Water-Data Report 2012

05451500 Iowa River at Marshalltown, IA

Iowa Basin
Middle Iowa Subbasin

LOCATION.--Lat 42°03′57″, long 92°54′27″ referenced to North American Datum of 1927, in NW ¼ SE ¼ SE ¼ sec.23, T.84 N., R.18 W., Marshall County, IA, Hydrologic Unit 07080208, on right bank 10 ft downstream from bridge on State Highway 14 in Marshalltown, 1,500 ft upstream from Burnett Creek, 2.2 mi upstream from Linn Creek, and 212.7 mi upstream from mouth.

DRAINAGE AREA.--1,532 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge records from October 1902 to September 1903, October 1914 to September 1927, October 1932 to current year. Prior to February 1933, monthly mean discharge for some periods published in WSP 1308.

REVISED RECORDS.--WSP 1438: Drainage area. WSP 1558: 1915-18, 1919 (M), 1920, 1921-23 (M), 1924-27, 1933, 1934 (M), 1936, 1938, 1947 (M).

GAGE.--Water-stage recorder. Datum of gage is 853.10 ft above National Geodetic Vertical Datum of 1929. October 25, 1902, to August 8, 1903, non-recording gage at site 1 mi upstream at different datum; May 21, 1915, to September 30, 1927, and February 1, 1933, to September 1, 1934, non-recording gage at site 1,000 ft upstream at same datum; September 2-20, 1934, non-recording gage at site 1,000 ft downstream at different datum; September 21, 1934, to June 8, 1973, water-stage recorder at site 900 ft downstream at same datum.

REMARKS.--Records good except for estimated daily discharges, which are poor. U.S. Army Corps of Engineers rain gage and U.S. Geological Survey data collection platform with satellite telemetry at station.

Suggested citation: U.S. Geological Survey, 2013, Water-resources data for the United States, Water Year 2012: U.S. Geological Survey Water-Data Report WDR-US-2012, site 05451500, accessed at http://wdr.water.usgs.gov/wy2012/pdfs/05451500.2012.pdf

05451500 Iowa River at Marshalltown, IA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	122	122	138	e180	317	303	325	850	532	219	66	46
2	122	128	142	e170	325	344	316	929	507	203	65	45
3	120	138	165	e166	306	363	307	1,810	491	186	62	46
4	119	141	209	e209	299	351	299	2,340	461	175	71	46
5	119	138	223	e215	299	476	284	2,150	440	158	74	51
6	118	133	e197	e220	290	355	268	1,860	414	151	69	45
7	116	125	e198	e202	265	314	264	1,730	384	147	71	64
8	114	138	e205	e176	249	323	262	1,680	374	131	72	54
9	113	191	e211	e163	216	328	262	1,620	336	124	61	48
10	113	276	e190	e152	e150	305	239	1,460	324	114	57	50
11	114	259	e195	e135	e113	301	246	1,280	331	102	56	46
12	141	203	e200	e126	e125	315	236	1,130	336	104	57	43
13	144	187	e219	e132	e151	335	246	1,010	300	96	60	45
14	150	176	253	e169	e157	328	276	916	274	100	59	51
15	146	167	270	e177	e171	321	924	850	270	87	59	52
16	141	159	311	e174	242	318	1,220	798	263	81	61	51
17	137	153	291	e169	239	307	960	737	329	76	64	50
18	140	150	226	e161	257	291	879	692	340	73	64	46
19	135	151	e205	e146	228	300	795	656	298	70	62	46
20	130	149	e189	e151	222	291	1,050	615	272	68	59	45
21	127	147	e185	e155	171	316	1,380	588	296	67	57	43
22	124	142	e174	e163	165	341	1,490	537	314	62	54	44
23	125	142	e153	e180	e111	370	1,430	506	390	54	52	43
24	129	142	e159	e214	e107	413	1,300	515	479	56	52	45
25	129	142	e164	e225	e105	400	1,180	529	426	54	50	46
26	124	147	e161	e226	e101	382	1,050	532	360	66	55	46
27	123	144	e162	e221	e101	360	912	516	315	65	59	44
28	122	151	e161	e228	e128	325	866	502	268	64	52	44
29	118	136	e175	e227	208	319	838	510	257	73	51	45
30	122	148	e179	273	---	339	812	467	242	71	48	45
31	120	---	e184	283	---	339	---	500	---	73	46	---
Total	3,917	4,725	6,094	5,788	5,818	10,473	20,916	30,815	10,623	3,170	1,845	1,415
Mean	126	158	197	187	201	338	697	994	354	102	59.5	47.2
Max	150	276	311	283	325	476	1,490	2,340	532	219	74	64
Min	113	122	138	126	101	291	236	467	242	54	46	43
Ac-ft	7,770	9,370	12,090	11,480	11,540	20,770	41,490	61,120	21,070	6,290	3,660	2,810
Cfsm	0.08	0.10	0.13	0.12	0.13	0.22	0.46	0.65	0.23	0.07	0.04	0.03
In.	0.10	0.11	0.15	0.14	0.14	0.25	0.51	0.75	0.26	0.08	0.04	0.03

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1903 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	525	516	375	318	634	1,596	1,579	1,494	1,940	1,096	597	484
Max	2,818	2,593	2,139	2,231	3,424	5,333	6,796	5,559	9,796	8,389	7,062	3,362
(WY)	(2008)	(1973)	(1983)	(1973)	(1915)	(2010)	(1965)	(1991)	(2008)	(1993)	(1993)	(1993)
Min	39.2	46.2	31.0	10.2	20.9	98.4	99.3	49.9	16.0	41.8	35.9	27.5
(WY)	(1940)	(1940)	(1990)	(1977)	(1940)	(1934)	(1934)	(1934)	(1934)	(1977)	(1934)	(1939)

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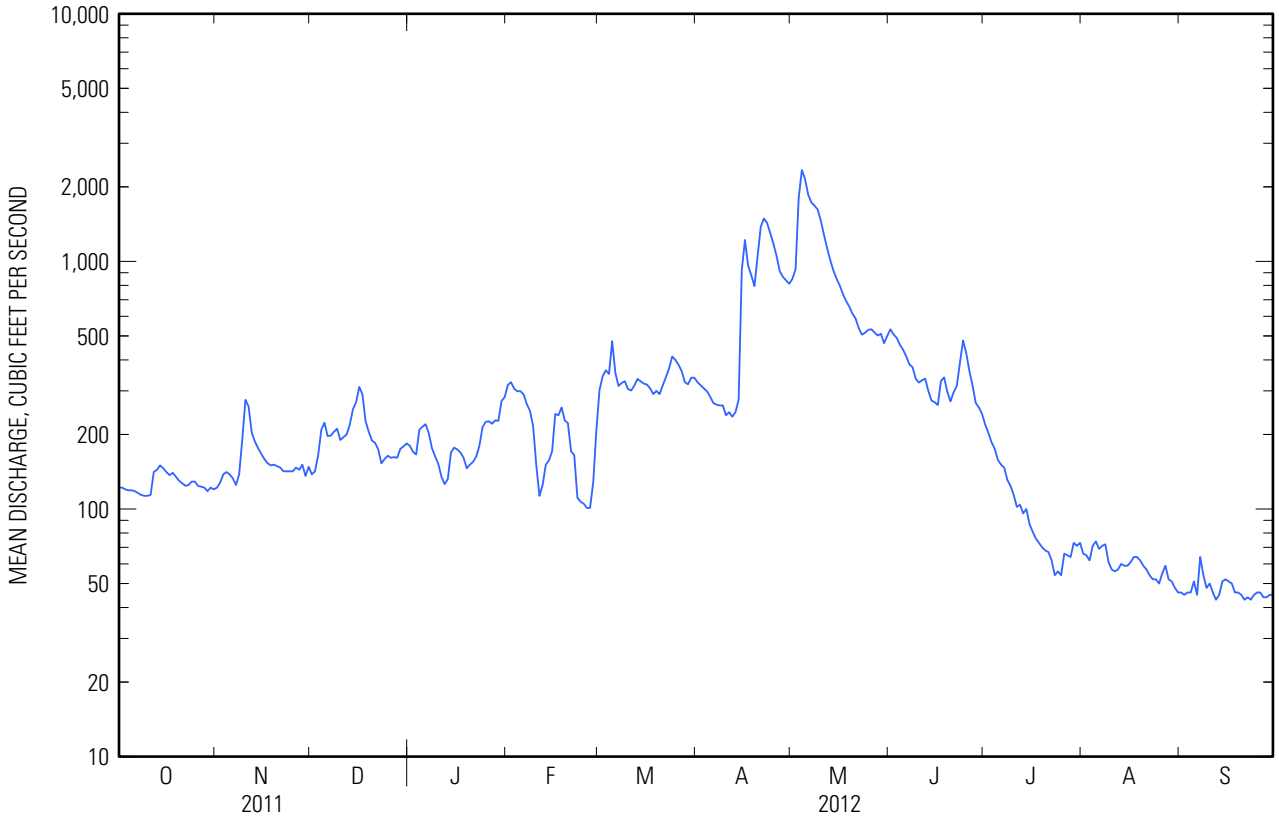
SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1903 - 2012	
Annual total	400,072		105,599			
Annual mean	1,096		289		929	
Highest annual mean					3,456	1993
Lowest annual mean					77.3	1934
Highest daily mean	5,360	Feb 21	2,340	May 4	39,400	Jun 4, 1918
Lowest daily mean	113	Oct 9	43	Sep 12[a]	4.7	Jan 25, 1977
Annual seven-day minimum	115	Oct 5	44	Sep 21	5.2	Jan 20, 1977
Maximum peak flow			2,400	May 4	42,000	Jun 4, 1918
Maximum peak stage			13.09	May 4	21.79	Jun 13, 2008
Instantaneous low flow			41	Sep 12[b]	41	Sep 12, 2012
Annual runoff (ac-ft)	793,500		209,500		673,400	
Annual runoff (cfsm)	0.715		0.188		0.607	
Annual runoff (inches)	9.71		2.56		8.24	
10 percent exceeds	2,950		596		2,280	
50 percent exceeds	674		175		420	
90 percent exceeds	135		54		80	

[a] Also Sep 21, 23.
[b] Also Sep 13.



05451500 Iowa River at Marshalltown, IA—Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1988-1995, 2008, 2012.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Daily instantaneous values collected in conjunction with suspended-sediment samples, March 1988 to February 1995, records fragmentary.
WATER TEMPERATURE: Daily instantaneous values collected in conjunction with suspended-sediment samples, March 1988 to February 1995, records fragmentary.
SUSPENDED-SEDIMENT CONCENTRATION AND DISCHARGE: March 1988 to February 1995.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SUSPENDED-SEDIMENT CONCENTRATION: Maximum daily mean, 4,980 mg/L, May 19, 1990; minimum daily mean, 2 mg/L, August 8, 1988, August 16, 1988.
SUSPENDED-SEDIMENT DISCHARGE: Maximum daily, 76,700 tons/day, July 12, 1993; minimum daily, 0.2 tons/day, August 8, 1988, August 16, 1988.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
Part 1 of 2
[N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than; E, estimated]

Sample date-time	Barometric pressure, mm Hg (00025)	Temperature, air, °C (00020)	Discharge, instantaneous, ft³/s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	pH, water, unfiltered, field, standard units (00400)	Specific conductance, water, unfiltered, µS/cm at 25°C (00095)	Temperature, water, °C (00010)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)
08-22-2012 1310	742	34.5	53	E 27.9	8.3	517	22.4	< .010	< .040

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
Part 2 of 2
[N, nitrogen; P, phosphorus; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than; E, estimated]

Sample date-time	Nitrite, water, filtered, mg/L as N (00613)	Orthophosphate, water, filtered, mg/L as P (00671)	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, unfiltered, analytically determined, mg/L (62855)
08-22-2012 1310	0.001	< .004	0.096	0.68