CASE STUDY

Rotoshear®

Village of Deerfield, Illinois

Fine screens are an integral part of cost-effective CSO management

Problem

Back in the late 1980s, the Village of Deerfield, Illinois, with a population of 17,000, assessed its wastewater and conveyance needs. The municipality had a separate sanitary sewer system, but the sewers were subject to large amounts of infiltration and inflow during storm events.

The high flow rates overloaded the sewers and treatment plant, resulting in surcharged sewers, basement back-ups and occasional discharge of untreated sewage into local creeks.

Solution

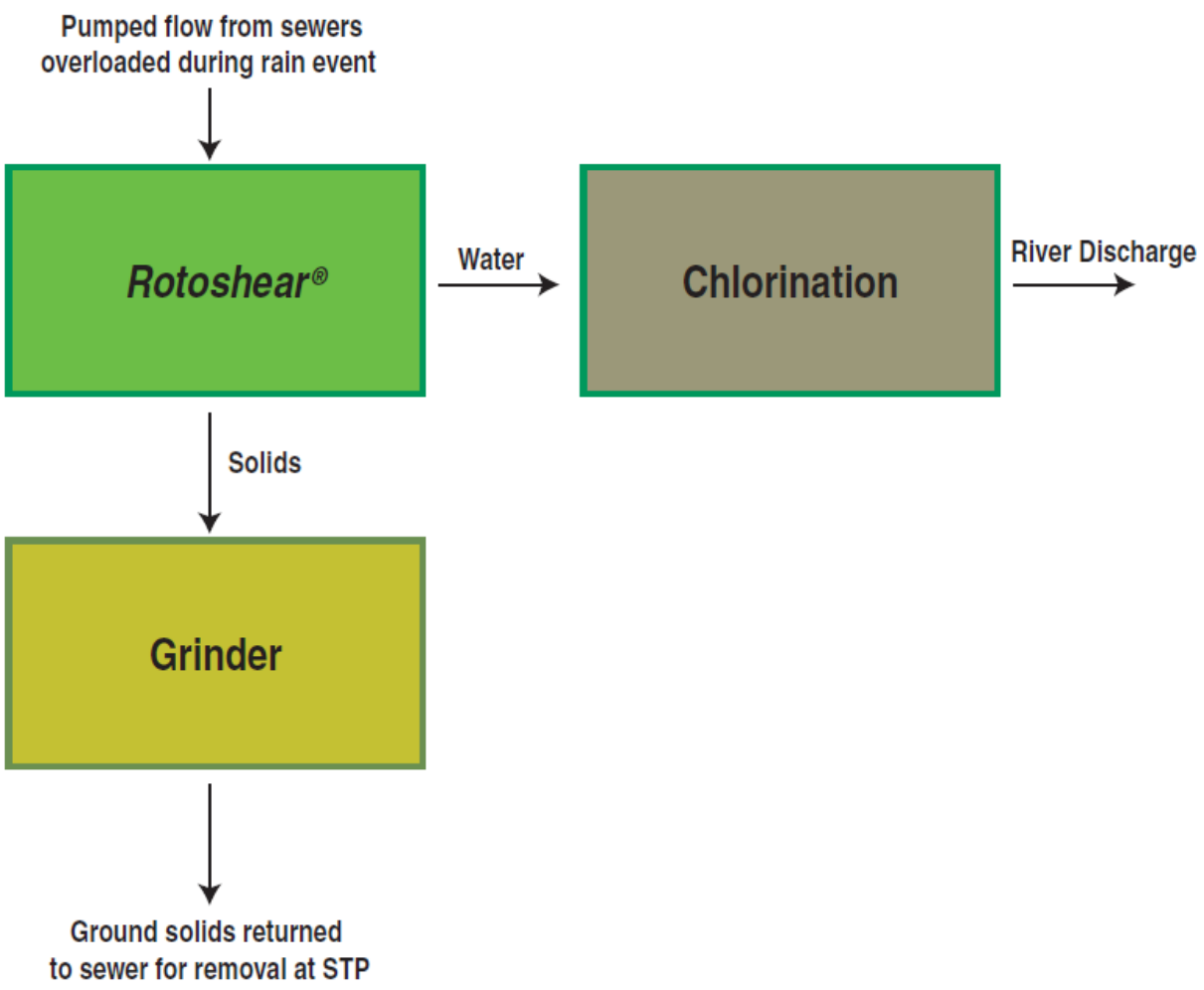
The Village hired Baxter & Woodman, Inc., Crystal Lake, IL, to study the problem. Of the alternatives, the most cost-effective solution involved removing the floatables and solids with a fine screen followed by chlorination.

The plan called for two large capacity pumping and treatment facilities set up at strategic locations in the sanitary sewer system. One was rated 20 MGD (3154 M3/H) and the other, 15 MGD (2356 M3/H). The total installed cost, including engineering fees, was about $0.12 per GPD of capacity.

Both facilities are designed to treat excess sewage flow during wet weather periods and to meet EPA effluent limitations. Each plant has three medium sized Hycor Rotoshear® fine screens with .040" (1 mm) screen openings to remove solids and floatables. The influent, which flows through the fine screens, is disinfected by chlorination and then discharged into the respective branches of the Chicago River.

Deerfield Pumping/treatment facilities are constructed on residential lots and designed to look like large houses. They are well-designed and functional, and earned an engineering excellence award for the Village and Baxter & Woodman from the Consulting Engineers Council of Illinois.

The system works efficiently and was extremely cost-effective. Parkson frequently uses fine screens as a cost effective alternative to primary clarifiers to treat wastewater. Savings can be substantial compared to the civil and capital costs of settling tanks and appurtenances. This method of removing solids and floatables is accepted by the Water Environment Federation as found in WEF Manual #8. ■



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