

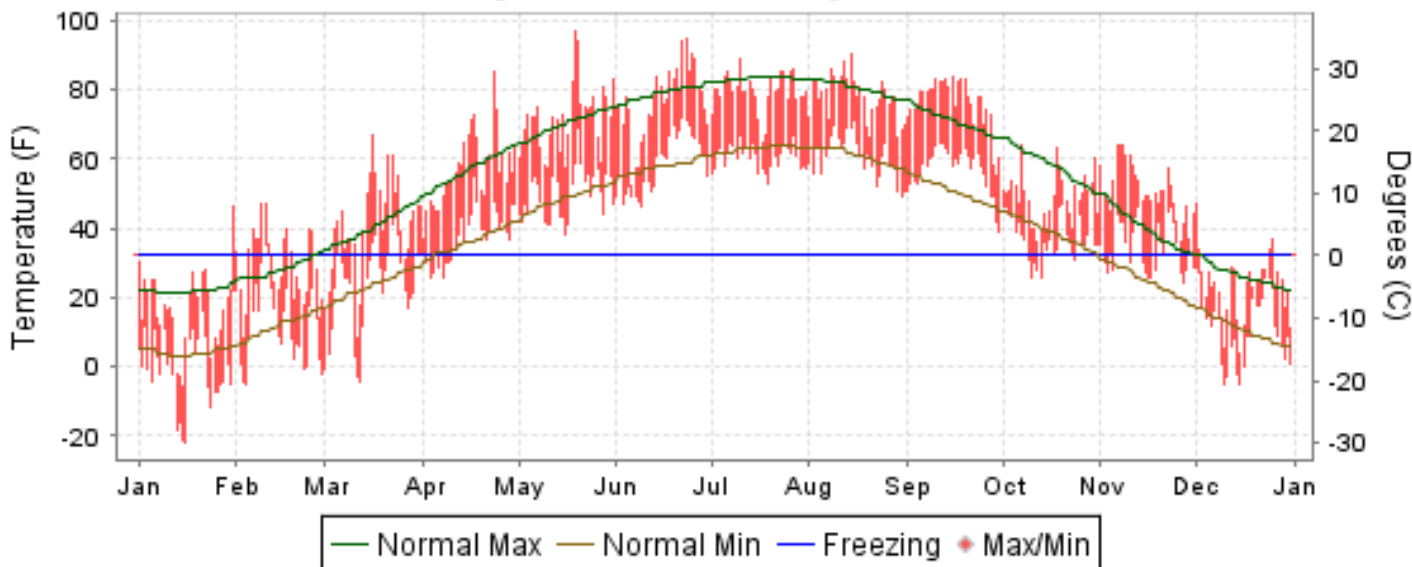


2009 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

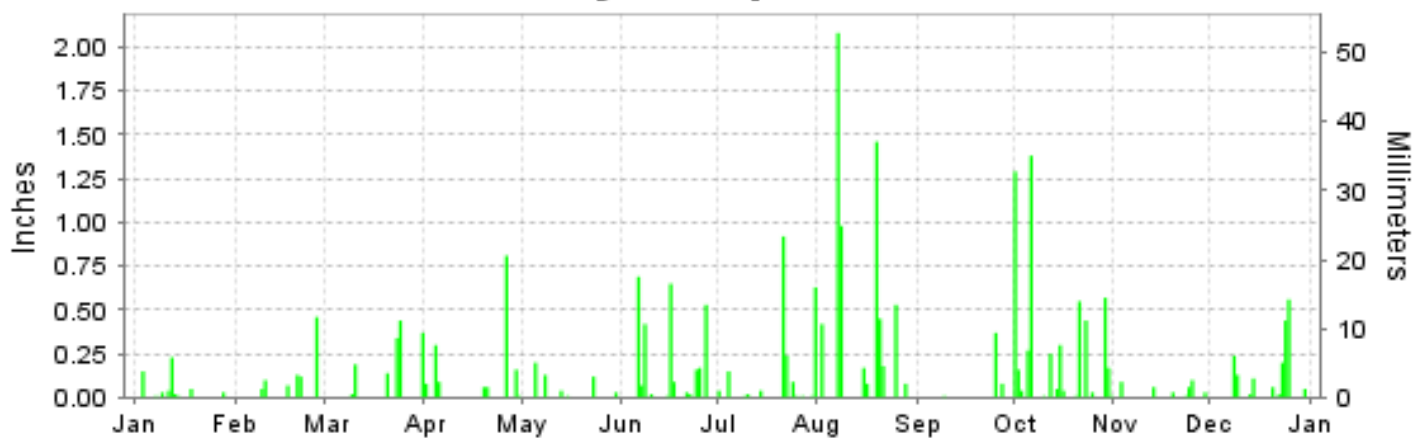
ISSN 0198-2737

MINNEAPOLIS, MINNESOTA (KMSP)

Daily Max/Min Temperature



Daily Precipitation



Daily Station Pressure



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NATIONAL
CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

Thomas R. Karl
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 2009

MINNEAPOLIS (KMSP)

LATITUDE: 44° 52'N LONGITUDE: -93° 13'W ELEVATION (FT): GRND: 815 BARO: 874 TIME ZONE: CENTRAL (UTC -6) WBAN: 14922

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	16.8	29.1	41.1	57.4	71.6	76.7	79.5	78.0	76.0	49.1	51.0	23.2	54.1	
	HIGHEST DAILY MAXIMUM	46	47	67	85	97	95	89	90	84	64	64	47	97	
	DATE OF OCCURRENCE	31	10+	16	23	19	23	10	14	15	07	08+	01	MAY 19	
	MEAN DAILY MINIMUM	-0.2	12.4	23.3	37.8	50.0	58.7	60.5	60.9	57.0	37.3	34.4	11.4	37.0	
	LOWEST DAILY MINIMUM	-22	-5	-4	26	38	46	53	49	39	26	24	-5	-22	
	DATE OF OCCURRENCE	16	04	12	07+	16	09	19	30	30	13+	27	15+	JAN 16	
	AVERAGE DRY BULB	8.3	20.8	32.2	47.6	60.8	67.7	70.0	69.5	66.5	43.2	42.7	17.3	45.6	
	MEAN WET BULB	7.2	18.5	28.6	39.4	49.7	58.2	60.2	61.6	59.0	40.0	37.8	15.7	39.7	
	MEAN DEW POINT	0.7	11.9	20.9	27.1	37.9	50.9	53.1	56.0	53.5	35.5	31.6	10.2	32.4	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	2	3	0	1	0	0	0	0	0	6
	MAXIMUM <= 32°	30	15	6	0	0	0	0	0	0	0	0	27	78	
MINIMUM <= 32°	31	27	25	9	0	0	0	0	0	6	15	31	144		
MINIMUM <= 0°	16	5	3	0	0	0	0	0	0	0	0	5	29		
H/C	HEATING DEGREE DAYS	1747	1229	1008	515	162	69	8	18	55	669	662	1472	7614	
	COOLING DEGREE DAYS	0	0	0	2	40	158	171	166	110	0	0	0	647	
RH	MEAN (PERCENT)	70	68	64	49	46	59	58	64	65	76	68	73	63	
	HOUR 00 LST	73	71	69	52	50	67	67	72	71	79	73	75	68	
	HOUR 06 LST	76	75	73	64	64	73	74	81	80	84	79	78	75	
	HOUR 12 LST	64	61	57	43	37	50	46	53	54	67	59	68	55	
	HOUR 18 LST	65	63	56	38	33	48	46	51	52	71	61	69	54	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	1	2	2	0	0	0	0	0	1	0	0	1	7	
	THUNDERSTORMS	0	0	1	2	1	6	4	7	0	1	0	0	22	
CLOUDNESS	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.)	29.15	29.17	29.13	29.08	29.04	28.98	29.05	29.06	29.18	29.05	29.13	29.12	29.10	
	MEAN SEA-LEVEL PRESS. (IN.)	30.09	30.11	30.07	30.00	29.94	29.87	29.94	29.95	30.08	29.95	30.05	30.07	30.01	
WINDS	RESULTANT SPEED (MPH)	3.1	3.2	1.8	2.4	2.8	1.5	2.5	1.9	2.3	0.9	1.5	2.7	1.1	
	RES. DIR. (TENS OF DEGS.)	28	29	14	35	25	32	28	24	15	35	18	35	29	
	MEAN SPEED (MPH)	7.9	9.8	9.8	10.2	10.5	8.1	8.1	7.8	6.3	9.0	7.0	8.7	8.6	
	PREVAIL.DIR.(TENS OF DEGS.)	30	31	12	35	32	30	30	17	14	29	16	36	14	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	31	32	30	31	36	30	28	30	41	32	31	29	41	
	DIR. (TENS OF DEGS.)	28	28	12	34	28	28	32	25	29	22	29	33	29	
	DATE OF OCCURRENCE	01	02	24	21	13	28	17	02	27	30	02	09	SEP 27	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	43	41	39	41	49	40	39	43	54	43	43	43	54	
DIR. (TENS OF DEGS.)	28	19	13	33	20	29	28	24	28	22	29	34	28		
DATE OF OCCURRENCE	01	10	24	21	20	28	31	02	27	30	02	09	SEP 27		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	0.57	0.93	1.50	1.57	0.53	2.86	2.17	6.43	0.46	5.57	0.38	1.83	24.80	
	GREATEST 24-HOUR (IN.)	0.23	0.46	0.47	0.81	0.20	0.69	0.92	3.05	0.37	1.57	0.11	0.56	3.05	
	DATE OF OCCURRENCE	12	26	23-24	26	05	06	21	07-08	25	05-06	24-25	25	AUG 07-08	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	9	6	6	8	6	12	12	10	3	17	7	10	106	
PRECIPITATION 0.10	2	4	5	3	3	6	4	8	1	10	1	6	53		
PRECIPITATION 1.00	0	0	0	0	0	0	0	2	0	2	0	0	4		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	8.4	10.9	1.5	2.5	0.0	0.0	0.0	0.0	0.0	2.8	T	20.9	47.0	
	GREATEST 24-HOUR (IN.)	4.7	6.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	2.5	T	5.2	6.0	
	DATE OF OCCURRENCE	12	26	10	04						12	29	24	FEB 26	
	MAXIMUM SNOW DEPTH (IN.)	8	6	5	2	0	0	0	0	0	1	0	11	11	
	DATE OF OCCURRENCE	19	27	04+	05						12	24	24	DEC 24	
NUMBER OF DAYS WITH:															
SNOWFALL >= 1.0	2	3	1	1	0	0	0	0	0	1	0	6	14		

NORMALS, MEANS, AND EXTREMES MINNEAPOLIS (KMSP)

LATITUDE: 44 ° 52'N **LONGITUDE:** -93 ° 13'W **ELEVATION (FT):** GRND: 815 BARO: 874 **TIME ZONE:** CENTRAL (UTC -6) **WBAN: 14922**

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	21.9	28.4	40.6	57.0	70.1	79.0	83.3	80.4	71.1	58.4	40.1	26.4	54.7
	MEAN DAILY MAXIMUM	119	22.0	25.2	38.7	55.2	68.5	76.7	83.2	80.5	70.5	58.8	40.1	27.0	53.9
	HIGHEST DAILY MAXIMUM	71	58	61	83	95	97	102	105	102	98	90	77	68	105
	YEAR OF OCCURRENCE		1944	2000	1986	1980	2009	1985	1988	1947	1976	1997	1999	1998	JUL 1988
	MEAN OF EXTREME MAXS.	119	41.1	45.5	62.1	79.5	87.7	93.2	94.8	93.3	88.6	79.9	61.9	45.8	72.8
	NORMAL DAILY MINIMUM	30	4.3	11.8	23.5	36.2	48.5	57.8	63.0	60.8	50.8	38.9	24.8	10.9	35.9
	MEAN DAILY MINIMUM	119	5.2	8.9	22.0	35.9	48.0	57.3	63.3	60.9	51.1	40.2	25.2	12.2	35.9
	LOWEST DAILY MINIMUM	71	-34	-32	-32	2	18	34	43	39	26	13	-17	-29	-34
	YEAR OF OCCURRENCE		1970	1996	1962	1962	1967	1945	1972	1967	1974	1997	1964	1983	JAN 1970
	MEAN OF EXTREME MINS.	119	-17.7	-12.6	0.0	20.9	33.1	44.1	52.0	49.1	35.2	25.1	6.0	-10.1	18.8
	NORMAL DRY BULB	30	13.1	20.1	32.1	46.6	59.3	68.4	73.2	70.6	61.0	48.7	32.5	18.7	45.4
	MEAN DRY BULB	119	13.6	17.2	30.4	45.5	58.3	67.1	73.3	70.7	60.8	49.5	32.6	19.6	44.9
	MEAN WET BULB	26	13.9	17.8	27.9	39.2	50.3	60.0	64.5	63.1	55.2	42.7	29.5	18.0	40.2
	MEAN DEW POINT	26	10.3	14.1	23.1	33.1	45.4	56.4	61.5	60.2	51.8	38.3	25.9	14.7	36.2
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	0.1	0.7	2.7	5.6	3.0	0.9	*	0.0	0.0	13.0
	MAXIMUM <= 32	30	23.6	16.7	7.1	0.4	0.0	0.0	0.0	0.0	0.0	0.1	8.0	20.4	76.3
MINIMUM <= 32	30	30.8	26.8	24.1	10.1	0.7	0.0	0.0	0.0	0.5	7.3	23.7	30.2	154.2	
MINIMUM <= 0	30	12.9	6.9	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	7.5	29.9	
H/C	NORMAL HEATING DEG. DAYS	30	1616	1273	1034	560	222	44	7	20	178	516	978	1428	7876
	NORMAL COOLING DEG. DAYS	30	0	0	0	4	41	146	259	190	56	3	0	0	699
RH	NORMAL (PERCENT)	30	71	71	67	59	60	64	66	69	70	67	72	75	68
	HOURLY 00 LST	30	74	75	72	65	66	72	75	78	77	73	76	77	73
	HOURLY 06 LST	30	75	77	77	74	75	79	81	84	84	80	80	79	79
	HOURLY 12 LST	30	68	65	60	50	51	54	55	58	58	58	66	70	59
	HOURLY 18 LST	30	69	67	60	49	48	52	54	58	60	59	68	73	60
S	PERCENT POSSIBLE SUNSHINE	58	53	59	57	58	61	66	72	69	62	55	39	42	58
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI)	46	1.0	1.3	1.5	0.4	0.3	0.4	0.2	0.5	0.8	0.6	0.9	1.3	9.2
	THUNDERSTORMS	64	0.0	0.2	1.0	2.6	4.9	7.6	7.3	6.4	4.4	1.8	0.5	0.2	36.9
CLOUDNESS	MEAN: SUNRISE-SUNSET (OKTAS)	58	5.1	5.0	5.4	5.3	5.1	4.9	4.2	4.2	4.4	4.6	5.7	5.5	5.0
	MIDNIGHT-MIDNIGHT (OKTAS)	32	4.9	4.8	5.1	5.0	4.8	4.5	4.0	4.0	4.2	4.6	5.3	5.2	4.7
	MEAN NO. DAYS WITH: CLEAR	58	8.3	7.7	7.1	6.9	7.0	7.2	9.8	10.0	9.8	9.8	5.5	6.4	95.5
	PARTLY CLOUDY	58	7.3	6.9	7.4	7.7	9.1	10.4	11.8	11.2	8.5	7.5	6.4	6.4	100.6
	CLOUDY	58	15.4	13.7	16.5	15.3	14.8	12.4	9.5	9.8	11.8	13.7	18.1	18.2	169.2
PR	MEAN STATION PRESSURE(IN)	26	29.15	29.17	29.13	29.05	29.04	29.02	29.07	29.11	29.10	29.11	29.11	29.14	29.10
	MEAN SEA-LEVEL PRES. (IN)	26	30.10	30.11	30.06	29.97	29.94	29.91	29.95	29.99	30.00	30.02	30.04	30.09	30.02
WINDS	MEAN SPEED (MPH)	26	9.9	9.8	10.5	11.4	10.5	9.6	9.0	8.7	9.5	10.2	10.0	9.7	9.9
	PREVAIL.DIR(TENS OF DEGS)	41	32	32	32	32	15	14	16	15	16	32	32	32	32
	MAXIMUM 2-MINUTE: SPEED (MPH)	13	35	37	37	45	49	49	40	47	41	38	39	39	49
	DIR. (TENS OF DEGS)		29	31	29	28	22	31	27	26	29	31	28	31	31
	YEAR OF OCCURRENCE		2004	2002	2004	2000	1998	2008	2007	2007	2009	2001	2005	2004	JUN 2008
	MAXIMUM 3-SECOND SPEED (MPH)	13	47	47	49	59	64	62	54	71	54	53	49	52	71
	DIR. (TENS OF DEGS)		32	33	32	28	26	32	28	26	28	28	28	31	26
	YEAR OF OCCURRENCE		2004	2002	2000	2000	1998	2008	2007	2007	2009	2008	2005	2004	AUG 2007
PRECIPITATION	NORMAL (IN)	30	1.04	0.79	1.86	2.31	3.24	4.34	4.04	4.05	2.69	2.11	1.94	1.00	29.41
	MAXIMUM MONTHLY (IN)	71	3.63	2.14	4.75	7.00	8.03	9.82	17.90	9.32	7.53	5.68	5.29	4.27	17.90
	YEAR OF OCCURRENCE		1967	1981	1965	2001	1962	1990	1987	2007	1942	1971	1991	1982	JUL 1987
	MINIMUM MONTHLY (IN)	71	0.10	0.06	0.32	0.16	0.53	0.22	0.58	0.43	0.41	0.01	0.02	T	T
	YEAR OF OCCURRENCE		1990	1964	1994	1987	2009	1988	1975	1946	1940	1952	1939	1943	DEC 1943
	MAXIMUM IN 24 HOURS (IN)	71	1.21	1.10	1.66	2.58	3.03	3.28	10.00	7.36	3.55	4.83	2.91	2.47	10.00
	YEAR OF OCCURRENCE		1967	1966	1965	2006	1965	2003	1987	1977	1942	2005	1940	1982	JUL 1987
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	9.9	7.5	10.2	11.3	10.9	11.1	10.4	10.4	9.8	8.4	9.1	9.7	118.7
	PRECIPITATION >= 1.00	30	*	*	0.1	0.3	0.5	1.2	1.0	1.0	0.6	0.4	0.3	0.1	5.5
SNOWFALL	NORMAL (IN)	30	13.5	8.2	10.4	3.1	0.1	0.0	0.0	0.0	0.*	0.6	10.0	10.0	55.9
	MAXIMUM MONTHLY (IN)	66	46.4	26.5	40.0	21.8	3.0	T	T	T	1.7	8.2	46.9	33.2	46.9
	YEAR OF OCCURRENCE		1982	1962	1951	1983	1946	1995	2008	2007	1942	1991	1991	1969	NOV 1991
	MAXIMUM IN 24 HOURS (IN)	66	18.5	9.3	14.7	13.6	3.0	T	T	T	1.7	8.2	21.0	16.5	21.0
	YEAR OF OCCURRENCE'		1982	1939	1985	1983	1946	1995	1994	1992	1942	1991	1991	1982	NOV 1991
	MAXIMUM SNOW DEPTH (IN)	59	38	30	27	10	2	0	0	0	0	1	23	21	38
	YEAR OF OCCURRENCE		1982	1967	1965	1985	1984					2009	1991	1991	JAN 1982
NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	4.1	3.0	3.1	0.9	0.0	0.0	0.0	0.0	0.0	0.1	2.8	2.9	16.9	

PRECIPITATION (inches) 2009 MINNEAPOLIS (KMSP)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	0.94	0.67	1.12	0.83	2.29	5.52	2.30	3.26	3.68	0.66	0.26	0.24	21.77
1981	0.30	2.14	0.71	2.17	2.18	4.42	4.09	4.73	1.46	2.69	2.16	0.92	27.97
1982	2.45	0.43	2.09	1.62	4.99	1.44	0.92	3.80	1.50	3.45	3.27	4.27	30.23
1983	0.67	1.19	3.22	3.97	6.20	5.22	3.07	3.12	3.34	2.61	4.93	1.53	39.07
1984	0.88	1.64	1.47	3.86	2.29	7.95	3.03	5.15	2.65	5.48	0.31	2.24	36.95
1985	0.87	0.50	4.48	1.81	3.65	2.18	2.20	5.02	4.37	3.66	1.72	1.20	31.66
1986	0.90	0.84	2.03	5.88	3.48	5.34	4.11	4.44	6.90	1.77	0.62	0.31	36.62
1987	0.63	0.13	0.64	0.16	1.88	1.95	17.90	3.67	1.28	0.60	2.07	1.25	32.16
1988	1.37	0.30	1.33	1.58	1.70	0.22	1.17	4.29	2.79	0.80	2.86	0.67	19.08
1989	0.52	1.04	2.19	2.66	3.38	3.50	3.50	2.92	1.28	0.53	1.38	0.42	23.32
1990	0.10	0.77	3.66	3.80	3.36	9.82	5.06	1.71	1.88	1.23	0.65	1.01	33.05
1991	0.49	1.03	2.29	3.58	6.35	2.57	2.95	3.14	5.43	2.52	5.29	1.05	36.69
1992	0.66	0.57	1.56	1.99	1.15	3.68	5.21	4.54	5.20	2.11	1.95	1.05	29.67
1993	1.25	0.39	1.25	1.99	4.02	6.28	5.58	6.50	2.04	0.79	1.57	0.55	32.21
1994	1.17	0.78	0.32	3.77	2.21	3.09	4.12	2.90	4.74	4.65	1.39	0.53	29.67
1995	0.36	0.25	2.11	1.90	2.43	3.38	2.72	4.59	2.21	3.68	0.88	1.15	25.66
1996	1.87	0.24	1.39	0.76	2.37	4.76	2.09	1.43	1.30	3.01	5.08	1.75	26.05
1997	1.71	0.30	1.18	1.01	1.70	3.70	12.60	6.01	3.19	2.03	0.69	0.31	34.43
1998	1.64	0.80	4.56	1.56	4.40	6.52	2.63	5.99	1.32	2.19	1.32	0.46	33.39
1999	2.67	0.40	1.86	3.43	6.56	3.68	4.55	2.64	2.73	0.92	0.77	0.33	30.54
2000	0.90	1.08	1.12	1.12	4.56	4.56	6.10	3.19	2.15	1.09	3.38	1.23	30.48
2001	1.21	1.33	1.09	7.00	4.53	6.35	2.12	2.31	3.50	1.28	2.77	0.74	34.23
2002	0.46	0.41	1.38	3.15	2.83	8.30	5.19	8.30	3.90	4.18	0.09	0.22	38.41
2003	0.22	0.54	1.44	2.40	6.14	4.66	2.05	1.12	2.20	0.62	0.71	0.62	22.72
2004	0.23	1.09	2.11	2.06	6.39	3.06	3.36	1.19	4.21	2.32	0.93	0.44	27.39
2005	1.21	0.96	1.37	2.30	2.78	4.24	2.94	5.22	4.44	5.45	1.53	0.97	33.41
2006	0.71	0.32	2.01	5.97	1.66	2.81	1.29	6.90	2.44	0.41	0.92	2.13	27.57
2007	0.31	1.37	3.64	1.11	1.99	2.05	3.29	9.32	6.04	3.63	0.09	1.48	34.32
2008	0.15	0.40	1.97	3.12	2.53	2.70	2.13	3.35	1.78	1.96	1.14	1.15	22.38
2009	0.57	0.93	1.50	1.57	0.53	2.86	2.17	6.43	0.46	5.57	0.38	1.83	24.80
POR= 118 YRS	0.85	0.82	1.64	2.23	3.43	4.20	3.56	3.55	2.88	2.09	1.45	0.94	27.64

WBAN : 14922

AVERAGE TEMPERATURE (°F) 2009 MINNEAPOLIS (KMSP)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	15.3	15.3	27.3	49.2	61.5	67.6	75.2	70.7	59.5	45.1	36.6	19.8	45.3
1981	18.0	23.4	37.7	49.1	57.1	67.0	70.9	69.3	60.0	46.7	38.0	17.5	46.2
1982	2.3	15.8	29.0	43.8	62.5	63.7	75.6	71.8	60.9	50.3	31.5	25.7	44.4
1983	19.6	26.9	34.2	42.3	54.6	68.0	77.2	76.8	62.6	48.4	34.0	3.7	45.7
1984	12.0	27.5	24.8	47.1	56.0	69.7	72.2	73.5	57.2	50.7	33.3	17.9	45.2
1985	10.1	16.5	35.6	52.1	62.2	63.9	73.9	67.6	59.9	47.5	24.8	7.7	43.5
1986	17.5	15.7	33.9	49.6	59.4	68.6	73.9	67.1	59.8	49.2	28.2	24.7	45.6
1987	21.2	31.6	38.7	53.5	63.5	72.8	76.0	69.0	62.5	44.6	37.9	25.0	49.7
1988	10.4	13.9	33.8	47.4	65.4	74.4	78.1	73.9	62.4	44.0	32.7	20.5	46.4
1989	21.2	8.6	26.6	45.3	57.5	68.4	76.4	70.8	60.9	49.9	28.0	10.6	43.7
1990	26.3	23.7	35.7	46.8	56.3	69.5	71.3	70.6	64.4	48.1	37.4	16.9	47.3
1991	12.5	24.4	34.3	49.1	61.9	72.9	72.3	71.1	59.0	47.2	24.5	21.2	45.9
1992	21.9	28.0	33.1	43.6	60.5	65.6	65.8	65.9	59.6	47.4	31.4	21.2	45.3
1993	14.6	17.2	29.5	44.2	57.2	64.5	70.3	70.4	55.0	46.5	30.6	22.2	43.5
1994	4.4	13.2	34.7	45.9	60.7	69.9	70.1	67.4	64.3	52.2	38.0	24.5	45.4
1995	18.5	19.3	35.0	42.2	56.9	71.2	73.1	74.7	60.2	48.6	27.4	19.1	45.5
1996	10.2	18.0	25.3	41.4	55.6	67.4	70.0	70.5	62.2	48.8	25.4	13.7	42.4
1997	10.3	19.9	29.3	43.0	53.4	70.0	71.0	68.8	62.4	50.2	28.1	26.9	44.4
1998	19.1	31.9	31.9	50.7	63.4	64.9	72.6	71.6	66.6	51.2	37.2	24.6	48.8
1999	12.4	27.9	33.8	49.0	60.1	67.3	76.2	70.1	61.1	49.6	41.8	25.6	47.9
2000	15.9	27.9	41.1	46.7	60.9	66.1	72.4	72.2	61.6	53.3	31.2	7.6	46.4
2001	20.0	11.8	27.5	48.4	59.7	69.1	75.9	74.2	60.9	48.6	46.4	27.6	47.5
2002	24.6	28.3	24.9	45.7	54.6	71.1	77.0	70.9	65.5	41.8	33.0	26.2	47.0
2003	15.3	15.7	31.3	48.3	57.7	68.2	73.7	75.3	62.5	51.1	32.1	25.0	46.4
2004	11.2	21.6	36.0	50.0	56.6	65.5	72.2	66.3	67.4	50.1	37.7	22.6	46.4
2005	15.6	26.5	31.8	52.0	56.4	73.4	76.8	71.7	66.3	52.4	36.6	19.4	48.2
2006	28.6	20.0	33.6	53.6	61.9	71.0	79.7	72.1	59.7	45.9	36.8	29.1	49.3
2007	19.7	13.5	38.4	47.2	64.2	72.7	76.0	72.1	64.8	54.3	34.5	16.6	47.8
2008	13.2	15.2	28.3	44.0	56.3	68.7	75.6	72.5	63.6	50.4	34.7	13.5	44.7
2009	8.3	20.8	32.2	47.6	60.8	67.7	70.0	69.5	66.5	43.2	42.7	17.3	45.6
POR= 119 YRS	13.6	17.2	30.4	45.5	58.3	67.1	73.3	70.7	60.8	49.5	32.6	19.6	44.9

HEATING DEGREE DAYS (base 65°F) 2009 MINNEAPOLIS (KMSP)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	0	12	194	611	845	1396	1453	1160	838	472	249	28	7258
1981-82	11	11	172	564	803	1466	1945	1374	1111	629	117	71	8274
1982-83	0	14	168	448	997	1212	1400	1061	947	673	313	49	7282
1983-84	2	0	161	514	923	1901	1641	1082	1240	531	284	7	8286
1984-85	5	12	251	435	943	1453	1694	1355	904	403	123	104	7682
1985-86	0	28	240	537	1201	1774	1466	1377	957	454	212	30	8276
1986-87	0	43	177	480	1096	1243	1352	929	809	347	134	13	6623
1987-88	2	29	106	623	804	1236	1688	1479	962	523	76	4	7532
1988-89	1	16	116	646	963	1373	1353	1576	1184	583	251	44	8106
1989-90	0	6	159	470	1105	1683	1194	1151	899	569	274	37	7547
1990-91	2	5	136	516	820	1484	1624	1130	945	481	197	3	7343
1991-92	7	8	228	548	1206	1354	1333	1067	981	636	190	72	7630
1992-93	32	52	182	542	1003	1351	1557	1335	1096	617	243	70	8080
1993-94	3	18	302	566	1025	1322	1879	1445	932	569	180	27	8268
1994-95	2	45	99	390	802	1250	1434	1274	924	678	247	47	7192
1995-96	6	0	201	511	1123	1416	1697	1360	1222	699	304	62	8601
1996-97	3	2	167	500	1182	1583	1688	1255	1100	653	351	6	8490
1997-98	27	26	113	483	1101	1173	1414	917	1019	423	104	107	6907
1998-99	0	0	74	422	829	1249	1625	1034	958	473	171	76	6911
1999-00	0	2	174	471	690	1214	1515	1070	734	542	176	72	6660
2000-01	12	1	146	364	1008	1771	1386	1483	1155	497	197	54	8074
2001-02	8	2	162	505	552	1152	1243	1021	1234	588	348	30	6845
2002-03	0	4	119	711	951	1197	1532	1372	1037	505	228	30	7686
2003-04	0	0	175	441	979	1232	1661	1251	892	456	260	60	7407
2004-05	8	50	59	457	810	1308	1525	1073	1022	394	268	0	6974
2005-06	0	3	61	416	845	1403	1123	1253	967	334	187	19	6611
2006-07	0	0	196	597	839	1103	1399	1434	817	539	102	9	7035
2007-08	0	10	106	352	908	1494	1598	1436	1130	621	271	11	7937
2008-09	0	0	101	449	905	1588	1747	1229	1008	515	162	69	7773
2009-	8	18	55	669	662	1472							

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COOLING DEGREE DAYS (base 65°F) 2009 MINNEAPOLIS (KMSP)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1980	0	0	0	16	82	121	322	194	38	1	0	0	774
1981	0	0	0	0	10	96	200	151	28	0	0	0	485
1982	0	0	0	0	46	40	338	232	53	0	0	0	709
1983	0	0	0	0	0	145	389	368	98	8	0	0	1008
1984	0	0	0	0	13	155	237	280	24	0	0	0	709
1985	0	0	0	22	43	77	284	118	93	0	0	0	637
1986	0	0	0	1	45	148	286	115	32	0	0	0	627
1987	0	0	0	11	95	253	348	159	37	0	0	0	903
1988	0	0	0	1	96	296	412	302	45	0	0	0	1152
1989	0	0	0	0	26	153	359	192	41	8	0	0	779
1990	0	0	0	28	11	178	206	191	125	1	0	0	740
1991	0	0	0	8	109	246	238	205	51	0	0	0	857
1992	0	0	0	3	56	96	64	88	28	2	0	0	337
1993	0	0	0	0	12	60	176	195	8	0	0	0	451
1994	0	0	0	3	52	183	167	126	86	0	0	0	617
1995	0	0	0	0	3	240	264	308	63	9	0	0	887
1996	0	0	0	0	20	142	168	181	87	4	0	0	602
1997	0	0	0	0	1	163	222	150	41	33	0	0	610
1998	0	0	0	0	62	111	243	212	130	0	0	0	758
1999	0	0	0	0	28	151	357	166	64	0	0	0	766
2000	0	0	0	0	55	111	249	228	53	8	0	0	704
2001	0	0	0	8	38	184	351	293	46	2	0	0	922
2002	0	0	0	18	33	221	379	195	141	0	0	0	987
2003	0	0	0	13	8	130	278	326	108	16	0	0	879
2004	0	0	0	10	8	81	239	98	140	2	0	0	578
2005	0	0	0	7	6	263	372	217	106	30	0	0	1001
2006	0	0	0	1	99	205	460	230	44	12	0	0	1051
2007	0	0	1	14	83	247	349	234	110	32	0	0	1070
2008	0	0	0	0	12	131	336	239	64	5	0	0	787
2009	0	0	0	2	40	158	171	166	110	0	0	0	647

SNOWFALL (inches) 2009 MINNEAPOLIS (KMSP)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	0.0	0.0	0.0	T	0.9	2.8	4.6	11.0	0.1	1.7	0.0	0.0	21.1
1981-82	0.0	0.0	0.0	0.9	14.0	10.6	46.4	7.4	10.9	4.8	0.0	0.0	95.0
1982-83	0.0	0.0	0.0	1.4	3.6	19.3	3.2	10.8	14.3	21.8	0.0	0.0	74.4
1983-84	0.0	0.0	0.0	T	30.4	21.0	10.6	9.3	17.3	9.8	0.0	0.0	98.4
1984-85	0.0	0.0	0.0	0.3	2.0	16.3	13.1	4.2	36.8	T	0.0	0.0	72.7
1985-86	0.0	0.0	0.4	T	23.9	13.5	10.3	12.3	8.7	0.4	0.0	0.0	69.5
1986-87	0.0	0.0	0.0	T	4.4	4.2	5.5	1.2	2.1	T	0.0	0.0	17.4
1987-88	0.0	0.0	0.0	0.3	4.5	7.5	19.5	4.5	3.7	2.4	0.0	0.0	42.4
1988-89	0.0	0.0	0.0	0.2	15.8	7.2	6.0	17.3	22.7	0.8	0.1	T	70.1
1989-90	0.0	0.0	0.0	0.0	11.3	7.0	1.1	10.7	3.2	2.2	0.0	0.0	35.5
1990-91	0.0	0.0	0.0	T	5.0	11.7	6.5	14.2	4.4	1.5	0.3	0.0	43.6
1991-92	0.0	T	0.0	8.2	46.9	6.7	5.0	5.9	10.8	0.6	0.0	0.0	84.1
1992-93	0.0	T	T	1.3	12.2	9.2	12.0	5.3	6.9	0.5	0.0	0.0	47.4
1993-94	T	0.0	0.0	T	7.7	4.5	24.3	12.0	1.7	5.5	0.0	T	55.7
1994-95	T	0.0	0.0	T	6.2	6.5	4.2	2.1	10.4	0.2	0.0	T	29.6
1995-96	0.0	0.0	T	0.7	6.6	16.1	14.5	1.2	14.1	2.3	T	0.0	55.5
1996-97	0.0	0.0	0.0	T	15.3	23.5	14.2	4.0	14.3	0.6	T	T	71.9
1997-98	T	0.0	0.0	T	8.6	3.3	20.4	1.1	11.6	T	T	T	45.0
1998-99	0.0	0.0	T	0.0	0.1	3.1	33.1	4.2	16.0	T	0.0	0.0	56.5
1999-00	0.0	0.0	0.0	T	0.7	7.3	18.2	7.7	1.0	1.3	0.0	0.0	36.2
2000-01	0.0	0.0	0.0	0.0									
2001-02													
2002-03													
2003-04													
2004-05							8.6	8.0	6.6	T	T	0.0	
2005-06	0.0	0.0	0.0	T	5.1	14.5	2.3	2.1	20.4	T	0.0	0.0	44.4
2006-07	0.0	0.0	0.0	T	0.2	4.3	5.5	12.6	11.0	1.9	0.0	0.0	35.5
2007-08	T	T	T	0.0	0.4	18.1	2.0	4.8	18.0	1.6	T	0.0	44.9
2008-09	T	0.0	0.0	T	4.3	17.4	8.4	10.9	1.5	2.5	0.0	0.0	45.0
2009-	0.0	0.0	0.0	2.8	T	20.9							
POR= 65 YRS	T	T	T	0.5	6.7	9.4	10.2	7.3	10.2	2.5	0.1	T	46.9

WBAN : 14922

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 (1971 - 2000). 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. 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.</p>	<p>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 HISTORY GO TO "MULTI-NETWORK METADATA SYSTEM", URL IS: https://mi3.ncdc.noaa.gov/mi3qry/login.cfm</p> <p>NOTE: The "Period of Record:(POR) for all "averages" is based on the "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.</p>
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2009

MINNEAPOLIS

MINNESOTA (KMSP)

The Twin Cities of Minneapolis and St. Paul are located at the confluence of the Mississippi and Minnesota Rivers over the heart of an artesian water basin. Its flat or gently rolling terrain varies little in elevation from that of the official observation station at International Airport. Numerous lakes dot the surrounding area. Minneapolis alone boasts of 22 lakes within the city park system. The largest body of water, nearly 15,000 acres, is Lake Minnetonka, located about 15 miles west of the airport. Most bodies of water are relatively small and shallow and are ice covered during winter.

The climate of the Minneapolis-St. Paul area is predominantly continental. Seasonal temperature variations are quite large. Temperatures range from less than -30 degrees to over 100 degrees. The growing season is 166 days. Because of this favorable growing season, all crops generally mature before the autumn freeze occurs.

The Twin Cities lie near the northern edge of the influx of moisture from the Gulf of Mexico. Severe storms such as blizzards, freezing rain

(glaze), tornadoes, wind and hail storms do occur. The total annual precipitation is important. Even more significant is its proper distribution during the growing season. During the five month growing season, May through September, the major crops produced are corn, soybeans, small grains, and hay. During this period, the normal rainfall is over 16 inches, approximately 65 percent of the annual precipitation. Winter snowfall is nearly 48 inches. Winter recreational weather is excellent because of the dry snow. These conditions exist from about Christmas into early March. Snow depths average 6 to 8 inches in the city and 8 to 10 inches in the suburbs during this period.

Floods occur along the Mississippi River due to spring snow melt, excessive rainfall, or both. Occasionally an ice jam forms and creates a local flood condition. The flood problem at St. Paul is complicated because the Minnesota River empties into the Mississippi River between the two cities. Consequently, high water or flooding on the Minnesota River creates a greater flood potential at St. Paul. Flood stage at St. Paul can be expected on the average once in every eight years.

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