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

Streamgage number and name:

05372930 Bear Creek at Rochester, Minn.

Peak-flow information:

Number of systematic peak flows in record	15	
Systematic period begins	1969	
Systematic period ends	1983	
Length of systematic record	15	
Years without information	0	
Number of historical peak flows in record	0	
Length of historical period	61	
Historical period begins	1951	
Historical period ends	2011	
Historical period based on		Correlation with streamgage 05372995

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.243
Standard error of generalized skew	0.426
Low-outlier method	Bulletin 17B Grubbs-Beck test

Bulletin 17B systematic record analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
3.1290	0.4690	1.617

Outlier criteria and number of peak flows exceeding:

Low	111.4	0
High	15233.3	1

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
3.0607	0.3568	0.405

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	189	75.9	321	––	––	––
0.9900	218	92.3	360	––	––	––
0.9500	329	164.0	507	––	––	––
0.9000	419	226.0	623	––	––	––
0.8000	570	340.0	820	––	––	––
0.6667	774	501.0	1,100	––	––	––
0.5000	1,090	749.0	1,560	1,220	842	1,750
0.4292	1,260	881.0	1,840	––	––	––
0.2000	2,250	1,570.0	3,730	2,790	1,910	4,090
0.1000	3,390	2,260.0	6,430	4,350	2,940	6,420
0.0400	5,400	3,340.0	12,200	6,730	4,480	10,100
0.0200	7,380	4,310.0	18,800	8,700	5,630	13,400
0.0100	9,890	5,450.0	28,400	10,900	6,690	17,700
0.0050	13,000	6,780.0	42,000	––	––	––
0.0020	18,400	8,880.0	68,600	17,000	9,200	31,200

Peak-flow data used in the analysis:

Explanation of symbols and codes

−− none

Water year	Peak flow	Peak-flow code
1969	870	−−
1970	650	−−
1971	780	−−
1972	670	−−
1973	1,870	−−
1974	5,800	−−
1975	718	−−
1976	2,240	−−
1977	350	−−
1978	24,900	−−
1979	930	−−
1980	1,075	−−
1981	3,240	−−
1982	712	−−
1983	830	−−