



## Falkirk Council: BM Roads Service System (formerly MobiWin Fleet and Weather Management System)

### Who?

Falkirk Council is responsible for managing a total network length (of all adopted roads) of 988.52km with category 1 roads at: 324.80km, category 2 at 65.39km and category 3 at 185.17km. Its Winter Service Plan for Carriageways & Footways 2019-2020 placed an emphasis on spread rates for precautionary salting using the adopted matrix that has been developed from the Well Maintained Highways Infrastructure and takes account of recommendations made by SCOTS (Society of Chief Officers of Transportation in Scotland following a review of the Code of Practice and consultation with the National Winter Service Research Group (NWSRG). The adopted matrix is designed to take all reasonable steps and actions to prevent snow and ice endangering the safe passage of vehicles (which is a statutory duty) over public roads, and takes account of local authority gritting route conditions, practicalities with gritting fleets, salt condition and the knowledge and experience of officers involved in winter services.

This has meant that gritting routes and associated activities required to be reviewed with Falkirk's aim being to improve the efficiency of treatments.

Road conditions often vary considerably across the Falkirk area with factors such as local topography, humidity, wind speed and direction, residual saline and traffic volumes all influencing the possibility of adverse conditions occurring. Some of the conditions that require a response are: temperatures falling to zero with varying cloud cover conditions; humidity and residual saline on the roads; frost or light snow forecast on dry roads; frost forecast after rain; freezing conditions coinciding with rain; ice already formed on the road surfaces prior to treatment; erratic temperature movements due to changing cloud cover and heavy snow falls.

### **The challenge:**

Falkirk had been looking to explore how it could implement route optimisation as part of the overall development of its winter service delivery plan. “We wanted to become more efficient with the planning and optimisation of our routes and had been looking at various products for route optimisation which were proving very expensive.” says Robert Fleming, Senior Roads Officer at Falkirk Council.

### **The solution:**

Falkirk opted for the BM Roads Service System (BMRSS), formerly the MobiWin- Fleet and Weather Management System - an advanced system which manages critical winter weather data and activities of salt spreaders and other vehicles using GPS. Comprising of a number of additional modules, the system allows optimisation of routes, it dispatches actions and manages highways defects all in real time as well.

“We’ve known the team at Safecote for some time and they suggested we should consider BMRSS, which was not only a fraction of the cost of other optimisation software but could be quickly implemented with our existing systems and forecasting tool to give us an accurate picture of how we could prioritise our routes via a dynamic polygon,” he added.

Falkirk was the first local authority to trial the system in the UK after it was agreed Safecote would be official distributors in the UK of the system. “The first impression was that it was a very efficient and easy-to-use system that we could link to our forecasting system and study in more detail the different climatic domains across the region, information that can then be uploaded straight into the spreaders for the drivers to download before they embark on a route,” says Mr Fleming.

Falkirk has had the system for approximately 18 months, meaning the council has now been through two winters using the system. “It was first used on our old routes successfully but then we moved to a risk-based approach based on the maintenance hierarchy of different routes and roads and BMRSS helped us get our 10 main gritting routes down to 8- giving us considerable savings over the time we have used it,” says Mr Fleming. “The system is very quick and very accurate and has definitely played a central part in refining our routes, saving us money and making us more efficient,” he adds. “We successfully reduced from 10 routes into nine and then tried eight, we can easily run the system each time based on the routes to see if it works, and if it doesn’t, we can quickly change it back again. There is plenty of information to help us make the right decisions at the right time.”

Falkirk originally had a number of different systems all forming part of its treatment procedures. “BMRSS gave us the opportunity for all these to be fed into the one system,” says Mr Fleming. “When we send out our forecast decisions, the actions are then sent by text to the various drivers.

Previously, we had no automatic route direction information and drivers had to learn the routes from route cards and if we needed to double up on some routes due to the weather, we had to put two operatives in a vehicle, one to drive and one to direct. Due to the two domains within Falkirk we sometimes only treated the ‘high routes’ which were done by various different drivers depending on the rota. Also, if drivers needed to be called out due to changing conditions the supervisors had to phone round all of the drivers. Communication and technology is much more efficient within BMRSS. The routes are all digitised and when required the system can be used to call the drivers out and define which route drivers will be treating and what vehicle they will be using. The driver acknowledges receipt of the call/text by pressing a predetermined button on the phone and once they arrive at the depot to pick up the vehicle the system provides them with route directions in a satnav format,” he adds.

The system tracks the vehicle ensuring it is treating the correct route and provides salt usage information as well. This is all based on the route information generated by the system and the supervisors have all the tools in the one location.

“If additional drivers are required then the route can be sent to them and they can follow the route just like a satnav

More recent developments include the use of the system to help include routes taken by tractors and the transition into incorporating footway salting more into its plans as well. More developments could be on the horizon too. “In Sweden there have been trials of BMRSS and automated gritting and if financially viable, we would consider that moving forward as well.”

BMRSS offers management of any vehicle movements including salt and liquid spreaders, grass cutters, gully cleaners, waste vehicles and others. Salt stock control is an integral part of the system, automated customised and exception reports and public feeds are also standard features of the system together with updated weather information from a forecaster and RWIS units giving decision support functionality in line with code of practices.

The system can create and update optimised routes as and when required, to ensure you are allowing for changes to the network and define priorities. These are also changeable during the winter season and allow for road divers and other factors. The Dynamic Route Optimisation part of the system takes data from weather feeds and historic information to allow dynamic routing which will calculate the most efficient and cost-effective way to treat only critical areas of the pre-defined network.

BMRSS also offers automatic updates once a decision has been taken to change something. Operatives can also log on and report defects on the network via an app on the inspectors’ smart phone/tablet. All data is viewable instantly showing images, location, etc., making it also an integral part of the wider highways asset management process. Works orders with time scales and follow up, costings and invoices can all be created from the system as well.

“Safecote’s approach to providing innovative winter service products and technology has always impressed me and the expertise and back-up they provide is very useful and very welcome. It is a forward-thinking company that is always on the look-out for something new to help make the sector more effective and efficient,” adds Mr Fleming