Investigating for a new well field in Illinois.

PROJECT PROFILE
WATER MANAGEMENT

CLIENT
Illinois American Water

MINIMIZING WATER HARDNESS AND TREATMENT COSTS

Champaign, Il

SITUATION:

Illinois American Water (ILAW) operates two well fields located within and just outside Champaign. In response to increasing demand, ILAW decided to expand capacity by developing a new well field and hired Layne to investigate the existing, future, and potential of groundwater resources around Champaign.

SOLUTION:

Layne conducted a regional groundwater demand analysis, developed a groundwater model capable of predicting the regional and local impacts of pumping at candidate well field sites, determined on the potential yields of the new well field, and proposed an arrangement of wells to optimize resource use.

As part the project, we provided the scientific and technical expertise for ILAW when working with the public and the Illinois State Water Survey. Our investigation provided the necessary data and technical analysis to not only determine a realistic solution but also to withstand the scrutiny of multiple stakeholders.

Additionally, we estimated the number of residential and other wells that would experience significant water level declines as a result of the new well field. In this analysis, we used the well log database from the Illinois State Water Survey, our knowledge of the Mahomet Aquifer derived from previous modeling work, and a field survey to verify existing well logs to estimate the number and location of potentially affected wells. We used a groundwater flow model developed for well field yield analysis to simulate the effects of pumping at the new well field and to determine mitigation plans for each well impacted well.

SERVICES EMPLOYED:

+ Groundwater Flow Modeling
+ Hydrologic Investigation
+ Integrated Water Supply Planning