Water-Data Report 2012

01096500 NASHUA RIVER AT EAST PEPPERELL, MA

MERRIMACK RIVER BASIN
NASHUA RIVER SUBBASIN

LOCATION.--Lat 42°40′03″, long 71°34′32″ referenced to North American Datum of 1927, Middlesex County, MA, Hydrologic Unit 01070004, on right bank 200 ft downstream from powerplant at East Pepperell and 0.8 mi upstream from Nissitissit River.

DRAINAGE AREA.--435 mi^2 of which 119 mi^2 probably is noncontributing, net above gage is 316 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge: October 1935 to current year. Water-quality records: water years 1952-53, 1973-74.

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

GAGE.--Water-stage recorder with satellite telemeter. Datum of gage is 169.04 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 discharges and those for Apr. 2, 3, 14-16, 21, 22, June 1, 21, 28, 29, and July 2, 10-12, 17-31, and Aug. 1-5, which are poor. Daily discharges flagged with < indicates that daily discharges are less than the reported value. Extremes and daily discharge include water released while diverting water from Wachusett Reservoir, primarily for use in the metropolitan Boston area, and water diverted into basin from Ware River Basin since 1955 for municipal use of Fitchburg. Prior to October 1981, water diverted around station through plant of James River-Pepperell Co. was added to daily figures. Flow occasionally regulated by powerplant immediately upstream of gage.

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

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1,610	1,560	1,790	1,130	1,030	673	456	513	483	396	<96	44
2	1,400	1,490	1,870	1,080	964	694	523	680	586	368	<163	45
3	1,210	1,440	1,510	1,040	938	704	473	725	1,160	374	<129	44
4	1,160	1,440	1,270	968	888	775	395	748	1,600	373	<87	180
5	1,480	1,490	1,160	874	831	844	381	682	1,340	411	<200	239
6	1,580	1,450	1,090	836	743	843	438	633	1,170	401	215	105
7	1,370	1,340	1,110	815	581	844	368	565	1,080	373	e126	47
8	1,140	1,230	1,790	782	691	830	373	591	922	305	e22	146
9	1,030	1,170	2,950	707	685	913	376	667	919	276	e22	213
10	950	1,110	3,050	632	695	1,160	380	834	838	214	29	144
11	862	1,250	2,230	646	678	1,110	382	995	724	<183	251	36
12	798	1,560	1,680	699	638	990	378	934	650	<256	348	32
13	793	1,510	1,420	680	610	938	352	799	636	189	228	145
14	961	1,300	1,310	873	602	1,010	305	718	843	184	275	148
15	1,250	1,160	1,260	714	552	1,030	297	595	855	178	166	32
16	1,410	1,100	1,230	700	632	993	328	804	731	179	240	35
17	1,270	1,030	1,200	681	591	947	315	898	583	<213	390	134
18	1,030	999	1,140	707	597	907	268	943	512	<198	276	75
19	1,010	955	1,060	734	585	755	259	862	433	<138	161	156
20	1,320	900	1,040	735	585	872	255	718	531	<170	172	374
21	1,900	867	1,030	674	573	742	258	509	329	<146	318	95
22	1,780	853	1,070	626	559	733	281	623	519	<95	154	71
23	1,410	1,090	1,240	655	557	645	831	684	368	<141	71	199
24	1,200	1,740	1,520	691	574	715	1,500	652	317	<142	69	252
25	1,120	2,010	1,520	774	706	598	1,330	633	358	<86	74	104
26	1,070	1,670	1,320	832	877	562	912	580	577	<128	75	69
27	1,070	1,370	1,180	992	741	469	688	551	427	<141	164	85
28	1,220	1,170	1,260	1,580	628	615	495	447	442	<148	93	97
29	1,330	1,070	1,470	1,800	636	423	502	501	390	<166	50	161
30	1,430	1,260	1,400	1,460	---	495	383	534	425	<177	153	192
31	1,550	---	1,220	1,180	---	431	---	418	---	<151	106	---
Total	38,714	38,584	45,390	27,297	19,967	24,260	14,482	21,036	20,748	6,900	4,923	3,699
Mean	1,249	1,286	1,464	881	689	783	483	679	692	223	159	123
Max	1,900	2,010	3,050	1,800	1,030	1,160	1,500	995	1,600	411	390	374
Min	793	853	1,030	626	552	423	255	418	317	86	22	32
Cfsm	3.95	4.07	4.63	2.79	2.18	2.48	1.53	2.15	2.19	0.70	0.50	0.39
In.	4.56	4.54	5.34	3.21	2.35	2.86	1.70	2.48	2.44	0.81	0.58	0.44

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	358	502	629	622	681	1,163	1,272	741	518	282	234	249
Max	1,570	1,781	1,616	1,417	1,581	3,930	3,676	1,435	1,976	1,399	966	1,671
(WY)	(2006)	(1956)	(1997)	(1979)	(2008)	(1936)	(1987)	(2006)	(1982)	(2009)	(1938)	(1938)
Min	91.1	94.7	134	116	186	386	369	236	107	90.0	69.6	72.9
(WY)	(1942)	(2002)	(1966)	(1981)	(1980)	(1989)	(1985)	(1965)	(1999)	(1966)	(2002)	(2002)

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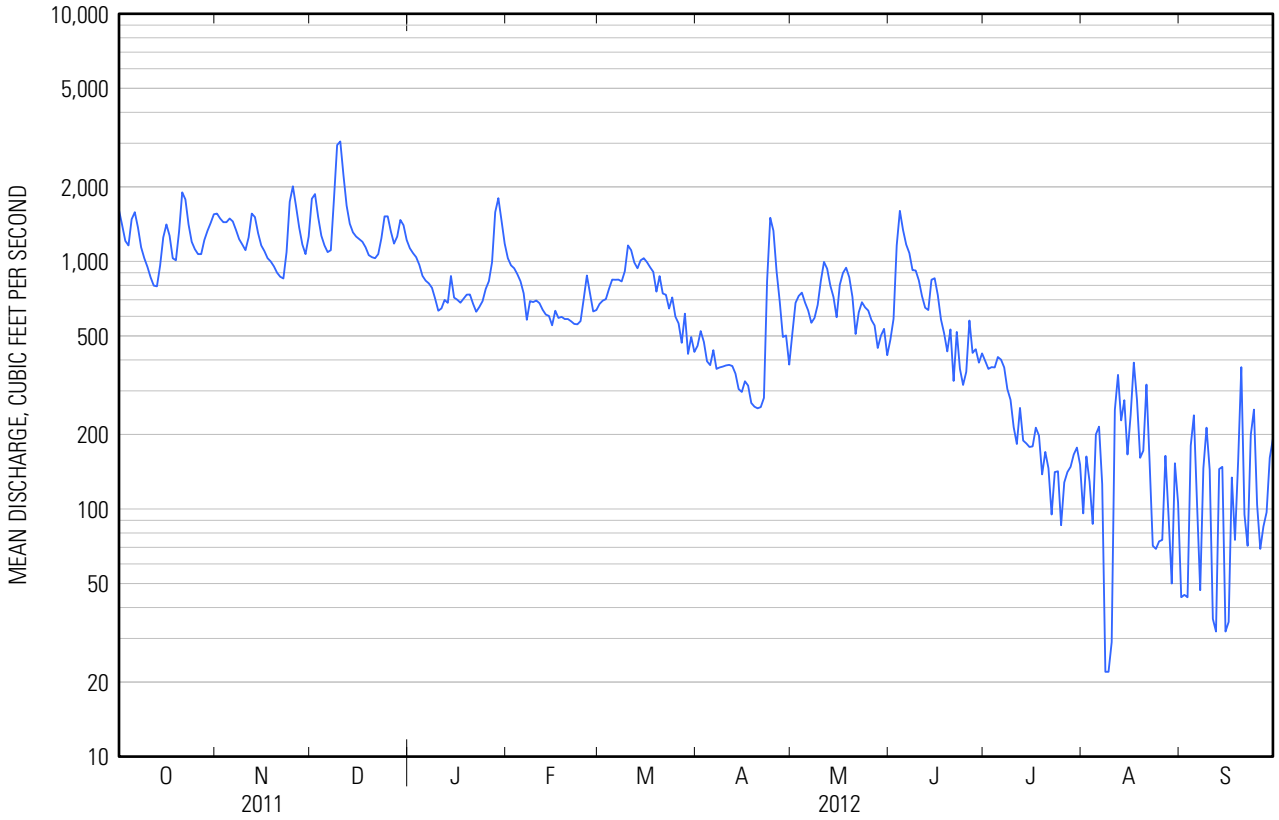
SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1936 - 2012	
Annual total	355,585		266,000			
Annual mean	974		727		603	
Highest annual mean					969	1956
Lowest annual mean					214	1965
Highest daily mean	5,700	Mar 9	3,050	Dec 10	19,400	Mar 20, 1936
Lowest daily mean	80	Aug 5	22	Aug 8 [a]	1.1	Aug 13, 1939
Annual seven-day minimum	130	Aug 1	76	Aug 28	14	Aug 1, 1965
Maximum peak flow			3,310	Dec 9	[b]20,900	Mar 20, 1936
Maximum peak stage			6.83	Dec 9	[c]19.10	Mar 20, 1936
Instantaneous low flow			20	Sep 18		
Annual runoff (cfsm)	3.08		2.30		1.91	
Annual runoff (inches)	41.86		31.31		25.94	
10 percent exceeds	1,750		1,410		1,290	
50 percent exceeds	847		680		387	
90 percent exceeds	323		141		103	

[a] Also occcured on August 9, estimated.
[b] From rating curve extended above 12,000 ft³/s on basis of velocity-area studies.
[c] From floodmarks.