Water-Data Report 2011

# 02060500 ROANOKE (STAUNTON) RIVER AT ALTAVISTA, VA

Roanoke Basin
Upper Roanoke Subbasin

LOCATION.--Lat 37°06′16″, long 79°17′44″ referenced to North American Datum of 1927, Pittsylvania County, VA, Hydrologic Unit 03010101, on right bank 12 ft upstream from bridge on alternate U.S. Highway 29, 0.3 mi south of Altavista, 0.3 mi downstream from Sycamore Creek, 3.5 mi upstream from Big Otter River, and at mile 286.5.

DRAINAGE AREA.--1,782 $mi^2$.

## SURFACE-WATER RECORDS

PERIOD OF RECORD.--August 1930 to current year.

REVISED RECORDS.--WSP 892: 1938(M). WSP 972: 1931-33. OFR 2006-1308: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 503.10 ft NGVD of 1929. Prior to Feb. 21, 1951, on left bank 50 ft downstream, at present datum.

REMARKS.--Records good. Flow regulated since 1962 by Leesville Lake (station 02059400) 9.5 mi upstream and since 1963 by Smith Mountain Lake (station 02057400) 27.5 mi upstream. Statistics of monthly mean data and summary statistics for water years 1931 - 1962 (unregulated flow) are available in previous data books, water years 1991 - 1998. U.S. Army Corps of Engineers satellite gage-height telemeter at station. American Electric Power gage-height transmitter at station with recorder at Roanoke. Hadson Power Company gage-height telemeter at station. Maximum discharge, 105,000 $ft^3/s$, from rating curve extended above 52,000 $ft^3/s$ on basis of unit hydrograph and flood-routing studies by U.S. Army Corps of Engineers and records for other stations in Roanoke River Basin. Several measurements of water temperature were made during the year. Water-quality records for some prior periods have been collected at this location.



Suggested citation: U.S. Geological Survey, 2012, Water-resources data for the United States, Water Year 2011: U.S. Geological Survey Water-Data Report WDR-US-2011, site 02060500, accessed at http://wdr.water.usgs.gov/wy2011/pdfs/02060500.2011.pdf

**02060500 ROANOKE (STAUNTON) RIVER AT ALTAVISTA, VA—Continued**

**DISCHARGE, CUBIC FEET PER SECOND**
**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**
**DAILY MEAN VALUES**

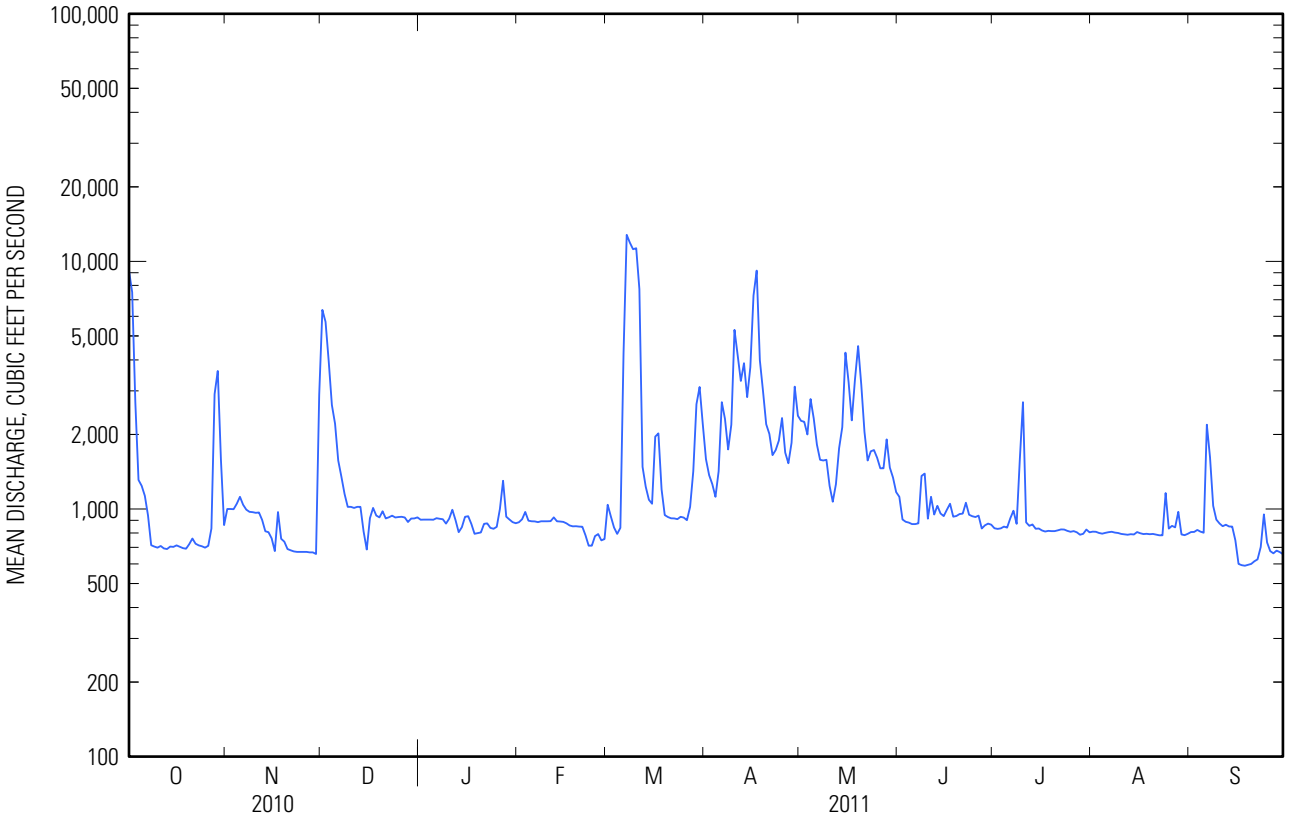
| Day | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 9,170 | 1,000 | 6,370 | 905 | 884 | 1,040 | 1,590 | 2,270 | 1,120 | 836 | 810 | 807 |
| 2 | 7,510 | 1,000 | 5,700 | 906 | 909 | 933 | 1,370 | 2,250 | 907 | 831 | 809 | 808 |
| 3 | 2,690 | 998 | 3,950 | 906 | 973 | 842 | 1,260 | 2,000 | 888 | 835 | 800 | 823 |
| 4 | 1,310 | 1,050 | 2,630 | 906 | 897 | 793 | 1,120 | 2,780 | 881 | 849 | 795 | 810 |
| 5 | 1,240 | 1,120 | 2,210 | 905 | 892 | 839 | 1,420 | 2,320 | 869 | 841 | 801 | 802 |
| 6 | 1,130 | 1,040 | 1,570 | 918 | 891 | 4,250 | 2,700 | 1,820 | 869 | 917 | 806 | 2,190 |
| 7 | 941 | 994 | 1,350 | 913 | 885 | 12,800 | 2,310 | 1,580 | 875 | 984 | 809 | 1,620 |
| 8 | 714 | 974 | 1,150 | 909 | 892 | 11,900 | 1,740 | 1,570 | 1,360 | 871 | 803 | 1,030 |
| 9 | 705 | 971 | 1,020 | 873 | 892 | 11,200 | 2,190 | 1,580 | 1,390 | 1,580 | 800 | 906 |
| 10 | 698 | 965 | 1,020 | 914 | 892 | 11,300 | 5,290 | 1,240 | 914 | 2,700 | 793 | 874 |
| 11 | 709 | 968 | 1,010 | 993 | 893 | 7,730 | 4,180 | 1,070 | 1,120 | 883 | 790 | 852 |
| 12 | 693 | 903 | 1,020 | 902 | 925 | 1,480 | 3,290 | 1,260 | 950 | 855 | 787 | 864 |
| 13 | 689 | 813 | 1,020 | 806 | 892 | 1,230 | 3,880 | 1,760 | 1,030 | 866 | 791 | 850 |
| 14 | 705 | 806 | 812 | 844 | 890 | 1,090 | 2,830 | 2,140 | 959 | 832 | 789 | 849 |
| 15 | 703 | 761 | 686 | 930 | 887 | 1,050 | 3,740 | 4,280 | 936 | 834 | 807 | 747 |
| 16 | 713 | 676 | 918 | 935 | 875 | 1,960 | 7,280 | 3,250 | 993 | 819 | 798 | 600 |
| 17 | 704 | 972 | 1,010 | 870 | 858 | 2,020 | 9,180 | 2,280 | 1,050 | 811 | 792 | 593 |
| 18 | 695 | 758 | 941 | 794 | 851 | 1,200 | 3,990 | 3,330 | 931 | 816 | 794 | 590 |
| 19 | 691 | 738 | 925 | 799 | 852 | 945 | 2,990 | 4,550 | 937 | 814 | 791 | 595 |
| 20 | 721 | 689 | 979 | 804 | 849 | 928 | 2,200 | 3,170 | 954 | 814 | 793 | 600 |
| 21 | 760 | 681 | 916 | 871 | 848 | 917 | 2,010 | 2,050 | 958 | 820 | 788 | 615 |
| 22 | 724 | 674 | 926 | 875 | 783 | 916 | 1,650 | 1,570 | 1,060 | 827 | 783 | 626 |
| 23 | 713 | 671 | 940 | 839 | 711 | 910 | 1,730 | 1,710 | 948 | 826 | 783 | 702 |
| 24 | 707 | 671 | 924 | 832 | 711 | 930 | 1,890 | 1,730 | 935 | 816 | 1,160 | 951 |
| 25 | 698 | 671 | 928 | 847 | 777 | 923 | 2,330 | 1,610 | 928 | 809 | 833 | 733 |
| 26 | 710 | 671 | 930 | 1,000 | 792 | 901 | 1,690 | 1,460 | 940 | 814 | 855 | 676 |
| 27 | 834 | 668 | 924 | 1,300 | 747 | 1,020 | 1,530 | 1,460 | 834 | 805 | 843 | 662 |
| 28 | 2,910 | 668 | 886 | 931 | 756 | 1,420 | 1,850 | 1,910 | 859 | 787 | 974 | 679 |
| 29 | 3,610 | 658 | 915 | 907 | --- | 2,650 | 3,120 | 1,470 | 873 | 794 | 789 | 670 |
| 30 | 1,580 | 2,890 | 916 | 885 | --- | 3,110 | 2,380 | 1,340 | 864 | 826 | 784 | 657 |
| 31 | 861 | --- | 925 | 876 | --- | 2,200 | --- | 1,170 | --- | 805 | 794 | --- |
| Total | 47,238 | 27,119 | 46,421 | 27,895 | 23,904 | 91,427 | 84,730 | 63,980 | 29,132 | 28,517 | 25,344 | 24,781 |
| Mean | 1,524 | 904 | 1,497 | 900 | 854 | 2,949 | 2,824 | 2,064 | 971 | 920 | 818 | 826 |
| Max | 9,170 | 2,890 | 6,370 | 1,300 | 973 | 12,800 | 9,180 | 4,550 | 1,390 | 2,700 | 1,160 | 2,190 |
| Min | 689 | 658 | 686 | 794 | 711 | 793 | 1,120 | 1,070 | 834 | 787 | 783 | 590 |
| Cfsm | 0.86 | 0.51 | 0.84 | 0.50 | 0.48 | 1.66 | 1.58 | 1.16 | 0.54 | 0.52 | 0.46 | 0.46 |
| In. | 0.99 | 0.57 | 0.97 | 0.58 | 0.50 | 1.91 | 1.77 | 1.34 | 0.61 | 0.60 | 0.53 | 0.52 |

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1963 - 2011, BY WATER YEAR (WY)**

| | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 1,137 | 1,350 | 1,489 | 2,031 | 2,166 | 2,671 | 2,453 | 1,907 | 1,540 | 1,086 | 1,036 | 1,213 |
| Max | 4,811 | 6,190 | 5,630 | 5,371 | 7,119 | 7,795 | 10,930 | 4,716 | 5,684 | 3,363 | 3,351 | 5,246 |
| (WY) | (1991) | (1986) | (2010) | (2010) | (1998) | (1993) | (1987) | (1978) | (1972) | (1972) | (2003) | (1987) |
| Min | 189 | 396 | 351 | 455 | 421 | 338 | 604 | 484 | 220 | 504 | 311 | 438 |
| (WY) | (1964) | (1982) | (1964) | (2002) | (2002) | (1981) | (1964) | (1964) | (1964) | (1981) | (1963) | (2002) |

**02060500 ROANOKE (STAUNTON) RIVER AT ALTAVISTA, VA—Continued**

**SUMMARY STATISTICS**

| | Calendar Year 2010 | | Water Year 2011 | | Water Years 1963 - 2011 | |
|---|---|---|---|---|---|---|
| **Annual total** | 729,990 | | 520,488 | | | |
| **Annual mean** | 2,000 | | 1,426 | | 1,670 | |
| **Highest annual mean** | | | | | 2,903 | 1987 |
| **Lowest annual mean** | | | | | 583 | 2002 |
| **Highest daily mean** | 17,800 | Jan 25 | 12,800 | Mar 7 | 46,700 | Sep 8, 1987 |
| **Lowest daily mean** | 590 | Sep 9 | 590 | Sep 18 | 39 | Jul 10, 1966 |
| **Annual seven-day minimum** | 610 | Sep 9 | 603 | Sep 16 | 116 | Sep 2, 1965 |
| **Maximum peak flow** | | | 13,200 | Mar 7 | [a]62,100 | Sep 8, 1987 |
| **Maximum peak stage** | | | 13.64 | Mar 7 | [a]34.45 | Sep 8, 1987 |
| **Instantaneous low flow** | | | 588 | Sep 17[b] | [c]13 | Jan 30, 1966 |
| **Annual runoff (cfsm)** | 1.12 | | 0.800 | | 0.937 | |
| **Annual runoff (inches)** | 15.24 | | 10.87 | | 12.73 | |
| **10 percent exceeds** | 3,980 | | 2,640 | | 3,250 | |
| **50 percent exceeds** | 1,050 | | 907 | | 1,000 | |
| **90 percent exceeds** | 701 | | 708 | | 340 | |

[a] Prior to regulation, 1931-62, maximum peak flow, 105,000 ft³/s, Aug. 15, 1940, gage height, 40.08 ft, from floodmarks.
[b] Also Sept. 18, 2011.
[c] Prior to regulation, 1931-62, instantaneous low flow, 94 ft³/s, Jan. 31, 1934.