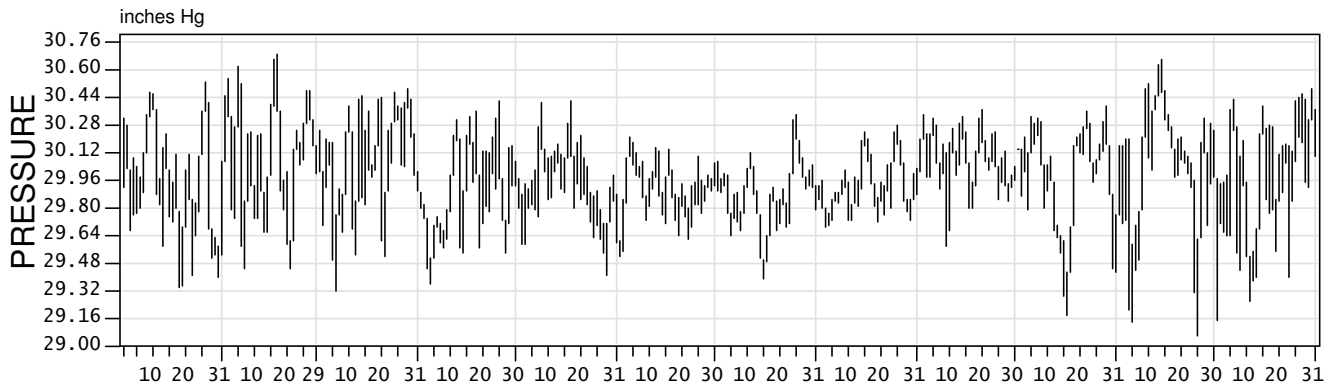
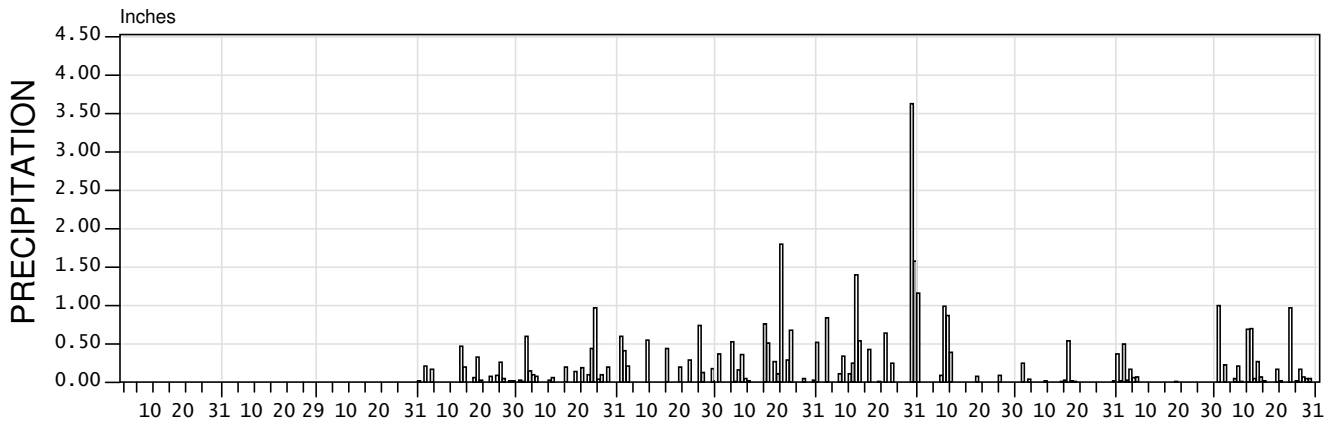
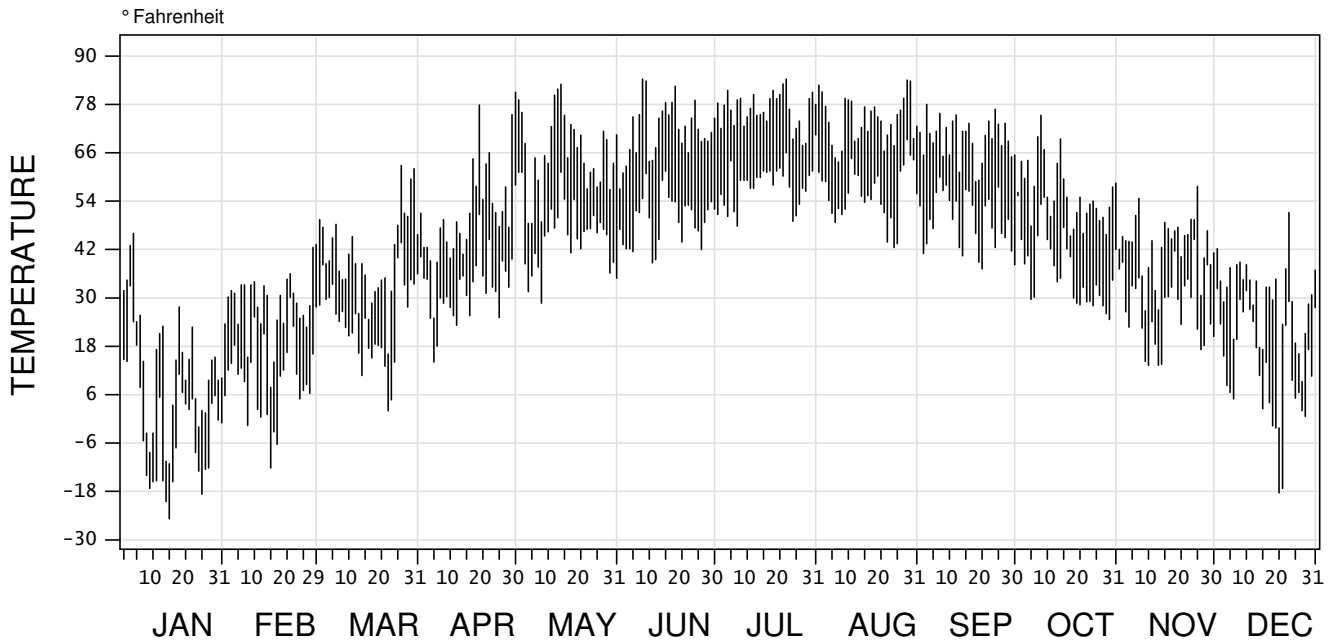


2004

LOCAL CLIMATOLOGICAL DATA

Annual Summary with Comparative Data

Westford Daily Data



METEOROLOGICAL DATA FOR 2004

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	13.5	28.4	40.5	51.4	66.3	71.7	76.8	74.1	69.5	56.1	43.0	29.3	51.7
-Daily Minimum	-1.9	10.3	24.2	33.0	45.5	49.5	57.9	55.9	49.0	36.8	27.2	12.7	33.3
-Monthly	5.8	19.4	32.4	42.2	55.9	60.6	67.3	65.0	59.3	46.5	35.1	21.0	42.5
-Monthly Dew Point	-2.8	9.1	23.3	30.4	46.4	51.1	60.9	59.4	53.0	39.3	28.8	15.4	34.5
Extremes													
-Highest	46.0	43.2	62.9	81.1	83.0	84.3	84.3	84.0	78.1	75.3	57.8	51.3	84.3
-Date	4	29	26	30	14	8	22	28	3	8	25	23	JUN 8
-Lowest	-24.9	-12.2	2.0	14.1	28.7	38.8	47.9	42.6	37.2	24.8	13.3	-18.4	-24.9
-Date	15	15	22	5	8	11	7	24	20	29	10	20	JAN 15
DEGREE DAYS													
Heating Base 65°F	1841	1337	1024	678	312	147	26	75	191	589	910	1377	8507
Cooling Base 65°F	0	0	0	5	15	28	82	59	2	0	0	0	191
SUNSHINE													
NUMBER OF DAYS													
Sunrise to Sunset													
-Clear	8	12	6	3	1	6	2	6	7	5	4	4	64
-Partly Cloudy	6	7	9	16	18	20	20	17	18	15	7	7	160
-Cloudy	17	10	16	11	12	4	9	8	5	11	19	20	142
Precipitation													
.01 inches or more	16	9	15	13	18	14	18	17	8	15	14	21	178
Snow, Ice pellets													
1.0 inches or more	10	3	2	2	1	0	0	0	0	0	1	11	30
Thunderstorms	0	0	0	2	2	5	9	6	1	0	1	0	26
Heavy Fog, visibility													
¼ mile or less	0	0	0	0	0	0	0	1	0	0	0	0	1
TEMPERATURE:													
-Maximum													
90°F and above	0	0	0	0	0	0	0	0	0	0	0	0	0
32°F and below	28	20	6	1	0	0	0	0	0	0	4	15	74
-Minimum													
32°F and below	30	29	23	14	2	0	0	0	0	12	20	31	161
0°F and below	17	4	0	0	0	0	0	0	0	0	0	4	25
PRESSURE													
Average													
-Monthly	29.938	30.106	30.076	29.904	29.936	29.913	29.880	29.932	30.090	29.988	30.058	29.988	29.984
Extremes													
-Highest	30.53	30.69	30.49	30.43	30.43	30.21	30.34	30.29	30.37	30.39	30.67	30.49	30.69
-Date	26	17	28	25	17	4	25	25	20	28	14	30	FEB 17
-Lowest	29.34	29.45	29.32	29.36	29.41	29.53	29.40	29.69	29.58	29.18	29.07	29.15	29.07
-Date	18	21	6	4	28	1	15	3	9	16	25	1	NOV 25
RELATIVE HUMIDITY (%)													
Average													
-Monthly	66.8	64.3	70.6	66.5	72.5	73.3	83.2	85.5	82.1	79.4	78.0	76.7	74.9
Local Time													
Hour 01	69	69	75	74	82	82	92	94	89	87	83	78	81
Hour 07	70	72	75	76	82	83	92	93	93	88	85	82	83
Hour 13	59	55	62	57	63	62	71	75	67	63	70	70	64
Hour 19	68	66	70	62	66	65	79	84	84	82	77	77	73
PRECIPITATION													
Water Equivalent													
-Total	1.28	0.83	2.94	2.10	3.59	3.86	6.66	11.43	2.58	1.45	3.09	4.94	44.75
-Greatest (24 hrs)	0.00	0.00	0.03	0.55	0.99	0.75	1.80	3.64	1.34	0.56	1.04	1.41	3.64
-Date	1	1	31	13-14	23-24	25	19-20	28-29	8-9	15-16	24-25	11	AUG 28-29
Snow, Ice pellets													
-Total	22.5	12.0	10.5	3.9	1.5	0.0	0.0	0.0	0.0	0.0	2.5	28.4	81.3
-Greatest (day)	4.2	4.0	6.7	2.1	1.5	0.0	0.0	0.0	0.0	0.0	1.9	4.7	6.7
-Date	28	4	21	4	4	1	1	1	1	1	9	26	MAR 21
WIND													
Resultant													
-Direction	263	236	214	243	211	222	202	202	206	195	221	209	221
-Speed	2.2	1.8	2.3	1.8	1.8	1.6	1.1	1.2	1.2	1.1	2.1	2.1	1.6
Average Speed	3.6	3.2	4.0	4.2	3.3	2.5	1.7	1.7	1.9	2.2	3.8	4.0	3.0
Maximum One-minute													
Average													
-Direction	WNW	SE	S	W	SSW	SE	W	SW	SSE	S	WNW	N	S
-Speed	11	15	23	11	10	6	5	7	4	4	16	0	23
-Date	15	21	14	5	20	1	9	1	14	17	25	1	MAR 14
Peak Gust													
-Direction	S	SSW	S	S	SSW	W	S	S	SSW	S	S	S	S
-Speed	34	30	33	39	39	44	33	27	27	31	38	45	45
-Date	11	9	14	19	2	9	5	19	7	2	10	31	DEC 31

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	26.3	32.7	40.5	53.2	67.1	76.6	79.4	78.0	69.4	55.7	43.4	33.1	54.6
-Daily Maximum	7.6	12.1	20.5	32.4	43.6	52.9	57.3	56.1	48.5	37.4	28.8	17.3	34.5
-Daily Minimum	17.0	22.4	30.5	42.8	55.4	64.8	68.4	67.1	59.0	46.5	36.1	25.2	44.6
-Monthly Dew Point	-0.3	1.4	4.6	6.2	10.0	10.6	12.1	12.1	10.7	7.8	5.9	3.3	7.0
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	2002	2001	1996	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	-18.4	-29.0
-Year	1997	2003	2003	2003	1997	2001	2000	1995	2000	2002	2000	2004	JAN 1997
MEAN DEGREE DAYS													
Heating Base 65°F	1476	1168	1071	635	306	82	23	46	203	563	849	1210	7635
Cooling Base 65°F	0	0	0	2	9	71	108	99	22	1	0	0	311
MEAN SUNSHINE													
MEAN NUMBER OF DAYS													
Sunrise to Sunset													
-Clear	26.2	23.3	25.3	22.9	23.6	23.6	22.2	24.3	24.5	24.8	24.1	24.9	289.7
-Partly Cloudy	1.6	1.7	2.1	2.7	3.3	2.9	3.8	3.7	3.2	2.5	1.4	1.4	30.2
-Cloudy	2.8	2.2	3.3	2.7	2.9	1.1	1.8	1.5	1.1	2.6	3.6	3.8	29.4
Precipitation ≥ .01"	17.4	12.1	15.1	12.7	16.3	12.9	14.7	12.1	12.4	14.7	17.2	17.2	174.9
Snow, Ice plds. ≥ 1.0"	10.4	6.0	6.0	2.6	0.3	0.0	0.0	0.0	0.0	0.2	5.1	9.6	40.2
Thunderstorms	0.0	0.1	0.4	1.1	3.1	4.1	5.9	4.7	1.4	0.6	0.4	0.1	22.0
Heavy Fog, vis. ≤ ¼ mi	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.3	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	1.8	1.7	1.8	0.2	0.0	0.0	0.0	5.5
32°F and below	18.8	11.9	6.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	3.1	13.9	54.7
-Minimum													
32°F and below	29.7	25.6	25.8	15.2	2.3	0.0	0.0	0.0	0.5	10.4	18.5	27.3	155.3
0°F and below	10.3	6.4	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.9	21.8
PRESSURE													
Average	6.657	6.678	6.671	6.661	6.654	5.978	5.976	5.988	6.016	5.990	6.004	5.995	6.272
-Monthly													
Extremes													
-Record Highest	30.53	30.89	30.49	30.69	30.44	30.28	30.34	30.34	30.45	30.39	30.67	30.53	30.89
-Year	2004	2003	2004	2003	2003	2003	2004	2003	2003	2004	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	13.9	13.9	15.2	14.3	16.2	14.9	16.1	16.7	16.3	16.0	15.6	15.3	15.4
-Monthly													
-Local Time													
Hour 01	15	15	16	16	18	17	18	18	18	17	16	16	17
Hour 07	16	16	16	16	18	17	18	18	18	18	17	16	17
Hour 13	13	12	13	12	14	13	13	14	13	13	14	14	13
Hour 19	15	14	15	14	15	13	15	16	17	16	15	15	15
PRECIPITATION													
Water Equivalent													
-Mean	3.10	1.93	3.10	2.72	3.87	4.12	5.25	5.61	4.40	3.60	3.60	3.75	45.04
-Maximum Monthly	6.88	3.16	4.84	6.05	7.29	12.15	7.65	11.43	8.87	6.48	4.52	7.77	12.15
-Year	1998	2000	2001	2000	2000	1998	1996	2004	2002	1995	2003	2003	JUN 1998
-Minimum Monthly	1.28	0.83	1.05	0.00	0.00	0.00	3.24	1.54	1.65	1.45	2.11	1.32	0.00
-Year	2004	2004	1996				2000	2002	2001	2004	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	26.8	14.4	20.2	7.5	0.4	0.0	0.0	0.0	0.0	1.0	10.7	28.4	109.5
-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	257	232	209	233	211	221	205	210	199	204	219	214	218
-Speed	1.3	1.4	1.8	1.3	1.1	1.1	0.9	0.9	0.9	1.0	1.7	1.5	1.2
Average Speed	0.7	0.7	0.9	0.9	0.6	0.5	0.4	0.3	0.4	0.5	0.8	0.8	0.6
Maximum One-minute													
Average													
-Direction	SW	WSW	S	SE	SSW	SE	W	WNW	S	SW	W	WNW	WSW
-Speed	19	25	24	12	10	6	9	10	13	21	23	10	25
-Year	2003	2003	2003	2003	2004	2004	2003	2003	2003	2003	2003	2003	FEB 2003
Peak Gust													
-Direction	S	WSW	S	S	SSW	W	S	SSW	SE	SW	W	S	S
-Speed	34	35	40	39	39	44	33	27	32	40	39	45	45
-Year	2004	2003	2003	2004	2004	2004	2004	2003	2003	2003	2003	2004	DEC 2004

* Length of record: June 1995 to December 2004

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
2004	1.28	0.83	2.94	2.10	3.59	3.86	6.66	11.43	2.58	1.45	3.09	4.94	44.75

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	22.5	12.0	10.5	3.9	1.5	0.0	124.5
2004-05	0.0	0.0	0.0	0.0	2.5	28.4							

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
2004	5.8	19.4	32.4	42.2	55.9	60.6	67.3	65.0	59.3	46.5	35.1	21.0	42.5

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	1841	1337	1024	678	312	147	8367
2004-05	26	75	191	589	910	1377							

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
2004	0	0	0	5	15	28	82	59	2	0	0	0	191

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	07/2001	Present	44° 37' 39"	73° 02' 29"	850	12	0	5	5	6	5

INSTRUMENTATION DETAIL

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

Davis Vantage Pro, Vantage Pro Plus, Vantage Pro2, Vantage Pro2 Plus

Wind:

Electronic sensors:

Large cups: Instantaneous speed to 120 mph and direction to nearest 7°, greater of 2 mph or ±5%.

Small cups: Instantaneous speed to 175 mph and direction to nearest 7°, greater of 3 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:

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

Sunshine:

Electronic sensor: 0 to 1600 W/m², 5%.

UV:

Electronic sensor: 0 to 16 Index, 8%.

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