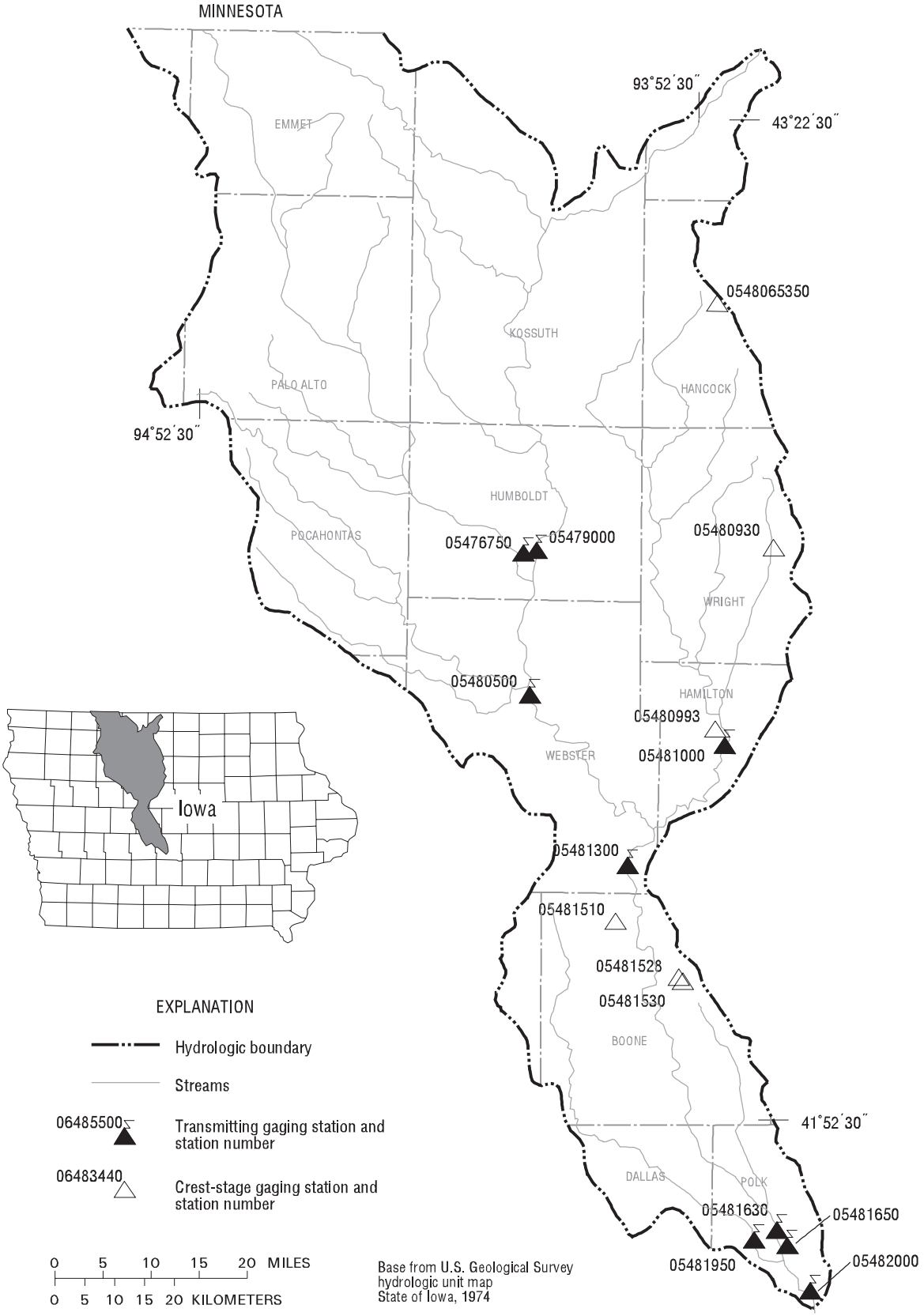

MINNESOTA
93°52′30″
43°22′30″
EMMET
KOSSUTH
PALO ALTO
HANCOCK
94°52′30″
HUMBOLDT
POCAHONTAS
WRIGHT
HAMILTON
WEBSTER
BOONE
DALLAS
POLK
41°52′30″
Iowa
05480650
05476750
05479000
05480930
05480500
05480993
05481000
05481300
05481510
05481528
05481530
05481630
05481650
05481950
05482000
EXPLANATION
Hydrologic boundary
Streams
06485500 Transmitting gaging station and station number
06483440 Crest-stage gaging station and station number
0 5 10 15 20 MILES
0 5 10 15 20 KILOMETERS
Base from U.S. Geological Survey hydrologic unit map State of Iowa, 1974

Gaging Stations

Crest Stage Gaging Stations

05476750 DES MOINES RIVER AT HUMBOLDT, IA

LOCATION.--(revised) Lat 42°43'10", long 94°13'13", in SE¼ SW¼ sec.1, T.91 N., R.29 W., Humboldt County, Hydrologic Unit 07100002 on left bank 5 ft downstream from First Avenue in city of Humboldt, .84 mi downstream of Reasoner Dam, about 700 ft downstream from City of Humboldt water plant, 3.2 mi upstream from Indian Creek, 3.9 mi upstream from East Fork Des Moines River, and at mile 334.3 upstream from mouth of Des Moines River.

DRAINAGE AREA.--2,256 mi^2.

PERIOD OF RECORD.--October 1964 to current year. Prior to October 1970, published as "West Fork Des Moines River at Humboldt."

GAGE.--Water stage recorder. Datum of gage is 1,053.54 ft above NGVD of 1929. Prior to Oct. 3, 1966, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Daily nonrecording gage readings made from Mar. 7, 1940 to Sept. 30, 1964, but discharge not published for this period because of extreme regulation at dam 700 ft upstream from gage. Power generation and streamflow regulation discontinued August 1964. Low-flow discharges occasionally affected by minor regulation at Reasoner Dam. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 23, 1947, reached a stage of 12.2 ft, discharge, 11,000 ft^3/s at present site and datum.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	99	97	81	87	56	332	835	549	2,340	2,260	1,110	275
2	98	97	87	92	57	e420	768	527	2,280	2,070	1,040	264
3	103	112	71	81	55	e479	736	488	2,230	2,090	976	256
4	100	120	71	94	54	538	e711	475	2,200	2,090	945	246
5	101	105	79	86	55	586	e676	467	2,210	1,980	1,010	244
6	101	118	102	77	53	789	e632	438	2,300	2,100	1,040	234
7	99	129	109	71	50	882	e586	400	2,380	2,790	962	219
8	101	91	114	67	53	842	e563	338	2,450	3,100	902	213
9	99	82	113	64	53	765	e519	397	2,510	2,990	853	197
10	97	104	52	64	52	e679	469	373	2,590	2,600	811	183
11	103	106	67	67	52	e668	434	355	2,710	2,360	765	182
12	100	105	78	70	51	547	408	362	3,130	2,280	726	175
13	97	92	77	70	52	601	403	352	3,540	2,520	693	168
14	101	99	80	70	52	668	388	337	3,430	2,820	656	236
15	94	105	81	69	50	660	376	326	3,130	3,020	638	346
16	90	96	79	78	53	742	367	322	2,940	3,060	619	2,190
17	93	103	78	80	54	684	350	304	2,760	2,830	603	3,370
18	96	105	76	106	58	685	353	288	2,600	2,460	609	4,260
19	97	98	75	74	61	665	364	273	2,480	2,180	630	4,900
20	102	96	75	63	62	688	363	301	2,370	2,010	595	4,900
21	92	87	76	67	60	664	404	423	2,330	1,930	562	4,080
22	92	88	76	90	65	640	434	1,340	2,280	1,920	495	3,280
23	93	94	77	67	66	593	401	3,710	2,310	1,920	460	3,090
24	98	58	75	63	68	537	416	4,620	2,370	1,820	436	3,380
25	99	67	75	63	73	527	539	5,140	2,520	1,710	416	3,500
26	95	84	76	61	80	598	697	4,490	2,660	1,590	406	3,310
27	97	90	84	63	107	675	735	3,550	2,710	1,480	370	2,910
28	102	86	92	54	174	839	701	2,890	2,720	1,400	320	2,500
29	92	73	93	54	249	1,150	649	2,520	2,640	1,330	297	2,280
30	102	101	87	48	---	1,050	585	2,520	2,460	1,240	284	2,100
31	99	---	85	51	---	938	---	2,480	---	1,170	280	---
TOTAL	3,032	2,888	2,541	2,211	2,025	21,131	15,862	41,355	77,580	67,120	20,509	53,488
MEAN	97.8	96.3	82.0	71.3	69.8	682	529	1,334	2,586	2,165	662	1,783
MAX	103	129	114	106	249	1,150	835	5,140	3,540	3,100	1,110	4,900
MIN	90	58	52	48	50	332	350	273	2,200	1,170	280	168
AC-FT	6,010	5,730	5,040	4,390	4,020	41,910	31,460	82,030	153,900	133,100	40,680	106,100
CFSM	0.04	0.04	0.04	0.03	0.03	0.30	0.23	0.59	1.15	0.96	0.29	0.79
IN.	0.05	0.05	0.04	0.04	0.03	0.35	0.26	0.68	1.28	1.11	0.34	0.88

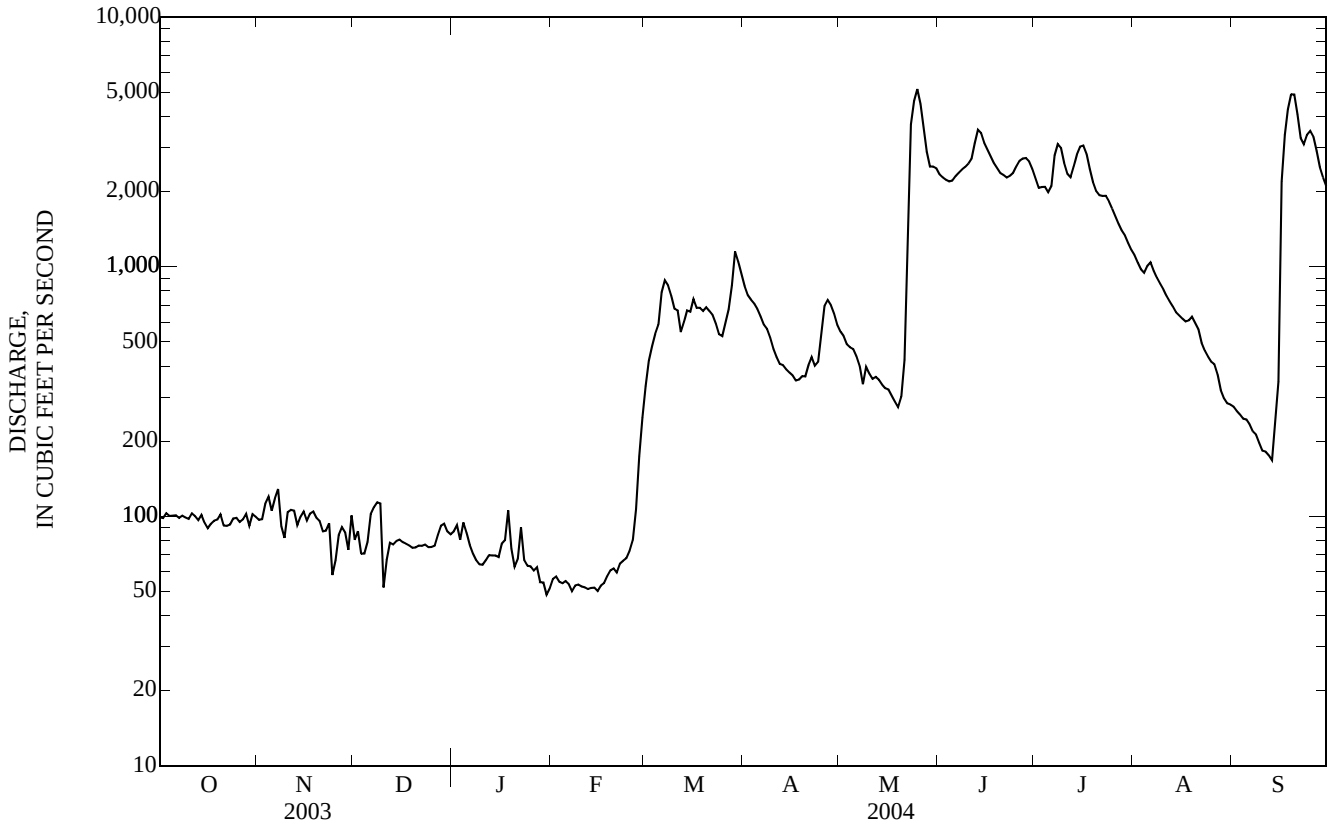
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1965 - 2004, BY WATER YEAR (WY)

MEAN	592	619	398	225	317	1,223	2,644	1,987	1,986	1,573	682	530
MAX	3,768	2,656	1,675	1,078	1,570	5,110	8,454	6,428	9,126	11,540	4,477	3,097
(WY)	(1987)	(1980)	(1983)	(1983)	(1983)	(1983)	(1969)	(2001)	(1993)	(1993)	(1993)	(1979)
MIN	20.4	28.8	19.9	13.5	19.8	78.9	94.4	77.6	72.3	81.0	42.4	30.1
(WY)	(1977)	(1977)	(1977)	(1977)	(1977)	(1968)	(1968)	(1968)	(1977)	(1976)	(1976)	(1976)

05476750 DES MOINES RIVER AT HUMBOLDT, IA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1965 - 2004	
ANNUAL TOTAL	232,368		309,742			
ANNUAL MEAN	637		846		1,066	
HIGHEST ANNUAL MEAN					4,136	1993
LOWEST ANNUAL MEAN					74.3	1977
HIGHEST DAILY MEAN	4,420	Jun 27	5,140	May 25	17,800	Apr 14, 1969
LOWEST DAILY MEAN	52	Dec 10	48	Jan 30	13	Nov 12, 1976
ANNUAL SEVEN-DAY MINIMUM	73	Dec 10	52	Feb 9	13	Jan 12, 1977
MAXIMUM PEAK FLOW			5,310	May 24	19,000	Jul 13, 1993
MAXIMUM PEAK STAGE			8.36	May 24	15.40	Apr 14, 1969
INSTANTANEOUS LOW FLOW					13	Jan 12, 1977
ANNUAL RUNOFF (AC-FT)	460,900		614,400		772,400	
ANNUAL RUNOFF (CFSM)	0.282		0.375		0.473	
ANNUAL RUNOFF (INCHES)	3.83		5.11		6.42	
10 PERCENT EXCEEDS	2,060		2,600		2,840	
50 PERCENT EXCEEDS	136		354		432	
90 PERCENT EXCEEDS	80		67		68	

e Estimated



05479000 EAST FORK DES MOINES RIVER AT DAKOTA CITY, IA

LOCATION.--(revised) Lat 42°43'25", long 94°11'36", in NW¼ SE¼ sec.6, T.91 N., R.28 W., Humboldt County, Hydrologic Unit 07100003, on right bank 50 ft upstream from old mill dam, in city park at east edge of Dakota City, 500 ft upstream from bridge on county highway P56, 0.6 mi downstream from bridge on State Highway 3, 3.4 mi upstream from confluence with Des Moines River, and at mile 333.8 upstream from mouth of Des Moines River.

DRAINAGE AREA.--1,308 mi^2.

PERIOD OF RECORD.--March 1940 to current year. Prior to October 1954, published as "near Hardy".

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1508: 1944, 1945-47 (M).

GAGE.--Water-stage recorder. Datum of gage is 1,038.71 ft above NGVD of 1929. Prior to Oct. 1, 1954, nonrecording gage at site 8 mi upstream at different datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of September 1938 reached a stage of 17.4 ft, discharge, about 22,000 ft^3/s, site and datum in use during the period 1940-54.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	27	33	27	e29	e33	e192	398	392	3,060	546	333	93
2	26	33	35	e29	e34	e256	344	349	2,710	506	312	90
3	27	41	24	27	e33	e314	304	313	2,420	575	279	85
4	25	46	37	22	e33	e379	273	288	2,220	750	262	79
5	25	43	34	e23	e31	e441	248	267	2,040	754	300	77
6	26	40	34	e22	e31	e475	229	248	1,830	703	319	76
7	25	39	31	e18	e29	571	216	224	1,570	927	355	72
8	25	37	e30	e19	e32	424	205	217	1,340	1,250	352	69
9	25	33	30	e19	e33	445	185	217	1,180	1,430	316	68
10	25	39	18	e19	e33	434	167	208	1,080	1,450	279	69
11	28	36	e23	e19	e32	382	155	198	1,110	1,410	249	64
12	30	36	e22	e23	e31	251	150	198	1,460	1,490	224	60
13	28	36	25	e25	e32	310	145	236	1,880	1,340	206	61
14	30	36	29	e27	e31	275	138	271	2,150	1,250	191	76
15	30	36	30	e26	e31	243	131	299	2,650	1,190	181	126
16	30	32	29	e27	e31	213	128	315	3,220	1,060	168	503
17	30	39	26	35	e31	202	116	313	3,440	905	156	1,130
18	28	45	26	e45	e31	171	111	289	2,950	759	146	1,390
19	28	45	26	30	e30	167	127	260	2,490	654	136	1,760
20	31	43	24	25	e36	160	137	248	2,180	570	129	2,590
21	31	42	25	27	e32	150	159	341	2,090	561	123	3,620
22	32	39	27	27	e33	138	196	2,140	1,890	1,050	113	3,850
23	33	38	28	27	e35	136	194	4,930	1,580	1,210	118	3,490
24	33	29	24	27	e37	132	193	5,990	1,310	1,120	109	3,080
25	35	37	23	26	e39	136	e377	5,850	1,110	914	104	2,710
26	30	37	25	29	e45	167	e808	6,690	965	732	113	2,380
27	31	32	30	e25	e55	289	735	6,090	844	607	125	2,130
28	33	31	e32	e24	e85	472	658	5,030	751	516	116	1,940
29	34	29	e31	e23	e145	591	546	4,230	666	454	e108	1,790
30	32	37	30	e27	---	546	450	3,720	601	412	e100	1,680
31	33	---	30	e29	---	464	---	3,410	---	372	95	---
TOTAL	906	1,119	865	800	1,144	9,526	8,223	53,771	54,787	27,467	6,117	35,208
MEAN	29.2	37.3	27.9	25.8	39.4	307	274	1,735	1,826	886	197	1,174
MAX	35	46	37	45	145	591	808	6,690	3,440	1,490	355	3,850
MIN	25	29	18	18	29	132	111	198	601	372	95	60
AC-FT	1,800	2,220	1,720	1,590	2,270	18,890	16,310	106,700	108,700	54,480	12,130	69,840
CFSM	0.02	0.03	0.02	0.02	0.03	0.23	0.21	1.33	1.40	0.68	0.15	0.90
IN.	0.03	0.03	0.02	0.02	0.03	0.27	0.23	1.53	1.56	0.78	0.17	1.00

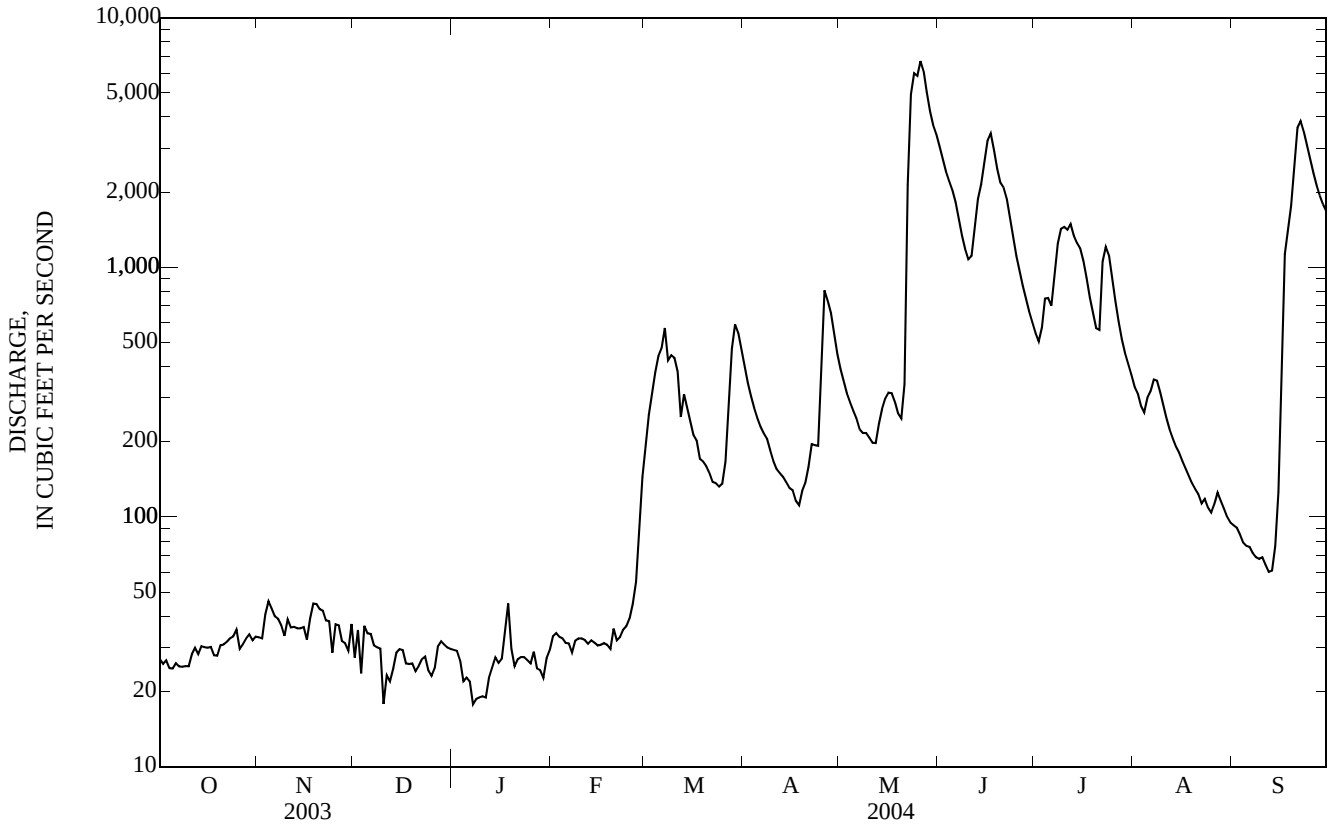
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2004, BY WATER YEAR (WY)

MEAN	306	312	214	122	228	887	1,560	1,231	1,397	906	394	329
MAX	1,713	2,042	1,340	836	1,602	4,033	14,300	12,850	8,143	6,777	4,114	2,666
(WY)	(1983)	(1942)	(1992)	(1992)	(1984)	(1983)	(2001)	(2001)	(2001)	(1993)	(1979)	(1979)
MIN	12.0	14.2	8.45	5.12	10.4	39.4	58.8	75.7	36.3	13.7	15.5	7.40
(WY)	(1959)	(1959)	(1977)	(1977)	(1959)	(1968)	(1977)	(1977)	(1977)	(1977)	(1976)	(1976)

05479000 EAST FORK DES MOINES RIVER AT DAKOTA CITY, IA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1941 - 2004	
ANNUAL TOTAL	183,303		199,933			
ANNUAL MEAN	502		546		658	
HIGHEST ANNUAL MEAN					3,559	2001
LOWEST ANNUAL MEAN					29.7	1977
HIGHEST DAILY MEAN	4,400	Jul 10	6,690	May 26	21,000	May 4, 2001
LOWEST DAILY MEAN	18	Dec 10	18	Dec 10 a	4.8	Jan 11, 1977
ANNUAL SEVEN-DAY MINIMUM	25	Oct 4	20	Jan 5	4.8	Jan 8, 1977
MAXIMUM PEAK FLOW			6,790	May 26	18,800	Jun 21, 1954
MAXIMUM PEAK STAGE			16.64	May 26	24.02	Jun 21, 1954
INSTANTANEOUS LOW FLOW			9.7	Dec 10	4.8	Jan 11, 1977 b
ANNUAL RUNOFF (AC-FT)	363,600		396,600		476,600	
ANNUAL RUNOFF (CFSM)	0.384		0.418		0.503	
ANNUAL RUNOFF (INCHES)	5.21		5.69		6.83	
10 PERCENT EXCEEDS	1,830		1,770		1,730	
50 PERCENT EXCEEDS	76		132		210	
90 PERCENT EXCEEDS	29		26		24	

a Also Jan. 7.
b Also Jan. 12-14, 1977.
e Estimated.



05480500 DES MOINES RIVER AT FORT DODGE, IA

LOCATION.--Lat 42°30'22", long 94°12'04", in NW¼ SW¼ sec.19, T.89 N., R.28 W., Webster County, Hydrologic Unit 07100004, on right bank 400 ft upstream from Soldier Creek, 1,800 ft downstream from Illinois Central Railroad bridge in Fort Dodge, 2,000 ft downstream from Lizard Creek, and at mile 314.6.

DRAINAGE AREA.--4,190 mi^2.

PERIOD OF RECORD.--April 1905 to July 1906 (no winter records), October 1913 to September 1927 (published as "at Kalo"), October 1946 to current year. Monthly discharge only for some periods, published in WSP 1308.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1308: 1924, 1925 (M).

GAGE.--Water-stage recorder. Datum of gage is 969.38 ft above NGVD of 1929. See WSP 1728 for history of changes prior to Dec. 8, 1949.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Occasional minor regulation caused by dam 0.8 mi upstream from gage. U.S. Army Corps of Engineers data collection platform with satellite telemetry and City of Fort Dodge gage-height telemeter at station.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	142	147	165	142	e101	e763	1,480	1,300	6,790	3,210	1,670	489
2	139	148	143	e146	e97	e885	1,330	1,210	6,060	2,940	1,540	470
3	139	188	134	e146	e92	e953	1,230	1,120	5,440	3,090	1,490	451
4	139	227	156	e143	e99	1,060	1,160	1,060	4,890	3,350	1,440	438
5	136	196	154	e136	e102	e1,280	1,100	1,010	4,660	3,190	1,400	425
6	135	177	152	e140	e99	e1,690	1,040	974	4,470	3,070	1,500	433
7	134	196	189	e141	e91	e1,850	969	923	4,210	3,850	1,470	393
8	130	193	195	e139	e89	1,690	929	872	4,010	4,690	1,440	378
9	127	149	195	e133	e92	1,470	893	900	4,030	4,940	1,360	375
10	127	145	115	e125	e93	1,380	844	929	4,140	4,570	1,270	356
11	126	172	101	e116	e96	1,300	799	879	4,600	4,350	1,200	345
12	137	170	145	e118	e93	870	763	872	5,930	4,440	1,130	334
13	134	163	136	e122	e89	1,070	745	926	6,690	4,300	1,070	316
14	138	150	140	e119	e90	1,010	729	916	6,860	4,410	1,030	360
15	137	164	147	e111	e92	996	694	938	6,870	4,540	988	452
16	134	169	e127	e117	e93	1,010	683	949	8,610	4,460	944	1,650
17	142	182	e92	e114	e90	977	657	961	11,200	4,060	913	3,870
18	139	213	e132	e109	e95	960	635	947	8,980	3,510	889	5,640
19	136	184	e131	e104	e95	957	675	894	7,590	3,060	904	6,950
20	134	174	e136	e108	e130	976	705	895	6,490	2,750	889	7,830
21	135	170	133	e104	e126	951	789	975	5,860	2,660	840	8,120
22	129	164	136	e101	e158	909	919	3,760	5,330	2,890	792	7,620
23	131	168	e133	e104	199	877	900	12,500	4,760	3,200	725	6,910
24	133	122	e130	e100	201	860	879	14,400	4,410	3,050	693	6,620
25	143	129	e133	104	195	816	1,360	14,400	4,270	2,750	666	6,470
26	141	150	134	107	201	869	2,070	13,800	4,130	2,460	640	5,970
27	136	160	e147	e103	343	1,060	1,960	11,600	4,020	2,240	650	5,110
28	148	153	e146	e98	e563	1,560	1,780	9,240	3,950	2,050	584	4,360
29	152	131	e149	e96	e690	2,080	1,600	8,970	3,790	1,940	550	3,910
30	143	167	e146	e96	---	1,890	1,420	8,120	3,510	1,820	520	3,580
31	148	---	e143	e99	---	1,650	---	7,560	---	1,710	498	---
TOTAL	4,244	5,021	4,415	3,641	4,594	36,669	31,737	124,800	166,550	103,550	31,695	90,625
MEAN	137	167	142	117	158	1,183	1,058	4,026	5,552	3,340	1,022	3,021
MAX	152	227	195	146	690	2,080	2,070	14,400	11,200	4,940	1,670	8,120
MIN	126	122	92	96	89	763	635	872	3,510	1,710	498	316
AC-FT	8,420	9,960	8,760	7,220	9,110	72,730	62,950	247,500	330,400	205,400	62,870	179,800
CFSM	0.03	0.04	0.03	0.03	0.04	0.28	0.25	0.96	1.32	0.80	0.24	0.72
IN.	0.04	0.04	0.04	0.03	0.04	0.33	0.28	1.11	1.48	0.92	0.28	0.80

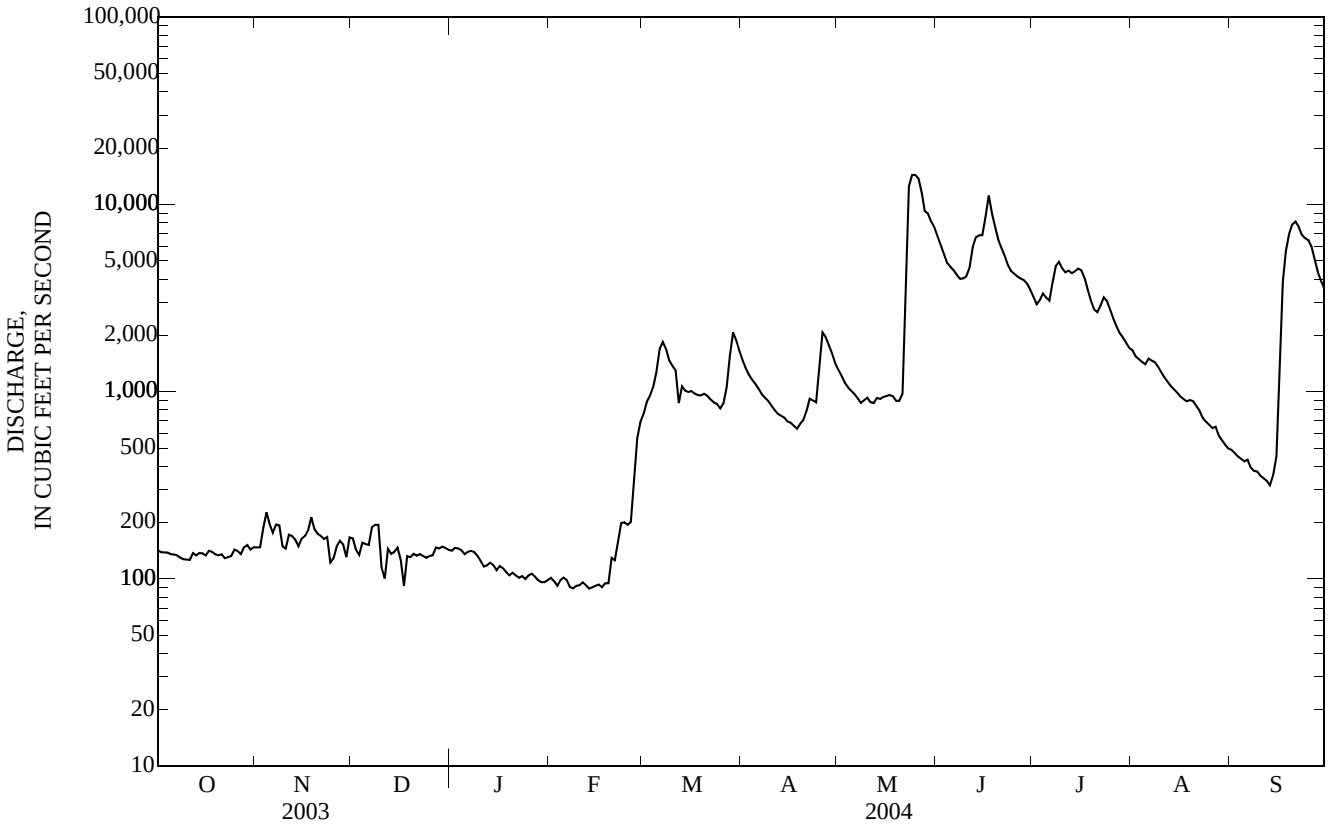
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1914 - 2004, BY WATER YEAR (WY)

MEAN	889	855	598	381	776	2,506	4,113	3,124	3,511	2,425	1,095	905
MAX	6,120	4,447	3,698	2,257	4,352	11,070	17,530	12,490	16,150	21,530	9,264	6,206
(WY)	(1987)	(1983)	(1983)	(1983)	(1984)	(1983)	(1993)	(2001)	(1993)	(1993)	(1993)	(1979)
MIN	32.8	54.5	34.7	24.0	35.5	141	224	149	138	75.2	69.0	49.9
(WY)	(1957)	(1959)	(1977)	(1977)	(1959)	(1968)	(2000)	(1926)	(1977)	(1926)	(1976)	(1976)

05480500 DES MOINES RIVER AT FORT DODGE, IA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1914 - 2004	
ANNUAL TOTAL	568,176		607,541			
ANNUAL MEAN	1,557		1,660		1,766	
HIGHEST ANNUAL MEAN					7,882	1993
LOWEST ANNUAL MEAN					143	1977
HIGHEST DAILY MEAN	12,800	Jun 27	14,400	May 24 a	35,100	Apr 8, 1965
LOWEST DAILY MEAN	92	Dec 17	89	Feb 8	14	Nov 3, 1955
ANNUAL SEVEN-DAY MINIMUM	127	Dec 16	92	Feb 8	23	Jan 13, 1977
MAXIMUM PEAK FLOW			15,000	May 24	35,600	Apr 8, 1965
MAXIMUM PEAK STAGE			10.05	May 24	19.62	Jun 23, 1947
INSTANTANEOUS LOW FLOW					14	Nov 3, 1955
ANNUAL RUNOFF (AC-FT)	1,127,000		1,205,000		1,279,000	
ANNUAL RUNOFF (CFSM)	0.372		0.396		0.421	
ANNUAL RUNOFF (INCHES)	5.04		5.39		5.73	
10 PERCENT EXCEEDS	5,110		4,710		4,730	
50 PERCENT EXCEEDS	277		737		650	
90 PERCENT EXCEEDS	136		113		106	

a Also May 25.
e Estimated.



05481000 BOONE RIVER NEAR WEBSTER CITY, IA

LOCATION.--(revised) Lat 42°25'57", long 93°48'20", in NW¼ SE¼ sec.18, T.88 N., R.25 W., Hamilton County, Hydrologic Unit 07100005, on right bank 100 ft upstream from bridge on State Highway 17, 2.5 mi south of Webster City, and 3.2 mi downstream from Brewers Creek.

DRAINAGE AREA.--844 mi^2.

PERIOD OF RECORD.--March 1940 to current year.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1308: 1940 (M), WSP 1708: 1956.

GAGE.--Water-stage recorder. Datum of gage is 989.57 ft above NGVD of 1929. Prior to June 26, 1940, nonrecording gage at same site and datum.

REMARKS.--Records good except those for estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1896, 19.1 ft about June 10, 1918, from floodmarks, from information by local resident, discharge, 21,500 ft^3/s. Flood of June 18, 1932, reached a stage of 16.0 ft, discharge, 15,000 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16	20	e25	e34	e24	e1,320	725	712	2,860	583	176	61
2	16	20	26	e36	e22	1,210	663	682	2,470	550	198	56
3	17	36	e32	e32	e15	851	503	527	2,070	678	197	50
4	17	60	e30	e25	e17	592	436	477	1,760	761	318	48
5	16	61	e32	e17	e19	906	387	441	1,570	754	206	47
6	15	47	e32	e20	e14	1,340	358	408	1,400	894	173	59
7	16	40	e25	e19	e11	1,210	332	363	e1,300	1,070	152	51
8	17	33	e28	e18	e9.8	899	302	343	e1,020	1,110	169	47
9	21	30	e27	e19	e12	613	273	345	1,050	916	202	46
10	20	31	e24	e23	e13	490	249	334	1,210	788	147	44
11	22	28	e22	e22	e18	382	228	311	1,250	1,040	125	41
12	21	25	e21	e24	e16	240	217	294	2,790	1,120	111	36
13	23	24	e22	e26	e15	217	206	541	2,480	1,050	100	33
14	29	23	e25	e24	e12	223	196	639	2,370	857	91	56
15	24	23	e26	e22	e10	213	189	712	2,270	683	84	51
16	22	23	e19	e34	e10	177	186	693	2,110	568	81	51
17	22	29	e15	e24	e11	161	180	634	3,090	468	130	99
18	20	38	e19	e15	e13	163	169	605	3,500	391	120	205
19	19	44	e16	e12	e15	167	175	565	3,170	338	92	131
20	20	40	e20	e16	e43	167	195	532	2,530	300	81	99
21	21	34	e26	e14	e41	153	238	567	1,960	633	73	85
22	21	36	e27	e10	e86	146	294	3,130	1,850	685	66	77
23	19	37	e23	e22	e190	138	325	6,980	1,650	675	62	67
24	19	e31	e17	e16	e185	179	331	10,300	1,400	723	62	62
25	19	e35	e19	e22	e165	178	505	12,700	1,240	547	67	55
26	19	e33	e24	e24	e157	209	1,320	9,800	1,070	411	90	49
27	18	e35	e32	e18	e230	706	1,580	6,480	939	334	204	48
28	21	e26	e31	e15	e510	1,390	1,310	4,450	834	284	111	50
29	22	e25	e35	e14	e811	1,540	993	4,430	726	250	90	48
30	23	26	e32	e15	---	1,190	795	3,700	647	216	78	46
31	21	---	e29	e19	---	858	---	3,210	---	193	65	---
TOTAL	616	993	781	651	2,694.8	18,228	13,860	75,905	54,586	19,870	3,921	1,898
MEAN	19.9	33.1	25.2	21.0	92.9	588	462	2,449	1,820	641	126	63.3
MAX	29	61	35	36	811	1,540	1,580	12,700	3,500	1,120	318	205
MIN	15	20	15	10	9.8	138	169	294	647	193	62	33
MED	20	32	25	20	17	382	313	634	1,700	675	111	51
AC-FT	1,220	1,970	1,550	1,290	5,350	36,160	27,490	150,600	108,300	39,410	7,780	3,760
CFSM	0.02	0.04	0.03	0.02	0.11	0.70	0.55	2.90	2.16	0.76	0.15	0.07
IN.	0.03	0.04	0.03	0.03	0.12	0.80	0.61	3.35	2.41	0.88	0.17	0.08

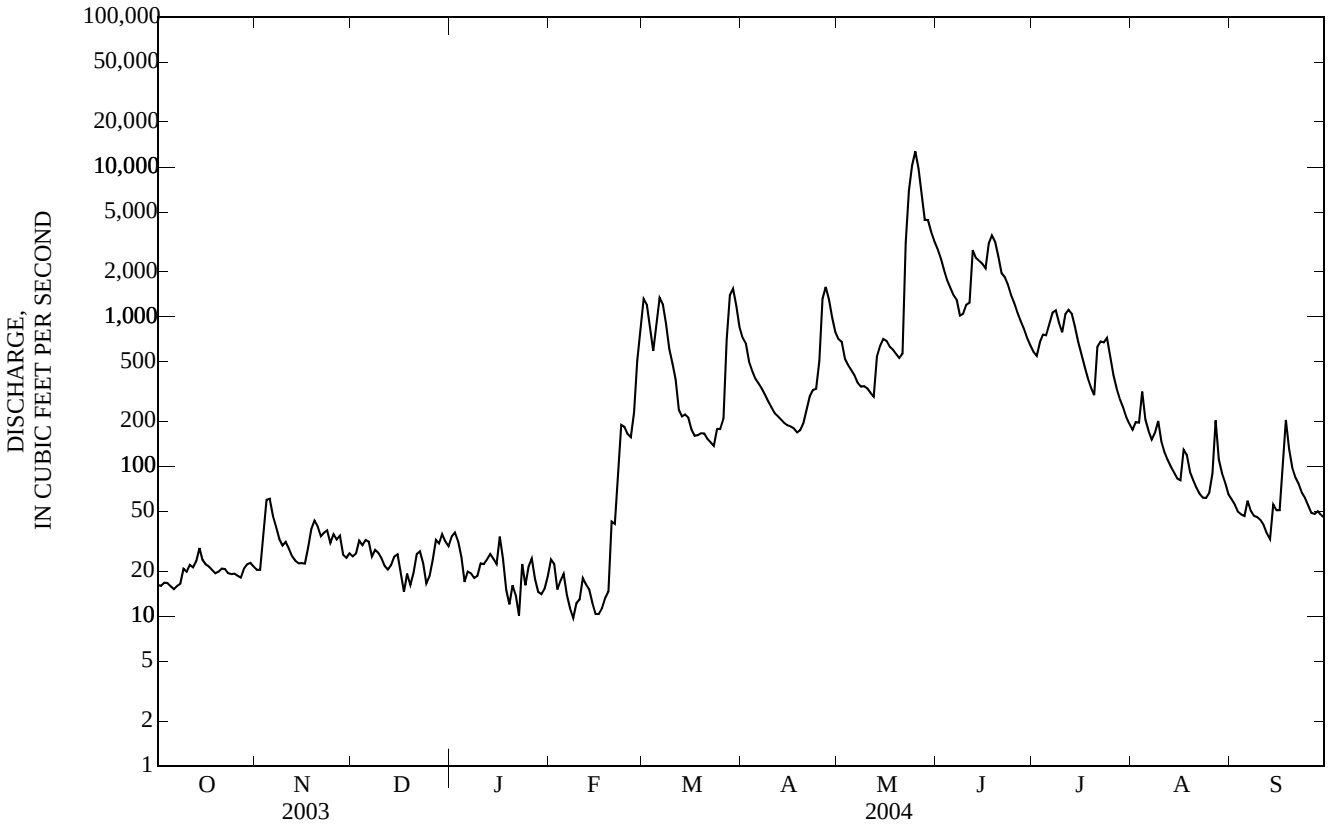
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2004, BY WATER YEAR (WY)

MEAN	239	215	144	96.4	243	788	935	888	1,085	598	258	204
MAX	1,771	1,395	1,181	568	1,847	2,826	4,307	4,315	4,239	4,715	2,942	2,501
(WY)	(1987)	(1993)	(1983)	(1983)	(1984)	(1973)	(1965)	(1991)	(1984)	(1993)	(1993)	(1965)
MIN	6.66	11.0	4.62	0.32	3.60	32.5	33.7	46.0	14.1	8.66	9.79	6.48
(WY)	(1950)	(1950)	(1977)	(1977)	(1950)	(1968)	(1957)	(1968)	(1977)	(1977)	(1949)	(1976)

05481000 BOONE RIVER NEAR WEBSTER CITY, IA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1941 - 2004	
ANNUAL TOTAL	185,703		194,003.8			
ANNUAL MEAN	509		530		475	
HIGHEST ANNUAL MEAN					1,861	1993
LOWEST ANNUAL MEAN					36.1	1956
HIGHEST DAILY MEAN	7,750	Jul 10	12,700	May 25	19,500	Jun 22, 1954
LOWEST DAILY MEAN	15	Oct 6	9.8	Feb 8 a	0.00	Feb 7, 1977
ANNUAL SEVEN-DAY MINIMUM	16	Oct 1	12	Feb 13	0.01	Feb 1, 1977
MAXIMUM PEAK FLOW			13,400	May 25	20,300	Jun 22, 1954
MAXIMUM PEAK STAGE			15.55	May 25	18.55	Jun 22, 1954
INSTANTANEOUS LOW FLOW					0.00	Feb 7, 1977
ANNUAL RUNOFF (AC-FT)	368,300		384,800		343,900	
ANNUAL RUNOFF (CFSM)	0.603		0.628		0.562	
ANNUAL RUNOFF (INCHES)	8.19		8.55		7.64	
10 PERCENT EXCEEDS	1,430		1,300		1,220	
50 PERCENT EXCEEDS	71		90		139	
90 PERCENT EXCEEDS	21		18		17	

a Ice affected.
e Estimated.



05481300 DES MOINES RIVER NEAR STRATFORD, IA

LOCATION.--(revised) Lat 42°15'07", long 93°59'48", in NW¼ NE¼ sec.21, T.86 N., R.27 W., Webster County, Hydrologic Unit 07100004, on right bank 6 ft downstream from bridge on State Highway 175, 0.1 mi downstream from Skillet Creek, 4.0 mi southwest of Stratford, 7.3 mi downstream from Boone River, and at mile 276.7.

DRAINAGE AREA.--5,452 mi^2.

PERIOD OF RECORD.--October 1967 to current year in reports of U.S. Geological Survey. Replacement station for 05481500 "near Boone", which operated April 1920 to September 1968. Records not necessarily equivalent.

GAGE.--Water-stage recorder. Datum of gage is 894.00 ft above NGVD of 1929.

REMARKS.--Records good except those for estimated daily discharges, which are poor. Occasional minor regulation caused by dam at Fort Dodge. U.S. Army Corps of Engineers rain gage and data collection platform with satellite telemetry at station. Precipitation records are available online at the U.S. Army Corps of Engineers website: www2.mvr.usace.army.mil/ WaterControl/datamining2.cfm.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 30, 1903, reached a stage of 25.4 ft, from high-water mark, site and datum then in use, discharge, 43,600 ft^3/s.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	173	178	e179	e161	e113	e2,360	2,830	2,310	11,700	3,990	1,900	554
2	170	180	e174	e160	e109	e2,320	2,450	2,060	10,000	3,680	1,750	537
3	166	210	e139	e162	e106	e2,180	2,160	1,890	8,680	3,760	1,660	513
4	164	301	e165	e164	e109	2,010	1,960	1,720	7,680	4,620	2,060	492
5	167	329	e163	e157	e110	2,410	1,810	1,600	7,000	4,410	1,760	482
6	163	274	e157	e154	e109	e3,250	1,680	1,510	6,560	4,230	1,630	510
7	161	241	e194	e152	e104	e3,440	1,560	1,400	6,090	4,440	1,590	482
8	161	235	e199	e152	e103	3,430	1,450	1,300	5,630	5,390	1,500	437
9	162	234	e199	e149	e102	2,660	1,350	1,260	5,280	5,760	1,550	422
10	162	214	e141	e141	e108	2,280	1,270	1,260	6,040	5,520	1,420	417
11	167	197	e130	e133	e112	2,090	1,180	1,250	5,710	5,290	1,280	399
12	166	207	e150	e135	e106	1,710	1,110	1,160	8,780	6,160	1,190	385
13	172	207	e146	e138	e105	1,370	1,060	1,350	9,420	5,790	1,110	372
14	185	203	e150	e140	e106	1,510	1,020	1,670	9,370	5,480	1,040	371
15	187	192	e154	e134	e109	1,450	979	1,620	8,970	5,290	987	437
16	177	193	e131	e138	e112	1,410	951	1,680	9,680	5,170	938	484
17	174	217	e96	e134	e109	1,400	962	1,630	15,700	4,830	946	2,190
18	174	274	e149	e131	e115	1,370	915	1,660	15,500	4,270	961	4,410
19	173	292	e145	e125	e118	1,390	864	1,560	12,500	3,710	915	6,020
20	169	252	e150	e127	e147	1,380	910	1,470	10,100	3,300	896	7,200
21	162	228	e147	e126	e147	1,360	1,020	1,430	8,580	3,230	853	7,980
22	164	217	e153	e124	e173	1,300	1,100	3,810	7,590	3,570	808	7,960
23	164	215	e150	e127	e262	1,260	1,240	15,400	6,880	3,770	751	7,210
24	162	188	e147	e119	e279	1,260	1,230	24,500	6,190	3,870	705	6,700
25	161	e194	e150	e121	e266	1,230	1,550	27,900	5,790	3,550	689	6,500
26	166	206	e152	e127	e342	1,190	2,840	26,800	5,440	3,060	680	6,180
27	175	209	e159	e118	e562	1,500	4,030	23,400	5,170	2,700	883	5,560
28	172	e172	e159	e115	e1,190	3,000	3,700	18,700	4,910	2,420	832	4,870
29	178	e172	e167	e111	e1,740	4,130	3,160	16,600	4,650	2,220	690	4,280
30	183	e196	e166	e109	---	4,130	2,680	16,000	4,350	2,040	623	3,910
31	176	---	e162	e112	---	3,390	---	13,500	---	1,880	584	---
TOTAL	5,256	6,627	4,823	4,196	7,173	65,170	51,021	219,400	239,940	127,400	35,181	88,264
MEAN	170	221	156	135	247	2,102	1,701	7,077	7,998	4,110	1,135	2,942
MAX	187	329	199	164	1,740	4,130	4,030	27,900	15,700	6,160	2,060	7,980
MIN	161	172	96	109	102	1,190	864	1,160	4,350	1,880	584	371
AC-FT	10,430	13,140	9,570	8,320	14,230	129,300	101,200	435,200	475,900	252,700	69,780	175,100
CFSM	0.03	0.04	0.03	0.02	0.05	0.39	0.31	1.30	1.47	0.75	0.21	0.54
IN.	0.04	0.05	0.03	0.03	0.05	0.44	0.35	1.50	1.64	0.87	0.24	0.60

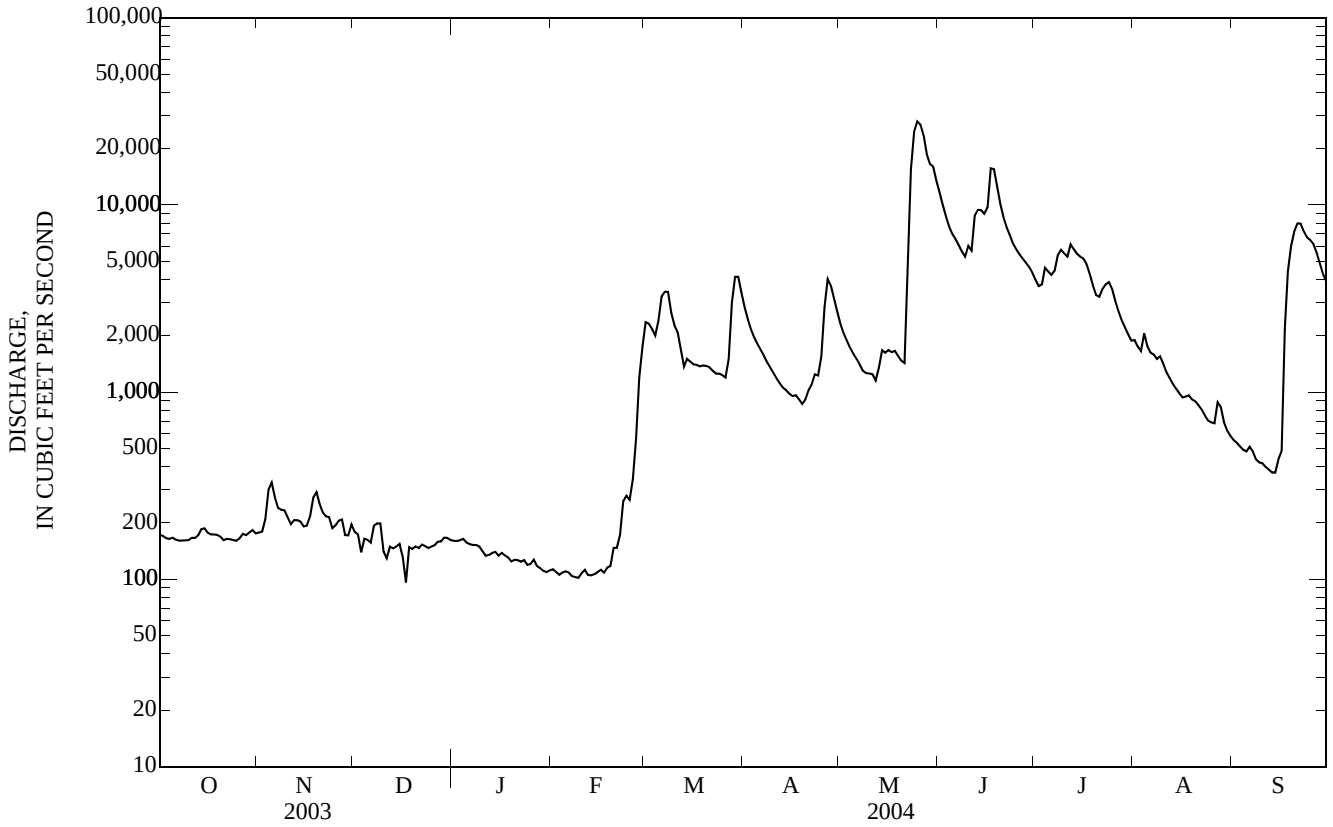
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1968 - 2004, BY WATER YEAR (WY)

MEAN	1,570	1,613	1,184	718	1,202	4,096	6,403	5,787	6,093	4,367	1,938	1,312
MAX	8,763	5,745	5,267	3,267	7,061	13,920	22,020	17,120	21,310	27,250	13,500	7,546
(WY)	(1987)	(1993)	(1983)	(1992)	(1984)	(1983)	(1993)	(2001)	(1993)	(1993)	(1993)	(1993)
MIN	69.4	96.3	44.4	18.7	57.7	204	348	296	177	156	122	69.5
(WY)	(1977)	(1977)	(1977)	(1977)	(1977)	(1968)	(2000)	(1968)	(1977)	(1977)	(1976)	(1976)

05481300 DES MOINES RIVER NEAR STRATFORD, IA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1968 - 2004	
ANNUAL TOTAL	821,415		854,451			
ANNUAL MEAN	2,250		2,335		3,028	
HIGHEST ANNUAL MEAN					10,400	1993
LOWEST ANNUAL MEAN					254	1977
HIGHEST DAILY MEAN	20,900	Jul 10	27,900	May 25	41,400	Apr 2, 1993
LOWEST DAILY MEAN	96	Dec 17	96	Dec 17 a	13	Jan 23, 1977 b
ANNUAL SEVEN-DAY MINIMUM	137	Dec 11	106	Feb 7	14	Jan 22, 1977
MAXIMUM PEAK FLOW			28,600	May 25	423,000	Apr 2, 1993
MAXIMUM PEAK STAGE			21.21	May 25	25.68	Apr 2, 1993
INSTANTANEOUS LOW FLOW					13	Jan 23, 1977
ANNUAL RUNOFF (AC-FT)	1,629,000		1,695,000		2,194,000	
ANNUAL RUNOFF (CFSM)	0.413		0.428		0.555	
ANNUAL RUNOFF (INCHES)	5.60		5.83		7.55	
10 PERCENT EXCEEDS	6,830		6,110		8,290	
50 PERCENT EXCEEDS	457		942		1,280	
90 PERCENT EXCEEDS	164		132		185	

a Ice affected.
b Also Jan. 24, 1977.
e Estimated.



05481630 SAYLORVILLE LAKE NEAR SAYLORVILLE, IA

LOCATION.--Lat 41°42'13", long 93°41'21", in SE $^1/_4$ SW $^1/_4$ sec.30, T.80 N., R.24 W., Polk County, Hydrologic Unit 07100004, in control tower of Saylorville Dam, 3.2 mi northwest of Saylorville, 4.2 mi upstream from Beaver Creek, and at mile 213.7.

DRAINAGE AREA.--5,823 mi^2.

PERIOD OF RECORD.--April 1977 to current year.

GAGE.--Water-stage recorder. Datum of gage is at NGVD 0f 1929 (levels by U.S. Army Corps of Engineers).

REMARKS.--Reservoir is formed by earthfill dam completed in 1976. Storage began in April 1977. Release controlled at intake structure to forechamber of 22 ft diameter concrete conduit through dam. Ungated chute spillway 430 ft in length at right end of dam at elevation 884 ft, contents, 570,000 acre-ft. Conservation pool at elevation 836 ft, contents, 90,000 acre-ft, surface area, 5,950 acres. Flood pool elevation at 890 ft, contents, 586,000 acre-ft, surface area, 16,700 acres. Reservoir is used for flood control, low-flow augmentation, conservation and recreation. Storage tables for water years 1985-1986 published as day second-feet instead of acre-feet storage. Prior to October 1, 2000 published as contents in acre feet, and as elevation in feet NGVD thereafter.

COOPERATION.--Records provided by U.S. Army Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 892.03 ft July 13, 1993; minimum elevation, 832.61 ft Jan. 19, 1979.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 870.16 ft on May 31; minimum elevation, 835.28 ft on Feb. 18, 19.

ELEVATION ABOVE NGVD 1929, FEET
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004
DAILY OBSERVATION AT 0600 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	836.31	835.95	837.07	836.47	835.76	836.68	836.06	836.36	870.09	856.48	836.32	836.06
2	836.29	835.98	837.06	836.49	835.76	837.17	836.06	836.22	870.03	855.55	836.10	836.12
3	836.27	836.07	837.11	836.52	835.72	837.41	836.19	836.13	870.00	854.69	836.14	836.14
4	836.27	836.41	837.14	836.48	835.66	837.08	836.06	836.14	869.71	853.78	836.53	836.16
5	836.25	836.59	837.25	836.44	835.63	836.80	835.99	836.16	869.24	852.95	836.41	836.14
6	836.23	836.64	837.18	836.36	835.65	836.52	836.09	836.16	868.68	852.45	836.14	836.40
7	836.23	836.67	837.11	836.33	835.62	836.78	836.18	836.18	867.94	851.88	836.08	836.29
8	836.20	836.70	837.05	836.30	835.58	836.92	836.26	836.14	867.13	851.27	836.03	836.10
9	836.20	836.70	836.99	836.28	835.55	836.78	836.19	836.22	866.27	850.72	836.06	836.08
10	836.18	836.72	837.14	836.26	835.52	836.30	836.25	836.29	865.34	850.34	836.08	836.05
11	836.16	836.77	836.72	836.24	835.48	836.34	836.21	836.28	864.48	849.86	836.09	836.08
12	836.19	836.79	836.60	836.22	835.46	836.13	836.17	836.25	863.60	849.48	835.98	836.08
13	836.17	836.85	836.50	836.23	835.42	836.17	836.22	836.41	863.20	849.31	836.01	836.04
14	836.23	836.80	836.48	836.22	835.39	836.37	836.26	836.39	863.02	849.18	836.00	836.03
15	836.19	836.81	836.47	836.21	835.36	836.42	836.24	836.39	862.80	848.87	835.96	835.99
16	836.20	836.83	836.48	836.20	835.33	836.63	836.29	836.42	862.54	848.52	835.95	836.04
17	836.18	836.79	836.46	836.22	835.30	836.48	836.37	836.40	862.53	848.14	836.04	836.02
18	836.16	836.89	836.45	836.24	835.28	836.24	836.37	836.57	863.34	847.66	836.27	836.06
19	836.16	836.92	836.45	836.20	835.28	836.20	836.50	836.36	864.43	847.05	836.33	836.45
20	836.15	836.95	836.42	836.18	835.32	836.33	836.31	836.25	864.87	846.32	836.18	836.41
21	836.14	837.04	836.43	836.15	835.32	836.37	836.65	836.14	864.86	845.45	836.09	836.32
22	836.13	837.06	836.45	836.14	835.36	836.34	836.63	836.16	864.73	844.52	836.10	836.38
23	836.12	837.09	836.47	836.08	835.60	836.33	836.55	837.93	864.24	843.65	836.11	836.49
24	836.08	837.12	836.45	836.06	836.01	836.29	836.49	842.33	863.60	842.78	836.14	836.50
25	836.08	837.07	836.43	836.02	836.20	836.22	836.55	848.68	862.78	842.02	836.12	836.52
26	836.06	837.09	836.41	836.00	836.40	836.26	836.42	856.02	861.86	841.20	836.10	836.46
27	836.01	837.10	836.41	836.00	836.44	836.22	836.47	862.70	860.86	840.21	836.16	836.44
28	836.11	837.17	836.43	835.94	836.52	836.45	836.86	867.35	859.85	839.08	836.42	836.41
29	836.00	837.05	836.45	835.90	836.48	836.70	836.82	868.99	858.71	838.07	836.10	836.31
30	835.95	837.06	836.44	835.86	---	836.78	836.56	869.60	857.52	837.23	836.06	836.28
31	836.00	---	836.46	835.81	---	836.32	---	870.16	---	836.58	836.02	---
MEAN	836.16	836.79	836.68	836.20	835.67	836.52	836.34	842.64	864.61	847.27	836.13	836.23
MAX	836.31	837.17	837.25	836.52	836.52	837.41	836.86	870.16	870.09	856.48	836.53	836.52
MIN	835.95	835.95	836.41	835.81	835.28	836.13	835.99	836.13	857.52	836.58	835.95	835.99