

2004

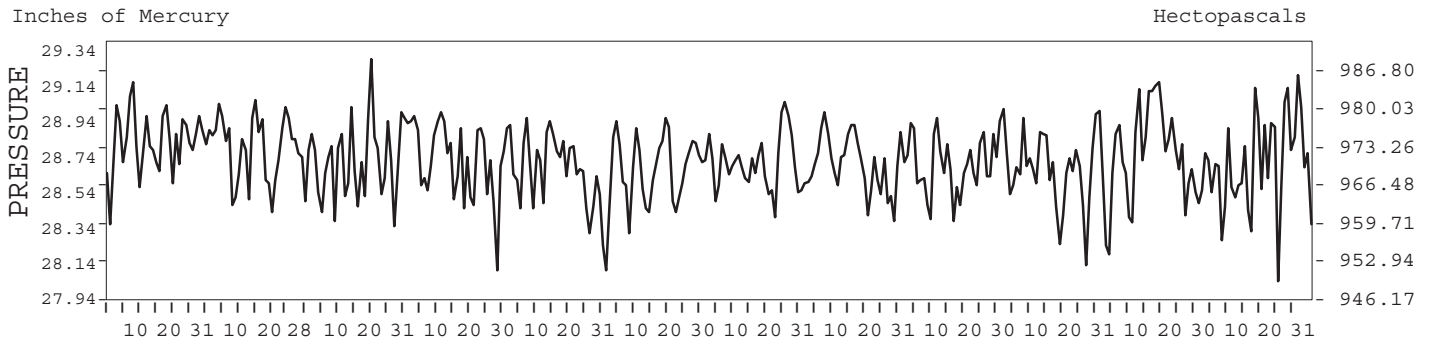
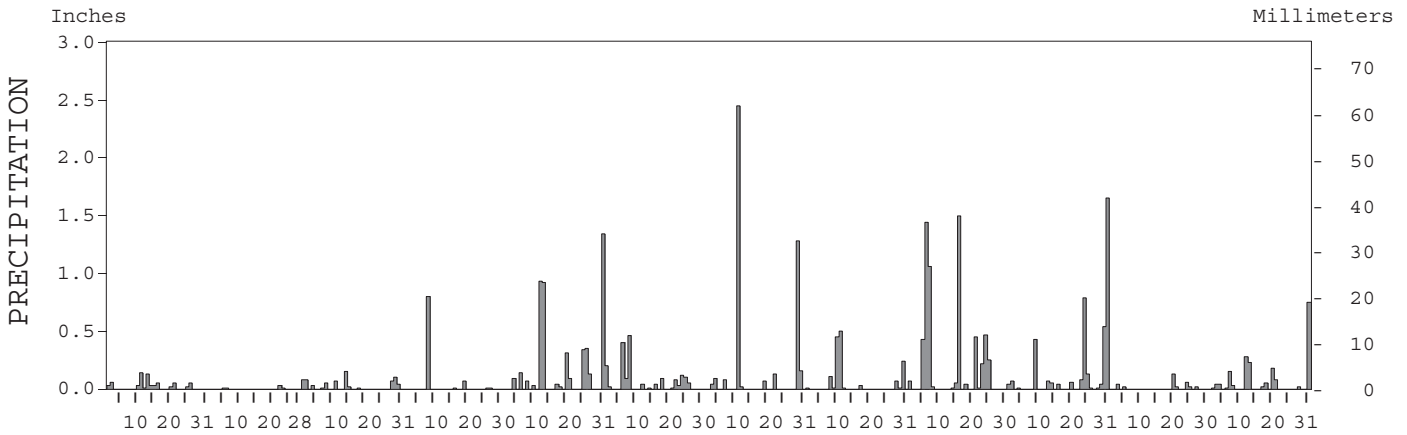
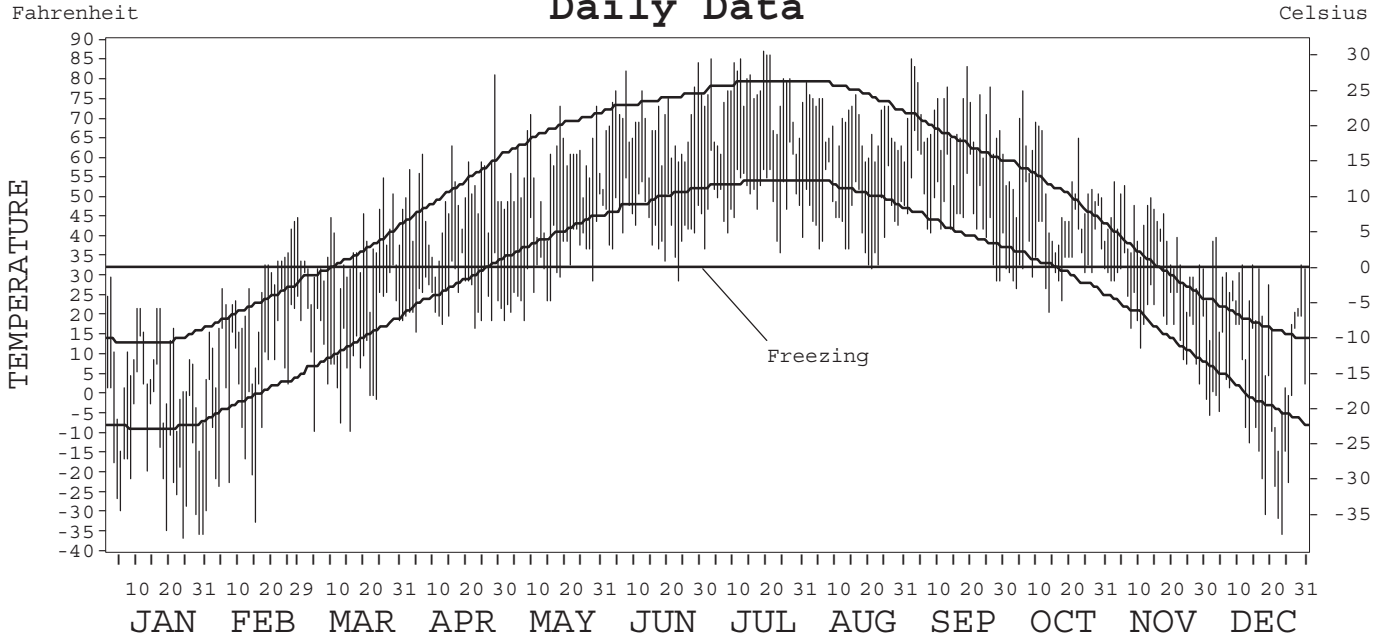
LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA



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INTERNATIONAL FALLS, MINNESOTA (INL)

Daily Data



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

METEOROLOGICAL DATA FOR 2004

INTERNATIONAL FALLS, MN (INL)

LATITUDE: 48° 33' 59" N LONGITUDE: 93° 24' 11" W ELEVATION (FT): GRND: 1182 BARO: 1185 TIME ZONE: CENTRAL (UTC + 6) WBAN: 14918

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	6.6	25.0	35.4	49.6	56.9	68.8	75.4	67.5	69.7	52.4	39.3	20.2	47.2	
	HIGHEST DAILY MAXIMUM	30	45	55	81	73	84	87	79	85	77	54	40	87	
	DATE OF OCCURRENCE	02	28	25	28	29+	29	19	01	02	06	03	04	JUL 19	
	MEAN DAILY MINIMUM	-14.8	3.4	12.8	25.0	33.3	43.4	50.3	44.5	47.3	34.8	22.0	-2.0	25.0	
	LOWEST DAILY MINIMUM	-36	-32	-9	16	19	29	36	32	29	21	3	-35	-36	
	DATE OF OCCURRENCE	24	15	15+	04	07+	23	24	21	28+	14	29	24	JAN 24	
	AVERAGE DRY BULB	-4.1	14.2	24.1	37.3	45.1	56.1	62.9	56.0	58.5	43.6	30.7	9.1	36.1	
	MEAN WET BULB		14.3	23.6	32.5	40.6	51.2	58.6	53.4	55.4	40.9	28.5			
	MEAN DEW POINT		8.8	18.1	23.4	33.0	45.8	55.0	49.9	52.6	37.1	23.3			
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MAXIMUM ≤ 32°	31	19	12	1	0	0	0	0	0	0	7	26	96	
	MINIMUM ≤ 32°	31	29	30	27	15	1	0	1	2	14	27	31	208	
MINIMUM ≤ 0°	24	9	6	0	0	0	0	0	0	0	0	17	56		
H/C	HEATING DEGREE DAYS	2135	1466	1260	825	609	267	111	272	223	653	1022	1726	10569	
	COOLING DEGREE DAYS	0	0	0	0	0	6	51	2	35	0	0	0	94	
RH	MEAN (PERCENT)	77	74	74	59	64	69	76	80	82	79	74	81	74	
	HOUR 00 LST	81	80	80	73	79	83	90	92	91	84	76	81	82	
	HOUR 06 LST	82	82	84	79	78	85	93	95	92	88	85	84	86	
	HOUR 12 LST	73	71	66	48	50	54	57	64	69	70	64	79	64	
	HOUR 18 LST	77	69	66	42	54	52	60	66	74	76	69	81	66	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	4	1	3	0	0	2	0	2	1	1	2	3	19	
	THUNDERSTORMS	0	0	0	2	5	5	7	4	4	2	0	0	29	
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.)	28.82	28.79	28.72	28.72	28.66	28.68	28.70	28.71	28.70	28.64	28.77	28.71	28.72	
	MEAN SEA-LEVEL PRESS. (IN.)	30.20	30.13	30.04	30.02	29.94	29.95		29.98	29.96	29.92	30.08	30.05		
WINDS	RESULTANT SPEED (MPH)	1.9	2.4		2.3	1.5	2.9	2.2	1.1	3.5		4.2	1.5		
	RES. DIR. (TENS OF DEGS.)	28	22		31	10	27	25	27	19		24	29		
	MEAN SPEED (MPH)	7.4	7.4	9.5	9.0	9.6	8.3	6.5	7.0	8.7	8.8	7.7	8.6	8.2	
	PREVAIL. DIR. (TENS OF DEGS.)	28	18	12	31	10	28	19	30	18	19	20	30	29	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	28	26	33	25	29	29	24	31	33	28	25	31	33	
	DIR. (TENS OF DEGS.)	31	22	27	33	04	12	27	32	02	33	33	30	02	
	DATE OF OCCURRENCE	17	12	20	29+	11+	11	21	18	15	16	06+	17+	SEP 15	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	35	37	43	31	39	38	33	45	45	35	33	38	45	
DIR. (TENS OF DEGS.)	31	23	28	33	10	32	29	33	18	33	33	29	18		
DATE OF OCCURRENCE	17	12	20	29+	30	18	21	18	23	16+	10+	17+	SEP 23		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	0.65	0.14	0.63	0.90	5.00	1.54	4.33	1.50	5.99	3.98	0.31	2.00	26.97	
	GREATEST 24-HOUR (IN.)	0.16	0.08	0.16	0.80	1.84	0.55	2.47	0.50	2.39	2.15	0.15	0.75	2.47	
	DATE OF OCCURRENCE	13-14	29	27-28	07	11-12	06-07	10-11	10	05-06	29-30	19-20	30	JUL 10-11	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	13	5	11	5	15	14	10	10	14	15	7	15	134	
PRECIPITATION ≥ 0.10	2	0	2	1	9	4	4	4	8	5	1	6	46		
PRECIPITATION ≥ 1.00	0	0	0	0	1	0	2	0	3	1	0	0	7		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	22.9	5.7	8.5	T	T	0.0	0.0	0.0	0.0	T	1.8	17.5	56.4	
	GREATEST 24-HOUR (IN.)	5.5	1.5	1.7	T	T	0.0	0.0	0.0	0.0	T	0.9	3.0	5.5	
	DATE OF OCCURRENCE	14	06	13	26+	13+					16+	23	30	JAN 14	
	MAXIMUM SNOW DEPTH (IN.)	18	14	9	5	0	0	0	0	0	0	T	11	18	
	DATE OF OCCURRENCE	17+	12+	26+	02+							30+	31	JAN 17+	
	NUMBER OF DAYS WITH:														
SNOWFALL ≥ 1.0	9	3	5	0	0	0	0	0	0	0	0	7	24		

NORMALS, MEANS, AND EXTREMES

INTERNATIONAL FALLS, MN (INL)

LATITUDE: 48° 33' 59" N LONGITUDE: 93° 24' 11" W ELEVATION (FT): GRND: 1182 BARO: 1185 TIME ZONE: CENTRAL (UTC + 6) WBAN: 14918

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	13.8	22.4	34.9	51.5	66.6	74.2	78.6	76.3	64.7	51.7	32.5	18.1	48.8
	MEAN DAILY MAXIMUM	57	12.6	20.8	32.9	49.9	64.4	73.2	78.2	75.9	64.6	52.1	32.9	18.3	48.0
	HIGHEST DAILY MAXIMUM	65	48	58	76	93	95	99	98	95	95	88	73	57	99
	YEAR OF OCCURRENCE		1973	2000	1946	1952	1964	1995	1988	2003	1976	1963	1975	1939	JUN 1995
	MEAN OF EXTREME MAXS.	57	34.9	40.9	52.4	73.2	84.0	87.8	90.3	89.0	82.9	74.4	54.1	38.3	66.8
	NORMAL DAILY MINIMUM	30	-8.4	-7	12.3	27.1	40.0	49.1	53.6	51.3	41.6	31.5	16.4	-1.1	26.1
	MEAN DAILY MINIMUM	57	-9.0	-2.7	10.5	27.4	39.1	48.9	53.7	51.3	42.0	32.4	17.3	-3	25.9
	LOWEST DAILY MINIMUM	65	-46	-45	-38	-14	11	23	34	30	20	2	-32	-41	-46
	YEAR OF OCCURRENCE		1968	1996	1962	1954	1967	1964	2001	1982	1965	1988	1985	1955	JAN 1968
	MEAN OF EXTREME MINS.	57	-34.9	-29.9	-16.9	8.4	24.5	34.4	41.3	38.4	26.7	17.3	-5.8	-27.3	6.3
	NORMAL DRY BULB	30	2.7	10.9	23.6	39.3	53.3	61.6	66.1	63.8	53.2	41.6	24.4	8.5	37.4
	MEAN DRY BULB	57	1.9	9.0	21.7	38.6	51.8	61.1	65.9	63.7	53.5	42.2	25.2	9.0	37.0
	MEAN WET BULB	18	5.7	11.3	21.5	34.2	46.4	56.0	60.4	58.8	50.1	37.9	23.5	10.2	34.7
	MEAN DEW POINT	18	1.5	5.2	14.2	25.4	38.7	50.9	56.5	55.1	46.2	32.7	19.2	6.5	29.3
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	*	0.3	0.9	1.6	1.0	0.1	0.0	0.0	0.0	3.9	
MAXIMUM ≤ 32°	30	28.7	22.1	13.1	1.9	*	0.0	0.0	0.0	0.0	1.1	15.6	26.9	109.4	
MINIMUM ≤ 32°	30	31.0	27.9	29.2	21.5	6.1	0.4	0.0	0.1	4.0	17.1	28.2	30.9	196.4	
MINIMUM ≤ 0°	30	21.3	15.0	6.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	3.6	16.6	63.7	
H/C	NORMAL HEATING DEG. DAYS	30	1946	1531	1298	775	378	140	55	102	360	723	1217	1744	10269
	NORMAL COOLING DEG. DAYS	30	0	0	0	1	17	47	91	67	10	0	0	0	233
RH	NORMAL (PERCENT)	30	74	71	66	60	61	69	73	75	77	74	78	78	71
	HOUR 00 LST	30	76	74	71	67	72	80	85	87	87	81	82	80	78
	HOUR 06 LST	30	76	77	77	76	77	83	88	92	90	85	84	80	82
	HOUR 12 LST	30	70	65	58	49	48	56	58	60	63	64	73	74	62
	HOUR 18 LST	30	71	64	56	48	47	55	57	60	67	67	75	76	62
S	PERCENT POSSIBLE SUNSHINE														
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	66	0.9	1.1	1.1	1.0	0.9	0.9	1.7	2.2	1.9	1.4	1.1	1.5	15.7
	THUNDERSTORMS	66	0.0	0.0	0.2	0.9	3.6	7.1	8.6	7.0	3.6	0.9	0.1	0.0	32.0
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	47	5.4	5.0	5.3	5.2	5.3	5.4	5.0	4.9	5.5	5.8	6.3	5.6	5.4
	MIDNIGHT-MIDNIGHT (OKTAS)	32	5.1	4.8	4.9	4.9	5.0	5.0	4.7	4.4	5.0	5.6	5.9	5.3	5.0
	MEAN NO. DAYS WITH:														
	CLEAR	57	7.5	7.9	7.7	6.9	6.8	4.8	6.1	7.1	5.6	5.8	3.7	6.2	76.1
PARTLY CLOUDY	57	7.3	6.4	7.6	8.3	9.0	10.8	13.2	11.3	8.8	7.1	5.2	5.8	100.8	
CLOUDY	57	16.2	14.1	15.6	14.8	15.2	14.4	11.2	12.1	15.3	18.1	21.1	18.9	187.0	
PR	MEAN STATION PRESSURE (IN)	32	28.70	28.78	28.70	28.70	28.70	28.60	28.70	28.70	28.70	28.70	28.70	28.71	28.70
	MEAN SEA-LEVEL PRES. (IN)	21	30.07	30.07	30.04	29.97	29.92	29.99	29.94	29.98	29.99	29.98	29.99	30.05	30.00
WINDS	MEAN SPEED (MPH)	38	8.6	8.7	9.3	9.5	9.2	8.2	7.4	7.4	8.3	8.9	9.4	8.5	8.6
	PREVAIL. DIR (TENS OF DEGS)	31	29	29	30	06	18	18	30	18	18	18	18	29	30
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	8	35	35	33	35	33	31	47	43	38	35	33	36	47
	DIR. (TENS OF DEGS)		30	30	27	33	28	02	26	30	34	30	36	31	26
	YEAR OF OCCURRENCE		2001	2002	2004	2002	2000	2002	2003	2001	2002	1999	1998	1999	JUL 2003
	MAXIMUM 5-SECOND:														
SPEED (MPH)	8	46	45	43	44	44	38	55	59	45	46	47	49	59	
DIR. (TENS OF DEGS)		31	29	28	33	30	32	25	32	18	31	24	30	32	
YEAR OF OCCURRENCE		2001	2002	2004	2002	2000	2004	2003	2001	2004	1999	1999	1999	AUG 2001	
PRECIPITATION	NORMAL (IN)	30	0.84	0.64	0.96	1.38	2.55	3.98	3.37	3.14	3.03	1.98	1.36	0.70	23.93
	MAXIMUM MONTHLY (IN)	65	3.03	1.81	3.07	3.54	6.67	8.29	9.52	11.26	7.36	4.84	3.49	2.00	11.26
	YEAR OF OCCURRENCE		1975	1955	1966	2001	1985	2002	1966	1942	1961	1971	1977	2004	AUG 1942
	MINIMUM MONTHLY (IN)	65	0.07	0.04	0.13	0.08	0.20	0.70	1.00	0.58	0.28	0.14	0.10	0.16	0.04
	YEAR OF OCCURRENCE		2003	2002	2001	1987	1976	1961	1941	1991	1952	1992	1999	1940	FEB 2002
	MAXIMUM IN 24 HOURS (IN)	65	1.50	1.14	1.80	1.59	2.76	4.32	4.87	4.82	3.37	2.62	1.56	1.25	4.87
	YEAR OF OCCURRENCE		1975	1946	1957	1979	1991	2002	1966	1942	1973	1979	1977	1960	JUL 1966
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	10.9	8.7	9.4	8.4	11.1	13.3	11.6	11.2	12.0	10.9	10.4	10.9	128.8	
PRECIPITATION ≥ 1.00	30	*	0.0	0.0	0.1	0.3	0.7	0.6	0.5	0.7	0.2	*	0.0	3.1	
SNOWFALL	NORMAL (IN)	30	15.2	10.5	9.0	5.4	0.3	0.*	0.0	0.0	0.1	2.3	13.3	13.9	70.0
	MAXIMUM MONTHLY (IN)	64	43.0	32.3	31.5	23.0	13.4	0.3	T	T	1.9	8.5	29.7	43.9	43.9
	YEAR OF OCCURRENCE		1975	1992	1951	1950	1954	1969	1992	1996	1942	1981	1965	1992	DEC 1992
	MAXIMUM IN 24 HOURS (IN)	64	17.7	12.1	17.0	13.9	7.7	0.3	T	T	1.5	5.9	14.7	14.4	17.7
	YEAR OF OCCURRENCE		1975	1996	1966	1950	1954	1969	1992	1995	1951	1981	1991	1990	JAN 1975
	MAXIMUM SNOW DEPTH (IN)	55	38	35	38	25	12	0	0	0	0	5	26	25	38
	YEAR OF OCCURRENCE		1982	1969	1966	1975	1954					1988	1965	1985	MAR 1966
	NORMAL NO. DAYS WITH:														
SNOWFALL ≥ 1.0	30	4.3	3.3	2.7	1.5	0.1	0.0	0.0	0.0	0.1	0.8	3.8	3.9	20.5	

PRECIPITATION (inches) 2004 INTERNATIONAL FALLS, MN (INL)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1975	3.03	0.51	1.55	1.82	1.37	6.22	2.02	3.34	1.66	2.46	0.87	0.86	25.71
1976	0.99	0.46	1.84	0.94	0.20	7.01	5.70	1.89	1.19	0.81	0.21	0.60	21.84
1977	0.66	1.01	1.91	1.01	5.81	4.20	2.16	3.01	6.81	0.80	3.49	0.96	31.83
1978	0.76	0.27	0.41	1.12	3.86	2.89	6.29	2.96	3.62	0.39	1.60	0.93	25.10
1979	0.54	1.03	1.66	2.70	1.75	4.26	1.08	3.18	0.69	3.88	0.76	0.41	21.94
1980	0.92	0.55	0.87	0.45	0.83	1.70	2.23	4.03	4.08	1.81	1.62	0.56	19.65
1981	0.26	0.22	1.18	1.49	2.47	3.71	2.33	2.03	4.12	2.86	0.67	0.76	22.10
1982	1.24	0.51	1.58	0.84	3.51	2.68	2.37	2.88	3.63	3.67	1.52	0.29	24.72
1983	0.36	0.98	0.72	0.62	1.21	5.02	2.98	3.66	4.23	2.58	1.95	0.66	24.97
1984	0.30	0.76	0.22	0.89	1.77	6.50	2.14	1.30	1.14	4.11	0.91	1.27	21.31
1985	0.38	0.70	0.72	3.17	6.67	6.15	1.22	4.27	2.97	1.97	1.57	0.51	30.30
1986	0.61	0.95	0.26	3.33	0.50	3.67	2.59	1.52	2.42	0.64	1.27	0.35	18.11
1987	0.37	0.48	1.05	0.08	3.13	1.11	7.86	2.50	1.38	0.66	0.72	0.20	19.54
1988	0.44	0.14	1.71	0.30	1.18	4.39	3.04	6.66	3.93	1.03	1.39	0.76	24.97
1989	1.42	0.28	0.81	0.54	1.93	6.59	1.51	4.82	1.92	1.21	0.99	0.45	22.47
1990	0.62	0.50	1.35	1.47	0.98	5.50	3.13	2.15	1.23	1.42	0.75	1.21	20.31
1991	0.79	0.91	1.10	2.52	4.09	4.58	4.10	0.58	4.94	1.47	1.83	0.94	27.85
1992	0.78	1.57	0.56	1.43	2.08	2.17	4.00	5.48	2.34	0.14	1.17	1.70	23.42
1993	0.68	0.10	0.32	1.67	2.82	2.01	6.03	3.84	2.04	0.73	0.81	0.44	21.49
1994	0.46	0.34	0.58	1.47	1.65	4.56	4.02	2.73	3.67	1.97	2.46	0.67	24.58
1995	1.03	0.65	0.70	1.21	2.36	2.66	3.29	3.13	3.56	3.12	1.32	1.26	24.29
1996	1.78	1.47	0.43	1.54	2.10	4.41	3.05	3.52	2.64	3.17	3.00	1.48	28.59
1997	0.72	0.19	1.18	1.31	1.44	2.57	2.65	1.41	3.90	2.37	0.99	0.23	18.96
1998	0.64	1.04	0.30	0.73	4.81	4.33	2.18	1.95	0.28	4.20	1.70	0.37	22.53
1999	0.09	0.51	2.03	1.82	5.70	3.31	6.21	2.67	5.89	0.65	T	0.18	29.06
2000	0.60	0.23	0.73	1.66	2.57	4.05	2.71	4.11	2.00	1.20	2.75	0.20	22.81
2001	0.18	0.25	0.13	3.54	4.50	3.07	8.29	1.65	2.11	2.59	0.90	0.27	27.48
2002	0.07	0.04	0.29	1.48	2.08	8.29	3.79	4.35	1.19	1.07	0.22	0.26	23.13
2003	T	0.09	0.51	0.65	1.44	3.99	3.30	2.36	2.17	1.03	0.93	0.38	16.85
2004	0.65	0.14	0.63	0.90	5.00	1.54	4.33	1.50	5.99	3.98	0.31	2.00	26.97
POR= 65 YRS	0.78	0.67	1.01	1.57	2.68	3.95	3.69	3.14	3.10	1.80	1.32	0.80	24.51

WBAN : 14918

AVERAGE TEMPERATURE (°F) 2004 INTERNATIONAL FALLS, MN (INL)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1975	6.3	6.8	15.1	33.0	55.1	61.2	70.2	62.2	50.6	44.8	28.7	6.9	36.7
1976	-4	14.5	17.3	42.8	51.2	64.6	66.0	64.9	53.6	36.3	19.5	-3.0	35.6
1977	-5.8	12.6	29.6	42.9	61.0	61.8	66.6	57.0	52.5	43.3	22.6	3.6	37.3
1978	-3.5	2.6	18.5	37.0	55.5	59.6	63.5	63.0	56.0	43.4	20.5	0.7	34.7
1979	-8.7	-6	19.7	34.0	46.0	59.5	66.4	60.2	52.9	36.9	22.2	15.1	33.6
1980	2.1	8.1	16.8	44.3	58.8	62.3	68.8	64.9	52.8	38.9	26.1	4.6	37.4
1981	6.2	14.5	28.6	40.9	53.3	61.5	68.6	67.8	54.0	40.1	34.9	10.5	40.1
1982	-10.5	6.5	18.7	35.4	55.8	56.2	67.3	61.1	53.7	45.0	21.6	16.4	35.6
1983	11.2	16.6	27.8	38.2	49.0	61.9	69.6	68.6	55.1	41.7	27.7	-4.3	38.6
1984	0.7	20.7	17.5	44.0	48.9	61.5	65.1	67.7	49.0	44.6	25.6	3.4	37.4
1985	-1	4.7	26.7	41.7	54.4	54.5	63.6	60.1	51.2	42.1	14.3	0.2	34.5
1986	7.7	9.4	27.6	43.2	56.0	60.4	66.7	61.2	52.4	41.4	19.9	15.9	38.5
1987	11.0	23.5	29.8	47.9	55.8	64.1	67.9	62.5	56.2	38.6	31.0	18.6	42.2
1988	0.2	1.9	21.7	39.5	58.5	67.6	68.4	65.2	53.8	37.8	26.1	8.8	37.5
1989	8.0	-1.7	16.8	36.0	53.4	60.2	69.7	65.2	55.0	43.4	21.0	-1.5	35.5
1990	13.4	9.6	27.0	38.7	49.7	63.2	65.8	66.0	55.6	40.6	28.1	5.9	38.6
1991	-1	15.4	25.3	44.8	58.1	66.1	66.4	67.9	51.8	38.1	20.2	13.0	38.9
1992	12.3	16.5	23.9	35.6	55.0	57.7	59.4	60.3	53.0	40.4	25.4	8.6	37.3
1993	4.7	9.1	25.5	38.6	50.7	58.6	64.4	65.0	48.5	37.4	22.9	13.1	36.5
1994	-7.8	5.5	29.2	38.7	54.2	64.1	64.8	61.8	57.8	47.5	30.9	19.1	38.8
1995	9.6	6.4	27.0	33.9	52.5	68.1	65.9	67.1	53.2	41.6	15.4	6.5	37.3
1996	-5.4	7.3	15.2	32.0	49.9	63.8	65.0	66.1	55.5	42.5	17.5	6.1	34.6
1997	2.1	10.2	18.4	35.9	46.0	62.7	64.2	60.6	56.4	43.1	23.0	20.4	36.9
1998	12.0	27.1	25.9	44.0	56.0	60.0	64.3	66.2	56.5	44.2	27.2	10.7	41.2
1999	3.7	19.5	26.9	42.0	54.3	61.0	66.6	62.1	51.9	40.0	33.5	17.6	39.9
2000	4.7	18.9	32.2	39.2	53.7	57.5	66.2	63.8	52.1	44.3	28.8	-1.3	38.3
2001	14.0	3.3	23.1	40.8	54.0	62.4	66.3	65.6	54.3	40.4	36.9	18.7	40.0
2002	11.9	18.8	15.4	37.4	46.0	63.4	68.5	64.1	56.9	33.2	23.0	17.3	38.0
2003	4.9	4.1	20.8	39.5	53.2	61.0	64.2	66.7	54.2	42.4	22.3	16.6	37.5
2004	-4.1	14.2	24.1	37.3	45.1	56.1	62.9	56.0	58.5	43.6	30.7	9.1	36.1
POR= 65 YRS	2.7	9.0	21.9	38.9	51.5	60.8	66.3	63.6	53.5	42.7	25.3	9.2	37.1

HEATING DEGREE DAYS (base 65°F) 2004 INTERNATIONAL FALLS, MN (INL)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1975-76	41	118	426	622	1085	1801	2025	1463	1475	659	420	83	10218
1976-77	40	94	362	883	1359	2112	2195	1461	1089	658	183	114	10550
1977-78	34	246	367	666	1266	1908	2126	1745	1436	832	312	195	11133
1978-79	95	119	299	661	1329	1992	2287	1837	1402	923	580	177	11701
1979-80	36	161	364	862	1277	1539	1951	1646	1488	618	257	124	10323
1980-81	19	56	365	805	1161	1873	1818	1411	1119	716	359	108	9810
1981-82	32	17	324	764	894	1685	2343	1638	1431	882	280	256	10546
1982-83	21	161	354	612	1298	1500	1664	1352	1145	797	490	153	9547
1983-84	27	23	320	715	1116	2149	1995	1276	1470	621	494	112	10318
1984-85	50	50	474	626	1176	1908	2015	1687	1182	688	324	307	10487
1985-86	74	163	411	704	1520	2011	1773	1555	1152	646	313	161	10483
1986-87	34	145	367	723	1346	1517	1671	1158	1084	513	299	103	8960
1987-88	31	127	257	809	1018	1433	2011	1828	1337	756	237	53	9897
1988-89	29	85	331	834	1162	1743	1765	1868	1490	863	363	170	10703
1989-90	11	73	308	670	1312	2062	1596	1548	1171	796	464	88	10099
1990-91	39	59	284	748	1101	1833	2017	1383	1219	601	261	35	9580
1991-92	44	43	393	826	1338	1610	1631	1404	1267	875	335	233	9999
1992-93	173	155	354	756	1178	1746	1868	1560	1221	787	434	211	10443
1993-94	58	73	492	845	1257	1606	2263	1666	1102	784	339	80	10565
1994-95	58	135	221	535	1019	1416	1714	1640	1174	924	390	80	9306
1995-96	50	36	358	719	1484	1809	2183	1672	1540	984	462	111	11408
1996-97	50	37	309	691	1419	1819	1943	1531	1436	865	579	88	10767
1997-98	105	164	262	677	1253	1377	1637	1053	1205	621	291	169	8814
1998-99	68	40	259	637	1129	1676	1895	1268	1174	682	339	153	9320
1999-00	57	110	387	768	936	1465	1865	1330	1011	767	351	223	9270
2000-01	49	70	384	634	1078	2051	1574	1723	1297	724	335	148	10067
2001-02	62	72	339	756	836	1429	1639	1288	1529	822	590	121	9483
2002-03	25	69	289	979	1254	1470	1856	1699	1363	758	358	150	10270
2003-04	65	52	332	699	1272	1494	2135	1466	1260	825	609	267	10476
2004-	111	272	223	653	1022	1726							

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COOLING DEGREE DAYS (base 65°F) 2004 INTERNATIONAL FALLS, MN (INL)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1975	0	0	0	0	23	54	211	38	0	2	0	0	328
1976	0	0	0	0	0	80	76	98	27	0	0	0	281
1977	0	0	0	0	65	26	92	4	0	0	0	0	187
1978	0	0	0	0	24	41	57	63	34	0	0	0	219
1979	0	0	0	0	1	18	86	18	8	0	0	0	131
1980	0	0	0	2	69	51	142	62	5	0	0	0	331
1981	0	0	0	0	5	9	151	112	3	0	0	0	280
1982	0	0	0	2	1	0	101	46	22	0	0	0	172
1983	0	0	0	0	0	67	178	142	30	0	0	0	417
1984	0	0	0	0	4	16	61	139	0	1	0	0	221
1985	0	0	0	0	0	1	41	19	2	0	0	0	63
1986	0	0	0	0	41	32	96	34	0	0	0	0	203
1987	0	0	0	7	20	83	130	56	0	0	0	0	296
1988	0	0	0	0	40	136	141	96	3	0	0	0	416
1989	0	0	0	0	11	32	165	85	14	5	0	0	312
1990	0	0	0	11	0	40	72	96	10	0	0	0	229
1991	0	0	0	0	54	76	90	137	6	0	0	0	363
1992	0	0	0	0	33	22	5	16	1	0	0	0	77
1993	0	0	0	0	0	26	47	81	0	0	0	0	154
1994	0	0	0	0	14	60	56	42	13	0	0	0	185
1995	0	0	0	0	9	180	84	108	9	0	0	0	390
1996	0	0	0	0	0	81	60	78	32	0	0	0	251
1997	0	0	0	0	0	24	85	37	10	4	0	0	160
1998	0	0	0	0	18	25	53	84	13	0	0	0	193
1999	0	0	0	0	14	40	112	26	2	0	0	0	194
2000	0	0	0	0	10	3	93	42	5	0	0	0	153
2001	0	0	0	4	0	78	109	98	26	0	0	0	315
2002	0	0	0	0	8	79	140	47	50	0	0	0	324
2003	0	0	0	0	0	35	44	114	16	4	0	0	213
2004	0	0	0	0	0	6	51	2	35	0	0	0	94

SNOWFALL (inches) 2004 INTERNATIONAL FALLS, MN (INL)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1975-76	0.0	0.0	0.0	2.1	5.5	14.8	21.4	9.7	28.1	0.2	0.4	0.0	82.2
1976-77	0.0	0.0	0.0	6.9	3.8	12.4	11.2	14.2	14.0	0.2	0.0	0.0	62.7
1977-78	0.0	0.0	0.0	T	24.4	9.7	13.4	4.6	5.4	9.2	0.0	0.0	66.7
1978-79	0.0	T	0.0	0.3	21.0	15.0	10.8	18.3	11.5	2.1	0.8	0.0	79.8
1979-80	0.0	0.0	0.0	2.1	10.3	6.2	16.3	11.0	12.5	5.8	T	0.0	64.2
1980-81	0.0	0.0	0.0	1.7	19.1	9.3	6.8	3.9	1.7	3.3	T	0.0	45.8
1981-82	0.0	0.0	1.4	8.5	5.3	16.2	28.4	4.5	14.8	10.8	0.0	0.0	89.9
1982-83	0.0	0.0	0.0	T	13.9	3.9	5.7	16.4	2.3	3.7	0.1	0.0	46.0
1983-84	0.0	0.0	T	0.9	26.5	15.4	5.7	6.1	3.9	T	0.2	0.0	58.7
1984-85	0.0	0.0	T	2.1	10.9	12.4	9.8	15.3	13.9	2.0	T	0.0	66.4
1985-86	0.0	0.0	T	4.8	27.1	15.5	16.4	15.4	5.2	0.1	0.3	0.0	84.8
1986-87	0.0	0.0	0.0	0.7	11.5	8.4	14.1	12.6	6.9	0.5	0.0	0.0	54.7
1987-88	0.0	0.0	0.0	1.4	0.1	8.1	14.7	4.9	16.1	0.2	0.0	0.0	45.5
1988-89	0.0	0.0	0.0	5.4	20.8	21.4	28.9	6.7	12.5	7.1	1.9	0.0	104.7
1989-90	0.0	0.0	T	T	8.5	10.8	9.8	11.7	3.0	17.1	T	T	60.9
1990-91	T	0.0	T	2.5	7.8	31.1	18.5	18.3	12.1	5.1	1.8	0.0	97.2
1991-92	0.0	0.0	T	3.9	23.8	22.2	16.7	32.3	2.7	9.3	0.1	T	111.0
1992-93	T	0.0	0.1	1.8	24.9	43.9	17.6	1.6	6.8	2.0	T	0.0	98.7
1993-94	0.0	0.0	1.3	4.7	18.4	5.7	15.4	8.8	10.0	10.6	T	T	74.9
1994-95	0.0	T	T	1.1	10.6	10.1	17.5	13.8	4.0	12.8	T	0.0	69.9
1995-96	0.0	T	T	4.7	16.5	21.4	30.0	18.1	7.7	17.6	T	0.0	116.0
1996-97	0.0	T	T	5.4	23.9	24.7	11.3	5.4	13.0	1.4	0.2	0.0	85.3
1997-98	0.0	0.0	0.0	3.3	10.8	4.7	17.1	5.6	4.2	5.7	T	0.0	51.4
1998-99	0.0	0.0	0.0	T	22.4	12.9	4.0	9.2	11.4	5.9	T	0.0	65.8
1999-00	0.0	0.0	0.0	T	T	3.3	17.0	1.9	1.4	3.5	0.0	0.0	27.1
2000-01	0.0	0.0	0.0	T	3.4	15.4	7.7	10.4	2.9	21.6	0.0	0.0	61.4
2001-02	0.0	0.0	0.0	1.6	17.5								
2002-03							7.0	9.4	11.8	13.0	0.0	0.0	
2003-04	0.0	0.0	1.2	3.9	19.9	7.9	22.9	5.7	8.5	T	T	0.0	70.0
2004-	0.0	0.0	0.0	T	1.8	17.5							
POR= 63 YRS	T	T	0.1	1.8	12.0	12.1	12.8	9.2	9.2	6.4	1.1	0.0	64.7

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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.</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 EIGHTS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
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2004
INTERNATIONAL FALLS,
MINNESOTA (INL)

Situated on the Canadian border, International Falls is subjected to frequent outbreaks of continental polar air throughout most of the year. These are tempered to mildness during June, July, and August, when the land and lake areas to the north and northwest have been warmed by long days of sunshine. Periods of fine, mild weather occur, interspersed with showers and an occasional three or four day period of cloudy, rainy weather. The area of small lakes, covering up to 30 percent of the area to the north and northwest, supplies a good deal of the moisture for the late afternoon and evening showers and stores heat that tempers southward flow of cold air during September and October. This prolongs the fall season until early November. In November the water surfaces freeze and snow returns to International Falls. From December through February, temperatures fall below zero on most days and occasionally fail to rise above zero for a week or more.

In winter, frost penetrates into the ground to depths of 36 to 60 inches. If winter begins abruptly so that a heavy blanket of snow covers the ground before protracted freezing occurs, it may freeze to only a few inches deep. This is very important to loggers, who depend upon deep soil freezing for road foundations into otherwise inaccessible places. The wide expanse of deep snow and ice prolongs winter. The transition to summer is rapid after the spring thaw. Spring lasts only about a month.

By June 1st, the ground generally is warm enough for successful planting, but vigilance against freezing temperatures is required through most of June. Crops that do not mature by September 1st have little chance of providing a harvest. Heaviest precipitation coincides with the growing season.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is September 15 and the average last occurrence in the spring is May 26.

Heavy deposits of glaze occur only about once a year at International Falls. Occasional storms that intensify over the southern plateau or plains states and move rapidly northeastward, drawing up moist gulf air, bring the most violent weather changes. They often produce severe thunderstorms and windstorms in early fall and blizzards with heavy snowfall and drifting in winter. Quite often such a storm brings an abrupt end to fall weather. During winter, a variation of 100 miles in the paths of such storms as they approach the border is of tremendous importance to local transportation and road maintenance.

Surrounding terrain is generally level. Forests of varying density and swampland surround the station for many miles to the east, south, and west. Rainy Lake, approximately 300 square miles in area, lies to the north. The lake is 5 miles from the station at its closest point.

STATION LOCATION

INTERNATIONAL FALLS,
MINNESOTA

LOCATION	Occupied From	Occupied To	Airline Distances and Directions from previous Location	LATITUDE		ELEVATION ABOVE										AUTOMATIC OBSERVING EQUIPMENT *	* TYPE	REMARKS
				NORTH	WEST	GROUND												
						SEA LEVEL	WIND INSTRUMENT	EXTREME THERMOMETERS	PSYCHROMETER	SUNSHINE SWITCH	TIPPING BUCKET	RAINING GAUGE	WINDHOLE GAUGE	8 INCH RAIN GAGE	HYGROTHERMOMETER			
*NOTE:																		
<u>AIRPORT</u>																		
Weather Bureau Building Municipal Airport	7/20/46	10/25/50	2.3 mi. SSE	48°34'	93°23'	1179	28	5	5				3	3				
Weather Bureau Building Municipal Airport	10/25/50	9/16/53	300' W	48°34'	93°23'	1177	28	5	5				3	3				
Administration Building Municipal Airport ++	9/16/53	11/01/96	NA	48°34'	93°23'	1179	b20 e6	d5	d5				a6	5	f5			
++ Name changed to Falls International Airport prior to 1969.																		
Falls International AP	11/01/96	Present	NA	48°34'	93°24'	g1182										S		ASOS Commissioned 11/01/96 g. Ground elevation.

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* NOTES: For earlier station history see previous edition.