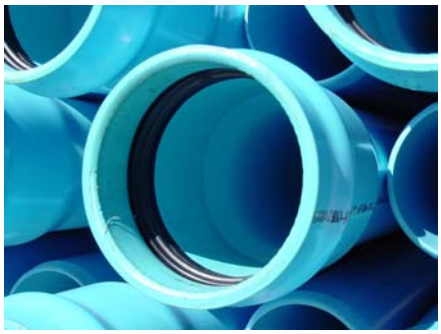
PA DEP Small Drinking Water Systems Engineering Services Services Program (ESP) Case Study

Client Name: Hazel Hurst Water Company
Location: McKean County, Pennsylvania
Project Name: Distribution System Improvements



Background:
The Village of Hazel Hurst is located in Hamlin Township, McKean County. The Hazel Hurst Water Company (HHWC) serves 76 residential and commercial users. The HHWC completed a Well Development and Transmission main Project which has increased pressures throughout the distribution system.

Public Health Challenges:
The aging distribution system saw an increase in the number of leaks due to the increased pressure created by the newly developed well. To repair the leaks the system needed to be shut down causing numerous outages for the customers.

Capacity Issues:
Technical – The existing distribution system consisted of various pipe materials and sizes. The oldest pipes in the system were galvanized pipes and the source of various leaks due to corrosion. Since there are no meters in the system, it was difficult to ascertain the amount of leakage that was occurring. At times the average daily demand of 28,000 gpd quantity measured as high as 60,000 gpd. No leak detection program had ever been implemented to address these types of issues. Also, the HHWC lacked an accurate distribution system map to determine where the leaks were and how to isolate them through valving.
Managerial –HHWC is managed by an elected, seven-member board. HHWC can not mandate connection to their system; consequently over the years a number of customers have reverted to wells reducing the ever declining customer base. The funding resources for HHWC's capital improvements were minimized.
Financial – Due to the small customer base, HHWC could not undertake major system improvements in a cost-effective manner.

Actions:
Due to the distribution system condition, increased leakage was anticipated after the new well and storage tank (Phase I) were placed on line. Since the new storage tank levels were designed to improve pressure throughout the distribution network, an interim operational measure was necessary to minimize leakage until the new distribution system could be completed. The tank operational levels were temporarily lowered to reduce the pressures and the resulting increased water leaks until Phase II completion.

This second project completed the renewal of the distribution system by providing an upgrade and eliminating the conditions and deficiencies. The improvements included the installation of approximately 16,000 feet of PVC distribution pipe, system control and isolation valves, and appurtenances. The project involved four (4) bore and jack crossings of heavily traveled Historic Route 6, nine (9) new fire hydrants, and three (3) stream crossings. The installation of the fire hydrants at strategic locations provides fire protection throughout the entire Village which was not available prior to the improvements.

Outcomes:
Since the completion of the two capital improvements projects through the ESP, the HHWC has reduced its average daily demand; conserving water resources and reducing operating costs and customers' water costs. The installation of the new distribution system has improved property values and has helped a struggling community enhance community development, reducing blight along Pennsylvania's Historic Route 6 corridor. HHWC now complies with the Safe Drinking Water Act and provides safe, reliable water to its customers.

Small Drinking Water Systems
DEP
Engineering Services Program (ESP)

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