

## 'Pothole Action Fund'

Around 10,000 road potholes had been repaired to end of February – and this figure expected to rise to around 11,000 by end of March. This includes around 3,000 potholes addressed through the robust capital road resurfacing programme.

Pothole repair funding in Essex combines Essex County Council (ECC) funding with the Department for Transport (DfT) Pothole Action Fund, resulting in approximately £6.8M for pothole repairs in 2017/18.

The Department for Transport (DfT) provided £1.869 million to ECC to tackle road potholes in 2017/2018. Essex then received an additional £1.3M for pothole repairs from the DfT in February 2018, making a total of £3.173M DfT funding for 2017/18.

Whilst the DfT anticipated Local Authorities carrying forward this additional £1.3M funding to spend in 2018/19, Essex has seized the opportunity to deploy more repair gangs on the network. As a result, a significant amount of this additional funding will now be spent in 2017/18 - benefitting road users sooner rather than later.

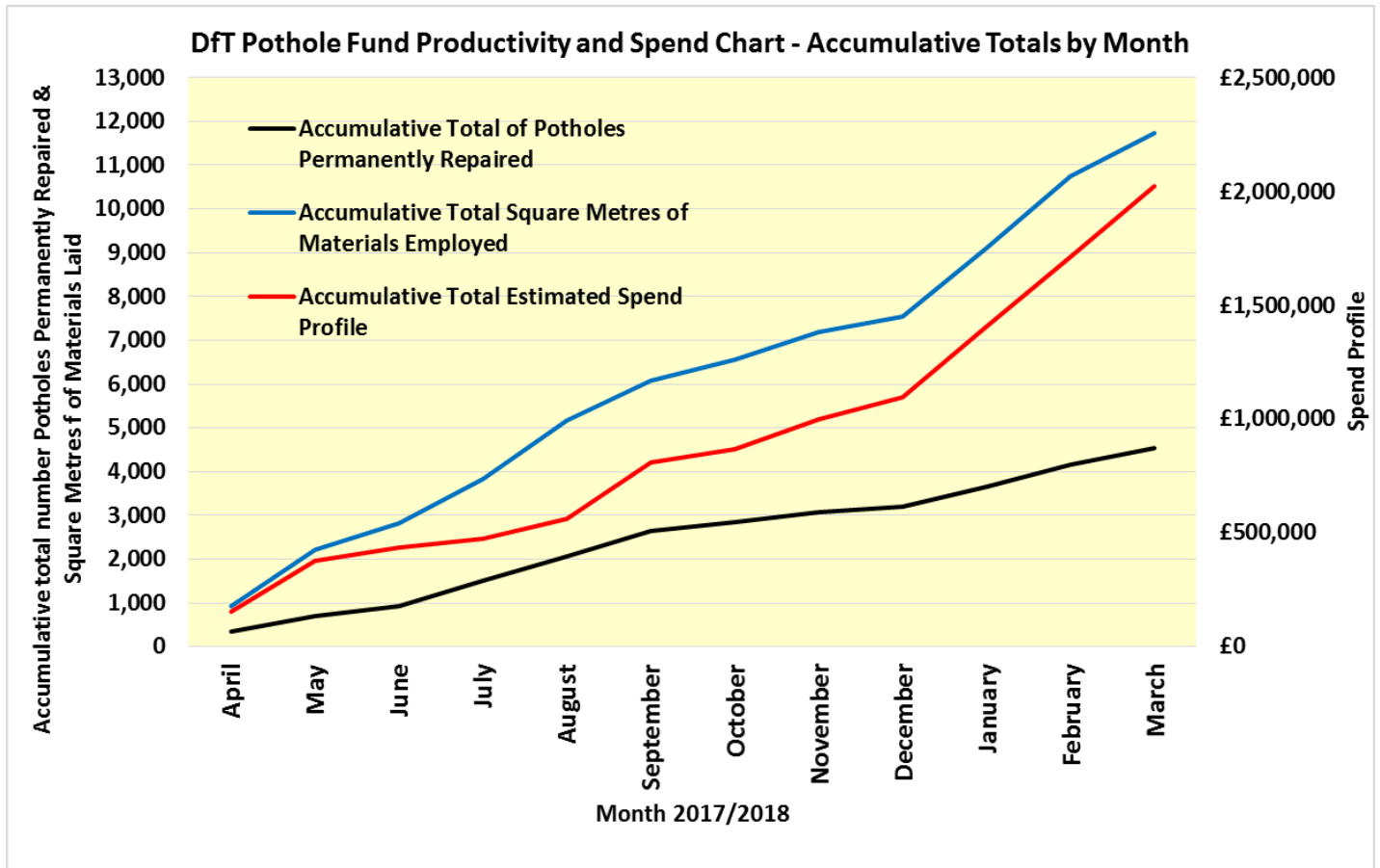
The DfT funding enhances the existing ECC funding which is estimated at over £3.6M for similar road repairs in 2017/18, which makes a combined total of approximately £6.8 million.

The DfT funding has facilitated additional road pothole repairs to be undertaken on all road hierarchies across the County. The most appropriate treatments have been selected on a site by site basis, but predominantly the treatment selected has been traditional patching for quality, long lasting repairs.

Essex Highways complies with best practice in its road repairs, and therefore invests in 'right first time' value for money permanent repairs. This approach reflects the Highways Maintenance Efficiency Programme (HMEP) guidance, which is an industry led but government promoted initiative to encourage good asset management practice.

Chart 1 below shows the accumulative number of potholes repaired by month using the DfT funding – over 4,000 potholes had been repaired to the end of February, and this is expected to rise to over 4,500 by the end of March.

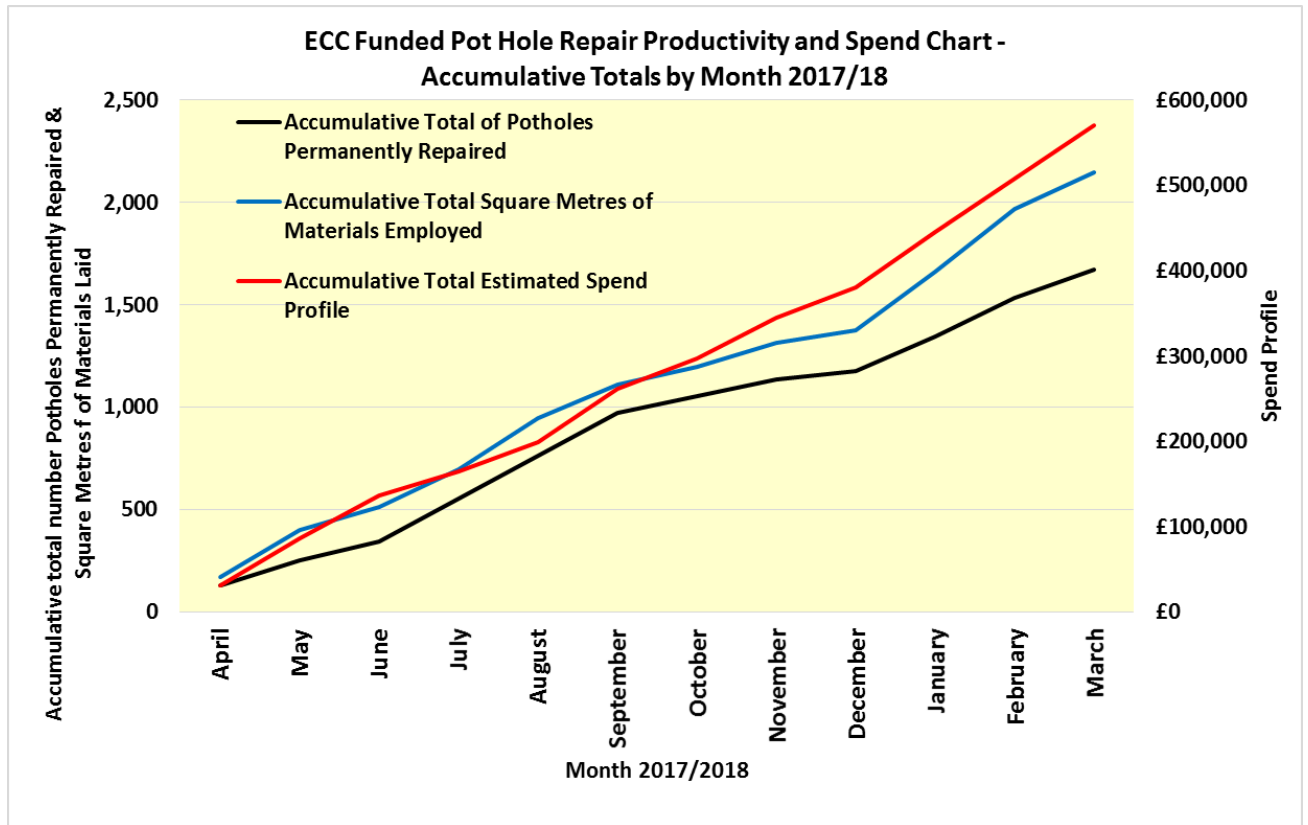
**Chart 1: DfT Pothole Action Fund Productivity and Spend Chart 2017/18 – Accumulative Information by Month.**



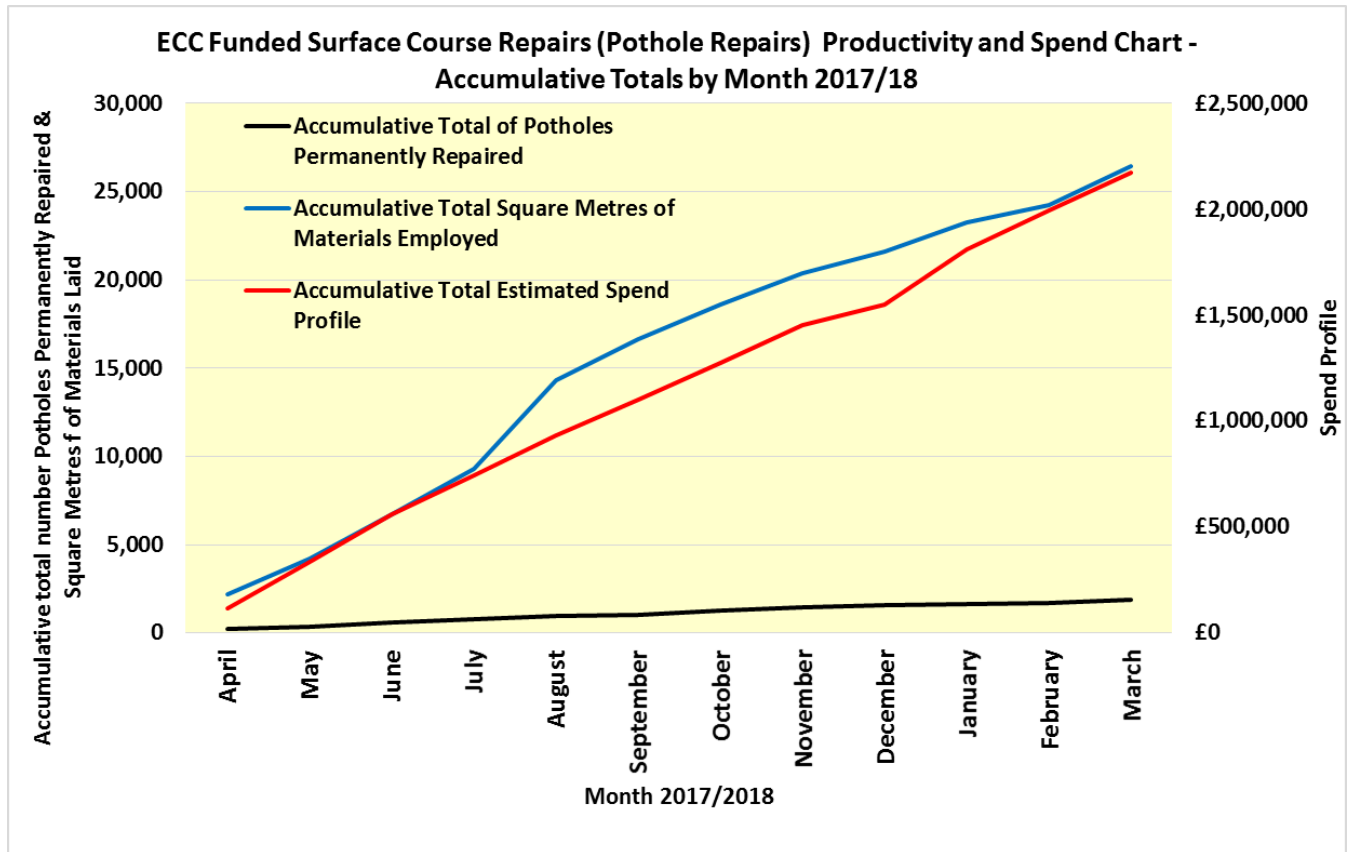
The ECC funding for pothole repairs has focused on higher priority, safety related repairs, although lower priority repairs have also been undertaken. This is shown in Chart 2 below, where over 1,500 potholes had been repaired by the end of February; a figure which is expected to rise to nearly 1,700 by the end of March.

In addition, potholes have been addressed through other ECC funded surface course repairs such as patching. Chart 3 below shows the productivity and spend profile for potholes addressed through other surface course repairs, where over 1,700 potholes had been repaired by the end of February; a figure which is expected to rise to nearly 1,900 by the end of March.

**Chart 2: ECC Funded Pothole Repair Productivity and Spend Chart 2017/18**



**Chart 3: ECC Funded Surface Course Repairs (Pothole Repairs) Productivity and Spend Chart 2017/18**



**Discouraging potholes forming through a balanced capital road resurfacing programme of preventative and strengthening treatments in 2017/18**

Note that the information above relates to general maintenance. Works to address potholes do not begin and end with these localised repairs, however, as Essex undertakes a comprehensive programme of capital road resurfacing works each year. Capital road resurfacing works are more substantive treatments which discourage potholes forming.

Essex is an advocate of the Preventative Approach, whereby generous applications of capital funded, low cost, value for money preventative treatments such as Surface Dressing and Micro Surfacing are applied to seal the road surface to prevent the ingress of water. Water is a major contributor to road condition deterioration and the subsequent formation of potholes, especially during the winter months with the action of freeze/thaw.

Preventative treatments also address the effect of oxidation. Oxidation causes the surface to become brittle over time and susceptible to cracking, especially in Essex where a significant composition of clay soils contributes to ground movement through expansion and contraction.

Strengthening treatments, such as machine surfacing, recycling and reconstruction, strengthen road surfaces, making them more resilient to the formation of potholes in the first instance, but these are more expensive treatments.

The tables below show the amount of capital road works programmed for 2017/18 and already largely completed. This includes well over 3M square metres in total of Surface Dressing plus Micro Surfacing. Indeed these treatments account for 74% of the total area of works – this delivers great value for the residents of Essex.

<b>Capital Roads Maintenance Treatment Type 2017-18</b>	<b>length km</b>	<b>%</b>
Joints	31	4%
Machine Surfacing	126	15%
Major Reconstruction	2	0.2%
Micro	44	5%
Recycling	19	2.3%
Skid Resistance	2	0.2%
Surface Dressing	604	73%
<b>Total</b>	<b>827</b>	<b>100%</b>

<b>Capital Roads Maintenance Treatment Type 2017-18</b>	<b>Area Square Metres</b>	<b>%</b>
Joints	225,735	5%
Machine Surfacing	767,802	18%
Major Reconstruction	11,124	0.3%
Micro	236,892	6%
Recycling	65,371	1.5%
Skid Resistance	11,298	0.3%
Surface Dressing	2,919,196	69%
<b>Total</b>	<b>4,237,419</b>	<b>100%</b>

Total programmed length of works is over 800 km (over 500 miles) which is further than from London to Edinburgh. Or for international travellers it is further than from London to Frankfurt in Germany. Overall the county has just over 5,000 miles of roads. This is about the road distance from London to Oman on the Arabian Peninsular.

It is estimated that these resurfacing works had included repairs to an additional 2,500 potholes by the end of February; a figure which is expected to rise to 2,800 by the end of March.

**Why minor defects such as potholes are unlikely ever to be eradicated completely**

We can all be proud of the programmes of works being undertaken on roads across Essex throughout 2017/2018, including minor repair works such as fixing potholes as well as

more substantive works such as resurfacing. Whilst these will make a significant contribution to addressing road condition, however, they will not solve the problem of the occurrence of potholes entirely. Why not?

It can sometimes seem a mystery as to why potholes form at all. Why after extensive minor repairs have been carried out more potholes eventually reappear. There are a number of factors which create this phenomenon. The penetration of water is a major cause of road deterioration, but another major cause is oxidisation. Exposure to the air over time causes the road surface to harden and become brittle, and this makes the surface prone to cracking, which then allows the penetration of water. Regrettably we have an ageing road network. This is not peculiar to Essex but merely describes the roads across the entire country.

New and extensive resurfacing can be expected to remove any significant incidence of potholes for a number of years, but generally the older the network becomes then the more it will reveal the effects of ageing – such as the occurrence of potholes.

The other contributor to the occurrence of potholes is the actual construction of the roads. Roads of modern construction are less prone to the formation of potholes, but the majority of our roads have ‘evolved’ over time and have not been constructed to the standards that would be expected of a newly built road today. These ‘evolved’ roads are more prone to the occurrence of potholes, not least as they provide much less resilience to the effects of extreme weather (expansion through freezing in the winter, and contraction due to drying out in the summer).

For more information about potholes please refer to the HMEP report ‘Pothole Review: Prevention and a Better Cure’ accessed via the link below

<http://www.highwayefficiency.org.uk/efficiency-resources/asset-management/the-potholes-review.html>

At the heart of the HMEP recommendations for addressing potholes are practices which have long been adopted by Essex Highways:

- **Intervening at the right time** with preventative treatments (such as Surface Dressing and Micro Surfacing) to reduce the amount of potholes forming, thereby preventing bigger problems later
- **Getting it ‘Right first time’** with permanent, high quality repairs to reduce the cost of revisits
- **Providing clarity to the public** – through communicating to the public what is being done and how it is being done. Not only is Essex Highways providing this information through its website and press releases but it has recently launched a twitter account.

The continued occurrence of potholes is acknowledged by the DfT, and we anticipate receiving further Pothole Action funding in future years – funding which will enhance not displace our spending plans. This is good news for all road users.