

BALTIMORE, MARYLAND																																
WIND SPEED AVERAGES AND EXTREMES																																
(Speed in Miles per Hour)																																
Data Period of Record: 1891-Present																																
YEAR	JANUARY		FEBRUARY		MARCH		APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		OCTOBER		NOVEMBER		DECEMBER		ANNUAL		YEAR					
	Average	Max Gust	Average	Max Gust	Average	Max Gust	Average	Max Gust	Average	Max Gust	Average	Max Gust	Average	Max Gust	Average	Max Gust	Average	Max Gust	Average	Max Gust	Average	Max Gust	Average	Max Gust	Overall Monthly Average	Average Monthly Max Gust		Annual Max Gust				
1891																									7.8	48	1891					
1892																									7.6	42	1892					
1893	8.8		9.9	45	9.3		9.2		8.9	43	8.8		8.7		7.0		7.2		7.5		7.8		7.8		8.0	45	1893					
1894	7.3	48	7.9		7.9		8.8		7.9		6.5	30	6.7		5.2		6.6		7.6		8.6		6.8		7.8	43	1894					
1895	8.1		10.6		9.5		8.6																	8.1	8.7		1895					
1896	8.5		10.9		10.8	50	8.4		7.6		6.9		6.7		4.2		4.8		4.8		4.5		4.7		6.0		1896					
1897	6.1		5.7		5.6		5.8		5.6		5.8		4.8		5.5		5.5		4.8		4.5		5.2		5.2		1897					
1898	5.5		5.3		5.7		6.7		5.7		5.2		5.1		4.2		4.8		5.5	30	4.8		5.6	54	5.3	42.0	54	1898				
1899	5.2		5.9		5.8		5.7		5.7	28	4.9	38	5.3		5.3		4.7		4.6		4.4		5.5	5.2	5.2		1899					
1900	5.3		6.8		5.8		5.0		5.5	5.2	5.5		4.6		4.3		4.4		4.8		5.2		4.6	5.1	5.1		1900					
1901	5.1		6.1		5.1		5.1		5.1	4.5	5.1	21	4.6		5.1	21	4.6		4.1		6.0		5.1	6.1	6.1		1901					
1902	5.2		6.9		6.2		6.9		8.0	7.8	6.9	70	6.2		6.6	36	7.0		6.6	32	8.0		6.8	42.3	70	42.3	70	1902				
1903	8.6	42	9.0	45	6.6	32	9.0	7.2	7.1	26	6.7	46	6.4	6.3	34	8.5	42	6.4	29	8.4	41	7.5	37.4	46	37.4	46	1903					
1904	7.6	34	8.9	38	8.2		8.7	36	7.1	35	6.6	42	6.2	6.0	5.9	40	6.9	7.2	36	7.4	40	7.2	37.9	42	37.9	42	1904					
1905	8.5		8.0	34	6.6		7.9	36	7.6	30	6.8	28	6.6	38	6.9	31	6.3	24	6.7	30	7.6	34	7.9	42	7.3	32.7	42	32.7	42	1905		
1906	8.7	46	8.0	27	9.2	42	8.3	33	7.9	29	6.9	32	6.4	5.8	6.4	6.4	9.2	7.6	8.0	4.7	8.0	4.7	7.7	34.8	46	34.8	46	1906				
1907	6.8	45	7.5	30	7.7	36	10.1	31	7.7	36	7.6	35	6.2	39	6.7	32	6.0	28	6.6	30	7.4	35	7.3	46	7.2	35.3	46	35.3	46	1907		
1908	7.7	40	8.5	32	7.6	30	8.5	32	7.5	26	6.7	27	6.7	40	6.6	27	5.9	26	7.2	28	6.1	32	6.7	26	7.1	30.5	46	30.5	46	1908		
1909	6.8	30	8.1	36	8.3	30	8.9	33	7.8	31	6.0	25												7.7	30.8	36	30.8	36	1909			
1910																											1910					
1911																											1911					
1912																											1912					
1913																											1913					
1914	8.0	36	8.3	29	8.0	35	7.9	28	6.6	34	6.6	34	6.5	24	5.9	21	6.5	27	6.4	30	7.5	37	7.7	27	7.2	30.2	37	30.2	37	1914		
1915	6.7	43	9.8	36	8.5	31	7.9	35	6.6	30	7.1	26	6.4	26	6.8	37	6.1	28	6.0	28	6.5	36	7.2	26	7.1	31.8	43	31.8	43	1915		
1916	9.2	36	8.3	27	8.7	26	8.1	48	7.6	40	7.3	25	7.1	25	5.8	26	9.0	44	6.4	27	6.7	29	6.8	36	7.6	32.4	46	32.4	46	1916		
1917	5.7	20	7.6	30	7.8	28	7.9	27	7.8	27	6.4	30	6.0	26	6.0	24	6.6	24	7.0	28	6.1	24	7.8	32	6.9	26.7	32	26.7	32	1917		
1918	7.6	46	6.9	31	6.9	34	8.2	39	6.3	22	7.4	30	6.0	33	6.1	25	6.0	20	5.6	24	5.7	21	6.0	24	6.6	29.1	46	29.1	46	1918		
1919	5.4	20	7.0	24	9.2	32	7.4	30	6.6	22	6.2	30	6.1	26	6.0	29	5.7	25	5.6	24	5.9	26	6.9	29	6.5	26.4	32	26.4	32	1919		
1920	7.3	24	8.5	32	7.2	35	8.0	27	7.0	40	6.0	40	6.6	21	6.1	26	5.2	17	5.1	19	6.2	32	6.7	30	6.7	28.6	40	28.6	40	1920		
1921	5.7	26	6.5	25	7.1	25	6.5	26	6.9	26	5.9	24	5.6	27	5.4	24	5.2	24	5.7	22	5.6	19	5.5	24	6.0	24.4	27	24.4	27	1921		
1922	6.5	41	6.0	29	6.7	26	6.4	31	6.1	30	5.8	23	5.6	30	5.4	20	5.0	16	5.3	22	5.1	20	5.3	24	5.8	26.0	41	26.0	41	1922		
1923	6.4	21	6.4	34	7.2	25	7.1	31	6.6	27	5.6	24	5.6	26	5.3	22	4.9	17	5.6	26	5.4	23	5.2	26	5.9	25.2	34	25.2	34	1923		
1924	6.2	32	6.6	24	7.2	32	6.5	28	7.0	38	5.3	26	5.1	17	5.3	20	6.4	27	4.4	20	5.2	19	5.4	26	5.9	25.8	38	25.8	38	1924		
1925	6.0	28	7.3	36	6.9	20	7.0	26	5.9	19.5	6.3	19	6.9	61	8.7	43	8.8	37.5	8.8	46	11.4	54	11.4	43.5	7.9	35.1	61	35.1	61	1925		
1926	5.9	27	6.4	31	7.1	25	7.1	26	5.8	19	5.6	22	6.7	60	8.7	40	8.7	39	8.8	46	10.7	48	9.3	36	7.6	34.9	60	34.9	60	1926		
1927	10.3	42	10.6	43	10.2	44	10.7	42	9.5	43	9.9	36	8.7	33	8.0	46	7.9	27	9.8	48	10.1	48	11.8	44	9.8	41.3	48	41.3	48	1927		
1928	10.8	47	9.6	37	10.9	44	12.0	46	7.9	30	9.1	28	7.6	34	7.0	35	8.6	47	7.6	26	9.2	38	7.5	36	9.0	37.3	47	37.3	47	1928		
1929	10.2	40	8.8	33	10.6	54	11.0	42	9.4	42	8.6	42	8.4	31	8.0	40	7.7	30	9.9	48	8.8	36	7.7	29	9.1	38.9	54	38.9	54	1929		
1930	8.1	36	8.5	32	11.5	40	11.3	43	10.0	35	9.7	32	8.1	33	8.6	31	8.2	28	7.6	30	8.3	37	8.7	35	9.5	41	9.0	34.9	46	34.9	46	1930
1931	8.8	36	9.1	30	11.6	35	11.1	42	9.4	36	8.9	30	7.1	50	7.7	30	8.5	42	7.5	32	7.4	32	9.0	43	8.8	36.5	50	36.5	50	1931		
1932	11.0	41	10.6	40	14.2	47	11.9	40	10.7	32	9.2	28	10.3	40	9.3	36	9.9	31	11.0	31	11.0	44	9.1	34	10.7	37.0	47	37.0	47	1932		
1933	11.0	43	11.8	44	12.6	40	11.9	32	9.8	37	9.8	41	9.5	39	10.0	50	9.5	43	9.3	34	11.0	38	9.6	37	10.5	39.8	50	39.8	50	1933		
1934	10.7	39	11.1	34	10.4	38	10.4	32	10.6	35	10.2	36	9.0	29	8.9	33	9.2	32	10.2	38	10.7	34	10.5	38	10.2	34.8	39	34.8	39	1934		
1935	10.4	40	10.7	35	11.0	32	11.7	38	9.8	31	10.1	35	8.6	38	6.6	42	8.7	35	5.1	29	11.3	30	11.7	35	10.2	35.0	42	35.0	42	1935		
1936	10.9	42	10.1	31	10.7	34	12.2	40	10.2	32	10.3	32	9.2	38	9.7	32	10.1	38	9.9	38	11.2	35	10.1	35	10.4	35.6	42	35.6	42	1936		
1937	10.4	30	11.8	38	11.6	36	13.6	43	9.9	40	9.9	43	9.3	37	8.7	46	8.7	26	10.9	38	10.6	35	9.9	35	10.4	37.3	46	37.3	46	1937		
1938	10.0	41	11.0	41	10.8	36	10.7	43	10.5	31	8.6	37	9.0	39	9.0	32	9.5	35	9.4	35	9.5	35	9.9	32	9.9	36.4	43	36.4	43	1938		
1939	10.6	41	11.0	35	11.3	38	12.0	40	10.0	30	10.2	34	9.4	36	9.5	43	9.2	30	9.4	38	10.4	34	11.6									

DATA SOURCE: 1) National Centers for Environmental Information (NCEI) - Local Climatological Data, Baltimore, MD:

<https://www.ncdc.noaa.gov/IP61cd1cd.html>
<https://www.ncdc.noaa.gov/ids/web/dataset/dataset>

2) National Centers for Environmental Information (NCEI) - Climatological Data, Maryland & Delaware:

<https://www.ncdc.noaa.gov/ids/web/dataset/dataset>

3) National Weather Service - Baltimore/Washington, Sterling, VA:

<https://www.weather.gov/wh/ClimateWebSite>

4) Maryland Weather Service - Volume 2 - Climate Features of Baltimore:

<https://www.google.com/books?id=JmMwMwAAIAAAJ/7h1m>

NOTES: 1) Bold red values indicate extreme maximums for that monthly or annual category.

2) Cells with this gray background = future, incomplete, or non-applicable data.

3) Cells with this orange background and italic type = incomplete or preliminary data.

4) Due to lack of data prior to 1891 (July), that is the earliest year shown in the table, above. However, a few Maximum Monthly Velocities prior to then have been discovered: April 1879 with 60 mph; August 1888 with 45 mph; October 1878 with 45 mph. Minimum Monthly Averages prior to November 1891: January 1877 - 3.7 mph, February 1877 - 3.9 mph, March 1875 - 5.3 mph, December 1872 - 4.0 mph.

5) General note: throughout this Table's data period, varying wind equipment, location/siting/exposure, and classifications have affected the readings: Wind Speed classifications are thus:

a) Beginning with the January 1965 Baltimore Local Climatological Data publication, the "Fastest Mile" category classification is thus: "... the associated speed ... is the fastest observed one-minute wind speed."

b) From 1965-Present, the "Average" Speed is the "Mean" or "Average" Speed (no time period specified); prior to 1965 "Average" is classified as "Average Hourly" Speed.

c) Prior to 1984, the "Max Gust" is simply the "Fastest Mile" (sometimes described as "the speed it takes for one mile of wind to pass a given point in one minute" (which is lower than "Peak Gust").

d) From 1/1/1984-9/19/2006, the "Max Gust" is the highest "5-Second Wind Speed." For 9/20/2006-Present, the "Max Gust" is the highest "3-Second Wind Speed" with the switch to a sonic anemometer from a cup anemometer.

e) The U.S. Weather Bureau Airport Station was moved from the Baltimore Municipal Airport to then-named Friendship International Airport on July 23, 1950 at 0000 E.S.T. (per the Local Climatological Data publication of July 1950).

7) Data for "Average Speed" from July 1950-December 1950 is taken from the 1950 Monthly Local Climatological Data publications, the "Fastest Mile" data is taken from the Local Climatological Data Annual Summary publication as this data is not available in the monthly publications. Prior to July 1950, all data is taken from the Annual Summary for the period prior to the station relocation from the Baltimore Municipal Airport to Friendship International Airport.

8) There are no Local Climatological Data (LCD) Annual Summary publications for Baltimore in 1921 and 1914. In order to obtain the monthly averages and highest velocities, the Maryland/Delaware Climatological Data (CD) monthly publications were reviewed and data is taken from the "Wind" paragraphs which show the total wind movement in miles for the entire month. This value is then divided by 24 (hours in the day) and this subsequent value is then divided by the number of days in the month to arrive at the monthly average. All of these monthly CDs for 1914 and 1921 contain the "maximum velocity" for the month except for August 1921. There is a gap in available online wind data for Baltimore from 1910 to 1913 when the CD's were grouped by "the 12 large climatological districts, defined by the great watersheds ... " and no wind data is provided.

9) The Automated Surface Observing System (ASOS) was deployed at BWI on 4/1/1999, using an anemometer with cups, and appears to record a noticeable decrease in the average wind speeds compared to the previous equipment. The equipment was then changed to a sonic anemometer on 9/20/2006.

STATION LOCATION	WIND PERIOD OF RECORD
W Monument St & Linden Ave (NW Corner) - Johns Hopkins University Physics Lab	11/1/1891 - 9/6/1895
N Calvert & E Fayette Streets (SW Corner) - Equitable Building	9/7/1895 - 7/31/1896
652 N Howard Street - Johns Hopkins University Treasurer's Bldg	8/1/1896 - 12/31/1907
8 Gay & Wynn Streets - Custom House	1/1/1908 - 12/31/1950
Baltimore Municipal Airport - Baltimore City/Baltimore County line - Baltimore City/Dundalk, MD	7/1/1950 - 7/22/1950
Baltimore-Washington International Thurgood Marshall Airport (Formerly Friendship Intl Airport)	7/23/1950 - Present

STATION DATA SOURCE: NOAA NCDC, "Local Climatological Data, Baltimore, MD Friendship Int'l AP," 1950.

NOAA NCDC, "Local Climatological Data, Baltimore, MD Custom House," 1908 & 1950.

NOAA NCDC, "2012 Local Climatological Data, Annual Summary, Baltimore, MD, KBW1."

STATION NOTE: There is overlap in the wind data between the Custom House and the Baltimore Municipal Airport, at times taken from either location due to equipment issues.