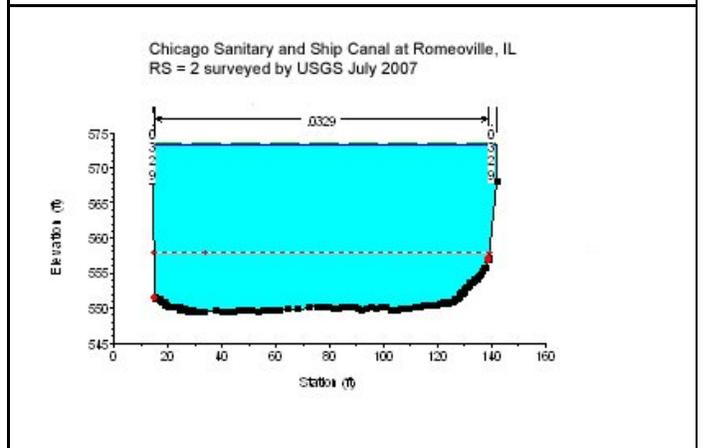
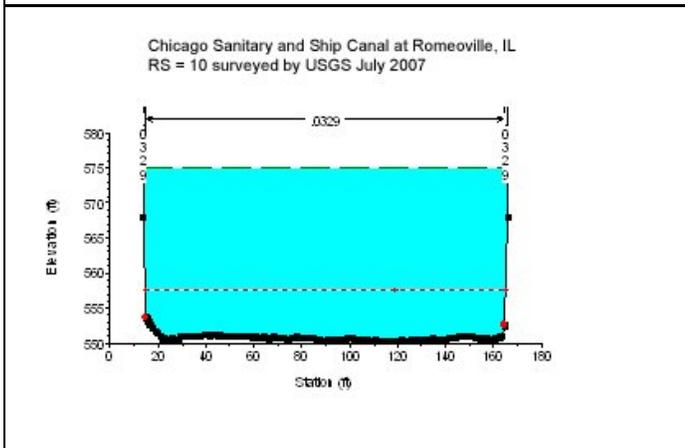
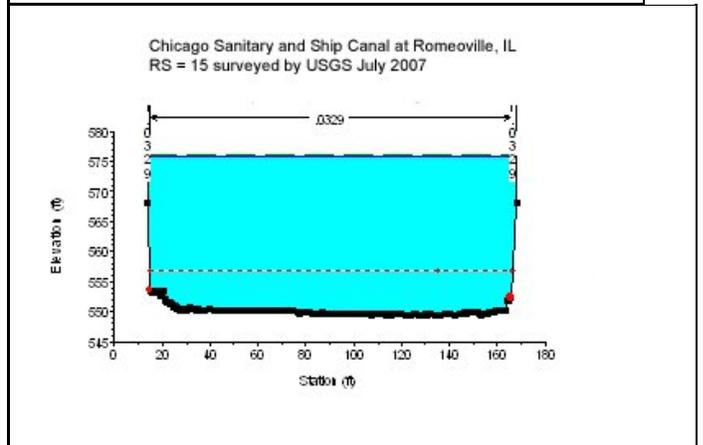
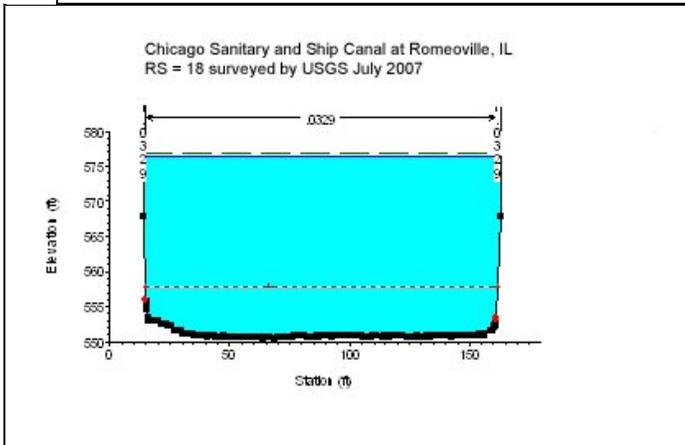
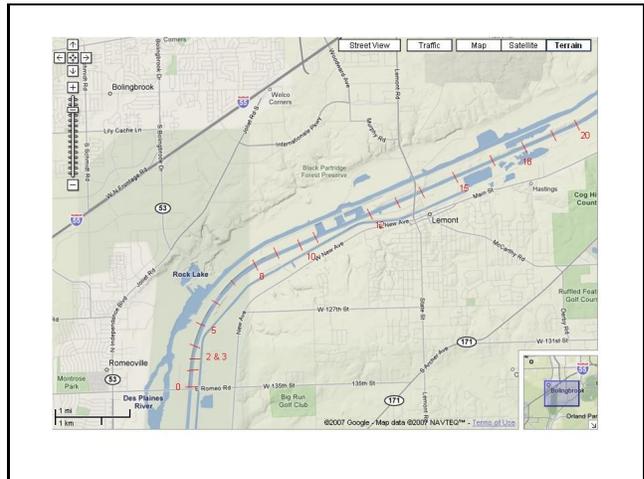


Chicago Sanitary and Ship Canal at Romeoville, IL



Study Reach.--The channel reach under consideration is an excavated channel through rock outcrop. The study reach, as shown in the satellite map (taken from Google map) on the top left, is about 5.9 mile long on the Chicago Sanitary and Ship Canal (CSSC). The study reach is defined by two USGS streamflow gaging stations. At upstream, the USGS streamflow gage at Lemont is 1.5 mile upstream from the Lemont Road bridge; at downstream, the USGS streamflow gaging station at Romeoville Road is at East Romeoville Road bridge. Twenty-one cross sections survey by USGS in July 2007 are available for describing the channel geometries in the study reach. A terrain map (also taken from Google map) on the top right illustrates the approximate variations in channel width and locations of these cross sections. Because most

cross sections have similar geometries, cross sectional plots for river stations (RS) 2, 10, 15, and 18, as plotted above, are selected as representative cross sections.

Gage Location.--The downstream Romeoville gage, USGS streamflow gaging station number 05536995, is located at Lat 41°38'27", long 88°03'34" (NAD of 1983), in SE1/4 SW1/4 sec.35, T.37N., R.1 E., Will County, Hydrologic Unit 07120004, on left bank 40 ft upstream from bridge on East Romeoville Road (135th Street) in Romeoville, 5.2 mi upstream from Lockport Lock and Dam, and at river mile 6.2 of CSSC (Illinois Waterway mile 296.2). The upstream Lemont gage, USGS streamflow gaging station number 05536890, is established in March 2004, to replace discharge measurements at Romeoville. The gage location is at Lat 41°41'29", long 87°57'52" (NAD of 1983), at CSSC river mile 12.0, and Illinois Waterway river mile 302.0.

Drainage Area.--739 sq mi.

Gage Datum and Elevations of Reference Points.--Datum of the Lemont gage is 551.76 ft above NAVD 1988. PR-1 is two file marks in aluminum angle bolted to wall on right bank located upstream 1.5 mi upstream from the Lemont Rd. bridge, elevation = 584.15 ft. A staff gage is located 5.9 mi downstream at Romeoville, elevation of bolt = 581.64 ft. All elevations are in NAVD 1988 convention. The Romeoville gage was discontinued and all equipment removed on May 10, 2006.

Stage, Discharge Measurements and Computed n-Values.--Discharge measurements are made with an acoustic Doppler current profiler (ADCP) by boat near the Lemont gage or downstream near the Romeoville gage. To minimize the backwater effects from Lockport Lock and Dam, data for the n-value study were selected from the ADCP measurements taken during the period when gates at Lockport were all open and that both the Lemont gage and the Romeoville gage were in operation. Water-surface slope for each selected event was determined by taking difference in water surface elevations between the Lemont and Romeoville gages at the time of discharge measurement and dividing by the distance. The computed n-values are listed in the following table.

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>
1/14/2005	10771.0	3599.0	18.42	3.05	0.000070	0.029
1/14/2005	12133.0	3585.0	18.36	3.44	0.000089	0.029
1/12/2005	13130.0	3426.0	17.74	3.90	0.000118	0.029
1/13/2005	14657.0	3668.0	18.68	4.06	0.000127	0.030



05536995 Chicago Sanitary and Ship Canal at Romeoville, IL
View of bank



05536995 Chicago Sanitary and Ship Canal at Romeoville, IL
View of channel



Description of Channel.--The reach is mostly straight with a mild bend towards south near Romeoville. Cross sections generally are in a rectangular shape. The canal was constructed by using dynamite to cut an opening in the limestone outcrop. Bed material consists of bedrock and coarse gravel. Bank material is limestone bedrock. The banks are near vertical walls approximately 30 feet in height with top widths varying between 140 feet and 180 feet approximately.

Floods.--Maximum discharge, 19,466 ft³/s, Feb. 21, 1997, gage height. 23.95 ft.

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