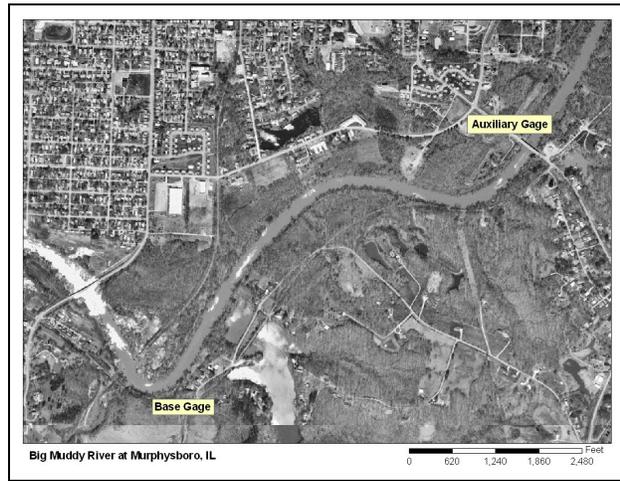
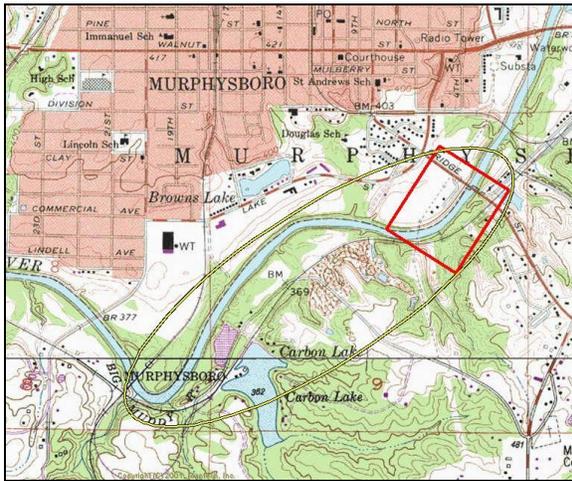


Big Muddy River at Murphysboro, IL



Study Reach.--The reach under consideration is a wide, natural meandering channel. The study reach, 8900 ft long, extends from the USGS auxiliary gage on Route 127 bridge to the USGS base gage, located just upstream of the South Twentieth Street bridge, as shown in the quadrangle map on the top left. The alignment of study reach, approximate variations in channel width and bank conditions, and locations of surveyed cross sections are shown in the aerial photo on the top right.

Gage Location.--Lat 37°44'55", long 89°20'45", in SE1/4 SE1/4 sec.8, T.9S., R.2W., Jackson County, on left bank just upstream from Lewis Creek, 0.2 mile upstream from South Twentieth Street bridge, at Murphysboro, and at river mile 36.0. The USGS streamgage station number is 05599500.

Drainage Area.--2,169 sq mi.

Gage Datum and Elevations of Reference Points.--This is a slope station where the auxiliary gage is located at Route 127 bridge, 1.5 miles upstream. Datum of gage is 335.50 ft. Reference gage is a low staff gage mounted on left concrete abutment on abandoned remains of the old railroad bridge, elevation of brass screw = 344.996 ft. At medium and high stages, outside water surface readings may be obtained by taping down from reference points, RP-7, which is at head of cadmium bolt in streamward face of right abutment on upstream end, elevation = 373.249 ft; or from RP-8, which is at head of cadmium bolt in streamward face of right abutment, elevation = 366.916 ft. A wire weight gage (WWG) is located on the upstream side of Rt. 127 bridge. All elevations are in NGVD 1929 convention.

Stage, Discharge Measurements and Computed n-Values.--Stage and discharge data for the n-value studies were retrieved from measured discharge records of this slope station site. Water surface elevations were measured from the WWG at the auxiliary gage and from the staff gage or from RP-7 or RP-8 at the base gage at the time of the discharge measurement. Discharge measurements are made using the conventional current-meter method. Because backwater from the Mississippi River could occur when the elevation at Grand Tower station reached or exceeded 338.6 ft (16.67 ft gage datum), events having such concerns were not selected. The computed n-values are listed in the following table. Whenever possible, the computed n-values are associated with a photo taken at the time of the measurement. The photos are arranged from low stage to high stage in order to illustrate contributing factors of n-values at a particular stage.

Date of Observation	Discharge (ft ³ /s)	Average Cross Section	Hydraulic Radius (ft)	Mean Velocity (ft/s)	Slope	Coefficient of Roughness
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		Area (ft ²)			<i>n</i>
3/17/1993	3500.0	2850.0	14.12	0.000025	0.036
5/5/1997	3570.0	3080.0	11.27	0.000026	0.034
3/16/1995	6190.0	3220.0	9.94	0.000054	0.027



05599500 Big Muddy River at Murphysboro, IL
Looking Upstream



05599500 Big Muddy River at Murphysboro, IL
Looking Downstream



05599500 Big Muddy River at Murphysboro, IL
Looking Downstream from bridge of Rt. 127



05599500 Big Muddy River at Murphysboro, IL
Looking Upstream from bridge of Rt. 127

Description of Channel.--This channel is a natural channel. The bed material consists of bedrock overlain with mud and gravel. Low-water channel is subject to seasonal vegetation as well as scour and fill. Both banks are steeply sloped and wooded, overflowing at a stage of about 18 ft into cultivated flood plains. The study reach can be described as meandering, with three large bends.

Floods.--May 2, 1996, 33,800 cfs, gage height 36.33 ft; May 11, 1961, 33,300 cfs; maximum gage height, 37.97 ft May 12, 1961. During the Great Flood of the Mississippi River during the summer of 1993, the site went into reverse flow for several periods. The maximum reverse flow measured was -2,610 ft³/s on Aug. 6, 1993.

Estimated n-Values using Cowan's Approach.--