

U. S. DEPARTMENT OF COMMERCE

CHARLES SAWYER, Secretary

WEATHER BUREAU

F. W. REICHELDERFER, Chief

LOCAL CLIMATOLOGICAL SUMMARY

WITH COMPARATIVE DATA

1951

RICHMOND, VIRGINIA

Compiled under the direction of

S. S. Schworm



CHATTANOOGA: 1952

AVERAGE TEMPERATURE

TOTAL PRECIPITATION

RICHMOND, VIRGINIA
1951

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	An 1
1900	39.4	37.6	43.8	57.3	67.0	74.6	81.2	82.9	75.6	64.6	40.3	59.7	
1901	38.8	34.7	49.6	52.8	65.5	74.8	81.0	77.4	70.0	59.1	44.1	38.6	57.2
1902	36.2	34.6	50.0	55.8	67.8	74.3	79.0	75.0	68.6	61.6	54.8	36.2	58.0
1903	38.2	43.0	54.4	57.8	67.8	73.0	79.3	75.8	68.6	58.9	46.2	35.8	56.2
1904	33.4	34.2	47.5	54.2	67.2	74.4	77.7	75.6	70.9	57.7	46.2	35.8	56.2
1905	35.0	31.2	49.8	57.6	69.4	74.2	78.4	75.8	71.7	59.4	48.2	40.4	57.6
1906	43.1	38.6	42.0	50.1	67.0	75.0	76.6	78.2	73.6	57.8	50.0	41.4	58.5
1907	42.8	35.0	52.1	59.4	67.7	76.4	79.1	75.4	72.8	55.9	47.8	42.0	57.0
1908	36.1	36.6	52.2	60.7	72.2	79.2	78.9	74.0	68.4	60.4	50.4	41.2	58.4
1909	42.2	47.4	46.4	56.6	66.0	76.7	78.9	74.2	67.4	55.4	53.1	35.9	58.2
1910	39.0	39.4	53.9	58.4	63.8	70.3	77.8	74.6	71.8	61.0	42.5	34.1	57.2
1911	41.8	41.0	44.6	52.4	69.8	75.0	79.6	77.7	72.5	59.2	45.0	43.2	58.5
1912	28.9	35.0	44.9	59.6	67.0	72.2	77.6	76.4	73.0	60.2	48.2	43.2	57.2
1913	46.7	40.0	52.0	57.8	66.6	73.8	79.0	75.2	69.0	60.2	50.2	42.2	59.4
1914	41.8	35.0	41.8	56.0	68.6	75.8	76.9	77.6	68.2	61.8	48.0	35.7	57.3
1915	39.4	43.7	40.6	59.9	66.0	72.0	78.0	76.2	72.4	61.3	49.2	37.7	58.0
1916	44.0	38.8	43.4	55.8	69.7	71.7	77.5	76.1	68.2	60.2	48.5	38.8	57.7
1917	42.8	37.6	45.6	57.4	61.2	70.6	75.8	73.4	72.2	60.4	48.0	40.0	59.3
1918	28.0	41.2	51.4	54.7	70.4	71.0	73.8	75.3	65.6	62.2	47.8	43.2	53.3
1919	40.6	39.8	49.5	56.6	61.1	73.2	77.6	75.0	71.3	67.2	48.8	35.9	58.5
1920	34.2	35.5	48.2	55.2	60.8	72.4	75.4	75.2	71.0	62.0	47.2	41.0	56.5
1921	35.9	42.0	57.6	60.1	63.1	74.8	80.0	76.6	76.8	59.5	51.6	41.0	60.2
1922	39.0	41.9	49.4	58.6	67.2	75.0	77.3	70.6	60.8	49.0	42.3	58.4	
1923	40.1	37.0	48.0	55.8	64.4	76.0	76.4	75.2	70.8	57.7	46.8	47.6	58.0
1924	38.0	38.2	45.6	64.8	62.8	72.8	75.2	76.4	65.8	58.6	48.8	40.5	56.4
1925	36.6	47.4	48.9	59.2	62.0	77.9	79.6	74.3	75.4	55.1	46.7	38.6	58.5
1926	37.8	41.8	43.0	54.5	65.2	71.4	77.6	78.0	71.2	60.2	46.4	37.8	57.1
1927	37.9	45.9	50.2	53.8	66.2	69.4	76.0	71.3	70.6	61.4	53.1	41.0	58.1
1928	38.9	40.4	47.4	54.2	64.1	72.8	78.4	78.0	65.8	61.4	50.4	41.0	57.7
1929	38.8	38.2	52.8	60.2	65.8	73.1	77.0	75.1	71.2	58.0	49.8	41.4	58.4
1930	39.6	45.3	46.4	55.6	68.8	74.2	79.8	76.1	76.8	57.2	48.1	36.8	58.7
1931	42.7	41.5	42.3	54.4	65.8	75.8	75.4	76.4	74.4	62.4	48.4	37.7	59.5
1932	49.9	46.2	43.4	55.0	65.1	74.7	79.7	75.8	72.2	60.4	48.4	44.2	59.5
1933	45.6	41.2	46.4	56.8	67.1	75.8	76.2	78.6	74.4	58.7	47.4	43.2	59.4
1934	42.4	29.0	43.4	56.8	70.0	78.1	80.6	76.0	72.3	58.0	51.1	39.6	57.9
1935	36.1	39.6	52.2	53.7	63.8	74.4	77.6	76.2	68.6	59.9	52.4	33.3	57.3
1936	33.0	34.6	52.4	50.4	68.6	74.2	79.9	79.0	73.6	61.8	47.8	41.4	58.3
1937	46.4	39.3	44.7	56.4	66.8	76.4	77.0	77.6	66.8	56.4	47.8	40.0	58.0
1938	36.2	44.8	53.2	59.7	65.6	72.0	77.1	79.0	69.0	59.2	52.0	40.8	59.2
1939	42.3	45.5	49.4	56.8	67.8	77.0	77.2	77.8	72.8	60.6	46.6	41.4	59.5
1940	27.3	39.9	44.6	53.6	66.0	75.4	76.6	74.4	67.9	57.8	49.5	44.4	56.4
1941	37.0	36.1	42.0	61.2	68.6	74.4	78.8	78.0	73.6	67.0	51.4	43.9	59.3
1942	36.8	36.8	49.2	60.2	70.7	75.8	80.0	75.4	72.0	61.2	50.8	37.7	58.9
1943	40.4	42.2	47.6	54.2	69.2	79.0	78.4	78.8	69.2	58.2	48.6	39.4	58.8
1944	39.8	41.2	45.5	56.7	71.8	76.9	78.4	75.7	71.8	58.8	48.9	37.0	58.5
1945	35.0	41.8	58.6	61.3	84.2	75.6	76.8	75.6	74.4	59.2	51.1	34.8	59.0
1946	45.2	42.7	49.9	58.2	67.4	75.8	75.4	71.0	62.4	64.6	44.2	39.4	58.0
1947	45.0	34.2	41.4	54.2	64.2	72.9	75.6	74.4	71.2	64.6	47.0	39.4	58.0
1948	32.2	40.9	51.4	58.3	66.7	75.1	78.6	76.2	69.6	57.8	54.5	43.6	58.7
1949	46.4	47.8	49.2	56.6	66.6	75.8	78.6	76.2	68.2	63.6	50.6	43.9	60.5
1950	50.7	41.8	45.3	55.3	65.6	74.0	76.2	75.3	68.4	62.1	48.0	37.4	58.3
1951	41.4	42.4	47.3	56.9	65.3	74.4	78.8	76.4	70.5	62.4	45.5	43.1	58.7

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1900	2.71	4.22	2.89	3.62	2.20	3.08	3.13	3.66	4.03	2.55	2.87	2.60	37.76
1901	2.80	0.55	3.79	5.29	3.80	2.32	5.06	6.98	3.21	0.79	1.37	6.08	42.05
1902	3.28	4.84	1.89	3.12	2.42	4.81	5.21	3.10	4.31	4.81	4.83	4.12	48.32
1903	3.61	5.02	8.14	4.46	3.36	5.73	5.17	3.21	1.60	3.44	1.40	2.28	47.42
1904	2.34	2.71	3.52	1.57	1.45	4.11	6.25	3.83	3.00	2.80	2.55	3.71	37.84
1905	2.47	4.14	2.18	3.06	4.09	3.72	3.25	4.01	2.61	1.24	0.51	7.10	38.38
1906	2.54	2.57	4.78	2.16	3.37	5.14	6.75	8.68	0.35	7.47	0.87	2.12	46.80
1907	1.22	3.20	2.91	4.87	5.78	6.21	2.99	5.31	6.51	2.30	4.64	3.44	48.48
1908	4.39	3.92	2.96	2.73	6.71	5.72	4.37	10.40	2.74	2.81	1.25	4.72	52.78
1909	3.00	2.94	4.13	3.21	3.41	4.59	1.25	4.01	2.89	0.77	0.62	3.39	34.21
1910	3.38	2.38	1.42	8.74	2.67	5.67	6.40	2.90	1.07	5.03	0.98	2.50	43.14
1911	3.65	2.20	2.15	4.00	0.60	2.83	0.57	7.25	1.85	3.61	4.33	3.95	37.00
1912	2.34	3.76	8.18	2.17	4.59	2.50	1.25	1.49	4.20	0.58	1.73	2.84	35.63
1913	2.53	1.51	3.53	2.54	4.80	3.80	3.65	4.59	3.20	3.95	1.49	2.17	37.74
1914	3.65	3.27	3.66	1.28	2.50	2.76	3.00	2.42	1.47	1.67	2.20	4.95	32.83
1915	5.41	3.92	1.10	1.68	3.00	3.77	2.42	7.34	1.99	3.27	0.63	1.93	36.46
1916	1.51	3.68	1.57	1.84	4.74	8.72	5.38	1.55	2.01	1.44	1.31	3.40	37.26
1917	2.98	2.92	5.97	3.56	3.27	4.81	3.28	3.74	4.82	3.78	0.41	1.72	42.27
1918	5.81	0.91	3.98	8.02	3.30	5.36	1.05	2.76	3.55	0.59	1.26	4.79	41.38
1919	3.64	2.22	3.51	3.25	5.19	3.90	9.92	2.62	0.54	1.71	1.31	2.30	40.11
1920	2.02	6.67	3.11	2.96	3.06	6.34	6.05	8.69	2.71	0.66	6.69	1.87	50.83
1921	3.80	3.52	2.13	4.65	3.89	1.49	2.36	0.61	0.95	1.20	2.97	3.02	30.59
1922	4.58	3.87	7.01	2.01	3.27	6.42	8.48	7.78	0.66	0.88	0.86	3.14	51.70
1923	4.61	3.09	5.88	3.96	1.16	2.09	10.87	6.41	4.25	2.16	2.20	2.28	48.96
1924	2.98	2.34	4.00	5.11	7.36	4.85	2.33	3.05	9.58	0.78	1.61	3.40	47.39
1925	5.42	0.90	2.47	2.33	2.15	2.24	2.32	2.55	0.93	4.67	1.55	3.89	31.42
1926	3.30	3.60	1.96	2.01	1.59	2.19	7.17	5.24	1.46	0.81	3.63	4.56	37.52
1927	0.70	2.87	1.95	3.47	3.30	3.12	9.10	7.19	4.01	2.02	1.61	5.02	44.36
1928	2.23	1.84	2.71	6.86	1.99	7.19	1.95	8.05	7.01	0.40	1.20	1.46	42.89
1929	1.53	5.19	3.96	3.50	4.00	3.02	2.16	2.41	2.41	6.99	3.34	2.70	41.21
1930	4.25	1.21	1.07	3.19	2.71	5.18	4.51	2.35	1.37	1.31	1.63	2.48	31.26
1931	1.81	2.94	2.94	3.97	7.59	5.64	4.98	4.47	11.45	1.92	1.24	2.82	43.73
1932	5.64	1.66	6.21	1.69	4.47	3.17	1.66	1.36	0.75	6.58	3.50	8.44	41.23
1933	3.85	2.73	2.15	4.02	4.84	1.63	4.59	8.84	1.05	0.72	1.17	3.14	38.73
1934	1.63	5.34	4.36	2.10	4.83	3.65	3.22	3.22	5.92	0.82	3.34	2.32	40.75
1935	4.41	2.13	4.00	4.40	3.81	6.22	5.64	3.68	9.23	1.73	3.19	2.12	50.56
1936	7.76	3.92	3.83	2.68	0.45	3.88	3.18	2.90	1.43	1.68	0.92	4.34	36.97
1937	10.08	2.42	1.66	6.02	1.64	6.02	6.00	9.85	2.61	6.34	2.44	0.90	55.98
1938	2.96	1.89	3.57	2.60	4.66	9.28	9.71	2.44	3.85	1.58	3.61		

STATION LOCATION

Location	Occupied from	Occupied to	Airline distance and direction from previous location	Latitude	Longitude	Elevation above								REMARKS	
						Sea level		Ground							
						Ground	Actual barometer elevation (ft.)	Wind instruments	Extreme thermometers	Psychrometer	Talpsychrometer	Tipping bucket rain gage	Weighting rain gage		8" rain gage
CITY OFFICE															
High elevation in East Richmond	1/1890	2/1893				Est. 150								W. H. Pleasants, Exact address unknown.	
Near Southern RR Bridge	3/1893	3/1895	?			Est. 35								A. J. Duesberry, River Observer, Observed Temperatures	
Westbrook Farms	4/1895	10/1897	4 Mi. N.	27° 36'	77° 24'	186								Capt. J. C. Shafer, Temperatures only.	
State Library Building Capitol Square	9/18/95	5/22/97	4 Mi. S.	37° 32'	77° 27'	142								Section Center, No Observations.	
Chamber of Commerce Bldg Ninth & Main Streets	5/22/97	10/4/97	3/8 Mi. SW	37° 32'	77° 27'	104								Section Center, No Observations.	
Same	10/5/97	5/31/00				143.70	107	98	98		89		89	Observational Program begun 10/5/97.	
Times Bldg., 10th & Bank Streets	5/31/00	6/30/05	1/8 Mi. NE	37° 32'	77° 27'	115	156.90	92	82	82		76		76	
Mutual Assurance Bldg. 9th & Main Streets	6/30/05	1/30/10	1/8 Mi. SW			104	214.82	154	145	145	138		138		
Weather Bureau Building Chimborazo Park, 3301 E Broad Street	1/30/10	7/1/39	1-1/2 Miles East	37° 32'	77° 25'	162	169.59	53	11	11		3		3	
Same	7/1/39	9/24/42												Observational program at Airport.	
Same	9/24/42	4/19/46											4	Observations, including Pibals, returned to WBO. Byrd Field occupied by AAF	
Same	4/19/46	6/1/50												Observational and Pibal Program returned to WBAS, Byrd Field. Climatological Observations only at WBO. Triple register and associated instruments moved to WBAS. Weighing gage returned to WBO. Climatological observations.	
Weather Bureau Building Chimborazo Park, 3301 E. Broad	1/1/50	Present		37° 32'	77° 25'	162		# 53	11				4	3	
AIRPORT STATION															
Old WB/CAA Bldg location	7/15/25	8/3/30	None	37° 30'	77° 20'	158*	163.96	-	-	-	-	-	-	-	Branch service of City Office and CAA cooperating.
WB-CAA Building	8/3/30	5/26/35	None	37° 30'	77° 20'	158	163.96	40	5	4.5	-	-	-	3	Full WBAS established; closed 1935.
WB-CAA Building	5/27/35	7/14/38	None	37° 30'	77° 20'	158	163.96	*40	5	4.5	-	-	-	3	Observations by CAA during period WB closed.
WB-CAA Building	7/14/38	7/24/42	None	37° 30'	77° 20'	158	163.96	*50	5	4.5	-	-	-	3	Reopened same location; closed 1942 because AF had airport.
Army Hangar (operations Annex)	7/24/42	4/19/46	1/2 Mi. NNW	37° 30'	77° 20'	156	159.72	55	5	4.5	-	-	-	3	Army base closed after World War II.
Old Airport Administration Building	4/19/46	6/1/50	1/3 Mi. SSE	37° 30'	77° 20'	156	166.85	46	5.2	4.7	-	-	-	4.3	WBAS re-opened in airport terminal building (old).
Byrd Field, New Terminal Building	6/1/50	Present	4/5 Mi. N	37° 30'	77° 20'	162	180.24	67	6.2	5.7	-	3	-	3	All Airport operations consolidated in new Terminal Building.

Station History may be found in the Local Climatological Summary for the year 1950
CLIMATE OF RICHMOND, VIRGINIA

Several of the more noteworthy figures in the climate of Richmond were recorded prior to the opening of the first-order station in October 1897. The least monthly precipitation, 0.11, occurred in October 1874 and again in November 1890. The longest period without measurable precipitation, 38 days, was from September 13 to October 21, 1894. The wettest year of record was 1889 with a total of 72.02 inches. The warmest year was 1891 with an average temperature of 61.4°.

February 1899 was long remembered as the "cold February"; the temperature went to the all-time low of -3° on the 10th and -2° on the 11th and was below 10° during seven consecutive days. Snow storms on the 6-7 and 11-14 totalled 19.8 inches, although the greatest depth on the ground was 17.7 inches. Richmond's hottest August occurred in 1900 when there were fifteen consecutive days with the temperature reaching above 90° and a total of 23 days during the month with the temperature above 90°. A major flood occurred in the James River in December 1901 with a crest of 23.2 feet on the 31st. A glaze storm on December 15-17, 1905 caused great damage. Telephone, telegraph, and power lines were broken so that electricity had to be shut off until repairs could be made. One person was killed by a live wire. Hundreds of trees were damaged or destroyed. A killing frost on October 12, 1906 was the earliest of record for any autumn. The shortest growing season occurred in 1907 with 190 days (April 15 - October 22). A heavy wet snow on December 22-23, 1908 accumulated 17.2 inches in about 20 hours. The weight of this heavy snow broke many telephone and telegraph lines and even a few poles, and did considerable damage to trees, especially evergreens. A ten inch snowfall on April 3, 1915, stands as the record for so late in the season. It disrupted train and trolley service and did considerable damage to power, telephone, and telegraph lines.

The record cold December of 1917 and the near record cold January of 1918 combined to make that the coldest winter. Heavy snow in each month totalled 29.3 inches, the most for any two-month period and made the season's snowfall the second greatest of record. The year 1917 had the lowest annual mean temperature. Richmond's highest temperature, 107°, was recorded on August 6, 1918. A killing frost which occurred on April 26, 1919 is the record for so late in the season. The deepest snow fell January 27-29, 1922 in a storm that produced a total of 19.1 inches. The greatest depth on the ground during this storm was 18.0 inches on January 28. The summer of 1922 produced excessive rainfall which on three occasions, July 13 and 28 and August 26, resulted in the overflow of Shockoe Creek over the entire Shockoe Valley and Main Street from 14th to 17th Streets. The worst of these floods was on July 13th when the water rose to a depth of more than five feet at a million dollars. A similar and greater flood in the same area occurred on July 30, 1923, when there was a torrential downpour of 6.33 inches in two hours and a 24-hour total of 7.26 inches. One life was lost, and again the damages amounted to more than half a million dollars. During the period 1925-34 when so much of the country was suffering from prolonged droughts, the Richmond area was fortunate with only two years, 1925 and 1930, that were much below normal in precipitation, and in both of these years there was sufficient moisture during the growing season for most crops. The growing season of 1929 was the longest of record, lasting from March 11 to November 22, a total of 256 days.

A series of major floods in the James River began in 1935 and continued with a flood each year for two more years. On September 7, 1935 the crest at Richmond was 23.6 feet. On March 20, 1936 the river reached an all-time high of 26.5 feet. The second highest mark, 25.2 feet, was reached on April 27, 1937. One of the most sudden floods in the James River at Richmond occurred during the night of February 14, 1938, when the water rose about six feet in half an hour because of an ice jam just below the City. Quite cold weather in January had caused the river to freeze over and some jamming began as early as January 31, but no solid ice pack dammed up the water until February 14th. When the water reached about 20 feet, the jam was broken and part of the water receded so rapidly that two steamers, three barges, and two ice breakers were carried away and badly damaged, and a tug was sunk in the harbor. January 1940 was the coldest month of record. One of the heaviest snowfalls occurred on the 23-24, with 16.0 inches at the City Office and 21.6 at the Byrd Field Weather Bureau Airport Station. At the City Office there were no record breaking low temperatures, but at the Airport Station an extreme low of -12° was registered on the 29th, and the temperature went to below zero six consecutive days (23-30). The deep snow hindered traffic for several days, and snow removal was retarded by the cold weather. The passage of the remnants of a tropical storm through Virginia in August 1940 resulted in some torrential rainfall which produced another major flood of 23.2 feet at Richmond on the 23rd.

1941 was the driest year of record with only 26.82 inches of precipitation; however, the second half of the growing season had enough moisture to prevent a complete crop failure. October 1941 was notable for six days with maximum temperature above 90°; the highest was 98° on the 6th. The greatest number of consecutive days with measurable precipitation occurred in August 1942 when there was rain every day from the 3rd to the 14th, a total of 12.

One of the worst, if not the worst, glaze storm in Richmond's history occurred on January 27-28, 1943. The total thickness of the ice accumulation was nearly an inch. Telephone, telegraph, and power lines suffered great damage, and service to some sections of the Richmond area was not restored for two weeks or more. There was some damage to buildings and many thousands of trees were destroyed or badly broken. Another major flood occurred in the James River in September 1944. The crest at Richmond was 22.4 on the 21st. The wettest month of record was July 1945 with a total rainfall of 16.08 inches. Of this amount, 5.72 inches fell in a 24-hour period on the 17-18th. High water in Gillie Creek weakened a bridge on Government Road near the Weather Bureau Office so that it gave way under a loaded bus, and three lives were lost. During this period there were hundreds of complaints of flooded basements in the City. On July 14, 1948 a heavy downpour of rain on the 13-14th produced 3.18 inches, of which 1.79 inches fell in a 15-minute period, the heaviest rain of record for that length of time. Large amounts of dust in the air were brought down as mud in several showers on March 29, 1950. Smoke from Canadian forest fires carried southeastward at high levels all but completely obscured the sun and the moon during the period September 24-30, 1950.