

Consultation response from Brake to ‘Shaping the future of England’s strategic roads (RIS2)’

February 2018

Introduction

This consultation response is from Brake, the road safety charity. Brake also promotes sustainable and active travel as part of its humanitarian goals. Brake develops its position within the framework of key international documents, including those produced as part of the Decade of Action for Road Safety and the UN Sustainable Development Goals. Established in 1995, Brake is supported by a range of stakeholders, from the haulage industry to road crash victims.

Appendix A of this consultation response is Brake’s Position Paper giving its broad understanding of Highways England’s operation during RIS1 and providing ten recommendations for RIS2 funding priorities.

Those recommendations are as follows:

1. RIS2 must have safety and the environment as ‘equal first’ priorities
2. RIS2 must drive funding towards measures that will meet newly-defined demanding performance indicators and targets relating to safety and the environment, set by Highways England with the approval of ORR
3. The NIC must place safety and the environment as its top priorities for infrastructure
4. RIS2 must radically increase funding specifically for safety and environmental purposes
5. RIS2 must expediate the establishment of an independent road collision investigation branch
6. RIS2 must enable Highways England to ‘do what it does best’ and prioritise the construction of safe infrastructure, with a focus on the most vulnerable road users
7. RIS2 must support vehicle technologies that advance safety and ultra-low emissions
8. RIS2 must provide comprehensive funding for enforcement
9. RIS2 must enable Highways England to aim for fewer customers in cars
10. RIS2 must enable Highways England to increase road user awareness and interact more with SRN users and non-users on the topics of safety and sustainability

For more information on Brake’s thinking behind these recommendations, see Appendix A.

Question 1: Do you think Highways England’s proposals will deliver what users of the SRN want?

In its Analysis to Inform RIS2¹ the Department for Transport emphasises the importance of “understanding what matters to road users”. However, road users are not consumers of a commercial product that needs to be tailored to their specified needs; rather they should be perceived as people using a public service that must be required to not cause them or others harm, through risk to life from crashes or disease-inducing pollution, nor contribution to global warming. For example, the SRN has enormous potential to contribute to enhancing people’s lives through segregated provision for active travel, most notably cycling, connecting key places.

Encouragingly, safety has been identified by Transport Focus as a key concern among SRN users. However, other ‘wants’ often perceived as important to SRN users (primarily drivers) include decreased journey times, and other measures to help drivers ‘get there quicker’, such as opening lanes quicker after a collision. Pollution caused by use of the SRN is not identified as a key concern, presumably because it isn’t a day to day concern of drivers on the SRN. This demonstrates the principle that what we think is needed by users today, is not necessarily the overall public priority for us all (saving lives and preventing global warming, while also, as a secondary outcome, being able to move about reasonably efficiently, using the most appropriate transport means).

¹ Analysis to Inform RIS2, Department for Transport, 2016

It's important when considering this argument to recognise the less-heard voices, inclusive of victims of road crashes on the SRN, and all vulnerable road users particularly cyclists, equestrians, people on foot, who are not currently, or are minimal, users of the SRN due to reasons inclusive of fear and lack of segregated facilities for them etc, and who are less likely to be featured in survey results therefore. Silent voices also include the people at risk of, or suffering or dying of, respiratory disease due to air pollution heavily contributed to by roads generally, inclusive of the SRN. Ultimately global warming, contributed to by traffic-related air pollution, causes climate change that affects all of us, wherever we live.

In its Initial Report, Highways England says: *"We're also committed to improving connectivity on and around the network for non-drivers by delivering safe and accessible routes.As we build toward transforming our busiest A-roads into expressway corridors, such provision will allow us to safely segregate these vulnerable road users from high speed motor vehicles."*

This is critical work in Brake's view. For example, providing segregated space for cyclists, and integrating with train providers etc, will encourage and enable active and more efficient travel that is fast and efficient, reduce the risk of vulnerable road users being involved in collisions, and reduce pollution and congestion. It is a vital 'sister measure' to the measure of changing our vehicles to be ULEVs. Becoming a ULEV nation is only half the battle as population levels rise and our roads are increasingly clogged with vehicles of whatever kind (as indicated by Highways England in its Initial Report as likely due to the increase in traffic volumes predicted.)

This work must be supported centrally with performance indicators such as those indicated in Appendix A, under recommendation 2, such as:

- who uses the network, by type of road, road user and miles travelled, including vulnerable road users (if roads are too dangerous, pedestrians and cyclists are less likely to use them²);
- people killed and seriously injured by different types of road user and per miles travelled;
- safety on different parts of the network (by types of road)
- meticulously researched causation factors of crashes, particularly fatal and serious injury crashes;
- facilities for vulnerable road users, particularly length of roads on the network carrying segregated, traffic-free routes across the SRN for cyclists;
- compliance with speed limits and other key enforcement measures on the network;
- modal shift on the network (from car to bicycle in particular);
- modal shift off the SRN to rail, and from private cars to coaches;
- reduction in carbon, NOx and particulate emissions from the SRN as a whole, rather than just at air quality study sites;
- speed of access to trauma care.

Brake's concern is that Highways England will have too many priorities diverting its attention. These include speeding up journey time, providing more space for increased traffic, and an array of other issues that will distract it from its core need to meet its target of a network free of death and injury by 2040 and the priority of reducing its impact on global warming.

Consumers of transport are generally known for being extremely unaccepting of poor safety standards on public transport (rail, aviation, maritime). Safety systems are therefore rigorous on public transport and deaths and injuries very rare by comparison. It can be perceived that the public are generally more accepting of significantly worse – and by comparison horrendous - safety standards on roads, in the knowledge that the causation of road collisions is often partially the fault of individuals using the roads. However, often collisions can be prevented and mitigated through engineering of vehicles and roads using readily available technologies, such as ISA and AEB, and better crash barriers and other road engineering measures. Brake strongly supports Highways England in its commitment to connected and automated technologies to eliminate human error. The next step - driverless vehicles, including platooning lorries, and connected roads – is likely to become a reality and as an infrastructure provider, Highways England needs to be ready to meet that challenge. Brake welcomes this focus in the Initial Report.

² Cycling and Walking Investment Strategy, Department for Transport, 2016

Question 2: Do you think Highways England's proposals will deliver what businesses want?

The Transport Investment Strategy and Industrial Strategy are about achieving economic success through an efficient transport network. Brake's extensive experience of working with the haulage industry has taught us that one of the biggest costs this industry faces is related to collisions. Road risk management is an essential aspect of business efficiency. A more crowded SRN may result in more collisions. A connected, autonomous SRN may result in fewer. Certainly, segregated space for vulnerable road users makes inordinate sense from the perspective of business users of the network, inclusive of coach operators, vans and lorries.

Question 3: Do you think Highways England's proposals will meet the needs of people affected by the presence of the SRN?

It depends what is meant by "people affected".

Many people are affected by the SRN as a result of collisions; the ripples of a death or injury on the road spread wide in a community.

Everyone is affected by the presence of the SRN in the sense that building and use of the SRN causes pollution which contributes to global warming and climate change.

It is inappropriate therefore to consider the SRN merely within the context of abutting biodiversity, or other issues such as littering, noise, or immediate air pollution; not to suggest these things are unimportant locally.

It is essential that RIS2 funding and Highways England's proposals takes a much broader, helicopter, and humanitarian approach first and foremost in line with the UN SDGs. Brake is therefore pleased to see the publication of Highways England's Air Quality Strategy³ committing to work with partners to move Britain towards no emissions from vehicles and clean air for everyone. This requires, however, a concerted approach. For example, as indicated in Appendix A, recommendation 9, Highways England must not treat itself as a traditional business seeking more customers per se. It needs to be, in fact, seeking a reduction in customers in cars.

One of the key calls of people bereaved and injured by road crashes is comprehensive investigation of those crashes. Brake is pleased that Highways England is working with TRL and other academic agencies to investigate its most devastating crashes involving fatalities and serious injuries. RIS2 is an opportunity to meet Brake's recommendation 5 to expediate the establishment of an independent road collision investigation branch to carry out this work with all partners involved.

Another key call by road crash victims is for greater enforcement. Highways England has repeatedly pointed out that the drop in enforcement is a danger to safety and raised this as a risk in its operational metrics manual. RIS2 is an opportunity to invest in enforcement. It's not clear to Brake from Highways England's initial report how it hopes to address and improve enforcement significantly on the SRN in partnership with policing agencies, and Brake would urge a particular push, among other things, on enforcement of speed limits, and tackling lorry driver fatigue and lorry roadworthiness, given the length of many journeys and the significant amount of freight carried on the SRN proportionate to the extent of the SRN's length.

Question 4: Do you agree with Highways England's proposals for:

Four categories of road and the development of Expressways (initial report 4.4.3 and 5.3.6)

Brake supports categorising roads, as long as safety and the needs of vulnerable road users are prioritised in those categorisations. We must not run the risk of, in effect, upgrading all roads to the "next rung" to carry more motorised traffic more safely, at the expense of space and facilities for VRUs.

The definition of all-purpose trunk roads and expressways' aims, as defined in **4.4.3**, is disheartening because they particularly mention motorists and their perceived needs, yet include no mention of VRU needs:

"Expressways – to bring the safety and congestion advantages through better design, on-road response and technology to our busiest A-roads while keeping road layouts and driving practices familiar for motorists.

³ Highways England, Air Quality Strategy, 2017

All-purpose trunk roads – which will continue to provide a vital service and connectivity to significant parts of the country, particularly the more remote areas.”

Brake does not find this an adequate descriptor it can support, as it does not indicate intention to protect and enable everyone inclusive of cyclists and other VRUs such as equestrians, people on foot, etc.

5.3.6 talks about “appropriate” and “alternative” provision being given to VRUs on these roads but Brake is concerned about the lack of specificity of these phrases. Appropriate, alternative provision to travelling on shared, fast space is entirely segregated space that also enables direct, well-lit and safe travel (not, for example, a windy, gravel track more suited to use for weekend travel reasons rather than a cyclist trying to cycle many kilometres, fast, to get from A to B).

Operational priorities (Initial Report section 5.1)

These ‘operational priorities’ are listed as *better information, better road works, reliable and seamless journeys, smart motorways and expressways, preparing for connected and driverless vehicles and supporting electric vehicles.*

These priorities can be perceived to be focussed around the primary activities of Highways England ‘day to day’ as an infrastructure provider developing with the times, and to be driven by their focus on moving motorised vehicles around England. As such, it is therefore an expected list. It does encompass elements that support Brake’s call for Highways England to focus on safety and sustainability (particularly connected and driverless vehicles and supporting electric vehicles).

However, our significant criticism of this list and the way it is described in entirety is that it appears to be entirely related to motorised vehicle usage on the network and not VRUs.

Priorities for keeping infrastructure in good condition (5.2)

The title of this is suggestive that existing infrastructure is in good condition. The status quo of much of the infrastructure is improving, with efforts to elevate SRN all-purpose trunk roads to higher star ratings well underway according to the ORR assessment⁴ (see Appendix A below). However, this is primarily about elevating roads from 2 to 3 stars out of a possible 5.

Brake welcomes the replacement of central reservation barriers with stronger concrete barriers, which offers greater protection to vehicle occupants as well as motorcyclists. We are conscious of the enormity of this as an engineering and cost exercise, and the equal importance of other measures that need undertaking, such as providing segregated routes for VRUs.

HE says in this section: *“With limited funding, we need to make difficult decisions about how we prioritise between extending the life of some of our oldest and busiest roads and building new roads to ease congestion. We welcome a wide input to this debate through the consultation which follows.”*

Again, Brake would infer from this that there is an emphasis on motorised road users, and not on all road users. There is no mention in this section on infrastructure for VRUs along the network, and in RIS1 the only focus has been on enabling VRUs to cross the network, not use it.

Enhancement priorities (5.3) A local priorities fund (5.3.8) Future studies (5.3.11)

Throughout 5.3 and all its sub parts including 5.3.8 and .11, there is a focus on upgrading roads for motorised vehicle users.

5.3 lays out that HE wants:

“a portfolio of enhancements that:

- *responds to our customers’ and stakeholders’ needs*
- *reflects the state of the network itself*
- *aligns to the priorities of our shareholder*

⁴ ORR, Annual assessment of HE performance, 16-17

- *provides a foundation for the future”*

Brake has some concerns about these four objectives.

- Regarding the first bullet, determining what humanity and the planet really needs (safe and sustainable transport) is different to asking road users, particularly drivers, what they want today (eg. fast journey times).
- The meaning of the second bullet point is ambiguous.
- The priorities of the shareholder, meaning Government, presumably means the Transport Investment Strategy and the Industrial Strategy, neither of which are focussed on safety nor sustainability in summary, and are more about commercial gains.
- The fourth bullet point is suggestive of relating to developments in technology for infrastructure and vehicles, but it is not clear.

Brake recommends these bullet points need rewriting with a focus on safety and sustainability for all.

Regarding 5.3.8 (local priorities), this is one of the few mentions of safety centrally. We think it is inadequate for safety to be sidelined to a local priority fund and instead believe that safety should be centrally and far more significantly funded (see Appendix A cost analysis).

Regarding 5.3.11 Brake welcomes the reference to multi-modal and public transport. However, we note the omission of any text relating to free-flowing journeys for VRUs particularly cyclists on segregated sections of all-purpose trunk roads and expressways.

Designated funds (5.4)

Brake does not think that safety and sustainability, and areas of potentially major expenditure, such as building segregated and fast routes between places for cyclists and other VRUs, are adequately met through proportionally very small “designated funds”: the amounts of money designated in the safety and cycling budgets in RIS1 are tiny compared with the costs of collisions alone on the network (let alone the costs of air pollution in terms of respiratory disease and global warming. See cost analysis in Appendix 1) and also tiny compared with the investment overall in RIS1 inclusive of new road building.

The examples given for potential designated funds include sustainability examples, which is promising, but there is nothing to suggest that this would include nation-wide infrastructure works for segregation of cycling for example nor, for example, large investments in tackling key killers such as speed through enforcement or other means. Brake is therefore concerned that safety and sustainability will remain side-lined, particularly in light of the seeming focus in the Initial Report on road building and maintenance, for upkeep and congestion-relieving purposes.

Performance measures and targets (6.3)

Brake attended a round table with Highways England and other stakeholders in the safety field, during which it was strongly voiced by Brake and others that there needed to be carefully-thought through KPIs relating to safety and sustainability, including relating to people killed and seriously injured.

Brake is interested in this statement in 6.3: *“We believe we should be penalised for missing targets when we didn’t deliver our planned activities rather than because of one or a number of factors we can’t control.”*

As explained in Appendix A, Brake has noted in HE’s operational metrics manual that HE is concerned that aspects of safety and sustainability are outside its control – such as levels of enforcement, air pollution from all vehicles, driver behaviour. However, Brake does not believe these things are entirely outside the control of RIS2 funding. Brake does not believe they should be lower priorities. Brake thinks that through RIS2 direction of funds and instilling of priorities and agreement of KPIs, safety and sustainability can be put first.

[Question 5: Are there any other proposals that you do not agree with? If so, which ones and what could be done differently?](#)

No comment at this time.

Question 6: Do you agree with Highways England's assessment of the future needs of the SRN (Initial Report section 4.4)?

Highways England's assessment of the future needs of the SRN seem correct in many ways but are heavily weighted to the "future" from a motorist and fleet vehicle perspective, but seem less considerate to the need to enable active travel and public transport to flourish in England, safely, for sustainability and health reasons.

Looking at the network overall, a large part of the SRN is all-purpose trunk roads; routes that can be potentially be developed through provision of additional segregated space to enable fast travel by bicycles between places in England as part of an active travel network connected to non-SRN routes. On these roads currently there are major problems around excessive and illegal speed and other offences by drivers meaning that many parts of the network cannot be safely used by VRUs. Linking up with public transport providers – particularly local bus and train routes - is also key, along with encouraging private car drivers off the SRN and on to rail / coaches.

Question 7: How far does the Initial Report meet the Government's aims for RIS2 (economy, network capability, safety, integration and environment – described in par 2.3) Which aims could Highways England do more to meet and how?

Brake thinks much more could be done to prioritise safety, integration and environment, in some of the ways Brake describes above and in our recommendations in Appendix A. Brake cannot see that these things are being made as central as they could be, by some significant margin, in Highways England's Initial Report. This report is heavily focussed around the perceived importance of alleviating inconvenience and inefficiencies for people in motorised vehicles and maintaining the status quo of Highways England as a road maintainer and builder for people in vehicles with needs relating to their journey times etc.

An example (to give just one) is the lack of focus on speed as a cause of casualties, and the urgent need to reduce speed and enforce speed limits for safety reasons. Instead there is a focus on increasing speed (eg around road works) to enable faster journey times, and a focus on the perceived concern of speeds being affected negatively (i.e. HE means reduced) by forecast increases in volumes of traffic. Throughout the Initial Report there are two brief mentions of the need to address speed as a cause of casualties; one in relation to expressways and one in relation to driver education. While it is valuable for information sharing, driver education is notoriously unreliable / ineffective as a way to affect driver behaviour according to many transport psychology reports.

Question 8: Do you think there should be any change in the roads included in the SRN (described in par 1.3)?

If so, which roads would you propose are added or removed and why?

Having an SRN for our major routes between places is important. Brake thinks that central management of such roads, inclusive of collection and accessibility of information about their usage, casualties, emissions, etc, and action based on that data, is vital. We advocate the establishment of a road casualty investigation branch in support of this is vital alongside the ongoing auditing function of ORR.

It may be that more roads could be added to the SRN, particularly given that decisions around which roads are in, our out, of the SRN at present are to some degrees arbitrary.

We would support an academic review of the definition of an an SRN road, and which roads should therefore be included or not, and ensuing consideration of that.

Question 9: Is there anything else we need to consider?

At present Highways England is seemingly still focussing on meeting expressed needs of motorist / fleet operator users (the most obvious 'need' being a desire for shorter journey times on the SRN) and expanding and maintaining the network to meet the forecasted increased use of the SRN by motorised vehicles of all types. Brake does not consider that this approach best meets the vital pillars of safety and sustainability.

Putting safety and sustainability first can meet economic and other goals too, such as shorter journey times. For example, journey times can be shortened by centrally addressing the problem that there are too many people using cars for long SRN journeys and who can instead use public transport – either coaches or rail or both. There are also

too few people on bicycles and too few safe and segregated routes between places for people on bicycles. A focus by Highways England on reducing numbers of private vehicle users through cross-team work with other agencies should be a central focus. Equally, having a central focus on increasing safety through multiple measures such as enforcement (speed cameras etc.) and engineering (inclusive of segregation) would reduce the burden of the cost of collisions on industry, reduce journey times through fewer crashes blocking the roads, and have many other benefits.

Safety and sustainability issues such as multi-modal, public transport and active travel should not be side-lined to designated funds of a much smaller nature in terms of level of investment than road maintenance and building. They should be addressed centrally and at least equally in investment.

Question 10: Does the analytical approach have the right balance between ambition, robustness and proportionality? If not, what do you suggest we do differently?

Overall, there seems to be a mis-match between the aims of the Transport Investment Strategy and Industrial Strategy and the stated aims of RIS2 which include safety and the environment centrally. There are confusing and multiple aims, goals, etc listed in different documents that do not seem to entirely flow from each other and do not seem to stem from a solid and clear premise of what is right and good for people and the planet. Brake has respect for the openness of Highways England in its consultative efforts, and its stated focus on safety centrally and its concern for the environment, but with regard to documentation prepared so far for RIS2 inclusive of the Initial Report, we do not yet feel this focus is coming across adequately by a large margin.

Appendix A

Position paper

Road safety and sustainability on England’s Strategic Road Network

Author: Mary Williams OBE, chief executive

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Preface

Richard Cuerden, Academy Director, TRL

In 2007, the then-named Highways Agency released its Strategic Safety Action Plan for England's motorways and main trunk road network⁵. One of its key aims was "keeping the network safe". The plan included a commitment to initiate road safety research targeted at identifying and understanding collisions, and a commitment to review methods available to collect data about collisions. Each death and injury on the Strategic Road Network is a statistical reminder of the challenge we face to bring an end to the unnecessary and preventable personal tragedies, which continue to be an unacceptable burden on our society. We must continue to learn from these events and strive for zero deaths and serious injuries on our roads.

Commendably, the renamed Highways England committed, in its Health and Safety Five Year Plan⁶, to "implement an internationally recognised Safe Systems approach to road safety", which means undertaking developments to the system (primarily roads, vehicles), so when people make mistakes the chances of death and injury are mitigated. It also means looking for opportunities to improve what drivers do. Today, Highways England has a much-improved outcome of "making the network safer" and has set itself an ambitious casualty reduction target.

Commissioned by Highways England, TRL carried out research into most of the fatalities on the network that occurred in 2014. The study involved an in-depth review of the causes and consequences of 159 collisions which resulted in 176 fatalities. Experienced collision investigators reviewed the police forensic reconstruction reports, photographs and scene plans and for each case, identified factors (countermeasures) that could have prevented the collision and/or mitigated the injury outcome. The countermeasures were grouped as pertinent to the people involved, the environment or the vehicles based on Haddon's matrix (William Haddon, 1970). Each factor was given a confidence rating and based on this limited sample, the main findings were that there is significant potential for vehicle and infrastructure interventions to have a positive influence and reduce road casualties, but a targeted strategy is required to integrate these as part of a Safe System approach.

The report TRL produced for Highways England highlighted the need for all solutions to be cost effective and relevant with regard to the road safety challenges we are facing. Road infrastructure is changing, including the adoption of SMART motorways. Our road user demographics are changing with more journeys predicted; including freight. There will be proportionally more elderly road and vehicle users. In addition, we are seeing unprecedented changes in vehicle design and technical performance, especially regarding the level of driver assistance that is offered. Connected and Autonomous Vehicles (CAVs), including platooning trucks and cars will become a reality and the SRN needs to be ready for these new challenges. The combination of all these factors, and others, will affect exposure and risk of injury on the road and directly translate to different collision typologies and resulting injury mechanisms. All solutions and investments must be future proofed.

In its Annual Assessment of Highways England's Performance April 2015-2016⁷, the ORR references that deaths are easier to prevent on the railways because this is a more "controlled environment". However, rapid advances in vehicle technologies and road design have the potential to increase the "controllability" of the road transport system and directly lower the risk and injury outcomes of road collisions and reduce pollution. The next stage must include trialling new solutions in real road environments, for example using the UK's Smart Mobility Living Lab (SMLL), to evaluate their potential along with assessing other related policy measures, including road design, insurance, licensing and regulation. All may be required changes to ensure a safe integrated approach.

This position paper by Brake presents an NGO's view of the urgent need for prioritisation of safety and sustainability on the SRN, with a focus on a move towards a Safe System approach and a more controlled environment. The paper makes comprehensive recommendations that are evidence based. I recommend that the road map set out in this paper is carefully reviewed and used by Highways England to help inform their on-going development of strategy and investment planning.

⁵ Strategic Safety Action Plan for the Core Trunk Road Network 2007, Highways Agency

⁶ Health and Safety Five year Plan, Highways England, 2015

⁷ Annual Assessment of Highways England's Performance April 2015- Mar 2016, ORR

Introduction, Mary Williams OBE, chief executive, Brake

This paper provides Brake's understanding of, and position on, the developments and plans regarding the safety and environmental impacts of Britain's Strategic Road Network (SRN), meaning Britain's motorway and all-purpose trunk roads (APTRs, inclusive of dual carriageways and single carriageway A roads), as operated by Highways England (the government-owned company in charge of maintaining, running and extending this network). This is exclusive of a proportion of the A road network under the jurisdiction of local authorities.

The paper includes a list of nine recommendations for prioritising the achievement of safe, sustainable, healthy and fair transport.

Why now?

This paper has been prepared in light of Highways England becoming a separate company in 2015 (it was previously a branch of government called the Highways Agency) and in light of the preparation stages of Road Investment Strategy 2 (RIS2) currently underway (the next round of investment funding from 2020). This is a vital time to secure significant funding for safety and sustainability on the SRN as the most important priority.

Sources of information and engagement with Highways England and the government

This paper utilises primarily some key strategy, planning and assessment documents, such as those referenced here⁸ ⁹ ¹⁰ ¹¹ and readily available from Highways England and by the Office of Rail and Road (ORR), with many online. The ORR is, importantly, required to monitor independently Highways England's performance (as defined in the Infrastructure Act 2015).

Brake additionally has, alongside other important road safety stakeholders in the NGO sector, attended meetings and round tables in 2016 and 2017 hosted by ORR and Highways England to learn more, and discuss, Highways England's road safety performance and plans. Brake is continuing to participate in conversations with Highways England and the government, its funder, regarding RIS2, for example through consultation responses.

Our perspective

Brake's methodology is to be research-led, obtaining and analysing information obtained from reliable sources such as TRL and other research bodies. Our subsequent positions are formed on the basis of a need to protect human life and the planet. This credible approach enables us to speak loudly and confidently on behalf of everyone.

Brake also has the privilege of being in a position to seek independently the views of the general public on matters we research. In 2018, thanks to funding from Direct Line, we are publishing two separate reports about the results of driver surveys we have carried out regarding their thoughts on the strategic road network's safety, sustainability and future. These views are well worth listening to and include, understandably, some significant and heartfelt fears relating to these crucial issues.

Many people I meet do not understand the structure of ownership and funding of our Strategic Road Network. Ultimately, however, it is ours. It's a critical part of our nation's infrastructure and it's all our responsibilities to ensure the deaths, injuries and pollution caused by it come to an end.

⁸ Operational Metrics Manual, Highways England June 2016

⁹ Annual Assessment of Highways England performance April 15 to March 16, ORR

¹⁰ Health and Safety Five Year Plan, Highways England, 2015

¹¹ National Incident and Casualty Reduction Plan, Highways England, 2016

1 Targets

Targets to reduce casualties

Highways England's ultimate aim, as stated in its five year Health and Safety Plan¹², that **“no-one should be harmed when travelling or working on the strategic road network”**, with a goal of achieving this by 2040.

The Road Investment Strategy 1 (2015-2020) states: **“By 2040 we aspire to a network in which the number of people killed or seriously injured on the SRN will be approaching zero.”**

Highways England has a target of a **40% reduction in people killed and seriously injured (KSI) on the network by 2020 against the 2005-9 average base line**. This target is nearly as ambitious as the Sustainable Development Goal's target of a 50% worldwide reduction by 2020.

Highways England is also crucially required to **“facilitate safe movement for vulnerable road users** alongside and across the Strategic Road Network (SRN).”¹³ This is a very important addition, because without this requirement, Highways England would not have a specific focus to ensure the safety of cyclists and pedestrians, potentially inhibiting its ability to focus on contributing to a modal shift from cars to cycling and walking.

Highways England has a number of additional performance indicators and related targets outlined later in this paper, but its most significant additional target that it can work to meet directly relates to the **safety standards of its road infrastructure** (which it is responsible for building and maintaining). It has a requirement for **90% of travel on the SRN being on roads with a safety rating of EuroRAP 3* (or equivalent to a new Highways England Star rating system) by the end of 2020**¹⁴ (stars range from 1 (worst) to 5 (best)).

Lack of targets to reduce emissions of carbon dioxide, NOx and particulates

The UK government has an aspiration of all new vehicles being ULEV (ultra-low emission vehicle) by 2040.¹⁵

Despite the importance of this target, the urgency of climate change and the loss of life from respiratory disease caused by air pollution, Highways England is carrying out air quality studies and aims for increased biodiversity alongside the SRN, but has **no target for reducing emissions of carbon dioxide, NOx nor particulates from use of its roads**.

Highways England has identified in its Operational Metrics Manual¹⁶ that there is a risk to the company delivering better environmental outcomes due to:

“lack of formal legislation for Highways England to deliver and enforce any air quality intervention measure either on the Strategic Road Network (SRN) and / or local road network. There is **no clear mandate, against a backdrop of an open network, to implement specific interventions on the SRN eg Low Emissions Zone (LEZ), which may hamper our ability to help improve air quality**. Highways England are aware that in principle a Local Authority may declare an LEZ on their road network, but it is unclear as to whether they have any jurisdiction over traffic using the SRN.”

Highways England also identifies the link between greater usage and pollution: “An increase in traffic would lead to worsening in air quality in areas of poor air quality alongside the SRN.”¹⁷

The thresholds for NOx pollution as laid down by the EU and England are set out in the EU Directive on Ambient Air Quality (2008/50/EC) and the Air Quality (England) (Amendment) Regulations (2002) and supporting Air Quality Strategy, targeted at improving areas of poor air quality.

Highways England is working to reduce emissions resulting from its use of vehicles and its construction activities, and talks about this in its strategies. Although this is in itself a significant piece of work, it is not central to reducing overall emissions on the SRN.

¹² Health and Safety Five Year Plan, Highways England

¹³ Road Investment Strategy and Highways England's Strategic Business Plan

¹⁴ Incident and Casualty Reduction Plan, Highways England

¹⁵ Uptake of ultra-low emission vehicles in the UK, Office for Low Emission Vehicles, 2015

¹⁶ Highways England Operational Metrics Manual, 2016

¹⁷ Highways England Operational Metrics Manual, 2016

2 Casualties on the SRN

How many people?

- **People killed and seriously injured (KSIs) were higher in 2015 (1,784) than three years previously in 2012.**
- **Deaths went up**, from 211 in 2014 **to 224 in 2015**, an increase of more than 6% and also higher than in 2012.
- **Serious injuries declined**, from 1,642 in 2014 **to 1,560 in 2015**, a decrease of nearly 5%.

Where do the casualties occur?

- Just under **two thirds (59%) of KSIs on the SRN are on A roads**, with the remainder on motorways.¹⁸

What modes of transport are casualties using?

- Just over half of people who die on the SRN are in cars.
- However, this figure doesn't reflect vulnerability. It is more indicative of the proportion of cars on the SRN compared with other types of vehicles.
- in collisions on the SRN, survivability rates are significantly lower for people on bicycles, motorcycles and on foot. This is highly likely, for example, to be a root cause of low numbers of cyclists using the SRN. Consequently, lower numbers of deaths of people on bicycles on the SRN should **not be considered indicative of the SRN being safe for cyclists.**

- **Motorcyclists**

What proportion of our casualties happen on the SRN?

- **More than one in seven deaths on England's roads (14%) happen on the SRN.** Across England's entire road network there were 1,472 deaths in 2014¹⁹.
- Eliminating deaths on the SRN would make a significant contribution to reducing England's overall death toll. **More people are killed on the SRN than in collisions on roads in England involving drink drivers.**

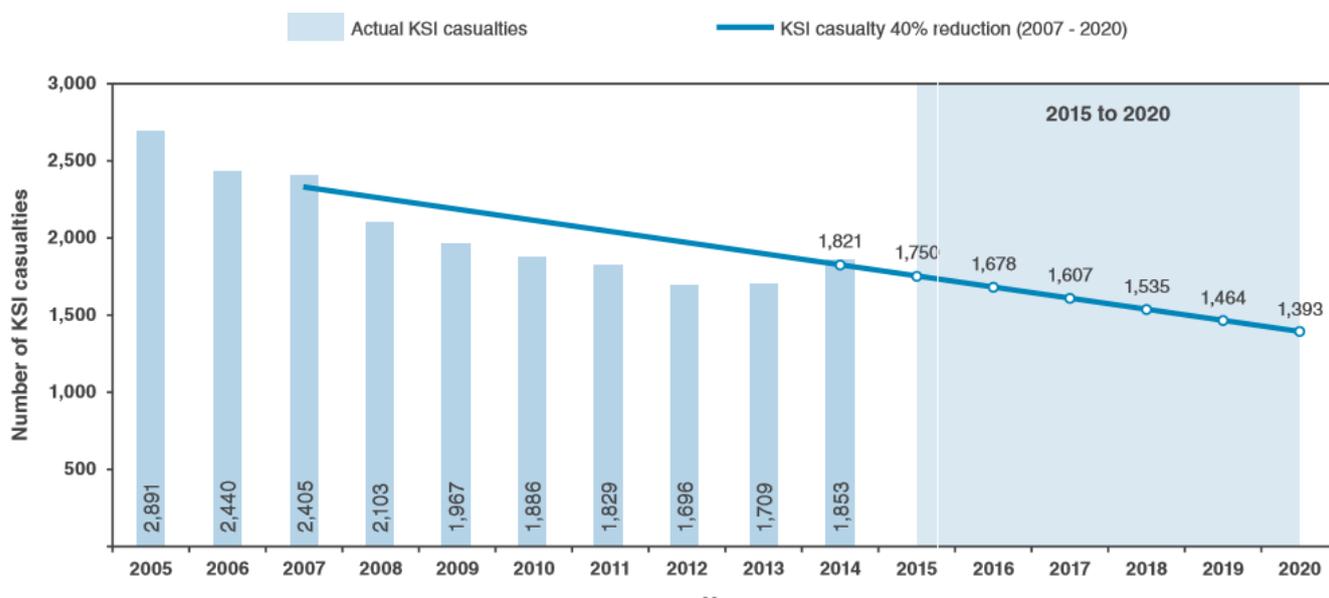


Chart from Highways England, National Incident and Casualty Reduction Plan, 2016²⁰

Fatal collision causation and safe system counter measures

¹⁸ Annual Assessment of Highways England performance April 15 to March 16, ORR

¹⁹ Road Casualties Great Britain, Department for Transport, 2014

²⁰ National Incident and Casualty Reduction Plan, Highways England, 2016

A Highways England-commissioned study of fatal collisions on the Strategic Road Network carried out in 2014 studying **159 out of 192 fatal collisions**²¹ found:

- **More than half fatal collisions (90)** were caused by multiple factors relating to a) human behaviour (particularly bad driving and speeding), b) the road and its environment (eg lack of street lighting, view of surroundings obscured, bad weather) and/or c) the vehicle (tyres, brakes, etc).
- Although nearly all crashes had a human element, **countermeasures influencing behaviour of people could have prevented only 4% of the collisions:** the rest required countermeasures relating to the road and its environment and/or the vehicle.

The research suggested counter measures that could have prevented this cohort of crashes, including advanced driver assistance systems (such as automated emergency braking and intelligence speed assistance) and improvements to the road (such as better barriers and street lighting). TRL recommended on-going analysis of fatal collisions on the SRN to determine, with a larger data set, and within a cost-benefit model, appropriate countermeasures. This on-going analysis is currently underway.

In a round table meeting held by ORR²², TRL also called for the establishment of an independent and national Road Collision Investigation Branch, a measure supported by Brake and many other NGOs fighting for transport safety.

Warped 'customer satisfaction' levels?

An annual survey by Transport Focus of "customer satisfaction" among SRN users consistently records satisfaction levels above 90% for safety, indicating perhaps that many people who use the network are accepting that deaths and injuries are inevitable and a presumption that Highways England has no control over them, or perhaps that the respondents don't think that they, personally, will be involved in a fatal or serious injury crash. However, as the research carried out by TRL demonstrates (see above), safety on the SRN can be controlled to a significant degree by management changes to the road environment and developments to vehicle systems.

It can be conjectured that public opinion would not be so satisfied if similar levels of deaths and injuries occurred each year on a transport system the general public might consider more controllable, for example the rail network (there have been no rail passenger deaths for eight years).

3 Global warming emissions and pollutants from the SRN

Use of the SRN significantly contributes to England's emissions of carbon dioxide, NOx and particulates.

- Transport accounts for a quarter of England's greenhouse gas emissions and affects air quality²³
- The SRN carries a third of England's traffic.
- The SRN carries **two thirds of England's large goods vehicle (truck) traffic**, largely run on diesel (which releases higher amounts of NOx than petrol). About a third of cars are also diesel.²⁴
- A quarter of journeys on the network are trucks and vans.²⁵
- Hardly any vehicles on UK roads are Ultra Low Emission Vehicles (ULEVs) (2.8%), although this is growing²⁶ along with growth in charging stations.
- Air pollution contributes to about 40,000 deaths annually in the UK. While these deaths do not result in so many years of life lost per person as road crashes (deaths related to air pollution are more likely to be older people), it is a comparatively much larger number of deaths.²⁷

²¹ Towards Zero, TRL, McCarthy and Barrow, May 2016

²² Meeting held at ORR, 30 September 2016, 'Delivery of safety improvements through the ring-fenced fund'

²³ Gov.uk

²⁴ Vehicle Licensing Statistics 2014, Department for Transport,

²⁵ Annual Assessment of Highways England's Performance April 2015- Mar 2016, ORR

²⁶ Ultra low emissions vehicle guide, SMMT, 2016

²⁷ Every breath we take: the lifelong impact of air pollution, Royal College of Physicians and the Royal College of Paediatrics and Child Health, February 2016

- Respiratory disease affects one in five people. It is responsible for around a million hospital admissions and is the third biggest cause of death in the UK.²⁸

Without a major change in the vehicle fleet to ULEVs, continued rises in use of the SRN will increasingly contribute to global warming and lung-damaging pollutants (particularly parts of the SRN near urban conurbations).

These continued rises in usage are significant:

- traffic overall grew by 19% between 2000 and 2015, with the biggest growth in light vehicles;
- traffic on the SRN grew at a faster rate than on local roads;
- miles travelled by vehicles on the SRN rose from under 85bn in 2012/13 to nearly 90bn in 2015/16;
- traffic is expected to grow by up to **60% between 2010 and 2040**²⁹ and could become denser (more vehicles in any given space) due to Smart motorways and vehicles potentially becoming wirelessly connected.

ORR, in its Annual Assessment of Highways England's performance 16-17, says traffic growth "presents a challenge to Highways England in delivering its commitments in the first road period and the company must manage the impacts on its outcome."³⁰

²⁸ Report on inquiry into respiratory deaths, APPG on Respiratory Health, 2014

²⁹ Annual Assessment of Highways England's Performance April 2015- Mar 2016, ORR

³⁰ Annual Assessment of Highways England's Performance April 2016- Mar 2017, ORR

4 Expenditure plans

The government's Road Investment Strategy (RIS) 1³¹ set out the outcomes, outputs and capital investments that Highways England must deliver over its 'first road period' (April 2015 to March 2020) from a funding package of more than £11 billion to invest over those five years in maintaining, renewing and improving the strategic road network.

Majority £10.7bn budget for improvements, maintenance and renewals

It is important to note that RIS1 funding includes new road building. Out of the £11bn, £7bn is for "major improvements", and £3.7bn is for "maintenance and renewals" (in other words, new roads and maintenance of roads, including safety features on those roads).

Highways England is extending its network, and also changing some of its roads, creating:

Smart motorways: These use active traffic management techniques to increase capacity by use of variable speed limits and hard shoulder running at busy times.

Express ways: Highways England describes these as: "A-roads that can be relied upon to be as well designed as motorways. As a minimum this means:

- Largely or entirely dual carriageway roads that are safer, well-built and resilient to delay
- Junctions which are largely or entirely grade separated, so traffic on the main road can pass over or under roundabouts without stopping
- Modern safety measures and construction standards
- Technology, where appropriate, to manage traffic and provide better information to drivers."³²

As explained above, road usage is expected to increase.³³ Expanding the SRN is likely to contribute to this increase; more road space has been shown to attract more use of roads.³⁴

c.£350m budget ring fenced for safety, cycling and innovation

Highways England has ring fenced a much less significant amount of money for safety, cycling and innovation:

£105m for safety schemes (largely for improving poorly performing A roads)

In 2015-16 approximately only £1m of the £105m was spent, largely on "scoping work"³⁵, but Highways England intended to spend the bulk of its safety funds on: "retrofitting measures to improve the existing road network. Safety designated funds focus on **improving safety on single carriageway sections** [*Brake emphasis*] where the star rating is generally lower and KSI risk is higher."³⁶

This approach aims to enable Highways England to meet its target, as specified earlier in this report, of 90% of journeys being on roads with a Eurorap three-star rating or higher for safety. A star rating of the SRN in 2010 placed:

- 50% of the motorway network at 3 star and 50% at 4 star;
- 78% of dual carriageways at 3 star, with 20% at 4 star, and 2% at 2 star;
- **62% of single carriageways at 2 star**, with nearly all the remainder at 3 star (only 1% being 1 star).

In summary, this fund will be largely spent on remedial measures to address the poorest roads and make them achieve higher safety ratings, but not make all roads as good as they could be, nor necessarily meet the needs of all potential road users, including those travelling by active and sustainable means.

Highways England has expressed, in conversation with Brake, that improvements to single carriageway sections can include remedial measures that protect vehicle occupants in the event of a vehicle running off the road (such as safer verges, free from ditches and trees). Another focus is removing objects that impair driver visibility at junctions,

³¹ Road Investment Strategy: for the 2015/16 – 2019/20 Road Period, Department for Transport

³² National Incident and Casualty Reduction Plan, Highways England, 2016

³³ Annual Assessment of Highways England's Performance April 2015- Mar 2016, ORR

³⁴ The Fundamental Law of Road Congestion: Evidence from US cities, Gilles Duranton, Matthew A. Turner

³⁵ Annual Assessment of Highways England's Performance April 2015-2016, ORR

³⁶ National Incident and Casualty Reduction Plan, Highways England, 2016

such as overgrown bushes. Another method identified by Highways England is the transformation of a single carriageway A road into a dual-carriage express way (see above definition) to also ‘increase capacity’.³⁷

These approaches are suggestive that the current focus for these funds is not, primarily, segregated space for vulnerable road users (cyclists particularly) on single carriageway A roads.

It should also be noted that Eurorap upgrades its star ratings over time, and a rating achieved in 2010 may be graded less safe for the same road today, making it more challenging for Highways England to achieve improved star ratings.

Highways England has been quick to point out in conversation with Brake that much of its wider work has safety elements to it. For example, £220m is being spent on “congestion busting schemes” that will have a safety element to them including tackling places where there are “collision clusters”.

£100m for cycling (largely for off-road cycle paths)

This £100m money is from the Cycling, Safety and Integration Fund resulting from the government’s Cycling and Walking Investment Strategy launched in 2016³⁸. (It is part of a total £250m ring fenced for “cycling, safety and integration” which includes £45m for ‘integration’). The £100m is being spent on 200 cycling network infrastructure schemes. Highways England produced its Cycling Strategy³⁹ in January 2016, which feeds in to its “annual cycling programme”. The Highways England Cycling Strategy says: “For our network this means cycling facilities which are safe, **separate from traffic** [*Brake emphasis*] and that enable users of all abilities to cycle, encouraging cycling as a sustainable form of transport.” The Cycling Strategy says it will achieve this by:

- “Reviewing the extent and quality of the existing cycling network;
- Identifying, prioritising and investing in ways to improve cycling conditions;
- **Progressively creating comprehensive and coherent cycle networks** [*Brake emphasis*] with our key stakeholders and delivery partners.”

It has not been possible for Brake at the time of writing to find out

- what proportion of England’s SRN all-purpose trunk roads have cycle paths that are segregated from road space (for example by a verge or kerb),
- what proportion of cycle lanes within the road space (indicated by paint),
- what proportion has no designated space.

£150m for innovation

The “Innovation Designated Fund” managed through Highways England’s “Innovation, Technology and Research Strategy⁴⁰” is about improving roads *and* vehicles through technology. It is about delivering “smart” motorways and, crucially, “supporting breakthrough vehicle technologies” notably trials of connected, platooning and autonomous vehicle technologies.

It can be conjectured that autonomous vehicles are more likely to be ULEVs. If this is the case, then this fund could contribute to future massive reductions in air pollution from the SRN, as well as safety gains.

£400m budget ring fenced for air quality and environment

An additional £100m has been ring fenced for expenditure on air quality, and £300m for expenditure on the environment. These collective £400m funds are being used for:

- studies of air quality (see below)
- encouragement of biodiversity around the SRN, and
- schemes to tackle noise pollution, littering, etc.

³⁷ Meeting, Brake / Highways England, Brake offices, 2017

³⁸ Cycling and Walking Investment Strategy, Department for Transport, 2016

³⁹ Cycling Strategy, Highways England

⁴⁰ Innovation, Technology and Research Strategy, Highways England

There are expected to be ten air quality pilot studies completed over three years ending in 2017. The purpose of the pilot studies are to test the feasibility of 'Air Quality Intervention Measures' for effectiveness and deliverability in the pilot study area and where effective to assess their potential application elsewhere.

Highways England says: "The purpose of the studies is to help understand the current air quality problems in terms of spatial extent of air quality exceedances and the range of concentrations in a given area. This is supported by work to understand the reasons for the problem eg detailed traffic numbers and fleet compositions. A pilot study may be targeted at specific interventions and not all studies will be identical. The anticipated outcomes will guide potential targeted mitigation solutions."

5 Cost benefits of investing in road safety and reducing emissions on the SRN

The Department for Transport estimates the "average value of prevention" of each death on the road at more than £1.8 million, and each serious injury at more than £200,000 (based on 2014 data)⁴¹.

The real costs are often higher. For example, it can cost millions of pounds to provide specialist life-long care to someone with a life-changing disability that seriously affects brain or limb functions.

However, using the conservative figures provided by the Department for Transport:

224 deaths on the SRN in 2015 x £1.8m value of prevention = £403.2m

1560 serious injuries on the SRN in 2015 x £200,000 value of prevention = £312m

Total cost of KSIs on the SRN = £715.2m

Over a five-year period, this equates to a £3.5bn value of prevention.

This is **more than ten times as much as Highways England is currently looking to expend on additional road safety schemes, cycling schemes, and its innovation and design fund put together (£320m).**

As Highways England emphasises, it also invests funds in safety measures as part of its normal infrastructure building and maintenance programme, and these safety measures are likely to improve continuously in quality. However, this routine investment can be considered routine and may be countered by increased risk from an extended network with growing volumes of traffic.

It is reasonable to argue, therefore, that the £320m budget set aside for additional safety, cycling, and innovation and design is far too small compared with the cost of KSIs on the network and the additional costs of air pollution in death and illness. This can be considered especially so when the costs of all injuries, insurance and congestion have not been taken into account in this high-level assessment.

Aside from the above calculations, investing in walking and cycling schemes enables modal shift, which reduces pollution from traffic and additional and extensive costs incurred by:

- a) the NHS and society from people suffering from, and dying from, respiratory conditions (treating respiratory conditions is estimated to cost the NHS an estimated £4.7bn a year⁴²); and
- b) the country generally, due to the effects of climate change.

⁴¹ Reported Road Casualties Great Britain annual report, 2014

⁴² Report on inquiry into respiratory deaths, APPG on Respiratory Health, 2014

6 Highways England outcomes and performance indicators

Highways England set itself the following **outcomes**:

- Making the network safer
- Supporting the smooth flow of traffic
- Encouraging economic growth
- Delivering better environmental outcomes
- Helping cyclists, walkers and other vulnerable users of the network
- Achieving real efficiency

Highways England set itself **performance indicators (PIs)**, laid out in its Operational Metrics Manual⁴³, in relation to these outcomes. Some of these PIs have associated targets; some do not. The PIs relevant to safety and environmental performance are listed below alongside information from the Highways England Operational Metrics Manual⁴⁴ regarding factors that may inhibit or assist performance.

PI: Incident and casualty numbers and contributory factors for motorways, *and*

PI: Casualty numbers and contributory factors for all-purpose trunk roads

Highways England (led by its Safer Roads Group) says it will:

- aim to achieve the KPI target of a 40% reduction in KSI casualties on the SRN by 2020
- report on incident numbers and report the number of casualties on the motorway network and all-purpose trunk roads
- monitor contributory factors for emerging trends that can lead to interventions to support casualty reduction

Highways England notes the following external influences that could impact on its ability to meet this target:

Data collation	HE queries the “accuracy of data provided to DfT by the police. This is currently deteriorating as a result of reducing police coverage.”
Vehicle advances	“Vehicle developments could influence casualty and incident numbers.”
Increases in traffic	“An increase in traffic may result in an increase in casualties, putting the target at risk.”
Changes in speed	“Changes to road speeds on the network could influence casualty and incident numbers.”
All Lane Running Smart Motorways	These motorways, without constant “hard shoulders”, “may increase numbers of lane impacting incidents in some locations, because there are more live lanes.”
Medical advances	There is a possibility that “medical advancements will contribute to the reduction in the number of casualties.”
Driver behaviour and vehicle roadworthiness and enforcement	Highways England calls for “Effective improvements to increase level of compliance ie roadworthy vehicles and drivers who obey the rules of the road. This is a significant dependency.”

Brake identifies two sub-aspects of these external influences as particular concerns:

Potential increases in motorcyclists: As well as the predicted increases in traffic volume overall, there are currently efforts to rise numbers of motorcyclists on the SRN, backed by Highways England. Motorcyclists are highly vulnerable road users. Motorcycle Safety and Transport Policy Framework is a partnership document by Highways England, the police and the motorcycling industry that promotes motorcycling on the SRN as a way to “reduce congestion.... and an affordable transport solution”⁴⁵. The latest edition of the framework acknowledges safe infrastructure as vital. In some other nations with high levels of motorcycling, motorcyclists are given segregated space on major roads. Such segregation is not proposed as yet in the UK.

Enforcement: Enforcement priorities are wide-ranging, but priorities on the SRN are the enforcement of speed limits and enforcement of lorries’ safety, particularly with regard to roadworthiness and driver hours. HE remarks: “On

⁴³ Highways England Operational Metrics Manual, 2016

⁴⁴ Highways England Operational Metrics Manual, 2016

⁴⁵ Realising the Motorcycling Opportunity: A Motorcycle Safety and Transport Policy Framework, 2016

roads, police capability is down 70% as set out by the Association of Chief Police Officers (ACPO). Government policy and resourcing of enforcement activity will have a significant impact on casualties and incidents on the motorway network if the levels of police enforcement continue to drop.”⁴⁶

PI: Number of vulnerable road user casualties (broken down into cyclists, pedestrians, motorcyclists and equestrians)

Highways England is committed to: reporting on the number of vulnerable user casualties on the SRN; and the reporting of a reduction in the number of casualties across vulnerable user groups inclusive of cyclists, pedestrians, motorcyclists and equestrians. There are “no specific targets” but HE recognises “the government’s desire to “enable choice so people can be more active by walking or cycling” and is required to “**facilitate safe movement for vulnerable road users** alongside and across the Strategic Road Network (SRN).”⁴⁷ HE says it will:

- “improve provision for cyclists generally;
- fix historic problems where the SRN has increased community severance;
- prevent new barriers emerging; and
- enable choice so people can be more active by walking or cycling.”

Highways England is aware that the metrics need improvement. It says: “At present the metrics for measuring the impact of interventions for cyclists, walkers and other vulnerable users is limited in their number and scope. New metrics will be developed..., **however, in the interim, the number of new or upgraded crossings provided for cyclists, walkers, and other vulnerable users will be used as a key performance indicator.**”

In other words, HE’s current and only performance indicator is about enabling vulnerable road users to cross the network, not use it, nor monitor the extent of its use by vulnerable road users.

In its Initial Report, 2018, HE reported it had delivered “264 new and upgraded cycle, pedestrian, and equestrian crossings points since 2015”⁴⁸.

The HE does not have a PI for miles travelled on the SRN by vulnerable road user groups, or deaths or serious injuries per miles travelled on the SRN by vulnerable road user groups. These can be considered as important PIs to introduce.

PI: Identification and delivery of the “annual cycling programme”

Highways England is required to deliver its “annual cycling programme” of infrastructure schemes as explained above and in the Cycling Strategy⁴⁹ and is required to produce an Annual Cycling Report.

Separate space for cyclists away from other traffic is acknowledged in Highways England’s Cycling Strategy as the way to achieve safety. However, there is no PI for the amount of the SRN that has segregated space. As stated above, the only PI relates to ability to cross the network through new and upgraded crossings, rather than use the network.

PI: iRAP-based road safety investigations (the international road assessment programme that stars roads)

A tailored version of the current iRAP system⁵⁰ considering incident location, collision data, traffic volume, and vehicle speed and road layouts is being applied to the SRN to inform work needed and reach the target of 90% of travel on the SRN being on roads with a safety rating of EuroRAP 3* (or equivalent to the new Highways England Star rating system) by the end of 2020⁵¹. The rating system is aimed to be developed and applied to the network in 2018, to inform route strategies and investment programmes moving beyond that date.

⁴⁶ Highways England Operational Metrics Manual, 2016

⁴⁷ Road Investment Strategy and Highways England’s Strategic Business Plan

⁴⁸ Initial Report, Highways England, 2018

⁴⁹ Cycling Strategy, Highways England

⁵⁰ iRAP www.irap.net

⁵¹ Incident and Casualty Reduction Plan, Highways England

PI: Number of air quality pilot studies completed

Highways England says it is working “with our partners to make progress on reducing the negative impacts on air quality to support wider government initiatives targeted at improving air quality,” but there is no specific target.

PI: Carbon dioxide equivalents in tonnes associated with Highways England activities and its supply chain’s activities

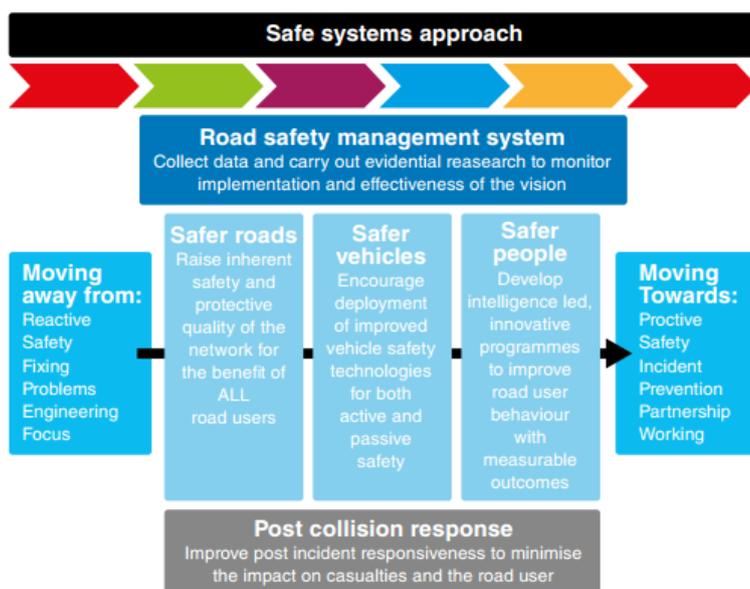
Highways England identifies that “it will need to demonstrate that we are playing our part in helping reduce carbon dioxide, and other greenhouse gas emissions, in line with current and future government targets.” It remarks that “de-carbonisation of the grid and ‘green’ vehicle development will benefit the measure.” However, this performance indicator is not about carbon dioxide emissions from all vehicles using the SRN. It is solely about Highways England’s activities (building, maintaining and operating roads) and the related activities of its suppliers. Only a broader performance indicator relating to all vehicles on the SRN could give Highways England any meaningful goal to contribute to reducing global warming gasses and air pollution.

7 Plans and targets for road safety

ORR, in its Annual Assessment of Highways England’s performance, identified four priorities for Highways England for 2016-2017, two of which are:

- Improve transparency about its plans and performance, including the transparency of its plans and strategies in the areas of safety and the environment
- Improve data quality

Highways England’s Health and Safety Five Year Plan, commits to a ‘Safe Systems’ approach to road safety, as shown in the model below taken from that plan:



Highways England has additionally internally produced a National Incident and Casualty Reduction Plan⁵² in 2016 that aims to define, measure and analyse collisions, improve the SRN, and monitor and evaluate countermeasures in relation to the road, vehicles and people, as per the safe systems approach.

The company has also produced regional incident and casualty reduction plans, owned by each of its six regions, and requires its regions to use the same tools when undertaking road safety schemes, including a road safety intervention tool kit and Route Treatment Guide.

Highways England’s plan says it will undertake the following work to achieve its target of 90% of journeys on three star roads or above:

- Upgrades to junctions and removing some of the worst bottlenecks

⁵² Incident and Casualty Reduction Plan, Highways England

- Developing A roads to be expressways
- Providing safer verges with improved run off protection
- Improved road signing and markings
- Upgrading lay-bys
- Upgrading central barriers
- Developing and deploying technology to prevent, detect and monitor incidents
- Using designated safety funding to deliver targeted safety improvements
- Improving technical standards

Highways England will also have a focus on working with its partners in relation to enforcement on the SRN and education of SRN road users. Highways England says it will “work closely with our partners to develop targeted enforcement and education interventions to address a wide range of issues which impair driving such as: fatigue, distraction, alcohol and drugs.”

It will also have a focus on vehicle maintenance: “We will work with industry bodies, motoring organisations and enforcement agencies to improve vehicle maintenance. In the first instance we will develop a series of campaigns focused on the improvement of vehicle maintenance. We will also build on our existing partnerships with the DVSA and the police.”

The plan also talks about “collating more detailed fatality information via the national and regional intelligence units (NIU and RIUs) and the regional teams to ensure we are able to report more accurate information concerning fatal incidents.”

8 Plans and targets for reducing pollution

Highways England has environmental outcome targets relating to reduction of noise pollution and improvement of biodiversity. It must mitigate 1,150 “noise important areas” by 2020, and work to achieve a biodiversity action plan. There are no targets for reduction of carbon emissions, NO_x, nor particulate pollutants from the network’s use, so consequently no relevant plans.

9 Recommendations from Brake relating to RIS2 and Highways England's operations 2020-25

Brake offers the below recommendations mindful of the fact we are more than half way through the current period of funding of the Road Investment Strategy (RIS1), 2015-2020, we are looking forward to 1 April 2020, which is the start of RIS2, 2020-2025, and Highways England needs to be driving hard towards 2040 and no deaths or injuries and very low pollution levels on its network.

With the establishment of a National Infrastructure Commission, now is also the time to be imbedding and developing Highways England's position as a company that prioritises safety and the environment **above all else**.

RECOMMENDATION 1: RIS2 MUST HAVE SAFETY AND THE ENVIRONMENT AS 'EQUAL FIRST' PRIORITIES

As a company with a statutory role regarding the preparation of RIS2 (alongside the Department for Transport, ORR and Transport Focus), Highways England can play a critical role in shaping that strategy to be bigger and better for safety and the environment.

The government has said that RIS2 will have similar broad aims, relating to: economy, network capability, safety, integration, and the environment (listing safety third, and the environment fifth)⁵³. In its Transport Investment Strategy published 2017, the government has four goals for transport, and four actions for transport, none of which lists safety nor the environment.

In its Analysis to Inform RIS2⁵⁴ the Department for Transport emphasises the importance of "understanding what matters to road users". However, road users are not consumers of a commercial product that needs to be tailored to their specified needs; rather they should be perceived as people using a public service that must be required to not cause them or others harm, through risk to life from crashes or disease-inducing pollution, nor contribution to global warming. Indeed, the SRN has enormous potential to contribute to enhancing people's lives through segregated provision for active travel, most notably cycling.

In multiple statements Highways England has made in relation to RIS1, it is clear Highways England recognises the imperative importance of saving lives and the planet, and putting these priorities equal first, and also understands the value of active travel, and has a unique opportunity to lead RIS2 in this direction.

In its SRN Initial Report produced in 2018 in preparation for RIS2, Highways England lists safety as central to its imperatives and values⁵⁵.

RIS2 funding must be centred around the needs to stop casualties and have clean air in line with the 2040 targets of no-one being harmed on the SRN and all vehicles being ULEV by 2040. Above all else, these are the targets that matter. These targets also support economic goals through numerous means, such as alleviating congestion from collisions, reducing the burden on the NHS of casualties, and contributing to wellbeing of people generally.

RECOMMENDATION 2: RIS2 MUST DRIVE FUNDING TOWARDS MEASURES THAT WILL MEET NEWLY-DEFINED DEMANDING PERFORMANCE INDICATORS AND TARGETS RELATING TO SAFETY AND THE ENVIRONMENT, SET BY HIGHWAYS ENGLAND WITH THE APPROVAL OF ORR

By 2020, Highways England needs to have achieved its stepping stone, but ambitious, goal of 40% reduction in KSI and needs to have evolved and be working towards an array of pertinent performance indicators (PIs) and targets in relation to both road safety and environmental performance.

During RIS1, Highways England has very few performance indicators and targets relating to road safety and none relating to carbon, NOx and particular emissions. This lack of PIs and targets in these critical areas does not enable focus on the most important areas of work; saving lives and protecting people and the planet from pollution.

Highways England **needs to evolve a comprehensive set of safety and environmental PIs and targets** relating to, among others:

⁵³ Road Investment Strategy post 2020: planning ahead, 2016

⁵⁴ Analysis to Inform RIS2, Department for Transport, 2016

⁵⁵ SRN Initial Report, Highways England, 2018

- who uses the network, by type of road, road user and miles travelled, including vulnerable road users (if roads are too dangerous, pedestrians and cyclists are less likely to use them⁵⁶);
- people killed and seriously injured by different types of road user and per miles travelled;
- safety on different parts of the network (by types of road)
- meticulously researched causation factors of crashes, particularly fatal and serious injury crashes;
- facilities for vulnerable road users, particularly length of roads on the network carrying segregated, traffic-free routes across the SRN for cyclists;
- modal shift on the network (from car to bicycle in particular);
- modal shift off the SRN to rail, and from private cars to coaches;
- reduction in carbon, NOx and particulate emissions from the SRN as a whole, rather than just at air quality study sites;
- speed of access to trauma care.

Highways England should take care to ensure targets are meaningful; that they are achievable but also aim high. For example, it is questionable whether the government's current target of doubling cycling by 2025 is meaningful in relation to the SRN, given this means doubling a number that is not very much, resulting in a number that is still not very much.

Brake does not accept a need for targets relating to speed of "mop up" of collisions if they impact on the ability of road collision investigation teams to thoroughly study a collision site. Casualty investigation is of paramount importance; much more so than traffic flow.

RIS2 funding must be consequential to the targets; it must meet the need for investment to achieve these targets.

RECOMMENDATION 3: THE NATIONAL INFRASTRUCTURE COMMISSION MUST PLACE SAFETY AND THE ENVIRONMENT AS ITS TOP PRIORITIES FOR INFRASTRUCTURE

The National Infrastructure Commission, as a new arms-length executive agency of The Treasury, provides a unique opportunity for safety and the environment. The objectives of the NIC are to: (i) support sustainable economic growth across all regions of the UK, (ii) improve competitiveness and (iii) improve quality of life. As such, it is poised to place safety and sustainability, as well as health, at the heart of growth and competitiveness.

Highways England must be at the forefront of influencing NIC's assessment of national infrastructure needs, calling for prioritising of safe and sustainable infrastructure (ranging from comprehensive off road cycle networks, to ULEVs to heightened enforcement), using its evidence base of research and experience to demonstrate how safety and sustainability contributes to economic growth, as well as a better quality of life.

Highways England should:

- Establish with the NIC that Highways England believes safety and sustainability are the watchwords of sustainable growth;
- Utilise every opportunity to influence and participate in development of the NIC's recommendations;
- Be at the forefront of calls for sustainable alternatives to roads (particularly rail freight, public transport and cycling) as well as developments that make roads safer and more sustainable (such as five star roads and ULEVs).

RECOMMENDATION 4: RIS2 MUST RADICALLY INCREASE FUNDING SPECIFICALLY FOR SAFETY AND ENVIRONMENTAL PURPOSES.

Funding for RIS1 was not set within a cost-benefit approach that took into account the enormity of the cost to the economy and society of road casualties and pollution from the SRN. A move towards a five-year fund for safety that was above the £3bn mark would liberate funds for:

- a) Further and continued investigation into collision causation, including the establishment of an independent Road Collision Investigation Branch for Britain

⁵⁶ Cycling and Walking Investment Strategy, Department for Transport, 2016

- b) Implementation of road design countermeasures across the network, delivered by Highways England, with A roads and segregated networks for pedestrian and cyclists the priority, and aiming for five star roads across the network
- c) Direction of funds to other agencies responsible for other aspects of collision prevention, most notably police enforcement, to address the identified decline in policing staffing and resources. Speed, use of mobile phones, drink and drug driving, fatigue, and many other killers need addressing, including roadworthiness of lorries, a major user of the network.
- d) Direction of more funds into research-led innovation and design, regarding roads and vehicles, particularly connected and automated technologies.

RECOMMENDATION 5: RIS2 CAN EXPEDITE THE ESTABLISHMENT OF AN INDEPENDENT ROAD COLLISION INVESTIGATION BRANCH

Highways England has itself identified inadequacies in its information relating to causation of crashes and is funding on-going academic-led investigation of fatal crashes on its network. Highways England is committed to improving its collision investigation, but it should not be its own police officer. Instead, it is much more appropriate for there to be established an independent Road Casualty Investigation Branch, similar to the ones in existence that investigate fatalities caused by other modes of transport. This branch could be part of the Department for Transport but operate as an independent body.

RECOMMENDATION 6: RIS2 MUST ENABLE HIGHWAYS ENGLAND TO 'DO WHAT IT DOES BEST' AND PRIORITISE THE CONSTRUCTION OF SAFE INFRASTRUCTURE, WITH A FOCUS ON THE MOST VULNERABLE

Highways England should be applauded for embracing a “safe systems approach” and consequently funding should liberate investment in “doing what HE does best” – road infrastructure – focussing on infrastructure development that prioritises evidential methodologies for saving lives and reducing pollution, with a particular focus on segregated development of safe routes for cyclists and pedestrians and systems that address the vulnerability of motorcyclists, possibly leading to segregated space for motorcyclists also.

It should also ensure that its “smart motorways” and “express ways” are safer than existing motorways and dual carriageways and certainly do not compromise safety in any way.

It is noted from the study by TRL for Highways England of fatalities on the SRN that significant fatalities can be prevented through safety measures relating to the road environment. Brake supports:

- the star rating of roads, and the urgent safety development of A roads in particular, with priority given to the safety of motorcyclists (for example through improved visibility at junctions, better lighting, speed limit reduction, etc);
- the building of segregated, high-quality traffic-free routes for cyclists and pedestrians across the A road network (in recognition that this is a “safe system” approach and will encourage modal shift and consequently reduce pollution and improve health, and in recognition of the “fit” with Highways England’s ultimate goal of a casualty-free network). These routes should be well-maintained, well-lit and pleasant to travel upon without hindrance, and, crucially, be direct, rather than meandering routes more fitting for weekend leisure purposes;
- the implementation of research-led innovation and design improvements to roads, particularly through connected technologies, that generally improve the safety of all vehicle occupants, given so many casualties on the network are people inside vehicles, particularly cars. Brake has concerns that “smart motorways” and “express ways” are developed with improved safety as the central and most important aim, not flow of traffic.

RECOMMENDATION 7: RIS2 MUST SUPPORT VEHICLE TECHNOLOGIES THAT ADVANCE SAFETY AND ULTRA-LOW EMISSIONS

There are rapid, manufacturer-led advances taking place in vehicle technology, including autonomising vehicles’ crash prevention features, improved crash protection features, electronically connecting vehicles with information relevant to their environment, platooning of vehicles (a group of vehicles, particularly trucks, travelling together),

and development of ULEVs (ultra-low emission vehicles). Highways England can support development of technology that enables safety and reduces pollution. Highways England funding through RIS2 can:

- help fund developments
- work in partnership with manufacturers and academics to enable safe trials on the SRN

RECOMMENDATION 8: RIS2 MUST PROVIDE COMPREHENSIVE FUNDING FOR ENFORCEMENT

There must be increased funding liberated through RIS2 for comprehensive and specialist enforcement of the SRN, through partnership work with enforcement agencies, investment in those enforcement agencies, and the tools available to them.

Highways England has rightly identified in its Operational Metrics Manual the risk, and reality, of reduced traffic enforcement.

Traffic enforcement tackles many causes of road casualties relating to the behaviour of people and the safety of their vehicles. It includes specialist enforcement requiring expert staff and equipment, particularly checking lorries and coaches regarding their standards of maintenance and checking hours their drivers have worked. It also includes electronic and other advanced enforcement, notably through cameras, drug testing kits, etc.

The TRL study for Highways England found that bad driving behaviour and speeding contributes significantly to fatal crashes. Enforcement through highways patrols and cameras can tackle this, alongside tackling the other “big” offences by drivers, including alcohol and drug use, use of mobile phones, and lack of seat belt wearing. Autonomous vehicles are some way off, and therefore the SRN cannot be expected to reach its 2020 target or targets beyond that without traffic enforcement, and Highways England has a critical role to play in fighting for resumed and heightened road enforcement.

RECOMMENDATION 9: RIS2 MUST ENABLE HIGHWAYS ENGLAND TO AIM FOR FEWER CUSTOMERS IN CARS

The SRN is not a business that can succeed more easily as customers increase. Increased use of the network by motorised vehicles, particularly in cars, is far more likely to reduce its chance of meeting safety and sustainability goals. It is already rapidly getting busier, with growth in traffic anticipated and significant, contributing to increased pollution and risk. Capacity of the SRN cannot be continuously grown through road building; this is not sustainable. The answer is to enable car users and motorcyclists to leave the SRN and take trains / buses instead, and cycle/walk; and to enable rail freight. Yet Highways England has a motorcycling strategy that is partly working to encourage and enable use of the network by motorcyclists⁵⁷.

Highways England, as a company regulated by the ORR, is in a fantastic position to be at the forefront of discussions regarding increasing investment in public transport (including high-speed rail and reopened rail lines) and rail freight, in light of the anticipated growth in traffic on the SRN, the deaths, seriously injuries and pollution caused by use of the SRN, and the safety and environmental benefits of alternatives, particularly rail.

Highways England has rightly raised, in its metrics manual, the risk that air pollution will not be tackled on the SRN due to lack of direction from government nor targets / requirements for Highways England to do anything about it. Highways England should be given ownership of reducing air pollution from users of its network and set demanding targets in relation to this, and be required to come up with innovative methodologies to achieve it. This could include, for example:

- Funding of more rapid development and take up of ULEVs
- Improved integration of the SRN with rail
- Increased and expanded use of coaches, with a focus on improved, congestion-free routes for coaches
- Free use of the network for ULEVs
- Comprehensive, off-road cycle ways, that are pleasant and well-separated from traffic, yet direct between places

⁵⁷ Realising the Motorcycling Opportunity A Motorcycle Safety and Transport Policy Framework, Highways England

RECOMMENDATION 10: RIS2 MUST ENABLE HIGHWAYS ENGLAND TO INCREASE ROAD USER AWARENESS AND INTERACT MORE WITH SRN USERS AND NON-USERS ON THE TOPICS OF SAFETY AND SUSTAINABILITY

There is general understanding that road safety education is not a primary, effective route for reducing casualties. It is very challenging to achieve behavioural change. However, it is still important that Highways England communicates road safety and sustainability messages to users of the SRN, particularly in relation to road safety and environmental impact, and changes to the SRN in relation to these things.

The SRN is changing, with “smart” motorways and “express ways” and it is important that drivers and other road users understand these changes and how to use these roads as safely as possible. It is noted that Highways England is working to give road users more information, some of which is nothing to do with safety and sustainability (for example, the price of fuel at different junctions). Although it is hard to change behaviour, people need information to enable them to consider choices.

Brake would value seeing continued and developed information provision on safety and sustainable transport choices, particularly in relation to encouraging car users to travel safely, use alternative modes instead and to use ULEVs.

As Highways England builds more segregated cycle paths, it also can have a role in heavily promoting use of these safe routes.

As part of its communication with road users, Highways England can play an important role in finding out more about road users’ behaviours and thoughts regarding the SRN, through detailed surveys that chime with the safety and sustainability aims of Highways England, and don’t simply result in high “satisfaction” ratings. Such detailed surveys could provide valuable information to allow Highways England to develop its network further to be safe, sustainable, fair and accessible for all.

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