

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05330300 Sand Creek near New Prague, Minn.

Peak-flow information:

Number of systematic peak flows in record	52
Systematic period begins	1960
Systematic period ends	2011
Length of systematic record	52
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.159
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
	2.4425	0.3041	-0.111

Outlier criteria and number of peak flows exceeding:

Low	39.5	0
High	1944.4	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.4425	0.3041	-0.129

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	41.9	27.9	56.8	--	--	--
0.9900	50.9	35.0	67.3	--	--	--
0.9500	85.4	64.1	107.0	--	--	--
0.9000	112.0	87.4	136.0	--	--	--
0.8000	154.0	126.0	184.0	--	--	--
0.6667	207.0	174.0	244.0	--	--	--
0.5000	281.0	239.0	331.0	277	228	337
0.4292	318.0	271.0	376.0	--	--	--
0.2000	501.0	421.0	616.0	492	400	606
0.1000	673.0	553.0	858.0	658	521	832
0.0400	914.0	730.0	1,220.0	892	670	1,190
0.0200	1,110.0	869.0	1,530.0	1,080	777	1,510
0.0100	1,320.0	1,010.0	1,880.0	1,290	881	1,890
0.0050	1,540.0	1,160.0	2,250.0	--	--	--
0.0020	1,860.0	1,370.0	2,810.0	1,830	1,110	3,020

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow	Water	Peak	Peak-flow
year	flow	code	year	flow	code
1960	1,100.0	--	1986	350.0	--
1961	204.0	--	1987	350.0	--
1962	84.0	--	1988	140.0	--
1963	54.0	--	1989	200.0	--
1964	64.0	--	1990	314.0	--
1965	1,070.0	--	1991	310.0	--
1966	325.0	--	1992	450.0	--
1967	294.0	--	1993	855.0	--
1968	140.0	--	1994	178.0	--
1969	540.0	--	1995	153.0	--
1970	197.0	--	1996	243.0	--
1971	665.0	--	1997	430.0	--
1972	247.0	--	1998	912.0	--
1973	177.0	--	1999	456.0	--
1974	268.0	--	2000	244.0	--
1975	420.0	--	2001	418.0	--
1976	144.0	--	2002	206.0	--
1977	86.0	--	2003	296.0	--
1978	167.0	--	2004	254.0	--
1979	575.0	--	2005	169.0	--
1980	143.0	--	2006	457.0	--
1981	210.0	--	2007	941.0	--
1982	220.0	--	2008	181.0	--
1983	395.0	--	2009	85.9	--
1984	330.0	--	2010	432.0	--
1985	490.0	--	2011	533.0	--