# Plastic road surfacing on trial

↑ To date approximately 5km of highway has been surfaced in Cumbria using plastic shavings homogenised within bitumen, across five trial sites

**Discarded industrial and household plastic could be made useful as part of the road surface if trials in Cumbria prove successful.**

Innovative road surfacing trials using plastic shavings to replace part of the bitumen in the asphalt mix are set to be expanded in Cumbria following an allocation of £1.6M of Department for Transport funding in February.

It is hoped that the trials will demonstrate the feasibility of putting waste plastic – huge tonnages of which currently go to landfill or incineration – to good use in the roads, improving the sector's environmental credentials.

*"We aim to put material down on every conceivable type of road."*
Stephen Hall

Lessons learned will be shared with highway authorities across the UK.

Government's investment comes following two years of small scale testing by Cumbria County Council and plastic roads specialist MacRebur.

"The £1.6M enables us to expand our trials," says the council's assistant director for economy and environment Stephen Hall. "We aim to put down the material on every conceivable road type, from highly trafficked major routes to rural roads and locations adjacent to industrial sites where we get a lot of heavy vehicles."

He adds: "Until now, everything we have done has been machine laid surfacing. We will continue with that but also trial this for small scale patching work using both hot and cold materials; that's new territory."

The project partners are working alongside academics from the universities of Central Lancashire, Nottingham, Sunshine Coast Australia and California to ensure the necessary rigour in the testing process.

"Our aim is that in two years we will be able to conclude whether this is going to work in terms of durability and if it is a viable surfacing solution for the long term," says Stephen Hall. He adds that, if it proves economically feasible, the environmental benefits could be significant.

Stephen is pleased with the performance of the surfaces laid in the county using plastic to date, which add up to approximately 5km of highway across five sites where 6% of the binder comes from waste plastic. This is equivalent to 6.45 million single use carrier bags.

"We're environmentalists," says MacRebur chief executive Toby McCartney. "We have worked out a process to take plastic that can't be recycled and use it to enhance the road surface."

The company's products have already been used on roads in 14 different UK local authorities as well as in Australia and New Zealand, parts of eastern Europe and in the USA. However Cumbria was the first and is currently the largest trial.

"Cumbria produces 500t of waste plastic destined for landfill or incineration every year," says Toby McCartney. "If we were to put 6% into the binder of every tonne of asphalt produced for their annual resurfacing programme it would eliminate 800t of plastic."

Stephen Hall concludes: "At the end of the trial we will produce a technical note for the DfT that we would share across all authorities in the UK to enable us to make good decisions about whether to invest more heavily in this product." **SD**

## How useful material is created

Flakes of waste plastic are converted into hydrocarbons found in bitumen and fully homogenised within the road binder using an 'activator' developed by plastic roads specialist MacRebur.

This process means there is no risk of micro-plastics from the road surface washing into rivers or oceans, the company claims. "We have been cautious every step of the way to make sure we meet the environmental criteria that we set upon ourselves," says chief executive Toby McCartney.

Following extensive laboratory testing, four different asphalt products are currently produced to serve different purposes, ranging from 'MR6' to provide greater durability and reduce rutting, to 'MR10' which is a more flexible solution.