

1999

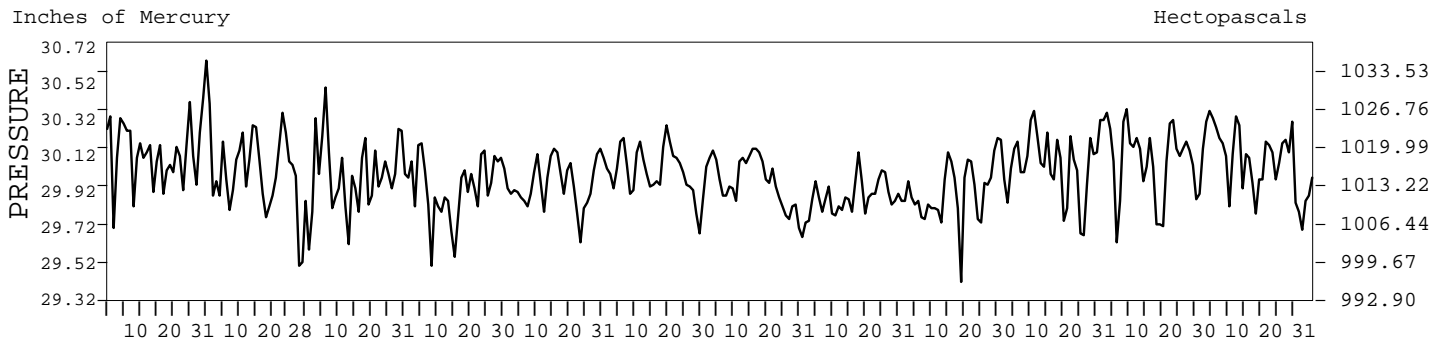
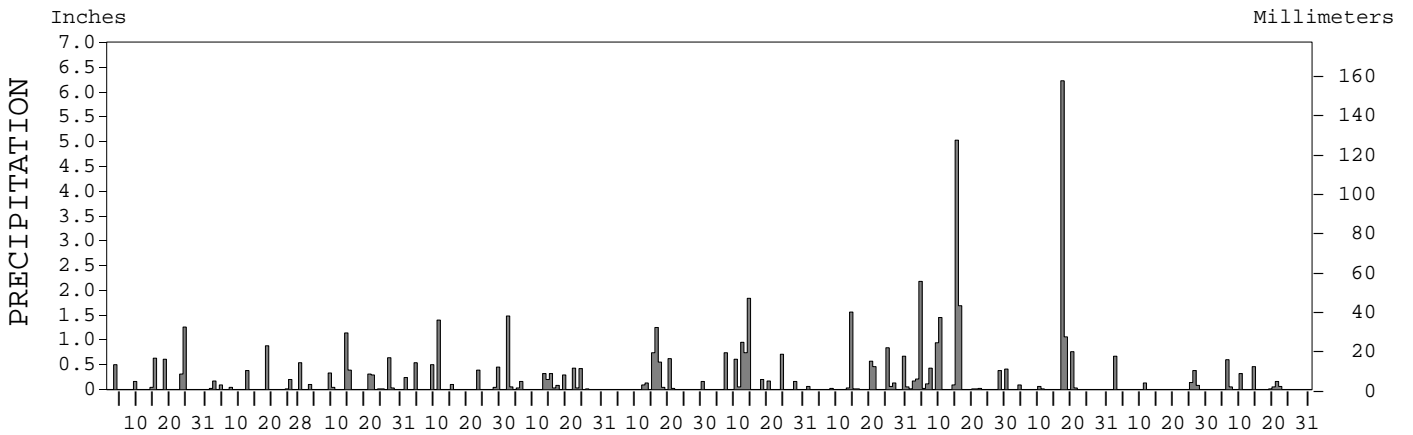
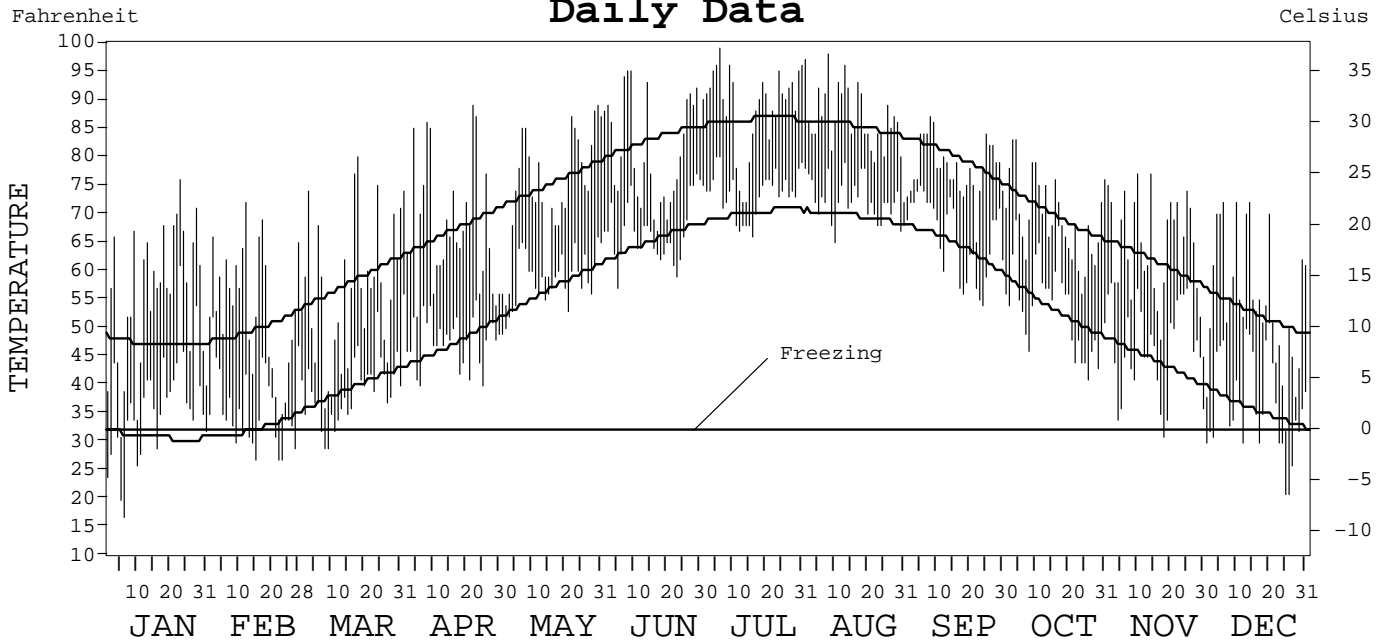
LOCAL CLIMATOLOGICAL DATA  
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-5345

NORFOLK,  
VIRGINIA (ORF)

Daily Data



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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
 NATIONAL ENVIRONMENTAL AND INFORMATION SERVICE  
 NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE  
 NATIONAL CLIMATIC DATA CENTER  
 ASHEVILLE, NORTH CAROLINA  
 DIRECTOR NATIONAL CLIMATIC DATA CENTER

# METEOROLOGICAL DATA FOR 1999

## NORFOLK, VA (ORF)

LATITUDE: 36° 54' 13" N      LONGITUDE: 76° 11' 31" W      ELEVATION (FT): GRND: 48      BARO: 48      TIME ZONE: EASTERN (UTC + 5)      WBAN: 13737

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	55.8	53.1	56.3	67.9	74.4	81.0	88.6	86.6	78.1	69.4	64.1	54.8	69.2	
	HIGHEST DAILY MAXIMUM	76	72	80	89	89	95	99	98	87	83	77	72	99	
	DATE OF OCCURRENCE	23	12	18	22	30	09+	06	08	08	04+	14+	14+	JUL 06	
	MEAN DAILY MINIMUM	36.3	35.9	38.9	48.1	58.5	66.8	73.5	72.4	66.0	53.5	46.8	36.8	52.8	
	LOWEST DAILY MINIMUM	17	27	29	40	49	57	66	65	54	41	31	21	17	
	DATE OF OCCURRENCE	06	23+	09+	25+	01	05	16	10	24	26	18	26+	JAN 06	
	AVERAGE DRY BULB	46.1	44.5	47.6	58.0	66.5	73.9	81.1	79.5	72.1	61.5	55.5	45.8	61.0	
	MEAN WET BULB	42.1	41.0	41.6	52.6	61.6	68.5	74.6	73.0	67.1	57.3	50.5	41.6	56.0	
	MEAN DEW POINT	37.0	35.0	33.5	47.0	58.2	65.6	71.6	70.1	64.2	53.6	45.2	35.3	51.4	
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	7	19	10	0	0	0	0	0	36
	MAXIMUM ≤ 32°	1	0	0	0	0	0	0	0	0	0	0	1	2	
	MINIMUM ≤ 32°	9	9	4	0	0	0	0	0	0	0	1	11	34	
	MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0	
H/C	HEATING DEGREE DAYS	583	567	531	226	60	0	0	0	4	146	282	588	2987	
	COOLING DEGREE DAYS	4	0	0	25	112	275	509	458	222	42	4	0	1651	
RH	MEAN (PERCENT)	72	70	62	69	77	78	75	75	78	77	72	69	73	
	HOUR 01 LST	76	75	67	78	86	86	85	85	87	85	79	72	80	
	HOUR 07 LST	80	80	68	75	81	84	83	83	85	85	82	76	80	
	HOUR 13 LST	62	60	54	56	67	68	63	63	67	62	59	54	61	
	HOUR 19 LST	71	70	60	62	74	73	69	72	77	78	73	69	71	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	2	0	0	1	0	0	0	0	0	0	3	0	6	
	THUNDERSTORMS	1	3	2	5	3	0	6	8	6	1	0	0	35	
CLOUDINESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	30.15	30.04	29.99	29.94	29.97	30.03	29.97	29.90	29.92	30.11	30.09	30.07	30.02	
	MEAN SEA-LEVEL PRESS. (IN.)	30.18	30.07	30.02	29.97	30.00	30.06	30.00	29.93	29.95	30.14	30.14	30.12	30.05	
WINDS	RESULTANT SPEED (MPH)	1.5	1.6	2.5	0.5	2.4	2.7	1.8	0.8	2.2	2.3	1.6	2.6	0.3	
	RES. DIR. (TENS OF DEGS.)	22	35	34	23	08	14	19	09	08	04	33	28	04	
	MEAN SPEED (MPH)	10.0	9.8	11.1	10.5	10.6	10.3	8.5	8.1	10.4	7.8	8.5	8.4	9.5	
	PREVAIL. DIR. (TENS OF DEGS.)	23	01	01	26	06	23	23	21	05	06	24	24	23	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	32	32	41	31	31	24	30	44	36	29	31	30	44	
	DIR. (TENS OF DEGS.)	16	26	22	06	06	06	21	05	06	01	20	24	05	
	DATE OF OCCURRENCE	03	12	03	30	15+	16	01	30	15	18	02	26	AUG 30	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	45	53	49	43	38	29	46	53	46	40	39	37	53	
DIR. (TENS OF DEGS.)	17	34	22	01	05	08	27	06	29	33	18	01	06		
DATE OF OCCURRENCE	03	28	03	23+	02	20+	28	30	16	18	02	11	AUG 30		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	3.51	2.33	3.29	3.66	3.85	3.60	6.17	4.47	13.16	8.24	1.40	1.71	55.39	
	GREATEST 24-HOUR (IN.)	1.57	0.88	1.42	1.40	1.48	1.88	1.84	1.57	5.79	7.29	0.67	0.65	7.29	
	DATE OF OCCURRENCE	23-24	18	14-15	11-12	02	15-16	14	14-15	15-16	17-18	02	06-07	OCT 17-18	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	7	9	11	8	14	9	10	13	17	7	5	8	118	
PRECIPITATION ≥ 0.10	6	5	7	7	8	6	9	6	11	3	4	4	76		
PRECIPITATION ≥ 1.00	1	0	1	1	1	1	1	1	4	2	0	0	13		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)														
	GREATEST 24-HOUR (IN.)														
	DATE OF OCCURRENCE		25+												
	MAXIMUM SNOW DEPTH (IN.)														
	NUMBER OF DAYS WITH:														
SNOWFALL ≥ 1.0		0													

# NORMALS, MEANS, AND EXTREMES

## NORFOLK, VA (ORF)

LATITUDE: 36° 54' 13" N      LONGITUDE: 76° 11' 31" W      ELEVATION (FT): GRND: 48      BARO: 48      TIME ZONE: EASTERN (UTC + 5)      WBAN: 13737

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	47.3	49.7	57.9	66.9	75.3	82.9	86.4	85.1	79.6	69.5	61.2	52.2	67.8
	MEAN DAILY MAXIMUM	52	48.7	50.8	58.1	68.0	75.8	83.5	87.4	85.5	80.2	70.1	61.3	52.3	68.5
	HIGHEST DAILY MAXIMUM	51	78	82	88	97	100	101	103	104	99	95	86	80	104
	YEAR OF OCCURRENCE		1970	1997	1990	1960	1991	1964	1993	1980	1983	1954	1974	1991	AUG 1980
	MEAN OF EXTREME MAXS.	52	70.3	72.4	79.9	86.7	90.8	95.3	96.9	95.4	92.0	84.6	78.5	72.1	84.6
	NORMAL DAILY MINIMUM	30	30.9	32.3	39.3	47.1	56.8	65.2	70.0	69.4	64.2	52.9	43.8	35.4	50.6
	MEAN DAILY MINIMUM	52	32.3	33.4	39.7	48.0	57.2	65.7	70.9	69.8	64.3	53.1	43.5	35.5	51.1
	LOWEST DAILY MINIMUM	51	-3	8	18	28	36	45	54	49	45	27	20	7	-3
	YEAR OF OCCURRENCE		1985	1965	1980	1982	1966	1967	1979	1982	1967	1976	1950	1983	JAN 1985
	MEAN OF EXTREME MINS.	52	17.0	19.8	26.8	35.1	44.4	54.3	61.7	60.2	52.1	38.5	29.5	20.9	38.4
	NORMAL DRY BULB	30	39.1	41.0	48.6	57.0	66.1	74.1	78.2	77.2	71.9	61.2	52.5	43.8	59.2
	MEAN DRY BULB	52	40.5	42.1	48.9	58.0	66.5	74.6	79.1	77.6	72.2	61.6	52.5	43.9	59.8
	MEAN WET BULB	16	37.7	39.1	44.0	51.7	60.1	68.2	68.7	71.6	62.4	57.1	48.7	40.8	54.2
	MEAN DEW POINT	16	31.3	32.3	37.0	45.2	54.9	64.2	65.5	68.5	59.0	52.6	43.1	34.8	49.0
	NORMAL NO. DAYS WITH:														
	MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.4	1.5	5.9	10.9	8.6	2.8	0.1	0.0	0.0	30.2
MAXIMUM ≤ 32°	30	3.3	1.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	5.7	
MINIMUM ≤ 32°	30	18.0	15.5	6.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2	3.0	13.1	56.2	
MINIMUM ≤ 0°	30	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
H/C	NORMAL HEATING DEG. DAYS	30	803	672	508	249	51	0	0	0	11	164	380	657	3495
	NORMAL COOLING DEG. DAYS	30	0	0	0	9	85	277	409	378	218	46	0	0	1422
RH	NORMAL (PERCENT)	30	66	66	65	63	69	71	73	75	74	72	68	67	69
	HOUR 01 LST	30	71	71	71	72	80	82	84	85	84	81	75	72	77
	HOUR 07 LST	30	73	73	74	72	77	79	82	84	83	82	78	74	78
	HOUR 13 LST	30	58	56	54	50	55	56	59	61	61	58	56	58	57
	HOUR 19 LST	30	65	64	62	59	65	66	70	73	74	73	68	66	67
S	PERCENT POSSIBLE SUNSHINE	32	53	56	60	63	62	67	62	62	61	58	56	54	60
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	51	2.1	2.5	1.9	1.4	1.8	1.0	0.5	1.0	1.2	2.1	1.8	2.1	19.4
	THUNDERSTORMS	51	0.4	0.6	1.9	2.7	4.9	5.6	8.2	6.4	2.7	1.3	0.5	0.4	35.6
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	48	5.0	5.0	4.9	4.6	4.9	4.7	4.7	4.6	4.5	4.2	4.4	4.8	4.7
	MIDNIGHT-MIDNIGHT (OKTAS)	32	4.7	4.7	4.4	4.2	4.6	4.4	4.5	4.4	4.2	4.0	4.1	4.4	4.4
	MEAN NO. DAYS WITH:														
	CLEAR	48	8.8	8.1	8.9	8.8	7.7	7.5	7.4	7.9	9.1	11.6	10.3	9.4	105.5
PARTLY CLOUDY	48	6.5	6.2	7.6	9.3	10.0	11.7	12.0	11.9	9.5	7.2	7.9	6.8	106.6	
CLOUDY	48	15.7	13.9	14.5	11.9	13.3	10.8	11.6	11.3	11.5	12.2	11.7	14.8	153.2	
PR	MEAN STATION PRESSURE (IN)	27	30.10	30.09	30.00	30.00	29.99	29.99	30.01	30.00	30.00	30.10	30.09	30.09	30.04
	MEAN SEA-LEVEL PRES. (IN)	16	30.11	30.09	30.06	30.00	30.01	30.01	30.02	30.03	30.07	30.11	30.13	30.12	30.06
WINDS	MEAN SPEED (MPH)	47	11.4	11.9	12.3	11.8	10.3	9.6	9.0	8.8	9.7	10.1	10.5	10.8	10.5
	PREVAIL. DIR (TENS OF DEGS)	31	36	36	04	22	22	23	23	22	05	05	23	23	23
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	3	41	41	41	36	32	36	36	46	36	29	31	30	46
	DIR. (TENS OF DEGS)		01	07	22	06	25	28	03	11	06	01	20	24	11
	YEAR OF OCCURRENCE		1998	1998	1999	1998	1997	1998	1997	1998	1999	1999	1999	1999	AUG 1998
	MAXIMUM 5-SECOND:														
SPEED (MPH)	3	54	53	49	44	40	58	51	64	46	40	39	38	64	
DIR. (TENS OF DEGS)		02	34	22	02	25	29	04	09	29	33	18	01	09	
YEAR OF OCCURRENCE		1998	1999	1999	1998	1997	1998	1997	1998	1999	1999	1999	1998	AUG 1998	
PRECIPITATION	NORMAL (IN)	30	3.78	3.47	3.70	3.06	3.81	3.82	5.06	4.81	3.90	3.15	2.85	3.23	44.64
	MAXIMUM MONTHLY (IN)	51	9.93	8.21	10.36	7.25	10.12	9.72	14.37	14.32	13.80	10.12	7.01	6.10	14.37
	YEAR OF OCCURRENCE		1987	1998	1994	1984	1979	1963	1994	1992	1979	1971	1951	1983	JUL 1994
	MINIMUM MONTHLY (IN)	51	1.05	0.84	0.75	0.43	0.64	0.37	0.36	0.74	0.26	0.57	0.49	0.67	0.26
	YEAR OF OCCURRENCE		1981	1991	1986	1985	1991	1954	1993	1975	1986	1984	1965	1988	SEP 1986
	MAXIMUM IN 24 HOURS (IN)	51	3.80	4.78	4.02	5.90	3.41	6.85	5.64	11.40	6.79	7.29	3.35	2.76	11.40
	YEAR OF OCCURRENCE		1967	1998	1994	1991	1980	1963	1969	1964	1959	1999	1952	1983	AUG 1964
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	10.7	10.3	10.4	9.8	9.9	9.7	11.1	10.1	7.7	7.4	7.7	9.5	114.3	
PRECIPITATION ≥ 1.00	30	0.8	0.7	0.7	0.8	0.9	1.1	1.5	1.3	1.2	0.8	0.5	0.6	10.9	
SNOWFALL	NORMAL (IN)	30	3.1	3.9	1.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.*	0.5	8.8
	MAXIMUM MONTHLY (IN)	48	14.2	24.4	13.7	1.2	T	T	0.0	T	0.0	0.0	0.6	14.7	24.4
	YEAR OF OCCURRENCE		1966	1989	1980	1964	1994	1990		1991			1950	1958	FEB 1989
	MAXIMUM IN 24 HOURS (IN)	48	9.1	14.2	9.9	1.2	T	T	0.0	T	0.0	0.0	0.6	11.4	14.2
	YEAR OF OCCURRENCE		1973	1989	1980	1964	1994	1990		1991			1950	1958	FEB 1989
	MAXIMUM SNOW DEPTH (IN)	48	9	14	14	0	0	0	0	0	0	0	0	11	14
	YEAR OF OCCURRENCE		1966	1980	1980									1958	MAR 1980
	NORMAL NO. DAYS WITH:														
SNOWFALL ≥ 1.0	30	0.9	0.8	0.2	0.*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.1	

PRECIPITATION (inches) 1999 NORFOLK, VA (ORF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	2.27	3.97	3.37	3.19	2.58	4.10	5.33	2.04	1.72	1.30	2.34	3.01	35.22
1971	4.03	3.59	3.88	2.18	4.46	2.16	4.81	4.63	5.46	10.12	0.97	1.44	47.73
1972	2.94	3.50	2.55	2.15	3.35	4.93	4.65	1.60	6.91	4.09	5.44	4.12	46.23
1973	2.54	3.21	4.69	3.44	3.62	5.93	4.19	7.92	0.86	1.37	1.90	5.83	45.50
1974	3.52	2.98	5.16	3.34	3.74	4.76	5.47	8.33	4.40	1.23	1.22	3.81	47.96
1975	4.18	4.18	5.72	4.19	3.37	1.16	13.73	0.74	4.82	3.19	1.63	3.62	50.53
1976	2.51	1.50	2.21	0.99	3.74	1.59	5.19	2.62	3.51	2.90	2.38	3.22	32.36
1977	3.33	2.23	4.05	2.20	3.86	2.41	2.70	4.57	3.00	6.09	5.41	3.92	43.77
1978	6.32	1.91	7.80	2.90	5.64	7.84	4.19	1.66	1.17	1.50	4.40	2.31	47.64
1979	6.47	5.01	5.13	7.00	10.12	2.97	4.69	1.79	13.80	1.74	5.26	0.98	64.96
1980	4.54	2.91	4.40	3.25	5.17	1.39	1.85	4.54	1.47	4.21	2.01	2.64	38.38
1981	1.05	2.26	1.88	2.26	2.75	5.00	5.10	6.87	3.18	3.28	1.78	5.77	41.18
1982	3.35	5.81	3.04	1.71	3.07	4.22	5.83	6.51	3.63	4.25	3.43	4.30	49.15
1983	2.21	6.23	4.55	6.13	3.52	3.84	0.77	3.07	4.52	5.29	3.24	6.10	49.47
1984	2.77	4.66	5.09	7.25	6.23	1.50	7.66	2.25	1.94	0.57	2.68	2.22	44.82
1985	3.98	3.53	2.02	0.43	3.23	6.81	6.14	1.89	6.36	3.92	5.71	0.79	44.81
1986	2.52	2.71	0.75	3.31	1.41	1.51	2.59	4.80	0.26	1.67	1.21	3.74	26.48
1987	9.93	3.11	2.30	3.83	2.65	2.98	3.20	2.04	7.00	1.81	3.51	2.33	44.69
1988	3.12	2.70	2.11	3.53	5.49	3.83	2.93	5.69	1.74	2.85	4.02	0.67	38.68
1989	2.70	5.80	8.50	3.62	2.97	5.10	4.86	7.49	5.10	2.94	3.69	3.86	56.63
1990	3.26	2.93	3.49	3.55	3.79	3.51	4.06	11.85	1.00	3.73	1.68	2.67	45.52
1991	4.74	0.84	4.70	6.39	0.64	4.54	6.46	3.77	2.04	4.65	1.72	2.43	42.92
1992	4.48	2.07	2.63	1.26	3.46	2.22	4.52	14.32	2.06	2.85	4.26	3.15	47.28
1993	4.89	2.36	5.91	3.59	2.88	2.79	0.36	1.45	4.14	3.40	0.97	3.29	36.03
1994	4.06	3.64	10.36	0.56	3.52	1.27	14.37	3.65	2.02	2.50	5.25	1.20	52.40
1995	2.40	2.80	2.95	2.76	2.42	4.54	1.78	1.50	5.05	4.82	2.94	1.86	35.82
1996	5.49	3.04	3.46	4.94	3.59	6.60	7.46	5.19	2.72	4.71	2.87	3.86	53.93
1997	2.09	2.94	3.21	3.01	1.66	1.10	7.85	1.76	1.97	4.31	4.94	2.64	37.48
1998	6.02	8.21	4.15	4.31	3.99	4.56	3.91	8.47	2.25	1.73	1.83	5.33	54.76
1999	3.51	2.33	3.29	3.66	3.85	3.60	6.17	4.47	13.16	8.24	1.40	1.71	55.39
POR= 129 YRS	3.39	3.37	3.80	3.24	3.65	3.96	5.53	5.28	3.84	3.15	2.60	3.12	44.93

WBAN : 13737

AVERAGE TEMPERATURE (°F) 1999 NORFOLK, VA (ORF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	33.9	39.3	44.7	56.7	67.5	74.9	76.9	78.0	74.7	63.7	51.7	47.0	59.1
1971	38.6	44.7	46.9	55.9	65.0	76.0	77.2	75.7	73.2	66.7	52.4	52.3	60.4
1972	46.4	43.2	49.0	56.4	63.5	70.5	77.6	75.8	71.9	59.2	51.6	49.2	59.5
1973	40.5	39.7	52.3	58.5	66.9	76.9	78.3	78.5	75.0	64.2	53.5	46.2	60.9
1974	48.6	43.4	53.1	60.8	66.8	72.8	78.3	77.4	71.4	58.7	53.5	46.0	60.9
1975	46.0	45.4	47.4	52.7	68.3	77.0	78.6	79.6	72.3	63.4	55.7	43.2	60.8
1976	38.9	49.9	53.4	61.9	66.3	75.9	78.2	75.9	71.1	57.7	45.9	41.4	59.7
1977	29.2	41.5	54.7	61.9	68.2	74.3	81.4	81.0	76.3	60.5	54.8	43.5	60.6
1978	37.0	32.6	46.1	57.2	65.6	74.1	76.1	80.5	73.2	60.8	56.0	45.3	58.7
1979	39.4	33.3	49.1	58.1	66.7	70.4	77.1	78.5	72.8	60.4	56.4	44.9	58.9
1980	40.3	34.7	46.5	58.6	67.8	73.9	80.9	80.9	76.1	60.4	49.9	42.3	59.4
1981	32.7	43.1	45.4	61.2	65.1	78.3	79.8	75.1	70.7	59.6	50.7	41.0	58.6
1982	35.4	42.0	48.8	55.0	69.4	73.4	78.6	75.3	70.0	60.2	54.4	48.8	59.3
1983	40.2	40.8	51.0	55.7	65.8	73.0	80.3	79.0	72.8	62.7	52.6	41.6	59.6
1984	35.5	46.7	45.4	55.6	67.8	76.2	76.7	78.4	70.5	66.9	49.9	50.9	60.0
1985	34.9	40.4	51.8	62.0	68.8	74.2	78.2	77.2	73.4	65.9	60.3	41.2	60.7
1986	39.3	42.1	49.9	57.3	67.6	76.1	82.1	76.6	72.4	65.4	54.9	44.8	60.7
1987	39.6	38.7	47.5	54.6	68.3	77.0	82.4	79.6	74.3	56.6	54.3	46.0	59.9
1988	37.3	42.5	49.5	56.5	65.8	73.6	80.1	80.8	70.5	56.9	54.2	42.4	59.2
1989	45.3	43.6	50.1	56.5	65.6	78.5	79.2	77.7	73.9	62.7	53.3	34.8	60.1
1990	47.3	50.2	53.2	58.7	66.6	75.5	80.6	78.0	71.6	65.9	55.0	50.5	62.8
1991	43.5	46.0	52.7	61.6	72.8	76.2	82.0	79.5	72.3	61.9	52.7	47.6	62.4
1992	42.7	45.0	48.8	58.2	62.4	72.0	81.8	75.6	73.5	59.7	53.8	44.6	59.8
1993	44.2	39.1	46.8	57.3	68.5	76.1	83.4	78.9	74.6	61.3	53.5	41.5	60.4
1994	36.5	43.4	51.7	64.7	64.9	79.6	83.0	77.6	72.4	62.0	57.5	50.1	62.0
1995	45.1	41.5	51.7	60.4	67.9	75.8	83.3	80.1	72.2	65.5	48.4	40.0	61.0
1996	38.7	41.3	45.0	58.8	65.2	75.2	77.7	74.9	72.4	61.8	46.5	46.7	58.7
1997	41.3	46.0	51.5	54.6	64.0	72.0	79.1	76.4	72.0	62.1	50.3	43.5	59.4
1998	46.5	47.2	50.8	58.9	67.5	75.9	79.0	78.9	75.3	61.9	52.6	48.7	61.9
1999	46.1	44.5	47.6	58.0	66.5	73.9	81.1	79.5	72.1	61.5	55.5	45.8	61.0
POR= 125 YRS	41.1	42.2	48.9	57.5	66.7	74.7	78.8	77.6	72.4	62.1	52.3	43.7	59.8

HEATING DEGREE DAYS (base 65°F) 1999 NORFOLK, VA (ORF)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0	0	16	93	393	552	812	567	555	269	69	0	3326
1971-72	0	0	3	27	391	390	572	628	494	272	81	11	2869
1972-73	0	0	4	197	406	486	752	703	403	217	47	0	3215
1973-74	0	0	0	83	353	575	504	599	377	183	63	0	2737
1974-75	0	0	16	213	371	584	584	547	541	382	47	0	3285
1975-76	0	0	6	98	290	671	804	443	362	186	62	6	2928
1976-77	0	0	0	245	566	726	1104	657	330	150	40	1	3819
1977-78	0	0	0	158	321	661	860	902	580	235	72	3	3792
1978-79	0	0	3	162	268	614	787	879	499	213	52	5	3482
1979-80	0	0	0	190	272	616	759	872	564	196	58	2	3529
1980-81	0	0	11	181	449	699	994	610	605	159	96	0	3804
1981-82	0	0	12	189	423	739	907	636	495	303	21	0	3725
1982-83	0	4	6	177	334	498	762	674	426	295	85	3	3264
1983-84	0	0	27	126	370	718	908	522	601	281	54	3	3610
1984-85	0	0	16	37	450	432	928	686	421	172	21	0	3163
1985-86	0	0	6	61	162	731	790	637	465	228	69	1	3150
1986-87	0	1	8	88	311	620	779	730	538	306	58	0	3439
1987-88	0	0	0	252	320	582	851	646	474	266	86	15	3492
1988-89	0	0	2	265	324	692	602	601	486	282	80	0	3334
1989-90	0	0	12	134	356	928	541	417	410	234	39	3	3074
1990-91	0	0	13	102	301	444	657	527	386	166	19	2	2617
1991-92	0	0	22	132	377	542	686	575	496	262	125	1	3218
1992-93	0	0	9	179	337	623	638	722	555	246	22	5	3336
1993-94	0	0	10	140	353	726	877	599	414	111	89	0	3193
1994-95	0	0	0	113	239	463	614	651	411	190	45	0	2726
1995-96	0	0	4	80	497	769	810	681	614	237	99	7	3798
1996-97	0	0	1	123	559	561	728	532	418	314	82	44	3362
1997-98	0	0	1	148	434	663	573	492	466	211	60	0	3048
1998-99	0	0	2	127	367	513	583	567	531	226	60	0	2976
1999-	0	0	4	146	282	588							

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COOLING DEGREE DAYS (base 65°F) 1999 NORFOLK, VA (ORF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	1	0	0	19	140	303	374	412	311	60	0	0	1620
1971	0	3	0	3	76	336	383	343	259	87	23	5	1518
1972	0	0	8	20	40	183	398	343	217	22	10	2	1243
1973	0	0	16	27	112	363	420	424	307	64	17	1	1751
1974	3	0	16	64	124	244	419	390	213	26	32	0	1531
1975	2	3	0	22	157	366	429	460	233	55	17	0	1744
1976	1	13	11	102	110	337	417	347	193	27	0	0	1558
1977	0	4	16	66	145	289	515	502	347	24	22	0	1930
1978	0	0	0	9	96	286	352	487	257	36	3	9	1535
1979	0	0	11	13	112	171	385	426	239	54	22	0	1433
1980	0	0	0	11	153	274	499	497	351	45	1	1	1832
1981	0	0	0	51	103	407	468	320	189	29	0	0	1567
1982	0	0	1	8	166	257	428	331	164	39	21	4	1419
1983	0	0	0	21	115	250	481	440	265	62	4	0	1638
1984	0	0	0	5	146	345	368	426	188	102	5	2	1587
1985	0	5	20	91	146	284	419	382	267	97	28	0	1739
1986	0	0	2	2	153	343	537	367	237	109	15	0	1765
1987	0	0	0	2	168	364	544	461	285	0	7	0	1831
1988	0	0	1	18	118	280	477	498	173	17	10	0	1592
1989	0	9	30	31	106	412	447	399	286	69	10	0	1799
1990	0	8	52	51	98	324	489	407	218	137	8	5	1797
1991	0	0	13	71	269	347	534	456	248	43	18	11	2010
1992	0	0	0	63	51	220	527	336	270	23	9	0	1499
1993	0	0	0	23	136	345	579	438	305	31	18	0	1875
1994	0	0	11	111	94	447	562	400	229	30	20	8	1912
1995	2	0	4	59	143	330	574	475	226	102	6	0	1921
1996	0	0	1	55	116	320	401	312	227	31	10	0	1473
1997	0	7	7	7	59	262	443	360	218	63	0	0	1426
1998	7	0	33	37	143	338	440	440	317	39	0	12	1806
1999	4	0	0	25	112	275	509	458	222	42	4	0	1651

SNOWFALL (inches) 1999 NORFOLK, VA (ORF)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0.0	0.0	0.0	0.0	T	T	T	2.4	4.2	T	0.0	0.0	6.6
1971-72	0.0	0.0	0.0	0.0	T	T	0.0	1.8	T	T	0.0	0.0	1.8
1972-73	0.0	0.0	0.0	0.0	T	0.0	9.1	4.7	T	0.0	0.0	0.0	13.8
1973-74	0.0	0.0	0.0	0.0	0.0	1.4	T	0.9	7.5	0.0	0.0	0.0	9.8
1974-75	0.0	0.0	0.0	0.0	0.0	T	0.3	T	0.8	T	0.0	0.0	1.1
1975-76	0.0	0.0	0.0	0.0	0.0	T	T	T	0.0	0.0	0.0	0.0	T
1976-77	0.0	0.0	0.0	0.0	T	1.0	4.7	1.4	0.0	0.0	0.0	0.0	7.1
1977-78	0.0	0.0	0.0	0.0	0.0	T	1.3	9.2	2.3	0.0	0.0	0.0	12.8
1978-79	0.0	0.0	0.0	0.0	0.0	0.0	1.0	12.7	T	0.0	0.0	0.0	13.7
1979-80	0.0	0.0	0.0	0.0	0.0	0.0	9.3	18.9	13.7	0.0	0.0	0.0	41.9
1980-81	0.0	0.0	0.0	0.0	0.0	T	T	0.0	0.3	0.0	0.0	0.0	0.3
1981-82	0.0	0.0	0.0	0.0	0.0	1.8	4.2	0.1	T	T	0.0	0.0	6.1
1982-83	0.0	0.0	0.0	0.0	0.0	0.4	T	3.0	T	T	0.0	0.0	3.4
1983-84	0.0	0.0	0.0	0.0	0.0	T	T	5.2	T	0.0	0.0	0.0	5.2
1984-85	0.0	0.0	0.0	0.0	0.0	T	4.3	0.0	T	0.0	0.0	0.0	4.3
1985-86	0.0	0.0	0.0	0.0	0.0	T	3.6	1.1	T	T	0.0	0.0	4.7
1986-87	0.0	0.0	0.0	0.0	0.0	T	1.6	1.0	1.2	T	0.0	0.0	3.8
1987-88	0.0	0.0	0.0	0.0	0.3	T	4.4	T	T	0.0	0.0	0.0	4.7
1988-89	0.0	0.0	0.0	0.0	0.0	T	T	24.4	T	0.5	0.0	0.0	24.9
1989-90	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	T	0.0	0.0	T	0.5
1990-91	0.0	0.0	0.0	0.0	0.0	T	0.0	T	T	0.0	0.0	0.0	T
1991-92	0.0	T	0.0	0.0	0.0	T	T	0.0	T	T	0.0	0.0	T
1992-93	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.9	1.7	0.0	0.0	0.0	3.9
1993-94	0.0	0.0	0.0	0.0	0.0	3.9	7.4	1.2	0.3	0.0	T	0.0	12.8
1994-95	0.0	0.0	0.0	0.0	0.0	0.0	T	0.3	T	0.0	0.0	0.0	0.3
1995-96	0.0	0.0	0.0	0.0	0.0	T	6.2	11.0					
1996-97													
1997-98													
1998-99													
1999-													
POR= 47 YRS	0.0	T	0.0	0.0	0.0	0.9	2.7	2.8	1.0	0.0	T	T	7.4

WBAN : 13737

REFERENCE NOTES:

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1961 - 1990). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD.</p>	<p>GENERAL CONTINUED: CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED. WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65° F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.</p> <p>ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
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1999  
NORFOLK,  
VIRGINIA (ORF)

The city of Norfolk, Virginia, is located near the coast and the southern border of the state. It is almost surrounded by water, with the Chesapeake Bay immediately to the north, Hampton Roads to the west, and the Atlantic Ocean only 18 miles to the east. It is traversed by numerous rivers and waterways and its average elevation above sea level is 13 feet. There are no nearby hilly areas and the land is low and level throughout the city. The climate is generally marine. The geographic location of the city with respect to the principal storm tracks, is especially favorable, being south of the average path of storms originating in the higher latitudes and north of the usual tracks of hurricanes and other tropical storms.

The winters are usually mild, while the autumn and spring seasons usually are delightful. Summers, though warm and long, frequently are tempered by cool periods, often associated with northeasterly winds off the Atlantic. Temperatures of 100 degrees or higher occur infrequently. Extreme cold waves seldom penetrate the area and temperatures of zero or below are almost nonexistent. Winters pass, on occasion, without a measurable amount of snowfall. Most of the snowfall in Norfolk is light and generally melts within 24 hours.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is November 17 and the average last occurrence in the spring is March 23.

# STATION LOCATION

NORFOLK, VIRGINIA

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE										AUTOMATED	* Type	REMARKS
						SEA LEVEL	GROUND											
							WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND			
<p><u>CITY</u> - - NOTE: For period January 1, 1871 through January 23, 1890, refer to previous editions.</p>																		
Dodson Building (2nd Floor) 53-55 Main Street	1/24/90	5/18/92	Same Bldg.	36° 51'	76° 18'	10	93	82	82									
Dodson Building (3rd Floor) 53-55 Main Street	5/19/92	12/31/98	Same Bldg.	36° 51'	76° 18'	10	93	82	82			80						Tipping bucket gage installed about 1897.
Citizens Bank Building 191-195 Main Street	1/01/99	12/31/12	200 ft. E	36° 51'	76° 18'	10	111	98	98				96					
Royster Building 201-203 Granby Street	1/01/13	2/22/17	500 ft. N	36° 51'	76° 18'	9	205	170	170				163					
Royster Building 201-203 Granby Street	2/23/17	11/30/34	Same Bldg.	36° 51'	76° 18'	9	205	170	170				178					One story added to part of building. Rain gages relocated.
U.S. Post Office and Fed. Court Building 600 Granby Street	12/01/34	7/31/53	1000 ft. N	36° 51'	76° 17'	11	125	80	80				73					WBO Norfolk was combined with WBAS at the Norfolk Municipal Airport on 8/1/53.
COOPERATIVE Virginia Electric Gas Plant, Starr and Monticello Streets	8/01/53	1965	0.3 mi. N	36° 52'	76° 17'	11			5									
AIRPORT Norfolk Municipal AP 5.4 Airline Miles ENE of Post Office	7/08/38	5/01/40	NA	36° 53'	76° 12'	25	25		5									
Norfolk Municipal AP	5/01/40	3/05/52	900 ft. WNW	36° 53'	76° 12'	25	55	6	6									
Norfolk Municipal AP+ + Norfolk Regional Airport effective 11/1/68. International Airport in Nov. 1976.	3/05/52	03/01/96	0.25 mi. N	36° 54'	76° 12'	c24	a34 b78 e20 h33	6	6	%64	3	NA	3	#4 #4 g4	NA	#	- Telemetry (4') 3/5/52 to 8/31/59. Hygro comm. 470' SE of office 8/31/59. a - Direct reading sensor on field. b - Autographic record sensor. c - 26 ft. to 8/31/59 and 22 ft. to 12/8/59. d - Data source to 8/31/59. e - Relocated 8/24/73. f - Moved 1210 ft. Se on 5/18/78. g - Commissioned 8/2/53. h - Type change 1/22/80. h - Moved 80 ft. NW 3/5/82.	
International Airport	03/01/96	Present	NA	36°54'	76°12'	48									S	ASOS Commissioned 03/01/96		

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801.  
 INQUIRIES/COMMENTS CALL: (828) 271-4800

National Climatic Data Center  
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