

Annual Peak-Flow Frequency Analysis

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

**Streamgauge number and name:**

04017000 Embarrass River at Embarrass, Minn.

**Peak-flow information:**

Number of systematic peak flows in record	22
Systematic period begins	1943
Systematic period ends	1964
Length of systematic record	22
Years without information	0
Number of historical peak flows in record	0

**Frequency analysis options:**

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	0.109
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
2.7567	0.2863	-0.111

**Outlier criteria and number of peak flows exceeding:**

Low	115.2	0
High	2831.2	0

**Bulletin 17B Final analysis results:**

**Moments of the common logarithms of the peak flows:**

	Standard	
Mean	deviation	Skewness
2.7567	0.2863	0.013

**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	105	55.9	157	--	--	--
0.9900	124	69.2	180	--	--	--
0.9500	194	123.0	262	--	--	--
0.9000	246	166.0	323	--	--	--
0.8000	328	238.0	418	--	--	--
0.6667	429	328.0	541	--	--	--
0.5000	570	449.0	724	548	423	711
0.4292	641	508.0	823	--	--	--
0.2000	994	779.0	1,370	924	689	1,240
0.1000	1,330	1,010.0	1,960	1,200	860	1,680
0.0400	1,820	1,320.0	2,920	1,560	1,040	2,330
0.0200	2,220	1,570.0	3,780	1,820	1,150	2,860
0.0100	2,660	1,830.0	4,790	2,090	1,260	3,470
0.0050	3,140	2,100.0	5,950	--	--	--
0.0020	3,850	2,480.0	7,760	2,690	1,440	5,050

**Peak-flow data used in the analysis:**

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1943	423	--
1944	1,160	--
1945	774	--
1946	300	--
1947	1,120	--
1948	1,490	--
1949	297	--
1950	1,740	--
1951	828	--
1952	803	--
1953	619	--
1954	1,260	--
1955	360	--
1956	440	--
1957	930	--
1958	199	--
1959	224	--
1960	376	--
1961	724	--
1962	572	--
1963	181	--
1964	470	--