City of South Pittsburg
dba/ Marion Natural Gas Systems
138 Cedar Avenue
South Pittsburg, TN 37380

Final Report for PHMSA Grant # DTPH56-11-G-PHPT21

The City of South Pittsburg's Marion Natural Gas System provides natural gas within the City of Pittsburg, TN and the surrounding areas. The City has completed the implementation and upgrade of their Geographic Information System (GIS) for the purposes of utility asset management and operations. The project components are as follows:

- GIS/GPS software upgrades, implementation, and training
- Data model improvements and data cleanup
- GPS collection
- Implementation of utility specific GIS tools
- Field laptop

The utility's GIS is based on ESRI technology. The initial task was to upgrade the desktop GIS software from ArcView 9.2/9.3 to ArcEditor 10.0. Along with that, the associated GPS software packages were upgraded as well (Trimble GPS Analyst, GPScorrect, ESRI ArcPad). For mobile GIS mapping the ArcGIS Publisher extension was installed. Utility staff received a two-day onsite training on all the new and upgraded components. Up-to-date software technology ensures that the utility is leveraging its available GIS data and utilizes it to its maximum potential to meet today's regulatory and safety guidelines.

In a next step, the existing utility database model for natural gas was analyzed and evaluated to make sure it was adequate and met the requirements for subsequent data migration and population. By implementing a robust database design incorporating all relevant system components and taking into consideration future applications, employees of the utility can now make sound and informed decisions in order to not only enhance the efficiency of the utility's operation but also increase safety for its customers.

Once the data model improvements were completed, the existing gas data was migrated. Additional information, previously not in GIS, was captured and populated into the database. Lastly, all gas meters and risers were GPS collected and imported into the GIS with the relevant attributes. Subsequent rigorous quality control ensured that all data was both spatially correct as well as the associated information was accurate. The solid database along with its population with all relevant information provided two accomplishments: first and foremost a solid foundation and standard for required information was set; and secondly, it allows utility staff to assess what future information needs might arise for daily operation.

The GIS software was enhanced by installing a suite of utility-specific tools that aid not only in asset inventory and management, but also simplify and streamline varying analysis and operations workflows. An interface to the Customer Information System (CIS) enables GIS users to associate service lines with the right customer and access relevant information. An isolation trace tool quickly and easily lets staff determine which valves need to be shut off in case of a leak or incident, and which customers will be affected. Several reporting tools allow for convenient and repeated summaries of specific information, including the annual DOT Report. A utility risk analysis tool allows for the assessment of potential threats to the system and its customers.

Also under this grant a laptop was purchased for the field crew to allow them access to relevant GIS data and retrieve pertinent information while out of the office.

This project was completed in September 2012 at a final cost of $49,500. The City of South Pittsburg and the Marion Natural Gas System look forward to the long-term use of its new and improved GIS as well as the benefits it will bring to its customers.