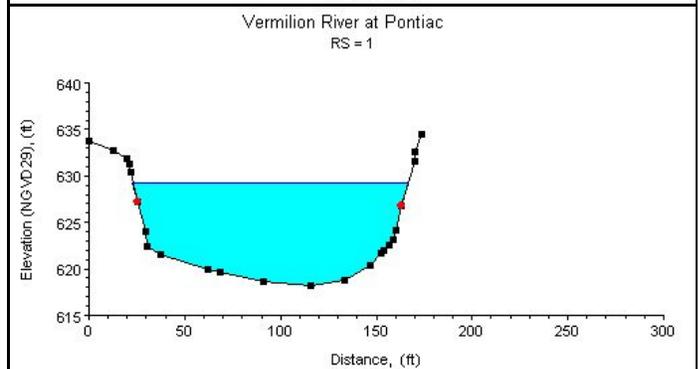
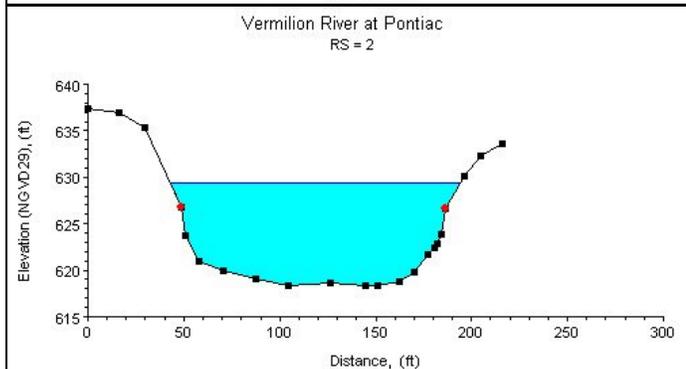
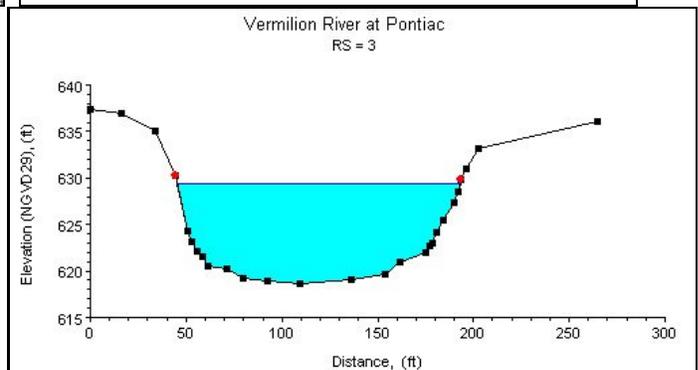
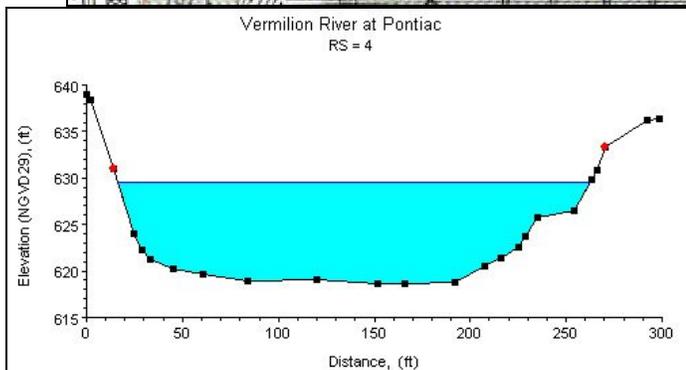
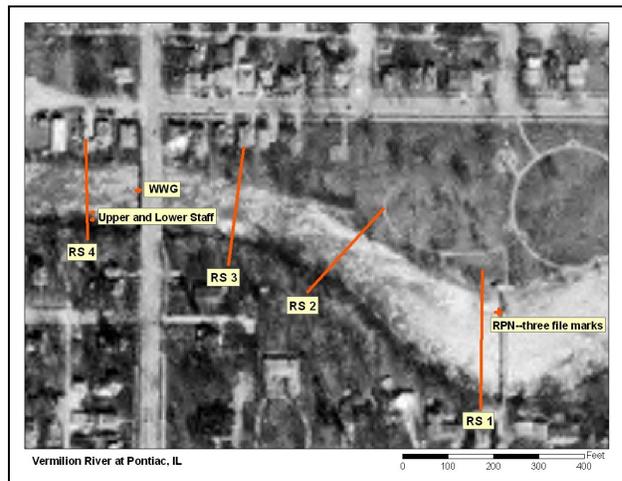


Vermilion River at Pontiac, IL



Study Reach.--The channel under consideration is in an urban setting. The study reach, approximately 940 ft long, is located from the pedestrian footbridge in Humiston Riverside Park to 130 ft downstream of the gage on Vermillion Street bridge, as shown in quadrangle map on the top left. Four surveyed cross sections (surveyed by the U.S. Geological Survey in June 2003) are available for describing the channel characteristics of the study reach. 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. Cross-sectional geometries, as described by four surveyed cross sections, vary gradually and continuously from upstream to downstream (see plots above).

Gage Location.--Lat 40°52'40", long 88°38'10", in SE1/4 SW1/4 sec.22, T.28N., R.5E., Livingston County, Hydrologic Unit 07130002, near center of span on downstream side of bridge on Vermillion Street in Pontiac, 0.1 mi upstream from State Highway 116, 0.8 mi upstream from Turtle Creek, and at river mi 60.3. The USGS streamgage-station number is

05554500.

Drainage Area.--579 sq mi.

Gage Datum and Elevations of Reference Points.--Datum of gage is 619.45 ft. A reference point (RP-N1) is the center mark of three file marks located on the downstream side of the footbridge, elevation of center mark = 645.086 ft. A wire-weight gage (WWG) is attached to downstream side of Vermillion Street bridge. Two staff gages are located 130 ft downstream from Vermillion Street. Elevation of brass screw on the upper staff gage is 631.207 ft; elevation of brass screw on the lower staff gage is 626.619 ft. All elevations are in NGVD 1929 convention.

Stage, Discharge Measurements, and Computed n-Values.--Water-surface elevations were measured from RP-N1 on the footbridge, the WWG and staff gages before and after a discharge measurement. Discharge measurements are made using the conventional current-meter method. 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 Area (ft ²)	Hydraulic Radius (ft)	Mean Velocity (ft/s)	Slope	Coefficient of Roughness <i>n</i>
5/21/2003	488.0	610.8	4.07	0.84	0.000080	0.033
3/31/2004	1900.0	970.6	6.02	2.05	0.000251	0.034
6/1/2004	3550.0	1365.3	7.88	2.73	0.000286	0.032



Description of Channel.--This channel is in an urban setting. Bed material consists of a gravel and cobble mix with sparse patches of drift debris. The earth banks have sparse spreads of bushes and grasses. Some areas along the bank are lined with riprap. Channel geometry is of trapezoidal shape, becoming narrower in the downstream direction. The bottom width of the channel ranges from 180 ft at the upstream end to 100 ft at the downstream end. The banks are about 10 ft high. Top width varies from nearly 256 ft at the upstream end to about 138 ft at the downstream end. The channel has a mild meander.

Floods.--Maximum discharge, 13,100 ft³/s, Dec. 4, 1982, gage height, 19.16 ft.

Estimated n-Values using Cowan's Approach.--0.046 - 0.05