	Est	Annua (mil	Annu (m	Total (m	Avera (tho	Per ca (ga		Thickness of	Num	Approxi	Usual (gallor	Spe (gallon foot	Daily (tho	Ye		Man	Sul	Ö	Dissolve	Hardı	
Alpha	179	-	3.9	3.9	11	61	Buried gravel	10	2	100	100	14	281	1971	2.3	0.21	350	3.0	900	740	
Avoca	203		4.7	4.7	13	64	Buried coarse sand and gravel	16	2	165	90	40	209	1971	.66	.75	640	3.0	1200	930	A TRANSPORT
Balaton	649	1.0	31	32	88	131	Outwash gravel	0	1	30	200		432	1970	<.02	<.02	200	140	850	650	
Brewster	563	-	12	12	33	59	Buried fine sand and gravel	12	2	132	98	3.3	271	1969	.63	<.02	1200	2.0	1900	1600	
Ceylon	487	-	26	26	70	144	Cretaceous	30	2	300	250	11	720	1967	.54	.52	600	2.5	1100	740	
Currie	368	1.0	15	16	44	112	Buried sand and gravel	15	2	132	125	62	209	1972	1.0	.93	900	3.0	1600	1100	
Dundee	138	-	3.8	3.8	10	72	Buried sand	5	1	80	35	17	50	1969	4.6	.36	1000	3.3	1600	1000	
Dunnell	237	-	6.7	6.7	18	76	Buried sand and gravel	22	2	182	150	9.8	432	1972	1.1	.38	460	3.0	1100	760	
Euldo	1,226		35	35	96	78	Sioux Quartzite	1064	1	1300	175	-	353	1957	.30	.66	1000	6.0	1800	1100	
Fulda	1,220		35	33	90	76	Buried gravel and clay	8	1	166	70	2.3	333	1971	1.1	.32	700	4.0	1200	1100	
Hadley	119		1.4	1.4	3.8	32	Buried fine sand	6	2	216	75	2.5	158	1968	1.4	.35	320	<1	800	540	
Heron Lake	777	_	18	18	50	64	Sandy and weathered Sioux Quartzite	100	2	360	225	3.7	482	1969	2.5	.24	670	1.3	1700	670	
lona	260	-	3.6	3.6	9.9	38	Buried sand and gravel	10	1	196	90	1.8	130	1969	8.6	.70	740	6.0	1300	760	
Jackson	3,550	6.0	106	112	307	82	Outwash gravel	15	2	42	500	50	1260	1970	2.9	.59	180	41	650	530	
Lakefield	1,820	_	68	68	186	102	Buried sand and gravel	29	3	204	175	35	720	1969	3.0	.44	500	2.2	1000	790	
Lake Wilson	378	-	6.7	6.7	18	48	Outwash sand and gravel	0	2	87	90	2.2	238	1970	.31	.37	180	<1	580	470	100
Okabena	237	_	6.6	6.6	18	76	Cretaceous	30	2	310	160	4.3	374	1969	7.7	.26	760	3.2	1400	990	1997 198
Sherburn	1,190	_	39	39	107	90	Buried sand and gravel	30	2	275	250	38	792	1964	5.8	.22	410	1.4	940	700	
Slayton	2,351	-	65	65	178	76	Buried sand and gravel	30	2	210	500	38	1423	1963	.61	1.7	850	<.5	1100	1200	
Wilmont	390	_	5.0	5.0	14	36	Buried sand	5	2	350	40	0.6	108	1968	4.6	.02	2100	3.3	3000	2000	
Windom	3,952	-	187	187	512	130	Outwash sand	15	5	100	250	20	1908	1970	1.5	.29	110	8.5	360	310	
Total	19,074						PRODUCTS OF BARROWS IN THE RELATIONSHIP IN THE				ES		ion gallo			ne water			Total		
	M	ETRIC C	CONVERSION	TABLE			Public s	supply				Ground	a water		Surtac	ce water			Total		
in (inches) ft (feet) mi (miles) ft/mi (feet per	r mile)	× × ×	25.4 0.3048 1.609 0.1894	= m (r = km (= m/k	(millimetres) netres) (kilometres) m (metres per			Domes opulation				(544			0			644		

2.590

0.4047

3.785

× 1233.0

acre-ft(acre-feet)

Mgal (million gallons)

(gal/min)/ft (gallons per

gal/min (gallons per

minute per foot)

(ft³/s)/mi (cubic feet

(ft 3/s)/mi2(cubic feet

ft 3/s (cubic feet per

per second per

per second per

square mile)

tons (short)

= km² (square kilometres)

(l/s)/m (litres per

second per metre)

metres per second per kilometre)

metres per second

per square kilometre)

m³/s (cubic metres

per second)

(m³/s)/km (cubic

= $(m^3/s)/km^2$ (cubic

= Mg (megagrams)

= m³ (cubic metres)

= 1 (litres)

= l/s (litres per

 $3.785 \times 10^{-3} = \text{hm}^3 \text{ (cubic)}$

hm² (square hectometres)

	Ground water	Surface water	Total				
Public supply							
Domestic (population 19,074)	644	0	644				
Industrial	8	0	8				
Rural supply							
Domestic (population 16,974)	465	0	465				
Livestock	766	135	901				
Irrigation	<0.5	11	11				
Self supplied							
Industrial	5	46	51				
Watershed total (population 36,048)	1,888	192	2080				

wash deposits (surficial and buried) of limited extent. Ninety-one percent of the

Although total water usage is only 0.2 percent of inflow (average annual precipi-

tation), the availability of water, both in quantity and quality, is a problem in many

parts of the watershed. This has sometimes hindered economic development.

total water pumped is ground water.

		Surface water		Ground water								
				Small lakes	Quaterna	ary	Cretaceous Precambrian					
Purpose	Considerations	Des Moines River	Large lakes	and minor streams	Surficial sand and gravel	Buried sand and gravel	Sandstone	Sioux Quartzite				
Municipal and Industrial supply	For a moderate supply, principal needs are: Quantity Minimum available surface	Adequate supply with devel- opment of storage facilities.	Adequate supply from some lakes for limited use.	Dividia di Maria di Santa di S	Adequate yields. Good recharge. Aquifer easily defined.	Adequate supply locally.	Adequate in some areas.	Locally adequate if weathered or frac				
	water supply of 1 ft ³ /s (0.03 m ³ /s) or wells yielding 250 gal/min (16 l/s). Quality Dissolved-solids concentration less than 500 mg/l. Hardness less than 180 mg/l.	Bacterial disinfection mandatory for human consumption. Algal growth gives odor problems.	Water quality studies lacking. Algal growth gives odor problems.	Not adequate.	Limited distribution. Easily contaminated.	Difficult to locate in subsurface. Very hard water. Dissolved solids high.	Difficult to locate in subsurface. Missing in central part of watershed. Deeply buried in most areas. Quality highly variable.	Generally slow recha Limited to central ar of watershed. High dissolved solids Very hard water.				
	For an adequate farm supply, needs are: Quantity	Generally adequate supply.	Adequate supply from some lakes for limited use.		Adequate yields.	Generally adequate supply.	Adequate in some areas.	Locally adequate if weathered or fra				
Rural domestic and stock supply	Minimum of 5 gal/min (0.3 l/s). Quality Dissolved-solids concentration less than 1,000 mg/l.	Available only to riparian lands. Bacterial disinfection mandatory for human consumption.	Available only to ripar- ian lands. Water quality studies lacking.	Most not adequate. Available only to ripar- ian lands.	Limited distribution. Easily contaminated.	Difficult to locate in subsurface. Dissolved solids high. Very hard water.	Difficult to locate in subsurface. Deeply buried in most areas. Quality highly variable.	Deeply buried in mo areas. High dissolved solid Very hard water.				
Irrigation supply	For an average farm, needs are: Quantity Minimum available surface water supply of 2 ft ³ /s (0.06 m ³ /s) during growing season or wells yielding 250 gal/min (16 l/s). Quality Dissolved-solids concentration	Generally adequate supply from May through July. Available only to riparian lands. May be inadequate in August and September.	Adequate supply from some lakes. Limited supply from some lakes. Available only to riparian lands.	Not adequate.	Adequate yields. Acceptable quality. Limited distribution.	Adequate supply locally. Difficult to locate in subsurface.	Adequate in some areas. Difficult to locate in subsurface. Dissolved solids and sodium high locally.	Generally inadequat Deeply buried in mo areas. Slow recharge. Dissolved solids and				
	less than 2,000 mg/l is desired. Suitability of water quality for irrigation as indicated by classification of U.S. Dept. of Agriculture. (Wilcox 1955)							sodium high loca				
Fish and wildlife habitat	Adequate depth and quality of water for fish in lakes and streams. Adequate cover for wildlife habitat is provided by: Wetlands—lakes or potholes surrounded by marsh areas. Streams—marsh and woodland	Suitable for wildlife along banks. Suitable for fish most of the time.	Excellent migratory waterfowl resting and feeding areas. Excellent wildlife habitats in marsh areas and along shores. Good fishing conditions at some, limited at	Good migratory waterfowl resting and feeding areas. Excellent habitat along shores and banks.								
	along banks.	Occasional high water. No flow at times.	others.	No water at times. Fluctuating water stage.	EXPLANATION							
Recreation	Adequate access to lakes and streams. Availability of areas suitable for hunting, fishing and other water sports. Available resorts, lake	Suitable for hunting, fish- ing, and canoeing.	Suitable for hunting, fishing, and water sports. Widely distributed. Public access at most.	Many suitable for hunt- ing and trapping. Widely distributed.	C	olor indicates overall evaluation for purpose and considerations indicated	Adequate supply generally accase able quality	ept- Advantages				
THE P	Available resorts, lake cottages, and campgrounds. Esthetic values and absence of pollution.	Occasional high water. Water quality information lacking.	Water quality information lacking.	Most are shallow and may go dry.			Very hard water, iron high	Disadvantages				

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