

1999

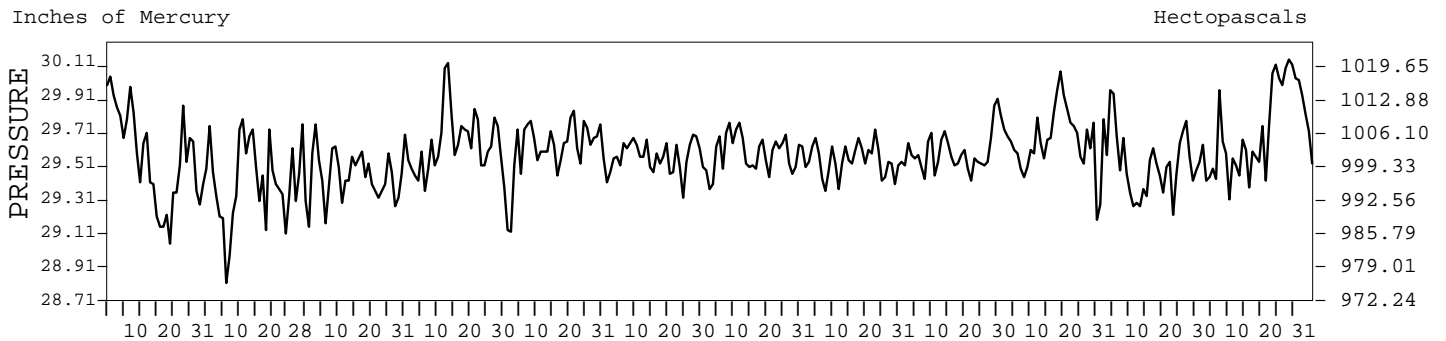
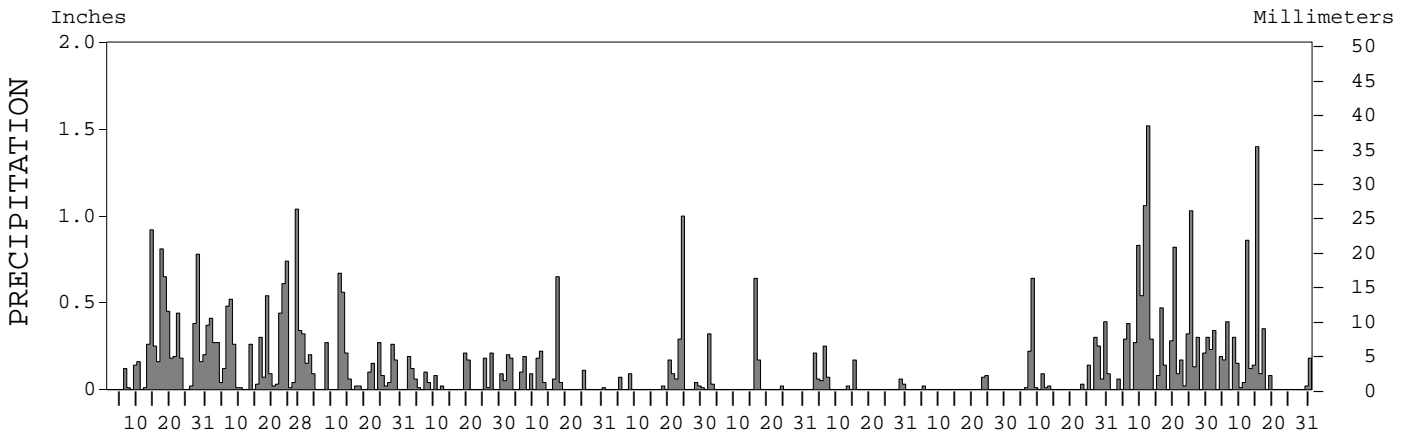
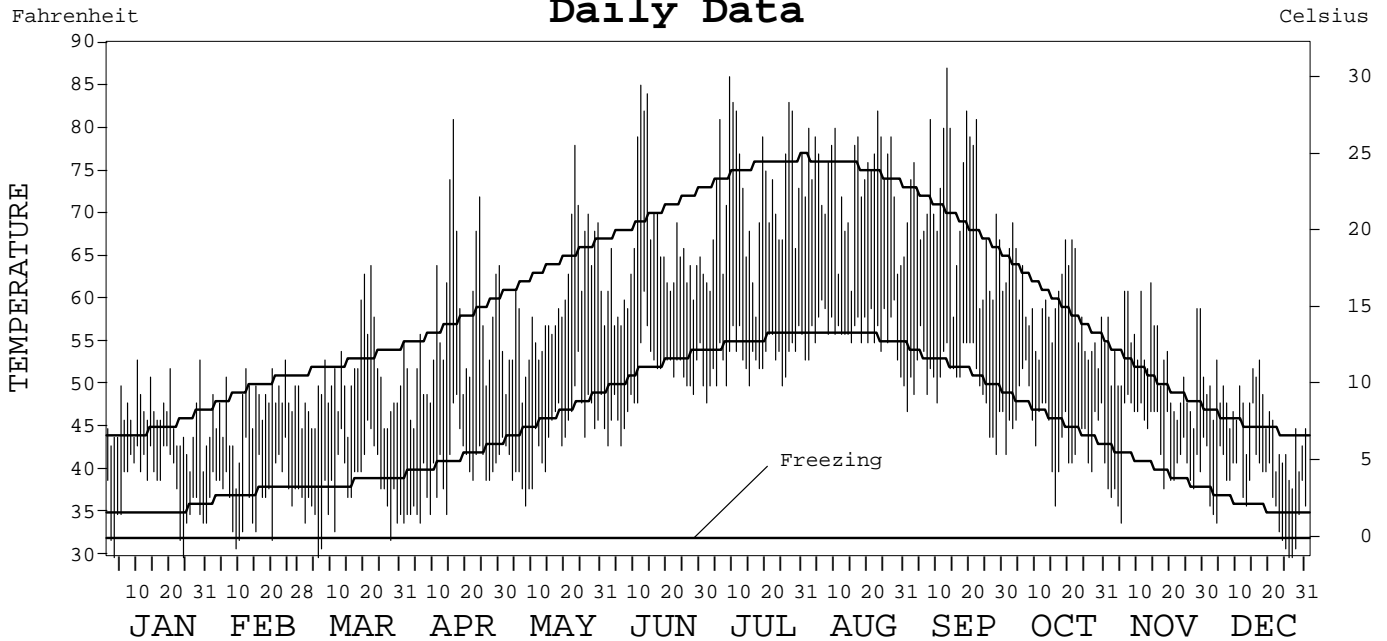
LOCAL CLIMATOLOGICAL DATA  
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-5442

SEATTLE, WASHINGTON  
SEATTLE - TACOMA AIRPORT (SEA)

Daily Data



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*Thomas R. Karl*

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	NATIONAL ENVIRONMENTAL AND INFORMATION SERVICE	NATIONAL SATELLITE, DATA, AND INFORMATION SERVICE	NATIONAL CLIMATIC DATA CENTER ASHEVILLE, NORTH CAROLINA	DIRECTOR NATIONAL CLIMATIC DATA CENTER
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# METEOROLOGICAL DATA FOR 1999

## SEATTLE, WA (SEA)

LATITUDE: 47° 27' 41" N      LONGITUDE: 122° 18' 49" W      ELEVATION (FT): GRND: 448      BARO: 448      TIME ZONE: PACIFIC (UTC + 8)      WBAN: 24233

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	46.0	47.5	50.6	57.3	59.6	65.7	71.7	73.4	70.9	59.4	53.2	46.1	58.5	
	HIGHEST DAILY MAXIMUM	53	53	64	81	78	85	86	82	87	69	62	53	87	
	DATE OF OCCURRENCE	29+	24	22	16	23	12	09	23	13	03	14	17+	SEP 13	
	MEAN DAILY MINIMUM	37.9	37.5	38.0	39.7	44.0	50.6	53.1	56.1	50.7	44.9	42.6	37.8	44.4	
	LOWEST DAILY MINIMUM	30	31	30	34	36	43	48	50	42	36	34	30	30	
	DATE OF OCCURRENCE	24+	09	06	06+	08	06+	02	31	28	16	05	27+	DEC 27+	
	AVERAGE DRY BULB	42.0	42.5	44.3	48.5	51.8	58.2	62.4	64.8	60.8	52.2	47.9	42.0	51.5	
	MEAN WET BULB	40.3	39.3	40.2	42.7	46.6	52.5	56.1	59.0	54.4	48.6	45.7	40.6	47.2	
	MEAN DEW POINT	37.9	35.3	36.0	36.0	41.5	48.2	51.6	55.7	49.8	45.5	43.9	38.8	43.4	
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MAXIMUM ≤ 32°	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MINIMUM ≤ 32°	4	3	3	0	0	0	0	0	0	0	0	5	15	
MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	706	623	634	487	400	218	101	42	141	393	504	706	4955	
	COOLING DEGREE DAYS	0	0	0	0	0	18	29	43	22	0	0	0	112	
RH	MEAN (PERCENT)	86	78	76	67	71	74	72	77	72	81	89	89	78	
	HOUR 04 LST	90	80	83	81	87	86	88	90	88	91	93	92	87	
	HOUR 10 LST	87	77	75	65	70	73	72	76	69	79	87	91	77	
	HOUR 16 LST	80	72	63	51	56	58	54	62	50	66	85	85	65	
	HOUR 22 LST	87	81	80	69	73	78	75	80	75	84	89	91	80	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	1	1	0	0	0	0	0	3	1	6	2	7	21	
	THUNDERSTORMS	0	0	1	0	2	1	2	5	0	0	0	1	12	
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.)	29.54	29.39	29.44	29.64	29.59	29.55	29.57	29.53	29.59	29.65	29.49	29.72	29.56	
	MEAN SEA-LEVEL PRESS. (IN.)	30.04	29.88	29.93	30.13	30.08	30.03	30.05	30.01	30.07	30.14	29.97	30.21	30.04	
WINDS	RESULTANT SPEED (MPH)	5.4	9.0	4.3	1.5	2.4	4.3	1.7	1.4	1.9	0.7	3.4	5.4	2.8	
	RES. DIR. (TENS OF DEGS.)	19	18	19	20	22	22	29	24	01	13	16	19	19	
	MEAN SPEED (MPH)	8.5	11.5	9.2	7.2	7.7	7.0	6.6	6.2	6.5	7.3	7.2	8.5	7.8	
	PREVAIL. DIR. (TENS OF DEGS.)	19	18	22	21	22	22	22	21	01	01	17	20	22	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	30	37	44	23	24	26	22	21	36	30	28	33	44	
	DIR. (TENS OF DEGS.)	19	23	19	07	23	22	23	03	20	12	20	22	19	
	DATE OF OCCURRENCE	29	06	03	15	03	05	07	29	24	27	03	18	MAR 03	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	40	49	60	28	36	32	31	24	43	40	38	41	60	
DIR. (TENS OF DEGS.)	20	21	18	09	27	23	23	22	21	12	20	23	18		
DATE OF OCCURRENCE	29	06	03	15+	06	05	07	25	24	27	03	18+	MAR 03		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	6.84	6.95	3.66	1.49	2.12	1.86	1.18	0.92	0.17	2.26	9.60	5.06	42.11	
	GREATEST 24-HOUR (IN.)	1.18	1.04	0.67	0.34	0.65	1.27	0.64	0.28	0.08	0.72	1.76	1.43	1.76	
	DATE OF OCCURRENCE	13-14	27	12	19-20	17	23-24	16	06-07	24	07-08	11-12	15-16	NOV 11-12	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	22	25	19	14	14	11	5	9	3	14	23	18	177	
PRECIPITATION ≥ 0.10	19	15	12	7	8	3	3	3	0	6	19	13	108		
PRECIPITATION ≥ 1.00	0	1	0	0	0	1	0	0	0	0	3	1	6		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)														
	GREATEST 24-HOUR (IN.)														
	DATE OF OCCURRENCE														
	MAXIMUM SNOW DEPTH (IN.)														
	DATE OF OCCURRENCE														
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0															

# NORMALS, MEANS, AND EXTREMES

## SEATTLE, WA (SEA)

LATITUDE: 47° 27' 41" N      LONGITUDE: 122° 18' 49" W      ELEVATION (FT): GRND: 448      BARO: 448      TIME ZONE: PACIFIC (UTC + 8)      WBAN: 24233

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	45.0	49.5	52.7	57.2	63.9	69.9	75.2	75.2	69.3	59.7	50.5	45.1	59.4
	MEAN DAILY MAXIMUM	52	44.5	48.8	52.2	57.3	64.1	69.4	75.1	74.8	69.5	59.4	50.6	45.4	59.3
	HIGHEST DAILY MAXIMUM	55	64	70	75	85	93	96	100	99	98	89	74	64	100
	YEAR OF OCCURRENCE		1981	1968	1987	1976	1963	1995	1994	1981	1988	1987	1949	1993	JUL 1994
	MEAN OF EXTREME MAXS.	52	55.3	59.8	64.4	73.2	81.2	84.8	89.3	88.2	84.4	73.0	61.1	55.5	72.5
	NORMAL DAILY MINIMUM	30	35.2	37.4	38.5	41.2	46.3	51.9	55.2	55.7	51.9	45.8	40.1	35.8	44.6
	MEAN DAILY MINIMUM	52	34.7	36.7	37.9	41.1	46.4	51.3	54.6	54.8	51.2	45.2	39.7	35.8	44.1
	LOWEST DAILY MINIMUM	55	0	1	11	29	28	38	43	44	35	28	6	6	0
	YEAR OF OCCURRENCE		1950	1950	1955	1975	1954	1952	1954	1955	1972	1949	1955	1968	JAN 1950
	MEAN OF EXTREME MINS.	52	21.7	25.3	29.1	33.8	38.4	45.2	49.0	49.0	43.0	34.7	28.1	23.9	35.1
	NORMAL DRY BULB	30	40.1	43.5	45.6	49.2	55.1	60.9	65.2	65.5	60.6	52.8	45.3	40.5	52.0
	MEAN DRY BULB	52	39.6	42.8	45.0	49.2	55.3	60.4	64.9	64.7	60.4	52.3	45.1	40.6	51.7
	MEAN WET BULB	16	39.1	39.8	42.7	46.0	50.4	54.2	57.9	58.3	55.2	49.2	43.0	38.2	47.8
	MEAN DEW POINT	16	35.5	35.5	38.3	41.2	45.6	49.3	52.4	53.2	50.6	46.0	40.1	35.0	43.6
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.0	0.2	0.3	1.1	1.2	0.3	0.0	0.0	0.0	3.1	
MAXIMUM ≤ 32°	30	1.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.3	2.9	
MINIMUM ≤ 32°	30	9.6	5.3	3.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	3.6	8.6	30.5	
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	0.0	
H/C	NORMAL HEATING DEG. DAYS	30	772	602	601	474	307	144	58	65	156	378	591	760	4908
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	0	21	64	81	24	0	0	0	190
RH	NORMAL (PERCENT)	30	78	75	74	71	69	67	65	68	73	79	80	80	73
	HOUR 04 LST	30	81	80	82	83	82	81	81	83	86	86	84	82	83
	HOUR 10 LST	30	79	77	74	71	68	66	65	68	73	79	80	81	73
	HOUR 16 LST	30	74	67	61	57	54	53	49	50	57	67	75	77	62
	HOUR 22 LST	30	78	76	75	74	72	70	68	70	75	81	81	80	75
S	PERCENT POSSIBLE SUNSHINE	30	28	40	50	52	56	56	64	65	62	43	28	23	47
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	55	4.9	3.3	2.3	1.1	0.7	0.7	1.5	2.5	4.9	7.1	5.1	6.0	40.1
	THUNDERSTORMS	55	0.2	0.3	0.6	1.0	0.9	0.7	0.7	0.8	0.7	0.4	0.8	0.3	7.4
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	52	6.7	6.5	6.3	6.2	5.7	5.6	4.2	4.5	4.8	5.9	6.6	6.7	5.8
	MIDNIGHT-MIDNIGHT (OKTAS)	32	6.6	6.1	5.8	5.9	5.5	5.3	4.1	4.2	4.4	5.3	6.3	6.4	5.5
	MEAN NO. DAYS WITH:														
	CLEAR	52	2.8	3.0	3.4	2.7	4.4	5.1	10.2	9.0	8.1	4.0	2.5	2.3	57.5
PARTLY CLOUDY	52	3.9	4.2	5.8	7.3	8.8	7.9	9.5	9.7	8.5	7.4	4.2	3.9	81.1	
CLOUDY	52	24.3	21.1	21.9	20.0	17.7	16.9	10.5	11.9	13.0	19.5	23.3	24.9	225.0	
PR	MEAN STATION PRESSURE (IN)	27	29.55	29.52	29.50	29.55	29.55	29.56	29.57	29.54	29.55	29.57	29.53	29.58	29.55
	MEAN SEA-LEVEL PRES. (IN)	16	30.04	30.02	30.00	30.04	30.01	30.03	30.05	30.03	30.03	30.06	30.02	30.09	30.03
WINDS	MEAN SPEED (MPH)	49	9.7	9.7	9.6	9.4	8.9	8.7	8.3	7.9	8.2	8.5	9.3	9.6	9.0
	PREVAIL. DIR (TENS OF DEGS)	33	19	19	19	21	21	21	22	21	01	19	19	18	19
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	3	34	37	44	28	24	26	22	22	36	32	37	34	44
	DIR. (TENS OF DEGS)		08	23	19	21	23	22	23	01	20	18	20	21	19
	YEAR OF OCCURRENCE		1997	1999	1999	1997	1999	1999	1999	1997	1999	1997	1998	1997	MAR 1999
	MAXIMUM 5-SECOND:														
SPEED (MPH)	3	49	49	60	37	36	32	31	29	43	44	48	44	60	
DIR. (TENS OF DEGS)		20	21	18	21	27	23	23	34	21	18	21	18	18	
YEAR OF OCCURRENCE		1997	1999	1999	1997	1999	1999	1999	1998	1999	1997	1998	1997	MAR 1999	
PRECIPITATION	NORMAL (IN)	30	5.38	3.99	3.54	2.33	1.70	1.50	0.76	1.14	1.88	3.23	5.83	5.91	37.19
	MAXIMUM MONTHLY (IN)	55	12.92	9.11	8.40	6.53	4.76	3.90	2.39	4.59	5.95	8.95	11.62	11.85	12.92
	YEAR OF OCCURRENCE		1953	1961	1950	1991	1948	1946	1983	1975	1978	1947	1998	1979	JAN 1953
	MINIMUM MONTHLY (IN)	55	0.58	0.35	0.57	0.33	0.12	0.13	T	0.01	T	0.31	0.74	1.37	T
	YEAR OF OCCURRENCE		1985	1993	1965	1956	1992	1951	1960	1974	1991	1987	1976	1978	SEP 1991
	MAXIMUM IN 24 HOURS (IN)	55	3.22	3.41	2.86	3.32	1.83	2.08	0.85	1.75	2.23	3.74	3.58	2.61	3.74
	YEAR OF OCCURRENCE		1986	1951	1972	1991	1969	1985	1981	1968	1978	1981	1990	1979	OCT 1981
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	18.0	15.4	16.8	13.6	10.6	8.4	5.0	6.1	9.1	12.2	17.6	18.7	151.5	
PRECIPITATION ≥ 1.00	30	0.8	0.4	0.2	0.1	0.1	0.2	0.0	0.1	0.2	0.4	1.2	1.1	4.8	
SNOWFALL	NORMAL (IN)	30	4.1	1.2	0.7	0.1	T	0.0	0.0	0.0	0.0	0.1	1.1	3.1	10.4
	MAXIMUM MONTHLY (IN)	52	57.2	13.1	18.2	2.3	T	0.0	T	0.0	T	2.0	17.5	22.1	57.2
	YEAR OF OCCURRENCE		1950	1949	1951	1972	1993		1980		1972	1971	1985	1968	JAN 1950
	MAXIMUM IN 24 HOURS (IN)	52	21.4	9.8	7.4	2.3	T	0.0	T	0.0	T	2.0	9.4	13.0	21.4
	YEAR OF OCCURRENCE		1950	1990	1989	1972	1993		1980		1972	1971	1946	1968	JAN 1950
	MAXIMUM SNOW DEPTH (IN)	47	21	11	7	2	0	0	0	0	0	2	8	10	21
	YEAR OF OCCURRENCE		1969	1969	1989	1972						1971	1985	1974	JAN 1969
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	1.4	0.3	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.*	0.3	1.0	3.4	

PRECIPITATION (inches) 1999 SEATTLE, WASHINGTON WA (SEA)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	8.22	2.26	3.16	3.31	1.17	0.43	0.48	0.32	2.23	2.52	5.03	8.28	37.41
1971	5.32	4.36	7.12	2.39	1.43	2.28	0.68	0.57	3.51	3.57	5.31	6.67	43.21
1972	7.24	8.11	6.74	4.12	0.69	1.81	1.34	1.13	4.10	0.72	3.38	8.98	48.36
1973	4.29	1.89	1.62	1.35	1.60	2.50	0.08	0.27	1.81	3.31	7.99	8.33	35.04
1974	7.78	4.01	5.84	2.39	1.37	1.25	1.51	0.01	0.21	1.99	5.06	6.45	37.87
1975	6.01	5.80	2.87	2.49	1.13	0.84	0.27	4.59	T	7.75	5.07	7.66	44.48
1976	5.55	4.74	2.71	1.67	1.61	0.63	1.17	2.71	1.25	2.06	0.74	1.86	26.70
1977	1.77	1.58	3.80	0.55	3.70	0.54	0.42	3.59	2.55	2.60	5.27	6.47	32.84
1978	4.30	3.59	2.43	4.19	1.79	0.75	1.40	1.19	5.95	0.98	6.05	1.37	33.99
1979	2.25	5.32	1.55	0.81	0.88	0.46	0.73	1.02	2.07	3.38	1.94	11.85	32.26
1980	4.09	5.04	2.10	3.23	0.97	1.77	0.46	0.64	1.43	1.32	7.16	7.39	35.60
1981	2.42	4.45	2.23	1.58	1.33	2.31	1.38	0.25	3.42	6.40	4.07	5.56	35.40
1982	5.35	7.57	3.73	2.07	0.63	1.03	0.59	0.62	1.49	4.07	5.31	6.86	39.32
1983	7.07	4.57	3.81	1.06	2.10	1.85	2.39	1.90	1.85	1.34	7.97	5.02	40.93
1984	3.62	3.91	3.91	2.87	3.38	2.81	0.17	0.13	1.01	2.14	8.09	4.95	36.99
1985	0.58	2.63	2.56	1.30	0.85	2.80	0.10	0.55	1.98	5.74	4.26	1.78	25.13
1986	8.54	4.41	2.67	1.38	1.71	0.68	1.10	0.10	1.89	4.21	7.98	3.67	38.34
1987	5.98	2.05	5.53	2.61	2.38	0.16	0.39	0.29	0.91	0.31	3.21	6.11	29.93
1988	4.07	0.71	3.75	3.20	3.01	1.56	0.50	0.28	1.75	2.24	8.43	3.48	32.98
1989	2.78	3.43	5.79	2.80	2.78	1.14	0.64	0.89	0.54	2.98	6.13	4.79	34.69
1990	9.41	3.72	2.58	2.54	1.98	3.05	0.58	0.71	0.05	5.79	10.71	3.63	44.75
1991	4.46	4.69	4.66	6.53	1.39	1.29	0.28	2.17	T	1.31	5.33	3.31	35.42
1992	7.82	3.09	1.68	4.12	0.12	1.14	0.89	0.66	1.15	2.45	5.57	4.09	32.78
1993	4.09	0.35	4.80	4.54	2.86	2.48	1.27	0.16	0.03	1.54	2.20	4.48	28.80
1994	2.51	4.47	3.17	2.27	1.43	1.25	0.28	0.30	1.69	3.51	5.79	8.15	34.82
1995	4.48	4.97	4.07	2.05	0.81	1.46	1.34	1.81	0.91	3.93	10.40	6.37	42.60
1996	7.34	8.35	2.06	5.37	2.07	0.59	0.77	1.32	1.85	5.54	5.23	10.18	50.67
1997	7.02	1.99	8.15	4.32	1.87	1.64	1.20	1.27	3.41	5.83	3.93	2.63	43.26
1998	7.15	3.31	3.96	0.99	1.98	1.11	0.41	0.35	0.72	3.48	11.62	8.98	44.06
1999	6.84	6.95	3.66	1.49	2.12	1.86	1.18	0.92	0.17	2.26	9.60	5.06	42.11
POR= 56 YRS	5.66	4.28	3.75	2.56	1.69	1.49	0.71	1.00	1.78	3.56	5.94	5.87	38.29

WBAN : 24233

AVERAGE TEMPERATURE (°F) 1999 SEATTLE, WASHINGTON WA (SEA)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	41.2	47.0	46.0	46.1	54.7	62.7	64.9	64.5	58.6	50.8	46.5	39.0	51.8
1971	39.7	42.3	41.3	48.9	54.5	55.9	65.5	67.7	57.6	51.0	45.7	37.5	50.6
1972	37.0	41.4	46.9	47.0	58.3	60.1	66.0	66.7	55.4	50.1	46.7	38.1	51.1
1973	38.7	43.9	44.1	48.6	56.5	59.3	64.7	61.6	61.9	52.2	43.7	44.4	51.6
1974	38.7	43.2	46.3	50.3	54.9	62.6	64.0	64.6	64.4	52.5	45.1	42.4	52.4
1975	38.8	40.8	42.9	45.8	54.6	60.7	67.5	63.2	63.0	51.4	44.9	41.5	51.3
1976	41.8	40.9	41.3	49.5	56.4	60.0	65.9	64.1	62.6	54.9	47.8	44.7	52.5
1977	39.4	48.7	45.7	53.6	54.5	63.0	65.1	68.5	58.9	52.2	43.9	42.2	53.0
1978	44.4	46.0	48.6	49.9	54.5	64.3	65.8	65.5	58.8	54.3	41.2	37.5	52.6
1979	37.8	42.3	49.3	50.8	57.2	62.5	67.4	64.0	62.6	54.2	43.9	44.1	53.0
1980	34.8	43.8	44.3	51.6	54.2	57.5	63.8	61.9	59.6	53.9	46.7	44.1	51.4
1981	44.4	44.2	48.8	49.6	54.7	57.5	63.3	68.1	61.1	50.9	47.2	41.7	52.6
1982	39.3	42.1	44.1	47.4	54.7	63.1	62.8	65.1	60.6	52.7	43.2	40.8	51.3
1983	45.0	46.9	49.4	50.7	57.7	59.9	63.3	65.6	58.3	51.7	47.8	36.1	52.7
1984	43.2	44.8	48.5	48.7	52.9	58.8	65.0	64.9	59.9	49.7	44.6	36.8	51.5
1985	37.1	39.0	43.3	49.2	54.8	60.0	68.6	65.2	58.1	51.4	35.8	36.2	49.9
1986	44.9	42.8	49.2	48.1	55.7	62.7	61.7	68.4	59.1	54.3	45.3	42.0	52.9
1987	40.5	46.3	48.9	52.0	56.9	62.6	64.2	66.1	62.6	55.8	48.5	39.2	53.6
1988	40.1	44.4	45.6	50.3	54.9	59.6	65.3	65.4	60.5	55.4	45.4	41.9	52.4
1989	40.5	35.9	43.7	53.4	56.0	63.2	64.5	65.3	64.1	53.1	47.0	42.9	52.5
1990	42.5	40.0	47.1	52.1	54.7	59.8	68.0	67.3	63.4	51.2	46.6	35.3	52.3
1991	40.0	47.7	44.1	49.1	54.3	58.9	66.8	66.6	62.9	52.9	47.3	43.7	52.9
1992	43.9	47.3	50.3	53.1	59.8	65.0	66.7	66.8	60.0	54.4	45.5	38.8	54.3
1993	37.9	42.3	48.1	50.6	59.6	60.6	61.2	65.5	61.9	55.4	42.0	41.4	52.2
1994	44.9	40.4	48.5	52.3	58.2	60.6	67.9	67.3	64.4	52.8	42.4	41.7	53.5
1995	46.4	45.9	47.8	51.8	60.1	62.7	67.0	63.0	64.0	52.5	49.1	42.4	54.4
1996	39.7	43.2	47.2	51.5	53.1	60.5	67.9	66.5	59.2	51.1	43.1	39.3	51.9
1997	41.1	41.9	44.8	49.2	58.2	59.5	64.5	67.7	62.2	51.3	48.4	41.5	52.5
1998	42.2	45.8	46.6	50.4	54.9	59.9	67.6	66.8	63.1	52.6	46.7	39.9	53.0
1999	42.0	42.5	44.3	48.5	51.8	58.2	62.4	64.8	60.8	52.2	47.9	42.0	51.5
POR= 55 YRS	39.6	42.8	44.9	49.1	55.3	60.3	64.9	64.6	60.2	52.3	45.0	40.5	51.6

HEATING DEGREE DAYS (base 65°F) 1999 SEATTLE, WASHINGTON WA (SEA)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	53	44	190	435	548	801	778	628	728	472	321	267	5265
1971-72	82	17	214	429	570	843	863	678	557	531	222	144	5150
1972-73	48	32	295	455	544	825	807	586	639	484	272	183	5170
1973-74	70	114	111	388	633	632	809	606	573	433	306	99	4774
1974-75	60	66	74	380	591	690	804	671	678	570	317	144	5045
1975-76	23	73	93	413	594	723	712	693	731	465	265	157	4942
1976-77	24	52	81	307	510	625	786	451	591	335	320	79	4161
1977-78	34	43	178	390	625	701	631	525	498	447	323	78	4473
1978-79	44	42	180	324	706	846	837	630	479	420	235	96	4839
1979-80	27	40	86	327	628	642	929	610	634	395	329	218	4865
1980-81	66	104	158	343	543	639	633	577	494	455	316	220	4548
1981-82	80	28	138	430	530	715	790	636	640	521	312	103	4923
1982-83	93	42	141	373	647	745	613	502	479	422	244	149	4450
1983-84	72	19	196	406	511	890	672	577	507	482	372	183	4887
1984-85	54	42	159	467	603	867	857	719	666	469	310	160	5373
1985-86	8	48	199	413	870	888	618	616	479	502	305	90	5036
1986-87	105	12	196	323	586	707	754	522	491	384	253	105	4438
1987-88	58	37	102	284	485	792	767	590	593	435	316	165	4624
1988-89	60	38	162	291	583	708	749	807	654	340	273	93	4758
1989-90	41	29	68	362	534	677	689	696	547	379	312	158	4492
1990-91	29	23	61	420	546	913	767	475	639	472	322	179	4846
1991-92	24	40	90	368	526	654	645	507	447	351	171	63	3886
1992-93	26	22	151	322	580	805	834	629	517	427	170	135	4618
1993-94	113	48	120	290	685	723	618	682	503	373	209	132	4496
1994-95	23	5	43	369	671	713	570	527	527	390	160	118	4116
1995-96	19	77	60	382	471	693	779	630	543	399	362	135	4550
1996-97	42	32	167	422	649	793	732	640	622	468	211	159	4937
1997-98	38	11	95	416	489	718	700	533	562	433	307	152	4454
1998-99	21	21	79	376	543	771	706	623	634	487	400	218	4879
1999-	101	42	141	393	504	706							

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COOLING DEGREE DAYS (base 65°F) 1999 SEATTLE, WASHINGTON WA (SEA)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0	0	0	0	1	60	58	36	6	0	0	0	161
1971	0	0	0	0	4	2	106	107	0	0	0	0	219
1972	0	0	0	0	22	3	85	91	11	0	0	0	212
1973	0	0	0	0	16	19	67	17	21	0	0	0	140
1974	0	0	0	0	0	36	38	62	60	0	0	0	196
1975	0	0	0	0	0	21	108	29	39	0	0	0	197
1976	0	0	0	8	4	14	59	29	15	0	0	0	129
1977	0	0	0	0	0	26	44	158	4	0	0	0	232
1978	0	0	0	0	4	66	76	64	0	0	0	0	210
1979	0	0	0	0	2	27	106	15	21	0	0	0	171
1980	0	0	0	0	0	0	34	15	3	2	0	0	54
1981	0	0	0	0	1	3	35	131	24	0	0	0	194
1982	0	0	0	0	0	53	31	55	15	0	0	0	154
1983	0	0	0	0	24	2	24	44	0	0	0	0	94
1984	0	0	0	0	1	5	62	45	11	0	0	0	124
1985	0	0	0	0	3	17	125	59	0	0	0	0	204
1986	0	0	0	0	22	27	10	124	26	0	0	0	209
1987	0	0	0	0	11	42	39	80	35	5	0	0	212
1988	0	0	0	0	7	10	79	56	36	1	0	0	189
1989	0	0	0	0	2	47	32	45	46	0	0	0	172
1990	0	0	0	0	0	10	129	100	21	0	0	0	260
1991	0	0	0	0	0	0	85	96	34	0	0	0	215
1992	0	0	0	0	18	68	83	85	8	0	0	0	262
1993	0	0	0	0	10	8	1	72	32	0	0	0	123
1994	0	0	0	0	1	5	120	86	29	0	0	0	241
1995	0	0	0	0	15	55	88	20	34	0	0	0	212
1996	0	0	0	1	0	2	137	81	1	0	0	0	222
1997	0	0	0	0	4	0	29	100	17	0	0	0	150
1998	0	0	0	2	1	6	108	84	29	0	0	0	230
1999	0	0	0	0	0	18	29	43	22	0	0	0	112

SNOWFALL (inches) 1999 SEATTLE, WASHINGTON WA (SEA)

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	2.9	9.1	2.2	1.9	T	0.0	0.0	16.1
1971-72	0.0	0.0	0.0	2.0	T	10.6	14.0	0.3	T	2.3	0.0	0.0	29.2
1972-73	0.0	0.0	T	0.0	T	5.6	2.7	T	0.8	T	0.0	0.0	9.1
1973-74	0.0	0.0	0.0	0.0	0.2	0.3	3.7	T	T	0.0	T	0.0	4.2
1974-75	0.0	0.0	0.0	0.0	0.0	9.8	1.3	T	T	0.2	0.0	0.0	11.3
1975-76	0.0	0.0	0.0	0.0	1.6	2.6	T	0.5	0.2	T	0.0	0.0	4.9
1976-77	0.0	0.0	0.0	0.0	0.0	T	1.0	T	0.9	0.0	0.0	0.0	1.9
1977-78	0.0	0.0	0.0	0.0	3.5	T	T	0.0	T	T	0.0	0.0	3.5
1978-79	0.0	0.0	0.0	0.0	4.9	0.2	0.5	0.4	0.0	0.0	0.0	0.0	6.0
1979-80	0.0	0.0	0.0	0.0	0.0	1.2	8.8	2.5	0.1	T	0.0	0.0	12.6
1980-81	T	0.0	0.0	0.0	T	0.3	0.0	1.1	0.0	0.0	0.0	0.0	1.4
1981-82	0.0	0.0	0.0	0.0	0.0	T	7.0	T	2.0	T	0.0	0.0	9.0
1982-83	0.0	0.0	0.0	T	0.0	T	0.0	0.0	0.0	0.0	0.0	0.0	T
1983-84	0.0	0.0	0.0	0.0	T	0.3	T	0.0	0.0	T	0.0	0.0	0.3
1984-85	0.0	0.0	0.0	T	T	2.4	T	5.7	T	T	0.0	0.0	8.1
1985-86	0.0	0.0	0.0	T	17.5	1.7	0.0	1.1	0.0	T	0.0	0.0	20.3
1986-87	0.0	0.0	0.0	0.0	T	0.0	1.4	0.0	0.0	0.0	0.0	0.0	1.4
1987-88	0.0	0.0	0.0	0.0	0.0	T	T	0.0	T	0.0	0.0	0.0	T
1988-89	0.0	0.0	0.0	0.0	T	T	1.0	5.8	7.4	T	T	0.0	14.2
1989-90	0.0	0.0	0.0	0.0	0.0	0.0	T	9.8	T	0.0	T	0.0	9.8
1990-91	0.0	0.0	0.0	0.0	0.0	3.8	0.4	0.0	2.5	T	0.0	0.0	6.7
1991-92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992-93	0.0	0.0	0.0	0.0	T	6.7	1.3	1.4	0.0	0.0	T	0.0	9.4
1993-94	0.0	0.0	0.0	0.0	T	0.0	0.0	2.1	0.2	0.0	0.0	0.0	2.3
1994-95	0.0	0.0	0.0	0.0	T	1.9	0.0	0.2	T	0.0	0.0	0.0	2.1
1995-96	0.0	0.0	0.0	0.0	0.0	0.0	10.5	0.5	0.0	0.0	0.0	0.0	11.0
1996-97	0.0	0.0	0.0										
1997-98													
1998-99													
1999-													
POR= 51 YRS	T	0.0	T	0.0	1.1	2.4	4.8	1.6	1.3	0.1	T	0.0	11.3

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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  
SEATTLE, WASHINGTON  
SEATTLE - TACOMA AIRPORT (SEA)

The Seattle-Tacoma International Airport is located 6 miles south of the Seattle city limits and 14 miles north of Tacoma. It is situated on a low ridge lying between Puget Sound on the west and the Green River valley on the east with terrain sloping moderately to the shores of Puget Sound some 2 miles to the west. The Olympic Mountains, rising sharply from Puget Sound, are about 50 miles to the northwest. Rather steep bluffs border the Green River Valley about 2.5 miles to the east and the foothills of the Cascade Range begin 10 to 15 miles to the east of the airport.

The mild climate of the Pacific Coast is modified by the Cascade Mountains and, to a lesser extent, by the Olympic Mountains. The climate is characterized by mild temperatures, a pronounced though not sharply defined rainy season, and considerable cloudiness, particularly during the winter months. The Cascades are very effective in shielding the Seattle-Tacoma area from the cold, dry continental air during the winter and the hot, dry continental air during the summer months. The extremes of temperature that occur in western Washington are the result of the occasional pressure distributions that force the continental air into the Puget Sound area. But the prevailing southwesterly circulation keeps the average winter daytime temperatures in the 40s and the nighttime readings in the 30s. During the summer, daytime temperatures are usually in the 70s with nighttime lows in the 50s. Extremes of temperatures, both in the winter and summer, are usually of short duration. The dry season is centered around July and early August with July being the driest month of the year. The rainy season extends from October to March with December normally the wettest month, however, precipitation is rather evenly distributed through the winter and early spring months with more than 75 percent of the yearly precipitation falling during the winter wet season. Most of the rainfall in the Seattle area comes from storms common to the middle latitudes. These disturbances are most vigorous during the winter as they move through western Washington. The storm track shifts to the north during the summer and those that reach the State are not the wind and rain producers of the winter months. Local summer afternoon showers and a few thunderstorms occur in the Seattle-Tacoma area but they do not contribute materially to the precipitation.

The occurrence of snow in the Seattle-Tacoma area is extremely variable and usually melts before accumulating measurable depths. There are winters on record with only a trace of snow, but at the other extreme, over 21 inches has fallen in a 24-hour period. Usually, winter storms do not produce snow unless the storm moves in such a way to bring cold air out of Canada directly or with only a short over water trajectory.

The highest winds recorded in the Seattle-Tacoma area were associated with strong storms crossing the state from the southwest. Prevailing winds are from the southwest but occasional severe winter storms will produce strong northerly winds. Winds during the summer months are relatively light with occasional land-sea breeze effects creating afternoon northerly winds of 8 to 15 miles an hour. Fog or low clouds that form over the southern Puget Sound area in the late summer, fall, and early winter months, often dominate the weather conditions during the late night and early morning hours with visibilities occasionally lower for a few hours near sunrise. Most of the summer clouds form along the coast and move into the Seattle area from the southwest.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is November 11 and the average last occurrence in the spring is March 24.

STATION LOCATION

SEATTLE, WASHINGTON  
SEATTLE-TACOMA AIRPORT

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	NORTH	WEST	ELEVATION ABOVE											A U T O M A T I C A L I N S T R U M E N T S *	* Type M = AMOS T = AUTOB S = ASOS W = AWOS	REMARKS
						SEA LEVEL	GROUND												
							W I N D I N S T R U M E N T S *	W I N D I N S T R U M E N T S *	W I N D I N S T R U M E N T S *	W I N D I N S T R U M E N T S *	W I N D I N S T R U M E N T S *	W I N D I N S T R U M E N T S *	W I N D I N S T R U M E N T S *	W I N D I N S T R U M E N T S *	W I N D I N S T R U M E N T S *	W I N D I N S T R U M E N T S *			
CITY SE Corner 1st & Yesler Streets	8/01/90	5/01/93		47° 36'	122°20'	17		&70										& - Elevation estimated.	
New York Block, 701 2nd Avenue, 2nd & Cherry	5/01/93	5/01/05	793 ft. NE	47° 36'	122°20'		\$151	114	114		107							\$ - 121 ft. to 1/1/02.	
Alaska Building, 612 2nd Ave., 2nd & Cherry	5/01/05	11/01/11	200 ft. SW	47° 36'	122°20'		224	185	185		179								
Hoge Building, 703 2nd Avenue, 2nd & Cherry	11/01/11	4/15/33	250 ft. W	47° 36'	122°20'		39	250	215	215	209								
Federal Office Building 1st & Marion	4/15/33	11/30/72	730 ft. NW	47° 36'	122°20'		14	321	90	b90	83							Wind instruments on the Exchange Building, 1st & Marion. b - Removed 7/1/39 Summary published through 1964.	
2725 Montlake Blvd., East	11/30/72	Present	4 mi. NNE	47° 39'	122°18'		19	33	4	4		4						Summary Publication resumed January 1973.	
AIRPORT Control Tower Seattle-Tacoma Airport, 1.3 mi. S of P.O. at Seattle	11/21/44	11/17/49		47° 26'	122°18'		379	43	5	5									
Administration Building Seattle-Tacoma Airport	11/17/49	3/24/55	1000 ft. E	47° 27'	122°18'		379	109	6	5								* - Telepsychrometer (4') 11/17/49. Moved 1000' NNE 3/24/55. Moved 210' WSW 11/01/56. Removed 6/6/63.	
Administration Building Seattle-Tacoma Airport	3/24/55	11/01/56	No Change	47° 27'	122°18'		376	109	a5	a5									
Administration Building Seattle-Tacoma Airport	11/01/56	12/11/59	No Change	47° 27'	122°18'		386	112 c20	b5	b5								a - Moved 1000' NNE of prev. site. b - Moved 210' WSW of prev. site. c - Moved to field site 11/21/59.	
Administration Building Seattle-Tacoma Airport	12/11/59	10/01/96	No Change	47° 27'	122°18'		400	20 h20	d6 d77	d5 d77	%91	NA	f3 g77	g75	3 e6 h6 16	NA		d - Standby equipment. Roof site effective 9/23/67. e - Hygro. comm. 12/11/59. f - Added 1/1/65. g - Moved to roof site 2/1/66. h - Moved 2800 ft. SW of previous site 12/2/59. % - Commissioned 10/1/68. i - Type change 11/6/79.	
Seattle-Tacoma Airport	10/01/96	Present	NA	47°28'	122°19'		448										S	ASOS Commissioned 10/01/96	

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

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