

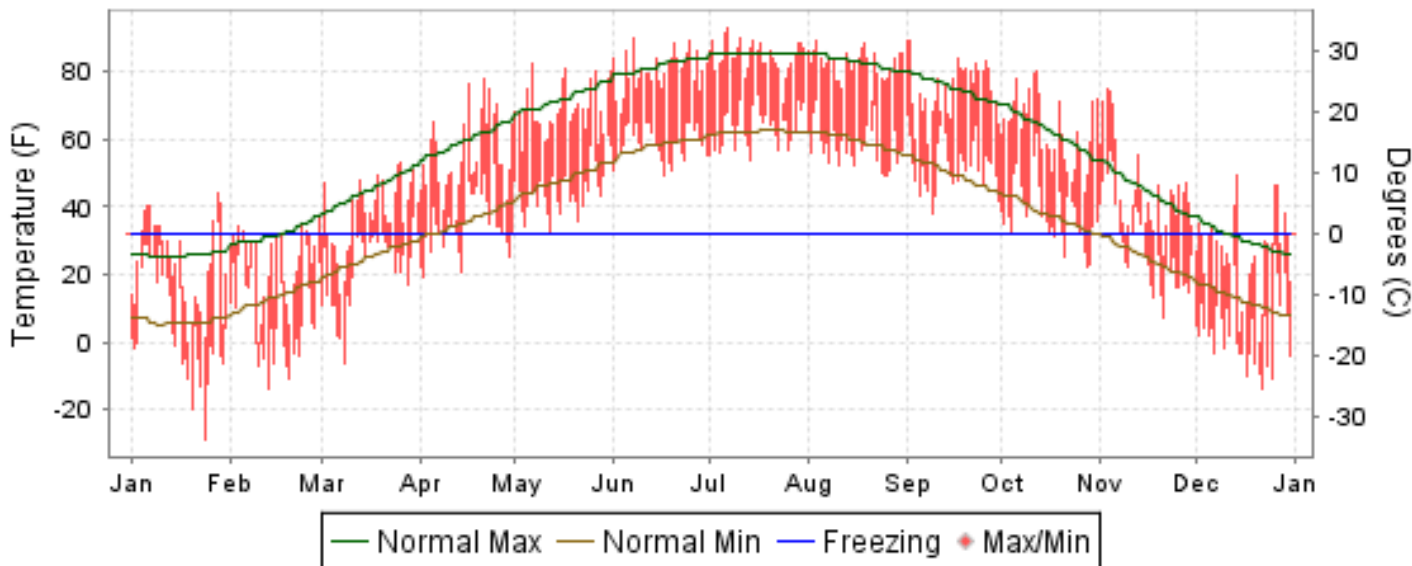


2008 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

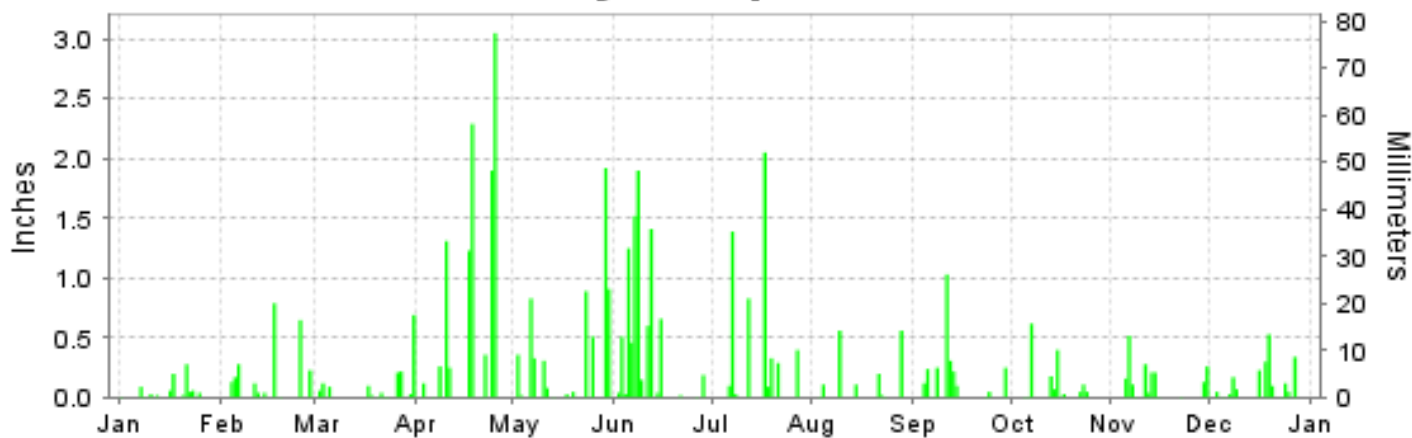
ISSN 0198-2117

WATERLOO, IOWA (KALO)

Daily Max/Min Temperature



Daily Precipitation



Daily Station Pressure



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NATIONAL
OCEANIC AND
ATMOSPHERIC ADMINISTRATION

NATIONAL
ENVIRONMENTAL SATELLITE, DATA
AND INFORMATION SERVICE

NATIONAL
CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

Thomas R. Karl
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 2008

WATERLOO (KALO)

LATITUDE: 42 ° 33'N LONGITUDE: -92 ° 24'W ELEVATION (FT): GRND: 865 BARO: 863 TIME ZONE: CENTRAL (UTC -6) WBAN: 94910

| ELEMENT | | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR | |
|--------------------------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-----------|---|
| TEMPERATURE °F | MEAN DAILY MAXIMUM | 23.2 | 23.9 | 37.9 | 55.6 | 68.7 | 80.2 | 84.3 | 81.9 | 74.9 | 62.6 | 45.1 | 26.1 | 55.4 | |
| | HIGHEST DAILY MAXIMUM | 44 | 37 | 53 | 78 | 82 | 90 | 93 | 89 | 89 | 80 | 75 | 49 | 93 | |
| | DATE OF OCCURRENCE | 28 | 29 | 26 | 21 | 06 | 07 | 07 | 04 | 02+ | 12 | 03 | 14 | JUL 07 | |
| | MEAN DAILY MINIMUM | 5.8 | 7.2 | 22.1 | 34.9 | 44.8 | 58.9 | 63.5 | 57.9 | 52.3 | 38.2 | 28.3 | 3.6 | 34.8 | |
| | LOWEST DAILY MINIMUM | -29 | -14 | -6 | 19 | 33 | 49 | 54 | 49 | 38 | 22 | 7 | -14 | -29 | |
| | DATE OF OCCURRENCE | 24 | 13 | 08 | 02 | 12 | 17 | 14 | 26+ | 09 | 28 | 21 | 22 | JAN 24 | |
| | AVERAGE DRY BULB | 14.5 | 15.6 | 30.0 | 45.3 | 56.8 | 69.6 | 73.9 | 69.9 | 63.6 | 50.4 | 36.7 | 14.9 | 45.1 | |
| | MEAN WET BULB | 14.0 | 15.8 | 28.0 | 41.0 | 50.3 | 62.4 | 67.2 | 64.2 | 58.7 | 45.4 | 33.6 | 14.9 | 41.3 | |
| | MEAN DEW POINT | 9.9 | 12.3 | 23.4 | 35.4 | 43.1 | 57.3 | 63.5 | 60.3 | 55.2 | 39.9 | 28.8 | 10.8 | 36.7 | |
| | NUMBER OF DAYS WITH: | | | | | | | | | | | | | | |
| | MAXIMUM >= 90° | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| MAXIMUM <= 32° | 21 | 24 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 24 | 81 | | |
| MINIMUM <= 32° | 30 | 29 | 27 | 12 | 0 | 0 | 0 | 0 | 0 | 7 | 20 | 31 | 156 | | |
| MINIMUM <= 0° | 15 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 40 | | |
| H/C | HEATING DEGREE DAYS | 1560 | 1427 | 1075 | 585 | 262 | 6 | 0 | 4 | 96 | 454 | 843 | 1547 | 7859 | |
| | COOLING DEGREE DAYS | 0 | 0 | 0 | 0 | 14 | 149 | 284 | 164 | 60 | 9 | 1 | 0 | 681 | |
| RH | MEAN (PERCENT) | 78 | 82 | 76 | 72 | 63 | 68 | 72 | 73 | 77 | 70 | 75 | 78 | 74 | |
| | HOUR 00 LST | 80 | 83 | 82 | 79 | 75 | 82 | 85 | 87 | 87 | 78 | 80 | 80 | 82 | |
| | HOUR 06 LST | 81 | 84 | 84 | 85 | 78 | 86 | 87 | 92 | 92 | 85 | 83 | 80 | 85 | |
| | HOUR 12 LST | 74 | 77 | 68 | 62 | 51 | 55 | 58 | 54 | 61 | 55 | 67 | 73 | 63 | |
| | HOUR 18 LST | 78 | 81 | 72 | 61 | 48 | 51 | 60 | 60 | 67 | 62 | 72 | 76 | 66 | |
| S | PERCENT POSSIBLE SUNSHINE | | | | | | | | | | | | | | |
| W/O | NUMBER OF DAYS WITH: | | | | | | | | | | | | | | |
| | HEAVY FOG(VISBY <= 1/4 MI) | 4 | 5 | 2 | 5 | 0 | 0 | 4 | 2 | 2 | 2 | 1 | 6 | 33 | |
| | THUNDERSTORMS | 0 | 0 | 1 | 4 | 7 | 11 | 11 | 5 | 3 | 0 | 1 | 0 | 43 | |
| CLOUDNESS | 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.) | 29.10 | 29.06 | 29.10 | 29.00 | 28.90 | 28.92 | 28.99 | 29.05 | 29.14 | 29.18 | 29.05 | 29.09 | 29.05 | |
| | MEAN SEA-LEVEL PRESS. (IN.) | 30.09 | 30.05 | 30.07 | 29.94 | 29.84 | 29.85 | 29.91 | 29.98 | 30.08 | 30.13 | 30.03 | 30.06 | 30.00 | |
| WINDS | RESULTANT SPEED (MPH) | 2.8 | 3.0 | 1.9 | 0.7 | 0.1 | 2.6 | 3.2 | 1.3 | 1.4 | 1.8 | 2.5 | 2.7 | 1.1 | |
| | RES. DIR. (TENS OF DEGS.) | 28 | 32 | 03 | 22 | 14 | 24 | 20 | 16 | 20 | 16 | 27 | 28 | 26 | |
| | MEAN SPEED (MPH) | 9.4 | 9.8 | 9.2 | 11.7 | 10.1 | 9.1 | 6.9 | 6.0 | 7.1 | 8.7 | 10.5 | 11.4 | 9.2 | |
| | PREVAIL.DIR.(TENS OF DEGS.) | 30 | 30 | 12 | 33 | 33 | 15 | 17 | 15 | 15 | 11 | 30 | 30 | 30 | |
| | MAXIMUM 2-MINUTE WIND | | | | | | | | | | | | | | |
| | SPEED (MPH) | 35 | 35 | 32 | 38 | 67 | 54 | 52 | 32 | 23 | 43 | 37 | 32 | 67 | |
| | DIR. (TENS OF DEGS.) | 30 | 33 | 33 | 08 | 32 | 27 | 27 | 03 | 33 | 32 | 19 | 33 | 32 | |
| | DATE OF OCCURRENCE | 29 | 17 | 03 | 10 | 25 | 07 | 07 | 09 | 30 | 26 | 06 | 30 | MAY 25 | |
| | MAXIMUM 3-SECOND WIND: | | | | | | | | | | | | | | |
| | SPEED (MPH) | 46 | 44 | 41 | 46 | 93 | 72 | 70 | 45 | 39 | 58 | 46 | 43 | 93 | |
| DIR. (TENS OF DEGS.) | 30 | 33 | 33 | 08 | 33 | 27 | 27 | 01 | 33 | 30 | 18 | 32 | 33 | | |
| DATE OF OCCURRENCE | 29 | 17 | 03 | 10 | 25 | 07 | 07 | 09 | 19 | 26 | 06 | 06 | MAY 25 | | |
| PRECIPITATION | WATER EQUIVALENT: | | | | | | | | | | | | | | |
| | TOTAL (IN.) | 0.87 | 2.46 | 1.61 | 10.79 | 6.25 | 8.79 | 5.51 | 1.58 | 2.59 | 1.53 | 1.95 | 2.01 | 45.94 | |
| | GREATEST 24-HOUR (IN.) | 0.28 | 0.79 | 0.72 | 4.85 | 2.77 | 3.42 | 2.05 | 0.56 | 1.03 | 0.63 | 0.57 | 0.53 | 4.85 | |
| | DATE OF OCCURRENCE | 21 | 17 | 30-31 | 24-25 | 29-30 | 07-08 | 17 | 28+ | 11 | 06-07 | 05-06 | 19 | APR 24-25 | |
| | NUMBER OF DAYS WITH: | | | | | | | | | | | | | | |
| | PRECIPITATION 0.01 | 12 | 10 | 13 | 11 | 13 | 15 | 9 | 8 | 11 | 10 | 12 | 13 | 137 | |
| PRECIPITATION 0.10 | 2 | 7 | 5 | 9 | 8 | 10 | 7 | 5 | 8 | 4 | 8 | 7 | 80 | | |
| PRECIPITATION 1.00 | 0 | 0 | 0 | 5 | 1 | 4 | 2 | 0 | 1 | 0 | 0 | 0 | 13 | | |
| SNOWFALL | SNOW,ICE PELLETS,HAIL | | | | | | | | | | | | | | |
| | TOTAL (IN.) | 14.4 | 18.1 | 5.1 | T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | 4.7 | 20.5 | 62.8 | |
| | GREATEST 24-HOUR (IN.) | 5.6 | 4.0 | 1.8 | T | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | T | 2.4 | 5.4 | 5.6 | |
| | DATE OF OCCURRENCE | 21 | 17 | 03 | 12+ | | | | | | 26 | 30 | 19 | JAN 21 | |
| | MAXIMUM SNOW DEPTH (IN.) | 12 | 13 | 11 | T | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 13 | |
| | DATE OF OCCURRENCE | 22 | 29 | 01 | 12 | | | | | | | | 25+ | FEB 29 | |
| | NUMBER OF DAYS WITH: | | | | | | | | | | | | | | |
| SNOWFALL >= 1.0 | 3 | 7 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 22 | | |

NORMALS, MEANS, AND EXTREMES WATERLOO (KALO)

LATITUDE:
42 ° 33'N

LONGITUDE:
-92 ° 24'W

ELEVATION (FT):
GRND: 865 BARO: 863

TIME ZONE:
CENTRAL (UTC -6)

WBAN: 94910

| | ELEMENT | POR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | YEAR |
|--|---|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|----------|
| TEMPERATURE °F | NORMAL DAILY MAXIMUM | 30 | 25.8 | 31.9 | 45.0 | 59.7 | 72.2 | 81.7 | 85.0 | 82.8 | 75.3 | 62.5 | 45.0 | 30.7 | 58.1 |
| | MEAN DAILY MAXIMUM | 58 | 25.5 | 30.3 | 42.5 | 58.6 | 71.1 | 80.0 | 84.0 | 81.7 | 73.9 | 62.1 | 44.6 | 30.5 | 57.1 |
| | HIGHEST DAILY MAXIMUM | 60 | 65 | 66 | 87 | 100 | 94 | 103 | 105 | 105 | 98 | 95 | 80 | 67 | 105 |
| | YEAR OF OCCURRENCE | | 2002 | 1981 | 1986 | 1980 | 1967 | 1988 | 1988 | 1988 | 2000 | 1997 | 1999 | 2001 | AUG 1988 |
| | MEAN OF EXTREME MAXS. | 58 | 45.5 | 50.0 | 69.6 | 81.8 | 87.7 | 92.8 | 94.6 | 92.8 | 89.4 | 82.5 | 66.3 | 50.2 | 75.3 |
| | NORMAL DAILY MINIMUM | 30 | 6.3 | 13.2 | 24.9 | 35.8 | 48.1 | 58.1 | 62.2 | 59.5 | 49.8 | 37.8 | 25.1 | 12.5 | 36.1 |
| | MEAN DAILY MINIMUM | 58 | 7.6 | 12.6 | 24.0 | 36.2 | 48.2 | 57.7 | 62.2 | 59.5 | 50.0 | 38.9 | 25.8 | 13.5 | 36.4 |
| | LOWEST DAILY MINIMUM | 60 | -33 | -31 | -34 | -4 | 22 | 38 | 42 | 38 | 22 | 11 | -17 | -29 | -34 |
| | YEAR OF OCCURRENCE | | 1994 | 1996 | 1962 | 1982 | 2005 | 1964 | 1984 | 1967 | 1967 | 1988 | 1977 | 2000 | MAR 1962 |
| | MEAN OF EXTREME MINS. | 58 | -15.7 | -12.0 | 2.9 | 19.8 | 32.5 | 44.3 | 49.9 | 46.4 | 32.9 | 21.5 | 7.5 | -10.3 | 18.3 |
| | NORMAL DRY BULB | 30 | 16.1 | 22.6 | 35.0 | 47.8 | 60.2 | 69.9 | 73.6 | 71.2 | 62.6 | 50.2 | 35.1 | 21.6 | 47.2 |
| | MEAN DRY BULB | 58 | 16.6 | 21.4 | 33.3 | 47.4 | 59.7 | 69.0 | 73.1 | 70.6 | 61.9 | 50.5 | 35.2 | 22.0 | 46.7 |
| | MEAN WET BULB | 25 | 17.5 | 21.7 | 31.3 | 42.3 | 52.9 | 62.7 | 66.8 | 65.1 | 56.5 | 44.7 | 32.1 | 20.9 | 42.9 |
| | MEAN DEW POINT | 25 | 14.3 | 18.2 | 27.0 | 37.0 | 48.3 | 58.8 | 64.2 | 62.7 | 53.0 | 40.4 | 28.6 | 18.0 | 39.2 |
| | NORMAL NO. DAYS WITH: MAXIMUM >= 90 | 30 | 0.0 | 0.0 | 0.0 | 0.1 | 0.8 | 3.9 | 6.4 | 4.2 | 1.6 | 0.2 | 0.0 | 0.0 | 17.2 |
| | MAXIMUM <= 32 | 30 | 21.5 | 14.3 | 5.5 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.1 | 16.7 | 63.5 |
| MINIMUM <= 32 | 30 | 30.5 | 26.3 | 23.2 | 10.3 | 1.1 | 0.0 | 0.0 | 0.0 | 1.0 | 9.6 | 22.5 | 29.6 | 154.1 | |
| MINIMUM <= 0 | 30 | 11.1 | 6.6 | 1.1 | * | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 6.4 | 25.8 | |
| H/C | NORMAL HEATING DEG. DAYS | 30 | 1532 | 1202 | 946 | 528 | 205 | 29 | 7 | 20 | 155 | 478 | 903 | 1343 | 7348 |
| | NORMAL COOLING DEG. DAYS | 30 | 0 | 0 | 0 | 7 | 47 | 168 | 261 | 198 | 70 | 7 | 0 | 0 | 758 |
| RH | NORMAL (PERCENT) | 30 | 76 | 76 | 72 | 66 | 66 | 68 | 73 | 75 | 72 | 69 | 75 | 78 | 72 |
| | HOOR 00 LST | 30 | 78 | 79 | 78 | 75 | 76 | 79 | 84 | 86 | 83 | 78 | 80 | 81 | 80 |
| | HOOR 06 LST | 30 | 78 | 80 | 82 | 81 | 81 | 84 | 87 | 90 | 88 | 83 | 83 | 82 | 83 |
| | HOOR 12 LST | 30 | 70 | 69 | 63 | 54 | 54 | 55 | 59 | 60 | 57 | 56 | 66 | 73 | 61 |
| | HOOR 18 LST | 30 | 75 | 73 | 65 | 55 | 53 | 55 | 59 | 63 | 61 | 61 | 72 | 77 | 64 |
| S | PERCENT POSSIBLE SUNSHINE | | | | | | | | | | | | | | |
| W/O | MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI) | 45 | 2.6 | 2.3 | 2.4 | 1.6 | 1.4 | 0.7 | 1.3 | 2.3 | 1.9 | 1.0 | 1.9 | 3.3 | 22.7 |
| | THUNDERSTORMS | 48 | 0.1 | 0.3 | 1.7 | 3.9 | 6.0 | 7.6 | 7.5 | 6.2 | 4.6 | 2.4 | 0.6 | 0.2 | 41.1 |
| CLOUDNESS | MEAN: SUNRISE-SUNSET (OKTAS) | 36 | 5.3 | 5.3 | 5.5 | 5.4 | 5.1 | 4.8 | 4.4 | 4.4 | 4.4 | 4.6 | 5.6 | 5.4 | 5.0 |
| | MIDNIGHT-MIDNIGHT (OKTAS) | 32 | 4.9 | 4.9 | 5.2 | 4.9 | 4.7 | 4.4 | 4.0 | 4.0 | 4.0 | 4.3 | 5.2 | 5.2 | 4.6 |
| | MEAN NO. DAYS WITH: CLEAR | 36 | 7.5 | 6.9 | 6.5 | 6.1 | 7.2 | 7.1 | 8.5 | 9.5 | 9.7 | 9.7 | 5.4 | 7.0 | 91.1 |
| | PARTLY CLOUDY | 36 | 7.1 | 6.4 | 7.0 | 7.6 | 9.5 | 11.0 | 12.0 | 10.7 | 8.0 | 7.6 | 6.7 | 6.0 | 99.6 |
| | CLOUDY | 36 | 16.4 | 14.9 | 17.5 | 16.3 | 14.3 | 11.9 | 10.5 | 10.8 | 12.1 | 13.7 | 17.9 | 17.9 | 174.2 |
| PR | MEAN STATION PRESSURE(IN) | 25 | 29.13 | 29.14 | 29.08 | 29.00 | 29.01 | 29.01 | 29.05 | 29.08 | 29.09 | 29.09 | 29.09 | 29.13 | 29.08 |
| | MEAN SEA-LEVEL PRES. (IN) | 25 | 30.11 | 30.12 | 30.05 | 29.95 | 29.94 | 29.94 | 29.97 | 30.01 | 30.02 | 30.04 | 30.05 | 30.11 | 30.03 |
| WINDS | MEAN SPEED (MPH) | 25 | 10.8 | 10.8 | 11.6 | 12.0 | 10.6 | 9.1 | 7.9 | 7.4 | 8.5 | 9.8 | 10.6 | 10.4 | 10.0 |
| | PREVAIL.DIR.(TENS OF DEGS) | 33 | 32 | 32 | 32 | 32 | 17 | 19 | 19 | 17 | 19 | 17 | 31 | 31 | 32 |
| | MAXIMUM 2-MINUTE: SPEED (MPH) | 12 | 40 | 51 | 44 | 51 | 67 | 60 | 52 | 46 | 38 | 43 | 53 | 40 | 67 |
| | DIR. (TENS OF DEGS) | | 31 | 27 | 20 | 28 | 32 | 33 | 27 | 31 | 19 | 32 | 22 | 32 | 32 |
| | YEAR OF OCCURRENCE | | 2005 | 2003 | 2005 | 1997 | 2008 | 1997 | 2008 | 1998 | 2000 | 2008 | 1998 | 2004 | MAY 2008 |
| | MAXIMUM 3-SECOND SPEED (MPH) | 12 | 47 | 69 | 54 | 61 | 93 | 72 | 70 | 56 | 46 | 58 | 68 | 51 | 93 |
| | DIR. (TENS OF DEGS) | | 31 | 27 | 30 | 27 | 33 | 27 | 27 | 32 | 20 | 30 | 22 | 31 | 33 |
| YEAR OF OCCURRENCE | | 2006 | 2003 | 2000 | 1997 | 2008 | 2008 | 2008 | 1998 | 2000 | 2008 | 1998 | 2004 | MAY 2008 | |
| PRECIPITATION | NORMAL (IN) | 30 | 0.84 | 1.05 | 2.13 | 3.23 | 4.15 | 4.82 | 4.20 | 4.08 | 2.95 | 2.49 | 2.10 | 1.11 | 33.15 |
| | MAXIMUM MONTHLY (IN) | 60 | 2.78 | 3.54 | 5.43 | 10.79 | 11.36 | 10.11 | 12.84 | 10.56 | 11.38 | 5.45 | 5.61 | 3.77 | 12.84 |
| | YEAR OF OCCURRENCE | | 1949 | 1971 | 1961 | 2008 | 2004 | 1993 | 1999 | 1998 | 1965 | 1984 | 1992 | 1982 | JUL 1999 |
| | MINIMUM MONTHLY (IN) | 60 | 0.10 | 0.02 | 0.16 | 0.95 | 0.82 | 0.86 | 0.19 | 0.08 | 0.42 | T | T | 0.12 | T |
| | YEAR OF OCCURRENCE | | 1962 | 1969 | 1994 | 1971 | 1992 | 1955 | 1996 | 2003 | 1953 | 1952 | 1954 | 1998 | NOV 1954 |
| | MAXIMUM IN 24 HOURS (IN) | 60 | 1.64 | 1.53 | 1.98 | 4.85 | 3.62 | 4.35 | 9.31 | 5.28 | 3.83 | 2.65 | 3.33 | 1.75 | 9.31 |
| | YEAR OF OCCURRENCE | | 1971 | 1976 | 1998 | 2008 | 1980 | 1980 | 1968 | 1966 | 2006 | 1961 | 2003 | 1982 | JUL 1968 |
| | NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01 | 30 | 7.6 | 7.2 | 9.7 | 10.9 | 11.6 | 11.1 | 9.3 | 9.4 | 8.8 | 8.0 | 8.9 | 8.0 | 110.5 |
| | PRECIPITATION >= 1.00 | 30 | * | 0.1 | 0.3 | 0.5 | 1.1 | 1.3 | 1.2 | 1.2 | 0.7 | 0.6 | 0.5 | 0.1 | 7.6 |
| SNOWFALL | NORMAL (IN) | 30 | 8.2 | 7.3 | 4.8 | 2.2 | 0.* | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 4.8 | 7.5 | 34.9 |
| | MAXIMUM MONTHLY (IN) | 53 | 24.2 | 24.3 | 20.1 | 10.3 | 1.0 | T | T | 0.0 | 0.0 | 1.3 | 15.9 | 20.5 | 24.3 |
| | YEAR OF OCCURRENCE | | 1996 | 1962 | 1959 | 1973 | 1991 | 1994 | 2007 | 0.0 | 0.0 | 2002 | 1991 | 2008 | FEB 1962 |
| | MAXIMUM IN 24 HOURS (IN) | 48 | 14.8 | 9.1 | 12.2 | 7.2 | 1.0 | T | T | 0.0 | 0.0 | 1.2 | 10.2 | 12.3 | 14.8 |
| | YEAR OF OCCURRENCE' | | 1971 | 1993 | 1959 | 2003 | 1991 | 1994 | 2006 | 0.0 | 0.0 | 1991 | 1991 | 1985 | JAN 1971 |
| | MAXIMUM SNOW DEPTH (IN) | 42 | 19 | 18 | 20 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 16 | 20 |
| | YEAR OF OCCURRENCE | | 1979 | 1962 | 1962 | 1973 | | | | | | | 1991 | 1985 | MAR 1962 |
| NORMAL NO. DAYS WITH: SNOWFALL >= 1.0 | 30 | 2.5 | 2.2 | 1.6 | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 1.1 | 2.2 | 10.4 | |

PRECIPITATION (inches) 2008 WATERLOO (KALO)

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL |
|----------------|------|------|------|-------|-------|-------|-------|-------|------|------|------|------|--------|
| 1979 | 1.41 | 0.32 | 3.06 | 4.37 | 3.83 | 6.07 | 6.68 | 5.33 | 0.75 | 4.18 | 1.41 | 0.71 | 38.12 |
| 1980 | 1.34 | 0.96 | 0.86 | 1.22 | 5.36 | 8.63 | 1.75 | 5.38 | 3.74 | 1.56 | 0.41 | 0.52 | 31.73 |
| 1981 | 0.23 | 2.44 | 0.25 | 4.20 | 2.05 | 5.23 | 3.52 | 4.13 | 3.13 | 1.76 | 1.86 | 0.83 | 29.63 |
| 1982 | 1.51 | 0.38 | 2.51 | 2.58 | 6.66 | 3.25 | 3.90 | 3.29 | 1.44 | 2.69 | 3.08 | 3.77 | 35.06 |
| 1983 | 0.84 | 1.44 | 3.80 | 2.43 | 5.28 | 5.31 | 3.89 | 1.30 | 3.19 | 4.35 | 3.67 | 1.03 | 36.53 |
| 1984 | 0.62 | 0.86 | 1.40 | 5.09 | 4.77 | 4.87 | 6.04 | 0.38 | 1.57 | 5.45 | 1.45 | 1.95 | 34.45 |
| 1985 | 0.61 | 1.23 | 2.86 | 1.45 | 2.32 | 2.72 | 3.38 | 4.22 | 5.27 | 3.09 | 1.78 | 1.25 | 30.18 |
| 1986 | 0.40 | 2.41 | 1.77 | 2.57 | 6.33 | 7.40 | 3.24 | 2.27 | 4.48 | 3.74 | 1.27 | 0.82 | 36.70 |
| 1987 | 0.47 | 0.91 | 2.48 | 1.44 | 2.93 | 2.66 | 5.59 | 8.51 | 1.84 | 0.81 | 2.69 | 1.82 | 32.15 |
| 1988 | 0.75 | 0.37 | 1.37 | 1.72 | 1.61 | 3.12 | 1.51 | 3.15 | 1.65 | 0.68 | 2.54 | 0.52 | 18.99 |
| 1989 | 1.09 | 0.28 | 0.93 | 2.41 | 1.54 | 1.40 | 2.67 | 2.33 | 3.07 | 3.13 | 0.55 | 0.22 | 19.62 |
| 1990 | 0.46 | 0.37 | 4.46 | 2.88 | 5.06 | 7.98 | 9.63 | 5.22 | 1.46 | 1.38 | 1.34 | 1.26 | 41.50 |
| 1991 | 0.76 | 0.33 | 4.00 | 8.53 | 7.72 | 2.18 | 1.60 | 4.88 | 2.92 | 4.61 | 4.08 | 1.54 | 43.15 |
| 1992 | 1.06 | 1.47 | 2.27 | 4.55 | 0.82 | 1.93 | 5.87 | 2.84 | 2.23 | 0.72 | 5.61 | 1.60 | 30.97 |
| 1993 | 0.58 | 1.30 | 4.00 | 3.67 | 6.11 | 10.11 | 11.26 | 9.65 | 2.86 | 1.80 | 0.97 | 0.76 | 53.07 |
| 1994 | 1.22 | 0.94 | 0.16 | 2.58 | 2.17 | 5.35 | 6.11 | 7.56 | 3.67 | 1.89 | 2.30 | 1.35 | 35.30 |
| 1995 | 0.80 | 0.12 | 2.68 | 4.41 | 3.15 | 4.99 | 1.83 | 4.97 | 2.44 | 2.39 | 1.57 | 0.16 | 29.51 |
| 1996 | 2.19 | 0.08 | 0.99 | 1.55 | 2.26 | 4.42 | 2.38 | 1.77 | 3.50 | 3.51 | 2.66 | .88 | 26.19 |
| 1997 | 0.80 | 1.12 | 1.56 | 3.62 | 2.68 | 5.92 | 1.99 | 4.63 | 3.15 | 4.12 | 1.03 | 0.52 | 31.14 |
| 1998 | 0.43 | 1.58 | 3.77 | 3.25 | 3.09 | 8.77 | 0.33 | 10.56 | 1.18 | 4.51 | 1.24 | 0.12 | 38.83 |
| 1999 | 0.66 | 0.35 | 0.64 | 4.72 | 6.67 | 4.27 | 12.84 | 4.32 | 0.87 | 0.34 | 1.20 | 0.39 | 37.27 |
| 2000 | 0.69 | 0.58 | 0.95 | 2.76 | 9.13 | 7.07 | 3.40 | 1.58 | 1.59 | 1.10 | 2.52 | 0.75 | 32.12 |
| 2001 | 1.01 | 1.00 | 1.25 | 2.15 | 5.44 | 3.91 | 5.96 | 2.44 | 3.75 | 3.45 | 0.78 | 0.88 | 32.02 |
| 2002 | 0.42 | 1.30 | 0.89 | 3.91 | 3.76 | 2.86 | 8.43 | 5.31 | 0.93 | 2.52 | 0.19 | 0.32 | 30.84 |
| 2003 | 0.32 | 0.54 | 1.44 | 4.04 | 5.41 | 3.27 | 4.32 | 0.08 | 2.32 | 0.95 | 4.99 | 0.53 | 28.21 |
| 2004 | 0.46 | 1.24 | 4.00 | 1.64 | 11.36 | 3.86 | 2.78 | 4.58 | 0.65 | 1.56 | 2.20 | 0.52 | 34.85 |
| 2005 | 1.54 | 1.45 | 1.13 | 2.67 | 3.22 | 8.02 | 3.81 | 2.80 | 3.06 | 0.44 | 1.58 | 1.12 | 30.84 |
| 2006 | 0.70 | 0.12 | 2.93 | 5.19 | 1.72 | 3.07 | 4.83 | 2.71 | 5.44 | 1.95 | 2.80 | 1.86 | 33.32 |
| 2007 | 0.73 | 1.31 | 1.61 | 4.47 | 4.65 | 5.11 | 4.64 | 10.31 | 4.18 | 3.76 | 0.16 | 1.92 | 42.85 |
| 2008 | 0.87 | 2.46 | 1.61 | 10.79 | 6.25 | 8.79 | 5.51 | 1.58 | 2.59 | 1.53 | 1.95 | 2.01 | 45.94 |
| POR= 58 YRS | 0.79 | 0.98 | 2.14 | 3.56 | 4.28 | 4.61 | 4.66 | 3.88 | 3.07 | 2.37 | 1.84 | 1.11 | 33.29 |

WBAN : 94910

AVERAGE TEMPERATURE (°F) 2008 WATERLOO (KALO)

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | ANNUAL |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|--------|
| 1979 | 3.6 | 9.4 | 31.8 | 44.4 | 58.2 | 69.3 | 72.3 | 71.8 | 66.1 | 51.2 | 35.6 | 28.3 | 45.2 |
| 1980 | 19.0 | 16.8 | 30.3 | 49.1 | 59.8 | 69.0 | 75.6 | 73.1 | 63.3 | 46.2 | 37.5 | 22.2 | 46.8 |
| 1981 | 19.3 | 25.4 | 38.5 | 52.8 | 57.8 | 68.5 | 72.5 | 69.1 | 60.7 | 46.3 | 39.2 | 19.6 | 47.5 |
| 1982 | 3.6 | 18.1 | 32.3 | 42.7 | 64.4 | 64.0 | 74.6 | 70.3 | 61.6 | 51.4 | 34.9 | 29.9 | 45.7 |
| 1983 | 24.1 | 27.8 | 36.3 | 43.4 | 55.9 | 69.7 | 77.0 | 77.4 | 63.0 | 49.4 | 37.2 | 6.6 | 47.3 |
| 1984 | 16.1 | 30.4 | 26.4 | 46.6 | 57.8 | 70.1 | 70.3 | 72.4 | 60.3 | 52.2 | 37.0 | 24.0 | 47.0 |
| 1985 | 12.6 | 17.7 | 39.2 | 53.8 | 63.3 | 66.3 | 73.3 | 67.6 | 63.2 | 50.3 | 28.1 | 8.9 | 45.4 |
| 1986 | 19.4 | 16.9 | 38.2 | 51.9 | 60.4 | 70.1 | 75.1 | 66.5 | 63.9 | 50.3 | 29.0 | 24.3 | 47.2 |
| 1987 | 21.5 | 32.1 | 39.2 | 51.8 | 64.9 | 73.3 | 77.0 | 69.9 | 62.3 | 45.1 | 40.9 | 27.0 | 50.4 |
| 1988 | 13.2 | 16.7 | 36.2 | 47.8 | 65.1 | 73.0 | 75.9 | 76.4 | 64.7 | 44.2 | 36.7 | 23.4 | 47.8 |
| 1989 | 27.2 | 12.8 | 32.2 | 46.8 | 58.3 | 68.7 | 76.0 | 71.6 | 59.7 | 51.8 | 31.7 | 13.1 | 45.8 |
| 1990 | 29.2 | 26.8 | 39.5 | 47.7 | 56.1 | 69.8 | 71.8 | 71.7 | 64.8 | 48.9 | 40.4 | 18.2 | 48.7 |
| 1991 | 11.9 | 25.8 | 38.0 | 50.2 | 63.7 | 74.1 | 73.8 | 71.6 | 60.6 | 49.0 | 28.8 | 26.2 | 47.8 |
| 1992 | 25.2 | 31.1 | 37.4 | 46.3 | 60.6 | 68.3 | 67.9 | 65.0 | 60.5 | 50.8 | 33.7 | 23.5 | 47.5 |
| 1993 | 18.3 | 19.8 | 30.5 | 45.9 | 61.0 | 68.5 | 73.2 | 72.4 | 58.2 | 50.1 | 34.1 | 25.3 | 46.4 |
| 1994 | 7.4 | 15.0 | 36.6 | 49.3 | 61.5 | 71.8 | 70.6 | 67.5 | 65.9 | 53.9 | 40.1 | 26.3 | 47.2 |
| 1995 | 17.9 | 23.2 | 37.6 | 44.7 | 58.4 | 71.4 | 74.3 | 77.4 | 60.7 | 49.8 | 29.7 | 23.6 | 47.4 |
| 1996 | 15.0 | 21.2 | 30.2 | 45.1 | 56.5 | 70.7 | 71.0 | 70.5 | 62.6 | 50.8 | 27.9 | 18.5 | 45.0 |
| 1997 | 13.7 | 23.3 | 35.6 | 44.4 | 54.7 | 70.7 | 72.4 | 68.6 | 63.1 | 51.6 | 31.2 | 26.7 | 46.3 |
| 1998 | 22.6 | 34.5 | 33.7 | 49.9 | 65.5 | 67.6 | 72.7 | 71.9 | 67.0 | 52.0 | 39.8 | 28.5 | 50.5 |
| 1999 | 15.1 | 32.7 | 35.8 | 50.2 | 61.7 | 70.0 | 76.9 | 69.1 | 61.5 | 50.5 | 42.8 | 25.9 | 49.4 |
| 2000 | 20.3 | 30.9 | 42.5 | 49.3 | 62.7 | 67.9 | 71.8 | 71.7 | 64.3 | 54.3 | 32.5 | 8.6 | 48.1 |
| 2001 | 18.5 | 17.0 | 28.6 | 52.6 | 60.9 | 68.4 | 74.1 | 71.7 | 60.4 | 49.4 | 48.0 | 30.3 | 48.3 |
| 2002 | 29.9 | 28.9 | 31.4 | 48.3 | 57.8 | 72.7 | 76.3 | 69.9 | 65.9 | 46.4 | 34.7 | 29.0 | 49.3 |
| 2003 | 19.9 | 19.1 | 34.7 | 50.2 | 58.7 | 69.4 | 74.1 | 73.5 | 61.4 | 51.3 | 35.6 | 27.2 | 47.9 |
| 2004 | 16.6 | 22.8 | 39.9 | 49.6 | 60.8 | 67.3 | 69.9 | 66.4 | 66.7 | 51.1 | 39.7 | 25.4 | 48.0 |
| 2005 | 17.6 | 29.1 | 35.4 | 52.6 | 56.6 | 72.5 | 73.7 | 69.9 | 66.3 | 51.2 | 37.5 | 17.1 | 48.3 |
| 2006 | 30.8 | 22.6 | 35.7 | 52.4 | 59.8 | 69.0 | 75.2 | 71.3 | 59.6 | 46.3 | 38.4 | 30.7 | 49.3 |
| 2007 | 20.1 | 13.6 | 40.2 | 45.7 | 64.5 | 69.9 | 73.0 | 73.1 | 64.6 | 54.8 | 35.7 | 18.9 | 47.8 |
| 2008 | 14.5 | 15.6 | 30.0 | 45.3 | 56.8 | 69.6 | 73.9 | 69.9 | 63.6 | 50.4 | 36.7 | 14.9 | 45.1 |
| POR= 58 YRS | 16.6 | 21.4 | 33.3 | 47.4 | 59.7 | 69.0 | 73.1 | 70.6 | 61.9 | 50.5 | 35.2 | 22.0 | 46.7 |

HEATING DEGREE DAYS (base 65°F) 2008 WATERLOO (KALO)

| YEAR | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | TOTAL |
|---------|-----|-----|-----|-----|------|------|------|------|------|-----|-----|-----|-------|
| 1979-80 | 2 | 13 | 70 | 431 | 875 | 1131 | 1418 | 1394 | 1067 | 493 | 203 | 24 | 7121 |
| 1980-81 | 0 | 3 | 124 | 578 | 819 | 1323 | 1408 | 1104 | 814 | 368 | 234 | 9 | 6784 |
| 1981-82 | 10 | 26 | 152 | 573 | 767 | 1400 | 1903 | 1311 | 1006 | 661 | 97 | 60 | 7966 |
| 1982-83 | 0 | 29 | 166 | 421 | 895 | 1079 | 1263 | 1033 | 885 | 646 | 277 | 35 | 6729 |
| 1983-84 | 0 | 0 | 159 | 488 | 826 | 1811 | 1509 | 1000 | 1190 | 548 | 236 | 4 | 7771 |
| 1984-85 | 12 | 10 | 215 | 392 | 833 | 1264 | 1621 | 1320 | 794 | 372 | 109 | 53 | 6995 |
| 1985-86 | 0 | 19 | 192 | 448 | 1105 | 1738 | 1410 | 1344 | 826 | 406 | 160 | 11 | 7659 |
| 1986-87 | 0 | 43 | 97 | 448 | 1070 | 1255 | 1342 | 915 | 792 | 403 | 105 | 7 | 6477 |
| 1987-88 | 1 | 42 | 109 | 609 | 718 | 1173 | 1602 | 1400 | 887 | 511 | 85 | 14 | 7151 |
| 1988-89 | 2 | 18 | 81 | 638 | 843 | 1281 | 1163 | 1459 | 1009 | 542 | 236 | 39 | 7311 |
| 1989-90 | 0 | 8 | 189 | 413 | 994 | 1604 | 1105 | 1063 | 786 | 540 | 273 | 37 | 7012 |
| 1990-91 | 5 | 4 | 133 | 500 | 730 | 1447 | 1642 | 1094 | 833 | 449 | 158 | 4 | 6999 |
| 1991-92 | 2 | 6 | 217 | 488 | 1078 | 1192 | 1228 | 977 | 848 | 554 | 183 | 33 | 6806 |
| 1992-93 | 23 | 75 | 178 | 441 | 934 | 1278 | 1442 | 1260 | 1060 | 567 | 167 | 50 | 7475 |
| 1993-94 | 0 | 3 | 212 | 472 | 919 | 1223 | 1784 | 1398 | 874 | 484 | 159 | 13 | 7541 |
| 1994-95 | 2 | 38 | 87 | 338 | 742 | 1193 | 1453 | 1162 | 845 | 603 | 204 | 24 | 6691 |
| 1995-96 | 7 | 0 | 180 | 473 | 1051 | 1280 | 1547 | 1266 | 1075 | 590 | 290 | 29 | 7788 |
| 1996-97 | 2 | 0 | 141 | 437 | 1106 | 1433 | 1585 | 1161 | 906 | 614 | 317 | 3 | 7705 |
| 1997-98 | 17 | 11 | 95 | 465 | 1005 | 1182 | 1309 | 849 | 966 | 446 | 72 | 73 | 6490 |
| 1998-99 | 0 | 1 | 55 | 398 | 746 | 1123 | 1541 | 897 | 897 | 436 | 139 | 32 | 6265 |
| 1999-00 | 0 | 7 | 162 | 451 | 660 | 1207 | 1380 | 984 | 692 | 463 | 127 | 35 | 6168 |
| 2000-01 | 6 | 3 | 138 | 339 | 969 | 1742 | 1433 | 1335 | 1123 | 379 | 177 | 58 | 7702 |
| 2001-02 | 6 | 9 | 168 | 477 | 505 | 1068 | 1082 | 1003 | 1037 | 519 | 259 | 10 | 6143 |
| 2002-03 | 0 | 9 | 84 | 579 | 901 | 1110 | 1392 | 1280 | 933 | 458 | 204 | 27 | 6977 |
| 2003-04 | 0 | 2 | 176 | 431 | 873 | 1164 | 1493 | 1216 | 770 | 466 | 171 | 48 | 6810 |
| 2004-05 | 18 | 70 | 74 | 429 | 751 | 1220 | 1461 | 998 | 911 | 370 | 266 | 3 | 6571 |
| 2005-06 | 3 | 9 | 72 | 456 | 816 | 1480 | 1054 | 1180 | 902 | 375 | 230 | 30 | 6607 |
| 2006-07 | 0 | 1 | 183 | 586 | 791 | 1054 | 1387 | 1425 | 775 | 585 | 92 | 9 | 6888 |
| 2007-08 | 0 | 0 | 107 | 347 | 873 | 1420 | 1560 | 1427 | 1075 | 585 | 262 | 6 | 7662 |
| 2008- | 0 | 4 | 96 | 454 | 843 | 1547 | | | | | | | |

WBAN : 94910

COOLING DEGREE DAYS (base 65°F) 2008 WATERLOO (KALO)

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | TOTAL |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 1979 | 0 | 0 | 0 | 0 | 35 | 153 | 237 | 230 | 106 | 9 | 0 | 0 | 770 |
| 1980 | 0 | 0 | 0 | 24 | 50 | 151 | 337 | 262 | 76 | 0 | 0 | 0 | 900 |
| 1981 | 0 | 0 | 0 | 8 | 19 | 120 | 252 | 158 | 27 | 0 | 0 | 0 | 584 |
| 1982 | 0 | 0 | 0 | 0 | 87 | 37 | 307 | 199 | 73 | 8 | 0 | 0 | 711 |
| 1983 | 0 | 0 | 0 | 4 | 3 | 182 | 380 | 390 | 106 | 11 | 0 | 0 | 1076 |
| 1984 | 0 | 0 | 0 | 3 | 20 | 164 | 183 | 246 | 80 | 0 | 0 | 0 | 696 |
| 1985 | 0 | 0 | 0 | 41 | 61 | 100 | 264 | 106 | 146 | 0 | 0 | 0 | 718 |
| 1986 | 0 | 0 | 3 | 18 | 26 | 171 | 321 | 97 | 69 | 0 | 0 | 0 | 705 |
| 1987 | 0 | 0 | 0 | 14 | 109 | 260 | 382 | 200 | 38 | 0 | 0 | 0 | 1003 |
| 1988 | 0 | 0 | 0 | 0 | 96 | 262 | 347 | 378 | 78 | 0 | 0 | 0 | 1161 |
| 1989 | 0 | 0 | 1 | 3 | 38 | 154 | 349 | 221 | 37 | 10 | 0 | 0 | 813 |
| 1990 | 0 | 0 | 0 | 27 | 6 | 186 | 223 | 218 | 132 | 9 | 0 | 0 | 801 |
| 1991 | 0 | 0 | 3 | 12 | 125 | 285 | 285 | 219 | 93 | 1 | 0 | 0 | 1023 |
| 1992 | 0 | 0 | 0 | 2 | 53 | 136 | 121 | 81 | 50 | 7 | 0 | 0 | 450 |
| 1993 | 0 | 0 | 0 | 0 | 48 | 164 | 262 | 240 | 16 | 18 | 0 | 0 | 748 |
| 1994 | 0 | 0 | 0 | 21 | 56 | 223 | 184 | 122 | 123 | 3 | 0 | 0 | 732 |
| 1995 | 0 | 0 | 0 | 0 | 10 | 219 | 302 | 389 | 57 | 9 | 0 | 0 | 986 |
| 1996 | 0 | 0 | 0 | 0 | 34 | 207 | 194 | 176 | 76 | 2 | 0 | 0 | 689 |
| 1997 | 0 | 0 | 0 | 0 | 6 | 182 | 253 | 130 | 45 | 58 | 0 | 0 | 674 |
| 1998 | 0 | 0 | 0 | 0 | 96 | 159 | 247 | 221 | 123 | 2 | 0 | 0 | 848 |
| 1999 | 0 | 0 | 0 | 0 | 42 | 187 | 376 | 139 | 63 | 8 | 0 | 0 | 815 |
| 2000 | 0 | 0 | 2 | 0 | 63 | 131 | 226 | 219 | 122 | 12 | 2 | 0 | 777 |
| 2001 | 0 | 0 | 0 | 15 | 58 | 166 | 292 | 225 | 37 | 0 | 0 | 0 | 793 |
| 2002 | 0 | 0 | 0 | 25 | 43 | 248 | 360 | 166 | 117 | 9 | 0 | 0 | 968 |
| 2003 | 0 | 0 | 0 | 16 | 14 | 165 | 287 | 274 | 74 | 14 | 0 | 0 | 844 |
| 2004 | 0 | 0 | 0 | 11 | 46 | 126 | 177 | 119 | 133 | 5 | 0 | 0 | 617 |
| 2005 | 0 | 0 | 0 | 4 | 14 | 232 | 279 | 170 | 119 | 37 | 0 | 0 | 855 |
| 2006 | 0 | 0 | 0 | 2 | 76 | 157 | 323 | 202 | 29 | 14 | 0 | 0 | 803 |
| 2007 | 0 | 0 | 11 | 14 | 85 | 162 | 255 | 261 | 101 | 35 | 0 | 0 | 924 |
| 2008 | 0 | 0 | 0 | 0 | 14 | 149 | 284 | 164 | 60 | 9 | 1 | 0 | 681 |

SNOWFALL (inches) 2008 WATERLOO (KALO)

| YEAR | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | TOTAL |
|----------------|-----|-----|-----|-----|------|------|------|------|------|-----|-----|-----|-------|
| 1979-80 | 0.0 | 0.0 | 0.0 | T | 2.5 | 0.2 | 6.2 | 10.5 | 7.9 | 0.9 | 0.0 | 0.0 | 28.2 |
| 1980-81 | 0.0 | 0.0 | 0.0 | T | T | 3.7 | 3.9 | 14.3 | T | T | 0.0 | 0.0 | 21.9 |
| 1981-82 | 0.0 | 0.0 | 0.0 | T | 3.3 | 5.2 | 18.1 | 1.9 | 3.9 | 7.5 | 0.0 | 0.0 | 39.9 |
| 1982-83 | 0.0 | 0.0 | 0.0 | 1.2 | 0.1 | 3.4 | 4.0 | 15.9 | 9.2 | 5.1 | 0.0 | 0.0 | 38.9 |
| 1983-84 | 0.0 | 0.0 | 0.0 | T | 3.2 | 12.5 | 8.8 | 2.1 | 16.1 | 1.8 | 0.0 | 0.0 | 44.5 |
| 1984-85 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 8.7 | 10.1 | 4.4 | 7.3 | 0.3 | 0.0 | 0.0 | 31.1 |
| 1985-86 | 0.0 | 0.0 | 0.0 | 0.0 | 6.6 | 14.5 | 5.1 | 11.7 | T | 2.2 | 0.0 | 0.0 | 40.1 |
| 1986-87 | 0.0 | 0.0 | 0.0 | 0.0 | 12.9 | 4.6 | 4.5 | 1.5 | 6.1 | T | 0.0 | 0.0 | 29.6 |
| 1987-88 | 0.0 | 0.0 | 0.0 | T | 0.5 | 12.8 | 6.1 | 4.8 | 0.8 | T | 0.0 | 0.0 | 25.0 |
| 1988-89 | 0.0 | 0.0 | 0.0 | T | 3.7 | 1.3 | 0.2 | 5.0 | 4.8 | T | T | T | 15.0 |
| 1989-90 | 0.0 | 0.0 | 0.0 | 0.4 | 1.1 | 5.4 | 4.9 | 5.2 | T | T | 0.0 | T | 17.0 |
| 1990-91 | 0.0 | 0.0 | 0.0 | T | 2.0 | 15.2 | 9.8 | 1.8 | 4.3 | 0.7 | 1.0 | 0.0 | 34.8 |
| 1991-92 | 0.0 | 0.0 | 0.0 | 1.2 | 15.9 | 4.5 | 7.1 | 6.6 | 2.8 | 0.3 | 0.0 | T | 38.4 |
| 1992-93 | 0.0 | 0.0 | 0.0 | T | 9.1 | 6.5 | 8.2 | 13.6 | 13.1 | 7.1 | T | T | 57.6 |
| 1993-94 | 0.0 | 0.0 | 0.0 | T | 1.5 | 5.5 | 16.7 | 15.8 | T | 1.0 | 0.0 | T | 40.5 |
| 1994-95 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 15.3 | 7.4 | 0.9 | 7.3 | 0.5 | 0.0 | 0.0 | 31.5 |
| 1995-96 | 0.0 | 0.0 | 0.0 | T | 5.0 | 3.7 | 24.2 | 1.2 | 2.1 | 1.6 | 0.0 | 0.0 | 37.8 |
| 1996-97 | 0.0 | 0.0 | 0.0 | T | 3.1 | 11.0 | 11.0 | 15.8 | T | 3.2 | 0.0 | 0.0 | 44.1 |
| 1997-98 | 0.0 | 0.0 | 0.0 | 5.5 | 7.0 | 6.3 | 7.5 | 3.3 | 12.8 | T | 0.0 | 0.0 | 42.4 |
| 1998-99 | 0.0 | 0.0 | 0.0 | 0.0 | 2.1 | 2.4 | 21.1 | 0.4 | 5.4 | 0.0 | 0.0 | 0.0 | 31.4 |
| 1999-00 | 0.0 | 0.0 | 0.0 | T | T | 8.2 | 10.9 | 12.0 | 5.2 | 1.1 | 0.0 | 0.0 | 37.4 |
| 2000-01 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 34.0 | 3.1 | 5.2 | 3.7 | T | 0.0 | 0.0 | 46.6 |
| 2001-02 | 0.0 | 0.0 | 0.0 | 0.0 | T | 0.8 | 5.3 | 2.7 | 7.1 | 3.6 | 0.0 | 0.0 | 19.5 |
| 2002-03 | 0.0 | 0.0 | 0.0 | 1.3 | 2.3 | 0.3 | 2.8 | 8.0 | 5.2 | 8.7 | 0.0 | 0.0 | 28.6 |
| 2003-04 | 0.0 | 0.0 | 0.0 | 0.0 | T | 6.0 | 7.0 | 8.6 | 5.1 | 0.0 | 0.0 | 0.0 | 26.7 |
| 2004-05 | 0.0 | 0.0 | 0.0 | 0.0 | T | 1.7 | 12.8 | 2.8 | 1.0 | 0.0 | 0.0 | 0.0 | 18.3 |
| 2005-06 | 0.0 | 0.0 | 0.0 | 0.0 | 3.7 | 19.7 | 2.0 | 4.6 | 2.0 | 0.0 | 0.0 | 0.0 | 32.0 |
| 2006-07 | T | 0.0 | 0.0 | T | 1.5 | 0.5 | 10.8 | 9.2 | 2.8 | 4.3 | 0.0 | 0.0 | 29.1 |
| 2007-08 | T | 0.0 | 0.0 | 0.0 | 1.1 | 15.2 | 14.4 | 18.1 | 5.1 | T | 0.0 | 0.0 | 53.9 |
| 2008- | 0.0 | 0.0 | 0.0 | T | 4.7 | 20.5 | | | | | | | |
| POR= 59 YRS | T | 0.0 | 0.0 | 0.2 | 2.9 | 7.7 | 7.4 | 6.4 | 5.3 | 1.5 | T | T | 31.4 |

WBAN : 94910

REFERENCE NOTES :

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| <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 (1971 - 2000). 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 EIGHTS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p> <p>NOTE: The "Period of Record:(POR) for all "averages" is based on the "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.</p> |
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2008 WATERLOO IOWA (KALO)

Waterloo is situated on the banks of the Cedar River in northeast Iowa, and has a continental humid climate. A wide variation is experienced in both temperature and precipitation during the four distinct seasons.

The distribution of precipitation through the year is very favorable for agriculture with an average 72 percent of the annual total falling in the April to September crop season. The annual temperature range is large. January, the coldest month, averages near 14 degrees and July, the warmest month, averages about 73 degrees. Extreme temperatures range from about -35 to 112 degrees.

It is sometimes convenient to divide the year into periods corresponding to the growing season of the area. Winter extends from November through March, based on a mean daily temperature of 40 degrees. The winter period is a season of cold, dry weather occasionally broken by storms of short duration. Precipitation during the winter is mainly snow with rain dominant at the beginning and end of the season. Annual snowfall varies considerably from year to year. Temperatures of zero degrees or below occur on average about 29 days per year. Bitterly cold days with high temperatures of zero degrees or lower average about 3 days per year. During the winter, prevailing winds are from the northwest.

The spring growing season is marked by an increase in both frequency and intensity of rainfall and by a rapid increase in the mean daily temperature. Spring extends from the first of April to mid May, when daily mean temperatures range between 40 and 59 degrees.

The summer growing season extends from mid May to mid September, based on a mean daily temperature of 60 degrees. Precipitation increases during the spring and reaches a maximum monthly amount in July. In summer, precipitation falls mainly from thunderstorms, three-fourths of which occur during the summer growing season. The prevailing summer wind is southerly, supplying moisture from the Gulf of Mexico. Daily temperatures reach their highest level in July or early August.

The fall growing season extends from mid September to the first part of November, by which time the mean daily temperature has fallen to 40 degrees. Precipitation declines and frequent periods of warm days, cool nights, and cloudless, but hazy, skies persist.

Station Location

WATERLOO

| LOCATION | Occupied From | Occupied To | Airline Distances and Directions from previous Location | Latitude | | Longitude | | ELEVATION ABOVE | | | | | | | | REMARKS | |
|---|---------------|-------------|---|----------|---------|-------------------------|-----------------|----------------------|--------------|-----------------|---------------------------|---------------------|-------------------|---------------------------------|------------------|--|--------|
| | | | | NORTH | WEST | SEA LEVEL | GROUND | | | | | | | AUTOMATIC OBSERVING EQUIPMENT * | | | |
| | | | | | | GROUND TEMPERATURE SITE | WIND INSTRUMENT | EXTREME THERMOMETERS | PSYCHROMETER | SUNSHINE SWITCH | TIPPING BUCKET RAIN GAUGE | WEIGHING RAIN GAUGE | 8 INCH RAIN GAUGE | | HYGROTHERMOMETER | | |
| <u>AIRPORT</u> | | | | | | | | | | | | | | | | | |
| Administration Building Waterloo Municipal AP | 1/29/48 | 10/17/55 | 4 mi. NW | 42° 33' | 92° 24' | 867 | | 27 | 4 | | | | | 4 | a | | SAWRS. |
| Administration Building Waterloo Municipal AP | 10/18/55 | 10/1/81 | NA | 42° 33' | 92° 24' | b868 | 20 | 4 | 4 | NA | NA | 5 | 4 | a5 | NA | Weather Bureau First Order Station. a. Telepsychrometer (4') 1/29/48-12/1/59. Hygro. comm. 2000' NW of tele. site 12/1/59. b. 867 feet to 12/1/59. | |
| Municipal Airport | 10/1/81 | 04/01/96 | 220 ft. SW | 42° 33' | 92° 24' | 868 | c20 | 4 | NA | NA | NA | 5 | 5 | c5 d5 | NA | c. Not moved 10/1/81. d. Type change 10/2/85. | |
| L.B. Municipal Airport | 04/01/96 | Present | NA | 42° 33' | 92° 24' | e860 | | | | | | | | | S | ASOS Commissioned 04/01/96 e. Ground Elevation | |

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* NOTES: For earlier station history information see previous edition.