Water-Data Report 2013

01102500 ABERJONA RIVER AT WINCHESTER, MA

MASSACHUSETTS-RHODE ISLAND COASTAL BASIN
BOSTON HARBOR SUBBASIN; MYSTIC RIVER SUBBASIN

LOCATION.--Lat 42°27'11.13", long 71°08'07.24", Middlesex County, MA, Hydrologic Unit 01090001, on left bank, 50 ft upstream from Mt. Vernon Street at Winchester. Prior to Sept. 29, 2011, at site 0.45 mi downstream.

DRAINAGE AREA.--24.5 mi^2 of which 0.60 mi^2 probably is noncontributing, net above gage is 23.9 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge: April 1939 to current year. Water-quality records: water years 1958-59, 1973, 1999-2004.

REVISED RECORDS.--WDR MA-RI-79-1: 1955. WDR MA-RI-84-1: Drainage area.

GAGE.--Data-collection platform, satellite telemeter, hourly updates, with river stage and velocity sensors. Elevation of gage is about 15 ft above NAVD 1988, from digital map.

COOPERATION.--Massachusetts Department of Conservation and Recreation, Division of Planning and Engineering.

REMARKS.--Records fair except those for discharges greater than 800 cfs, and those for estimated daily discharge, which are poor. Flow affected by diversions for industrial use and for municipal supply of Woburn and Winchester, and by wastage and leakage from Winchester North Reservoir (draining 0.60 mi^2). Some regulation by Winchester at Center Falls Dam, located about 500 ft downstream.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	10	40	16	66	53	140	e49	e17	e23	36	10	e5.4
2	7.8	27	16	53	39	105	e43	e15	e20	76	41	e5.4
3	8.1	25	e15	47	34	91	e39	e15	e26	36	e25	e5.7
4	7.8	21	e15	47	31	84	e36	e13	e20	30	e16	e4.6
5	7.4	18	e11	49	29	78	e33	e12	e13	26	e12	e3.7
6	6.3	39	e6.1	e42	28	76	e31	e12	e13	23	e9.2	e3.5
7	4.2	71	5.1	e35	27	80	e30	e12	e117	20	e9.0	e3.2
8	8.7	e70	13	23	32	82	e29	e12	232	16	e11	e2.9
9	5.3	38	9.8	e20	43	78	e28	e17	101	15	e42	e2.9
10	5.9	28	36	20	38	77	e30	e26	60	15	46	e3.0
11	8.7	23	22	17	44	80	e32	e19	157	15	e21	e3.0
12	5.4	21	15	23	58	91	e35	e17	156	14	e16	e3.2
13	3.7	33	12	25	52	115	e41	e13	130	12	e12	e39
14	17	19	10	25	47	92	e34	e11	195	12	e10	e9.7
15	17	8.9	9.1	23	46	80	e30	e9.4	119	11	e8.8	e3.8
16	11	10	9.4	29	47	74	e29	e8.5	79	10	e8.1	e3.5
17	7.9	9.2	25	30	42	69	e28	e7.5	95	10	e7.5	e3.5
18	7.4	8.5	84	25	37	65	e27	e7.4	122	8.9	e6.9	e4.5
19	7.3	8.1	64	22	41	76	e27	e7.7	84	9.6	e6.3	e4.4
20	87	8.5	43	22	69	84	e40	e9.9	69	9.8	5.8	e3.5
21	40	7.9	60	21	51	77	e34	e10	54	13	5.5	e4.3
22	19	7.9	62	19	44	71	e27	e13	43	e8.1	5.3	e6.6
23	14	7.8	39	30	42	67	e24	e14	39	30	e5.1	e4.4
24	11	8.0	29	29	70	68	e25	e19	45	54	e4.7	e3.3
25	14	7.2	24	27	66	68	e24	e35	41	21	e4.6	e3.4
26	43	6.6	37	26	47	66	e23	e22	41	33	e4.6	e3.9
27	68	7.3	252	25	136	63	e21	e14	37	e24	4.9	e3.3
28	63	7.4	225	25	203	60	e19	e13	49	e16	e4.6	e3.1
29	94	25	124	26	---	58	e18	e18	42	e15	e4.8	e3.1
30	122	e17	93	31	---	56	e18	e49	29	15	e4.7	e3.0
31	95	---	78	58	---	54	---	e31	---	12	e4.5	---
Total	826.9	628.3	1,459.5	960	1,496	2,425	904	499.4	2,251	646.4	376.9	156.8
Mean	26.7	20.9	47.1	31.0	53.4	78.2	30.1	16.1	75.0	20.9	12.2	5.23
Max	122	71	252	66	203	140	49	49	232	76	46	39
Min	3.7	6.6	5.1	17	27	54	18	7.4	13	8.1	4.5	2.9
Cfsm	1.12	0.88	1.97	1.30	2.24	3.27	1.26	0.67	3.14	0.87	0.51	0.22
In.	1.29	0.98	2.27	1.49	2.33	3.77	1.41	0.78	3.50	1.01	0.59	0.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1939 - 2013, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	17.4	25.4	35.1	37.7	42.5	67.1	56.6	36.0	26.2	12.8	12.3	11.7
Max	125	102	96.3	169	112	274	175	170	159	66.9	79.4	78.2
(WY)	(1997)	(1956)	(2009)	(1979)	(2008)	(2010)	(1987)	(2006)	(1982)	(2009)	(1955)	(1954)
Min	0.48	0.59	0.63	2.34	4.39	19.0	12.5	11.3	3.01	0.69	0.62	0.49
(WY)	(1942)	(1942)	(1942)	(1966)	(1980)	(2004)	(1966)	(1965)	(1957)	(1950)	(1957)	(1957)

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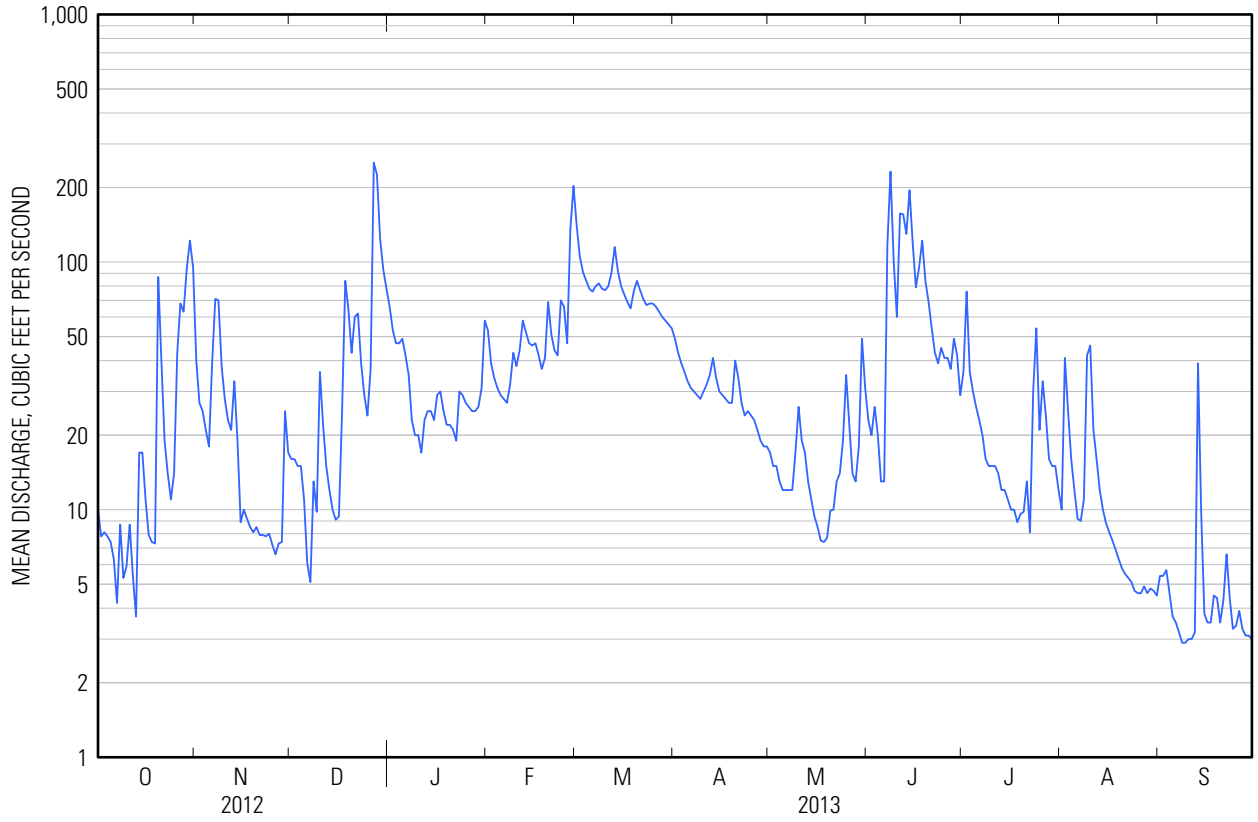
SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1939 - 2013	
Annual total	9,456.7		12,630.2			
Annual mean	25.8		34.6		31.7	
Highest annual mean					61.0	2010
Lowest annual mean					8.23	1966
Highest daily mean	252	Dec 27	252	Dec 27	1,420	Mar 15, 2010 [a]
Lowest daily mean	1.5	Jul 17	2.9	Sep 8	0.25	Oct 10, 1950
Annual seven-day minimum	2.5	Jul 11	3.1	Sep 6	0.31	Dec 6, 1941
Maximum peak flow			389	Dec 27	[b] 1,590	Mar 22, 2001
Maximum peak stage			4.04	Dec 27	[c] 16.90	Mar 22, 2001
Instantaneous low flow			[f] 2.9	Sep 8	[d] 0.00	Oct 10, 1950 [e]
Annual runoff (cfsm)	1.08		1.45		1.33	
Annual runoff (inches)	14.72		19.66		18.04	
10 percent exceeds	54		78		72	
50 percent exceeds	18		23		19	
90 percent exceeds	5.1		5.2		1.9	

[a] Also occurred on May 15, 2006.
[b] From rating curve extended above 400 ft³/s on basis of slope-area measurement of peak flow.
[c] Affected by backwater from Upper Mystic Lake; at previous site and datum.
[d] No flow caused by pumpage from gage pool; at previous site and datum.
[e] Also occurred on Oct. 12, 1950.
[f] Used same value as lowest daily mean discharge.