

Bright Ideas—GPS Solution Lights the Streets of St Helens

Customer
St Helens Council

Project
Cost-effective GPS solution
to improve council services

Project Date
2004 to 2005



A UK community finds a cost-effective GPS solution to improve services to citizens

What happens if the streetlight outside your house flickers into darkness? Who do you call and how soon will it be fixed? If you live in the St Helens area, near Liverpool in the United Kingdom, and you report a problem, the location is checked on a digital map displayed on a desktop computer and repair work is organized immediately. This remarkable efficiency is due to St Helens Council embracing GPS technology to improve its services.

The UK government (under its E-gov Agenda) is committed to putting all of its services online by the end of 2005 and currently has more than 100 technology projects under way. Thanks to the St Helens project, residents can now contact a call centre and talk directly to relevant staff about council services. To deliver the services efficiently, it is vital that call centre operators have access to accurate on-screen maps showing the location of all council assets within a particular borough.

The task of creating the maps fell to the engineering-GIS (Geographic Information System) department who determined the best way to handle this enormous job that included, among other things, accurately locating and recording the GPS (Global Positioning System) location of approximately 24,000 streetlights.

Clear objectives

Historically, a great deal of descriptive asset data for St Helens had been held within Symology, the council's database, while the GPS locations of the various assets were stored on a wide range of paper maps with varying degrees of accuracy.

The council's engineering department had to find a cost-effective and efficient way to collect geographic coordinates for all of the lighting assets held in the Symology database – starting with the 24,000 streetlights. In addition, the data had to be easily importable to Symology, usable by the call centre personnel (as a visual display in GDC Planweb software) and finally, maintainable by the council's street lighting section staff.

Trial and error

Previous data collection experience enabled the engineering department to collect and manage the huge amount of data required to make the project a success. While a PDA (Personal Digital Assistant) was sufficient in residential areas where data collected could be matched with home addresses, GPS was clearly the only useful system in rural and industrial zones where landmarks were insufficient to accurately locate streetlights.



In the past, PDAs had lacked the ruggedness, reliability and accuracy required for the job (not to mention that they are not equipped with GPS), so the council looked for other ways of recording data. In 2002, a Trimble® GPS Pathfinder® Pro XR receiver (in a backpack) was used along with a Trimble GIS TSC1™ datalogger loaded with Asset Surveyor® software.

Although the system delivered on all the areas where the PDA had failed, it was still proving time consuming to transfer collected data to the Symology database and to the council's corporate GIS, MapInfo. Additionally, the council's surveyors were attracting unwanted attention due to the visibility of the backpack. But, GPS was still the definitive solution needed to complete the project. Jim Dutton, Engineering GIS Coordinator for St Helens Council, contacted Trimble dealer Survey Supplies, to arrange a demonstration of the then newly released Trimble GeoXT™ handheld, a submeter GPS and Windows CE device combined in a single handheld unit. The unit was found to be ideal for the job – small enough to be discreet and yet sufficiently rugged with a large data storage capacity and clear color screen display.

Simplifying data transfer

The GeoXT was also a perfect platform for Survey Supplies' FastMAP CE data-capture software, which eliminated many of St Helens' earlier data transfer problems.



PROJECT HIGHLIGHTS

- St Helens embraces GPS technology to improve services to citizens
- City collects geographic coordinates for 24,000 streetlights to streamline routine maintenance and repairs
- Trimble's GeoXT is the perfect tool for the task—rugged and discreet with a large data storage capacity
- Future plans include linking digital photos of assets to the GPS location data in the GIS



"In previous years it has been difficult for data collected in the field to be linked back into Symology without manually entering the unique Symology number for each asset. That was very time consuming and open to error," said Dutton.

This problem was overcome at the beginning of the project with a data dump from Symology into a comma-separated text file with no coordinates. This was sent to the support staff at Survey Supplies, who created a holding database in Microsoft Access.

Data was then classified according to electoral ward and downloaded a ward at a time onto the Trimble GeoXT. The GeoXT was then taken into the field, data checked by address or streetlight number and individual records moved to their correct geographic location using the GPS coordinates.

Back at base, FastMAP Data Manager was used to download the modified data from the GeoXT, updating the Access database and in turn, Symology. The software enabled easy transfer of data to MapInfo and then onto the corporate Planweb system for use by call centre staff.

Students were employed for data collection, which made the project cost-effective and provided the students with valuable work experience. Additionally, the extended battery life of the GeoXT means that data can be uploaded in the morning for a full day in the field with no need to return to base. At the end of the day, the equipment is charged in preparation for the next morning.

Future developments

St Helens cites the ease of use and quick data transfer from field computers to their corporate systems as two key benefits that the Trimble GeoXT and FastMAP software have delivered. The simplicity of the system has also meant that less training time is required so that future plans can be expanded. These are likely to include linking digital photos to other information in the database, such as GPS location and physical description of assets.

"The ultimate goal is to give an X,Y coordinate to every single highway asset the council is responsible for. This information will be used for maintenance and by the call centre," said Dutton. "Technical support from Survey Supplies has been excellent, especially in developing the database system for us to use in data collection. We look forward to moving on to the next stage of our project."

The equipment used on this project includes:

- GPS Pathfinder Pro XR receiver
- TSC1 datalogger
- Asset Surveyor software
- GeoXT handheld

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