

## **Towards the second Road Investment Strategy ~ evidence submission from Campaign for Better Transport**

Campaign for Better Transport is a leading charity and environmental campaign group that promotes sustainable transport policies. Our vision is a country where communities have affordable transport that improves quality of life and protects the environment.

Campaign for Better Transport has been engaged as an active stakeholder during the development, delivery and monitoring of RIS1. In particular, we participate in the Highways England Design Panel, the HE Vulnerable Road Users Committee, Transport Focus' Road User Panel, and with other NGOs on the advisory group for HE Designated Funds.

We welcome the opportunity to contribute to the development of the second Road Investment Strategy.

### **Summary**

We note the Government's priorities for delivering improved connectivity to support economic activity, and unlock new homes and jobs. It is equally vital to deliver on carbon reduction and air quality targets for which the transport sector is currently off track. **A Road Investment Strategy (RIS2) that does not take delivering a low carbon future as its starting point will be a failure.**

We propose the following strategic priorities for RIS2, which frame our submission:

- Fix it first
- Showing environmental leadership
- Promoting green retrofit
- An integrated, multi-modal approach
- Making best use of technology
- Partnership working.

Our paper draws on research and on stakeholder views to make a series of constructive recommendations for RIS2 which are summarised at the end of each section of this paper.

Research on the impacts of new road schemes has demonstrated increased traffic, significant adverse environmental and community impacts and at best uncertain economic and safety benefits. This directly challenges the premise that new road building is necessary or desirable. RIS2 should be focused on consolidation, not expansion, to maintain a robust modern strategic road network without expensive and damaging expansion of road capacity.

The RIS2 period is likely to see increased urbanisation. Successful cities demonstrate that it is possible to support population growth, increased economic activity and rising household incomes without directly increasing road transport.

Instead of building 20th century solutions based on large-scale fixed infrastructure, there is the opportunity to deliver a road network fit for the 21st century, designed for low carbon, less polluting modes and better use of new technology for smarter journey planning.

This is best delivered by a joined up approach to transport and planning policies that seeks to reduce the need to travel by locating new homes and employment near transport hubs; promotes modal shift for people and goods by investing in high quality public transport, rail freight and active travel networks; and one that applies data and fairly prices road travel, to encourage more efficient use of the road network. In a society where living costs are rising and car ownership is falling, such a policy would deliver a resilient network, better aligned to the needs of future generations.

## Developing RIS2: a challenging context

When the 2014 Infrastructure Bill proposed the creation of Highways England and the development of the first Road Investment Strategy, we noted a number of concerns which still apply and which should be reflected in a fresh approach to RIS2.

We warned that any expansion of the Strategic Road Network (SRN) would have a huge impact on the environment, with new land required for bypasses and widening projects, increases in noise and air pollution and visual impacts on local communities.

We noted that any strategy which increases capacity on the SRN will be likely to have a significant knock-on effect on local roads, increasing congestion in towns, cities and rural areas around the SRN. In many cases, the expansion of the SRN close to urban areas would be in direct contradiction with local policies intended to reduce the need to travel and reduce road traffic. It could also undermine attempts to reduce air pollution and carbon dioxide emissions in these areas.

We were concerned that the evidence base for major road studies and the eventual proposals emerging had not paid sufficient attention to the effects on local roads or the likely roots of congestion close to urban areas through the addition of local trips to strategic journeys.

We argued that an appreciation of the latter might lead to very different strategies for reducing congestion, such as investing off the network in alternative means of travel, but noted that the resulting RIS focused almost entirely on increased capacity on the SRN.

We called for Highways England to work more closely and widely with local government, communities and stakeholders when making strategic plans, as part of a more integrated approach to transport and land use planning and for the Road Investment Strategy to earmark a significant proportion of its budget for a 'green retrofit' of existing roads.

During the RIS1 delivery period, further challenges have emerged.

Critical targets on carbon reduction, air pollution and biodiversity loss are already being missed or risk being further off track if RIS2 is not designed to meet them. Carbon reduction and high environmental standards should be essential goals for RIS2.

Research on the impact of new road schemes has demonstrated increased traffic, significant adverse environmental impact and at best uncertain economic and safety benefits.<sup>1</sup> This directly challenges the premise that new road building is necessary or desirable.

The construction-heavy programme set out in RIS1 has been assessed by the National Audit Office as bringing risks for "deliverability, affordability and value for money".<sup>2</sup>

Nor does a focus on building new roads meet the primary concerns identified by SRN users, as reported by Transport Focus, which show that safety, reliable journey times (supported by better information), and road surface maintenance are the priorities.

Learning from the RIS1 experience, we propose the following strategic priorities for RIS2, which frame our submission.

1. **Fix it first:** safety and maintenance should be the priority in RIS2 ahead of new capacity with a focus on making the current network work better rather than expanding it
2. **Showing environmental leadership:** meeting critical targets on CO2 emissions, air quality, and biodiversity is vital and brings positive opportunities. RIS2 can play its part in leading this agenda, not simply seeing it as a constraint.
3. **Promoting green retrofit:** continue to use the designated funds to reduce the environmental impact of existing roads, and make the best practice from this part of 'business as usual' for future programmes.
4. **An integrated, multi-modal approach:** create truly integrated transport corridors with high quality provision for public transport, cycling and walking, particularly where major roads meet town and city centres, and contributing to sustainable growth by supporting co-location of homes, jobs and transport hubs.

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<sup>1</sup> CPRE (2017) The end of the road? Challenging the road-building consensus

<sup>2</sup> National Audit Office (2017) Progress with the Road Investment Strategy

5. **Making best use of technology:** use shared data to improve integrated services, safety and information. RIS2 should prepare the way for the replacement of fuel duty by some form of road usage charge
6. **Partnership working:** the delivery of this vision of a robust, integrated, sustainable network should be underpinned by improved partnership working with stakeholders, local and national NGOs and the wider community.

## 1. Fix it first: new road capacity should be a last resort

The first Road Investment Strategy had a strong focus on delivering additional road capacity, boasting of a programme to deliver more than 300 miles of additional lanes, including junction, road widening and 286 lane miles of Smart motorways, to support further economic growth.

Research on the impact of new road schemes has demonstrated increased traffic, significant adverse environmental impacts and at best uncertain economic and safety benefits. This directly challenges the premise that new road building is necessary or desirable.

### **CPRE: Learning from previous road schemes for a better future**

Research commissioned by CPRE from consultants TfQL analysed 86 road schemes from the past 20 years, using official data from the Post Opening Evaluation (POPE) reports. It presents clear evidence that developing new road capacity fails to deliver the promised benefits, yet causes significant environmental harm.<sup>3</sup>

The phenomenon of induced traffic is well known: the CPRE report confirms that major new roads increase traffic above the general traffic increases for their areas, with traffic increases of up to 47per cent over 20 years.

The bad environmental effects of new roads, with loss of ancient woodland, fragmentation of wildlife habitats and permanent damage to the landscape are well known. Sixty-nine out of the road schemes in the study had an adverse impact on the landscape and more than half damaged an area with national or local landscape designations.

The report also confirms that the promised economic benefits from new roads have not been delivered. Only a quarter of schemes in the study had evidence of economic uplift, and it was unclear whether this new economic activity would have happened anyway and whether it was genuinely additional, or simply a displacement from elsewhere.

Building new capacity in response to demand is intrinsically unsustainable: the benefits of additional capacity are eroded as it is taken up, and the adverse knock-on effects to the rest of the road network are likely to outweigh any temporary benefit for the SRN.

The larger the new road, the greater its impact on the surrounding network. For example, Transport for the North has commissioned a Wider Transport Connectivity Study looking at the likely impact of the proposed Trans Pennine Tunnel on the region's major road network, and suggested that this would require a series of interventions including new junctions, new link roads and large-scale Park and Ride provision, to accommodate the additional traffic from the Tunnel.<sup>4</sup>

The CPRE report echoes earlier evidence reviews indicating that there is little robust evidence on the impact road schemes have on local economic development and that the majority of evaluations showed at best mixed impacts on employment.<sup>5</sup>

The second Road Investment Strategy is an opportunity to consolidate the network, with a focus on maintenance, safety, environmental enhancements and resilience, rather than further capacity increases.

We share Transport Focus calls for increased budgets and dedicated funding within RIS2 for maintenance, renewals and safety improvements on the network. The survey work they have conducted indicates that the

<sup>3</sup> Sloman L, Hopkinson L and Taylor I (2017) The Impact of Road Projects in England Report for CPRE

<sup>4</sup> Trans-Pennine Tunnel Wider Connectivity Study: Stage 1 Report WSP | Parsons Brinckerhoff

<sup>5</sup> The What Works Centre for Local Economic Growth (July 2015) Evidence Review: Transport

primary concerns identified by SRN users, are safety, reliable journey times (supported by better information), and road surface maintenance.<sup>6</sup>

We have criticised past road scheme appraisal for a 'predict and provide' approach, which gives too much weight to small time savings by motorists and insufficient weight to wider impacts on the environment, society and the quality of life.

We are encouraged by the range of factors that are being taken into account in the modelling for RIS2, including demographic change, the reduction in number of trips, and the impact of spatial planning decisions on travel demand, and by the development of regional traffic models to inform RIS2 development.

Increased use of scenario planning is welcome. The declining numbers of trips falls in car ownership and falls in take-up of driving licences are confirmed in the latest National Travel Survey. Combined with national and local planning policies that seek to locate homes and jobs close to transport hubs, this indicates that investing in additional road capacity is neither a necessary nor a desirable response to a growing population.

Understanding the range of potential demands and the impact of different interventions is essential in developing RIS2 but not sufficient. The Road Investment Strategy is an opportunity to replace 'predict and provide' with 'decide and provide', by setting out not only what is possible but also what is desirable, and to prioritise those interventions that support the most desirable outcome.

#### **Recommendations:**

- **RIS2 should follow the smarter travel hierarchy: reduce demand, widen travel choice, maximise efficiency, and make new road capacity a last resort.**
- **RIS2 should focus on establishing a safe and well-maintained network, with budget allocations to match this priority**
- **RIS2 should confirm a presumption against any new road construction in protected landscapes and World Heritage Sites.**

## **2. Showing environmental leadership**

CO2 reduction, improving air quality and reversing the decline in biodiversity are shared environmental challenges which are not currently being met, and where the transport sector has a critical role. The urgent need to address them also brings opportunities.

RIS2 should set out how the operation of the SRN plays its part in leading this agenda, not simply seeing it as a constraint. RIS2 can show environmental leadership by setting out a proactive strategy to address these challenges, and harness the economic and social benefits of a more sustainable approach.

**The need to reduce carbon emissions is both urgent and absolute.** The latest UK CCC report identifies transport as the largest emitting sector of the UK economy with 26per cent of UK greenhouse gas (GHG) emissions in 2016, and as one of the sectors that is off track to meet its carbon budget targets.

The 2017 Report to Parliament from the UK Committee on Climate Change noted that carbon dioxide emissions from transport have increased 0.9per cent from 2015 to 2016, the third successive year that emissions have risen. The Committee advises that this trend needs to be reversed, as a matter of urgency, to deliver a reduction in emissions of 44per cent from 2016 to 2030.<sup>7</sup>

The forthcoming UK Government Emissions Reduction plan will set out how public policy at all levels will work to achieve the required carbon reduction. With a sustainable transport strategy in place, increased traffic and increased emissions need not be the inevitable consequence of population growth and increased economic activity. It is imperative that all sectors of UK transport, including RIS2, have a clear focus on how to deliver this.

Supporting a major uptake of electric vehicles is a key priority area. The UK CCC identifies an estimated 1,300 per cent increase in annual EV sales is needed to help meet 2030 carbon reduction targets. In RIS1, Highways England took steps to reduce emissions from its operating fleet. RIS2 should support rapid rollout of an interoperable EV fast charging network for all SRN users, in support of a wider low carbon strategy.

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<sup>6</sup> Transport Focus (2017) Road users' priorities for the Road Investment Strategy, 2020-25

<sup>7</sup> Committee on Climate Change (June 2017) Reducing emissions and preparing for climate change: 2017 Report to Parliament Summary and recommendations

This will complement the Government's industrial strategy that identifies electric vehicles, energy storage and smart grid technology as key sectors.<sup>8</sup>

The UK CCC recommends national and local policies to reduce demand, sufficient to deliver car kilometre reductions of around 5per cent below the baseline trajectory. RIS2 must play a part in this by shifting its focus from increasing road capacity to making more effective use of existing capacity and contributing to reduced traffic demand.

Significant increases in road capacity are incompatible with CO2 reduction targets. TfQL research for CPRE found that the cumulative carbon emissions from 54 road schemes opened between 2002 and 2010 were equivalent to an increase of 3per cent annual emissions from traffic.<sup>9</sup>

The Department for Transport should set a carbon cap for the RIS2 programme, and within that agree individual scheme caps with Highways England. The strategy should allow for a 'carbon veto' to be applied to new road plans that would breach the carbon cap.

Detailed monitoring of the efficacy of the assumptions, monitoring and mitigation measures for CO2 emissions on individual road schemes are essential in RIS2. This should include reviewing the extent to which non-road alternatives, including demand management, are considered in scheme development, and the ongoing monitoring of scheme impacts.

The impact of new and existing road schemes on low carbon modes should be given greater consideration, as part of RIS2 and in schemes where Highways England is a consultee. For example, poor designs for the proposed M5 J25 in Somerset would see cyclists and pedestrians having to use eight separate crossing points to cross the motorway, instead of a single bridge or underpass.<sup>10</sup> Ensuring good quality design for non-motorised users helps CO2 reduction as well as accessibility: this should be a requirement in RIS2.

**Air pollution** is also a critical challenge where mandatory targets are not being met at roadsides across the UK. Many of the solutions to CO2 emissions also benefit air quality. As with carbon reduction, this is an area where binding targets will not be met without leadership from transport bodies. Journeys on the SRN begin and end on local roads and contribute to traffic in urban centres.

The recent Highways England Air Quality Strategy recognises the role that the SRN should play in delivering acceptable air quality. We welcome its inclusion of better cycling provision and support for all road users for "informed, environmentally conscientious decisions when planning and making their journeys".<sup>11</sup>

Even a marginal increase in traffic volumes is likely to have an adverse impact on air quality. As with CO2 emissions, detailed monitoring of the assumptions, monitoring and mitigation measures for air pollution on individual road schemes is essential in RIS2, as is reviewing the extent to which non-road alternatives, including demand management, are considered in scheme development.

RIS1 has seen a range of pilot projects to measure air quality on the SRN and to explore engineering solutions to address it such as new fuels or use of polymeric barriers. However, it has been a challenge for Highways England to find effective interventions that are wholly within their control: pollution is generated by individual vehicles using the SRN and spreads beyond SRN boundaries.

RIS2 should make improving air quality a goal not a constraint in its investment programme, prioritising sustainable modes, promoting clean infrastructure and mitigating existing pollution sources. This can include design solutions such as the use of pollution reducing surfacing and barriers, including natural interventions such as tree planting and green walls.

Electrification of the fleet is not sufficient to solve air quality problems. Particulate matter from tyres and braking systems is also a factor. In addition to supporting the rollout of electric vehicles, RIS2 should look at the widest range of interventions to improve air quality.

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<sup>8</sup> HM Government (January 2017) Green Paper: Building our industrial strategy

<sup>9</sup> Sloman L, Hopkinson L and Taylor I (2017) The Impact of Road Projects in England Report for CPRE

<sup>10</sup> Campaign for Better Transport (July 2017) M5 Junction 25 Development Objection to planning application 4/38/17/0205 by Somerset County Council

<sup>11</sup> Highways England (August 2017) Our strategy to improve air quality

These include reducing speed limits in highly polluted areas, investing to support modal shift (particularly of freight to rail) and working in partnership on Clean Air Zones. The Air Quality strategy should be underpinned by annual progress reporting in RIS2 and an appropriate budget allocated to help deliver it, based on the designated fund for air quality.

**Recommendations:**

- **RIS2 should have a carbon budget for its programme, and individual scheme budgets**
- **RIS2 should allow for a ‘carbon veto’ to be applied to new road plans that would breach the carbon cap**
- **RIS2 should support rapid rollout of an interoperable EV fast charging network for SRN users**
- **RIS2 should be designed to improve provision for low carbon modes both on and crossing the SRN**
- **Highways England should be a partner in all Clean Air Zones that include parts of the SRN**
- **RIS2 should include an earmarked budget to deliver the Air Quality strategy**

### **3. Promoting the “green retrofit”**

With other NGOs, in our 2014 report *Better not bigger*, we called for a high proportion of the RIS1 budget to be earmarked for a ‘green retrofit’ of major roads, to offset their adverse environmental impact, ahead of providing new road capacity.

We strongly welcome the ring-fenced designated funds in RIS1 for environment, air quality, cycling, safety, integration and innovation and support their retention and expansion in RIS2. We have participated with other stakeholders in advisory groups to contribute ideas and receive feedback on how the funds are being spent. There are some exemplary projects already delivered in RIS1, such as the improvement to the Droitwich Pools near the M5, or planned, such as the green bridge over the A38 at Haldon Hill.

We note there has been little information shared to date on the projects funded, beyond a few case studies, reducing the ability for scrutiny and the opportunity to share and mainstream best practice for future programmes. In RIS2, we would like to see the information on designated funds spending made available as open data, accessible to other groups and the general public. This is particularly important given that the funds are supposed to be spent ‘beyond business as usual’.

#### **A shared green vision for RIS2**

With a group of sixteen environmental and sustainable transport NGOs, Campaign for Better Transport has produced a joint report, *Rising to the Challenge* which identifies key challenges and opportunities for the second Road Investment Strategy, including the potential for a green retrofit of major roads.<sup>12</sup>

It shows how RIS2 can contribute to tackling climate change and pollution, and protecting the natural environment; how to improve existing roads, rather than building new ones; and how the experience of non-motorised users can be transformed for the better.

It includes examples of best practice in the UK and around the world to outline many ways the existing road network could be improved with practical proposals for how RIS2 funding, whether in the mainstream budget or through designated funds, can be used to deliver a green retrofit of the SRN.

It proposes new performance indicators for RIS2 that focus on outcomes rather than activity, to better understand and improve the impact of the Strategic Road Network on the environment.

For example, in RIS1 the performance indicator to address noise pollution was delivered by funding double glazing in priority areas. This narrowly focused approach does not mitigate all the noise impacts and does nothing to address noise pollution at source. A better approach would be for noise reduction to be delivered through measures such as noise reducing surfacing and barriers, to protect tranquillity in the outdoor environment as well as in people’s homes.

The Government’s promised 25 year Environment Plan is due to be published later this year and will shape the policy framework during the RIS2 delivery period. RIS2 should play its part in delivering the Environment

<sup>12</sup> Campaign for Better Transport (August 2017) *Rising to the Challenge: a shared green vision for RIS2*

Plan goals, continue to reduce the environmental impact of major roads, and make the best practice from this part of 'business as usual' for future road programmes including in an updated Biodiversity Action Plan.

The management of the SRN also has an impact. Highways England should consider adopting EMAS standard Environmental Management Systems in RIS2. The Design Manual for Roads and Bridges (IAN 183/14) requires Environmental Management Plans for major projects. By adopting an EMAS approach, Highways England could extend this approach to cover maintenance and operations too.

It is important that environmental schemes, such as species-rich grasslands on the SRN estate, are well maintained. We support the recommendation made by Transport Focus that DfT should also consider transferring responsibility for litter clearance on all SRN roads to Highways England, and that appropriate funding should be earmarked for this within RIS2.

#### **Recommendations:**

- **The work on a “green retrofit” begun in RIS1 should continue in RIS2, supported by designated funds, and with best practice mainstreamed into any new road schemes**
- **RIS2 should include funded programmes to maintain environmental enhancements**
- **RIS2 performance metrics should focus on outcomes and impacts not activity**
- **Highways England and its contractors should adopt an organisation-wide EMAS approach**
- **RIS2 should give responsibility for litter clearance on all SRN roads to Highways England.**

#### **4. An integrated multi-modal approach**

Developing a Road Investment Strategy for the SRN in isolation from other modes would be an inevitable failure. The SRN represents only around 3per cent of the physical network, and carries around one in three road journeys, which in turn begin and end on the local road network.

Growing devolution of transport powers to new combined authorities and sub-national transport bodies, and the influential Major Roads for the Future report for the Rees Jeffreys Foundation, underline the case for better integration of the SRN with the rest of the road network.

The better integration we advocate in RIS2 should go beyond physical integration of the road network to a truly multi-modal approach as to how that network is best used. By promoting modal shift and actively engaging in travel demand management programmes (TDM), it is possible to change travel behaviour so as to tackle congestion, maximise efficient use of the network and reduce the pressure for costly additional capacity. This approach has been piloted successfully in Northamptonshire (as reported in section 5 below) and should be integrated into RIS2.

As the impact of the Local Sustainable Transport Fund demonstrated, investing in packages of smaller scale interventions, including better bus services, walking and cycling provision and information on travel choices has resulted in increased access to jobs and greater economic activity as well as health and environmental benefits. This approach should be incorporated into the Road Investment Strategy particularly at locations where the SRN joins or severs congested local networks.

Government policies including the Cycling and Walking Investment Strategy (CWIS), the Rail Freight Strategy and the High Level Output Specification for passenger rail, all acknowledge the importance of other modes for connecting people and communities, moving goods and supporting economic growth.

The CWIS sets out Government policy to increase the levels of cycling and reduce the decline in walking, and roads policy should actively contribute to meeting these targets. RIS2 should set out how Highways England will play its part in delivering that policy, through good quality provision for cycling and walking alongside and in crossing the SRN. High standards for cycling provision have been set in IAN 195/16: RIS2 should see these applied consistently in new schemes, and retrospectively to parts of the SRN with sub-standard provision. We support Transport Focus call for Highways England to take on responsibility for all junctions on the SRN to ensure consistency of design and maintenance standards.

One of the key priorities set by Government for RIS2 is to support economic growth, including the movement of goods as well as people: that movement need not be primarily or solely by road. It is vital that RIS2 is part of an integrated, multi-modal strategy, with the aim of supporting seamless journeys and not creating severance or working in silos.

## 4.1 An integrated approach: corridor planning

A corridor planning approach, which looks at all journeys within an area, promotes sustainable modes, and considers all modes as part of an integrated solution. Measures to reduce car-dependency, and increase occupancy, such as through car sharing and more efficient freight transport, would make best use of the network.

Such an approach would widen travel choices by investing strategically in rail and light rail corridors, to unlock land for housing and employment, and in high quality walking and cycling routes, particularly where major roads meet town and city centres.

### **SCATE A27 Alternative Strategy**

The A27 around Chichester in West Sussex suffers from high levels of congestion at peak times. Major road construction to the north is not a viable option given the proximity of the South Downs National Park, and alternative bypass routes have all proved highly controversial.

New research from a team at ITP and UWE has looked at opportunities to promote an alternative transport vision for the A27 corridor along the Sussex coast. The study, commissioned by Campaign for Better Transport acting on behalf of the South Coast Alliance for Transport and Environment (SCATE) with support from the Foundation for Integrated Transport (FIT) explores the potential for a multi modal corridor approach to deliver increased transport capacity, without new road building.

The research looks at recent trends including falling numbers of trips per person, combined with lower levels of car ownership and declining take-up of driving licences among younger adults.

The research has identified a range of options, including long distance coach services, improvements to local bus services, faster rail services, enhanced local rail connections, dedicated cycling provision and road speed and parking management. Integrating these with planning would offer an alternative solution to new road capacity by reducing the need for car travel on the A27 corridor.

The full research report is due later this year and will be shared with the Department for Transport when published.

Some of the most challenging areas for the Road Investment Strategy are highly congested corridors between sensitive sites or in dense urban areas. Adopting a corridor planning approach would help avoid the kind of challenges posed by the failed RIS1 A27 Chichester scheme and the constraints at Worthing-Lancing and at Arundel, in RIS2.

RIS2 can contribute positively by taking a more open approach to option appraisal, which keeps new road building as a last resort, while engaging constructively with stakeholders to seek more sustainable alternatives. For example, it should not be acceptable to say that because no bus or rail improvements are planned at present, therefore a new road is the only solution. A full range of solutions should be explored, including non-road based options. This would be better for the environment, and also likely to deliver better value road projects which are more acceptable to the communities they serve.

RIS2 is being developed in the context of a growing population and intense demand for new homes. Planning policy has long supported co-locating new homes and jobs with existing developments to maximise the economic and social benefits, while reducing the adverse environmental impact.

The DfT White Paper 'Creating growth, cutting carbon' noted that: "Where places (e.g. shops, work and other services) are located in relation to where people live is a significant factor in determining how much people need or want to travel. It is vital that sustainable transport is a central consideration from the early stages of local planning – for example whenever new houses or retail areas are being developed".<sup>13</sup>

The National Planning Policy Framework sets out core principles to support sustainable growth that should underpin decisions on land use. These include supporting the transition to a low carbon future in a changing climate; contributing to conserving and enhancing the natural environment and reducing pollution; actively

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<sup>13</sup> Department for Transport (2011) Creating growth, cutting carbon: making sustainable local transport happen

managing patterns of growth to make the fullest possible use of public transport, walking and cycling; and focusing significant development in locations which are or can be made sustainable.<sup>14</sup>

The same principles should apply to RIS2.

Setting out a policy approach to land use planning should be a feature of the Road Investment Strategy, as the location and design of new developments, both residential and commercial, has a direct impact on traffic and therefore on the operation of the SRN.

Indeed these connections have begun to be made in RIS1. The Housing and Growth Fund in RIS1 has assisted the delivery of new homes by match funding developer costs to connect these sites to the SRN. While some good work has been done in providing for multi-modal access routes, these isolated developments risk reinforcing car dependency and adding more local trips to the SRN rather than being part of a truly sustainable approach.

In RIS2 this approach could and should progress from enabling development at what may be less isolated sites to making a more strategic positive contribution to sustainable growth and to proactively engage in shaping planning policies, including local development plans, to help direct development to appropriate locations.

Such locations would not build new homes close to motorways, or high-speed dual carriageway roads but focus instead on sites within walking distance of major public transport links, and adjacent to or within urban centres. This would follow the best practice set out in the Masterplanning Checklist for Sustainable Transport in New Developments.<sup>15</sup> However, a recent fieldwork project looking at the experience of new urban extensions shows that many are being designed and developed without adequate provision for bus connections, safe walking or cycling routes.<sup>16</sup>

The Housing and Growth Fund should not be used to support such unsustainable development of new homes: instead, it should be refocused to support provision of homes and jobs near existing transport hubs, rather than at isolated sites connected solely or primarily to the SRN and to ensure that the design of access roads is appropriate for buses, cyclists and pedestrians as well as motor traffic.

The Design Manual for Roads and Bridges is appropriate for motorways and trunk roads but not for access roads servicing new homes. Bus operator Stagecoach recently published design guidance on incorporating provision for bus services in new housing developments,<sup>17</sup> and there is a wealth of good practice in design of walking and cycling routes from Sustrans and the Chartered Institute of Highways and Transportation. Following these should be a condition of Highways England match funding for new road connections.

## **4.2 An integrated approach: rail freight**

Promoting integration and modal shift for freight traffic as well as passenger traffic is critical to making RIS2 sustainable.

It is the growth in road freight that is primarily driving calls for more road capacity. Indeed the recent National Travel Survey statistics show that car trips are falling, while there is growth in both HGV and LGV traffic volumes. The Domestic Road Freight Statistics 2016 report that goods lifted and moved in HGVs reached a record high since recording began in 1990. 91per cent of all HGV traffic was on major roads with 46per cent on motorways.

This growth in freight has significant impacts on the Strategic Road Network and the local road network, not least in maintenance. Fully laden HGVs are 160,000 times more damaging to road surfaces than the average car and recent trials of longer HGVs are likely to add to this trend.

Excessive freight traffic is a primary cause of congestion at key locations on the SRN, with serious implications in terms of environmental impact and costs to the public purse and to business. The Freight Trade Association has estimated that Operation Stack, used to manage excessive HGV traffic on the M2

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<sup>14</sup> DCLG (2012) National Planning Policy Framework

<sup>15</sup> Campaign for Better Transport (2008) Masterplanning Checklist for Sustainable Transport in New Developments

<sup>16</sup> Foundation for Integrated Transport (2017) Transport for New Homes

<sup>17</sup> Stagecoach UK (2017) Bus services & new residential developments: general highways and urban design advice to applicants and highways authorities

corridor, costs the UK freight industry about £750,000 a day, while the Port of Dover estimates the UK economy loses up to £250m per day when Stack is in force.

Freight traffic is the main driver for proposals for RIS1 schemes including the Port of Liverpool Access Road, as well as potential RIS2 schemes such as new capacity for the Midlands motorway box. The freight sector is poorly served by the SRN, with Transport Focus reporting serious concerns about services for HGV drivers, while an ageing and declining domestic driver base, combined with moves to automation and the impact of Brexit, mean that the future for HGV road freight is hard to predict and does not provide a sound basis for new road building.

### **Reducing road congestion through better use of rail freight**

Research by consultants MTRU, commissioned by Campaign for Better Transport and sponsored by the Department, has explored the potential for using rail freight to reduce road congestion: it found that upgrading strategic rail corridors parallel to the SRN could significantly reduce HGV volumes on the A14, A34 and M6 corridors.<sup>18</sup>

The study looked at the economic benefits of using the railways to solve road congestion and improve productivity.

In particular, it examined the potential of increasing rail freight capacity along four heavily congested freight routes: the A14 between Felixstowe and the Midlands, the A34 from Southampton to the Midlands, and the M6 and M62 motorways. The two A roads have up to 6,500 of the largest HGVs (5 and 6 Axle articulated lorries) on the corridors each day, between 10 per cent and 17 per cent of all traffic, and the M6 motorway has over 13,500 of the largest HGVs a day and on the M62 over 11,000. This represents 10-12 per cent of all traffic on the two motorway sections.

The research found that upgrading existing rail lines, which run parallel to the motorway routes and are currently nearing full capacity, would allow large numbers of these lorry loads to be transferred to rail. This would help road congestion - because of the extra road space taken by lorries, transferring 2000 lorry loads a day to rail would be the equivalent of taking 8000 cars off the road. As more rail freight interchanges become operational there is further scope to transfer traffic to rail. For example, the existing strategic rail freight interchange at Daventry removes 64 million HGV miles a year (a significant increase from the earlier assumption of 23 million): most of these would otherwise be on trunk roads.

Upgrading the rail freight network on key strategic corridors ameliorates road congestion and therefore improves productivity. Transferring freight from road to rail would bring serious additional benefits including improved road safety and reduced air pollution and carbon emissions.

The DfT welcomed the study, noting that “rail freight offers real benefits for the environment and helps keep bulky loads off of the road network, helping to ease congestion for other motorists.”

Investing in rail freight is a timely, effective and economically viable alternative to building new road capacity to accommodate freight movements. Reform of the HGV levy, including the possibility of moving to distance based charging – which we support – could incentivise better efficiency and reward use of lower polluting engines and will also encourage the logistics sector to look more broadly at rail options. It also offers increased resilience to the SRN for a RIS2 which may see further rollout of smart motorways and expressways, necessitating widespread road works.

In addition, there are already plans for a number of Strategic Rail Freight Interchanges (SRFIs) at various points in the planning system, which as noted in the MTRU research referenced above, can have a significant impact. The private sector is already coming forward with plans for more rail freight interchanges, which will continue to reduce road freight during the lifetime of RIS2.

Upgrading rail freight routes that run parallel to the SRN can lead to significant modal shift, delivering a wide range of environmental benefits as well as reducing demand for road capacity from HGVs. Rail freight as an

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<sup>18</sup> Keith Buchan, MTRU (March 2017): Impact on congestion of transfer of freight from road to rail on key strategic corridors

alternative to HGVs is low-carbon and energy efficient, producing 76per cent less carbon dioxide and up to fifteen times less nitrogen oxide emissions and 90per cent less small particulate matter than the equivalent road journey.

Highways England has begun to work with Campaign for Better Transport and the developers of new SRFIs to investigate opportunities for joint working to support rail freight infrastructure upgrades. This could be facilitated by the Designated Air Quality Fund, given the environmental benefits of reducing HGV traffic from key strategic corridors. We welcome the opportunity to progress such innovative work in RIS2.

### 4.3 An integrated approach: bus and coach services

Bus and coach services are a lifeline for rural communities and a vital part of urban transport networks. They also contribute positively to the operation of the Strategic Road Network by reducing congestion and helping manage capacity. Every three buses replace about 200 cars on the road, and modern Euro VI vehicles emit less NOx than Euro6 cars.

The Highways England Accessibility Strategy sets out some positive goals to improve support for Park and Ride sites and other interchange facilities, and for better integration with public transport along SRN corridors. However in RIS1, bus and coach operators report that little priority has been given to identifying and meeting their needs, despite a number of franchised services operating on or around the SRN.

#### Bus and coach operators' forum

In February 2017, Campaign for Better Transport supported Highways England in convening a round table of bus and coach operators to discuss their priorities for improvement on the operation of the Strategic Road Network.

There were some important issues identified around severance, access and information. Service time reliability, junction improvements, and better sign posting to interchanges and Park and Ride facilities were all highlighted.

Severance is a big issue, for communities needing to access the network and operators needing to cross it. Successful integration will see HE assisting in delivering good quality end-to-end bus and coach journeys and working with local bus partnerships.

There is a genuine desire to find collaborative solutions to problem sites on the network. The integration fund in RIS1 is a welcome resource to address some of these problems, but progress in working with bus and coach operators to identify and deliver projects has been slow.

Effective delivery of a refreshed bus and coach integration fund in RIS2 should be a priority, assisted by a dedicated partnership forum for the bus and coach sector with Highways England.

RIS2 should set out to 'bus-proof' the SRN, by understanding the needs of bus operators and their passengers. RIS2 adds to this challenge with the prospect of Expressways: which may see bus stops removed from trunk roads when these are upgraded. Reviewing bus stops could lead to a safer, more accessible and more pleasant environment for bus users: but if changes are not properly planned in consultation with bus operators, could lead to severely disrupted services and passengers being cut off from reliable connections. The Bus Services Act provides an opportunity for partnership working with bus providers and with local authorities, which Highways England should embrace within RIS2.

Bus and coach operators collect detailed information via GPS systems on the movement and performance of their services, which can be a valuable indicator of overall SRN performance. By committing to work more closely on sharing data and designing road schemes to enhance bus and coach services, RIS2 can deliver improvements that benefit all SRN users.

#### Recommendations:

- **RIS2 should adopt an integrated approach to option appraisal on congested corridors, rather than consider road schemes in isolation**
- **RIS2 should have an explicit remit to improve integration with public transport as part of a multi modal approach**
- **RIS2 should contribute positively to delivering the targets set in the Cycling & Walking Investment Strategy**
- **Highways England should take on responsibility for all junctions on the SRN**

- RIS2 should contribute to wider sustainable development goals that support reduced car dependence and appraise road schemes on that basis
- The Growth and Housing Fund should be retained in RIS2 and refocused on supporting development at transport hubs not on isolated sites
- RIS2 should focus on better connections to existing and planned rail freight terminals rather than on building new road capacity to service freight movements
- RIS2 should seek to 'bus-proof' the SRN including at junctions and with bus priority in urban areas
- Expressway design should be developed in partnership with bus and coach operators and local authorities to ensure that current and future needs of bus users are met.
- The integration fund identified in RIS1 should be retained and expanded in RIS2 with an additional specific allocation to support bus and coach integration on the SRN.
- To support better use of the SRN, the DfT should consider allowing reallocation of funds within the Road Investment Strategy to reinvest in increased rail freight capacity and enhanced bus and rail passenger interchanges.

## 5. Making best use of technology

RIS2 is being developed at a time of much debate about the impact of new technology, from autonomous vehicles to drone deliveries and the potential for new mobility packages rather than traditional car ownership. For example, the development of keyless vehicle entry, via smartphone or Bluetooth, supported by wireless data connections, has potential to transform the car share sector.<sup>19</sup>

Better connectivity and better sharing of information and vehicles, is likely to result in more efficient travel choices, and reduced demand for road capacity. An OECD study looking at the impact of integrated MaaS (Mobility as a Service) in Lisbon, found that the result of a full-scale implementation of shared mobility in this metropolitan area would see total vehicle-kilometres in peak hours reduced by 55per cent (compared to 2011) for the metropolitan area, with a reduction for the city alone of 44per cent.<sup>20</sup> RIS2 should not only accommodate but facilitate such developments, with a focus on integrating services and data rather than building more conventional road capacity.

While much of the debate has been around the potential for new types of vehicles and access to vehicles, new technology has much wider applications. There is an opportunity to apply technology to the network, rather than to the vehicles, to develop a road network fit for the 21st century, designed for low carbon, less polluting modes and making better use of new technology for smarter journey planning.

RIS2 gives the opportunity to make best use of technology and data to deliver a more sustainable network. Road users do not distinguish between the SRN and other major roads, and make end-to-end journeys across a mixture of local and strategic roads. Other sectors, from banking to libraries, have developed sophisticated data sharing protocols which facilitate joint working while protecting commercial, client and organisational confidentiality. In RIS2, Highways England could champion such an approach to road network data. By sharing expertise and joining up management and data services with local highways authorities, there would be benefits for travellers and network managers alike.

### **Northamptonshire: using travel data to cut traffic**

Northamptonshire County Council has helped pilot the DfT funded Total Transport approach. It is one of 37 Total Transport pilots, aiming to deliver a more integrated network, which will save money to the public purse, and give passengers a better journey.

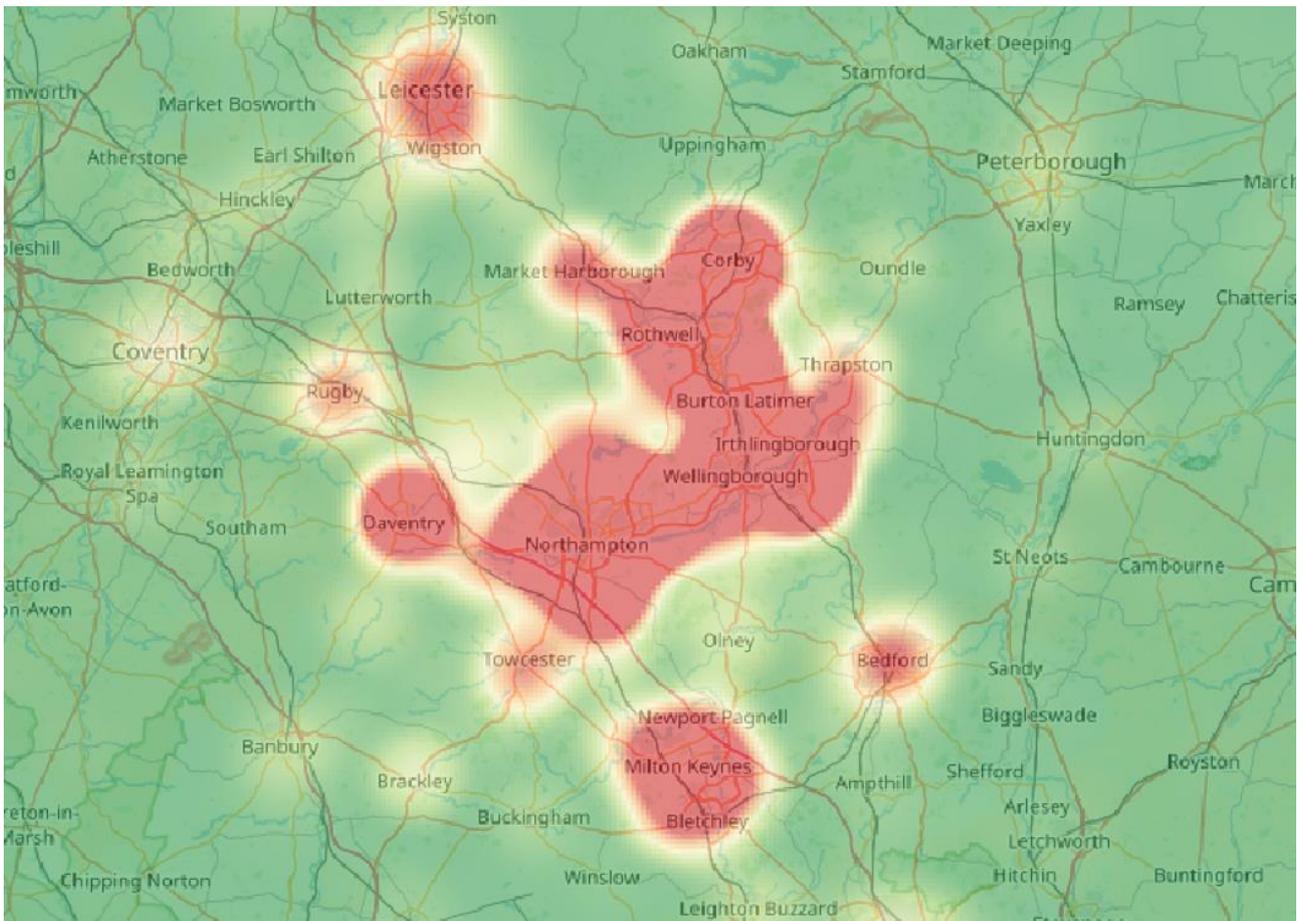
Total Transport takes a cross-sector approach to the delivery of passenger transport services across health, school, and local authority transport and buses. By pooling information and resources, it can deliver services that are better coordinated, integrated, and more efficient.

Researchers at the University of Northampton have taken this a stage further by pooling anonymised postcode data and travel survey responses from public sector employees to identify which routes have the greatest volume of single occupancy car commuting.

<sup>19</sup> Strategy Analytics (2017) Automotive Consumer Wireless Applications Spread Beyond Infotainment

<sup>20</sup> OECD/ITF (2017) Transition To Shared Mobility

Their study focused on mapping journeys on the **A45 trunk road** through Northamptonshire. Having excluded HGVs, LGVs, bus and coaches, the team identified flows of 102,000 cars a day on this road, and have postcode data on origin and destinations of 39 per cent of these journeys of which around 80per cent are single occupancy trips. The heat map below shows the concentration of journey origins and destinations.



Looking at the options for managing that road use better, the research team conclude that there is significant potential for modal shift. Car sharing could remove 14,500 of these vehicles, and there are opportunities to use the data to enhance bus provision on key routes. Around 4 per cent of the overall commuting demographic is making journeys under 2 miles: switching 80 per cent of these to bike would remove another 4300 vehicles. A modest investment in these other travel options could remove around 20per cent of the traffic currently on the trunk road, with benefits not only for congestion but also for the environment, with reduced carbon emissions.

Applying this approach will enable highways authorities to deploy public transport and local sustainable options to meet proven need, with a significant impact in cutting car commuting and managing demand for new road capacity.

The full research report is due later this year and will be shared with the Department for Transport when published.

RIS1 has seen some significant work being done through Highways England's Innovation team, including new materials to improve safety and reduce maintenance, better use of information and new 'smart' road designs. We support the use of new technology to better manage road capacity and for **new road designs** to improve road safety and reduce adverse environmental impacts.

Demand management can be delivered partly through provision of information and access to alternative travel options and partly through introducing usage-based charges to incentivise efficient use of the network.

The need to find alternative funding streams for roads as EV usage increases and fuel duty income falls has already led to a range of options for road user pricing being developed, notably in the entries to the 2017 Wolfson Prize. Existing moves towards a distance-based HGV levy are welcome. Where charges are

already levied, for example on river crossings, these should be revised to be related to vehicle emissions, rather than based on vehicle size.

Any future charges should have any built-in environmental incentives to use cleaner vehicles, with fees set at a level to encourage a shift to other modes. Whatever the final version, it is important that the smart motorway and expressway programmes in RIS2 are designed to accommodate road user pricing.

RIS1 saw the introduction of All Lane Running on some smart motorways, the practice of converting the hard shoulder to an additional fulltime traffic lane. The House of Commons Transport Committee conducted an inquiry into All Lane Running in 2016, to which Campaign for Better Transport gave evidence, as did motoring organisations and the emergency services, all of whom expressed grave concerns about the policy in practice. The Committee clearly recommended a halt to the further rollout of All Lane Running: this recommendation has since been rejected although the design of Emergency Refuge Areas has been modified.

The original managed motorway concept was successful: in the pilot study on the M42, where Active Travel Management was used, safety improved by nearly 56per cent. We regret this approach has not been extended in RIS1. Given the significant and continuing concerns raised about All Lane Running, we feel this is a key area for review in RIS2.

The proposed expressway design is likely to be delivered during RIS2. The concept of delivering motorway standard dual carriageways (but without hard shoulders or safety refuges) along existing trunk road corridors raises a number of concerns that these upgraded roads may repeat the mistakes of the past. In particular RIS2 should avoid building extra road space in protected landscapes, industrialising the countryside and adding to light pollution.

Expressways risk excluding non-motorised users from their local main road without a better alternative and undermining local bus services. The expressway design principles should be revisited to protect needs of all road users and individual expressway schemes should include substantial dedicated budgets to ensure high quality provision for non-motorised users.

RIS2 should include work to enhance information sharing on SRN related projects, not only major road schemes, but also maintenance schemes, safety and integration projects and environmental enhancements. TfL shares open data to enable better understanding and planning of transport by a range of users. In the context of RIS2, such sharing could, for example, facilitate local authorities and user groups to develop better local Cycling and Walking Investment Plans by seeing where cycling enhancements are proposed.

#### **Recommendations:**

- **RIS2 should prioritise data sharing to better understand and manage travel demand**
- **RIS2 should have a dedicated fund for Highways England to work with large businesses and employers on green travel plans, to reduce demand on the SRN as it has successfully done in the past**
- **RIS2 should be designed to accommodate road user pricing including environmental incentives**
- **smart motorways should adopt a managed motorway approach in preference to all lane running**
- **expressways design principles should be revisited to protect needs of all road users**
- **expressway schemes should include substantial dedicated budgets to ensure provision for non-motorised users and bus integration**
- **Highways England should adopt an open data approach to sharing information on road schemes, maintenance and enhancement projects**

## **6. Partnership working**

We have noted the challenges in delivering RIS1 as reported by the National Audit Office. We believe there is potential to deliver RIS2 more effectively through better partnership working, identifying schemes that are more sustainable and more acceptable to local communities by engaging wider groups of stakeholders.

As part of the 2012 Roads Reform programme, a number of bodies were set up within and alongside Highways England to monitor the delivery of the Road Investment Strategy.

Campaign for Better Transport has been engaged as an active stakeholder during the development, delivery and monitoring of RIS1. In particular, we participate in the Highways England Design Panel, the HE

Vulnerable Road Users Committee, Transport Focus' Road User Panel, as a key stakeholder with ORR, and we sit with other NGOs on the advisory group for HE Designated Funds.

Campaign for Better Transport has a seat on the **Highways England Design Panel**: we support its mission to champion good design across the Strategic Road Network and want to see this continue in RIS2. In particular we are keen to see that the design of schemes integrates into the existing landscape and rather than being imposed upon it, and that the needs of non-motorised users and communities alongside the SRN are properly met.

The Panel has worked during RIS1 to develop design principles for the SRN, and has begun to look at some sensitive schemes. However at present it receives presentations on schemes rather than being actively engaged in their design. To be effective in RIS2, the Panel should be engaging with selected schemes through their whole project cycle, from the concept and option identification stage, through to a post opening evaluation against the design objectives.

The Design Panel requires proper resourcing to enable working groups to be set up to review individual schemes and to pursue best design practice and its integration into 'business as usual': the funding to deliver this should be allocated as a priority within RIS2.

**Early engagement of stakeholders** should also apply on individual schemes delivered in RIS2. There has been widespread criticism of some schemes in RIS1 that only one option was offered (for example the A358 Taunton to Southfields), or only highly-damaging road-based options were developed for full consultation (as with the A5036 Liverpool Port Access Road).

The M25 SW Quadrant strategic study made good use of stakeholder engagement to develop and get feedback on a long list of solutions including demand management and enhancing public transport options. This led to the project team ruling out further widening of the M25 which might otherwise have been a default option. This open approach is one that merits becoming the norm in RIS2.

#### **Recommendations:**

- **The Design Panel should be retained in RIS2 with a remit and resourcing to set design objectives for selected schemes and review scheme delivery against these**
- **Consultation on individual road schemes should involve stakeholders from the start, including in identifying scheme priorities and option appraisal, not only in commenting on preferred routes.**

#### **Conclusion**

This paper is one of a number of contributions that Campaign for Better Transport is making to the development of the second Road Investment Strategy. It draws on research and on stakeholder views to make a series of constructive recommendations for RIS2.

Instead of building 20th century solutions based on large-scale fixed infrastructure, there is the opportunity to refocus on making the existing network more resilient and better integrated. RIS2 can and should deliver a road network fit for the 21st century, designed for low carbon, less polluting modes and making better use of new technology for smarter journey planning.

We look forward to working with the Department for Transport and Highways England to help make this vision a reality.

8 September 2017

Bridget Fox  
Campaign for Better Transport

Campaign for Better Transport's vision is a country where communities have affordable transport that improves quality of life and protects the environment. Achieving our vision requires substantial changes to UK transport policy which we aim to achieve by providing well-researched, practical solutions that gain support from both decision-makers and the public.

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