

01389500 PASSAIC RIVER AT LITTLE FALLS, NJ

PASSAIC RIVER BASIN

LOCATION.--Lat 40°53'05", long 74°13'34" referenced to North American Datum of 1983, Totowa Borough, Passaic County, NJ, Hydrologic Unit 02030103, on left bank 0.6 mi downstream from Beatties Dam in Little Falls, and 1.0 mi upstream from Peckman River.

DRAINAGE AREA.--762 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--September 1897 to current year. Monthly discharge only for September 1897, published in WSP 1302. Published as "at Paterson", September 1897 to September 1955.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 120.00 ft above NGVD of 1929 (levels by Passaic Valley Water Commission). Prior to September 1955, discharge determined at site 3.7 mi downstream at Paterson. Prior to Jan 8, 1933, non-recording gage operated by the Society for Establishing Useful Manufacturers and data were reviewed by the USGS. From Jan 8, 1933, to Sep 30, 1955, water-stage recorder, at site 3.7 mi downstream at NGVD of 1929 (levels from New Jersey Geological Survey benchmark).

COOPERATION.--Gage-height record collected in cooperation with the Passaic Valley Water Commission.

REMARKS.--Records good. Significant fluctuations at medium and low flow due to operation of hydroelectric plant at Beatties Dam. Flow regulated by reservoirs in Rockaway (see 01379990 and 01380900), Pequannock (see 01382100, 01382200, 01382300, 01382380, and 01382400), Wanaque (see 01383000, 01384002, and 01386990), and Ramapo River subbasins. Large diversions for municipal supply from Passaic River above Beatties Dam (see 01389490), and from Rockaway (see 01380800), Pequannock (see 01382370), Pompton (see 01388980, 01388981, 01388982), Ramapo (see 01387990), and Wanaque (see 01386980) Rivers. In addition, the New Jersey-American Water Company (formerly Commonwealth Water Company) diverts from Canoe Brook near Summit (see 01379529) and from Passaic River near Summit (see 01379510); that company, the city of East Orange, and others also divert water for municipal supply by pumping wells in the basin. Flow includes sewage effluent from several treatment plants upstream of gage. Several measurements of water temperature were made during the year. National Weather Service telephone telemetry and USGS satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,400 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov 25	1300	4,550	5.58
Dec 9	2145	*6,350	*6.77

01389500 PASSAIC RIVER AT LITTLE FALLS, NJ—Continued

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

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2,870	2,200	3,290	2,480	1,770	800	468	397	636	167	248	118
2	3,030	2,270	3,040	2,300	1,650	882	618	359	968	162	343	99
3	2,870	2,340	2,750	2,110	1,530	993	609	700	991	144	348	103
4	2,650	2,370	2,450	1,860	1,370	1,060	540	827	1,100	136	279	176
5	2,580	2,320	2,200	1,580	1,240	993	454	843	1,250	128	216	386
6	2,350	2,150	2,030	1,410	1,130	860	384	684	1,190	115	225	449
7	2,010	1,990	2,370	1,320	1,040	747	330	519	1,020	106	215	386
8	1,700	1,860	4,620	1,250	962	685	295	422	839	174	170	381
9	1,480	1,720	6,090	1,150	867	698	277	393	612	114	136	558
10	1,300	1,580	6,140	1,050	815	689	276	485	427	96	418	310
11	1,120	1,470	5,460	971	760	638	294	434	380	94	739	160
12	971	1,330	4,650	1,520	746	579	252	303	694	115	511	79
13	919	1,200	3,960	2,040	700	545	263	245	1,100	109	318	96
14	1,380	1,090	3,390	2,050	640	534	240	260	1,150	109	230	82
15	1,990	1,040	2,980	1,890	621	511	225	341	1,130	98	441	64
16	1,950	1,120	2,670	1,640	620	490	220	508	1,040	111	561	75
17	1,660	1,610	2,340	1,510	665	477	219	606	895	124	275	95
18	1,450	1,740	2,050	1,510	686	465	191	542	756	146	417	232
19	1,430	1,610	1,760	1,410	662	450	162	423	535	195	383	760
20	1,970	1,460	1,560	1,260	639	438	87	369	261	260	273	592
21	2,100	1,360	1,440	1,190	599	421	81	492	179	330	211	283
22	1,970	1,360	1,480	1,110	565	415	198	919	278	259	175	131
23	1,770	3,130	1,820	1,080	546	397	1,410	1,120	368	186	153	158
24	1,580	4,290	1,910	1,470	637	375	1,410	1,190	363	174	135	160
25	1,420	4,540	1,770	1,710	858	351	1,260	1,270	317	172	125	132
26	1,290	4,370	1,660	1,680	901	336	1,040	1,110	293	174	148	96
27	1,270	3,980	1,710	1,870	807	311	860	963	260	222	130	109
28	1,490	3,520	2,760	2,150	723	295	693	969	218	486	305	94
29	1,580	3,190	3,100	2,170	687	294	522	814	210	559	251	155
30	2,120	3,300	2,890	2,050	---	278	419	728	186	388	190	160
31	2,210	---	2,670	1,910	---	369	---	721	---	265	142	---
Total	56,480	67,510	89,010	50,701	25,436	17,376	14,297	19,956	19,646	5,918	8,711	6,679
Mean	1,822	2,250	2,871	1,636	877	561	477	644	655	191	281	223
Max	3,030	4,540	6,140	2,480	1,770	1,060	1,410	1,270	1,250	559	739	760
Min	919	1,040	1,440	971	546	278	81	245	179	94	125	64

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1898 - 2012, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	657	954	1,327	1,354	1,407	2,344	2,062	1,288	803	527	563	575
Max	5,613	4,757	4,497	4,039	3,787	6,755	5,761	4,554	4,290	3,124	3,138	5,668
(WY)	(1904)	(1908)	(1903)	(1979)	(1973)	(1936)	(1983)	(1989)	(1972)	(1945)	(2011)	(2011)
Min	44.5	56.5	44.8	42.3	31.0	131	167	227	64.5	60.3	30.4	28.9
(WY)	(1931)	(1999)	(1999)	(2002)	(2002)	(2002)	(2002)	(1965)	(1999)	(1954)	(1923)	(1964)

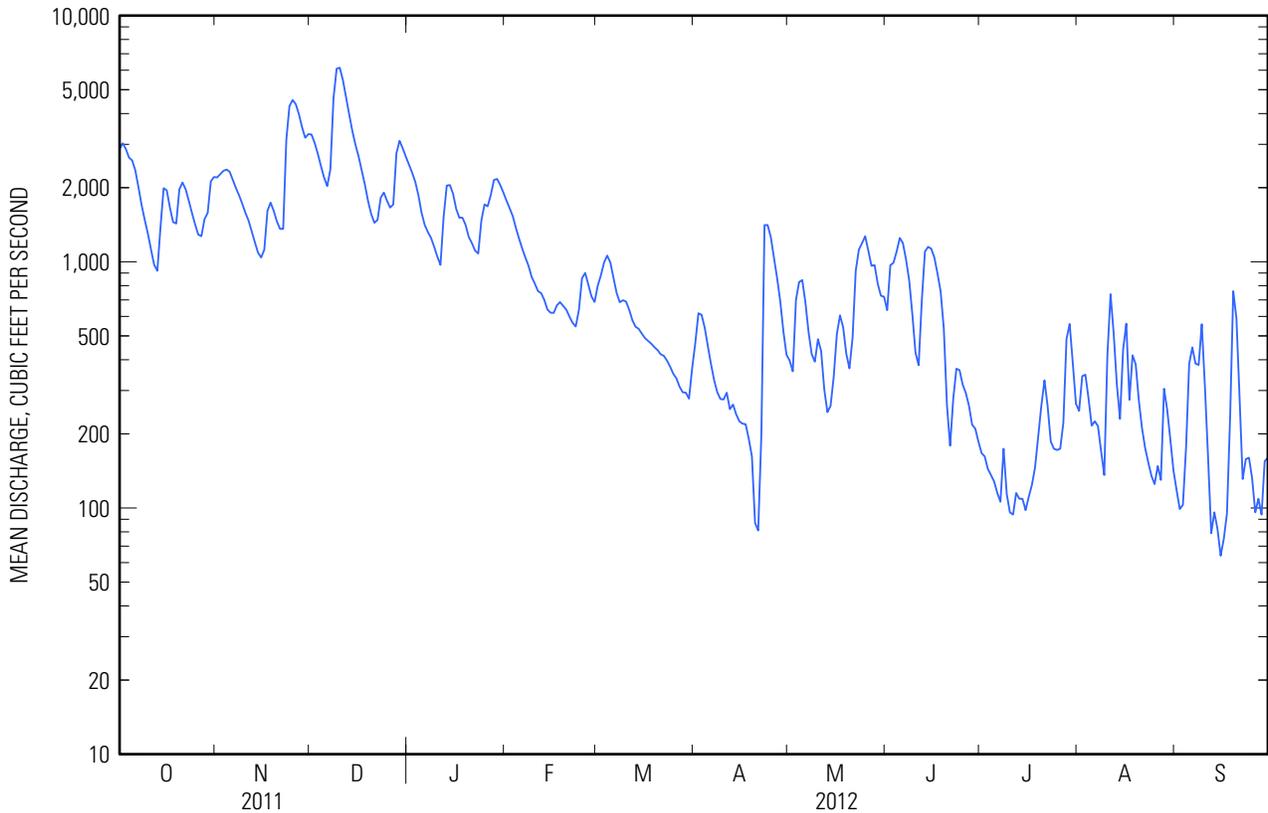
01389500 PASSAIC RIVER AT LITTLE FALLS, NJ—Continued

SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1898 - 2012	
Annual total	960,593		381,720			
Annual mean	2,632		1,043		1,154	
Highest annual mean					2,394	1903
Lowest annual mean					199	2002
Highest daily mean	20,500	Aug 30	6,140	Dec 10	28,000	Oct 10, 1903
Lowest daily mean	134	Jul 24	64	Sep 15	0.00	Jul 3, 1904
Annual seven-day minimum	173	Jul 18	93	Sep 11	13	Sep 19, 1932
Maximum peak flow			6,350	Dec 9	^a 31,700 Oct 10, 1903	
Maximum peak stage			6.77	Dec 9	^b 14.19 Aug 30, 2011	
Instantaneous low flow			47	Apr 21	0.00	Jul 3, 1904
10 percent exceeds	6,090		2,330		2,760	
50 percent exceeds	1,770		691		646	
90 percent exceeds	449		147		121	

^a Maximum discharge at present site, determined by flow-over-dam computation, no peak stage available, dam breaks occurred upstream at Pompton Lake and other locations.

^b Maximum stage recorded since 1956, at present site and datum.



01389500 PASSAIC RIVER AT LITTLE FALLS, NJ—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1963-96, 1998 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: October 1980 to November 1986.

WATER TEMPERATURE: Water years 1963 to 1980 (once daily), September 1980 to November 1986.

DISSOLVED OXYGEN: October 1970 to September 1980 (once daily).

SUSPENDED-SEDIMENT DISCHARGE: August 1963 to July 1965.

REMARKS.--Cooperative Network Site Descriptor: Urban Land Use Indicator, NJ Department of Environmental Protection Watershed Management Area 4. Post-Hurricane Synoptic for bacteria concentrations included stations 01381900, 01388000, 01388500, 01389500, 01389880, and 01391500.

COOPERATION.--Physical measurements and samples for laboratory analysis were collected in cooperation with the NJ Department of Environmental Protection. Determinations of concentrations of dissolved ammonia and suspended residue were performed by the NJ Department of Health and Senior Services, Environmental and Chemical Laboratory (DHSS-ECL).

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 1 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; <, less than]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Temperature, air, °C (00020)	Absorbance, UV, 254 nm, 1 cm path length, water, filtered, units per cm (50624)	Absorbance, UV, organic constituents, 280 nm, 1 cm path length, water, filtered, units per cm (61726)	Discharge, instantaneous, ft ³ /s (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	Dissolved oxygen, water, unfiltered, % saturation (00301)	pH, water, unfiltered, field, standard units (00400)
11-17-2011	1240	751	8.5	0.183	0.142	1,630	11.5	105	7.6
02-27-2012	1130	762	--	.103	.078	806	16.0	126	7.9
06-27-2012	1200	752	32.0	.140	.104	260	8.8	102	7.7
08-23-2012	1230	764	28.0	.122	.091	147	8.8	105	7.9

01389500 PASSAIC RIVER AT LITTLE FALLS, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 2 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than]

Date	Sample start time	Specific conductance, water, unfiltered, µS/cm at 25°C (00095)	Temperature, water, °C (00010)	Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)	Dissolved solids dried at 180°C, water, filtered, mg/L (70300)	Dissolved solids, water, filtered, sum of constituents, mg/L (70301)	Hardness, water, mg/L as CaCO ₃ (00900)	Suspended solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)
11-17-2011	1240	382	11.1	7.1	210	205	96.1	10	25.7
02-27-2012	1130	513	5.2	5.1	289	269	122	6.0	31.9
06-27-2012	1200	541	22.8	8.7	318	288	130	2.0	32.3
08-23-2012	1230	560	24.0	3.0	316	296	136	4.0	35.3

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 3 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than]

Date	Sample start time	Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	ANC, water, unfiltered, fixed endpoint (pH 4.5) titration, laboratory, mg/L as CaCO ₃ (90410)	Carbon (inorganic plus organic), suspended sediment, total, mg/L (00694)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)	Inorganic carbon, suspended sediment, total, mg/L (00688)	Silica, water, filtered, mg/L as SiO ₂ (00955)
11-17-2011	1240	7.75	2.24	37.3	59.4	0.59	67.7	0.07	< .03	9.61
02-27-2012	1130	10.2	2.32	50.1	67.2	.60	100	.07	< .03	7.85
06-27-2012	1200	12.1	3.75	51.3	77.5	.37	99.2	.10	.07	10.6
08-23-2012	1230	11.7	4.02	55.2	77.8	.30	98.1	.08	< .03	9.44

01389500 PASSAIC RIVER AT LITTLE FALLS, NJ—Continued

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 4 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than]

Date	Sample start time	Sulfate, water, filtered, mg/L (00945)	Ammonia plus organic nitrogen, water, filtered, mg/L as N (00623)	Ammonia, water, filtered, mg/L as N (00608)	Nitrate plus nitrite, water, filtered, mg/L as N (00631)	Particulate nitrogen, suspended in water, mg/L (49570)	Phosphorus, water, filtered, mg/L as P (00666)	Phosphorus, water, unfiltered, mg/L as P (00665)	Total nitrogen, water, filtered, mg/L (00602)	Total nitrogen, water, unfiltered, mg/L (00600)
11-17-2011	1240	14.6	0.33	0.024	1.10	0.057	0.098	0.153	1.4	1.5
02-27-2012	1130	18.3	.33	.054	1.65	.066	.10	.13	2.0	2.0
06-27-2012	1200	22.6	.52	.072	2.14	.043	.26	.35	2.7	2.7
08-23-2012	1230	25.2	.39	.012	2.37	.039	.21	.26	2.8	2.8

WATER-QUALITY DATA
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012

Part 5 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO₃, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO₂, silicon dioxide; cm, centimeter; ft³/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; <, less than]

Date	Sample start time	Organic carbon, suspended sediment, total, mg/L (00689)	Organic carbon, water, filtered, mg/L (00681)
11-17-2011	1240	0.58	5.31
02-27-2012	1130	.60	2.95
06-27-2012	1200	.31	4.27
08-23-2012	1230	.30	3.81