

Treatment/Process Feasibility Study City of Minneapolis, MN

Minneapolis depends entirely upon the Mississippi River for its water. The intakes and the primary treatment plant complex are located on the river just north of the City proper. The Minneapolis Water Works treatment facilities include the Fridley Softening Plant (150 MGD), the Fridley Filtration Plant (120 MGD), and the Columbia Heights Filtration Plant (80 MGD). Related facilities include five pumping stations, five reservoirs, and the dewatering plant, which handles residuals from the water treatment plants. The plants, pumping stations, reservoirs, and appurtenant structures were constructed over a period of approximately 100 years, with improvements and modifications made as needed during that time. The resultant system is very complicated, presenting many treatment challenges to the production staff.

Progressive Consulting Engineers, Inc. (PCE) was part of the team selected to do a comprehensive study of the Minneapolis water treatment processes. The objectives of the study were to evaluate the existing water treatment process and facilities; assess alternatives to meet current and future re-regulations regarding water quality and performance; and to develop a plan for improvements to meet future needs, while retaining flexibility to meet changing conditions. The study was organized into five major tasks:

1. Process testing and evaluation
2. Evaluation of taste and odor control
3. Pilot testing
4. Facility evaluation
5. Tracer studies and hydraulic evaluation



Existing and proposed treatment processes were studied by bench and pilot testing over three seasons, in order to test the raw water over an entire seasonal cycle. PCE performed tracer studies (a total of 72) at various flows throughout each of the plants. PCE also performed a hydraulic analysis model for each of the plants. Immediate modifications and assessed potential hindrances to future plant expansion and modification were proposed. The final report included preliminary layouts and costs for feasible process alternatives, a PC-based hydraulic model of the treatment and storage system, and a matrix of recommendations for improvements based on potential future SDWA requirements.

Client: City of Minneapolis
Construction Year: 1995
Fee: \$45,000



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