

Annual Peak-Flow Frequency Analysis

For more information on the contents of this documentation, see Kessler and others (2013).

Streamgauge number and name:

05320200 Le Sueur River tributary near Mankato, Minn.

Peak-flow information:

Number of systematic peak flows in record	27
Systematic period begins	1959
Systematic period ends	1985
Length of systematic record	27
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	-0.13
Standard error of generalized skew	0.4266
Low-outlier method	Single Grubbs-Beck test

EMA systematic record analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
1.3051	0.4453	1.091

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	5.5

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
1.3008	0.4528	0.260

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	1.76	0.41	3.36
0.9900	2.16	0.61	3.86
0.9500	3.90	1.74	6.19
0.9000	5.43	2.89	8.34
0.8000	8.22	5.00	12.40
0.6667	12.30	7.96	18.60
0.5000	19.10	12.60	29.70
0.4292	23.00	15.20	36.60
0.2000	47.30	30.30	89.00
0.1000	78.00	47.40	186.00
0.0400	136.00	75.30	490.00
0.0200	196.00	101.00	1,010.00
0.0100	275.00	130.00	2,070.00
0.0050	378.00	163.00	4,200.00
0.0020	559.00	214.00	10,100.00

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

* Less than low-outlier threshold

Water	Peak	Peak-flow
year	flow	code
1959	33.0	--
1960	33.0	--
1961	32.0	--
1962	18.0	--
1963	29.0	--
1964	1.0	*
1965	20.0	--
1966	16.0	--
1967	14.0	--
1968	36.0	--
1969	8.6	--
1970	15.0	--
1971	61.0	--
1972	9.7	--
1973	8.0	--
1974	75.0	--
1975	10.0	--
1976	9.0	--
1977	12.0	--
1978	83.0	--
1979	12.0	--
1980	9.6	--
1981	377.0	--
1982	14.0	--
1983	120.0	--
1984	5.5	--
1985	7.6	--