



Rochester Public Utilities Integrates Networkfleet® GPS Data and Esri ArcGIS Maps to Benefit 82,000 Customers

Summary

Rochester Public Utilities can now dispatch service trucks faster during power and water service interruptions, thanks to the integration of Networkfleet® GPS data and Esri ArcGIS Maps.

Problem

Rochester Public Utilities (RPU) provides power and water services to more than 47,000 power customers and more than 35,000 water customers in the Rochester, Minnesota area. During a service interruption, RPU system operators use an enterprise GIS program, ArcGIS ArcMap, to display geographical and tabular data relating to the outage. ArcMap is geographic information system (GIS) software from Esri. It allows datasets from across an organization to be brought together to create a complete picture of the infrastructure.

“Using ArcMap, we can see an aerial photograph of where the outage has occurred, along with the location of power lines, fuses, transformers, etc. in the affected area,” said Ryan Moore, GIS specialist at RPU. “Color coding on the map even shows which houses are impacted and which ones have already called in to report the problem.”

However, there was one thing missing: Information about the location of service trucks in the area. With this additional piece of data, RPU could more quickly get to the outage and begin repairs.

Solution

“RPU was already using Networkfleet’s GPS wireless fleet management system to track the location of certain trucks,” explained Moore. “However, we knew it would be more beneficial if we could incorporate the truck locations as a layer within RPU’s enterprise GIS.”

Being able to see truck locations in relation to information about outages turned out to be a straightforward process, thanks to the Web-based API that Networkfleet provides to every customer.

“We developed a Visual Basic.Net application that runs every two minutes to reference Networkfleet’s API,” Moore said. “The application calls a function that returns the truck’s current GPS coordinates and truck numbers. These two pieces of data are then stored in an SQL database for historical purposes. It is also written to a text file that is utilized in ArcMap as an XY event layer.”

The Visual Basic application runs as a Windows service every two minutes with no user interaction required. The Windows service reads the data returned in XML file format, writes it to a table, then converts it to a text file on the server.

Additionally, users can click a custom button on the ArcMap Toolbar to add the text file to ArcMap, thus refreshing the data layers based on the most current GPS coordinates (see sample site map) from Networkfleet.

This is a sample map with Networkfleet truck locations overlaid on ArcMap-generated maps. Underground utilities appear as red lines. The numbers are feeder IDs, and the lighter red lines are service lines. During an outage, a purple circle would show the service points affected; dots identify houses that have been impacted. The dots turn yellow if a resident has called to report the outage.



Results

- More efficiently dispatched field crews.
- Improved response times to better service more than 82,000 customers.
- Increased safety by pinpointing vehicle locations during emergencies.

Results

Using the Networkfleet API, RPU is able to pull information about truck locations into ArcMap. This provides a dynamic display of current vehicle locations overlaid on GIS data. Users can see where vehicles are in relation to addresses and streets as well as to important resources such as power lines, transformers, and fuses.

According to Moore, the ability to more efficiently dispatch field crews is invaluable to ensuring the fastest possible response during an outage. “This ability is especially beneficial if you’re not in the office, because the applications are accessible via a VPN connection. In addition to helping us get to outage areas quicker, this new capability is also vital when there is an accident in the field, because we can pinpoint the location and better direct emergency services to the accident scene.”

For more information on Networkfleet visit networkfleet.com or call 866.869.1353.