ASPHALT INDUSTRY ALLIANCE

ALARM

Annual Local Authority Road Maintenance Survey

2022

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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 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. Total highway maintenance budgets 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 2022 is the 27th annual survey and 73% 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 2021 and February 2022. Unless otherwise stated, the findings are based on the financial year 2021/22, ending 31 March 2022. Where these are unavailable, figures for the calendar year 2021 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.

Contents

The ALARM survey 2022 includes the findings of both quantitative and qualitative research.

The data received from local authorities has been extrapolated to represent the 113 local authorities in England without a PFI, 22 in Wales and 32 in London. The results have been collated, analysed and verified by an independent researcher. 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 2022 and the infographics contained in this report. We stipulate that it is acknowledged as your source – referencing it as the AIA's ALARM survey 2022 – 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 2021.

Not waving, but drowning

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

This year marks the 27th successive Annual Local Authority Road Maintenance (ALARM) survey and we are continually grateful to local authority highway teams for their ongoing support. We received a record number of responses, which allow us to build a robust picture of the effects of funding and maintenance levels on the condition of the local road network in England and Wales.

Against a backdrop of increased costs caused by rising inflation, the message from this year's ALARM research is clear: those responsible for maintaining our local roads are fast approaching the point where they are no longer waving but drowning. They have a legal responsibility to keep our roads safe, but flat funding allocations to carriageway maintenance in real terms – and rising costs – means they have to make difficult choices about keeping their networks open and safe today, versus improving structural resilience for today and tomorrow.

This has led to the reported backlog of carriageway repairs increasing by almost a quarter on last year's figure to £12.64bn – the equivalent of £75.7 million for every local authority in England and Wales. This is the amount local authorities told us they would need to spend to bring their networks up to conditions which would allow them to be maintained cost effectively going forward.

What's clear is that the current means of allocating funding – with capital budgets for enhancements to the network and revenue budgets for road maintenance – compounds a short-term approach. Revenue-poor engineers told us that they often have to opt for reactive maintenance treatments that can be completed within certain timescales, regardless of the whole-life implications for carbon emissions and their authorities' net zero pledges, which the majority have set for 2030 – just eight years away.

Although surface repairs have a part to play in extending the life of local roads, fixing potholes is indicative of a network on the edge and is less efficient when it comes to materials usage and carbon emissions. But ALARM again reports that 1.7 million potholes were filled over the last year – equivalent to one every 19 seconds – at a cost of £107.4 million.

And, with the total cost of compensation claims rising, the conditions of our local roads are out of kilter with the public's expectations and out of line with what's needed to achieve the country's levelling up and net zero ambitions.

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 its 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.

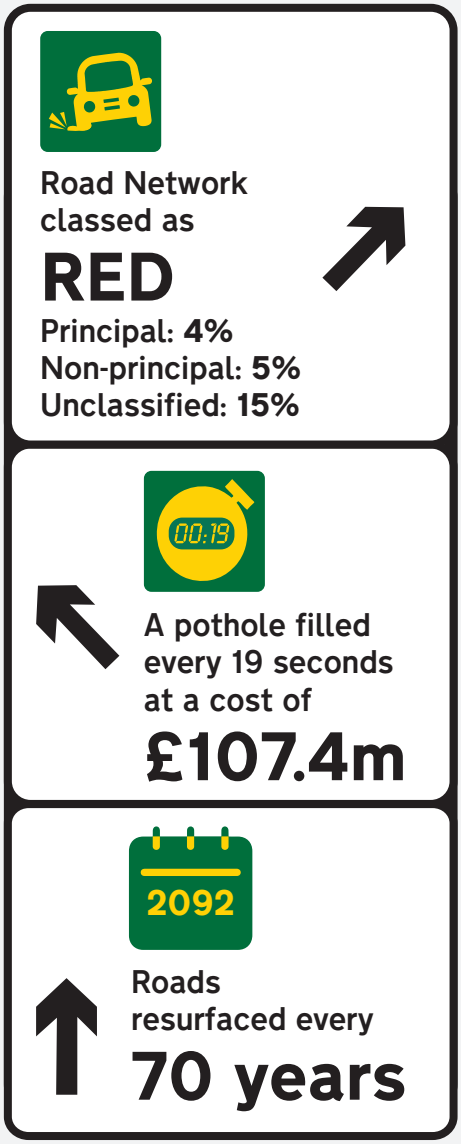
2021/22 at a glance

Funding:

- Average highway maintenance budgets across England and Wales have **increased by 4% to £24.7 million per authority** but this does not account for the impacts of increased costs from rising inflation and the ongoing impacts of COVID restrictions and related changes to working practices.
- Not all local authority highway teams saw an increase in funding: **56% of authorities actually reported a cut or freeze in their highway maintenance budget**, even before inflation is taken into account.
- The percentage of highway maintenance **budget allocated to the carriageway dropped slightly to 51%**, reflecting growing pressures to maintain other parts of the highway asset, such as structures, signage and drainage.
- However, increased average highway maintenance budgets still resulted in the average carriageway maintenance budget showing a marginal increase of 1.5% on last year to £13.2 million, which represents **a cut in real terms** against general measures of inflation.
- The average shortfall in the 2021/22 carriageway budget has **leapt nearly 50%** to £6.4 million per authority, with the total shortfall in the year exceeding £1 billion.
- As a result, the **one-time catch-up cost has increased by 23%** on last year's reported figure to £12.64 billion and would take nearly a decade to complete. This is the amount needed as a one-off – to bring the network up to 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. While **no category of road achieves the ideal profile**, there have been slight improvements on last year, with an additional 2% of the road network classified as GREEN (being in a good state of repair).
- Roads classed as **RED (poor overall condition) also saw a 2% increase**, bringing the total likely to require maintenance in the next 12 months to 11% – around 22,000 miles or the equivalent of travelling between London and Birmingham 175 times.
- The need to prioritise work means that an unclassified road is **at least three times** more likely to be classified as RED than either a principal or non-principal road.
- Feedback suggests that highway engineers focused on managing those roads classed as AMBER (where some deterioration is apparent) on their network, with many taking steps to return borderline AMBER roads to GREEN, if only temporarily.
- Over the last year **1.7 million potholes were filled** – the same as last year – equivalent to one every 19 seconds. Overall, £107.4m was spent filling potholes in 2021/22 and the total spent over the last 10 years is more than £1.04 billion.
- The average frequency for all classes of road resurfacing now stands at once every 70 years, with a road being resurfaced today not likely to be so again until 2092.
- Structural conditions data provides a more holistic assessment of the carriageway asset and **18% of the network (36,918 miles) is now defined as being structurally poor**, with less than five years' life remaining – an increase of more than 2,000 miles on last year's figures. Structural maintenance is needed when surface maintenance alone won't suffice.



Detailed key findings can be found on page 20.

Recommendations

The link between continued underinvestment and the ongoing structural decline of our local roads is clear. The country's ambitions to encourage active travel and cut waste and carbon emissions will not be achieved with a short-term approach that can't deliver a first-rate local road network.

Recent government announcements regarding three-year spending on maintenance (for England) are a step in the right direction but don't go far enough.

To ensure we have a safe, resilient, sustainable network on which we can all rely, a longer-term approach and significant investment is still needed across the country. The longer it takes for the funding to be put in place to tackle the backlog of repairs, the more it is going to cost to put it right in the future. Four years ago, the AIA calculated that an additional £1.5 billion per year was needed for 10 years to bring local roads up to scratch.

In the meantime, the network has continued to decline and ALARM 2022 indicates this figure has now reached more than £2 billion a year over the next decade.

This would allow local authority highway teams to bring the network up to a point from which it could be maintained cost-effectively going forward.

As a result , we would have the local road network we need in order to achieve the government's cohesion, economic recovery and levelling up goals.

Highway maintenance budgets

Local highway authorities in England and Wales, including London, are responsible for over 205,100 miles of roads (source: Department for Transport, 2020), representing 97.3% of the total road network and with an asset value in excess of £400 billion.

Central government identifies highway maintenance as a key, or Upper Tier, service provided by local authorities. There is a legal obligation for local authorities to maintain their road networks to a safe condition, but it is just one of many areas of responsibility and necessary expenditure.

Feedback received suggests that the proportion of total budgets allocated to highway maintenance in 2021/22 is down on the levels reported in ALARM 2021. In England the share of total local authority spending on highway maintenance was 5.1% (2020/21: 5.5%; 2019/20: 4.2%). In London this figure was just 1.6%, (2020/21: 2.0%; 2019/20: 1.3%), while in Wales it was 3.0% (2020/21: 4.5%; 2019/20: 2.9%).

> We struggle with revenue budget but appreciate there are other demands for local authority funding.

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

In absolute terms, average local authority budgets for all highway maintenance activity in England (excluding London) increased by 4.5% to £32.3 million per authority, the second successive year a rise has been reported and the highest monetary value recorded by ALARM.

This average, however, 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, 54% of responses actually report a cut or freeze in real terms on last year's highway maintenance budgets.

Of budgets allocated for highway maintenance, 45% is reported to be funded by central government, while the remaining 55% comes from local authorities' own sources.

The DfT provides around 92% of the central government funding to English highway authorities – equating to approximately 41% of authorities' total highway budgets – the majority of which is not ring-fenced specifically for highway improvements. The remainder comes 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 growth funding.

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

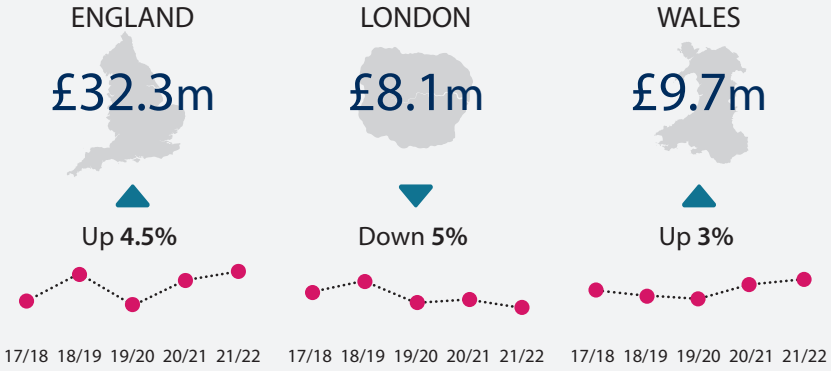
The results determine which of three bands they are placed in – and therefore how much from the £125 million incentive funding available in 2021/22 they were allocated – with band 1 receiving no incentive funding and band 3 receiving the greatest amount.

Responses show there has been a further increase in the number of local authorities placing themselves in band 3, the highest

Highway maintenance budgets

Average per authority 2021/22, with change from 2020/21

Includes bridge maintenance and structural work, cyclical maintenance (such as sweeping, grass cutting, checking traffic signals and replacing street furniture) and maintaining street lighting



Highway maintenance budget variances

Percentage of local authorities who saw decrease/increase/no change compared with 2020/21

	Decrease	Increase	No change
ENGLAND	53%	45%	2%
LONDON	29%	43%	28%
WALES	57%	43%	0%

band, which has increased to 94% (2020/21: 93%; 2019/20: 89%). Qualitative research highlights that authorities are generally supportive of this method of allocating the incentive funding and that efficiencies have been achieved as a result.

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 DfT funding among its membership.

Highway maintenance funding in London

Respondents in London have reported a 5% drop in their overall highway maintenance budget to an average of £8.1 million per authority, down from £8.5m last year and the lowest level reported since ALARM 2017.

Again, there is a disparity between those receiving an increase (43% of respondents) in their budgets with the remaining 57% experiencing a freeze or a year-on-year reduction. Since the Government withdrew funding to TfL in 2018, the vast proportion of highway maintenance budgets in the capital have come from London Borough's own sources.

This year just 10% of budgets are reported to originate from central government sources, with the vast majority (90%) coming from borrowing and other borough revenue such as parking fees.

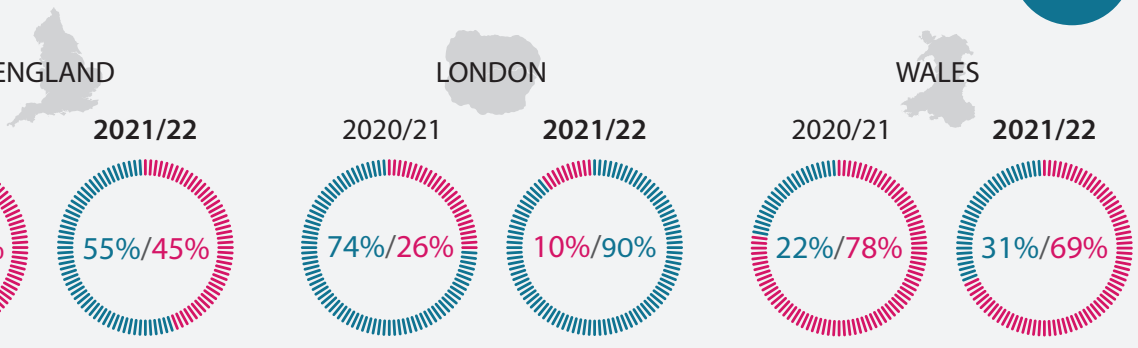
Local roads in England and Wales

Proportion by type:

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

Funding streams

Local authority and central government funding



Highway maintenance budgets continued

Highway maintenance funding in Wales

Average budgets reported in Wales have seen a 3% increase to £9.7 million per authority (2020/21: £9.4m), however this figure is impacted by significant capital investment projects – funded from their own sources – in a small number of authorities.

As a result, this figure hides the fact that 50% of Welsh respondents reported a cut in their overall highway maintenance budget.

Of the total budget, 69% of funding came through the Welsh Assembly Government and 31% from authorities' own sources.

Overall picture

The overall total highway maintenance budget across England and Wales for 2021/22 is reported as £4.13 billion, up by around £160 million on the 2020/21 figure (£3.97bn).

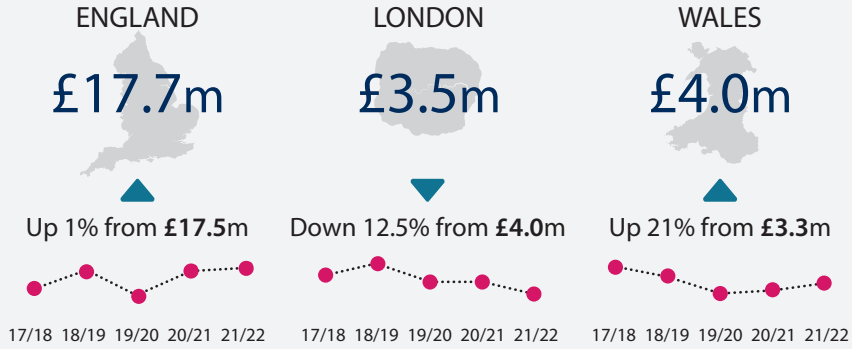
The trend graphic on page 9 demonstrates the fluctuating level of highway maintenance budgets over the last decade, but the overall trend is upward.

Carriageway maintenance

Defined in the survey as: *the percentage of the highway maintenance budget spent on the carriageway itself*, the carriageway

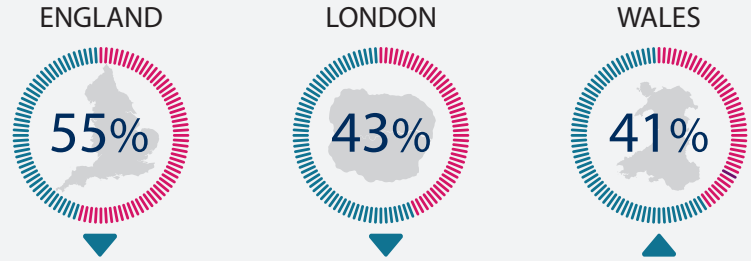
Carriageway maintenance budgets

Average per authority, with change from 2020/21



Carriageway spend

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



maintenance figure has dropped slightly to 51% across ALARM respondents, from 52% in 2020/21. However, the increase in highway maintenance budgets means that carriageway maintenance spending across England and Wales still increased by 2% in 2021/22 to a total of £2.20 billion.

The vast majority of local authorities (84% of responses) spent all of this, with 10% reporting an overspend (down from 16% reported in ALARM 2021) due to factors such as including schemes carried over from the previous financial year and the scope of projects changing at the point of delivery.

The average reported proportion of the carriageway maintenance budget spent on reactive maintenance (that not planned for at the beginning of the year) was 18% in England, while there was no change in London at 25% and a slight drop in Wales to 28%.

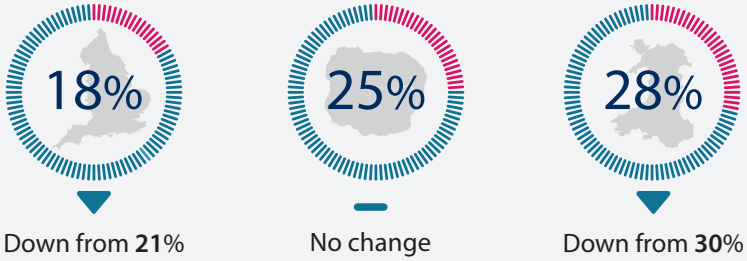
These figures acknowledge that circumstances can create an immediate need for maintenance to keep the roads safe and serviceable. It is extremely difficult for local authorities to predict and allocate the percentage of budget required for this kind of work but, it is generally agreed that around 16%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

> We don't have sufficient funds to allow us to deal with issues in a timely way.

> The council is looking for revenue budget cuts and capital budgets are not enough, so it's a case of managed decline on the network.

Reactive maintenance

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



Down from **21**%

No change

Down from **30**%

Unforeseen costs

There has been a large jump in the number of respondents who had to cope with unforeseen costs over the last year. The reasons for this include dealing with the effects of extreme weather events (see panel below), increased traffic volumes and axle weights on a deteriorating network, and the on-going impact of dealing with adapted ways of working due to the COVID-19 pandemic.

In England 56% of respondents have dealt with unforeseen costs, up from 40% reported last year, although the average additional cost incurred was down significantly to £388,100 per authority from £1.2 million. The number of London boroughs reporting unforeseen costs has increased from 47% to 82% and the additional cost incurred has also increased to an average of £541,600 per authority from the £306,400 reported last year.

> Even though budgets have gone up, once you factor in rising costs, it's a net cut so we end up doing less for more.

Wales paints a similar picture as London, with 75% of respondents reporting unforeseen costs (2020/21: 43%) at an average cost of £380,000 per authority.

Adverse weather

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

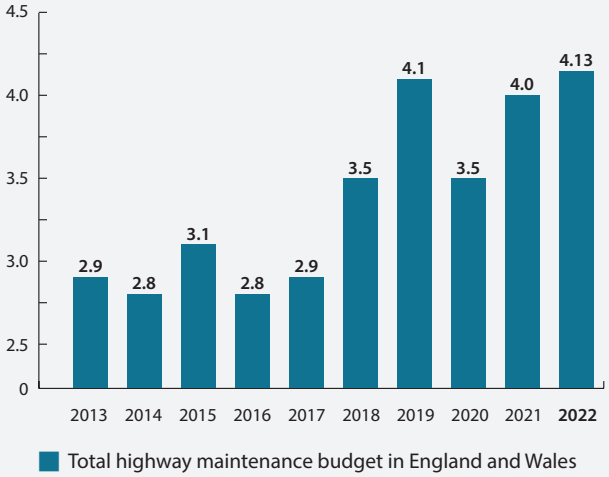
The impact is more acute on evolved and less well maintained – and therefore less resilient – roads, where water can penetrate existing cracks or defects, leading to the formation of potholes and, in time, undermine the entire structure of the road.


30
ENDS
GIVE WAY
ROAD AHEAD CLOSED
BUSINESS OPEN AS USUAL

Highway/carriageway maintenance trends

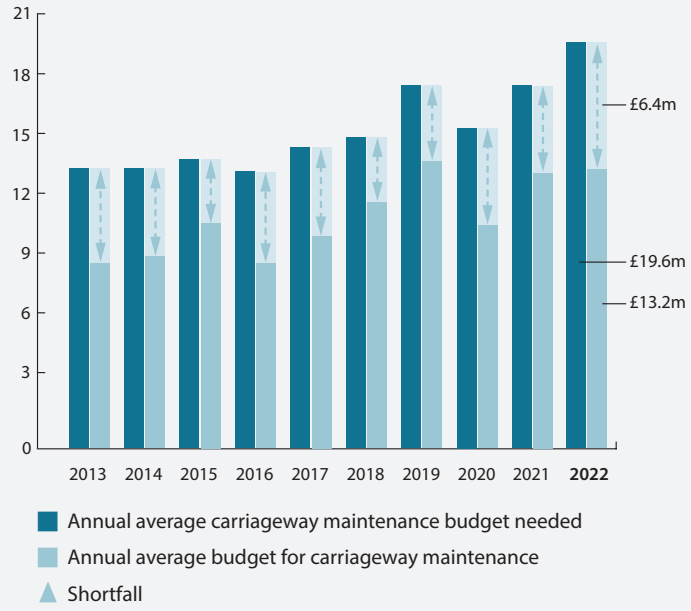
Total highway maintenance budget in England and Wales

(£bn)



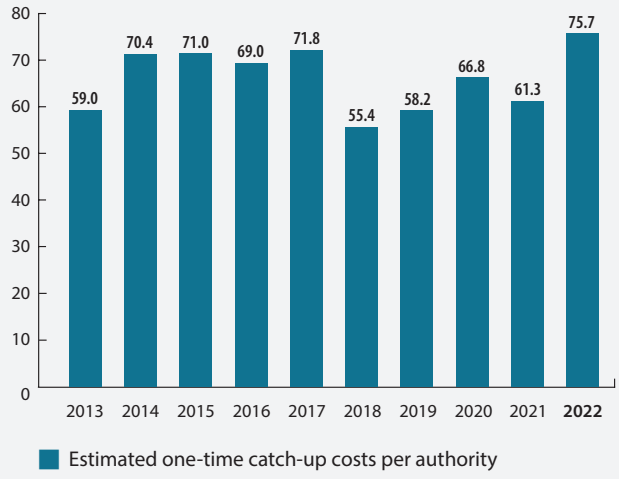
Carriageway maintenance budget needed

Annual average per authority (£m)



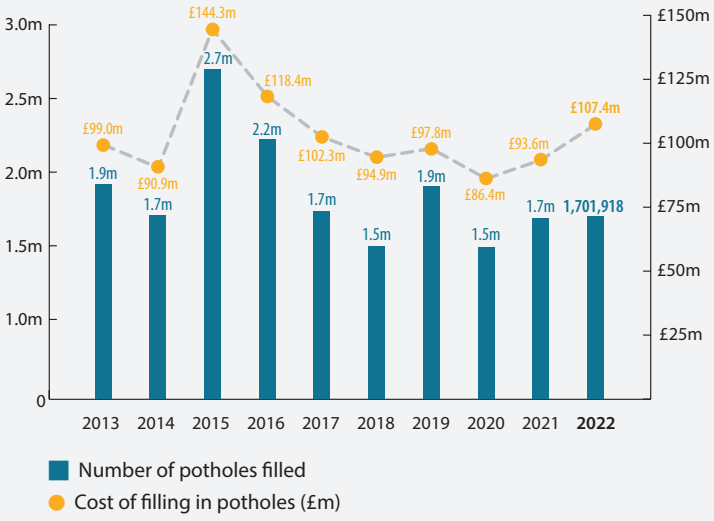
One-time catch-up costs

Estimate per authority (£m)



Potholes

Number of potholes filled (with cost £m)

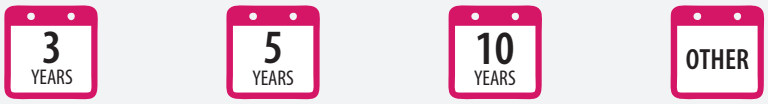


Data reported above is as per previous ALARM surveys and represents financial years. For example, 2022 represents data from 2021/22.

Highway maintenance budgets continued

Longer term funding

Reported ideal term funding in England and Wales



4% 65% 30% 1%

Longer term funding

Highway maintenance budgets are still currently set annually, but all respondents agreed that guaranteed, longer term funding helps increase efficiency and provide a more durable road network. Almost two-thirds (65%) indicate that 5 years is the optimum term with a further 30% stating that 10 years would be ideal.

Security of funding helps authorities plan with more confidence and drive greater cost and environmental efficiencies. Last autumn HM Treasury announced a three-year funding allocation for English local authorities, although respondents reported that, to date, the details have yet to filter through to those responsible for maintaining the network.

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 2021/22 carriageway maintenance budgets reported in England and Wales (including London Boroughs) is £1.06 billion (2020/21: £752.6m), the equivalent of a funding gap of £6.4 million per authority – a dramatic increase of 41% on ALARM 2021 figures.

In England the shortfall is reported as £7.4 million per authority, an increase of 61% on last year (2020/21: £4.6m), while in London the gap has increased by 13% to £5.1 million (2020/21: £4.5m).

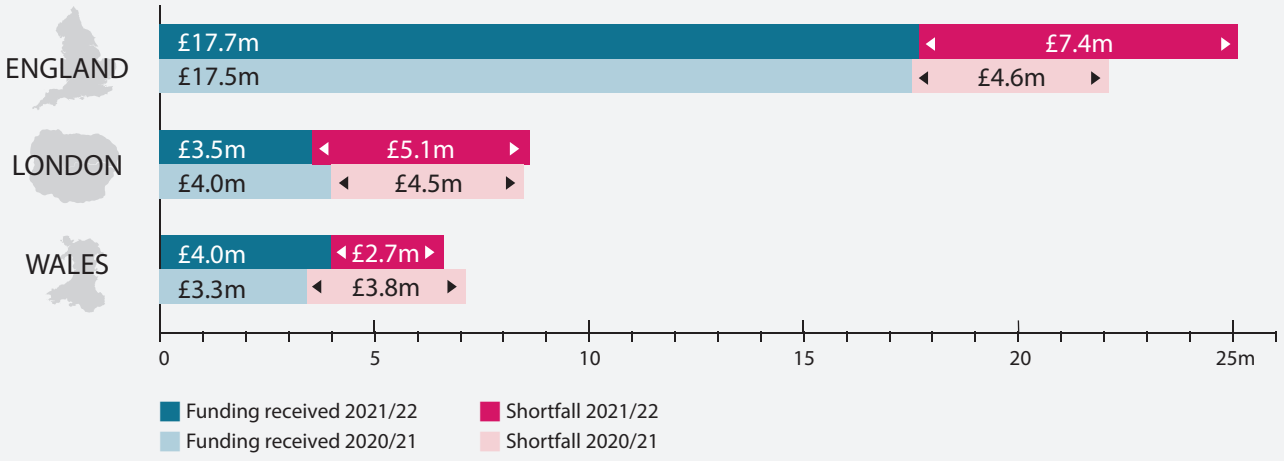
The shortfall reported in Wales has

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 condition that would allow it to be managed cost effectively going forward as part of a proactive asset management approach.

Budget shortfall

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



dropped from an average of £3.8 million per authority in 2020/21 to £2.7m this year.

Despite the size of the average shortfall, its real extent could still be being masked by the fact that 41% 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 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 estimate for this one-time 'catch-up' cost – *over and above what local authorities indicate they already receive* – increased by 23% in 2021/22 to £12.64 billion – the highest recorded (2020/21: £10.24bn; 2019/20: 11.14 billion). This equates to an average carriageway maintenance 'backlog' cost of £61,651 per mile of local road in England and Wales.

The one-time catch-up cost is an average of £99.1 million per authority in England; £25.1 million in London and £29.1 million in Wales.

Addressing the maintenance backlog

Highway departments estimated that it would still take 9 years to get local roads back into a reasonable steady state, if adequate funding and resources were in place, down slightly on the 10 years reported in ALARM 2021 due to the scope for increasing efficiencies. This breaks down as an average of 9 years in England and 8 years in both London and Wales.

> Without a shadow of a doubt, the backlog is increasing.

> We don't have sufficient funds to allow us to deal with issues in a timely way, so it ends up costing more in the long run to deal with carriageway defects.

> If you add in structures and other highway assets, the backlog would be much higher.

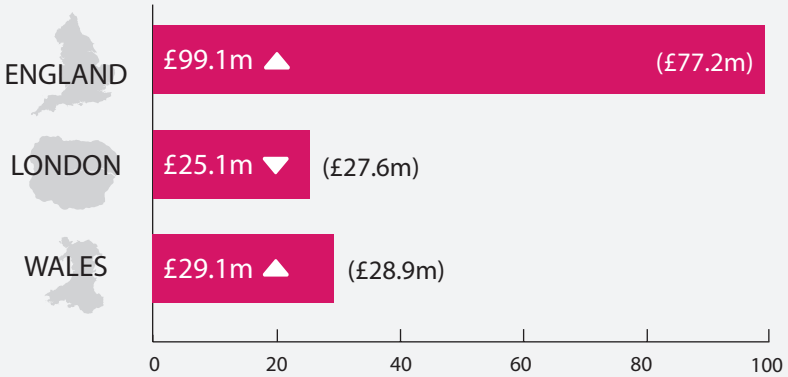
> It is increasingly challenging to invest across the network as a whole and we have to make challenging decisions about allocation depending on the relative condition of the asset.

Maintenance backlog

9 years: average number of years needed to clear carriageway maintenance backlog (2020/21: 10)

One-time catch-up costs

Average additional one-time catch-up cost required to clear carriageway maintenance backlog per authority, £m (2020/21 in brackets)



Road condition

Road Condition Index (RCI)

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, 22% AMBER and 6% RED. This is based on the assumption that an asset management approach to highway maintenance means that 100% of the network will not be in 100% perfect condition, 100% of the time. Responses show that no category of road achieves these ideal levels in England, London or Wales.

Network target condition levels, which respondents tell us are often set in line with available budgets, are similar to those reported in ALARM 2021. The continued implementation of the Well Managed Highway Infrastructure Code of Practice– which allows authorities to develop levels of service in line with local needs, priorities and affordability – also impacts on the target conditions set.

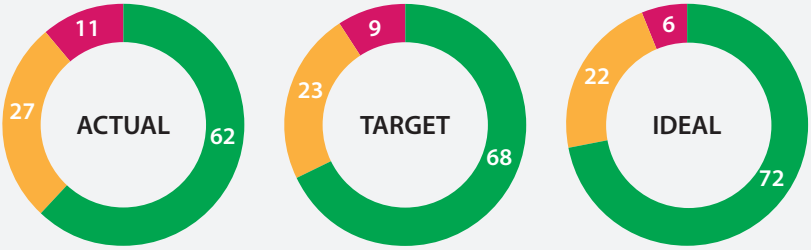
The RCI index features three condition categories (GREEN, AMBER and RED) across three road classes – principal, classified (non-principal) and unclassified – and compares current road conditions against these targets.

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.

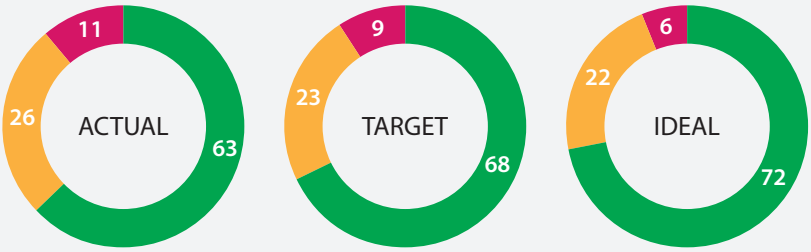
Road Condition Index (average all classes)

Performance in England and Wales (% of network)

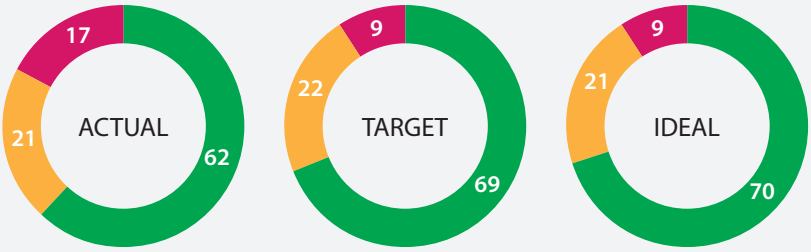
Overall:



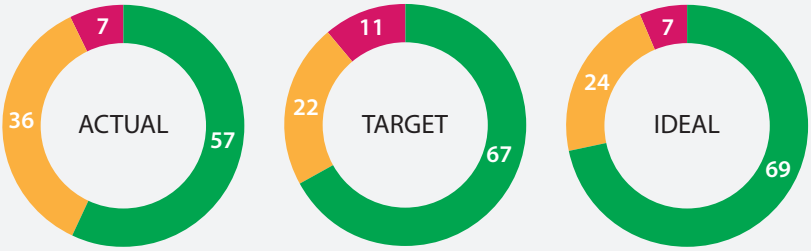
England:



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

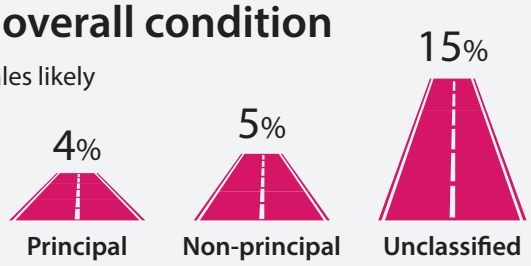
England and Wales (% of network)

		ALL CLASSES	PRINCIPAL	NON-PRINCIPAL	UNCLASSIFIED
GREEN	England	63 ↑	72 ↑	67 ↑	58 ↑
	London	62 ↓	66 ↑	65 ↑	62 ↓
	Wales	57 ↑	72 ↑	66 ↑	48 ↓
AMBER	England	26 ↓	24 ↓	27 ↓	27 ↓
	London	21 ↓	20 ↓	18 ↓	21 ↓
	Wales	36 –	25 ↓	28 ↓	44 ↑
RED	England	11 ↑	4 ↑	6 ↑	15 ↑
	London	17 ↑	14 ↑	17 ↑	17 ↑
	Wales	7 –	3 –	6 ↓	8 –

↑ Up from ALARM survey 2021
↓ Down from ALARM survey 2021
– Same as ALARM survey 2021

Roads in poor overall condition

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



RCI data reports that there are more roads classed as GREEN (being in a good state of repair) and less classed as AMBER (where some deterioration is apparent) but the percentage classed as RED – those in poor overall condition – has also increased on last year.

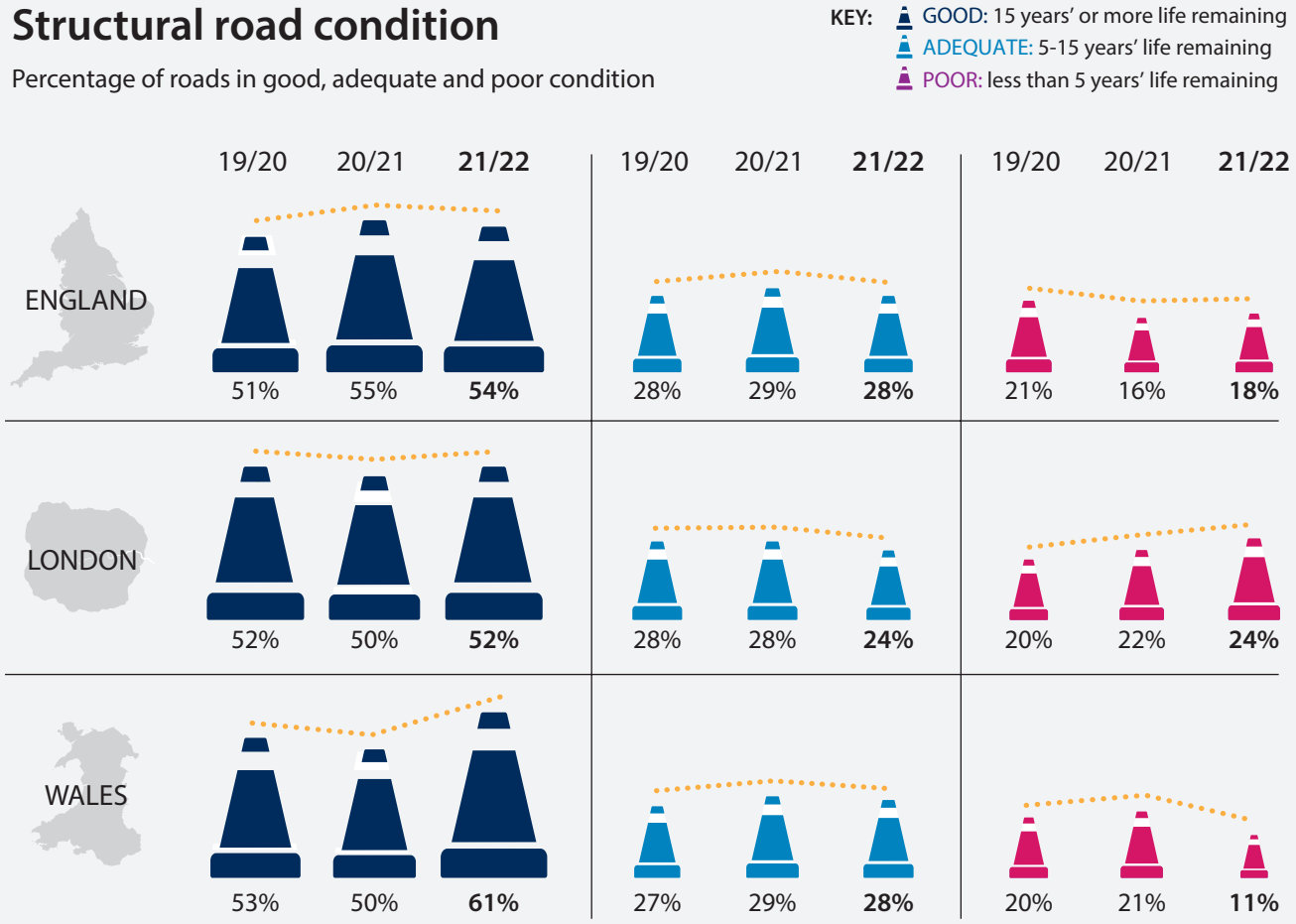
This means that almost 4,000 more miles of the local road network in England and Wales are now classified as GREEN but a similar number are also now likely to require maintenance in the next 12 months, bringing the total percentage of the network classed as RED to 11% – around 22,600 miles.

Breaking this down by road classification highlights the differences in condition with unclassified roads three times more likely to be classified as RED than either a principal or non-principal road.

Road condition continued

Structural road condition

Percentage of roads in good, adequate and poor condition



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 picture is again mixed, with improvements in some areas and further decline in others. Across England and Wales, a slight improvement to around 55% (2020/21: 54%) of the local road network is reported to be in good structural condition (with 15 or more years of life remaining), equivalent to approximately 112,800 miles.

Over a quarter (27%, equivalent to 55,378 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.

This means, compared with last year, there are 2,052 miles more structurally 'good' roads but 6,152 miles which continue to deteriorate, with less 'adequate' and more 'poor'.

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.

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 is the same as last year at 1.7 million (2020/21: 1.7m; 2019/20: 1.5m) – the equivalent of one pothole being repaired every 19 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.

Almost 90% (88%) of authorities responding to the ALARM survey stated that they use the 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 £63.12, the total amount spent in England and Wales last year is estimated at £107.4 million, up 15% from the £93.6 million reported in ALARM 2021.

Road surfacing frequency

Replacing the entire surface layer of roads at regular intervals maintains an appropriate level of skid resistance, vital for road safety, and 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, again, only achieved on principal roads in London.

Potholes

Average number of potholes filled per local authority, plus costs to fill as part of a planned programme and as a reactive repair, with change from 2020/21

		PLANNED COST	REACTIVE COST
ENGLAND	13,624 ▲	£45.83 △	£71.40 △
LONDON	2,517 ▼	£54.69 △	£87.23 △
WALES	3,721 ▼	£45.00 ▽	£104.65 △

Road surfacing frequency

Average frequency (years) of surfacing by road category with change from 2020/21

	All classes	Principal	Non principal	Unclassified
ENGLAND	84 ▲	34 ▼	62 ▲	104 ▼
LONDON	31 ▼	18 –	30 ▲	33 –
WALES	54 ▲	27 ▲	40 ▲	72 ▲

In England and Wales the average surfacing frequency across all types of road is once every seventy years. In England, it is reported to be once every 84 years across all road types (2020/21: 83 years), while in London this figure is once every 31 years, the same as reported in 2020/21. In Wales, average road surfacing frequency is once every 54 years (2020/21: 46 years).

The discrepancy in data between resurfacing frequency for principal roads and the rest of the network in all regions, continues to highlight how local authorities understandably have to prioritise key routes as current budgets are not sufficient to adequately maintain the whole network.

Utility company openings

Number of utility openings in past year (average per authority)

ENGLAND	LONDON	WALES
14,225 ▲	9,117 ▼	4,368 ▼
(13,212)	(10,554)	(4,369)

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 2.0 million in 2021/22, up around 5% on the previous year – can reasonably be assumed to be having an overall detrimental effect.

While the majority of reinstatements (85% based on responses received) are completed in accordance with legislation, local authorities still reported they spent an average of 6% of their carriageway maintenance budget addressing premature maintenance arising from utilities openings.

This amounts to an average of £788,000 per authority or a total of £131.6 million in England and Wales.

Road condition continued

Road user compensation claims

Number of claims in past year (average per authority) plus **total** cost (£) of dealing with claims (2020/21 figures in brackets)

ENGLAND	307* ▼ (408)	COST OF CLAIMS £6.5m ▲ (£2.4m)	STAFF COSTS £8.7m ▼ (£10.1m)	TOTAL COST £15.2m ▲ (£12.5m)
	17/18 18/19 19/20 20/21 21/22			
	(*83% pothole-related)			
LONDON	110* ▲ (91)	COST OF CLAIMS £1.7m ▲ (£748k)	STAFF COSTS £1.2m ▲ (£996k)	TOTAL COST £2.9m ▲ (£1.7m)
	17/18 18/19 19/20 20/21 21/22			
	(*54% pothole-related)			
WALES	91* ▲ (80)	COST OF CLAIMS £695k ▲ (£458k)	STAFF COSTS £1.1m ▲ (£324k)	TOTAL COST £1.8m ▲ (£782k)
	17/18 18/19 19/20 20/21 21/22			
	(*86% pothole-related)			

Road user compensation claims

The average number of claims received by local authorities in England and Wales has decreased in the last year, with 78% of the total relating specifically to potholes. The total amount paid in compensation claims, however, has increased to £8.9 million, despite traffic levels remaining below pre-pandemic levels. A further £11.0 million was spent on staff costs to deal with the claims, bringing the overall total spent addressing claims to £19.9 million across England, London and Wales.

This is the equivalent of £96.70 paid out each year per mile of road.

Pothole-related claims

% of road user compensation claims in England and Wales (average per authority)

78%

Materials innovation

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

- **67%** using Warm Mix Asphalts
- **39%** specify other recycled content
- **66%** promoting more efficient working to reduce emissions
- **33%** specify reclaimed asphalt
- **40%** choosing materials with lowest initial carbon footprint
- **66%** selecting surfacing materials with longer life

The path to net zero asphalt

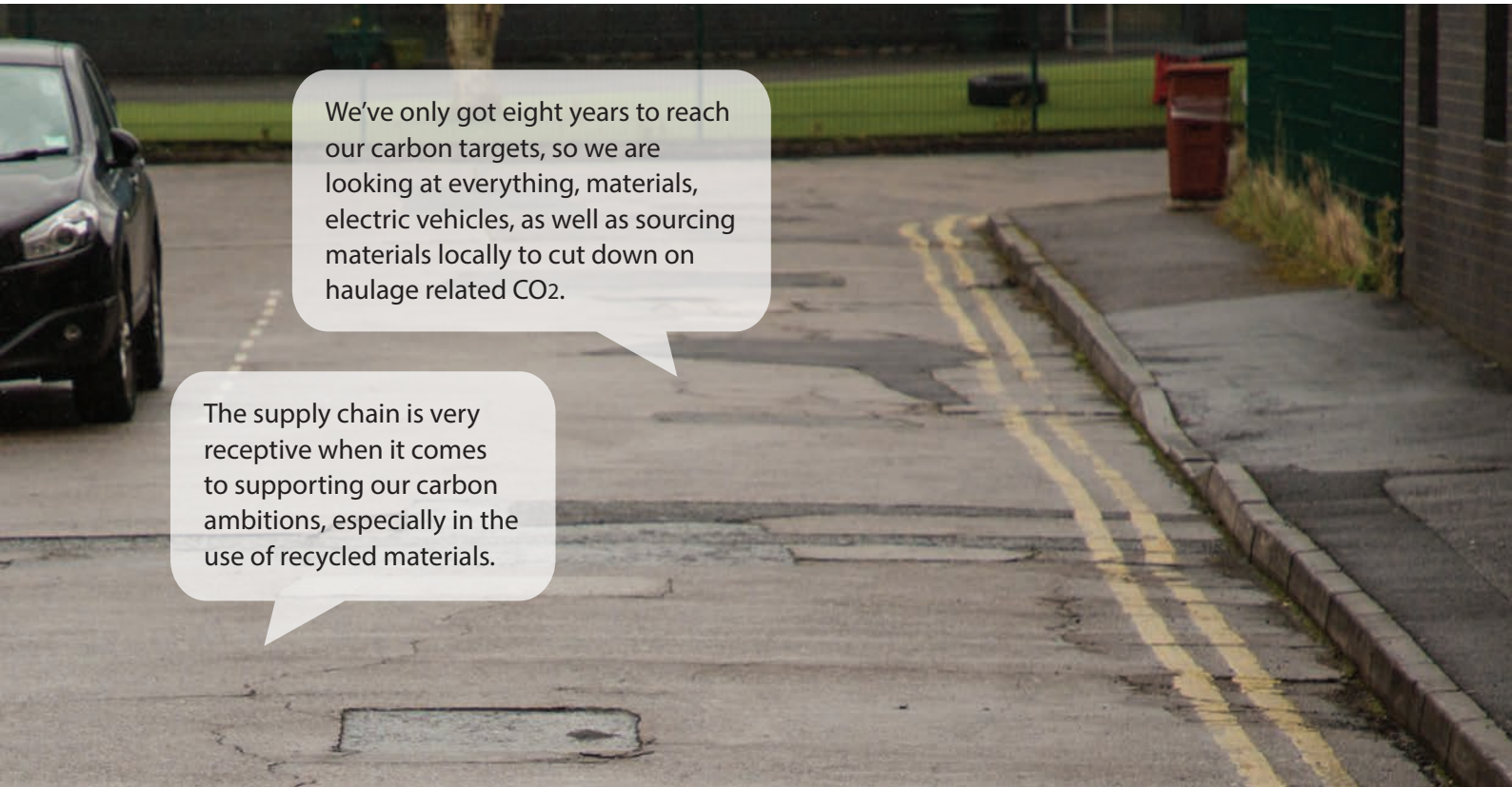
Around 80% of local authorities in England and Wales have declared a climate emergency [https://www.climateemergency.uk/] and 85% of ALARM respondents report that their local authority has a net zero pledge – with over half (55%) pledging to reach their target by 2030.

Despite this, only 8% 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 do take a number of measures to reduce the carbon footprint including using Warm Mix Asphalts (WMAs), which can reduce carbon emissions and improve efficiencies on highway projects.

Over 60% of respondents include WMAs on their asphalt specification list and, of those not currently including it, 73% are looking to adopt them in the future.

In addition, approximately 29% of newly-laid asphalt materials over the last year were explicitly specified to include recycled materials such as recycled aggregates and reclaimed asphalt, and is already accepted as standard practice.



Key findings

	TOTAL*	England**	London	Wales
Percentage of authorities responding	↑ **73%**	↑ 81%	↑ 66%	– 45%
Highway maintenance budgets				
Average highway maintenance budget per authority	↑ **£24.7m**	↑ £32.3m	↓ £8.1m	↑ £9.7m
Percentage of highway maintenance budget spent on carriageway	↓ **51%**	↓ 55%	↓ 43%	↑ 41%
Average carriageway maintenance budget per authority	↑ **£13.2m**	↑ £17.7m	↓ £3.5m	↑ £4.0m
Shortfall				
Shortfall in road carriageway budget 2021/22	↑ **£1.06bn**	↑ £840.4m	↑ £162.6m	↓ £58.4m
Average carriageway maintenance budget shortfall per authority 2021/22	↑ **£6.4m**	↑ £7.4m	↑ £5.1m	↓ £2.7m
Estimated time to clear carriageway maintenance backlog	↓ **9 yrs**	↓ 9yrs	– 8 yrs	– 8 yrs
Estimated one-time catch-up costs	↑ **£12.64bn**	↑ £11.20bn	↓ £803.6m	↑ £639.9m
Estimated one time catch-up cost per authority	↑ **£75.7m**	↑ £99.1m	↓ £25.1m	↑ £29.1m
Road condition				
Frequency of road surfacing (all road classes)	↑ **70 yrs**	↑ 84 yrs	– 31 yrs	↑ 54 yrs
Number of potholes filled over past year	↑ **1,701,918**	↑ 1,539,512	↓ 80,544	↓ 81,862
Average number of potholes filled per authority over past year	↑ **10,191**	↑ 13,624	↓ 2,517	↓ 3,721
Average cost to fill one pothole - planned	↑ **£47.42**	↑ £45.83	↑ £54.69	↓ £45.00
Average cost to fill one pothole - reactive	↑ **£78.81**	↑ £71.40	↑ £87.23	↑ £104.65
Total spent filling potholes in past year	↑ **£107.4m**	↑ £97.2m	↑ £5.1m	↓ £5.2m
Compensation claims				
Amount paid in road user compensation claims	↑ **£8.9m**	↑ £6.5m	↑ £1.7m	↑ £695k
Staff costs spent on claims (per year)	↓ **£11.0m**	↓ £8.7m	↑ £1.2m	↑ £1.1m

* England, London and Wales

** excludes London

↑ Up from ALARM survey 2021
↓ Down from ALARM survey 2021
– Same as ALARM survey 2021

About the AIA

Asphalt Industry Alliance

The Asphalt Industry Alliance (AIA: 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 (MPA: www.mineralproducts.org), the 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) 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.

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