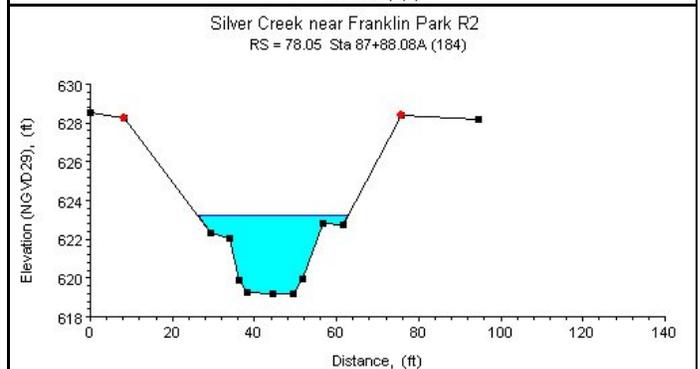
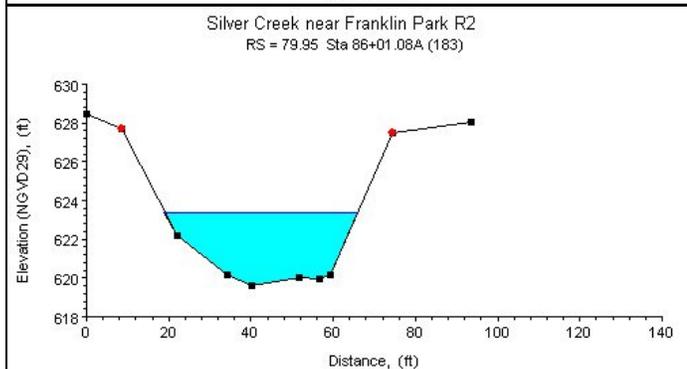
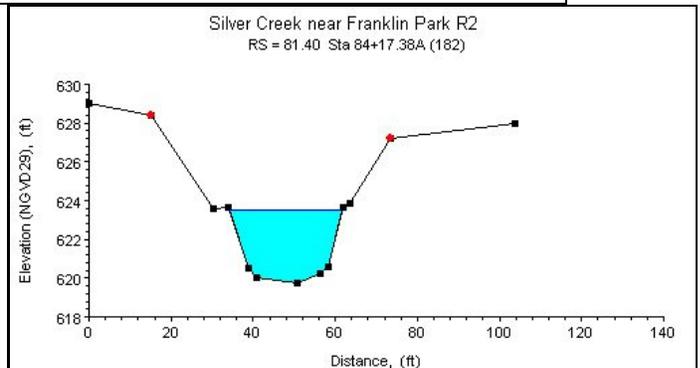
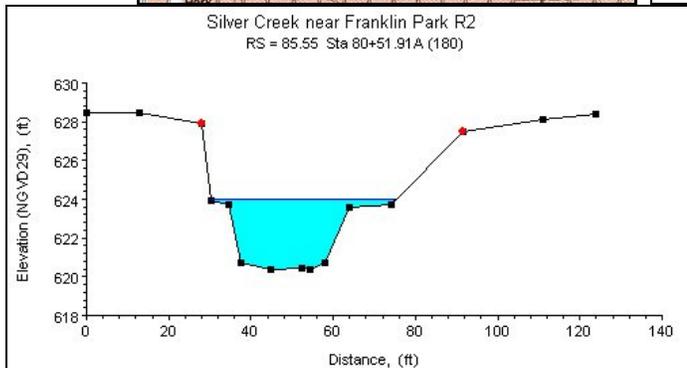
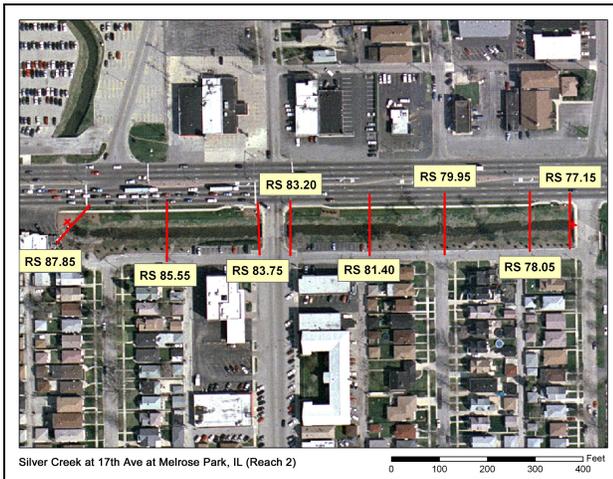
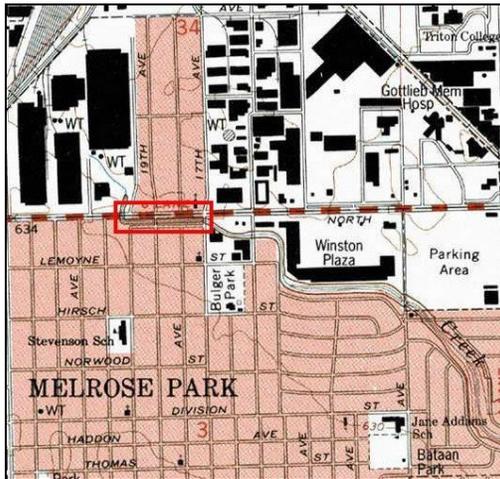


Silver Creek at 17th Ave at Melrose Park, IL (Reach 2)



Study Reach.--The reach under consideration is a constructed straight channel in an urban area. The selected study reach, 1070 ft long, is located between downstream of 20th Avenue (Jewel Drive) bridge and upstream side of 17th Avenue bridge, as shown in the quadrangle map on the top left. Eight surveyed cross sections (surveyed by the Illinois Department of Natural Resources in 1995) are available for evaluating the channel geometries of the study reach. The alignment of the 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. The general channel shapes of the study reach are represented by four selected cross sections as plotted above.

Gage Location.--The location of discharge measurement is lat $41^{\circ}54' 27''$, long $87^{\circ}51' 17''$. The location of this study reach is at NW1/4 NW1/4 NE1/4 sec.3, T.39N, R.12E, Cook County, Hydrologic Unit 07120004. The USGS streamgage-station number is 05530690.

Drainage Area.--10.64 sq mi. (at downstream of study reach)

Gage Datum and Elevations of Reference Points.--The upstream reference point (RP-N4) is two file marks on the 9th I-beam from the right located on the downstream face of North Avenue bridge, elevation=631.06 ft. The downstream reference point (RP-N3) is the top of a bolt located on the upstream face of 17th Avenue bridge, elevation 631.21 ft. Elevations are reported in NGVD 1929 convention.

Stage, Discharge Measurements and Computed n-Values.--Water-surface elevations are measured by tape down from the upstream and downstream reference points before, during and after each discharge measurement. Discharges are measured from the downstream side of Broadway Avenue or from the upstream side of 17th Avenue bridge. Discharge measurements are made using acoustic Doppler current profiler (ADCP) or using 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>
5/2/2006	24.9	39.6	1.48	0.65	0.002172	0.144
6/26/2006	39.0	47.7	1.71	0.85	0.001890	0.112
4/26/2007	112.0	1.95	1.99	0.001435	0.046	
4/25/2007	116.0	59.9	1.96	2.03	0.001428	0.046
1/13/2005	176.0	90.0	2.53	2.05	0.001224	0.047





05530690 Silver Creek at 17th Ave at Melrose Park, IL (Reach 2)
Looking Downstream from Roadway 01/13/05



05530690 Silver Creek at 17th Ave at Melrose Park, IL (Reach 2)
Looking Upstream at downstream side of Roadway bridge 01/13/05



05530690 Silver Creek at 17th Ave at Melrose Park, IL (Reach 2)
From upstream, looking downstream 05/02/06



05530690 Silver Creek at 17th Ave at Melrose Park, IL (Reach 2)
From downstream end, looking upstream 05/02/06



05530690 Silver Creek at 17th Ave at Melrose Park, IL (Reach 2)
Looking upstream from bridge 06/26/06



05530690 Silver Creek at 17th Ave at Melrose Park, IL (Reach 2)
Looking downstream from bridge 06/26/06



Description of Channel.--This channel is constructed and contains grass banks. Bed material consists of coarse sand, gravel, and cobbles. The banks are grass covered. Thick algae grows on the channel bed, especially during warm periods. Channel cross sections are trapezoidal in shape with mild bank slope and a top width of about 40 ft. The study reach is straight.

Floods.--Maximum discharge, 15,500 ft³/s, Apr. 13, 1994, gage height, 20.46 ft.

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