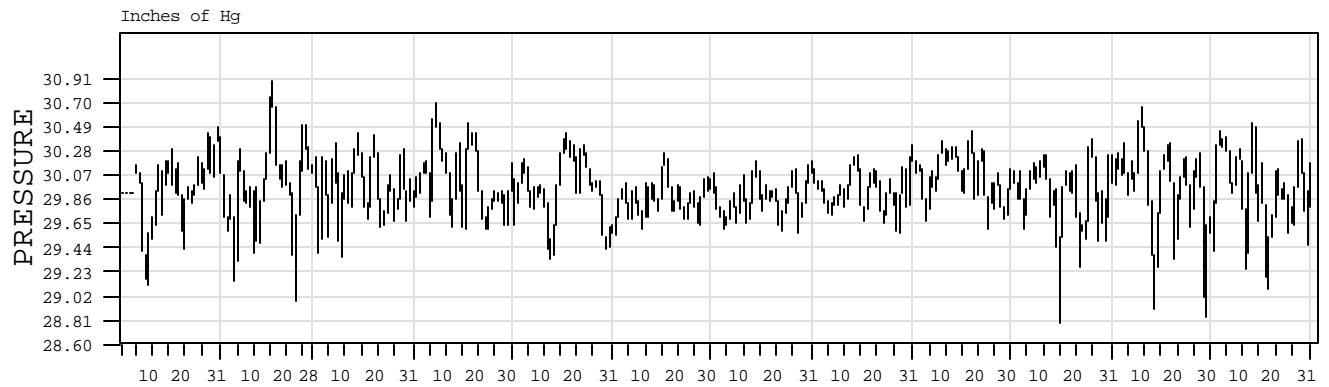
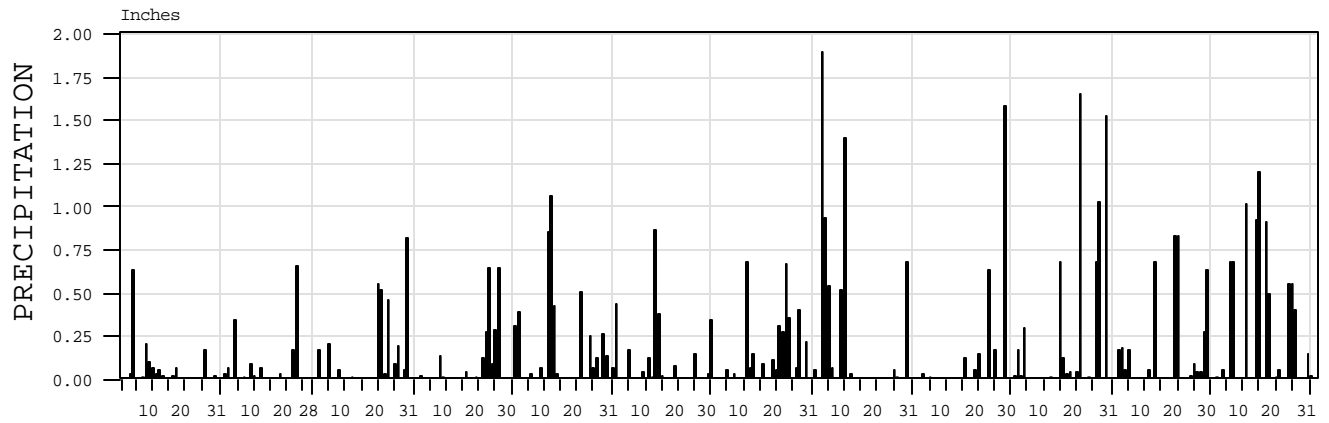
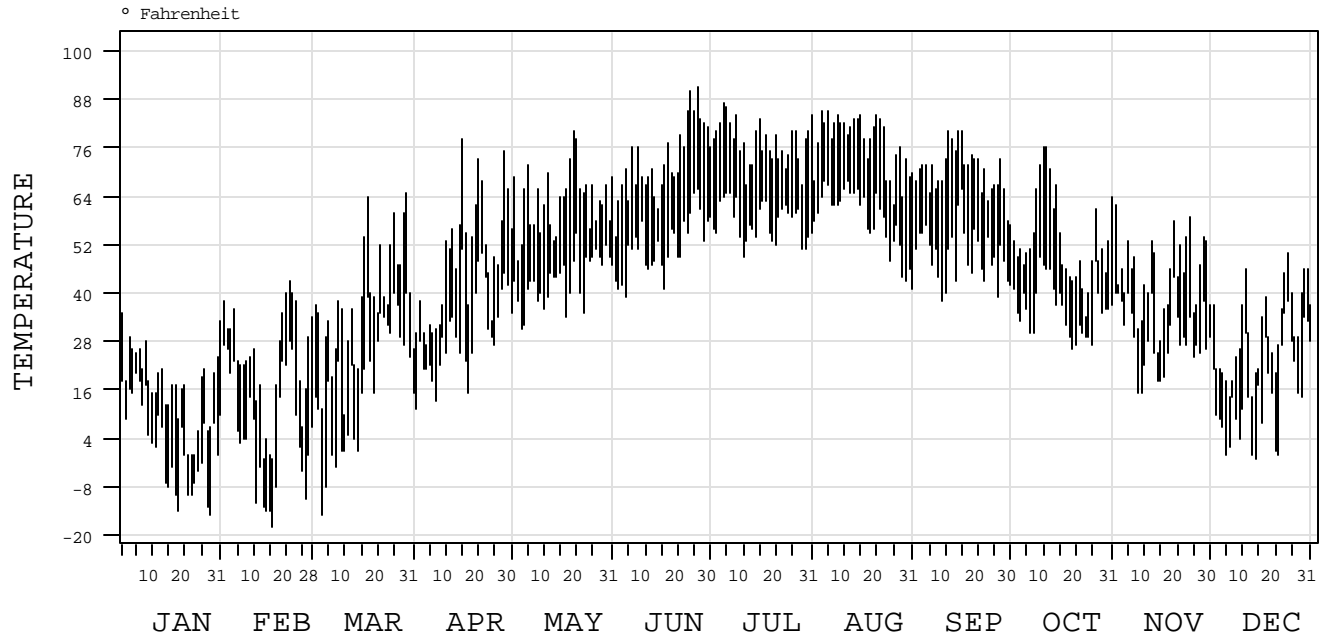


2003

LOCAL CLIMATOLOGICAL DATA

Annual Summary with Comparative Data
Westford
Daily Data



METEOROLOGICAL DATA FOR 2003

Westford

Latitude: 44° 37' 39" N Longitude: 73° 02' 29" W Elevation (Ground): 850 feet Time Zone: Eastern

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
TEMPERATURE													
Average													
-Daily Maximum	17.5	23.7	38.5	49.0	63.7	73.4	77.9	77.7	70.7	53.9	44.9	30.8	51.8
-Daily Minimum	2.7	6.3	18.4	30.8	43.8	52.2	58.3	58.9	50.0	36.6	29.6	16.2	33.7
-Monthly	10.1	15.0	28.4	39.9	53.8	62.8	68.1	68.3	60.4	45.3	37.2	23.5	42.7
-Monthly Dew Point	0.1	3.6	18.0	25.9	43.6	54.5	59.7	61.5	53.7	38.7	30.0	17.2	33.9
Extremes													
-Highest	35.0	43.6	65.0	78.8	80.3	91.0	87.0	85.3	80.7	76.8	62.4	50.5	91.0
-Date	1	21	29	15	19	26	4	3	14	11	1	24	JUN 26
-Lowest	-15.8	-18.1	-15.3	11.7	31.0	39.6	49.9	41.2	38.9	26.6	15.4	-1.8	-18.1
-Date	28	16	3	1	3	4	10	31	9	19	9	14	FEB 16
DEGREE DAYS BASE 65°F													
Heating	1710	1408	1148	767	363	135	19	59	170	629	848	1303	8559
Cooling	0	0	0	0	1	56	99	144	16	0	0	0	316
SUNSHINE INDEX													
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NUMBER OF DAYS													
Sunrise to Sunset													
-Clear	15	10	7	9	5	14	4	4	10	6	6	6	96
-Partly Cloudy	8	8	10	8	12	9	18	20	14	10	7	7	131
-Cloudy	8	10	14	13	14	7	9	7	6	15	17	18	138
Precipitation													
.01 inches or more	15	12	17	16	17	13	17	12	9	19	16	16	179
Snow, Ice pellets													
1.0 inches or more	7	5	3	3	0	0	0	0	0	0	3	10	31
Thunderstorms													
	0	0	0	3	2	2	1	7	2	1	1	1	20
Heavy Fog, visibility													
¼ mile or less	0	0	2	0	0	1	0	1	1	3	1	0	9
TEMPERATURE:													
-Maximum													
90°F and above	0	0	0	0	0	2	0	0	0	0	0	0	2
32°F and below	29	20	9	5	0	0	0	0	0	0	3	18	84
-Minimum													
32°F and below	31	28	24	18	1	0	0	0	0	9	18	27	156
0°F and below	13	10	4	0	0	0	0	0	0	0	0	4	31
PRESSURE													
Average													
-Monthly	29.973	29.994	29.965	30.042	29.955	29.870	29.875	29.944	30.067	29.912	29.979	29.962	29.962
Extremes													
-Highest	30.48	30.89	30.45	30.69	30.44	30.28	30.20	30.34	30.45	30.39	30.67	30.53	30.89
-Date	30	16	14	7	17	16	31	31	18	25	9	13	FEB 16
-Lowest	29.12	28.99	29.37	29.60	29.35	29.56	29.57	29.57	29.61	28.78	28.84	29.09	28.78
-Date	9	23	9	22	12	1	27	27	23	15	29	18	OCT 15
RELATIVE HUMIDITY (%)													
Average													
-Monthly	58.5	61.1	66.3	62.4	73.3	75.8	77.3	81.8	80.6	80.5	77.5	76.6	72.7
-Local Time													
Hour 01	71	64	71	70	81	87	87	89	87	86	81	77	79
Hour 07	73	68	73	68	83	85	88	90	92	88	81	80	81
Hour 13	58	53	58	54	62	64	63	68	67	69	70	71	63
Hour 19	68	62	66	61	68	70	71	80	82	81	78	77	72
PRECIPITATION													
Water Equivalent													
-Total	1.52	1.56	3.72	2.82	4.75	2.76	3.67	6.26	2.81	6.46	4.52	7.77	48.62
-Greatest (24 hrs)	0.64	0.66	1.06	0.77	1.90	1.23	0.83	1.90	1.59	1.71	1.66	0.00	1.90
-Date	4	23	20-21	22-23	11-12	13-14	23-24	2- 3	27-28	20-21	19-20	1	AUG 2- 3
Snow, Ice pellets													
-Total	26.3	12.8	13.4	8.4	0.0	0.0	0.0	0.0	0.0	T	4.3	69.8	135.0
-Greatest (day)	9.6	4.5	8.0	4.2	0.0	0.0	0.0	0.0	0.0	T	1.7	14.6	14.6
-Date	4	23	30	24	1	1	1	1	1	2	13	6	DEC 6
WIND													
Resultant													
-Direction	232	227	203	215	214	222	211	232	186	217	218	228	216
-Speed	0.9	2.0	2.6	1.7	0.9	1.2	1.4	1.0	1.2	1.8	2.5	2.0	1.6
Average Speed	2.9	3.5	4.2	4.0	2.3	2.1	2.0	1.7	1.8	2.9	4.3	4.1	3.0
Maximum One-minute													
Average													
-Direction	SW	WSW	S	SE	N	N	W	WNW	S	SW	W	WNW	WSW
-Speed	19	25	24	12	6	5	9	10	13	21	23	10	25
-Date	20	4	28	21	1	1	19	10	19	15	13	2	FEB 4
Peak Gust													
-Direction	W	WSW	S	WSW	S	S	W	SSW	SE	SW	W	W	S
-Speed	30	35	40	34	36	27	27	27	32	40	39	35	40
-Date	20	4	28	15	1	9	1	29	19	15	14	1	MAR 28

MEANS AND EXTREMES*

Westford

Latitude: 44° 37' 39" N Longitude: 73° 02' 29" W Elevation (Ground): 850 feet Time Zone: Eastern

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
TEMPERATURE													
Average													
-Daily Maximum	27.9	33.2	40.5	53.4	67.2	77.2	79.7	78.5	69.4	55.7	43.4	33.5	55.0
-Daily Minimum	8.8	12.4	20.1	32.3	43.4	53.3	57.2	56.1	48.4	37.4	29.0	17.8	34.7
-Monthly	18.3	22.8	30.3	42.9	55.3	65.2	68.5	67.3	58.9	46.6	36.2	25.6	44.8
-Monthly Dew Point	0.0	0.4	2.3	3.2	5.5	6.1	6.6	6.8	6.0	4.3	3.3	1.9	3.9
Extremes													
-Record Highest	59.0	59.0	76.0	86.0	88.0	100.0	103.0	98.0	91.0	77.0	72.0	63.0	103.0
-Year	1996	1999	1998	2002	1998	1995	1995	1995	2002	2001	1996	1998	JUL 1995
-Record Lowest	-29.0	-18.1	-15.3	11.7	27.0	35.0	43.0	38.0	25.0	19.0	0.0	-11.0	-29.0
-Year	1997	2003	2003	2003	1997	2001	2000	1995	2000	2002	2000	1998	JAN 1997
MEAN DEGREE DAYS													
Heating (base 65°F)	1431	1147	1077	630	306	75	23	43	204	560	843	1192	7530
Cooling (base 65°F)	0	0	0	2	8	76	111	103	24	1	0	0	324
MEAN SUNSHINE INDEX													
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEAN NUMBER OF DAYS													
Sunrise to Sunset													
-Clear	28.5	24.8	27.8	25.4	26.4	25.6	24.4	26.3	26.4	27.0	26.3	27.2	316.1
-Partly Cloudy	1.0	1.0	1.3	1.0	1.5	1.0	2.0	2.2	1.6	1.1	0.8	0.8	15.2
-Cloudy	1.0	1.3	1.8	1.6	1.8	0.8	1.0	0.8	0.7	1.7	1.9	2.0	16.2
Precipitation > .01"													
Snow, Ice plts. ≥ 1.0"	17.6	12.5	15.1	12.6	16.1	12.8	14.3	11.6	12.9	14.7	17.6	16.8	174.6
Thunderstorms	10.5	6.4	6.5	2.6	0.3	0.0	0.0	0.0	0.0	0.2	5.6	9.4	41.5
Heavy Fog, vis. ≤ ¼ mi	0.0	0.1	0.5	1.0	3.3	4.0	5.6	4.6	1.4	0.7	0.3	0.1	21.5
	0.0	0.0	0.3	0.0	0.0	0.1	0.0	0.2	0.1	0.3	0.1	0.0	1.1
TEMPERATURE:													
-Maximum													
90°F and above	0.0	0.0	0.0	0.0	0.0	2.0	1.9	2.0	0.2	0.0	0.0	0.0	6.1
32°F and below	17.6	10.9	6.3	0.8	0.0	0.0	0.0	0.0	0.0	0.0	3.0	13.8	52.3
-Minimum													
32°F and below	29.6	25.1	26.1	15.4	2.4	0.0	0.0	0.0	0.6	10.2	18.3	26.9	154.6
0°F and below	9.5	6.8	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.8	21.4
PRESSURE													
Average													
-Monthly	3.747	3.749	3.746	3.755	3.744	3.319	3.319	3.327	3.341	3.324	3.331	3.329	3.503
Extremes													
-Record Highest	30.48	30.89	30.45	30.69	30.44	30.28	30.20	30.34	30.45	30.39	30.67	30.53	30.89
-Year	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	FEB 2003
-Record Lowest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
-Year	1996	1996	1996	1996	1996	1995	1995	1995	1995	1995	1995	1995	JUN 1995
RELATIVE HUMIDITY (%)													
Average													
-Monthly	7.3	7.6	8.3	7.8	9.2	8.4	8.6	9.1	9.0	8.9	8.6	8.5	8.4
-Local Time													
Hour 01	9	8	9	9	10	10	10	10	10	10	9	9	9
Hour 07	9	9	9	9	10	9	10	10	10	10	9	9	9
Hour 13	7	7	7	7	8	7	7	8	7	8	8	8	7
Hour 19	9	8	8	8	8	8	8	9	9	9	9	9	8
PRECIPITATION													
Water Equivalent													
-Mean	3.33	2.07	3.12	2.79	3.90	4.15	5.09	4.96	4.60	3.84	3.65	3.62	45.13
-Maximum Monthly	6.88	3.16	4.84	6.05	7.29	12.15	7.65	10.18	8.87	6.48	4.52	7.77	12.15
-Year	1998	2000	2001	2000	2000	1998	1996	1995	2002	1995	2003	2003	JUN 1998
-Minimum Monthly	1.52	0.96	1.05	0.00	0.00	0.00	3.24	1.54	1.65	2.04	2.11	1.32	0.00
-Year	2003	1999	1996				2000	2002	2001	1997	1998	1998	
-Greatest (24 hrs)	2.85	0.95	1.23	1.34	2.33	3.08	2.58	6.05	2.65	1.71	1.66	2.24	6.05
-Year	1998	2000	2001	2000	2000	1998	1996	1995	1999	2003	2003	1996	AUG 1995
Snow, Ice pellets													
-Mean	27.3	14.8	21.4	8.0	0.3	0.0	0.0	0.0	0.0	1.1	11.6	28.4	172.9
-Maximum Monthly	34.3	23.5	41.6	21.7	2.2	0.0	0.0	0.0	0.0	4.7	20.5	69.8	69.8
-Year	1999	2000	2001	1996	1996	1995	1995	1995	1995	1997	2002	2003	DEC 2003
-Minimum Monthly	15.5	9.8	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.5	0.0
-Year	1996	1999	2000	1999	1997	1995	1995	1995	1995	1996	1998	1999	JUN 1995
-Greatest (day)	11.0	9.2	14.0	13.4	2.0	0.0	0.0	0.0	0.0	4.1	9.8	15.0	15.0
-Year	2000	2000	2001	2000	1996	1995	1995	1995	1995	2000	2002	1997	DEC 1997
WIND													
Resultant													
-Direction	231	226	202	214	213	221	210	231	185	216	217	227	215
-Speed	0.5	1.0	1.3	0.9	0.5	0.6	0.7	0.5	0.6	0.9	1.2	1.0	0.8
Average Speed	0.4	0.4	0.5	0.5	0.3	0.2	0.2	0.2	0.2	0.3	0.5	0.5	0.4
Maximum One-minute													
Average													
-Direction	SW	WSW	S	SE	N	N	W	WNW	S	SW	W	WNW	WSW
-Speed	19	25	24	12	6	5	9	10	13	21	23	10	25
-Year	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	FEB 2003
Peak Gust													
-Direction	W	WSW	S	WSW	S	S	W	SSW	SE	SW	W	W	S
-Speed	30	35	40	34	36	27	27	27	32	40	39	35	40
-Year	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	2003	MAR 2003

* Length of record: June 1995 to December 2003

Westford

PRECIPITATION (inches)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual
1995						1.36	3.92	10.18	3.15	6.48	4.24	3.39	32.72
1996	3.86	2.22	1.05	6.03	5.01	3.88	7.65	2.63	3.64	3.88	4.15	5.13	49.13
1997	2.05	1.82	3.34	0.00	0.00	0.00	6.06	5.47	4.28	2.04	4.41	3.78	33.25
1998	6.88	2.22	3.78	2.24	3.22	12.15	7.25	6.20	5.64	3.03	2.11	1.32	56.04
1999	4.61	0.96	2.79	0.76	3.83	2.95	5.07	2.80	8.33	3.82	3.35	1.73	41.00
2000	2.92	3.16	3.01	6.05	7.29	2.94	3.24	3.48	3.04	2.48	3.16	4.43	45.20
2001	1.98	2.27	4.84	0.65	2.63	2.20	4.04	6.07	1.65	2.39	2.72	2.35	33.79
2002	2.80	2.35	2.46	3.79	4.49	9.09	4.92	1.54	8.87	3.97	4.21	2.69	51.18
2003	1.52	1.56	3.72	2.82	4.75	2.76	3.67	6.26	2.81	6.46	4.52	7.77	48.62

SNOWFALL (inches)

Year	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
1994-95												0.0	0.0
1995-96	0.0	0.0	0.0	0.1	13.9	46.0	15.5	15.3	13.0	21.7	2.2	0.0	127.7
1996-97	0.0	0.0	0.0	0.0	19.8	15.0	31.9	11.2	24.2	9.8	0.0	0.0	111.9
1997-98	0.0	0.0	0.0	4.7	17.3	40.9	21.9	9.9	24.6	0.2	0.0	0.0	119.5
1998-99	0.0	0.0	0.0	0.0	2.0	7.6	34.3	9.8	25.2	0.0	0.0	0.0	78.9
1999-00	0.0	0.0	0.0	0.0	10.3	2.5	27.8	23.5	9.3	18.9	0.0	0.0	92.3
2000-01	0.0	0.0	0.0	4.3	13.4	40.8	30.9	18.4	41.6	0.0	0.0	0.0	149.4
2001-02	0.0	0.0	0.0	0.9	3.3	17.8	30.0	17.1	20.0	5.0	0.0	0.0	94.1
2002-03	0.0	0.0	0.0	0.0	20.5	15.4	26.3	12.8	13.4	8.4	0.0	0.0	96.8
2003-04	0.0	0.0	0.0	T	4.3	69.8							

Westford

TEMPERATURE °F

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Annual
1995						69.5	74.0	70.9	56.3	51.1	33.4	19.6	53.5
1996	15.9	19.8	27.3	41.4	53.0	65.3	67.2	66.8	59.9	45.2	32.0	32.2	43.8
1997	18.0	25.6	27.1	41.1	50.4	65.0	66.8	64.1	56.7	44.6	33.4	23.0	43.0
1998	21.5	27.4	33.4	45.0	60.7	66.1	68.3	66.1	59.0	47.6	38.2	30.9	47.0
1999	18.6	24.0	30.4	44.3	57.9	68.2	71.5	65.3	61.5	44.1	40.4	27.3	46.1
2000	16.4	22.9	35.5	41.8	55.8	62.9	65.6	65.5	55.2	47.4	36.0	18.8	43.6
2001	20.0	22.6	28.4	43.1	58.2	65.4	66.3	70.1	59.6	49.6	40.5	32.6	46.4
2002	26.4	25.2	31.6	46.5	52.5	61.7	68.5	68.6	61.9	44.0	34.9	22.9	45.4
2003	10.1	15.0	28.4	39.9	53.8	62.8	68.1	68.3	60.4	45.3	37.2	23.5	42.7

HEATING DEGREE DAYS: Base 65°F

Year	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	Total
1994-95												33	33
1995-96	0	13	262	424	954	1416	1528	1320	1177	665	391	47	8197
1996-97	18	31	180	542	998	1027	1463	1112	1181	652	445	59	7708
1997-98	44	67	265	639	893	1227	1224	1060	954	588	158	69	7188
1998-99	13	53	196	528	784	1032	1444	1154	1049	588	212	46	7099
1999-00	12	50	169	657	696	1139	1466	1147	923	634	299	99	7291
2000-01	45	58	260	537	877	1395	1403	852	1143	643	190	62	7465
2001-02	27	19	189	422	743	917	1206	1122	1044	504	388	123	6704
2002-03	30	38	148	662	790	1270	1710	1408	1148	767	363	135	8469
2003-04	19	59	170	629	848	1303							

Westford

COOLING DEGREE DAYS: Base 65°F

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
1995						160	248	182	9	0	0	0	599
1996	0	0	0	0	10	52	74	78	23	0	0	0	237
1997	0	0	0	0	0	53	90	36	7	0	0	0	186
1998	0	0	0	0	16	93	92	78	14	0	0	0	293
1999	0	0	0	0	15	132	164	52	56	0	0	0	419
2000	0	0	0	0	7	40	54	64	8	0	0	0	173
2001	0	0	0	0	6	67	52	164	27	1	0	0	317
2002	0	0	0	16	7	30	125	128	55	4	0	0	365
2003	0	0	0	0	1	56	99	144	16	0	0	0	316

STATION LOCATION AND INSTRUMENTATION
Westford

Location	Occupied from	Occupied to	Latitude North	Longitude West	Elevation Above (ft)						
					Sea Level	Ground					
						Wind	Sun	Temp	Humidity	Rain	Barometer
22 Penny Ln Westford, VT 05494	7/2001	Present	44° 37' 39"	73° 02' 29"	850	10	0	5	5	5	5

INSTRUMENTATION DETAIL

Units are: Temperature=°F, Wind=mph, Pressure=inches Hg, Precipitation=inches.

Davis VantagePro.

Wind:

Electronic sensors:

Instantaneous speed to 125 mph and direction to nearest 7°, greater of 2 mph or ±5%.

Temperature:

Electronic sensor: -40° to 140°F, ±1°F.

Humidity:

Electronic sensor: 0 to 100% RH, ±3%.

Barometer:

Electronic sensor: 26.00 to 32.00 inches Hg, ±0.05".

Rainfall:

4-inch diameter electronic tipping bucket rain gauge. Resolution 0.01", ±4%.

Sunshine:

Not recorded.

Snow, ice pellets, glaze and other meteorological phenomenon not recorded by the Weather Computer are manually observed and recorded in the station record.

OBSERVER NOTES