Annual Peak-Flow Frequency Analysis
For more information on the contents of this documentation, see Kessler and others (2013).

Streamgage number and name:

04015250 Silver Creek tributary near Two Harbors, Minn.

Peak-flow information:

Number of systematic peak flows in record	47
Systematic period begins	1965
Systematic period ends	2011
Length of systematic record	47
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	0.5
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:

Mean	Standard deviation	Skewness
2.4963	0.3291	0.517

Low-outlier information:

Number of low outliers	0
Low-outlier threshold	97

Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
2.4963	0.3292	0.509

Annual frequency curve at selected exceedance probabilities:

[WIE, Weighted independent estimate; ––, not computed]

Exceedance probability	Peak estimate	Lower-95 level	Upper 95 level	WIE estimate	Lower-95 WIE level	Upper 95 WIE level
0.9950	63.8	35.3	93.4	––	––	––
0.9900	71.6	42.7	99.5	––	––	––
0.9500	101.0	71.6	129.0	––	––	––
0.9000	125.0	94.1	156.0	––	––	––
0.8000	164.0	129.0	204.0	––	––	––
0.6667	216.0	173.0	270.0	––	––	––
0.5000	294.0	235.0	375.0	283	228	352
0.4292	337.0	268.0	435.0	––	––	––
0.2000	578.0	446.0	826.0	546	416	717
0.1000	855.0	631.0	1,420.0	785	562	1,100
0.0400	1,340.0	916.0	2,880.0	1,160	756	1,780
0.0200	1,810.0	1,170.0	4,940.0	1,500	910	2,470
0.0100	2,410.0	1,450.0	8,460.0	1,890	1,070	3,350
0.0050	3,160.0	1,770.0	14,500.0	––	––	––
0.0020	4,450.0	2,260.0	29,300.0	3,100	1,510	6,370

Peak-flow data used in the analysis:

Explanation of symbols and codes

<	Less than
−−	none

Water year	Peak flow	Peak-flow code	Water year	Peak flow	Peak-flow code
1965	130	−−	1989	135	−−
1966	155	−−	1990	104	−−
1967	168	−−	1991	205	−−
1968	1,020	−−	1992	320	−−
1969	208	−−	1993	1,090	−−
1970	203	−−	1994	275	−−
1971	206	−−	1995	475	−−
1972	1,880	−−	1996	142	−−
1973	455	−−	1997	880	−−
1974	950	−−	1998	219	−−
1975	200	−−	1999	1,260	−−
1976	97	−−	2000	224	−−
1977	318	−−	2001	268	−−
1978	430	−−	2002	999	−−
1979	838	−−	2003	<186	−−
1980	540	−−	2004	859	−−
1981	450	−−	2005	182	−−
1982	375	−−	2006	<179	−−
1983	215	−−	2007	191	−−
1984	148	−−	2008	696	−−
1985	335	−−	2009	240	−−
1986	590	−−	2010	<197	−−
1987	270	−−	2011	228	−−
1988	380	−−			