

## Annual Peak-Flow Frequency Analysis

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

### Streamgauge number and name:

05078100 Lost River at Gonvick, Minn.

### Peak-flow information:

Number of systematic peak flows in record	13
Systematic period begins	1960
Systematic period ends	1972
Length of systematic record	13
Years without information	0
Number of historical peak flows in record	0

### Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	-0.42
Standard error of generalized skew	0.4266
Low-outlier method	Single Grubbs-Beck test

### EMA systematic record analysis results:

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

	Standard	
Mean	deviation	Skewness
2.1279	0.3133	-1.094

#### Low-outlier information:

Number of low outliers	1
Low-outlier threshold	50

**Final analysis results:**

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

	Standard	
Mean	deviation	Skewness
2.1320	0.3018	-0.580

**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	15.6	0.85	34.5	--	--	--
0.9900	20.2	1.55	41.2	--	--	--
0.9500	39.0	6.38	66.9	--	--	--
0.9000	53.9	12.20	86.4	--	--	--
0.8000	77.6	28.30	118.0	--	--	--
0.6667	107.0	55.10	157.0	--	--	--
0.5000	145.0	89.00	212.0	164	119	226
0.4292	163.0	104.00	241.0	--	--	--
0.2000	246.0	168.00	397.0	290	211	397
0.1000	313.0	216.00	572.0	381	271	536
0.0400	394.0	268.00	873.0	504	341	745
0.0200	452.0	301.00	1,170.0	601	390	927
0.0100	506.0	328.00	1,530.0	704	437	1,140
0.0050	558.0	350.00	1,990.0	--	--	--
0.0020	622.0	372.00	2,750.0	961	538	1,720

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

Explanation of symbols and codes

-- none

\* Less than low-outlier threshold

Water	Peak	Peak-flow
year	flow	code
1960	50	--
1961	25	*
1962	255	--
1963	121	--
1964	110	--
1965	178	--
1966	167	--
1967	202	--
1968	60	--
1969	308	--
1970	230	--
1971	142	--
1972	260	--