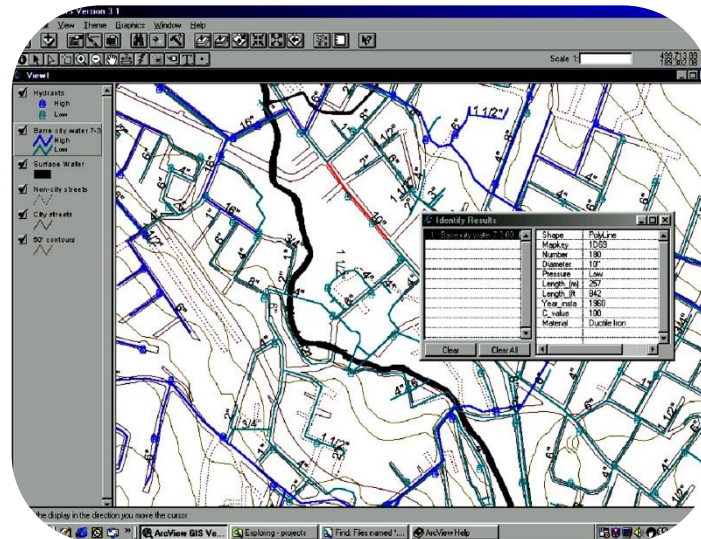


WATER SYSTEM GIS BASED COMPUTER MODEL

CITY OF BARRE, VERMONT



Water Modeling

The original computer hydraulic model of the Barre water system was developed in 1984 using the MS-DOS based KYPIPE program with a hand-drafted basemap. Since the original water model development, hydraulic modeling programs have improved significantly to include graphic computer representation and import and export of GIS-based data. Considering these advances, the City of Barre identified the need to update the hydraulic computer model and basemap and incorporate recent technology.

DG utilized the detailed orthophotography available for the entire City to form the basis for a Water System GIS. Multiple GIS features were included in the basemap, such as E911 point data, 50 ft contours, surface waters, georeferenced topographic quads, soils and wetlands.

The project allows computer simulation results, such as pressure contours, available fire flows and hydraulically deficient areas to be displayed instantaneously on several alternative background maps.

The end product is an interactive map of the water mains, fire hydrants, alarm boxes and streets within the City of Barre and Town of Barre, integrated with an updated computer model of the water system, which allows the City to produce multiple up-to-date infrastructure maps from a single project file.

KEY FEATURES:

- Water main database included pressure zone, installation date, material, size, roughness coefficient and length.
- Hydrant and fire alarm box databases incorporated in water system mapping.
- Water map utilized updated 911 city street map.
- Creation of unique coverage's and new data layers using digitizing and querying techniques.