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, Water Resources Commission; Massachusetts Department of Environmental Protection, Office of Watershed Management; and Massachusetts Executive Office of Energy and Environmental Affairs.

REMARKS.--Records good except those for estimated daily discharge, which are poor. 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.

01096500 NASHUA RIVER AT EAST PEPPERELL, MA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	837	457	965	1,440	640	1,230	1,080	518	496	1,110	1,530	618
2	841	457	1,230	1,200	613	1,110	926	512	412	1,350	1,910	474
3	648	443	1,160	1,210	606	907	884	487	425	2,810	1,710	406
4	531	424	886	1,090	593	730	1,010	465	456	3,430	1,420	454
5	462	408	759	1,090	546	723	1,310	471	389	2,450	1,130	375
6	395	388	719	1,020	517	686	1,190	592	394	1,520	942	367
7	388	548	658	941	538	681	1,390	923	389	1,200	820	359
8	362	601	579	1,120	580	961	1,690	1,420	380	1,210	728	349
9	380	507	511	1,100	660	1,160	1,390	1,500	341	1,270	625	334
10	462	393	580	947	664	1,360	1,120	1,170	354	1,260	557	317
11	380	444	e838	807	602	1,300	995	938	429	1,130	524	320
12	363	326	e2,230	912	696	1,480	1,030	944	691	1,010	566	352
13	330	378	3,240	773	1,020	1,630	1,020	747	991	927	519	438
14	329	366	3,640	798	1,040	1,340	840	723	1,030	775	397	411
15	357	374	2,620	741	859	1,140	786	705	1,360	740	366	364
16	404	489	1,670	669	721	1,050	707	692	1,420	705	387	360
17	341	702	1,760	650	706	1,010	678	705	1,110	666	362	337
18	310	554	1,590	663	674	1,010	627	809	804	763	358	323
19	296	475	1,450	688	673	994	576	691	935	814	373	306
20	296	394	1,260	712	797	1,030	526	624	1,180	751	373	302
21	219	380	1,140	695	733	1,000	809	574	1,190	678	369	292
22	256	360	1,030	675	726	836	1,270	531	1,050	731	421	290
23	259	317	1,050	666	862	777	1,490	495	1,060	822	450	289
24	256	302	1,060	661	745	759	1,270	444	1,070	1,240	455	278
25	255	559	1,290	612	695	721	1,010	452	1,140	2,490	406	276
26	427	1,240	1,880	590	593	694	772	477	1,210	3,090	382	273
27	645	1,620	1,930	582	558	681	733	420	1,130	2,510	375	318
28	568	1,190	1,730	591	917	711	682	559	1,090	1,930	363	348
29	518	913	1,950	656	---	765	600	592	1,210	1,610	599	341
30	609	717	2,150	708	---	1,000	560	602	1,170	1,280	832	345
31	515	---	1,860	694	---	1,120	---	563	---	1,110	800	---
Total	13,239	16,726	45,415	25,701	19,574	30,596	28,971	21,345	25,306	43,382	21,049	10,616
Mean	427	558	1,465	829	699	987	966	689	844	1,399	679	354
Max	841	1,620	3,640	1,440	1,040	1,630	1,690	1,500	1,420	3,430	1,910	618
Min	219	302	511	582	517	681	526	420	341	666	358	273
Cfsm	1.35	1.76	4.64	2.62	2.21	3.12	3.06	2.18	2.67	4.43	2.15	1.12
In.	1.56	1.97	5.35	3.03	2.30	3.60	3.41	2.51	2.98	5.11	2.48	1.25

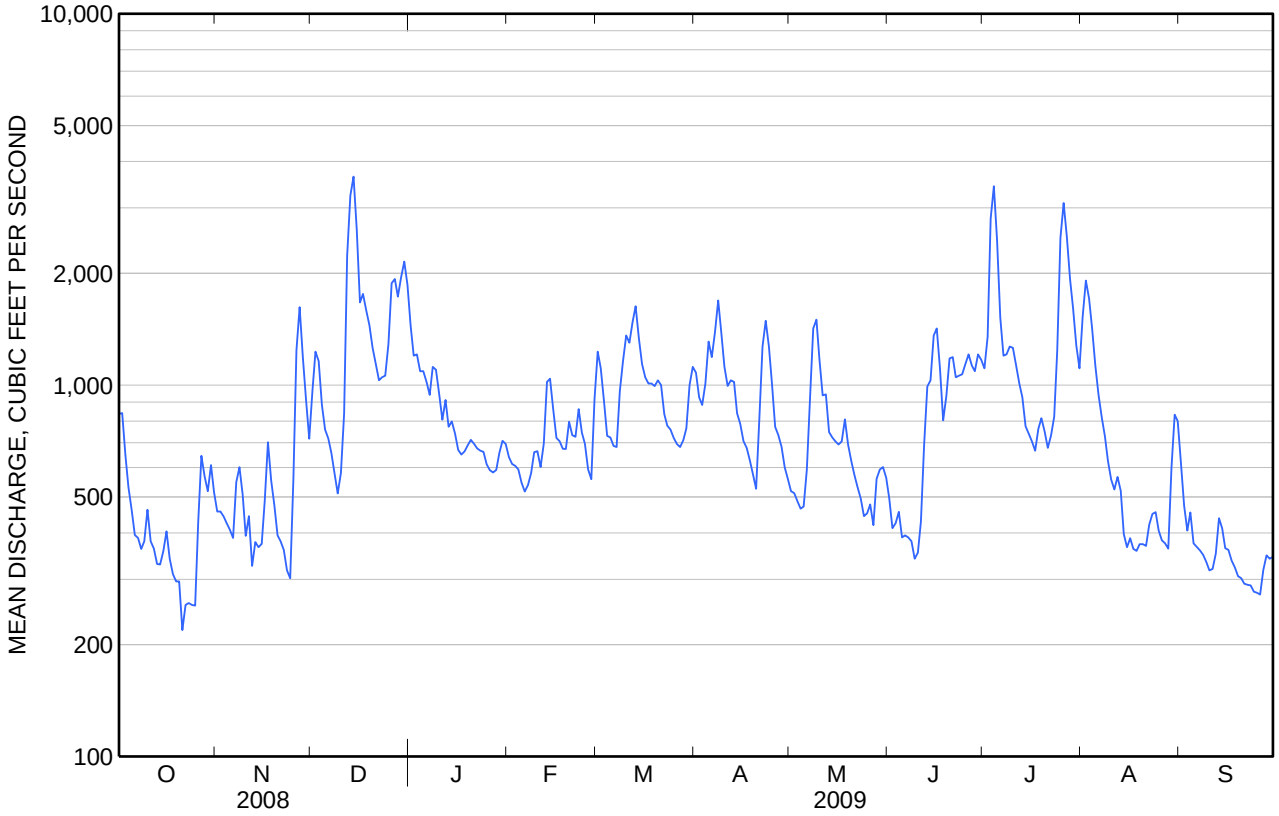
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1936 - 2009, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	345	491	617	622	681	1,125	1,271	744	515	282	232	241
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)

01096500 NASHUA RIVER AT EAST PEPPERELL, MA—Continued

SUMMARY STATISTICS

	Calendar Year 2008		Water Year 2009		Water Years 1936 - 2009	
Annual total	304,436		301,920			
Annual mean	832		827		596	
Highest annual mean					969	1956
Lowest annual mean					214	1965
Highest daily mean	4,000	Mar 10	3,640	Dec 14	19,400	Mar 20, 1936
Lowest daily mean	89	Jul 13	219	Oct 21	1.1	Aug 13, 1939
Annual seven-day minimum	165	Jun 9	262	Oct 19	14	Aug 1, 1965
Maximum peak flow			3,910	Dec 14	[a]20,900	Mar 20, 1936
Maximum peak stage			8.20	Dec 14	[b]19.10	Mar 20, 1936
Instantaneous low flow			47	Oct 21		
Annual runoff (cfsm)	2.63		2.62		1.89	
Annual runoff (inches)	35.84		35.54		25.64	
10 percent exceeds	1,740		1,400		1,280	
50 percent exceeds	564		695		380	
90 percent exceeds	229		358		102	

[a] From rating curve extended above 12,000 ft³/s on basis of velocity-area studies.

[b] From floodmarks.