Tracking Efficiency

The town of South Windsor, Conn., improves efficiency and optimizes manpower with a mobile GPS solution.

The 25,000 residents of South Windsor, Conn., are enjoying better service from their local government because of technology that tracks town operations like snowplowing and leaf removal.

South Windsor is using smartphones to track the locations of public works crews in real time, enabling increased productivity and reduced operational costs. This is made possible by the combined use of BlackBerry smartphones, Freeance applications and existing GIS data.

Public Works managers now deploy a BlackBerry with each piece of equipment. The devices let managers track crews during the day and monitor their progress. The technology tracks such tasks as leaf removal, lawn mowing, sidewalk inspections, zoning enforcement and, later this winter, snowplowing.

In the fall, the town uses large vacuum-like machines to pick up leaves raked from residents' yards. The solution allows managers to track the machines' progress, making the pickup program more efficient.

"We can actually track the position of where these leaf machines are," said Michael Gantick, the town's director of Public Works. "So we know where they are collecting leaves at any time, and also for historical purposes determine which streets they've collected leaves on."

In summer 2008, South Windsor purchased 20 BlackBerry devices. According to Scott Roberts, the town's IT director, it took about two weeks to get the devices prepped with the software and forms, and connected to the town's server.

One BlackBerry smartphone equipped with Freeance Mobile is deployed with each piece of equipment in order to track its GPS location and transmit the coordinates back to the town's server. The data points are extracted and displayed on a browser-based map that can be viewed by a PC or smartphone using the Freeance Web and Freeance Direct software.

"One of the interesting things that GPS and GIS give us in the government sector is the ability to take this information that we've traditionally kept in a database, on paper or in Excel spreadsheets — which are all great — but now we're able to place them on a map," Roberts said. "And when we do that, we're able to see all different kinds of analyses pop out that you wouldn't see otherwise."

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> — MATTHEW GALLIGAN, TOWN MANAGER, SOUTH WINDSOR, CONN.

The solution is a cost-effective use of taxpayers' dollars. Governments of all levels are facing budget deficiencies, so by marrying existing technologies with forward-thinking ideas that increase efficiency and reduce costs, the town can be a better steward of its citizens' money.

"In South Windsor, we are always looking to improve our services to our citizens," said Matthew Galligan, South Windsor's town manager. "Knowing in real time where our resources are helps us respond more quickly and cost effectively to the changing demands. Having GIS and GPS in the field is currently assisting the Public Works Department in managing and informing the public with regard to our daily autumn leaf collection process. Time is always a critical factor with the winter season approaching, and this software will help us manage the process more efficiently and cost effectively."

Saving Valuable Time and Resources

The solution has also saved South Windsor time and manpower. The manager of the leaf pickup program saves about an hour each day using the technology. Before the BlackBerry solution, the manager had to meet with crews at the end of every day to determine what areas were completed and predict what work would be finished the next day, Roberts said. Now he receives nearly real-time updates during the day and can make informed predictions without talking with each crew.

"It gives you predictability for forecasting where you're going to be in future days and predictability of when you've got bad weather coming in and trying to figure out how many leaves you collected last year versus this year, and so forth," Gantick said.

During the winter season, the GPS technology will be used during shift changes. Supervisors only need to print out a map of the work that's been completed instead of explaining and listing what work has been completed. This saves time and decreases confusion.

South Windsor tracked its lawn mowing equipment during the summer, which allowed the town to tally how many acres per hour were mowed with an eye toward determining more efficient travel routes.

"You really get a sense of how long it takes to do certain things for forecasting future costs because we have other fields and facilities that the town's going to build, and now we can better quantify and estimate what our future maintenance costs and needs are going to be based on our data collection," Gantick said.

Informed, Happy Citizens

The technology also has positively affected citizens who want to know when their leaves

will be collected. The town has a Web site and phone hot line for obtaining this information, and the technology allows it to be updated more quickly and accurately.

Each night, supervisors update what areas they will be working in for the next two days. This allows citizens to plan ahead and feel like town officials are keeping them informed.

"I think information is power," Gantick said. "It's another form of communication. And you can't have enough of that in this day and age when you're dealing with human beings and programs that people expect us to complete in an effective and efficient manner."

In the event that a citizen makes a complaint — like a snowplow was speeding down a street — a manager can look up exactly how fast the vehicle was traveling and what direction it went. This capability helps ensure that citizens know their concerns are taken seriously and that the town has the proper information to rectify the problem.

Tracking in the Future

In the future, the capability will also save time when determining when and where to remove snow. "We would like to obtain a weather feed from the National Weather Service and overlay it on the town's GIS map in order to track storm intensity," Roberts said. This would enable managers to deploy snowplows to areas that are going to be hit the hardest with inclement weather. Currently that information comes from police reports, supervisors driving around who survey the storm and firsthand accounts from snowplow drivers.

Another plan is to update the town's Web portal to share real-time information with citizens. The goal is for citizens to be able to go online and see exactly where the snowplows and leaf collection machines are located.

"We've only scratched the surface of what this technology can bring, so we don't truly understand the capabilities," Gantick said. "Theoretically next year people can look on the Web and see where the leaf machine is in their neighborhood because some people are out there raking feverishly, and they would like to know exactly where the crew is."

As officials become more acclimated to the technology, the town will focus more on data collection, such as tracking which areas had the largest amount of leaves collected, which would aid preparation for following years.

"To track data, to have real information when somebody complains about something, to be able to evaluate efficiencies and how long it takes to do certain activities, and track where you've been with these different programs — we're talking about saving a lot of manpower both by managers and the people out in the field working," Gantick said. "We can better monitor the programs as well as provide information on an almost instantaneous basis as to what's going on."