



EMBARGOED UNTIL
00:01 HOURS,
TUESDAY 21 MARCH 2023

ALARM

**Annual Local Authority
Road Maintenance** Survey Report

2023

About the ALARM survey

Each year the Asphalt Industry Alliance (AIA) commissions an independent survey of local authority highway departments in England (including London) and Wales.

The aim of the survey is to take a snapshot of the general condition of the local road network, based on information provided directly by those responsible for its maintenance. The data received from local authorities provides a means of tracking any improvement or deterioration, allowing long-term trends to be reported, and the qualitative feedback received from them provides context.

Questions in the survey relate predominantly to the maintenance of the carriageway itself – the road surface and structure – and only that part of the total highway maintenance budget which specifically addresses the condition of the carriageway, referred to as the carriageway maintenance budget. Total highway maintenance budgets also cover other significant areas of expenditure – including structural work to bridges, street lighting and cyclical maintenance (for example grass-cutting, checking traffic signals and the replacement of street furniture) – which are excluded from this report.

ALARM 2023 is the 28th annual survey and 75% of authorities responsible for local roads in England and Wales responded. This report summarises the key findings.

The survey and data collation was carried out between December 2022 and February 2023. Unless otherwise stated, the findings are based on the financial year 2022/23, ending 31 March 2023. Where these are unavailable, figures for the calendar year 2022 were requested.

There are four authorities in England, and one in London, which have Private Finance Initiative (PFI) contracts in place to fund and manage their highway maintenance programmes over a 25-year period. These are not included in the survey.

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The ALARM survey 2023 includes the findings of both quantitative and qualitative research.

The data received from local authorities has been extrapolated to represent the 114 local authorities in England without a PFI, 22 in Wales and 32 in London. The results have been collated, analysed and verified by a registered member of the Royal Statistical Society. ALARM survey reports from previous years can be accessed via our website: www.asphaltuk.org. A broad range of other road-related statistics are collated on RoadFile: www.roadusers.org.uk

Acknowledging ALARM

The Asphalt Industry Alliance is happy for journalists, researchers, industry organisations, government departments and others to use and/or quote the findings of ALARM 2023 and the infographics contained in this report. We stipulate that it is acknowledged as your source – referencing it as the AIA's ALARM survey report 2023 (or AIA ALARM 2023) – in all cases.

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Quotations used in this report are from local authority highway officials.

▲ Arrows indicate the direction of change from ALARM 2022.



Bleak expectations

Overview by **Rick Green**, Chair,
Asphalt Industry Alliance

The findings of this year's Annual Local Authority Road Maintenance (ALARM) survey make for bleak, if not unsurprising, reading. Local roads underpin all other local services, but findings show a worsening picture in their overall conditions and the means to improve them.

Resurfacing now takes place, on average, less than once every 100 years; local authority highway budget shortfalls in 2022/23 were up to record levels and the cost of the backlog of repairs to bring the network up to scratch is, at just over £14 billion, the highest it has been.

Rising costs due to inflationary pressures mean that despite a moderate increase in overall local highway maintenance budgets, engineers can do less, and many have been forced to postpone or cancel road schemes to make savings. This will only store up problems and additional costs for the future – and have a negative impact on network resilience.

The data shows that the shortfall in the carriageway maintenance budget has increased to £1.30 billion across England and Wales – a jump of 20 per cent on the figure reported last year. The shortfall is the difference between what local authorities received and what they said they would have needed to keep local roads to their target conditions and prevent further decline – so doesn't even consider what would be needed to improve conditions to an ideal situation.

Local authorities are also having to deal with the challenges of more extreme weather events, increased volumes of traffic, as well as an ageing network. It's therefore not surprising the data shows that structural conditions continue to decline with 8,000 fewer miles of roads classed as structurally 'good' than reported last year (see page 15).

Highway engineers can only do so much with the resources they're given and should be applauded for the steps they take to keep roads safe.

It's clear from the column inches and social media posts devoted to potholes that the condition of our local roads remains a key issue for the public. Materials innovation and technical advances can only go so far: they are not a silver bullet. Without a change to the funding structure and the amount allocated, local road conditions can't – and won't – improve.

The backlog of repairs is the **highest it has been**

Structural conditions **continue to decline**

Highway budget shortfalls in 2022/23 were **up to record levels**

Executive summary

The aim of the Annual Local Authority Road Maintenance (ALARM) survey is to highlight the connection between local road maintenance funding and conditions in England (including London) and

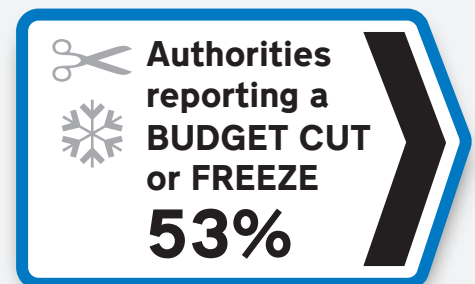
Wales, based on information provided directly by those responsible for their maintenance. A record number of local authorities took part in this year's survey, providing robust data for analysis and underscoring the value

that those working in the sector place on its annual findings. It is used by local authorities for benchmarking and by stakeholders across the sector as a valuable tool for tracking local road conditions and funding.

2022/23 at a glance

Funding:

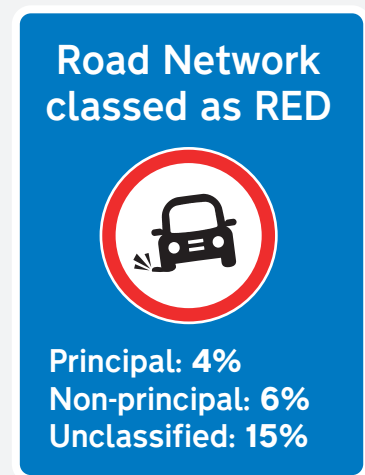
- ➔ Average highway maintenance budgets across England and Wales have **increased by 4.5% to £25.8 million per authority** but this does not keep pace with the impacts of rising inflation and represents a cut in real terms. This represents a total highway maintenance budget of £4.33 billion.
- ➔ Not all local authority highway teams saw an increase in funding: **53% of authorities actually reported a cut or freeze in their highway maintenance budget**, even before inflation is taken into account.
- ➔ The average percentage of highway maintenance **budget allocated to the carriageway dropped slightly to 50%**, the lowest it has been for a decade. This reflects the need to balance the maintenance of other parts of the highway asset, such as structures, signage, street lighting and drainage.
- ➔ Despite increased average highway maintenance budgets, **average carriageway maintenance budgets showed a small drop to £13.0 million** from £13.2 million last year. This equates to a total carriageway maintenance budget of £2.19 billion across England and Wales.
- ➔ The average shortfall in the 2022/23 carriageway budget has increased by **20% to £7.7 million per authority**, with the total shortfall across England and Wales reaching £1.30 billion. This suggests that local authorities in England and Wales only received around two-thirds of the amount they say they would have needed to maintain their network to their own targets.
- ➔ The **one-time catch-up cost has increased again by a further 11% to a new high of £14.02 billion** and would take over a decade to complete. This is the amount needed as a one-off investment to bring the network up to a condition that would allow it to be managed cost effectively going forward as part of a proactive asset management approach.



Conditions:

- ➔ Road Condition Index (RCI) data reports the condition of the surface of the carriageway, not necessarily the structure of the road. It shows there has been a **drop in the number of roads classed as GREEN** (in a good state of repair) and a corresponding increase in those classed as AMBER (showing some deterioration).
 ~~~~~
- ➔ Roads classed as RED (poor overall condition) have remained stable with **one in every 9 miles** (11%) of the local road network in England and Wales likely to require maintenance in the next 12 months. This equates to around 22,600 miles or almost the entire way around the world.  
 ~~~~~
- ➔ Unclassified roads are almost four times as likely to be classified as RED than principal roads. Feedback suggests this is the result of local authority highway engineers needing to prioritise work.
 ~~~~~
- ➔ Over the last year, ALARM reports that **1.4 million potholes were filled** – down from 1.7 million last year – but still equivalent to one every 22 seconds. Overall, £93.7 million was spent filling potholes in 2022/23 and the total spent over the last 10 years is more than £1 billion.  
 ~~~~~
- ➔ The average frequency of resurfacing for all classes of roads now stands at **once every 116 years**.
 ~~~~~
- ➔ Structural maintenance is needed when surface maintenance alone won't suffice, and structural conditions data provides a more holistic assessment of the carriageway asset. Compared with last year, there are now more than **8,000 miles (4%) less 'good' roads**.

Detailed key findings can be found on page 20.



## Recommendations

Everyone relies on local roads; they underpin our communities and support delivery of goods and services, and local authority highway teams have a legal responsibility to keep them safe. But they do not have the funds to do so in a cost effective, proactive way.

The link between continued underinvestment and the ongoing structural decline and below-par surface conditions of our local roads is clear and it would now take £14.02 billion – the

highest recorded in ALARM – to bring them up to a condition from which they could be effectively managed going forward. This equates to £68,254 for every mile of local road in England and Wales.

We all appreciate that there are difficult choices to make with demands and pressures on the public purse coming from every area, but not investing in local road maintenance only leads to worsening conditions, which impact on other locally provided public

services, a rising bill to fix the problem and more road user complaints.

To really improve conditions and create a safe, resilient and sustainable network, what's needed is a **longer-term funding horizon** from central government with **more highway budget ring-fencing**. This would help local authority engineers to plan effectively and be able to implement more efficient works to protect and enhance the resilience of the local road network.

# Highway maintenance budgets

**T**here are 205,400 miles of local roads in England and Wales, including London, representing 97.3% of the total road network (source: Department for Transport, 2021). They are maintained by local highway authorities, who have a legal obligation to keep them in a safe condition. With a combined value in excess of £400 billion, they are considered local authorities' most valuable asset.

Central government identifies highway maintenance as an Upper Tier, or key service to be provided by local authorities, but it is just one of many areas of responsibility and necessary expenditure.

Feedback received suggests that the proportion of total local authority budgets allocated to highway maintenance in 2022/23 is largely down on the levels reported last year. In England the share of spending on highway maintenance was 5.0%, down slightly on previous years (2021/22: 5.1%; 2020/21: 5.5%). In London

this figure was higher than in recent years at 4.3% (2021/22: 1.6%; 2020/21: 2.0%), while in Wales it was just 2.1% (2021/22: 3.2%; 2020/21: 5.8%).

These total budgets are funded by central government as well as local authority sources, which includes borrowing, use of capital reserves and monies collected through council taxes and a share of business rates as well as parking fines and other fees.

## Highway maintenance funding in England

Average local authority budgets for all highway maintenance activity in England (excluding London) increased by 3.1% to £33.3 million per authority, the highest monetary value recorded in ALARM reports. However this increase is still significantly lower than the current rate of inflation.

Notably, this average hides a wide disparity between those local authorities seeing increased budgets and those which

have experienced a cut from the previous financial year. In England over half (53%) of responses report an absolute cut in monetary terms on last year's highway maintenance budgets, with a further 3% reporting a freeze.

Of budgets allocated for highway maintenance, 51% is reported to be funded by central government, while the remaining 49% comes from local authorities' own sources.

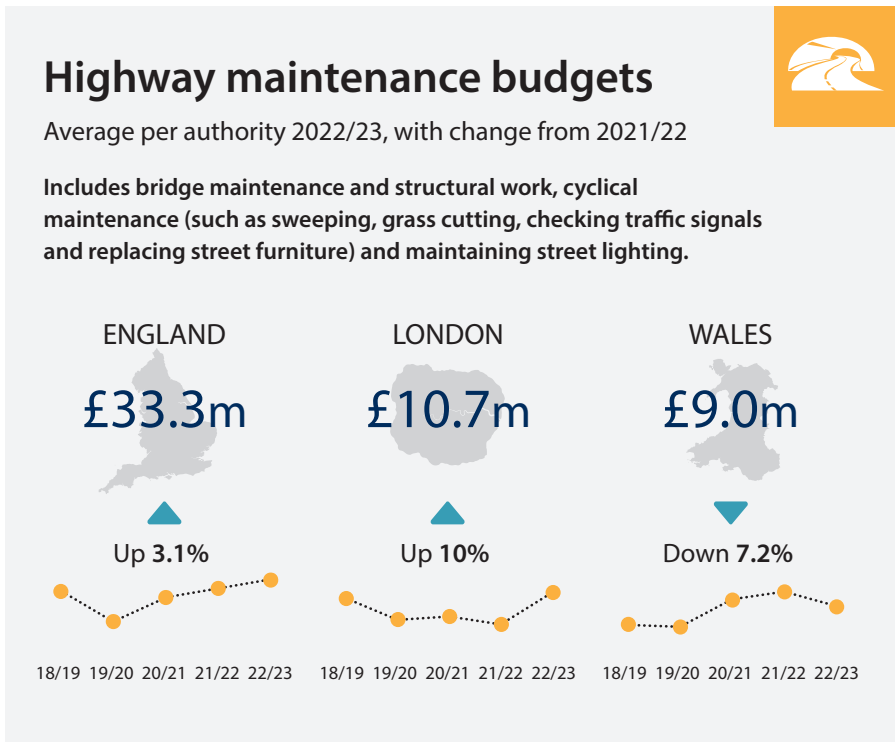
The DfT provides 91% of the central government funding to English highway authorities – equating to approximately 47% of authorities' total highway budgets. The majority of DfT funding is not ring-fenced specifically for highway maintenance or improvements.

The remainder of the central government funding streams come from other sources such as the Department for Levelling Up, Housing and Communities (previously known as the Ministry of Housing, Communities and Local Government), Environment Agency grants and regional and mayoral areas growth funding.

Incentive-based highways maintenance funding was introduced in England by the DfT in 2016 to promote efficiency improvements and reward success. To secure this, local authorities must respond to an annual self-assessment questionnaire covering asset management, resilience, customer satisfaction, benchmarking and efficiency, and operational delivery.










The results determine which of three bands they are placed in – and therefore how much from the £125 million incentive funding available in 2022/23 they were allocated – with band 1 receiving no incentive funding and band 3 receiving the greatest amount.

Responses show that the number of local authorities placing themselves in



## Highway maintenance budget variances




Percentage of local authorities who saw decrease/increase/no change compared with 2021/22

|         | Decrease                                                                              | Increase                                                                              | No change                                                                             |
|---------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| ENGLAND | 53%  | 44%  | 3%   |
| LONDON  | 7%   | 60%  | 33%  |
| WALES   | 60%  | 40%  | 0%   |

## Local roads in England and Wales

Proportion by type:



-  Principal roads: 10%
-  Non principal roads: 29%
-  Unclassified roads: 61%

band 3, the highest band, has remained steady over the past three years at over 90% (2022/23: 93%; 2021/22: 94%; 2020/21: 93%). Qualitative feedback highlights that authorities are generally supportive of this method of allocating the incentive funding and that efficiencies have been achieved as a result, although there are still a handful of authorities missing out on the potential additional funding.

In England a large number of local

authorities, particularly in and surrounding large cities, are members of a combined authority, which takes responsibility for allocating all DfT transport-related funding, including highway maintenance among its membership.

### Highway maintenance funding in London

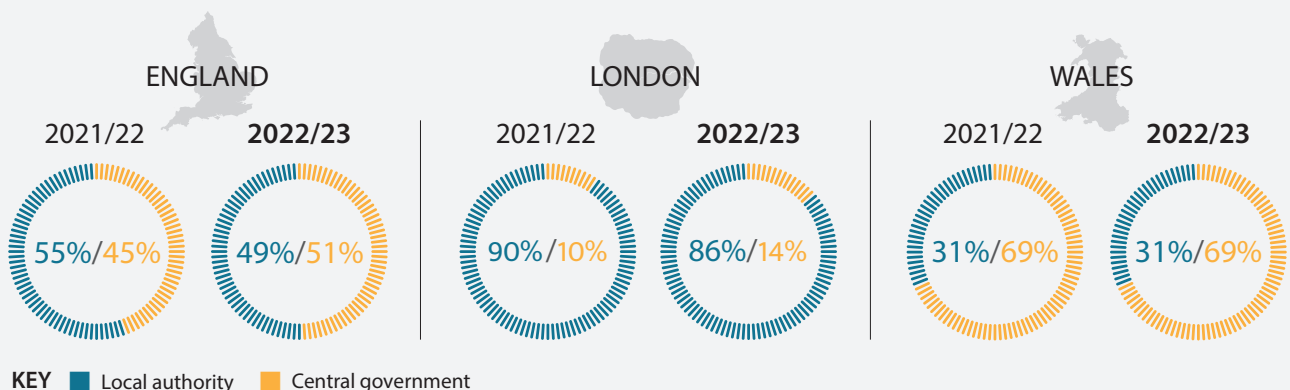
Respondents in London have reported an increase in their overall highway

maintenance budget, up 10% to an average of £10.7 million per authority, back in line with budgets reported in ALARM 2019 (£10.6m).

This figure is impacted by significant capital investment projects – funded from their own sources – in a small number of authorities. Again, there is disparity between those receiving an increase (60% of respondents) in their budgets with the

## Funding streams

Local authority and central government funding

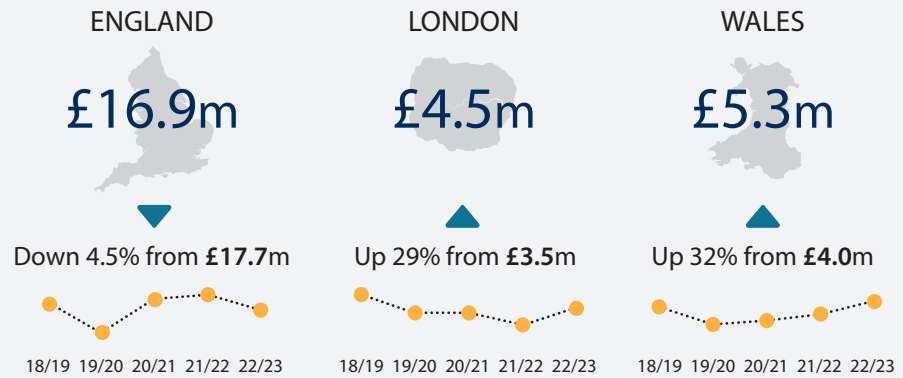


# Highway maintenance budgets continued

Work is being approved on the basis of what funding is available rather than on the identified need, which completely goes against asset management principles.

## Carriageway maintenance budgets

Average per authority, with change from 2021/22



remaining 40% experiencing a freeze or a reduction on last year.

Since the Government withdrew funding to TfL in 2018, the vast proportion of highways maintenance budgets in the capital have come from London Boroughs' own sources. The cash injections made by Government to TfL between 2020-22 – to deal with the effects of reduced income during the pandemic – were predominantly spent keeping services running.

This year only 14% of budgets are reported to originate from central government sources, including TfL, with the vast majority (86%) coming from borrowing and other borough revenue such as parking fees.

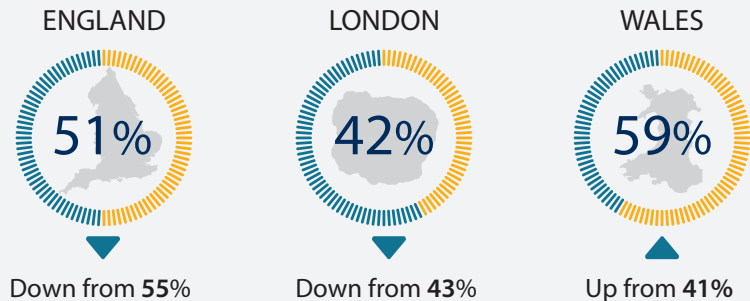
### Highway maintenance funding in Wales

Average budgets reported in Wales have seen an 7.2% drop to £9.0 million per authority (2021/22: £9.7m), the lowest figures since ALARM 2020.

A majority of Welsh respondents – 60% – reported a cut on last year's overall highway maintenance budget, with 40% experiencing increased funding.

## Carriageway spend

Proportion of the overall highway maintenance budget spent on the carriageway itself



Of the total, 69% of highway maintenance funding came through the Welsh Assembly Government and 31% from authorities' own sources, the same split as reported last year.

### Overall picture

The overall total highway maintenance budget across England and Wales for 2022/23 is reported as £4.33 billion, up by around £200 million on the 2021/22 figure (£4.13bn). An increase in line with inflation would have required more than £4.5 billion.

The graphic on page 9 demonstrates the fluctuating level of highway maintenance

budgets over the last decade, showing a general upward trend in absolute terms.

### Carriageway maintenance

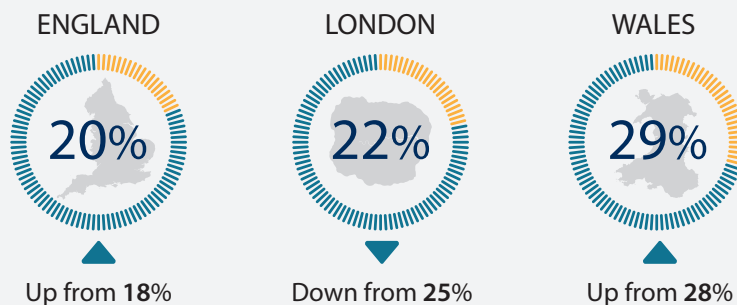
Defined in the survey as: *the percentage of the highway maintenance budget spent on the carriageway itself*, the average allocation over the last decade has been 54%. This year the carriageway maintenance figure dropped slightly to 50% across ALARM respondents, from 51% in 2021/22.

The reduction in the percentage of the highway budget spent on the carriageway has somewhat been compensated by the



## Reactive maintenance

Proportion of carriageway maintenance budget spent on reactive maintenance (16% considered ideal)



### Unforeseen costs

There has been a jump in the overall number of respondents who had to cope with unforeseen maintenance needs over the last year – and the additional cost incurred. The reasons identified for this include dealing with the effects of extreme weather events, rising traffic volumes and increasing average vehicle weights on a deteriorating network. Plus, there remains the on-going legacy of the COVID-19 pandemic, when many councils postponed planned works, though this is now diminishing.

In England 70% of respondents have dealt with unforeseen costs, up from 56% reported last year, and the average additional cost incurred more than quadrupled from £388,100 per authority reported in ALARM 2022 to £1.9 million.

Fewer London boroughs are reporting unforeseen costs – 72% this year compared to 82% last year – but the additional cost incurred has increased to an average of £687,000 per authority from £541,600 reported last year.

Wales reports the highest proportion of respondents dealing with unforeseen costs at 80% (2021/22: 75%) but the average cost per authority is the lowest at £98,800 (2021/22: £380,000).

Overall, £236.2 million was spent addressing unforeseen needs in 2022/23, more than three times the £69.5m reported last year.

increase in overall highway maintenance budgets. As a result, the total carriageway maintenance budget across England and Wales in 2022/23 was £2.19 billion, down marginally from £2.20 billion in 2021/22. An increase in line with inflation would have required £2.4 billion.

The majority of local authorities (87% of responses) spent all of this, and 24% report an **overspend**. This is the highest proportion of authorities overspending reported since ALARM 2019 from factors such as including schemes carried over from the previous financial year, the scope of projects changing at the point of delivery and rising prices.

The average reported proportion of the carriageway maintenance budget spent

on reactive maintenance (that not planned for at the beginning of the year) was 20% in England, up 2% on ALARM 2022, while in London there was a drop of 3% from 25% last year to 22% this. The figure in Wales increased slightly to 29% from 28% reported last year.

These figures acknowledge that circumstances can create an immediate need for maintenance to keep the roads safe and serviceable. It is extremely difficult for local authorities to predict and allocate the percentage of budget required for this kind of work but, it is generally agreed that around 16% (the same figure reported for the last three years) is considered a more ideal level, less than the reported reality – significantly so in London and Wales.

### Adverse weather

Adverse weather conditions, particularly wetter winters with more intense downpours and storms and hotter, drier summers, coupled with increased traffic volumes and the age of the network can result in accelerated deterioration and unpredicted failures.

The combined impacts are more acute on evolved and often less well maintained – and therefore less resilient – roads, where water can penetrate existing cracks or defects, leading to the formation of potholes and, in time, undermine the entire structure of the road.



Adverse weather has caused increased cases of landslips and road collapses, which have resulted in the need for immediate works that were not planned for.



The huge uplift in costs means we have been able to deliver far less than we expected this year, with projects being taken off the list.

We're trying to be proactive and take preventative measures rather than relying on patching and pothole fixing.

We are trying to move on from just filling in potholes and think about the bigger picture.

Government funding allocations consider network length but not volume and type of traffic.

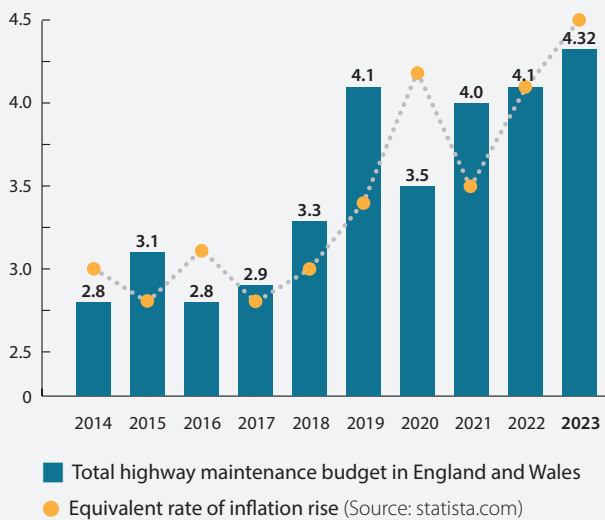
There's a disconnect between our net zero carbon ambitions and how we are going to deliver them. It's going to take four to five decades, not four to five years.



# Highway/carriageway maintenance trends

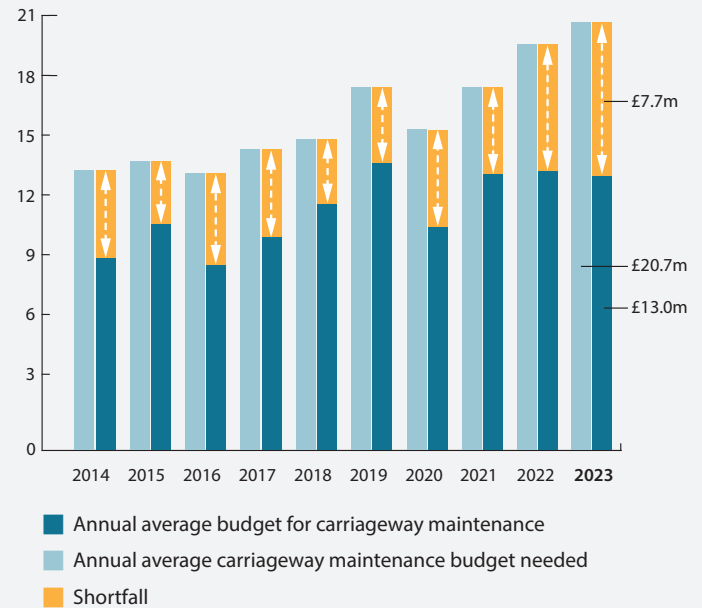
## Total highway maintenance budget in England and Wales

(£bn)



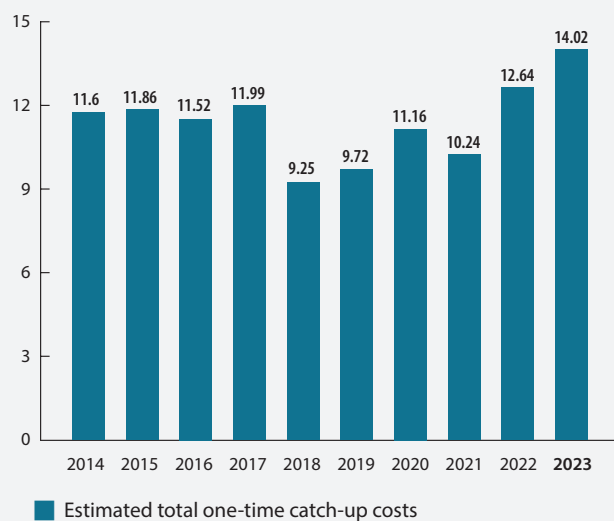
## Carriageway maintenance budget needed

Annual average per authority (£m)



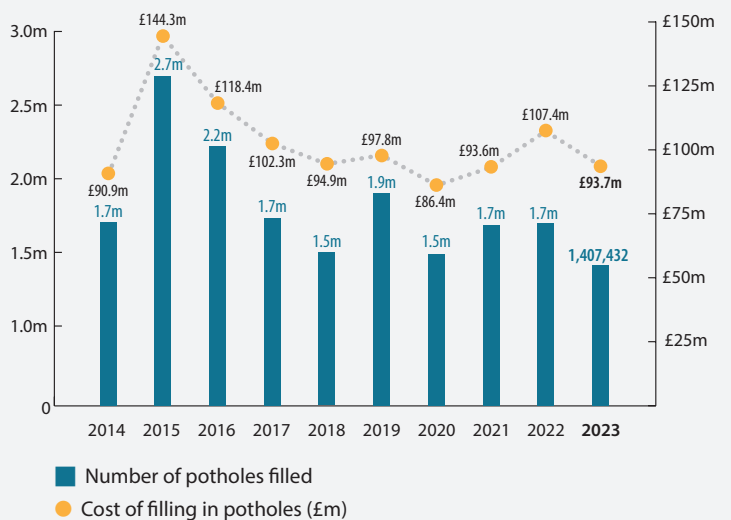
## One-time catch-up costs

(£bn)



## Potholes

Number of potholes filled (with cost £m)



Data reported above is as per previous ALARM surveys and represents financial years. For example, 2023 represents data from 2022/23.

# Highway maintenance budgets continued

## Longer term funding

Reported ideal term funding in England and Wales



### Longer term funding

All respondents agreed that guaranteed, longer-term funding helps increase efficiency and provide a more resilient road network.

Almost all responses indicate that at least 5 years should be considered as the optimal term (5 years: 61%; 10 years: 35%).

Security of funding helps authorities plan with more confidence and drive greater cost and environmental efficiencies. Previous calculations by the AIA have indicated that planned, preventative maintenance is 20 times more cost effective per square metre than reactive work, such as patching and filling potholes,

as it adds resilience to the network as a whole, not just isolated areas.

### Budget shortfall

The total shortfall (see panel above) in 2022/23 carriageway maintenance budgets reported in England and Wales (including London Boroughs) is £1.30 billion (2021/22: £1.06 billion), the equivalent of a funding gap of £7.7 million per authority – a 20% increase on ALARM 2022 figures (£6.4 million average).

In England the shortfall is reported as £8.5 million per authority, an increase of 15% on last year (2021/22: £7.4m), while in

## Shortfall versus backlog

The **shortfall** is the difference between the sums received in any financial year and the amount a local authority would need to keep their network to current target conditions and prevent further decline.

The **backlog** describes the amount that would be needed – as a one-off – to bring the network up to a condition that would allow it to be managed cost effectively going forward as part of a proactive asset management approach.

London the gap has increased by 43% to £7.3 million (2021/22: £5.1m).

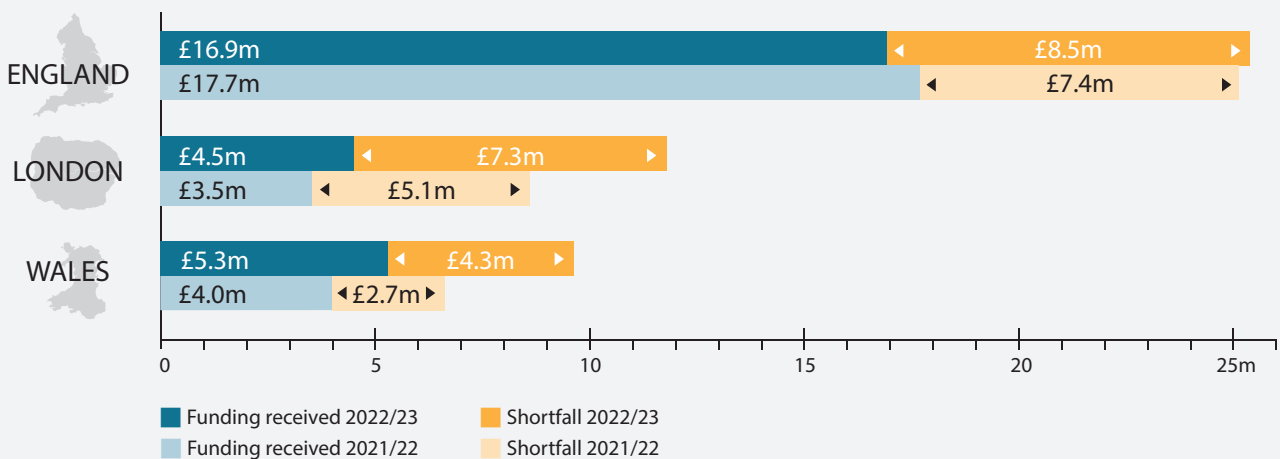
The shortfall reported in Wales has increased even more dramatically from an average of £2.7 million per authority in 2021/22 to £4.3 million this year – a jump of 59%.

Despite the size of the average shortfall, its real extent could still be being masked by the fact that 39% of local authorities report transferring capital funds, intended for highway improvements, to supplement revenue budgets for 'traditionally' maintenance work.

Of course, carrying out road maintenance as part of capital works, still

## Budget shortfall

Average carriageway maintenance budget received and average shortfall per authority (£m)





leads to efficient highway improvements, regardless of the funding stream.

### One-time catch-up cost (backlog)

Each year the ALARM survey asks highway departments to estimate how much it would cost to address the effects of the legacy of shortfalls and bring their road networks up to scratch (assuming they had the resources in place to make it practical to do so as a one-off project). This would be the condition from which longer term and cost effective, planned preventative maintenance programmes could be put into place, reducing the future cost of more extensive repairs or replacement.

The combined estimate for this one-time 'catch-up' cost – **over and above what local authorities indicate they already receive** – for England and Wales (including London) is £14.02 billion – the highest reported in ALARM (2021/22: £12.64 billion; 2020/21: £10.24bn) and continues the upward trajectory reported over the last decade (see trend data on page 9).

This 11% increase equates to an average carriageway maintenance 'backlog' cost of £68,254 per mile of local road in England and Wales.

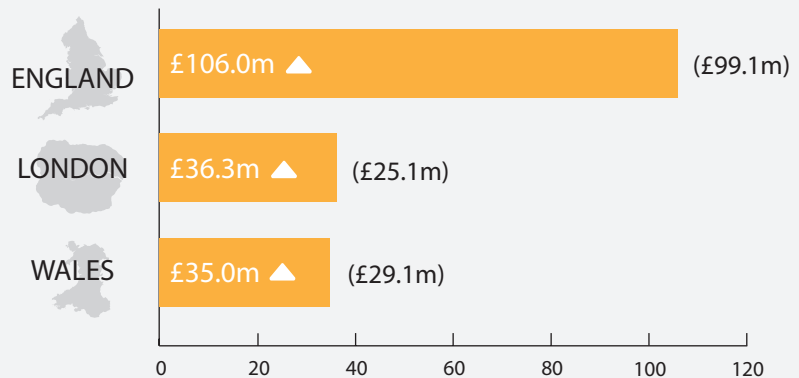
The one-time catch-up cost is an average of £106.0 million per authority in England (up 6%); £36.3 million in London (up 45%) and £35.0 million in Wales (up 20%).

### Addressing the maintenance backlog

Highway departments estimated that it would take 11 years to get local roads back into a reasonable steady state, if adequate funding and resources were in place, up on the 9 years reported in ALARM 2022. This breaks down as an average of 11 years in England; 10 years in London and 9 years in Wales.

## One-time catch-up costs

Average additional one-time catch-up cost required to clear carriageway maintenance backlog per authority, £m (2021/22 in brackets)



## Maintenance backlog

**11 years:** average number of years needed to clear carriageway maintenance backlog (2021/22: 9)

# Road condition

## Road Condition Index (RCI)

An asset management approach to highway maintenance means that 100% of the network will not be in 100% perfect condition, 100% of the time, but local authorities reported that, if they had sufficient funds and resources, the ideal RCI profile of the local road network in England and Wales would be: 72% GREEN, 21% AMBER and 7% RED.

Responses show that this ideal remains well out of reach with English authorities reporting 61% GREEN, 28% AMBER and 11% RED; London authorities 61% GREEN, 25% AMBER and 14% RED; and Welsh authorities 62% GREEN, 31% AMBER and 7% RED.

Target condition levels, which qualitative feedback suggests are often set in line with available budgets, remain in line with those reported over the last two years. The continued implementation of the Well Managed Highway Code – which allows authorities to develop levels of service



The RCI index features three condition categories (GREEN, AMBER and RED) across three road classes – principal, classified (non-principal) and unclassified – and compares current road conditions against these targets.

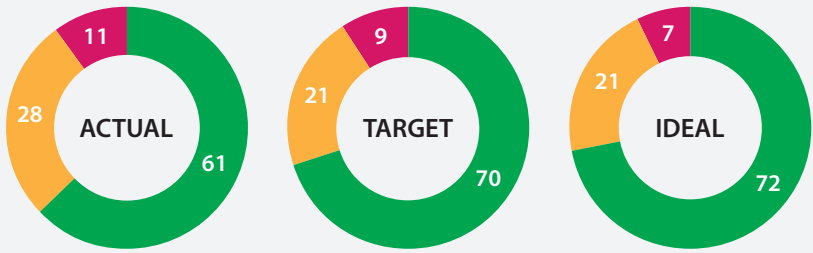
Local authorities can adjust the precise definitions of the categories to reflect the individual nature of their networks. However, in general, GREEN defines lengths where the carriageway is in a good state of repair, AMBER is for lengths where some deterioration is apparent which should be investigated to determine the optimum time for planned maintenance and RED for lengths of carriageway in poor overall condition, likely to require planned maintenance within a year or so.



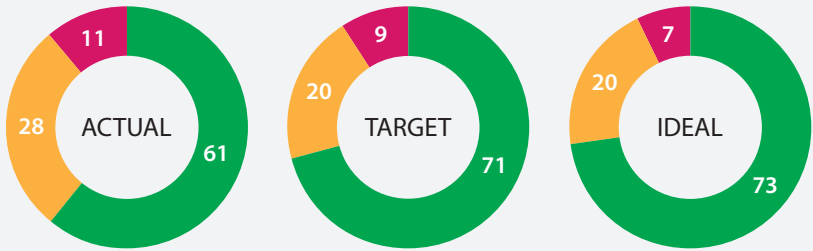
## Road Condition Index (average all classes)

Performance in England and Wales (% of network)

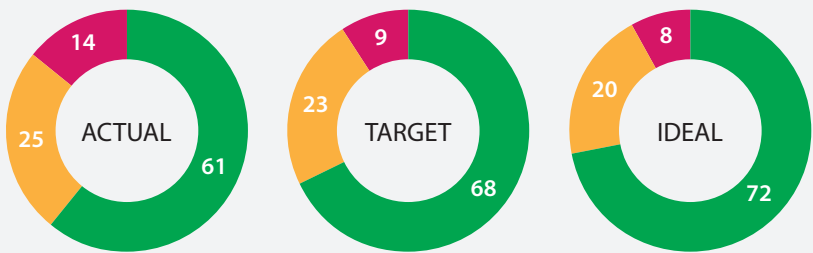
### Overall:



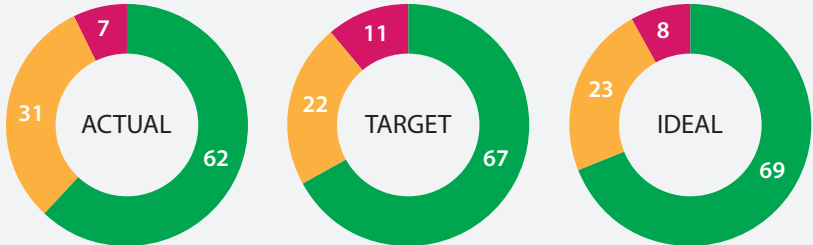
### England:



### London:



### Wales:



### CARRIAGEWAY STATUS:

- GREEN:** good state of repair
- AMBER:** some deterioration is apparent
- RED:** poor overall condition – likely to require maintenance in next 12 months

## Actual Road Condition Index

England and Wales (% of network)

|       |         | ALL CLASSES | PRINCIPAL | NON-PRINCIPAL | UNCLASSIFIED |
|-------|---------|-------------|-----------|---------------|--------------|
| GREEN | England | 61 ↓        | 73 ↑      | 67 =          | 55 ↓         |
|       | London  | 61 ↓        | 61 ↓      | 58 ↓          | 61 ↓         |
|       | Wales   | 62 ↑        | 73 ↑      | 68 ↑          | 55 ↑         |
| AMBER | England | 28 ↑        | 23 ↓      | 27 =          | 29 ↑         |
|       | London  | 25 ↑        | 22 ↑      | 28 ↑          | 25 ↑         |
|       | Wales   | 31 ↓        | 24 ↓      | 26 ↓          | 37 ↓         |
| RED   | England | 11 =        | 4 =       | 6 =           | 16 ↑         |
|       | London  | 14 ↓        | 17 ↑      | 14 ↓          | 14 ↓         |
|       | Wales   | 7 =         | 3 =       | 6 =           | 8 =          |

- ↑ Up from ALARM survey 2022
- ↓ Down from ALARM survey 2022
- = Same as ALARM survey 2022

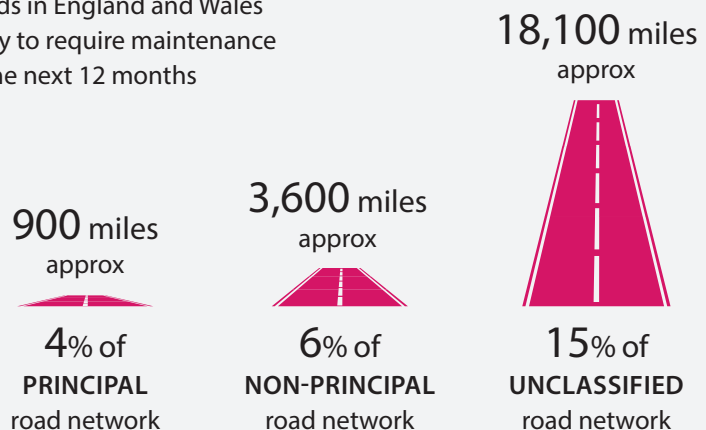
in line with local needs, priorities and affordability – also impacts on the target conditions set.

RCI data reports that there are less roads overall classed as GREEN (being in a good state of repair) and more classed as AMBER (where some deterioration is apparent) but the percentage classed as RED – those in poor overall condition – has remained stable. This means that one in every nine miles of local road network in England and Wales (11%) is classed as RED and likely to require maintenance in the next 12 months. This equates to around 22,600 miles.

Breaking this down by road classification highlights the differences in condition with unclassified roads almost four times more likely to be classed as RED than a principal road.

## Roads in poor overall condition

Roads in England and Wales likely to require maintenance in the next 12 months










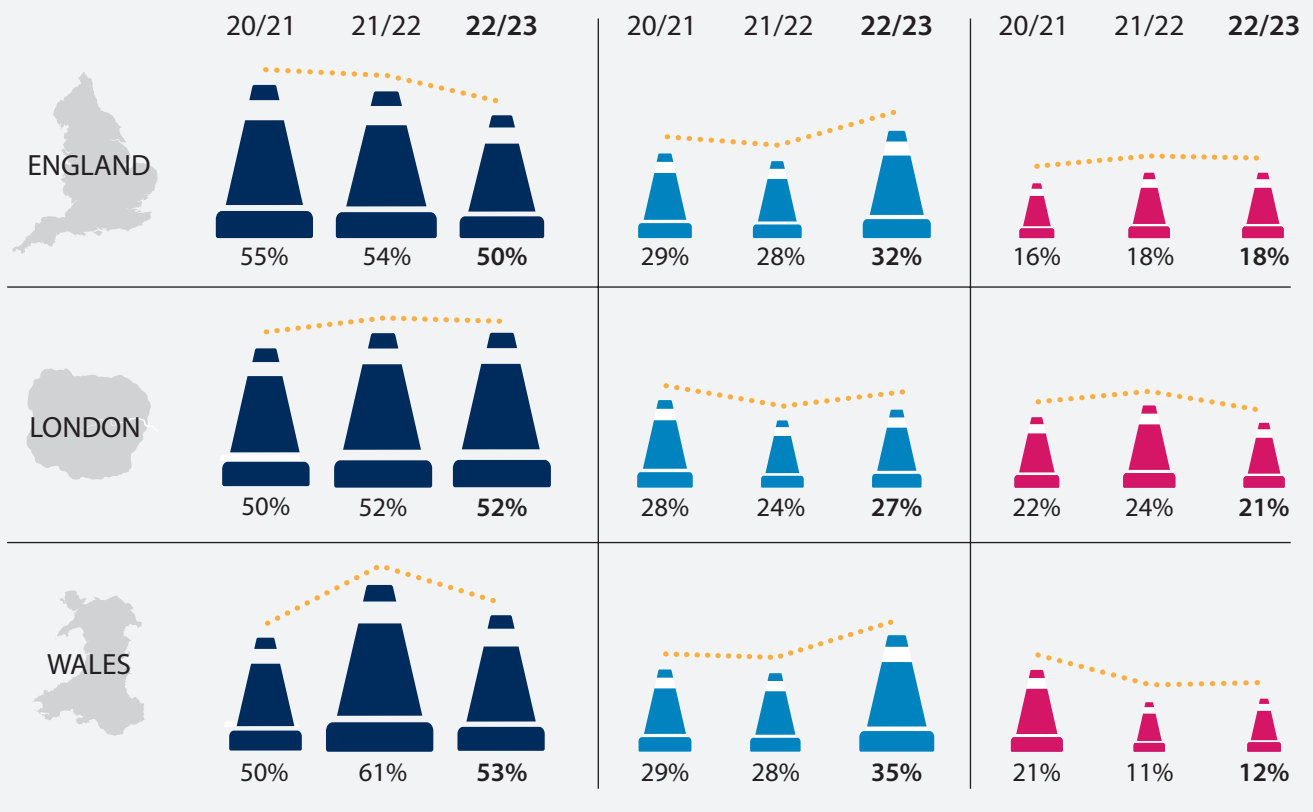


## Road condition continued

### Structural road condition

Percentage of roads in good, adequate and poor condition

KEY:  GOOD: 15 years' or more life remaining  
 ADEQUATE: 5-15 years' life remaining  
 POOR: less than 5 years' life remaining



#### Structural road condition

Structural maintenance is required when the condition of the road has deteriorated beyond the point at which only surface maintenance will suffice.

As shown in the chart (above), the network has seen further decline in most areas, with the exception of the percentage of roads classed as poor in London, which has decreased from 24% reported in ALARM 2022 to 21%.

Overall, around 51% (2021/22: 55%) of the local road network in England and Wales is reported to be in good structural condition (with 15 or more years of life remaining), equivalent to approximately 104,745 miles.

Approaching a third (31%, equivalent to 63,668 miles) is now reported to be in adequate condition (5-15 years of life remaining) and 18% – 36,918 miles – in poor condition and having less than five years of life remaining.

However, this means, compared with last year, there are 8,055 miles less

structurally 'good' roads and 8,290 miles more 'adequate' while the number of roads classed as 'poor' remains stable.

Structural assessments are carried out against engineering properties and criteria and may not always identically reflect the visually evident conditions and road user experience indicated by RCI.

We've been exploiting what residual structural strength remains but it's now starting to go and we're seeing more of our local roads deteriorate.

We've been relying on the resilience of the road network over the last decade or so.

## Road condition continued

### Potholes

Potholes are symptomatic of poorly maintained roads and can be used as indicators of resilience, potentially pointing to underlying structural issues.

The total number of potholes filled reported in this year's survey has decreased by 16% from 1.7 million reported for the last two years to 1.4 million (2021/22: 1.7m; 2020/21: 1.7m) – the equivalent of one pothole being addressed every 22 seconds in England (including London) and Wales.

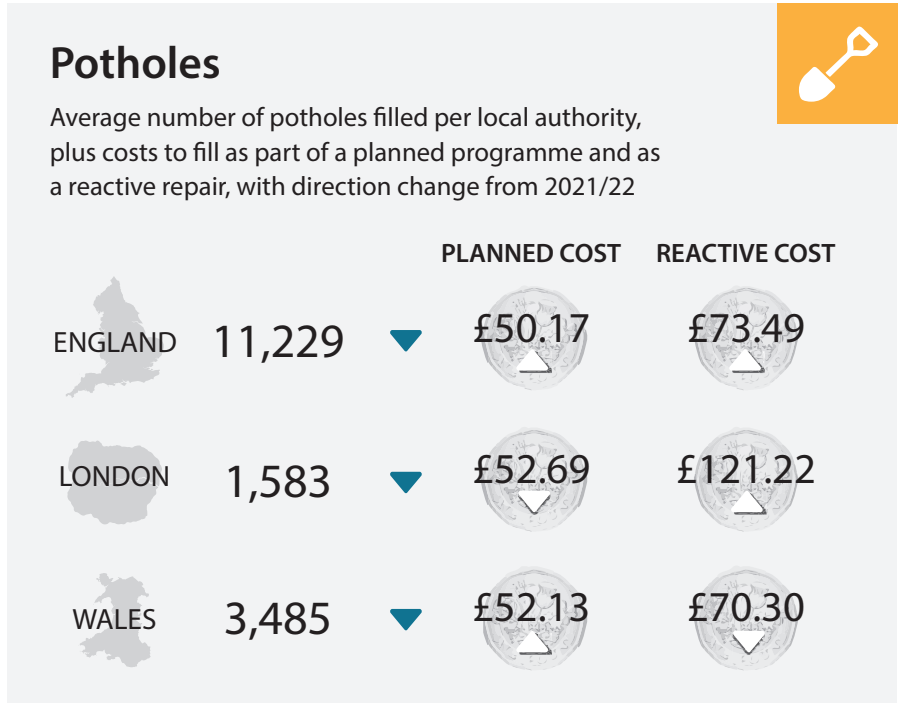
Qualitative feedback highlighted that continuing weather extremes are taking their toll across the network and that pothole repairs remain only one element of the defects local authorities dealt with in the last year.

Over 90% (94%) of authorities responding to the ALARM survey stated that they use a guideline depth of 40mm (or less) to define a pothole. As the effect of a pothole can vary dramatically depending on the nature of the traffic on the road and its location, depth definition is not always the only means of prioritising repairs.

The disparity in cost between filling potholes as part of a planned programme of carriageway repairs and as a reactive repair is again apparent. Taking the average cost for filling a pothole across each region to be £66.54, the total amount spent in England and Wales last year is estimated at £93.7 million, down 13% from the £107.4 million reported in ALARM 2022.

### Road surfacing frequency

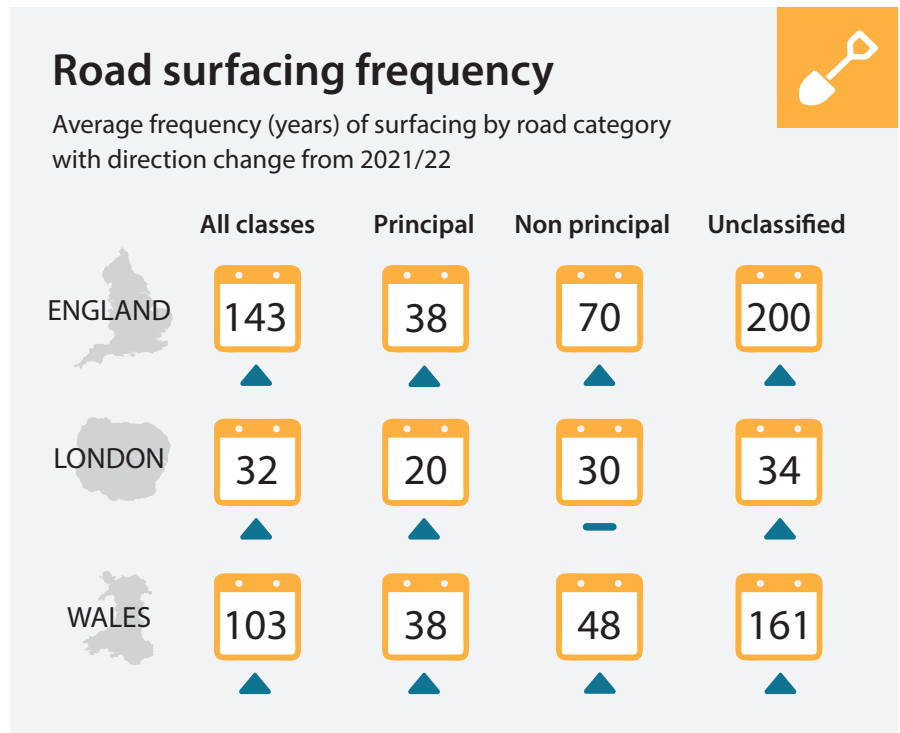
Replacing the entire surface layer of roads at regular intervals maintains an appropriate level of skid resistance, vital for road safety, guards against water ingress and freeze-thaw effects by maintaining a weatherproof seal on the road's surface and enhances resilience. It also offers the opportunity to identify and address any



deeper structural issues arising which are not initially evident.

Considering the lifespan of particular materials, the type of road and the level

and nature of its traffic, the recommended frequency of road resurfacing is between 10 and 20 years – an ideal, once again, only reportedly achieved on principal roads



in London. Across England (including London) and Wales the average surfacing frequency across all types of road is once every 116 years.

In England only, it is reported to be once every 143 years across all road types (2021/22: 84 years), while in London this figure is once every 32 years (2021/22: 31 years) and in Wales once every 103 years (2021/22: 72 years).

The breakdown of data across the different classes of roads continues to highlight how local authorities have to prioritise key routes, to the detriment of unclassified roads, as current budgets are not sufficient to adequately maintain the whole network.

### Utility company road openings

Opening a road to create a trench can reduce its structural life by up to 30% and the continuing high level of utility openings in England and Wales – reported as 2.4 million in 2022/23, up 18% on the previous year – can reasonably be assumed to be having an overall detrimental effect.

While the majority of reinstatements (82% based on responses received) are completed in accordance with legislation, local authorities still reported they spent an average of 3.4% of their carriageway maintenance budget addressing premature maintenance arising from utilities openings.

This amounts to an average of £447,100 per authority or a total of £77.1 million in England and Wales.

In my opinion, the quality of utility company reinstatement appears to be getting worse.

The maintenance period for work by utility companies should be increased to five years, reducing work for local authorities on failed excavations.

## Utility company openings

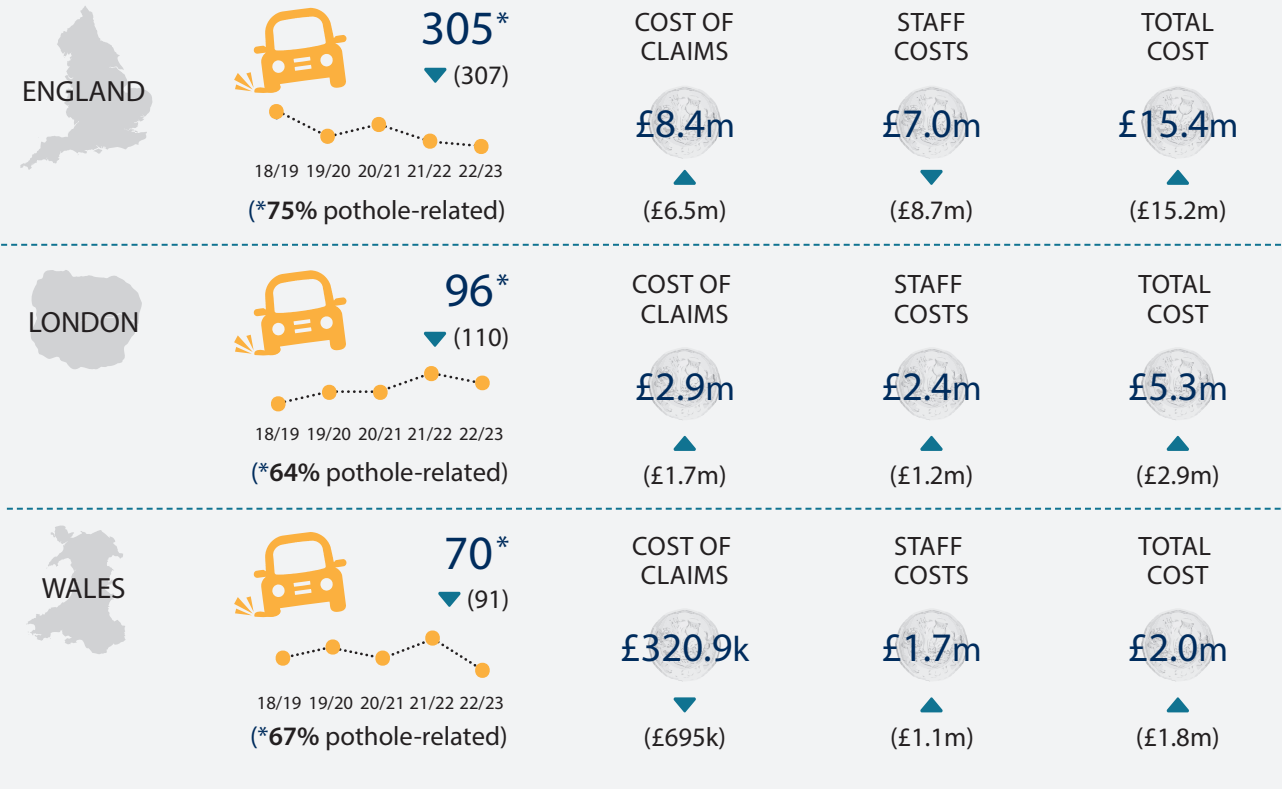
Average number of utility openings per authority in past year (previous year in brackets)



## Road condition continued

### Road user compensation claims

Number of claims in past year (average per authority) plus **total** cost (£) of dealing with claims (2021/22 figures in brackets)

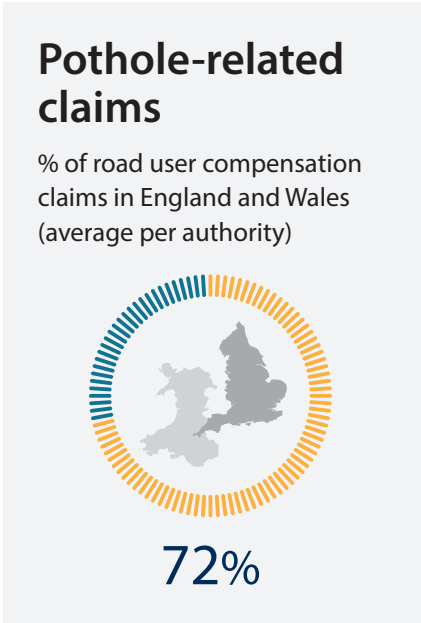


#### Road user compensation claims

The average number of claims received by local authorities in England and Wales has dropped again to an average of 234, with 72% of the total relating specifically to potholes. The total amount paid in compensation claims, however, has increased by 30% to £11.6 million, although it is recognised that successful claims will not necessarily relate to the current financial year.

A further £11.1 million was spent on staff costs to deal with claims, bringing the overall total spent addressing claims to £22.7 million across England, London and Wales, up 14% on last year and in line with the findings of ALARM 2020 (£22.8 million). This is the equivalent of £110.23 paid out each year per mile of road.

I don't think there is any local authority at this moment in time where road conditions are improving. It's about managing decline.



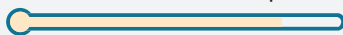


## Materials innovation

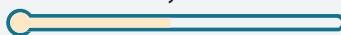
Percentage of responding local authorities in England and Wales reporting steps to reduce their carbon footprint including, or combinations of:



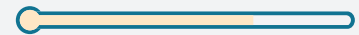
**82%**  
permit use of  
Warm Mix Asphalts



**49%**  
specify other  
recycled content



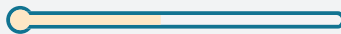
**71%**  
promoting more  
efficient working  
to reduce emissions



**36%**  
specify reclaimed  
asphalt



**46%**  
choosing materials  
with lowest initial  
carbon footprint



**71%**  
selecting surfacing  
materials with  
longer life



### The path to net zero asphalt

Around 80% of local authorities in England and Wales have declared a climate emergency (<https://data.climateemergency.uk/>) and 93% of ALARM respondents report that their local authority has a net zero pledge – with 60% pledging to reach their target by 2030.

Despite this, only 10% of respondents confirmed that their authority has a quantified target to reduce the carbon footprint resulting from the procurement of road surfacing materials.

But, when planning and specifying road maintenance, local authorities are moving to implement a range of measures to reduce the carbon footprint. Local authorities were asked specifically about six different measures and responses show an increase in the uptake in all of these, on that reported in ALARM 2022 (see chart above).

One of these measures is using Warm Mix Asphalts (WMAs), which can reduce carbon emissions and improve efficiencies on highway projects, and 82% of respondents now include WMA on their asphalt specification list (2021/22: 60%) and, of those not currently including

it, 83% are looking to adopt it in the future.

In addition, one third (33%) of newly-laid asphalt materials over the last year were

explicitly specified to include recycled materials such as recycled aggregates and reclaimed asphalt, which is already accepted as standard practice.



## Key findings

|                                                                        | TOTAL*      | England**   | London    | Wales     |
|------------------------------------------------------------------------|-------------|-------------|-----------|-----------|
| Percentage of authorities responding                                   | ↑ 75%       | − 81%       | ↑ 69%     | ↑ 55%     |
| <b>Highway maintenance budgets</b>                                     |             |             |           |           |
| Average highway maintenance budget per authority                       | ↑ £25.8m    | ↑ £33.3m    | ↑ £10.7m  | ↓ £9.0m   |
| Percentage of highway maintenance budget spent on carriageway          | ↓ 50%       | ↓ 51%       | ↓ 42%     | ↑ 59%     |
| Average carriageway maintenance budget per authority                   | ↓ £13.0m    | ↓ £16.9m    | ↑ £4.5m   | ↑ £5.3m   |
| <b>Shortfall</b>                                                       |             |             |           |           |
| Shortfall in road carriageway budget 2022/23                           | ↑ £1.30bn   | ↑ £968.9m   | ↑ £234.4m | ↑ £95.6m  |
| Average carriageway maintenance budget shortfall per authority 2022/23 | ↑ £7.7m     | ↑ £8.5m     | ↑ £7.3m   | ↑ £4.3m   |
| Estimated time to clear carriageway maintenance backlog                | ↑ 11 yrs    | ↑ 11 yrs    | ↑ 10 yrs  | ↑ 9 yrs   |
| Estimated one-time catch-up costs                                      | ↑ £14.02bn  | ↑ £12.09bn  | ↑ £1.16bn | ↑ £770.0m |
| Estimated one time catch-up cost per authority                         | ↑ £83.4m    | ↑ £106.0m   | ↑ £36.3m  | ↑ £35.0m  |
| <b>Road condition</b>                                                  |             |             |           |           |
| Frequency of road surfacing (all road classes)                         | ↑ 116 yrs   | ↑ 143 yrs   | ↑ 32 yrs  | ↑ 103 yrs |
| Number of potholes filled over past year                               | ↓ 1,407,432 | ↓ 1,280,106 | ↓ 50,656  | ↓ 76,670  |
| Average number of potholes filled per authority over past year         | ↓ 8,378     | ↓ 11,229    | ↓ 1,583   | ↓ 3,485   |
| Average cost to fill one pothole – planned                             | ↑ £50.91    | ↑ £50.17    | ↓ £52.69  | ↑ £52.13  |
| Average cost to fill one pothole – reactive                            | ↑ £82.16    | ↑ £73.49    | ↑ £121.22 | ↓ £70.30  |
| Total spent filling potholes in past year                              | ↓ £93.7m    | ↓ £85.2m    | ↓ £3.4m   | ↓ £5.1m   |
| <b>Compensation claims</b>                                             |             |             |           |           |
| Amount paid in road user compensation claims                           | ↑ £11.6m    | ↑ £8.4m     | ↑ £2.9m   | ↓ £320.9k |
| Staff costs spent on claims (per year)                                 | ↑ £11.1m    | ↓ £7.0m     | ↑ £2.4m   | ↑ £1.7m   |

\* England, London and Wales

\*\* excludes London

↑ Up from ALARM survey 2022  
 ↓ Down from ALARM survey 2022  
 − Same as ALARM survey 2022  
 □ Highest recorded in ALARM

# About the AIA



## Asphalt Industry Alliance

The Asphalt Industry Alliance ([www.asphaltuk.org](http://www.asphaltuk.org)) is a partnership of the two principal bodies which represent the suppliers of raw materials used to produce asphalt, as well as asphalt producers and laying contractors: the Mineral Products Association (MPA) and Eurobitume UK. It draws on the knowledge and resources of each association and its members.

The AIA was established in 2000 to increase awareness of the asphalt industry and its activities, and the uses and benefits of asphalt. Asphalt is the generic term used to refer to the range of bitumen coated materials available in the UK that are used in road construction and maintenance. Asphalt also has other, non-road applications such as airport runways, sports arenas and parking areas.



## Mineral Products Association

MPA Asphalt is part of the Mineral Products Association ([www.mineralproducts.org](http://www.mineralproducts.org)), the UK trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries. It continues to have a growing membership since its formation and is the sectoral voice for mineral products.

MPA Asphalt represents the interests of its asphalt producer and contractor members through representation and liaison with national and European clients, specifiers, regulators, researchers and standards bodies as well as with trade associations from other countries and related industry sectors. It also funds research into asphalt and its uses and operates the Asphalt Information Service which provides general guidance and information on the use of asphalts in the wide range of their applications.



## Eurobitume UK

Eurobitume UK ([www.eurobitume.eu](http://www.eurobitume.eu)) is the trade association of the UK bitumen supply industry and its members produce most of the UK's bitumen. Almost all of this is used in the construction and maintenance of bituminous, or asphalt roads, which account for over 95 per cent of all UK roads.

Eurobitume UK is a consultative body formed to promote the technical benefits of bitumen to the construction industry; to provide the industry with information and advice; and to fund research into bituminous products. It also works with contractors and authorities on issues relating to the use and recycling of bituminous materials.

It is involved in the development of industry policy on quality assurance and standards relating to issues such as safety, storage and the handling of bitumen as well as the development of specifications and test methods for bitumen.

### Pictures

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