

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05457000 Cedar River near Austin, Minn.

Peak-flow information:

Number of systematic peak flows in record	72
Systematic period begins	1910
Systematic period ends	2011
Length of systematic record	102
Years without information	30
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.273
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
3.6119	0.3187	-0.571

Outlier criteria and number of peak flows exceeding:

Low	486.0	0
High	34453.8	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
3.6119	0.3187	-0.459

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	451	307	609	--	--	--
0.9900	582	411	764	--	--	--
0.9500	1,120	866	1,380	--	--	--
0.9000	1,550	1,250	1,860	--	--	--
0.8000	2,260	1,890	2,630	--	--	--
0.6667	3,130	2,690	3,620	--	--	--
0.5000	4,330	3,750	5,000	4,190	3,510	4,990
0.4292	4,920	4,260	5,710	--	--	--
0.2000	7,670	6,560	9,190	7,400	6,250	8,760
0.1000	10,000	8,440	12,400	9,640	8,020	11,600
0.0400	13,100	10,800	16,600	12,400	9,940	15,600
0.0200	15,300	12,400	19,900	14,500	11,100	18,900
0.0100	17,600	14,100	23,200	16,500	12,200	22,500
0.0050	19,800	15,600	26,500	--	--	--
0.0020	22,600	17,700	31,000	21,300	14,100	32,400

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
1910	5,940	--	1976	3,910	--
1911	3,960	--	1977	580	--
1912	5,670	--	1978	12,400	--
1913	1,930	--	1979	4,720	--
1914	1,480	--	1980	3,250	--
Gap in systematic record			1981	4,810	--
1945	7,750	--	1982	3,060	--
1946	5,440	--	1983	8,690	--
1947	3,580	--	1984	3,410	--
1948	5,260	--	1985	2,190	--
1949	4,000	--	1986	4,440	--
1950	8,800	--	1987	4,070	--
1951	7,070	--	1988	979	--
1952	7,520	--	1989	3,290	--
1953	6,990	--	1990	7,580	--
1954	5,570	--	1991	4,640	--
1955	2,710	--	1992	3,190	--
1956	2,190	--	1993	10,800	--
1957	2,250	--	1994	2,510	--
1958	534	--	1995	1,830	--
1959	4,940	--	1996	2,640	--
1960	4,260	--	1997	4,960	--
1961	9,400	--	1998	4,370	--
1962	9,530	--	1999	6,110	--
1963	2,330	--	2000	15,300	--
1964	543	--	2001	7,710	--
1965	9,400	--	2002	1,650	--
1966	3,740	--	2003	2,820	--
1967	3,250	--	2004	20,000	--
1968	2,920	--	2005	3,130	--
1969	3,830	--	2006	5,120	--
1970	1,430	--	2007	3,060	--
1971	3,880	--	2008	15,300	--
1972	2,110	--	2009	3,030	--
1973	8,270	--	2010	12,900	--
1974	5,740	--	2011	6,930	--
1975	4,140	--			