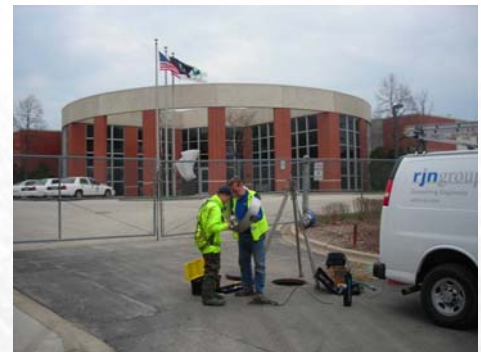


Inflow / Infiltration Study in Deerfield

*A phased cost
effective
approach for the
SSES*

The Village of Deerfield experiences excessive inflow into the sanitary system during rain events. Currently, this system includes two stormwater treatment facilities which are used to bypass sanitary flow during severe storms and pre-treat the flow before discharging to the Chicago River. The Village's objective in undertaking the Sewer System Evaluation Survey (SSES) was to improve, maintain, and upgrade their collection system cost effectively by identifying major sources of inflow. This analysis will be used to develop a program to reduce the use of the existing stormwater treatment facilities and also reduce the incidences of overflow to the Chicago River.



RJN Group, Inc. worked closely with the City to devise a phased cost effective approach for the SSES. As a first step, the Village initiated the Flow Monitoring Study to quantify flows within the system. The RJN team was hired to perform the flow metering, flow analysis and hydraulic modeling of the system. The project area was divided into basins covering approximately 378,000 linear feet of sewer lines.

The RJN team installed a network of twenty-one (21) flow meters at various locations within the Village, and one within an area of the Village of Bannockburn, a tributary to the Village of Deerfield. These meters were monitored for 60 days and included both wet- and dry- weather conditions.



The team was responsible for evaluating and selecting the meter locations; and installing, calibrating and servicing the meters on-site. Two rain gauges were also installed and monitored during the metering period. These were used to calibrate the rain events recorded at the meters.

RJN also performed analysis of the flow metering data to determine the average and peak base flows for dry- and wet-weather conditions, the unit infiltration for each basin and the inflow peaking factor for each meter. Based on the results, the basins were ranked according to severity of defects. Recommendations were made for prioritized field investigations need to determine the additional sources of inflow into the system.

This project was completed on-time and the Village was able to identify those areas that needed most attention for future resource allocations.