

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

November 2015

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

Date	Temperature					Humidity	Deg. Days		Precip Ty 1 fog 2 hvy fog 3 thunder 4 ice plt 5 hail 6 glaze 7 duststm 8 smk, hz 9 blw snw	Snow Cvr	Precip		Pressure Adj. to Sea Level			Wind						Solar Radiation		
	Maximum	Minimum	Average	Mean	Dew Point		Mean	Heating Base 65°F			Cooling Base 65°F	Water Equivalent	Ice Pellets Snow	Maximum	Minimum	Mean	Avg Speed	Res Speed	Res Dir	Peak			2 Minute	
																				Speed	Dir		Speed	Dir	Speed	Dir
1	2	3	4A	4B	5	6	7	8	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	53.1	39.2	46.1	45.8	40	81	19	0	.....	0	0.14	0.0	29.97	29.62	29.754	5.2	4.8	216	28	S	16	203	22
2	54.5	36.9	45.7	46.7	41	82	19	0	.....	0	0.00	0.0	30.08	29.83	29.990	0.9	0.8	267	15	W	8	297	46
3	63.8	37.9	50.9	49.6	43	80	14	0	.....	0	0.00	0.0	30.28	30.01	30.097	1.6	1.3	213	19	SSW	10	205	79
4	64.8	35.8	50.3	49.2	41	77	14	0	.....	0	0.01	0.0	30.34	30.14	30.259	1.2	1.2	204	18	SSW	9	195	94
5	67.9*	52.1	60.0*	60.2	49	68	5	0	.....	0	0.00	0.0	30.15	29.95	30.072	5.5	5.5	206	19	SW	11	213	59
6	66.5	51.7	59.1	61.1	55	81	5	0	.....	0	0.07	0.0	29.96	29.54	29.734	7.5	6.8	220	34	S	17	214	16
7	51.8	39.2	45.5	46.3	36	67	19	0	.....	0	0.00	0.0	30.02	29.79	29.896	2.8	2.6	277	26	NW	11	258	69
8	45.9	32.2	39.1	38.4	28	67	26	0	.....	0	0.00	0.0	30.32	30.02	30.220	1.3	1.2	304	15	N	8	280	91
9	53.5	31.3	42.4	41.2	32	72	22	0	.....	0	0.00	0.0	30.35	30.25	30.299	2.2	2.2	209	15	S	10	218	89
10	59.0	30.1	44.6	42.2	33	71	20	0	.....	0	0.00	0.0	30.27	29.91	30.108	0.1	0.1	70	7	NE	5	69	86
11	52.6	40.2	46.4	45.3	36	71	18	0	.....	0	0.00	0.0	29.91	29.85	29.881	0.0	0.0	13	5	NNW	3	303	43
12	52.8	38.3	45.5	46.5	44	91	19	0	.....	0	0.36	0.0	29.89	29.31	29.589	3.6	3.5	196	27	WSW	14	243	20
13	46.2	37.3	41.8	43.7	41	89	23	0	.....	0	0.44	0.0	29.54	29.24	29.371	5.7	5.2	238	31	W	17	265	8
14	37.3	28.2	32.8	31.3	27	83	32	0	.....	0	0.03	T	30.13	29.54	29.914	4.9	4.8	307	26	NW	15	305	16
15	45.0	27.5	36.3	37.8	32	81	28	0	.....	0	0.02	0.0	30.14	30.02	30.077	1.2	1.2	220	19	S	11	208	43
16	44.8	24.3	34.5	37.9	31	76	30	0	.....	0	0.00	0.0	30.43	30.07	30.218	1.0	1.0	321	19	NW	10	309	83
17	43.0	19.5	31.3	28.8	23	79	33	0	.....	0	0.00	0.0	30.55	30.43	30.505	0.0	0.0	0	0	NE	0	42	79
18	51.2	24.1	37.7	40.3	29	66	27	0	.....	0	0.00	0.0	30.48	30.20	30.363	4.4	4.4	191	24	S	13	214	76
19	53.4	47.1	50.3	51.0	46	82	15	0	.....	0	0.48	0.0	30.20	29.84	30.022	6.2	6.1	187	30	S	14	191	27
20	49.5	30.4	39.9	42.7	32	67	25	0	.....	0	0.20	0.0	30.20	29.88	30.054	1.9	1.8	282	23	WNW	14	295	72
21	40.9	25.1	33.0	33.8	25	73	32	0	.....	0	0.00	0.0	30.28	29.83	30.140	0.5	0.5	183	16	SSW	7	196	51
22	47.1	27.4	37.2	39.6	28	64	28	0	.....	0	0.03	0.0	29.96	29.70	29.847	3.3	2.7	235	29	SSW	13	275	63
23	31.4	20.2	25.8	25.4	16	70	39	0	.....	0	0.00	0.0	30.13	29.93	30.022	1.5	1.5	330	22	W	12	297	71
24	29.8	16.1	22.9	24.0	20	84	42	0	.....	T	0.00	0.2	30.50	30.13	30.287	0.0	0.0	247	6	WNW	1	292	30
25	41.8	19.1	30.4	31.6	26	80	34	0	.....	0	0.02	0.0	30.72	30.50	30.648	1.3	1.3	199	29	SSW	12	205	51
26	50.1	39.1	44.6	44.6	35	69	20	0	.....	0	0.00	0.0	30.66	30.39	30.560	8.8	8.8	206	36	SW	16	210	59
27	56.8	34.0	45.4	50.3	44	80	19	0	.....	0	0.26	0.0	30.40	30.03	30.181	6.5	6.1	207	30	SSW	15	209	35
28	34.1	26.1	30.1	28.5	27	92	35	0	.....	0	0.01	0.0	30.26	30.15	30.225	0.0	0.0	19	13	N	3	13	18
29	31.7	18.6	25.2	25.1	22	89	39	0	.....	T	T	0.5	30.45	30.23	30.311	0.1	0.1	6	10	ENE	4	278	38
30	31.3	11.8*	21.5*	20.9	17	84	43	0	.....	0	0.00	0.0	30.47	30.34	30.407	0.9	0.9	212	14	SW	9	223	63
Sum	Sum	-----	-----	---	----	Ttl	Ttl						Total	Total	For the month:						---			
1452	941					744	0		Number of Days	2.07	0.7	30.72	29.24	30.102	2.7	2.1	221	36	SW	17	214			
Avg	Avg	Avg	Mean	Avg	Avg	----	----		Precip	Season Ttl	Date	Date	-----	----	---		Date	Date	Avg					
48.4	31.4	39.9	40.3	33	77.2	----	----		≥.01 inch	13	38.07	1.0	25	13	-----	----	---		26	6	53			
Number of Days						Season to Date	Snow, Ice ≥1.0 inch	0	Greatest in 24 Hours and Dates						Greatest Depth on Ground of Snow, Ice Pellets or Ice and Date									
Max Temperature		Min Temperature		1539	401	Thunder	0	Precipitation		Snow, Ice Plts		Greatest Depth on Ground of Snow, Ice Pellets or Ice and Date												
≥ 90°F	≤ 32°F	≤ 32°F	≤ 0°F	----	----	Heavy Fog	0	0.68	19-20	0.5	29	T						24+						
0	4	17	0	----	----	Clear	7	Partly Cloudy		8	Cloudy		15											

NOTES:
 Units are: Temperature=°F, Wind=mph, Pressure=Inches Hg, Precipitation=inches.
 Data in column 4A are (MAX+MIN) ÷ 2, whereas columns 4B, 5, 6, 15, 16, 23 are means via continuous observations for 24 hours.
 Column 5: Dew point is calculated from temperature and humidity and is continuously averaged for 24 hours.
 Data in columns 9, 10, 12 are entered manually by the station observer.
 Columns 17-18: Resultant wind is calculated by the vector sum of continuous wind observations.
 Column 23: Solar Radiation is measured in Watts/m^2 and is continuously averaged for 24 hours.
 Data in columns 4B, 5, 6, 15, 16, 23 are updated continuously, there by achieving a "true" mean.

OBSERVATIONS AT 3-HOUR INTERVALS

November 2015: Westford

Hour	NOV 19									NOV 20									NOV 21								
	Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	Direction	Speed	Gust	Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	Direction	Speed	Gust	Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	Direction	Speed	Gust
01	0	30.19	0.00	47	42	81	20	0	8	0	29.89	0.08	49	48	96	30	3	5	0	30.20	0.00	30	24	79	25	0	0
04	0	30.15	0.00	49	43	81	17	6	19	0	29.96	0.00	46	41	82	28	4	12	0	30.24	0.00	27	24	86	25	0	0
07	0	30.12	0.00	52	45	79	20	8	22	0	30.02	0.00	43	32	66	28	9	14	0	30.27	0.00	25	23	92	25	0	0
10	102	30.07	0.00	53	46	77	19	8	24	287	30.05	0.00	44	30	58	30	1	16	128	30.28	0.00	36	29	76	25	0	0
13	130	29.99	0.00	53	47	79	16	5	15	338	30.03	0.00	47	29	48	30	0	7	181	30.18	0.00	40	27	59	04	0	0
16	11	29.94	0.00	52	46	79	18	7	20	12	30.08	0.00	42	28	56	29	0	14	12	30.09	0.00	37	25	60	09	0	0
19	0	29.91	0.00	52	47	83	17	5	22	0	30.15	0.00	38	27	63	26	0	4	0	30.01	0.00	35	26	69	15	0	0
22	0	29.85	0.07	50	48	94	18	3	14	0	30.19	0.00	34	25	68	25	0	4	0	29.92	0.00	39	24	56	18	4	9
NOV 22									NOV 23									NOV 24									
01	0	29.81	0.00	38	25	61	17	4	13	0	29.93	0.00	26	22	84	00	0	0	0	30.13	0.00	19	12	75	00	0	0
04	0	29.75	0.00	40	32	72	17	6	18	0	29.96	0.00	24	20	88	04	0	9	0	30.17	0.00	16	13	87	00	0	0
07	0	29.73	0.00	43	38	83	22	6	24	0	30.00	0.00	22	19	90	31	1	14	0	30.22	0.00	20	17	88	36	0	0
10	248	29.83	0.00	44	34	67	25	7	15	258	30.03	0.00	27	16	64	01	3	14	323	30.26	0.00	28	21	77	19	0	4
13	306	29.86	0.00	45	27	48	27	5	12	329	30.00	0.00	29	15	55	35	0	13	77	30.26	0.00	30	22	72	21	0	0
16	16	29.89	0.00	41	24	51	26	2	6	11	30.02	0.00	27	14	56	34	0	12	0	30.32	0.00	27	24	87	30	0	0
19	0	29.95	0.00	37	22	53	29	2	7	0	30.08	0.00	27	13	56	32	7	22	0	30.40	0.00	27	25	92	30	0	0
22	0	29.95	0.00	31	23	71	32	3	10	0	30.11	0.00	22	13	69	36	0	0	0	30.47	0.00	26	24	91	30	0	0
NOV 25									NOV 26									NOV 27									
01	0	30.51	0.00	26	24	91	30	0	0	0	30.65	0.00	40	30	69	19	5	15	0	30.38	0.00	48	42	80	19	7	19
04	0	30.58	0.00	22	19	91	10	0	0	0	30.66	0.00	40	33	74	20	13	25	0	30.32	0.00	49	43	79	19	8	19
07	0	30.64	0.00	24	23	95	13	0	0	11	30.65	0.00	39	33	79	20	11	23	0	30.25	0.00	50	44	79	20	9	25
10	123	30.71	0.00	32	28	85	20	0	0	251	30.64	0.00	44	33	66	21	12	23	141	30.21	0.00	54	46	73	21	8	22
13	283	30.69	0.00	40	31	70	19	2	7	193	30.56	0.00	48	36	61	20	8	24	146	30.10	0.00	56	46	71	19	7	24
16	12	30.68	0.00	38	29	71	18	0	4	7	30.51	0.00	48	36	63	20	11	25	0	30.04	0.00	56	47	70	21	6	12
19	0	30.68	0.00	34	26	74	21	1	9	0	30.48	0.00	48	38	69	21	7	24	0	30.05	0.00	52	49	89	21	4	8
22	0	30.66	0.00	37	26	64	20	5	18	0	30.42	0.00	48	41	76	20	8	33	0	30.12	0.06	39	38	94	02	0	7
NOV 28									NOV 29									NOV 30									
01	0	30.18	0.00	33	32	96	35	0	0	0	30.24	0.00	26	25	93	12	0	0	0	30.45	0.00	20	15	81	02	0	0
04	0	30.20	0.00	30	29	96	01	1	11	0	30.25	0.00	22	20	93	26	0	0	0	30.44	0.00	13	11	91	02	0	0
07	0	30.24	0.00	29	27	93	32	0	9	0	30.27	0.00	20	19	95	26	0	0	0	30.47	0.00	12	10	92	02	0	0
10	35	30.25	0.00	29	28	94	01	0	0	213	30.28	0.00	27	24	87	26	0	0	192	30.47	0.00	24	20	82	18	0	0
13	77	30.20	0.00	30	27	92	01	0	0	114	30.27	0.00	31	24	77	03	0	4	311	30.40	0.00	30	22	70	22	4	12
16	0	30.23	0.00	27	24	89	35	0	0	0	30.33	0.00	27	24	89	01	0	2	9	30.35	0.00	28	20	72	20	0	3
19	0	30.23	0.00	26	24	89	13	0	0	0	30.39	0.00	23	21	93	01	0	0	0	30.35	0.00	22	18	87	21	0	0
22	0	30.25	0.00	27	24	89	12	0	0	0	30.43	0.00	24	20	86	00	0	10	0	30.36	0.00	20	18	92	21	0	0

WEATHER NOTES

NOTES:
 Units are: Temperature=°F, Wind=mph, Pressure=Inches Hg, Precipitation=inches.
 Wind Direction: Directions are those from which the wind is blowing, indicated in tens of degrees from true north: i.e., 09 for East, 18 for South, 27 for West, and 00 or 36 for North.
 Wind Speed: The observed one-minute average speed in miles-per-hour.
 Wind Gust: The maximum instantaneous wind speed for the 10-minute period preceding the observation.
 Rainfall Rate: The instantaneous rainfall rate at the time of observation, calculated by timing consecutive 0.01" pulses from the electronic rain gauge and interpolating this rate for one hour.

SUMMARY BY HOUR

Hour	Averages						Resultant Wind	
	Sunshine	Pressure	Temperature	Dew Point	Humidity	Wind Speed	Direction	Speed
01	0	30.098	38	33	83	1.9	21	1.4
04	0	30.099	37	32	84	2.9	21	2.2
07	5	30.116	36	32	85	3.3	22	2.7
10	202	30.123	43	35	75	4.1	22	3.0
13	219	30.082	46	34	64	3.8	23	2.8
16	14	30.079	44	34	68	2.1	22	1.6
19	0	30.103	40	33	77	2.4	22	1.7
22	0	30.112	39	33	81	1.8	22	1.4

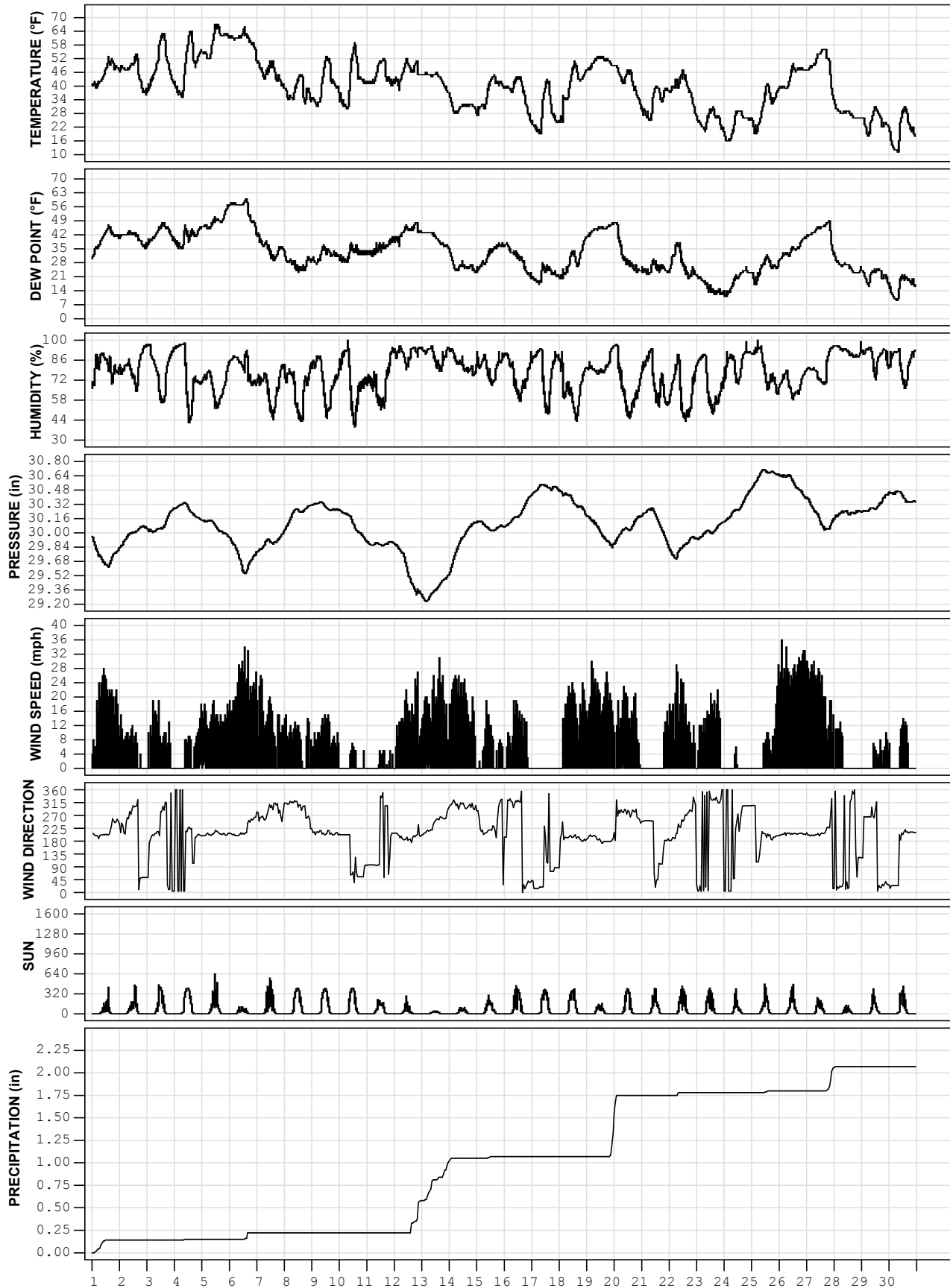
HOURLY PRECIPITATION (Water Equivalent) November 2015: Westford

Date	A.M. Hour Ending at												P.M. Hour Ending at												Date
	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	
01			0.01	0.01	0.02		0.01	0.04	0.02	0.02		0.01												01	
02																								02	
03																								03	
04									0.01															04	
05																								05	
06														0.01		0.06								06	
07																								07	
08																								08	
09																								09	
10																								10	
11																								11	
12																								12	
13			0.01		0.04	0.04	0.02	0.02	0.09	0.01			0.01	0.11		0.01	0.01		0.02	0.19	0.01	0.01	0.01	13	
14	0.02	0.01												0.02				0.03	0.05		0.05	0.03	0.02	14	
15									0.01			0.01												15	
16																								16	
17																								17	
18																								18	
19																				0.02	0.12	0.12	0.22	19	
20	0.12	0.08																						20	
21																								21	
22								0.03																22	
23																								23	
24																								24	
25											0.01		0.01											25	
26																								26	
27																0.01	0.01	0.03	0.08	0.09	0.03	0.01		27	
28	0.01																							28	
29																								29	
30																								30	
Sum	0.15	0.09	0.02	0.01	0.06	0.04	0.03	0.09	0.12	0.04	0.00	0.03	0.00	0.03	0.13	0.06	0.01	0.02	0.04	0.10	0.29	0.27	0.19	0.25	Sum

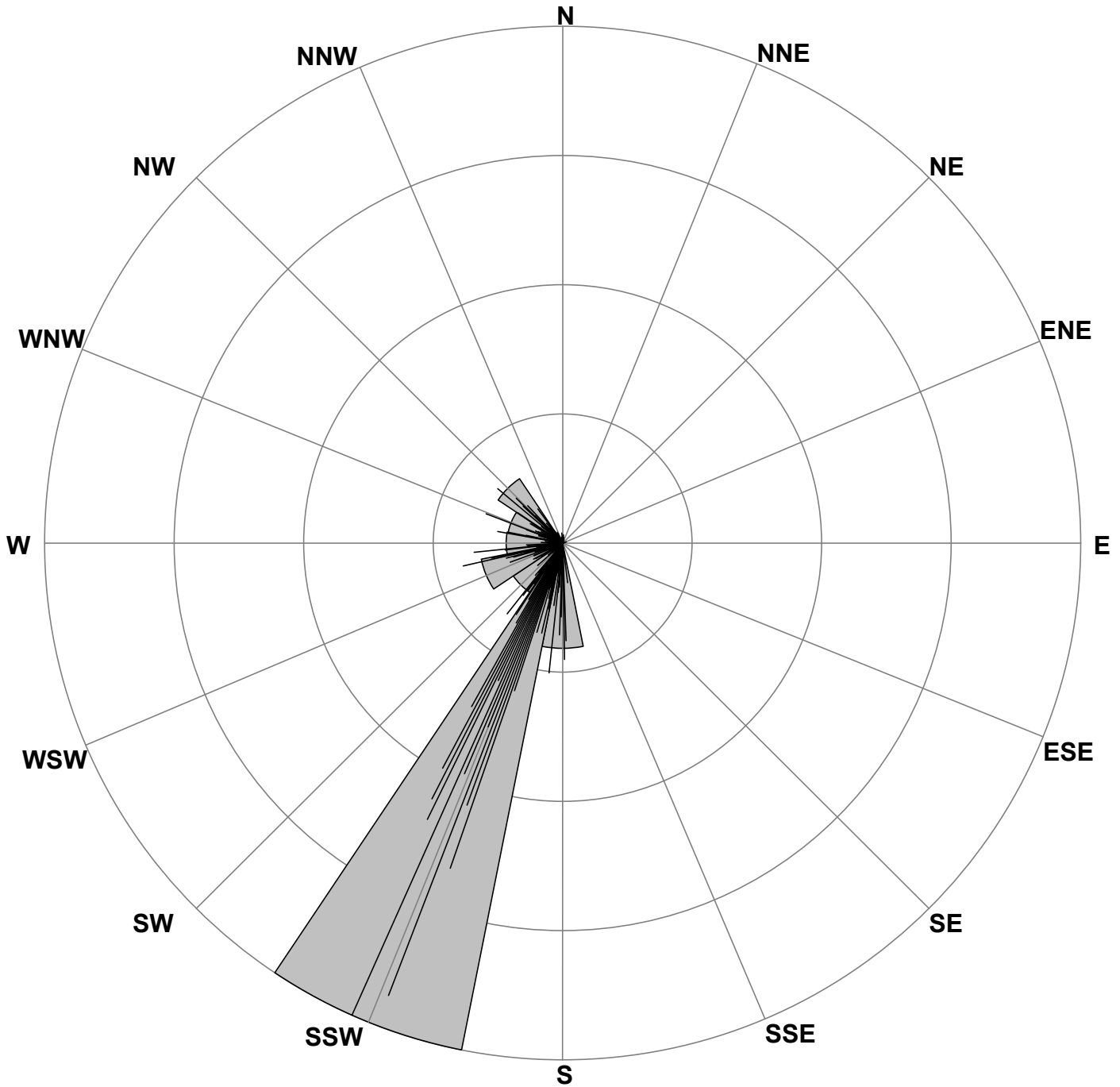
During a frozen precipitation event, hourly precipitation totals may not be recorded. In this case, daily amounts are typically entered in the last column (hour ending at 12 A.M.)

HOUR-BY-HOUR DATA

November 2015: Westford



**Wind Rose: November 2015
Westford**



**Maximum direction of wind: 129.9 miles from 204°
Maximum sector of wind: 1030.1 miles from SSW
1927.9 total miles of wind**