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

Streamgage number and name:
     05384120 South Branch Root River at Lanesboro, Minn.

Peak-flow information:
Number of systematic peak flows in record	16
Systematic period begins	1973
Systematic period ends	1988
Length of systematic record	16
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	-0.24
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
3.5584	0.3215	-1.410

Low-outlier information:
Number of low outliers	0
Low-outlier threshold	1,180

Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
3.5645	0.3011	-0.576

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	425	30.8	896	−−	−−	−−
0.9900	549	54.3	1,070	−−	−−	−−
0.9500	1,060	212.0	1,750	−−	−−	−−
0.9000	1,460	392.0	2,260	−−	−−	−−
0.8000	2,100	937.0	3,080	−−	−−	−−
0.6667	2,890	1,660.0	4,090	−−	−−	−−
0.5000	3,920	2,570.0	5,510	3,880	2,820	5,340
0.4292	4,420	2,990.0	6,240	−−	−−	−−
0.2000	6,650	4,740.0	10,000	6,750	5,050	9,030
0.1000	8,450	6,060.0	14,100	8,880	6,600	12,000
0.0400	10,700	7,510.0	20,800	11,900	8,620	16,300
0.0200	12,200	8,410.0	27,200	14,200	10,000	20,000
0.0100	13,700	9,140.0	35,000	16,500	11,200	24,200
0.0050	15,100	9,740.0	44,100	−−	−−	−−
0.0020	16,800	10,300.0	59,200	22,000	13,500	35,700

Peak-flow data used in the analysis:

Explanation of symbols and codes

<	Less than
−−	none
NA	Missing peak value

Water year	Peak flow	Peak-flow code
1973	5,000	−−
1974	5,900	−−
1975	3,700	−−
1976	7,000	−−
1977	1,180	−−
1978	5,100	−−
1979	5,250	−−
1980	7,100	−−
1981	9,500	−−
1982	2,200	−−
1983	3,150	−−
1984	4,900	−−
1985	3,550	−−
1986	3,000	−−
1987	NA	−−
1988	<900	−−