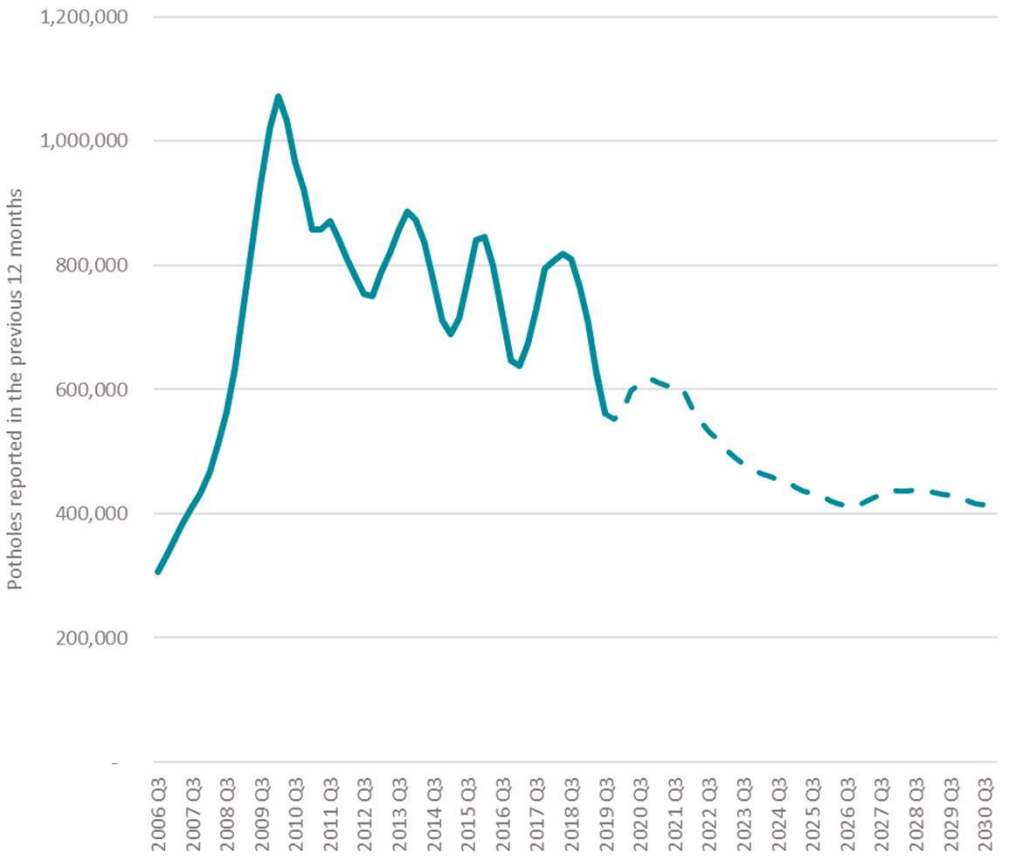
Potholes on UK roads in 2030 – Cebr forecasts

Potholes on UK roads to return to pre-austerity levels based on current spending plans

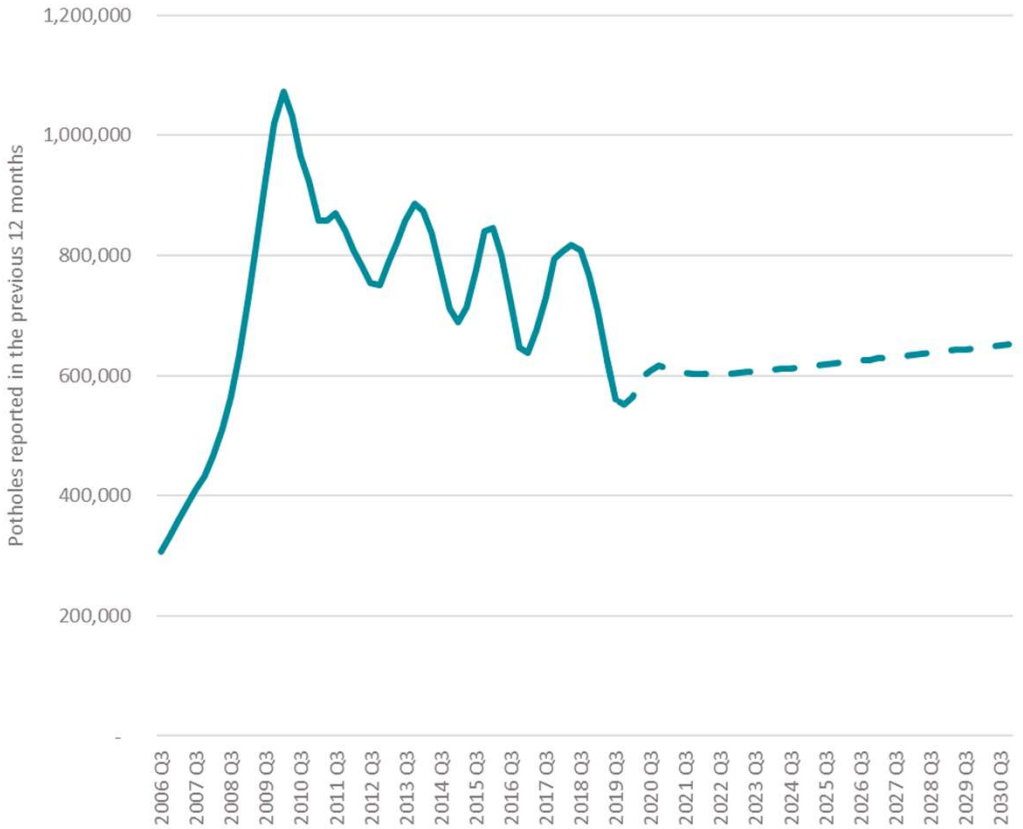
- The number of reported potholes on the UK's roads is forecast to fall from 561,000 in 2019 to 413,000 in 2030. This would be the lowest number since the third quarter of 2007.
- Despite a major projected increase in the amount of government funds directed towards the issue of potholes over the next decade – as laid out in the Conservative Party's general election manifesto – the large backlog of outstanding work that has developed in recent years mean that potholes will remain a significant issue for motorists in the coming decade.
- The number of miles driven on the UK's roads is set to increase over the next 10 years, based on projections from the Department for Transport. In 2015, cars drove a total of 226 billion miles on roads in England and Wales. By 2030, this figure is forecast to reach 265 billion.
- Although the increased traffic levels will place a strain on the roads, this will be offset by an expected increase in government spending as well as a reduced frequency of air-frost days (days when the air temperature falls to below 0 degrees Celsius).



Sources: Department for Transport, Met Office, RAC, Confused.com, Cebr analysis

Roads to deteriorate further over the next decade if government spending remains at current levels

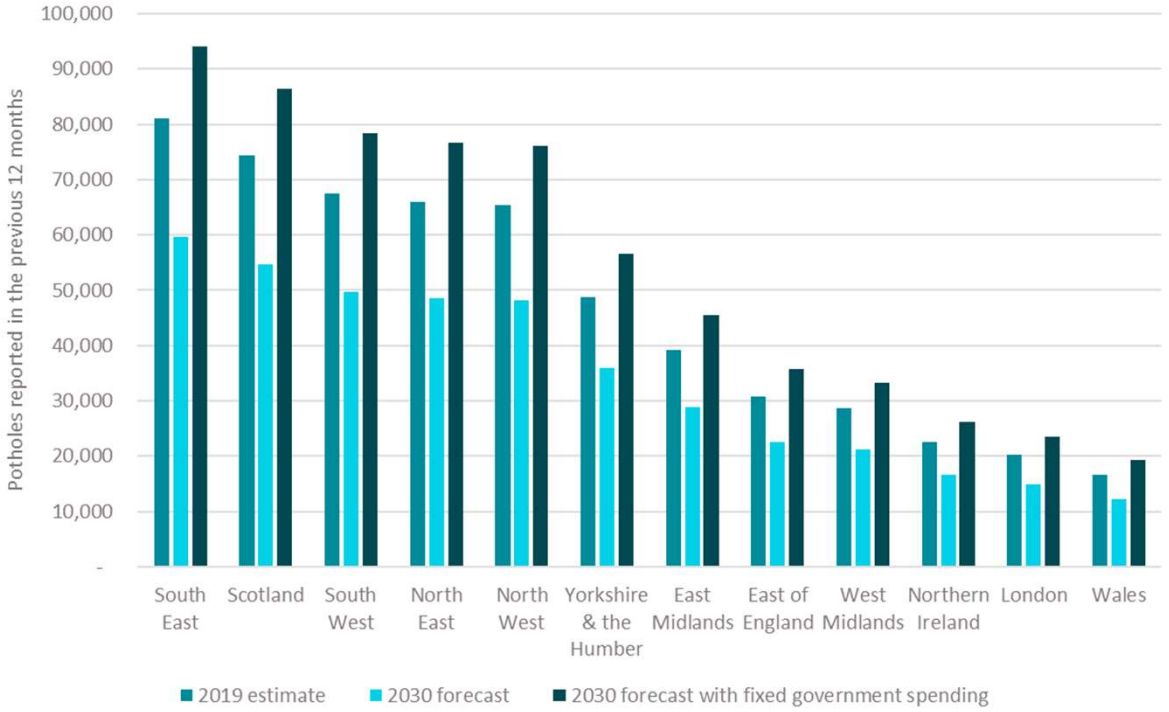
- The forecasts presented in the previous slide are conditional upon a significant rise in government spending on roads and maintenance over the next decade.
- The Department for Transport plans suggest that capital expenditures on UK roads in the 2019/20 financial year will amount to £4.9 billion. If real terms spending were to remain at this level throughout the next decade, Cebr forecasts that the number of potholes reported on UK roads will surge from 561,000 in 2019 to 651,000 by 2030 – a 16% increase.
- Under this scenario, the large backlog of potholes that has developed since 2006 as well as increasing traffic flows on UK roads will lead to a significant worsening of the pothole situation.
- Although the government does plan to raise investment spending in the coming years, the economic and political landscape could change considerably over the next decade. The forecasts for this scenario highlight that UK roads are at risk of deteriorating further if plans to boost spending do not materialise.



Sources: Department for Transport, Met Office, RAC, Confused.com, Cebr analysis

Potholes reported in the South East could rise by 13,000 if government spending does not increase in the 2020s

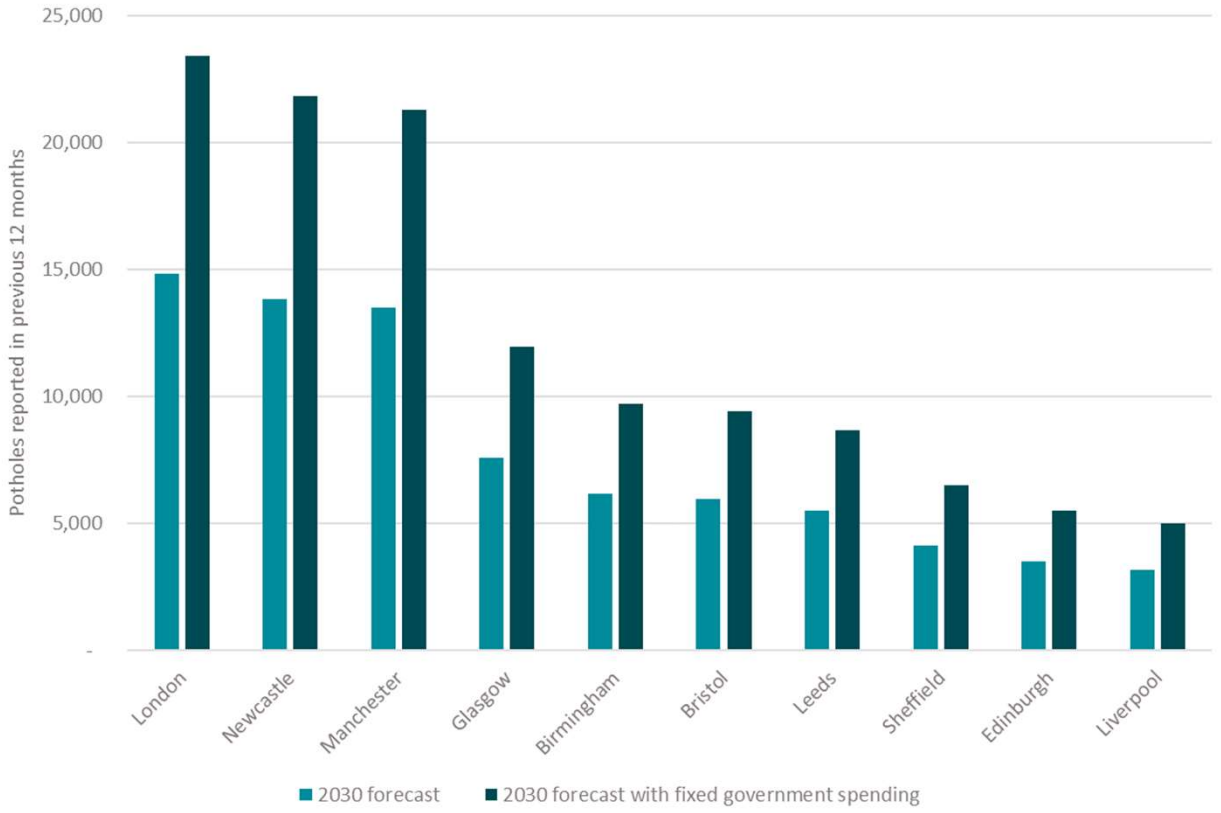
- Data from freedom of information requests to local authorities suggests that the issue of potholes is most severe in the South East and Scotland. Indeed, it is estimated that more than 81,000 potholes were reported in the South East in 2019, while 74,000 were reported in Scotland.
- It is assumed for this analysis that the projected increase in government funding for pothole repairs is distributed throughout the UK based on the current density of potholes. Therefore, all regions and nations in the UK are forecast to see a reduction in the number of reported potholes, although the largest absolute benefits will be observed in the south of England and Scotland.
- Conversely, these regions would miss out the most if real terms government spending remains at 2019 levels.



Sources: Department for Transport, Met Office, RAC, Confused.com, Cebr analysis

London, Newcastle and Manchester to have the largest pothole problem in 2030

- As would be expected given the scale of London relative to other UK cities, the capital is forecast to have more reported potholes in 2030 than any other city in the UK.
- The scale of the current pothole problem in the North East of England, together with the large share of the region's traffic that is focussed in Newcastle, mean that Newcastle is forecast to have more than 13,800 potholes reported in 2030.
- If real terms government spending on roads remains at 2019 levels, the number of reported potholes in Newcastle is forecast to climb to 21,900.
- More limited flows of vehicle traffic mean that the pothole issue is projected to be less severe in Liverpool, Edinburgh and Sheffield.



Sources: Department for Transport, Met Office, RAC, Confused.com, Cebr analysis

Methodology

- The first stage in developing the forecasts for potholes on UK roads in 2030 was to establish the historic statistical relationship between a range of variables and the rate at which potholes are reported. The key variables considered in the analysis are:
    - **Miles driven by vehicles on the roads** – high volumes of traffic exert a strain on the road surface, thereby increasing the risk of potholes developing.
    - **Frequency of air-frost days** – one of the most common ways in which potholes form is via water seeping into cracks in the road, and then freezing and expanding during periods of cold weather.
    - **Government funding towards pothole repairs and road maintenance** – the resources directed both to the filling of potholes and the overall maintenance of roads (which reduces the chances of potholes forming in the first place) is a key determinant of the incidence of potholes.
- A multiple regression analysis was conducted using the above three variables as well as data from the RAC Pothole Index – which extends back to 2006. This allowed the statistical relationship between pothole frequency and each of the three variables to be established.
- The multiple regression analysis finds that government funding and the incidence of air frost days have been the key drivers of the frequency of potholes between 2006 and 2019. As would be expected, the analysis also finds that the number of potholes in a given period is influenced heavily by the number in the preceding period.
- The relationships identified in the multiple regression analysis are then combined with forecasts for traffic volumes, the number of air-frost days, and government funding between 2019 and 2030 in order to project the value of the RAC Pothole Index in 2030. Traffic volumes are projected based on Department for Transport forecasts, and the number of air-frost days have been forecast based on Met Office projections for minimum temperatures in different parts of the UK. Government spending on road maintenance over the past decade has been predicted based on projections from the Office for Budget Responsibility on the growth of Departmental Capital Expenditure Limits up to 2023, a pledge in the Conservative Party Manifesto to direct £500 million per year towards the issue of potholes, and Cebr's longer term forecasts for government investment as a whole.
- To convert the projections for the RAC Pothole Index into a forecast for the number of reported potholes in 2030, an estimate of the total number of potholes reported on UK roads developed by RAC in 2017 has been applied to the projected change in the RAC Pothole Index. The regional breakdown presented in this report has been developed by examining the current distribution of reported potholes, using data compiled by Confused.com. Finally, the city level forecasts are based on the share of a region's traffic that takes place in each city, under the assumption that potholes in each region are proportionally distributed based on the amount of vehicle traffic.

Year	Capital expenditure on roads by local authorities and Highways England (£ thousands)	Vehicle miles travelled on UK roads (billions)	Air-frost days
2020	£5,872,628	265	48
2021	£6,138,483	268	46
2022	£6,336,078	270	46
2023	£6,681,939	273	46
2024	£6,965,409	276	45
2025	£6,770,824	278	45
2026	£7,084,146	281	45
2027	£7,423,626	283	45
2028	£7,770,195	285	45
2029	£8,132,657	288	45
2030	£8,511,925	290	44

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