



# FEBRUARY 2011 LOCAL CLIMATOLOGICAL DATA

NOAA, National Climatic Data Center

**RICHMOND, VA**  
**RICHMOND INTERNATIONAL AIRPORT (KRIC)**  
 Lat:37° 30'N Long: 77° 19'W Elev (Ground) 163 Feet  
 Time Zone : EASTERN WBAN: 13740 ISSN#: 0198-537X



Date 1	Temperature °F						Deg Days BASE 65°		WEATHER 10	SNOW/ICE ON GND(IN)		PRECIPITATION ON GND(IN)		PRESSURE (INCHES OF HG)		WIND SPEED = MPH DIR = TENS OF DEGREES								Date 24		
	MAXIMUM 2	MINIMUM 3	AVERAGE 4	DEP FROM NORMAL 5	AVERAGE DEW PT 6	AVERAGE WET BULB 7	HEATING 8	COOLING 9		0700 LST	1300 LST	2400 LST	2400 LST	AVERAGE STATION 15	AVERAGE SEA LEVEL 16	RESULTANT SPEED 17	RES DIR 18	AVERAGE SPEED 19	MAXIMUM							
																			3-SEC		2-MIN					
									DEPTH 11	WATER- EQUIV 12	SNOW- FALL 13	WATER EQUIV 14			SPEED 20	DIR 21	SPEED 22	DIR 23								
01	49	29	39	2	33	36	26	0	RA DZ FZDZ BR HZ	T		0.0	0.04	30.02	30.21	0.5	10	4.8	12	11	10	11	01			
02	68	39	54	17	39	48	11	0	RA BR	0		0.0	0.36	29.67	29.88	9.8	26	14.5	41	26	32	27	02			
03	41	31	36	-1	15	29	29	0		0		0.0	0.00	30.17	30.39	4.7	35	6.3	24	32	18	33	03			
04	41	32	37	0	24	32	28	0	RA	0		0.0	T	30.14	30.30	3.9	18	4.3	14	21	12	20	04			
05	48	34	41	4	38	39	24	0	RA DZ FG+ BR	0		0.0	0.22	29.64	29.80	4.6	25	6.2	25	24	20	26	05			
06	51	29	40	3	30	36	25	0		0		0.0	0.00	29.75	29.99	1.2	21	3.6	16	29	13	21	06			
07	56	29	43	6	35	39	22	0	BR	0		0.0	0.00	29.76	29.92	4.8	18	4.9	17	19	15	19	07			
08	49	27	38	0	21	34	27	0		0		0.0	0.00	29.70	29.96	10.1	33	12.5	33	34	26	32	08			
09	38	21	30*	-8	10	24	35	0		0		0.0	0.00	30.09	30.27	0.6	21	5.0	20	14	17	14	09			
10	41	25	33	-6	17	27	32	0	SN BR	T		0.1	T	29.91	30.12	3.7	04	5.8	20	03	15	03	10			
11	49	21*	35	-4	18	28	30	0		0		0.0	0.00	29.98	30.16	4.0	19	4.8	16	25	12	26	11			
12	54	23	39	0	14	31	26	0		0		0.0	0.00	29.88	30.09	8.1	29	8.7	32	28	24	28	12			
13	60	31	46	7	21	36	19	0		0		0.0	0.00	29.93	30.12	9.8	23	10.0	31	24	24	24	13			
14	71	45	58	19	23	42	7	0		0		0.0	0.00	29.65	29.84	13.4	29	17.3	51	30	37	29	14			
15	53	33	43	3	12	32	22	0		0		0.0	0.00	30.12	30.35	5.1	03	7.2	25	35	18	34	15			
16	60	28	44	4	21	35	21	0		0		0.0	0.00	30.19	30.37	7.4	22	7.6	26	22	20	22	16			
17	71	33	52	12	40	47	13	0		0		0.0	0.00	30.01	30.18	9.8	23	10.5	28	23	22	22	17			
18	77	55	66*	26	46	55	0	1		0		0.0	0.00	29.78	29.97	11.8	26	13.4	33	29	24	28	18			
19	67	46	57	17	0	39	8	0		0		0.0	0.00	29.82	30.04	16.3	31	17.8	46	35	36	32	19			
20	54	33	44	3	9	34	21	0	RA	0		0.0	T	30.03	30.20	1.3	06	8.5	21	19	17	34	20			
21	70	41	56	15	33	44	9	0		0		0.0	0.00	29.57	29.76	3.8	23	11.6	29	04	24	04	21			
22	41	30	36	-5	28	32	29	0	RA FZRA SN BR	0		T	0.08	29.86	30.09	7.2	04	7.8	24	02	20	02	22			
23	50	27	39	-3	19	31	26	0		0		0.0	0.00	30.12	30.33	1.1	02	2.6	10	06	7	14	23			
24	54	30	42	0	34	39	23	0	RA BR	0		0.0	0.18	30.02	30.18	6.3	21	7.0	23	25	20	23	24			
25	73	37	55	13	42	49	10	0	RA FG BR	0		0.0	0.44	29.54	29.76	10.7	26	19.1	52*	28	39*	31	25			
26	54	29	42	0	27	36	23	0		0		0.0	0.00	29.98	30.15	4.2	18	5.3	21	21	17	21	26			
27	65	40	53	10	42	47	12	0	RA	0		0.0	0.04	29.79	29.99	3.9	17	5.7	21	18	18	18	27			
28	78*	49	64	21	52	56	1	0	RA BR	0		0.0	0.73	29.62	29.81	8.3	24	15.7	46	23	37	23	28			
56.5				33.1		44.8		☼	26.5	37.8	20.0	0.0	< MONTHLY AVERAGES   TOTALS >		0.1	2.09	29.88	30.08	3.5	26	8.9	< MONTHLY AVERAGES				
7.2		3.4		5.3		<-----DEPARTURE FROM NORMAL----->												-0.89	SUNSHINE, CLOUD, & VISIBILITY TABLES ON PAGE 3							
<b>DEGREE DAYS</b>								<b>GREATEST 24-HR PRECIPITATION :</b> 0.77 <b>DATE :</b> 27-28				<b>SEA LEVEL PRESSURE</b>				<b>DATE TIME</b>										
<b>MONTHLY</b>				<b>SEASON TO DATE</b>				<b>GREATEST 24-HR SNOWFALL :</b> 0.1 <b>DATE :</b> 10				<b>MAXIMUM :</b> 30.46				<b>16 0954</b>										
<b>TOTAL DEPARTURE</b>				<b>TOTAL DEPARTURE</b>				<b>GREATEST SNOW DEPTH :</b> T <b>DATE :</b> 10+				<b>MINIMUM :</b> 29.47				<b>25 1354</b>										
<b>HEATING :</b>		559		-146		3078		29		<b>NUMBER OF -&gt;</b>		<b>MAXIMUM TEMP &gt;= 90 :</b> 0		<b>MINIMUM TEMP &lt;= 32 :</b> 16		<b>PRECIPITATION &gt;= 0.01 INCH:</b> 8										
<b>COOLING :</b>		1		0		1		0		<b>THUNDERSTORMS :</b> 0		<b>MAXIMUM TEMP &lt;= 32 :</b> 0		<b>MINIMUM TEMP &lt;= 0 :</b> 0		<b>PRECIPITATION &gt;= 0.10 INCH:</b> 5										
												<b>HEAVY FOG :</b> 1		<b>SNOWFALL &gt;= 1.0 INCH :</b> 0												

**FEBRUARY 2011  
RICHMOND, VA**

# HOURLY PRECIPITATION

(WATER EQUIVALENT IN INCHES)

RICHMOND, VA (KRIC)  
FEBRUARY 2011

WBAN # 13740

Date	FOR HOUR (LST) ENDING AT												Date	FOR HOUR (LST) ENDING AT												Date	Sum of Hourly Data	2400 LST Water Equiv.
	1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20	21	22	23	24			
01	T	T	T			T	T	T	T				01									T	T	0.04	01	0.04	0.04	
02	0.05	0.09	0.16	0.02	0.02		T	0.01	0.01				02												02	0.36	0.36	
03													03												03	0.00	0.00	
04													04			T	T		T						04	T	T	
05	T	T	0.02	0.01	0.01	0.01	0.01	0.03	0.07	0.01	0.03	T	05	0.01	T	T	0.01	T							05	0.22	0.22	
06													06												06	0.00	0.00	
07													07												07	0.00	0.00	
08													08												08	0.00	0.00	
09													09												09	0.00	0.00	
10	T	T	T	T	T	T							10												10	T	T	
11													11												11	0.00	0.00	
12													12												12	0.00	0.00	
13													13												13	0.00	0.00	
14													14												14	0.00	0.00	
15													15												15	0.00	0.00	
16													16												16	0.00	0.00	
17													17												17	0.00	0.00	
18													18												18	0.00	0.00	
19													19												19	0.00	0.00	
20													20										T		20	T	T	
21													21												21	0.00	0.00	
22	T	0.02	0.06	T			T	T		T	T	T	22												22	0.08	0.08	
23													23												23	0.00	0.00	
24													24		T	0.02	0.08	0.04	0.01	0.03	T	T		24	0.18	0.18		
25							T	0.02	0.40	0.02	T		25											25	0.44	0.44		
26													26											26	0.00	0.00		
27													27								0.04			27	0.04	0.04		
28													28			0.18	0.09	0.19	0.21	0.06		T	T	T	28	0.73	0.73	

\* Indicates sum of Hourly and Daily disagree.

## MAXIMUM SHORT DURATION PRECIPITATION (See Note)

Time Period (Minutes)	5	10	15	20	30	45	60	80	100	120	150	180
Precipitation (Inches)	0.25	0.32	0.35	0.37	0.38	0.40	0.40	0.42	0.44	0.45	0.46	0.54
Ending Date	25	25	25	25	25	25	25	25	28	28	28	28
Ending Time (Hr/Min)	0855	0859	0859	0859	0859	0859	0859	0941	1907	1907	1928	1907

Note : The hourly and daily precipitation totals are printed in the last 2 columns and hi-lighted in red when they disagree. NWS does not edit ASOS hourly values but may edit daily and monthly totals. Hourly, daily, and monthly totals are printed as reported by the ASOS site.

Date and time are not entered for TRACE amounts.

# REFERENCE NOTES & SUPPLEMENTAL SUMMARIES

\* = Extreme for the month (last occurrence if more than one).

T = Trace precipitation amount.

+ = also occurs on earlier date.

FG+ = Heavy fog, visibility .25 miles or less.

BLANK entries denote missing or unreported data.

Resultant wind is the vector sum of the wind speeds and directions divided by the number of observations.

Wind direction is recorded in tens of degrees (2 digits) clockwise from true north. '00' = calm, 'VR' = variable.

Precipitation is for the 24-hour period ending at the time indicated in the column heading.

Water Equivalent of snow on the ground is reported only when the depth is 2 or more inches.

NORMALS ARE FOR THE YEARS 1971-2000

## WEATHER NOTATIONS

QUALIFIER	WEATHER PHENOMENA		
DESCRIPTOR	PRECIPITATION	OBSCURATION	OTHER
BC Patches	DZ Drizzle	BR Mist	DS Duststorm
BL Blowing	GR Hail	DU Widespread Dust	FC Funnel Cloud
DR Low Drifting	GS Small Hail and/or Snow Pellets	FG Fog	+FC Tornado Waterspout
FZ Freezing	IC Ice Crystals	FU Smoke	PO Well-Developed Dust/Sand Whirls
MI Shallow	PL Ice Pellets	HZ Haze	
PR Partial	RA Rain	PY Spray	SQ Squalls
SH Shower(s)	SG Snow Grains	SA Sand	SS Sandstorm
TS Thunderstorm	SN Snow	VA Volcanic Ash	GL Glaze
VC In the Vicinity	UP Unkown Precipitation		

Intensity (as indicated on pages 4 to 6):  
'+' = Heavy    '' = Moderate    '-' = Light

# RICHMOND, VA FEBRUARY 2011

Ceilometer (30-second) data are used to derive cloudiness at or below 12,000 feet. This cloudiness is the mean cloud cover detected during sunrise to sunset (SR-SS), or midnight to midnight (MN-MN).

Satellite data are used to derive cloudiness above 12,000 feet. Effective Cloud Amount is based on the cloud cover and the transparency of the clouds within the satellite field of view (approx. 31x31 miles).

Sky Condition is based on the sum (not to exceed 8) of the sunrise to sunset cloud cover below and above 12,000 feet. Both ceilometer and satellite data must be present to compute Sky Condition. Clear = 0-2 oktas, Partly Cloudy = 3-6 oktas, Cloudy = 7-8 oktas.

A Heating (Cooling) Degree Day is the difference between the average daily temperature and 65 degrees F. The HDD season begins July 1, the CDD season begins January 1.

Dew Point is the temperature to which the air must be cooled to achieve 100% relative humidity. Wet Bulb is the temperature the air would have if cooled to saturation at constant pressure by evaporation of water into it.

Snow Depth, Snowfall, and Sunshine data may come from nearby sites that the National Weather Service deems Climatologically representative of this site.

### ADDITIONAL NOTES:

Station Augmentation-SANDSTON COOP  
Lat/Lon:37.54417/-77.27583 Elevation:165  
Distance:4 MI Dir:E  
Augmented Elements:Temp, Precip, Snow  
Equipment:MMS, SRG, Snowboard

Date	SUNSHINE		CLOUDINESS (OKTAS)				VISIBILITY (MILES)		RESERVED
	TOTAL MINUTES	PERCENT POSSIBLE	SR-SS		MN-MN		MINIMUM	MAXIMUM	
			Sky Cover	Satellite	Sky Cover	Satellite			
01							1.00	10.00	
02							2.00	10.00	
03							10.00	10.00	
04							10.00	10.00	
05							0.75	10.00	
06							10.00	10.00	
07							2.00	10.00	
08							10.00	10.00	
09							10.00	10.00	
10							3.00	10.00	
11							7.00	10.00	
12							10.00	10.00	
13							10.00	10.00	
14							10.00	10.00	
15							10.00	10.00	
16							10.00	10.00	
17							10.00	10.00	
18							10.00	10.00	
19							10.00	10.00	
20							10.00	10.00	
21							10.00	10.00	
22							4.00	10.00	
23							10.00	10.00	
24							3.00	10.00	
25							0.50	10.00	
26							10.00	10.00	
27							10.00	10.00	
28							2.00	10.00	
MONTHLY AVGS							7.33	10.00	
<b>SUNSHINE (Minutes)</b>									
Total : 0					Possible : 18192				
Percent Possible : 0									
<b>NUMBER OF DAYS WITH : SKY CONDITION</b>									
Clear		Partly CLDY			Cloudy			Missing	
<b>MINIMUM VISIBILITY (MILES)</b>									
<= .25			<= 3.0				>= 7.0		
0			8				19		





# OBSERVATIONS AT 3-HOURLY INTERVALS

# RICHMOND, VA

FEBRUARY 2011

KRIC

WBAN # 13740

HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)						
			Observation Time (LST)	Eff Cl'd Amt Okta's		VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION Tens of Deg	STATION	SEA LEVEL			
<b>SUNRISE: 0646</b>						<b>FEB 25</b>						<b>SUNSET: 1759</b>					
01	OVC	120				48	44	46	86	8	20	29.69	29.88				
04	OVC	012				57	54	55	90	15	20	29.52	29.70				
07	BKN	090			-RA	61	56	58	84	20	21	29.44	29.63				
10	OVC	085			-RA	59	56	57	90	23	22	29.37	29.56				
13	SCT	037				70	52	60	53	26	26	29.28	29.47				
16	FEW	065				65	33	50	30	23	30	29.45	29.64				
19	CLR	NC				49	23	39	36	18	34	29.76	29.95				
22	CLR	NC				41	24	35	51	13	02	29.93	30.12				
<b>SUNRISE: 0645</b>						<b>FEB 26</b>						<b>SUNSET: 1760</b>					
01	CLR	NC				36	23	31	59	7	04	30.01	30.20				
04	SCT	250				34	24	30	67	0	00	30.01	30.21				
07	BKN	250				30	24	28	78	0	00	30.05	30.24				
10	BKN	250				41	23	34	49	6	16	30.09	30.28				
13	BKN	250				48	24	38	39	9	20	30.01	30.20				
16	BKN	250				53	27	42	37	11	21	29.87	30.07				
19	SCT	250				47	30	40	52	5	18	29.85	30.04				
22	CLR	NC				40	34	37	79	6	16	29.82	30.01				
<b>SUNRISE: 0644</b>						<b>FEB 27</b>						<b>SUNSET: 1801</b>					
01	FEW	250				43	38	41	83	9	22	29.75	29.95				
04	OVC	250				43	39	41	86	6	19	29.75	29.95				
07	OVC	250				45	39	42	80	6	23	29.78	29.97				
10	BKN	250				54	41	48	62	8	04	29.85	30.05				
13	BKN	250				61	40	51	46	3	14	29.81	30.01				
16	BKN	250				64	43	53	47	6	12	29.79	29.98				
19	OVC	250				57	44	50	62	10	16	29.82	30.01				
22	OVC	140				52	48	50	86	7	16	29.82	30.01				
<b>SUNRISE: 0642</b>						<b>FEB 28</b>						<b>SUNSET: 1802</b>					
01	OVC	250				51	46	49	83	5	20	29.75	29.95				
04	OVC	130				58	50	54	75	13	20	29.67	29.86				
07	OVC	250				61	52	56	72	15	20	29.64	29.83				
10	OVC	250				68	54	60	61	28	21	29.58	29.77				
13	OVC	250				75	55	63	50	28	23	29.52	29.70				
16	BKN	050			-RA	61	58	59	90	8	35	29.55	29.74				
19	OVC	024			+RA BR	59	57	58	93	7	23	29.57	29.76				
22	OVC	045			-RA	54	49	51	83	24	01	29.64	29.83				

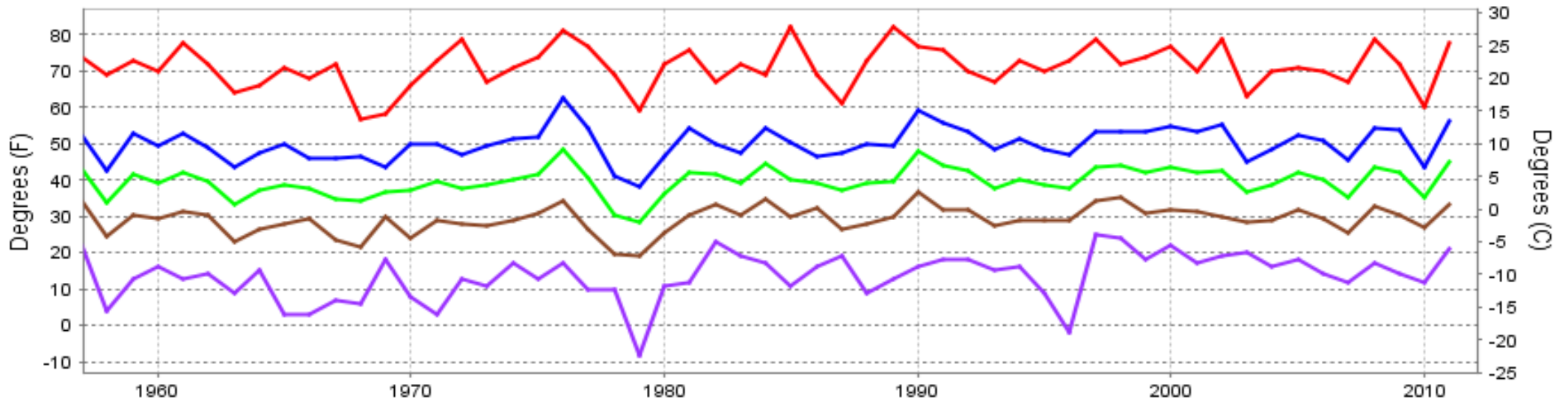
HOUR (LST)	SKY COVER	CEILING 100's of FT.	SATELLITE		WEATHER	TEMPERATURE °F			WIND		PRESSURE (INCHES, HG)			
			Observation Time (LST)	Eff Cl'd Amt Okta's		VISIBILITY (MILES)	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY (PCT)	SPEED (MPH)	DIRECTION Tens of Deg	STATION	SEA LEVEL

**3-HOURLY OBSERVATION NOTES**  
 Sky Cover is the amount of the sky obscured. CLR or SKC = 0, FEW = 1/8-2/8, SCT = 3/8-4/8, BKN = 5/8-7/8, OVC = 8/8, W = Vertical Visibility = 8/8  
 Ceiling is reported in hundreds of feet above ground level for clouds at or below 12,000 feet. NC = No Ceiling detected.  
 & = Original observation contained additional weather elements.  
 See page 3 for additional notes.

## SUMMARY BY HOUR

HOUR (LST)	AVERAGES										RESULTANT WIND (MPH)	
	CEILOMETER	EFF CLD AMT	DRY BULB	DEW POINT	WET BULB	RELATIVE HUMIDITY	PRESSURE (Inches, HG)		VISIBILITY (Miles)	WIND SPEED (MPH)	SPEED	DIRECTION
							STATION	SEA LEVEL				
01			39	26	35	64	29.90	30.10	9.23	7	2	31
02			38	26	34	66	29.90	30.10	9.05	6	2	30
03			38	26	34	67	29.89	30.09	9.05	6	2	30
04			38	27	34	69	29.88	30.08	9.02	5	3	30
05			37	28	34	71	29.89	30.09	8.71	6	3	29
06			38	28	34	70	29.89	30.09	8.95	7	3	29
07			38	28	34	70	29.91	30.10	8.92	7	3	29
08			40	28	35	69	29.92	30.11	8.95	7	3	29
09			43	28	37	61	29.92	30.12	8.88	10	4	28
10			46	27	39	53	29.92	30.11	9.39	10	4	28
11			49	26	40	47	29.91	30.10	9.43	11	7	28
12			51	26	41	44	29.89	30.09	9.61	10	9	28
13			53	26	42	40	29.86	30.05	9.55	11	8	28
14			55	26	43	38	29.84	30.03	9.70	13	9	28
15			55	25	43	37	29.83	30.02	9.67	12	7	28
16			54	25	43	39	29.83	30.02	9.50	11	6	28
17			52	25	42	41	29.84	30.03	9.48	12	6	28
18			50	26	41	46	29.86	30.05	9.50	10	4	28
19			47	26	39	50	29.87	30.07	9.54	9	3	29
20			45	26	38	52	29.88	30.08	9.82	8	3	29
21			44	27	38	56	29.89	30.09	9.75	9	2	30
22			43	27	37	59	29.90	30.09	9.79	8	1	33
23			42	27	36	60	29.90	30.09	9.86	9	1	32
24			41	27	35	61	29.89	30.09	9.89	9	1	31

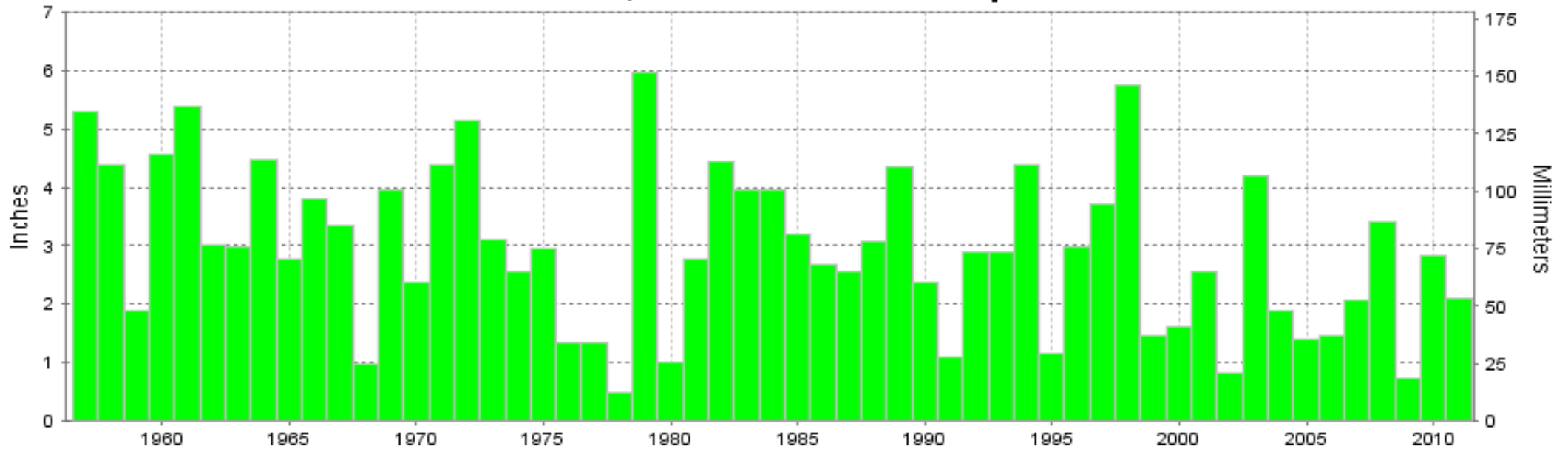
## RICHMOND, VA FEBRUARY Temperatures



— Extreme Max   
 — Mean Max   
 — Mean   
 — Mean Min   
 — Extreme Min

**Long-Term (1957-2011) Mean: 39.6**  
**1971-2000 Normal: 39.5**

## RICHMOND, VA FEBRUARY Precipitation



Long-Term (1957-2011) Mean Monthly Total: 2.95

1971-2000 Normal: 2.98



**FEBRUARY 2011  
RICHMOND, VA**

# **LOCAL CLIMATOLOGICAL DATA**

## **NOAA, National Climatic Data Center**

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**DIRECTOR**

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