01097000 ASSABET RIVER AT MAYNARD, MA

MERRIMACK RIVER BASIN
CONCORD RIVER SUBBASIN; ASSABET RIVER SUBBASIN

LOCATION.--Lat 42°25′55″, long 71°27′01″ referenced to North American Datum of 1927, Middlesex County, MA, Hydrologic Unit 01070005, on right bank, 150 ft upstream from bridge on State Highway 27 in Maynard, 1.7 mi downstream from Assabet Brook, and 7.1 mi upstream from confluence with Sudbury River.

DRAINAGE AREA.--116 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge: July 1941 to current year. Water-quality records: water years 1954, 1967-74, and 2009 to current year.

REVISED RECORDS.--WSP 1231: 1945-46.

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 142.12 ft above National Geodetic Vertical Datum of 1929.

COOPERATION.--Massachusetts Department of Conservation and Recreation, Office of Water Resources; and Massachusetts Department of Environmental Protection, Office of Watershed Management.

REMARKS.--Records good except those for estimated daily discharge, which are poor. Occasional diurnal fluctuation at low flow by mills upstream; greater regulation prior to 1969. Since 1962, high flow affected by retarding reservoirs and, since 1970, occasional release at low flow by these reservoirs.

Suggested citation: U.S. Geological Survey, 2012, Water-resources data for the United States, Water Year 2011: U.S. Geological Survey Water-Data Report WDR-US-2011, site 01097000, accessed at http://wdr.water.usgs.gov/wy2011/pdfs/01097000.2011.pdf

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	56	37	83	117	e125	518	314	275	125	150	36	502
2	136	40	137	141	e135	525	364	243	197	123	33	393
3	118	36	153	174	e134	468	383	228	218	102	31	292
4	69	49	130	172	e129	413	371	234	168	92	28	197
5	50	118	106	152	129	385	398	275	130	81	25	159
6	76	147	94	133	144	449	412	268	114	77	25	179
7	145	115	84	118	156	914	376	241	107	63	48	262
8	127	119	77	112	164	1,340	333	220	98	60	102	558
9	81	169	77	110	e155	1,290	302	207	102	93	140	978
10	57	175	80	104	152	1,080	277	193	119	100	245	990
11	41	146	72	99	e141	979	254	189	117	74	307	776
12	35	121	104	106	e129	1,080	239	179	165	60	287	592
13	32	106	425	114	e119	1,090	292	167	210	52	189	473
14	30	91	522	e116	122	989	402	154	185	51	104	386
15	131	81	446	e112	e139	864	407	199	148	47	114	316
16	182	76	317	110	e139	784	333	331	122	44	282	276
17	145	156	232	e105	140	792	529	429	107	40	377	229
18	82	252	191	e114	176	773	840	402	101	35	335	185
19	65	234	169	133	247	717	775	379	92	34	237	168
20	51	165	158	154	e250	651	630	381	74	33	170	160
21	48	123	151	156	e237	573	544	355	55	32	125	150
22	46	106	146	e142	e212	528	467	306	71	35	102	161
23	49	98	150	e133	e195	503	427	265	216	48	88	187
24	43	95	143	e127	e182	466	468	256	276	45	76	313
25	39	91	132	e125	258	429	479	244	292	39	74	400
26	41	93	124	e122	425	398	433	221	367	47	114	381
27	43	93	125	e123	472	371	397	190	368	45	186	278
28	46	86	e121	e121	465	348	360	170	286	36	478	219
29	46	109	129	e121	---	319	334	157	231	35	806	337
30	40	99	120	e114	---	297	303	139	188	33	790	484
31	37	---	114	e114	---	281	---	127	---	34	632	---
Total	2,187	3,426	5,112	3,894	5,471	20,614	12,443	7,624	5,049	1,840	6,586	10,981
Mean	70.5	114	165	126	195	665	415	246	168	59.4	212	366
Max	182	252	522	174	472	1,340	840	429	368	150	806	990
Min	30	36	72	99	119	281	239	127	55	32	25	150
Cfsm	0.61	0.98	1.42	1.08	1.68	5.73	3.58	2.12	1.45	0.51	1.83	3.16
In.	0.70	1.10	1.64	1.25	1.75	6.61	3.99	2.44	1.62	0.59	2.11	3.52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1941 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	99.6	153	206	223	253	413	397	242	161	79.8	65.9	69.7
Max	580	542	575	670	696	1,031	1,052	477	788	404	561	542
(WY)	(2006)	(1956)	(2009)	(1979)	(1970)	(2010)	(1987)	(2006)	(1982)	(2009)	(1955)	(1954)
Min	9.92	22.1	35.6	37.6	66.5	143	127	106	28.8	11.6	5.18	5.00
(WY)	(1958)	(1950)	(1950)	(1966)	(2002)	(1989)	(1966)	(1999)	(1999)	(1966)	(1966)	(1957)

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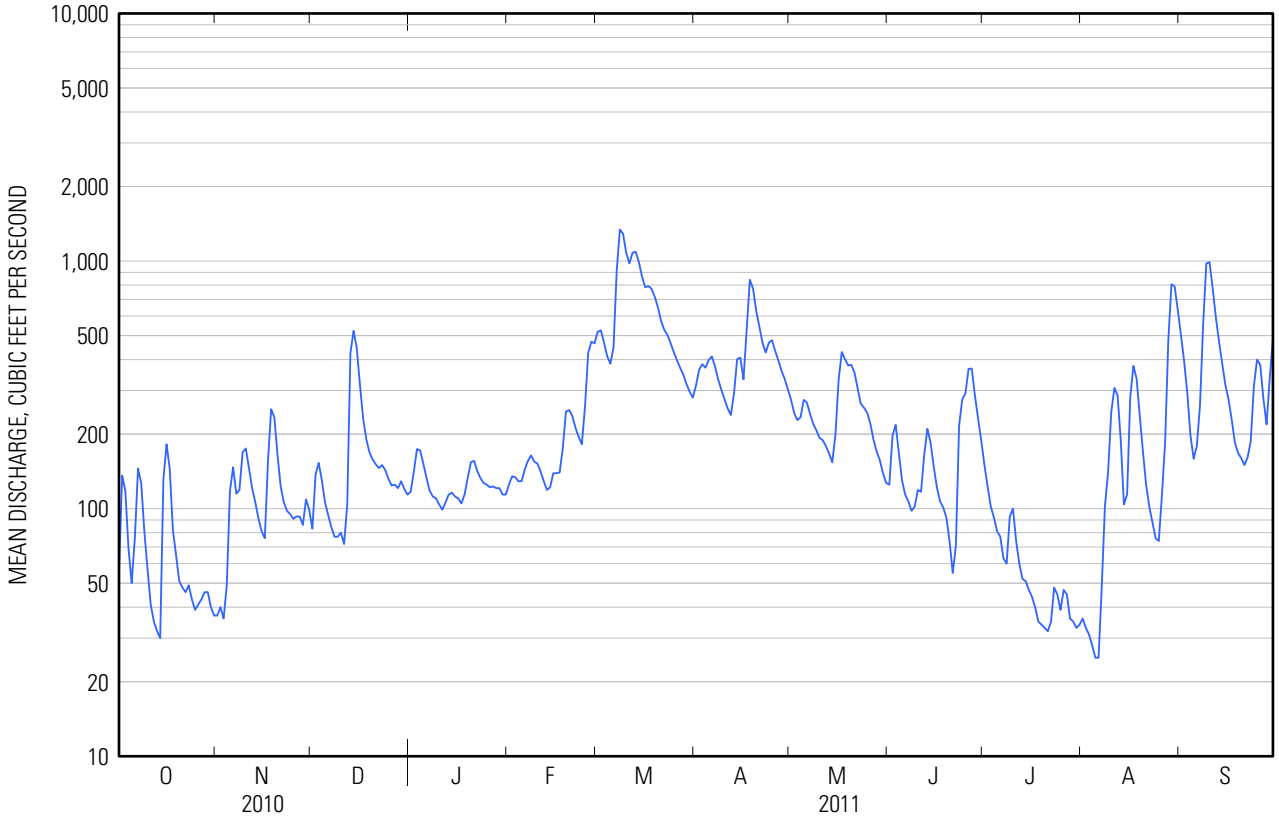
SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1941 - 2011	
Annual total	90,037		85,227			
Annual mean	247		233		197	
Highest annual mean					320	2006
Lowest annual mean					73.3	1966
Highest daily mean	2,400	Mar 31	1,340	Mar 8	3,650	Aug 20, 1955
Lowest daily mean	11	Aug 20	25	Aug 5	0.20	Feb 7, 1965
Annual seven-day minimum	12	Aug 15	30	Jul 31	1.0	Feb 2, 1965
Maximum peak flow			1,390	Mar 8	4,250	Aug 20, 1955
Maximum peak stage			5.56	Mar 8	[a]8.96	Aug 20, 1955
Instantaneous low flow			23	Aug 5[b]		
Annual runoff (cfsm)	2.13		2.01		1.70	
Annual runoff (inches)	28.87		27.33		23.04	
10 percent exceeds	664		478		436	
50 percent exceeds	127		152		132	
90 percent exceeds	21		47		27	

[a] Backwater from debris.
[b] Also occurred on Aug. 6 and 7, 2011.



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water-quality records: Water years 1954, 1967-74, and 2009 to current year.

INSTRUMENTATION.--Automatic, flow-based sampler, 100 ml samples.

REMARKS.--Records for intermittent water-quality data are not rated. These data, based on 100-ml samples composited over a 1-week period, in conjunction with streamflow data, are intended for use in estimating phosphorus loads; the phosphorus concentration data should not be used to characterize water-quality conditions.

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 1 of 4
[P, phosphorus; mg/L, milligrams per liter; --, no data; <, less than]

Sample date-time	Number of sampling points, count (00063)	Sample purpose (71999)	Sampler type (84164)	Sampling method (82398)	Purpose, site visit (50280)	Type of quality assurance data associated with sample (99111)
10-05-2010 1250	27	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
10-12-2010 1125	32	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
11-02-2010 1145	41	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
11-09-2010 1110	44	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	Replicate sample
11-16-2010 1105	43	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
11-23-2010 1055	40	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
11-30-2010 1120	13	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
12-07-2010 1030	63	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
12-21-2010 1110	31	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	Replicate sample
12-28-2010 1125	36	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
01-04-2011 1040	25	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
01-25-2011 1155	13	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
02-01-2011 1000	22	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
02-08-2011 1215	15	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
02-15-2011 1135	43	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
02-22-2011 1035	40	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
03-01-2011 1215	40	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
03-08-2011 1040	63	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
03-15-2011 1130	40	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
03-22-2011 1035	28	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
03-29-2011 1230	36	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
04-05-2011 1150	--	--	--	--	--	--
04-12-2011 1015	--	--	--	--	--	--
04-19-2011 1105	--	--	--	--	--	--
04-26-2011 1155	--	--	--	--	--	--
05-03-2011 1045	--	--	--	--	--	--
05-10-2011 1115	--	--	--	--	--	--
05-17-2011 1140	--	--	--	--	--	--
05-24-2011 1055	--	--	--	--	--	--
05-31-2011 1100	--	--	--	--	--	--
06-07-2011 1110	39	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
06-14-2011 1135	18	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
06-21-2011 1135	64	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
06-28-2011 1145	24	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	Replicate sample
07-05-2011 1020	28	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
07-12-2011 1130	13	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
07-26-2011 1130	21	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
08-02-2011 1155	31	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
08-09-2011 1130	64	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
08-16-2011 0940	28	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data

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WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 2 of 4
[P, phosphorus; mg/L, milligrams per liter; --, no data; <, less than]

Sample date-time	Type of replicate (99105)	Orthophosphate, water, filtered, mg/L as P (00671)	Phosphorus, water, unfiltered, mg/L as P (00665)
10-05-2010 1250	--	0.007	0.078
10-12-2010 1125	--	.009	.077
11-02-2010 1145	--	.009	.073
11-09-2010 1110	Split	.010	.055
11-16-2010 1105	--	.010	.082
11-23-2010 1055	--	.014	.069
11-30-2010 1120	--	.011	.061
12-07-2010 1030	--	--	.092
12-21-2010 1110	Split	.013	.074
12-28-2010 1125	--	.009	.076
01-04-2011 1040	--	.009	.071
01-25-2011 1155	--	.009	.056
02-01-2011 1000	--	--	.049
02-08-2011 1215	--	.010	.049
02-15-2011 1135	--	.008	.040
02-22-2011 1035	--	.008	.047
03-01-2011 1215	--	.007	.057
03-08-2011 1040	--	.006	.047
03-15-2011 1130	--	.005	.027
03-22-2011 1035	--	.005	.031
03-29-2011 1230	--	.006	.039
04-05-2011 1150	--	< .004	.048
04-12-2011 1015	--	.006	.063
04-19-2011 1105	--	.007	.047
04-26-2011 1155	--	.009	.091
05-03-2011 1045	--	.011	.142
05-10-2011 1115	--	--	.098
05-17-2011 1140	--	.011	.069
05-24-2011 1055	--	.009	.084
05-31-2011 1100	--	.019	.106
06-07-2011 1110	--	.012	.114
06-14-2011 1135	--	.017	.100
06-21-2011 1135	--	.019	.104
06-28-2011 1145	Split	.026	.110
07-05-2011 1020	--	.013	.080
07-12-2011 1130	--	.011	.067
07-26-2011 1130	--	.010	.053
08-02-2011 1155	--	.007	.077
08-09-2011 1130	--	.022	.092
08-16-2011 0940	--	.026	.089

01097000 ASSABET RIVER AT MAYNARD, MA—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 3 of 4
[P, phosphorus; mg/L, milligrams per liter; --, no data; <, less than]

Sample date-time	Number of sampling points, count (00063)	Sample purpose (71999)	Sampler type (84164)	Sampling method (82398)	Purpose, site visit (50280)	Type of quality assurance data associated with sample (99111)
08-23-2011 1510	45	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
09-06-2011 1205	64	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
09-13-2011 1555	34	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
09-20-2011 1250	27	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	No assoc QA data
09-27-2011 1115	51	Routine	Sampler point auto	Composite multi pnt	Fixed frequency SW	Replicate sample

WATER-QUALITY DATA
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
Part 4 of 4
[P, phosphorus; mg/L, milligrams per liter; --, no data; <, less than]

Sample date-time	Type of replicate (99105)	Orthophos-phate, water, filtered, mg/L as P (00671)	Phosphorus, water, unfiltered, mg/L as P (00665)
08-23-2011 1510	--	--	0.110
09-06-2011 1205	--	.024	.079
09-13-2011 1555	--	--	.081
09-20-2011 1250	--	.017	.079
09-27-2011 1115	Split-sequential	.023	.081