

METEOROLOGICAL DATA FOR 1997

MUSKEGON, MI (MKG)

LATITUDE: 43° 10' 16" N LONGITUDE: 86° 14' 12" W ELEVATION (FT): GRND: 625 BARO: 629 TIME ZONE: EASTERN (UTC+ 5) WBAN: 14840

| | ELEMENT | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR | |
|----------------------|-------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-----------|---|
| TEMPERATURE °F | MEAN DAILY MAXIMUM | 30.3 | 32.6 | 40.5 | 52.2 | 58.5 | 78.0 | 79.3 | 73.7 | 69.6 | 59.3 | 41.9 | 35.8 | 54.3 | |
| | HIGHEST DAILY MAXIMUM | 61 | 46 | 63 | 71 | 77 | 88 | 89 | 84 | 82 | 82 | 59 | 45 | 89 | |
| | DATE OF OCCURRENCE | 04 | 18 | 28+ | 04 | 24 | 24 | 18 | 16 | 16 | 08 | 01 | 19 | JUL 18 | |
| | MEAN DAILY MINIMUM | 16.8 | 21.5 | 26.3 | 32.4 | 39.2 | 54.9 | 58.4 | 55.9 | 50.9 | 40.3 | 30.3 | 27.2 | 37.8 | |
| | LOWEST DAILY MINIMUM | -2 | -3 | 15 | 14 | 28 | 39 | 44 | 45 | 35 | 27 | 22 | 16 | -3 | |
| | DATE OF OCCURRENCE | 19 | 13 | 07 | 10 | 04 | 15 | 05 | 14 | 24 | 23 | 24+ | 31+ | FEB 13 | |
| | AVERAGE DRY BULB | 23.6 | 27.1 | 33.4 | 42.3 | 48.9 | 66.5 | 68.9 | 64.8 | 60.3 | 49.8 | 36.1 | 31.5 | 46.1 | |
| | MEAN WET BULB | 21.8 | 26.2 | 30.4 | 36.8 | 44.3 | 60.5 | 63.3 | 61.5 | 57.0 | | 34.5 | 30.2 | | |
| | MEAN DEW POINT | 18.1 | 21.9 | 24.6 | 28.0 | 38.5 | 55.7 | 59.2 | 58.8 | 53.8 | | 31.1 | 26.7 | | |
| | NUMBER OF DAYS WITH: | | | | | | | | | | | | | | |
| | MAXIMUM ≥ 90° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | MAXIMUM ≤ 32° | 20 | 15 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 47 | |
| | MINIMUM ≤ 32° | 29 | 26 | 23 | 16 | 3 | 0 | 0 | 0 | 0 | 8 | 20 | 27 | 152 | |
| MINIMUM ≤ 0° | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | | |
| H/C | HEATING DEGREE DAYS | 1277 | 1053 | 970 | 674 | 492 | 32 | 25 | 53 | 148 | 475 | 859 | 1028 | 7086 | |
| | COOLING DEGREE DAYS | 0 | 0 | 0 | 0 | 0 | 86 | 151 | 58 | 13 | 10 | 0 | 0 | 318 | |
| RH | MEAN (PERCENT) | 81 | 78 | 71 | 59 | 69 | 70 | 72 | 82 | 78 | 76 | 81 | 81 | 75 | |
| | HOUR 01 LST | 82 | 80 | 75 | 68 | 79 | 82 | 81 | 91 | 87 | 83 | 85 | 83 | 81 | |
| | HOUR 07 LST | 82 | 80 | 81 | 70 | 78 | 84 | 85 | 93 | 90 | 86 | 89 | 84 | 84 | |
| | HOUR 13 LST | 77 | 73 | 64 | 49 | 61 | 56 | 60 | 68 | 63 | 65 | 76 | 75 | 66 | |
| | HOUR 19 LST | 81 | 76 | 67 | 51 | 60 | 58 | 63 | 75 | 76 | 75 | 77 | 80 | 70 | |
| S | PERCENT POSSIBLE SUNSHINE | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| W/O | NUMBER OF DAYS WITH: | | | | | | | | | | | | | | |
| | HEAVY FOG (VISBY ≤ 1/4 MI) | 4 | 0 | 3 | 1 | 2 | 1 | 1 | 1 | 4 | 0 | 2 | 3 | 22 | |
| | THUNDERSTORMS | 0 | 0 | 0 | 2 | 3 | 6 | 8 | 2 | 4 | 1 | 0 | 0 | 26 | |
| 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.) | 29.27 | 29.44 | 29.35 | 29.30 | 29.26 | 29.26 | 29.34 | 29.35 | 29.32 | | 29.28 | 29.25 | | |
| | MEAN SEA-LEVEL PRESS. (IN.) | 29.98 | 30.14 | 30.05 | 30.00 | 29.95 | 29.94 | 30.01 | 30.02 | 30.00 | | 29.98 | 29.95 | | |
| WINDS | RESULTANT SPEED (MPH) | 3.9 | 3.6 | 2.5 | 3.2 | 1.7 | 3.2 | 2.2 | 0.9 | 2.3 | | 1.7 | 1.7 | | |
| | RES. DIR. (TENS OF DEGS.) | 27 | 27 | 29 | 26 | 29 | 21 | 27 | 32 | 28 | | 26 | 29 | | |
| | MEAN SPEED (MPH) | 12.3 | 10.4 | 11.0 | 10.2 | 10.6 | 7.8 | 8.0 | 7.5 | 8.5 | 9.3 | 8.8 | 8.8 | 9.4 | |
| | PREVAIL. DIR. (TENS OF DEGS.) | 29 | 29 | 30 | 01 | 30 | 07 | 26 | 36 | 36 | 19 | 29 | 29 | 29 | |
| | MAXIMUM 2-MINUTE WIND: | | | | | | | | | | | | | | |
| | SPEED (MPH) | 33 | 29 | 29 | 48 | 31 | 30 | 31 | 26 | 31 | 32 | 25 | 26 | 48 | |
| | DIR. (TENS OF DEGS.) | 32 | 20 | 10 | 22 | 20 | 08 | 15 | 21 | 29 | 19 | 20 | 21 | 22 | |
| | DATE OF OCCURRENCE | 16 | 18 | 13 | 06 | 05 | 01 | 02 | 15 | 30 | 13 | 27 | 15+ | APR 06 | |
| | MAXIMUM 5-SECOND WIND: | | | | | | | | | | | | | | |
| | SPEED (MPH) | 40 | 39 | 37 | 61 | 40 | 37 | 37 | 34 | 40 | 43 | 31 | 32 | 61 | |
| DIR. (TENS OF DEGS.) | 19 | 20 | 31 | 22 | 18 | 08 | 14 | 22 | 30 | 19 | 17 | 21 | 22 | | |
| DATE OF OCCURRENCE | 21+ | 18 | 14 | 06 | 11+ | 01 | 02 | 15 | 30 | 13 | 27 | 15 | APR 06 | | |
| PRECIPITATION | WATER EQUIVALENT: | | | | | | | | | | | | | | |
| | TOTAL (IN.) | 2.03 | 3.30 | 0.95 | 1.80 | 2.25 | 3.00 | 2.15 | 2.88 | 3.10 | 1.28 | 2.43 | 1.22 | 26.39 | |
| | GREATEST 24-HOUR (IN.) | 0.81 | 1.84 | 0.29 | 0.50 | 0.77 | 1.68 | 0.66 | 0.91 | 1.31 | 0.41 | 0.59 | 0.35 | 1.84 | |
| | DATE OF OCCURRENCE | 04-05 | 20-21 | 13-14 | 30 | 07-08 | 20-21 | 21 | 12 | 16 | 26-27 | 02-03 | 24-25 | FEB 20-21 | |
| | NUMBER OF DAYS WITH: | | | | | | | | | | | | | | |
| | PRECIPITATION ≥ 0.01 | 19 | 10 | 11 | 11 | 14 | 5 | 9 | 13 | 10 | 10 | 21 | 16 | 149 | |
| PRECIPITATION ≥ 0.10 | 5 | 5 | 5 | 6 | 7 | 4 | 5 | 8 | 5 | 5 | 8 | 4 | 67 | | |
| PRECIPITATION ≥ 1.00 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | | |
| SNOWFALL | SNOW, ICE PELLETS, HAIL: | | | | | | | | | | | | | | |
| | TOTAL (IN.) | | | | | | | | | | | | | | |
| | GREATEST 24-HOUR (IN.) | | | | | | | | | | | | | | |
| | DATE OF OCCURRENCE | | | | | | | | | | | | | | |
| | MAXIMUM SNOW DEPTH (IN.) | 16 | 5 | | | | | | | | | 1 | | | |
| | DATE OF OCCURRENCE | 18 | 1 | | | | | | | | | 16 | | | |
| NUMBER OF DAYS WITH: | | | | | | | | | | | | | | | |
| SNOWFALL ≥ 1.0 | | | | | | | | | | | | | | | |

NORMALS, MEANS, AND EXTREMES

MUSKEGON, MI (MKG)

LATITUDE: 43° 10' 16" N LONGITUDE: 86° 14' 12" W ELEVATION (FT): GRND: 625 BARO: 629 TIME ZONE: EASTERN (UTC+ 5) WBAN: 14840

| ELEMENT | | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|-----------------------|-----------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|----------|
| TEMPERATURE °F | NORMAL DAILY MAXIMUM | 30 | 28.8 | 30.8 | 41.2 | 54.5 | 66.6 | 75.6 | 80.3 | 78.1 | 70.8 | 59.0 | 46.0 | 33.7 | 55.5 |
| | MEAN DAILY MAXIMUM | 50 | 29.6 | 31.4 | 41.1 | 54.5 | 66.5 | 76.0 | 80.4 | 78.6 | 70.8 | 59.4 | 45.4 | 34.2 | 55.7 |
| | HIGHEST DAILY MAXIMUM | 58 | 63 | 62 | 80 | 86 | 93 | 98 | 96 | 99 | 95 | 83 | 76 | 64 | 99 |
| | YEAR OF OCCURRENCE | | 1950 | 1976 | 1981 | 1970 | 1962 | 1995 | 1988 | 1964 | 1954 | 1971 | 1961 | 1982 | AUG 1964 |
| | MEAN OF EXTREME MAXS. | 50 | 45.5 | 46.8 | 64.5 | 75.3 | 82.6 | 88.5 | 89.8 | 88.5 | 84.8 | 75.2 | 63.4 | 51.2 | 71.3 |
| | NORMAL DAILY MINIMUM | 30 | 17.7 | 18.0 | 25.4 | 35.4 | 45.1 | 54.4 | 60.2 | 58.8 | 51.5 | 41.5 | 32.7 | 23.3 | 38.7 |
| | MEAN DAILY MINIMUM | 50 | 17.4 | 18.0 | 25.1 | 35.5 | 45.2 | 54.8 | 60.2 | 59.0 | 51.5 | 41.8 | 32.4 | 23.0 | 38.7 |
| | LOWEST DAILY MINIMUM | 58 | -13 | -19 | -10 | 1 | 22 | 31 | 40 | 36 | 27 | 21 | -14 | -15 | -19 |
| | YEAR OF OCCURRENCE | | 1948 | 1996 | 1943 | 1982 | 1947 | 1972 | 1945 | 1979 | 1991 | 1980 | 1950 | 1976 | FEB 1996 |
| | MEAN OF EXTREME MINS. | 50 | -1.4 | -1.5 | 6.3 | 20.0 | 31.0 | 40.7 | 47.3 | 46.0 | 34.8 | 26.7 | 17.3 | 4.8 | 22.7 |
| | NORMAL DRY BULB | 30 | 23.3 | 24.4 | 33.3 | 45.0 | 55.9 | 65.0 | 70.3 | 68.5 | 61.2 | 50.3 | 39.4 | 28.5 | 47.1 |
| | MEAN DRY BULB | 50 | 23.5 | 24.7 | 33.0 | 45.0 | 56.0 | 65.5 | 70.3 | 68.8 | 61.1 | 50.6 | 38.8 | 28.7 | 47.2 |
| | MEAN WET BULB | 14 | 23.1 | 24.0 | 30.6 | 40.3 | 49.9 | 59.5 | 60.0 | 64.0 | 56.5 | 46.0 | 35.5 | 25.6 | 42.9 |
| | MEAN DEW POINT | 14 | 19.0 | 19.1 | 24.5 | 33.4 | 43.2 | 54.3 | 56.2 | 60.6 | 52.8 | 41.6 | 31.1 | 21.9 | 38.1 |
| | NORMAL NO. DAYS WITH: | | | | | | | | | | | | | | |
| MAXIMUM ≥ 90° | 30 | 0.0 | 0.0 | 0.0 | 0.0 | * | 0.7 | 1.0 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 2.4 | |
| MAXIMUM ≤ 32° | 30 | 18.6 | 15.5 | 6.0 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 13.7 | 56.2 | |
| MINIMUM ≤ 32° | 30 | 29.2 | 26.2 | 23.8 | 11.1 | 1.8 | * | 0.0 | 0.0 | 0.3 | 5.3 | 15.2 | 26.7 | 139.6 | |
| MINIMUM ≤ 0° | 30 | 1.9 | 1.9 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 4.7 | |
| H/C | NORMAL HEATING DEG. DAYS | 30 | 1293 | 1137 | 983 | 600 | 309 | 78 | 10 | 25 | 133 | 456 | 768 | 1132 | 6924 |
| | NORMAL COOLING DEG. DAYS | 30 | 0 | 0 | 0 | 0 | 27 | 78 | 174 | 133 | 19 | 0 | 0 | 0 | 431 |
| RH | NORMAL (PERCENT) | 30 | 78 | 75 | 71 | 65 | 64 | 68 | 71 | 74 | 76 | 74 | 75 | 79 | 72 |
| | HOUR 01 LST | 30 | 80 | 78 | 75 | 72 | 73 | 78 | 81 | 85 | 84 | 79 | 78 | 80 | 79 |
| | HOUR 07 LST | 30 | 80 | 80 | 79 | 77 | 75 | 80 | 84 | 88 | 88 | 83 | 80 | 81 | 81 |
| | HOUR 13 LST | 30 | 75 | 70 | 64 | 56 | 54 | 57 | 58 | 61 | 63 | 64 | 70 | 76 | 64 |
| | HOUR 19 LST | 30 | 77 | 73 | 67 | 58 | 55 | 58 | 60 | 65 | 72 | 72 | 74 | 78 | 67 |
| S | PERCENT POSSIBLE SUNSHINE | | | | | | | | | | | | | | |
| W/O | MEAN NO. DAYS WITH: | | | | | | | | | | | | | | |
| | HEAVY FOG (VISBY ≤ 1/4 MI) | 54 | 1.6 | 1.7 | 2.2 | 2.0 | 2.4 | 2.1 | 1.5 | 2.0 | 1.6 | 2.1 | 1.8 | 1.5 | 22.5 |
| | THUNDERSTORMS | 57 | 0.2 | 0.4 | 1.6 | 3.4 | 4.4 | 6.2 | 6.2 | 5.9 | 4.8 | 2.2 | 1.1 | 0.4 | 36.8 |
| CLOUDINESS | MEAN: | | | | | | | | | | | | | | |
| | SUNRISE-SUNSET (OKTAS) | 54 | 7.0 | 6.5 | 5.8 | 5.4 | 4.9 | 4.6 | 4.0 | 4.2 | 4.6 | 5.1 | 6.6 | 6.9 | 5.5 |
| | MIDNIGHT-MIDNIGHT (OKTAS) | 26 | 6.8 | 6.1 | 5.5 | 4.8 | 4.5 | 4.2 | 3.8 | 3.8 | 4.4 | 5.1 | 6.4 | 6.8 | 5.2 |
| | MEAN NO. DAYS WITH: | | | | | | | | | | | | | | |
| CLEAR | 54 | 1.6 | 2.9 | 5.2 | 6.5 | 8.4 | 8.7 | 10.9 | 10.6 | 8.9 | 7.4 | 2.5 | 1.6 | 75.2 | |
| PARTLY CLOUDY | 54 | 3.4 | 4.7 | 7.3 | 7.3 | 8.9 | 9.8 | 10.8 | 10.7 | 9.1 | 8.2 | 4.4 | 3.8 | 88.4 | |
| CLOUDY | 54 | 25.9 | 20.6 | 18.5 | 16.1 | 13.8 | 11.5 | 9.3 | 9.7 | 12.1 | 15.4 | 23.1 | 25.6 | 201.6 | |
| PR | MEAN STATION PRESSURE (IN) | 24 | 29.34 | 29.38 | 29.31 | 29.29 | 29.29 | 29.28 | 29.31 | 29.35 | 29.37 | 29.36 | 29.33 | 29.36 | 29.33 |
| | MEAN SEA-LEVEL PRES. (IN) | 14 | 30.05 | 30.08 | 30.05 | 29.96 | 29.99 | 29.96 | 29.98 | 30.03 | 30.04 | 30.04 | 30.04 | 30.07 | 30.02 |
| WINDS | MEAN SPEED (MPH) | 31 | 12.1 | 11.3 | 11.7 | 11.6 | 9.8 | 9.2 | 8.9 | 8.5 | 9.4 | 10.4 | 12.0 | 11.6 | 10.5 |
| | PREVAIL. DIR (TENS OF DEGS) | 22 | 29 | 30 | 30 | 30 | 22 | 22 | 22 | 20 | 12 | 13 | 29 | 30 | 30 |
| | MAXIMUM 2-MINUTE: | | | | | | | | | | | | | | |
| | SPEED (MPH) | 1 | 33 | 29 | 29 | 48 | 31 | 30 | 31 | 26 | 31 | 32 | 25 | 26 | 48 |
| | DIR. (TENS OF DEGS) | | 32 | 20 | 10 | 22 | 20 | 80 | 15 | 21 | 29 | 19 | 20 | 21 | 22 |
| | YEAR OF OCCURRENCE | | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | APR 1997 |
| PEAK GUST: | | | | | | | | | | | | | | | |
| SPEED (MPH) | 1 | 40 | 39 | 37 | 61 | 40 | 37 | 37 | 34 | 40 | 43 | 31 | 32 | 61 | |
| DIR. (TENS OF DEGS) | | 19 | 20 | 31 | 22 | 18 | 80 | 14 | 22 | 30 | 19 | 17 | 21 | 22 | |
| YEAR OF OCCURRENCE | | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | 1997 | APR 1997 | |
| PRECIPITATION | NORMAL (IN) | 30 | 2.34 | 1.49 | 2.51 | 2.90 | 2.60 | 2.35 | 2.10 | 3.41 | 3.88 | 2.80 | 3.15 | 3.03 | 32.56 |
| | MAXIMUM MONTHLY (IN) | 58 | 4.55 | 3.30 | 6.59 | 7.12 | 6.48 | 5.46 | 6.63 | 9.88 | 13.55 | 7.33 | 6.61 | 5.42 | 13.55 |
| | YEAR OF OCCURRENCE | | 1982 | 1997 | 1976 | 1947 | 1990 | 1967 | 1952 | 1975 | 1986 | 1991 | 1985 | 1949 | SEP 1986 |
| | MINIMUM MONTHLY (IN) | 58 | 0.45 | 0.36 | 0.55 | 0.72 | 0.33 | 0.19 | 0.47 | 0.11 | 0.17 | 0.33 | 0.62 | 0.91 | 0.11 |
| | YEAR OF OCCURRENCE | | 1956 | 1982 | 1958 | 1989 | 1992 | 1959 | 1951 | 1969 | 1979 | 1944 | 1986 | 1960 | AUG 1969 |
| | MAXIMUM IN 24 HOURS (IN) | 58 | 1.69 | 1.84 | 2.36 | 2.31 | 2.59 | 4.03 | 2.54 | 3.72 | 6.00 | 3.21 | 2.31 | 3.04 | 6.00 |
| | YEAR OF OCCURRENCE | | 1974 | 1997 | 1976 | 1963 | 1989 | 1994 | 1959 | 1975 | 1986 | 1954 | 1990 | 1982 | SEP 1986 |
| | NORMAL NO. DAYS WITH: | | | | | | | | | | | | | | |
| PRECIPITATION ≥ 0.01 | 30 | 18.2 | 13.7 | 13.2 | 12.2 | 10.0 | 9.6 | 8.4 | 9.0 | 10.5 | 11.5 | 13.9 | 17.3 | 147.5 | |
| PRECIPITATION ≥ 1.00 | 30 | 0.1 | * | 0.2 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.7 | 0.9 | 0.2 | 0.5 | 4.4 | |
| SNOWFALL | NORMAL (IN) | 30 | 38.3 | 19.2 | 12.3 | 3.7 | T | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 8.7 | 30.6 | 113.5 |
| | MAXIMUM MONTHLY (IN) | 57 | 102.4 | 45.8 | 35.7 | 20.4 | 0.4 | 0.0 | T | 0.0 | T | 4.9 | 25.7 | 82.6 | 102.4 |
| | YEAR OF OCCURRENCE | | 1982 | 1981 | 1965 | 1982 | 1954 | | 1990 | | 1994 | 1967 | 1995 | 1963 | JAN 1982 |
| | MAXIMUM IN 24 HOURS (IN) | 57 | 22.0 | 17.5 | 9.9 | 12.2 | 0.4 | 0.0 | T | 0.0 | T | 4.7 | 9.1 | 20.1 | 22.0 |
| | YEAR OF OCCURRENCE | | 1982 | 1965 | 1961 | 1982 | 1954 | | 1990 | | 1994 | 1967 | 1964 | 1963 | JAN 1982 |
| | MAXIMUM SNOW DEPTH (IN) | 49 | 33 | 32 | 22 | 13 | 0 | 0 | 0 | 0 | 0 | 3 | 11 | 34 | 34 |
| | YEAR OF OCCURRENCE | | 1979 | 1958 | 1963 | 1982 | | | | | | 1967 | 1955 | 1963 | DEC 1963 |
| NORMAL NO. DAYS WITH: | | | | | | | | | | | | | | | |
| SNOWFALL ≥ 1.0 | 30 | 11.0 | 6.5 | 4.1 | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 2.7 | 9.3 | 34.8 | |

PRECIPITATION (inches) 1997 MUSKEGON, MI (MKG)

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL |
|----------------|------|------|------|------|------|------|------|------|-------|------|------|------|--------|
| 1968 | 1.87 | 2.44 | 0.81 | 1.66 | 2.44 | 2.86 | 3.05 | 1.83 | 3.55 | 2.68 | 2.91 | 3.71 | 29.81 |
| 1969 | 3.00 | 0.43 | 1.39 | 3.49 | 2.85 | 3.41 | 3.00 | 0.11 | 1.57 | 6.56 | 2.65 | 1.28 | 29.74 |
| 1970 | 2.51 | 1.03 | 2.94 | 3.35 | 2.06 | 2.42 | 1.90 | 1.85 | 7.15 | 2.50 | 3.01 | 2.49 | 33.21 |
| 1971 | 1.87 | 2.19 | 1.99 | 1.67 | 1.67 | 0.98 | 1.74 | 1.33 | 1.77 | 0.71 | 1.86 | 5.34 | 23.12 |
| 1972 | 2.21 | 1.01 | 2.30 | 2.09 | 1.18 | 3.29 | 3.51 | 6.67 | 3.28 | 3.45 | 1.32 | 4.08 | 34.39 |
| 1973 | 1.35 | 1.64 | 2.57 | 3.65 | 3.77 | 2.10 | 3.08 | 3.01 | 1.67 | 3.31 | 2.30 | 2.91 | 31.36 |
| 1974 | 4.30 | 2.24 | 4.29 | 3.56 | 4.13 | 2.65 | 1.48 | 2.78 | 0.76 | 2.06 | 2.67 | 1.58 | 32.50 |
| 1975 | 3.57 | 1.98 | 2.54 | 3.06 | 2.63 | 4.97 | 2.07 | 9.88 | 1.32 | 1.15 | 4.23 | 2.79 | 40.19 |
| 1976 | 1.72 | 2.81 | 6.59 | 3.21 | 5.11 | 1.41 | 1.18 | 0.95 | 1.08 | 1.29 | 1.51 | 1.75 | 28.61 |
| 1977 | 2.91 | 1.16 | 3.48 | 1.71 | 1.51 | 2.52 | 2.41 | 2.48 | 4.40 | 2.46 | 3.11 | 3.97 | 32.12 |
| 1978 | 3.24 | 0.81 | 1.69 | 3.41 | 2.99 | 3.19 | 1.54 | 4.25 | 4.53 | 3.07 | 2.37 | 2.81 | 33.90 |
| 1979 | 2.76 | 0.90 | 4.04 | 2.91 | 1.96 | 2.07 | 1.71 | 4.15 | 0.17 | 4.66 | 3.26 | 2.49 | 31.08 |
| 1980 | 2.35 | 0.69 | 1.02 | 4.41 | 1.77 | 4.36 | 3.62 | 5.52 | 4.31 | 2.17 | 1.88 | 3.27 | 35.37 |
| 1981 | 0.77 | 2.85 | 0.95 | 3.54 | 2.82 | 3.93 | 1.86 | 3.15 | 5.41 | 3.16 | 2.50 | 2.17 | 33.11 |
| 1982 | 4.55 | 0.36 | 2.40 | 2.32 | 3.40 | 2.79 | 2.43 | 4.67 | 1.80 | 1.63 | 5.34 | 5.27 | 36.96 |
| 1983 | 1.20 | 1.22 | 2.60 | 3.26 | 3.30 | 1.72 | 1.61 | 1.46 | 7.47 | 2.53 | 4.47 | 4.07 | 34.91 |
| 1984 | 1.32 | 1.18 | 2.06 | 1.90 | 5.62 | 1.90 | 2.49 | 2.02 | 1.97 | 2.23 | 3.19 | 4.82 | 30.70 |
| 1985 | 2.45 | 2.83 | 4.02 | 2.13 | 1.55 | 0.98 | 3.27 | 7.08 | 3.35 | 5.01 | 6.61 | 2.99 | 42.27 |
| 1986 | 1.03 | 2.68 | 1.73 | 1.77 | 2.21 | 1.76 | 3.15 | 2.98 | 13.55 | 2.21 | 0.62 | 1.36 | 35.05 |
| 1987 | 1.52 | 0.68 | 1.48 | 2.82 | 2.51 | 1.15 | 2.13 | 8.12 | 4.56 | 3.31 | 3.18 | 4.21 | 35.67 |
| 1988 | 2.89 | 1.66 | 1.95 | 3.83 | 0.43 | 0.47 | 1.65 | 3.11 | 5.92 | 4.79 | 6.58 | 2.82 | 36.10 |
| 1989 | 1.61 | 1.04 | 1.92 | 0.72 | 4.64 | 0.89 | 1.36 | 4.86 | 2.41 | 1.58 | 2.92 | 1.90 | 25.85 |
| 1990 | 2.34 | 1.74 | 2.42 | 2.00 | 6.48 | 3.63 | 1.26 | 1.22 | 3.79 | 4.36 | 5.31 | 2.60 | 37.15 |
| 1991 | 1.36 | 0.75 | 4.40 | 3.56 | 3.52 | 3.84 | 3.31 | 3.88 | 3.32 | 7.33 | 4.25 | 1.82 | 41.34 |
| 1992 | 1.36 | 1.33 | 2.30 | 3.30 | 0.33 | 1.50 | 2.68 | 1.97 | 3.54 | 2.46 | 6.26 | 2.69 | 29.72 |
| 1993 | 2.61 | 0.83 | 1.66 | 4.83 | 2.26 | 4.40 | 3.87 | 6.40 | 4.59 | 1.66 | 2.00 | 1.10 | 36.21 |
| 1994 | 2.66 | 2.65 | 1.34 | 2.38 | 1.28 | 4.99 | 2.46 | 5.22 | 2.98 | 2.19 | 3.71 | 1.01 | 32.87 |
| 1995 | 2.82 | 1.30 | 1.79 | 3.47 | 1.83 | 0.71 | 2.67 | 3.54 | 0.99 | 3.68 | 4.82 | 1.88 | 29.50 |
| 1996 | 1.47 | 1.58 | 1.22 | 2.47 | 3.37 | 4.46 | 1.87 | 1.10 | 2.62 | 3.64 | 1.33 | 1.87 | 27.00 |
| 1997 | 2.03 | 3.30 | 0.95 | 1.80 | 2.25 | 3.00 | 2.15 | 2.88 | 3.10 | 1.28 | 2.43 | 1.22 | 26.39 |
| POR= 57 YRS | 2.25 | 1.69 | 2.41 | 2.99 | 2.73 | 2.62 | 2.39 | 3.16 | 3.38 | 2.69 | 3.16 | 2.57 | 32.04 |

WBAN : 14840

AVERAGE TEMPERATURE (°F) 1997 MUSKEGON, MI (MKG)

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|--------|
| 1968 | 22.8 | 22.1 | 38.9 | 49.0 | 54.5 | 64.9 | 68.9 | 69.7 | 62.6 | 52.8 | 38.9 | 26.6 | 47.6 |
| 1969 | 22.9 | 25.7 | 30.6 | 46.8 | 56.8 | 61.1 | 70.9 | 71.7 | 62.5 | 49.7 | 36.5 | 26.3 | 46.8 |
| 1970 | 19.2 | 22.9 | 28.6 | 46.5 | 58.4 | 67.0 | 71.5 | 69.4 | 61.8 | 53.2 | 39.4 | 27.4 | 47.1 |
| 1971 | 20.0 | 24.8 | 29.3 | 42.9 | 53.6 | 68.6 | 67.9 | 66.7 | 64.5 | 57.8 | 38.1 | 31.6 | 47.2 |
| 1972 | 21.8 | 22.4 | 30.3 | 42.6 | 58.7 | 61.7 | 68.0 | 68.2 | 62.3 | 47.7 | 38.2 | 27.5 | 45.8 |
| 1973 | 27.9 | 24.1 | 41.4 | 44.9 | 51.9 | 66.5 | 71.0 | 71.6 | 62.0 | 54.5 | 40.0 | 26.9 | 48.6 |
| 1974 | 25.1 | 20.3 | 32.9 | 45.2 | 52.1 | 62.2 | 70.1 | 68.7 | 58.5 | 47.9 | 39.7 | 31.0 | 46.1 |
| 1975 | 28.1 | 26.0 | 31.0 | 41.0 | 59.5 | 67.4 | 71.1 | 70.2 | 56.8 | 53.3 | 46.0 | 30.4 | 48.4 |
| 1976 | 23.6 | 32.3 | 37.6 | 46.5 | 52.0 | 67.7 | 70.0 | 67.1 | 58.3 | 46.0 | 33.1 | 20.6 | 46.2 |
| 1977 | 14.3 | 22.0 | 38.8 | 50.3 | 63.1 | 62.3 | 72.2 | 66.6 | 62.3 | 47.8 | 39.5 | 26.2 | 47.1 |
| 1978 | 19.5 | 15.7 | 29.2 | 44.7 | 58.0 | 63.2 | 67.3 | 68.5 | 63.2 | 48.1 | 37.6 | 26.4 | 45.1 |
| 1979 | 17.0 | 14.5 | 33.6 | 41.2 | 54.7 | 64.2 | 68.6 | 66.4 | 60.7 | 49.4 | 39.2 | 31.3 | 45.1 |
| 1980 | 23.7 | 22.0 | 30.6 | 44.8 | 56.4 | 61.5 | 70.9 | 70.7 | 60.9 | 45.7 | 37.8 | 25.2 | 45.9 |
| 1981 | 20.6 | 28.1 | 34.9 | 47.1 | 53.8 | 65.9 | 69.7 | 69.6 | 58.9 | 47.2 | 38.7 | 29.7 | 47.0 |
| 1982 | 16.1 | 21.6 | 30.5 | 40.1 | 62.0 | 59.7 | 71.6 | 67.1 | 60.4 | 52.4 | 40.3 | 35.7 | 46.5 |
| 1983 | 26.9 | 30.2 | 36.4 | 41.9 | 50.5 | 66.2 | 74.4 | 72.2 | 62.6 | 50.0 | 40.7 | 20.8 | 47.7 |
| 1984 | 19.3 | 31.9 | 27.5 | 46.3 | 51.4 | 66.9 | 68.3 | 71.7 | 59.7 | 52.7 | 39.4 | 32.0 | 47.3 |
| 1985 | 20.4 | 21.6 | 35.1 | 50.3 | 58.7 | 62.3 | 69.3 | 67.1 | 63.3 | 50.8 | 38.0 | 24.6 | 46.8 |
| 1986 | 24.6 | 24.0 | 36.5 | 49.4 | 58.1 | 64.5 | 72.9 | 65.6 | 61.9 | 49.7 | 36.4 | 31.1 | 47.9 |
| 1987 | 26.5 | 30.7 | 37.0 | 48.6 | 60.6 | 68.9 | 73.4 | 68.7 | 62.0 | 46.0 | 41.8 | 33.3 | 49.8 |
| 1988 | 22.9 | 22.5 | 34.2 | 45.6 | 59.8 | 67.6 | 72.7 | 73.5 | 61.2 | 45.2 | 41.2 | 28.8 | 47.9 |
| 1989 | 31.0 | 21.8 | 31.5 | 43.9 | 54.7 | 65.0 | 71.8 | 67.9 | 58.7 | 49.8 | 36.6 | 20.5 | 46.1 |
| 1990 | 32.1 | 28.7 | 36.9 | 46.3 | 53.7 | 64.7 | 69.9 | 68.2 | 62.3 | 49.3 | 43.0 | 31.0 | 48.8 |
| 1991 | 24.5 | 29.5 | 37.7 | 49.1 | 63.0 | 69.5 | 71.1 | 70.6 | 60.5 | 52.1 | 36.3 | 30.5 | 49.5 |
| 1992 | 28.8 | 29.9 | 33.6 | 43.1 | 55.4 | 61.7 | 66.2 | 64.5 | 59.9 | 49.0 | 38.3 | 31.0 | 46.8 |
| 1993 | 26.1 | 23.6 | 33.3 | 43.3 | 56.9 | 64.7 | 72.2 | 71.8 | 57.1 | 47.8 | 38.2 | 29.3 | 47.0 |
| 1994 | 16.0 | 20.4 | 32.9 | 45.5 | 53.3 | 66.3 | 69.7 | 65.5 | 63.6 | 52.3 | 42.0 | 33.8 | 46.8 |
| 1995 | 27.1 | 23.9 | 36.2 | 42.8 | 55.2 | 69.8 | 71.8 | 74.1 | 57.7 | 50.5 | 32.1 | 24.5 | 47.1 |
| 1996 | 21.6 | 24.2 | 29.0 | 41.7 | 53.8 | 64.5 | 65.2 | 70.0 | 61.3 | 49.2 | 34.1 | 29.1 | 45.3 |
| 1997 | 23.6 | 27.1 | 33.4 | 42.3 | 48.9 | 66.5 | 68.9 | 64.8 | 60.3 | 49.8 | 36.1 | 31.5 | 46.1 |
| POR= 57 YRS | 23.6 | 24.6 | 32.8 | 45.2 | 55.7 | 65.3 | 70.1 | 68.8 | 61.1 | 50.7 | 38.9 | 28.6 | 47.1 |

WBAN : 14840

HEATING DEGREE DAYS (base 65°F) 1997 MUSKEGON, MI (MKG)

| YEAR | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | TOTAL |
|---------|-----|-----|-----|-----|-----|------|------|------|------|-----|-----|-----|-------|
| 1968-69 | 35 | 40 | 103 | 402 | 778 | 1184 | 1296 | 1092 | 1059 | 538 | 272 | 162 | 6961 |
| 1969-70 | 5 | 1 | 143 | 471 | 850 | 1192 | 1411 | 1172 | 1124 | 564 | 248 | 54 | 7235 |
| 1970-71 | 9 | 20 | 146 | 367 | 763 | 1161 | 1387 | 1119 | 1098 | 657 | 352 | 39 | 7118 |
| 1971-72 | 31 | 22 | 120 | 246 | 801 | 1031 | 1333 | 1231 | 1068 | 665 | 233 | 133 | 6914 |
| 1972-73 | 41 | 44 | 118 | 529 | 797 | 1152 | 1147 | 1137 | 726 | 602 | 401 | 15 | 6709 |
| 1973-74 | 3 | 8 | 155 | 328 | 743 | 1171 | 1229 | 1246 | 989 | 587 | 398 | 116 | 6973 |
| 1974-75 | 7 | 13 | 215 | 525 | 750 | 1046 | 1137 | 1085 | 1050 | 714 | 202 | 62 | 6806 |
| 1975-76 | 16 | 5 | 249 | 364 | 565 | 1066 | 1275 | 942 | 841 | 561 | 400 | 24 | 6308 |
| 1976-77 | 5 | 43 | 219 | 581 | 948 | 1371 | 1564 | 1200 | 807 | 436 | 145 | 117 | 7436 |
| 1977-78 | 7 | 54 | 101 | 526 | 758 | 1196 | 1402 | 1374 | 1105 | 599 | 239 | 100 | 7461 |
| 1978-79 | 29 | 15 | 125 | 519 | 815 | 1190 | 1481 | 1408 | 969 | 708 | 340 | 84 | 7683 |
| 1979-80 | 19 | 49 | 160 | 482 | 766 | 1039 | 1277 | 1239 | 1060 | 601 | 277 | 152 | 7121 |
| 1980-81 | 0 | 8 | 152 | 592 | 806 | 1228 | 1368 | 1028 | 923 | 529 | 345 | 34 | 7013 |
| 1981-82 | 17 | 9 | 196 | 545 | 782 | 1089 | 1509 | 1209 | 1064 | 738 | 147 | 165 | 7470 |
| 1982-83 | 9 | 52 | 172 | 390 | 734 | 899 | 1173 | 969 | 877 | 685 | 449 | 77 | 6486 |
| 1983-84 | 20 | 1 | 137 | 457 | 723 | 1365 | 1411 | 954 | 1156 | 559 | 415 | 19 | 7217 |
| 1984-85 | 23 | 11 | 193 | 374 | 761 | 1016 | 1376 | 1206 | 920 | 465 | 214 | 123 | 6682 |
| 1985-86 | 13 | 15 | 153 | 431 | 802 | 1244 | 1244 | 1144 | 878 | 481 | 219 | 75 | 6699 |
| 1986-87 | 7 | 60 | 129 | 466 | 855 | 1042 | 1184 | 954 | 863 | 487 | 204 | 32 | 6283 |
| 1987-88 | 17 | 35 | 112 | 582 | 690 | 976 | 1299 | 1227 | 948 | 573 | 189 | 55 | 6703 |
| 1988-89 | 11 | 19 | 130 | 606 | 708 | 1115 | 1044 | 1203 | 1032 | 626 | 323 | 72 | 6889 |
| 1989-90 | 0 | 27 | 215 | 468 | 843 | 1371 | 1012 | 1008 | 863 | 580 | 341 | 79 | 6807 |
| 1990-91 | 6 | 24 | 149 | 484 | 655 | 1046 | 1249 | 990 | 840 | 469 | 157 | 12 | 6081 |
| 1991-92 | 9 | 2 | 199 | 397 | 855 | 1061 | 1116 | 1013 | 965 | 653 | 304 | 134 | 6708 |
| 1992-93 | 24 | 70 | 185 | 493 | 796 | 1047 | 1200 | 1152 | 977 | 643 | 277 | 79 | 6943 |
| 1993-94 | 0 | 11 | 244 | 530 | 796 | 1101 | 1513 | 1244 | 989 | 582 | 365 | 64 | 7439 |
| 1994-95 | 5 | 57 | 94 | 385 | 683 | 957 | 1166 | 1144 | 887 | 661 | 298 | 34 | 6371 |
| 1995-96 | 21 | 1 | 243 | 449 | 981 | 1247 | 1340 | 1180 | 1110 | 692 | 357 | 64 | 7685 |
| 1996-97 | 42 | 2 | 167 | 483 | 919 | 1106 | 1277 | 1053 | 970 | 674 | 492 | 32 | 7217 |
| 1997- | 25 | 53 | 148 | 475 | 859 | 1028 | | | | | | | |

WBAN : 14840

COOLING DEGREE DAYS (base 65°F) 1997 MUSKEGON, MI (MKG)

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|
| 1969 | 0 | 0 | 0 | 0 | 25 | 52 | 195 | 217 | 75 | 1 | 0 | 0 | 565 |
| 1970 | 0 | 0 | 0 | 13 | 49 | 121 | 220 | 162 | 54 | 7 | 0 | 0 | 626 |
| 1971 | 0 | 0 | 0 | 0 | 5 | 151 | 125 | 82 | 114 | 28 | 0 | 0 | 505 |
| 1972 | 0 | 0 | 0 | 0 | 43 | 41 | 144 | 149 | 41 | 1 | 0 | 0 | 419 |
| 1973 | 0 | 0 | 0 | 4 | 0 | 67 | 194 | 220 | 75 | 13 | 0 | 0 | 573 |
| 1974 | 0 | 0 | 0 | 0 | 3 | 38 | 173 | 137 | 27 | 1 | 0 | 0 | 379 |
| 1975 | 0 | 0 | 0 | 0 | 38 | 141 | 213 | 174 | 6 | 11 | 0 | 0 | 583 |
| 1976 | 0 | 0 | 0 | 15 | 2 | 113 | 166 | 118 | 21 | 1 | 0 | 0 | 436 |
| 1977 | 0 | 0 | 0 | 4 | 95 | 42 | 237 | 114 | 28 | 0 | 0 | 0 | 520 |
| 1978 | 0 | 0 | 0 | 0 | 29 | 57 | 109 | 131 | 79 | 0 | 0 | 0 | 405 |
| 1979 | 0 | 0 | 0 | 0 | 29 | 67 | 137 | 103 | 36 | 7 | 0 | 0 | 379 |
| 1980 | 0 | 0 | 0 | 1 | 20 | 54 | 191 | 190 | 36 | 0 | 0 | 0 | 492 |
| 1981 | 0 | 0 | 0 | 0 | 6 | 67 | 172 | 160 | 20 | 0 | 0 | 0 | 425 |
| 1982 | 0 | 0 | 0 | 0 | 61 | 12 | 220 | 126 | 41 | 9 | 0 | 0 | 469 |
| 1983 | 0 | 0 | 0 | 0 | 4 | 122 | 319 | 230 | 72 | 2 | 0 | 0 | 749 |
| 1984 | 0 | 0 | 0 | 2 | 0 | 81 | 134 | 227 | 40 | 0 | 0 | 0 | 484 |
| 1985 | 0 | 0 | 0 | 30 | 24 | 47 | 153 | 88 | 108 | 0 | 0 | 0 | 450 |
| 1986 | 0 | 0 | 0 | 18 | 11 | 67 | 258 | 82 | 42 | 0 | 0 | 0 | 478 |
| 1987 | 0 | 0 | 0 | 1 | 75 | 155 | 282 | 157 | 32 | 0 | 0 | 0 | 702 |
| 1988 | 0 | 0 | 0 | 0 | 36 | 140 | 258 | 288 | 23 | 0 | 0 | 0 | 745 |
| 1989 | 0 | 0 | 0 | 0 | 12 | 81 | 217 | 122 | 32 | 0 | 0 | 0 | 464 |
| 1990 | 0 | 0 | 0 | 25 | 0 | 74 | 166 | 131 | 73 | 4 | 0 | 0 | 473 |
| 1991 | 0 | 0 | 0 | 2 | 103 | 154 | 206 | 184 | 70 | 6 | 0 | 0 | 725 |
| 1992 | 0 | 0 | 0 | 2 | 13 | 39 | 69 | 62 | 37 | 1 | 0 | 0 | 223 |
| 1993 | 0 | 0 | 0 | 0 | 29 | 76 | 229 | 225 | 15 | 2 | 0 | 0 | 576 |
| 1994 | 0 | 0 | 0 | 4 | 10 | 110 | 156 | 80 | 59 | 0 | 0 | 0 | 419 |
| 1995 | 0 | 0 | 0 | 0 | 0 | 185 | 238 | 290 | 30 | 4 | 0 | 0 | 747 |
| 1996 | 0 | 0 | 0 | 0 | 17 | 57 | 52 | 165 | 62 | 0 | 0 | 0 | 353 |
| 1997 | 0 | 0 | 0 | 0 | 0 | 86 | 151 | 58 | 13 | 10 | 0 | 0 | 318 |

SNOWFALL (inches) 1997 MUSKEGON, MI (MKG)

| YEAR | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | TOTAL |
|----------------|-----|-----|-----|-----|------|------|-------|------|------|------|-----|-----|-------|
| 1968-69 | 0.0 | 0.0 | 0.0 | T | 5.7 | 37.4 | 51.4 | 9.6 | 11.6 | T | 0.0 | 0.0 | 115.7 |
| 1969-70 | 0.0 | 0.0 | 0.0 | T | 20.6 | 17.7 | 59.9 | 16.0 | 21.5 | 5.4 | 0.0 | 0.0 | 141.1 |
| 1970-71 | 0.0 | 0.0 | 0.0 | 0.0 | 10.5 | 27.9 | 45.2 | 10.5 | 29.0 | 3.2 | 0.0 | 0.0 | 126.3 |
| 1971-72 | 0.0 | 0.0 | 0.0 | 0.0 | 20.2 | 8.4 | 39.0 | 19.4 | 22.5 | 2.5 | 0.0 | 0.0 | 112.0 |
| 1972-73 | 0.0 | 0.0 | 0.0 | 4.6 | 7.8 | 24.7 | 7.9 | 19.5 | 4.0 | 8.3 | T | 0.0 | 76.8 |
| 1973-74 | 0.0 | 0.0 | 0.0 | 0.0 | 8.1 | 25.3 | 33.5 | 25.0 | 18.2 | T | 0.0 | 0.0 | 110.1 |
| 1974-75 | 0.0 | 0.0 | 0.0 | 4.0 | 8.3 | 16.3 | 18.8 | 21.6 | 14.1 | 9.1 | 0.0 | 0.0 | 92.2 |
| 1975-76 | 0.0 | 0.0 | 0.0 | 0.0 | 6.2 | 30.1 | 32.0 | 11.0 | 6.8 | 0.8 | T | 0.0 | 86.9 |
| 1976-77 | 0.0 | 0.0 | 0.0 | T | 19.7 | 36.9 | 60.5 | 11.3 | 9.3 | 6.2 | 0.0 | 0.0 | 143.9 |
| 1977-78 | 0.0 | 0.0 | 0.0 | T | 14.3 | 55.3 | 61.1 | 24.2 | 9.9 | T | 0.0 | 0.0 | 164.8 |
| 1978-79 | 0.0 | 0.0 | 0.0 | 0.1 | 7.8 | 24.6 | 65.7 | 11.8 | 10.5 | 2.3 | 0.0 | 0.0 | 122.8 |
| 1979-80 | 0.0 | 0.0 | 0.0 | T | 13.1 | 4.3 | 29.6 | 14.5 | 8.1 | 5.8 | 0.0 | 0.0 | 75.4 |
| 1980-81 | 0.0 | 0.0 | 0.0 | 0.2 | 6.9 | 28.8 | 23.7 | 45.8 | 2.2 | T | 0.0 | 0.0 | 107.6 |
| 1981-82 | 0.0 | 0.0 | 0.0 | 0.2 | 6.8 | 22.8 | 102.4 | 8.1 | 13.2 | 20.4 | 0.0 | 0.0 | 173.9 |
| 1982-83 | 0.0 | 0.0 | 0.0 | T | 3.4 | 5.5 | 7.9 | 6.0 | 12.7 | T | 0.0 | 0.0 | 35.5 |
| 1983-84 | 0.0 | 0.0 | T | 0.0 | 2.6 | 50.9 | 28.8 | 2.7 | 8.7 | 0.5 | 0.0 | 0.0 | 94.2 |
| 1984-85 | 0.0 | 0.0 | 0.0 | 0.0 | T | 23.0 | 46.7 | 33.7 | 10.1 | 2.2 | 0.0 | 0.0 | 115.7 |
| 1985-86 | 0.0 | 0.0 | 0.0 | 0.0 | 4.3 | 57.0 | 23.8 | 17.7 | 7.0 | T | 0.0 | 0.0 | 109.8 |
| 1986-87 | 0.0 | 0.0 | 0.0 | 0.0 | 5.3 | 16.3 | 24.6 | 1.5 | 6.4 | 8.3 | 0.0 | 0.0 | 62.4 |
| 1987-88 | 0.0 | 0.0 | 0.0 | T | 3.9 | 20.4 | 33.2 | 26.7 | 7.2 | T | 0.0 | 0.0 | 91.4 |
| 1988-89 | 0.0 | 0.0 | 0.0 | 0.6 | 2.3 | 32.5 | 10.2 | 34.7 | 10.2 | 0.6 | T | 0.0 | 91.1 |
| 1989-90 | 0.0 | 0.0 | 0.0 | 4.1 | 17.9 | 77.0 | 6.5 | 23.9 | 5.4 | 2.0 | T | 0.0 | 136.8 |
| 1990-91 | T | 0.0 | 0.0 | 0.0 | 5.1 | 17.4 | 25.6 | 16.1 | 4.0 | 0.4 | 0.0 | 0.0 | 68.6 |
| 1991-92 | 0.0 | 0.0 | T | T | 14.5 | 29.5 | 21.4 | 8.1 | 10.7 | 1.3 | 0.0 | 0.0 | 85.5 |
| 1992-93 | 0.0 | 0.0 | 0.0 | 0.5 | 9.6 | 21.4 | 22.5 | 24.8 | 9.7 | 3.6 | 0.0 | 0.0 | 92.1 |
| 1993-94 | 0.0 | 0.0 | 0.0 | 0.1 | 0.9 | 37.6 | 59.8 | 33.0 | 1.1 | T | T | 0.0 | 132.5 |
| 1994-95 | 0.0 | 0.0 | T | T | 0.4 | 12.2 | 27.9 | 34.5 | 14.3 | 2.2 | 0.0 | 0.0 | 91.5 |
| 1995-96 | 0.0 | 0.0 | 0.0 | T | 25.7 | 29.6 | 22.8 | 18.4 | 18.4 | 1.3 | | | |
| 1996-97 | | | | | | | | | | | | | |
| 1997- | | | | | | | | | | | | | |
| POR= 55 YRS | T | 0.0 | T | 0.5 | 9.0 | 25.0 | 30.9 | 17.7 | 11.1 | 2.7 | 0.0 | 0.0 | 96.9 |

WBAN : 14840

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> |
|---|---|

1997 MUSKEGON, MICHIGAN (MKG)

Muskegon is located on the eastern shore of Lake Michigan approximately 100 miles north of the southern tip of the lake. The terrain is generally level with several sand dunes along the shoreline. Much of the soil is sandy and vegetation grows well, as evidenced by the trees and grass which grow on the dunes. Many crops grow in the area. Asparagus and celery are the principal truck-garden vegetables. A variety of fruits is raised and blueberries lead as a principal product. The main industry in this area is manufacturing with emphasis on foundry and machined products. The area is also a resort center due to features such as extensive sandy beaches, both on Lake Michigan and inland lakes.

Lake Michigan has a very decided effect upon the weather and climate of this area. The prevailing westerly winds tend to moderate the temperatures, resulting in warmer winters than further inland. In the summer the effect is just the opposite. The air temperature usually remains below the uncomfortable readings of the high 90s. Spring arrives about three to four weeks later than normal for this latitude. Autumn is also delayed, as is the cold of early winter.

Precipitation is fairly moderate, but snowfall is moderate to heavy. The heaviest snows occur during late December, January, and February. Precipitation is also influenced by the lake, especially during the winter. Instability in snow showers along the lakeshore vary enormously in intensity, resulting in traces of snow to more than a foot in 24 hours. The heavier snow squalls tend to concentrate over small sections of the shoreline, depending on their intensity and the direction of the wind. With strong winds most snowshowers will fall further inland, sometimes as much as 30 to 40 miles. Snowfall is likely to occur every day for weeks at a time. The daily accumulation of lake effect snow varies greatly. However, due to low water content of most of the storms, the snow settles rapidly.

Summertime thunderstorms have a tendency, as they move inland, to follow the Muskegon and Grand River Valleys. Thus, these areas are more often frequented by severe electrical storms which will pass without a drop of rain 2 to 3 miles from the immediate river valleys. Thunderstorms near the shoreline are most frequent at night. The afternoon convection-type storms seldom occur within 5 miles of the lake. Lake Michigan-spawned thunderstorms give shoreline areas a surprising number of occurrences compared with surrounding areas of the same latitude during late summer and autumn.

Many crops are planted before the frost danger is over. The young plants are protected by farmers, thus extending the length of the growing season.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is October 11 and the average last occurrence in the spring is May 8.

STATION LOCATION

MUSKEGON, MICHIGAN

| LOCATION | OCCUPIED FROM | OCCUPIED TO | AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION | LATITUDE NORTH | LONGITUDE WEST | ELEVATION ABOVE | | | | | | | | | | | REMARKS | |
|---|----------------------|----------------------|---|----------------|----------------|-----------------|--------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|---|
| | | | | | | SEA LEVEL | GROUND | | | | | | | | | | | |
| | | | | | | | WIND | EMERGENCY | EMERGENCY | EMERGENCY | EMERGENCY | EMERGENCY | EMERGENCY | EMERGENCY | EMERGENCY | EMERGENCY | | EMERGENCY |
| <u>COOPERATIVE</u> | | | | | | | | | | | | | | | | | | |
| West Muskegon | 1896 | 1914 | | 43°14' | 86°17' | | | | | | | | | | | | | |
| 1180 Lake Street | 1914 1924 1929 | 1921 1925 1930 | 3 mi. W | 43°13' | 86°20' | | | | | | | | | | | | | |
| 509 Southern Avenue | 1921 | 1931 | 2.5 mi. E | 43°13' | 86°17' | | | | | | | | | | | | | |
| Beach Street | 1932 | 1938 | 3 mi. W | 43°14' | 86°20' | | | | | | | | | | | | | |
| <u>AIRPORT</u> | | | | | | | | | | | | | | | | | | |
| Muskegon County Airport | 2/13/38 | 10/15/75 | 7 mi. SE | 43°10' | 86°14' | f625 | d20 | b4 | a4 | | | | c5 | b5 | e5 h6 | | | Weather Bureau Operation. a - Installed 8/29/38. b - Installed 7/1/40. c - Installed 1/1/41. d - 36 feet to 7/30/53 and 45 feet to 7/25/61. e - Commissioned 2600 feet at 259 degrees from office 12/1/60. Moved 1200 feet SE 9/12/68. f - 627 feet to 9/12/68. |
| Administration and NWS Building Muskegon County Airport | 10/15/75 | Present | 0.9 mi. SSW | 43°10' | 86°15' | 625 | g20 | 5 | 5 | NA | i3 | | 5 | 3 | g6 | NA | | g - Same site as prior to 10/15/75. h - Moved 1200 feet SE 9/12/68. i - Effective 8/20/87. S ASOS Commissioned 05/01/96 |

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801.
INQUIRIES/COMMENTS CALL: (704) 271-4800

National Climatic Data Center
151 Patton Avenue, Rm 120
Asheville NC 28801-5001

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE \$300
FORWARD AND ADDRESS CORRECTION

FIRST CLASS
POSTAGE & FEES PAID
United States Department of Commerce
NOAA Permit No. G - 19