



# JANUARY 2003

## LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

# MINNEAPOLIS – ST. PAUL, MN

INTERNATIONAL AIRPORT (MSP)  
 Lat: 44° 52' N Long: 93° 13' W Elev (Ground): 871 Feet  
 Time Zone: CENTRAL WBAN: 14922 ISSN #: 0198-2745

DATE	TEMPERATURE °F						DEG DAYS BASE 65°		WEATHER	SNOW/ICE ON GND (IN)		PRECIPITATION (INCHES)		PRESSURE (INCHES OF HG)		WIND SPEED = MPH DIR = TENS OF DEGREES						DATE	
	MAXIMUM	MINIMUM	AVERAGE	DEP FROM NORMAL	AVERAGE DEW PT	AVERAGE WET BULB	HEATING	COOLING		0600 LST	1200 LST	2400 LST	2400 LST	AVERAGE STATION	AVERAGE SEA LEVEL	RESULTANT SPEED	RES DIR	AVERAGE SPEED	MAXIMUM				
																			5-SEC		2-MIN		
																			SPEED	DIR	SPEED		DIR
1	2	3	4	5	6	7	8	9	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
01	25	20	23	9	10	19	42	0					0.00	29.29	30.23	8.9	06	9.2	18	06	14	07	01
02	31	14	23	9	14	20	42	0					0.00	29.29	30.24	4.4	02	5.8	16	05	10	04	02
03	30	12	21	8	16	20	44	0	SN BR				T	29.12	30.06	4.2	15	4.9	18	13	15	14	03
04	34	21	28	15	25	28	37	0	RA FZRA FZDZ SN BR				T	28.95	29.88	0.6	04	5.3	17	01	12	34	04
05	32	29	31	18	26	29	34	0	FZDZ SN BR				0.01	29.19	30.12	10.7	35	10.9	29	02	17	35	05
06	29	23	26	13	19	23	39	0					0.00	29.49	30.43	5.4	28	9.2	21	24	17	24	06
07	52	28	40	27	29	35	25	0					0.00	28.97	29.89	9.6	26	10.1	22	28	18	29	07
08	54*	31	43*	30	26	35	22	0					0.00	28.67	29.57	12.0	28	13.1	38	29	28	30	08
09	36	17	27	14	17	25	38	0	RA SN BR				T	28.88	29.80	18.6	31	19.1	39*	33	32*	33	09
10	17	3	10	-2	0	8	55	0	SN BR BLSN				0.02	29.19	30.14	14.7	31	15.1	32	33	28	33	10
11	15	-1	7	-5	-5	4	58	0					0.00	29.40	30.37	10.0	29	10.2	21	30	17	28	11
12	33	2	18	6	2	12	47	0					0.00	29.22	30.18	9.0	27	13.1	33	33	26	32	12
13	8	0	4	-8	-3	4	61	0	SN BR				T	29.41	30.38	8.2	32	8.4	21	33	17	33	13
14	11	-2	5	-7	-4	3	60	0					0.00	29.45	30.42	10.4	29	11.1	26	33	21	32	14
15	16	-2	7	-5	-3	5	58	0					0.00	29.49	30.46	5.0	27	6.2	14	29	12	29	15
16	23	7	15	3	-1	11	50	0					0.00	29.42	30.38	9.3	32	10.8	29	35	23	36	16
17	20	0	10	-2	-3	8	55	0	SN				T	29.31	30.27	7.5	24	10.3	31	24	24	24	17
18	22	2	12	-1	1	9	53	0	SN				T	29.05	29.99	12.9	30	13.6	33	33	26	32	18
19	25	1	13	0	3	11	52	0	SN				T	28.90	29.85	9.0	29	11.8	28	32	21	32	19
20	13	4	9	-4	-5	6	56	0					0.00	29.21	30.17	9.1	33	9.8	21	34	17	34	20
21	11	-4	4	-9	-8	2	61	0					0.00	29.41	30.38	6.3	30	7.5	21	34	18	34	21
22	5	-6	0	-13	-12	-2	65	0	SN				T	29.63	30.61	12.6	34	12.9	26	34	22	33	22
23	6	-12*	-3*	-16	-17	-5	68	0					0.00	29.73	30.72	8.2	32	9.3	24	35	18	33	23
24	15	2	9	-4	0	8	56	0	SN BR				0.01	29.39	30.36	6.4	20	7.4	16	22	13	21	24
25	14	2	8	-6	3	9	57	0	SN BR				0.01	29.30	30.26	11.2	32	11.5	25	29	21	32	25
26	6	-6	0	-14	-10	-2	65	0					0.00	29.58	30.56	8.1	31	9.2	17	32	17	32	26
27	28	-1	14	0	10	15	51	0	SN BR				0.02	29.11	30.06	10.5	18	11.5	26	21	23	20	27
28	26	10	18	4	14	19	47	0	SN BR				0.04	29.19	30.13	6.5	01	6.9	24	34	21	35	28
29	14	0	7	-7	-1	7	58	0					0.00	29.46	30.42	1.4	28	6.2	17	01	14	01	29
30	31	14	23	8	23	25	42	0	BR HZ				0.00	29.03	29.96	7.7	18	8.3	23	20	18	19	30
31	32	29	31	16	28	29	34	0	FZDZ SN BR				0.11	29.02	29.94	3.2	35	6.0	28	03	13	32	31

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23.0		7.6	15.3	■ ■	6.3	13.6	49.4	0.0	< MONTHLY AVERAGES		TOTALS->		0.22	29.25	30.20	5.7	30	9.8	<- MONTHLY AVERAGES				
1.1		3.3	2.2	■ ■	<-----DEPARTURE FROM NORMAL----->								- .82				SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3						
<b>DEGREE DAYS</b>									GREATEST 24-HR PRECIPITATION: 0.11 DATE: 31			SEA LEVEL PRESSURE			DATE			TIME					
MONTHLY TOTAL DEPARTURE									SEASON TO DATE TOTAL DEPARTURE			GREATEST 24-HR SNOWFALL:			MAXIMUM			23 0953					
HEATING: 1532 -84									4514 -229			GREATEST SNOW DEPTH:			MINIMUM			08 1553					
COOLING: 0 0									0 0			NUMBER OF DAYS WITH			MAXIMUM TEMP ≥ 90: 0			MINIMUM TEMP ≤ 32: 31			PRECIPITATION ≥ 0.01 INCH: 7		
															MAXIMUM TEMP ≤ 32: 26			MINIMUM TEMP ≤ 0: 11			PRECIPITATION ≥ 0.10 INCH: 1		
															THUNDERSTORMS: 0			HEAVY FOG: 0			SNOWFALL ≥ 1.0 INCH: :		

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

# MINNEAPOLIS–ST.PAUL, MN

JANUARY 2003 MSP WBAN # 14922

DATE	FOR HOUR (LST) ENDING AT												DATE	FOR HOUR (LST) ENDING AT												DATE	Sum if Different (See Note)	2400 LST
	1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20	21	22	23	24			Water Equiv.
01													01												01		0.00	
02													02												02		0.00	
03													03				T	T							03		T	
04													04				T	T							04		T	
05						T	T	T	T	T	T	T	05								T	T			05	T	0.01	
06													06												06		0.00	
07													07												07		0.00	
08													08												08		0.00	
09													09				T	T	T						09		T	
10	T	T	T										10				T	T	T						10	T	0.02	
11													11												11		0.00	
12													12												12		0.00	
13													13	T	T	T	T			T	T	T	T		13		T	
14													14												14		0.00	
15													15												15		0.00	
16													16												16		0.00	
17													17												17		T	
18	T	T											18				T	T							18		T	
19													19				T	T							19		T	
20													20												20		0.00	
21													21												21		0.00	
22													22	T											22		T	
23													23												23		0.00	
24													24	T	T	T	T	T	T	T	T	T			24	T	0.01	
25													25	T	T	T	T	T	T	T	T				25		0.01	
26													26												26		0.00	
27				T	T	T	T	T					27	T	T	T									27	T	0.02	
28													28	T											28		0.04	
29													29	T											29		0.00	
30	T												30												30		0.00	
31		0.04	0.05	0.02	T								31												31		0.11	

## MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)	.01	.02	.02	.03	.04	.06	.07	.08	.09	.10	.11	.11
Ending Date	31	31	31	31	31	31	31	31	31	31	31	31
Ending Time (Hour/Min)	0334	0216	0230	0216	0216	0216	0230	0246	0307	0307	0334	0334

Date and time are not entered for TRACE amounts.

Note : The sum of the hourly totals is given when it differs from the daily total. NWS does not edit ASOS hourly values but may edit daily and monthly totals. Hourly, daily, and monthly totals are printed as reported by the ASOS site.

## REFERENCE NOTES & SUPPLEMENTAL SUMMARIES

\* = Extreme for the month (last occurrence if more than one)  
 T = Trace precipitation amount  
 + = also occurs on earlier date  
 FG+ = Heavy fog, visibility .25 miles or less  
 BLANK entries denote missing or unreported data

Resultant wind is the vector sum of the wind speeds and directions divided by the number of observations.

Wind direction is recorded in tens of degrees (2 digits) clockwise from true north. '00' = calm, 'VR' = variable.

Precipitation is for the 24-hour period ending at the time indicated in the column heading.

Water Equivalent of snow on the ground is reported only when the depth is 2 or more inches.

NORMALS ARE FOR THE YEARS 1971–2000

### WEATHER NOTATIONS

QUALIFIER	WEATHER PHENOMENA		
	PRECIPITATION	OBSCURATION	OTHER
BC Patches	DZ Drizzle	BR Mist	DS Duststorm
BL Blowing	GR Hail	DU Widespread Dust	FC Funnel Cloud
DR Low Drifting	GS Small Hail and/or Snow Pellets	FG Fog	+FC Tornado Waterspout
FZ Freezing	IC Ice Crystals	FU Smoke	PO Well-Developed Dust/Sand Whirls
MI Shallow	PL Ice Pellets	HZ Haze	SQ Squalls
PR Partial	RA Rain	PY Spray	SS Sandstorm
SH Shower(s)	SG Snow Grains	SA Sand	GL Glaze
TS Thunderstorm	SN Snow	VA Volcanic Ash	
VC In the Vicinity	UP Unknown Precipitation		

Intensity (as indicated on pages 4 to 6):  
 '+ ' = Heavy    ' ' = Moderate    '- ' = Light

## MINNEAPOLIS–ST.PAUL, MN JANUARY 2003

Ceilorometer (30-second) data are used to derive cloudiness at or below 12,000 feet. This cloudiness is the mean cloud cover detected during sunrise to sunset (SR–SS), or midnight to midnight (MN–MN).

Satellite data are used to derive cloudiness above 12,000 feet. Effective Cloud Amount is based on the cloud cover and the transparency of the clouds within the satellite field of view (approx. 31x31 miles).

Sky Condition is based on the sum (not to exceed 8) of the sunrise to sunset cloud cover below and above 12,000 feet. Both ceilometer and satellite data must be present to compute Sky Condition. Clear = 0–2 oktas, Partly Cloudy = 3–6 oktas, Cloudy = 7–8 oktas.

A Heating (Cooling) Degree Day is the difference between the average daily temperature and 65 degrees F. The HDD season begins July 1, the CDD season begins January 1.

Dew Point is the temperature to which the air must be cooled to achieve 100% relative humidity. Wet Bulb is the temperature the air would have if cooled to saturation at constant pressure by evaporation of water into it.

Snow Depth, Snowfall, and Sunshine data may come from nearby sites that the National Weather Service deems Climatologically representative of this site.

### ADDITIONAL NOTES:

DATE	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR–SS		MN–MN		MINIMUM	MAXIMUM	
			CEILOMETER	SATELLITE	CEILOMETER	SATELLITE			
01							10.00	10.00	
02							10.00	10.00	
03							1.00	10.00	
04							3.00	10.00	
05							3.00	10.00	
06							10.00	10.00	
07							10.00	10.00	
08							10.00	10.00	
09							4.00	10.00	
10							1.75	10.00	
11							10.00	10.00	
12							10.00	10.00	
13							1.50	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							10.00	10.00	
17							1.25	10.00	
18							10.00	10.00	
19							9.00	10.00	
20							10.00	10.00	
21							10.00	10.00	
22							9.00	10.00	
23							10.00	10.00	
24							1.00	10.00	
25							1.25	10.00	
26							10.00	10.00	
27							2.00	10.00	
28							.75	10.00	
29							10.00	10.00	
30							5.00	10.00	
31							1.00	6.00	
<b>MONTHLY AVGS</b>							6.90	9.87	
<b>SUNSHINE (MINUTES)</b>									
Total:      Possible: Percent Possible:									
<b>NUMBER OF DAYS WITH:</b>									
<b>SKY CONDITION</b>									
CLR   PTLY CLDY   CLOUDY   MISSING 31									
<b>MINIMUM VISIBILITY (MILES)</b>									
<=0.25    <=3.0    >=7.0 0            9            19									

# OBSERVATIONS AT 3-HOURLY INTERVALS

## MINNEAPOLIS-ST. PAUL, MN

JANUARY 2003 MSP WBAN # 14922

HOUR (LST)	SATellite		WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SATellite		WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)							
	SKY COVER	CEILING 100'S OF FT		OBSERVATION TIME (LST)	EFF CLD AMT Oktas	VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)		DIRECTION TENS OF DEG	STATION		SEA LEVEL	SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT Oktas	VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
	<b>SUNRISE: 0751</b>			<b>JAN 01</b>	<b>SUNSET: 1642</b>							<b>SUNRISE: 0750</b>	<b>JAN 07</b>	<b>SUNSET: 1648</b>															
03	OVC	120			10.00	21	8	18	57	10	04	29.22	30.16	03	SCT	NC			10.00	30	24	28	79	10	25	29.14	30.07		
06	OVC	100			10.00	21	8	18	57	10	07	29.26	30.20	06	FEW	NC			10.00	30	26	29	85	8	24	29.07	30.00		
09	BKN	090			10.00	20	8	17	60	10	07	29.29	30.24	09	FEW	NC			10.00	33	28	31	82	7	25	29.01	29.94		
12	OVC	080			10.00	23	9	19	55	7	07	29.31	30.25	12	BKN	250			10.00	47	30	40	52	13	27	28.93	29.84		
15	BKN	150			10.00	24	9	20	52	8	06	29.31	30.25	15	BKN	250			10.00	51	31	42	46	13	29	28.89	29.79		
18	OVC	150			10.00	24	10	20	55	9	08	29.32	30.26	18	FEW	NC			10.00	46	31	40	56	10	27	28.90	29.80		
21	OVC	150			10.00	23	12	20	63	7	05	29.34	30.28	21	FEW	NC			10.00	42	30	37	62	8	27	28.89	29.80		
24	BKN	150			10.00	21	13	19	71	7	03	29.33	30.27	24	FEW	NC			10.00	38	30	35	73	5	24	28.86	29.77		
	<b>SUNRISE: 0751</b>			<b>JAN 02</b>	<b>SUNSET: 1643</b>							<b>SUNRISE: 0750</b>	<b>JAN 08</b>	<b>SUNSET: 1649</b>															
03	SCT	NC			10.00	18	14	17	84	7	02	29.33	30.27	03	FEW	NC			10.00	33	28	31	82	6	22	28.81	29.71		
06	CLR	NC			10.00	15	12	14	88	5	01	29.33	30.27	06	FEW	NC			10.00	34	28	32	79	7	25	28.71	29.62		
09	FEW	NC			10.00	18	15	17	88	6	VR	29.34	30.28	09	BKN	250			10.00	36	27	32	70	10	25	28.60	29.51		
12	SCT	NC			10.00	27	16	24	63	6	03	29.31	30.24	12	BKN	250			10.00	49	28	40	45	17	28	28.60	29.49		
15	FEW	NC			10.00	30	14	25	51	8	02	29.26	30.20	15	FEW	NC			10.00	54	25	42	33	17	28	28.58	29.47		
18	CLR	NC			10.00	28	15	24	58	6	03	29.26	30.20	18	FEW	NC			10.00	47	23	37	39	17	29	28.62	29.52		
21	CLR	NC			10.00	23	14	20	68	5	34	29.27	30.21	21	CLR	NC			10.00	40	25	34	55	18	30	28.67	29.58		
24	CLR	NC			10.00	18	13	17	81	0	00	29.25	30.19	24	CLR	NC			10.00	36	26	32	67	18	29	28.71	29.62		
	<b>SUNRISE: 0751</b>			<b>JAN 03</b>	<b>SUNSET: 1644</b>							<b>SUNRISE: 0750</b>	<b>JAN 09</b>	<b>SUNSET: 1651</b>															
03	SCT	NC			10.00	14	11	13	88	0	00	29.23	30.17	03	SCT	NC			10.00	34	26	31	73	20	29	28.73	29.64		
06	BKN	150			10.00	13	10	12	88	5	13	29.19	30.14	06	OVC	027			9.00	-SN	34	24	30	67	23	29	28.72	29.62	
09	BKN	150			10.00	16	13	15	88	0	00	29.18	30.13	09	OVC	027			10.00	-SN	32	24	29	73	21	31	28.75	29.66	
12	OVC	110			10.00	26	18	23	71	7	16	29.12	30.06	12	OVC	031			10.00	30	18	26	61	24	32	28.87	29.78		
15	OVC	060			10.00	30	18	26	61	7	16	29.09	30.03	15	OVC	035			10.00	-SN	28	16	24	61	20	32	28.93	29.85	
18	FEW	NC			10.00	24	23	24	96	9	13	29.05	29.99	18	SCT	NC			10.00	24	8	20	50	18	31	29.02	29.95		
21	FEW	NC			10.00	22	18	21	85	7	13	29.03	29.97	21	OVC	090			10.00	20	3	16	48	14	31	29.06	30.00		
24	FEW	NC			10.00	21	16	20	81	7	12	28.99	29.92	24	OVC	024			4.00	-SN BR	17	14	16	88	9	29	29.06	30.00	
	<b>SUNRISE: 0751</b>			<b>JAN 04</b>	<b>SUNSET: 1645</b>							<b>SUNRISE: 0749</b>	<b>JAN 10</b>	<b>SUNSET: 1652</b>															
03	OVC	150			10.00	24	18	22	77	7	14	28.97	29.89	03	OVC	055			4.00	BLSN	14	7	12	73	24	31	29.06	30.00	
06	BKN	150			10.00	25	19	23	78	7	15	28.93	29.86	06	OVC	055			10.00	14	5	12	67	13	31	29.09	30.04		
09	OVC	029			9.00	27	23	26	85	0	00	28.94	29.87	09	FEW	NC			10.00	11	-3	8	53	22	33	29.15	30.09		
12	OVC	025			10.00	30	26	29	85	0	00	28.93	29.85	12	FEW	NC			10.00	10	-3	8	55	21	31	29.20	30.15		
15	OVC	015			9.00	34	29	32	82	3	03	28.92	29.84	15	FEW	NC			10.00	13	-2	10	51	16	29	29.22	30.17		
18	OVC	015			5.00 BR	33	30	32	89	5	32	28.98	29.90	18	CLR	NC			10.00	9	-4	7	55	13	29	29.26	30.22		
21	OVC	011			7.00	32	28	30	85	6	01	28.99	29.91	21	CLR	NC			10.00	5	-6	3	60	10	29	29.30	30.25		
24	OVC	008			5.00 BR	30	28	29	92	9	33	28.99	29.91	24	CLR	NC			10.00	3	-7	1	62	14	29	29.30	30.26		
	<b>SUNRISE: 0750</b>			<b>JAN 05</b>	<b>SUNSET: 1646</b>							<b>SUNRISE: 0749</b>	<b>JAN 11</b>	<b>SUNSET: 1653</b>															
03	OVC	015			6.00 BR	29	25	28	85	13	34	29.01	29.93	03	CLR	NC			10.00	1	-7	0	68	10	30	29.31	30.27		
06	OVC	013			3.00 -SN BR	29	27	28	92	9	33	29.03	29.96	06	FEW	NC			10.00	-1	-9	-2	68	14	30	29.32	30.29		
09	OVC	013			5.00 -SN BR	29	26	28	89	9	34	29.10	30.02	09	BKN	085			10.00	1	-8	0	65	13	29	29.38	30.35		
12	OVC	013			7.00	31	27	29	85	10	36	29.14	30.07	12	FEW	NC			10.00	8	-5	6	55	9	28	29.40	30.38		
15	OVC	021			9.00	32	26	30	79	13	35	29.21	30.14	15	FEW	NC			10.00	14	-1	11	51	6	28	29.43	30.40		
18	OVC	020			10.00	31	26	29	82	10	36	29.31	30.24	18	CLR	NC			10.00	12	-1	9	56	8	29	29.46	30.43		
21	OVC	028			10.00	31	25	29	79	12	35	29.40	30.35	21	CLR	NC			10.00	8	-3	6	60	8	29	29.47	30.45		
24	OVC	024			10.00	29	20	26	69	10	36	29.48	30.42	24	CLR	NC			10.00	5	-4	3	66	5	27	29.47	30.44		
	<b>SUNRISE: 0750</b>			<b>JAN 06</b>	<b>SUNSET: 1647</b>							<b>SUNRISE: 0749</b>	<b>JAN 12</b>	<b>SUNSET: 1654</b>															
03	OVC	022			10.00	27	19	24	72	9	36	29.54	30.49	03	CLR	NC			10.00	2	-4	1	76	5	23	29.42	30.39		
06	OVC	020			10.00	24	18	22	77	10	32	29.58	30.53	06	CLR	NC			10.00	3	-6	2	66	6	21	29.33	30.29		
09	OVC	016			10.00	23	18	21	81	10	35	29.62	30.56	09	SCT	NC			10.00	11	-1	9	58	10	20	29.22	30.17		
12	BKN	014			10.00	25	18	23	75	8	24	29.57	30.52	12	BKN	250			10.00	26	6	21	42	15	23	29.06	30.01		
15	BKN	250			10.00	26	19	24	75	9	24	29.50	30.45	15	FEW	NC			10.00	33	12	26	42	21	29	29.01	29.95		
18	SCT	NC			10.00	24	19	22	81	12	25	29.45	30.40	18	FEW	NC			10.00	23	9	19	55	18	30	29.12	30.07		
21	OVC	120			10.00	26	20	24	78	12	22	29.34	30.27	21	CLR	NC			10.00	12	1	10	61	18	32	29.26	30.21		
24	OVC	095			10.00	28	22	26	78	9	24	29.23	30.17	24	SCT	NC			10.00	6	-2	5	69	13	32	29.36	30.30		

# OBSERVATIONS AT 3-HOURLY INTERVALS

# MINNEAPOLIS-ST. PAUL, MN

JANUARY 2003

MSP

WBAN # 14922

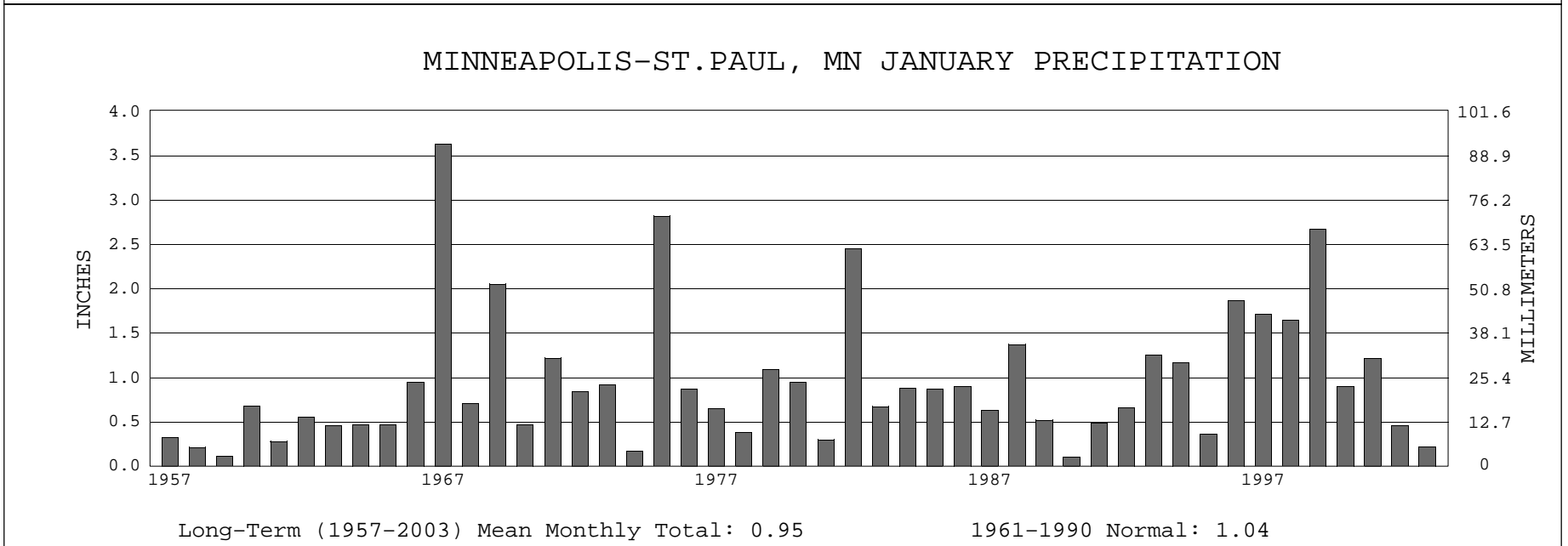
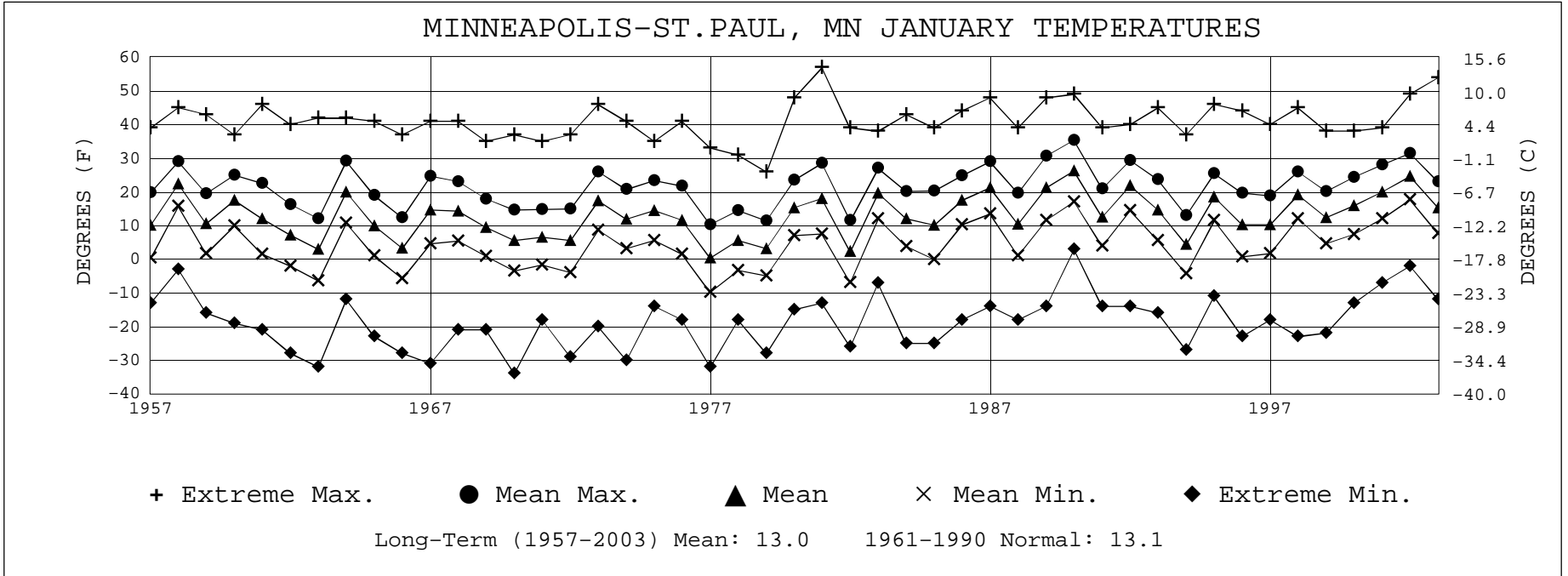
HOUR (LST)	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SATELLITE		VISIBILITY (MILES)	WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)					
	SKY COVER	CEILING 100'S OF FT			OBSERVATION TIME (LST)	EFF CLD AMT Oktas	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG		STATION	SEA LEVEL			SKY COVER	CEILING 100'S OF FT	OBSERVATION TIME (LST)	EFF CLD AMT Oktas	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL
SUNRISE: 0748 JAN 13 SUNSET: 1655																													
03	SCT	NC	10.00		2	-5	1	72	12	32	29.39	30.34	03	SCT	NC	10.00		1	-4	0	79	7	23	28.99	29.94				
06	SCT	NC	10.00		0	-8	-1	69	10	31	29.40	30.36	06	OVC	023	9.00	-SN	5	-1	4	76	10	22	28.86	29.81				
09	BKN	250	10.00		1	-8	0	65	8	31	29.43	30.40	09	OVC	050	10.00		13	8	12	81	13	24	28.80	29.74				
12	OVC	070	10.00		6	-6	4	57	7	31	29.43	30.41	12	BKN	100	10.00		23	11	20	60	16	29	28.79	29.73				
15	OVC	015	1.50	-SN	7	-2	6	80	5	29	29.40	30.36	15	BKN	250	10.00		23	8	19	53	15	32	28.80	29.74				
18	OVC	039	3.00	-SN	8	-2	7	76	6	30	29.40	30.37	18	BKN	200	10.00		18	3	14	52	12	32	28.90	29.84				
21	OVC	060	3.00	-SN	7	-2	6	80	10	32	29.43	30.41	21	SCT	NC	10.00		14	-2	11	49	12	33	29.01	29.96				
24	SCT	NC	10.00		6	0	5	76	9	32	29.45	30.43	24	SCT	NC	10.00		9	-4	7	55	9	34	29.06	30.00				
SUNRISE: 0748 JAN 14 SUNSET: 1656																													
03	SCT	NC	10.00		2	-2	1	83	8	31	29.48	30.45	03	BKN	200	10.00		7	-7	5	52	7	36	29.12	30.07				
06	BKN	130	10.00		0	-6	-1	76	6	27	29.46	30.43	06	BKN	200	10.00		5	-5	3	63	8	31	29.16	30.11				
09	CLR	NC	10.00		0	-6	-1	76	12	29	29.48	30.45	09	BKN	200	10.00		5	-7	3	57	10	34	29.19	30.14				
12	CLR	NC	10.00		7	-5	5	57	14	32	29.47	30.44	12	OVC	180	10.00		10	-7	7	45	8	32	29.23	30.19				
15	CLR	NC	10.00		11	-2	8	56	13	27	29.42	30.39	15	BKN	200	10.00		13	-4	10	46	10	29	29.20	30.15				
18	CLR	NC	10.00		7	-2	5	66	12	26	29.41	30.39	18	SCT	NC	10.00		11	-4	8	51	8	31	29.23	30.19				
21	CLR	NC	10.00		4	-5	2	66	16	32	29.43	30.41	21	OVC	100	10.00		10	-2	8	58	10	35	29.29	30.25				
24	CLR	NC	10.00		2	-6	1	69	9	31	29.45	30.42	24	CLR	NC	10.00		4	-9	2	54	13	34	29.36	30.32				
SUNRISE: 0747 JAN 15 SUNSET: 1658																													
03	CLR	NC	10.00		-1	-7	-2	75	7	29	29.48	30.45	03	CLR	NC	10.00		0	-11	-1	59	5	31	29.40	30.37				
06	CLR	NC	10.00		-2	-8	-3	75	8	27	29.51	30.48	06	CLR	NC	10.00		-2	-9	-3	72	3	29	29.40	30.37				
09	FEW	NC	10.00		0	-8	-1	69	9	32	29.53	30.51	09	FEW	NC	10.00		0	-7	-1	72	6	VR	29.43	30.41				
12	BKN	250	10.00		10	-6	7	48	3	01	29.50	30.47	12	BKN	200	10.00		6	-10	4	47	8	34	29.43	30.40				
15	BKN	250	10.00		16	-1	12	47	8	25	29.46	30.43	15	BKN	150	10.00		10	-8	7	43	10	28	29.38	30.35				
18	SCT	NC	10.00		10	2	8	69	6	23	29.48	30.46	18	BKN	150	10.00		9	-7	6	48	9	29	29.40	30.37				
21	CLR	NC	10.00		8	2	7	76	6	23	29.47	30.44	21	SCT	NC	10.00		5	-6	3	60	6	31	29.42	30.40				
24	OVC	200	10.00		8	3	7	80	5	23	29.48	30.45	24	FEW	NC	10.00		2	-6	1	69	9	32	29.47	30.45				
SUNRISE: 0747 JAN 16 SUNSET: 1659																													
03	BKN	150	10.00		10	3	9	73	3	26	29.44	30.41	03	SCT	NC	10.00		0	-8	-1	69	9	33	29.51	30.49				
06	BKN	200	10.00		11	-1	9	58	6	28	29.44	30.40	06	SCT	NC	10.00		-2	-9	-3	72	10	32	29.55	30.53				
09	BKN	200	10.00		11	1	9	64	7	28	29.43	30.40	09	SCT	NC	10.00		-2	-9	-3	72	13	36	29.63	30.61				
12	FEW	NC	10.00		20	2	16	45	14	30	29.39	30.35	12	BKN	025	9.00	-SN	2	-10	0	57	13	34	29.65	30.63				
15	CLR	NC	10.00		22	-1	17	36	15	30	29.34	30.29	15	SCT	NC	10.00		4	-13	2	45	16	31	29.64	30.62				
18	CLR	NC	10.00		18	-5	13	35	13	32	29.36	30.31	18	FEW	NC	10.00		0	-15	-2	49	15	33	29.68	30.67				
21	CLR	NC	10.00		13	-9	9	36	21	36	29.44	30.40	21	CLR	NC	10.00		-2	-18	-3	46	14	34	29.71	30.70				
24	CLR	NC	10.00		8	-8	5	47	10	36	29.50	30.46	24	CLR	NC	10.00		-6	-19	-7	53	15	34	29.75	30.73				
SUNRISE: 0746 JAN 17 SUNSET: 1700																													
03	CLR	NC	10.00		4	-8	2	57	7	35	29.53	30.50	03	CLR	NC	10.00		-10	-20	-11	60	10	34	29.75	30.74				
06	CLR	NC	10.00		2	-8	0	63	3	30	29.53	30.50	06	CLR	NC	10.00		-11	-20	-12	63	9	33	29.77	30.76				
09	CLR	NC	10.00		3	-5	2	69	5	27	29.50	30.47	09	SCT	NC	10.00		-11	-21	-12	61	14	32	29.81	30.81				
12	CLR	NC	10.00		10	-7	7	45	13	25	29.42	30.39	12	FEW	NC	10.00		-2	-18	-3	46	7	VR	29.78	30.77				
15	CLR	NC	10.00		14	-2	11	49	10	22	29.30	30.25	15	SCT	NC	10.00		5	-15	2	38	9	33	29.70	30.69				
18	SCT	NC	10.00		15	-2	12	56	10	18	29.11	30.07	18	FEW	NC	10.00		2	-14	0	46	7	29	29.69	30.68				
21	OVC	049	10.00		20	-4	15	34	17	23	28.98	29.92	21	BKN	150	10.00		2	-11	0	54	0	00	29.65	30.65				
24	OVC	050	7.00	-SN	18	-4	17	84	9	25	28.92	29.86	24	BKN	110	10.00		2	-11	0	54	6	25	29.63	30.61				
SUNRISE: 0745 JAN 18 SUNSET: 1702																													
03	BKN	033	10.00		19	12	17	74	14	30	28.95	29.89	03	BKN	085	10.00		2	-10	0	57	5	17	29.57	30.54				
06	OVC	050	10.00		15	7	13	70	22	31	28.98	29.92	06	OVC	070	10.00		4	-10	2	52	8	20	29.50	30.47				
09	SCT	NC	10.00		8	0	6	69	16	32	29.05	30.00	09	OVC	044	10.00		7	-10	4	45	12	17	29.44	30.42				
12	SCT	NC	10.00		12	-1	9	56	16	30	29.07	30.02	12	OVC	014	1.50	-SN	9	4	8	80	12	20	29.39	30.35				
15	SCT	NC	10.00		14	-6	10	40	15	30	29.06	30.01	15	OVC	032	8.00	-SN	12	5	10	73	7	19	29.31	30.27				
18	BKN	250	10.00		10	-4	7	53	10	28	29.10	30.05	18	OVC	028	9.00	-SN	14	8	13	77	6	20	29.29	30.25				
21	CLR	NC	10.00		6	-3	4	66	10	28	29.11	30.07	21	OVC	028	10.00		14	10	13	84	0	00	29.28	30.23				
24	FEW	NC	10.00		2	-4	1	76	7	23	29.07	30.03	24	FEW	NC	9.00		11	8	10	88	7	29	29.24	30.19				

# OBSERVATIONS AT 3-HOURLY INTERVALS

# MINNEAPOLIS-ST. PAUL, MN

JANUARY 2003 MSP WBAN # 14922

HOUR (LST)	SATELLITE		WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)		HOUR (LST)	SATELLITE		WEATHER	TEMPERATURE °F				WIND		PRESSURE (INCHES, HG)															
	SKY COVER	CEILING 100'S OF FT		OBSERVATION TIME (LST)	EFF CLD AMT Otktas	VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)		DIRECTION TENS OF DEG	STATION		SEA LEVEL	OBSERVATION TIME (LST)	EFF CLD AMT Otktas	VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL										
																												DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION TENS OF DEG	STATION	SEA LEVEL		
SUNRISE: 0740 JAN 25 SUNSET: 1711												SUNRISE: 0734 JAN 31 SUNSET: 1719																									
03	BKN	020			9.00	9	7	9	92	7	29	29.21	30.17	03	OVC	003	1.00	-SN	BR	29	28	29	96	6	08	28.92	29.84										
06	BKN	130			10.00	11	7	10	84	7	30	29.20	30.16	06	OVC	030	5.00	BR		29	28	29	96	3	05	28.94	29.86										
09	OVC	018		-SN	BR	12	8	11	84	12	33	29.23	30.19	09	OVC	009	3.00	BR		29	28	29	96	7	36	29.01	29.94										
12	OVC	055		-SN		12	6	11	77	15	31	29.26	30.21	12	OVC	009	3.00	BR		31	28	30	89	8	35	29.06	29.99										
15	BKN	031			10.00	13	2	11	61	15	33	29.29	30.24	15	OVC	013	4.00	BR		31	27	29	85	10	32	29.09	30.02										
18	SCT	NC			10.00	10	-3	8	55	16	31	29.37	30.33	18	OVC	015	6.00	BR		31	27	29	85	5	33	29.07	30.01										
21	BKN	100			10.00	6	-5	4	60	16	30	29.43	30.40	21	OVC	011	6.00	BR		30	27	29	88	5	VR	29.04	29.97										
24	CLR	NC			10.00	2	-9	0	60	15	32	29.50	30.47	24	OVC	007	5.00	BR		29	28	29	96	3	14	29.03	29.96										
SUNRISE: 0739 JAN 26 SUNSET: 1712												3-HOURLY OBSERVATION NOTES																									
03	CLR	NC			10.00	-3	-11	-4	67	12	32	29.57	30.55	Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, VV = Vertical Visibility = 8/8.																							
06	CLR	NC			10.00	-6	-13	-7	71	14	32	29.59	30.58	Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet.																							
09	CLR	NC			10.00	2	1	2	95	15	31	29.65	30.63	NC = No ceiling detected.																							
12	CLR	NC			10.00	-1	-14	-2	53	12	31	29.63	30.62	& = Original observation contained additional weather elements.																							
15	FEW	NC			10.00	5	-9	3	52	8	32	29.59	30.57	See page 3 for additional notes.																							
18	FEW	NC			10.00	6	-12	3	43	0	00	29.59																									
21	SCT	NC			10.00	0	-11	-2	60	6	22	29.54	30.52																								
24	OVC	150			10.00	-1	-7	-2	75	6	15	29.47	30.45																								
SUNRISE: 0738 JAN 27 SUNSET: 1714												SUMMARY BY HOUR																									
03	OVC	080			10.00	4	-5	3	66	9	16	29.40	30.37	AVERAGES																							
06	OVC	048		-SN		8	3	7	80	16	15	29.25	30.21	RESULTANT WIND (MPH)																							
09	OVC	046		-SN		10	4	9	77	14	17	29.13	30.09	HOUR (LST)																							
12	OVC	024		-SN		18	8	15	66	18	16	29.03	29.98	CEILOMETER																							
15	OVC	033			10.00	22	12	19	66	13	21	28.97	29.91	EFF CLD AMT																							
18	SCT	NC			10.00	26	19	24	75	7	19	28.97	29.91	DRY BULB																							
21	OVC	022			10.00	28	21	26	75	5	20	28.98	29.91	DEW POINT																							
24	SCT	NC			10.00	25	21	24	85	6	21	28.99	29.92	WET BULB																							
SUNRISE: 0737 JAN 28 SUNSET: 1715												PRESSURE (INCHES, HG)																									
03	SCT	NC			7.00	18	17	18	96	0	00	29.01	29.95	STATION																							
06	OVC	070			9.00	23	22	23	96	5	02	29.04	29.97	SEA LEVEL																							
09	VV	007		-SN	BR	24	22	23	91	8	03	29.13	30.06	VISIBILITY (MILES)																							
12	OVC	016		-SN		23	18	21	81	10	03	29.20	30.14	WIND SPEED (MPH)																							
15	OVC	030			10.00	25	18	23	75	10	33	29.20	30.14	SPEED																							
18	CLR	NC			10.00	20	10	17	65	10	01	29.29	30.23	DIRECTION																							
21	CLR	NC			10.00	14	1	11	56	9	36	29.36	30.31																								
24	FEW	NC			10.00	10	-1	8	61	8	01	29.41	30.37																								
SUNRISE: 0736 JAN 29 SUNSET: 1717																																					
03	SCT	NC			10.00	8	-3	6	60	9	01	29.47	30.43																								
06	FEW	NC			10.00	4	-5	2	66	6	34	29.52	30.48																								
09	CLR	NC			10.00	4	-4	3	69	6	02	29.55	30.52																								
12	CLR	NC			10.00	9	-1	7	64	0	00	29.54	30.50																								
15	SCT	NC			10.00	14	0	11	53	6	24	29.46	30.42																								
18	BKN	055			10.00	12	-1	9	56	9	24	29.43	30.40																								
21	OVC	019			10.00	11	1	9	64	3	25	29.37	30.33																								
24	OVC	015			10.00	14	6	12	71	9	18	29.29	30.24																								
SUNRISE: 0735 JAN 30 SUNSET: 1718																																					
03	OVC	013			10.00	18	15	17	88	8	20	29.21	30.16																								
06	OVC	013			10.00	24	21	23	88	7	19	29.12	30.06																								
09	OVC	011			9.00	26	22	25	84	16	20	29.07	30.01																								
12	OVC	007		BR		26	24	25	92	10	19	29.00	29.94																								
15	OVC	007		BR		28	26	27	92	10	19	28.97	29.89																								
18	OVC	015			7.00	31	26	29	82	8	16	28.92	29.85																								
21	BKN	017		BR		31	28	30	89	6	14	28.92	29.84																								
24	OVC	090		BR		30	27	29	88	5	13	28.90	29.82																								





JANUARY 2003

MINNEAPOLIS—ST.PAUL, MN

# LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

*I certify that this is an official publication of the National Oceanic and Atmospheric Administration (NOAA). It is compiled using information from weather observing sites operated by NOAA—National Weather Service / Department Of Transportation—Federal Aviation Administration and received at the National Climatic Data Center (NCDC), Asheville, North Carolina 28801.*

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