

SELECTED DATA FOR STREAM SUBBASINS  
IN THE LE SUEUR RIVER BASIN,  
SOUTH-CENTRAL MINNESOTA

By David L. Lorenz and Gregory A. Payne

ABSTRACT

This report presents selected data that describe the characteristics of stream basins upstream from selected points on streams in the Le Sueur River basin. The points on the streams include outlets of subbasins of about five square miles, sewage treatment plant outlets, and U.S. Geological Survey streamflow-gaging stations in the basin.

INTRODUCTION

The Le Sueur River upstream from its confluence with the Blue Earth River drains an area of 1,110 mi<sup>2</sup> (square miles). It is located in the counties of Blue Earth, Faribault, Freeborn, Le Sueur, Steele, and Waseca in south-central Minnesota.

This report is one of several gazateers providing basin characteristics of streams in Minnesota. It provides selected data for subbasins larger than about 5 mi<sup>2</sup>, sewage-treatment-plant outlets, and U.S. Geological Survey (USGS) streamflow-gaging stations located in the Le Sueur River basin.

Methods

USGS 7-1/2 minute series topographic maps were used as base maps to obtain the data presented in this report. Data were compiled with a geographic information system (GIS) and were stored in an Albers equal-area projection. Data-base functions and other capabilities of the GIS were used to aggregate the data, determine drainage area of the subbasins, and determine stream channel lengths. Elevation data for the streams were recorded at the point where topographic-contour lines intersected the stream traces. Points on the stream channel 10 percent and 85 percent of the stream-channel length from the basin outlet to the drainage divide were located by the GIS, and the elevations of these points were interpolated from the data recorded in the GIS. Stream slope was calculated from these data. Lake area and storage area data were calculated using the analytic capabilities of the GIS.

Acknowledgments

The Minnesota State Planning Information Center provided assistance with much of the digitizing and programing needed to produce this report. The Center's help is gratefully acknowledged.

## DRAINAGE-AREA BOUNDARIES

The subbasins reported here were delineated on the basis of topographic features and human activities recorded on topographic maps. Data from field inspection and recent drainage-ditch maps were transferred to the topographic maps.

Drainage basins do not have fixed boundaries. Human activities along basin divides, such as the installation of storm sewers, the drainage of wetlands, and the diversions of streams can alter the stream's drainage area.

## EXPLANATION OF BASIN CHARACTERISTICS

Table 1 is a list of the basin characteristics determined for each of the subbasins in the Le Sueur River basin. The rank of the stream is shown by indentation and indicates the drainage pattern of the stream. The first-ranked river is the Le Sueur River. Tributary streams are indented two spaces per rank.

The data for drainage area, main-channel length, and main-channel slope are reported using three significant figures or rounded to the nearest hundredth of a unit. The data for lake area and storage area are reported to two significant figures or to the nearest 0.1 percent.

Table 1. --- Selected characteristics of the Le Sueur River drainage basin

[Outlet location is quarter-quarter section, section, township, range]

Map number	Downstream order no.	Stream name	Outlet location	By subbasin			Cumulative to mouth of basin			Main channel length (miles)	Main channel slope (foot per mile)
				Drainage area (square miles)	Lake area (percent subbasin area)	Storage area (percent subbasin area)	Drainage area (square miles)	Lake area (percent total area)	Storage area (percent total area)		
3800		County Ditch No. 46	SE $\frac{1}{4}$ NW $\frac{1}{4}$ 06 104N 21W	16.3	0.1	2.0	16.3	0.1	2.0	9.28	5.33
8500		County Ditch No. 28	SE $\frac{1}{4}$ NW $\frac{1}{4}$ 06 104N 21W	8.67	.0	.0	8.67	.0	.0	8.74	5.01
2400		Le Sueur River	SE $\frac{1}{4}$ NW $\frac{1}{4}$ 35 106N 22W	26.9	1.1	5.3	51.9	.6	3.4	22.0	6.87
2300		Tributary to Le Sueur River	SE $\frac{1}{4}$ NW $\frac{1}{4}$ 35 106N 22W	22.9	.0	3.9	22.9	.0	3.9	9.24	12.8
2202	5320020	Le Sueur River near New Richland	SW $\frac{1}{4}$ NE $\frac{1}{4}$ 34 106N 22W	1.07	.0	.0	75.9	.4	3.5	23.6	6.85
2201		Le Sueur River	NE $\frac{1}{4}$ NE $\frac{1}{4}$ 32 106N 22W	7.00	.0	.0	82.9	.4	3.2	26.7	6.77
2200		Le Sueur River	NW $\frac{1}{4}$ SE $\frac{1}{4}$ 31 106N 22W	3.17	.0	.8	86.1	.4	3.1	29.3	6.55
2800		Judicial Ditch No. 8	SE $\frac{1}{4}$ SE $\frac{1}{4}$ 25 105N 23W	8.26	.0	.3	8.26	.0	.3	8.11	7.80
2700		Boot Creek	SE $\frac{1}{4}$ NE $\frac{1}{4}$ 24 105N 23W	20.8	.0	.2	29.1	.0	.2	12.5	9.32
2501		New Richland STP outlet	SW $\frac{1}{4}$ SW $\frac{1}{4}$ 17 105N 22W	8.15	.0	2.4	8.15	.0	2.4	8.30	11.8
2500		Tributary to Boot Creek	SE $\frac{1}{4}$ NE $\frac{1}{4}$ 24 105N 23W	1.59	.0	.9	9.74	.0	2.1	9.96	24.5
2601	5320040	Boot Creek near New Richland	NW $\frac{1}{4}$ NE $\frac{1}{4}$ 06 105N 22W	10.5	.0	.1	49.3	.0	.6	19.3	6.78
2600		Boot Creek	SE $\frac{1}{4}$ NE $\frac{1}{4}$ 31 106N 22W	.90	.0	.0	50.2	.0	.6	20.3	6.62
2100		Le Sueur River	NW $\frac{1}{4}$ NE $\frac{1}{4}$ 07 106N 22W	15.3	.0	2.1	152	.2	2.2	41.2	5.35
700		Judicial Ditch No. 10	SW $\frac{1}{4}$ NW $\frac{1}{4}$ 09 106N 22W	7.51	.0	1.2	7.51	.0	1.2	7.55	11.5
801	5320060	Little Le Sueur River near Wilton	SE $\frac{1}{4}$ NE $\frac{1}{4}$ 07 106N 22W	16.7	.0	3.6	24.2	.0	2.9	9.88	9.63
800		Little Le Sueur River	NW $\frac{1}{4}$ NE $\frac{1}{4}$ 07 106N 22W	.07	.0	.0	24.3	.0	2.8	10.3	9.64
901	5320070	Le Sueur River at Wilton	NE $\frac{1}{4}$ SE $\frac{1}{4}$ 01 106N 23W	1.16	.0	.5	177	.2	2.2	43.0	5.28
600		County Ditch No. 15-2	SE $\frac{1}{4}$ NE $\frac{1}{4}$ 01 106N 23W	6.76	.0	3.0	6.76	.0	3.0	6.10	11.1
900		Le Sueur River	NE $\frac{1}{4}$ SW $\frac{1}{4}$ 34 107N 23W	6.44	.0	.0	190	.2	2.2	49.4	4.97
501		Waseca STP outlet	NW $\frac{1}{4}$ SW $\frac{1}{4}$ 13 107N 23W	1.19	2.0	2.0	1.19	2.0	2.0	2.20	20.6
400		County Ditch No. 38	NE $\frac{1}{4}$ SW $\frac{1}{4}$ 27 107N 23W	11.3	.0	1.1	11.3	.0	1.1	9.87	9.19
500		County Ditch No. 12	NE $\frac{1}{4}$ SW $\frac{1}{4}$ 34 107N 23W	10.1	.0	2.5	22.6	.1	1.7	11.4	10.1
1000		County Ditch No. 35	SW $\frac{1}{4}$ NW $\frac{1}{4}$ 32 107N 23W	9.86	.0	.5	9.86	.0	.5	8.54	13.8

Table 1.--Selected characteristics of the Le Sueur River drainage basin--Continued

Map number	Downstream order no.	Stream name	Outlet location	By subbasin			Cumulative to mouth of basin				Main channel slope (foot per mile)
				Drainage area (square miles)	Lake area (percent subbasin area)	Storage area (percent subbasin area)	Drainage area (square miles)	Lake area (percent total area)	Storage area (percent total area)	Main channel length (miles)	
1110		Le Sueur River	SW/WSW/ 30 107N 23W	7.14	0.0	1.3	230	0.1	2.0	54.7	4.86
3700		County Ditch No. 19	SW/WSW/ 30 107N 23W	5.90	.0	7.0	5.90	.0	7.0	4.29	18.0
300		Silver Creek	NE/WSW/ 17 108N 23W	10.2	.0	3.7	10.2	.0	3.7	10.2	7.87
200		Iosco Creek	SW/WSW/ 01 108N 24W	11.2	.2	5.2	21.4	.1	4.5	15.2	7.34
100		Lake Elysian outlet	SE/NE/ 21 108N 24W	24.0	18	23	45.4	9.5	14.5	19.4	5.76
1901		Janesville STP outlet	SW/ANW/ 04 107N 24W	11.1	.6	2.7	56.5	7.8	12.1	22.6	4.51
1800		County Ditch No. 29	NW/ANW/ 09 107N 24W	5.29	.0	.3	5.29	.0	.3	6.87	16.3
1900		County Ditch No. 6	SE/WSW/ 08 107N 24W	8.34	.0	.0	70.1	6.3	9.8	24.6	4.14
1600		Tributary to County Ditch No. 6	SE/WSW/ 08 107N 24W	7.73	18	23	7.73	18.	22.3	6.11	6.82
1700		County Ditch No. 6	SW/WSW/ 14 107N 25W	7.22	.0	.4	85.1	6.8	10.	29.2	3.86
1500		Le Sueur River	SW/SE/ 09 107N 25W	21.3	.0	.6	342	1.8	4.1	76.0	4.20
8000		County Ditch No. 83	SW/SE/ 09 107N 25W	9.59	.0	.4	9.59	.0	.4	6.73	12.7
7901		St Clair STP outlet	NE/WSW/ 08 107N 25W	2.02	.0	.0	354	1.7	3.9	77.7	4.14
7400		County Ditch No. 88	NE/NE/ 07 107N 25W	15.2	2.7	5.7	15.2	2.7	5.7	9.39	6.57
7900		Le Sueur River	NE/WSW/ 29 108N 25W	5.03	.0	.1	374	1.7	4.0	84.4	3.90
2000		County Ditch No. 12	SE/SE/ 11 108N 25W	7.55	8.1	23	7.55	8.1	23	5.89	3.91
8600		Tributary to Le Sueur River	NE/NE/ 21 108N 25W	11.8	20	24	19.4	15.	24	10.6	1.20
8102		Madison Lake STP outlet	NE/SE/ 17 108N 25W	3.26	.0	.0	3.26	.0	.0	4.43	4.59
8200		Tributary to Le Sueur River	NE/ANW/ 20 108N 25W	12.7	13	24	12.7	13	24.	5.67	1.60
8101		Eagle Lake STP outlet	NE/SE/ 13 108N 26W	1.26	.0	3.6	1.26	.0	3.6	1.79	27.9
8100		Tributary to Le Sueur River	NE/WSW/ 29 108N 25W	6.89	.0	1.9	43.5	10.	18	16.0	5.32
7801	5320200	Tributary to Le Sueur River near Mankato	SE/WSW/ 28 108N 26W	.06	.0	.0	.06	.0	.0	.34	103
7800		Le Sueur River	NE/NE/ 09 107N 26W	18.1	.1	1.8	436	2.5	5.3	98.4	3.66
7500		Tributary to Le Sueur River	NE/NE/ 09 107N 26W	9.13	.0	.0	9.13	.0	.0	8.38	16.7
3901		Freeborn STP outlet	NE/NE/ 02 103N 23W	9.87	.0	2.3	9.87	.0	2.3	7.24	11.4
3900		Cobb Creek	SW/ANW/ 11 104N 24W	21.5	.0	1.0	31.3	.0	1.4	22.0	7.18
3000		Tributary to Cobb River	NE/SE/ 34 105N 24W	10.2	.0	.5	10.2	.0	.5	8.07	13.2

Table 1.--Selected characteristics of the Le Sueur River drainage basin--Continued

Map number	Downstream order no.	Stream name	Outlet location	By subbasin			Cumulative to mouth of basin			Main channel length (miles)	Main channel slope (foot per mile)
				Drainage area (square miles)	Lake area (percent subbasin area)	Storage area (percent subbasin area)	Drainage area (square miles)	Lake area (percent total area)	Storage area (percent total area)		
3100		Cobb River	NW¼SW¼ 27 105N 24W	29.0	11	12	70.6	4.4	5.9	27.4	7.19
8400		County Ditch No. 40	NW¼SW¼ 27 105N 24W	2.14	.0	.0	2.14	.0	.0	3.36	15.3
3201		Minnesota Lake STP outlet	NE¼NE¼ 04 104N 25W	3.55	.7	1.0	3.55	.7	1.0	3.76	10.2
3200		Cobb River	NE¼SW¼ 23 105N 25W	15.6	.6	3.4	91.9	3.5	5.1	42.1	5.92
3300		Judicial Ditch No. 51	NE¼SW¼ 23 105N 25W	16.6	1.4	3.3	16.6	1.4	3.3	9.22	7.08
5900		Cobb River	SE¼SW¼ 07 105N 25W	4.09	.0	.0	113	3.1	4.7	48.7	5.31
6000		County Ditch No. 16	SE¼SW¼ 07 105N 25W	5.46	1.7	6.2	5.46	1.7	6.2	4.56	3.33
6501		Mapleton STP outlet	NE¼SE¼ 33 106N 26W	3.82	.0	.0	3.82	.0	.0	3.27	14.3
6500		County Ditch No. 57	NE¼SE¼ 22 106N 26W	5.39	.0	.0	9.20	.0	.0	5.85	7.48
6600		Cobb River	NE¼NW¼ 14 106N 26W	18.60	1.7	3.3	146	2.6	4.3	63.6	4.48
3500		Tributary to Little Cobb River	NW¼SE¼ 33 106N 24W	18.8	.4	2.5	18.8	.4	2.5	14.0	3.33
2901		Waldorf STP outlet	SW¼SW¼ 34 106N 24W	17.1	1.8	2.1	17.1	1.8	2.1	15.4	10.6
2900		Little Cobb River	NW¼SE¼ 33 106N 24W	.51	.0	.0	17.6	1.7	2.0	16.4	10.80
6700		County Ditch No. 5	SW¼NW¼ 23 106N 25W	15.7	3.2	15	15.7	3.2	15	7.27	2.59
3400		Little Cobb River	NW¼NW¼ 13 106N 25W	14.2	1.4	3.3	66.3	1.6	5.5	27.5	7.26
1200		County Ditch No. 20	SW¼NE¼ 24 106N 24W	10.9	4.8	8.0	10.9	4.8	8.0	5.77	17.5
3600		Bull Run Creek	SW¼NE¼ 24 106N 24W	10.5	3.0	6.9	10.5	3.0	6.9	8.88	13.0
1300		Bull Run Creek	NW¼NW¼ 13 106N 25W	20.8	.3	2.4	42.1	2.1	5.0	23.3	5.99
1400		Little Cobb River	SE¼SE¼ 06 106N 25W	13.1	.0	.2	121	1.6	4.8	38.6	4.99
6800		Tributary to Little Cobb River	SE¼SE¼ 06 106N 25W	5.68	3.6	8.5	5.68	3.6	8.5	6.40	6.12
6900		Little Cobb River	NE¼NW¼ 14 106N 26W	4.98	9.7	11	132	2.0	5.1	45.1	4.04
7000		Cobb River	SW¼NW¼ 04 106N 26W	7.66	.0	1.4	286	2.3	4.6	71.1	4.21
7301	5320300	Cobb River Tributary near Mapleton	SW¼NE¼ 04 106N 26W	8.21	.0	.0	8.21	.0	.0	4.40	7.93
7300		Cobb River Tributary	SW¼NW¼ 04 106N 26W	.47	.0	.0	8.68	.0	.0	4.95	9.24
7101	5320330	Cobb River near Good Thunder	SE¼NW¼ 30 107N 26W	11.6	.0	.0	306	2.1	4.3	82.0	3.99
7100		Cobb River	NE¼NW¼ 18 107N 26W	6.24	.0	.0	312	2.1	4.2	87.4	4.19
7600		Le Sueur River	SW¼NE¼ 12 107N 27W	6.44	.0	.0	763	2.3	4.7	106	3.88

Table 1.--Selected characteristics of the Le Sueur River drainage basin--Continued

Map number	Downstream order no.	Stream name	Outlet location	By subbasin			Cumulative to mouth of basin				
				Drainage area (square miles)	Lake area (percent subbasin area)	Storage area (percent subbasin area)	Drainage area (square miles)	Lake area (percent total area)	Storage area (percent total area)	Main channel length (miles)	Main channel slope (foot per mile)
4200		Maple River	SE¼NE¼ 36 104N 25W	9.82	0.6	2.3	9.82	0.6	2.3	9.47	12.4
8301		Wells STP outlet	SE¼SE¼ 06 103N 24W	1.41	.0	.0	1.41	.0	.0	2.96	18.2
8300		Tributary to Maple River	SE¼NE¼ 36 104N 25W	1.76	.0	.0	3.17	.0	.0	5.21	15.2
4000		Maple River	NW¼NE¼ 22 104N 25W	10.6	.5	1.7	23.6	.4	1.7	13.9	11.5
4100		County Ditch No. 85	NW¼NE¼ 22 104N 25W	17.9	.0	.9	17.9	.0	.9	12.1	11.1
4500		Tributary to Maple River	NE¼SE¼ 13 104N 26W	20.1	.0	.0	20.1	.0	.0	13.3	10.6
4400		Maple River	NW¼NW¼ 12 104N 26W	8.76	1.1	2.5	70.3	.3	1.1	24.5	7.49
4300		Tributary Maple River	NW¼NW¼ 12 104N 26W	9.64	31	32	9.64	31.	32.	6.51	4.67
4600		County Ditch No. 20	SW¼SE¼ 01 103N 26W	19.7	.0	.0	19.7	.0	.0	9.21	11.8
4700		County Ditch No. 70	SW¼SE¼ 01 103N 26W	6.07	.0	.0	6.07	.0	.0	6.64	13.2
4900		County Ditch No. 3	NW¼NW¼ 23 104N 26W	10.1	.0	1.2	35.9	.0	.3	13.9	8.00
5100		County Ditch No. 7	NW¼NW¼ 23 104N 26W	11.5	.0	.3	11.5	.0	.3	9.75	8.59
5200		Judicial Ditch No. 9	SE¼NW¼ 04 104N 26W	10.3	.0	.0	10.3	.0	.0	7.32	6.17
5000		County Ditch No. 3	SE¼NE¼ 33 105N 26W	10.3	.0	.7	68.1	.0	.3	21.1	5.71
4800		Maple River	SE¼NE¼ 28 105N 26W	6.66	.0	1.9	155	2.1	2.7	34.0	5.15
5800		Big Slough	SE¼NE¼ 28 105N 26W	19.9	.0	1.6	19.9	.0	1.6	11.0	2.50
6401	5320400	Tributary to Maple River near Mapleton	SE¼SW¼ 01 105N 27W	5.74	.0	.1	5.74	.0	.1	4.69	9.99
6400		Tributary to Maple River	NE¼SW¼ 12 105N 27W	.26	.0	.0	6.00	.0	.1	5.63	9.44
6100		Maple River	NE¼NW¼ 15 105N 27W	15.7	.0	.0	196	1.6	2.3	50.5	3.45
5700		Tributary to Rice Creek	NE¼SE¼ 22 104N 27W	24.2	7.1	9.6	24.2	7.1	9.6	9.68	8.31
5500		Rice Creek	NE¼SE¼ 22 104N 27W	20.4	.1	1.1	20.4	.1	1.1	11.1	6.88

Table 1.--Selected characteristics of the Le Sueur River drainage basin--Continued

Map number	Downstream order no.	Stream name	Outlet location	By subbasin			Cumulative to mouth of basin					Main channel slope (foot per mile)
				Drainage area (square miles)	Lake area (percent subbasin area)	Storage area (percent subbasin area)	Drainage area (square miles)	Lake area (percent total area)	Storage area (percent total area)	Main channel length (miles)	Main channel slope (foot per mile)	
5400		Judicial Ditch No. 1	SW¼NW¼ 23 104N 27W	10.8	0.0	0.0	10.8	0.0	0.0	0.0	7.92	4.91
5300		Rice Creek	NE¼NW¼ 15 105N 27W	26.3	9.0	10	81.6	5.0	6.5	30.2	3.48	3.48
5601	5320440	Judicial Ditch No. 49 near Amboy Amboy STP outlet	NW¼NW¼ 19 105N 27W	19.0	.2	.7	19.0	.2	.7	6.40	9.56	9.56
5600		Judicial Ditch No. 49	SW¼SE¼ 09 105N 27W	7.91	.0	.0	26.9	.2	.5	10.9	7.04	7.04
6200		Maple River	NE¼NE¼ 10 106N 27W	19.2	.4	.6	324	2.3	3.1	66.0	2.28	2.28
6300		Tributary to Maple River	NE¼NE¼ 10 106N 27W	7.92	.2	2.2	7.92	.2	2.2	8.32	11.17	11.17
7202		Good Thunder STP outlet	NW¼NE¼ 10 106N 27W	.12	.0	.0	332	2.2	3.1	66.4	2.28	2.28
7201	5320480	Maple River near Rapidan	NW¼NW¼ 24 107N 27W	6.45	.0	.0	338	2.2	3.0	77.6	2.67	2.67
7200		Maple River	SW¼NE¼ 12 107N 27W	3.37	.0	.0	342	2.2	3.0	81.0	2.94	2.94
7701	5320500	Le Sueur River near Rapidan	SE¼SW¼ 35 108N 27W	3.70	.0	.0	1110	2.3	4.2	110	4.06	4.06
7700		Le Sueur River	NE¼SW¼ 26 108N 27W	5.98	.3	.5	1110	2.2	4.2	112	4.12	4.12

## GLOSSARY

**Downstream-Order Number.**--Distinctive numbers assigned to each gaging station to provide geographical location and identification. The numbers are assigned based on the downstream order for each minor basin. The first digit designates the major river basin. The last six digits designate the downstream order of the location.

**Drainage area.**--That area measured on a horizontal plane, enclosed by a topographic divide, within which direct surface runoff from precipitation normally flows by gravity into a stream above a specified point. This may include closed basins and other areas which do not contribute directly to surface runoff.

**Lake Area.**--The percentage of the drainage area covered by open water.

**Length.**--The total length of the main channel from the basin outlet to the drainage divide. The main channel is that stream which drains the greatest area.

**Map Number.**--This is an arbitrary number used to identify the subbasin. The number is based on the Minnesota Common Stream Number System. The last five digits of the 7-digit number are used. The first 2 digits are 31 for all basins and were omitted to clarify the map.

**Outlet Location.**--The U.S. public lands system is used to describe subbasin outlet location down to the quarter-quarter section. The description includes quarter-quarter section, section, Township, and Range.

**Slope.**--The average slope of the main channel between points 10 and 85 percent of the distance along the main channel from the basin outlet to the drainage divide.

**Storage Area.**--The percentage of the drainage area covered by lakes, ponds, and marshes as shown on topographic maps.

**Stream Name.**--The name of the stream shown on the map. U.S. Geological Survey streamflow-gaging stations are given the name of the stream on which they are located. Sewage-treatment plants are identified as STP outlets.