

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

04016000 Partridge River near Aurora, Minn.

Peak-flow information:

Number of systematic peak flows in record	40
Systematic period begins	1943
Systematic period ends	1982
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	0.114
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
	2.9667	0.2829	-0.334

Outlier criteria and number of peak flows exceeding:

Low	161.4	0
High	5315.6	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.9667	0.2829	-0.130

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	160	102	219	--	--	--
0.9900	191	127	256	--	--	--
0.9500	310	227	391	--	--	--
0.9000	398	305	490	--	--	--
0.8000	538	431	645	--	--	--
0.6667	708	585	839	--	--	--
0.5000	939	791	1,120	926	759	1,130
0.4292	1,060	890	1,260	--	--	--
0.2000	1,610	1,340	2,010	1,560	1,260	1,940
0.1000	2,110	1,720	2,750	2,040	1,600	2,610
0.0400	2,810	2,220	3,860	2,660	1,980	3,590
0.0200	3,370	2,610	4,780	3,120	2,220	4,400
0.0100	3,960	3,000	5,800	3,600	2,440	5,320
0.0050	4,580	3,410	6,910	--	--	--
0.0020	5,450	3,960	8,530	4,690	2,840	7,770

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
1943	680	--	1963	252	--
1944	2,930	--	1964	1,420	--
1945	1,560	--	1965	675	--
1946	764	--	1966	1,390	--
1947	1,980	--	1967	535	--
1948	2,660	--	1968	1,010	--
1949	950	--	1969	1,610	--
1950	3,230	--	1970	1,010	--
1951	1,360	--	1971	1,420	--
1952	1,190	--	1972	1,240	--
1953	711	--	1973	505	--
1954	2,150	--	1974	848	--
1955	174	--	1975	1,110	--
1956	784	--	1976	916	--
1957	1,630	--	1977	734	--
1958	300	--	1978	716	--
1959	463	--	1979	2,090	--
1960	823	--	1980	318	--
1961	694	--	1981	740	--
1962	680	--	1982	700	--