

LOCAL CLIMATOLOGICAL DATA

Monthly Summary

July 2016

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		11	12	13	14	15	16	17	18	19	20	21	22	23		
1	82.0	53.0	67.5	65.3	58	80	0	3	.....	0	0.11	0.0	29.94	29.71	29.845	1.2	1.2	217	19	SSW	10	217	221
2	65.5	48.7	57.1*	59.1	53	82	7	0	.....	0	0.00	0.0	29.93	29.70	29.822	3.0	2.7	272	23	W	12	287	171
3	78.3	50.0	64.2	65.3	52	66	1	0	.....	0	0.00	0.0	29.98	29.89	29.933	1.8	1.5	261	23	NW	9	288	311
4	84.1	56.4	70.3	70.5	55	60	0	5	.....	0	0.00	0.0	29.95	29.79	29.882	1.4	1.4	227	15	SSW	9	209	298
5	86.5	58.4	72.5	71.6	59	67	0	8	.....	0	0.00	0.0	29.80	29.66	29.712	0.9	0.6	254	12	NW	8	291	293
6	87.9	64.2	76.0	75.3	63	68	0	11	.....	0	0.00	0.0	29.78	29.71	29.741	1.2	1.1	251	14	W	8	295	281
7	85.9	61.8	73.9	71.7	67	86	0	9	..3.....	0	0.41	0.0	29.75	29.63	29.694	0.6	0.5	213	13	WSW	8	218	154	
8	76.5	61.5	69.0	67.6	64	89	0	5	.....	0	0.00	0.0	29.82	29.75	29.782	0.5	0.4	304	11	WNW	7	293	191
9	65.4	58.9	62.2	61.7	59	92	3	0	.....	0	0.31	0.0	29.76	29.71	29.736	0.9	0.9	174	16	SSE	7	201	80
10	63.5	55.9	59.7	59.0	58	97	5	0	.....	0	0.50	0.0	29.97	29.72	29.820	0.3	0.2	336	14	NW	7	312	67
11	79.2	48.5*	63.8	63.3	57	82	1	0	.....	0	0.00	0.0	30.09	29.97	30.039	0.3	0.2	321	10	NW	6	293	295
12	83.4	53.5	68.5	68.3	58	73	0	4	.....	0	0.00	0.0	30.08	29.93	29.995	0.7	0.7	221	14	W	7	209	287
13	88.4	61.8	75.1	75.4	68	77	0	10	..3.....	0	0.00	0.0	29.94	29.79	29.868	3.2	3.2	211	20	SSW	11	206	242	
14	84.0	67.8	75.9	73.9	70	87	0	11	..3.....	0	0.07	0.0	29.80	29.61	29.709	3.2	3.2	209	27	S	11	218	190	
15	85.6	64.3	75.0	74.3	65	75	0	10	.....	0	0.00	0.0	29.81	29.67	29.725	2.0	1.9	249	19	NW	10	204	283
16	77.4	59.1	68.3	66.8	62	85	0	3	.....	0	0.00	0.0	30.05	29.80	29.948	0.6	0.6	291	13	W	8	283	174
17	81.5	57.2	69.4	67.6	61	81	0	5	.....	0	0.00	0.0	30.08	29.99	30.035	0.5	0.5	286	13	SSW	8	293	235
18	81.4	60.5	71.0	70.2	65	84	0	6	..3.....	0	0.98	0.0	30.00	29.76	29.858	1.9	1.8	220	26	SSW	11	217	187	
19	72.0	51.8	61.9	61.8	56	81	3	0	.....	0	0.05	0.0	30.11	29.89	30.023	0.9	0.9	301	16	WSW	9	294	215
20	77.7	50.6	64.1	62.7	55	79	0	0	.....	0	0.00	0.0	30.17	30.08	30.120	0.6	0.6	287	15	W	8	296	257
21	83.9	53.4	68.7	69.5	60	74	0	4	.....	0	0.00	0.0	30.09	29.80	29.984	1.1	1.1	217	15	S	8	200	272
22	88.8*	65.2	77.0*	76.4	65	69	0	12	..3.....	0	0.32	0.0	29.80	29.62	29.691	2.4	1.9	252	21	W	11	280	247	
23	81.6	60.1	70.8	67.1	64	89	0	6	..3.....	0	0.54	0.0	29.86	29.68	29.745	0.7	0.6	276	21	NNE	9	301	192	
24	77.8	51.2	64.5	64.0	58	82	0	0	.....	0	0.00	0.0	29.99	29.86	29.940	0.2	0.1	314	9	N	4	291	288
25	78.3	54.9	66.6	68.7	65	87	0	2	.....	0	T	0.0	29.93	29.70	29.797	0.9	0.9	212	13	SW	7	221	120
26	80.1	61.4	70.8	71.3	65	81	0	6	.....	0	0.00	0.0	29.85	29.69	29.776	1.4	1.2	272	15	WNW	8	286	184
27	87.2	57.9	72.5	72.1	64	78	0	8	.....	0	0.00	0.0	29.89	29.79	29.839	0.4	0.4	234	12	SSW	6	208	280
28	83.0	62.0	72.5	69.8	65	86	0	8	..3.....	0	0.02	0.0	29.86	29.80	29.828	0.1	0.1	294	15	NW	8	313	125	
29	81.6	56.8	69.2	69.6	63	82	0	5	.....	0	0.00	0.0	29.94	29.84	29.872	0.3	0.3	311	13	WNW	7	290	267
30	78.3	51.0	64.7	63.8	57	80	0	0	.....	0	0.00	0.0	30.06	29.93	30.007	0.1	0.1	336	11	W	5	286	261
31	80.6	50.4	65.5	63.9	58	82	0	1	.....	0	0.00	0.0	30.08	30.02	30.050	0.0	0.0	49	8	N	3	16	196
Sum	Sum				---	--	Ttl	Ttl		Total	Total	For the month:						---						
2487	1768						20	142	Number of Days	3.31	0.0	30.17	29.61	29.865	1.1	0.8	243	27	S	12	287			
Avg	Avg	Avg	Mean	Avg	Avg	Avg	--	--	Precip	Season Ttl	Date	Date			--	--	---	Date	Date	Avg				
80.2	57.0	68.6	68.0	61	80.0	--	--	--	≥.01 inch	10	20.86	0.0	20	14	--	--	---	14	2	221				
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			20	242	Thunder	7	Precipitation			Snow, Ice Plts											
≥ 90°F	≤ 32°F	≤ 32°F	≤ 0°F	--	--	--	--	Heavy Fog	0	1.03	18-19	0.0	-	0			-							
0	0	0	0	--	--	--	--	Clear	7	Partly Cloudy			16	Cloudy			7							

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

July 2016: Westford

Hour	Wind			Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	Wind			Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	Wind																																																																																																																																																																																																																									
	Direction	Speed	Gust							Direction	Speed	Gust							Direction	Speed	Gust																																																																																																																																																																																																																							
JUL 19										JUL 20										JUL 21																																																																																																																																																																																																																								
01	0	29.91	0.00	61	60	97	30	0	0	0	30.11	0.00	52	50	95	29	0	0	0	30.08	0.00	55	53	96	32	0	0	04	0	29.94	0.00	59	57	96	03	0	5	0	30.12	0.00	51	50	96	29	0	0	0	30.07	0.00	54	53	96	22	0	5	07	26	30.01	0.00	57	55	96	02	0	0	65	30.16	0.00	53	52	96	22	1	5	33	30.07	0.00	58	56	92	21	1	7	10	661	30.06	0.00	62	56	80	29	1	6	606	30.16	0.00	67	58	72	20	0	5	605	30.06	0.00	73	62	67	20	5	10	13	258	30.06	0.00	69	55	63	32	3	11	796	30.14	0.00	74	54	50	28	5	13	745	30.00	0.00	80	63	57	20	2	12	16	752	30.04	0.00	69	56	63	30	5	16	578	30.10	0.00	76	56	49	32	0	10	633	29.93	0.00	83	66	57	16	0	11	19	77	30.05	0.00	64	53	68	30	1	15	118	30.08	0.00	73	60	64	31	0	0	86	29.88	0.00	78	65	63	20	1	7	22	0	30.09	0.00	54	51	91	29	0	0	0	30.08	0.00	57	55	93	32	0	0	0	29.84	0.00	72	62	71	22	0	7													
JUL 22										JUL 23										JUL 24																																																																																																																																																																																																																								
01	0	29.78	0.00	71	61	70	21	4	11	0	29.68	0.00	65	64	96	08	0	0	0	29.87	0.00	59	58	97	19	0	0	04	0	29.72	0.00	70	61	72	18	1	10	0	29.68	0.00	63	62	97	21	0	0	0	29.91	0.00	57	56	97	02	0	0	07	18	29.72	0.00	70	59	69	21	0	8	69	29.72	0.00	65	64	98	21	0	0	26	29.95	0.00	52	52	98	01	0	0	10	635	29.69	0.00	78	67	71	22	2	15	617	29.71	0.00	75	67	77	24	4	8	881	29.98	0.00	66	60	80	29	0	6	13	846	29.67	0.00	86	71	62	28	4	13	220	29.70	0.00	81	67	63	29	5	18	798	29.98	0.00	72	62	69	29	1	5	16	645	29.65	0.00	88	69	54	28	4	18	7	29.79	0.11	62	60	94	02	0	11	598	29.94	0.00	77	59	53	27	1	4	19	47	29.63	0.00	82	68	61	30	0	2	107	29.80	0.00	64	63	94	26	0	0	77	29.93	0.00	70	62	76	11	0	0	22	0	29.65	0.00	70	66	87	07	0	1	0	29.85	0.89	61	61	97	18	0	0	0	29.94	0.00	58	57	95	11	0	0													
JUL 25										JUL 26										JUL 27																																																																																																																																																																																																																								
01	0	29.90	0.00	58	57	96	11	0	0	0	29.70	0.00	70	67	91	20	0	8	0	29.86	0.00	61	60	96	31	0	0	04	0	29.87	0.00	58	57	97	11	0	0	0	29.70	0.00	69	65	86	24	2	10	0	29.86	0.00	59	58	96	25	0	0	07	46	29.86	0.00	58	57	97	11	0	0	42	29.75	0.00	67	63	86	27	2	10	26	29.87	0.00	61	61	98	25	1	4	10	230	29.84	0.00	75	67	75	21	0	6	640	29.77	0.00	74	67	79	30	5	9	626	29.88	0.00	76	67	73	21	3	10	13	272	29.79	0.00	78	69	75	21	1	8	137	29.80	0.00	74	67	78	31	0	3	833	29.85	0.00	84	67	58	24	0	10	16	142	29.74	0.00	74	69	83	20	0	0	680	29.81	0.00	80	67	64	31	3	11	613	29.81	0.00	86	64	48	21	0	8	19	60	29.70	0.00	75	70	84	21	2	9	102	29.81	0.00	77	66	69	30	0	1	56	29.79	0.00	80	69	70	29	0	0	22	0	29.70	0.00	71	69	91	21	5	8	0	29.85	0.00	62	60	94	31	0	0	0	29.81	0.00	67	64	88	29	0	0													
JUL 28										JUL 29										JUL 30																																																																																																																																																																																																																								
01	0	29.80	0.00	66	61	84	29	0	0	0	29.85	0.00	64	63	97	28	0	0	0	29.95	0.00	55	53	95	03	0	0	04	0	29.80	0.00	66	63	88	20	0	0	0	29.84	0.00	62	61	97	28	0	0	0	29.96	0.00	53	52	97	03	0	0	07	54	29.83	0.00	66	63	91	20	0	0	62	29.86	0.00	64	64	98	29	0	0	28	30.00	0.00	52	52	97	10	0	0	10	139	29.83	0.00	74	67	77	20	0	0	624	29.87	0.00	76	67	74	01	1	5	635	30.02	0.00	71	59	66	01	0	5	13	390	29.82	0.00	79	67	66	26	0	0	561	29.87	0.00	77	68	73	29	0	6	267	30.02	0.00	74	62	67	01	0	0	16	90	29.83	0.00	69	66	91	30	0	0	647	29.86	0.00	80	66	63	31	1	13	682	30.01	0.00	78	60	53	27	0	7	19	70	29.83	0.00	71	68	90	28	0	0	107	29.88	0.00	73	61	67	00	0	5	97	30.01	0.00	71	58	63	02	0	1	22	0	29.84	0.00	63	61	95	28	0	0	0	29.93	0.00	59	57	92	03	0	0	0	30.06	0.00	55	53	92	01	0	0													
JUL 31																																																																																																																																																																																																																																												
01	0	30.05	0.00	52	51	96	01	0	0																			04	0	30.05	0.00	51	50	97	01	0	0																				07	39	30.06	0.00	53	53	98	03	0	0																					10	519	30.07	0.00	69	58	68	07	0	6																					13	729	30.07	0.00	75	62	63	02	0	0																					16	223	30.03	0.00	79	62	56	05	0	0																					19	46	30.02	0.00	70	63	81	10	0	0																					22	0	30.06	0.00	60	58	94	10	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	29.863	61	58	90	0.7	22	0.7
04	0	29.856	60	57	91	0.6	21	0.6
07	53	29.881	61	59	91	0.9	23	0.8
10	502	29.885	72	63	76	1.7	24	1.2
13	563	29.871	76	64	66	2.1	26	1.5
16	453	29.851	77	63	65	1.6	27	1.1
19	65	29.846	73	63	73	0.4	21	0.3
22	0	29.866	63	59	89	0.3	21	0.3

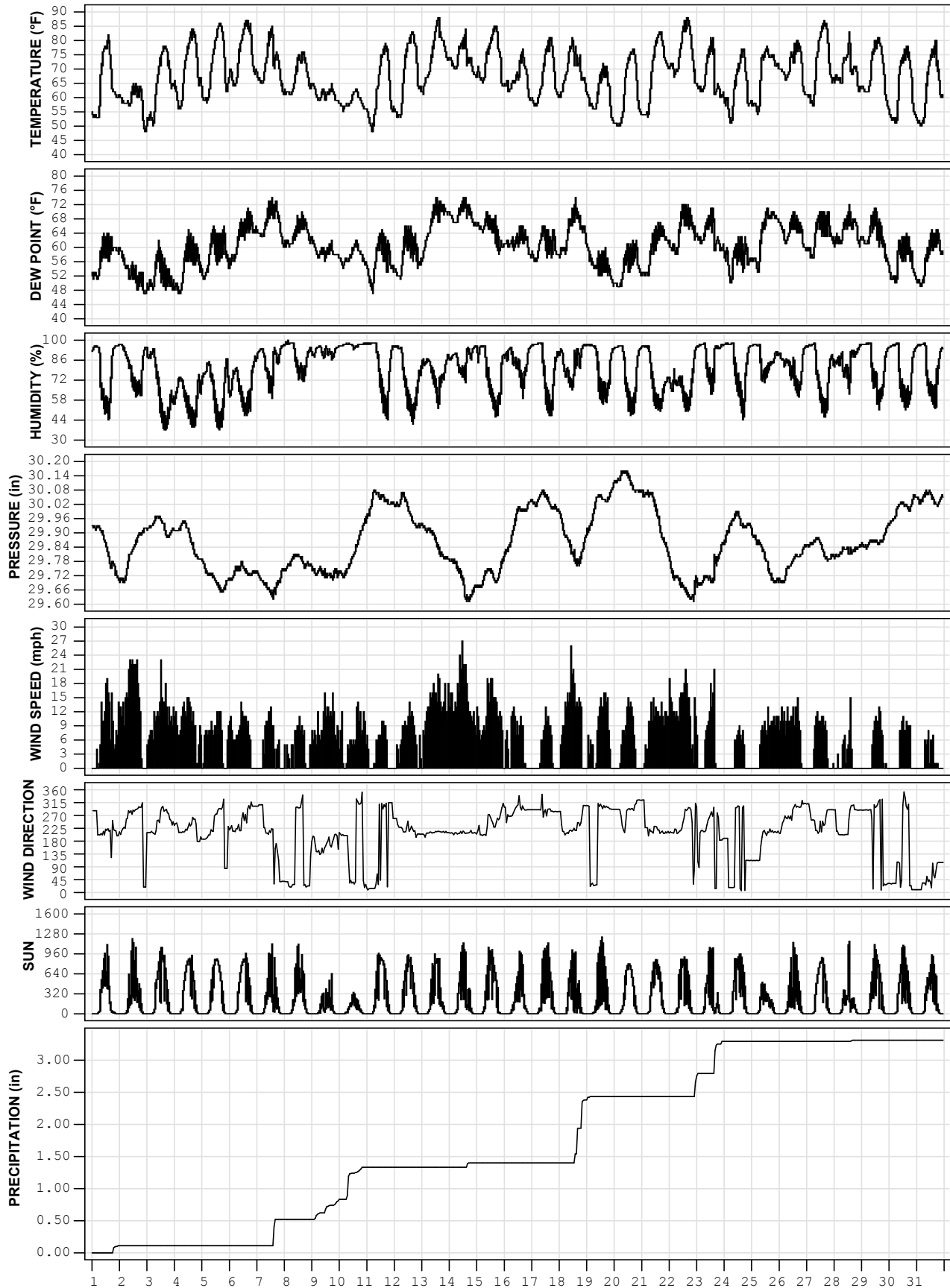
HOURLY PRECIPITATION (Water Equivalent) July 2016: Westford

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																		0.08	0.01	0.01		0.01			01	
02																										02
03																										03
04																										04
05																										05
06																										06
07																0.30	0.11									07
08																										08
09			0.02	0.04	0.02	0.01	0.01	0.30	0.04		0.01	0.06	0.04		0.01	0.01	0.01	0.01	0.02	0.02	0.01	0.02	0.03	0.01	0.02	09
10							0.06							0.01												10
11																										11
12																										12
13																										13
14															0.06	0.01										14
15																										15
16																										16
17																										17
18														0.14		0.40				0.41	0.02	0.01				18
19	0.04		0.01																							19
20																										20
21																										21
22																										22
23	0.04														0.36	0.08	0.02					0.04	0.23	0.09		23
24																										24
25																										25
26																										26
27																										27
28															0.01	0.01										28
29																										29
30																										30
31																										31
Sum	0.08	0.00	0.03	0.04	0.02	0.01	0.07	0.30	0.04	0.00	0.01	0.06	0.04	0.15	0.32	0.96	0.10	0.04	0.10	0.45	0.05	0.08	0.25	0.11	Sum	

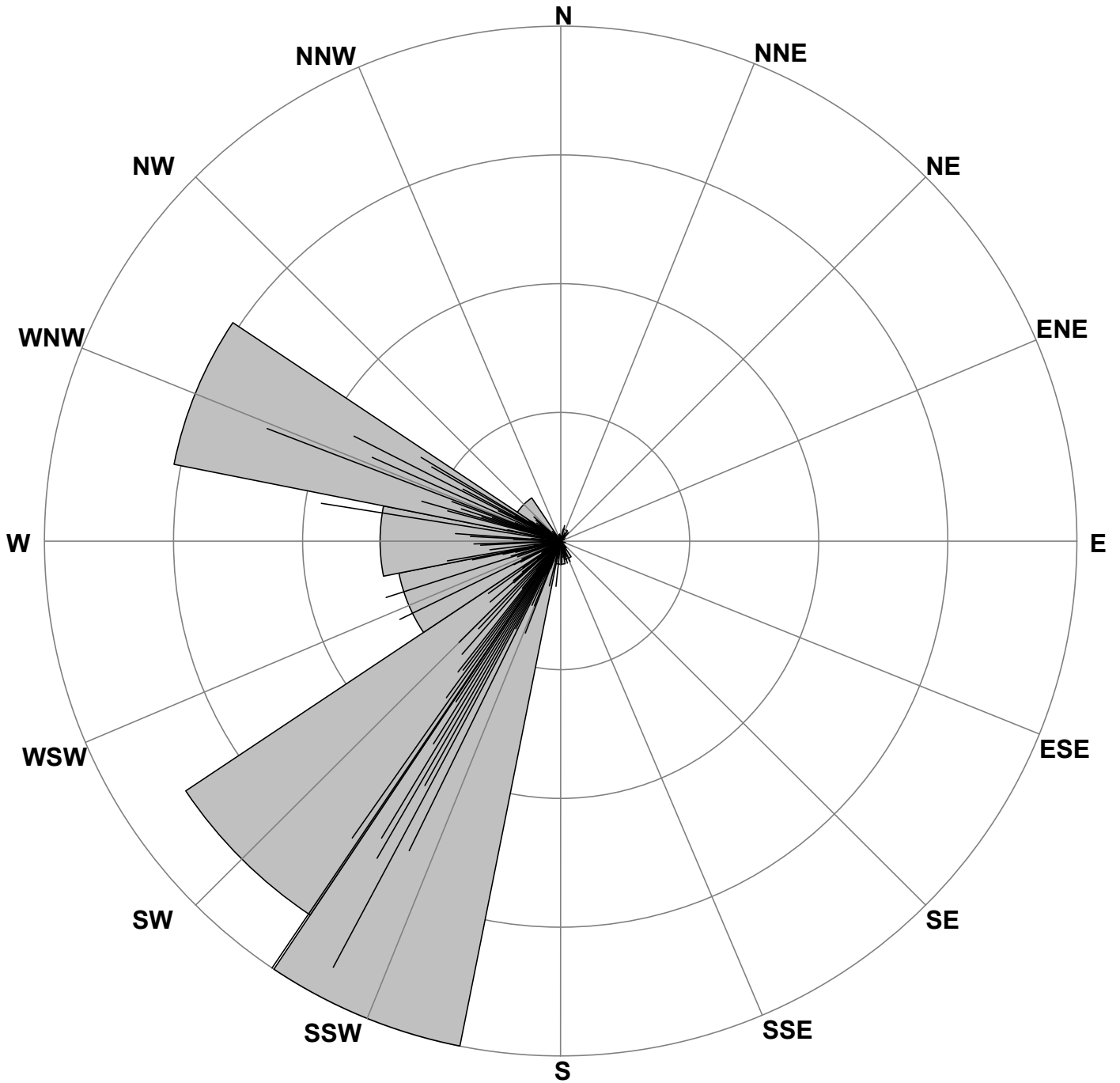
During a frozen precipitation event, hourly precipitation totals may not be recorded. In this case, daily amounts are typically entered in the last column (hour ending at 12 A.M.)

HOUR-BY-HOUR DATA

July 2016: Westford



**Wind Rose: July 2016
Westford**



**Maximum direction of wind: 41.8 miles from 214°
Maximum sector of wind: 227.0 miles from SSW
806.0 total miles of wind**