1	0	160	476	894	1947	1468	1072	1247	569	285	23	8142
1984-85	2	12	265	451	857	1376	1594	1260	836	378	124	101	7256
1985-86	5	44	269	562	1327	1721	1363	1341	865	498	204	17	8216
1986-87	0	54	180	504	1082	1227	1265	896	835	387	96	23	6549
1987-88	5	54	110	649	801	1252	1715	1448	878	554	83	1	7550
1988-89	0	22	126	628	916	1321	1219	1559	1083	514	235	61	7684
1989-90	0	5	192	481	1056	1655	1131	1117	871	586	268	39	7401
1990-91	11	7	109	527	875	1538	1587	977	859	455	192	7	7144
1991-92	6	3	180	583	1171	1200	1186	1009	871	636	187	35	7067
1992-93	35	63	159	500	1030	1414	1576	1397	1109	621	244	74	8222
1993-94	2	19	257	557	1046	1331	1821	1443	872	563	140	8	8059
1994-95	5	15	100	386	849	1332	1461	1157	931	689	281	55	7261
1995-96	3	0	198	523	1068	1275	1674	1224	1159	672	334	44	8174
1996-97	8	4	228	535	1237	1691	1738	1313	1060	727	413	7	8961
1997-98	20	26	130	497	1105	1202	1402	922	1138	549	147	117	7255
1998-99	4	2	79	440	881	1262	1574	976	961	572	208	72	7031
1999-	0	4	199	505	686	1229							

WBAN : 14944

COOLING DEGREE DAYS (base 65°F) 1999 SIOUX FALLS, SD (FSD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0	0	0	6	54	172	280	241	108	2	0	0	863
1971	0	0	0	4	1	211	167	268	79	2	0	0	732
1972	0	0	0	0	60	108	197	219	35	0	0	0	619
1973	0	0	0	0	13	143	300	370	38	8	0	0	872
1974	0	0	0	2	23	118	450	126	26	6	0	0	751
1975	0	0	0	0	44	134	428	252	36	16	0	0	910
1976	0	0	0	2	24	226	370	324	85	9	0	0	1040
1977	0	0	0	11	101	197	382	123	40	0	0	0	854
1978	0	0	0	0	32	133	202	213	163	0	0	0	743
1979	0	0	0	3	25	131	289	189	87	0	0	0	724
1980	0	0	0	23	46	153	290	207	74	6	0	0	799
1981	0	0	0	14	27	175	342	203	61	0	0	0	822
1982	0	0	0	4	12	42	298	230	45	0	0	0	631
1983	0	0	0	0	15	122	381	420	120	2	0	0	1060
1984	0	0	0	0	10	120	276	305	36	4	0	0	751
1985	0	0	0	19	59	85	212	93	72	0	0	0	540
1986	0	0	0	0	20	163	318	108	25	0	0	0	634
1987	0	0	0	20	100	219	381	178	53	0	0	0	951
1988	0	0	0	1	94	349	393	330	61	0	0	0	1228
1989	0	0	0	6	25	125	387	228	56	7	0	0	834
1990	0	0	0	31	11	198	209	258	160	7	0	0	874
1991	0	0	0	11	119	265	264	249	100	5	0	0	1013
1992	0	0	0	4	53	103	58	103	25	5	0	0	351
1993	0	0	0	0	5	85	208	223	16	9	0	0	546
1994	0	0	0	13	113	212	191	160	113	2	0	0	804
1995	0	0	0	0	0	214	324	375	68	11	0	0	992
1996	0	0	0	0	27	163	140	167	63	4	0	0	564
1997	0	0	0	0	1	128	255	152	62	20	0	0	618
1998	0	0	0	0	54	69	225	196	123	0	0	0	667
1999	0	0	0	0	14	136	319	185	48	3	0	0	705

SNOWFALL (inches) 1999 SIOUX FALLS, SD (FSD)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0.0	0.0	0.0	5.1	0.5	8.5	1.9	1.7	4.7	0.3	0.0	0.0	22.7
1971-72	0.0	0.0	0.0	T	4.4	10.6	1.8	10.6	5.0	0.8	0.0	0.0	33.2
1972-73	0.0	0.0	0.0	0.2	2.5	6.2	5.5	7.4	0.3	T	0.0	0.0	22.1
1973-74	0.0	0.0	0.0	T	0.1	11.6	1.9	2.9	5.1	3.3	0.0	0.0	24.9
1974-75	0.0	0.0	0.0	0.0	2.5	1.1	18.3	3.1	17.9	T	0.0	0.0	42.9
1975-76	0.0	0.0	0.0	T	13.2	2.5	6.5	6.6	7.9	T	0.1	0.0	36.8
1976-77	0.0	0.0	0.0	3.4	0.7	6.7	2.7	1.9	13.5	T	0.0	0.0	28.9
1977-78	0.0	0.0	0.0	0.9	8.6	8.0	7.6	6.5	5.5	0.6	0.0	0.0	37.7
1978-79	0.0	0.0	0.0	0.0	2.9	9.5	19.0	7.3	13.2	1.5	0.0	0.0	53.4
1979-80	0.0	0.0	0.0	T	15.2	0.3	2.9	5.5	5.8	T	0.0	0.0	29.7
1980-81	0.0	0.0	0.0	0.8	0.4	4.6	1.4	3.1	T	0.5	0.0	0.0	10.8
1981-82	0.0	0.0	0.0	0.8	8.9	5.5	16.9	1.0	1.8	7.5	0.0	0.0	42.4
1982-83	0.0	0.0	0.0	3.3	4.1	17.6	4.7	3.6	18.8	18.4	0.0	0.0	70.5
1983-84	0.0	0.0	0.0	T	19.0	13.7	5.0	11.9	19.4	6.0	0.0	0.0	75.0
1984-85	0.0	0.0	T	T	T	4.7	7.4	0.7	16.1	2.5	0.0	0.0	31.4
1985-86	0.0	0.0	0.9	0.2	21.9	9.1	9.1	0.9	8.2	0.3	0.0	0.0	50.6
1986-87	0.0	0.0	0.0	T	5.4	T	2.4	0.3	T	T	0.0	0.0	8.1
1987-88	0.0	0.0	0.0	0.1	7.5	13.3	17.9	7.3	2.5	11.3	0.0	0.0	59.9
1988-89	0.0	0.0	0.0	T	10.9	2.2	2.0	10.0	16.0	0.7	T	0.0	41.8
1989-90	0.0	0.0	0.0	0.0	2.4	4.0	0.2	5.8	0.7	T	0.0	T	13.1
1990-91	0.0	0.0	0.0	1.2	8.4	8.8	5.4	5.4	3.2	T	T	T	32.4
1991-92	0.0	0.0	0.0	10.0	10.8	0.2	3.8	11.2	8.4	3.5	T	T	47.9
1992-93	0.0	0.0	0.0	T	4.7	8.4	8.6	13.1	14.9	2.2	T	T	51.9
1993-94	T	0.0	T	T	8.8	4.6	16.8	13.0	1.1	14.9	0.0	T	59.2
1994-95	0.0	0.0	0.0	0.0	9.7	7.0	0.5	2.4	8.8	12.5	0.0	0.0	40.9
1995-96	T	0.0	0.0	7.4	5.1	1.9	15.4	1.7	6.9				
1996-97			0.0	T	11.3	19.8	8.8	16.5	1.3	6.0	T	0.0	
1997-98	0.0	0.0	0.0	0.4	5.0	3.3	11.7	6.9	21.4	0.3	0.0	T	49.0
1998-99	0.0	0.0	0.0	0.0	14.8	9.0	9.9	7.9	11.2	2.4	T	0.0	55.2
1999-	T	0.0	T	2.7	T	3.2							
POR= 53 YRS	T	0.0	0.0	0.8	5.6	6.9	6.8	7.9	9.3	2.8	0.2	T	40.3

WBAN : 14944

REFERENCE NOTES:

<p>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).</p> <p>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).</p> <p>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. NORMALS ARE 30-YEAR AVERAGES (1961 - 1990). 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 AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD.</p>	<p>GENERAL CONTINUED: CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED. 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.</p> <p>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 EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
---	---

# 1999 SIOUX FALLS, SOUTH DAKOTA (FSD)

Sioux Falls is located in the Big Sioux River Valley in southeast South Dakota. The surrounding terrain is gently rolling. The land slopes upward for about 100 miles north and northwest to an elevation about 400 feet higher than the city. To the southeast, the land slopes downward 200 to 300 feet over the same distance. Little change in elevation occurs in the remaining directions.

The climate is of the continental type. There are frequent weather changes from day to day or week to week as the locality is visited by differing air masses. Cold air masses arrive from the interior of Canada, cool, dry air from the northern Pacific, warm, moist air from the Gulf of Mexico, or hot, dry air from the southwest.

Temperatures fluctuate frequently as cold air masses move in very rapidly. During the late fall and winter, cold fronts accompanied by strong, gusty winds drop temperatures by 20 to 30 degrees in a 24-hour period. Severe cold spells usually last only a few days. The winter months of December through February have experienced cold spells with average temperatures under 8 degrees and more than 60 consecutive days below 32 degrees.

Temperatures of 100 degrees and above occur about one in every three years, and will most likely happen in July. Summer nights are usually comfortable with temperatures below 70 degrees.

Rainfall is heavier during the spring and summer with lighter amounts in winter. Nearly 64 percent of the normal yearly precipitation falls during the growing season of April through August.

One or two very heavy snows usually fall each winter. Eight to 12 inches of snow may fall in 24 hours. There have been a few snows in excess of 15 inches and almost 30 inches have fallen during a severe winter storm. Strong winds often cause drifting snow, and blizzard conditions may block highways for a day or so.

Southerly winds prevail from late spring to early fall with northwest winds the remainder of the year. Strong winds of 70 mph with gusts to 90 mph have occurred.

Thunderstorms are frequent during the late spring and summer with June and July the most active months. The thunderstorms usually occur during the late afternoon and evening with a secondary peak of activity between 2 and 5 in the morning. Some of the most severe thunderstorms with damaging winds, hail and an occasional tornado, occur most frequently June.

There is occasional flooding in the lower areas of Sioux Falls along the Big Sioux River and Skunk Creek. Runoff from the melting snow in the spring often causes substantial rises in the rivers. A diversion canal around Sioux Falls has reduced the threat of damaging floods.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is October 1 and the average last occurrence in the spring is May 10.

# STATION LOCATION

SIOUX FALLS, SOUTH DAKOTA

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE										AUCOMPTHTO	* Type M = AMOS T = AUTOB S = ASOS W = AWOS	REMARKS	
						SEA LEVEL	GROUND												
							WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND				WIND
<u>COOPERATIVE</u>																			
213 South Menlo	1/01/00	7/31/08		43° 33'	96° 44'	1460													
924 West 10th Street	8/01/08	10/31/08	528 ft. N	43° 33'	96° 44'	1460													
610 N. Summit	11/01/08	10/31/41	1600 ft. NNE	43° 33'	96° 44'	1489													
<u>AIRPORT</u>																			
Old Administration Bldg	11/01/41	11/30/42	1 mi. NW	43° 34'	96° 44'	1420	45	26	26									Second-Order Weather Bureau.	
<u>COOPERATIVE</u>																			
610 N. Summit	12/01/42	12/30/45	1 mi. SE	43° 33'	96° 44'	1489													
<u>AIRPORT</u>																			
Old Administration Bldg Municipal Airport	12/31/45	9/24/47	1 mi. NW	43° 34'	96° 44'	1420	45	5	5					3	3			First-Order Weather Bureau.	
New Administration Bldg Municipal Airport Foss Field	9/24/47	1/14/93	500 ft. SW	43° 34'	96° 44'	d1418	a17	5	5					b4	4	c4		a - 47 ft. to 4/16/56 and 55 ft. to 11/25/61. b - 5 ft. to 5/31/57 and 5 ft. to 10/12/64. c - Commissioned 2400 ft. NW of thermometer site 8/1/63. d - 1400 ft. to 8/1/63.	
Weather Service Bldg Foss Field	1/12/71	9/14/93	1 mi. N	43° 35'	96° 44'	1418	j30	s5	s5	NA	f3	5	5	e4	h4	NA		e - Same site as prior to 1/12/71. s - Standby equipment. f - Commissioned 2/1/71. Removed 10/1/76	
NWS Forecast Office NOAA 1. Weather Lane Foss Field	9/14/93	04/01/96	1350 ft. E	43° 35'	96° 44'	1418	k20	k5	k5	NA	k5	k5	k5	k5	k5	NA		f - Commissioned 2/1/71. Removed 10/1/76 g - Type change 2/28/83. h - Type change 7/23/85. j - Moved 7/18/84. k - Moved 9/14/93.	
Foss Field	04/01/96	Present	NA	43°35'	96°45'	1426										S		ASOS Commissioned 04/01/96	

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801.  
INQUIRIES/COMMENTS CALL: (828) 271-4800

National Climatic Data Center  
151 Patton Avenue, Rm 120  
Asheville NC 28801-5001

OFFICIAL BUSINESS  
PENALTY FOR PRIVATE USE \$300  
FORWARD AND ADDRESS CORRECTION

FIRST CLASS  
POSTAGE & FEES PAID  
United States Department of Commerce  
NOAA Permit No. G - 19