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Engineering Consulting and Information Technology Services

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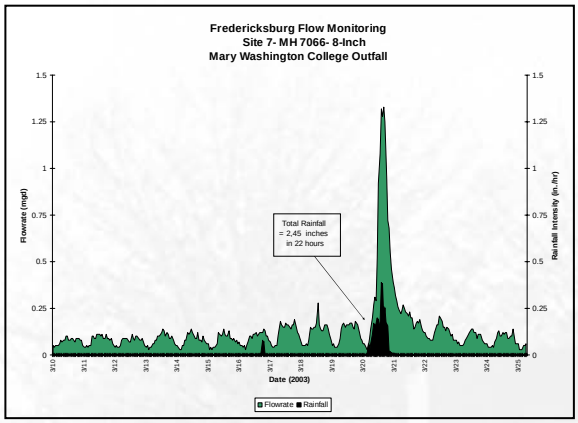
Kenmore Area Sanitary Sewer Facilities — Fredericksburg, Virginia

Metering, modeling, and night flow isolation were key project tasks



Reoccurring I/I problems manifested as flooded basements in the historic City of Fredericksburg, Virginia. After encountering a routine situation following a record rainfall event in September 2000, the City developed a plan to analyze the sanitary sewer flow conditions and prevent SSOs. The goals of the study included determining conditions and source of I/I, and outlining an action plan to reduce the potential for damage to private property.

In 2002, the City selected RJN Group, Inc. to assist with an investigation of an old and historic Kenmore section where I/I-related peak flow was causing many customer problems. The project area consisted of 75,000 feet of sewer and 300 manholes.

Field investigation included extensive flow monitoring and collection of key system information necessary for modeling through manhole inspections and an elevation survey. The entire system was broken down into a series of small basins with night flow measurements collected during wet-weather. Smoke testing and private sector source investigation included a public relations program where residents routinely affected by flooding were interviewed along with an external and internal inspection of the homes.

RJN's solution incorporated temporary monitoring and modeling, which led to the smallest and most efficient problem area for recommended corrective action. RJN directed sewer cleaning where the model showed that basement backups would be greatly reduced.

Throughout the process, RJN focused on collecting and providing a maximum amount of information with a minimum amount of field effort. Metering was reduced to four weeks, prior survey reports were examined, and the model was shortened to key nodes within the system. Modeling also led to extensive mapping updates.