

1998

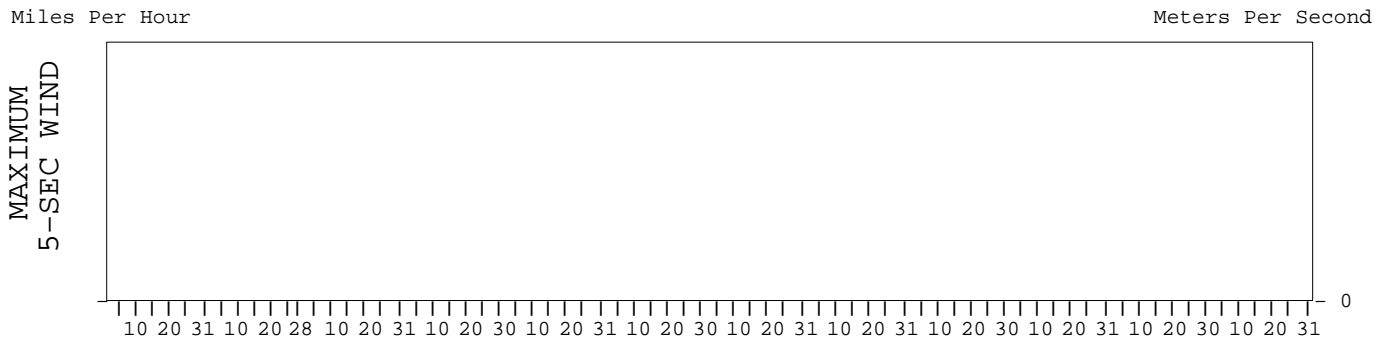
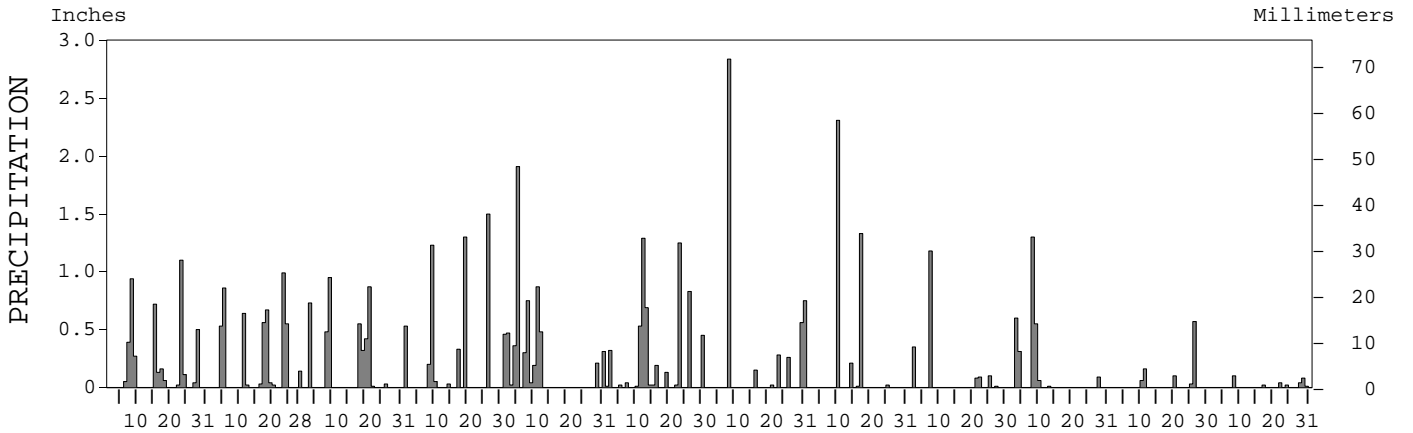
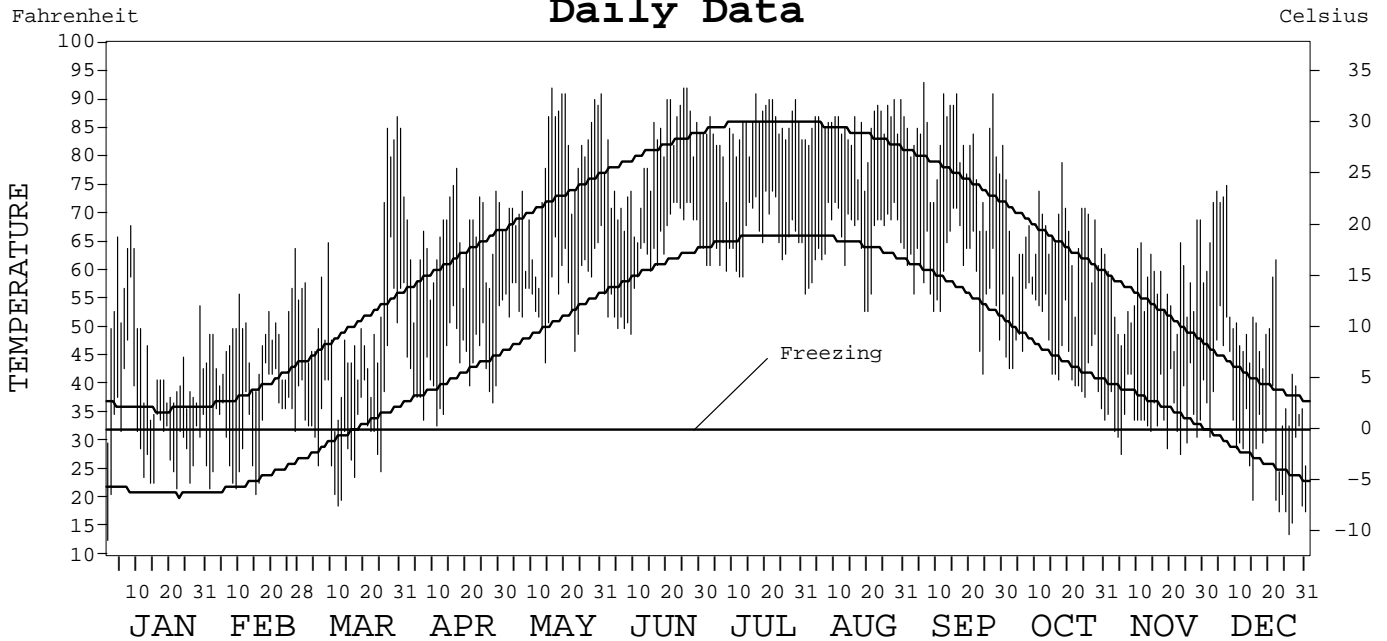
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



MIDDLETOWN/HARRISBURG INTL APT
PENNSYLVANIA (MDT)

ISSN 1059-7050

Daily Data



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Thomas R. Karl

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METEOROLOGICAL DATA FOR 1998

MIDDLETOWN/HARRISBURG APT, PA (MDT)

LATITUDE: 40° 12' 0" N LONGITUDE: 76° 46' 0" W ELEVATION (FT): GRND: 303 BARO: 324 TIME ZONE: EASTERN (UTC+ 5) WBAN: 14711

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	45.4	48.0	53.7	65.6	77.0	79.5	84.8	85.1	81.5	65.5	56.6	49.9	66.0	
	HIGHEST DAILY MAXIMUM	68	64	87	78	92	92	91	90	93	79	69	75	93	
	DATE OF OCCURRENCE	08	27	30	17	16	26+	17	30+	06	18	29+	07	SEP 06	
	MEAN DAILY MINIMUM	31.0	32.7	35.3	43.6	56.6	62.0	65.7	65.1	59.6	46.2	35.2	31.4	47.0	
	LOWEST DAILY MINIMUM	13	21	19	33	44	49	59	53	42	34	28	1	1	
	DATE OF OCCURRENCE	01	15	12	11	14	09	13+	20+	24	31	23+	31	DEC 31	
	AVERAGE DRY BULB	38.2	40.4	44.5	54.6	66.8	70.8	75.3	75.1	70.6	55.9	45.9	40.7	56.6	
	MEAN WET BULB														
	MEAN DEW POINT														
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	5	4	4	2	4	0	0	0	0	19
MAXIMUM ≤ 32°	1	0	1	0	0	0	0	0	0	0	0	2	4	4	
MINIMUM ≤ 32°	20	12	14	0	0	0	0	0	0	0	9	18	73	73	
MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
H/C	HEATING DEGREE DAYS	824	680	653	305	67	29	0	1	24	278	565	748	4174	
	COOLING DEGREE DAYS	0	0	24	1	130	209	326	323	199	0	0	0	1212	
RH	MEAN (PERCENT)														
	HOUR 01 LST														
	HOUR 07 LST														
	HOUR 13 LST														
	HOUR 19 LST														
S	PERCENT POSSIBLE SUNSHINE	23	36	48	58	58	46	61	63	59	48	50	39	49	
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	1	1	1	1	1	0	0	1	1	1	0	0	8	
	THUNDERSTORMS	1	1	1	4	8	8	1	1	2	0	0	0	27	
CLOUDINESS	AVG. SKY COVER (OKTAS)														
	SUNRISE - SUNSET	6	6	6	5	5	6	5	5	4	5	5	5	5	
	MIDNIGHT - MIDNIGHT		6	5	5	5	6	5	4		4	5	5		
	NUMBER OF DAYS WITH:														
	CLEAR	3	4	1	6	5	2	6	6	8	8	8	8	65	
PARTLY CLOUDY	12	8	18	12	13	17	16	19	12	13	14	11	165		
CLOUDY	16	16	12	12	13	11	9	6	10	10	8	12	135		
PR	MEAN STATION PRESS. (IN.)														
	MEAN SEA-LEVEL PRESS. (IN.)	30.10	29.98	30.04	29.95	29.90	29.89	29.99	30.08	29.97	30.15	30.10	30.17	30.03	
WINDS	RESULTANT SPEED (MPH)	2.5	4.7	2.7	2.9	2.0	2.8	1.7	1.3	2.0	3.6	4.2	3.8	2.3	
	RES. DIR. (TENS OF DEGS.)	31	33	25	31	29	17	29	28	29	31	29	29	29	
	MEAN SPEED (MPH)	8.7	9.9	11.7	9.3	8.2	9.6	7.5	7.1	6.7	8.1	8.2	8.2	8.6	
	PREVAIL. DIR. (TENS OF DEGS.)	31	31	30	32	30	30	30	13	30	31	31	29	30	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	29	35	35	46	35	37	26	25	40	28	35	35	46	
	DIR. (TENS OF DEGS.)	29	30	29	29	33	29	30	28	28	27	24	31	29	
	DATE OF OCCURRENCE	09	25	12	08	29	30	01	18+	07	14	11	30+	APR 08	
	PEAK GUST :														
	SPEED (MPH)														
DIR. (TENS OF DEGS.)															
DATE OF OCCURRENCE															
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	4.49	5.05	4.36	5.17	6.37	5.82	4.86	3.88	1.81	2.92	0.92	0.31	45.96	
	GREATEST 24-HOUR (IN.)	1.30	1.39	1.30	1.50	1.91	1.62	2.84	2.31	1.18	1.30	0.60	0.11	2.84	
	DATE OF OCCURRENCE	07-08	04-05	08-09	26	05-06	11-12	08	10	07	08	25-26	28-29	JUL 08	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	13	12	9	8	13	16	7	5	6	7	5	7	108	
PRECIPITATION ≥ 0.10	9	8	7	6	11	9	6	3	3	4	3	1	70		
PRECIPITATION ≥ 1.00	1	0	0	3	1	2	1	2	1	1	0	0	12		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	5.3	0.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	7.1	
	GREATEST 24-HOUR (IN.)	2.8	0.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.8	
	DATE OF OCCURRENCE	24-25	23+	03									29	JAN 24-25	
	MAXIMUM SNOW DEPTH (IN.)	2	0	0	0	0	0	0	0	0	0	0	T	2	
	DATE OF OCCURRENCE	25+											24	JAN 25+	
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0	2	0	0	0	0	0	0	0	0	0	0	0	2		

NORMALS, MEANS, AND EXTREMES

MIDDLETOWN/HARRISBURG APT, PA (MDT)

LATITUDE: 40° 12' 0 " N LONGITUDE: 76° 46' 0 " W ELEVATION (FT): GRND: 303 BARO: 324 TIME ZONE: EASTERN (UTC+ 5) WBAN: 14711

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	35.9	39.2	50.3	62.0	72.5	81.2	85.8	83.8	76.3	64.7	52.6	40.6	62.1
	MEAN DAILY MAXIMUM	25	38.1	40.8	48.6	62.4	72.7	81.8	86.0	83.6	76.0	65.8	51.8	41.0	62.4
	HIGHEST DAILY MAXIMUM	60	73	78	87	93	97	100	107	101	102	97	84	75	107
	YEAR OF OCCURRENCE		1950	1997	1998	1985	1942	1966	1966	1944	1953	1941	1950	1998	JUL 1966
	MEAN OF EXTREME MAXS.	25	57.4	59.9	71.1	83.2	89.0	94.1	96.0	93.8	90.3	81.6	70.1	60.1	78.9
	NORMAL DAILY MINIMUM	30	21.2	23.3	32.0	41.2	51.1	60.6	65.6	64.3	56.5	44.6	36.1	26.6	43.6
	MEAN DAILY MINIMUM	25	24.0	25.3	31.7	42.3	51.9	61.6	66.4	64.0	56.7	45.2	35.1	26.8	44.3
	LOWEST DAILY MINIMUM	60	-22	-5	5	19	31	40	49	45	30	23	13	-8	-22
	YEAR OF OCCURRENCE		1994	1979	1984	1982	1966	1980	1945	1976	1963	1969	1955	1960	JAN 1994
	MEAN OF EXTREME MINS.	25	7.2	8.8	18.1	28.9	38.7	49.3	56.5	52.7	40.8	31.3	21.5	10.1	30.3
	NORMAL DRY BULB	30	28.6	31.3	41.2	51.6	61.8	70.9	75.7	74.1	66.4	54.7	44.4	33.6	52.9
	MEAN DRY BULB	25	31.1	33.0	40.2	52.3	62.3	71.7	76.2	73.8	66.3	55.5	43.4	33.9	53.3
	MEAN WET BULB	5	27.2	26.8	35.0	46.1	54.7	65.3	56.4	54.2	48.3	41.4	33.2	26.2	42.9
	MEAN DEW POINT	5	21.4	19.4	27.9	38.4	48.6	60.8	53.8	51.4	45.3	37.5	28.2	21.1	37.8
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.0	0.8	3.2	5.6	2.6	3.4	0.0	0.0	0.0	15.6	
MAXIMUM ≤ 32°	30	10.8	7.8	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.6	26.8	
MINIMUM ≤ 32°	30	27.7	23.8	14.0	3.4	0.0	0.0	0.0	0.0	0.0	1.8	8.8	24.2	103.7	
MINIMUM ≤ 0°	30	1.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	
H/C	NORMAL HEATING DEG. DAYS	30	1128	944	738	402	147	9	0	0	59	329	618	973	5347
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	48	186	332	285	101	10	0	0	962
RH	NORMAL (PERCENT)														
	HOUR 01 LST														
	HOUR 07 LST														
	HOUR 13 LST														
	HOUR 19 LST														
S	PERCENT POSSIBLE SUNSHINE	60	48	54	57	58	59	64	67	66	61	58	47	44	57
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	55	2.2	2.3	1.8	1.0	0.9	0.6	0.6	0.8	1.5	2.7	1.7	2.5	18.6
	THUNDERSTORMS	55	0.2	0.2	1.0	2.4	5.0	6.1	6.8	4.9	2.9	0.8	0.5	0.2	31.0
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	48	5.4	5.3	5.3	5.2	5.2	4.9	4.9	4.7	4.7	4.6	5.2	5.6	5.1
	MIDNIGHT-MIDNIGHT (OKTAS)	7	5.6	5.1	5.2	4.9	4.9	5.2	4.9	4.5	4.7	3.5	4.7	5.3	4.9
	MEAN NO. DAYS WITH:														
	CLEAR	60	6.5	6.6	7.1	6.5	5.9	6.5	7.0	7.8	8.5	9.8	6.2	6.1	84.5
PARTLY CLOUDY	60	7.7	7.2	8.3	8.8	10.7	11.6	11.6	11.2	9.5	8.3	8.2	7.4	110.5	
CLOUDY	60	16.8	14.5	15.6	14.9	14.4	11.9	12.0	11.6	11.6	12.5	15.3	16.9	168.0	
PR	MEAN STATION PRESSURE (IN)	24	29.72	29.72	29.67	29.62	29.63	29.63	29.65	29.69	29.73	29.75	29.73	29.74	29.69
	MEAN SEA-LEVEL PRES. (IN)	7	30.09	30.06	30.03	29.97	29.98	29.97	29.98	30.05	30.10	30.12	30.11	30.04	
WINDS	MEAN SPEED (MPH)	25	7.7	8.2	9.0	8.4	6.9	6.1	5.4	4.8	5.0	5.4	6.9	7.1	6.7
	PREVAIL. DIR (TENS OF DEGS)	11	31	31	31	31	30	30	31	30	31	31	31	30	31
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	16	46	44	46	46	47	58	52	49	40	37	40	46	58
	DIR. (TENS OF DEGS)		03	03	29	03	02	03	01	02	28	03	03	03	03
	YEAR OF OCCURRENCE		1996	1995	1997	1995	1980	1980	1994	1994	1998	1992	1995	1978	JUN 1980
	PEAK GUST:														
SPEED (MPH)															
DIR. (TENS OF DEGS)															
YEAR OF OCCURRENCE															
PRECIPITATION	NORMAL (IN)	30	2.84	2.93	3.28	3.24	4.26	3.85	3.59	3.31	3.51	2.93	3.52	3.24	40.50
	MAXIMUM MONTHLY (IN)	20	8.01	5.93	6.32	7.96	9.71	8.12	8.09	6.26	8.41	5.59	6.23	7.57	9.71
	YEAR OF OCCURRENCE		1979	1981	1993	1983	1989	1982	1994	1986	1987	1989	1985	1983	MAY 1989
	MINIMUM MONTHLY (IN)	20	0.43	0.82	0.95	0.45	1.86	1.00	0.97	0.53	0.65	0.74	0.92	0.31	0.31
	YEAR OF OCCURRENCE		1981	1980	1995	1985	1981	1988	1983	1995	1986	1994	1998	1998	DEC 1998
	MAXIMUM IN 24 HOURS (IN)	18	2.09	1.84	1.94	2.06	2.91	2.32	3.84	2.78	3.03	2.78	3.27	2.58	3.84
	YEAR OF OCCURRENCE		1979	1985	1992	1992	1984	1987	1994	1991	1979	1995	1993	1993	JUL 1994
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	9.6	11.0	12.5	13.0	9.7	10.8	9.2	10.2	6.4	5.6	9.6	9.0	116.6	
PRECIPITATION ≥ 1.00	30	0.6	0.6	0.7	0.5	0.2	0.5	0.6	0.6	0.8	1.0	0.7	0.5	7.3	
SNOWFALL	NORMAL (IN)	30	15.7	15.2	9.6	0.3	T	0.0	0.0	0.0	T	2.0	11.0	53.8	
	MAXIMUM MONTHLY (IN)	20	38.9	28.8	22.8	10.2	0.0	T	0.0	T	0.0	T	9.7	17.4	38.9
	YEAR OF OCCURRENCE		1996	1983	1993	1982		1993		1993		1982	1987	1995	JAN 1996
	MAXIMUM IN 24 HOURS (IN)	18	21.7	14.2	20.4	4.0	0.0	T	0.0	T	0.0	T	7.9	9.1	21.7
	YEAR OF OCCURRENCE		1996	1979	1993	1996		1993		1993		1979	1987	1990	JAN 1996
	MAXIMUM SNOW DEPTH (IN)	25	20	23	20	1	0	0	0	0	0	0	12	13	23
	YEAR OF OCCURRENCE		1961	1961	1993	1959							1953	1951	FEB 1961
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	3.0	4.2	2.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.7	12.8	

PRECIPITATION (inches) 1998 MIDDLETOWN/HARRISBURG INTL APT PA (MDT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	1.06	1.70	2.20	2.13	1.56	2.54	9.72	2.07	2.32	1.63	3.29	6.46	36.68
1970	0.88	3.25	3.64	5.03	2.39	5.80	6.34	2.97	2.12	3.20	4.59	3.50	43.71
1971	2.70	5.62	2.67	1.04	5.30	1.80	2.84	7.77	1.94	2.85	4.96	1.93	41.42
1972	2.65	5.00	2.68	4.10	5.56	18.55	2.26	2.52	1.41	2.03	7.20	5.31	59.27
1973	3.24	2.50	2.00	6.23	6.37	3.34	2.18	2.19	5.73	2.47	1.04	6.52	43.81
1974	3.82	1.36	4.64	3.21	4.38	3.69	2.79	4.13	6.79	1.25	2.30	4.59	42.95
1975	4.12	3.10	3.78	2.80	5.25	6.51	3.13	1.83	14.97	2.62	2.92	3.19	54.22
1976	4.34	1.88	3.43	1.63	5.42	2.42	5.50	3.28	4.79	9.87	0.79	1.96	45.31
1977	1.44	1.75	6.10	4.48	1.00	3.17	3.01	0.93	3.73	3.66	5.61	4.82	39.70
1978	7.44	1.35	3.94	1.97	5.67	5.16	4.35	3.60	1.64	2.51	2.13	3.95	43.71
1979	8.01	4.74	1.93	3.60	4.66	2.62	3.14	3.24	6.62	3.91	2.67	1.46	46.60
1980	0.90	0.82	5.47	4.27	4.58	2.50	1.59	1.51	1.06	2.94	3.65	0.77	30.06
1981	0.43	5.93	1.02	2.77	1.86	4.66	4.67	4.11	2.20	3.76	0.96	2.41	34.78
1982	3.63	1.92	2.20	4.17	4.89	8.12	2.90	2.47	2.87	1.82	3.37	1.56	39.92
1983	2.26	3.38	4.86	7.96	5.36	2.81	0.97	2.50	1.40	4.21	5.29	7.57	48.57
1984	1.12	4.51	5.36	4.46	6.20	6.36	3.76	2.75	1.49	1.98	3.78	2.28	44.05
1985	1.06	2.91	2.78	0.45	6.29	3.07	2.50	2.14	3.76	1.34	6.23	1.28	33.81
1986	2.24	4.50	3.16	4.10	2.29	1.48	5.17	6.26	0.65	2.59	4.58	4.90	41.92
1987	3.69	1.59	1.43	2.93	3.73	3.46	1.96	2.89	8.41	2.63	4.96	1.84	39.52
1988	2.18	3.28	1.98	2.65	5.79	1.00	4.40	2.67	2.42	1.81	3.67	0.90	32.75
1989	2.29	1.90	3.60	1.10	9.71	6.02	7.20	3.03	2.63	5.59	2.17	1.27	46.51
1990	3.77	2.73	1.76	2.60	7.20	1.10	3.62	6.14	1.65	4.92	2.58	6.05	44.12
1991	2.61	1.39	3.54	2.00	3.15	1.08	1.99	5.29	1.35	3.15	2.08	3.49	31.12
1992	1.62	1.56	5.13	2.62	3.17	1.90	3.54	1.45	5.65	1.64	4.82	2.42	35.52
1993	2.39	2.32	6.32	6.49	1.96	3.20	3.65	3.45	7.84	2.66	4.17	3.95	48.40
1994	5.00	3.24	6.22	2.96	2.73	1.81	8.09	4.94	2.33	0.74	5.18	2.92	46.16
1995	3.52	1.52	0.95	2.22	3.52	4.16	5.81	0.53	1.95	5.43	3.67	2.53	35.81
1996	5.87	1.60	3.26	4.69	3.93	6.33	7.06	2.22	3.35	4.26	3.88	5.98	52.43
1997	2.00	1.47	3.44	0.92	3.66	2.41	4.82	3.60	2.52	1.50	3.97	2.01	32.32
1998	4.49	5.05	4.36	5.17	6.37	5.82	4.86	3.88	1.81	2.92	0.92	0.31	45.96
POR= 109 YRS	2.85	2.67	3.28	3.08	3.78	3.60	3.65	3.59	3.08	2.90	2.80	2.90	38.18

WBAN : 14711

AVERAGE TEMPERATURE (°F) 1998 MIDDLETOWN/HARRISBURG INTL APT PA (MDT)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	29.9	33.3	38.6	53.4	63.2	72.4	75.3	73.4	65.6	53.8	42.7	31.4	52.8
1970	22.9	30.4	36.7	51.4	65.1	70.7	76.2	75.6	71.6	58.7	46.0	34.8	53.3
1971	26.4	33.2	38.6	50.4	60.0	72.5	75.5	72.2	69.9	60.6	43.5	40.3	53.6
1972	34.5	30.2	40.0	49.6	62.3	67.7	76.2	74.0	68.4	52.1	41.8	36.8	52.8
1973	33.7	31.7	45.2	50.9	57.8	73.4	75.5	76.1	68.6	57.4	46.9	36.2	54.5
1974	34.8	32.3	42.8	56.2	63.0	70.5	77.6	77.1	64.5	51.6	44.9	35.4	54.2
1975	33.3	32.4	38.3	47.4	64.8	70.7	75.3	76.2	63.3	57.7	50.0	34.2	53.6
1976	27.6	39.6	44.2	54.5	59.4	73.4	72.3	72.4	64.8	51.5	39.6	30.0	52.4
1977	20.1	30.4	46.0	54.1	64.5	68.6	75.9	74.3	68.3	52.7	46.1	31.6	52.7
1978	26.2	22.8	38.6	51.0	61.5	69.5	73.1	76.9	67.6	54.4	46.7	36.5	52.1
1979	29.2	22.6	45.1	50.4	62.2	68.5	73.4	72.9	65.5	52.3	46.8	37.6	52.2
1980	30.3	29.1	38.9	52.8	63.3	67.8	76.3	76.1	67.7	51.5	39.4	29.6	51.9
1981	23.7	34.6	38.7	53.7	61.9	71.7	75.7	72.2	63.9	50.7	44.7	31.9	52.0
1982	22.8	30.9	38.6	47.6	62.2	65.1	74.4	70.5	65.3	55.1	47.6	41.4	51.8
1983	33.0	33.4	42.7	49.3	58.4	69.1	75.9	74.9	66.2	53.6	43.9	28.7	52.4
1984	24.8	36.6	33.7	48.0	58.2	72.9	74.3	75.8	64.4	61.5	43.9	41.5	53.0
1985	27.9	34.4	44.5	56.9	65.2	69.4	75.9	74.1	69.2	57.2	47.9	31.0	54.5
1986	31.4	30.0	43.5	53.5	65.6	71.4	76.3	72.0	66.2	56.0	41.2	36.1	53.6
1987	30.0	32.3	44.1	52.3	63.2	72.6	78.2	73.1	65.7	49.4	43.9	36.6	53.5
1988	24.4	31.8	42.4	50.0	62.3	70.8	78.8	76.2	63.5	49.5	43.7	33.3	52.2
1989	34.8	32.4	40.4	50.4	60.0	70.6	73.7	72.6	66.0	55.6	42.7	22.6	51.8
1990	38.2	38.2	44.9	53.1	59.4	71.2	75.2	72.7	65.0	58.2	46.9	38.4	55.1
1991	31.7	37.4	43.7	53.7	69.1	74.2	78.7	76.2	65.4	56.9	43.7	36.5	55.6
1992	33.0	35.7	40.3	51.8	60.2	69.3	75.0	71.6	65.5	51.3	44.3	35.3	52.8
1993	34.8	28.8	36.6	51.3	64.6	72.1	78.0	75.9	65.6	52.8	43.9	34.0	53.2
1994	20.3	26.7	38.1	56.8	59.8	76.2	78.7	71.6	65.9	53.8	49.0	38.5	53.0
1995	34.8	29.1	44.7	50.9	61.9	71.6	77.9	77.4	66.9	59.0	39.6	29.6	53.6
1996	26.2	31.8	37.7	52.5	60.0	73.2	74.1	74.0	67.2	54.9	39.6	37.3	52.4
1997	29.8	38.3	42.5	51.1	59.6	71.4	77.4	74.0	67.1	56.2	41.6	36.0	53.8
1998	38.2	40.4	44.5	54.6	66.8	70.8	75.3	75.1	70.6	55.9	45.9	40.7	56.6
POR= 110 YRS	30.2	31.4	40.3	50.7	62.1	70.8	75.3	73.4	66.4	55.0	43.6	33.3	52.7

HEATING DEGREE DAYS (base 65°F) 1998 MIDDLETOWN/HARRISBURG INTL APT PA (MDT)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1969-70	0	0	89	352	662	1036	1299	962	872	407	93	13	5785
1970-71	0	0	39	213	564	931	1192	884	812	432	165	12	5244
1971-72	0	3	40	146	643	759	940	1001	766	457	108	44	4907
1972-73	0	1	25	395	686	865	964	926	607	422	227	7	5125
1973-74	0	1	34	238	534	887	931	910	683	289	133	2	4642
1974-75	0	0	94	414	600	911	977	903	818	520	97	13	5347
1975-76	0	0	87	232	445	951	1150	730	639	354	193	23	4804
1976-77	0	5	75	418	756	1075	1387	966	588	340	106	32	5748
1977-78	0	5	35	377	562	1029	1196	1175	810	414	173	17	5793
1978-79	14	0	48	321	544	876	1104	1182	611	435	123	26	5284
1979-80	12	14	71	393	536	844	1070	1033	799	361	103	48	5284
1980-81	0	0	57	411	761	1091	1277	844	809	339	147	6	5742
1981-82	0	1	94	437	599	1021	1304	948	812	518	128	61	5923
1982-83	7	12	67	318	520	725	985	876	686	468	221	25	4910
1983-84	0	2	103	362	628	1117	1238	817	962	502	240	11	5982
1984-85	0	0	105	131	627	724	1143	849	627	292	87	16	4601
1985-86	0	0	41	237	508	1049	1038	974	664	349	89	9	4958
1986-87	2	17	46	300	705	890	1080	907	643	380	142	2	5114
1987-88	0	8	51	477	627	873	1252	961	693	445	131	41	5559
1988-89	4	5	88	475	633	975	931	912	760	433	196	9	5421
1989-90	1	6	81	292	663	1306	824	744	629	385	175	13	5119
1990-91	5	8	96	248	535	816	1026	769	651	345	69	2	4570
1991-92	0	0	103	279	634	877	986	842	761	392	170	16	5060
1992-93	0	3	86	420	615	914	931	1005	875	405	67	15	5336
1993-94	0	2	99	371	628	954	1382	1067	828	260	195	2	5788
1994-95	0	3	41	340	475	815	928	999	623	420	126	3	4773
1995-96	0	0	64	218	755	1090	1196	960	840	376	208	3	5710
1996-97	0	0	54	307	756	852	1083	741	688	410	175	32	5098
1997-98	1	1	46	318	696	892	824	680	653	305	67	29	4512
1998-	0	1	24	278	565	748							

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COOLING DEGREE DAYS (base 65°F) 1998 MIDDLETOWN/HARRISBURG INTL APT PA (MD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1969	0	0	0	3	71	235	327	267	113	11	0	0	1027
1970	0	0	0	7	102	191	353	333	246	24	0	0	1256
1971	0	0	0	0	17	241	331	236	195	17	6	0	1043
1972	0	0	0	0	33	133	357	287	137	3	0	0	950
1973	0	0	0	8	13	266	334	352	148	9	0	0	1130
1974	0	0	0	34	79	176	401	381	88	1	3	0	1163
1975	0	0	0	0	97	192	325	354	44	12	2	0	1026
1976	0	0	0	47	22	283	233	240	73	3	0	0	901
1977	0	0	4	19	95	147	347	297	140	1	3	0	1053
1978	0	0	0	0	69	162	273	377	133	1	0	0	1015
1979	0	0	0	5	43	138	279	264	92	7	0	0	828
1980	0	0	0	0	57	138	355	350	145	0	0	0	1045
1981	0	0	0	6	60	213	339	232	66	0	0	0	916
1982	0	0	0	2	48	70	307	191	83	19	4	0	724
1983	0	0	0	6	22	154	343	315	146	13	0	0	999
1984	0	0	0	0	34	256	292	342	95	35	0	1	1055
1985	0	0	0	55	99	157	345	290	173	4	0	0	1123
1986	0	0	5	12	116	205	360	238	88	27	0	0	1051
1987	0	0	0	9	94	237	418	266	76	0	0	0	1100
1988	0	0	0	0	53	219	439	355	52	4	0	0	1122
1989	0	0	5	0	49	182	279	249	114	9	1	0	888
1990	0	0	14	34	12	205	330	254	102	43	0	0	994
1991	0	0	0	16	202	284	429	355	118	31	0	0	1435
1992	0	0	0	1	29	151	314	214	108	0	0	0	817
1993	0	0	0	0	63	236	410	348	127	0	0	0	1184
1994	0	0	0	20	40	343	428	213	76	0	1	0	1121
1995	0	0	0	6	41	208	409	392	124	36	0	0	1216
1996	0	0	0	9	61	253	286	288	126	1	0	0	1024
1997	0	0	0	0	14	230	392	283	117	50	0	0	1086
1998	0	0	24	1	130	209	326	323	199	0	0	0	1212

SNOWFALL (inches) 1998 MIDDLETOWN/HARRISBURG INTL APT PA (MDT)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1969-70	0.0	0.0	0.0	T	2.1	28.3	9.8	7.5	12.9	T	0.0	0.0	60.6
1970-71	0.0	0.0	0.0	0.0	0.0	10.9	11.6	5.1	5.3	T	0.0	0.0	32.9
1971-72	0.0	0.0	0.0	0.0	8.8	T	2.6	21.6	0.5	1.1	0.0	0.0	34.6
1972-73	0.0	0.0	0.0	1.2	5.9	0.5	T	5.7	T	T	0.0	0.0	13.3
1973-74	0.0	0.0	0.0	0.0	T	15.3	7.0	5.5	T	T	0.0	0.0	27.8
1974-75	0.0	0.0	0.0	0.0	T	0.5	11.3	13.1	6.1	T	0.0	0.0	31.0
1975-76	0.0	0.0	0.0	0.0	T	2.2	3.6	2.5	10.0	0.0	0.0	0.0	18.3
1976-77	0.0	0.0	0.0	0.0	1.4	5.1	12.2	4.5	0.2	T	T	0.0	23.4
1977-78	0.0	0.0	0.0	T	1.5	5.5	33.5	21.1	9.0	0.0	0.0	0.0	70.6
1978-79	0.0	0.0	0.0	0.0	4.0	0.3	9.2	26.0	T	T	0.0	0.0	39.5
1979-80	0.0	0.0	0.0	T	T	0.2	3.8	2.7	7.9	0.0	0.0	0.0	14.6
1980-81	0.0	0.0	0.0	0.0	4.0	4.3	5.5	4.4	6.7	0.0	0.0	0.0	24.9
1981-82	0.0	0.0	0.0	0.0	0.8	12.5	18.8	8.4	7.8	10.2	0.0	0.0	58.5
1982-83	0.0	0.0	0.0	T	T	1.1	4.4	28.8	0.4	1.3	0.0	0.0	36.0
1983-84	0.0	0.0	0.0	0.0	T	4.6	9.7	2.3	14.9	T	0.0	0.0	31.5
1984-85	0.0	0.0	0.0	0.0	1.9	2.6	10.6	11.4	T	3.6	0.0	0.0	30.1
1985-86	0.0	0.0	0.0	0.0	T	5.6	7.8	23.1	T	T	0.0	0.0	36.5
1986-87	0.0	0.0	0.0	0.0	T	1.9	31.5	10.1	1.4	1.0	0.0	0.0	45.9
1987-88	0.0	0.0	0.0	0.0	9.7	3.6	9.6	2.8	1.0	T	0.0	0.0	26.7
1988-89	0.0	0.0	0.0	0.0	T	T	6.4	2.2	11.3	0.0	0.0	0.0	19.9
1989-90	0.0	0.0	0.0	0.0	1.8	6.7	4.9	1.3	3.5	1.1	0.0	0.0	19.3
1990-91	0.0	0.0	0.0	0.0	0.0	9.3	5.2	0.7	5.9	T	0.0	0.0	21.1
1991-92	0.0	0.0	0.0	0.0	0.0	T	1.7	4.6	6.6	0.0	0.0	T	12.9
1992-93	0.0	0.0	0.0	0.0	T	3.9	1.4	18.5	22.8	0.6	0.0	T	47.2
1993-94	0.0	T	0.0	0.0	T	0.9	34.2	22.0	18.8	0.0	0.0	0.0	75.9
1994-95	0.0	0.0	0.0	0.0	0.5	0.5	0.6	5.6	1.8	0.0	0.0	0.0	9.0
1995-96	0.0	0.0	0.0	0.0	8.1	17.4	38.9	6.3	2.3	4.6	0.0	0.0	22.8
1996-97	0.0	0.0	0.0	0.0	0.2	6.1	3.7	6.9	5.9	0.0	0.0	0.0	11.4
1997-98	0.0	0.0	0.0	0.0	0.3	4.8	5.3	0.4	0.6	0.0	0.0	0.0	11.4
1998-	0.0	0.0	0.0	0.0	0.0	0.8							
POR= 58 YRS	0.0	T	0.0	0.0	2.0	6.6	9.8	9.0	6.3	0.6	T	T	34.3

WBAN : 14711

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
MIDDLETOWN/HARRISBURG INTL APT
PENNSYLVANIA (MDT)

Harrisburg, the capital of Pennsylvania, is situated on the east bank of the Susquehanna River. It is in the Great Valley formed by the eastern foothills of the Appalachian Chain, and about 60 miles southeast of the Commonwealths geographic center. It is nestled in a saucer-like bowl, 10 miles south of Blue Mountain, which serves as a barrier to provide a modifying influence upon the severe winter climate experienced 50 to 100 miles to the north and west. Although the severity of the winter climate is lessened, the city lies a little too far inland to derive the full benefits of the coastal Climate.

Air masses change with some regularity, and any one condition does not persist for many days in succession. The mountain barrier occasionally prevents cold waves from reaching the Great Valley. The city is favorably located to receive precipitation produced when warm, maritime air from the Atlantic Ocean is forced upslope to cross the Blue Ridge Mountains.

The Growing Season is 192 days.

During June 1992, Hurricane Agnes produced 15.11 inches of rain from the 20th to the 23rd. Prolonged dry spells occur occasionally. During September and October 1947 there were 35 consecutive days with less than .01 inches of precipitation.

Flood stage on the Susquehanna River occurs on the average of about every three years in Harrisburg, but serious flooding is much less frequent. About one-third of all floods have occurred during March. Tropical hurricanes rarely reach Harrisburg with destructive winds.

STATION LOCATION

MIDDLETOWN, PA

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE										* Type M = AMOS T = AUTOB S = ASOS W = AWOS	REMARKS	
						SEA LEVEL	GROUND											AUTOMATED
							WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND	WIND			
Harrisburg International Airport	10/1/91	Present		40° 12'	76° 46'	310	10											Station established 10/1/92. Sunshine switch, tipping bucket, weighing rain gage, 8" rain gage are all on the roof.

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
 151 Patton Avenue, Rm 120
 Asheville NC 28801-5001

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