PA DEP Small Drinking Water Systems
Engineering Services Program (ESP) Case Study

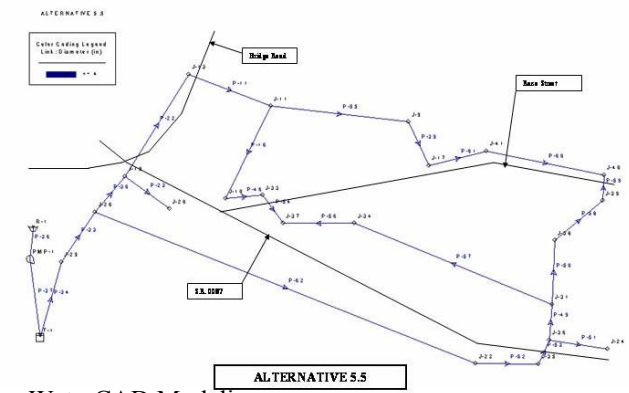
Client Name: Mehoopany Township Municipal Authority
Location: Mehoopany Township, Wyoming County
Project: Engineering Assessment

Background:

The Mehoopany Township Municipal Authority (MTMA) serves a population of approximately 90 people through 33 connections and has an average water usage of approximately 8,500 gallons per day (gpd) through a well source. Well #1 is approximately 320 feet deep and reportedly has a safe yield of 10,000 gpd. Treatment of the groundwater consists of chlorination. Treated water is pumped to a 1,500 gallon underground concrete storage reservoir. The distribution system consists of lead, ductile iron, and polyvinyl chloride (PVC) piping of various sizes.

Public Health Challenges:

Low pressures and low flow throughout the distribution system make it inadequate. The existing well has been deemed as an acceptable water supply, however it was reported that up to 30 percent of the water was unaccounted for. Also, some residents have a holding tank in their basements with a well booster pump to pump the water to the first and second floors of their homes. There are no hydrants in the system.



WaterCAD Modeling


Bore and jack operation during construction

Capacity Issues:

Technical – The source is providing sufficient yield however, the distribution system is not providing enough pressure or flow to the customers.
Managerial – MTMA recently took over this once private water system and could not effectively operate and maintain the system.
Financial – Due to the small customer base, MTMA had limited financial capabilities to raise capital funds for replacement of the entire distribution system.

Actions:

A Engineering Assessment was completed to improve the MTMA public water system and bring it into compliance with regulatory requirements. Options evaluated included interconnection with a neighboring system, development of ground water sources, and various distribution system improvements. WaterCAD modeling was completed to aide in predicting the effects of waterline replacement, looping and pipe sizing throughout the distribution system. Also included in the study was identification of a secondary water source and a new potable storage tank.

Outcomes:

The Engineering Assessment evaluated the water system and determined the most cost effective solution the system's needs. Based on the assessment, MTMA identified that replacement of the entire distribution system, development of a new groundwater source, and construction of a new storage tank as the most cost effective and viable solution to their water system needs. Hydrogeologic and engineering design services have been initiated to implement the alternative. Construction of the distribution system has recently been completed and new source and storage tank design are underway.

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