

Water-Data Report 2006

01100568 SHAWSHEEN RIVER AT HANSCOM FIELD NEAR BEDFORD, MA

MERRIMACK RIVER BASIN
SHAWSHEEN RIVER SUBBASIN

LOCATION.--Lat 42°28'01", long 71°16'22" referenced to North American Datum of 1927, Middlesex County, MA, Hydrologic Unit 01070002, on left bank 300 ft downstream from FAA hangar, on Hanscom Field, and 1.6 mi south of Bedford.

DRAINAGE AREA.--2.13 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--Discharge: October 1995 to current year. Precipitation: March 1996 to September 2004. Water-quality records: water years 1995-2001.

REVISED RECORDS.--WDR MA-RI-03-1: Drainage area.

GAGE.--Water-stage recorder with satellite telemeter. Elevation of gage is 115 ft above National Geodetic Vertical Datum of 1929, from topographic map.

COOPERATION.--U.S. Air Force.

REMARKS.--Records poor due to variable backwater from beaver dams.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

[e, estimated]

| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|--------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | e1.5 | e4.9 | e7.3 | e4.5 | e6.5 | e4.1 | e4.3 | e3.2 | e5.2 | e4.1 | e2.6 | e2.5 |
| 2 | e1.4 | e4.9 | e5.4 | e4.5 | e5.6 | e3.5 | e3.4 | e5.7 | e6.0 | e3.5 | e1.9 | e1.7 |
| 3 | e1.2 | e4.9 | e5.7 | e5.9 | e14 | e4.3 | e4.0 | e7.9 | e25 | e3.3 | e2.4 | e8.3 |
| 4 | e1.0 | e4.9 | e5.4 | e5.0 | e11 | e4.9 | e9.9 | e5.7 | e15 | e5.4 | e3.5 | e5.9 |
| 5 | e0.87 | e4.9 | e5.7 | e4.6 | e14 | e5.4 | e5.9 | e4.3 | e7.7 | e3.5 | e2.7 | e5.4 |
| 6 | e0.77 | e4.4 | e5.1 | e4.8 | e7.8 | e5.2 | e5.3 | e3.5 | e5.2 | e3.0 | e3.3 | e5.3 |
| 7 | e0.69 | e6.4 | e4.8 | e4.6 | e5.6 | e4.3 | e3.1 | e4.0 | e29 | e3.3 | e2.4 | e4.9 |
| 8 | e34 | e5.1 | e4.8 | e4.0 | e5.6 | e3.8 | e4.8 | e4.0 | e16 | e3.4 | e2.2 | e4.6 |
| 9 | e9.5 | e4.8 | e4.3 | e4.3 | e6.2 | e3.2 | e3.1 | e8.2 | e9.9 | e2.9 | e2.4 | e4.6 |
| 10 | e5.0 | e10 | e4.6 | e4.6 | e4.6 | e3.2 | e4.0 | e9.0 | e11 | e3.2 | e1.9 | e4.6 |
| 11 | e3.7 | e4.7 | e4.8 | e4.8 | e4.6 | e4.3 | e2.0 | e3.8 | e8.2 | e20 | e2.4 | e4.3 |
| 12 | e3.9 | e4.2 | e4.6 | e6.8 | e5.1 | e3.8 | e3.1 | e8.4 | e7.1 | e11 | e2.4 | e3.8 |
| 13 | e3.7 | e4.1 | e4.0 | e5.1 | e4.0 | e3.5 | e3.4 | e80 | e8.9 | e6.2 | e2.4 | e4.1 |
| 14 | e15 | e4.2 | e3.7 | e7.8 | e5.4 | e11 | e2.9 | e40 | e12 | e4.8 | e3.3 | e8.2 |
| 15 | e55 | e4.1 | e4.8 | e8.1 | e4.6 | e4.1 | e2.9 | e16 | e11 | e4.5 | e12 | e4.9 |
| 16 | e10 | e5.3 | e19 | e5.4 | e5.4 | e3.0 | e2.9 | e8.4 | e7.1 | e4.2 | e4.2 | e3.3 |
| 17 | e5.3 | e8.2 | e8.9 | e4.6 | e6.7 | e3.4 | e2.6 | e7.9 | e5.4 | e3.7 | e2.8 | e2.5 |
| 18 | e4.8 | e5.4 | e5.9 | e19 | e5.1 | e3.4 | e2.9 | e6.8 | e5.4 | e4.0 | e2.0 | e2.0 |
| 19 | e3.9 | e5.1 | e4.8 | e8.7 | e4.0 | e3.7 | e2.9 | e10 | e6.3 | e4.2 | e3.9 | e2.8 |
| 20 | e4.2 | e4.6 | e4.8 | e5.4 | e3.8 | e3.4 | e3.1 | e7.6 | e5.2 | e3.2 | e13 | e14 |
| 21 | e3.9 | e5.7 | e4.2 | e5.1 | e3.5 | e2.9 | e3.4 | e8.9 | e4.4 | e9.9 | e2.7 | e4.1 |
| 22 | e3.4 | e26 | e4.5 | e5.4 | e4.6 | e3.4 | e3.1 | e7.9 | e4.6 | e5.1 | e3.1 | e2.9 |
| 23 | e19 | e7.3 | e4.2 | e4.8 | e4.6 | e3.2 | e6.4 | e6.8 | e9.8 | e3.7 | e2.5 | e4.1 |
| 24 | e4.6 | e6.5 | e4.5 | e5.9 | e4.9 | e3.2 | e8.1 | e6.8 | e10 | e4.2 | e2.0 | e3.8 |
| 25 | e30 | e4.8 | e5.6 | e5.7 | e4.1 | e2.6 | e4.5 | e6.6 | e7.6 | e3.4 | e23 | e3.8 |
| 26 | e12 | e5.4 | e20 | e5.9 | e4.6 | e3.2 | e2.6 | e7.1 | e6.3 | e3.4 | e4.7 | e3.5 |
| 27 | e7.3 | e5.4 | e8.0 | e4.8 | e3.2 | e2.3 | e3.5 | e6.8 | e5.2 | e3.2 | e5.3 | e3.8 |
| 28 | e5.3 | e5.4 | e5.6 | e5.1 | e3.8 | e2.9 | e3.8 | e6.5 | e4.4 | e20 | e5.8 | e3.8 |
| 29 | e6.4 | e4.0 | e6.1 | e7.0 | --- | e3.2 | e2.9 | e6.6 | e4.4 | e6.2 | e4.4 | e4.1 |
| 30 | e6.7 | e19 | e6.4 | e8.1 | --- | e3.2 | e2.1 | e6.3 | e4.4 | e2.9 | e3.1 | e4.1 |
| 31 | e5.6 | --- | e5.9 | e7.8 | --- | e3.4 | --- | e5.5 | --- | e2.6 | e2.2 | --- |
| Total | 269.63 | 194.6 | 193.4 | 188.1 | 162.9 | 119.0 | 116.9 | 320.2 | 267.7 | 166.0 | 132.5 | 135.7 |
| Mean | 8.70 | 6.49 | 6.24 | 6.07 | 5.82 | 3.84 | 3.90 | 10.3 | 8.92 | 5.35 | 4.27 | 4.52 |
| Max | 55 | 26 | 20 | 19 | 14 | 11 | 9.9 | 80 | 29 | 20 | 23 | 14 |
| Min | 0.69 | 4.0 | 3.7 | 4.0 | 3.2 | 2.3 | 2.0 | 3.2 | 4.4 | 2.6 | 1.9 | 1.7 |
| Cfsm | 4.08 | 3.05 | 2.93 | 2.85 | 2.73 | 1.80 | 1.83 | 4.85 | 4.19 | 2.51 | 2.01 | 2.12 |
| In. | 4.71 | 3.40 | 3.38 | 3.29 | 2.85 | 2.08 | 2.04 | 5.59 | 4.68 | 2.90 | 2.31 | 2.37 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2006, BY WATER YEAR (WY)

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Mean | 5.30 | 4.55 | 5.10 | 5.10 | 4.75 | 6.22 | 6.46 | 5.70 | 6.36 | 3.26 | 2.96 | 3.99 |
| Max | 19.6 | 8.55 | 11.2 | 7.57 | 7.65 | 15.8 | 12.3 | 10.3 | 21.9 | 6.62 | 7.56 | 9.87 |
| (WY) | (1997) | (2003) | (2003) | (1999) | (1998) | (2001) | (2003) | (2006) | (1998) | (1996) | (2003) | (2003) |
| Min | 0.94 | 2.29 | 2.19 | 2.12 | 2.59 | 2.51 | 2.59 | 1.96 | 1.08 | 0.61 | 0.74 | 0.62 |
| (WY) | (2001) | (2001) | (1996) | (2001) | (2000) | (2002) | (2002) | (1999) | (1999) | (2002) | (2002) | (2005) |

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SUMMARY STATISTICS

| | Calendar Year 2005 | | Water Year 2006 | | Water Years 1996 - 2006 | |
|---------------------------------|--------------------|--------|-----------------|--------|-------------------------|--------------|
| Annual total | 1,989.85 | | 2,266.63 | | | |
| Annual mean | 5.45 | | 6.21 | | 4.98 | |
| Highest annual mean | | | | | 7.90 | 2003 |
| Lowest annual mean | | | | | 2.50 | 2002 |
| Highest daily mean | 55 | Oct 15 | 80 | May 13 | 209 | Oct 21, 1996 |
| Lowest daily mean | 0.21 | Sep 26 | 0.69 | Oct 7 | 0.10 | Jul 5, 2002 |
| Annual seven-day minimum | 0.27 | Sep 21 | 1.1 | Oct 1 | 0.13 | Jul 2, 2002 |
| Maximum peak flow | | | °235 | May 14 | °684 | Jun 13, 1998 |
| Maximum peak stage | | | 7.11 | Jul 28 | 8.69 | Jun 13, 1998 |
| Instantaneous low flow | | | °0.36 | Oct 1 | °0.10 | Oct 2, 2000 |
| Annual runoff (cfsm) | 2.56 | | 2.92 | | 2.34 | |
| Annual runoff (inches) | 34.75 | | 39.59 | | 31.74 | |
| 10 percent exceeds | 9.4 | | 9.9 | | 8.8 | |
| 50 percent exceeds | 4.8 | | 4.6 | | 3.3 | |
| 90 percent exceeds | 0.62 | | 2.9 | | 1.1 | |

^a From rating curve extended above 170 ft³/s.

^c Estimated.

