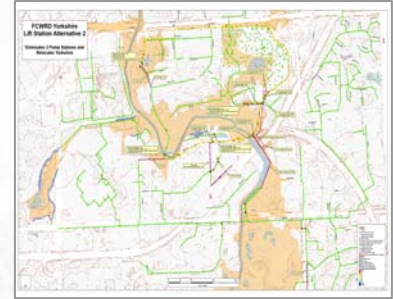


Facility Consolidation and Design

Feasibility study assessed current conditions to develop consolidation strategy

The Flagg Creek Water Reclamation District (FCWRD), located in southeast DuPage County, covers 25 square miles and serves 83,000 residential and commercial users. RJN Group, Inc. completed a study to assess the feasibility of consolidating four aging lift stations, and the design to divert flow passing from a fifth District lift station to the Metropolitan Water Reclamation District (MWRD) for treatment.



The goal of the study was to develop assessments to determine the feasibility of relocating / consolidating the Yorkshire, Steeple Chase, Harger Road, and Timber Trail lift stations. The District had limited historical information on the design and construction of these facilities. Assessments were completed by:

- Evaluating the existing collection system conditions
 - Field surveys of manhole structures
 - Review of existing flow and station O&M data
- Assessing and projecting future system needs
 - Flow analysis identified excessive I/I at the Yorkshire and Timber Trail lift stations
 - Planned expansion of a hospital facility which would contribute to flow
 - Hydraulic modeling
- Developing four alternatives
 - Rerouting all stations by gravity to a single location
 - Reducing the number of stations from four to two
 - Relocating only the Yorkshire station to a new site
 - Maintaining all existing sites
- Analyzing and estimating costs associated with each alternative
 - Engineering design costs
 - Construction costs
 - Ongoing operation and maintenance costs

After comprehensive analysis, the lowest cost alternative - rehabilitation of the existing pump stations - resulted in equipment savings of approximately \$3 million over a twenty-year life of the mechanical components and a fifty-year life for the gravity sewers.



RJN completed design work for the fifth pump station, Westdale Gardens. This station served an area of Cook County, but discharged flow under Interstate 294 into DuPage County for treatment at the FCWRD plant. The objective of the design was to re-route the flow to MWRD plants for treatment. The work required coordination with MWRD for pump selection, detailed hydraulic calculations, power, controls and emergency power generation. When constructed, the station will transport flow through a 5,700 foot force main provided by MWRD.

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