



**A Safer Way:**  
Consultation on Making  
Britain's Roads the  
Safest in the World

April 2009

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ISBN 978 1 906581 93 0



Printed in Great Britain on paper containing at least 75 per cent recycled fibre.

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# Foreword



Human beings make mistakes. When people make those mistakes on the roads, the consequences can be grave, even fatal, for themselves or for others. This consultation document proposes a shift towards a road safety 'system' in which we try to anticipate people's errors and provide protection through safer road and vehicle design, and through everyone of us improving our skills, so that the mistake of the child who steps off the kerb whilst distracted, or the mistake of the driver who misjudges the speed of the approaching vehicle at the junction, does not result in death or serious injury.

We propose ways to make our road engineering and design safer, to make our vehicles safer and encourage consumers to buy safer vehicles. We also propose ways to support responsible road use through improved teaching and promotional campaigns. And, acknowledging that not all collisions are due to mistakes, we propose ways to tackle those who indulge in irresponsible road use, going beyond errors and displaying unquestionably dangerous behaviour.

Thanks to the dedication of road safety professionals in engineering, education and the emergency services, and to the good sense of the vast majority of Britain's road users, we already have a good road safety record. We are well on course to reduce the number of deaths and serious injuries on our roads by 40 per cent by 2010. We are among a small group of leading nations on road safety, but we believe that our proposals for a new approach to road safety and for new safety measures can make Britain's the very safest roads in the world. This is an ambitious, but achievable, vision.

We also propose challenging targets. In particular, we want to reduce the number of deaths on our roads by one-third by 2020. Given that, in the decade to 2007, deaths were reduced by 18 per cent, this would be a considerable achievement. However, we have an obligation to be ambitious, given the way in which injury and death on our roads so blight the lives of individuals and families.

In considering how we can improve the safety of our roads, we have taken account of the need to support the economy, protect the environment and improve public health. We recognise that there are competing priorities, and so what we propose is not a menu of actions to enhance road safety at any cost. Our proposals are based on research and analysis; they are intended to make the most of the overlapping interests of safety, environment and health and to present an economically rational package of measures. Given the massive economic and social cost of road accidents, this is a pressing priority for Government.

But improved road safety is not something that Government in Westminster, Edinburgh or Cardiff can make happen on its own. It needs the active co-operation of us all, in improving the way in which we use the roads and the skills which we apply in doing so. That's why I am keen to use this consultation for an essential dialogue on road safety, with members of the public as well as with expert interest groups. We all have ideas on road safety, as we all have daily experience of using the roads and this is a once-in-a-decade opportunity to air them.

So I encourage you to let us have your views on road safety and on our proposals, to help us to make our roads the safest in the world.

A handwritten signature in black ink, appearing to read 'Jim Fitzpatrick', with a stylized flourish at the end.

Jim Fitzpatrick MP  
Parliamentary Under Secretary of State for Transport

# Executive summary

1. This consultation seeks views on the vision, targets and measures for improving road safety in Great Britain for the period beyond 2010.
2. We have made good progress in reducing road casualties over the last decade. In 2007, the number of people killed or seriously injured on British roads had dropped by 36 per cent from the average of 1994–98, and we are on course to meet our target of a 40 per cent reduction by 2010.
3. However, nearly 3,000 people still die on the roads each year, and there remains a great deal to do to improve road safety further. This consultation document includes proposed targets for reductions in deaths and serious injuries to be achieved by 2020.
4. The consultation covers the following areas:
  - the context;
  - our vision for the future;
  - our approach to road safety;
  - the road network;
  - safer vehicles;
  - road user behaviour;
  - targets and ensuring success.

## Background and context

5. The Department for Transport's publication *Towards a Sustainable Transport System* in 2007 and consultation *Delivering a Sustainable Transport System* in 2008 established five key goals: health, safety and security, supporting economic growth, tackling climate change, quality of life and the natural environment, and equality of opportunity. The proposed road safety strategy has been developed within this context.
6. The strategy needs, therefore, to consider any potential impacts on all of these goals. This means we need to be sure that our approach does not,

for example, have a detrimental effect on greenhouse gas emissions, or lead to disproportionate economic impacts, and has a positive impact on public health.

7. A thorough review of the evidence underpins the proposals in this strategy. We have been particularly keen to understand where collisions happen, who is involved (age, gender, socio-economic group), what they are doing and why, which types of vehicle are involved and what the consequences are.

## The challenges

8. This analysis of the evidence has led us to identify the following key challenges for the new strategy:
  - **reducing the number of road deaths**, which have fallen at a slower rate than serious injuries;
  - **pedestrian and cyclist casualties in our towns and cities** – particularly in deprived communities;
  - **protecting children**, particularly in deprived areas, and **young people**, who are greatly over-represented in the casualty statistics;
  - **protecting motorcyclists**, who represent 20 per cent of road fatalities but just 1 per cent of traffic;
  - **safety on rural roads**: 62 per cent of all road fatalities in 2007 occurred on rural roads, which carry only 42 per cent of traffic;
  - **variations** in safety from area to area and road to road;
  - **poor road user behaviour** amongst a minority, where drink-driving and failure to wear a seatbelt remain a problem;
  - **illegal and inappropriate speed**: excessive speed was recorded as a contributory factor in 26 per cent of road fatalities in 2007.

## A vision for the future

9. Wider factors, notably the environmental, economic and social context, will influence what we will be able to achieve over the period of the strategy. The further ahead we look, the harder it is to predict the impact of these factors. It is, however, likely that we will be living in a more carbon-constrained world, but with a continued increase in demand for travel over the longer term.
10. We propose to set targets over a ten-year time period, long enough for changes to make an impact, but not so far ahead that the impact of external factors is too hard to predict. However, many changes, particularly

in areas such as vehicle technology or road design, may not begin to significantly affect casualty outcomes for a number of years. We are therefore proposing that the period of the strategy should be twenty years, to encourage longer-term steps.

11. We feel that a vision for road safety will be an important factor in enabling a diverse range of road safety stakeholders to work effectively together. We feel that any vision should be credible, challenging and engaging for all concerned. We are proposing a long-term vision of **'Making Britain's roads the safest in the world'**.

## Delivering our goal – the overall approach

12. We have recently consulted on a package of possible changes to road safety enforcement, including improvements to the enforcement of speed and drink and drug drive laws. The results of this consultation will be reflected in our final strategy.
13. Beyond this, and after two successful road safety strategies, we believe that we now have a legal and regulatory framework that is broadly fit for purpose for delivering improved road safety. A first key focus of this strategy is on improving the delivery of road safety, through better use of data, more systematic information sharing, better evaluation, supporting skills development and new arrangements for national reporting and scrutiny.
14. A second key focus is on dealing with certain dangerous road user behaviours, which persist despite generally good levels of compliance with road traffic law. We aim to work smartly to understand the motivations behind the most dangerous road user behaviours and the characteristics of the individuals undertaking them.
15. We want to work with our delivery partners to deliver a safe, holistic road safety system where road design, vehicles and education work in combination to minimise the risk to road users. We recognise that human beings make mistakes, and the holistic system needs to reduce the chances of mistakes on the roads having serious or fatal consequences.

## Strengthening the weak links in our road network

### Rural roads

16. On the whole, the British road network is relatively safe by international standards. Nevertheless, there are considerable variations of the levels of safety on different parts of the network. Of particular concern are rural roads: over 60 per cent of all deaths occur on rural roads, but they account for just over 40 per cent of traffic.

17. Many of these roads are single carriageways where the national speed limit applies (60 mph). We know that speed is a factor in many of the fatalities, but compliance with the speed limit on these roads is good. The high casualty figures suggest therefore that speed limits are not at the appropriate level on some of these roads.
18. The characteristics of single carriageway roads vary greatly and can offer very different levels of safety. Some are well engineered; others are not suitable for high speed limits. For this reason it is important to get the right speed limit for each road.
19. However, our research has shown that reducing speed limits on the most dangerous of these roads could save a great number of lives. Highway authorities are currently responsible for reviewing speeds on these roads, and we believe that this remains the right mechanism for delivering change. Progress with reviews has however been patchy, and renewed efforts are needed to bring everywhere up to the standard of the best.
20. We propose to tackle this problem by revising our existing guidance to highway authorities, recommending that lower limits are adopted where risks are relatively high and there is evidence that a lower limit would reduce casualties. To support the review process we will – with the Road Safety Foundation – provide clear comparative information on the safety performance of rural ‘A’ roads.

### **Pedestrians in urban areas**

21. Pedestrian and cyclist deaths are, unsurprisingly, concentrated in urban areas. Engineering measures (e.g. crossings, traffic calming) can reduce pedestrian casualties, but too many pedestrians are hit by vehicles in residential streets at speeds causing serious injury or death.
22. In order to improve safety on the streets where people live, we are proposing to amend our guidance on speed limits, recommending that highway authorities, over time, introduce 20 mph zones or limits into streets that are primarily residential in nature, or other areas where pedestrian and cyclist movements are high (for example around schools or markets) and which are not part of any major through route.

### **Supporting the choice of the safer vehicle**

23. Improvements in vehicle safety, particularly in the protection they offer in the event of an accident, have played a crucial role in delivering the casualty reductions we have seen over the last decade. Vehicle manufacturers have also implemented innovative technologies that help people drive or ride more safely and avoid collisions.

24. To achieve further improvements in vehicle safety, we need to understand the main issues and prioritise our work. Our research programme provides these insights, and we will look to extend and improve our evidence base, both to analyse the effectiveness of existing measures and to target areas where technology can deliver improvements. We will explore the trialling or piloting of new systems and working in international circles to obtain the best available data. We will put a particular emphasis on the development of advanced crash avoidance systems, which we think will become more important over the period of the strategy.

### **Delivery**

25. Regulations for vehicles are set at a European and increasingly global level. This can be a lengthy process, but it is appropriate in certain circumstances. We will continue to promote regulatory solutions where this brings the greatest benefit in a timely manner.
26. However, with technology developing at an ever faster rate, regulation is not always the most effective method of effecting change. Over the last decade we have seen an increasing role for independent consumer testing programmes, which can play an important complementary role to regulation in improving market penetration of safety technology. We will continue to support market-based measures and explore ways to develop new opportunities in areas such as providing better consumer information and raising awareness among the motoring public.

## **Responsible and irresponsible road use**

27. We aim to support responsible road use and to tackle irresponsible behaviour.

### **Supporting responsible road use**

28. Following the *Learning to Drive* consultation, we will take forward a programme of measures that will strengthen the way that people learn to drive and are tested, and create a culture of continued and lifelong learning.
29. We will continue to raise awareness and improve road user behaviour through the award-winning THINK! campaign. The campaign has previously addressed specific dangerous behaviours, including speeding and drink-driving. As well as continuing this approach, we will also consider a future campaign based on a wider theme of road user responsibility, to challenge complacency about road safety and encourage people to make positive safety choices.

30. We are also developing a suite of road safety educational materials for everyone from toddlers to young adults, and we will promote these materials to schools. As many parties are involved in delivering road safety education, we will encourage local authorities to ensure work is co-ordinated to form a high-quality whole.

### Tackling irresponsible road use

31. We aim to reduce further the prevalence of behaviours that, whilst seen to be unacceptable by the vast majority, persist in causing death and serious injury, notably drink-driving, failure to wear a seatbelt, and careless or dangerous driving. We also believe that drug driving presents a significant danger. We consulted on a package of measures to address these issues in our recent road safety compliance consultation. The responses are now being considered and will be reflected in our final strategy.
32. Excessive speed also remains an issue. We need to improve compliance with limits if we are to improve our casualty record.
33. We estimate that uninsured and untraced drivers kill 160 people and injure 23,000 every year. Working with the police, we will therefore continue to vigorously pursue our programme of seizure of untaxed and uninsured vehicles and of the vehicles of unlicensed drivers.

## Measuring and ensuring success

### Targets

34. We believe that our key national target should be to reduce deaths, since we have been less successful in reducing deaths than serious injuries over the last decade. At the local level, as road deaths are much rarer occurrences, it is more reliable to address the combined number of deaths and serious injuries. We will monitor local progress against this benchmark.
35. We are therefore proposing the following targets:
- to reduce road deaths by at least 33 per cent by 2020 compared to the baseline of the 2004–08 average;
  - to reduce the annual total of serious injuries on our roads by 2020 by at least 33 per cent compared to the baseline.
36. We also consider it important to maintain our progress on child road safety and to tackle the pressing problem of young people's safety, and therefore propose a more challenging target for children and young people:
- to reduce the annual total of road deaths and serious injuries to children and young people (aged 0–17) by at least 50 per cent against a baseline of the 2004–08 average by 2020.

37. To improve health, the environment and congestion, we are keen to encourage more walking and cycling. We wish to reduce the risk to the individual walker or cyclist, and to take into account expected growth in activity. We are therefore proposing a target based on the rate of casualties:
- to reduce by at least 50 per cent by 2020 the rate of KSI per km travelled by pedestrians and cyclists, compared with the 2004–08 average.

### **Performance indicators**

38. We also intend to maintain further performance information. We will publish annually a set of key indicators of progress on road safety, showing a range of measures of casualties, behaviours and trends. A full list of these indicators is at Appendix A.

### **Ensuring delivery**

39. We will appoint an independent expert panel to advise us on road safety trends and policy. We will also draw up a new integrated national road safety delivery plan, and ask the Road Safety Delivery Board to manage its delivery.
40. We will also submit to Parliament an annual report about road safety in Great Britain. This will assess progress against our targets and the national indicator set.

# How to respond

The consultation period will run for 12 weeks until 14 July 2009. Please ensure that your response reaches us by that date. This consultation document can also be found at [www.dft.gov.uk/consultations](http://www.dft.gov.uk/consultations) or, if you would like hard copies or alternative formats (e.g. Braille, audio CD), you can contact us at the address below.

Please send your comments on the proposals to:

Email: [roadsafetyconsultation@dft.gsi.gov.uk](mailto:roadsafetyconsultation@dft.gsi.gov.uk)

Post: Road Safety Consultation  
2/13 Great Minster House  
76 Marsham Street  
London SW1P 4DR

Should you have any questions about how to respond, you can use the above addresses.

When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of a larger organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

A list of organisations we have sent this consultation to is at Appendix D. If you have any suggestions of others who may wish to be involved in the consultation process, please contact us.

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

The Department will process your personal data in accordance with the DPA, and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

The Impact Assessment can be found at Appendix E; when responding to the consultation, please comment on the analysis of costs and benefits, giving supporting evidence where possible.

The consultation is being conducted in line with the Government's Code of Practice on Consultation at Appendix F.

A summary of responses to this consultation will be published on our website: [www.dft.gov.uk](http://www.dft.gov.uk) after the consultation period has closed. Paper copies will be available on request. The Government will then announce its conclusions following the consultation.

# 1. Introduction

This chapter explains:

- the purpose of the document;
- why road safety matters;
- the relationship with other aspects of Government strategy and goals;
- how we are developing the new strategy.

## Background

- 1.1** This is a consultation document seeking views on the vision, targets and measures for improving road safety in Great Britain<sup>1</sup> beyond 2010. The views we receive in response will influence the final shape of our new road safety strategy.
- 1.2** Our roads are vital in providing us with access to work and leisure as well as to the goods and services we want and need. They are essential to our economy and our communities.
- 1.3** But we must balance the need for efficient mobility with the obligation to maintain public safety. There were 2,946 deaths on our roads in 2007 and nearly 28,000 serious injuries. This scale of death and injury on our roads is a huge public welfare issue, causing physical and emotional pain to the victims and their families and friends.
- 1.4** The overall social and economic cost of road collisions is estimated at £19 billion per year.<sup>2</sup> Travel is important to our prosperity and quality of life, but there is clear potential for us to achieve cost-effective improvements in our overall wellbeing by improving road safety.

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1 This will be the strategy for *Great Britain*. Legislative authority for road safety in Great Britain is largely reserved to the Westminster parliament, although law-making powers in road safety education and the funding of local road safety measures are devolved to the Scottish parliament. Executive powers to carry out the functions of road traffic law have been transferred to Scottish and Welsh Ministers in certain areas and a new Scottish framework for road safety is imminent. Road safety as a whole is devolved to the Northern Ireland Assembly.

2 *Road Casualties Great Britain 2007*, TSO (p24).

- 1.5 What follows is the Government's proposed road safety strategy for the period from 2010 to 2030. It sets out how we plan to approach the task of reducing casualties on our roads in the next 20 years, and includes proposed targets for reductions in deaths and serious injuries to be achieved by 2020.

## Health, safety and security in *Delivering a Sustainable Transport System (DaSTS)*

- 1.6 We outlined our proposed approach to long-term transport planning in our publication **Towards a Sustainable Transport System (TaSTS)**, which was published in 2007, in response to the Eddington transport study and the Stern review on climate change. Eddington advocated a cross-modal, longer-term approach with a focus on clear goals. In November 2008 we consulted on our latest strategic thinking in *Delivering a Sustainable Transport System (DaSTS)*.
- 1.7 This work has established **health, safety and security** as one of five key policy goals for the Department, the others being supporting economic growth, tackling climate change, quality of life and the natural environment, and equality of opportunity. We worked closely with our stakeholders and consulted on the goals and challenges – defining the problems that people want us to solve. Road safety – for workers and users – was one of the key challenges identified through this exercise.
- 1.8 This is the background against which this road safety strategy is being developed and it requires us to approach the task in a more holistic way than previous strategies. In addition to looking at specific road safety levers and assessing road safety impacts, we need to ensure that what we propose progresses as many of the DaSTS goals and challenges as possible, and delivers outcomes that are acceptable to users across the whole of their travelling experiences. So, for example:
- we have rigorously assessed our proposed interventions and are clear that their overall impact is not detrimental in terms of greenhouse gas emissions;
  - our road safety strategy needs to have an overall positive impact on public health, taking account of the health benefits of walking and cycling for adults and children, as well as the obvious public health benefit of avoiding large numbers of premature deaths and serious injuries;
  - road safety measures must pass the test of better regulation, and must be proportionate in terms of their economic impacts on different sectors of society.

## Finding out what people want

- 1.9** National road safety strategies represent important landmarks in Government policy. Given this, we have discussed the issues extensively with stakeholders and expert groups in producing this consultation document and we are keen to hear the views of those groups and of members of the public on these proposals. This input will then inform the final strategy, to be published later this year.
- 1.10** A cross-departmental steering group is responsible for overseeing the development of this strategy. The steering group comprises representatives from the Department for Transport, the Scottish Executive, the Welsh Assembly, the Highways Agency, the Driving Standards Agency, other interested Government departments and the Health & Safety Executive.<sup>3</sup>
- 1.11** We have recently consulted on reforms to the way that people learn to drive and are tested<sup>4</sup> and on improving compliance<sup>5</sup> with road traffic law. This paper takes account of decisions following the *Learning to Drive* consultation.<sup>6</sup> It also describes the programme of measures that will strengthen current learning and testing procedures, and create a culture of continued and lifelong learning. The final strategy for the period from 2010 will also take account of the reaction to our proposals on road safety compliance.
- 1.12** Aside from this consultation document, we are also assessing public attitudes to road safety through new research, the DfT Citizens' Panel and by reference to existing survey work.

## Improving our understanding of the evidence

- 1.13** A thorough appraisal of the available evidence underpins the proposals in this strategy. This evidence includes a detailed analysis of:
- where collisions happen;
  - who is involved (age, gender, socio-economic group);
  - what they are doing and why (the attitudes and beliefs which underlie their behaviours);
  - which types of vehicle are involved;
  - when collisions happen;
  - what the consequences are in terms of injury or death.

<sup>3</sup> Other representatives of the steering group include the Home Office, Department for Children, Schools & Families, Ministry of Defence, Northern Ireland Executive, the Department for Business, Enterprise & Regulatory Reform and Department of Health.

<sup>4</sup> *Learning to Drive: A Consultation Paper*.

<sup>5</sup> *Road Safety Compliance Consultation* (DfT, November 2008).

<sup>6</sup> *Learning to Drive: Report on Consultation*, published 21 April 2009.

- 1.14** We have also carried out further research into some of these factors, including:
- new work to understand better the geography of road safety – where casualties occur and where the people involved in those collisions live;
  - comparisons of international experience.

## Building partnerships

- 1.15** Road safety improvement is an issue across the whole of Great Britain. The Steering Group has considered:
- how we can work together to improve road safety through education, engineering and enforcement;
  - what other social, economic and environmental pressures need to be taken into account in developing a new road safety strategy;
  - what the future is into which we will be launching this strategy.
- 1.16** Local authorities, the police and the other emergency services are, and will continue to be, crucial partners in delivering road safety improvements. We will work closely with our partners to ensure that measures and initiatives are properly targeted to achieve maximum road safety benefit. We will also support the work of local authorities by helping them to develop the local road safety expertise they require to deliver the best results.

## 2. Background and context

This chapter:

- assesses our progress on road safety;
- sets out the evidence about the nature of the problem now;
- offers a spatial interpretation of the key factors;
- provides international comparisons.

### The situation in 2009

- 2.1** The last two road safety strategies have been very successful. The 1987 target to reduce road casualties by one-third by 2000 was more than achieved for deaths and serious injuries, cutting deaths by 39 per cent and serious injuries by 45 per cent.
- 2.2** Our current strategy was published in 2000 and set targets for casualty reduction by 2010. Over this period we have seen casualties drop in line with, or ahead of, targets:
- people killed or seriously injured (KSIs) – down 36 per cent to 30,720 in 2007 against a target of 40 per cent;
  - child KSIs in the 0–15 age group – down 55 per cent to 3,090 in 2007 against a 50 per cent target;
  - slight injuries rate down 30 per cent in 2007 against a 10 per cent target;
  - to reduce total road casualties in the most deprived English districts faster than for England as a whole by 2005 – achieved in 2005.
- 2.3** We know that some measures underpinning this picture have been particularly effective.
- 2.4** Improved vehicle safety has been especially successful over the last decade and has contributed a major part of the casualty reductions seen during this period. Better occupant protection, through measures such as improved vehicle structures and airbags has been the overwhelming factor in

reducing casualties among car occupants. We expect improvements in vehicle safety to continue to play a crucial role in the period of this strategy, and our approach to this key area of activity is set out in more detail in Chapter 6.

- 2.5** We also know that road safety engineering projects and speed management initiatives have played a significant part in reducing casualties.<sup>7</sup> By contrast, drink-drive deaths and young driver casualties have fallen more slowly, until 2007, when the numbers of those types of casualties dropped markedly.

## Road deaths

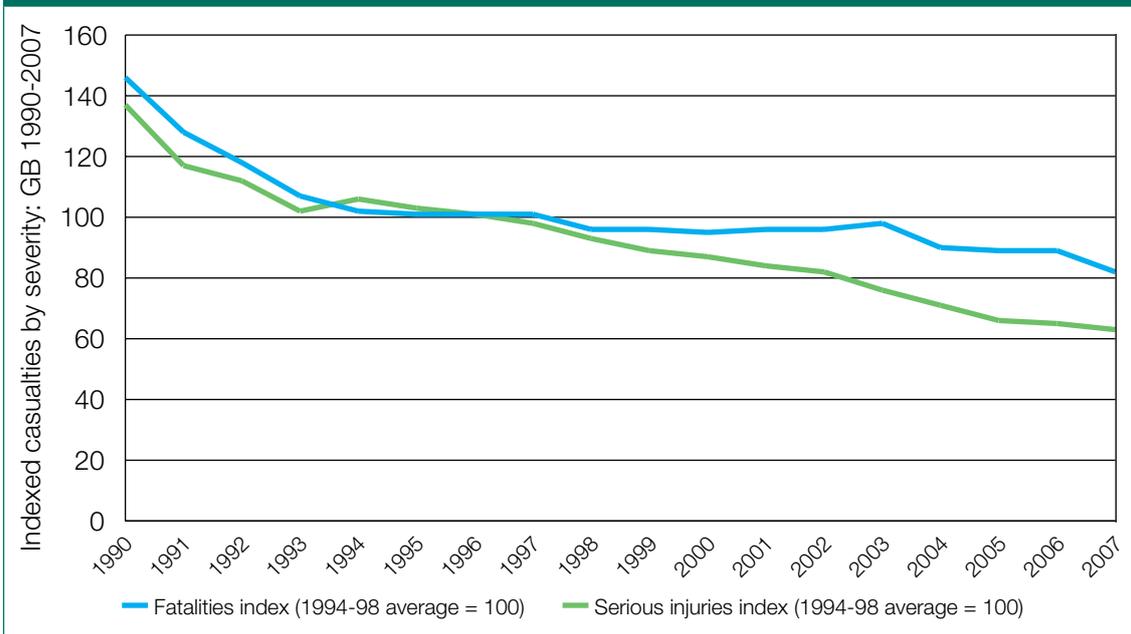
- 2.6** However, the evidence shows us that the headline KSI trend masks a divergence in the trends for serious injuries (down 36 per cent by 2007) and deaths (down only 18 per cent) (Figure 2.1). This trend is not reflected among children, where the good progress on serious injuries (down 55 per cent) has been all but matched for deaths (down 53 per cent). And even for the whole population, the most recent data give some cause for optimism that this divergence in serious injuries and deaths is reducing – in 2007, and more strongly in 2008 (provisional data for first three quarters) deaths have been falling rapidly, and much more rapidly than serious injuries. However, looking at what we have achieved over the whole period of the current strategy from 2000, it is clear that our performance on deaths has been weaker than on KSIs as a whole.
- 2.7** Research<sup>8</sup> from 2005 suggests that the reasons for this slower reduction in fatalities include a worsening of behaviour among some drivers and riders. This was evidenced by more single-vehicle crashes and higher incidence of 'loss of control' contributing to collisions. The most recent research,<sup>9</sup> based on 2007 data, concluded that this decline has ceased.

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7 TRL Report 663, 2009.

8 TRL Report 629, 2005.

9 TRL Report 671, 2009.

**Figure 2.1 Indexed casualties by severity: GB, 1990–2007**

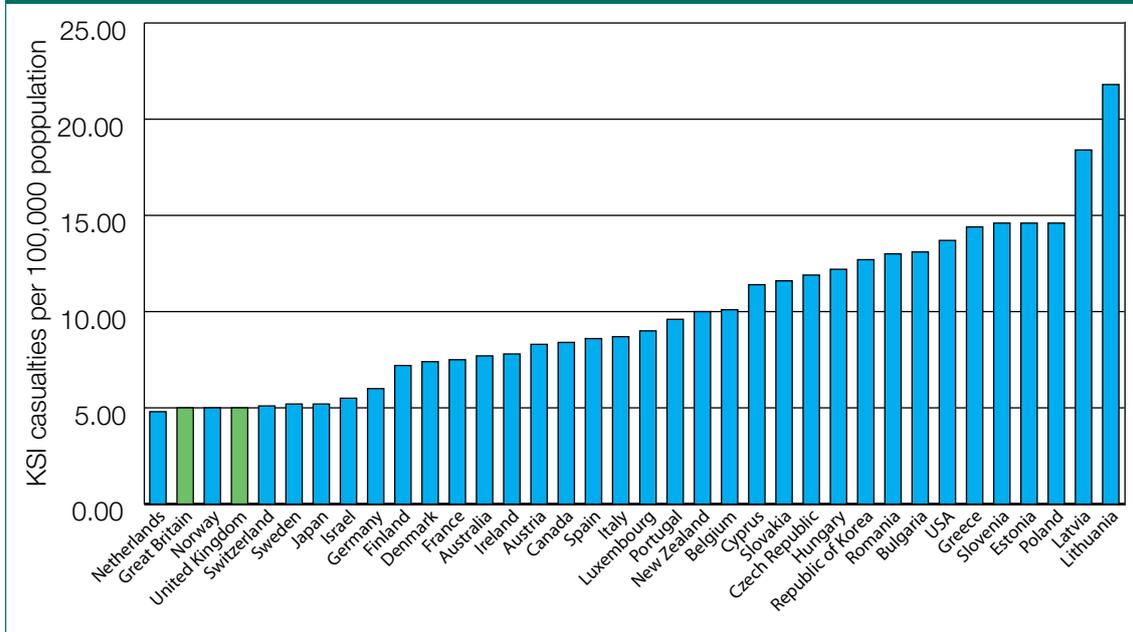
Source: STATS19

- 2.8** There was also a large increase in the amount of motorcycling in the period to 2003, reflected in higher numbers of motorcyclist deaths (in spite of a broadly consistent casualty rate per motorcycle mile travelled).
- 2.9** Deaths are not spread evenly in terms of road users, geography or demographics. An analysis of the evidence highlights certain areas where improvement has been slow.

## International comparisons

- 2.10** British roads are among the safest in the world. Over recent years we have been consistently in a group of five top-performing nations with the Netherlands, Norway, Sweden and Switzerland. Comparing road deaths per 100,000 population in 2007 across a range of nations, Great Britain is placed firmly among the leading group (Figure 2.2).

**Figure 2.2 International comparison\* of fatality rate per 100,000 population 2007**



\*Countries with a population of 500,000 or more

Source: International Road Traffic Accidents Database (IRTAD) and EU road traffic accident data (CARE)

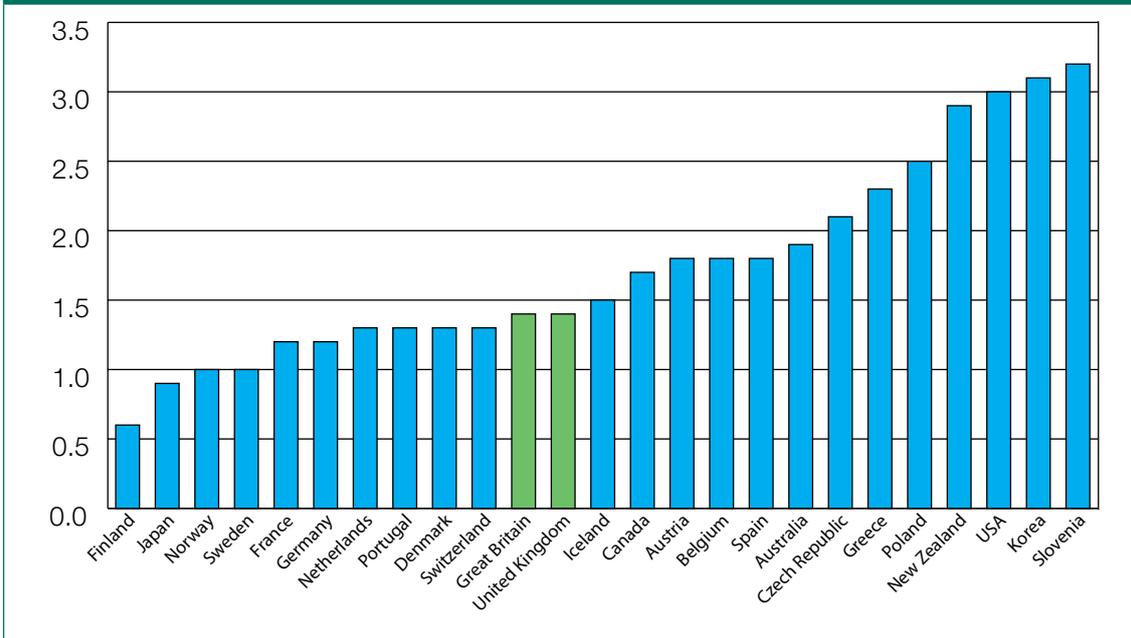
**2.11** Some countries with comparable road safety records are achieving rates of improvement that are faster than ours, and it is useful to understand why and how this is happening. We have therefore engaged in international research programmes and information sharing with other high-achieving nations to increase our understanding of potential measures.

### Children and young people

**2.12** Our roads are not so comparatively safe when it comes to children, where our performance compares less favourably internationally (Figure 2.3). Comparative international research<sup>10</sup> has found that British children spend more time around busy, highly trafficked roads than children from other successful countries, such as the Netherlands and Sweden.

<sup>10</sup> *SUNflower* + 6, Lynam et al, TRL, VTI and SWOV 2005

Figure 2.3 Child (aged 0–14) road deaths per 100,000 population: 2006



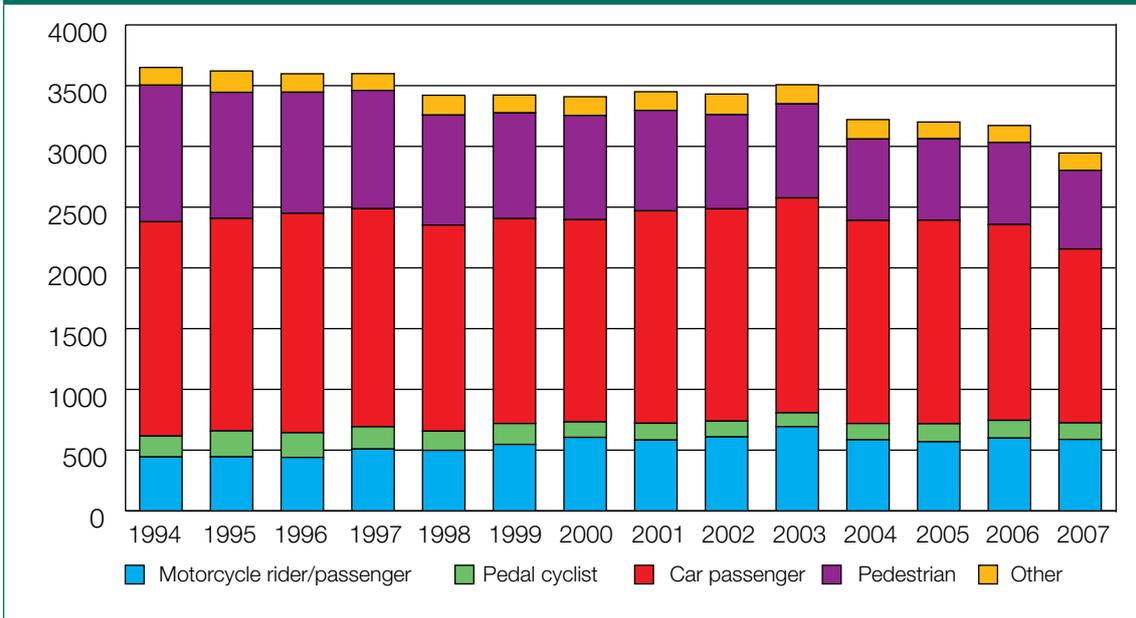
Source: IRTAD and CARE

## Key challenges

### Protecting different types of road user

**2.13** Car occupants represent nearly half of all road deaths, but they do also represent the majority of traffic (Figure 2.4). Motorcyclists, however, represent 20 per cent of fatalities, but just 1 per cent of traffic, and improving safety for motorcyclists will be a key challenge.

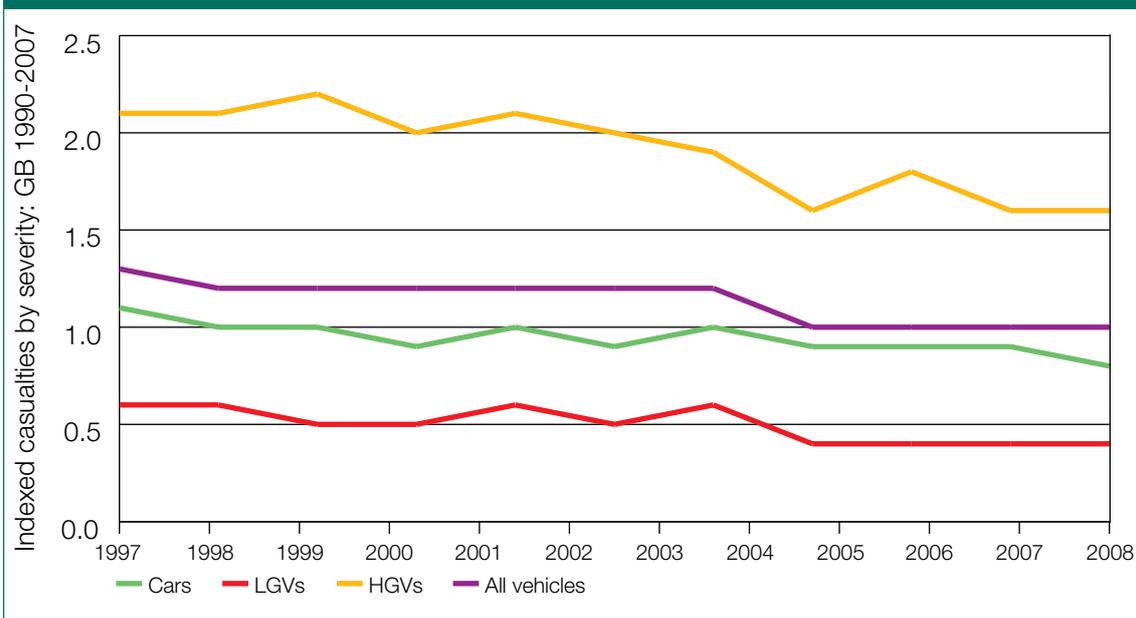
**Figure 2.4 Fatalities by road user type: GB, 1994-2007**



Source: STATS19

**2.14** Different vehicles have a number of different characteristics, both in terms of design and their patterns of use. Heavy vehicles, for example, are over-represented in fatal accidents per kilometre travelled (Figure 2.5). This strategy needs to recognise these differences and target interventions appropriately.

**Figure 2.5 Vehicle Involvement rate in fatal accidents per 100 million vehicle kilometres: GB, 1997-2007**



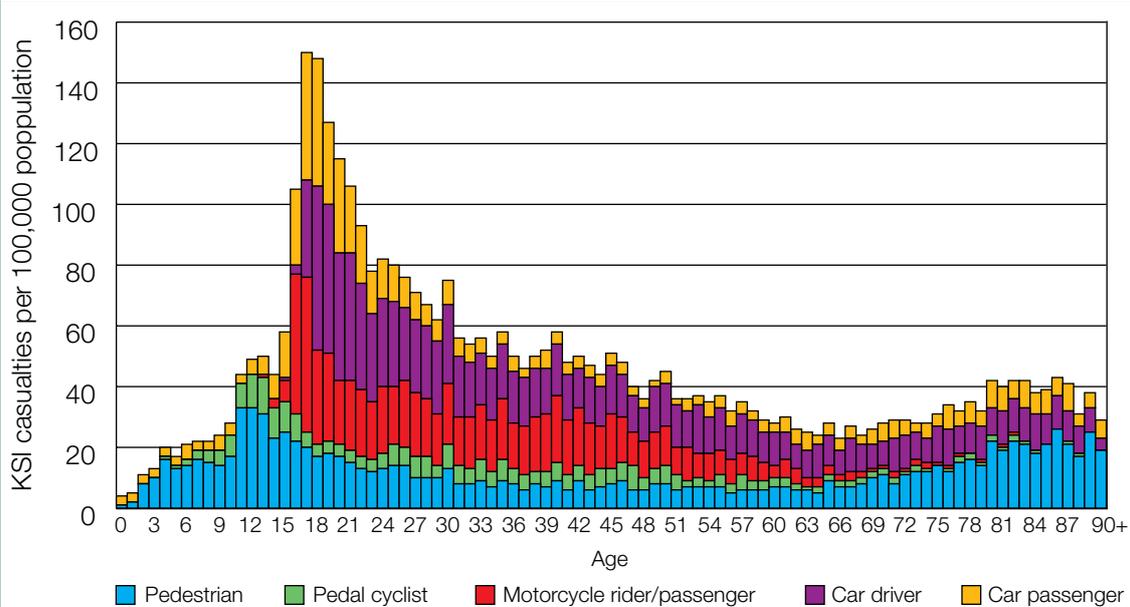
Source: STATS19 and DfT traffic estimates

**2.15** Perhaps unsurprisingly, pedestrians are most at risk on urban roads, where 65 per cent of fatalities and 82 per cent of KSIs occur. Ages at greatest risk are 11–15 and older people aged 80 and over. Similarly, 73 per cent of cyclist KSIs are on urban roads.

## Young people

**2.16** The younger adult age groups are disproportionately likely to die on the roads, with the 16–29 age group accounting for over a third of all deaths. Road collisions account for around 30 per cent of all deaths of 15–19 year olds and around 17 per cent of all deaths of 20–29 year olds.<sup>11</sup> As can be seen from Figure 2.6, peak road KSIs are in the 16–21 (inclusive) age group.

**Figure 2.6 KSI casualties per 100,000 population, by age and casualty type: GB, 2007**

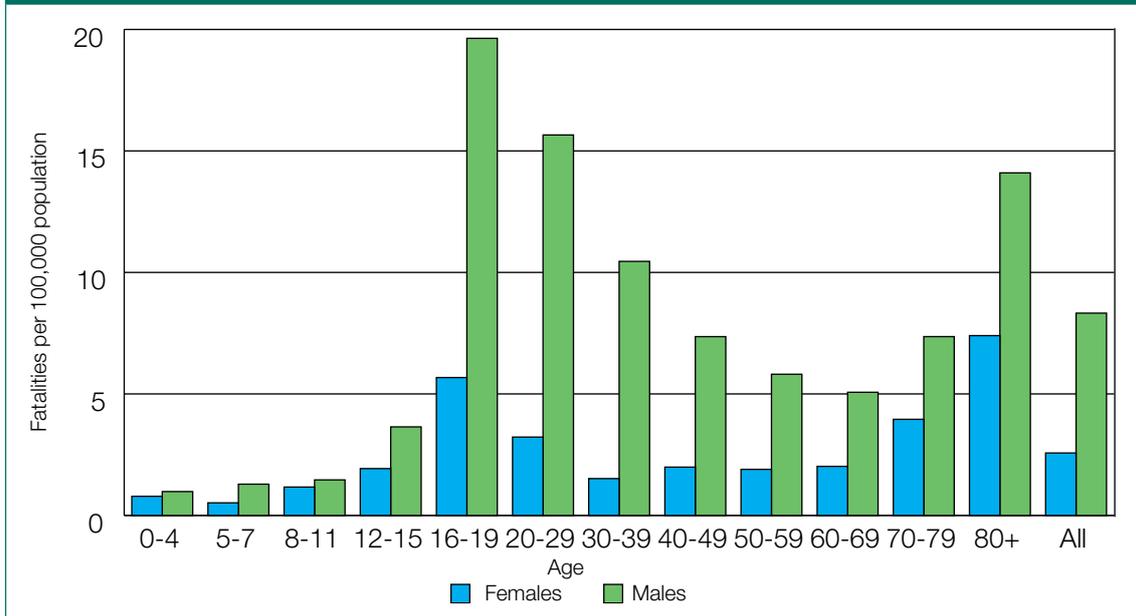


Source: STATS19

**2.17** And 75 per cent of all road deaths are among men (Figure 2.7). Whilst men travel around 26 per cent further per year on average than women, this does not account for the difference in fatality rates.

<sup>11</sup> Road Casualties Great Britain 2007 (table 50, p 169)

Figure 2.7 Fatalities – rate per 100,000 population: GB, 2007



Source: STATS19

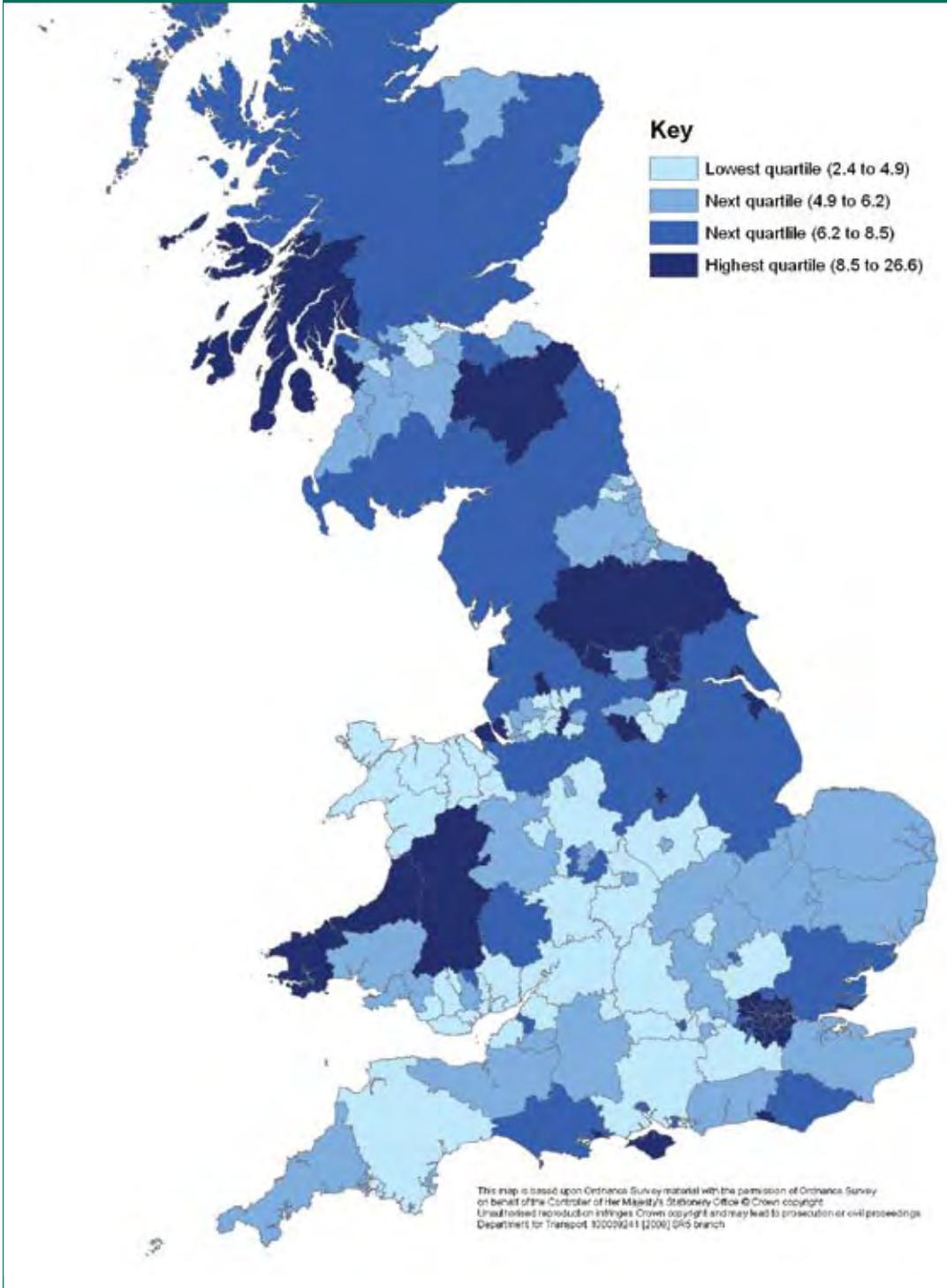
## Rural roads

**2.18** Thirty-eight per cent of road deaths occur on rural 'A' roads. And when all rural roads are considered together, they account for 62 per cent of total fatalities but carry only 42 per cent of traffic. Sixty-eight per cent of motorcycle fatalities are on rural roads. Seventy-four per cent of car-occupant fatalities occur on rural roads, and these roads have a higher ratio of fatal collisions to serious collisions than urban roads.

## Patterns of performance across the country

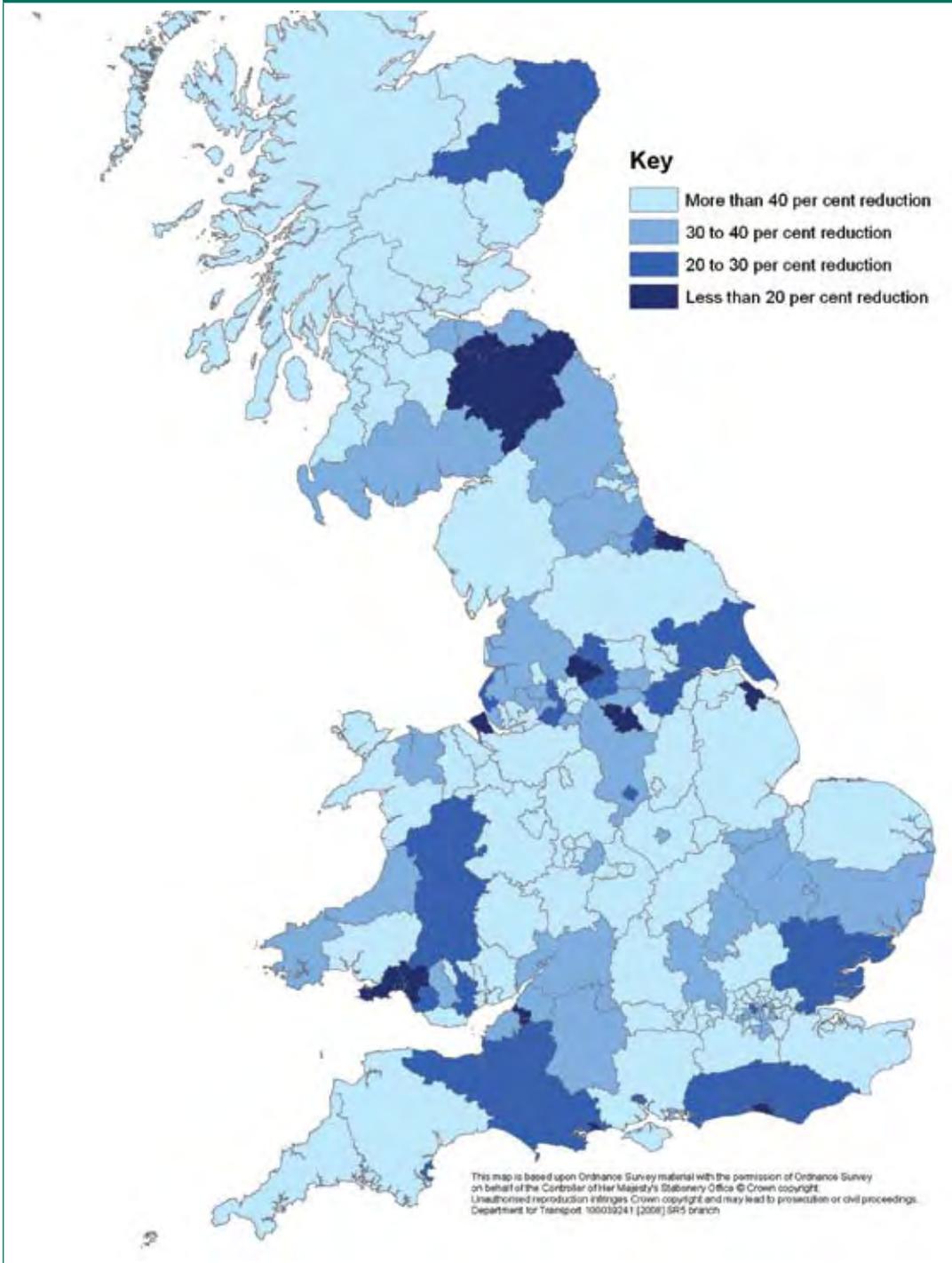
**2.19** For some aspects of road safety, achievement of improvements has been fairly evenly spread around the country. But for others, looking at where we are now compared with 10 years ago (Figures 2.8 and 2.9) reveals some different patterns of success, even between areas with similar socio-economic characteristics.

Figure 2.8 KSI casualty rate per 100 million vehicle kilometres: Local Highway Authorities in Great Britain 2005–07 average



Source: STATS19

**Figure 2.9 Percentage change in the rate of KSI casualty rate per 100 million vehicle kilometres: Local Highway Authorities in Great Britain 2005–07 average compared with 1994–98 baseline**



Source: STATS19

## Road user behaviour

- 2.20** Whilst in many areas, such as drink-drive and seatbelts, public opinion is now overwhelmingly supportive of safe behaviour, there is still an issue with a small number of people who flout the rules of the road. This necessitates a more targeted approach to behavioural change strategies.

### Case study

In Calderdale, targeted education, publicity and enforcement has led to increases in seatbelt wearing rates amongst both the majority white and the minority Asian populations. The approach involved partnership, including commercial sponsorship, between the local authority and schools, emergency services and communities.

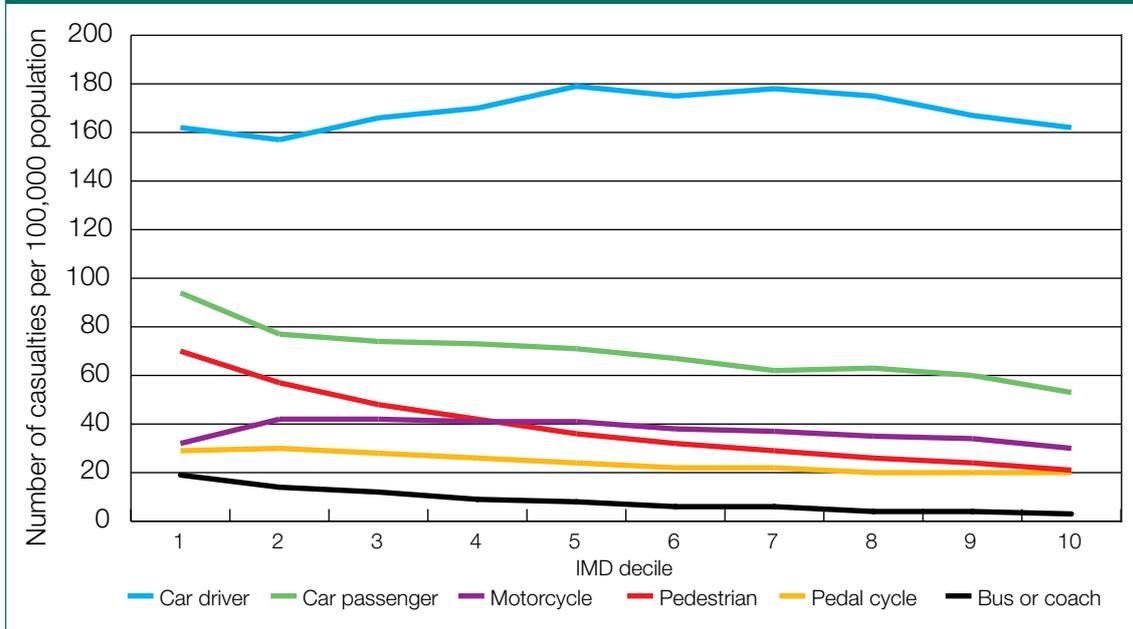
Even after police enforcement declined, seatbelt wearing rates are far higher than before the work started. The seatbelt wearing rate amongst the minority population has increased from less than half to 85 per cent. Calderdale's casualties have fallen faster than the wider area and there has been an even faster reduction in car occupant casualties amongst British Asians locally.

For more details see [www.seatbelton.org/](http://www.seatbelton.org/)

## Deprivation

- 2.21** Research shows a link between deprivation and road safety risk. We were successful in meeting our 2005 target of reducing total road casualties in the most deprived English districts faster than for England as a whole. However, the most deprived areas remain slightly over-represented in the casualty population (see Figure 2.10). In 2007, 12 per cent of casualties were living in the 10 per cent most deprived areas, whilst 8 per cent were living in the 10 per cent least deprived areas, based on the index of multiple deprivation (IMD).
- 2.22** In fact, this link between casualties and deprivation is largely due to pedestrian casualties, where the rate falls from 70 casualties per 100,000 population in the most deprived areas to 21 in the least deprived. The rate in the most deprived areas is higher across all age groups, but most stark for children; the rate for pedestrian casualties per 100,000 population in the 0–16 age range is approximately 4 times greater in the 10 per cent most deprived areas than in the 10 per cent least deprived.

**Figure 2.10 Number of casualties per 100,000 population by IMD decile and road user type: England, 2007**



Source: STATS19

## Speed

**2.23** Research shows a strong link between speed and road casualties. Reducing the average speed of traffic on a road by 1 mph leads to an expected reduction of 5 per cent in the number of collisions on that road, while reducing the speed of the fastest drivers has the largest effect on collisions. There is a well-understood relationship between the speed of a crash and the impact – and therefore the likely severity of any injuries.

**2.24** We have seen reductions in speeding over the last decade, in particular on 30 mph-limited roads, where the percentage of cars speeding has fallen from 72 per cent in 1996 to 49 per cent in 2007. Nevertheless, in view of the risks posed by excessive speed, these numbers are too high. Of 2,946 road deaths in 2007 there were 727 deaths where speed was recorded as a contributory factor,<sup>12</sup> while a 2007 survey for the THINK! campaign showed that over 70 per cent of drivers admit to speeding.

**2.25** The road safety compliance consultation identified three key issues to address in this area:

- speeding on urban roads where high numbers of vulnerable road users are present, and where small changes in speed have a large impact on injury severity;

<sup>12</sup> Analysis of contributory factors is based on accidents at which a police officer attended the scene and in which at least one contributory factor was reported.

- speeding on rural roads, where the problem is as often inappropriate speed as it is exceeding the limit, and where car occupant and motorcyclist fatalities are at their highest;
- extreme speeders, who exceed the limit by wide margins on all roads and thereby present a major risk to other road users.

**2.26** In summary, then, we believe that the key challenges for the new road safety strategy are:

- achieving faster progress in reducing the number of deaths;
- pedestrian and cyclist casualties in our towns and cities – particularly in deprived communities;
- protecting children and young people;
- protecting motorcyclists;
- rural roads;
- the geographical variation in performance;
- poor road user behaviour amongst a few;
- illegal and inappropriate speed.

### **Question**

This consultation document sets out the current evidence on the key road safety challenges. Do you agree with our analysis? Would you highlight any others?

## 3. A vision for the future

This chapter:

- sets out some of the factors which we think will influence road safety in the period of the new strategy;
- establishes a time period for the new strategy;
- establishes an overall vision for the new strategy.

### The future we are planning for

- 3.1** Planning five, ten and twenty years ahead is a difficult business. What we might be able to achieve over these periods will depend crucially on the environment we will be working within, and there are things we do and do not know about this. The further ahead we look, the greater these uncertainties become.
- 3.2** In preparing for this consultation document, we have consulted internally and externally with road safety interests to look ahead ten and twenty years and develop our thinking about the things that might be important in shaping the world we are planning for. The current economic downturn introduces uncertainty into our expectation for casualty trends and, in the case of vehicle safety technologies, might well have a negative impact on casualties. As car purchases are deferred, penetration of new safety technologies in the vehicle fleet will slow and, since the improvement in vehicle crash protection has been so important in improving safety under the current strategy, this might have a considerable impact on overall casualty numbers in the period of the next strategy.
- 3.3** Stakeholders tell us, and reference to the Government's *Foresight* programme suggests, that the environmental, economic and social context in which this new strategy may include the following factors:

Environmental:

- more carbon-constrained;

- land-use patterns becoming more concentrated around urban areas;
- changing travel patterns – more walking, cycling and motorcycling;
- changing vehicle mix – a greater proportion of smaller, lighter vehicles and different fuels.

#### Economic:

- changes in demand for travel, probably seeing an increase in the longer term;
- increased long-distance freight traffic;
- increase in light goods vehicle traffic, especially for local deliveries;
- increasing use of, and familiarity with, technology.

#### Social:

- busy lives, involving multi-tasking and immediate communications;
- stronger local democracy;
- changing demographics, with an ageing population and greater proportion of female drivers;
- greater demand for road travel for leisure purposes.

**3.4** These factors may present quite significant challenges for road safety. For example, a higher proportion of older road users who are less able to withstand the impacts of collisions, vehicles made lighter to improve their carbon efficiency and an increase in the levels of motorcycling, cycling and walking could all potentially impact upon casualty numbers. The remaining chapters of this document – especially Chapter 6 on vehicle technology – set out some specific ways in which we are proposing to plan for and manage these risks.

**3.5** Our overall approach, though, is to deal with this uncertainty by identifying these potential areas of risk and working to mitigate any negative effects through targeted use of technology, engineering solutions, awareness-raising and enforcement where appropriate. We will also look to maximise the opportunities that these changes may present, for example, through using the synergies that reducing emissions may have with improving safety.

## The time period for our strategy

**3.6** The current road safety strategy is for ten years. This clearly has merit in being a period:

- long enough for those charged with delivering the target to feel like they can make a difference to the outcome;
- but short enough to be not too far into an entirely unknowable future.

- 3.7** We therefore plan to set targets for a ten-year period, with a range of indicators to help us to monitor progress.
- 3.8** However, many changes we make today, or new innovations in vehicle technology or in road design, for example, may not start to have an effect on safety for a number of years. We therefore feel the period of the overall strategy ought to be 20 years to encourage longer-term steps, particularly in the field of vehicle technology, which will pave the way for significant casualty reduction benefits in the period from 2020 to 2030.

## Our vision

- 3.9** Successful road safety delivery requires lots of different people and organisations, working in a range of different areas, to sign up to a common vision or goal that we can all work towards. To do its job, such a vision needs to be:
- memorable and clear;
  - challenging;
  - credible and inspiring for those expected to deliver it;
  - engaging – capable of sharing by us all – the public (both adults and children), Government, local authorities, the emergency services, road safety interest groups and businesses.
- 3.10** Our long-term vision is to have **the world's safest roads**. Realising this vision will be demanding and will require a significant change in how we use our roads, including greater compliance with road safety laws, since other world leaders such as the Netherlands are also intent on making their roads much safer than they are today.

### Questions

Do you agree that our vision for road safety should be to have the safest roads in the world?

Do you agree that we should define a strategy running over twenty years to 2030, but with review points after five and ten years?

We have identified a number of factors that may affect our ability to deliver road safety improvements in the future world we are planning for. Do you think we have taken account of the key risks and opportunities? Are there others you would add?

## 4. Delivering our goal – the overall approach

This chapter explains our underlying approach to road safety for the period to 2030. It:

- explains how the new strategy needs to evolve from those which preceded it;
- defines some high level preconditions for the goal to be achieved;
- describes how we intend to support the road safety profession in reducing casualties;
- introduces the specific measures which are described in more detail in the later chapters.

### What road users can expect from us – a fair deal

- 4.1** The new road safety strategy needs to be seen within the wider perspective of what it means to use the roads in Britain today. The overall strategy needs to be acceptable to people if we are to get their support for its goals and their willing compliance with road traffic laws.
- 4.2** The deal with the road user puts obligations on Government in four areas:
- safer, better-performing roads;
  - cleaner and safer vehicles;
  - supporting responsible road use;
  - cracking down on irresponsible road use.
- 4.3** In return, Government expects responsible use of the roads, involving:
- compliance with road traffic laws;
  - looking out for other road users, particularly the more vulnerable;
  - being open to ‘smarter’ buying, driving and travel planning.

- 4.4** In this strategy, our offer to the road user is:
- to strengthen the weak links in the road network;
  - to support the choice of the safer vehicle;
  - to encourage safe driver behaviour;
  - to help ensure fair and effective enforcement.
- 4.5** The specific measures we are proposing to take under each of these headings are discussed in Chapters 5–8 below.

## Legal and regulatory building blocks

- 4.6** Our first two road safety strategies focused on putting into place road safety measures that were *legal* and *regulatory*. We needed to make sure that the right laws and penalties were in place to encourage drivers to be safe, and to encourage vehicle manufacturers and others to meet high safety standards.
- 4.7** As we enter the period for our third strategy, our laws on issues such as drink-driving, speed and seatbelt wearing are now among the strongest in the world. We also have high levels of compliance with road traffic law. But we face a continuing challenge of dealing with non-compliant behaviour by some very distinct groups. In 2007, 16 per cent of fatalities involved drink-driving, and a third of all car occupants who died were not wearing a seatbelt. Breaking the speed limit is recorded as a factor in 14 per cent of fatalities (and may be responsible for many more) – there are a small number of people who are driving at extremely high speeds, though there are many more who routinely drive significantly in excess of the speed limit.
- 4.8** There are some changes we can make to the legal framework, such as those proposed in our recently completed consultation on *Road Safety Compliance*. However, we believe that the legal and regulatory framework that governs safe road use is now broadly fit for purpose.
- 4.9** Under our new strategy, we will need to work to understand the motivations behind the most dangerous road user behaviours and the characteristics of the individuals undertaking them.
- 4.10** We face a similar drive towards targeting on our regulatory work – especially in relation to vehicle standards. The UK is a world leader in researching and developing vehicle technology, and we have been highly effective in shaping international vehicle standards. The continuous improvement that has been worked through with Europe has been one of the most important factors in delivering the safety improvements which have been achieved during the first two road safety strategies.

- 4.11** We are facing a world where the pace of change in technology is difficult for regulators to keep up with. The systems which manufacturers are developing for 21st century vehicles – including crash avoidance systems and sophisticated sources of in-vehicle information – are running ahead of the ability of regulators to keep up with them. Whilst we will continue to work in Europe to raise standards of vehicles, we need to respond to a world of continuous innovation by supporting other routes to market for safety systems, including partnership working and providing better ways for information to reach consumers. We will also look to identify through research those systems that are the most effective.

## Smart delivery

- 4.12** The paragraphs above set out the case for national action to be targeted, and to use a wide range of delivery mechanisms. But road safety is a hugely collaborative enterprise that involves a wide range of public, private and voluntary sector players. As well as doing a smart delivery job ourselves, a key role for national Government in the new strategy is to provide our delivery partners with the information and support they need to carry out their roles as well as they can. These measures are set out in the next chapter.
- 4.13** The relationship between central Government and local authorities for this strategy is very different from its predecessor. Whereas in 2000 Government required all English highway authorities to set their own casualty reduction targets, reflecting the national targets, road safety is now one of a number of areas of responsibility for which local authorities must consider Government's guidance and determine their own priorities for future targets and investment. Nevertheless, within their new Local Area Agreements, more than one-third of English local highway authorities have chosen a road safety target, reflecting the high priority that road safety is given within local communities.

**Essex County Council** recognised that its casualties were not reducing and that a co-ordinated plan was required. A casualty reduction board was established in 2005 incorporating a range of stakeholders.

This resulted in a co-ordinated approach involving the three Es of engineering, education and enforcement, as well as engagement. The biggest element of this has been a series of data-led enforcement activities. The police have implemented specific operations focusing on motorcyclists, young drivers, drink drivers and speeding. These have been linked with education activities, utilising the Community Wheels vehicle extensively, which has been funded through a DfT Partnership grant. A pro-active approach has also been taken to the selection and addressing of sites for engineering solutions.

In 2005, there had been 1,152 KSIs in Essex. In July 2007, there had been 992 KSIs in the previous 12 months and, in the 12 months to December 2008, this figure had dropped to 706.

## Improving delivery

- 4.14** In a mature policy environment such as road safety, the key challenge facing us is one of delivering rather than legislating. We know what good practice looks like, in terms of safer behaviour, safer vehicles and safer roads. But we need the more dangerous road users, the poorer roads and the lower performing areas to match the standards of the best.
- 4.15** Our pre-consultation for this strategy has brought out a number of respects in which our stakeholders think road safety delivery could be smarter than it is now. These are:
- moving away from a 'silo-based' approach that looks at engineering, enforcement and education separately, to considering the needs of an integrated road safety system;
  - a stronger national capability to lead the dissemination of research, good practice and evaluation material;
  - better feedback from the considerable evidence we hold about the circumstances around fatal road collisions;
  - measures to lead and support road safety as a growing profession.

## The road safety system

- 4.16** In general terms, then, we need to make our roads, vehicles, drivers and riders safer, but also ensure that each of these elements of the system takes account of the limitations of the other elements and provides an additional layer of protection against death and injury.
- 4.17** For example, vehicle safety technology can help drivers to avoid making mistakes. Highway design can help to mitigate the consequences if a vehicle does leave the carriageway, and vehicle structures and safety features can protect vehicle occupants and other road users in the event of a collision. And we all have a responsibility as road users to adjust our behaviour to reduce the chance of collisions happening.
- 4.18** Looking at road safety as a system also allows us to achieve better value for money in our interventions, as we are able to prioritise those measures that are most likely to cost-effectively reduce casualties.
- 4.19** In framing our approach to road safety in Great Britain for the next twenty years, we have closely considered the various elements of the road safety system:
- the road user;
  - the road environment;
  - and the vehicle.
- 4.20** We appreciate the importance of understanding:
- the limits of human physiology to withstand different types of collisions;
  - the limits to human perception and understanding in avoiding collisions – people do make errors;
  - the impact of collisions of different recurring types (e.g. vehicle–vehicle, vehicle–pedestrian, junction, head-on);
  - the effect of road design in reducing the likelihood and severity of collisions.
- 4.21** Speed is a crucial aspect of the system and the interaction between the different elements. In developing this strategy, we have researched closely the role of speed in collisions and the severity of injuries.
- 4.22** We are also considering those within the system who make the decisions and the investments that affect the safety of our roads:
- the public and businesses;
  - local highway authorities;
  - the police and other emergency services;

- vehicle manufacturers;
- national Government departments and agencies.

**4.23** We are convinced that those involved in the road safety system can reduce casualties further by working in a more co-ordinated way, using the fullest possible information.

## A safe, holistic road system

**4.24** We want to see:

- roads that take account of the level of safety vehicles can deliver and what drivers need to help them drive safely at all times;
- vehicles that deliver greater safety, taking account of how drivers will respond to new technologies and what protection vehicles will offer in the event of a collision;
- education and promotion that enable and encourage all types of road users to improve their safety skills and attitudes – we can *all improve*.

**4.25** We want to see improved organisation which reduces casualties through:

- more intelligent use of road safety data at national and local level;
- national capability to learn the lessons from fatal collisions with the power to make recommendations to national and local government;
- improved skills and capacity in local highway authorities;
- traditional road safety interests, such as highway authorities and the police, working increasingly in partnership with others not immediately associated with road safety, such as educationalists and the Probation Service;
- good practice sharing among local road safety practitioners;
- improving the quality of our data to help us to target our interventions more effectively.

### Sustainable Safety in the Netherlands

Since the mid-1990s, Dutch road safety has been guided by the vision of Sustainable Safety. This recognises human physical vulnerability and fallibility. It focuses on the individual elements of the road, the vehicle and the person. Roads and vehicles should be tailored to allow for human characteristics and people should be prepared for using the roads.

Crucial to Sustainable Safety are:

- the **functionality** of the road. Whether a through road, a distributor road or an access road, the road should be designed to suit its purpose. Speed limits are set to suit the road function;
- **homogeneity** of mass, speed and direction. Vehicles and users of different weights and speeds are separated where vehicle speeds are high – on through or distributor roads;
- **predictability** of road user behaviour. Through giving the different road types common design elements, Sustainable Safety aims to make roads 'self-explaining' and to encourage road users to understand how to behave and, in turn, to make it easier for other road users to know what to expect.

Sustainable Safety has been a crucial part of improving Dutch road safety. Between 1997 and 2007, road deaths in the Netherlands fell from 1,235 to 791.

## Information management in the road safety sector

### Sources of data

- 4.26** We constantly seek to improve and expand our existing data sources to develop our understanding of road safety trends. In particular, we continue to work closely with the police and local authorities to achieve high standards in the data collected by the police on personal injury accidents (known as STATS19), our primary source of evidence for developing and monitoring road safety policy. This is a long-standing series, and it has been recognised for many years that a significant proportion of non-fatal road accidents are not recorded, as the police have not attended the accident. If levels of reporting remain consistent, trends are reliable.
- 4.27** Analysis of hospital admissions data (Hospital Episode Statistics (HES)) is now adding to our detailed understanding, though HES data are not yet suitable for monitoring trends in road safety. In addition, the first record-level linkage of police and hospital data for the whole of England has been carried out, and some initial analysis was published in *Road Casualties Great Britain* in September 2008. Further work of this kind is planned as a

matter of routine to assist research into the medical effects of road accidents.

- 4.28** Work to date suggests that STATS19 remains the best and most complete source of identifying road casualties, together with the full details of the circumstance of the collision. The questions we added on road safety to the National Travel Survey in January 2007 will, over time, also provide further valuable information on longer term-trends. We will also continue to explore the potential for other data sources (for example, A&E attendance, insurance data) to enrich our understanding.
- 4.29** It is also important to continue to maintain and develop our existing sources. To this end we are currently undertaking, with stakeholders, the latest in the series of regular reviews of the STATS19 system to ensure it produces high-quality data that meet user needs whilst minimising the burden of collection. The intention is to complete the review by the end of the year to allow for any changes to be implemented from January 2011.
- 4.30** In addition, we are working with the National Police Improvement Agency (NPIA), on a project known as CRASH, to enable road collision details to be captured electronically by police officers. The system will enable mobile working at the scene of an accident, rather than having to fill in paper forms. This will improve the quality and consistency of accident data as well as reducing the form filling burden on the police. Testing with pilot forces is planned for 2010.

### **Organising and sharing data**

- 4.31** In our preliminary discussions about this strategy, our delivery partners told us that, while there was a wealth of information available on road safety research and performance, they sometimes struggled to find their way around it.
- 4.32** They were also aware of a proliferation of road accident project activity but were concerned that the impacts of these projects were not always systematically evaluated and disseminated.
- 4.33** To support truly effective delivery, we need to ensure that all those who need access to research, good practice and evaluation information can find it. We therefore propose to initiate work on a road safety information management strategy, which will start by mapping out stakeholder needs for road safety information, the different sources of information available, and what new structure and communication activities might be put into place in order to meet these needs.

## Learning from real collisions

- 4.34** The Government currently collects data on the circumstances surrounding each and every fatal road accident in Great Britain. However, unlike other modes (such as aviation and maritime), there is no national independent investigatory body, and we do not currently have any process for reviewing the characteristics of fatal collisions and recommending policy or delivery changes to public or private sector organisations.
- 4.35** Given the role of the police in investigating road collisions, we think that a full, separate investigatory body would be an unnecessary duplication of effort. However we are keen to put into place a stronger central intelligence to ensure that the lessons from real collisions are learned and disseminated. We therefore propose to appoint a new independent expert panel tasked with providing an annual report on road safety to Ministers and Parliament. We will ask the panel to focus particularly on fatal incidents using data provided by the police and other agencies. This annual report will seek both to take an overview on road safety performance and draw out potential recommendations to delivery agents in the light of real world experience.
- 4.36** Given our particular interest in road deaths, the panel will have particular responsibility for advising Ministers on the trends and new issues relating to fatal incidents. At present, the police investigate all fatal road collisions, and researchers investigate a sample for the Department for Transport. The researchers also take receipt of police fatal accident files for research purposes, once the police have completed their investigations. It takes too long for the information to reach the researchers, and we will take steps to hasten the dispatch of fatal accident files from the police to them.
- 4.37** We will also explore the feasibility of creating an anonymised database of selected information from the police investigation which is not available from the police's accident return (STATS19). The database would include such factors as seatbelt wearing or licensing information. The information could be available within a very short time frame – typically within weeks of an accident occurring.
- 4.38** We are piloting this with a few police forces, analysing the data received and seeking additional information to inform specific issues or to supplement specific cases. If the project is deemed successful, we will explore with the police a national system.
- 4.39** These data could potentially provide evidence on current fatal road traffic accident trends for policy guidance, as well as allowing direct and quick feedback to the police and local road safety officials to enable intelligent and targeted safety interventions. We will also take account of the findings and recommendations in coroners' reports that are conveyed to us.

## Supporting the profession

- 4.40** It is also clear from talking to stakeholders that they see a problem recruiting, retaining and motivating those professionals involved in reducing road casualties, whether in highway authorities, police forces or the private sector.
- 4.41** We will support the road safety profession through:
- improvements in the way we manage road safety information. We will shift our focus from creating knowledge, through research and data gathering, to sharing it with those who need to know. We will aim to provide clear, digestible advice to those professionals who need it;
  - providing annual data on local road safety performance, at the level both of local authority areas and key routes, to underpin a geographically intelligent approach to road safety;
  - working with local agencies to build capacity to reduce casualties;
  - encouraging self help among local authorities, building on the Road Safety Time Bank concept;
  - partnership with professional bodies to champion skills initiatives and continuing professional development among safety engineers, road safety officers, transport planners and emergency services personnel. DfT supported research conducted as part of Project Brunel suggests the widening skills gap in specialist disciplines such as road safety engineering can be addressed if the industry works together. DfT will be working with stakeholders to improve skills and raise the profile of the industry to help attract new resources.



**The Road Safety Time Bank** gives road safety and casualty reduction professionals the opportunity to learn from the work of a broad spectrum of their peers. Members of the Road Safety Time Bank gain access to the knowledge and expertise they need to help improve performance and add to their range of skills and services.

The majority of local highway authorities are members. The Timebank allows them to record their good practice, learn from others and trade staff time ([www.roadsafetyhub.co.uk/](http://www.roadsafetyhub.co.uk/)).

- 4.42** But we will also provide political advocacy and leadership – championing the road safety profession and the great work it does.

- 4.43** As we have said, we are keen to improve the use of data to allow for more targeted use of road safety resources. Given this, we will work to provide an online database combining accident and socio-demographic data for local authorities. This will allow ready local analysis of collision statistics by social and geographical groupings.

### **Questions**

We think that the key challenge for road safety from 2010 is better and more systematic delivery, rather than major policy changes. Do you agree?

We are proposing a number of measures to support the effectiveness of the road safety profession. Do you think they will be effective? What else might need to be done?

Do you agree that an independent annual report on road safety performance, created on an annual basis, would be a worthwhile innovation?

# 5. Strengthening the weak links in our road network

This chapter:

- summarises what we know about which roads are safe and which are not;
- suggests some ways in which the safety of the most dangerous roads might be improved;
- says how we are going to work with the Highways Agency and local highway authorities to build the case for road safety engineering measures;
- explains how we will monitor delivery.

## Context

- 5.1** On the whole, the British road network is safe, by international standards, and becoming safer. The safety of our roads has been enhanced in the period of the current road safety strategy by good investment in safety engineering schemes. These have typically addressed points on the road with known casualty problems – ‘black spots’ – with a high degree of success.
- 5.2** We are concerned that road safety engineering schemes are rarely appraised on the same basis as other transport schemes. They tend to be justified in terms of first year rates of return rather than whole-life benefit–cost ratios and to take little account of their wider impacts, for example on travel time, or of regression to the mean – whereby sites are chosen for engineering action on the basis of short-term increases in casualties that may be expected to reduce without intervention.
- 5.3** Nevertheless, there is continuing evidence of the high value for money of such schemes. Evidence from stakeholders and from new research<sup>13</sup> suggests that returns of more than 160 per cent in the first year are still commonplace. This is an exceptional return, even among high-value transport schemes. We also have evidence of the high returns still available from diverse engineering schemes such as side barriers and interventions to

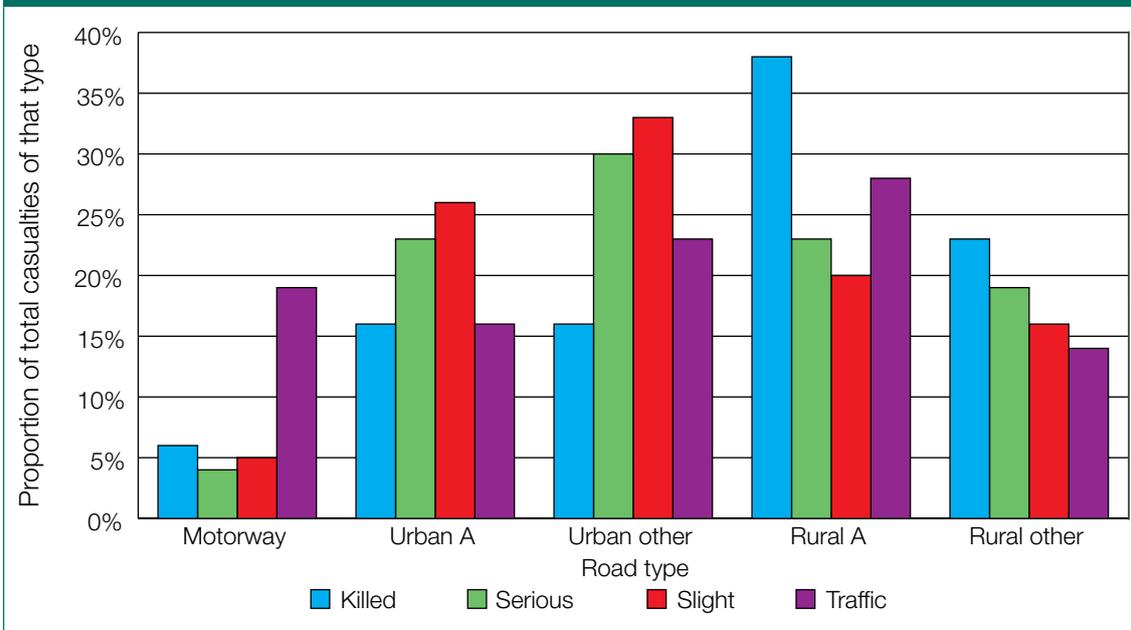
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<sup>13</sup> Atkins (2009) *Contribution of Local Safety Schemes to Casualty Reduction*, RSRR108, DfT.

protect motorcyclists.<sup>14</sup> Such economically beneficial schemes merit greater support than they are currently receiving.

**5.4** Certain parts of our network are very safe. For example, 20 per cent of the distance travelled on our roads is driven on motorways, whilst only 6 per cent of deaths happen there (Figure 5.1). But some road types are associated with higher casualty rates and higher casualty numbers. Of particular concern are rural roads. Just over 40 per cent of the distance travelled is on rural roads, but these account for 62 per cent of all deaths, and 74 per cent of car occupant deaths in particular. Thirty-eight per cent of deaths are on rural 'A' roads and 41 per cent of all fatalities were on single carriageway roads with a 60mph limit.

**Figure 5.1 Casualty and traffic proportions by road type: GB, 2007**

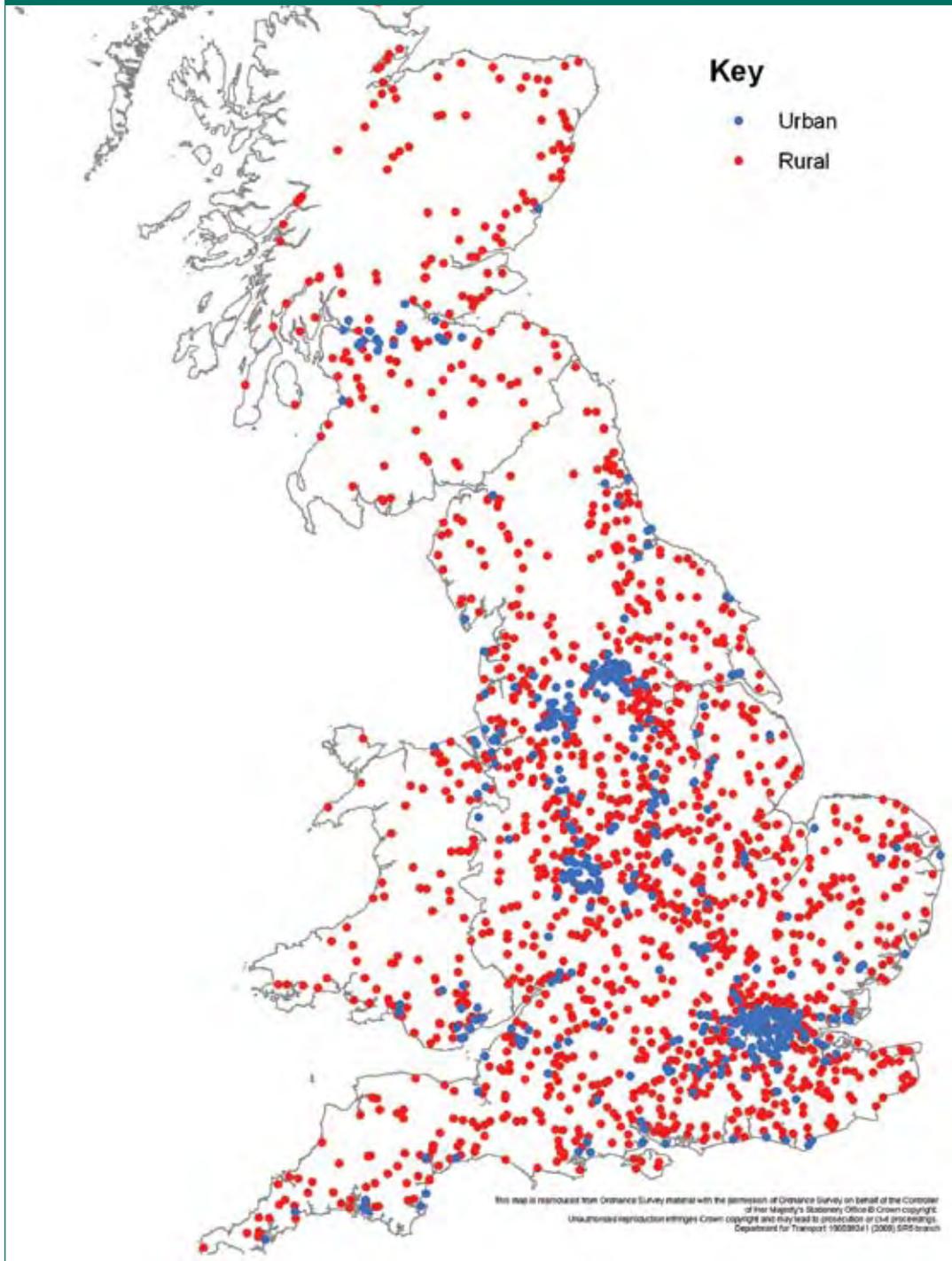


Source: STATS19 and DfT traffic estimates

**5.5** This problem on our rural roads is evidenced by British casualty maps. Figure 5.2 shows how widely dispersed vehicle occupant/rider deaths are.

14 TRL Report 379, Sexton and Johnson, 2009.

Figure 5.2 Motor vehicle occupant and rider fatalities in urban and rural areas: GB, 2007



Source: STATS19

- 5.6** This appears to be a fundamental weakness in our road safety system. Levels of compliance with the speed limit on these roads are better than for other roads, where only 10 per cent of cars and 27 per cent of motorcyclists exceed the speed limit, yet casualty rates remain high. The speeds at which cars are travelling on our rural roads, and particularly on single-carriageway rural roads, appear regularly to be too high, given the road environment and the ability of the occupants to withstand collisions such as run-off crashes, side-impact collisions at junctions and head-on collisions. This results in an excessive number of fatal road collisions.
- 5.7** Motorcyclists are especially vulnerable, as they are not given any protection by the vehicle and can be killed or injured by roadside objects such as trees or posts.
- 5.8** In 2007, a total of 152 people were killed in accidents on single carriageways with a 60 mph limit where 'exceeding the speed limit' was recorded as a factor. On these roads 233 people were killed in accidents where 'travelling too fast for the conditions' was recorded as a factor. A total of 333 fatalities had either or both factors recorded. This represents 30 per cent of the fatalities on these roads.<sup>15</sup>
- 5.9** These factors are attributed by the police officer attending the scene. We would expect them to be underestimates, as the police officer is unlikely to record a factor unless there is strong evidence to support it.
- 5.10** We have considered whether there is anything in the pattern of fatal accidents on these roads to distinguish them from others. Age and gender patterns of fatalities are similar to the picture for all roads nationally: 39 per cent were in the 16-29 age range (against 35 per cent nationally). And there is a spread of fatalities throughout the day that generally matches the national pattern.
- 5.11** As well as considering the causes of collisions, we also need to consider measures that can mitigate the severity of casualties resulting from collisions. It is only human for drivers and others to make mistakes. The challenge is to seek to ensure that mistakes do not result in deaths or crippling injuries. Research<sup>16</sup> commissioned in developing the strategy has assessed the risk of two common accident types at various speeds resulting in death. This research suggests that the risk of the driver dying in a head on collision involving two cars travelling at 60 mph is around 90 per cent. This drops to around 65 per cent at 50 mph and around 15 per cent at 40 mph.
- 5.12** The same research has also considered typical junction accidents, where the driver misjudges the speed of an approaching car and pulls out from a

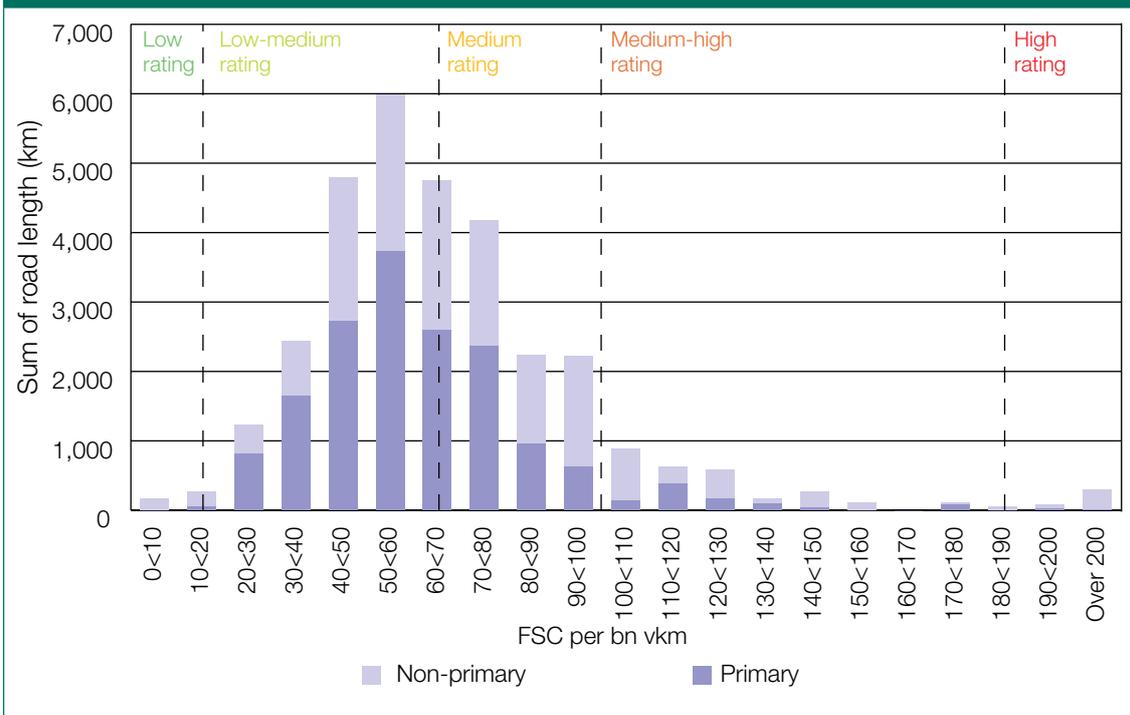
<sup>15</sup> Analysis of contributory factors is based on accidents at which a police officer attended the scene and in which at least one contributory factor was reported.

<sup>16</sup> Richards and Cuerden (2009) *The Relationship between Speed and Car Driver Injury Severity*, RSWP9, DfT.

side road, and is then struck in the driver's side. Where the approaching car is travelling at 60 mph, the risk of the driver of the car pulling out dying in such an accident is around 40 per cent; this drops to around 12 per cent at 50mph and less than 1 per cent at 40 mph.

**5.13** So we know that we would reduce the rate of death and injury on these roads, if we managed to bring down speeds on these roads. But we also know that these roads have very different characteristics. Figure 5.3 shows the distribution of risk on rural 'A' road single carriageways. Even within this single class of roads, some have a risk of death or serious injury per vehicle km comparable to motorways, whilst others are more than ten times as risky.

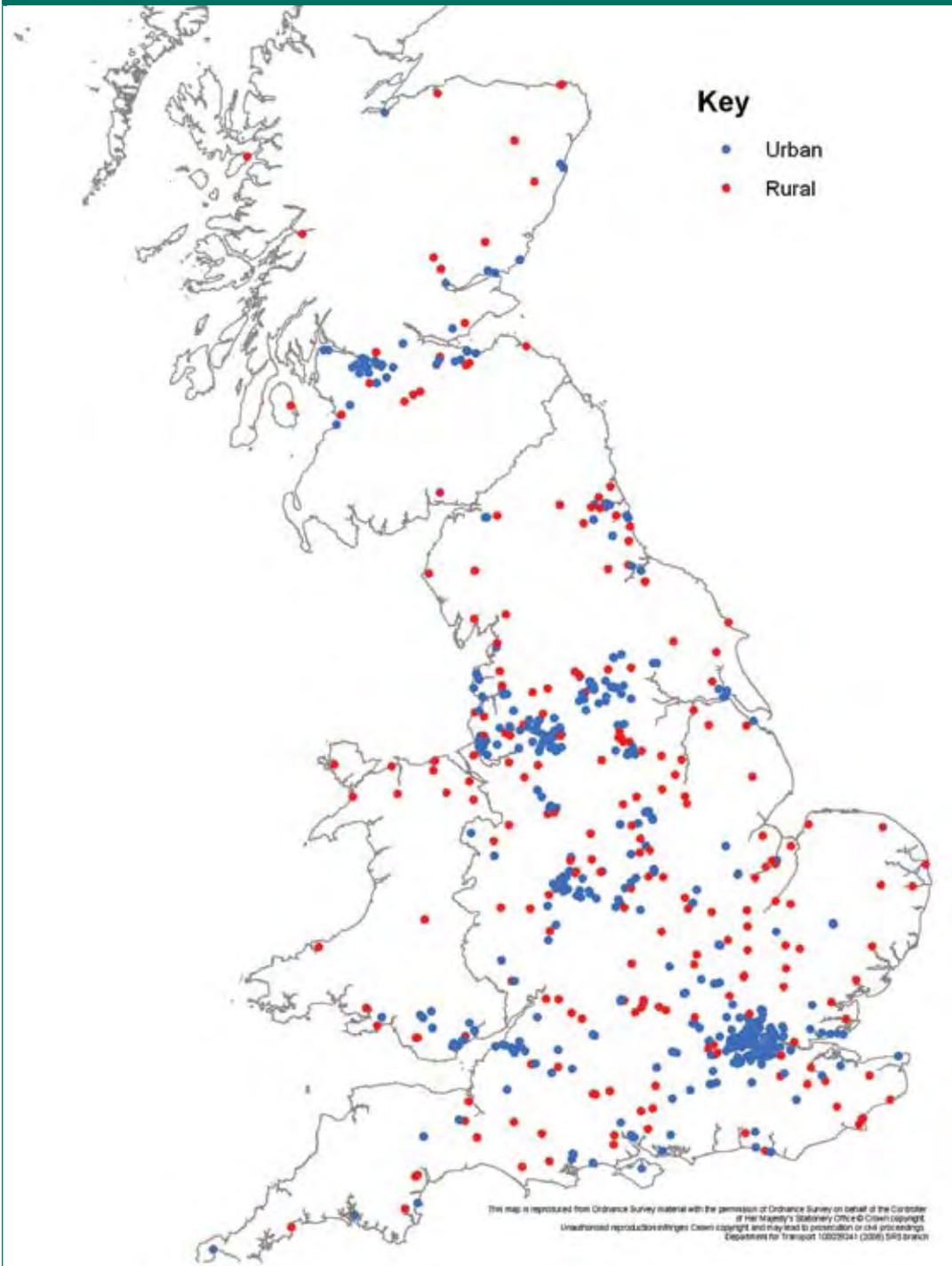
**Figure 5.3 Single carriageway 'A' roads: length of road by fatal and serious collisions (FSC) per billion vehicle km**



Data provided by the Road Safety Foundation. Ratings indicated are the Foundation's standard risk-rating bands

**5.14** Figure 5.4 shows the less surprising concentration of pedestrian deaths in our urban areas, but it also paints a picture of the extent of pedestrian deaths on our roads. Engineering measures can reduce pedestrian casualties (e.g. crossings, traffic calming), but too many pedestrians are hit by vehicles in residential streets at speeds that the human body cannot bear.

Figure 5.4 Pedestrian fatalities in urban and rural areas: GB, 2007



Source: STATS19

- 5.15** We need to tackle these problems on our network in an effective and proportionate way, prioritising those areas with the worst problems and taking account of the wider effects of road safety measures.

## Our approach

- 5.16** We will act to enhance the safety of those parts of our road network that are demonstrably less safe. This applies to particular classes of road and road user – vehicle occupants on rural roads and pedestrians in city streets. But it also applies to individual routes and areas that the data show to be less safe than others.
- 5.17** We will do this through engineering, through improved information and through ensuring that the speed of traffic provides the right protection to road users on a given route.

## Action

### Reducing pedestrian casualties

- 5.18** As in other areas of road safety, there is an established suite of measures to assist in protecting pedestrians. This includes infrastructure such as pedestrian crossings and refuges, and we expect these kinds of interventions to continue to be made by highway authorities.
- 5.19** However, the pattern of pedestrian casualties year on year is not often consistent, meaning that single pieces of infrastructure will not provide adequate protection. Research suggests that pedestrians struck at 30 mph have about a 1 in 5 chance of being killed. At 20 mph the chance of a pedestrian dying is 1 in 40.<sup>17</sup> In order to improve safety on the streets where we live, we will amend our guidance on speed limits, recommending that highway authorities, over time, introduce 20 mph zones or limits into streets that are primarily residential in nature and which are not part of any major through route. Similarly, we will encourage local authorities to consider introducing 20 mph limits or zones in town or city streets, such as around schools, shops, markets, playgrounds and other areas where pedestrian and cyclist movements are high.
- 5.20** We believe that these zones will offer greater protection not only for pedestrians, but for cyclists and motorcyclists. They will also offer greater protection for children and older people, since both groups are less able to withstand the impacts of collisions.
- 5.21** Local authorities have been incrementally introducing such zones and limits in recent years. We do not have comprehensive data on the extent of

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<sup>17</sup> Ashton and Mackay, 1979.

20 mph zones and limits, but we do know, for example, that London now has around 750 zones. Such zones and limits are proven to make our streets safer, where they are appropriately engineered. There is an established toolkit of engineering measures that moderate vehicle speeds, and we will want to see these used appropriately in the creation of zones.

- 5.22** We will, however, also research the effect on speeds and casualties of wide-area, un-engineered 20 mph zones. As introduced in Portsmouth and proposed for a number of other cities, these are implemented through 20 mph signs alone. Our previous evidence shows that these have the effect of reducing speeds by 1–2 mph (as opposed to engineered zones, which can reduce speeds to near 20 mph) and are therefore most suited to roads where average speeds are already low. We will, however, re-examine this issue in the light of the evidence provided by our forthcoming research.
- 5.23** Not only do these zones make our streets safer, but they also have potential to reduce pollution and improve public health by encouraging walking and cycling. The limited evidence gathered to date suggests that people walk and cycle more in areas subject to 20 mph zones.<sup>18</sup> We believe that these road safety measures will have the effect of enhancing both public safety and public *perception* of safety, so encouraging more walking and cycling. They are particularly popular around schools, with both children and adults.

The Department is supporting several demonstration projects to test and evaluate road safety interventions. A set of ten trial schemes on mixed priority routes (busy streets with shops, parking, deliveries and traffic) has resulted in substantial road casualty reductions, environmental improvements, economic regeneration and better accessibility ([www.dft.gov.uk/pgr/roadsafety/dpp/mpr/](http://www.dft.gov.uk/pgr/roadsafety/dpp/mpr/)).

Other projects recently completed or in progress include a road safety demonstration project for inner cities (in Birmingham) and four rural projects, being delivered by the road safety beacon authorities of Devon, Lincolnshire, Norfolk and Northamptonshire.

## Reducing rural road casualties

- 5.24** Again, there are established measures, such as road markings, junction treatments and barriers, that have improved the safety of rural roads, and we expect these still to be deployed with success by highway authorities.
- 5.25** However, we are also considering other steps to reduce death and injury on our rural roads.

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<sup>18</sup> Kirkby, 2002.

### **Tackling the riskiest routes**

- 5.26** Highway authorities need good information about the safety performance of their roads, if they are to take effective action to manage it. We will support a programme of improved information on the relative risks of British roads. We have funded the Road Safety Foundation to extend its current risk-mapping of British roads to cover all 'A' roads. These data will be published in June 2009.
- 5.27** We will look to highway authorities to form partnerships with police and other interests to develop and implement proposals to rapidly improve safety on the riskiest routes. These partnerships will be best placed to bring forward engineering, design, education and enforcement measures to deal with the specific problems of those roads. We expect this process to assist highway authorities in the treatment of these difficult routes.

### **Reducing speeds**

- 5.28** We have considered a range of measures to reduce speeds on the riskiest rural single carriageway roads. The wide distribution of risk on rural roads of this type, shown in Figure 5.3, makes a blanket approach to speed limits inappropriate. Our assessment shows that a blanket approach would reduce casualties, but would also impose large economic costs, through increasing journey times, even on roads that are relatively safe.
- 5.29** Our current approach is to ask highway authorities to review their speed limits, giving priority to their 'A' and 'B' roads. We still think that this is the right mechanism for ensuring that right roads have the right speeds. Some authorities, such as Buckinghamshire and Warwickshire County Councils, have been making good progress with their reviews, resulting in reduced speeds and fewer casualties. However, we want authorities to take account of the forthcoming evidence on the riskiness of individual roads, and on the greatly enhanced risk at 60 mph compared to 50 mph summarised in paragraphs 5.11 and 5.12 above. Across the country as a whole, we are concerned that progress has generally been too slow and too patchy.
- 5.30** So, to complement the better data on risk described in paragraph 5.26 above, we will also revise our existing guidance to highway authorities to assist the ongoing review of speed limits. We will recommend that they prioritise the review of 'A' and 'B' class national speed limit single carriageways, given the high proportion of traffic and casualties on these roads, and encourage the adoption of lower limits wherever the risks are relatively high and there is evidence that a lower limit would reduce casualties. We will keep track of authorities' progress in reviewing speed limits and will ensure that knowledge about successful speed limit review is shared.

## Better investment in road safety

- 5.31** We will ensure that the compelling economic case for investment in good quality local road safety schemes is understood by highway authorities. We will support better local decision making on local road safety engineering schemes by:
- sharing evidence on the potential for these schemes to offer high economic benefits to local areas;
  - improving the quality of scheme evaluation and ensuring that all local authorities have opportunities to learn lessons from the experience of others;
  - supporting the development and promulgation of guidance on the development of schemes aimed at treating stretches of route rather than individual ‘black spots’;
  - reviewing the operation of the road safety partnership grant scheme, in order to improve the support we offer to those delivering demonstration projects and increasing the lead times between confirmation of funding and scheme initiation;
  - encouraging local highway authorities to consider road safety schemes against other potential transport schemes on their economic merits, including on principal roads in rural areas, to make key junctions safer and on major urban arteries (such as mixed priority routes);
  - ensuring that in developing regional strategies and Local Transport Plans, regions and local authorities treat the improvement of road safety as a key goal, and consider, with advice from the responsible local highway authorities and the police, the most cost-effective means of improving safety on medium and high risk roads.

## Improving the riskier areas

- 5.32** We will assist and challenge those highway and police authorities with lower standards of road safety to improve their road casualty record. We will publish an annual account of progress on road safety area by area and will challenge those which are not reducing casualties fast enough to do better.

### Questions

Do you agree that highway authorities reviewing and, where appropriate, reducing speed limits on single carriageway roads will be an effective way of addressing the casualty problem on rural roads? Are there other ways in which the safety of rural roads can be improved?

How can we most effectively promote the implementation of 20 mph zone schemes in residential areas? What other measures should we be encouraging to reduce pedestrian and cyclist casualties in towns?

How can we provide better support to highway authorities in progressing economically worthwhile road safety engineering schemes?

# 6. Supporting the choice of the safer vehicle

## Introduction

- 6.1** Vehicle manufacturers have made significant progress during the last decade in making vehicles safer for all road users. This has helped to reduce the number of casualties and the severity of injuries from collisions.
- 6.2** Major improvements have been made to the design of vehicle structures that enhance the crash protection they provide to occupants. Restraint systems such as seatbelts and airbags are more effective than earlier designs, because of the use of advanced technology across most new vehicles.
- 6.3** Vehicle manufacturers have also implemented innovative technologies that help drivers and riders drive more safely, thereby reducing collisions and consequently the risks to all road users.
- 6.4** Whilst the main focus during the last decade has been to address key problems for secondary safety (i.e. protection in the event of a collision), the significant advances in computing and sensor technologies present an opportunity to secure important casualty reductions through the implementation of advanced primary safety systems (i.e. crash avoidance) in the longer term.
- 6.5** The UK car fleet takes around 12–15 years to turn over, and this can be noticeably longer for heavy vehicles. So it will take several years for measures being implemented now to be sufficiently widespread in the marketplace to noticeably affect casualty numbers. This chapter will therefore look at how we can secure earlier take-up of existing technologies across the vehicle fleet, how we can implement existing new technologies more quickly, and how Government can influence the development and implementation of advanced vehicles and technologies over the strategy period.
- 6.6** But the UK Government cannot achieve improvements in vehicle safety on its own. Vehicle regulations are set at European level and increasingly with a global perspective, given the international nature of the automotive industry. Therefore we need to work with a broad range of partners, including the

European Commission, other governments, manufacturers, fleet operators and interest groups to deliver solutions for British road users.

**Choose ESC!** is a Europe-wide awareness campaign aimed at improving people's understanding of the safety benefits of Electronic Stability Control. The objective is to encourage more people to choose a vehicle equipped with ESC, or to choose to add it as an option.



It was a project with a number of partners, run by the European Commission and supported by the UK Department for Transport and industry stakeholders. To support the project the European New Car Assessment Programme (EuroNCAP) released a country by country survey of the availability of ESC across Europe.

## The wider context

- 6.7** We live in an ever-changing society and need to take account of any social, environmental, economic and demographic changes over the period of the strategy that may affect road safety, as described in Chapter 3. We recognise, therefore, the need to consider unique solutions for sectors of society where measures for the wider population may have limited impact.
- 6.8** Not all vehicles are the same. 'Safer vehicles' applies not only to cars, but also to motorcycles, goods vehicles, buses and coaches. These vehicles have different uses within our society, and improving their safety poses different challenges and in some cases require specific solutions. We are also conscious of the potential for improvements to one road user group to reduce the safety of another.
- 6.9** Some of the key contextual factors are outlined below.

### ***a) The move towards a low carbon economy.***

Over the period of the strategy, environmental considerations are likely to increase and will impact significantly on the automotive industry and road users in general. We anticipate a sizable shift to lighter, cleaner, quieter vehicles and this creates both opportunities and risks for safer vehicles.

Faced with increasing pressure to improve fuel consumption, manufacturers will look to reduce vehicle weights, amongst other technical solutions. Vehicle manufacturers will undoubtedly create safe but light vehicles that meet all relevant legislation, but these vehicles will be used in mixed traffic flows with other, heavier vehicles. This size and weight mismatch could present new challenges for crash safety.

We also expect to see a growth in the use of alternative energy sources such as electric power, fuel cells or hydrogen, particularly in the later stages of the strategy period. These present a considerable opportunity for safer vehicle design through, for example, the creation of larger safety cells that protect occupants better. Any risks from these technologies will also need to be considered.

This need for manufacturers to reduce carbon dioxide emissions may lead to a smaller proportion of research and development budgets being invested in safety. There could also be an impact on the speed that safety measures already present in higher-end models (e.g. curtain airbags) penetrate the value end of the market if these measures add weight and cost to the vehicle. One of the advantages of electronics-based technologies at the heart of many advanced safety systems is that they typically add less weight to the vehicle than structural solutions.

A move towards a low carbon economy could also lead to a rise in the number of vulnerable road users. Potential increases in walking, cycling and use of powered two-wheelers mean that protection of these categories of road user should continue to be a priority in terms of vehicle engineering developments. In addition, an increase in car-sharing could lead to an increase in rear seat passenger numbers, who do not currently enjoy equivalent safety protection to those in front seats.

We believe that climate change issues must be recognised within the context of our future planning for safety. We will work to identify the synergies between improved environmental and safety performance, and to maximise the opportunities for better safety that changes in vehicle design and fuel type may present.

### ***b) Changes in social demographics***

The number of older drivers has increased over the past decade and is expected to continue to increase during the next. Not only are there more older people with a driving licence, but there has also been a marked increase in the distance they travel.

Older drivers tend to have lower bone density and slower recovery times from injuries. This means the same type of accident can cause more serious injuries, and can be more debilitating.

The number of female drivers is also expected to increase. Historically, vehicle designs and protection systems have been optimised for an average male occupant, and crash data suggest that women can be at greater risk of serious injury from the same type of accident than men. On average, women may also sit closer to the steering wheel and pedals, which can lead to more serious injuries.

We need to adopt an intelligent approach to meet the challenge of ensuring safe mobility, notably in the area of crash protection. We will look to target our efforts on addressing the type of problem described above by pursuing improvements in areas such as adaptive restraint systems and improved side impact protection.

### ***c) Changes in the driving task***

An ever-increasing amount of technology is being introduced into vehicles, each with its own screens or warning mechanisms. While some of these technologies are aimed at assisting drivers, there is an increased risk of driver distraction from the key driving task when interacting with these systems. Conversely there is a risk that the driver passes key monitoring tasks over to the vehicle and therefore has a decreased involvement in the driving task, which could lead to increased driver detachment or drowsiness. Over-reliance on technology could also lead to serious consequences should that technology fail.

### ***d) Consistency issues***

At the moment, many technological add-ons are little regulated and developed by each manufacturer to meet their product and market need. Although those manufacturers take great care to ensure the safety of their individual systems, this can result in similar systems differing from one another in terms of name, operating protocols and the way drivers interface with the device (e.g. controls, warning signals, etc). This can lead to an increased risk of driver confusion or error when changing from one vehicle to another, which could limit the effectiveness of new systems and present new safety risks. We will work within European circles to ensure manufacturers take a consistent and safe approach.

### **European Statement of Principles code of practice**

The UK worked with a number of other European partners to develop the European Statement of Principles for in-vehicle information systems and a Code of Practice on the development of Advanced Driver Assistance Systems (ADAS), both of these guidance documents focus on human-machine interaction issues.

These have been promoted by DfT (for example at the ITS world congress and at specific industry workshops), and UK manufacturers are starting to implement them voluntarily. For example Ford has now integrated principles from the Code of Practice into its working practices and product design sign-off procedures.

### ***e) Globalisation***

Manufacturers are increasingly developing vehicles for a global marketplace. We need to work internationally to ensure that the highest standards of safety are ensured, but that equally we do not restrict innovation in the further development of safer vehicles or place administrative obstacles to deployment due to different legal systems in key markets.

## **Maximising the potential of technology**

- 6.10** A significant proportion of the improvement to vehicle safety in recent years has been due to **secondary safety** measures, such as better vehicle structures and the widespread fitment of airbags. There remains further benefit to be gained from better secondary safety, including the advanced technologies that interact with occupants and structures, and we will continue to support further development through consumer information and appropriate regulation. However, in a world with an increasing environmental need to reduce greenhouse gas emissions there is pressure to reduce vehicle weights. When this is considered together with changing social and demographic factors, it is difficult to predict with confidence how far improved crash protection can take us over the lifetime of the strategy.
- 6.11** It is better to prevent an accident from occurring, and vehicle and component manufacturers have made considerable advances in developing safer braking, suspension and tyres in recent years. Improvements in these areas have been seen across all vehicle types. Increasingly, these developments rely heavily on advanced computers and sensors which, in combination, help drivers and riders avoid collisions. This area of **primary safety** vehicle technology has great potential to deliver significant road safety benefits during the lifetime of this strategy. Adopting these technologies into new vehicles quickly links closely to the climate change agenda, as they tend to add little weight.

- 6.12** We recognise a growing consensus among governments, manufacturers and consumer organisations of the potential these new advanced primary safety systems offer and a number of international and collaborative research initiatives are investigating the road safety benefits they can deliver.

**The PReVENT initiative**, supported by the European Commission, brings together a number of industry and research partners to further the development of advanced safety systems. It will develop and validate a variety of preventative safety applications and assess the road safety benefits of the technologies to accelerate the introduction of preventative and active safety in Europe. Current subprojects include lane keeping support, collision mitigation systems and hazard warning supported by vehicle to vehicle communication.

- 6.13** DfT research in 2007 showed that passenger cars fitted with one primary safety system, ESC, are 25 per cent less likely to be involved in fatal collisions. This system seems to provide exceptional casualty reduction potential, and while we would not expect every advanced system to bring an equivalent level of benefit, it is clear that in the longer term there will be a shift towards casualty reduction through primary safety technologies. We will therefore focus our research programmes to understand the full potential of these technologies and build the evidence base that, together with continuing activity in international forums to develop harmonised standards, will secure their early adoption.
- 6.14** Over the short to medium term we expect secondary safety improvements to continue delivering increased casualty reductions. But, if we are to maintain the recent rate of improvement, the contribution of advanced primary safety systems will become more and more important over the longer term. We will put renewed emphasis on this area and take a leadership role to ensure they deliver the necessary results. To achieve this, we will support the development and deployment of the most beneficial systems across the fleet.

## Delivering safer vehicles

- 6.15** For many years, vehicle technology has been implemented either by new and tougher regulation or by manufacturers creating a market for new systems that consumers purchase. This approach has worked well, and significant improvements have been delivered. But over the last decade we have seen an increasing role for independent consumer testing programmes that have had a noticeable impact on vehicle manufacturers and vehicle design for safety.
- 6.16** In order to deliver continuing improvements for vehicle safety, we first need to understand the issues to be addressed and prioritise any interventions.

Our research programme provides the insights by developing and interrogating an evidence base built from extensive accident investigation and injury profiling.

## Research and evidence: supporting innovation

- 6.17** We will look to extend and improve our evidence base, both to analyse the effectiveness of existing measures and to target areas where technology can deliver improvements.
- 6.18** For example, advanced primary safety systems are not yet widespread in the vehicle fleet, and consequently there are few real world data to demonstrate their effectiveness. In addition, much of our evidence comes from accident data, but this does not capture instances where these systems prevented an accident from occurring.
- 6.19** In order to get the best evidence we will need to be innovative in our approach to research. We aim to:
- explore ways of trialling new systems and of monitoring the performance of in-vehicle technology, even when no accident occurs;
  - work in international circles to obtain the best available data;
  - pilot new safety systems in car fleets and analyse the data. This will help us both to improve our evidence base and to drive technology uptake in the vehicle parc.
- 6.20** This evidence will help prioritise those systems with a strong safety benefit and to identify any implementation issues. We recognise that new technologies and systems evolve with increasing knowledge and experience of their use, and so we will be seeking closer collaboration with designers and manufacturers to enhance our understanding.
- 6.21** Manufacturers and system suppliers are developing advanced safety systems at ever faster rates. This creative outlook is welcomed, but it is not yet clear which systems should be most strongly supported. However, some examples of technologies that appear to have good safety potential are:
- **advanced braking** and **lane keeping** systems (already available in the fleet to some extent);
  - **collision avoidance** systems and **Intelligent Speed Adaptation** (technology available in some form and expected to be available in the short/medium term);
  - **vehicle to vehicle/vehicle to infrastructure** communication (technologies that can bring about additional safety benefit through enabling other systems to operate).

**6.22** Details of some of the more promising technologies within these categories are outlined below.

## Intelligent Speed Adaptation (ISA)

**6.23** Research and initial trials have shown that ISA has the potential to reduce the number of collisions leading to death or serious injury. We will support the development of key building blocks, such as the availability of accurate mapping data, which will enable manufacturers to develop these systems and fleet operators and private motorists to choose them.

**6.24** We expect that industry will take forward the technology, in response to consumer demand. We will look to support this process in the following ways:

- a) speed limit dataset. Availability of accurate speed limit data is crucial for ISA. We will develop, consult on and publish a voluntary framework for local authorities to use for collecting electronic speed limit information;
- b) pilot ISA schemes. We have already agreed with one local authority that they will take forward a pilot on voluntary ISA and we will monitor the project with interest as it develops;
- c) further research, including work on incentives to fit and use. The Motorists' Forum, the Committee for Integrated Transport (CfIT) and Transport for London have carried out helpful work in this area, underpinned by data from the DfT work. We will monitor this and other research in order to improve our base of evidence.

## Autonomous vehicle safety systems

**6.25** Systems that can take control of the vehicle in emergency situations are evolving quickly from manufacturers' research and development departments into new products. Collision mitigation systems with autonomous braking are beginning to feature in the vehicle fleet, and systems that can detect pedestrians are also under development.

**6.26** We will continue to monitor the development and effectiveness of such systems and to encourage the adoption of the most beneficial. This may include pilot testing, further research and standardisation where appropriate, together with work to improve consumer information and awareness.

## Vehicle to vehicle communication

- 6.27** An enabling technology, this would allow vehicles to exchange information regarding hazards, dangerous road conditions and the position of other vehicles in close proximity. Hazard warning systems using this information have significant potential to help drivers avoid collisions and reduce casualties.
- 6.28** The European Commission has already requested that Member States make available a specific frequency range to be used for vehicle safety systems. Manufacturers expect that systems will become available from 2015 onwards.

## Vehicle to infrastructure communication

- 6.29** Systems that allow communication between individual vehicles and roadside infrastructure could warn drivers about the road layout ahead, traffic incidents and conditions, traffic signals and road works, helping them to avoid collisions.
- 6.30** DfT is committed to take part in the co-funded European CVIS project (Co-operative Vehicle Infrastructure Systems), which will complete in January 2010. This is a research project to explore the potential of technologies to assist drivers, improve road safety and bring environmental benefits, concentrating on the exchange of information from vehicle to vehicle and vehicle to infrastructure.

## Technology for motorcycles

- 6.31** We are also keen to encourage the development of safety technologies for motorcycles; technologies that had been largely car-based, such as ABS and driver assistance systems are now being seen more frequently in the motorcycle fleet. We will continue to work with our partners to take forward research to improve motorcycle safety, including conspicuity and the European PISA programme (Powered Two Wheeler Integrated Safety), where possible finding synergies with environmental performance.

## Use of accident data

- 6.32** As described in Chapter 4, we will also look to enhance our accident investigation work. Investigation of road collisions is carried out by the police, with further analysis of certain incidents through wider DfT research programmes. We will explore ways to develop and extend the information we gather from road collisions. This may include improving the way in which this information is used to inform road safety policy, and also improving the links between policy makers and the investigation teams.

## Further areas of research

- 6.33** We will continue to research the differences in injury mechanisms for different groups, e.g. female, elderly, rear passengers, and how these can be mitigated. We also recognise that solutions may differ between vehicle categories, such as measures to reduce pedestrian injuries for cars may be radically different to those required for large vehicles such as buses and trucks.
- 6.34** We will continue to monitor developments in these areas, and will also take particular interest in advanced systems which detect or protect vulnerable road users. By adopting this approach, we aim to ensure these technologies are brought to the widest range of consumers in the market at the earliest opportunity. An emerging issue for further consideration is ensuring that advanced safety systems are adequately maintained throughout the vehicle's life and therefore continue to deliver the road safety benefits designed in by the manufacturer.

## Delivering change in the market place

### Delivery through regulation

- 6.35** Regulations for vehicles are set at a European and increasingly global level. It can be a lengthy and time consuming process, but it is appropriate in certain areas, especially where manufacturers do not voluntarily provide the same level of technology in all models, and where harmonised performance requirements are needed to ensure consistency.
- 6.36** We will continue to promote regulatory solutions where this brings the greatest benefit in a timely manner. Current areas of activity include:
- a) **Pedestrian protection** phase 2: a European regulation containing new car and light van requirements aimed at reducing the number of vulnerable road users killed or seriously injured in collisions has recently been agreed by the EU Institutions. We intend to monitor the benefits, especially those relating to Brake Assist provision, and raise the issue with the European Commission if the requirements need to be strengthened.
  - b) Electronic Stability Control (**ESC**) helps reduce the likelihood of collisions which involve a vehicle skidding or overturning. It can also be helpful in adverse weather conditions. International regulations supported by the UK have been agreed that will make ESC mandatory on all new cars and larger vehicles, through a phased approach starting in 2011.
  - c) The European Commission has proposed a **General Safety Regulation**. In addition to simplifying existing regulations, this is likely to include

provision for advanced primary safety systems including ESC for all vehicles and **Advanced Emergency Braking Systems** and **Lane Departure Warning Systems** for heavy vehicles. The Department has a leading role in this area through its work in the UN-ECE and will work to ensure that the regulations are suitably defined, appropriate and timely.

- d) **Car side and front impact** requirements – international discussions on revised side impact crash test requirements are well underway and likely to come into effect from around 2012 onwards. This is expected to deliver significant potential benefits and, in chairing the European side impact research experts' group, the UK has the opportunity to lead this to a successful conclusion.
- e) **Compatibility:** Vehicles currently in the fleet already vary quite considerably in terms of their size and weight and an increase in the number of low carbon cars could lead to an even broader mix. Differences in size, weight and shape could lead to more severe crash outcomes for different types of vehicle. Compatibility is a complex area of design and engineering and is therefore likely to be implemented initially with cars rather than larger vehicles. It is possible that legislation for car to car compatibility could come into force from around 2015 onwards.
- f) **Vision:** Trends in HGV design have led to drivers having increased difficulty in seeing cyclists and pedestrians on the passenger side. This blind spot can also be a problem for drivers of left-hand drive vehicles on British roads. The Department has been active in trying to address this issue in the short term through a programme of issuing 'fresnel' lenses to drivers of left-hand drive lorries on entry to the UK.

For the longer term, we have explored with our European partners possible solutions and expect to raise a proposal in the technical forum through the UN-ECE in Geneva to amend the mirror standards, extending the required field of view for HGVs.

- g) **Smart restraint systems** – some aspects of smart restraint systems, such as seatbelt pre-tensioners and load limiters are already entering into the market. However more sophisticated systems, tailored to the individual, could have greater benefits in terms of improving crash outcomes. Legislation requiring this type of smart restraint system is starting to be considered and could be in place around 2020.

## Consumer Information and raising awareness

- 6.37** Vehicle technology is developing more and more quickly. Manufacturers often introduce new safety systems in high-specification models initially, with wider application to the full model range sometimes taking several years to be achieved. Regulations can overcome this delay, but, as a result of the fast nature of technology change, they are unlikely to be able to keep

pace. We believe, therefore, that market-based measures, such as consumer information and raising awareness of safety technology with the motoring public, will play an important complementary role to regulation in improving market penetration.

**6.38** Publishing high-quality information can influence the market by:

- changing consumer purchasing decisions towards safer vehicles;
- motivating manufacturers to achieve best-in-class for their products, compared to their competitors;
- raising awareness of the benefits of certain technologies, affecting demand for safety systems and their uptake.

**6.39** We will continue to work within existing groups, nationally and internationally, to develop new opportunities in these areas. Current areas of activity are:

- a) **EuroNCAP** (European New Car Assessment Programme). The UK government was a founder member of EuroNCAP's vehicle safety star rating scheme when it was established in 1997. The programme has had a major impact on vehicle safety in Europe and been a catalyst for improvements in crash protection. We will continue to work with our international partners in this initiative to set challenging objectives for safety, whilst encouraging vehicle manufacturers to achieve high star ratings.

Whilst EuroNCAP has been effective at improving car occupant safety, it is has been less effective as a tool for improving the safety of other road users such as pedestrians. Other road users are potentially anonymous and theoretical to the car buyer, and their safety is therefore likely to be given less consideration in purchasing decisions. To resolve this anomaly, we have actively supported a major change to the EuroNCAP rating process that will require a minimum level of safety in both occupant and pedestrian protection for a vehicle to be awarded an overall star rating. We believe this is a major advance and should encourage safer designs for vulnerable road users.

We will also be supporting EuroNCAP initiatives to include accident avoidance technologies (e.g. ESC) in the overall rating scheme. The Beyond NCAP programme aims to recognise new safety systems that manufacturers are introducing on their vehicles which show a good safety benefit. We hope this will incentivise and reward innovative manufacturers, and speed up the introduction of new safety systems into the vehicle fleet.

- b) As outlined earlier, **ESC** is to be mandatory for new vehicles in Europe by means of a phased approach from 2011. However it will take several years for this technology to penetrate the UK vehicle fleet and for the

potential benefits to be realised. We will therefore encourage voluntary uptake of this technology in the meantime through:

- raising awareness of the benefits among consumers;
  - working with fleet operators to encourage the choice of vehicles fitted with ESC.
- c) **SHARP** (Safety Helmet Assessment and Rating Programme) was launched in 2008 to provide motorcyclists with information about the safety performance of different motorcycle helmets available on the market. A good helmet is important, because 80 per cent of motorcycling fatalities involve head injuries (source: COST 327, 2001). SHARP has been very well received and involves a rolling programme of testing. We recently announced the latest batch of results, meaning that 125 helmets have now been rated.



**SHARP (<http://sharp.direct.gov.uk/>)**

Up to 50 lives a year could be saved by ground-breaking motorcycle helmet safety ratings. The SHARP tests – which award ratings of between one and five stars – showed that the safety performance of helmets can vary by as much as 70 per cent.

Helmets from across a wide price range and from a variety of manufacturers have received four or five stars – so all riders should be able to find a high-scoring helmet in a size and style that fits them and at a price they want to pay. All helmets must meet minimum legal safety standards, but the SHARP scheme uses a wider range of tests to provide riders with more information on how much protection a helmet can provide in a crash. The objective advice will help riders to choose the safest helmet suitable for them.

### **Delivering in partnership**

- 6.40** Government cannot deliver improved vehicle safety alone. Whether it be through regulation, evidence gathering, providing information or raising awareness, we rely on vehicle manufacturers to deliver the real world improvements and consumers to buy safer vehicles. Consumers look to Government to ensure that high safety standards are maintained, and to

provide them with high-quality, objective information. We recognise that it is through working with our partners that we will collectively deliver the highest levels of vehicle safety.

### **Questions**

What should Government do to secure greater road safety benefits from vehicles?

Do you agree that, in future, crash avoidance systems will grow in importance and will have the potential to greatly reduce casualties?

How can we best encourage consumers to include safety performance in their purchasing decisions?

# 7. Responsible and irresponsible road use

This chapter:

- analyses the progress we have made in improving road user behaviour in recent years;
- explains how we will support positive driver behaviour;
- explains how we will improve the enforcement of road safety laws, including through the use of technology.

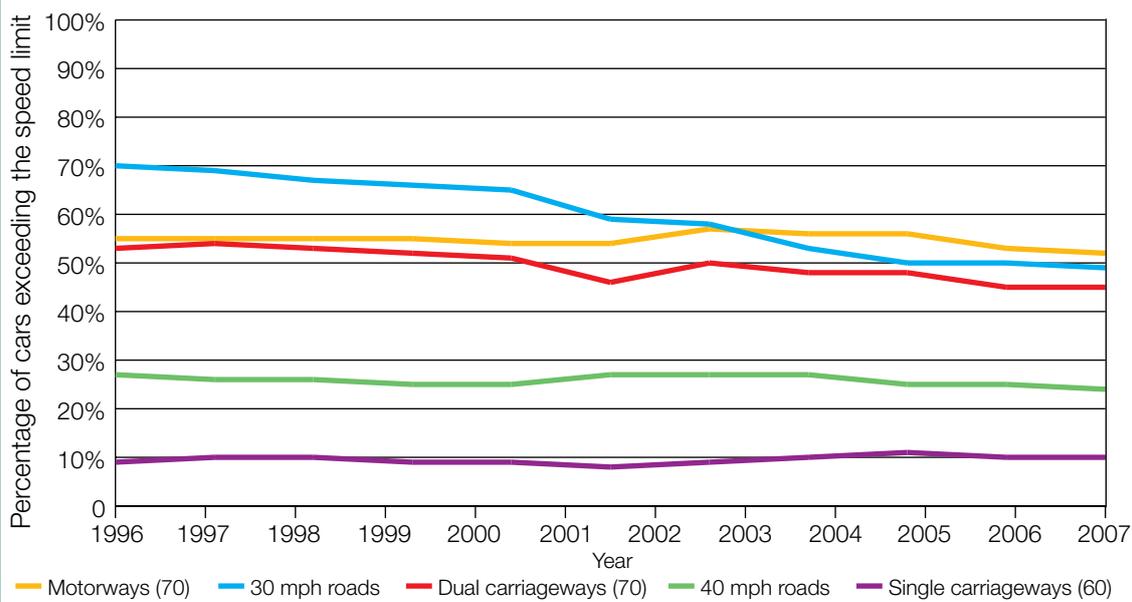
## Context

### Responsible and irresponsible behaviour

- 7.1** Most road users are responsible and understand the rules of the road. They treat the roads seriously and do not act dangerously. But we could all improve, and we all make occasional errors. We have described how we want to improve the road environment so that these errors do not lead to serious injury or death, but we also need to improve the road safety system so that we reduce the level of error and acknowledge good road use.
- 7.2** For the dangerous behaviours on our roads, we need to make sure we have effective responses – the right level of penalty and enforcement.
- 7.3** Over the last thirty years, we have had great success in changing dangerous behaviours, shifting social norms on issues such as drink-driving and failing to wear a seatbelt. Whilst those are still too prevalent amongst an irresponsible minority and continue to play a disproportionate part in our casualty record, they are widely regarded as unacceptable in our society and compliance with road traffic law is high.
- 7.4** Our aim is to support the responsible road user, whilst cracking down on the irresponsible. In this, we face two key challenges in the next twenty years. The first is to shift the social norm in relation to dangerous driving speeds in the way that we have done for drink-driving and seatbelts.

**7.5** There is a clear correlation between speed and collisions: for every 1 mph reduction in average traffic speeds, there is an expected 5 per cent reduction in collisions. And we have made some progress in reducing speeding in recent years. The percentage of vehicles that exceed the speed limit on 30 mph roads was lower in every vehicle category in 2007 than it was ten years earlier (Figure 7.1). The improvement is particularly marked for cars, for which the percentage exceeding the speed limit in 1996 was about three-quarters. This fell to just under half in 2007. But that proportion is clearly still substantial, and on other types of road the picture is worse – on motorways, for example, 54 per cent of cars were travelling at a speed that exceeded the limit of 70 mph. Speed limits are set at a level to maintain public safety, and we need to improve compliance with limits if we are to improve our casualty record.

**Figure 7.1 Percentage of cars exceeding the speed limit on five road types: GB 1997–2007**



Source: DfT automatic traffic counters

**7.6** The second major challenge for this strategy is to reduce further the prevalence of minority behaviours that, whilst seen to be unacceptable by the vast majority, persist in causing death and serious injury:

- drink-driving is implicated in 460 deaths of the 2,946 total;
- failure to wear a seatbelt in around 300 avoidable deaths;
- careless or dangerous driving contributed to at least 400 road deaths;
- and we believe that drug driving also presents a significant danger.

**7.7** In addition, there is a clear link between driving without a licence, tax or insurance, unacceptable in themselves, and involvement in collisions.

We have had some success in tackling this in the last two years, but we need to pursue this further to improve our road safety record.

## Our approach

### Supporting responsible road use

- 7.8** We want to support responsible road user behaviour so that:
- expectations are clear for all age groups;
  - they have the right opportunities and resources to improve their knowledge and skills;
  - good road user behaviour is acknowledged.

### Cracking down on irresponsible road use

- 7.9** As for that minority of people who flout the law and persist in behaviour on our roads that puts themselves and others in danger, we will use the law and enforcement capacity to detect and deter them. We will act to target in particular those individuals who are guilty of repeated dangerous offences on our roads, and make it more difficult for them to offend again.

## Action

### Supporting responsible road use

- 7.10** Following the *Learning to Drive* consultation, we will take forward a programme of measures that will strengthen the way that people learn to drive and are tested, and create a culture of continued and lifelong learning. This is a long-term programme that supports progressive improvements. The first phase aims to deliver, over the next two years, real changes focusing on an improved learning process, improved theory and practical driving tests, and further options for learning and qualifications.

### **The Learning to Drive programme**

Early improvements include:

- continued roll out across Great Britain of the new pre-driver qualification in safe road use – including, but not confined to, preparation for learning to drive;
- introducing from October 2009:
  - a partial credit towards the theory test for car drivers for those students awarded the new pre-driver qualification in the form of an abridged theory test; and
  - case studies into the theory test for car drivers and moped and motorcycle riders to better assess whether learners have understood driving or riding theory;
- launching in 2009/10 a trial to assess the effectiveness of the proposed new learning to drive syllabus and process.
- introducing from October 2010:
  - requirement for the supervising driver to accompany the candidate during a practical car test; and
  - into all our practical tests for learner drivers, an assessment of competence whilst the candidate is driving independently.

Full details are set out in *Learning to Drive: Report on Consultation*.<sup>19</sup>

- 7.11** We will continue to improve road user behaviour through the highly successful THINK! campaign. THINK! is widely recognised and appreciated by the public and has successfully targeted our most dangerous road user behaviours. THINK! works on the principle that road users are generally rational people who make informed decisions, but that they occasionally misjudge risk. The thrust of the campaign, therefore, is to improve risk perception among parts of the population where it is flawed. The campaign has addressed specific dangerous behaviours in this way – from speeding, through drink-driving, to not wearing a seatbelt.
- 7.12** However, we will also consider a campaign for 2010/11 based on a wider theme of road user responsibility. The idea of such a campaign would be to challenge complacency about road safety and encourage the public to make positive safety choices.

<sup>19</sup> *Learning to Drive: Report on Consultation*, Driving Standards Agency, published 21 April 2009

### **THINK! campaign**

Speeding accounts for more than 720 deaths on UK roads every year. Yet it's still seen by some as an acceptable thing to do, and almost every driver breaks the limit from time to time. Recent research<sup>20</sup> commissioned by the Department for Transport revealed that people find it difficult to imagine that they could ever be involved in, let alone be the cause of, an accident if they break the limit now and again. We set out to jolt people out of this complacent attitude by dramatising the tremendous and life-wrecking impact that killing a child whilst speeding would have on the driver of a vehicle.

In the TV ad, a man who has killed a child while speeding is unable to get on with his daily life without being constantly reminded of what he has done. Whereas previous anti-speeding communications have focused on the consequences to the victim, this campaign is different because it shifts its focus to the emotional impact speeding has on the driver. It builds on the success of the previous campaign, 'Lucky', emphasising that if you hit a pedestrian driving above 30 mph, you are more likely to kill them.

**7.13** We are developing our road user education. At present, we have a variety of tools and resources for different groups of children and young people. We are developing a suite of educational materials that flow through from toddlers to young adults. This will be a comprehensive and coherent set of materials, tailored to be suitable for each age group while maintaining continuity from primary to secondary school and will be designed to be attractive to schools, teachers, parents, as well as children. We will promote these materials to schools, highlighting their relevance to the National Curriculum and their potential to improve the safety of our children and to give them a good grounding in road user safety, which will help them throughout their lives

**7.14** Many agencies are involved in delivering road safety education locally, with admirable enthusiasm and commitment. However, it is important that this kind of education is carefully co-ordinated, targeted and of high quality. We will therefore be encouraging local authorities to ensure that there is a clear understanding of which agencies are delivering which courses to which road user groups, to ensure that there is no confusion caused by overlap, and looking to them to create a co-ordinated, high quality whole.

### **Practical skills**

**7.15** One area of recent success has been cyclist training, where we have developed a new national standard and are delivering a scheme – Bikeability. This is cycling proficiency for the 21st century, with levels one (off-road training), two (basic on-road training) and three (more advanced

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<sup>20</sup> Flamingo: Creative Development Research, 2008.

on-road training) designed for children of different age groups, but also available for adults. We are making funding available to give an extra 500,000 children the opportunity to undertake national standard training by 2012, over and above the training already provided by local authorities

- 7.16** There are also examples of good practice within the commercial vehicle sector. The EU driver certificate of professional competence requirements came in for bus and coach drivers last September and will be introduced for HGV drivers in September 2009.
- 7.17** Also within the HGV sector, the Safe and Fuel Efficient Driving scheme (SAFED) helps to reinforce safe driving behaviour through a combination of classroom and on-road training sessions. To date 10,000 van drivers and 12,000 HGV drivers have been through the scheme, and the Department is keen to measure the improved safety performance that this will bring. From the continuing uptake of the scheme, it is clear that the issue of road safety is taken seriously by industry. More information on the SAFED scheme can be found at <http://www.safed.org.uk/>.
- 7.18** We are concerned that we might be developing a culture of road use in Great Britain in which the public are expected to do the right thing – to use the roads responsibly, within the law and considerately – but where those traits go unacknowledged and unrewarded.

### **Driving for work**

- 7.19** Those driving for work are over-represented in the casualty statistics. The Department's Driving for Better Business outreach programme supports business leaders who have successfully managed driving for work in their companies to take the message, at high level, to business more widely.
- 7.20** Roadsafe – sponsored by the SMMT – is the Department's partner in delivering the programme. Its main activities have been to:
- recruit 'champions' from the business community;
  - identify partners for pilot project; and
  - engage a wide range of other commercial and road safety interests.
- 7.21** Roadsafe has worked closely with the Department and its driving-for-work campaigns and has developed links with the National Business Travel Network (also DfT sponsored).
- 7.22** We are also conducting research into drivers' hours and exploring options around lorry parking policy to help avoid excessive hours of driving.

## Cracking down on irresponsible road use

**7.23** We have just completed a consultation on a package of measures to improve road traffic law and its enforcement in five areas of dangerous behaviour:

- drink-driving;
- drug driving;
- speed;
- failure to wear a seatbelt;
- careless driving.

**7.24** The consultation also asked for views on a revised approach to remedial training and testing of drivers.

**7.25** The proposals on which we sought views in the consultation paper are intended to support the police in enforcing against these dangerous behaviours.

**7.26** On **drink-drive**, we proposed:

- to remove an outdated loophole around breath-testing;
- ways to improve the High Risk Offenders scheme;
- to improve our evidence on drink drivers, including through a new roadside survey of drinking and driving.

**7.27** On **speeding**, we proposed to:

- introduce a system of graduated penalty points for speeding, so that extreme speeders receive more points;
- refresh our speeding publicity;
- promote the evaluation of average speed cameras and disseminate the results.

**7.28** On **drug-driving** we proposed:

- to streamline the processes for the offence of driving while impaired by drink or drugs by amending the role of Forensic Medical Examiner;
- to ensure that a comprehensive investigation of drugs (and alcohol) involvement in fatal collisions is undertaken routinely;
- a substantial publicity and education campaign in 2009/10 to raise awareness of the offences, the penalties and drivers' obligations;
- to explore the creation of a new offence of driving with an illegal drug present in the body.

- 7.29** On **seatbelt-wearing** we:
- have commenced a major publicity campaign on the impact of collisions, even at low speeds, on unbelted car occupants;
  - propose improvements in the requirements for child seatbelts.
- 7.30** The paper also proposed that careless driving be made a fixed penalty offence to reduce pressures on the police and to increase the level of enforcement action against demonstrably bad driving.
- 7.31** We are considering the responses received to this consultation and will include consequent action in our final road safety strategy, to be published later this year.

### Logistics sector

- 7.32** Within the freight sector, HGV operators are licensed and their compliance with licensing is monitored and enforced. VOSA compliance checks are also key to keeping unsafe HGVs and their drivers off the road. An HGV compliance strategy is currently under development to determine where best to focus effort and resources to secure the optimal improvement in compliance levels. The overarching aim of this strategy is to help and encourage HGV operators and their drivers to comply with their legal requirements, whilst at the same time having an effective and co-ordinated enforcement regime which tackles those who evade their responsibilities.
- 7.33** Sufficient rest and the use of comfort facilities (washrooms, relaxation areas and cafes) are important in ensuring safe freight transport operations. The Department is undertaking a research project on the provision of lorry parking in England and will also clarify roles and responsibilities across the public and private sectors. It is anticipated the outcomes will feed into an action plan on lorry parking for implementation from 2009/10.

### Uninsured and unlicensed drivers

- 7.34** We will also continue to tackle the problem of unlicensed and uninsured drivers. People who drive with no licence or insurance or who fail to register and tax their vehicles are more likely to be involved in other types of criminal activity and collisions. We estimate that uninsured and untraced drivers kill 160 people and injure 23,000 every year.
- 7.35** Uninsured drivers add £30 a year to every motorist's insurance premium. The Road Safety Act 2006 made it an offence to *keep a vehicle that does not meet insurance requirements*. We have just completed a consultation on implementation of this offence. Frequent checks will be made between the DVLA's vehicle register and the Motor Insurers' Bureau database to identify potentially uninsured vehicles. The registered keeper will receive a

warning that they appear to be uninsured. If no appropriate action is taken, vehicle clamping or removal, and/or a fixed penalty notice or prosecution could follow.

**7.36** Under powers to detect, seize and destroy vehicles being driven without insurance, tax or a valid driver's licence, the police removed around 180,000 vehicles in 2008 and 150,000 in 2007. The seizure programme has contributed to improved compliance. In 2006 and 2008, a survey by police forces through spot checks on around 6,000 vehicles found:

- the level of unlicensed drivers stopped fell by half over two years;
- the proportion of uninsured drivers stopped fell to 1.2 per cent from 1.9 per cent;
- the level of vehicles stopped without a necessary MOT fell to 1.5 per cent from 4.2 per cent;
- the proportion of drivers stopped without valid vehicle tax fell to 1 per cent from 2 per cent;
- the level of drivers committing a serious offence, such as no insurance, or driving whilst disqualified, fell to 3.4 per cent from 7.5 per cent.

**7.37** Working with the police, we will therefore continue to vigorously pursue our programme of seizure of untaxed and uninsured vehicles and of the vehicles of unlicensed drivers.

### **Single Double Summer Time**

**7.38** The evidence suggests that there would also be reduced road casualties if we adjusted British clocks to Single Double Summer Time. This would put clocks one hour ahead of GMT in winter and two in summer. Based on the experience of 1968–71, the estimated effect of having lighter evenings would be to reduce road deaths by around 80 per year and serious injuries by around 212 per year.<sup>21</sup>

**7.39** However, a move to Single Double Summer Time would have wide-ranging implications. Apart from the impact on road casualties, there are other aspects which would have to be considered, because different people, industrial sectors and regions would be affected in different ways. For example, we would have to consider the impact of darker mornings, particularly on people living in the far northern and western parts of the country. As this issue goes far beyond the scope of this strategy, we do not propose to pursue it further here.

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<sup>21</sup> TRL Report 368.

### **Questions**

We have highlighted what we believe to be the most dangerous driving behaviours. Do you agree with our assessment?

What more can be done to persuade the motoring public that illegal and inappropriate speeds are not acceptable behaviours?

What more can be done to encourage safe and responsible driving?

Should more be done to reward good driving? If so, what?

# 8. Measuring and ensuring success

This chapter:

- sets out our casualty reduction targets and the reasoning for them;
- explains how we are going to ensure progress with the strategy;
- explains how we are going to monitor progress on road safety.

## Targets

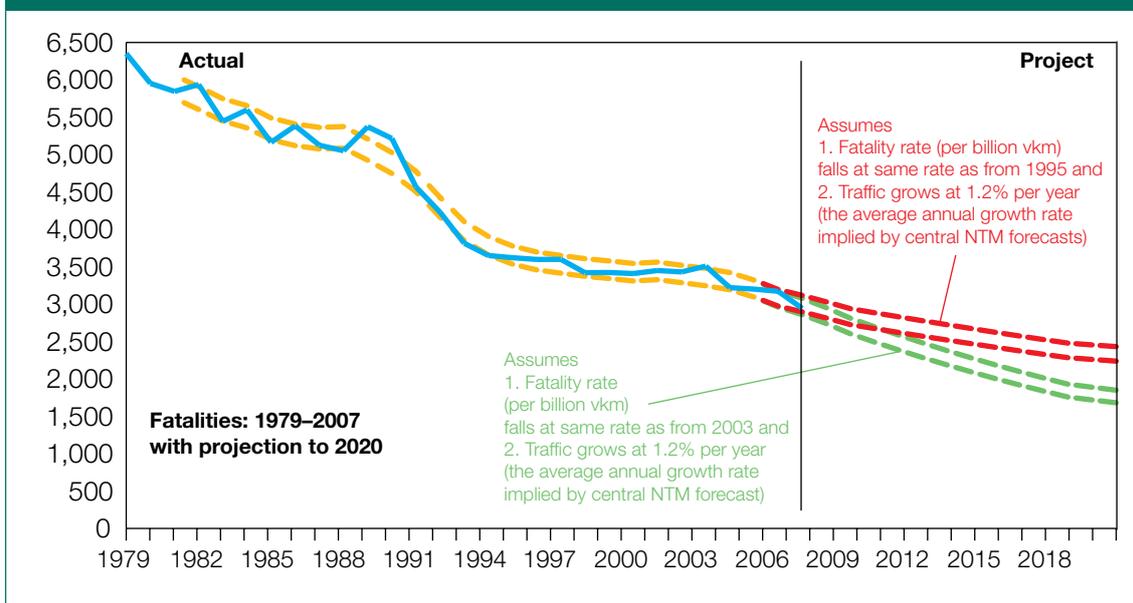
- 8.1** In setting effective and meaningful targets, we must ensure that they are realistic yet ambitious, not demoralising to those delivering them, but equally giving the right priority to addressing a pressing moral and economic problem.
- 8.2** In our discussions with stakeholders, many have made a compelling case that we should focus on reducing road deaths. We agree, because a target couched in terms of deaths is;
- focused on reducing the most serious collisions;
  - readily intelligible by the public.
- 8.3** And we recognise that there has been less good progress in reducing road deaths since 2000 than for serious injuries since the mid-1990s.
- 8.4** Such a target is not readily replicable below the national level. This is because road deaths are much rarer occurrences at regional or local than at national level, so that the data would be too irregular to be sure of the pattern. At local level, it is more reliable to address the combined number of deaths and serious injuries. We will monitor local progress against this benchmark.
- 8.5** And serious injuries are an important national issue in their own right, especially the most serious injuries that give rise to long-term, perhaps life-long, disabilities.

- 8.6** We also consider it important to maintain our progress on child road safety, given our relatively modest record by international standards. We will therefore set ourselves a further target to reduce the combined number of deaths and serious injuries among children on British roads.
- 8.7** And, finally, we propose a new target in respect of the rate of KSI per distance travelled by pedestrians and cyclists. This reflects two things: our concern that there is no perverse incentive to improve our casualty record by limiting walking and cycling; and our interest in assessing the *risk* of travel rather than just the absolute number of casualties.

### Casualty forecasts

- 8.8** To provide a context for our target-setting, we analysed the trend in the reduction of road fatalities. Figure 8.1 shows two alternative projections:
- assuming rates follow the overall trend since 1995 and that traffic grows in line with the central National Transport Model (NTM) forecast, this would lead to a fall of between **17 and 24 per cent**;
  - if the steeper trend that we have seen (on average) since 2003 persists, again with growth in traffic following the NTM central forecast, then a fall in the region of **37 to 43 per cent** may be possible.

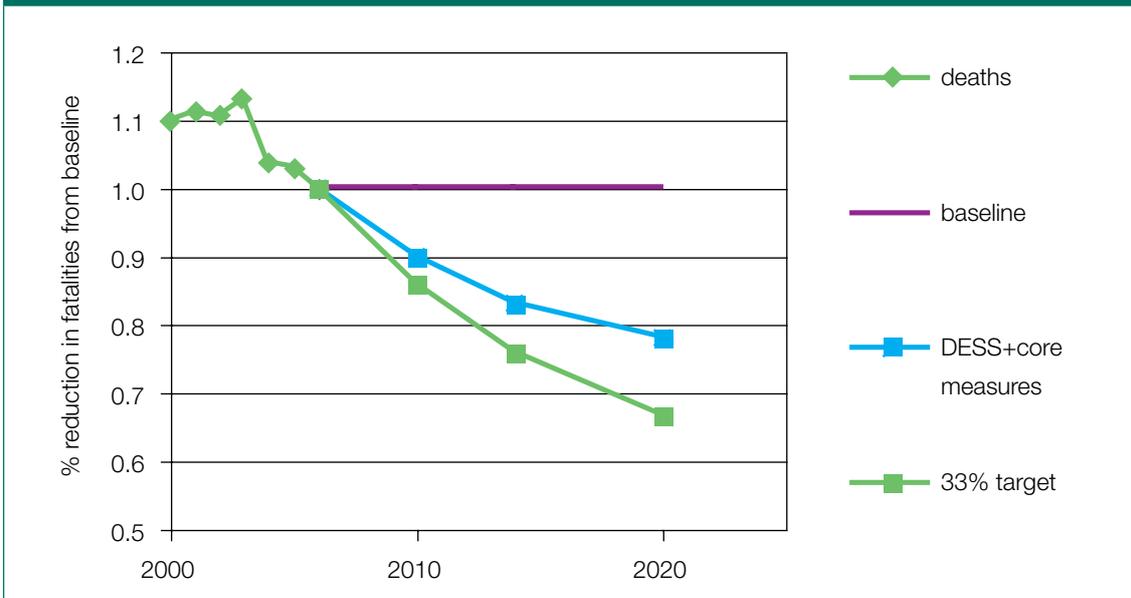
**Figure 8.1 Road fatalities in GB: 1979–2007 with projection to 2020**



- 8.9** To further inform the target-setting process, we also commissioned research to consider the likely casualty reductions to 2020 without new measures. Through looking at the expected effect of current 'DESS' measures (drink-drive, engineering and secondary safety), and the 'core programme' (others, e.g. THINK! campaign and working with local authorities), TRL advises that we could expect a 22 per cent reduction in

road deaths and a 40 per cent reduction in serious injuries over this period. Figure 8.2 represents TRL's analysis of the forecast reduction in fatalities to 2020 and a possible target that may be achieved by taking additional measures.

**Figure 8.2 Forecast percentage reduction in road fatalities in GB: with projection to 2020**



Source: TRL

**8.10** Key to this assessment is vehicle crash protection (secondary safety), which would provide a substantial proportion of the reduction. We have assumed that the level of crash protection provided by a new car in 2020 is the same as that provided by a new car in 2006/07. This is a cautious assumption to allow for uncertainty in the period to 2020 over:

- the effect of the drive to reduce vehicle emissions;
- the development of crash protection technologies as compared to the last decade.

**8.11** As reducing deaths is a priority, we are proposing a target for deaths separate from that for serious injuries. Considering independent analysis of what is possible in the light of measures in train and those set out in this paper, we believe that the most appropriate targets would be:

- to reduce road deaths by at least 33 per cent by 2020 compared to the baseline of the 2004–08 average number of road deaths; and
- to reduce the annual total of serious injuries on our roads by 2020 by at least 33 per cent.

**8.12** Children and young people are a particular priority, and we compare less favourably internationally when child road deaths are considered. We have

made good progress on 0–15 year olds, but have done less well for 16 and 17 year olds. As highlighted in Chapter 2, young drivers are greatly over-represented in fatality statistics. We therefore propose a more challenging target for children and young people:

- to reduce the annual total of road deaths and serious injuries to children and young people (aged 0–17) by at least 50 per cent against a baseline of the 2004–08 average by 2020.

**8.13** For health, environmental and other reasons, we are keen to encourage more walking and cycling. We wish to reduce the risk to the individual walker or cyclist and take into account expected growth in activity; we are therefore proposing a target based on the rate of casualties:

- to reduce by at least 50 per cent by 2020 the rate<sup>22</sup> of KSI per kilometre travelled by pedestrians and cyclists, compared with the 2004–08 average. This takes into account performance over the last decade.

**8.14** The analysis reveals a gap between the forecast and our proposed target, and in setting it we have taken account of the potential casualty reduction associated with some of the new measures which we have proposed in the previous chapters. Many of our measures, such as the THINK! campaign, road user education and the work to improve delivery will yield benefits but we cannot accurately estimate the casualty impacts of these. We also expect advanced primary safety systems on vehicles to have an impact, but this is more likely to occur towards the end of the strategy period and the potential magnitude of this effect is not yet clear. It is estimated that the potential increase over the next decade in the number of 20 mph zones and limits for primarily residential streets (see Chapter 5) could save around 60 lives and around 1,000 serious injuries per year (see Appendix E, Impact Assessment).

### Better information

**8.15** We intend to maintain two further tiers of performance information. We will publish annually a set of key indicators of progress on road safety, combining:

- measures of casualties by road-user type, demographics and geography, including absolute numbers and rate-based indicators, to allow for modes where traffic volumes may fluctuate to a greater extent;
- measures of key risky behaviours and compliance with the law;
- details of the trends in the risk of travelling by individual modes.

**8.16** A full list of these indicators is attached at Appendix A. These will be reviewed regularly. We also propose to collect more detailed management information on road safety to assist in analysis of our casualty problems.

<sup>22</sup> Expressed as a 3-year rolling average

### **The right structures – ensuring delivery**

- 8.17** Our strategy has placed great emphasis on consideration of the road safety system. An important part of that system is that we have in place the right structures and accountability to ensure delivery.
- 8.18** As we said in Chapter 4, we will appoint an independent expert panel to advise us on road safety trends and policy. We will also draw up a new integrated national road safety delivery plan, and ask the Road Safety Delivery Board to manage its delivery and provide an annual assessment of progress.
- 8.19** The delivery Board will comprise representatives of the highway authorities, the police, the fire service, and interested Departments of national Government. The Board will oversee delivery of the target and challenging Ministers in Westminster, Scotland and Wales to provide the leadership and resources to ensure that the targets are met.
- 8.20** The Westminster, Scottish and Welsh administrations will jointly publish the delivery plan, setting out how we intend to meet the targets, how we intend to deliver on the measures in this strategy and how we will make British roads the safest in the world.
- 8.21** In order to ensure progress on this strategy and proper public scrutiny, we will also submit to Parliament an annual report for road safety in Great Britain. This will assess progress against our targets and the national indicator set, providing analysis of accident trends at national, regional and local level.

## Questions

Do you agree that our targets should be:

- to reduce road deaths by at least 33 per cent by 2020 compared to the baseline of the 2004–08 average number of road deaths;
- to reduce the annual total of serious injuries on our roads by 2020 by at least 33 per cent;
- to reduce the annual total of road deaths and serious injuries to children and young people (aged 0–17) by at least 50 per cent against a baseline of the 2004–08 average by 2020
- to reduce by at least 50 per cent by 2020 the rate<sup>23</sup> of KSI per km travelled by pedestrians and cyclists, compared with the 2004–08 average?

We are proposing a set of indicators in order to help us to monitor performance (Appendix A). Do you believe these cover the right areas?

Do you agree that the Road Safety Delivery Board should be tasked with holding Government and other stakeholders to account on the implementation of a new national road safety plan?

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<sup>23</sup> Expressed as a three-year rolling average.

# Appendix A: Targets and indicators for a post 2010 strategy

## Proposed targets for achievement by 2020, compared to a baseline of the 2004–08 average

- To reduce the number of people killed in road collisions by at least 33 per cent.
- To reduce the number of people seriously injured in road collisions by at least 33 per cent.
- To reduce the number of children and young people (<18) killed or seriously injured in road collisions by 50 per cent.
- To reduce the combined rate of death or serious injury for pedestrians and cyclists, per 100 million km walked or cycled by 50 per cent.

## Proposed key performance indicators (KPIs)

1. Rate of road deaths per 100 million vehicle kilometre.
2. Rate of killed or seriously injured pedestrians per 100 million kilometres walked.
3. Rate of killed or seriously injured pedal cyclists per 100 million kilometres cycled.
4. Rate of killed or seriously injured motorcyclists per 100 million vehicle kilometres.
5. Rate of killed or seriously injured car users per 100 million vehicle kilometres.
6. Number of killed or seriously injured casualties resulting from collisions involving drivers under the age of 25.
7. Number of people aged over 70 killed or seriously injured in road collisions per 100, 000 population aged over 70.
8. Number of people killed in road collisions on rural roads.

9. Number of pedestrians killed or seriously injured per capita in 10 per cent most deprived Super Output Areas compared with 10 per cent least deprived.
10. Number of people killed where at least one of the drivers or riders involved was over the legal blood alcohol limit.
11. Number of car occupants killed who were not wearing a seatbelt.
12. Proportion of vehicles exceeding speed limits.
13. Cost of road traffic casualties.

## Measuring progress on our vision

We will compare our safety to that of other leading nations by reference to the number of deaths per 100,000 population.

# Appendix B: Summary of actions

## Key actions

### Chapter 4: Delivering our goal: the overall approach

- To support truly effective delivery, we need to ensure that all those who need access to research, good practice and evaluation information can find it. We therefore propose to initiate work on a road safety information management strategy, which will start by mapping out stakeholder needs for road safety information, the different sources of information available, and what new structure and communication activities might be put into place in order to meet these needs.
- We will appoint a new independent expert panel tasked with providing an annual report on road safety to Ministers and Parliament. This annual report will seek to both take an overview on road safety performance and draw out potential recommendations to delivery agents in the light of real world experience.
- Given our particular interest in road deaths, the panel will have particular responsibility for advising Ministers on the trends and new issues relating to fatal incidents.
- We will take steps to hasten the dispatch of fatal accident files from the police to our researchers.
- We will also explore the feasibility of creating an anonymised database of selected information from the police investigation that is not available from the police's accident return (STATS19).
- We will pilot this with a few police forces, analysing the data received and seeking additional information to inform specific issues or to supplement specific cases. If the project is deemed successful we will explore with police a national system.
- We will support the road safety profession through:
  - improvements in the way we manage road safety information. We will shift our focus from creating knowledge, through research and data gathering, to sharing it with those who need to know. We will aim to provide clear, digestible advice to those professionals who need it;

- providing annual data on local road safety performance, at the level both of local authority areas and key routes, to underpin a geographically intelligent approach to road safety;
- working with local agencies to build capacity to reduce casualties;
- encouraging self help among local authorities, building on the Road Safety Time Bank concept;
- partnership with professional bodies to champion skills initiatives and continuing professional development among safety engineers, road safety officers, transport planners and emergency services personnel.
- We will also provide political advocacy and leadership – championing the road safety profession and the great work it does.
- We will work to provide an online database combining accident and socio-demographic data for access by local authorities. This will allow ready local analysis of collision statistics by social and geographical groupings.

### **Chapter 5: Strengthening the weak links in our road network**

- We will amend our guidance on speed limits recommending that highway authorities, over time, introduce 20 mph zones or limits into streets that are primarily residential in nature, and which are not part of any major through route. Similarly, we will encourage local authorities to consider introducing 20 mph or zones in town or city streets, such as around schools, shops, markets, playgrounds and other areas where pedestrian and cyclist movements are high.
- We will support a programme of improved information on the relative risks of British roads.
- We will revise our existing guidance to highway authorities to assist the ongoing review of speed limits. We will recommend that they prioritise the review of 'A' and 'B' class national speed limit single carriageways, given the high proportion of traffic and casualties on these roads, and encourage the adoption of lower limits wherever the risks are relatively high and there is evidence that a lower limit would reduce casualties.
- We will ensure that the compelling economic case for investment in local road safety schemes is understood by highway authorities. We will support better local decision making on local road safety engineering schemes by:
  - sharing evidence on the potential for these schemes to offer high economic benefits to local areas;
  - improving the quality of scheme evaluation and ensuring that all local authorities have opportunities to learn lessons from the experience of others;

- supporting the development and promulgation of guidance on the development of schemes aimed at treating stretches of route rather than individual black spots;
  - reviewing the operation of the road safety partnership grant scheme, in order to improve the support we offer to those delivering demonstration projects and increase the lead times between confirmation of funding and scheme initiation;
  - encouraging local highway authorities to consider road safety schemes against other potential transport schemes on their economic merits, including on principal roads in rural areas, to make key junctions safer and on major urban arteries (such as mixed priority routes);
  - ensuring that in developing regional strategies and Local Transport Plans, regions and local authorities treat the improvement of road safety as a key goal, and consider, with advice from the responsible local highway authorities and the police, the most cost-effective means of improving safety on medium and high risk roads.
- We will publish an annual account of progress on road safety by local authority area and will challenge and support those that are not reducing casualties fast enough to do better.

## **Chapter 6: Supporting the choice of the safer vehicle**

- We will ensure the delivery of safer vehicles through a combination of consumer information, raising awareness and regulation.
- We will play a full part in European and international discussions and will continue to promote regulatory solutions where this brings the greatest benefit in a timely manner.
- We will put renewed emphasis on the development of advanced primary safety systems and take a leadership role to ensure they deliver the necessary results.
- We will increasingly target our efforts in improving vehicles' crash protection on specific issues for particular groups, for example through side impact protection and adaptive restraints.
- We will look to extend and improve our evidence base, both to analyse the effectiveness of existing measures and to target areas where technology can deliver improvements.
- In order to get the best evidence, we will need to be innovative in our approach to research. We aim to:
  - explore ways of trialling new systems and of monitoring the performance of in-vehicle technology, even when no accident occurs;
  - work in international circles to obtain the best available data;

- pilot new safety systems in car fleets and analyse the data. This will help us both to improve our evidence base and to drive technology uptake in the vehicle parc.
- EuroNCAP car safety ratings: we will continue to work with our international partners in this initiative to set challenging objectives for safety, whilst encouraging vehicle manufacturers to achieve high star ratings.
- We will also be supporting EuroNCAP initiatives to include accident avoidance technologies (e.g. ESC) in the overall rating scheme.
- We will encourage uptake of ESC through raising awareness of the benefits among consumers and working with fleet operators to encourage the choice of vehicles fitted with ESC.
- We will support the development of the key building blocks needed for Intelligent Speed Adaptation (ISA). We expect that industry will take forward the technology in response to consumer demand and we will look to support this process in the following ways:
  - a) availability of accurate speed limit data is crucial for ISA. We will develop, consult on and publish a voluntary framework for local authorities to use for collecting electronic speed limit information;
  - b) pilot ISA schemes. We have already agreed with one local authority that they will take forward a pilot on voluntary ISA and we will monitor the project with interest as it develops.
- We will continue to monitor the development and effectiveness of autonomous vehicle safety systems and to encourage the adoption of the most beneficial.
- We will continue to work with our partners to take forward research to improve motorcycle safety, including conspicuity and the European PISA programme (Powered Two Wheeler Integrated Safety), where possible finding synergies with environmental performance.
- HGV vision: We have explored with our European partners possible solutions and expect to raise a proposal in the technical forum through the UN-ECE in Geneva to amend the mirror standards, extending the required field of view for HGVs.

## **Chapter 7: Responsible and irresponsible road use**

- We will take forward proposals to improve the driver education system set out in our report on the *Learning to Drive* consultation paper.
- We will continue to improve road user behaviour through the THINK! campaign. We will focus this campaign on behaviours that have a clear link to our most serious casualties.

- In addition, we will also consider a campaign for 2010/11 based on a wider theme of road user responsibility. The idea of such a campaign would be to challenge complacency about road safety and encourage the public to make positive safety choices.
- Road safety education: we will develop a suite of educational materials which flow through from toddlers to young adults. This will be a comprehensive and coherent set of materials, tailored to be suitable for each age group while maintaining continuity from primary to secondary school and will be designed to be attractive to schools, teachers, parents as well as children.
- It is important that this kind of education is carefully co-ordinated, targeted and of high quality. We will therefore be challenging local authorities to ensure that there is a clear understanding of which agencies are delivering which courses to which road user groups, to ensure that there is no confusion caused by overlap, and looking to them to create a co-ordinated, high quality whole.
- Cyclist training: we are making funding available to give an extra 500,000 children the opportunity to undertake national standard training by 2012, over and above the training already provided by local authorities.
- We will continue to vigorously pursue our programme of seizure of untaxed and uninsured vehicles and of the vehicles of unlicensed drivers.

# Appendix C: List of questions

## Vision and targets (Chapters 3 and 8)

1. Do you agree that our vision for road safety should be to have the safest roads in the world? (Chapter 3)
2. Do you agree that we should define a strategy running over twenty years to 2030, but with review points after five and ten years? (Chapter 3)
3. Do you agree that our targets should be to reduce:
  - road deaths by at least 33 per cent by 2020 compared to the baseline of the 2004–08 average number of road deaths;
  - the annual total of serious injuries on our roads by 2020 by at least 33 per cent;
  - the annual total of road deaths and serious injuries to children and young people (aged 0–17) by at least 50 per cent against a baseline of the 2004–08 average by 2020;
  - by at least 50 per cent by 2020 the rate<sup>24</sup> of KSI per km travelled by pedestrians and cyclists, compared with the 2004–08 average? (Chapter 8)
4. We are proposing a set of indicators in order to help us to monitor performance (Appendix A). Do you believe these cover the right areas? (Chapter 8)

## Context (Chapters 2, 3 and 4)

5. We have identified a number of factors that may affect our ability to deliver road safety improvements in the future world we are planning for. Do you think we have taken account of the key risks and opportunities? Are there others you would add? (Chapter 3)

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<sup>24</sup> Expressed as a three-year rolling average

6. We think that the key challenge for road safety from 2010 is better and more systematic delivery, rather than major policy changes. Do you agree? (Chapter 4)
7. This consultation document sets out the current evidence on the key road safety challenges. Do you agree with our analysis? Would you highlight any others? (Chapter 2)

## New performance framework (Chapters 4 and 8)

8. We are proposing a number of measures to support the effectiveness of the road safety profession. Do you think they will be effective? What else might need to be done? (Chapter 4)
9. Do you agree that an independent annual report on road safety performance, created on an annual basis, would be a worthwhile innovation? (Chapter 4)
10. Do you agree that the Road Safety Delivery Board should be tasked with holding Government and other stakeholders to account on the implementation of a new national road safety plan? (Chapter 8)

## Roads and local authorities (Chapter 5)

11. Do you agree that highway authorities reviewing and, where appropriate, reducing speed limits on single carriageway roads will be an effective way of addressing the casualty problem on rural roads? Are there other ways in which the safety of rural roads can be improved? (Chapter 5)
12. How can we most effectively promote the implementation of 20 mph zone schemes in residential areas? What other measures should we be encouraging to reduce pedestrian and cyclist casualties in towns? (Chapter 5)
13. How can we provide better support to highway authorities in progressing economically worthwhile road safety engineering schemes? (Chapter 5)

## Vehicles (Chapter 6)

14. What should Government do to secure greater road safety benefits from vehicles?
15. Do you agree that, in future, crash avoidance systems will grow in importance and will have the potential to greatly reduce casualties?

16. How can we best encourage consumers to include safety performance in their purchasing decisions?

## Behaviours (Chapter 7)

17. We have highlighted what we believe to be the most dangerous driving behaviours. Do you agree with our assessment?
18. What more can be done to persuade the motoring public that illegal and inappropriate speeds are not acceptable behaviours?
19. What more can be done to encourage safe and responsible driving?
20. Should more be done to reward good driving? If so, what?

# Appendix D: List of those consulted

Age Concern  
Ambulance Service Association  
Ambulance Service Network  
Association of British Insurers  
Association of British Drivers  
Association of Car Fleet Operators  
Association of Chief Police Officers  
Association of Chief Police Officers (Scotland)  
Association of Industrial Road Safety Officers  
Association of International Courier and Express Services  
Association of London Government  
Association of Metropolitan Authorities  
Association of National Driver Improvement Scheme Providers  
Association of Road Traffic Safety and Management  
Association of Vehicle Recovery Operators Automobile  
Automobile Association  
Auto Cycle Union

Brake  
British Association of Removers  
British Chambers of Commerce  
British Chauffeurs Guild  
British Horse Society  
British Hospitality Association  
British Medical Association  
British Motorcyclists Federation  
British Retail Consortium  
British Standards Institution  
British Transport Police  
British Vehicle Rental and Leasing Association

Campaign for Better Transport  
Campaign to Protect Rural England  
Centre for Transport Studies  
Chartered Institute of Logistics and Transport  
Child Accident Prevention Trust  
Chief Fire Officers Association

Civil Aviation Authority  
Commission for Integrated Transport  
Confederation of British Industry  
Confederation of Passenger Transport (England)  
Construction Confederation  
Convention of Scottish Local Authorities  
County Councils Network  
County Surveyors Society  
Crown Prosecution Service  
Cyclists' Touring Club  
Cycling England

Despatch Association  
Disabled Drivers Association  
Disabled Motorists Federation  
Disabled Persons Transport Advisory Committee  
Disability Rights Commission  
Driving Instructors Association  
Driving Standards Agency  
Driver and Vehicle Licensing Agency

Environmental Protection UK  
Environmental Transport Association  
EuroNCAP

Federation of Small Businesses  
FIA Foundation  
Fleet Safety Association  
Freight Transport Association  
Friends of the Earth

Government Car and Despatch Agency  
Government Departments  
Government Offices  
Green Alliance  
Greenpeace  
Guild of British Coach Operators

Health and Safety Executive  
Heavy Transport Association  
Help the Aged  
Highways Agency

IAM Motoring Trust  
Independent Transport Commission  
Institute of Automotive Engineer Assessors  
Institute of Highway Incorporated Engineers  
Institute of Highways and Transportation

Institute of Logistics and Transport  
Institute of the Motor Industry  
Institute of Occupational Safety and Health Institute of Risk Management  
Institute of Road Safety Officers  
Institute of Road Transport Engineers  
Institute of Transport Administration  
Institute of Vehicle Recovery  
Institution of Civil Engineers

Joseph Rowntree Foundation  
Justices Clerks Society

Living Streets  
Local authorities  
Local Authority Road Safety Officers Association  
Local Government Association

Magistrates Association

Maritime Coastguard Agency  
Motor Car Crash Repair Research Centre (Thatcham)  
Motor Caravanners' Club  
Motorcycle Action Group  
Motorcycle Industry Association  
Motorcycle Retailers Association  
Motorcycle Rider Trainers Association  
Motorists Forum  
Motor Industry Research Association  
Motor Insurers Bureau  
Motor Schools Association  
Motor Sports Association  
MVA Consultancy

National Association of Local Councils  
National Children's Bureau  
National Council on Inland Transport  
National Courier Association  
National Farmers' Union  
National Federation of the Blind of the UK  
National Institute for Health and Clinical Excellence  
National Union of Rail, Maritime and Transport Workers Union

Parliamentary Advisory Committee on Transport Safety  
Passengers Forum  
Play England  
Police Federation of England and Wales  
Police Service of Northern Ireland

RAC Foundation  
Rail Safety and Standards Board  
Retail Motor Industry Federation  
Road Haulage Association  
Road User's Alliance  
Roadpeace  
Road Rescue Recovery Association  
Roadsafe  
Royal Society for the Prevention of Accidents  
Road Transport Industry Training Board

Sense With Roads  
Slower Speed Initiative  
Society of Motor Manufacturers & Traders  
Society of Operations Engineers  
Sustrans

Trades Union Congress  
Traffic Commissioners  
Transport & General Workers Union  
Transport and Health Study Group  
Transport Research Laboratory  
Transport Select Committee

United Road Transport Union  
UNISON

Vehicle Certification Agency  
Vehicle and Operator Services Agency

# Appendix E: Impact Assessment

## Summary: Intervention and options

<b>Department /Agency:</b> <b>Department for Transport</b>	<b>Title:</b> <b>Impact Assessment of measures for road safety strategy consultation</b>	
<b>Stage :</b> Consultation	<b>Version:</b>	<b>Date:</b> April 2009
<b>Related Publications:</b> Consultation on compliance with road traffic law		

### Available to view or download at:

<http://www.dft.gov.uk/roadsafetyconsultation>

**Contact for enquiries:** [roadsafetyconsultation@dft.gsi.gov.uk](mailto:roadsafetyconsultation@dft.gsi.gov.uk)

**Telephone:**

### What is the problem under consideration? Why is government intervention necessary?

The Government's current road safety strategy runs until 2010. We will require a new strategy to be in place in order to set the priorities for further casualty reductions beyond 2010.

The existing strategy has been successful, but there are still approximately 3000 deaths each year on our roads. The new strategy will set out the way in which the Government intends to tackle this problem. Part of this strategy will continue to build on existing work but new measures are also required to address particular issues. They are outlined in this impact assessment.

### What are the policy objectives and the intended effects?

The measures are aimed at reducing the number of road casualties in Great Britain. They are designed to move our road safety record beyond what has been achieved during the lifetime of the current strategy and towards our vision of having the safest roads in the world. Potential measures have been assessed for their benefits in reducing road casualties, together with other impacts such as their economic cost and contribution to reducing greenhouse gas emissions. A combination of measures is likely to prove most effective in achieving the maximum reduction in casualties.

### What policy options have been considered? Please justify any preferred option.

**1:** Reduce speed limits on single carriageway roads; **2:** Increase numbers of 20 mph zones in residential streets; **3:** Upgrade right angle junctions with motorcycle-friendly high-grip surfaces; **4:** Treat roads with CEN standard barriers where appropriate; **5:** Change to 'Single Double Summer Time' and **6:** No action. Option 2 and a variant on option 1 are raised further in the consultation.

**When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?** We will report annually from 2010 on road casualty statistics and on our progress. We also propose that an independent panel will produce an annual report to parliament, analysing trends in road fatalities.

### **Ministerial Sign-off** For Impact Assessments:

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

.....Date:

## Summary: Analysis and evidence

**Policy Option:** 1 Description: Reduce the national speed limit on single carriageway roads from 60 mph to 50 mph.

COSTS	ANNUAL COSTS		Description and scale of key monetised costs by 'main affected groups'	
	One-off (Transition)	Yrs		Increase in journey time (business and private use): £4639.2m
	£ 5.1m			
	Average Annual Cost (excluding one-off)			Implementation costs (media campaign): £5.1m
£ 463.9m	10			
			<b>Total Cost (PV) £ 4644.3m</b>	
Other <b>key non-monetised costs</b> by 'main affected groups'				

BENEFITS	ANNUAL BENEFITS		Description and scale of <b>key monetised benefits</b> by 'main affected groups'	
	One-off	Yrs		Casualty savings from reduced speeds: £4458m
	£			
	Average Annual Benefit (excluding one-off)			Decrease in greenhouse gas emissions and fuel consumption: <b>£144.9m</b>
£ 449.5m	10			
			<b>Total Benefit (PV) £ 4602.9m</b>	
Other <b>key non-monetised benefits</b> by 'main affected groups'				
Improved journey time reliability due to reduction in accidents and less congestion				
Reduced burden on local authorities wishing to change speed limits to 50 mph				

### Key Assumptions/Sensitivities/Risks

Benefits depend on reduced average speeds as drivers change behaviour to comply with speed limit, and how that speed reduction affects the number / severity of collisions.

Price Base Year 2002	Time Period Years 10	<b>Net Benefit Range (NPV)</b> £	<b>NET BENEFIT (NPV Best estimate)</b> £ -41.4m
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What is the geographic coverage of the policy/option?	GB			
On what date will the policy be implemented?				
Which organisation(s) will enforce the policy?	Police			
What is the total annual cost of enforcement for these organisations?	£ 0 (additional)			
Does enforcement comply with Hampton principles?	Yes			
Will implementation go beyond minimum EU requirements?	No			
What is the value of the proposed offsetting measure per year?	£ 0			
What is the value of changes in greenhouse gas emissions?	£ 23.3m (decrease)			
Will the proposal have a significant impact on competition?				
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	Yes/No	Yes/No	N/A	N/A

<b>Impact on Admin Burdens Baseline</b> (2005 Prices)			(Increase - Decrease)	
Increase of £	Decrease of £	<b>Net Impact</b>	£	0

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

## Summary: Analysis and evidence

Policy Option: 2

Description: Increased self-enforcing 20 mph zones in residential streets

COSTS	ANNUAL COSTS		Description and scale of <b>key monetised costs</b> by 'main affected groups'. This is assessed over 10 years from 2010.  Costs to local authorities of signs, road marking, engineering and media campaign: <b>£867m</b>  Increased fuel consumption and emissions: <b>£113.5m</b>
	One-off (Transition)	Yrs	
	£ 867m		
	Average Annual Cost (excluding one-off)		
£ 11.35m	10	<b>Total Cost (PV)</b>	£ 980.5m
Other <b>key non-monetised costs</b> by 'main affected groups' Increase in journey time			

BENEFITS	ANNUAL BENEFITS		Description and scale of <b>key monetised benefits</b> by 'main affected groups'  Casualty savings from lower speeds
	One-off	Yrs	
	£		
	Average Annual Benefit (excluding one-off)		
£ 153.8m	10	<b>Total Benefit (PV)</b>	£ 1538m
Other <b>key non-monetised benefits</b> by 'main affected groups' Health benefits from expected increase in walking and cycling			

### Key Assumptions/Sensitivities/Risks

Benefits depend on reduced speeds as drivers change behaviour to comply with speed limit.

Price Base Year 2002	Time Period Years 10	<b>Net Benefit Range (NPV)</b> £	<b>NET BENEFIT (NPV Best estimate)</b> £ 557.5m
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What is the geographic coverage of the policy/option?	GB			
On what date will the policy be implemented?				
Which organisation(s) will enforce the policy?	Police			
What is the total annual cost of enforcement for these organisations?	£ 0			
Does enforcement comply with Hampton principles?	Yes			
Will implementation go beyond minimum EU requirements?	No			
What is the value of the proposed offsetting measure per year?	£ 0			
What is the value of changes in greenhouse gas emissions?	£ 18.8m (increase)			
Will the proposal have a significant impact on competition?	No			
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	Yes/No	Yes/No	N/A	N/A

<b>Impact on Admin Burdens Baseline</b> (2005 Prices)		(Increase - Decrease)	
Increase of £	Decrease of £	<b>Net Impact</b>	£ 0

Key: Annual costs and benefits: Constant Prices (Net) Present Value

## Summary: Analysis and evidence

Policy Option: 3

Description: Mass action programme to reduce motorcycle accidents through introduction of high-friction surfaces at junctions on the 'main arm' of urban roads

COSTS	ANNUAL COSTS		Description and scale of <b>key monetised costs</b> by 'main affected groups'  Costs to local authorities of resurfacing work
	<b>One-off</b> (Transition)	<b>Yrs</b>	
	£ 651.8m	1	
	<b>Average Annual Cost</b> (excluding one-off)		
£	10	<b>Total Cost (PV)</b>	£ 651.8m
Other <b>key non-monetised costs</b> by 'main affected groups'			

BENEFITS	ANNUAL BENEFITS		Description and scale of <b>key monetised benefits</b> by 'main affected groups'  Casualty benefits from fewer collisions involving motorcycles
	<b>One-off</b>	<b>Yrs</b>	
	£		
	<b>Average Annual Benefit</b> (excluding one-off)		
£	10	<b>Total Benefit (PV)</b>	£ 1846.2m
Other <b>key non-monetised benefits</b> by 'main affected groups'			
Reduction in delay and improved journey time reliability due to fewer accidents			

**Key Assumptions/Sensitivities/Risks** The number of urban junctions is not known; an estimate has been used from the total length of urban A roads, assuming 10 junctions per km.

The range depends on assumed casualty reduction (a 12 per cent reduction is assumed at the lower end of calculation, 24 per cent at the higher)

Price Base Year 2002	Time Period Years 10	<b>Net Benefit Range (NPV)</b> £ 3051.4m - 1194.4m	<b>NET BENEFIT (NPV Best estimate)</b> £ 1194.4m
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What is the geographic coverage of the policy/option?	GB			
On what date will the policy be implemented?				
Which organisation(s) will enforce the policy?	Police			
What is the total annual cost of enforcement for these organisations?	£ 0			
Does enforcement comply with Hampton principles?	Yes			
Will implementation go beyond minimum EU requirements?	No			
What is the value of the proposed offsetting measure per year?	£ 0			
What is the value of changes in greenhouse gas emissions?	£ 0			
Will the proposal have a significant impact on competition?	No			
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	Yes/No	Yes/No	N/A	N/A

<b>Impact on Admin Burdens Baseline</b> (2005 Prices)			(Increase - Decrease)		
Increase of	£	Decrease of	£	<b>Net Impact</b>	£ 0

Key: Annual costs and benefits: Constant Prices (Net) Present Value

## Summary: Analysis and evidence

Policy Option: 4

Description: Mass action programme to introduce CEN standard side barriers on motorways and dual carriageways

COSTS	ANNUAL COSTS		Description and scale of <b>key monetised costs</b> by 'main affected groups'
	<b>One-off</b> (Transition)	<b>Yrs</b>	
	£ <b>1336.8m</b>		
	<b>Average Annual Cost</b> (excluding one-off)		
£		<b>Total Cost (PV)</b> £ <b>1336.8m</b>	
Other <b>key non-monetised costs</b> by 'main affected groups'			

BENEFITS	ANNUAL BENEFITS		Description and scale of <b>key monetised benefits</b> by 'main affected groups'
	<b>One-off</b>	<b>Yrs</b>	
	£		
	<b>Average Annual Benefit</b> (excluding one-off)		
£ <b>134.36m</b>	10	<b>Total Benefit (PV)</b> £ <b>1343.6m</b>	
Other <b>key non-monetised benefits</b> by 'main affected groups'			

Key Assumptions/Sensitivities/Risks

Price Base Year2002	Time Period Years 10	<b>Net Benefit Range</b> (NPV) £	<b>NET BENEFIT</b> (NPV Best estimate) £ <b>6.8m</b>
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What is the geographic coverage of the policy/option?		GB		
On what date will the policy be implemented?				
Which organisation(s) will enforce the policy?				
What is the total annual cost of enforcement for these organisations?		£ 0		
Does enforcement comply with Hampton principles?		Yes		
Will implementation go beyond minimum EU requirements?		No		
What is the value of the proposed offsetting measure per year?		£ 0		
What is the value of changes in greenhouse gas emissions?		£ 0		
Will the proposal have a significant impact on competition?		No		
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	Yes/No	Yes/No	N/A	N/A
<b>Impact on Admin Burdens Baseline</b> (2005 Prices)		(Increase - Decrease)		
Increase of £	Decrease of £	<b>Net Impact</b>	£	0

Key: **Annual costs and benefits: Constant Prices** (Net) Present Value

## Summary: Analysis and evidence

Policy Option: 5

Description: Introduce Single Double Summer Time

COSTS	ANNUAL COSTS		Description and scale of <b>key monetised costs</b> by 'main affected groups'
	One-off (Transition)	Yrs	
	£ 5m	1	Cost to Government of media campaign
	Average Annual Cost (excluding one-off)		
£		<b>Total Cost (PV)</b> £ 5m	

Other **key non-monetised costs** by 'main affected groups'  
Cost to agriculture & building industries of darker mornings, darker mornings in northern parts of Britain.

BENEFITS	ANNUAL BENEFITS		Description and scale of <b>key monetised benefits</b> by 'main affected groups'
	One-off	Yrs	
	£		Net reduction in road casualties due to lighter evenings
	Average Annual Benefit (excluding one-off)		
£ 138.36m	10	<b>Total Benefit (PV)</b> £ 1383.6m	

Other **key non-monetised benefits** by 'main affected groups' Energy savings from lighter evenings, more opportunities for sport and leisure, benefit to business community of being aligned with other western European nations

### Key Assumptions/Sensitivities/Risks

Benefits are based on previous experiment of 1968-71 and assume similar overall effects

Price Base Year2002	Time Period Years 10	<b>Net Benefit Range</b> (NPV) £	<b>NET BENEFIT</b> (NPV Best estimate) £ 1378.6m
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What is the geographic coverage of the policy/option?	GB			
On what date will the policy be implemented?				
Which organisation(s) will enforce the policy?				
What is the total annual cost of enforcement for these organisations?	£ 0			
Does enforcement comply with Hampton principles?	Yes			
Will implementation go beyond minimum EU requirements?	No			
What is the value of the proposed offsetting measure per year?	£ 0			
What is the value of changes in greenhouse gas emissions?	£ 0			
Will the proposal have a significant impact on competition?				
Annual cost (£-£) per organisation (excluding one-off)	Micro	Small	Medium	Large
Are any of these organisations exempt?	Yes/No	Yes/No	N/A	N/A

<b>Impact on Admin Burdens Baseline</b> (2005 Prices)		(Increase - Decrease)	
Increase of £	Decrease of £	<b>Net Impact</b>	£ 0

Key:

Annual costs and benefits: Constant Prices

(Net) Present Value

## Evidence base (for summary sheets)

[Use this space (with a recommended maximum of 30 pages) to set out the evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Ensure that the information is organised in such a way as to explain clearly the summary information on the preceding pages of this form.]

### **Background**

The current road safety strategy, *Tomorrow's Roads – Safer for Everyone*, set out our approach and targets for 2010. Our overall progress towards meeting these targets has been good: in 2007 we had achieved a reduction in the numbers of people killed or seriously injured (KSI) on GB roads by 36 per cent, against a target of 40 per cent for 2010.

However, there are still almost 3,000 deaths on our roads each year and 30,000 people killed or seriously injured. As we approach the end of this strategy period, a new strategy is needed to address the future road safety challenges and to reduce further road casualties.

### **The new road safety strategy**

A significant part of the new road safety strategy will concern the continuation or enhancement of existing work, such as vehicle improvements, the THINK! campaign and working with local authorities. In addition to these activities, we set out to identify additional measures that could make a significant contribution to reducing further casualties on our roads. It is these measures that have been considered in this impact assessment.

### **Analysis**

In order to identify suitable measures for the new strategy, we started with an analysis of the evidence, to understand better the problem areas. Road deaths (down 18 per cent in 2007) are not reducing as quickly as KSIs, and certain groups and factors are persistent problems.

The fatal accident data have helped us to identify key areas of focus. The fatality rate per 100,000 of population is highest in the 16–19 age group, particularly for males. Motorcyclists represent 20 per cent of fatalities, but just 1 per cent of traffic. Drink-driving, failure to wear a seat belt and excessive or inappropriate speed still figure highly as contributory factors in fatal accidents.

Particular places and road types also show higher risk rates. In 2007, 62 per cent of fatalities were on rural roads, whereas these roads represent only 42 per cent of the miles travelled. And pedestrian deaths are particularly concentrated in the larger metropolitan areas, with 68 per cent of fatalities occurring on urban roads.

## Process

We then considered the potential measures that could give the strongest return in terms of casualty reduction. Through discussion with our stakeholders and researchers we drew up a long list of measures. For some of the proposed measures, we discovered there was a lack of evidence to assess the potential benefit they could bring. Our researchers then assessed each of the remaining measures for the casualty benefit they could be expected to deliver over the lifetime of the strategy.

From the resulting benefit analysis, we drew up a shortlist of measures for a more detailed cost–benefit analysis. It is these measures that are assessed in this impact assessment. A detailed report on this research and its underpinning assumptions has been published by TRL.<sup>25</sup>

## General assumptions

The speed data factor in a degree of congestion; this is not therefore accounted for separately. The increase in traffic and improved emissions is factored in for the fuel and emissions calculations, but we have not been able to factor in the interaction between traffic and the potential impact on journey time with a satisfactory degree of accuracy. The journey time effects are therefore assumed as constant.

For some of the options, expected changes in fuel consumption and emissions have been modelled. Modelling of emissions is complex; we have followed the approach we believe gives the most accurate results in these particular scenarios. For air quality emissions, we have used the higher end of the modelled range. Further assumptions for specific options are detailed for the relevant measure.

## A: Options raised in the consultation

### 1: Reduce speed limits on single carriageway roads.

This measure is aimed at the problem of high casualty rates on rural roads, for car occupants and motorcyclists. The modelled scenario involves a change in the meaning of the national speed limit sign on single carriageway roads, therefore applying a reduced limit (50 mph) to all single carriageway roads where the national speed limit is in force. The calculations do not assume any increase in enforcement from current levels. Research suggests that a 10 mph reduction of the speed limit, without additional enforcement, will lead to a reduction in average speeds of 2.4 mph. Research evidence also suggests a model for translating this reduction in average speed into reduced casualties. This approach has been peer-reviewed and supported as the most suitable approach with the available evidence.

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<sup>25</sup> Sexton and Johnson (2009) *An Evaluation of Options for Road Safety Beyond 2010*. TRL Published Project Report PPR 379

Costs lie predominantly in increases in journey time, and benefits come from an expected reduction in road casualties (around 250 fatalities and 1,000 serious injuries per year) and a decrease in greenhouse gas emissions. The modelling of changes in emissions is complex; we have followed the method we believe provides the most accurate results in this case.

### Net present values (discounted to 2010 at 2002 prices)

Sum over:	Net present value (£m)	Implementation cost (£m)	Casualty (£m)	Emissions and fuel (£m)	Journey time (£m)
10 year	-41.4	5.1	4,458	144.9	-4639.2
20 year	-929.1	5.1	7,298	268.5	-8490.5

The analysis shows that the costs and benefits of this measure are broadly similar over 10 years. However, the modelled scenario assumes that the reduction to 50 mph is applied across all of the single carriageway network. We feel that a targeted approach would be more appropriate, and this would not lead to such a large increase in journey time. The numbers of potential casualty savings are nevertheless very significant, and for this reason **a variation on this scenario is raised in the consultation paper**. This variation would keep the national speed limit at its current level but see the Department for Transport assist highway authorities with the current review of speed limits on their roads and encourage the adoption of lower limits on single carriageway roads where there is evidence that this would reduce casualties.

### 2: Increased self-enforcing 20 mph zones in residential streets

Under this option, DfT would amend guidance on speed limits so that it is clear we expect highway authorities, over time, to introduce 20 mph zones or limits into streets that are primarily residential in nature, and which are not part of any major through route. Similarly, we would expect local authorities to consider introducing 20 mph or zones in town or city streets, such as around schools, shops, markets, playgrounds and other areas where pedestrian and cyclist movements are high.

Costs are essentially related to the required engineering to make zones self-enforcing. In this case, increased travel time has not been included in the cost calculation, as it is believed that the distance travelled by each person on this type of road, essentially to and from their home, would have a minimal effect on overall journey time. Also, it has not been possible to assess accurately the proportion of the average journey that is undertaken on these roads.

The main benefits come from a reduction in road casualties. This measure would form part of our efforts to address the issue of pedestrian casualties in metropolitan areas.

There are a number of critical calculations required in order to estimate the NPV. These estimates are based on the assumption that 50 per cent of suitable residential roads will be converted to 20 mph zones, the casualty savings will 30 per cent, that about 12 per cent of suitable roads already have 20 mph zones and that only the speed of vehicles within the zone will be affected.

The researchers looked at alternative scenarios, with a higher proportion of roads converted and a higher casualty saving, but we have used the more conservative estimates here.

**Net present values (discounted to 2010 at 2002 prices)**

Sum over:	Net present value (£m)	Implementation cost (£m)	Casualty (£m)	Emissions and fuel (£m)
10 year	557.5	867.0	1,538	-113.5
20 year	1,644.9	867.0	2,727	-215.1

NPV is reasonable and gets get better over time. This measure offers good casualty reduction potential and is raised further in the consultation for that reason.

**B: Options more suited for local intervention**

Research has suggested that local road safety schemes can have a significant impact on reducing road casualties. The two following measures are examples of potential engineering improvements. Examples like this could form part of the information we provide to local authorities, to help them decide upon the best type of local action to take. The Department cannot instruct local authorities to spend their budgets in a particular way, but we can provide them with support and evidence about the value of this type of scheme.

**3: Mass action programme to reduce motorcycle accidents through the introduction of high-friction surfaces at junctions on the ‘main arm’ of urban roads**

This engineering measure is designed to address the number of collisions involving motorcyclists. It would need to be implemented at a local level by local authorities. Costs are in the required resurfacing work, and benefits come from an estimated reduction in motorcycle casualties. The assumed mechanism for generating a reduction in road casualties assumes that the introduction of high-friction surfaces would enable a motorcyclist to avoid an emerging vehicle in their path, leading in turn to a reduction in road casualties. The findings of the ‘On the Spot’ report suggest that for the sample of two-wheeler accidents investigated, 12–24 per cent may have been prevented through this measure. In estimating the maximum/minimum benefits of the scheme, this assumption has been used.

The number of urban junctions is unknown. This is estimated by using a survey of urban 'A' roads, which found an average of around 10 junctions per kilometre. Road lengths of metropolitan roads were analysed to provide an estimate of the total road length to be treated. The analysis has taken account of likely number of junctions that have already been treated, thereby estimating the remainder that would need treatment, to be phased over three years.

**Mass action programme for high grip junctions (12 per cent casualty reduction for powered two-wheelers) (discounted to 2010 at 2002 prices)**

Sum over:	Net present value (£m)	Implementation cost (£m)	Casualty (£m)	Casualty reductions
10 year	1,194.4	651.8	1,846.2	593
20 year	2,135.6	1,150.8	3,286.3	1,084

**Mass action programme for high grip junctions (24 per cent casualty reduction for powered two wheelers), (discounted to 2010 at 2002 prices)**

Sum over:	Net present value (£m)	Implementation cost (£m)	Casualty (£m)	Casualty reductions
10 year	3,051.4	651.8	3,703.2	1,194
20 year	5,441.2	1,150.8	6,592.0	2,183

There is a good NPV, although it proved difficult to gain an accurate estimate of the figures. This measure could form part of a package of measures a local highway authority may use on the appropriate parts of its network, but would seem best suited to this local approach rather than as a national programme.

**4: Mass action programme to introduce CEN standard side barriers to motorways and dual carriageways**

This is a further example of an engineering measure that could be used by the Highways Agency and local highways authorities on their networks. The costs relate to the required infrastructure, while the benefits are from an estimated reduction in casualties.

The length of existing side barriers is estimated by extrapolating from HA survey sources to the whole network and assuming that all sides will receive a CEN standard barrier. It is noted, however, that all side barriers are unlikely to be replaced. Accident rates per kilometre were modelled by star rating, and hence the saving in accidents by changing all to 4\* barriers could be computed by comparing current accidents (by star rating) with the estimated saving if they were 4\*. The accidents were then pro-rated against accident/casualty distributions in order to estimate fatal, serious and slights. It was not possible to estimate changes from fatal to severe or from severe to slight.

The analysis assumes that the lower accident rate for 4\* rated HA motorways would apply to the whole road network as a result of installing the CEN standard barrier. There is a possible overestimation of benefits as a result. In practice, the costs may also be lower if barriers were not implemented across the whole network.

**Mass action programme for CEN barriers on motorways (discounted to 2010 at 2002 prices)**

Sum over:	Net present value (£m)	Implementation cost (£m)	Casualty (£m)	Casualty reductions
10 year	460.77	77.7	538.4	185
20 year	876.68	77.7	954.3	327

**Mass action programme for CEN barriers on dual-carriageways (discounted to 2010 at 2002 prices)**

Sum over:	Net present value (£m)	Implementation cost (£m)	Casualty (£m)	Casualty reductions
10 year	-453.86	1,259.1	805.2	255
20 year	156.75	1,259.1	1,415.8	450

The figures show that this measure could be effective, but over the longer term. The NPV is low over 10 years, but improves when viewed over 20 years. However, the accident savings, and hence the CBA, should be treated with some caution. The basic approach may lead to an over optimistic estimate of accident savings because of some of the underlying assumptions. It is also not known how a barrier would change the severity of the accident. For these reasons this measure would seem more suitable for use at a local level on a case-by-case basis, rather than as a national plan.

## C: Options beyond the scope of this consultation

### 5: Introduce Single Double Summer Time

This option would see a change in time zone to GMT+1 in winter and GMT+2 in summer (the same as Central European time). There are estimated benefits from a reduction in road casualties, resulting from lighter evenings (TRL368 report presented 'A new assessment of the likely effects on road accidents of adopting Single Double Summer Time'). There are also other expected benefits, non-monetised in this analysis, such as saving energy and increasing leisure opportunities. There could be negative impacts on areas such as agriculture and the construction industry.

## Single Double Summer Time (discounted to 2010 at 2002 prices)

Sum over:	Net present value (£m)	Implementation cost (£m)	Casualty (£m)	Casualty reductions
10 year	<b>1,378.62</b>	<b>5.0</b>	<b>1,383.6</b>	<b>782</b>
20 year	<b>2,451.71</b>	<b>5.0</b>	<b>2,456.7</b>	<b>1,549</b>

The cost–benefit case in road safety terms is clear; however, there are many other, wider impacts which, whilst it has not been possible to assess them accurately, would need to be considered. There would be a particular impact on northern Scotland resulting from the darker mornings. This measure goes beyond the scope of this consultation.

## D: Options not taken forward

### Motorways

Raising and reducing motorway speed limits and enforcement of those limits was also looked at. Three scenarios were considered: increasing the speed limit to 80 mph, reducing it to 60 mph and maintaining the 70 mph limit. Under each scenario, the research assumption was that enforcement would be increased in order to improve compliance with the limit. Safety, environmental and economic impacts were assessed.

After initial analysis, none of these scenarios was taken further. The only scenario to achieve significant safety benefits was reducing the limit to 60 mph, but this was heavily outweighed by the economic costs of increased journey time. Increasing the limit to 80 mph was found to lead to increases in both casualties and greenhouse gas emissions, and the benefits of increasing compliance with the existing 70 mph limit did not justify the extra costs of enforcement.

## Conclusion

Through this analysis, a variant of Option 1 (targeted reduction of speed limits on single carriageway roads) and Option 2 (increasing self-enforcing 20 mph zones in residential areas) show promise and are therefore raised in more detail in the consultation document. They have good casualty benefit potential and perform satisfactorily in economic terms.

Options 3 and 4 are examples of how local schemes can have a significant impact on road casualties. However, they are more appropriate for consideration at local level than for national action, as their effectiveness is likely to vary depending on local circumstances. Option 5 (Single Double Summer Time) requires wider consideration because of the nature and uncertainty of the potential impacts.

## Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

**Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.**

Type of testing undertaken	<i>Results in evidence base?</i>	<i>Results annexed?</i>
Competition Assessment	No	No
Small Firms Impact Test	No	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	Yes	No
Other Environment	No	No
Health Impact Assessment	No	No
Race Equality	No	No
Disability Equality	No	No
Gender Equality	No	No
Human Rights	No	No
Rural Proofing	No	Yes

## Annexes

### Annex A: Rural proofing

#### **Road safety strategy impact assessment: rural proofing**

The new road safety strategy will aim to reduce the numbers of people killed or injured on Britain's roads. We do not believe that it will have a disproportionate impact on rural areas. It will, however, look to target the most acute problems.

The consultation takes account of rural circumstances and needs and notes the higher rate of death or injury on rural roads. One of the potential measures is particularly relevant in this context.

Option 1 of the impact assessment examines reducing speed limits on single carriageway roads. In practice, the large majority of single carriageway roads where the national speed limit currently applies are situated in rural areas. This option is likely, therefore, to be applied more often by local authorities in rural areas than in urban areas.

This is, however, intended to address a particular problem – the high rate of death and injury on rural roads. In 2007, 62 per cent of road fatalities occurred on rural roads, which carry only around 40 per cent of traffic. Improving this situation would clearly have a beneficial effect on rural communities.

The 'costs' of reducing speed limits occur almost entirely through increases in journey time resulting from changes in speed. An analysis of the fatal accident statistics suggests that these costs would fall equally on urban and rural communities, as they are both approximately equal users of this type of road.

Between 2005 and 2007, there were a total of 3,763 fatalities on single carriageway roads with a 60 mph limit (1,195 in 2007). For nearly 80 per cent per cent of these cases, it is possible to determine whether or not the casualty lived in an urban or rural area, derived from the postcode recorded by the police. The table below shows that of the cases where the area of residence can be assigned. Around half (48 per cent) of fatalities on rural roads lived in urban areas.

### Fatalities on 60 mph single carriageway roads by type of area of residence

Residence	Accident		Total
	Urban	Rural	
Urban	53	1,353	1,406
Rural	17	1,497	1,514
Unallocated	31	812	843
<b>Total</b>	<b>101</b>	<b>3,662</b>	<b>3,763</b>

Research suggests that reducing speed limits on these roads could save many lives. Both the costs and benefits of this proposal would therefore seem to be divided broadly equally between urban and rural areas.

Apart from the option outlined above, we believe that the other potential measures in the strategy, and its overall approach, do not impact differently on rural areas. We feel that the road safety strategy consultation makes an assessment of the impact of potential measures in rural areas and takes account of rural circumstances and needs.

# Appendix F: Code of Practice on Consultation

The Government has adopted a Code of Practice on consultations. The Code sets out the approach Government will take to running a formal, written public consultation exercise. While most UK Departments and Agencies have adopted the Code, it does not have legal force and cannot prevail over statutory or other mandatory external requirements (e.g. under European Community Law).

The Code contains seven criteria. They should be reproduced in all consultation documents. Deviation from the code will at times be unavoidable, but the Government aims to explain the reasons for deviations and what measures will be used to make the exercise as effective as possible in the circumstances.

## The seven consultation criteria

- 1. When to consult:** Formal consultation should take place at a stage when there is scope to influence the policy outcome.
- 2. Duration of consultation exercises:** Consultations should normally last for at least 12 weeks with consideration given to longer timescales where feasible and sensible.
- 3. Clarity of scope and impact:** Consultation documents should be clear about the consultation process, what is being proposed, the scope to influence and the expected costs and benefits of the proposals.
- 4. Accessibility of consultation exercises:** Consultation exercises should be designed to be accessible to, and clearly targeted at, those people the exercise is intended to reach.
- 5. The burden of consultation:** Keeping the burden of consultation to a minimum is essential if consultations are to be effective and if consultees' buy-in to the process is to be obtained.
- 6. Responsiveness of consultation exercises:** Consultation responses should be analysed carefully and clear feedback should be provided to participants following the consultation.

- 7. Capacity to consult:** Officials running consultations should seek guidance in how to run an effective consultation exercise and share what they have learned from the experience.

A full version of the code of practice is available on the Better Regulation Executive website at: [www.berr.gov.uk/files/file47158.pdf](http://www.berr.gov.uk/files/file47158.pdf)

If you consider that this consultation does not comply with the criteria or have comments about the **consultation process**, please contact:

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