



2005 Water Year
LEHIGH RIVER BASIN
01452500 Monocacy Creek at Bethlehem, PA

Latitude: 40° 38' 28"

Longitude: 075° 22' 47"

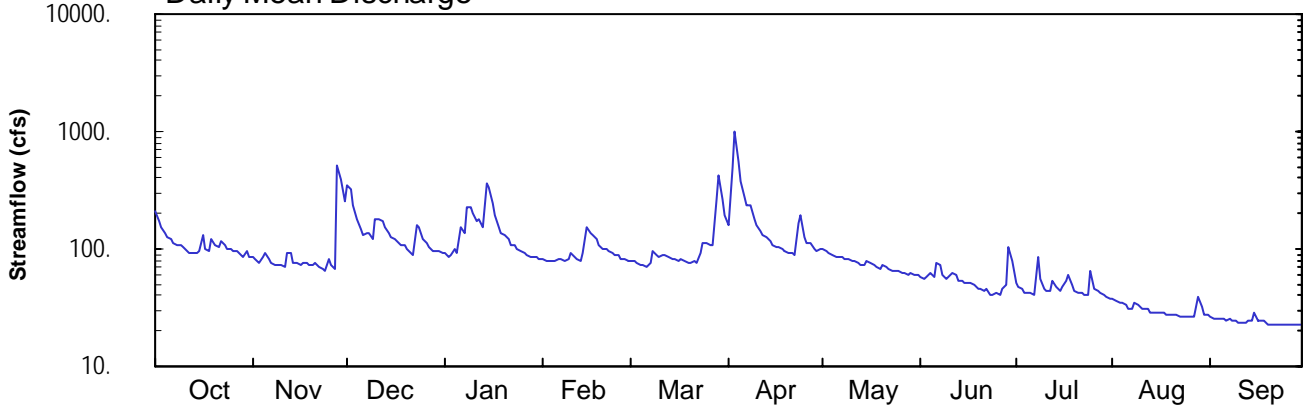
Hydrologic Unit Code: 02040106

Northampton County

Datum: 247.24 feet

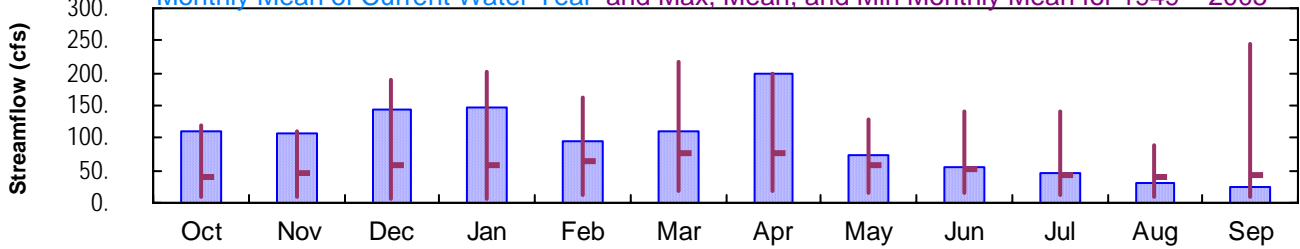
Drainage Area: 44.5 mi²

Daily Mean Discharge

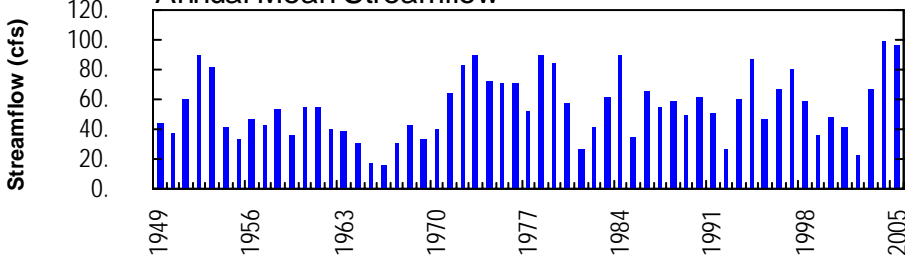


Monthly Statistics

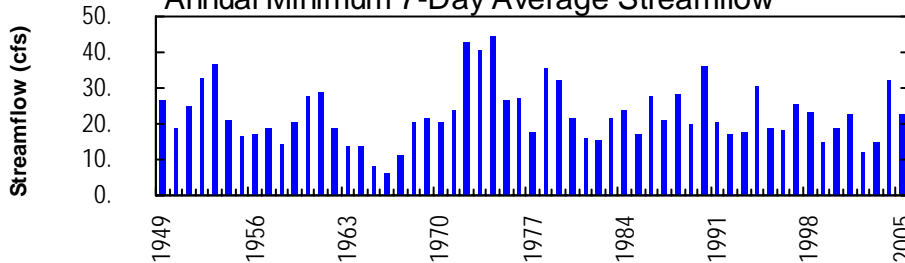
Monthly Mean of Current Water Year and Max, Mean, and Min Monthly Mean for 1949 – 2005



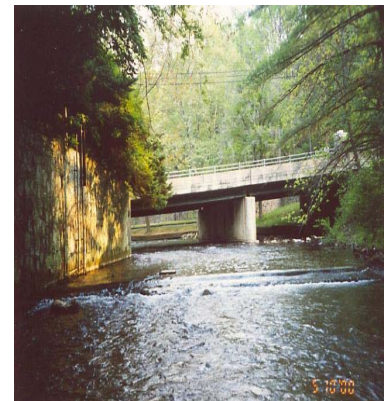
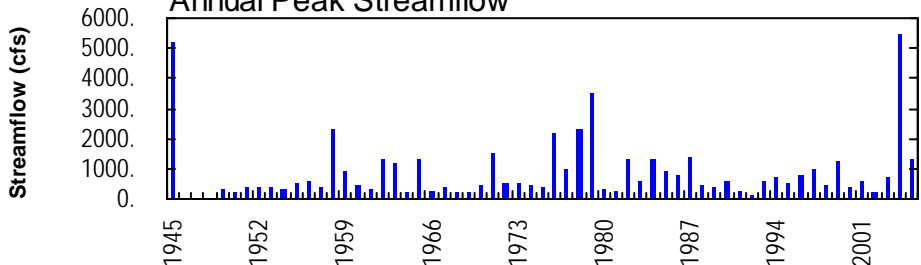
Annual Mean Streamflow



Annual Minimum 7-Day Average Streamflow



Annual Peak Streamflow



LEHIGH RIVER BASIN

01452500 MONOCACY CREEK AT BETHLEHEM, PA

LOCATION.--Lat 40°38'28", long 75°22'47", Northampton County, Hydrologic Unit 02040106, on right bank 40 ft downstream from highway bridge at entrance to Monocacy Park at Bethlehem, and 2.1 mi upstream from mouth.

DRAINAGE AREA.--44.5 mi².

PERIOD OF RECORD.--October 1948 to current year.

GAGE.--Water-stage recorder and crest-stage gage. Concrete control since July 17, 1969. Datum of gage is 247.24 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Army Corps of Engineers). Prior to May 15, 1962, nonrecording gage at site 40 ft upstream at same datum.

REMARKS.--No estimated daily discharges. Records fair. Some regulation at low flow since April 1954 by mill upstream. Several measurements of water temperature were made during the year. Satellite telemetry at station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of July 10, 1945, reached a stage of 9.74 ft, from floodmarks, discharge, about 5,200 ft³/s, by slope-area measurement.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 300 ft³/s and maximum (*):

| Date | Time | Discharge ft ³ /s | Gage Height (ft) | Date | Time | Discharge ft ³ /s | Gage Height (ft) |
|---------|------|---------------------------------|---------------------|---------|------|---------------------------------|---------------------|
| Nov. 28 | 1730 | 776 | 4.41 | Mar. 28 | 1745 | 535 | 3.89 |
| Dec. 1 | 1730 | 526 | 3.82 | Mar. 29 | 1730 | 372 | 3.46 |
| Dec. 23 | 1745 | 360 | 3.38 | Apr. 3 | 0530 | *1,330 | *5.44 |
| Jan. 8 | 1245 | 368 | 3.41 | Apr. 23 | 2345 | 396 | 3.55 |
| Jan. 14 | 1145 | 494 | 3.75 | June 29 | 2000 | 396 | 3.55 |

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 | 209 | 84 | 351 | 93 | 81 | 80 | 162 | 101 | 57 | 51 | 37 | 27 |
| 2 | 176 | 82 | 321 | 86 | 79 | 78 | 487 | 95 | 57 | 47 | 37 | 26 |
| 3 | 152 | 77 | 239 | 89 | 79 | 75 | 1000 | 92 | 59 | 45 | 35 | 26 |
| 4 | 138 | 86 | 179 | 99 | 79 | 74 | 555 | 88 | 63 | 43 | 34 | 26 |
| 5 | 124 | 94 | 148 | 93 | 79 | 73 | 370 | 86 | 58 | 42 | 34 | 25 |
| 6 | 119 | 81 | 133 | 152 | 81 | 71 | 279 | 85 | 77 | 43 | 31 | 25 |
| 7 | 112 | 77 | 136 | 135 | 81 | 75 | 232 | 84 | 73 | 41 | 31 | 25 |
| 8 | 110 | 73 | 135 | 229 | 81 | 98 | 238 | 83 | 60 | 85 | 35 | 25 |
| 9 | 108 | 72 | 122 | 229 | 81 | 90 | 178 | 81 | 56 | 56 | 33 | 24 |
| 10 | 102 | 72 | 179 | 201 | 92 | 87 | 162 | 80 | 57 | 46 | 30 | 24 |
| 11 | 94 | 71 | 181 | 171 | 85 | 87 | 144 | 79 | 62 | 44 | 30 | 24 |
| 12 | 93 | 93 | 171 | 177 | 83 | 87 | 134 | 76 | 59 | 43 | 31 | 24 |
| 13 | 91 | 93 | 154 | 152 | 80 | 85 | 128 | 74 | 53 | 54 | 29 | 24 |
| 14 | 94 | 77 | 139 | 362 | 91 | 84 | 116 | 74 | 53 | 48 | 29 | 24 |
| 15 | 95 | 76 | 127 | 335 | 156 | 83 | 107 | 79 | 51 | 44 | 28 | 28 |
| 16 | 129 | 73 | 123 | 244 | 135 | 81 | 105 | 76 | 52 | 48 | 28 | 24 |
| 17 | 102 | 77 | 117 | 192 | 131 | 84 | 104 | 72 | 51 | 53 | 28 | 24 |
| 18 | 96 | 75 | 107 | 153 | 121 | 81 | 99 | 69 | 49 | 60 | 28 | 24 |
| 19 | 120 | 74 | 108 | 138 | 108 | 77 | 95 | 67 | 47 | 49 | 28 | 23 |
| 20 | 106 | 74 | 101 | 133 | 100 | 75 | 93 | 74 | 46 | 45 | 28 | 23 |
| 21 | 105 | 75 | 94 | 122 | 101 | 78 | 91 | 71 | 44 | 43 | 27 | 23 |
| 22 | 119 | 70 | 91 | 107 | 96 | 76 | 90 | 67 | 46 | 42 | 27 | 23 |
| 23 | 108 | 67 | 162 | 108 | 93 | 93 | 168 | 66 | 41 | 41 | 27 | 22 |
| 24 | 101 | 66 | 153 | 99 | 90 | 114 | 196 | 64 | 40 | 40 | 26 | 23 |
| 25 | 99 | 83 | 122 | 96 | 88 | 111 | 129 | 64 | 42 | 65 | 26 | 23 |
| 26 | 97 | 72 | 113 | 94 | 84 | 110 | 113 | 63 | 41 | 47 | 26 | 23 |
| 27 | 96 | 67 | 106 | 90 | 83 | 108 | 111 | 62 | 46 | 43 | 26 | 23 |
| 28 | 90 | 513 | 98 | 85 | 81 | 261 | 101 | 61 | 50 | 42 | 40 | 22 |
| 29 | 86 | 395 | 97 | 86 | --- | 420 | 97 | 63 | 106 | 40 | 32 | 23 |
| 30 | 96 | 251 | 96 | 85 | --- | 266 | 100 | 60 | 80 | 39 | 28 | 23 |
| 31 | 87 | --- | 93 | 81 | --- | 196 | --- | 59 | --- | 38 | 27 | --- |
| TOTAL | 3454 | 3240 | 4496 | 4516 | 2619 | 3458 | 5984 | 2315 | 1676 | 1467 | 936 | 723 |
| MEAN | 111 | 108 | 145 | 146 | 93.5 | 112 | 199 | 74.7 | 55.9 | 47.3 | 30.2 | 24.1 |
| MAX | 209 | 513 | 351 | 362 | 156 | 420 | 1000 | 101 | 106 | 85 | 40 | 28 |
| MIN | 86 | 66 | 91 | 81 | 79 | 71 | 90 | 59 | 40 | 38 | 26 | 22 |
| CFSM | 2.50 | 2.43 | 3.26 | 3.27 | 2.10 | 2.51 | 4.48 | 1.68 | 1.26 | 1.06 | 0.68 | 0.54 |
| IN. | 2.89 | 2.71 | 3.76 | 3.78 | 2.19 | 2.89 | 5.00 | 1.94 | 1.40 | 1.23 | 0.78 | 0.60 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1949 - 2005, BY WATER YEAR (WY)

| | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 41.0 | 46.8 | 57.4 | 59.6 | 64.6 | 75.1 | 75.7 | 58.5 | 52.1 | 44.2 | 40.7 | 43.1 |
| MAX | 118 | 111 | 191 | 201 | 163 | 216 | 199 | 129 | 142 | 141 | 88.2 | 245 |
| (WY) | 2004 | 2004 | 1997 | 1979 | 1979 | 1994 | 2005 | 1984 | 1972 | 1984 | 1984 | 2004 |
| MIN | 8.90 | 10.0 | 6.88 | 7.14 | 13.6 | 19.8 | 18.6 | 16.2 | 15.0 | 11.6 | 10.6 | 9.51 |
| (WY) | 1966 | 1966 | 1966 | 1966 | 2002 | 2002 | 1966 | 1965 | 1965 | 1966 | 1965 | 1965 |

LEHIGH RIVER BASIN

01452500 MONOCACY CREEK AT BETHLEHEM, PA--Continued

| SUMMARY STATISTICS | FOR 2004 CALENDAR YEAR | | FOR 2005 WATER YEAR | | WATER YEARS 1949 - 2005 | |
|--------------------------|------------------------|--------|---------------------|-----------|-------------------------|-------------|
| ANNUAL TOTAL | 35643 | | 34884 | | | |
| ANNUAL MEAN | 97.4 | | 95.6 | | 54.8 | |
| HIGHEST ANNUAL MEAN | | | | | 98.6 | 2004 |
| LOWEST ANNUAL MEAN | | | | | 15.5 | 1966 |
| HIGHEST DAILY MEAN | 2290 | Sep 18 | 1000 | Apr 3 | 2290 | Sep 18 2004 |
| LOWEST DAILY MEAN | 30 | Jul 11 | 22 | Sep 23,28 | 5.2 | Jan 1 1966 |
| ANNUAL SEVEN-DAY MINIMUM | 32 | Jul 5 | 23 | Sep 22 | 5.9 | Dec 27 1965 |
| MAXIMUM PEAK FLOW | | | a1330 | Apr 3 | a5470 | Sep 18 2004 |
| MAXIMUM PEAK STAGE | | | 5.44 | Apr 3 | 9.85 | Sep 18 2004 |
| INSTANTANEOUS LOW FLOW | | | 21 | Sep 30 | 3.0 | Jan 9 1966 |
| ANNUAL RUNOFF (CFSM) | 2.19 | | 2.15 | | 1.23 | |
| ANNUAL RUNOFF (INCHES) | 29.80 | | 29.16 | | 16.74 | |
| 10 PERCENT EXCEEDS | 149 | | 162 | | 99 | |
| 50 PERCENT EXCEEDS | 76 | | 81 | | 42 | |
| 90 PERCENT EXCEEDS | 42 | | 27 | | 21 | |

a From rating curve extended above 440 ft³/s on basis of slope-area measurement at gage heights 5.47 and 9.74.

