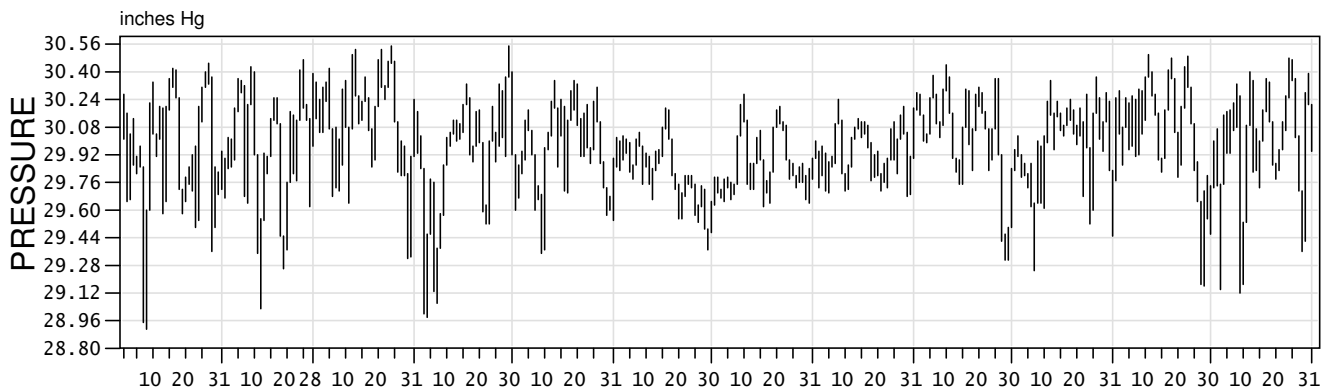
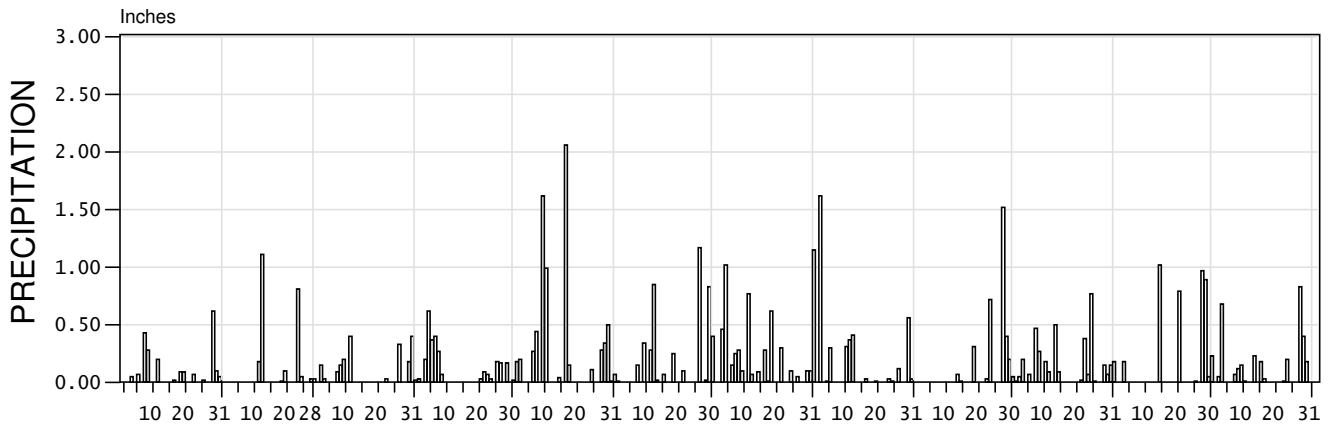
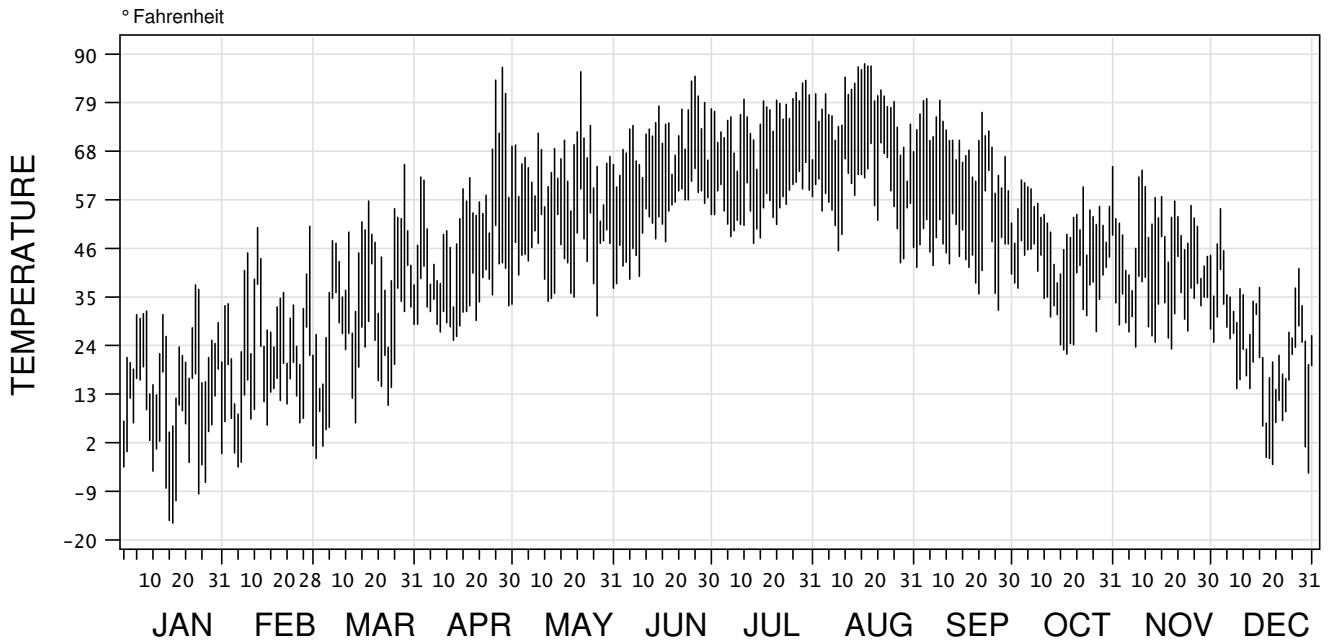


2009

LOCAL CLIMATOLOGICAL DATA

Annual Summary with Comparative Data

Westford Daily Data



METEOROLOGICAL DATA FOR 2009

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	21.6	30.3	40.9	56.0	65.0	71.9	75.4	78.2	69.2	52.4	49.9	29.4	53.3
-Daily Minimum	4.0	12.7	22.2	34.5	44.2	52.0	55.7	57.5	46.0	36.6	32.7	17.2	34.6
-Monthly	12.8	21.5	31.5	45.3	54.6	61.9	65.5	67.8	57.6	44.5	41.3	23.3	44.0
-Monthly Dew Point	6.1	14.5	20.1	32.0	42.7	54.3	58.6	61.0	50.2	37.6	33.3	17.4	35.7
Extremes													
-Highest	37.8	51.0	65.1	87.1	86.0	85.0	84.1	87.8	79.9	64.7	63.8	55.0	87.8
-Date	23	27	28	27	21	25	29	16	4	31	9	3	AUG 16
-Lowest	-16.2	-3.6	-1.5	25.2	30.8	38.0	47.3	42.7	32.0	22.1	23.4	-4.9	-16.2
-Date	16	5	1	12	26	1	13	27	26	17	18	30	JAN 16
DEGREE DAYS													
Heating Base 65°F	1610	1206	1027	585	324	120	43	47	219	626	701	1283	7791
Cooling Base 65°F	0	0	0	3	8	36	67	147	10	0	0	0	271
SOLAR RADIATION (W/m2)													
NUMBER OF DAYS													
Sunrise to Sunset													
-Clear	7	5	9	9	5	1	2	4	9	2	9	1	63
-Partly Cloudy	8	9	10	8	13	18	15	18	12	9	9	6	135
-Cloudy	16	14	12	13	13	11	14	9	9	20	12	24	167
Precipitation													
.01 inches or more	15	9	12	15	16	14	20	17	10	22	10	17	177
Snow, Ice pellets													
1.0 inches or more	7	4	4	1	0	0	0	0	0	0	0	6	22
Thunderstorms													
	0	0	0	0	1	5	4	5	0	0	0	0	15
Heavy Fog, visibility													
¼ mile or less	0	0	0	0	2	2	0	0	0	2	2	3	11
TEMPERATURE:													
-Maximum													
90°F and above	0	0	0	0	0	0	0	0	0	0	0	0	0
32°F and below	29	15	8	0	0	0	0	0	0	0	0	17	69
-Minimum													
32°F and below	31	27	24	13	1	0	0	0	1	10	14	29	150
0°F and below	12	3	1	0	0	0	0	0	0	0	0	4	20
PRESSURE													
Average													
-Monthly	29.950	29.975	30.121	29.910	29.954	29.825	29.861	29.936	30.051	29.985	30.073	29.998	29.970
Extremes													
-Highest	30.46	30.47	30.56	30.56	30.35	30.20	30.28	30.25	30.44	30.37	30.50	30.49	30.56
-Date	27	25	24	29	13	16	10	8	10	26	11	24	MAR 24
-Lowest	28.92	29.04	29.33	28.98	29.36	29.38	29.62	29.68	29.32	29.26	29.17	29.12	28.92
-Date	8	12	29	4	9	29	16	29	29	7	28	9	JAN 8
RELATIVE HUMIDITY (%)													
Average													
-Monthly	74.8	72.7	64.8	63.5	68.2	79.2	82.2	82.2	80.8	80.2	76.4	78.1	75.3
-Local Time													
Hour 01	77	76	68	70	76	87	90	92	91	86	81	81	81
Hour 07	79	78	74	74	76	88	91	92	93	87	84	82	83
Hour 13	67	64	57	54	59	68	71	69	65	68	64	71	65
Hour 19	76	74	63	59	63	76	80	81	82	81	77	79	74
PRECIPITATION													
Water Equivalent													
-Total	2.18	2.39	2.07	2.79	7.36	4.58	6.01	3.97	3.38	3.86	4.21	3.25	46.05
-Greatest (24 hrs)	0.00	0.01	0.45	0.70	2.58	1.18	1.44	1.63	1.53	0.79	1.87	0.71	2.58
-Date	1	27	29-30	3- 4	9-10	26-27	3- 4	2	27	23-24	27-28	2- 3	MAY 9-10
Snow, Ice pellets													
-Total	24.8	20.2	9.5	2.0	T	0.0	0.0	0.0	0.0	T	T	22.9	79.4
-Greatest (day)	5.4	15.1	5.9	1.5	T	0.0	0.0	0.0	0.0	T	T	5.4	15.1
-Date	28	23	2	5	31	1	1	1	1	13	5	23	FEB 23
WIND													
Resultant													
-Direction	242	250	255	250	239	244	234	235	239	236	255	253	245
-Speed	2.0	2.2	1.6	1.9	2.2	0.6	1.1	1.1	0.9	1.4	1.5	2.1	1.5
Average Speed	3.3	4.3	3.5	3.8	3.3	1.4	1.6	1.5	1.4	2.3	2.7	3.5	2.7
Maximum One-minute													
Average													
-Direction	SSW	SSW	W	W	SSW	S	W	SW	WNW	S	WNW	WSW	SSW
-Speed	22	24	23	20	22	15	17	12	13	23	23	21	24
-Date	13	27	11	23	14	9	6	4	18	31	28	10	FEB 27
Peak Gust													
-Direction	S	SW	WNW	S	S	SE	WNW	WSW	WNW	SSW	SSW	WSW	SW
-Speed	36	44	44	35	38	27	30	24	28	40	37	32	44
-Date	13	27	11	30	1	9	6	4	18	31	7	10	FEB 27

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	26.7	31.0	39.3	53.8	65.9	76.1	79.1	77.6	69.7	55.6	44.1	32.3	54.3
-Daily Minimum	8.7	11.8	20.3	33.4	43.6	53.5	57.5	56.0	48.6	37.8	29.5	17.2	34.8
-Monthly	17.7	21.4	29.8	43.6	54.8	64.8	68.3	66.8	59.2	46.7	36.8	24.8	44.5
-Monthly Dew Point	4.1	4.7	9.1	15.0	21.3	26.1	28.3	27.8	24.6	18.6	14.1	8.3	16.8
Extremes													
-Record Highest	59.6	59.0	76.0	87.1	88.0	100.0	103.0	98.0	91.0	80.3	72.0	63.0	103.0
-Year	2008	1999	1998	2009	1998	1995	1995	1995	2002	2007	1996	1998	JUL 1995
-Record Lowest	-29.0	-18.1	-15.3	11.7	26.4	35.0	43.0	38.0	25.0	19.0	0.0	-18.4	-29.0
-Year	1997	2003	2003	2003	2005	2001	2000	1995	2000	2002	2000	2004	JAN 1997
MEAN DEGREE DAYS													
Heating Base 65°F	1457	1207	1092	624	325	83	23	49	197	561	835	1229	7683
Cooling Base 65°F	0	0	0	2	10	74	113	98	23	1	0	0	320
MEAN SOLAR RADIATION													
MEAN NUMBER OF DAYS													
Sunrise to Sunset													
-Clear	19.0	17.1	19.1	18.0	17.6	17.5	17.3	18.5	19.1	18.3	17.4	17.7	216.6
-Partly Cloudy	4.6	4.7	5.1	4.7	6.5	7.3	7.7	7.9	6.2	4.4	4.0	3.2	66.4
-Cloudy	7.1	5.7	6.6	6.1	6.1	3.7	3.9	3.6	3.8	7.5	8.0	9.5	71.6
Precipitation ≥ .01"													
Snow, Ice plds. ≥ 1.0"	16.7	12.3	14.1	13.5	16.1	14.1	15.1	13.0	12.0	15.8	16.7	17.1	176.4
Thunderstorms	9.6	6.1	5.6	2.3	0.2	0.0	0.0	0.0	0.0	0.5	3.9	9.3	37.4
Heavy Fog, vis. ≤ ¼ mi	0.0	0.1	0.3	0.9	2.5	5.1	5.7	4.7	1.3	0.5	0.3	0.1	21.7
	0.1	0.0	0.4	0.0	0.5	0.3	0.1	0.5	0.3	0.5	0.5	0.2	3.3
TEMPERATURE:													
-Maximum													
90°F and above	0.0	0.0	0.0	0.0	0.0	1.5	1.2	1.3	0.1	0.0	0.0	0.0	4.2
32°F and below	19.4	13.9	7.9	0.7	0.0	0.0	0.0	0.0	0.0	0.1	3.2	14.8	60.0
-Minimum													
32°F and below	29.1	26.0	26.2	13.9	2.0	0.0	0.0	0.0	0.5	9.6	18.1	27.7	153.2
0°F and below	9.8	5.7	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.1	20.6
PRESSURE													
Average													
-Monthly	14.996	14.986	14.994	14.963	14.958	13.935	13.940	13.963	14.016	13.986	14.003	13.999	14.395
Extremes													
-Record Highest	30.85	30.89	30.77	30.69	30.52	30.29	30.34	30.34	30.54	30.72	30.67	30.76	30.89
-Year	2005	2003	2007	2003	2005	2008	2004	2003	2008	2008	2003	2006	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	35.5	33.4	32.9	31.6	34.7	36.5	37.6	38.1	37.7	37.4	35.7	36.3	35.6
-Local Time													
Hour 01	38	36	35	35	39	41	42	42	41	40	38	37	39
Hour 07	38	37	36	36	39	41	42	43	43	41	38	38	39
Hour 13	32	29	29	27	29	31	32	32	31	32	31	34	31
Hour 19	37	34	32	29	32	34	35	37	38	38	36	36	35
PRECIPITATION													
Water Equivalent													
-Mean	3.12	2.30	2.96	3.00	4.07	4.54	5.28	5.08	4.04	4.60	3.69	3.75	46.43
-Maximum Monthly	6.88	3.88	4.84	6.05	7.92	12.15	7.65	11.43	8.87	8.38	5.35	7.77	12.15
-Year	1998	2008	2001	2000	2006	1998	1996	2004	2002	2006	2007	2003	JUN 1998
-Minimum Monthly	1.28	0.83	1.05	0.00	0.00	0.00	3.10	1.54	1.65	1.45	1.92	1.32	0.00
-Year	2004	2004	1996				2006	2002	2001	2004	2008	1998	
-Greatest (24 hrs)	2.85	0.95	1.23	1.39	2.58	3.08	2.58	6.05	2.65	1.92	1.87	2.24	6.05
-Year	1998	2000	2001	2007	2009	1998	1996	1995	1999	2007	2009	1996	AUG 1995
Snow, Ice pellets													
-Mean	25.3	19.1	19.4	6.4	0.3	0.0	0.0	0.0	0.0	1.5	8.8	28.1	108.9
-Maximum Monthly	34.3	40.1	41.6	21.7	2.2	0.0	0.0	0.0	0.0	6.5	20.5	69.8	69.8
-Year	1999	2008	2001	1996	1996	1995	1995	1995	1995	2005	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	0.1	2.5	0.0
-Year	1996	1999	2000	1999	1997	1995	1995	1995	1995	1996	2006	1999	JUN 1995
-Greatest (day)	11.0	23.6	16.2	13.4	2.0	0.0	0.0	0.0	0.0	4.5	9.8	15.0	23.6
-Year	2000	2007	2006	2000	1996	1995	1995	1995	1995	2005	2002	1997	FEB 2007
WIND													
Resultant													
-Direction	226	242	248	237	241	230	221	232	224	231	233	234	234
-Speed	2.2	2.1	1.8	1.8	1.7	0.9	1.2	1.0	1.1	1.5	1.8	2.5	1.6
Average Speed	1.8	1.8	2.0	1.9	1.3	0.9	0.8	0.8	0.9	1.2	1.8	1.9	1.4
Maximum One-minute													
Average													
-Direction	WSW	S	S	WSW	SSW	W	W	W	W	S	S	SSW	WSW
-Speed	26	27	24	28	22	19	17	20	23	23	24	25	28
-Year	2008	2008	2003	2008	2009	2008	2009	2007	2008	2009	2007	2008	APR 2008
Peak Gust													
-Direction	WSW	W	WNW	W	SSW	W	S	W	W	SW	W	S	W
-Speed	45	47	44	40	39	44	33	34	40	40	39	45	47
-Year	2008	2006	2009	2008	2004	2004	2004	2007	2008	2003	2003	2004	FEB 2006

* Length of record: June 1995 to December 2009

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
2005	3.25	2.99	2.41	3.68	1.40	4.38	5.22	5.35	4.09	8.00	4.80	3.54	49.11
2006	4.44	2.48	2.02	3.82	7.92	9.50	3.10	4.24	4.15	8.38	3.06	4.67	57.78
2007	3.93	3.13	3.11	4.42	2.72	2.64	4.81	3.50	2.96	7.33	5.35	3.62	47.52
2008	1.91	3.88	3.85	2.88	2.75	5.82	7.58	3.14	2.01	5.40	1.92	3.66	44.80
2009	2.18	2.39	2.07	2.79	7.36	4.58	6.01	3.97	3.38	3.86	4.21	3.25	46.05

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	27.5	28.4	24.0	T	0.0	0.0	110.8
2005-06	0.0	0.0	0.0	6.5	5.2	30.1	23.9	15.5	21.5	3.2	0.0	0.0	105.9
2006-07	0.0	0.0	0.0	3.0	0.1	14.1	18.2	32.7	24.3	16.1	0.0	0.0	108.5
2007-08	0.0	0.0	0.0	0.0	9.5	41.2	19.3	40.1	10.5	1.0	T	0.0	121.6
2008-09	0.0	0.0	0.0	3.0	9.2	29.5	24.8	20.2	9.5	2.0	T	0.0	98.2
2009-10	0.0	0.0	0.0	T	T	22.9							

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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
2005	13.2	21.9	26.8	45.4	50.5	68.3	69.6	67.9	61.6	48.4	37.8	21.6	44.4
2006	27.0	20.5	30.1	44.2	56.2	63.4	70.7	64.4	57.7	44.8	41.0	29.8	45.8
2007	19.0	12.7	27.4	41.0	54.6	64.7	66.4	66.2	61.4	52.2	33.7	22.3	43.5
2008	23.2	21.2	26.8	48.8	52.7	65.5	68.5	65.3	59.6	45.5	36.5	22.7	44.7
2009	12.8	21.5	31.5	45.3	54.6	61.9	65.5	67.8	57.6	44.5	41.3	23.3	44.0

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	1614	1220	1198	604	466	59	8329
2005-06	21	36	153	534	833	1351	1184	1250	1092	632	296	105	7487
2006-07	5	93	217	634	724	1086	1419	1457	1159	711	342	75	7922
2007-08	34	58	140	395	929	1316	1287	1258	1173	482	369	68	7509
2008-09	10	37	190	596	851	1301	1610	1206	1027	585	324	120	7857
2009-10	43	47	219	626	701	1283							

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
2005	0	0	0	0	0	143	150	110	37	5	0	0	445
2006	0	0	0	0	19	52	176	65	4	0	0	0	316
2007	0	0	0	2	30	74	88	104	45	3	0	0	346
2008	0	0	0	3	0	92	127	57	36	0	0	0	315
2009	0	0	0	3	8	36	67	147	10	0	0	0	271

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	7/2007	Present	44° 37' 39"	73° 02' 29"	850	23	0	5	5	5	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