

# LOCAL CLIMATOLOGICAL DATA

## Monthly Summary

### September 2019

Station: Westford

Latitude: 44° 37' 38" N Longitude: 73° 02' 29" W Elevation (Ground): 850 feet Time Zone: Eastern

Date	Temperature					Humidity Mean	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		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
1	2	3	4A	4B	5	6	7	8		11	12	13	14	15	16	17	18	19	20	21	22	23	
1	74.0	46.2	60.1	59.8	52	77	5	0	.....	0	0.03	0.0	30.34	30.11	30.255	0.4	0.3	219	14	SSW	7	238	230
2	64.2	53.7	58.9	59.4	57	90	6	0	.....	0	1.53	0.0	30.11	29.84	29.943	1.5	1.5	213	21	S	9	222	30
3	69.2	52.2	60.7	59.6	53	79	4	0	..3.....	0	0.10	0.0	30.06	29.88	29.988	0.1	0.0	360	9	N	3	33	202
4	76.2	54.3	65.2	63.7	56	76	0	0	..3.....	0	0.39	0.0	29.99	29.67	29.789	2.3	2.0	228	27	NW	11	214	102
5	69.3	46.5	57.9	56.2	47	71	7	0	.....	0	0.00	0.0	30.09	29.99	30.046	0.1	0.1	295	9	NW	3	302	215
6	73.3	45.6	59.5	57.5	47	67	5	0	.....	0	0.00	0.0	30.05	29.84	29.957	0.0	0.0	164	9	SSE	3	155	193
7	71.4	49.5	60.5	57.0	44	62	4	0	.....	0	0.24	0.0	29.84	29.68	29.751	0.4	0.4	293	15	W	6	287	168
8	64.4	50.7	57.6	56.1	42	61	7	0	.....	0	0.00	0.0	30.16	29.75	29.960	0.7	0.7	296	18	W	9	316	166
9	65.3	42.6	54.0	52.5	37	55	11	0	.....	0	0.00	0.0	30.32	30.16	30.255	0.1	0.1	294	10	WNW	4	297	199
10	71.7	40.1	55.9	57.4	41	56	9	0	.....	0	0.01	0.0	30.34	30.04	30.225	0.8	0.8	211	24	S	8	218	161
11	76.7*	55.0	65.8*	66.8	41	43	0	1	.....	0	0.13	0.0	30.06	29.93	29.983	1.3	1.0	217	21	SSW	8	213	90
12	65.9	40.9	53.4	54.4	39	56	11	0	.....	0	0.00	0.0	30.33	30.05	30.178	0.1	0.1	23	13	N	4	49	149
13	67.9	38.1	53.0	53.6	37	54	12	0	.....	0	0.01	0.0	30.47	30.21	30.366	0.5	0.4	198	18	S	7	195	209
14	66.5	53.6	60.0	59.6	49	69	4	0	.....	0	T	0.0	30.21	29.99	30.079	4.2	4.2	208	37	S	17	205	72
15	67.5	52.3	59.9	59.5	49	69	5	0	.....	0	0.00	0.0	30.08	30.01	30.055	1.0	1.0	269	16	WNW	7	284	203
16																							
17																							
18																							
19																							
20																							
21																							
22																							
23	0.0	0.0*	0.0*	0.0	0	0	65	0	.....	0	0.50	0.0	0.00	0.00	0.000	0.0	0.0	0	0	N	0	0	0
24	0.0	0.0	0.0	0.0	0	0	65	0	.....	0	0.17	0.0	0.00	0.00	0.000	0.0	0.0	0	0	N	0	0	0
25																							
26	0.0	0.0	0.0	0.0	0	0	65	0	.....	0	0.45	0.0	0.00	0.00	0.000	0.0	0.0	0	0	N	0	0	0
27																							
28	0.0	0.0	0.0	0.0	0	0	65	0	.....	0	0.15	0.0	0.00	0.00	0.000	0.0	0.0	0	0	N	0	0	0
29																							
30																							
<b>Sum</b>	<b>Sum</b>	-----	-----	---	----		<b>Ttl</b>	<b>Ttl</b>			<b>Total</b>	<b>Total</b>	<b>For the month:</b>										---
1044	721						350	1	<b>Number of Days</b>		2.44	0.0	30.47	0.00	30.055	0.9	0.7	224	37	S	17	205	
<b>Avg</b>	<b>Avg</b>	<b>Avg</b>	<b>Mean</b>	<b>Avg</b>	<b>Avg</b>	----	----		<b>Precip</b>		<b>Season Ttl</b>	<b>Date</b>	<b>Date</b>	-----	----	----	----	<b>Date</b>	<b>Date</b>	<b>Avg</b>			
54.9	38.0	46.4	58.2	46	65.6	----	----		≥.01 inch	12	36.73	0.0	13	23+	-----	----	----	----	14	14	159		
<b>Number of Days</b>							<b>Season to Date</b>	<b>Snow, Ice ≥1.0 inch</b>	0	<b>Greatest in 24 Hours and Dates</b>					<b>Greatest Depth on Ground of Snow, Ice Pellets or Ice and Date</b>								
<b>Max Temperature</b>			<b>Min Temperature</b>			394	288	<b>Thunder</b>	2	<b>Precipitation</b>			<b>Snow, Ice Plts</b>										
≥ 90°F	≤ 32°F	≤ 32°F	≤ 0°F	----	----			<b>Heavy Fog</b>	0	1.56	1- 2	0.0	-	0			-						
0	4	4	4	----	----			<b>Clear</b>	3	<b>Partly Cloudy</b>		6	<b>Cloudy</b>		5								

**NOTES:**

- Units: Temperature=°F, Wind=mph, Pressure=Inches Hg, Precipitation=inches.
- Column 4A: value is (MAX+MIN) ÷ 2.
- Data in columns 4B, 5, 6, 15, 16, 23 are updated continuously, there by achieving a "true" mean.
- 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 W/m² and is continuously averaged for 24 hours.

## OBSERVATIONS AT 3-HOUR INTERVALS September 2019: Westford

Hour	Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	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
SEP 01									SEP 02									SEP 03									
00	0	30.29	0.00	49	46	92	30	0	0	0	30.11	0.05	59	55	88	24	0	0	0	29.94	0.00	56	52	89	30	0	0
03	0	30.30	0.00	47	45	92	30	0	0	0	30.04	0.25	59	56	91	20	0	8	0	29.94	0.00	58	55	88	25	0	0
06	0	30.31	0.00	48	46	93	30	0	0	0	29.98	0.06	59	56	91	18	2	16	0	30.01	0.00	53	49	87	01	0	7
09	399	30.34	0.00	59	56	92	25	0	0	23	29.94	0.11	60	57	91	21	2	15	352	30.05	0.00	56	52	86	35	0	0
12	731	30.31	0.00	69	55	61	14	0	9	40	29.90	0.20	61	58	91	21	6	19	236	30.05	0.00	64	56	74	32	0	3
15	659	30.24	0.00	73	57	57	20	0	8	54	29.86	0.00	63	60	90	23	0	7	636	30.01	0.00	67	53	61	06	0	1
18	185	30.19	0.00	68	54	61	22	2	12	67	29.88	0.00	62	59	90	32	0	0	172	29.97	0.00	69	56	64	24	0	0
21	0	30.15	0.00	62	54	75	20	0	7	0	29.92	0.00	55	52	89	30	0	0	0	29.97	0.00	57	52	83	24	0	0
SEP 04									SEP 05									SEP 06									
00	0	29.88	0.00	58	52	81	16	0	0	0	29.99	0.00	54	47	76	04	0	0	0	30.05	0.00	47	39	72	08	0	0
03	0	29.81	0.00	65	57	76	20	2	14	0	30.01	0.00	52	45	75	04	0	0	0	30.03	0.00	47	38	71	08	0	0
06	0	29.73	0.00	66	57	75	23	2	20	0	30.04	0.00	48	40	76	04	0	0	0	30.03	0.00	46	37	70	08	0	0
09	11	29.73	0.00	65	57	76	22	5	22	128	30.09	0.00	54	46	74	33	0	0	241	30.03	0.00	55	44	67	06	0	0
12	274	29.69	0.00	69	60	74	21	2	13	726	30.08	0.00	62	52	70	26	0	5	703	29.98	0.00	70	57	64	18	0	0
15	216	29.68	0.00	74	65	73	25	2	12	628	30.05	0.00	68	52	56	29	3	8	631	29.92	0.00	72	57	60	18	0	0
18	33	29.79	0.00	66	57	73	28	2	9	155	30.04	0.00	67	54	62	05	0	0	183	29.88	0.00	69	56	65	11	0	0
21	0	29.94	0.00	56	49	77	31	3	15	0	30.05	0.00	50	42	73	08	0	0	0	29.87	0.00	56	47	74	15	0	0
SEP 07									SEP 08									SEP 09									
00	0	29.84	0.00	53	44	72	19	0	5	0	29.75	0.09	55	37	51	26	1	10	0	30.16	0.00	51	37	59	30	0	0
03	0	29.80	0.00	51	40	66	15	0	0	0	29.79	0.00	54	35	49	29	1	7	0	30.18	0.00	48	28	46	30	0	0
06	0	29.78	0.00	50	38	63	15	0	0	0	29.85	0.00	53	33	46	26	0	8	0	30.23	0.00	47	27	45	30	0	0
09	369	29.77	0.00	61	53	74	14	0	0	141	29.93	0.00	55	42	62	30	0	9	193	30.29	0.00	51	28	42	03	0	0
12	703	29.72	0.00	67	50	54	31	1	11	462	29.98	0.00	60	51	72	32	1	13	835	30.28	0.00	61	50	69	31	0	0
15	93	29.69	0.00	62	53	73	30	0	7	830	30.01	0.00	61	52	71	31	0	9	619	30.26	0.00	64	48	58	30	0	4
18	12	29.72	0.08	55	40	58	29	0	0	93	30.04	0.00	61	52	72	30	0	0	149	30.25	0.00	63	52	68	32	0	0
21	0	29.75	0.00	55	39	54	28	0	0	0	30.12	0.00	54	44	67	31	0	8	0	30.30	0.00	45	28	52	32	0	0
SEP 10									SEP 11									SEP 12									
00	0	30.31	0.00	43	23	46	32	0	0	0	30.04	0.00	64	35	34	18	2	18	0	30.06	0.00	55	44	66	02	0	9
03	0	30.31	0.00	40	22	47	32	0	0	0	29.99	0.00	65	33	30	24	2	13	0	30.06	0.00	52	34	50	00	0	0
06	0	30.32	0.00	44	23	44	01	0	0	0	29.99	0.00	65	26	23	20	1	10	0	30.10	0.00	52	27	38	02	0	0
09	315	30.32	0.00	52	29	40	01	0	0	54	29.98	0.00	66	24	20	23	3	12	181	30.16	0.00	55	40	57	01	2	8
12	657	30.26	0.00	68	57	68	13	0	7	163	29.95	0.00	72	50	46	21	0	6	232	30.18	0.00	59	50	71	01	0	4
15	160	30.19	0.00	69	58	69	14	0	0	661	29.95	0.00	75	63	66	30	0	0	548	30.19	0.00	63	51	66	04	0	6
18	91	30.12	0.00	67	58	72	17	0	10	49	29.93	0.00	71	60	68	32	0	0	135	30.24	0.00	62	52	71	06	0	0
21	0	30.08	0.00	66	54	64	22	4	14	0	30.03	0.00	62	50	66	04	2	12	0	30.30	0.00	44	27	51	36	0	0
SEP 13									SEP 14									SEP 15									
00	0	30.33	0.00	41	21	44	36	0	0	0	30.21	0.00	58	47	68	19	1	15	0	30.06	0.00	60	47	63	25	0	10
03	0	30.37	0.00	39	19	44	01	0	0	0	30.14	0.00	57	47	70	19	6	29	0	30.05	0.00	56	48	74	22	0	0
06	0	30.40	0.00	38	18	44	02	0	0	0	30.13	0.00	56	47	71	19	5	28	0	30.07	0.00	56	48	75	29	1	13
10	350	30.46	0.00	51	24	35	11	0	0	76	30.10	0.00	57	49	75	22	4	21	343	30.07	0.00	61	51	71	27	0	8
12	687	30.44	0.00	65	50	58	23	1	9	221	30.07	0.00	60	52	74	19	6	25	663	30.04	0.00	66	52	61	26	2	11
15	404	30.37	0.00	68	49	51	18	0	15	134	30.03	0.00	63	55	74	22	7	15									
18	132	30.33	0.00	64	48	55	09	0	11	130	30.00	0.00	65	57	74	20	5	18									
21	0	30.27	0.00	56	45	68	30	0	10	0	30.05	0.00	62	49	62	21	2	11									
SEP 16									SEP 17									SEP 18									
00																											
03																											
06																											
09																											
12																											
15																											
18																											
21																											

### MAXIMUM SHORT DURATION PRECIPITATION

Time Period (minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation	1.08	1.83	2.01	2.11	2.24	3.53	3.53	3.53	3.53	3.53	3.53	3.53
Ended: Date	11	12	11	11	12	12	12	12	12	12	12	12
Ended: Time	1855	0353	1859	1859	1015	1026	1026	1026	1026	1026	1026	1026

The precipitation amounts may occur at any time during the month. The time indicated is the ending time of the interval. Date and time are not entered for trace amounts.

## OBSERVATIONS AT 3-HOUR INTERVALS September 2019: Westford

Hour	Sunshine	Pressure	Rainfall rate	Temperature	Dew Point	Humidity	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			
	SEP 19						SEP 20						SEP 21																	
00																														
03																														
06																														
09																														
12																														
15																														
18																														
21																														
	SEP 22						SEP 23						SEP 24																	
00																														
03																														
06																														
09																														
12																														
15																														
18																														
21																														
	SEP 25						SEP 26						SEP 27																	
00																														
03																														
06																														
09																														
12																														
15																														
18																														
21																														
	SEP 28						SEP 29						SEP 30																	
00																														
03																														
06																														
09																														
12																														
15																														
18																														
21																														

### WEATHER NOTES

**NOTES:**  
 Units: Temperature= $^{\circ}$ 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 pulses from the electronic rain gauge and interpolating this rate for one hour.

### SUMMARY BY HOUR

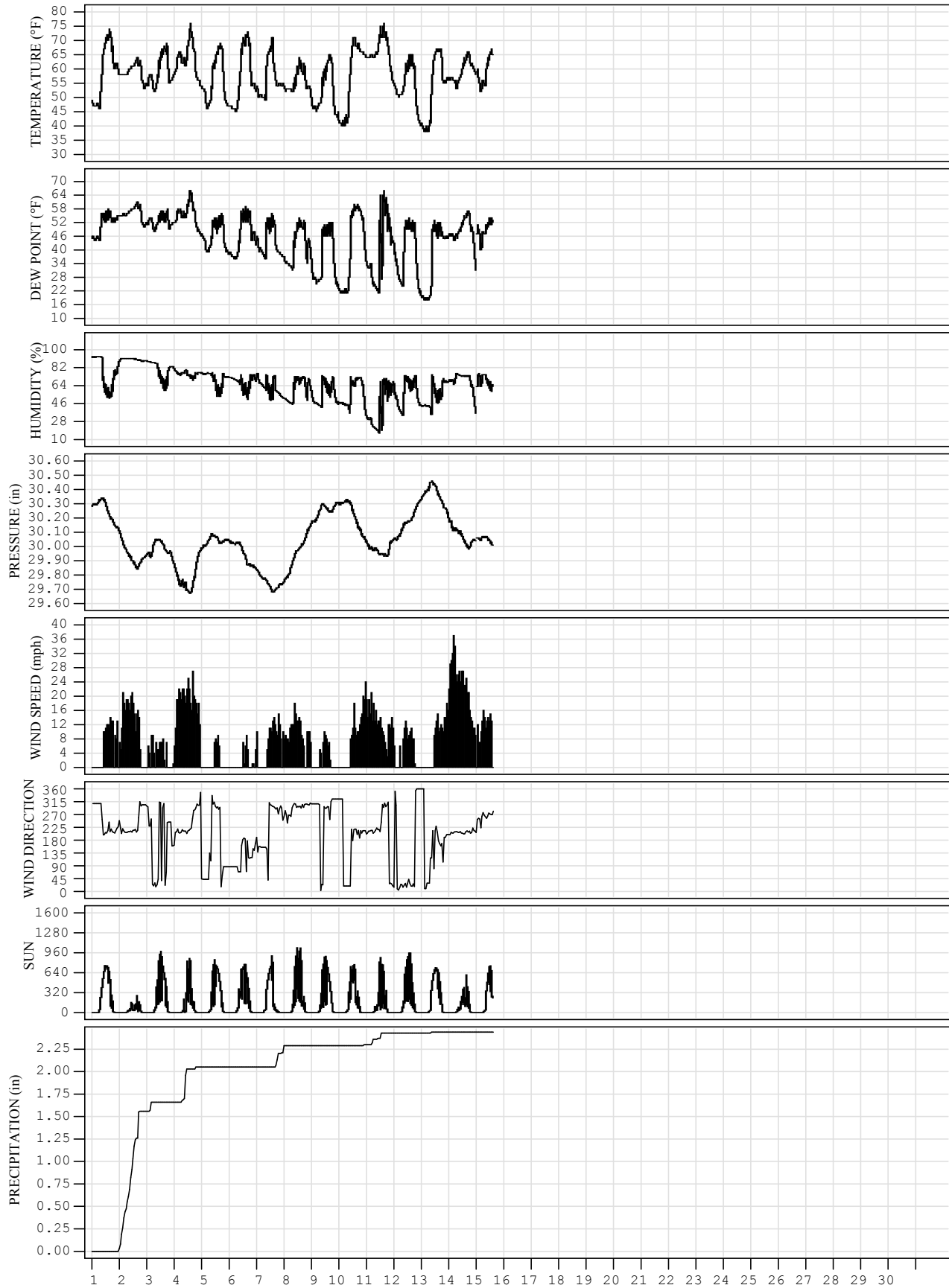
Hour	Averages						Resultant Wind	
	Sunshine	Pressure	Temperature	Dew Point	Humidity	Wind Speed	Direction	Speed
00	0	30.068	53	42	67	0.3	20	0.3
03	0	30.055	53	40	65	0.7	21	0.6
06	0	30.064	52	38	63	0.7	21	0.6
09	212	30.083	57	43	64	1.1	23	0.8
12	489	30.062	65	53	67	1.3	22	1.0
15	448	30.031	67	55	66	0.9	25	0.7
18	113	30.027	65	54	68	0.6	22	0.5
21	0	30.057	56	45	68	0.8	27	0.3

## HOURLY PRECIPITATION (Water Equivalent) September 2019: Westford

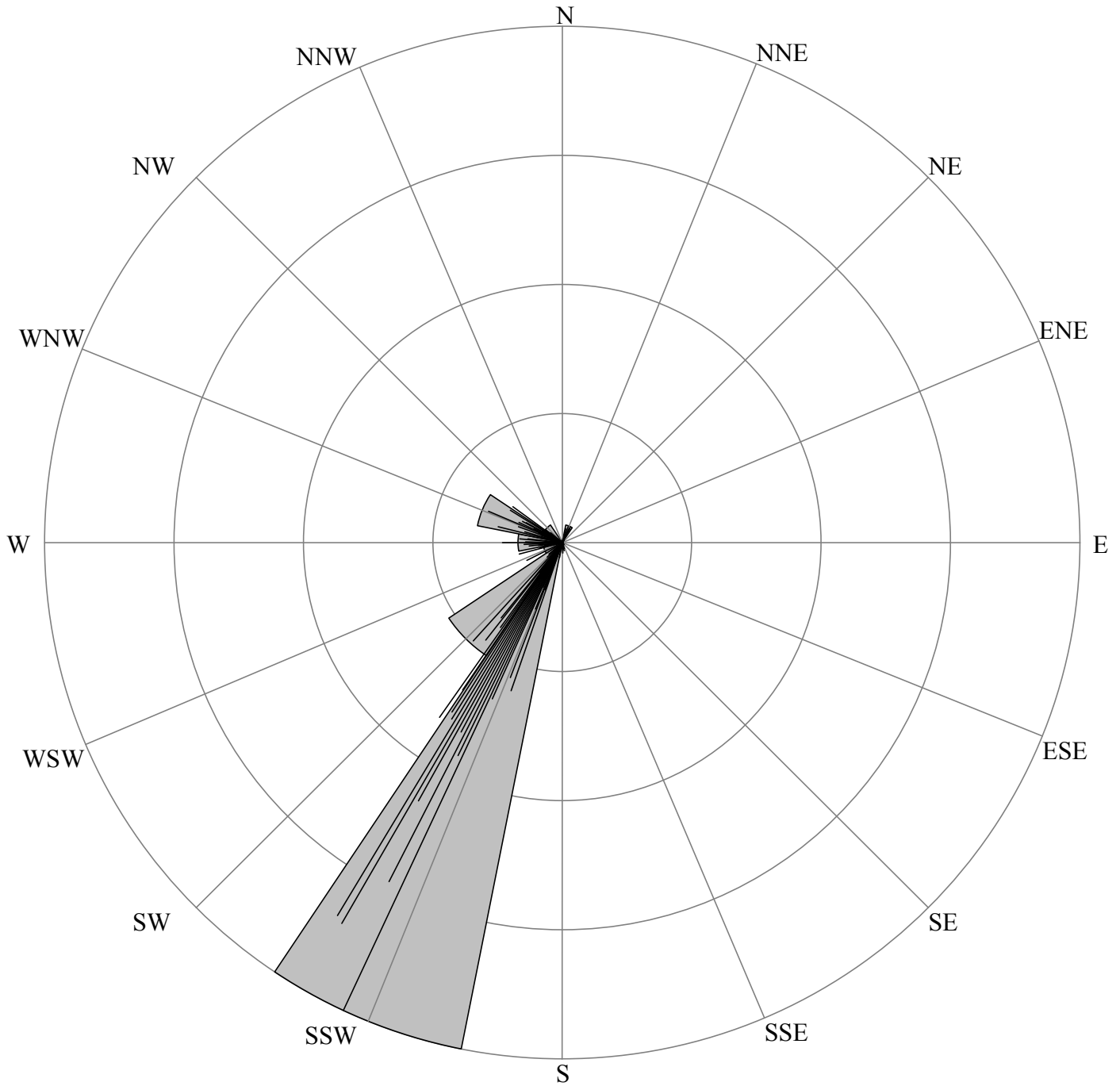
Date	A.M. Hour Ending at												P.M. Hour Ending at												Date
	01	02	03	04	05	06	07	08	09	10	11	12	01	02	03	04	05	06	07	08	09	10	11	12	
01																								0.03	01
02	0.05	0.11	0.07	0.11	0.07	0.03	0.08	0.06	0.08	0.13	0.09	0.12	0.14	0.07	0.02		0.29	0.01							02
03			0.01	0.09																					03
04							0.02	0.01	0.01	0.26	0.07														04
05																									05
06																									06
07																	0.02	0.06	0.07					0.01	07
08																									08
09																									09
10																							0.01		10
11					0.02	0.04				0.01			0.06												11
12																									12
13									0.01																13
14																									14
15																									15
16																									16
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26																									26
27																									27
28																									28
29																									29
30																									30
Sum	0.05	0.11	0.08	0.20	0.09	0.07	0.10	0.07	0.10	0.40	0.16	0.12	0.20	0.07	0.02	0.00	0.31	0.07	0.09	0.00	0.00	0.02	0.00	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 September 2019: Westford



Wind Rose: September 2019  
Westford



Maximum direction of wind: 27.4 miles from 205°  
Maximum sector of wind: 189.6 miles from SSW  
312.6 total miles of wind