



# Bethlehem Township and Bethlehem Township Municipal Authority GIS Project

ARRO provides an evolving, smart GIS solution.

## Background

In 1995, Bethlehem Township and the Bethlehem Township municipal authority recognized that a Geographic Information System (GIS) would be responsible management and ultimately serve as an invaluable tool for efficient community planning and data management for the present and beyond.

## Challenges

ARRO would need to conduct field surveys to obtain horizontal and vertical information (location, rim elevation, manhole inverts, sewer main length and slope) about sewer lines not shown on existing plans, scan pumping station facility drawings to create an interactive image library, and create efficient, user-friendly methods of accessing the GIS data throughout the township.

## The Solution

ARRO provided a comprehensive solution that generated several GIS coverages via the digitization of spatial features, including:

- Sanitary sewer system
- Sanitary sewer easements
- Road centerlines
- Contours
- Buildings
- Developments
- Fire hydrants
- Street lights and signs
- Zoning
- Storm sewers

All GIS coverages created have included relevant attributes.

ARRO has scanned over 1,200 sanitary sewer record and construction plans. One of the customized document management tools created allows the linkage and retrieval of these images upon a mouse click of a desired sanitary sewer.



### PROJECT:

Bethlehem Township GIS Project

### CHALLENGE:

ARRO ultimately would be tasked to develop the township's base map and layers (including digitizing hundreds of plans) and integrate with ArcView for compatibility and user friendliness.

### SOLUTION:

ARRO continues to assist Bethlehem Township in the development of its GIS. Utilizing a phased approach, the township has created an extremely progressive and comprehensive municipal geographic information system with continued support from ARRO.

## The Results

The project culminated with the development of GIS applications for ArcView software, including:

- Viewing standard specifications and development review documents
- Viewing CADD standard details
- Viewing scanned reference drawings and record drawings
- Custom report generation to simplify record keeping and streamline workflow
- Interactive multi-media televised inspection form interfaces

ARRO also updated county GIS base map layers, including municipal boundaries, tax parcels, and road and street names, and provided training to authority staff. ARRO continues to enhance the township's GIS through the development of additional tools, including:

- Sanitary sewer modeling
- Feature spatial editor
- Storm sewer maintenance management for MS4 reporting
- Pavement management
- Sanitary sewer maintenance management

Most recently, ARRO rolled out a customized tool allowing emergency response personnel to view building floor plans and possible hazard information. The tool can be accessed by crews from anywhere in the township, including en route to and on the scene of an emergency. In addition, ARRO provides the township with ongoing GIS/GPS technical support and training.

## In Their Own Words

**"ARRO'S EXPERTISE IN APPLICATION DEVELOPMENT WITHIN THE ESRI ArcMAP FRAMEWORK HAS PROVIDED OUR STAFF WITH THE ABILITY TO STORE AND RETRIEVE INFORMATION AS WELL AS ACCESS ARCHIVED DRAWINGS WITH THE TOUCH OF A BUTTON. ARRO HAS HELPED BRING OUR UTILITIES TO OUR DESKTOPS."**

— STEVE HUNSBERGER

DIRECTOR PHYSICAL PLANT AND INFORMATION SYSTEMS

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