

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05373080 Milliken Creek near Concord, Minn.

Peak-flow information:

Number of systematic peak flows in record	33
Systematic period begins	1979
Systematic period ends	2011
Length of systematic record	33
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.229
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:

	Standard	
Mean	deviation	Skewness
2.7552	0.4603	0.246

Outlier criteria and number of peak flows exceeding:

Low	36.0	0
High	8992.3	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
2.7552	0.4603	0.015	

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	37.7	17.3	64.7	--	--	--
0.9900	48.9	23.8	80.9	--	--	--
0.9500	100.0	57.0	150.0	--	--	--
0.9000	147.0	90.2	211.0	--	--	--
0.8000	233.0	156.0	323.0	--	--	--
0.6667	360.0	255.0	488.0	--	--	--
0.5000	568.0	416.0	774.0	600	429	839
0.4292	686.0	506.0	945.0	--	--	--
0.2000	1,390.0	1,000.0	2,080.0	1,340	962	1,870
0.1000	2,220.0	1,540.0	3,600.0	1,920	1,360	2,720
0.0400	3,660.0	2,400.0	6,590.0	2,670	1,840	3,880
0.0200	5,060.0	3,180.0	9,780.0	3,260	2,180	4,870
0.0100	6,780.0	4,080.0	14,000.0	3,930	2,500	6,200
0.0050	8,860.0	5,140.0	19,500.0	--	--	--
0.0020	12,300.0	6,770.0	29,100.0	5,670	3,190	10,100

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1979	883	--
1980	260	--
1981	824	--
1982	1,410	--
1983	640	--
1984	315	--
1985	290	--
1986	803	--
1987	235	--
1988	150	--
1989	196	--
1990	1,220	--
1991	792	--
1992	149	--
1993	1,200	--
1994	245	--
1995	147	--
1996	782	--
1997	1,220	--
1998	350	--
1999	922	--
2000	1,140	--
2001	4,080	--
2002	263	--
2003	343	--
2004	3,630	--
2005	604	--
2006	353	--
2007	343	--
2008	3,980	--
2009	55	--
2010	4,610	--
2011	448	--