



## **GIS on BlackBerry Enhances Accuracy of GIS Distribution System Electrical Model for Nova Scotia Power, Inc.**

**Freeance Mobile on BlackBerry smartphones proves accurate, time-efficient and durable in a field environment dominated by laptops and ruggedized devices.**

Nova Scotia Power, Inc. (NSPI) is excelling in their mandate to deliver exceptional customer service to residents thanks to its visionary leadership, customer-centric culture, and mobile GIS technology that enables accurate data collection in the field.

The electrical distribution utility manages \$3.5 billion worth of generation, transmission and distribution assets across a 15,500-mile system that serves nearly half-a-million residential, commercial and industrial customers.

Using BlackBerry smartphones and affordable GIS software from Freeance Mobile, Nova Scotia Power is enhancing its model of its electrical distribution system. The 3-year GIS Connectivity Project will result in an accurate digital representation of an expansive system that was formerly modeled using original draughtsman's drawings.

NSPI's collector team uses Freeance Standard software on BlackBerry Storm smartphones to collect precise location information and data about customer connectivity and distribution system features such as transformers and disconnect switches. Collected data is transferred from their Blackberry Storms to Nova Scotia Power's GIS server, where technicians use it to update the electrical model within minutes.

Brian Shannon, NSPI's GIS Connectivity Project Manager explains. "With Freeance Standard for BlackBerry, we're building a more accurate picture of NSPI's distribution system, which has tremendous benefit for operations and customer service," says Shannon.

A highly accurate electrical model will drastically improve NSPI's Outage Management System (OMS), enabling them to better predict the impact of storms, dispatch line crews more effectively and provide better information to customers and emergency officials during outages."

"This is, at the heart, a customer-service initiative, although there's no question this project has returned measurable time and cost savings already," Shannon reports, midway through the 3-year project.

### **Freeance Mobile on BlackBerry Solves a Rocky Start**

The province of Nova Scotia spans an area of 34,352 miles with population dispersed between major urban centers and small coastal villages. Collection occurs on foot and by vehicle in urban, rural and off-road areas.

At the start of the GIS Connectivity Project, looking at the projected labor profile, Shannon foresaw a problem. It was going to be impossible to complete the work on time.

Shannon deduced this based on the experience of an earlier small pilot program where engineering students gathered data using ruggedized device built specifically for use in the field.

"With the ruggedized units, students in the pilot program had to travel to and from local NS Power offices scattered throughout the province in order to upload the collected data to local computer terminals," Shannon explains. "For the GIS Connectivity Project, allotting time to travel to and from these depot offices every day would significantly reduce daily productivity."

With capital expenditure approvals for the three-year plan in place, however, Shannon and his team had to make things work.

The ruggedized devices were capable of connecting to the NSPI network via modem, however, this method of connectivity lacked the required security control. Customer connectivity information is private customer data that requires secure encryption.

A technology solution was needed that met this security requirement, as well as the following specified criteria:

- Ease of coordinating multiple teams collecting data on handheld devices.
- Eliminate the need to return to an office to transfer data.
- Increase the data process flow thereby reducing time to get data into the production environment.
- Simplify the data gathering process with easy to understand forms and pre-defined values, thereby reducing potential errors.



Already using a BlackBerry platform for executive-level communications, NSPI recognized they had the communications backbone in place to move forward swiftly. "Our GIS Project Lead was familiar with Freeance Mobile for BlackBerry and he suggested we investigate its suitability for our needs," says Shannon.

It quickly emerged as the right solution.

"We contacted TDC Group, explained our requirements, and right from that first phone call, they worked steadfastly with the team to put a solution in place quickly." Since that beginning, Shannon explains the experience with the Freeance Mobile solution has been, "One positive outcome after another."

Richard Janega, Executive Vice President and COO at NSPI agrees: "Freeance on BlackBerry has provided an integrated business solution for our utility, by improving speed and accuracy throughout our processes. Including data collection in the field, updating the GIS system and approving system changes."

A welcome surprise for Shannon and his team was how the smartphones stand up in field conditions and in every conceivable weather condition. "We have our Storms in OtterBox™ units and we don't have issues in terms of durability. In our experience, BlackBerry smartphones are very suitable for field use in rugged conditions. They stand up fine," he says.

### **The Numbers Don't Lie: Measurable Time and Costs Savings**

Shannon identifies the linchpin of the GIS Connectivity Project as the ability to provide reliable connectivity in the field for immediate GIS server updates. "Freeance Mobile on BlackBerry allowed us to avoid the need for collectors to travel to local utility depots for data uploads each day. Two hours saved per day for each of the 14 collectors, translates into nearly \$200,000 worth of labor savings," says Shannon.

Shannon also reports significant direct cost savings in terms of hardware, software server and licensing. "The cost savings advantage of Freeance on BlackBerry was approximately one-eighth of the cost of the technology solution we initially considered," he says.

"It's almost unfathomable when you hear of a solution that can work for a fraction of the cost of a leading alternative, *and* provide a far superior level of connectivity, but the numbers don't lie." Shannon says these cost savings alone may prove to be a big factor leading to the GIS Connectivity Project coming in on or under budget.

### **Customizable Forms Reduce Errors, Increases Operational Efficiency**

Previously, field personnel who noted discrepancies in the location or identification of features in the field would have to manually record any new findings on paper diagrams and submit to office personnel for manual updates to the model.

"Now our field personnel simply fills out the GPS Collector form," says Shannon. The form is configured with required fields and predefined values, and the integrated Blackberry GPS records the location automatically. The record is saved and is immediately available to the GIS Technician in the office, who verifies the data and updates the model within minutes.

"Having the collected data transmitted directly to the GIS Server during the collection process reduces errors and eliminates the turnaround time between data collection and submission to the GIS Technicians for processing," Shannon explains.

He credits the ease of use of the GIS Collector is integral to these operational savings. "Our field collectors are not utility-experienced folks, yet they're accurately capturing the different components of our infrastructure. We're giving them a basic orientation to what the field assets look like, and they're using drop down lists from the custom forms," says Shannon. "In a situation where there could be confusion leading to rampant inaccuracy, GIS Collector makes the collection clean and straightforward. There are fewer errors."

In addition to the operational and financial benefits, the ultimate payoff for NSPI is increased ability to deliver exceptional customer service.

For instance, more accurate data in their electrical system model means outage locations are more accurately predicted and crews are dispatched more effectively. This effect is most evident in large storms where upwards of 50 crews can be dispatched to make repairs. Having crews staged correctly maximizes their performance, minimizes logistical effort and speeds resolutions.

"In addition to the time and costs savings we've already enjoyed thanks to Freeance on BlackBerry, we also attain more accurate data to help speed the execution of restoration and repairs in the future," Janega reports. "Ultimately, Freeance Mobile has helped us create a foundation for improved customer service going forward."