

VOLKERHIGHWAYS

BATH & NORTH EAST SOMERSET

The Challenge

In late 2019 VolkerHighways used Thermal Road Repairs (TRR) technology to fix a test carriageway defect in the bus lane of a busy A-road in Bath. After 18 months, the repair remained intact and unchanged, at which point VolkerHighways and its client, Bath and North East Somerset Council (BaNES), decided to conduct a more substantial, one month trial, which was extended to two months, based on its impressive initial performance.

“We believe in the product, and we are keen to use it, but we wanted to see if we could get the outputs, prove it was cost effective and demonstrate the benefits that could be realised from it,” explains VolkerHighways project manager Kofi Agyen-Frempong. “Our client, needed as much data as possible to base any decisions on.”

The Solution

In May and June 2021, TRR supplied a unit and crew to carry out planned and reactive repairs on both urban and rural roads in Bath and North East Somerset. VolkerHighways has been the highway term maintenance contractor for BaNES since 2019.

The TRR system uses a thermal infrared heater, which is charged by mains power and solar panels, to heat up failed and failing material in the pothole and surrounding asphalt. The existing asphalt is then mixed with a small quantity of new asphalt to create a homogeneous material and is then compacted with a roller.



Because the asphalt around the edges of the pothole is also heated, there is no joint; the material all bonds together preventing the pothole from reforming. The patented TRR heating system comes with sensors and controls that carefully monitor the heat of the material beneath it, automatically switching off when the right heat has been reached. This is important, since overheating the bitumen makes it brittle and more likely to crack, something the VolkerHighways team will be watching out for in the repair zones over the coming months and years.

The TRR repair process is also much faster than traditional techniques: there is no need for breaking out the defect, saw cutting or jack hammering. Also, there is no requirement for vehicles to take waste loose material away or bring fresh asphalt in. Everything is contained in the one repair unit.

The Results

“Both VolkerHighways and BaNES are happy with the way the TRR technology performed,” says Agyen-Frempong, “we now need to weigh up the costs and benefits in order to decide whether and how best to use the technology in the longer term.”

There are multiple ways to procure the TRR technology: units can be purchased outright, leased, or the whole service including crew can be purchased. TRR provides training to contractor or council staff who would operate the unit.

“Local authorities are definitely interested in methods that reduce the carbon footprint of repairs.”

VolkerHighways project manager Kofi Agyen-Frempong

Immediately apparent benefits, according to Agyen-Frempong, include faster repair time, reducing disruption to road users and residents; much lower risk of HAVS since no breakers are required; lower noise; and lower carbon – which is high up on VolkerHighways’ and the local authority’s agendas, he says:

“Local authorities are definitely interested in methods that reduce the carbon footprint of repairs. Many of them have declared a climate emergency and they are now working on their action plans to reduce their carbon emissions.”

One lesson that emerged from the trial is the need to carefully plan the order of works and the wider logistics. In terms of repair cost per pothole, the TRR technology worked out close to ‘cost neutral’, compared to traditional methods, however this could be reduced further in the future, explains Agyen-Frempong:

“If there were a larger hot-box closer to the works, say in a depot, it would reduce the travel time required to load the unit with asphalt”, he says.

Agyen-Frempong also observed that the technology worked more effectively on urban, rather than rural roads in this area: “With rural roads, the defects tend to be far more extensive, over large areas and sometimes with crumbling edges, which means that using a unit that heats a 1m-squared area or a 1m-by-2m area may not be the best method.”

Before



After



**Speak to Thermal Road Repairs today about how to go greener.
High output. Low emission. Permanent solution.
www.thermalroadrepairs.com**