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

Streamgage number and name:

05320480 Maple River near Rapidan, Minn.

Peak-flow information:

Number of systematic peak flows in record	40
Systematic period begins	1972
Systematic period ends	2011
Length of systematic record	40
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.13
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
3.3466	0.2645	0.067

Outlier criteria and number of peak flows exceeding:

Low	433.7	0
High	11373.6	1

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
3.3466	0.2645	-0.016

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	458	307	611	––	––	––
0.9900	535	369	699	––	––	––
0.9500	813	610	1,010	––	––	––
0.9000	1,020	793	1,230	––	––	––
0.8000	1,330	1,080	1,580	––	––	––
0.6667	1,710	1,430	2,010	––	––	––
0.5000	2,220	1,890	2,610	2,160	1,780	2,620
0.4292	2,480	2,120	2,930	––	––	––
0.2000	3,710	3,130	4,570	3,570	2,890	4,420
0.1000	4,840	3,990	6,210	4,630	3,630	5,910
0.0400	6,430	5,140	8,670	6,090	4,520	8,210
0.0200	7,720	6,040	10,800	7,300	5,170	10,300
0.0100	9,090	6,970	13,100	8,580	5,790	12,700
0.0050	10,600	7,940	15,700	––	––	––
0.0020	12,700	9,290	19,600	12,000	7,180	20,000

Peak-flow data used in the analysis:

Explanation of symbols and codes

−− none

Water year	Peak flow	Peak-flow code	Water year	Peak flow	Peak-flow code
1972	1,400	−−	1992	2,000	−−
1973	2,760	−−	1993	3,950	−−
1974	2,670	−−	1994	2,330	−−
1975	2,090	−−	1995	1,750	−−
1976	900	−−	1996	2,350	−−
1977	510	−−	1997	2,000	−−
1978	1,460	−−	1998	1,160	−−
1979	2,600	−−	1999	3,030	−−
1980	2,440	−−	2000	2,540	−−
1981	2,800	−−	2001	5,540	−−
1982	2,880	−−	2002	1,410	−−
1983	4,550	−−	2003	1,500	−−
1984	2,240	−−	2004	4,850	−−
1985	2,400	−−	2005	4,380	−−
1986	2,300	−−	2006	2,750	−−
1987	880	−−	2007	2,700	−−
1988	700	−−	2008	1,480	−−
1989	1,450	−−	2009	994	−−
1990	2,540	−−	2010	12,800	−−
1991	3,520	−−	2011	4,660	−−