

## RJN Prepares Comprehensive Master Plan for Villa Park

RJN Group, Inc. currently maintains the GIS for the Village of Villa Park and was contracted to complete a Water Master Plan for the Village's system, which was aging and had incurred multiple breaks.

The following engineering services were completed by RJN for the Water Master Plan Project:

- GIS update to include age, size, and break history for all water mains
- Preparation of a model of the main components in the system, including all pipes 10-inch and above, water towers, storage facilities, booster stations, and Lake Michigan supply points. (Existing 8-inch mains were added to the skeletal model, where necessary, to complete the system.)
- Preparation of maps of the system by age, size, and break history
- Preparation of maps showing major users, dead-end lines and topography of the area
- Analysis of dead-end lines with particular emphasis on fire protection, and the necessity or feasibility of providing closed loops
- Analysis of existing 4-inch mains and associated pressure concerns
- Analysis of consumption patterns and potential growth areas
- Analysis of system model, including separate pressure zones, and recommendations to improve overall operating conditions
- Preparation of a recommended plan with associated costs. The methodology for the plan was based on the replacement of pipes with severe break histories (more than 10 per segment), replacement of undersized pipes that contribute to low operating pressures, improvement of the system performance and fire protection by closing specific dead-end lines; and upsizing of certain arterial pipes from 8- to 10-inch to provide a consistent back-bone within the Village under emergency situations. The plan was prepared on a 10-year time frame with improvements prioritized based on need.



One area of town known as the "ABC streets" was constructed during the 1950's and has an extensive history of multiple line breaks. As a follow up to the Master Plan Study, RJN is designing the replacement of water main in this area (approximately 12,000 linear feet). It is anticipated that this project will be funded using an EPA Water Supply Loan. RJN is assisting the Village by preparing the Project Plan and all corresponding application documents to facilitate the loan procurement.