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AIA
ASPHALT INDUSTRY ALLIANCE

Reporting on the asphalt industry

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ALARM SURVEY 2022
Backlog tops £12 billion

MATERIALS INNOVATION
Super smooth finish for test track

FUNDING FREEZE
Local authorities dig deep to fund gap

UNDERINVESTMENT IN LOCAL ROADS PERSISTS

ALARM shows carriageway repair backlog has increased by nearly a quarter over the past year

This year's Annual Local Authority Road Maintenance (ALARM) survey received a record number of responses from local authorities, demonstrating the value those working in the sector place on its findings.

We are extremely grateful to all those who contribute. The data helps us build a robust picture of the network and supports our ongoing campaign to raise the issues of local roads funding and maintenance with policy makers and budget holders.

The headline this year is the size of the backlog of carriageway repairs in England and Wales, which is reported to have reached £12.64 billion – an increase of almost a quarter on last year – highlighting the link between continued underinvestment and conditions (pages 6 and 7). As an industry, we are focusing on how the specification of road materials can help local authorities reduce their carbon footprint. Innovative new materials, with biogenic ingredients (page 4), and techniques that lower the carbon emissions associated with the production of asphalt (page 12), are examples of ways we can support highway teams to achieve their sustainability goals.

The Government is also supporting the creation of a net zero route map for an aggregates and asphalt operation in Leicestershire (page 3), through the BEIS Industry of Future Programme, which has the potential to be rolled out to almost 400 sites in the UK – contributing to the country's net zero ambitions.

The sustainability credentials of roads would of course be further enhanced by a sustainable, longer-term approach to funding. Recent government announcements regarding three-year spending on maintenance (for England) are helpful but don't go far enough.

Funding levels have been frozen (page 9) – against a backdrop of increased costs caused by rising inflation – meaning local authority highway teams can do little more than stem the tide rather than begin to tackle the backlog of repairs needed to bring the network up to scratch.

If we want a truly sustainable local network on which we can all rely, sufficient funding for highways maintenance over a five-year period needs to be recognised as part of the solution.

Rick Green
Chair, Asphalt Industry Alliance

RAC REPORTS HIGHEST EVER POTHOLE CALLOUTS

RAC patrols are attending more pothole-related breakdowns

RAC

■ **RAC patrols** attended over 10,000 pothole-related breakdowns in 2021 – the highest annual total recorded since 2018, as traffic volumes return to pre-pandemic levels.

Individual members experienced broken suspension springs, distorted wheels and damaged shock absorbers, as indicated in the findings of the RAC Pothole Index.

The Index analyses pothole-related breakdown data together with seasonal weather effects against improving vehicle reliability to give a long-term indication of the condition of the UK's roads. This index now stands at 1.63, up from 1.48 at the end of September 2021, meaning drivers are more than one-and-a-half times more likely to breakdown after hitting a pothole now than they were when the RAC started collecting this data in 2006.

RAC Head of Roads Policy, Nicholas Lyes, said: "Potholed roads are a menace, not a mere annoyance – they can cause thousands of pounds of unnecessary damage to drivers' vehicles, make using our roads uncomfortable and can be a serious road safety hazard for anyone on two wheels.

"Our patrols are going out to vast numbers of drivers who, through no fault of their own, are breaking down because of the wear-and-tear caused by potholes.

"This is ridiculous because it is almost entirely avoidable if roads were maintained properly. With drivers contributing so much in terms of tax to the Government the very least they deserve are roads that are fit for purpose."

> "Potholed roads are a menace, not a mere annoyance – they can cause thousands of pounds of unnecessary damage to drivers' vehicles..."
>
> **Nicholas Lyes,** Head of Roads Policy, RAC

MQP's Cliffe Hill quarry and asphalt plant

NET ZERO ROADMAP PROJECT

The first decarbonisation roadmap for an aggregates/asphalt operation in the UK is being developed as part of the BEIS Industry of Future Programme (IFP).

Hanson has secured funding to develop the net zero plan for its Midland Quarry Products (MQP) Cliffe Hill quarry and asphalt plant in Leicestershire. It is one of 15 IFP projects, being carried out by engineering and project management consultancy Atkins, to investigate options for decarbonising industrial sites across the UK.

The roadmaps will consider the most viable decarbonisation options for each site, including new technologies such as carbon capture and utilisation and the feasibility of fuel switching, upgrades, process changes and energy optimisation. The funding Hanson has received from BEIS will help inform and speed up the development of a decarbonisation roadmap at Cliffe Hill and will also help the company meet its overall ambition to be a net zero carbon business by 2050.

"This industry-leading project will allow us to evaluate various carbon reduction options and test their effectiveness in a live environment," said Marian Garfield, Hanson UK sustainability director. "There is huge potential to upscale the results: Hanson alone has around 80 aggregate and asphalt sites and there are a further 250+ asphalt plants and several times more quarries within the UK as a whole.

"We expect many of the findings will be able to be implemented across all our sites – and others in the sector – as part of the industry's commitment to supporting the government's net zero ambitions, maximising the value for money of the BEIS funding."

LOSS OF INSPIRING CHAIRMAN

FM Conway Chairman, Michael Conway MBE, has died aged 67 after a six-year battle with cancer.

Michael was CEO for over 40 years after taking over from his father Frank Conway who founded the company in 1961. For the past two years, Michael moved into the role of Chairman while CEO, Adam Green, and the Senior Leadership Team controlled the development and growth of business operations.

Adam Green said: "We have lost an inspiring mentor and a visionary leader both for FM Conway and the construction industry. Michael has touched the lives of many and leaves behind him a business built on – and guided by – strong family values.

"He was passionate about the company and empowering its people as well as in delivering critical infrastructure to help improve communities. He was also a true pioneer in sustainable construction, recycling materials ahead of his time."

Francisco Lucas, Technical Assistance and Asphalt Business Development Manager at Respol, has been elected President of Eurobitume for the next 12 months. He takes over from TotalEnergies' Frank-Michael Biel.

Francisco, known as Curro, was previously the association's Vice President. He will promote bitumen's credentials as a sustainable construction material and support the delivery of the 2nd E&E event taking place in Vienna later this year.

He will also ensure that the needs of Eurobitume's members and stakeholders continue to be met, focusing on the importance of effective communication so the voice of the bitumen industry is heard.

Dr Ian Lancaster has been appointed General Manager for Eurobitume UK, the industry association for UK bitumen suppliers.

Eurobitume UK and the Mineral Products Association are the two partners of the Asphalt Industry Alliance (AIA) and, in his new role, Ian becomes a director of the AIA.

Formerly UK Technical Manager at Nynas, Ian has almost 28 years' experience in the bitumen industry and will take an active role in supporting the AIA's core activity, including its Annual Local Authority Road Maintenance (ALARM) survey.

"I am really excited to be taking up this new role and becoming an integral member of the Eurobitume team," said Ian. "I am also looking forward to supporting the important work the AIA does to highlight the importance of fair and sustained funding for local roads in the UK."

Cover story:

ALL WEATHER TEST TRACK GETS SUPER SMOOTH FINISH

Catesby Tunnel is perfect for 24/7 vehicle testing

■ **A former** Victorian railway tunnel in Northamptonshire has been turned into a world-leading aerodynamic test track using a specialist asphalt to ensure a super smooth finish. The multimillion pound project has transformed the 2.7 kilometre-long, 8.2 metre-wide Catesby Tunnel, which dates from 1897, into the perfect venue for vehicle testing 24/7 whatever the weather. The facility, which opened in December 2021, enables testing of every aspect of vehicle performance, including aerodynamics, performance and engine emissions. Aero Research Partners chose Tarmac to supply the asphalt due to its success in resurfacing the Silverstone Formula One circuit, home to the British Grand Prix, in 2019.

The company laid 1,340 tonnes of a specially designed SMA asphalt with PSV 65, 10mm gritstone aggregate, to exceed the precise laying tolerance for thickness and level – better than many Formula One race circuits. The special mix design ensured that workability was retained while material was being transferred through the tunnel to the paver to ensure the best possible compaction and surface finish.

The tunnel environment meant meticulous planning was needed to complete the work, including ensuring ventilation to maintain safe working conditions for the paving teams.

Standard tipper trucks could not be used, so the asphalt material was transferred using feeders and dumper trucks, forming a giant conveyor; and the supply of asphalt had to be carefully planned to ensure a continuous supply to the paver to achieve the specific tolerances.

Rob Doody, managing director (Midlands region) for Tarmac, said: "The level of paving accuracy has delivered a top-class surface finish that is among the highest known paving standards in the world today and has built on our reputation for delivering precision surfacing schemes."

INNOVATIVE LOW CARBON ASPHALT DEVELOPED

■ **Aggregate Industries** has partnered with Shell Bitumen to develop the UK's first 'biogenic asphalt', to cut carbon emissions and improve durability.

SuperLow-Carbon asphalt is manufactured at lower temperatures than standard asphalt, reducing energy requirements, and includes a biogenic material that acts as a 'carbon sink'. Biogenic materials are made from living organisms such as plants, trees and crops, which absorb and store CO_2 through their lifecycle. They are harvested and used in bitumen, locking in the stored CO_2 rather than releasing it back into the atmosphere – even when the asphalt is recycled at its end of life.

> "...we have a responsibility to ensure we play a central role in the transition to net zero."
>
> **Vicky Smith,** Managing Director – Asphalt at Aggregate Industries

In addition to reducing CO_2 emissions, the lower asphalt temperatures used during production can reduce binder ageing, which is likely to deliver enhanced fatigue performance and durability. Lower mixing and paving temperatures also generate less fumes, odour and steam at the project site; lower burn risk; improve visibility and provide better working conditions for operatives. Reaching trafficking temperatures much sooner than hot mix products allows earlier reopening of carriageways – reducing disruption and build costs.

SUPERLOW-CARBON

"As a leading building materials supplier, we have a responsibility to ensure we play a central role in the transition to net zero," said Vicky Smith, Managing Director – Asphalt at Aggregate Industries. "That is why it is crucial to us to never stand still when it comes to innovative and sustainable building solutions. We are delighted with SuperLow-Carbon, which is a hard-working, sustainable and low carbon product that does not compromise on quality or performance."

Upgrading in progress on the A414 in Hertfordshire

KEY ROUTE GETS A LOW CARBON ASPHALT UPGRADE

The A414 in Hertfordshire has been upgraded using a range of low carbon asphalts.

The project was carried out as part of the National Highways Area 6 & 8 framework agreement by Hanson Contracting in partnership with designer Atkins.

The A414 is a key strategic route between St Albans and the M1 at Hemel Hempstead where the road surface was suffering from reflective cracking caused by movement of the underlying concrete road.

As a result, Hanson's Tufflayer stress absorbing membrane interlayer (SAMI) was used in conjunction with a thin asphalt surface course which trialled several new low carbon solutions to reduce the carbon footprint of the scheme and provide a more resilient road.

The asphalt on the westbound carriageway included Shell LT R, which includes additives derived from waste plastics, preventing them from going to landfill. The 940 tonnes of LT R used was produced and laid at a lower temperature using Hanson's ERA warm mix process, reducing energy consumption and saving 2.25 tonnes of CO_2.

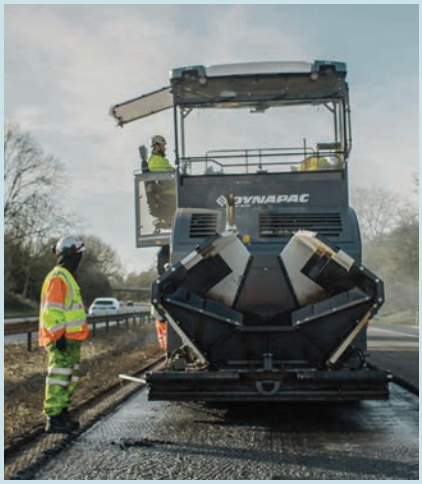
On the eastbound carriageway, Shell's AgeSafe bitumen has been used. This incorporates an additive to prolong the life of the asphalt surfacing, potentially reducing the need for future interventions and thus further cutting whole life carbon emissions. This asphalt was produced using Hanson's REA (reduced emissions asphalt) process, which helps to minimise the impact of asphalt production and laying on local air quality.

Performance will be closely monitored

"Collaboration within the supply chain allows us to look at advancements in technology that can deliver lower carbon solutions and help our customers meet their decarbonisation targets," said Adrian Hadley, Head of Technical (Asphalt and Aggregate) at Hanson UK.

"The A414 project is a perfect example of this and the performance of the different combinations of materials will be closely monitored to see how they react compared with the control sections."

A shuttle buggy was also used as part of the project to provide a constant supply of asphalt to the paver, enhancing the smoothness of the road. Smoother surfaces without joints reduce rolling resistance of vehicle tyres, thereby reducing fuel consumption and ongoing CO_2 emissions throughout the life of the road.



Tony Nicholls, General Manager East Region, Atkins Global, added: "This is a great example of collaborative working to find a sustainable solution using a combination of advancements in technology through design, material production, recycling and installation methods to reduce the overall carbon footprint of the scheme.

"With the methods employed, the finished surfacing has improved ride quality which helps extend life to the next intervention as well as reducing noise, providing further environment benefits."

BACKLOG UP AS ROAD QUALITY DECLINES

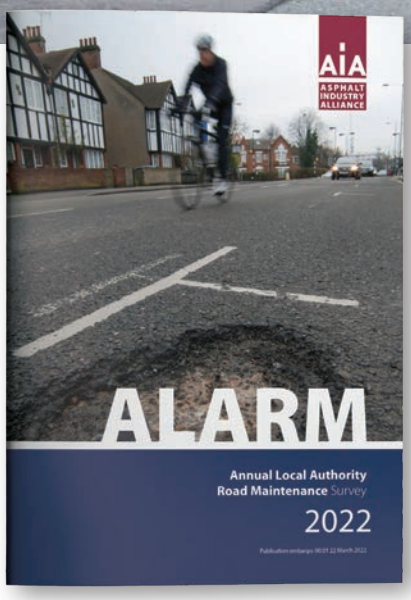
As the carriageway repair backlog in England and Wales worsens, highway engineers are having to choose between keeping roads safe and improving resilience.

THE COST to fix the backlog of carriageway repairs on local roads in England and Wales has reached £12.64 billion, and is being compounded by rising inflation, reports the 2022 Annual Local Authority Road Maintenance (ALARM) survey.

It also highlights the scale of the worsening issues faced by highway engineers who must make difficult choices about keeping local roads open and safe versus improving overall conditions.

Quantitative and qualitative

The ALARM survey is carried out annually by the Asphalt Industry Alliance (AIA) and aims to take a snapshot of the state of funding for local road maintenance and the resultant condition of the network. It does this based on information provided directly by those responsible for its maintenance and combines both quantitative and qualitative research. The findings indicate that there has been a slight increase in average highway maintenance budgets (up 4.5% on 2020/21), but less is being invested in the carriageway itself. The key headline is that the reported backlog of costs for carriageway repairs has increased by almost a quarter (23%) on last year's reported figure to £12.64 billion – or £61,700 for every mile of local road in England and Wales.



This is the amount local authorities report they would need to bring the network up to scratch and allow it to be managed cost effectively moving forward. And they also reported that it would take them nine years to carry out this work, if they had the surety of funding and resources to do so.

Legal responsibility

Rick Green, AIA Chair, said: "Local authority highway teams have a legal responsibility to keep our roads safe, but do not have the funds to do so in a cost-effective, proactive way.

"As a result, while they report some slight improvements in surface conditions, the structure of our roads continues to decline.

"Although surface repairs have a part to play in extending the life of local roads, short-term fixes, including filling potholes, is indicative of a network that is 'on the edge' and are less efficient and sustainable when it comes to materials usage and whole-life carbon emissions."

> "...short-term fixes, including filling potholes, is indicative of a network that is 'on the edge' and are less efficient and sustainable..."

Rick Green,
AIA Chair

This year marks the 27th successive ALARM survey, which received a record number of responses from 73% of local authorities in England and Wales. The findings of ALARM 2022, which relate to the 2021/22 financial year, show that in England and Wales:

- 56% of local authorities reported a cut or freeze in their highway maintenance budget.
- Local authorities would have needed an extra £1 billion last year just to reach their own current target road conditions, let alone achieving ideal conditions.
- Almost one in five local roads are in poor structural condition and could need to be rebuilt in the next five years – nearly 37,000 miles of the network.
- 1.7 million potholes were filled over the last year – equivalent to one every 19 seconds – at a cost of £107.4 million.
- Roads are only resurfaced on average once every 70 years.
- The need to prioritise works means that an unclassified road is at least three times more likely to be classed in poor overall surface condition than either a principal or non-principal road.
- The total cost of addressing compensation claims across England and Wales was almost £20 million.

Rick Green added: "The link between continued underinvestment and the ongoing structural decline and below par surface conditions of our local roads is clear.

"The country's ambitions to encourage active travel, plus cutting 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 that an additional investment of more than £2 billion a year over the next decade is now needed."

Annual blame game

Jack Cousens, Head of Roads Policy at the AA, added: "Each year the debate around roads maintenance degenerates into a blame game between local authorities and Government as each claim it is the other's responsibility to resolve.

"Local and national government must get round the table and create a fully funded plan that will help make our roads safer. There is now a need to focus available road funding on the most basic need: fixing the roads – for the benefit of drivers, cyclists, and pedestrians. Despite talks of levelling up, road users would simply like the roads levelled out."

The full ALARM survey is available to download at: www.asphaltuk.org

REPAIRS BACKLOG IN SCOTLAND

A REPORT from the BBC, which obtained information from local authorities in Scotland through a Freedom of Information (FoI) request, paints a similar picture north of the border, where the backlog of repairs is estimated to be almost £1.7 billion.

A Scottish Government spokesperson said: "We are treating councils fairly and providing a real terms increase of 6.3% to local authority budgets for the coming year – despite cuts to Scotland's overall budget by the UK Government.

"The Budget provides local government revenue funding amounting to almost £12.7bn – a cash increase of almost £1bn and a real-terms increase of £681.8m. In addition, councils will receive a fair share of a further £93.9m, which is currently undistributed.

"Maintenance of the local road network is the responsibility of local authorities, and it is the responsibility of individual councils to manage their own budgets and to allocate the total financial resources available to them on the basis of local needs and priorities."

COLLABORATIVE WMA WORK REWARDED WITH AWARD NOMINATION

MPA Asphalt and Eurobitume UK, in conjunction with National Highways, secured a nomination for a prestigious 2021 sustainability award.

Shortlisted in the Delivery Category of the National Highways Industry Awards for *Excellence in sustainability, environment, and carbon reduction; through the implementation of a technological change*, the nomination recognised the significant role their collaborative work has played in delivering a Specification for Highways Works (SHW) revision, now enabling a move to make Warm Mix Asphalts (WMAs) the default specification on the strategic road network.

"Our nomination acknowledged years of cumulative effort from across the MPA membership, supply chain partners Eurobitume UK and major client, National Highways, as well as invaluable support from a number of local authorities who provided trial sites to help build the evidence base for WMAs," said MPA Asphalt Director, Malcolm Simms.

"Despite not lifting the top Award, the adoption of WMAs represents an opportunity to make a difference, so we'll continue to encourage all highway authorities to join National Highways' approach and move to default specification of WMAs through their contractors and suppliers."

More information on the benefits of WMAs can be viewed here. A short video on WMAs can also be viewed at: https://youtu.be/8K7rG87z8t4

MPA Asphalt Director Malcolm Simms has been presented with the European Asphalt Pavement Association's (EAPA) *Technical Excellence Award* in recognition of 'outstanding work and research in the asphalt industry and in the EAPA committees'.

Pictured (centre) receiving his award at the EAPA General Council Assembly in Paris from EAPA Secretary General Dr Carsten Karcher (left) and EAPA Technical Director Breixo Gomez-Meijide, Malcolm said: "I'm honoured to receive recognition from our peers in Europe. EAPA gives its association member representatives the opportunity to share with, and learn from, the technical excellence of all our individual national members, so we are often just the face or voice for many others providing us with data and information from their practical experience."

This award follows on from Malcolm's receipt of the EAPA Asphalt Advocate of the Year Award for 2020, which was presented for 2022 to Anders Hundahl of Danish Association, Asphaltindustrien. Malcolm is the first recipient of both of EAPA's Awards.

GOVERNMENT FUNDING TO HELP MEET 2050 TARGET

The Department for Transport (DfT) has announced £30 million of funding for Live Labs 2 to support innovative ideas to decarbonise the country's highways.

Organised by the Association of Directors of Environment, Economy, Planning and Transport (ADEPT), the second round of the three-year, UK-wide programme is part of the government's drive to improve air quality and reach net zero carbon emissions by 2050.

"Investing in innovation is a priority for this Government," said Transport Minister Trudy Harrison. "That's why we're supporting local highway authorities to develop cutting-edge projects and help drive our decarbonisation mission.

Our £30 million investment will go towards a greener, safer transport landscape. It will help create green, high-skilled jobs across the country and I look forward to seeing these innovative ideas brought to life."

The launch of the second round of the competition will have a particular focus on making the construction, maintenance and running of the UK's roads more sustainable.

Paula Hewitt, ADEPT President, added: "Local authorities are perfectly placed to lead the drive to create net zero highways and local roads from the bottom up. The Live Labs format has proven particularly successful for highway authorities, enabling rapid change, innovation and experimentation.

"Following the success of the first ADEPT SMART Places Live Labs programme, Live Labs 2 aims to build on the partnerships between DfT, councils, commercial partners, SMEs and academia to deliver scalable zero carbon objectives with potential for commercialisation and applicability to diverse areas across the UK."

ADEPT
Association of Directors of Environment, Economy, Planning & Transport

The ADEPT SMART Places Live Labs Programme has published its final independent report, highlighting the successes and difficulties experienced by the eight trials, which it hopes will be used by local authorities to help them plan their own innovations.

Neil Gibson, chair of the Live Labs Commissioning Board, said: "From the outset, Live Labs has been clear on the value of sharing all learning with the wider sector. It is as important to understand why trials didn't work out and the skills, approaches and mindset needed to introduce new technologies, as it is to showcase success. Local authorities will find this report invaluable in determining their own routes to innovation."

Each of the Live Lab projects will publish their individual business cases to enable local authorities to assess the suitability and potential commercialisation of an innovation for its area.

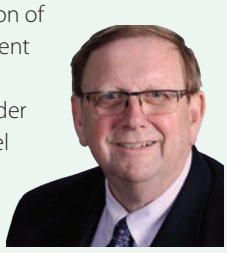
LOCAL AUTHORITIES DIG DEEP TO FUND FREEZE

DEPARTMENT FOR Transport (DfT) road maintenance funding for local authorities for this financial year has been frozen at 2021/22 levels, £300 million less than the allocation two years ago.

The announcement has prompted many local authorities to allocate additional funding from their own sources into highway maintenance in an attempt to fund the shortfall, which this year's Annual Local Authority Road Maintenance (ALARM) survey from the Asphalt Industry Alliance indicates stands at more than £1 billion in England and Wales (see pages 6 and 7).

Dorset Council, for example, has had confirmation that DfT funding for carriageway maintenance in the 2022/23 financial year will be £11.6 million – significantly less than needed.

As a result, Dorset Council Cabinet has awarded £6.7 million of additional investment as Cllr Ray Bryan, right, Portfolio Holder for Highways, Travel and Environment, explains: "With a shortfall in funding from DfT, and recognising the significant part our carriageway network plays in supporting Dorset Council priorities, we have committed an additional £6.7 million per year, for five years, to support highway maintenance activities. It has been proven that early, preventative maintenance is the most cost-effective way to maintain roads. This investment will help us keep our network in a good condition and reduce the number of reactive repairs needing to be carried out."



> "Government's decision not to fill our highways maintenance funding gap is incredibly disappointing. But we are determined not to leave our roads in a poor state of repair and unsafe for residents."
>
> **Cllr Martin Hill,** Leader of Lincolnshire County Council

Lobbying Government

In the 2019/20 financial year, Lincolnshire County Council was allocated £51 million in roads maintenance funding from DfT, which was cut to just under £39 million for 2021/22. DfT has confirmed it will remain at this lower level until 2025.

The council has been lobbying Government for a return of the £12 million a year funding gap through its *Fix Our Funds To Fix Our Roads* campaign, but has been unsuccessful.

Cllr Martin Hill, Leader of Lincolnshire County Council, said: "Government's decision not to fill our highways maintenance funding gap is incredibly disappointing. But we are determined not to leave our roads in a poor state of repair and unsafe for residents.

"I'm proud to say that our council has voted to make up the missing funds once again and, in difficult financial times, this isn't easy.

"The money will be allocated from a combination of council reserves and a small rise in council tax but long term we can't keep using reserves to fill the gap. At some point, something has got to give."

PARLIAMENTARY GROUP ESTABLISHED FOLLOWING END OF RESTRICTIONS

The *All Party Parliamentary Group (APPG) for Better Roads* has been established following the removal of COVID-19 restrictions.

It will be chaired by Sir Christopher Chope, right, MP for Christchurch, with five Vice Chairs: Lilian Greenwood, former Chair of the Transport Select Committee and MP for Nottingham South; Gareth Bacon, MP for Orpington; Greg Smith, MP for Buckingham; Gavin Newlands, MP for Paisley and Renfrewshire North; and Lord Kirkhope of Harrogate.

The APPG's inaugural meeting on May 17 confirmed a change of name from the previous *APPG on Highways* to better reflect its work in advocating the safety, environmental, social and economic cases for a properly maintained and sustainable network.

It was also an opportunity for the AIA to highlight the findings of its 2022 ALARM survey (pages 6 and 7) to Parliamentarians and allowed further consideration of proposals for the APPG's own inquiry to take place.

More information about the Group can be found here: https://www.appg-betterroads.org/

The Welsh Government has ringfenced £500 million for upgrades to major roads between 2022 and 2025. The money will be used to finance ongoing committed projects.

However, all future projects are on hold while the Welsh government conducts a roads review as part of its plans to reduce carbon emissions and tackle the climate emergency.

Paved with good intentions:

THE REALITY OF THE ROAD TO NET ZERO

As local authorities and specifiers work to reduce their carbon footprint, it is important to take care when assessing the other environmental credentials of the materials being considered.

Environmental Product Declarations (EPDs), for example, generally currently offer cradle-to-gate impact figures but without considering product durability. This potentially masks additional carbon costs and may lead to new options being selected which, in fact, are more carbon intensive than traditional alternatives.

Gary Schofield, Head of Technical, Bitumen Division, TotalEnergies UK, explains: "There is a real risk of unintended consequences when a product's carbon figures are taken at face value without taking account of the full picture and overall product lifecycle.

New alternatives

"It is important that we do what we can to reduce our carbon footprint, reuse, recycle and reduce the use of hydrocarbons in favour of low carbon alternatives, while ensuring roads are durable, safe and reliable."

However, new alternatives to traditionally used materials and processes bring their own set of environmental and ecological implications and it's important not to take only a product's carbon figures at face value without considering its overall lifecycle, including maintenance required, production of constituent materials and the wider supply chain. The argument for replacing hydrocarbons with bio elements is a good example. Various experiments and initiatives around the world have tested innovative new solutions – ranging from the lignin-based trials in various countries to tests involving sugar molasses as an alternative binding agent.

In some cases, these offer valuable potential routes to improving the carbon footprint of road construction and maintenance, but scalability is a key issue. For example, what is the risk of loss of biodiversity and the changes to ecosystems if crops are specifically grown to replace fuel and bitumen?

"We already struggle to grow sufficient food products without deforestation, so care must be taken in the assessment of what is the right approach," added Gary Schofield.

Secondary recycling

"Secondary recycling also brings its own considerations, not least in terms of the energy used within the recycling process. While roads can be viewed positively as a linear quarry, we must take care not to create a linear landfill.

"Waste used in road construction and maintenance materials is only positive if it has at least the same performance contribution and ideally that extends durability, reduces the maintenance interventions required, and importantly that can itself be recycled at the end of life."

In the future, EPDs will include more impact criteria to help industry and its customers benchmark, assess and improve their sustainability credentials.

➤ AIA partners, Eurobitume UK and MPA Asphalt, have been working with National Highways in the latest round of their long-standing Collaborative Research Programme to better understand the challenges of sustainability assessment in the sector.

Final reports of the 2021-22 research phase, delivered by AECOM, will be published soon at: https://aecom.com/uk/pavement-design-publications/. The key output has been to develop an aligned UK sector-specific framework on Sustainability Assessment and Declaration (founded in using EPD data).

This will also seek to comply with work still in progress at European Standards level on Product Category Rules for EPDs for asphalt, and to fairly balance data provision expectations for the supply chain, designers and specifiers in terms of whole product and scheme life.

A draft protocol to support more sustainable mixture design has also been under development within the research programme.

The next phase of research, which will start later in 2022, will look to 'bench test' the assessment framework and mix design protocol ahead of any proposals to adopt them in specific detail.

In addition, the industrial partners have been contributing to an early engagement process with National Highways for development of its Net Zero Roadmap for Asphalt.

INDUSTRY EVENT LATER THIS YEAR

A two-day E&E Event is taking place in Vienna, Austria, aimed at all those in the bitumen and asphalt industries.

Organised jointly by the European Asphalt Pavement Association (EAPA) and Eurobitume, the event will include presentations and discussions on topics such as sustainability, digitalisation, mobility and health and safety, as well as an exhibition.

It will take place on November 14 and 15 and more information, including details of the preliminary programme, can be found at: https://www.eeevent2022.org/

SHARING BEST PRACTICE

The date has been set for this year's Sharing Best Practice event, aimed at local authority highway engineers. The free online event, organised by the Asphalt Industry Alliance (AIA), will take place on Thursday November 24 from 10am to 1pm.

The agenda includes speakers covering a range of pertinent topics highlighting sector innovation, local authority case studies and updates on materials development, with a focus on decarbonisation.

To register your interest, email your name and contact details to: info@asphaltuk.org

Information about the 2021 event, including links to view the speakers' presentations, can be found at: https://www.asphaltuk.org/events/

DIARY DATES 2022 | Some planned dates for your diary (subject to change):

14-16 June: **Traffex Parkex 2022,** NEC, Birmingham
https://www.traffex.com

21-23 June: **Hillhead 2022,** Hillhead Quarry, Buxton
https://www.hillhead.com/

6 July: **NCE Future of Roads,** Victoria Park Plaza, London
https://roads.newcivilengineer.com/roads/en/page/home

6-7 July: **LCRIG Innovation Festival,** Newark Showground, Nottinghamshire https://innovationfestival.lcrig.org.uk/

4-9 Sept: **48th Annual MPA/Newcastle University Asphalt Materials and Pavements course,** Newcastle
https://www.ncl.ac.uk/sage/collaboration/cpd/transport/asphalt-materials/

5-6 Oct: **LCRIG Strictly Highways,** Winter Gardens, Blackpool
Details TBA

2-3 Nov: **Highways UK,** NEC, Birmingham
https://www.terrapinn.com/exhibition/highways-uk/index.stm

14-15 Nov: **E&E Event,** Hilton Park Hotel, Vienna, Austria
https://www.eeevent2022.org

24 Nov: **AIA Sharing Best Practice (online)**
www.asphaltuk.org/events

May/June 2024: **8th E&E Congress,** Budapest, Hungary
Details TBA

For the first time, **Lancashire County Council** has been working with Tarmac in a carbon saving resurfacing scheme that incorporates hundreds of recycled tyres.

RESURFACING SCHEME INCLUDES WORN TYRES USING WARM MIX TECHNOLOGY

LANCASHIRE COUNTY Council has used – for the first time – asphalt containing recycled car tyres to resurface a road as part of its Highways Decarbonisation Strategy.

The rubber modified asphalt, ULTIPAVE R, supplied by Tarmac, incorporates recycled tyres and was used to resurface Abingdon Road in Padiham.

The material was also produced using warm mix asphalt technology, which requires less energy than traditional hot mix asphalts due to the lower temperatures used. It delivers the same performance and surface characteristics as traditional materials but is a lower carbon solution.

Phil Durnell, Director of Highways and Transport at Lancashire County Council, said: "I was really pleased to come onsite and see the material being used for the first time on a Lancashire highway.

A circular process

"I was quite surprised how much rubber is in the mix: it's about one car tyre per tonne so, on that basis, we put 150 tyres at the end of their life into the road in just one day.

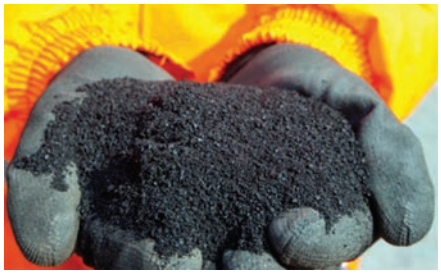
"The lower layers of the carriageway here have also been recycled using a cold foam mix process. This is essentially a circular process where the material is removed from the site to be directly recycled into the new material, with the recycled content typically being 95 per cent.

> "This year in our carriageway capital programmes, we are predicted to save 332 tonnes of CO_2 through using lower carbon processes."
>
> **Phil Durnell,** Director of Highways and Transport at Lancashire County Council

"By using recycled materials in the lower layers and tyre rubber modified asphalt surfacing, we have lowered the carbon footprint of this scheme by over 30 per cent.

"We are really keen to reduce our carbon footprint in maintaining Lancashire's roads and we are hoping to use this technique as part of our Highways Decarbonisation Strategy. This year in our carriageway capital programmes, we are predicted to save 332 tonnes of CO_2 through using lower carbon processes."

Lancashire County Council



Left: ULTIPAVE R being laid on a road in Lancashire
Above right: granulated rubber from recycled waste tyres

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