



Tackling the capital's potholes

Potholes are a perennial problem for councils and their residents. A radical reduction in the number of potholes on London roads would require a sustained programme of proactive resurfacing, coupled with a reduction in the number of road works (which would also have obvious benefits for traffic flow and air quality). In the absence of any additional funding however, councils need to decide for themselves whether potholes should be given more priority. This briefing explains the causes of potholes and the possible solutions available.

Overview

According to the website www.potholes.co.uk¹, one in five mechanical failures in cars on UK roads is as a result of potholes. This costs motorists an estimated £320 million every year. Whether these figures are accurate remains to be seen, but the fact that the website exists in the first place is a sure sign that potholes are a serious problem. The site helps motorists to report problems, and provides advice on how to claim for compensation from councils.

Data compiled in the Annual Local Authority Road Maintenance survey² suggests that 159,000 potholes were filled in London last year (excluding the TFL 'red route' network). The total spent was £11.2 million, which means each pothole was filled at a typical cost of around £70. In terms of compensation, London boroughs collectively spent £6.4 million on compensation in 2010/11, which took 7,410 staff days to process. This survey is compiled by the Asphalt Industry Alliance (AIA), so it is fair to say they have a vested interest in filling potholes. However, in the absence of any other evidence, these survey results are the best we have to go on, and are widely reported in the media.

Analysis

What causes potholes?

There are a number of causes of potholes. Chief among these is road works. Once a hole has been dug and a repair carried out, the utility company will reinstate the road to a given standard. This will be effective to a certain point, but every subsequent dig and reinstatement causes the structural integrity of the road surface to be weakened. A combination of vibration from vehicles and exposure to the elements causes these weaknesses to turn into cracks, which can in turn become potholes. This is particularly noticeable during cold winters, when waters seeps into cracks, freezes and expands. This can literally break up a road surface overnight.

¹ This website is sponsored by motoring warranty providers Warranty Direct

² The ALARM survey is conducted by the Asphalt Industry Alliance every year. All local authority highway departments are invited to respond; 73% of London local authorities did so. Data quoted relates to the financial year 2010/11

Potholes can also be caused by sub-surface defects and cavities, surface water not running away correctly (known as 'ponding') and chemical spills (like diesel) which can damage the road surface if left uncleaned. Roads with a high proportion of heavy goods vehicle traffic are more susceptible to damage as a result of impact and vibration. Conversely, passenger cars, two-wheelers and pedestrians have little effect on the life of a road surface.

What can be done to fix potholes?

It is important to fix potholes as soon as possible (see below). During cold or wet weather, it may be necessary to apply a temporary fix, until weather conditions are conducive to completing a proper repair. A patched pothole may last for some months or even a few years, but is much less effective than permanent resurfacing. The best way to fix potholes is therefore to resurface a whole section of road (known as 'curb-to-curb' resurfacing).

The AIA suggests that permanent resurfacing is around 20 times more cost-effective than temporary filling and patching-up. A well-surfaced road should last between 10 and 20 years (subject to weather conditions and in the absence of road works or other impact damage). Roads in London are resurfaced, on average, every 42 years (22 for principal roads with the highest volume of traffic).

How serious are potholes?

Many residents will complain to councils having been splashed by water that has collected in a pothole following wet weather, and for many this is as problematic as they get. However, a damaged road surface can be life threatening. Minor surface damage affects tyre traction, and can result in road accidents. Larger potholes cause people to swerve dangerously to avoid them, which can result in collision accidents. This is particularly true for cyclists, who may either swerve to avoid a pothole or be thrown off by riding across one. Also, a patient's life is put at risk if an ambulance goes over a pothole while trying to resuscitate them. Some councils have been pursued for compensation by the relatives of people killed by potholes, so it is fair to say that they need to be taken seriously.

Solutions

It is simple enough to fill potholes individually, but this is only a temporary solution (as shown above). It seems unlikely that the problem will be solved altogether, but it could be alleviated dramatically through a combination of measures.

Better coordination of roadworks

London is undertaking an unprecedented volume of infrastructure development – the greatest since World War II. Wholesale development projects (like Thames Water's Victorian Mains Replacement) and exponential growth in demand for utility and telecoms connections have resulted in an unprecedented level of roadworks. As well as the obvious benefits in terms of traffic disruption, better coordination of road works should result in fewer digs, fewer reinstatements and longer-lasting road surfaces.

All boroughs are signatories to the Road Management Concordat³, which includes measures such as a permit scheme for road works, coordination of works using a central website, improved asset monitoring to prevent emergencies and a targeted 'lane rental' scheme, which would require utilities to pay for the time they occupy a road. We may not be able to eliminate road works, but by encouraging utilities to share trenches, pioneer new technologies (like 'keyhole' digging) and avoid repeatedly reopening the same stretch of road, we can reduce the amount of cumulative damage to the road surface.

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³ For more information on the Road Management Concordat, see: www.londoncouncils.gov.uk

Improved resurfacing

As outlined above, in the case of potholes, prevention is infinitely better than cure. But to do this, the amount of money spent on road resurfacing would need to be increased significantly. The AIA survey indicates that the maintenance backlog across London is nine years. In other words, if boroughs had the funds to complete all necessary road maintenance, it would probably take nine years (and cost each borough, on average, £31 million). In terms of annual figures, road maintenance budgets in London last year were typically £6.87 million per authority, of which one third was spent on reactive maintenance. This represents a significant shortfall on the amount necessary. If we only keep doing what we're doing now, the backlog will get worse.

Some of the maintenance budget comes from TfL, in the form of the Local Implementation Plan funding. This can be used for proactive road maintenance schemes, but is not intended for reactive pothole filling. TfL has made it clear there is no additional funding for borough road maintenance. The DfT offered local authorities £100 million of one-off funding after each round of severe cold weather (this has happened twice, so £200 million in total, but this is for all of England and Wales). All of this was used for reactive maintenance. Other avenues for alternative funding have largely been exhausted. In effect, any increase in road maintenance spending would have to come at the expense of other budgets.

Commentary

Boroughs face a considerable challenge if they are to make a significant impact on potholes. Increasing the priority and hence the budget for proactive road resurfacing offers the only viable long-term solution. But even this would not work without a dramatic and sustained decrease in road works, through better coordination and improved technology. Without this latter measure, the success of any resurfacing will be seriously undermined. Failure to tackle potholes will cause the current problems to continue to escalate – this could lead to road closures, more compensation claims, serious injuries and even fatalities.

Author: Rob Kidd, transport and parking manager (T: 020 7934 9907)

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