

Road Safety Research Report No. 124
Delivery of Local Road Safety

AECOM in association with Tavistock Institute

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EXECUTIVE SUMMARY

In 2008 the Department for Transport commissioned AECOM, in association with the Tavistock Institute, to design and deliver a three-year independent evaluation of local road user safety. This report presents a summary of the main findings and is supported by seven appendices covering specific areas of the analysis. The evaluation was commissioned to consider the following objectives:

- to evaluate the different strategies and plans for delivering road user safety;
- to assess what is being delivered, the key processes and how efficient local highway authority (LHA) practices are; and
- to identify lessons and areas of good practice in road user safety investment.

Different strategies and approaches

There has been an observable shift towards the application of route- and area-based treatments, and away from the more traditional site-specific investment. This has, in turn, promoted greater integration between the core road safety functions (the ‘3Es’ – Education, Engineering, Enforcement), as well as an increased appreciation among practitioners of the importance of considering potential intended **and** unintended outcomes of investment.

Reductions in casualty numbers have made cluster-based analysis more difficult, encouraging practitioners to take a more holistic approach to safety planning. The proactive assessment of road user risk, allied with a growing appreciation of the importance of understanding attitudes to safety, is facilitating the design of ‘safe systems’ of road network.

What is working and where?

The assessment of road user risks is becoming more embedded in road safety practice. This has generated a wider and more in-depth understanding of causality of road traffic accidents, and the influence of an individual’s attitude and behaviour in their exposure to risk. In turn, this has supported the improved targeting of investment strategies.

Local road user safety interventions and plans continued to be successfully delivered at a range of organisational and geographical levels. This included inter-county publicity campaigns targeting motorcyclists through to site-specific engineering improvements. Improved delivery efficiency and effectiveness have also been achieved for school-based investment, through multi-agency collaborative working.

The extent and quality of community and road user engagement has increased both in rural and urban authorities, enabling practitioners to understand who they are targeting and the context in which they use the road network.

How is road safety being delivered?

The evaluation was undertaken during a period of central and local government spending cuts. This placed increased emphasis on collaborative and partnership working, both within local authorities and with external agencies. Different models of local authority re-organisation were identified, including the externalisation of key services and the consolidation of road safety functions into a single team.

The integration of the 3Es in site- and area-based investment have been enhanced through better use of evidence and data. The physical and organisational location of road safety practitioners, and the use of secondment programmes, have also assisted in integrating the different priorities and responsibilities among road safety stakeholders.

In such a period of uncertainty, organisational structures that fostered internal training and secondment opportunities have increased the sustainability of knowledge and team expertise. Staff turnover and a lack of succession planning continue to be central threats to effective delivery. A summary of the main areas of good practice and identified constraints in road safety delivery are presented below.

Good road safety practice

Good organisation

- Organisational structures and philosophies that promoted training, career progression and succession planning have helped to generate more comprehensive and sustainable knowledge and expertise in road safety teams. The techniques adopted have included apprentice-type arrangements for learning and development and secondment programmes.
- The integration of engineering, enforcement and education, training and publicity (ETP) resource and investment planning has been promoted through the co-location of staff and regular communication activities.
- Local authority road safety teams and wider delivery partnerships who have adopted area- and route-based interventions have promoted the integration of engineering, enforcement and education schemes, and have enhanced a 'safe system' approach to design.
- The systematic assessment of road user risks has enhanced practitioner understanding of the causality of road traffic accidents, its importance in design

activities, and the influence of road users' attitudes and behaviour on their exposure to risk.

Strong partnerships

- Partnership and inter-agency working has generated efficiency savings and enhanced the integration of investment, for example the delivery of targeted multi-agency education campaigns.
- Working with local partners and delivery agencies, to establish road safety strategies and investment priorities, has opened up additional funding and opportunities to adopt new approaches to delivering targeted road safety interventions.
- Establishing joint objectives and Terms of Reference, allied with clear leadership, has been central to establishing and maintaining an effective Road Safety Partnership or multi-agency working.
- Local authority level Road Safety Partnerships have been effective at bringing the 3Es together, providing an opportunity to utilise the strengths of each partner, create a better 'final product' and gain efficiencies through collaborative working.
- The most successful partnerships had a clear leadership structure, including a strong partnership manager, while ensuring that all partner organisations were able to influence the work of the partnership and set its direction.

Good use of evidence

- Local authority road safety teams have increasingly used wide and varied evidence in road safety design and planning. Interim outcome indicators (such as vehicle speeds and driver behaviour) have been employed on route- and area-based interventions, enhancing the planning and monitoring of delivery.

Effective marketing

- There is good evidence to suggest that targeted social marketing interventions (particularly when preceded by consultative engagement activities such as social research) have been effective at changing the behaviour of specific at-risk road user groups.
- Engaging with local road users and communities throughout the design, delivery and implementation of road safety engineering schemes has enhanced the support of local residents and politicians.

- The use of new social networking technologies, such as Facebook and Twitter, has enhanced the engagement of local communities and road users.

Opportunities for enhancement

Significant challenges remain

- Although there had been a 44% reduction in fatalities and serious injuries by 2009 compared with the 1994–98 average, there were still nearly 27,000 such casualties reported. Challenges remain in further reducing casualties within specific high-risk road user groups, such as pedal cyclists and young road users.
- High staff turnover in partner organisations has reduced the efficiency and effectiveness of some partnership and joint working activities.
- Local authority road safety officers and delivery partners are seeking to build on the ‘localism’ agenda, drawing in community representatives to steer delivery and raise road safety awareness.

Co-ordination of initiatives

- The range of organisations delivering road safety interventions to school-age children has not always been effectively co-ordinated (with the potential to benefit from economies of scale where there are shared priorities).
- Links between road safety teams and other local authority departments (e.g. transport, environmental services and sustainable development and schools) has not always been maintained. This requires the investment of management and staff time in co-ordination activities, opening up opportunities for close liaison and the joint delivery of activities.
- Over dependence on temporary staff (often as a result of dependence on short-term funding) has led to the loss of important contacts, networks and skills within local authority road safety teams, making it difficult to plan and deliver longer-term initiatives.

The importance of strong leadership

- The level and quality of leadership in road safety teams varied, and recent resource and management restructuring was identified as a central risk. Clear leadership is important in determining the overall focus and strategy, in maintaining a committed team, and in building strategic and operational partnerships.

Good use of evidence

- The use of enhanced data analysis techniques, including the use of socio-economic data and the triangulation of evidence from multiple sources (hospital data and MOSAIC, for example) has placed complex challenges on local road safety teams.
- There is scope to make better use of existing datasets (such as STATS19) through better data analysis techniques and the use of other data to provide a more complete picture of the local road safety issues.
- The level of awareness and expertise in evaluation methodologies and their value were not always evident among the case study local authorities.
- Local authority ETP teams had limited capability to design and undertake a robust evaluation programme.

1 INTRODUCTION

1.1 Introduction

In 2008, the Department for Transport commissioned AECOM, in association with the Tavistock Institute, to develop and deliver a three-year programme of local road user safety evaluation. The evaluation has taken an holistic view of road safety, from strategy development through to scheme delivery and ex-post assessment. The evaluation's aims were to explore three areas of road safety delivery:

- to evaluate the different strategies and plans for delivering road user safety;
- to assess what is being delivered, the key processes and how efficient local highway authority (LHA) practices are; and
- to identify lessons and areas of good practice in road user safety investment.

The evaluation has involved the detailed review and exploration of engineering, enforcement and education, training and publicity (ETP) interventions. A systematic process evaluation has considered the extent and quality of integration between officers responsible for the different elements of road user safety. Two areas of particular focus were local authority capacity building and the 'synergy' effect of integrated delivery and partnership working. The evaluation team has worked in collaboration with selected authorities to understanding the key challenges, barriers and constraints to road safety delivery.

The evaluation also aimed to identify good practice in delivering interventions targeted towards specific road user groups, as the targeting of investment becomes a more central element of local area strategies.

1.2 Background

Although the majority of local authorities in England have seen reductions in casualty numbers over the last decade, challenges remain in addressing prevailing safety issues. These include a slower rate of reduction in fatalities compared with serious injuries, and higher cycling casualty levels in 2009 compared with 2008 (a 5% increase was reported).

The 2007 Audit Commission Report, *Changing Lanes* (Audit Commission, 2007), recommended a shift from engineering to ETP and enforcement interventions. This was to address prevailing traffic accident levels for at-risk road user groups, and particularly to influence road users' attitudes to safety. The research provided an important context to the present evaluation, as it identified new challenges being faced by local authorities in terms of the skills and expertise required.

The evaluation was undertaken during a period of substantial change in the scope and scale of authority activities. With resources available to road safety officers coming under increasing pressures, due to wider economic conditions, authorities are seeking the best ways of delivering more cost efficient and effective interventions. This provided a challenging and fluid context in which to undertake a comprehensive evaluation.

This report presents a summary of the key findings from the evaluation, bringing together the evidence from across the commission. The report is structured around the main issues, particularly how local road safety is being delivered and how this could be improved. Specifically, the report is structured as follows:

- **Section 2** presents a summary of the evaluation methodology;
- **Section 3** reviews the context of road user safety investment in England which underpinned the evaluation;
- **Section 4** presents the findings of the evaluation into the delivery of road user safety, focusing on the changing approaches and balance of investment; and
- **Section 5** highlights good practice in specific areas of road safety delivery, focusing on building capacity and the potential synergy benefits of integrated delivery.

This report is supplemented by seven appendices, which provide more detailed outputs from the evaluation:

- **Appendix A: Evaluation methodology** – this appendix presents a summary of the evaluation methodology, including details of how case study local authorities were selected, the theoretical framework that underpinned the evaluation and the Action Learning Groups that were undertaken.
- **Appendix B: Delivery of road safety interventions** – considering the processes, designs and strategies of local road safety investment, including the identification of good practice within the individual 3E (Education, Engineering, Enforcement) areas of delivery.
- **Appendix C: Local road safety structure** – the recent cuts in local authority spending have instigated changes in local authority road safety team structures. This appendix reviews how the road safety ‘function’ is presently structured and delivered, and how this is changing.
- **Appendix D: Partnership working** – the evaluation included the detailed assessment of multi-agency partnership working, through detailed research with individual partner organisations. This appendix presents good practice covering each stage of partnerships, from formation, through operation to maintaining strong engagement levels.

- **Appendix E: Data, evidence and evaluation** – a detailed review of the practices and benefits of different techniques to data and evidence use. This incorporates innovative approaches and identifies the weaknesses of alternative approaches.
- **Appendix F: Road user engagement** – an increasingly important area of local road safety investment is engagement with road user groups. This appendix considers the strengths and weaknesses of different approaches for different road user groups.
- **Appendix G: The policy and context of road safety** – the political context within which local road safety investment is being undertaken continues to shape delivery approaches and strategies. This appendix provides a brief overview of the policy context to the evaluation period, highlighting influences on investment practices.

2 EVALUATION METHODOLOGY

2.1 Introduction

The evaluation methodology consisted of a series of integrated activities, focused around the use of case study local authorities. This section provides a brief overview of the approach. A more detailed record of the techniques used is provided in Appendix A: Evaluation methodology.

2.2 Evaluation approach

The evaluation was structured and grounded around the Theory of Change approach, which is becoming more widely used in UK policy evaluations. The approach remains heavily based on work undertaken by Connell and Kubisch (1988) in the US, and can be defined as follows:

'A theory of change (TOC) is the product of a series of critical-thinking exercises that provides a comprehensive picture of the early- and intermediate-term changes in a given environment that are needed to reach long-term goals.'

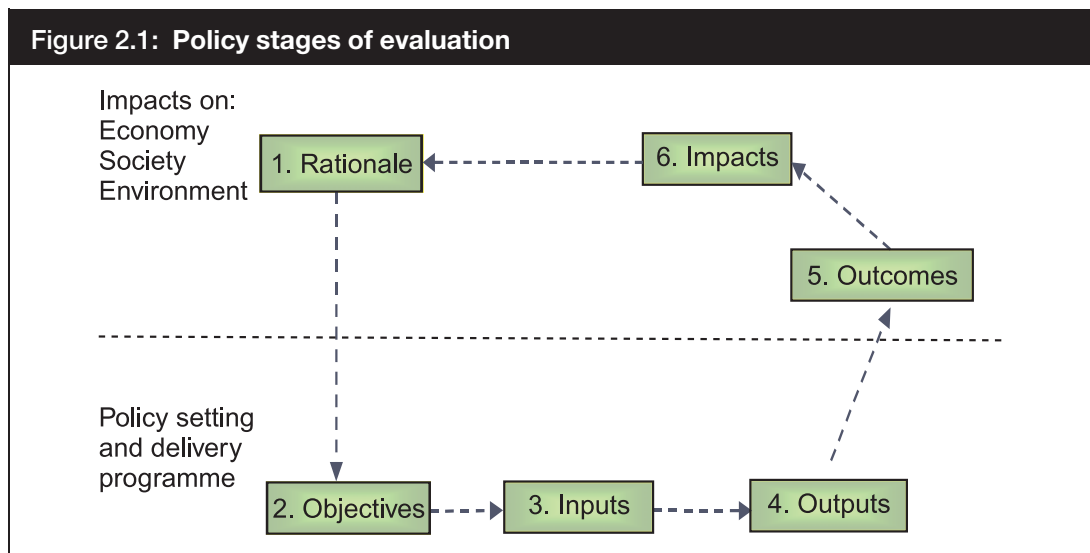
(Anderson, 2005)

The underlying principles of the approach are based around evaluating:

- what has changed;
- why observed changes have occurred; and
- understanding the wider context within which such changes have materialised.

This approach encourages evaluators to generate hypotheses concerning the links between different activities, generating causal paths from investment through to impacts. The evaluation approach therefore incorporated the key 'policy stages' commonly adopted in local road safety (Figure 2.1):

- the strategic level assessment of policies and plans, designed to generate road safety improvements as well as wider economic, social and environmental benefits (the **rationale** for investment);
- the authority level review of 'the road safety function' (i.e. how the **objectives** and scope of road safety are derived from the overarching rationale);
- the evaluation of delivery practices and programmes (how local authorities deliver local road safety, the money invested (**inputs**) and interventions delivered (**outputs**); through to
- the detailed evaluation of individual interventions (the **outcomes** and **impacts** of investment).



The evaluation team worked with representatives from case study authorities to develop logic mapping (Hills, 2010) for a range of intervention types. This assisted in ‘unpicking’ the complex interrelationships involved in road user behaviour and safety enhancement.

2.3 Case study local authorities

To undertake a robust evaluation of local road user safety, detailed consultation and collaborative working were undertaken with 14 case study local authorities. A rigorous selection process was adopted to select authorities that reflected the range of local authority areas in England. The factors used in selecting authorities included:

- local authority type (county, unitary, metropolitan and London borough);
- trends in killed and seriously injured casualties (KSIs), child KSIs, slight injuries and rates per vehicle-km;
- background socio-economic characteristics, particularly deprivation;
- the proportion of urban and rural classified roads;
- the population size; and
- the Government Office region.

Fourteen case study authorities were selected, five county councils, four unitary councils, three metropolitan districts and two London boroughs. The activities undertaken within each case study are summarised below:

- Three rounds of interviews – incorporating senior and junior road safety officers from across the authority road safety function (engineering, enforcement and

education, training and publicity (ETP)). Respondents were also from a range of authority departments, reflecting the dispersed nature of road safety delivery.

- Detailed data collation and analysis – a critical element of the evaluation, providing core background information and detailed intervention level data.
- Theory of Change workshops – following desk-based analysis of selected interventions, workshops with authority officers generated and validated Theory of Change logic mapping. These identified and explored the stages of delivery, the short/medium/long-term outcomes and, importantly, the causal paths through which outcomes have, or will, be achieved.

2.4 Action Learning Groups

To support the case study work, and to provide a mechanism for exploring emerging lessons and good practice, three sets of Action Learning Groups (ALGs) were undertaken. The Department for Transport was keen to have an element of ‘Action Learning’ in the commission, describing it as an opportunity to ‘bring together a range of road safety professionals and other stakeholders to facilitate learning, development and improved practice’. In this respect, the Department for Transport was one of a growing number of evaluation funders seeking to incorporate ‘action’ and ‘learning’ elements in programme evaluations.

The ALGs were designed to provide additional learning concerning what is working well, and what challenges are arising in the planning and delivery of road user safety at a local level. The following groups were identified by the evaluation team and the Department for Transport as being key road safety issues:

- young road users, including drivers and motorcyclists;
- accessing and using data more effectively; and
- road safety and sustainable travel.

2.5 Detailed research areas

In addition to the case study analysis, a number of more specific research themes were investigated. Additional research activities undertaken within the evaluation programme included the review of 20 mph zone and limit schemes across England and support to the evaluation of three Rural Demonstration Projects. The evidence from each activity was consolidated during the analysis.

Three county authority Road Safety Partnerships were evaluated through a series of in-depth interviews, systematic reviews and Theory of Change analysis. Partnerships were selected to provide the broadest coverage of approaches, scope and membership, while also permitting comparisons to be drawn between authorities. The evaluation also considered partnership links with regional stakeholders and specific local sub-partnership structures.

3 CONTEXT TO LOCAL ROAD USER SAFETY EVALUATION

3.1 Introduction

Key findings

- **Substantial progress has been made with respect to the three national road safety targets, with all three being achieved on average across Great Britain by 2008.**
- **However, substantial challenges remain, including:**
 - **over 23,000 fatal or serious casualties on England's roads in 2009;**
 - **over 2,000 of these fatal or serious casualties were children;**
 - **nearly 6,000 motorcyclists were killed or seriously injured across Great Britain in 2009; and**
 - **over 1,500 children were killed or seriously injured while walking in 2009.**
- **The majority of London boroughs, county councils and unitary councils had achieved a 40% reduction in casualties killed or seriously injured by 2009.**
- **Significant reductions have been achieved in the most challenging of road user casualty groups (motorcyclists and child pedestrians) by some local authorities, using a range of integrated**

Road safety continues to be a central target area for improving the well-being and safety of Britain's citizens. The Transport White Paper published in January 2011 noted that the value of preventing all the accidents that were reported in 2009 is estimated at £16 billion per annum (Department for Transport, 2011), reflecting the scale of the challenge.

Improvements in vehicle designs, the age/reliability of motor vehicles,¹ emergency response procedures and medical treatments, and reductions in drink- and drug-related traffic accidents have contributed to reducing casualties during the last decade. However, substantial challenges remain.

¹ Vehicle defects have accounted for less than 3% of KSIs across England since 2005. Source: Department for Transport (2010), data extracted for English authorities.

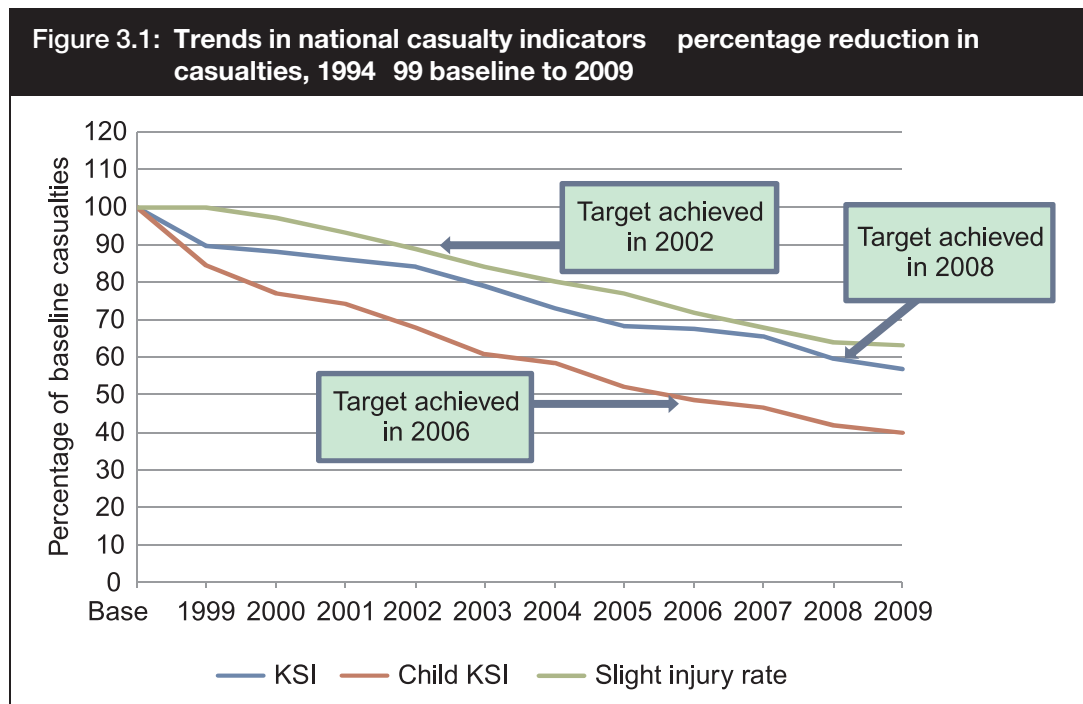
This section presents an overview of the key national casualty trends in England,² from the baseline (1994–98) to 2009.³ The evaluation was conducted during the first part of the Local Transport Plan 2 period (2006–11), providing the basis to consider how local highway authorities (LHAs) addressed specific casualty trends.

The evaluation has not considered the direct attribution of casualty reduction to specific investment, but has identified areas of strategic investment that have contributed to observed change. Through the use of selected case studies, this section provides a brief overview of evidence demonstrating the effectiveness of investment.

3.2 National casualty context and trends

At the national level, consistent progress has been made during the last decade in reducing road traffic casualties. By 2009 the following reductions against the baseline had been achieved (Figure 3.1):

- 44% reduction in killed and seriously injured casualties (KSIs), equivalent to 20,744 fewer fatalities or serious injuries in 2009;
- 61% reduction in child KSIs, reflecting 4,189 fewer fatalities or serious injuries in 2009; and
- 28% reduction in the rate of slight injuries.



² The scope of the evaluation was the 149 local highway authorities in England, and therefore relevant data have been extracted from the wider Great Britain statistical tables.

³ The 2009 dataset represented the most complete and verified data available at the time of reporting.

The evaluation approach was mindful of these reductions, particularly the progress achieved in decreasing child casualties.

However, changes in outturn casualty levels have not been consistent across local authorities, or by authority type, in England. Figure 3.2 identifies that the majority of London boroughs, county councils and unitary councils had achieved the 2010 target for reducing KSIs in 2009.

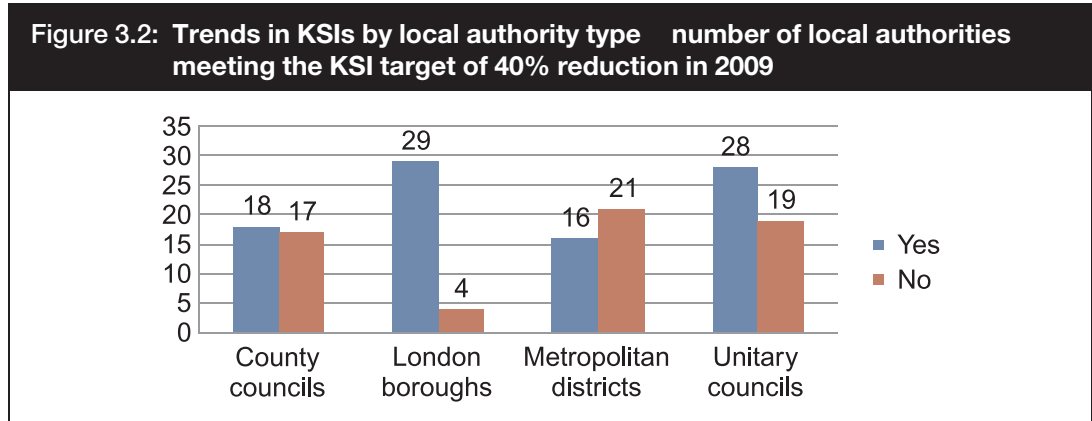
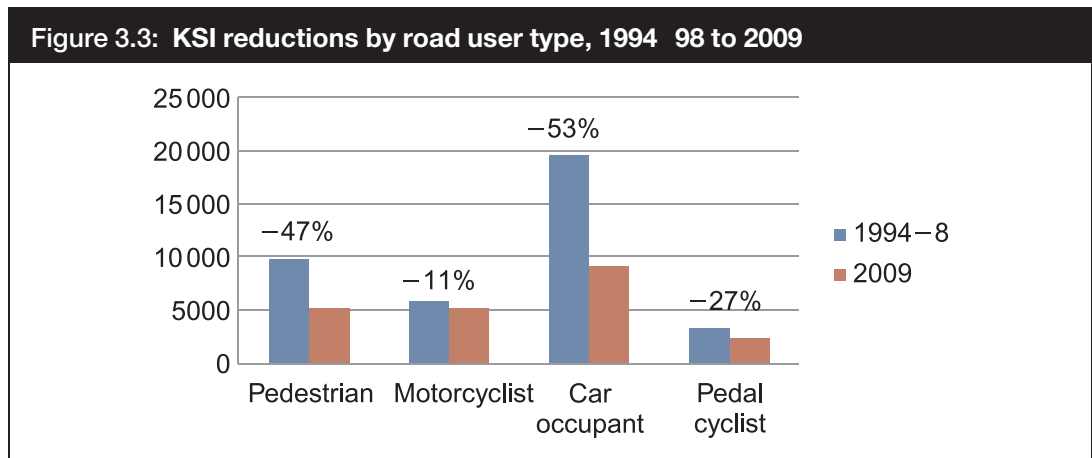


Figure 3.3 identifies that the reductions in KSIs were also not consistent across the types of road user, highlighting priority areas for ongoing investment.



These trends are, in part, a reflection of:

- the different baseline positions and historic investment in road safety in individual local authority areas;
- the different road characteristics in authority areas, generating different levels of risk for road users;
- the different road user characteristics, including social deprivation levels; and
- the different strategies and plans for local road safety investment.

The substantial progress made in reducing casualties since the baseline has also introduced new challenges for local road safety practitioners. Lower levels of road casualties have generated more dispersed geographical distributions, making the traditional ‘cluster’ more difficult to identify. Techniques used to analyse accident statistics have been adapted, with a move towards targeting specific road users and area-based treatments.⁴

The evaluation assessed the underlying strategy, policy and delivery factors that may have contributed to these trends, and how authorities have sought to continually reduce casualty levels.

3.3 Case study casualty trends

The data presented in this section have been extracted from *Reported Road Casualty Great Britain: 2009* (Department for Transport, 2010), through liaison with the Department for Transport Road Safety Statistics team. The data have been indexed to the 1994–98 baseline to safeguard the anonymity of the case study local authorities who collaborated in the evaluation.

The 14 case study authorities were selected from the four different types of authority: county, unitary, metropolitan and London borough. Within-type comparisons were made to consider each authority’s baseline position, trend to 2006 and through the 2007–09 period. Examples of the analysis outputs are presented below.

Figure 3.4 presents the KSI trends for the five county local authority case studies, and the average for all counties in England. Although there are fluctuations within individual authorities, the overarching pattern has been a steady reduction in fatalities and serious injuries.

The average across the county authorities equated to a 43% reduction by 2009, compared with the 1994–98 baseline. The case studies ranged from a 67% reduction by 2009 (see Box 3.1)⁵ to a 38% reduction for the case study in Box 3.1.

4 A more comprehensive assessment of the different techniques being adopted by local authorities is included in Appendix E: Data, evidence and evaluation.

5 These examples have been extracted from the consultation with local authority officers and stakeholders, and highlight areas of good practice that have contributed to reducing casualty levels. These are not examples of direct attribution and are based on detailed discussions with individual local authority officers. Quantitative outcome data are identified where this was available from the relevant authority.

Box 3.1: Reducing motorcyclist KSIs

Three adjacent local authorities worked in formal partnership to achieve a 40% reduction in motorcycle KSIs by 2009, compared with the 1994–98 baseline. The Great Britain average reduction for the same period was just 10%.

The defined safety problem was that in excess of 50% of motorcyclist casualties lived outside of the area in which they were killed or injured. A co-ordinated information and education approach was therefore developed across authority boundaries to target this high-risk road user group. A consistent message and information stream was also generated through this approach.

The programme of investment was supported by a successful Department for Transport match funding bid. The interventions delivered included:

- the more efficient production and dissemination of publicity material (co-ordinated through a single supplier);
- co-ordinated awareness campaigns;
- free training for a range of experience/skills, with nearly 200 motorcyclists trained during the first year; and
- the definition of priority motorcyclist routes, with enhanced signing for drivers.

Local road safety officers interviewed during the evaluation noted that the partnership arrangement, and particularly the associated economies of scale, enabled them ‘to do more than other[AQ: Is text missing here?] before’, i.e. deliver more interventions and to have more resources to plan and design measures. Within the partnerships, clear roles and responsibilities were defined for individual organisations (the police led on drink-driving and mobile phone use, while the local authorities delivered ETP interventions).

In comparison, Figure 3.5 shows the four unitary authorities. Case studies 13 and 14 had relatively low absolute KSI levels in 1994–98, and small subsequent changes generated a more variable pattern. These authorities had achieved 37% and 24% reductions respectively by 2009, compared with the 1994–98 baseline. This was reflective of the challenge facing many authorities in continuing to reduce already low levels of KSIs. This case study had achieved a 54% reduction (see Box 3.2).

With regard to reductions in child KSIs, Figure 3.6 presents the trends for county case study authorities. The average across all counties was a 59% reduction from the 1994–98 baseline. Further consideration was given to Case Study 3, which achieved over 50% reduction between 2004 and 2009.

Figure 3.4: County case study KSI trends, 1994–98 to 2009

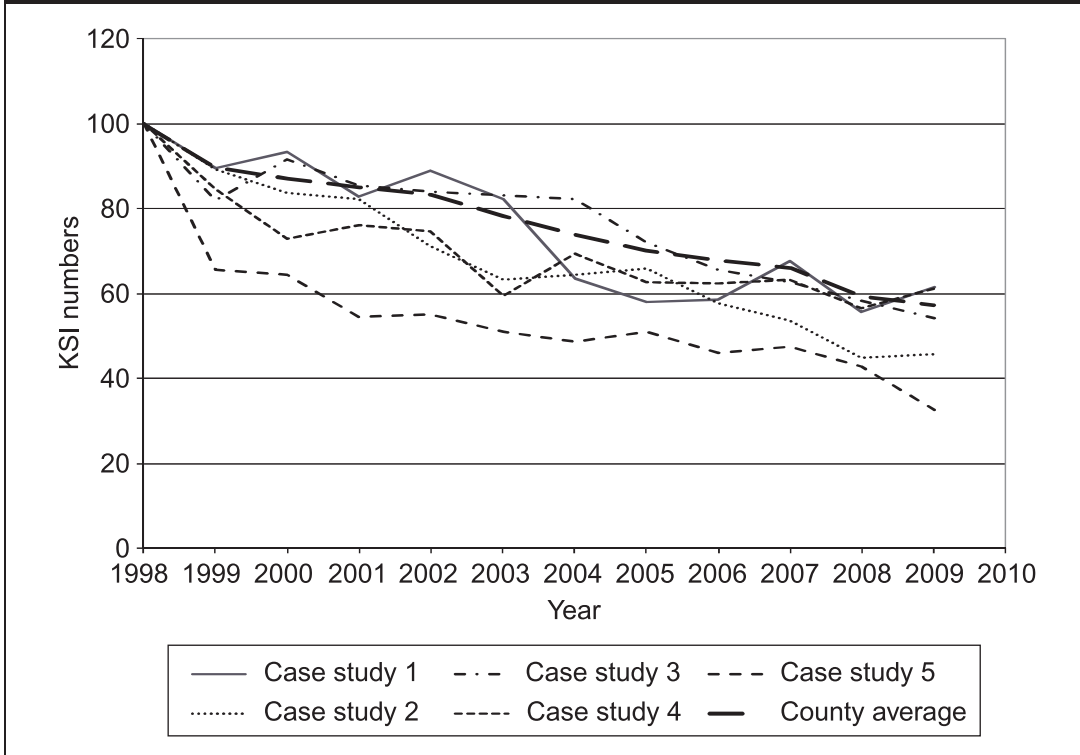


Figure 3.5: Unitary case study KSI trends, 1994–98 to 2009

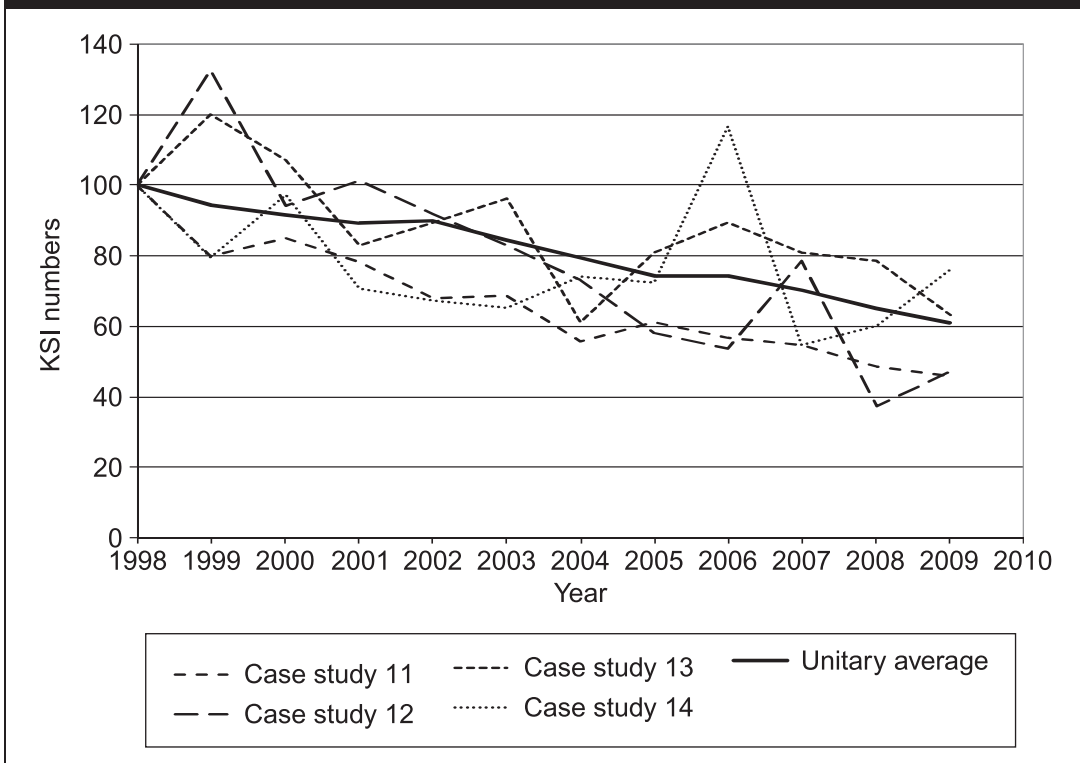
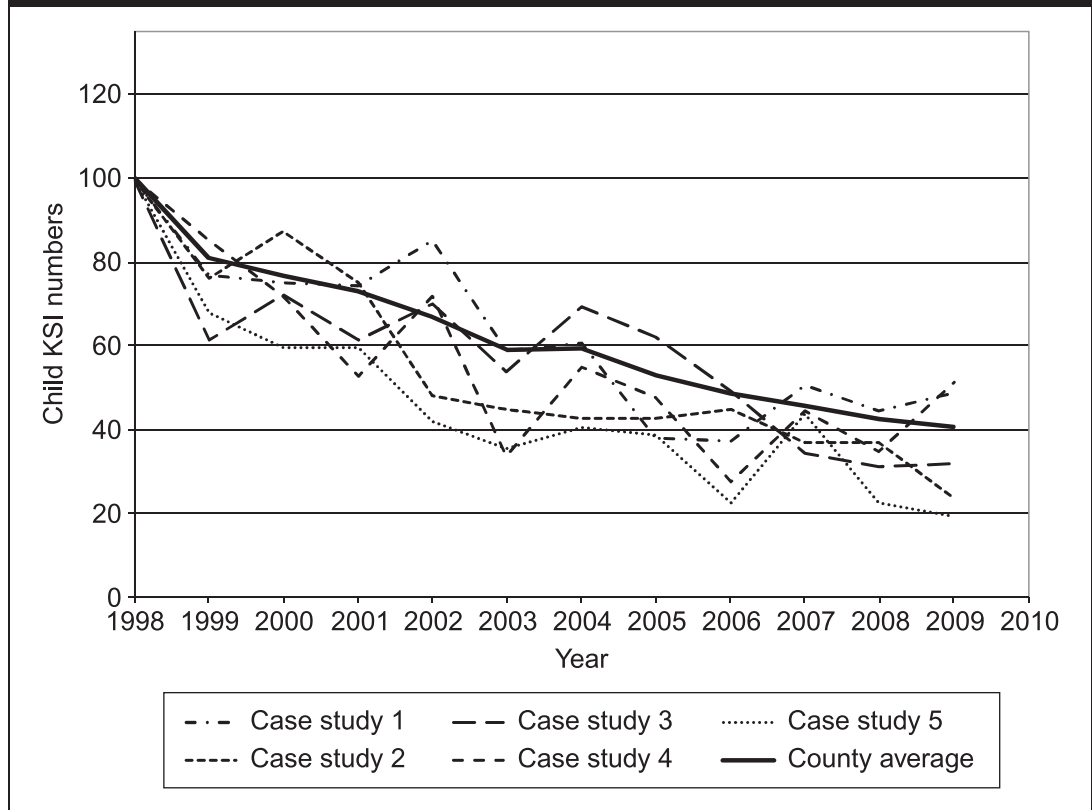


Figure 3.6: County case study child KSI trends, 1994–98 to 2009



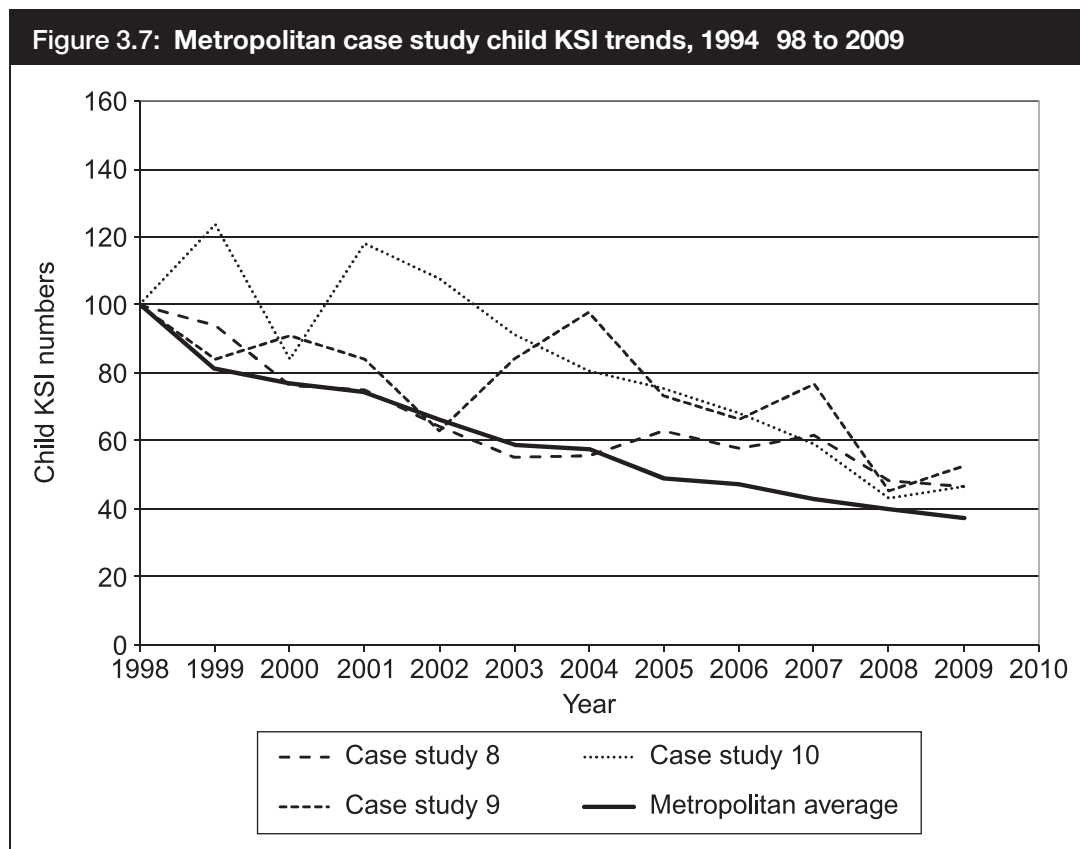
Box 3.2: Reducing pedestrian casualties

Two authorities achieved reductions of over 60% in pedestrian KSIs by 2009, compared with the 1994–98 baseline. Young and old (over 60) pedestrians remain the key risk groups.

Multiple datasets were used to identify, define and mitigate risks for pedestrians, with information sources including Road Safety Audits, STATS19 data, consultation and engagement, and data from sustainable transport teams. Informal partnerships were established in both authorities between road safety and sustainable transport functions. This helped to delivery safer pedestrian environments. Interventions included:

- high visibility shopping bags for elderly pedestrians;
- pedestrian training at schools, including encouraging schools to take ownership of delivery;
- direct signalised crossing facilities to follow pedestrian desire lines;
- area-based speed limits, 20 mph zones and traffic calming; and
- information/education for children stratified by age (pre-school – targeting parent responsibilities; school age – promoting child awareness and knowledge).

Figure 3.7 presents the child KSI trends for the three metropolitan case studies. The average reduction across all metropolitan authorities was 63% between the 1994–98 baseline and 2009. The three case study authorities demonstrated very different trends: Case Study 8 achieved a steady reduction (54% by 2009) from a relatively high baseline; Case Study 9 maintained a low level of child KSIs (in the region of 20 per annum) and achieved a 48% reduction; and Case Study 10 achieved a steady reduction after 2000 of 53%. All three of the case study metropolitan authorities remained higher than the average for this type in 2009, and have been since 2005.



3.4 The post-2010 challenges

The 2009 casualty statistics, aligned with the views of case study officers and partners, identified a range of ongoing challenges for local road safety practitioners. There were over 23,000 KSIs on England’s roads in 2009, of which over 2,000 were children. Specific road user groups that continue to be more difficult to address include:

- child pedestrians – 1,660 KSIs in 2009 across Great Britain;
- motorcyclists – 5,822 KSIs in 2009 across Great Britain; and
- young drivers – the 17–21-year-old age group had the highest fatality rate in 2009.⁶

⁶ Statistics derived from *Reported Road Casualties Greater Britain: 2009* (Department for Transport, 2010).

The majority of fatalities also continue to occur on rural roads (61%). The evaluation focused on extracting good practice and lessons learnt to assist in the ongoing investment to address these issues.

4 DELIVERING LOCAL ROAD USER SAFETY: A SAFE SYSTEM

Key findings

- **There has been an observable shift towards route- and area-based road safety investment, promoting a more holistic approach to delivery.**
- **The assessment of road user risks is becoming more embedded in road safety practice. This has generated:**
 - **a wider and more in-depth understanding of causality and the contributory factors in road traffic accidents;**
 - **better targeted investment strategies and interventions; and**
 - **investment that is seeking to influence the attitudes and behaviour of different road user groups.**
- **Local road safety education, training and publicity (ETP) officers are gaining a greater appreciation of the importance of considering both the characteristics of target groups and the context within which they use their local road network.**
- **Route- or area-based interventions are providing an effective platform for practitioners to consider the intended and potential unintended outcomes of investment.**
- **Interim outcome indicators are being successfully employed for route- and area-based interventions.**

4.1 Introduction

This section presents the findings of the evaluation into the delivery of road user safety, focusing on the changing approaches and balance of investment between the 3Es (Education, Engineering, Enforcement).⁷ The evaluation considered what is being delivered, why and how, providing the basis to consider what can be done differently to enhance local road safety delivery.

The importance of assessing road user risk and causality factors of road traffic accidents is highlighted, reflecting observed changes in local authority approaches. The move towards route- and area-based interventions is discussed, identifying good practice for urban and rural contexts. The section concludes with consideration of

7 More detailed analysis of the different delivery practises are presented in Appendix B: Delivery of road safety interventions.

the role of communities and other local authority departments in the changing environment of road safety delivery.

4.2 A changing approach to road safety

The traditional approach to delivering road safety interventions in England has been one of ‘problem solving’ (House of Commons Transport Committee, 2008). Evidence from the evaluation case study authorities suggests that this approach appears to have made a notable contribution to the casualty reductions experienced since the 1994–98 baseline period.

However, over the second Local Transport Plan (LTP2) period there has been a sustained shift towards the delivery of route- and area-based interventions. This has been particularly evident among the smaller and the more urban local authorities, where problem accident sites are becoming more difficult to identify as casualty numbers decrease.

A notable shift has also been evident towards planning to mitigate risks for different road user groups. This was acknowledged in previous research by the Audit Commission:

‘The focus must shift from making the roads safer, to making people use them more safely and sustainably.’

(Audit Commission, 2007; p. 8)

Designing investment strategies that target risk and focus on addressing the underlying causes of accidents underpins an holistic approach to road safety. This approach will also contribute to the emergence of a safe system, i.e. a road network and environment that is safer for all road users and purposes. Changing road user behaviour is also an integral element of such approaches.

There were examples from several of the case study local authorities which show how indicators of risk have played an important role in the design and delivery of road safety interventions. This included the assessment of skid risk (surface friction and condition surveys) and the use of CCTV to assess road user behaviours. ETP campaigns have also been used to change the underlying moral behaviour of road users, thereby addressing key risk and contributory factors such as inappropriate speeds. Those local authorities where there was a stronger emphasis towards delivering pre-emptive road safety, more commonly utilised a wider evidence base and range of indicators to assess risk. County case study engineers, in particular, used indicators such as surface friction and condition (measured by laser scanning) to improve skid resistance and reduce the risk of drivers losing control of their vehicles.

The more innovative use of data among some of the urban case study authorities saw the analysis of CCTV recordings to gain a better appreciation of road user behaviour. The different approaches to data use are detailed in Appendix E: Data, evidence and evaluation.

A reduction in funding for core road safety activities was commonly seen by local practitioners as a limiting factor in terms of delivering area- or risk-based road safety schemes. Many authorities felt that funding was more likely to be secured for schemes if there was evidence of an existing casualty problem. The need for clear causality and outcome data was therefore noted as a central challenge to delivering a more holistic approach.

Key finding: there has been an observed movement towards route- or area-based investment, often embedding risk-based assessments for targeted road user groups.

Local authorities are increasingly looking to ETP interventions to target and influence road user behaviour and change social norms, enabling the next step to be taken towards achieving a safe system. The following approaches to distinguishing road user target groups were identified across the case study authorities:

- **Users of individual modes of transport** – in the case study authorities, ETP practitioners generally targeted the modes of transport where casualties were high relative to the number of journeys made or overall distances travelled. In some cases the local authorities targeted those modes which were experiencing or expected to experience an increase in usage (such as walking, cycling and motorcycling).
- **Social groups** – these may be differentiated by factors such as age, gender, family status, ethnicity or geographical location (including specific communities). In the case study authorities, high-level target groups included: children and their parents, young male adults, ‘new arrivals’ from other countries, and deprived communities (Lowe *et al.*, 2011). More specific target groups were also identified by considering both high-risk social groups and the modes of transport where the greatest numbers of casualties occur for those groups. Examples included young male drivers, middle-aged riders of high-powered motorcycles, and those driving for work.
- **Road user behaviours** – many of the local authority case studies also targeted ETP interventions towards specific behaviours which increase the risk of road casualties. Examples from the case study local authorities included drink-driving, mobile phone use while driving, seat-belt use, speeding, and cyclists running red lights.

Key finding: to engender attitude and behaviour change, road safety ETP practitioners are increasingly considering both the *characteristics* of the groups being targeted and the *context* within which their interventions are being delivered (e.g. areas of social deprivation).

4.2.1 *Moving from cluster to route/area-based Investment*

The evaluation identified that many local authorities have addressed the most evident casualty clusters and, in so doing, have achieved quick-wins through site-based investment. Clusters of accidents and casualties are becoming more difficult to define for some authorities, with patterns being more widespread geographically and, in some cases, more diverse in the casualty/accident type or road users involved.

Local authorities are therefore taking a wider route- or area-based approach to road safety (see Box 4.1). Although this approach was borne out of necessity for some authorities, it has generated a wider and more comprehensive appreciation of road user risks. Transferable lessons and good practice are emerging which is relevant to all local authorities.

A good example of the potential benefits was identified in an urban case study authority, following a child cyclist fatality on a route with a dedicated bus lane. Using their normal parameters for accident/casualty cluster analysis, the location was not considered to be a problem site. However, owing to the nature of the incident (a fatality and a vulnerable road user), a more detailed investigation was undertaken. This took a broader route-based perspective of casualties on the three-mile bus lane, and it determined that there had been 20 injury accidents over an eight-year period, with child pedestrians and cyclists being over-represented.

The route-based investigation led to the delivery of a series of interventions along the bus route to provide safer crossing opportunities for pedestrians and cyclists to better understand desire lines. Enhanced signing and information was also provided to warn drivers of the presence of vulnerable road users. A central benefit afforded by such route-based interventions is that they can consider all road and mode users, both travelling along and traversing across the route.

Box 4.1: Urban area-based interventions

The Neighbourhood Road Safety Initiative⁸ and Mixed Priority Route⁹ programmes were both completed prior to the start of the evaluation. Both were large-scale investment programmes, which provided local authorities with the resources to develop and deliver comprehensive area- or route-based solutions. The lessons generated included:

- increased involvement of stakeholders and partners throughout, assisted in targeting hard to reach groups;
- the importance of setting clear and agreed objectives to bring partners together and to focus investment priorities;
- linking road safety with other policy areas (health and education, for example) can provide financial, resource and skill benefits; and
- a wider skill set is required from road safety officers to manage and deliver such complex programmes. Gaps in resources were particularly noted for road user engagement and communications.

Key finding: local authorities are using route- or area-based assessments to identify the nature, extent and scope of road safety problems. This is taking account of the context within which the route or area is set, such as the prevailing level of social deprivation.

Similar evidence was noted in the more rural case study local authorities (see Box 4.2). Several noted that site-specific engineering interventions can at times transfer casualty clusters to adjacent bends or junctions where there was previously no identifiable casualty problem. To help mitigate such risks, road safety engineers were monitoring and understanding road user behaviour. This approach, using video surveys, identified that new interventions led to increased speeds and risk taking on sections of the route without obvious safety measures.

8 www.dft.gov.uk/pgr/roadsafety/dpp/neighbourhoodroadsafety (accessed 25 May 2011).

9 www.dft.gov.uk/pgr/roadsafety/dpp/mpr (accessed 25 May 2011).

Box 4.2: Rural area-based demonstration projects

The Rural Road Safety Demonstration Project started in 2008¹⁰ and provided £6 million of investment to four rural county authorities. This increased level of investment provided a platform for authorities to plan, design and deliver an area-based investment strategy. The key lessons generated from this approach included the following:

- The use of both qualitative and quantitative information can assist in profiling road corridors and areas.
- Early and frequent stakeholder and community engagement enhanced the targeting and acceptance of investment.
- Joint intervention-based teams covering the 3Es enhanced communication and generated integrated solutions.
- The timescales for delivering road user attitude and behaviour change should not be underestimated, particularly the lead-in time required for road user engagement.
- The setting of achievable and time-based targets was problematic, promoting the use of interim indicators to monitor and track change.¹¹

Key finding: benefits in the design and effectiveness of interventions have been generated by considering both the intended and potential unintended outcomes of investment during the planning/scoping stage. Logic mapping is an example of techniques that can be used by local authorities, in a group or workshop setting, to collate the knowledge and inputs from cross-department. Department for Transport guidance, prepared by members of the evaluation team, is available to guide authorities (Hills, 2010).

The following engineering interventions were noted by interviewees as being incorporated into rural route-based delivery approaches:

- traffic-calming features – to control vehicle speeds;
- signs and lines (including hazard warnings) – to educate and inform road users, influencing their behaviour such as adjusting speeds to match prevailing road conditions;

¹⁰ Further details can be found at www.dft.gov.uk/pgr/roadsafety/dpp/rural/ (accessed 25 May 2011).

¹¹ This included the use of vehicle speed profiling as a proxy for risk.

- anti-skid and carriageway surface colouring – to address an identified risk factor and potential cause of accidents/casualties;
- pedestrian and cycle crossings – to provide safe crossing points for vulnerable road users, reducing the risk of mode conflicts;
- cycle paths – to provide for vulnerable road users, where network capacity exists;
- speed limit review (including signage) – to ensure that prevailing speed limits are appropriate to the network conditions and to influence road user behaviour;
- vehicle activated signs (VAS) – to provide drivers with feedback as to their speed or potential risks, such as sharp bends or poor forward visibility;
- gateway features – to demarcate different network environments and to influence road user behaviours; and
- junction enhancements (site-specific engineering) – to directly address potential risks.

Adopting a wider, more holistic, approach also requires three key, but often scarce, inputs: time, funding and human resources/skills. An assessment of the strengths and weaknesses of site- and route-based interventions is presented in Table 4.1.

Table 4.1: Comparison of site- and route/area-based intervention	
Site-based intervention	Route- or area-based intervention
The use of accident or casualty clusters to target engineering and, more recently, ETP and enforcement investment to address clearly identifiable outturn casualty trends. Interventions could include pedestrian or cyclists crossing facilities, junction layout modifications or changes to street furniture to install passive safety measures	A wider 'package' or programme of investment along a route or across a defined geographical area. Interventions could include route section speed limit revisions, enhanced signing and information, and whole area speed limit/traffic-calming treatments (20 mph zones, for example)
Strengths	
<ul style="list-style-type: none"> ● Focused investment in terms of geographical area ● Monitoring of intended outcomes (casualties) easier within defined location ● Attribution of outcomes to investment relatively straightforward as contextual factors are easier to determine 	<ul style="list-style-type: none"> ● Can address issues affecting all road user groups ● Is based on a wider understanding of road safety risk and causality ● Provides a platform for greater integration of the 3Es ● Encourages the consideration of targeting road user attitudes and behaviour change
Weaknesses	
<ul style="list-style-type: none"> ● Very focused outturn benefits addressing a single identified risk or casualty trend ● Lower benefits for wider community or road user population ● Unintended outcomes may not be identified or mitigated 	<ul style="list-style-type: none"> ● More difficult to measure direct outturn benefits in the short term

Key finding: site-specific engineering and enforcement interventions are continuing to form central elements of local road safety strategies, alongside the widespread move towards ETP.

4.2.2 *Considering wider route or area characteristics*

This section outlines good practice with regard to the factors that should be considered when defining route- or area-based investment. These insights provide tangible evidence as to the benefit of taking a broader approach to data analysis and risk assessment, particularly where casualty ‘clusters’ are being defined based on small numbers of KSIs over relatively long periods of time. This is reported by rural and urban areas.

The increased use of route- or area-based investment will necessitate the use of different datasets, scoping and design techniques, and innovative monitoring and evaluation processes.

4.2.2.1 Rural routes and areas

The evaluation has identified that, for rural routes, four key areas of influence were evident in the review and design of investment:

- the casualty record of the route;
- highway maintenance requirements;
- road safety concerns relating to specific route user groups; and
- the local environmental context.

The use of highway maintenance monitoring to support casualty trend analysis was evident in many case study local authorities. Rural routes identified as having casualty problems were also analysed in terms of road surface quality, particularly where STATS19 records showed that the loss of vehicle control was a contributory factor. Other areas of maintenance that were considered included verge maintenance (including hedges) and the legibility of signing and lining.

Benefits from adopting a balanced approach to rural route engineering can also be generated by taking account of local environmental concerns. One case study authority successfully removed trees adjacent to the highway through close consultation with biodiversity experts within the authority in order to create bend runoff areas. This approach addressed directly one potential cause of serious injury, although not the risk of vehicles losing control. It also allowed for several areas of roadside habitat to be enhanced as a secondary outcome.

Key finding: multiple and complementary datasets are being used successfully to analyse and understand accident and casualty trends. This includes, where relevant, the use of highway maintenance records to determine safety risks for different road user groups.

An holistic rural route investment should also consider the different road user groups, their behaviour, potential areas of conflict and how the route functions; for example, is it an A road carrying strategic traffic at relatively high speeds or a local road carrying a wider mix of vehicle types and road users.

Other environmental and contextual factors that were identified by road safety officers as being important included the wider rural aesthetics/environment, traffic characteristics (flows, vehicle types) and the highway and land-use characteristics (e.g. bend profiles and locations of signage).

The design and delivery of route-based investment in rural areas should also consider the cross-authority context of traffic movements to ensure that comprehensive treatments are adopted. This approach has been successfully achieved by adjacent rural authorities targeting motorcyclists, in order to overcome the constraint of riders living in different areas to where they ride. Such approaches promote further the importance of partnership and collaborative working, on either a formal or informal basis.¹²

The monitoring and evaluation of interventions targeting a combination of risk, causality and road user behaviour require a more complex set of tools and techniques. The use of logic mapping to design and programme investment is increasingly being used to identify anticipated outcomes and, thereby, the types of data required.

Short- to medium-term indicators of behaviour change are also being used to track progress towards longer-term changes in accidents and casualties. The Department for Transport Rural Demonstration Project provided four Beacon authorities the opportunity to trial innovative techniques. These included route profiling and the use of vehicle flows and speeds as a proxy for risk. A recent research commissioned by the Association of Directors of Environment, Economy, Planning and Transport (ADEPT) also considered the use of interim indicators in route-based investment (Helman *et al.*, 2011).

Key finding: interim indicators are being used for the monitoring of route- or area-based interventions. These include the measuring of vehicle speed profiles, flow breakdown statistics and observed user behaviour, such as pedestrian crossing lines relative to crossing facilities.

12 For further details see Appendix D: Partnership working.

4.2.2.2 Urban routes and areas

In an urban context, the shift towards route- and area-based approaches has been accompanied by a greater need to be aware of wider urban stakeholder priorities. The following were identified by case study local authorities as common considerations when delivering wider treatments in urban environments:

- traffic flows, speeds and behaviour;
- land use, including access requirements to retail and residential sites;
- access for emergency services;
- bus routes and potential vehicle conflicts;
- maintenance; and
- wider development and sustainable transport investment.

One metropolitan borough case study local authority had introduced formal procedures to ensure that road safety engineers have detailed knowledge of the local context within which they are working, for example social demographic profiles and network characteristics. This has contributed towards all local safety schemes now being preceded by detailed route and area reviews. These included land use, bus route, and local traffic/pedestrian surveys, all of which contributed towards a greater understanding of local needs.

Figure 4.1 shows an extract from an urban route-based investment programme logic map, taken from one of the case study local authorities. This highlights the links between outputs (i.e. what is delivered) with both short-term changes in attitudes and longer-term changes in behaviour. A summary of approaches adopted in rural and urban contexts is provided in Table 4.2.

Figure 4.1: Logic mapping for urban route-based interventions

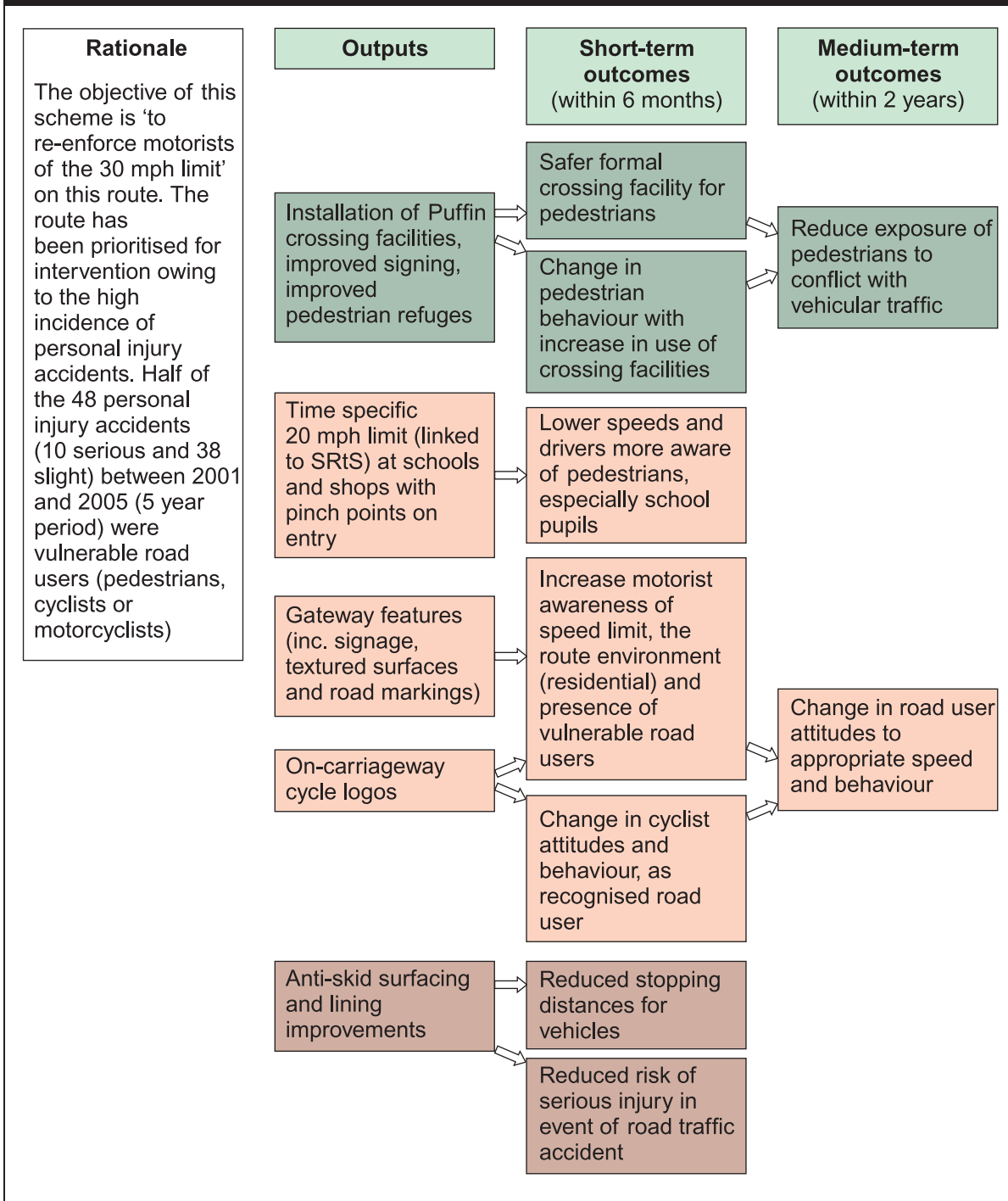


Table 4.2: Rural and urban route and area-based interventions	
Rural areas/routes	Urban areas/routes
Why invest?	
<ul style="list-style-type: none"> ● Address route or corridor speeding ● Promote a whole route treatment of risk ● Consider all potential road user groups and route functions (strategic and local) 	<ul style="list-style-type: none"> ● Enhance community environment and quality of life ● Embed road safety in wider society and wellbeing agenda ● Target specific user groups through combined department initiatives, generating resource and delivery efficiencies
Who to target?	
<ul style="list-style-type: none"> ● Motorcyclists travelling across local authority boundaries ● Vulnerable road users crossing, rather than traversing, routes ● Heavy goods vehicle (HGV) drivers in areas of hilliness or bendiness 	<ul style="list-style-type: none"> ● School-age children exposed to high-risk levels ● Areas of deprivation ● High-risk road users
What to deliver?	
<ul style="list-style-type: none"> ● Cross-border education and publicity campaigns ● Route-based speed management and awareness treatments, combining the 3Es ● Traffic-calming features – to control vehicle speeds ● Signs and lines (including hazard warnings) – to educate and inform road users, influencing their behaviour such as adjusting speeds to match prevailing road conditions ● Anti-skid and carriageway surface colouring – to address an identified risk factor and potential cause of accidents/casualties ● Pedestrian and cycle crossings – to provide safe crossing points for vulnerable road users, reducing the risk of mode conflicts ● Cycle paths – to provide for vulnerable road users, where network capacity exists ● Speed limit review (including signage) – to ensure that prevailing speed limits are appropriate to the network conditions, and to influence road user behaviour ● Vehicle activated signs (VAS) – to provide drivers with feedback as to their speed or potential risks, such as sharp bends or poor forward visibility ● Gateway features – to demarcate different network environments and to influence road user behaviours ● Junction enhancements (site-specific engineering) – to directly address potential risks 	
Where to focus investment?	
<ul style="list-style-type: none"> ● Adjacent authority areas covering key origin and destination locations for at-risk road users 	<ul style="list-style-type: none"> ● Residential areas ● Locations around key trip attractors (schools, hospitals, etc.) ● Key arterial routes of mixed road users with high vehicle conflict potential

4.3 Localism and road user engagement

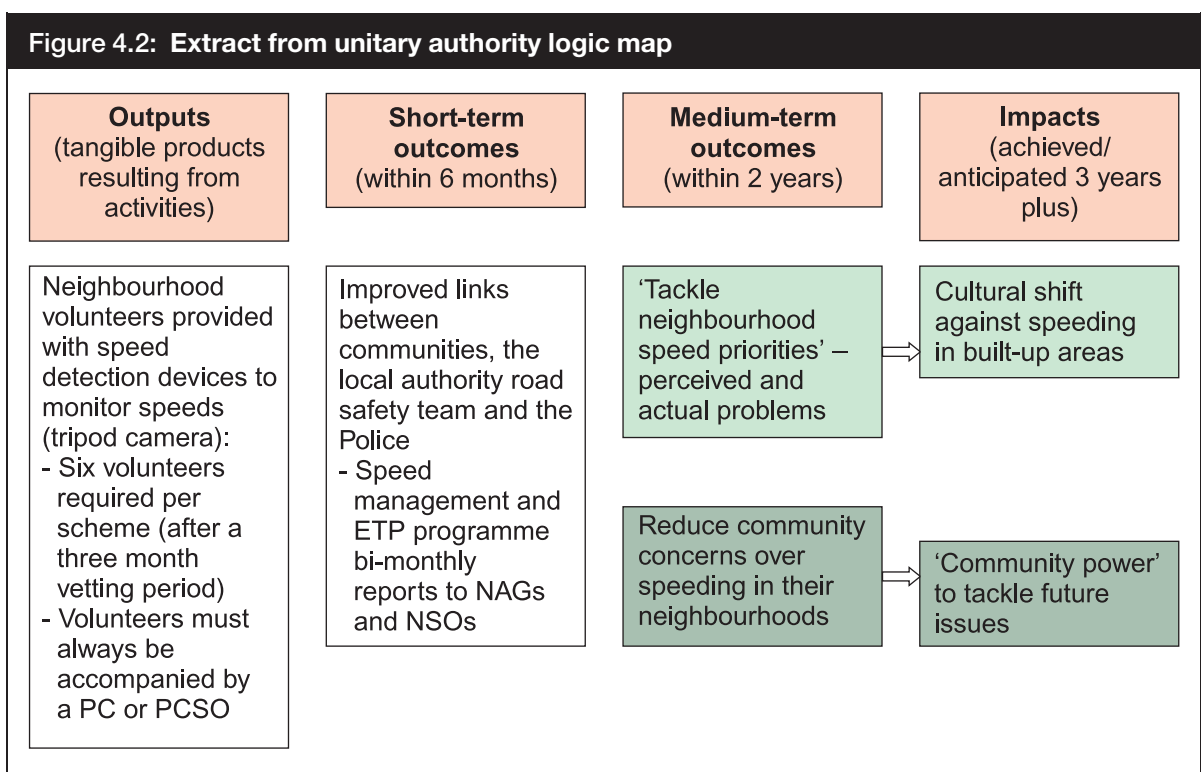
It will be important for road safety practitioners to embrace the shift towards more neighbourhood-led interventions as the localism agenda evolves. Core local authority road safety budgets are increasingly stretched and casualty problems are becoming less easy to detect. As such there could be considerable benefits in

drawing together the local knowledge of individual communities and the expertise of local authority officers to deliver targeted interventions.

An example of road user and community engagement in road safety delivery is provided in Figure 4.2. This shows an extract from a logic map for a community speed awareness programme in a unitary authority. Opportunities to involve the local community as a source of information and data, and as an additional resource were identified through this exercise.

The political influences over the delivery of urban road safety interventions can also emerge from the sub-local authority level. The most common form observed across the case studies was via councillor-led neighbourhood committees. In the case of the London boroughs consulted, they took the form of ‘Ward Forums’, and in unitary, metropolitan and county authorities they were usually referred to as ‘Area Committees’. In all cases they were based around local electoral boundaries.

Key finding: the case study local authorities have highlighted that a clear understanding of local community and road user requirements can contribute to the design of comprehensive area-based treatments.



4.4 Integrating road safety into wider policy areas

The case study authorities were supportive of the strategic framework provided by Local Area Agreements (LAA), linked with area-based central Government grants. Although grants have not been ring-fenced since 2005, officers stated that targeting such investment towards LAA objectives assisted in good programming and obtaining wider authority support.

However, changes in funding and the removal of the LAAs, in a period of overall spending cuts, could lead to shorter, less effective investment programmes. ETP officers noted that the uncertainty over future funding made designing interventions to achieve medium- to long-term behaviour change very difficult. Programmes of ongoing investment were considered to be more challenging to maintain, with increased pressure to demonstrate benefits in the short term.

Increasing emphasis is therefore being placed on integrating road safety into the broader local authority policy agenda. This has generated opportunities in the form of alternative funding avenues and benefits in the utilisation of skills and resources of other departments.

The availability of area-based grant funding from a number of Government departments has encouraged road safety officers to work in internal partnerships to deliver improvements. Examples included the collaboration with education departments, and the use of joint funding for school travel plan advisors and sustainable transport promotion.

The 2006 Road Safety Partnership Grant also promoted inter-departmental working, including the involvement of health, education and the voluntary sector in road safety. Case study authorities noted that this had generated ‘additionality’ for road safety, alongside wider social and environmental benefits. The Department for Transport funding requirements, which include identifying the **need** for investment and demonstrating an integrated/advanced **approach**, were also viewed by authorities as having improved the design and delivery of interventions.

However, a central challenge faced by many local authorities is that local road safety is often a dispersed function within local authorities, reflecting historic organisational structures rather than investment priorities.¹³ Internal local authority collaborative working was increasing where resource and timescales permitted, most notably where wider geographical areas or specific road user groups were being targeted.

13 More detailed overview of the different structures adopted to deliver local road safety is included in Appendix C: Local road safety structure.

Areas of existing joint-working included development and regeneration planning, sustainable transport and urban streetscape investment. Road safety officers felt that further emphasis should be placed on such approaches.

In the county case study authorities, the road safety engineers reported strong working relationships with their colleagues in highways and **development planning**. In one county authority this relationship had evolved to the extent that qualified road safety auditors were taking on a broader ‘advisory’ role regarding new developments, and their potential impacts, even before the preliminary design stage (considered during a Stage 1 Road Safety Audit (RSA)). This proactive approach was considered by officers to only be achievable because the key contacts in each team were senior engineers, who had a good strategic overview of the local authority engineering activities.

It was stated by county representatives that there had been a noticeable improvement in preliminary designs of development-related infrastructure, and they attributed this to the road safety auditors actively ‘educating’ engineering design teams with regard to RSA criteria. The RSA has proven to be a useful tool for the indirect delivery of road safety across all areas of highway infrastructure development, contributing towards the aim of achieving a ‘safe system’ (OECD/ITF, 2008).

Major new trip attractors have also been targeted by road safety practitioners when ensuring that area-wide infrastructure is appropriate for the potential user groups. In the example of new school developments, road safety treatments commonly include school safety zones to mitigate casualty concerns or public/political pressure. A more proactive approach can be adopted to better target the potential risks to road users, as exemplified by one of the case study authorities in Box 4.3.

Box 4.3: Pre-emptive road safety engineering for new schools

In a metropolitan borough case study authority, road safety engineers reported a successful pilot whereby they worked closely with ETP officers to deliver school-oriented road safety engineering. The key activities were:

- ETP officers initiated research to underpin the development of travel plans for three new Academies planned under the Building Schools for the Future programme;
- assessments were made of key travel corridors for pupils based on catchment areas for each Academy. Local political pressure to ensure that sites were well served by safe routes to walk and cycle led to the engagement of road safety engineers;

- a package of small-scale engineering interventions was developed, focusing on enhanced crossing provision on key corridors serving the Academies; and
- the project was seen as an innovative way of working road safety considerations into the design process. ETP and engineering staff felt that it improved their collective understanding of the overlaps in their work and there is now a renewed emphasis towards joint working and the sharing of evidence.

Key finding: there is clear evidence that strong links have been established between road safety and planning departments, facilitating proactive area-wide treatments. The RSA process and principles are seen by authorities as good practice, guiding the delivery of new development infrastructure.

Road safety engineering must not unduly hinder, and, wherever possible, should promote, the use of **sustainable transport** modes. In the case of cycling, while ETP activities can have a positive impact on people's attitudes towards the feasibility of cycling, research indicates that the real and perceived safety of riding on roads is the biggest prerequisite for encouraging non-cyclists to take up cycling.¹⁴

Across the case study authorities there was an apparent willingness to promote sustainable travel. However, most felt confined by the need to use their budget to prioritise casualty problems (which may or may not involve pedestrians and cyclists) and saw the routine improvement of pedestrian and cycle infrastructure as a discrete activity.

This supports the need for wider engagement between road safety engineers and those involved in transport planning activities to identify opportunities for joint scheme delivery and resourcing where there are shared priorities. Although there remained a consensus among local authorities interviewed to prioritise sites/areas with observed casualty problems, the potential benefits of a better appreciation of user group attitudes and behaviour were recognised.

Several of the road safety engineers consulted were keen to emphasise the importance of having a holistic approach to **streetscape design**. The publication of the Department for Transport's *Manual for Streets* (MfS) in 2007 was welcomed by a number of the local authority case studies as it was seen to facilitate more innovative approaches to building road safety into new residential developments while encouraging sustainable travel choices. The more proactive teams interviewed

14 This is supported by recent research commission (led by AECOM) to evaluate the Department for Transport/Cycling England investment in the 'Cycling City and Towns' programme, available online at www.dft.gov.uk/pgr/evaluation/reports/cctevaluation/interimreport/ (accessed 25 May 2011).

have utilised the emergence of new guidance in MfS (and MfS2¹⁵) to ‘sell’ their expertise to other internal local authority teams and departments. This has promoted integrated working and contributed towards the engineering of intrinsically safer streets.

Key finding: the case study local authorities are successfully using existing and emerging guidance to facilitate joint working and the integrated delivery of interventions. They consider such documents as providing a framework around which to build internal partnerships.

15 Consultation with local authorities was completed prior to the publication of *Manual for Streets 2* (MfS2; Chartered Institution of Highways and Transportation, 2010).

5 BUILDING DELIVERY CAPACITY: WORKING MORE EFFICIENTLY

Key findings

- **A single (combined) road safety team within a local authority can help to accommodate and embed the core road safety activities (the 3Es – Education, Engineering, Enforcement).**
- **Organisational structures that foster training and secondment opportunities are providing strong skills sets and a resource basis for road safety delivery. Secondment between partner organisations was also observed as generating positive benefits.**
- **Succession planning is not commonly undertaken within local authorities, increasing the risk of knowledge loss following staff turnover. This is presently undermining the sustainability of skills and expertise in areas of road safety delivery, including data analysis and education, training and publicity (ETP).**
- **Partnership working at a variety of different organisation levels is enhancing the efficiency and effectiveness of road safety delivery.**
- **Cost savings have been generated through partnership working, an example being the delivery of interventions in schools.**
- **Local authorities are increasingly using multiple datasets through which to triangulate road safety findings.**
- **The use of logic mapping techniques is becoming more common within local authorities and is enhancing the design and targeting of the range of road safety interventions.**

5.1 Introduction

A central challenge for road safety practitioners and local authorities in the present period of budget and staff cuts will be the prioritisation and targeting of available funding. This section draws in evidence from a range of the supporting appendices, notably Appendix D (partnerships), Appendix B (delivery) and Appendix E (data analyses).

The evaluation has identified the potential benefits of incorporating new areas of knowledge and expertise in road safety design and delivery, such as behaviour

change. However, the 2011 White Paper noted a word of caution, emphasising that lessons from previous investment need to be heeded before new interventions are used (Department for Transport, 2011; para 2.21). This could encourage a return to the more tried and tested engineering-based interventions.

A balance is therefore needed to provide sustainable yet effective road safety investment. The evaluation has considered the range of organisational and human resource structures employed by local authorities to identify emerging good practice and lessons generated by different approaches. This section begins with an overview of the strengths and weaknesses of existing road safety structures, before considering specific areas of activity such as data use and partnership working.

5.2 Policy context to local road safety

A central theme of this analysis was how local authorities can build and sustain sufficient capacity to deliver ongoing road safety programmes. Alongside substantial cuts in public spending, local authorities and their partners are responding to the emerging localism and devolution agenda. This includes the revision of organisational structures and cultures in response to the ‘Big Society’, significant health and policing reforms and the changing regional policy environment.

There has been a complete scaling back of the formerly centralist performance framework with the abolition of the Comprehensive Area Assessment (CAA), the end to the system of Public Service Agreements (PSAs) and, from October 2010, the end of Local Area Agreements (LAAs) and the National Indicator Set. This has generated an environment in which road safety will be delivered, which places greater emphasis on:

- outward accountability;
- localism and devolution; and
- enabling communities to do more.

As noted in Section 4, the evaluation identified that the combination of LAAs and Local Strategic Partnerships has provided an effective framework and focus for road safety investment. These mechanisms have been instrumental in mobilising local political support, while also fostering collaborative working with other authority departments and external partners.

5.3 Developing capacity

5.3.1 *Physical and structural co-ordination*

The present reduction in local authority funding has already led to re-structuring at both the authority and road safety team levels. An outline hierarchy of new road

safety structures was emerging during the final year of the evaluation reflecting different levels of service externalisation (Table 5.1).

The case study evaluation evidence supports model 2 as the most efficient for road safety delivery, as it retains the internal integrity of knowledge and expertise. The main weakness of model 3 is the potential for organisational retrenchment into historic silos. However, any model remains under the influence of wider local authority restructuring policy. The application of model 2 would emphasise the importance of partnership working and the efficient targeting of investment.

The evaluation has not been able to identify which model is more appropriate to different local authority types. No consistent evidence emerged from the research, reflecting both the recent and rapid change occurring in 2010 and the influence of local contextual factors.

Table 5.1: Models of local authority restructuring

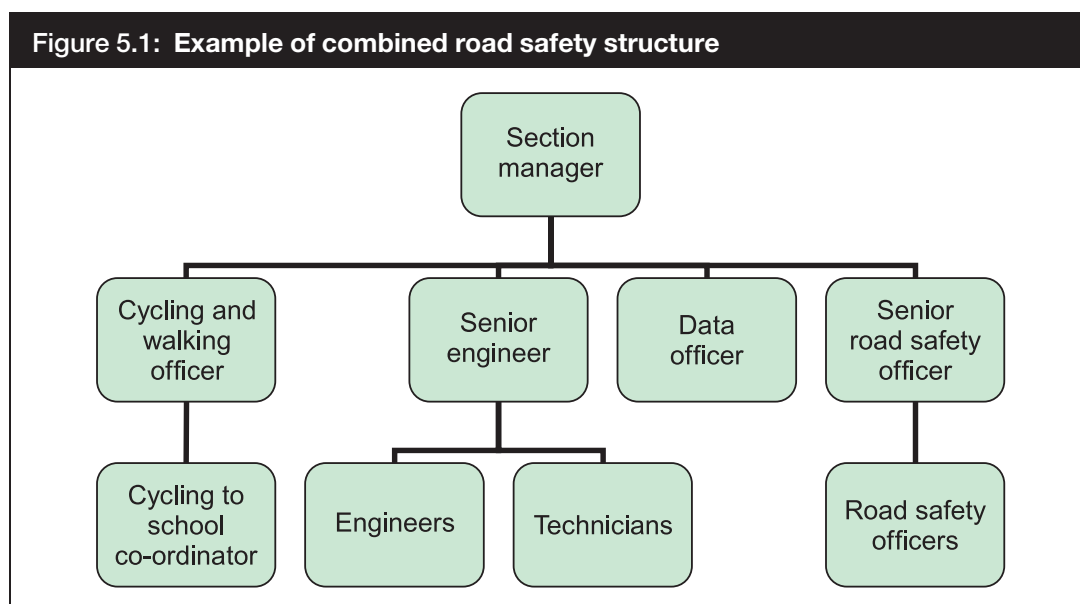
Model	Strengths	Weaknesses
1. The externalisation of all or some local authority functions. This has included specific ETP, enforcement and engineering road safety tasks	<ul style="list-style-type: none"> Reduces or removes substantial operational overheads, including office space and support services 	<ul style="list-style-type: none"> Removes existing knowledge base of local road safety officers
2. Downsizing of road safety into a single team to focus on core functions	<ul style="list-style-type: none"> A smaller focused and dedicated road safety team is established Promotes partnership working and internal joint working Increases knowledge sharing within the team Facilitates co-ordination and standardisation of core functions (RSAs, data analysis, etc.) 	<ul style="list-style-type: none"> Some specialist services will have to be externalised
3. Streamlining existing road safety team, but retaining dispersed structure	<ul style="list-style-type: none"> Minimises disruption by retaining existing structure 	<ul style="list-style-type: none"> Could perpetuate a retrenchment into silos Can be thinly resourced and open to knowledge loss through staff turnover Could reduce or constrain partnership working

The physical and structural separation of road safety activities was observed within a number of case study local authorities. This was particularly evident within two-tier authorities, where cross-boundary working was also more prominent (only two of the nine county or unitary case study authorities were considered to have a **combined**¹⁶ organisational structure). Dispersed structures were considered by case

¹⁶ This was defined as the presence of a single engineering and ETP road safety team, or as a minimum as a common managerial structure – see Appendix C: Local road safety structure.

study areas to reinforce historic cultural differences, thereby making joint working more difficult and often impractical.

Local authorities with **linked** or **combined** structures (Figure 5.1) have seen substantial reductions in KSIs, but not significantly different from the national average (on average 47% and 39% between the 1994–98 baseline and 2009¹⁷). Locating all road safety related functions within a single building or open plan office space, for example, can assist in overcoming cultural separation. In particular, face-to-face communication can be improved, which in turn facilitates enhanced joint working and information sharing.



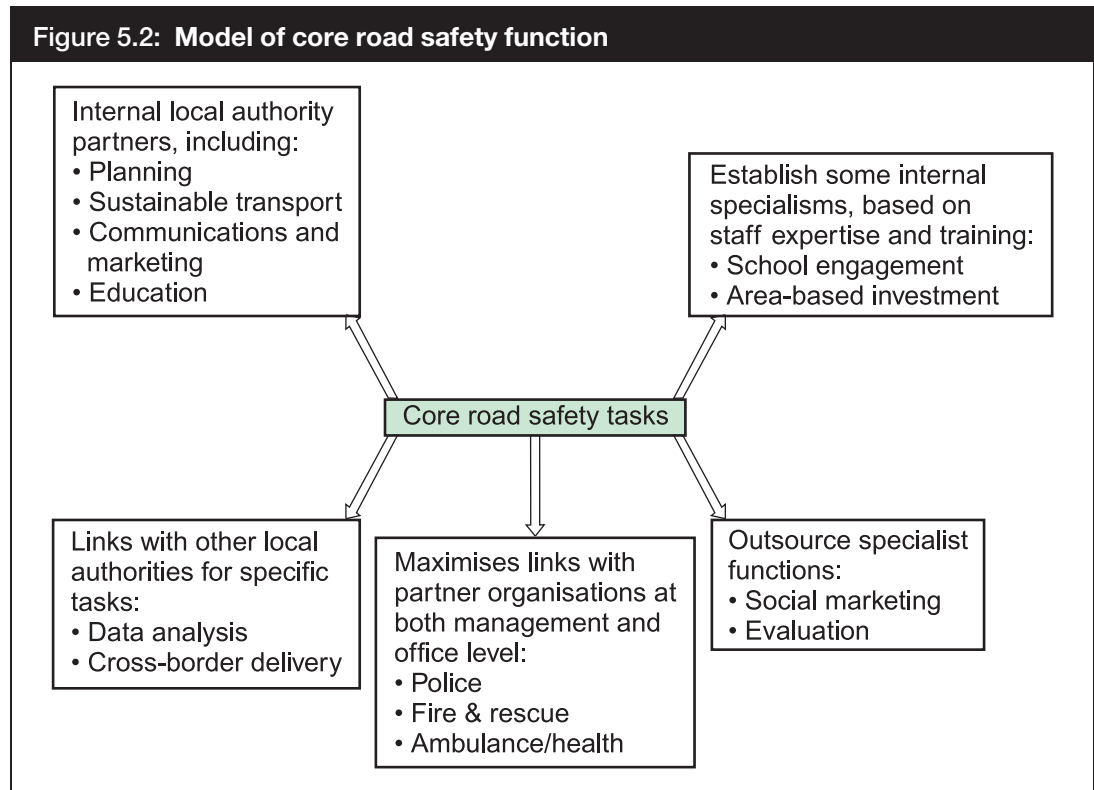
Key finding: a linked or combined road safety function can help to accommodate and embed core road safety activities (3Es). This often includes a clearly defined casualty reduction management structure/hierarchy bringing together representatives from the 3Es, data/monitoring, sustainable transport and potentially partner organisations.

Alternative approaches have been taken by local authorities to try and adopt restructured road safety operations. One case study sought to separate all local authority activities into **commissioning** or **delivery** categories, in line with the externalisation of certain work. However, the nature of road safety crosses into both these definitions, making such an arrangement difficult.

Whichever structural arrangement is adopted, road safety continues to be a cross-cutting local authority activity. The consensus among local officers interviewed was

¹⁷ It should be noted that the five local authorities with **dispersed** structures had seen an average reduction of 49% during the same period.

that road safety should be viewed as an investment theme or function, rather than in relation to the physical or organisation structure. This would embed the core safety tasks within a framework of support and supply arms (Figure 5.2).



5.3.2 Skills and expertise gaps

The evaluation has identified the following areas of skill shortage or limited expertise/knowledge among the road safety officers interviewed:

- data analysis – considering information sources beyond traditional STATS19 data, including Hospital Episodes Statistics (HES), contributory factor and statistical analysis;
- social marketing and research – including in-depth interview and focus group techniques, and new skill areas such as social marketing;
- management – of multi-disciplinary or multi-agency teams. Leadership and co-ordination were two main areas of weakness identified; and
- evaluation and research – particularly the assessment of short- to medium-term behaviour change and ETP interventions.

One hypothesised cause for this was a lack of formal training, which was identified by some respondents within local authorities. However, the existing BTEC

Professional Development Diploma in ‘Accident and Safety Management’ currently provides the following technical training:¹⁸

- accident analysis, investigation and reconstruction;
- psychological perspectives of behaviour;
- roads and traffic;
- principles of English law;
- transport and the environment;
- public relations and marketing; and
- research.

The coverage and scope of modules provided addresses the majority of skill gaps identified. This leads the evaluation team to conclude that operational constraints, such as time or funding, are likely barriers to road safety officers obtaining remotely provided training.

Key finding: organisational structures that foster training and secondment opportunities are providing strong skills sets and a resource basis for road safety delivery. The techniques adopted have included incorporating apprentice-type arrangements for learning and development.

5.3.3 *Knowledge sharing*

The co-ordination of key road safety functions within local authorities can also promote greater knowledge sharing between officers. This was particularly evident within the smaller unitary case study authorities evaluated.

The enhanced communication between smaller, more co-ordinated teams can also assist in addressing one of the main constraints identified by officers – the high turnover of staff. This was evident within both local authorities and partner organisations, and included staff reassignment **within** organisations as well as external staff turnover.

Key finding: succession planning is not commonly adopted within local authorities. This could become an integral and low cost element of local authority road safety management, supported by internal knowledge networks and the promotion of on-line information sources, such as the Road Safety Knowledge Centre.¹⁹

¹⁸ The course is modular based and undertaken through distance learning (www.roadsafetygb.org.uk/pages/training-nstg (accessed 25 May 2011)).

¹⁹ www.roadsafetyknowledgecentre.org.uk (accessed 25 May 2011).

5.3.4 *Delivering more for less*

The reductions in central and local Government funding and restructuring outlined above have encouraged new ways of working within local authority road safety teams. The following are examples of different approaches to delivering road safety where activities have changes to reflect budget reductions:

- A county local authority has withdrawn hands-on pedestrian safety training at schools, and moved to using information leaflets and on-line training modules. This approach has been supplemented by school visits in response to known safety concerns or incidents.
- Bikeability training delivered across local authority boundaries in two-tier authorities. This was commonly directed by road safety engineers using a team of part-time trainers. Following initial training, the use of external training teams minimises overheads and costs are only incurred when training is provided. A co-ordinated county level approach, maximising links with other school-based and cycle club activities, has increased training take-up in the Cambridge and Shropshire Cycle Towns (AECOM, 2011).
- School-based education and information activities have been co-ordinated between partner organisations to reduce the number of different approaches.²⁰ The role of the emergency services was highlighted by a number of local authorities, in providing good access within the time constraints of the school curriculum.

Key finding: the evaluation has identified evidence of activities targeting specific road user groups, such as young school children, that have been co-ordinated between partner organisations. This increased the coverage and dissemination possible through maximising existing protocols.

5.4 Partnership working

Whereas once, the focus for partnership working was almost solely on improving outcomes, the assessment of efficiencies and ensuring value for money has become increasingly evident. This shift towards increasing **productivity** is changing the nature and extent of partnership working, including greater emphasis on:

- shared services and joint strategic commissioning;
- a ‘whole area’ approach to managing budgets; and
- new models for service delivery.

²⁰ For more details see Appendix D: Partnership working.

Local Government Improvement and Development stated that:

*'The general direction of travel towards localism, greater autonomy, and more freedoms is precisely what the sector has been lobbying for this past 12 months or more. As the 'dust begins to settle' many will see this as an opportunity to re-direct the future role of partnerships – to move away from bureaucracy and instead have a clearer and more practical focus on what needs to be done to both improve outcomes and reduce costs.'*²¹

They also identified the following overarching findings relating to future partnership working within local authorities:

- the commitment to partnership working remains strong in the majority of authorities;
- partners are focusing on reviewing strategic objectives, leading to key principles for future collaboration;
- partnerships are taking the opportunity to consider their approaches to thinking and behaviour rather than merely structure; and
- partner organisations are seeking ways to pool and align resources to deliver more efficient and effective investment.

So how does this image of future partnership working fit with existing road safety practices. It has been evident throughout the evaluation that a '**synergy**' effect has been achieved by local and sub-regional partnerships. The key benefits identified by partnership members included:

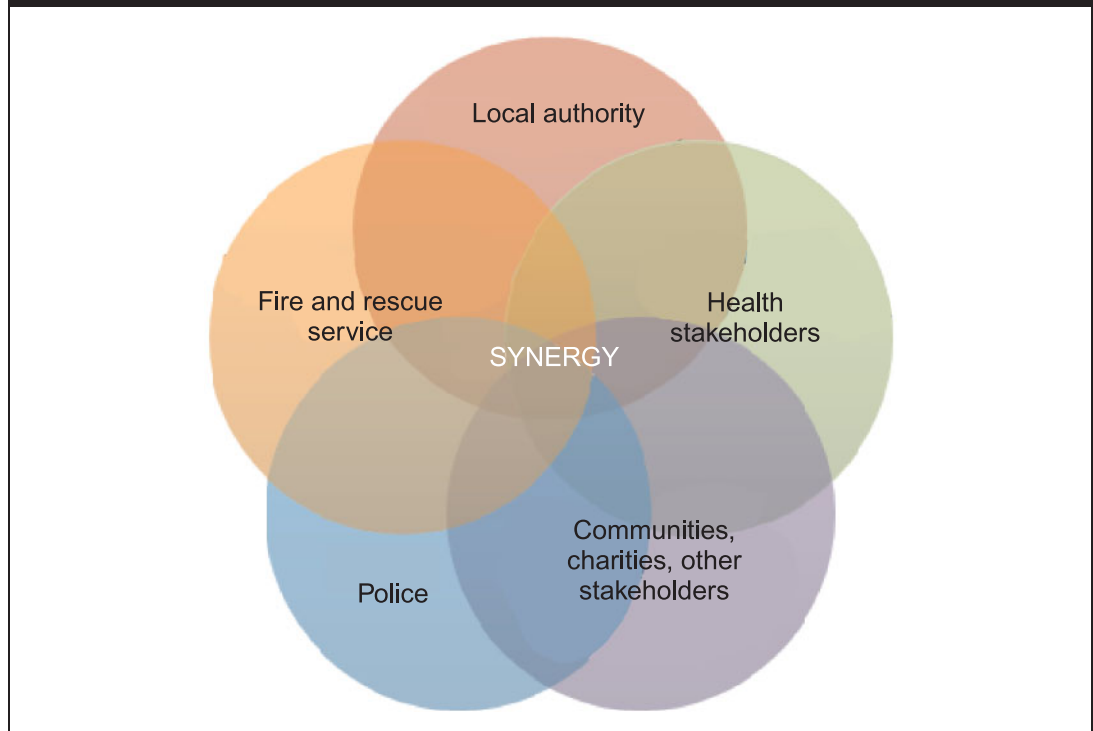
- greater resource availability (financial and personnel);
- wider stakeholder contacts, networks and, therefore, involvement/influence;
- reduced duplication of investment;
- integration of investment solutions ('packages') generating benefits greater than the individual elements; and
- economy of scale due to the increased bargaining power of a partnership, especially in the case of ETP interventions.

The main organisations commonly involved in combining resources are presented in Figure 5.3, and this has often resulted in wider local road safety investment programmes.²² In most cases the change in scope was marked in a formal way through revisiting previously prepared Terms of Reference and, in some cases, Service Level Agreements.

21 www.idea.gov.uk/idk/aio/23885112 (accessed 25 May 2011).

22 For more details see Appendix D: Partnership working.

Figure 5.3: Synergy effect through collaborative working



Three different levels or types of partnership have been identified through the evaluation, with the majority being established to address primarily road safety issues. Each level has generated benefits among the case study authorities in different areas of road safety delivery, including the following:

- **Mini Partnership** – defined as the internal collaborative working **within** local authorities and between divisions and departments. Benefits have included the utilisation of the skills and resources of other teams, including both funding and human resources.
- **Midi Partnerships** – defined as the collaboration **between** local authorities and key organisations **within** their authority boundary. These derived from the traditional safety camera partnerships, involving the police, emergency services, etc., to delivery targeted interventions. Examples included a joint local authority and ambulance service leaflet campaign targeting motorcyclists, funded by the former as ‘their investment for the future’. Joint schools based delivery between authorities and the fire and rescue service was highlighted as enhancing delivery efficiency and effectiveness.
- **Maxi Partnerships** – consisting of regional or sub-regional partnership working **between** local authorities. Partnerships have been effective in the development and delivery of publicity campaigns to influence cross-border road users (where residence and employment locations are in adjacent authorities) and targeted mode-specific marketing (motorcyclists, for example). Cross-boundary route-based investments have also been assisted through the presence of Maxi Partnerships.

Partnerships were therefore observed as a central strand of local authority working. The following are further examples of good practice partnership working from the case study local authorities:

- establishing common objectives and aims can enhance partnership formation and direction – this can also avoid duplication and contribute to economy of resources;
- the secondment of partner staff into local authority teams can enhance joint working, providing a better appreciation of delivery pressures and processes – fire and rescue officers have exemplified this, enhancing integration;
- local authorities, the police and ambulance services collaborated on a regional publicity campaign, using photographs of trauma victims to enhance the underlying message;
- the presence of national targets, and supporting local level targets, have been important stimuli to local partnership working; and
- regional and sub-regional partnerships have been evident, and have been effective for ETP activities – the pooling of resources across authorities and partners can generate cost savings for publicity campaigns.

Key finding: the evaluation has observed that partnership working at a variety of levels has greatly enhanced the ability and effectiveness of local road safety delivery.

Key finding: the case study local authorities have adopted regional and sub-regional collaborative working for publicity and information campaigns, generating cost savings where cross-border messages have been delivered.

At the strategic policy level, the evaluation has concluded that further inter-departmental or divisional discussions and collaboration should be fostered. This would increase the exposure of road safety within local authority agenda and help safeguard future funding.

Many areas of existing internal local authority collaborative working have been identified where enhanced co-ordinated interventions have been delivered. Some of these cut across a number of Government department initiatives, such as child welfare, while others have been based on local partnership objectives and structures. Examples of such working are provided below.

5.4.1 *Child safety*

The wellbeing of children is a policy focus for a number of central and local Government departments, including:

- cycling and pedestrian training (Department for Transport supported), including the use of peer groups to promote training within year groups;
- child health and obesity, including the Change4Life and the 2010 Health White Paper (Department of Health, 2011) promoting healthier lifestyles (Department of Health);
- guidance from the National Institute for Health and Clinical Excellence (NICE) to reduce unintentional injuries to the under fifteens;²³ and
- child wellbeing and safeguarding (Department of Education).

5.4.2 *Public health and wellbeing*

The proven links between health, wellbeing and contextual socio-demographic characteristics, alongside the health benefits of walking and cycling (Department of Health, 2004) are promoting joint working:

- the framework is now established through the White Paper, with an emphasis on addressing health inequalities – work to reduce road casualties in deprived areas continues to be an integral part of this; and
- partnership working on data analysis has enhanced officer understanding of casualty severity (combining HES and STATS19 datasets).

5.4.3 *Crime and public order*

The evaluation of partnership working has identified a growing synergy between local authority and policy officers/emergency services:

- partnership working has generated effective links between local authorities and police forces – enforcement and crime prevention activities have been combined in some case study authorities; and
- the fire and rescue services have liaised with road safety officers to combat youth offending (arson) – school-based interventions and education have been central to this.

5.4.4 *Education and citizenship*

- The targeting of school-aged children to influence current and future behaviour has become increasingly common across the public policy agenda. Opportunities

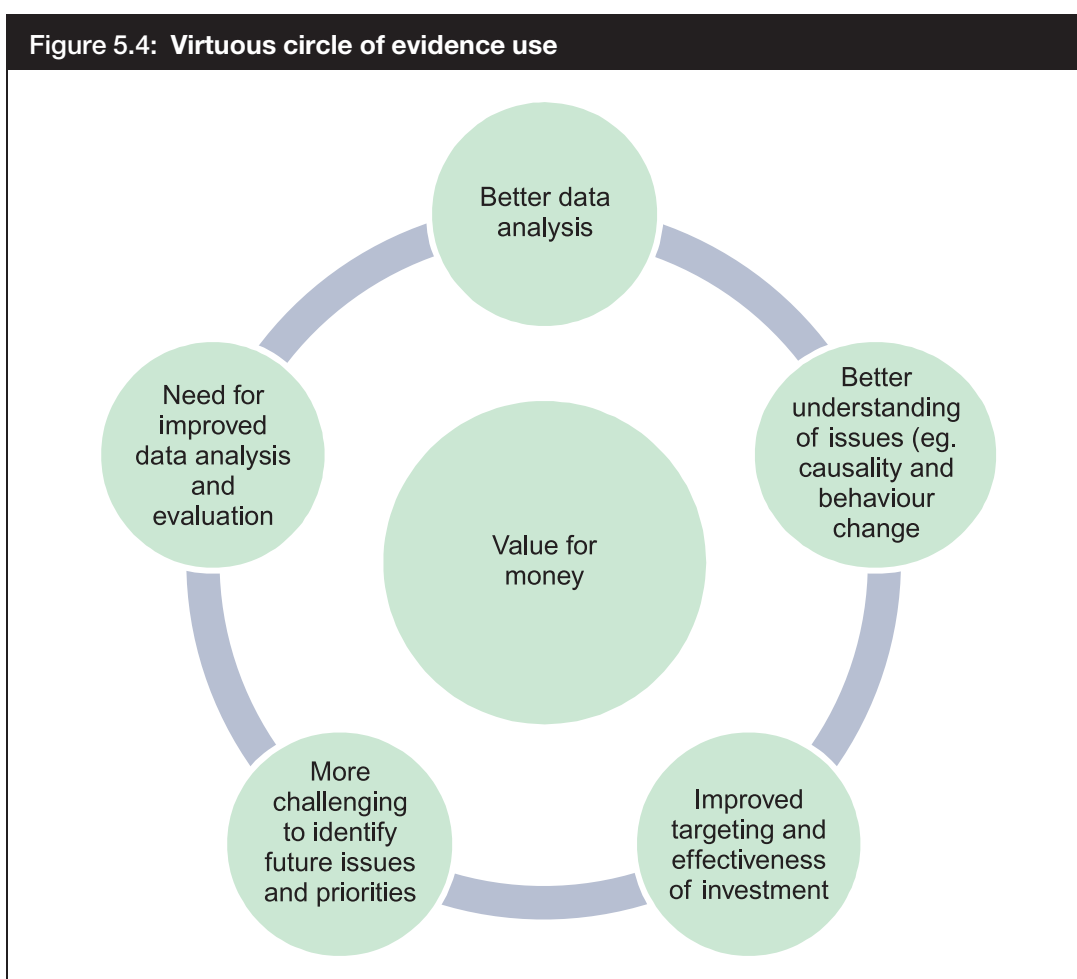
²³ See www.nice.org.uk/guidance/PH29 for the strategy and www.nice.org.uk/guidance/ph31 on road design and modification (accessed 25 May 2011).

have been taken by local authorities to piggy-back road safety activities onto existing education-based programmes through the promotion of better awareness of road safety issues and the appreciation of other road users. However, many case study local authorities identified the constraints placed on promoting road safety to secondary school children as road safety is not part of the national curriculum.

Key finding: the evaluation has observed inter-departmental or divisional working at a range of levels within local authorities. This has been used to generate more holistic and efficient delivery of road safety initiatives.

5.5 Data and evidence use

An issue that cuts across several elements of local road safety delivery is the use of data and evidence to inform and guide investment. The central challenge in the short term is to balance the need for increasingly complex analysis with reductions in staff and financial resources. A key tipping point needs to be reached whereby initial investment in analysis and evaluation generates a virtuous circle of knowledge and targeted investment (Figure 5.4).



Key finding: the case study local authorities are increasingly using multiple datasets to *triangulate* findings, combining accident and casualty statistics with HES, socio-demographic data (MOSAIC) and the outputs of road user engagement. Benefits noted included the better understanding of casualty trends and target road users groups.

Examples of good practice with regard to the use of evidence and data, extracted from the case study authorities, included the following:

- The use of skills and expertise from other local authority departments or divisions, including GIS analysis, statistical analysis and marketing. Examples of this approach between local authorities have been evident, including the analysis of STATS19 datasets. Although this has generated efficiency savings and consistency in data analysis, it is essential that a clear and comprehensive specification is prepared. This should ensure that the level of detail and cross-data comparisons are commensurate with all partners' requirements.
- The externalisation of some ETP and research/evaluation activities has been observed, a consequence of a lack of internal or partnership skills. This has been particularly effective for cross-authority interventions. However, this approach does not generate sustainable knowledge within local road safety teams.

Key finding: many local authorities are giving careful consideration to the sustainability of knowledge within immediate road safety teams and wider partnership structures. However, many do not have structured succession planning in place.

Key finding: local authorities have identified a need for further guidance on data and evidence use/analysis, research and evaluation.

Key finding: the use of logic mapping is increasing throughout the design and prioritisation of road safety investment to enhance the integration of activities and to bring in the views of road users and partners. The promotion of this approach within the Local Sustainable Transport Fund will further embed this technique in local authority skills sets.

6 ACKNOWLEDGEMENTS

The evaluation team would like to thank all representatives of the case study local authorities for their contribution to this commission. The depth and duration of analysis would not have been possible without their time and insight into road safety practices.

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APPENDIX A: Evaluation methodology

APPENDIX B: Delivery of road safety interventions

APPENDIX C: Local road safety structure

APPENDIX D: Partnership working

APPENDIX E: Data, evidence and evaluation

APPENDIX F: Road user engagement

APPENDIX G: The policy and context of road safety

These appendices are available at:

<http://assets.dft.gov.uk/publications/rsrr-124/rsrr-124-appendix-a.pdf>

<http://assets.dft.gov.uk/publications/rsrr-124/rsrr-124-appendix-b.pdf>

<http://assets.dft.gov.uk/publications/rsrr-124/rsrr-124-appendix-c.pdf>

<http://assets.dft.gov.uk/publications/rsrr-124/rsrr-124-appendix-d.pdf>

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