

1998

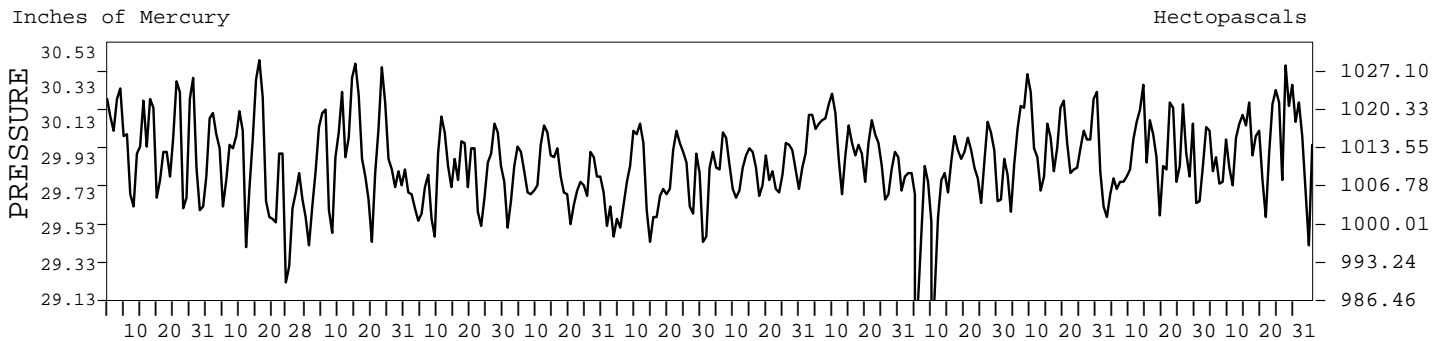
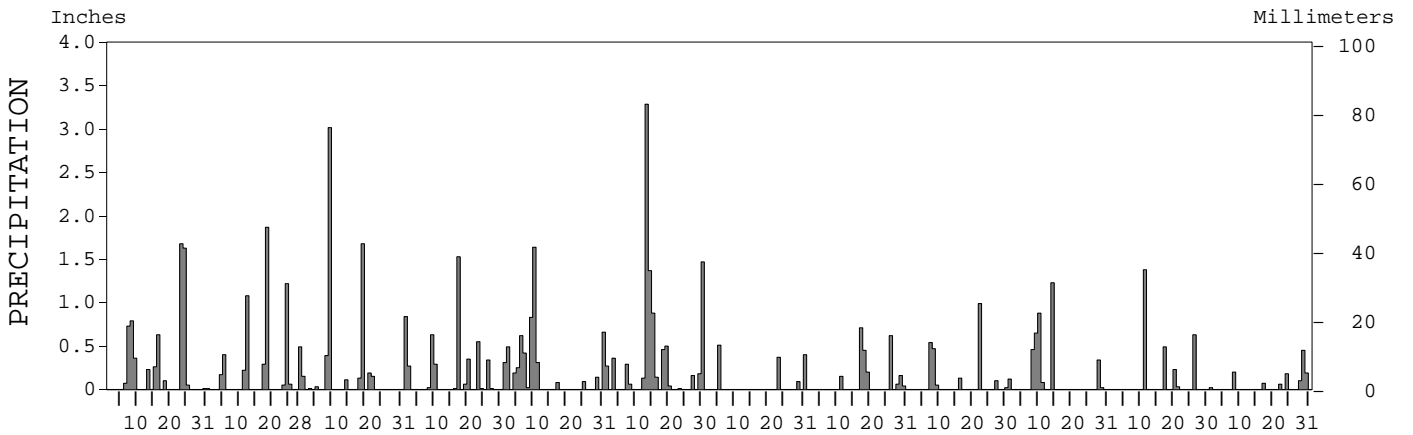
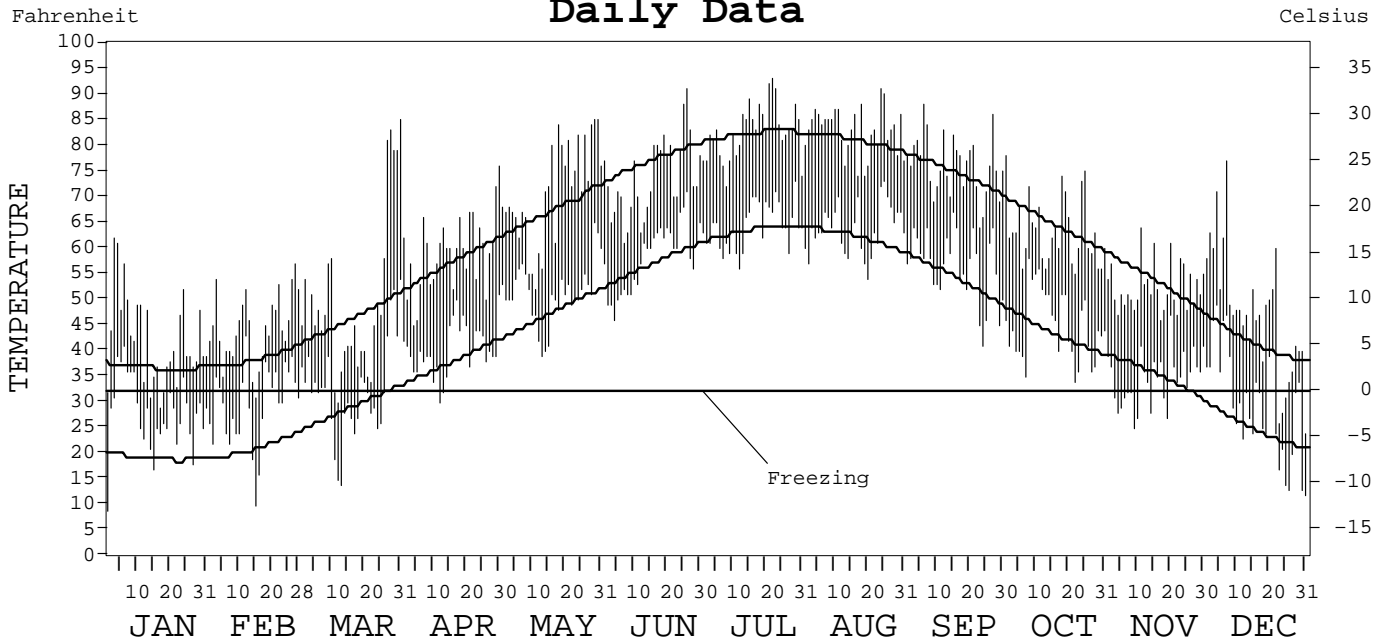
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-4608

PROVIDENCE,
RHODE ISLAND (PVD)

Daily Data



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Thomas R. Karl

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METEOROLOGICAL DATA FOR 1998

PROVIDENCE, RI (PVD)

LATITUDE: 41° 43' 19" N LONGITUDE: 71° 25' 57" W ELEVATION (FT): GRND: 51 BARO: 58 TIME ZONE: EASTERN (UTC+ 5) WBAN: 14765

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	42.2	44.5	49.9	59.1	70.9	73.7	82.7	82.8	76.1	63.3	52.4	47.2	62.1	
	HIGHEST DAILY MAXIMUM	62	57	85	76	85	91	93	91	88	78	64	77	93	
	DATE OF OCCURRENCE	03	27	31	30	30+	26	22	24	06	01	11	07	JUL 22	
	MEAN DAILY MINIMUM	28.0	29.5	32.5	40.4	51.2	58.2	64.3	63.8	56.5	44.9	34.5	29.7	44.5	
	LOWEST DAILY MINIMUM	9	10	14	30	39	46	56	54	41	34	25	12	9	
	DATE OF OCCURRENCE	01	15	13	12	13	04	12	20	24	22	09	31	JAN 01	
	AVERAGE DRY BULB	35.1	37.0	41.2	49.8	61.1	66.0	73.5	73.3	66.3	54.1	43.5	38.5	53.3	
	MEAN WET BULB		33.5	37.1	43.4	54.9	61.7	67.3	67.0		49.0	40.2	35.5		
	MEAN DEW POINT		27.7	30.9	35.5	50.2	58.6	63.8	63.6		43.4	35.0	29.5		
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	1	3	2	0	0	0	0	0	6
	MAXIMUM ≤ 32°	4	1	2	0	0	0	0	0	0	0	0	4	11	
	MINIMUM ≤ 32°	24	16	17	2	0	0	0	0	0	0	11	19	89	
MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	919	776	738	451	149	61	0	0	45	329	636	816	4920	
	COOLING DEGREE DAYS	0	0	8	0	36	96	270	266	93	0	0	0	769	
RH	MEAN (PERCENT)	74	73	71	63	74	81	75	76	73	69	73	71	73	
	HOURLY 01 LST	78	79	79	74	85	90	86	88	84	79	82	76	82	
	HOURLY 07 LST	75	81	81	71	79	87	78	83	83	81	83	79	80	
	HOURLY 13 LST	68	59	58	52	61	69	60	57	55	53	58	59	59	
	HOURLY 19 LST	77	73	70	58	71	80	73	76	74	70	73	72	72	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	2	1	3	4	6	8	0	4	0	0	0	1	29	
	THUNDERSTORMS	0	3	2	3	3	10	2	4	4	2	0	1	34	
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.)	30.01	29.88	29.94	29.84	29.83	29.78	29.87	30.00		30.00	29.96	30.02		
	MEAN SEA-LEVEL PRESS. (IN.)		29.95	30.01	29.90	29.89	29.84	29.93	30.06		30.07	30.03	30.09		
WINDS	RESULTANT SPEED (MPH)	5.0	5.8	2.4	2.8	2.6	3.0	3.5	1.8		4.4	4.2	4.5		
	RES. DIR. (TENS OF DEGS.)	36	01	28	35	01	17	25	21		31	28	29		
	MEAN SPEED (MPH)	10.0	10.8	10.4	9.3	9.9	8.4	7.6	7.0	7.6	9.4	8.1	8.2	8.9	
	PREVAIL. DIR. (TENS OF DEGS.)	01	03	03	33	16	17	22	20	21	28	28	28	28	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	31	38	37	37	30	32	26	26	32	31	38	33	38	
	DIR. (TENS OF DEGS.)	03	04	18	02	05	03	30	23	29	32	20	29	20	
	DATE OF OCCURRENCE	28	24	09	10	12	27	23	24	16	01	11	01	NOV 11	
	MAXIMUM 5-SECOND WIND:														
SPEED (MPH)	41	52	45	47	37	39	34	33	40	40	53	46	53		
DIR. (TENS OF DEGS.)	03	04	18	04	04	30	29	24	29	32	20	25	20		
DATE OF OCCURRENCE	28	24	09	23+	12	03	23	24	16	01	11	22	NOV 11		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	6.55	5.85	5.86	4.91	6.05	9.61	1.37	2.39	2.30	3.78	2.76	1.27	52.70	
	GREATEST 24-HOUR (IN.)	3.25	2.16	3.21	1.53	1.88	3.29	0.51	0.71	0.99	1.23	1.38	0.64	3.29	
	DATE OF OCCURRENCE	23-24	17-18	08-09	17	09-10	13	05	17	22	14	11	29-30	JUN 13	
	NUMBER OF DAYS WITH:														
PRECIPITATION ≥ 0.01	13	10	10	13	14	16	4	8	7	8	5	8	116		
PRECIPITATION ≥ 0.10	9	8	8	8	11	13	3	6	5	6	4	5	86		
PRECIPITATION ≥ 1.00	2	3	2	1	1	3	0	0	0	1	1	0	14		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	1.6	0.1	0.3	T										
	GREATEST 24-HOUR (IN.)	1.0	0.1	0.3	T										
	DATE OF OCCURRENCE	18	05	14	10										
	MAXIMUM SNOW DEPTH (IN.)	1	0	T	0										
DATE OF OCCURRENCE	18		23+												
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0	1	0	0	0											

NORMALS, MEANS, AND EXTREMES

PROVIDENCE, RI (PVD)

LATITUDE: 41° 43' 19" N LONGITUDE: 71° 25' 57" W ELEVATION (FT): GRND: 51 BARO: 58 TIME ZONE: EASTERN (UTC+ 5) WBAN: 14765

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	36.6	38.3	46.1	57.0	67.3	76.9	82.1	80.7	74.3	64.1	53.0	41.2	59.8
	MEAN DAILY MAXIMUM	51	36.9	38.6	46.2	57.7	67.8	76.9	80.6	80.6	73.3	63.5	52.3	41.2	59.6
	HIGHEST DAILY MAXIMUM	45	69	72	85	98	95	97	102	104	100	86	78	77	104
	YEAR OF OCCURRENCE		1995	1985	1998	1976	1996	1988	1991	1975	1983	1979	1993	1998	AUG 1975
	MEAN OF EXTREME MAXS.	51	56.0	56.0	66.7	78.1	85.6	91.0	92.0	91.3	87.2	79.5	69.5	60.2	76.1
	NORMAL DAILY MINIMUM	30	19.1	20.9	28.8	37.7	47.3	56.8	63.2	61.9	53.8	43.0	34.9	24.4	41.0
	MEAN DAILY MINIMUM	51	20.5	21.9	29.3	38.7	48.0	57.3	62.3	62.1	54.0	43.4	35.1	25.0	41.5
	LOWEST DAILY MINIMUM	45	-13	-7	1	14	29	41	0	40	33	20	6	-10	-13
	YEAR OF OCCURRENCE		1976	1979	1967	1954	1956	1980	1996	1965	1980	1976	1989	1980	JAN 1976
	MEAN OF EXTREME MINS.	51	2.2	3.9	13.8	26.9	36.7	46.1	52.5	50.2	39.0	29.2	20.9	7.1	27.4
	NORMAL DRY BULB	30	27.9	29.7	37.4	47.4	57.3	66.9	72.7	71.3	64.1	53.6	44.0	32.8	50.4
	MEAN DRY BULB	51	28.6	30.2	37.7	48.2	57.9	67.1	71.4	71.3	63.6	53.4	43.6	33.1	50.5
	MEAN WET BULB	14	26.5	28.2	33.8	42.7	52.3	61.2	62.4	61.4	58.6	49.1	39.5	31.1	45.6
	MEAN DEW POINT	14	18.6	19.9	25.7	35.0	46.2	56.5	58.7	62.1	54.5	43.6	33.1	24.0	39.8
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.1	0.5	1.8	3.6	2.1	0.9	0.0	0.0	0.0	9.0	
MAXIMUM ≤ 32°	30	11.6	7.7	1.4	*	0.0	0.0	0.0	0.0	0.0	0.0	0.2	6.8	27.7	
MINIMUM ≤ 32°	30	28.0	24.2	19.6	5.7	0.2	0.0	0.0	0.0	0.0	3.6	12.7	25.1	119.1	
MINIMUM ≤ 0°	30	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.5	
H/C	NORMAL HEATING DEG. DAYS	30	1150	988	856	528	246	31	0	8	90	359	630	998	5884
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	7	88	239	203	63	6	0	0	606
RH	NORMAL (PERCENT)	30	64	63	63	61	67	70	71	72	73	70	69	67	68
	HOUR 01 LST	30	69	68	70	71	78	82	83	84	84	80	75	72	76
	HOUR 07 LST	30	70	70	71	69	73	76	78	80	82	80	77	74	75
	HOUR 13 LST	30	56	54	52	48	53	56	56	56	56	53	57	58	55
	HOUR 19 LST	30	63	62	61	59	64	67	68	71	73	71	69	66	66
S	PERCENT POSSIBLE SUNSHINE	42	56	58	58	57	58	61	63	62	62	61	50	52	58
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	46	2.0	2.1	2.1	2.1	2.1	2.5	1.9	1.5	1.7	2.7	2.0	2.0	24.7
	THUNDERSTORMS	46	0.2	0.3	0.7	1.2	2.6	3.7	4.3	3.4	1.7	1.0	0.9	0.2	20.2
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	42	5.0	5.0	5.3	5.3	5.4	5.1	5.0	4.8	4.6	4.3	5.0	4.9	5.0
	MIDNIGHT-MIDNIGHT (OKTAS)	31	4.6	4.5	4.7	4.8	5.0	4.9	4.9	4.6	4.5	4.2	4.8	4.7	4.7
	MEAN NO. DAYS WITH:														
CLEAR	42	9.5	8.0	8.4	7.3	6.5	6.6	6.7	8.4	9.4	11.0	8.3	8.3	98.4	
PARTLY CLOUDY	42	6.8	7.1	7.7	8.2	9.9	10.3	11.9	10.3	8.1	7.9	6.9	7.8	102.9	
CLOUDY	42	14.7	13.2	14.9	14.5	14.6	13.1	12.4	12.3	12.4	12.1	14.9	14.9	164.0	
PR	MEAN STATION PRESSURE (IN)	26	29.96	29.96	29.93	29.89	29.91	29.89	29.91	29.97	30.00	30.01	29.99	29.98	29.95
	MEAN SEA-LEVEL PRES. (IN)	14	30.05	30.03	30.03	29.96	29.97	29.95	29.99	30.03	30.07	30.09	30.08	30.05	30.02
WINDS	MEAN SPEED (MPH)	42	10.8	11.3	11.9	11.7	10.5	9.8	9.3	9.0	9.2	9.3	10.2	10.4	10.3
	PREVAIL. DIR (TENS OF DEGS)	26	30	30	30	16	16	18	22	18	36	30	30	30	30
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	3	41	41	46	40	33	38	39	26	34	40	38	36	46
	DIR. (TENS OF DEGS)		20	30	29	03	31	36	01	23	02	06	20	31	29
	YEAR OF OCCURRENCE		1996	1996	1997	1997	1996	1997	1996	1998	1996	1996	1998	1997	MAR 1997
	MAXIMUM 5-SECOND:														
SPEED (MPH)	3	56	53	59	51	43	51	51	33	41	47	53	46	59	
DIR. (TENS OF DEGS)		21	29	28	03	31	36	01	24	01	05	20	25	28	
YEAR OF OCCURRENCE		1997	1996	1997	1997	1996	1997	1996	1998	1996	1996	1998	1998	MAR 1997	
PRECIPITATION	NORMAL (IN)	30	3.88	3.61	4.05	4.11	3.76	3.33	3.18	3.63	3.48	3.69	4.43	4.38	45.53
	MAXIMUM MONTHLY (IN)	45	11.66	7.20	8.84	12.74	8.38	11.08	8.08	11.12	7.92	11.89	11.01	10.75	12.74
	YEAR OF OCCURRENCE		1979	1984	1983	1983	1984	1982	1976	1955	1961	1962	1983	1969	APR 1983
	MINIMUM MONTHLY (IN)	45	0.50	0.39	0.56	1.48	0.71	0.39	0.96	0.71	0.77	0.40	0.81	0.58	0.39
	YEAR OF OCCURRENCE		1970	1987	1981	1966	1964	1957	1997	1984	1959	1994	1976	1955	FEB 1987
	MAXIMUM IN 24 HOURS (IN)	45	3.34	3.14	4.53	4.45	5.17	5.03	4.83	6.71	4.89	6.63	4.18	3.85	6.71
	YEAR OF OCCURRENCE		1962	1978	1968	1983	1984	1984	1976	1979	1961	1962	1983	1969	AUG 1979
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	10.8	9.8	11.4	10.7	11.4	10.7	8.6	9.4	8.1	8.5	10.7	12.2	122.3	
PRECIPITATION ≥ 1.00	30	1.1	0.9	1.2	1.2	1.0	0.8	0.9	0.8	0.9	1.0	1.3	1.2	12.3	
SNOWFALL	NORMAL (IN)	30	10.0	10.7	6.0	0.7	0.*	0.0	0.0	0.0	0.0	0.2	1.2	7.2	36.0
	MAXIMUM MONTHLY (IN)	44	37.2	30.9	31.6	7.6	7.0	0.0	0.0	0.0	0.0	2.5	8.0	19.8	37.2
	YEAR OF OCCURRENCE		1996	1962	1956	1982	1977					1979	1989	1963	JAN 1996
	MAXIMUM IN 24 HOURS (IN)	44	20.8	27.6	16.9	7.6	7.0	0.0	0.0	0.0	0.0	2.5	8.0	11.9	27.6
	YEAR OF OCCURRENCE		1996	1978	1960	1982	1977					1979	1989	1981	FEB 1978
	MAXIMUM SNOW DEPTH (IN)	49	19	30	20	10	2	0	0	0	0	1	7	12	30
	YEAR OF OCCURRENCE		1948	1961	1956	1970	1977					1979	1989	1981	FEB 1961
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	2.8	2.6	1.7	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.4	2.2	10.0	

PRECIPITATION (inches) 1998 PROVIDENCE, RI (PVD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	2.23	4.30	3.10	3.95	2.41	1.23	2.98	2.58	3.09	1.62	6.35	10.75	44.59
1970	0.50	5.34	4.75	3.91	3.03	4.25	1.00	6.59	1.79	4.41	5.31	4.54	45.42
1971	2.01	5.36	3.81	2.31	3.83	1.64	3.48	3.03	2.54	2.88	5.16	2.37	38.42
1972	1.85	5.19	6.70	3.71	5.73	6.83	4.25	2.98	7.31	4.36	8.45	7.70	65.06
1973	3.06	3.55	2.78	7.16	3.99	3.48	2.92	5.17	3.04	3.17	2.29	7.63	48.24
1974	4.45	3.04	4.51	2.86	2.74	3.28	1.64	3.10	6.15	2.79	1.56	4.54	40.66
1975	6.78	3.29	3.07	2.99	2.06	4.73	3.51	2.19	6.15	4.66	6.29	5.11	50.83
1976	6.38	2.91	3.44	2.00	2.53	1.60	8.08	7.01	1.57	6.52	0.81	3.47	46.32
1977	3.90	2.87	5.62	3.35	3.43	3.92	2.04	2.12	5.60	6.90	3.24	5.85	48.84
1978	9.01	3.20	3.10	2.53	5.27	1.97	2.63	6.46	1.82	3.22	2.61	5.19	47.01
1979	11.66	4.08	2.21	5.12	7.62	1.44	1.65	10.09	4.08	3.94	4.49	1.81	58.19
1980	1.40	1.16	8.11	6.18	1.78	3.85	2.03	1.99	0.90	3.41	3.73	1.57	36.11
1981	0.77	4.79	0.56	4.10	1.92	2.31	3.75	2.65	2.58	3.38	3.20	6.36	36.37
1982	6.09	3.08	3.76	3.64	1.61	11.08	3.51	3.67	3.61	3.08	4.32	1.81	49.26
1983	4.32	4.81	8.84	12.74	4.67	1.91	2.14	2.71	2.16	4.50	11.01	7.71	67.52
1984	2.00	7.20	5.77	4.30	8.38	4.09	5.16	0.71	1.77	4.25	1.95	3.16	48.74
1985	1.18	1.57	3.08	1.65	4.76	4.70	2.88	8.57	1.69	1.78	7.14	1.42	40.42
1986	5.88	3.18	2.86	2.10	2.29	3.27	5.95	3.29	0.97	2.48	5.77	8.09	46.13
1987	4.73	0.39	5.62	6.91	1.80	2.00	1.20	2.58	7.47	2.28	3.40	2.29	40.67
1988	2.69	5.29	4.09	3.11	2.83	0.91	5.73	0.94	2.38	1.77	7.60	1.03	38.37
1989	1.17	2.69	4.13	5.30	6.07	5.84	5.59	6.14	4.75	8.37	4.35	1.66	56.06
1990	5.01	2.93	2.01	5.57	5.70	1.13	3.52	3.74	2.28	4.96	2.45	5.48	44.78
1991	3.44	2.31	6.61	4.80	3.30	0.93	2.76	5.98	5.09	2.65	4.65	3.17	45.69
1992	4.82	2.10	4.04	2.34	1.42	4.61	3.59	6.06	5.09	1.53	5.05	6.83	47.48
1993	2.42	5.06	6.99	5.02	1.12	1.40	2.18	1.23	4.08	3.55	3.35	5.76	42.16
1994	5.53	2.10	7.19	2.07	2.98	2.70	1.34	6.34	4.12	0.40	5.34	4.58	44.69
1995	3.67	3.14	2.03	3.34	2.83	2.89	1.17	1.80	4.06	6.37	4.76	2.18	38.24
1996	5.02	2.19	2.71	4.88	2.44	2.17	5.57	2.19	5.72	6.20	2.38	6.59	48.06
1997	4.27	1.89	4.68	3.25	2.68	2.23	0.96	6.32	0.99	1.80	6.06	2.84	37.97
1998	6.55	5.85	5.86	4.91	6.05	9.61	1.37	2.39	2.30	3.78	2.76	1.27	52.70
POR= 94 YRS	3.80	3.29	3.90	3.74	3.26	3.07	3.09	3.70	3.29	3.22	3.79	3.79	41.94

WBAN : 14765

AVERAGE TEMPERATURE (°F) 1998 PROVIDENCE, RI (PVD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	28.8	28.7	35.0	49.7	57.7	68.2	71.5	74.3	64.0	53.3	42.4	30.5	50.3
1970	19.6	29.3	35.0	47.8	58.2	65.6	74.1	72.3	64.4	54.2	44.7	28.5	49.5
1971	22.9	30.9	36.7	45.9	58.1	69.0	74.3	73.0	68.7	59.2	40.4	35.0	51.2
1972	30.8	28.0	36.4	44.3	57.7	64.9	72.6	70.6	65.1	49.6	40.9	34.3	49.6
1973	31.1	29.6	43.7	50.0	56.7	70.3	73.6	75.0	63.4	54.2	43.8	38.3	52.5
1974	31.6	29.0	38.7	50.6	55.6	65.3	72.6	72.6	63.2	48.2	43.7	35.7	50.6
1975	34.1	30.4	35.5	44.5	61.4	66.0	74.3	71.4	61.0	55.3	48.0	32.1	51.2
1976	23.5	35.5	39.0	52.6	58.0	70.0	70.0	70.0	61.6	48.7	37.9	25.4	49.4
1977	20.9	29.8	43.6	50.6	61.2	66.7	74.3	73.0	64.1	52.9	45.9	31.6	51.2
1978	25.1	22.1	33.8	46.7	57.8	68.0	71.7	71.3	59.5	51.5	42.3	33.4	48.6
1979	30.0	19.7	40.4	46.8	60.3	65.1	73.5	70.2	64.0	53.0	48.3	37.3	50.7
1980	29.7	26.8	37.1	49.5	60.3	64.5	74.8	73.4	64.9	49.8	41.0	28.5	50.0
1981	20.3	37.4	38.7	51.4	58.5	69.4	75.6	70.0	62.4	49.1	43.0	31.1	50.6
1982	21.5	31.5	38.8	47.8	58.9	63.9	73.6	69.2	64.1	53.2	47.5	38.6	50.7
1983	31.4	32.9	40.4	49.9	56.9	70.2	76.6	74.3	69.6	55.3	46.0	32.5	53.0
1984	26.4	37.1	33.8	47.6	57.4	69.1	71.5	73.5	62.1	56.3	43.6	37.9	51.4
1985	22.5	32.1	40.8	51.0	60.2	64.8	73.0	71.1	65.2	54.6	45.9	30.4	51.0
1986	31.1	29.0	39.9	49.4	59.4	66.4	71.0	69.3	62.3	53.0	41.6	35.4	50.7
1987	29.0	28.6	39.8	48.4	59.3	68.4	72.2	69.6	64.3	51.4	43.0	35.1	50.8
1988	26.8	31.8	39.4	47.0	58.0	66.9	74.3	75.3	63.0	48.9	45.2	32.4	50.8
1989	33.8	29.9	37.5	46.2	59.3	68.7	72.3	72.1	65.3	54.1	42.5	21.8	50.3
1990	36.3	34.3	40.1	48.1	56.0	67.7	73.0	73.5	63.7	58.6	46.5	39.5	53.1
1991	29.6	35.1	41.3	51.8	63.9	69.3	74.2	73.6	63.1	56.1	45.4	36.3	53.3
1992	31.4	33.0	36.6	46.5	57.6	67.3	70.3	70.1	64.0	51.7	43.0	34.2	50.5
1993	31.4	26.3	35.8	49.6	61.8	69.3	74.5	73.8	65.1	51.5	44.0	33.7	51.4
1994	22.7	25.8	38.8	51.4	56.5	69.4	76.2	69.9	63.0	54.2	48.5	38.4	51.2
1995	36.0	29.4	41.2	48.4	57.3	68.3	75.8	73.5	62.8	57.0	40.7	29.8	51.7
1996	28.7	29.6	35.0	48.3	57.4	68.1	71.0	71.0	64.1	52.1	40.0	38.6	50.8
1997	29.3	36.5	37.8	47.1	55.4	68.1	73.7	70.6	64.0	51.8	41.0	34.2	50.8
1998	35.1	37.0	41.2	49.8	61.1	66.0	73.5	73.3	66.3	54.1	43.5	38.5	53.3
POR= 94 YRS	29.1	29.7	37.8	47.8	58.1	67.1	72.0	71.1	63.8	53.7	43.5	32.9	50.6

HEATING DEGREE DAYS (base 65°F) 1998 PROVIDENCE, RI (PVD)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1969-70	2	4	119	365	673	1065	1399	996	924	509	214	60	6330
1970-71	0	0	102	342	602	1124	1298	949	868	566	212	34	6097
1971-72	0	7	42	181	736	922	1054	1064	879	616	226	55	5782
1972-73	8	10	64	473	717	945	1044	984	653	451	268	16	5633
1973-74	2	3	125	331	632	819	1028	1003	808	433	313	62	5559
1974-75	0	0	114	512	634	899	951	962	907	606	160	64	5809
1975-76	0	13	132	298	506	1013	1283	850	798	403	223	39	5558
1976-77	2	23	124	501	806	1219	1361	983	653	434	176	51	6333
1977-78	0	6	103	368	568	1030	1231	1192	964	542	238	26	6268
1978-79	8	8	180	412	673	970	1075	1261	755	540	162	52	6096
1979-80	11	25	94	380	496	849	1088	1104	857	459	158	93	5614
1980-81	0	1	120	465	715	1125	1379	769	808	405	228	13	6028
1981-82	0	20	119	486	651	1044	1343	932	802	510	190	91	6188
1982-83	1	26	78	363	518	809	1038	892	755	449	254	13	5196
1983-84	0	4	62	323	563	1001	1190	802	961	513	236	36	5691
1984-85	1	0	125	270	637	832	1309	914	743	417	177	63	5488
1985-86	0	6	78	321	567	1065	1045	999	772	460	216	57	5586
1986-87	14	25	113	380	697	911	1111	1014	772	494	228	23	5782
1987-88	2	25	70	414	653	921	1177	954	787	532	238	67	5840
1988-89	8	10	89	491	587	1003	960	975	847	557	181	22	5730
1989-90	2	9	89	332	668	1329	882	854	761	511	275	24	5736
1990-91	6	0	107	242	549	781	1090	829	726	400	121	29	4880
1991-92	1	0	125	275	581	884	1034	919	876	549	246	27	5517
1992-93	11	4	100	404	652	951	1036	1077	901	455	118	32	5741
1993-94	1	0	102	413	623	966	1307	1092	805	401	263	17	5990
1994-95	0	5	85	326	487	815	892	990	731	493	244	22	5090
1995-96	0	0	111	245	721	1082	1116	1018	921	494	265	18	5991
1996-97	0	4	83	389	743	814	1098	794	836	529	289	77	5656
1997-98	3	2	83	410	713	948	919	776	738	451	149	61	5253
1998-	0	0	45	329	636	816							

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COOLING DEGREE DAYS (base 65°F) 1998 PROVIDENCE, RI (PVD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	0	0	0	0	23	125	211	299	94	9	0	0	761
1970	0	0	0	0	13	86	289	237	91	14	0	0	730
1971	0	0	0	0	3	157	296	263	158	8	5	0	890
1972	0	0	0	1	7	60	248	190	76	1	0	0	583
1973	0	0	0	8	17	181	272	318	84	3	0	0	883
1974	0	0	0	7	27	79	242	244	66	0	1	0	666
1975	0	0	0	0	55	100	300	218	16	4	1	0	694
1976	0	0	0	40	13	196	163	183	33	3	0	0	631
1977	0	0	0	5	68	108	295	260	85	0	0	0	821
1978	0	0	0	0	25	126	224	211	24	0	0	0	610
1979	0	0	0	0	26	59	279	190	74	12	0	0	640
1980	0	0	0	0	21	84	312	272	122	0	0	0	811
1981	0	0	0	2	33	152	335	183	47	0	0	0	752
1982	0	0	0	0	11	64	276	165	59	3	2	0	580
1983	0	0	0	1	8	177	367	298	206	30	0	0	1087
1984	0	0	0	0	6	164	206	272	47	7	0	0	702
1985	0	0	0	5	34	65	256	203	90	5	0	0	658
1986	0	0	0	0	51	105	207	164	38	14	0	0	579
1987	0	0	0	0	57	130	231	177	53	0	0	0	648
1988	0	0	0	0	26	131	302	336	37	2	0	0	834
1989	0	0	0	0	10	141	237	237	103	0	0	0	728
1990	0	0	0	8	1	114	262	272	74	49	2	0	782
1991	0	0	0	12	96	166	295	276	73	8	0	0	926
1992	0	0	0	0	27	103	183	169	75	1	0	0	558
1993	0	0	0	0	26	167	303	281	110	1	1	0	889
1994	0	0	0	0	7	155	352	163	30	0	0	0	707
1995	0	0	0	0	12	128	344	272	53	4	0	0	813
1996	0	0	0	3	36	117	200	200	65	0	0	0	
1997	0	0	0	0	0	177	281	184	63	10	0	0	715
1998	0	0	8	0	36	96	270	266	93	0	0	0	769

SNOWFALL (inches) 1998 PROVIDENCE, RI (PVD)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1969-70	0.0	0.0	0.0	0.0	T	15.4	6.5	6.8	15.7	1.1	0.0	0.0	45.5
1970-71	0.0	0.0	0.0	T	0.0	17.8	11.0	5.0	6.1	1.9	0.0	0.0	41.8
1971-72	0.0	0.0	0.0	0.0	T	4.7	2.2	13.7	8.7	0.7	0.0	0.0	30.0
1972-73	0.0	0.0	0.0	0.7	0.3	4.1	2.0	3.2	0.6	0.4	0.0	0.0	11.3
1973-74	0.0	0.0	0.0	0.0	T	T	15.1	11.1	0.4	1.3	0.0	0.0	27.9
1974-75	0.0	0.0	0.0	0.0	0.3	2.1	2.0	18.2	2.2	0.2	0.0	0.0	25.0
1975-76	0.0	0.0	0.0	T	1.2	7.5	15.6	3.7	9.5	0.0	0.0	0.0	37.5
1976-77	0.0	0.0	0.0	0.0	T	9.8	14.0	11.4	4.4	T	7.0	0.0	46.6
1977-78	0.0	0.0	0.0	0.0	1.3	3.9	20.5	28.6	15.9	T	0.0	0.0	70.2
1978-79	0.0	0.0	0.0	0.0	2.3	2.4	6.0	5.5	T	1.1	0.0	0.0	17.3
1979-80	0.0	0.0	0.0	2.5	0.0	T	0.6	3.8	5.3	0.0	0.0	0.0	12.2
1980-81	0.0	0.0	0.0	0.0	4.1	3.6	12.9	0.6	0.3	0.0	0.0	0.0	21.5
1981-82	0.0	0.0	0.0	T	T	16.4	13.4	4.3	5.7	7.6	0.0	0.0	47.4
1982-83	0.0	0.0	0.0	0.0	0.0	7.3	3.8	21.3	T	T	0.0	0.0	32.4
1983-84	0.0	0.0	0.0	0.0	T	4.5	17.9	T	13.7	T	0.0	0.0	36.1
1984-85	0.0	0.0	0.0	0.0	T	2.0	9.8	10.0	0.6	T	0.0	0.0	22.4
1985-86	0.0	0.0	0.0	0.0	1.8	2.6	0.7	13.0	0.5	T	T	0.0	18.6
1986-87	0.0	0.0	0.0	0.0	4.4	8.0	21.5	4.7	1.6	1.1	0.0	0.0	41.3
1987-88	0.0	0.0	0.0	0.0	8.0	7.8	13.5	6.7	2.7	T	0.0	0.0	38.7
1988-89	0.0	0.0	0.0	0.0	T	1.2	0.2	7.3	1.9	0.3	0.0	0.0	10.9
1989-90	0.0	0.0	0.0	0.0	8.0	15.8	10.8	10.5	9.3	1.8	0.0	0.0	56.2
1990-91	0.0	0.0	0.0	0.0	T	6.9	6.4	6.0	5.3	0.0	0.0	0.0	24.6
1991-92	0.0	0.0	0.0	0.0	T	4.8	2.4	4.9	8.2	2.0	0.0	0.0	22.3
1992-93	0.0	0.0	0.0	T	T	3.6	5.4	12.7	17.8	0.2	0.0	0.0	39.7
1993-94	0.0	0.0	0.0	0.0	T	10.1	18.0	25.8	9.6	0.0	T	0.0	63.5
1994-95	0.0	0.0	0.0	0.0	0.7	0.3	3.0	8.4	T	0.1	0.0	0.0	12.5
1995-96	0.0	0.0	0.0	0.0	4.0		37.2						
1996-97													
1997-98					0.2		1.6	0.1	0.3	T			
1998-													
POR= 42 YRS	0.0	0.0	0.0	0.1	1.1	6.8	9.7	9.6	7.1	0.7	0.2	0.0	35.3

WBAN : 14765

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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1998
PROVIDENCE,
RHODE ISLAND (PVD)

The proximity to Narragansett Bay and the Atlantic Ocean plays an important part in determining the climate for Providence and vicinity. In winter, the temperatures are modified considerably, and many major snowstorms change to rain before reaching the area. In summer, many days that could be uncomfortably warm are cooled by refreshing sea breezes. At other times of the year, sea fog may be advected in over land by onshore winds. In fact, most cases of dense fog are produced this way, but the number of such days is few, averaging two or three days per month. In early fall, severe coastal storms of tropical origin sometimes bring destructive winds to this area. Even at other times of the year, it is usually coastal storms which produce the severest weather.

The temperature for the entire year averages around 50 degrees with 70 degree temperatures common from near the end of May to the latter part of September. During this period, there may be several days reaching 90 degrees or more. Temperatures of 100 degrees and more are rare.

Freezing temperatures occur on the average about 125 days per year. They become a common daily occurrence in the latter part of November, and become less frequent near the end of March. The average date for the last freeze in spring is mid-April, while the average date for the first freeze in fall is late October, making the growing season about 195 days in length. Sub-zero weather in winter seldom occurs, averaging less than one day for December and one or two days each for January and February.

Measurable precipitation occurs on about one day out of every three, and is fairly evenly distributed throughout the year. There is usually no definite dry season, but occasionally droughts do occur.

Thunderstorms are responsible for much of the rainfall from May through August. They usually produce heavy, and sometimes even excessive amounts of rainfall. However, since their duration is relatively short, damage is ordinarily light. The thunderstorms of summer are frequently accompanied by extremely gusty winds, which may result in some damage to property.

The first measurable snowfall of winter usually comes toward the end of November, and the last in spring is about the middle of March. Winters with over 50 inches of snow are not common. The area normally receives less than 25 inches. The month of greatest snowfall is usually February, but January and March are close seconds. It is unusual for the ground to remain well covered with snow for any long period of time.

STATION LOCATION

PROVIDENCE, RHODE ISLAND

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	EXH	EXH	EXH	EXH	EXH	EXH	EXH	EXH			
<u>CITY</u>																		
University Hall, Brown University, Prospect St	10/22/04	1/01/09		41°50'	71°24'	125	67	57	57		56		56					
Banigan Building 10 Weybosset Street	1/01/09	6/22/13	1500 ft. WSW	41°50'	71°25'	9	165	141	141		134		134				Winds affected by higher building to west from 1/1/13 to 6/22/13.	
Turks Head Building 11 Weybosset Street	6/22/13	6/10/40	100 ft. W	41°50'	71°25'	8	251	215	215		211		211				Winds affected by higher building to west from 3/28/38 to 6/16/41.	
Post Office Annex Bldg. Exchange Terrace (A)	6/10/40	5/20/53	600 ft. NNW	41°50'	71°25'	12	74	65	65		58	58	58				Wind instruments exposed on Turks Head Building until 6/16/41 at which time they were moved to P.O. Annex Building. Wind instrument exposure on P.O. Annex Building very poor. (A) - Observation program transferred to Airport Station 11/10/41, but official records resumed at City Office for temperatures 1/1/42 and for precipitation 3/1/42.	
<u>AIRPORT</u>																		
Administration Building	6/16/32	11/12/39		41°44'	71°26'	55	52		5								Airway Station to 9/27/37 then First-Order Weather Bureau Airport Station. All locations at the T.F. Green Airport, Hills-grove, Rhode Island.	
Hangar Building No. 1	11/12/39	5/20/53	660 ft. W	41°44'	71°26'	55	60	46	46		44		44					
Old Administration Bldg	5/20/53	9/25/59	660 ft. E	41°44'	71°26'	55	39	7	5	30		4	3					
Old Administration Bldg T.F. Green State Airport †	9/25/59	Present	NA	41°44'	71°26'	a51	20	7 d7	6 d6	30	NA b3 d3	4 c6 d6	3 d3	#4 e4	NA		Wind equipment relocated to field site approximately 2200 feet south of Weather Bureau office. a - 55 feet until 11/1/63. # - Commissioned 11/1/63. b - Commissioned 6/1980. c - Minor move 5/1981. d - Moved 118' W 6/1983. e - Type change 5/1985.	
† Name effective in December 1967																	S ASOS Commissioned 09/01/95	

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