



# Safe Streets for London

The Road Safety Action Plan for London 2020

Working together, towards roads free  
from death and serious injury

**MAYOR OF LONDON**

Transport for London





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# Message from the Mayor

I want London to be the most liveable capital city in the world: improving the safety of our roads is a key factor in achieving this. We've made good progress in recent years, but I'm all too aware that London's growing population and the success of my programmes to increase the numbers of people cycling and walking, means that we will need to work even harder in future to tackle this.

The work set out in this plan will be hugely important. It builds upon our successes, strengthens our commitment and elevates our ambitions. When considered in combination with the delivery of my Cycle Vision and the recommendations of our Roads Task Force, we believe it will create a safer and more efficient road network, and create more vibrant and active places, all of which are crucial if our great city is to remain successful.

In the longer term we should work towards the goal of freeing London's roads from death and serious injury. To set us on this path, I have set a new target to cut the number of those killed or seriously injured by a further 40 per cent by 2020. In real numbers that is a total reduction of 10,000 casualties over the life of the plan. It is a challenging target, but we must achieve it, and that is why I will invest significant levels of funding in order to do so.

As you read on you will realise that Transport for London (TfL) is rewriting the rule book for London's roads to make them fit for the 21st century. We are targeting London's most notorious junctions and we intend to make full use of the very latest technology. That is why the plan proposes the creation of a London Vehicle Innovation Task Force, which will bring experts in vehicle manufacturer and safety technology together. The plan also recommends trialling new measures to improve



cyclists and other road users' safety; a more open approach to data provision, to ensure easier access to the latest information on collisions and casualties; and, better processes with the establishment of a new Road Safety Steering Group for London. This will be made up of representatives from London boroughs, the emergency services, key road safety groups, the GLA and TfL, as well as a new Road Fatality Review Group to ensure lessons are learnt from the most serious collisions to make London's roads safe.

A wide range of experts and agencies played key roles as we put this plan together, and I thank them for their valuable contribution. Their input hammers home how we all have a responsibility for road safety – either as road users, road authorities or transport providers – and as we move forwards we will continue to stress the need for better and more effective partnerships.

**Boris Johnson**  
Mayor of London

# Commissioner's foreword

Londoners and those travelling in the Capital deserve safe streets. This Plan will take us towards our longer-term ambition of freeing London's roads from death and serious injury, by delivering significant casualty reductions in the coming years. This is central to our commitment to ensure the Capital remains an attractive place in which to live, work and invest.

Death and injury on our roads ruin lives and cause irreparable damage to those involved. They also lead to increased congestion, reduce the resilience of the road network and impose a detrimental impact on the economy. For all of these reasons we are committed to doing more to make the city's streets safer for all.

We have a strong record of improving road safety: our streets have become significantly safer over the past decade. Since the formation of TfL in 2000, the number of people injured on London's streets has decreased by more than a third, and deaths and serious injuries have more than halved.

Nevertheless, much more remains to be done. That's why we welcome the Mayor's new casualty reduction target to reduce the number of people killed and seriously injured on our roads by 40 per cent by 2020. We will strive – working with stakeholders and delivery partners – to achieve this. I will use my commitment to this issue to ensure that road safety is embedded in everything that we do.



Despite the achievements that we have made, I remain saddened and often angered by the collisions that blight London. The terrible incidence of cyclists being fatally injured in collisions with HGVs compelled me to demand safer lorries and lorry driving in our city, working directly with vehicle manufacturers, the logistics industry, VOSA and the Traffic Commissioners to improve the safety of cyclists.

Looking ahead, we will do more to improve standards of cycle safety, including introducing safer and more innovative designs for junctions, roundabouts and traffic signals. Engineering, enforcement, and training and education initiatives will all be employed to maintain a relentless focus on the safety of those walking, cycling and riding motorcycles. Our commitment to these more vulnerable road users will be encapsulated in new targeted action plans for improving their safety.

This Safe Streets for London plan is part of a wider new agenda for London's streets: with a transformative change in the numbers cycling over coming years, in line with the Mayor's Vision for Cycling; and a new, more strategic approach to managing the demands on our road network being developed by the Mayor's Roads Task Force.

We are well placed to take forward this plan, working with London's boroughs in implementing and maintaining a safe road network and the Metropolitan Police Service and City of London Police using enforcement to increase compliance.

Given sufficient levels of funding we will work tirelessly to deliver the full range of actions outlined here, working in partnership with others. By improving road safety for those at greatest risk, we will continue to make strides in reducing casualties over the next decade and move towards our future ambition of a city with roads free from death and serious injury.



**Sir Peter Hendy CBE**  
Commissioner







# Executive summary

The Mayor's vision is to establish London as the best big city on earth, welcoming and attractive to all who live, work and visit here. A safe road network and urban realm where everyone, regardless of age and the way they choose to travel, feels safe using the road and transport network to access all the city has to offer in terms of jobs, leisure and education, is an essential part of achieving that vision.

Over the past decade, Transport for London (TfL) and its borough partners have made great progress in making the Capital's roads safer, reducing the number of casualties, and improving the road network for all road users. Ground-breaking communications targeting some of the most vulnerable groups of road users, such as the teen campaigns and Junior Road Safety Officer (JRSO) scheme, have had great success. In addition, significant investment to re-engineer junctions, signals and crossings, as well as greater enforcement across the network, have more than halved the number of people killed, and cut serious collisions and fatalities involving children by around 70 per cent.

While, over the last 10 years, we have seen improvements in safety for cyclists and motorcyclists, recent increases in cyclist casualties in particular are a cause for concern and more needs to be done for cyclists and other vulnerable road users. TfL is determined to understand and address changing casualty trends in London.

However, a focus on statistics and trends, while necessary, can mask the real issue. Collisions and casualties on the roads and streets ruin people's lives, leaving families and whole communities traumatised. There is a wider cost to London's economy too; around £1.5bn each year in terms of medical care, emergency services, lost productivity and damage to property.

The Mayor has set out his plans to hugely increase the number of people cycling in London. His Roads Task Force, which will report later in 2013, is focusing on how unprecedented levels of investment will ensure that the road network supports economic growth and development, and at the same time improves the liveability of the city and the safety of the network.

This Safe Streets for London plan will support the Mayor's Vision for Cycling, outcomes from the Roads Task Force, and build on the progress in making roads safer over the past decade. The programme includes delivering all of the safer streets actions set out in the Mayor's Vision for Cycling in London, namely better junctions, safer lorries and vans, 20mph limits, training, awareness and enforcement. It will be based on rigorous analysis and a relentless drive to understand exactly where and how people are being killed or injured.



Underpinned by more than a doubling of funding, the plan will be delivered through a partnership of all those who design, build, manage and use London's roads. By continuing to work together, TfL will reduce KSIs by a further 40 per cent by 2020, making significant progress towards the ultimate ambition – a London road network free from death and serious injury.

Building on the successes achieved to date, the Safe Streets for London programme of actions will focus on delivering safe roads, safe vehicles and safe people through partnership.

#### Safe roads:

- TfL will identify and address 'critical list' junctions and locations on the Transport for London Road Network (TLRN) and borough roads that require improvement
- TfL's Better Junctions programme, to increase safety at junctions for cyclists, will see funding increased five-fold from £19m to £100m

- TfL will upgrade and improve London's safety camera network, replacing old 'wet film' cameras with new, more efficient digital technology
- TfL will support, and fund via Local Implementation Plans (LIPs), the installation of 20mph zones and limits on borough roads across London and include the TLRN where possible
- Updated guidance on design for cycling improvements will be provided
- Wider application of SCOOT (Split Cycle Offset Optimisation Technique) signalling technology will be rolled out, to improve signal timings for all road users, including cyclists and pedestrians
- More blind spot safety mirrors will be installed, to help improve visibility of cyclists for large goods vehicle drivers
- Pedestrian countdown at traffic signals will be rolled out to more locations

### Safe vehicles:

- TfL will bring together vehicle manufacturers and safety technology developers to establish a London Vehicle Innovation Task Force
- TfL will tirelessly lobby at a local, national and European level to push for improvements to vehicle design and driver safety checks
- The Greater London Authority (GLA), TfL and Crossrail will further develop contractual powers to improve cycle safety, ensuring supply chain compliance with a five-point safety plan
- TfL will study the experience of cities such as Paris and Dublin, where lorries over a certain size are restricted from certain parts of the city, or at certain times of the day
- TfL will challenge conventional thinking and drive change in the construction and logistics sectors through working with the Government and Health and Safety Executive to ensure contractors take ownership of road risks
- New technology will be trialled (such as using radio frequency identification tags) to improve cyclist safety with visible or audible warning alerts to drivers and cyclists, and technologies for smaller fleets and work trips such as in-car data recorders and driver profilers
- TfL will promote effective technologies with businesses and the insurance industry to quicken their uptake in vehicles in London
- TfL will update, maintain, and make freely available, a digital speed limit map of all London's roads and promote its use with technology developers and manufacturers, enabling a revolution in intelligent speed assistance technology

### Safe people:

- Increased policing and enforcement will crack down on those who break the law, with the Metropolitan Police Service (MPS) Cycle Task Force to be expanded by more than a quarter from 39 to 50 officers
- New, innovative marketing and education resources will focus on improving the safety of children, cyclists, pedestrians, younger drivers and motorcyclists
- TfL will push for speed awareness courses to be offered to drivers as an alternative to prosecution for exceeding a 20mph speed limit
- Improved Children's Traffic Club and JRSO schemes will be rolled out, with every primary school in London offered support in developing a JRSO scheme
- TfL and London boroughs will offer school cycle training to every school pupil in London every year, with support for boroughs to extend child and adult cycle training

### Delivering in partnership:

- New web-based tools to access casualty data online will be developed to share information more easily with stakeholders, boroughs and to track progress
- Using a 'Compstat'-style approach, TfL will create a Road Fatality Review Group, working with partners across London to learn lessons from fatal collisions
- TfL will benchmark London's road safety performance nationally and internationally to learn from successful approaches to casualty reduction and proactively use systematic and rigorous analysis to gain new insights into the causes of collisions
- New partnerships will be forged with public health and the emergency services to help mobilise safety stakeholders' knowledge
- All 52 actions of the Cycle Safety Action Plan (CSAP) will be delivered and the CSAP will be updated to identify further ways to improve cycle safety in London
- Targeted safety action plans for pedestrians and motorcyclists will be published in 2013
- TfL will provide a comprehensive annual account of progress in casualty and collision reduction in London
- A new annual London road safety conference for boroughs, TfL and other stakeholders will be held to share knowledge and best practice
- A new programme of professional development will be established for London road safety practitioners including training, seminars, workshops and insight sessions, focused on improving skills
- The plan will establish a new approach to governance of road safety in London by setting up a Road Safety Steering Group (RSSG)







# Chapter 1

## Setting the scene

### 1.1 Introduction

Road safety is a key priority for the Mayor and TfL.

The number of casualties must be reduced further, while recognising that London's population is growing, the economy is changing and people are changing their travel choices. Delivery of safety improvements on London's roads needs to respond to this vibrancy and dynamism.

London is now home to 8.2 million people<sup>1</sup>, 12 per cent more than in 2001. Many more commute or travel into London from outside the city. London is expected to see 1.25 million more people and more than 750,000 additional jobs by 2031<sup>2</sup>. With this population growth, if trip rates do not change, then the level of risk of each trip on London's roads will need to decrease considerably just to keep casualties at current levels.

The current recession has been deeper than previous ones and recovery is taking longer. However, London's experience is that employment growth seems to have less of an impact on trip making than population growth. Nevertheless, the economy has an impact on road safety. It influences car ownership and use, and newer cars have better safety

features. Pressures on the cost of living can encourage people to change travel patterns, choosing cheaper ways of getting around.

London has seen a decline in car ownership over recent years along with increased levels of bus use and cycling. During the ten years between 2001 and 2011, total trips in London increased by 11.3 per cent, including a 59.7 per cent increase in bus trips and a 66.6 per cent increase in cycle trips. Car driver trips fell by 13 per cent over the same period. The travel choices Londoners make influence their safety on the road: different modes experience different levels of risk.

The Mayor has an ambition to create a 'cyclised city' – a civilised place where people can ride their bikes safely in a pleasant environment. His aim is to achieve 400 per cent growth in cycling between 2001 and 2026, taking cycling to a five per cent mode share. In addition, TfL continues to improve the quality and provision of information and resources for walking, through programmes such as Legible London, and promoting the health, environmental and economic benefits of walking.

The balance of supporting growth and aspiration for more walking and cycling, while focusing on reducing casualties, are central to this Safe Streets for London plan.

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1 Travel in London Report 5 (TfL, 2012)

2 Compared to 2007

## 1.2 The Mayor's Transport Strategy

The Greater London Authority Act 1999 gives TfL the power to prepare and carry out a programme of measures to promote road safety on London's roads, and to contribute to measures taken by other authorities. TfL also has a duty to carry out and act on road collision studies.

Policy 19 of the 2010 Mayor's Transport Strategy (MTS)<sup>3</sup> highlights the Mayor's commitment to reducing the number of people killed or injured on London's roads. The MTS also contains proposals relating to the

development of casualty reduction targets and a new Road Safety Plan (proposals 64 and 65).

Policies 13 and 17 and proposals 66 to 73 also have road safety elements. In addition, a number of other policy areas support the aims of this plan.

## 1.3 London policy context

### 1.3.1 London's road safety performance

London made good progress in the decade to 2010, with a 57 per cent reduction in KSI casualties compared with the 1994-1998 baseline (see Table 1).

Table 1: Target and actual casualty numbers for London

Casualty type	1994-1998 Baseline casualties	Stretched target reduction by 2010	Target number by 2010	2010 casualties (% change from baseline)
Total KSIs	6,684	50%	3,342	2,886 (-57%)
Pedestrian KSIs	2,137	50%	1,069	913 (-57%)
Pedal cyclist KSIs	567	50%	284	467 (-18%)
Motorcyclist KSIs	933	40%	560	615 (-34%)
Child KSIs	935	60%	374	250 (-73%)
Slight casualties <sup>4</sup>	38,997	25%	29,248	26,003 (-33%)

<sup>3</sup> Greater London Authority (2010), Mayor's Transport Strategy

<sup>4</sup> In the absence of guidance from the Department for Transport as to how this should be measured, slight casualty monitoring is shown in terms of absolute casualty numbers rather than a casualty rate.



### 1.3.2 Social and economic cost of collisions

Progress in reducing overall KSI casualties has slowed in recent years and vulnerable road user casualties now account for the majority (76.6 per cent) of KSIs. These recent trends demand urgent action.

Death and injury on London's roads continue to have a devastating impact on the people directly involved, as well as their families, the wider community and society. In 2011, transport accidents<sup>5</sup> accounted for four times more deaths than those caused by exposure to smoke, fire and flames<sup>6</sup> and more deaths than those attributed to murder<sup>7</sup>. On the Underground in 2011, there were three fatalities<sup>8</sup>.

Collisions also have a serious detrimental impact on London's economy. The Department for Transport (DfT) puts an average value on the prevention of a collision at £96,250<sup>9</sup> on urban roads. This is based on lost output, medical and ambulance costs, human costs, police costs, insurance and property damage and includes an allowance for damage-only collisions. Despite the progress made in reducing casualties on London's roads, the value placed on preventing the 24,443 collisions in 2011 was more than £2.35bn.

Collisions have a major detrimental impact on traffic flow: increasing congestion, reducing capacity, lengthening journey times, worsening journey time reliability and affecting the resilience of the road network. In 2010/11, 28 per cent of the congestion on the TLRN was estimated to be caused by collisions. Reducing collisions can make a significant contribution to these wider impacts.

### 1.3.3 A city to live in

London's economy is at the heart of the UK, but it is under pressure. There is a need to ensure the city is seen as a liveable, attractive capital and a place to invest. The Mayor has a vision of more people walking and cycling to create such a vibrant, healthy city.

Safe roads support plans to increase walking and cycling in London to create a liveable city. More people may be encouraged to walk and cycle if they perceive these ways of travelling to be safe, bringing environmental and health benefits. Road safety interventions can unite communities by making roads more like places and less like routes, and promote social inclusion. Inequality can also be reduced: those who live in the Capital's most deprived areas and black, Asian, and minority ethnic (BAME) groups suffer a disproportionately high number of road casualties.

Safety needs to retain its position as central to longer-term planning of the transport system. The Roads Task Force, a key part of the Mayor's vision for a road network fit for the 21st century, was set up to provide a new invigorated approach and framework to address the challenges. Its aim is to advise the Mayor on the steps needed to develop a network which supports London's sustainable social and economic growth.

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5 Office of National Statistics terminology

6 Office of National Statistics

7 There were 143 road fatalities compared to 131 homicides in London during 2010/11.

8 Travel in London Report 5 (TfL, 2012)

9 This is the value of prevention of a single collision involving injury, including an allowance for an assumed proportional reduction in damage-only collisions as detailed in the DfT's WebTAG 3.4.1. The value provided by WebTAG is 93,809 at 2010 values. The number quoted here has been updated to 2011 values using the IHXT index published by the Office of National Statistics, in accordance with WebTAG

## 1.4 Wider policy context

### 1.4.1 International policy

At an international level, the Mayor underlined his commitment to road safety by signing the European Road Safety Charter<sup>10</sup> in 2009. The charter includes an aspiration to halve fatal collisions across the European Union (EU) by 2020. Internationally, road safety has a prominent position (for example, the UN Decade of Action for Road Safety 2011–2020<sup>11</sup>) as rising levels of motorised traffic increase the exposure to risk on the roads of developing nations.

### 1.4.2 National road safety policy

The Government published its national Strategic Framework for Road Safety (SFRS)<sup>12</sup> in May 2011. The SFRS sets out the national policies intended to continue reducing deaths and injuries on the roads. The long-term vision of the SFRS is to ensure that Britain remains a world leader on road safety. In support of this ambition, it places an expectation on local government to continue to prioritise road safety and seek improvements by adopting policies that reflect local priorities and circumstances. The SFRS emphasises the importance of local decision-making to reflect local road safety priorities. A key theme of the SFRS is to ‘make it easier for road users to do the right thing’.

### 1.4.3 Localism

As well as the emphasis on local priorities in the SFRS, improving road safety locally is highlighted in the Local Transport White Paper<sup>13</sup> as an integral part of the local authority transport role. It emphasises that sustainable local transport depends on local solutions and that these will vary across areas.

### 1.4.4 Health policy

Casualty reduction needs to be considered within the wider context of health policy, including public health. The Government’s reforms to public health include giving local authorities new responsibilities. These present opportunities for community engagement and for developing holistic solutions to health and welfare issues that embrace the full range of local services, including transport<sup>14</sup>. National Institute for Health and Care Excellence (NICE) guidance<sup>15</sup> is an important source of information for effective road safety delivery.

A key tenet of the Government’s Health and Social Care Act 2012 was the creation of statutory Health and Wellbeing Boards. All of London’s local authorities now have fully established Health and Wellbeing Boards in place, with representation from the local authority, the National Health Service (NHS) and other stakeholders. On 1 April 2013 local authorities took on statutory responsibilities for the public health of their population from the NHS and will now be assessed against 68 public health indicators, one of which is rates of KSIs on the roads.

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10 [www.erscharter.eu/](http://www.erscharter.eu/)

11 [www.un.org/en/roadsafety/](http://www.un.org/en/roadsafety/)

12 Department for Transport (2011) Strategic Framework for Road Safety

13 Creating Growth, Cutting Carbon: Making Sustainable Growth Happen, Department for Transport, January 2011

14 Healthy Lives, Healthy People: Update and Way Forward, July 2011

15 For example, ‘Preventing unintentional injuries among children and young people aged under 15: road design and modification’. Public health guidance, PH31 – November 2010

#### 1.4.5 Community safety and policing priorities

The Right Direction, the Mayor's strategy to improve transport safety and security in London between 2010 and 2013<sup>16</sup>, provides the foundation for partnership working towards his goal of improving the safety and security of all Londoners travelling around the Capital. It contains a number of objectives that relate to road safety, including reducing injuries on London's roads as a result of criminal and antisocial behaviour, and improving cycle safety.

The former Metropolitan Police Authority's 'Have Your Say on Policing in London' consultation<sup>17</sup>, shows that traffic and road-related issues are the top priority for those who took part. Particular concerns identified in the consultation focus on road safety issues.

## 1.5 How the plan was developed

Good road safety involves many different partners and stakeholders working together to reduce casualties. To maximise the opportunity for collaborative working a draft Road Safety Action Plan for London was consulted on between 23 July and 31 October 2012. Responses were received online, by post and email.

The consultation was part of a wider stakeholder engagement process, including direct discussions with a wide range of stakeholder groups, for example the boroughs, emergency services and police, academics, businesses, technical experts, transport forums, local and national representative groups, as well as motoring, cycling, walking and accessibility groups.

Stakeholder feedback was drawn on to improve London's road safety through the inclusion of new actions and approaches in the Safe Streets for London plan.

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16 Greater London Authority (2010) The Right Direction, the Mayor's strategy to improve transport, safety and security in London 2010-2013

17 Metropolitan Police Authority Policing Planning and Performance Improvement Unit (2011) 'Because I'm a Londoner': Results from the 2010 public consultation to inform the Policing London Business Plan 2012/13



## Chapter 2

# Understanding the challenge

## 2.1 Recent trends

Section 1.3.1 describes the substantial progress made in reducing casualties in London over the period of the previous road safety plan. Large KSI casualty reductions were achieved, particularly for car occupants and those walking, however targets for cyclist and motorcyclists were not met and in 2011, 2,805 people were recorded to have been killed or seriously injured on London's roads (Table 2).

Table 2: Number of KSI casualties in London 2011 by mode of travel

Mode of travel	Number of KSI casualties	Percentage of total
Walking	980	35%
Motorcycle	599	21%
Pedal cycle	571	20%
Car	499	18%
Bus or coach	86	3%
Goods vehicle	30	1%
Taxi/private hire	25	1%
Other vehicle	15	1%
<b>Total</b>	<b>2,805</b>	<b>100%</b>

### 2.1.1 Risk to vulnerable road users

Vulnerable road users (those walking, cycling and riding a motorcycle) now account for the majority (76.6 per cent) of KSI casualties, with car occupants accounting for most of the remainder (a further 17.8 per cent of all KSI casualties). While this indicates which road user groups are experiencing greatest levels of injury, raw casualty numbers do not account for the exposure to risk in terms of the numbers or lengths of journeys undertaken by each road user group, or the time spent travelling.

Looking at KSI casualty figures alongside other data, for example, trips, population, journeys, and time and distance travelled using different modes provides greater insight. Looking at KSI casualties associated with walking, cycling and riding a motorcycle, alongside journeys<sup>18</sup> by each of these modes shows that vulnerable road users are over-represented in the casualty figures:

- Walking accounted for 21 per cent of daily journeys, but 35 per cent of KSI casualties in London in 2011
- Motorcycles accounted for one per cent of daily journeys, but 21 per cent of KSI casualties in London in 2011
- Pedal cycles accounted for two per cent of daily journeys, but 20 per cent of KSI casualties in London in 2011

Figure I: Casualty rate per billion kilometres by age for each mode

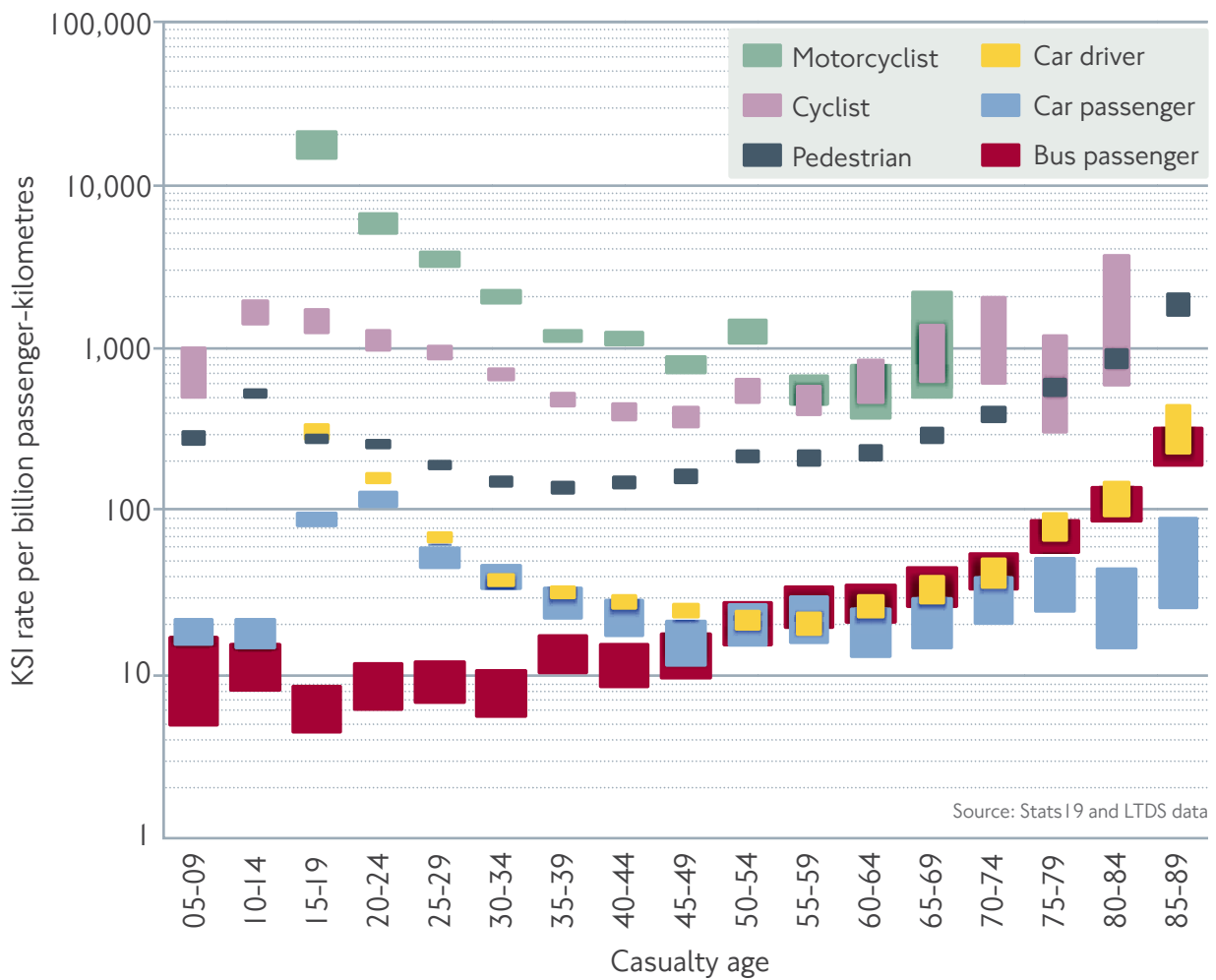


Figure I highlights data on age and exposure showing the risk (casualties per distance travelled) for each road user group. The size of each bar represents the 90 per cent confidence interval for the risk value for each age group by road user type. The risk value shows the risk of being killed or seriously injured per billion passenger-kilometres.

This demonstrates the importance of understanding risk to better identify interventions and focus resources. Using a broader range of data to understand risk and how to improve safety on London's roads is key to building the evidence over the period of the plan.

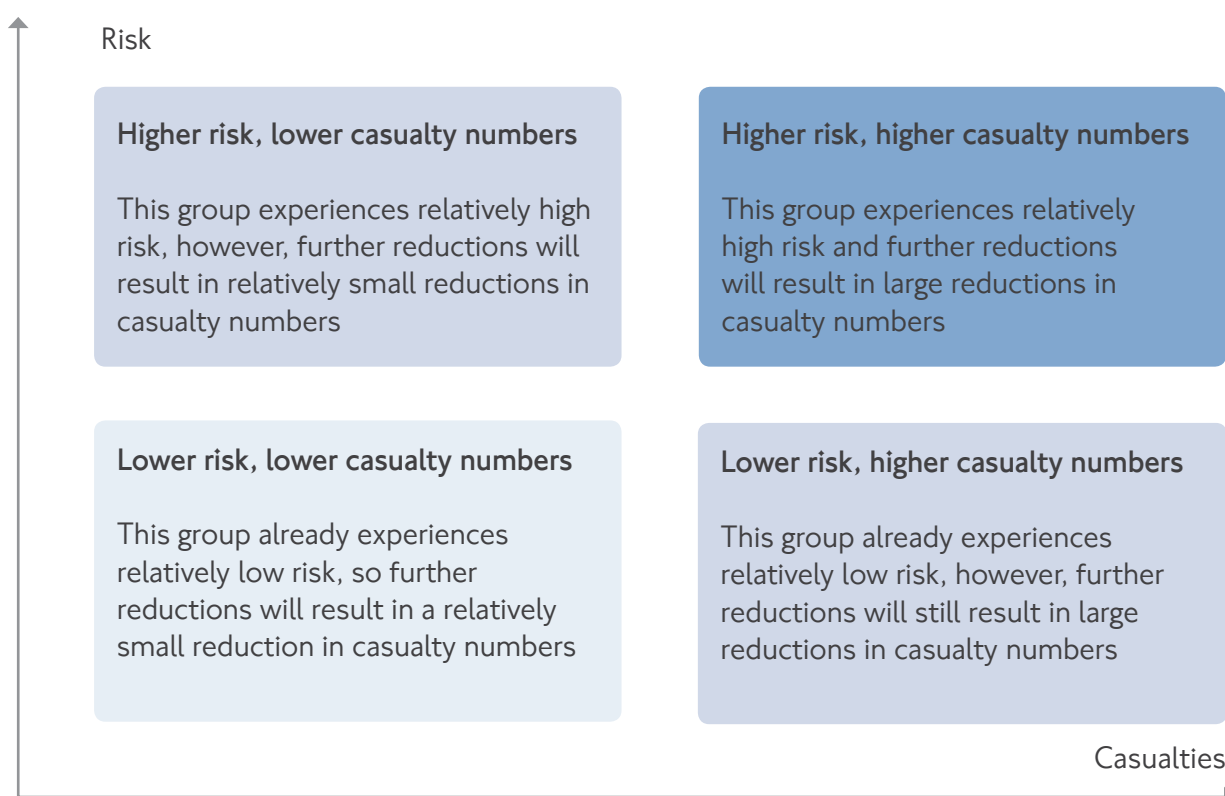
## 2.2 Understanding the causes

Levels of risk need to be used with other information to identify groups, locations and behaviours for intervention. Considering how many casualties can be saved through interventions is also important. If a group has high risk but accounts for an extremely small number of casualties then, even if an intervention substantially reduces risk, the reduction in the number of casualties will be small. Nevertheless, the benefit to those individuals in this group may still justify intervention.

The number of lives that can be saved, or injuries avoided, by focusing on safety improvements for a particular road user group, age group or location, depends on how much the risk can be reduced and how many casualties there are in that road user group, age group or location. All else being equal, halving risk for high risk groups will bring about greater casualty reductions (in terms of the number of lives saved or injuries avoided) than halving risk for low risk groups.

Using an approach considering the levels of risk and the numbers of casualties, groups can be positioned in one of four quadrants, shown in Figure 2.

Figure 2: Risk and casualty numbers quadrants



By plotting the risk and number of casualties for each age group for a given mode within these quadrants a 'risk path' can be created. This shows how, for a particular road user group, risk and casualty numbers vary with age.

Having used this approach to identify priority groups, further work is needed to understand the detail of the collision types to consider how best to reduce risk and casualty numbers. To do this for vulnerable road user groups, conflict analyses<sup>19</sup> for pedestrians, cyclists and motorcyclists using the DfT's 2011 STATS19 data have been undertaken.

These data, alongside other information, are used in the following interpretations below of groups for whom road safety improvements are a key focus. Using risk in this way focuses attention on groups for whom safety improvements are most needed and acts as a basis for understanding what good interventions might look like. For example, what behaviours, conflict types, ages, genders, locations etc, those interventions should be targeting, both with respect to the injured person and other road users involved in the collision. It also allows the level of casualty reduction that those interventions may bring about to be estimated.

## 2.3 Focusing interventions

The need to improve the safety of pedestrians, cyclists and motorcyclists has been identified; however, this plan seeks to improve road safety by reducing the casualty numbers and risk experienced by all Londoners. Groups (in terms of gender, age, ethnicity, location, mode etc) for whom safety can be most improved have been identified using the analytical approach described above. This analysis identifies groups for whom road safety improvements could be justified on the basis of risk, number of casualties, trend over time or a combination of these factors. These groups are:

- **Pedestrians**
  - > Pedestrians aged 75 or over owing to higher levels of risk
  - > Pedestrians aged under 20 owing to higher levels of risk
  - > Pedestrians aged between 20-29 owing to high casualty numbers

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<sup>19</sup> This classifies each collision resulting in a death or serious injury into conflict types based on STATS19 data. A conflict type is a broad category describing the movements of the parties involved in the collision and is helpful in drawing out recurring themes, not obvious from the raw data, to identify possible interventions.



- **Cyclists**

- > Child and teenage cyclists owing to higher levels of risk
- > Cyclists aged between 20-39 owing to high casualty numbers

- **Motorcyclists**

- > Motorcyclists aged under 30 owing to higher levels of risk
- > Motorcyclists aged under 30 owing to high casualty numbers

- **Drivers and passengers**

- > Older drivers owing to higher levels of risk
- > Car passengers aged between 20-29 owing to higher levels of risk and casualty numbers
- > Bus passengers aged over 60 owing to higher levels of risk
- > BAME groups, particularly pedestrians, cyclists and motorcyclists owing to higher risk than non-BAME groups

Improving safety for these groups may involve interventions to change the behaviour of the groups themselves through education or enforcement, improving the safety of the infrastructure, and changing the behaviours of other road users who are putting these groups at risk.

## 2.4 Conclusion

This section has outlined a new approach to understanding levels of risk on London's roads and to identifying effective road safety interventions. This use of risk evidence, alongside other information about the road network, is central to making London's roads safe and underpins the new approach described in the following section.



## Chapter 3

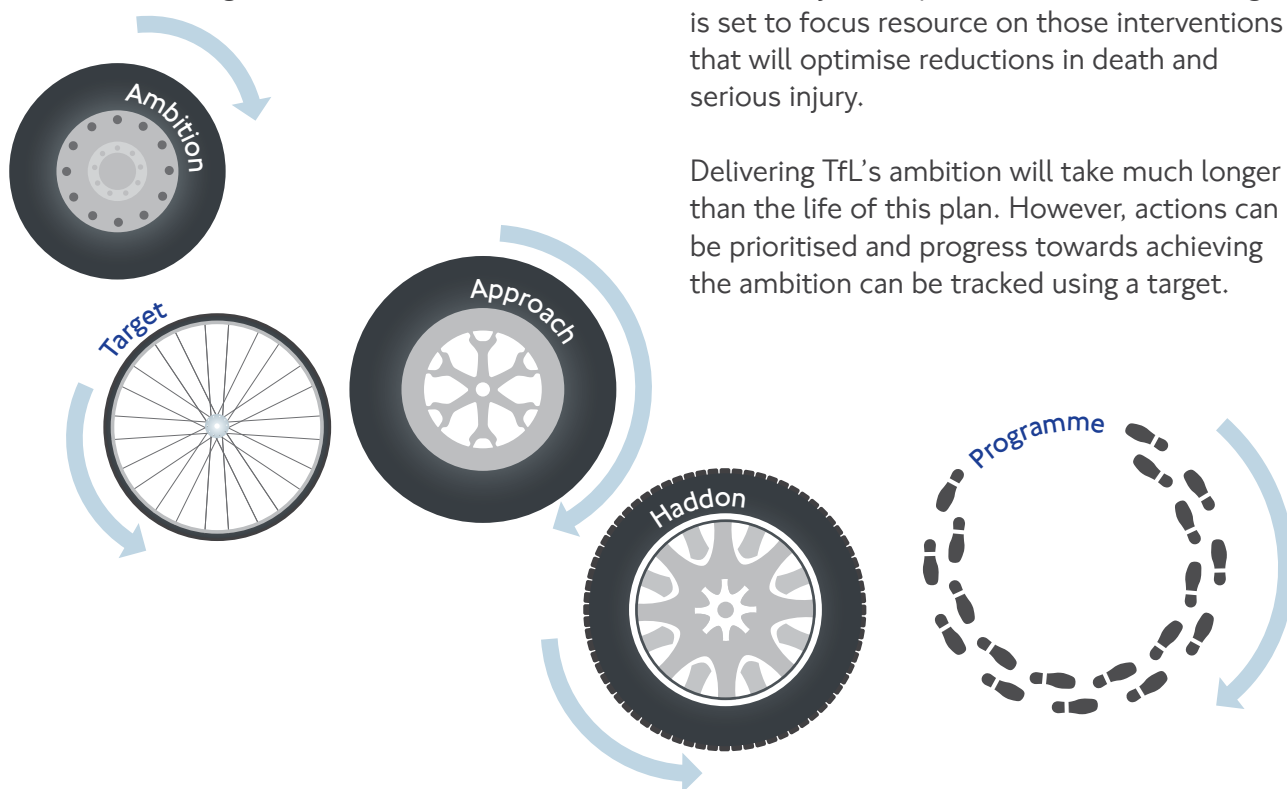
# The way forward

### 3.1 Introduction

London's effort to reduce road casualties involves dedication, resources and expertise. All stakeholders and practitioners share the common aim of saving life and preventing serious injury. This common aim underpins the long-term ambition of this plan.

The plan introduces a new target to focus resources to deliver tangible casualty reductions by 2020. A new approach will align resources with the ambition.

The plan's new 'system-based approach' demands principles, evidence and evaluation to define a programme of action setting a path towards achieving London's ambition.



### 3.2 Ambition

The Safe Streets for London plan must address all casualties arising from road collisions in the Capital. Road safety activities to 2020 should build on the successes achieved to date. The plan seeks to encourage a common approach to road safety among the organisations involved in the management of the road transport system in London, so there is a shared ambition as to how this will be achieved.

**Central to this plan is the ambition to work together, towards roads free from death and serious injury.**

This plan sets out a programme to improve road safety in the period to 2020. A new target is set to focus resource on those interventions that will optimise reductions in death and serious injury.

Delivering TfL's ambition will take much longer than the life of this plan. However, actions can be prioritised and progress towards achieving the ambition can be tracked using a target.

### 3.3 Target for 2020

Accurately projecting the future number of KSI road traffic casualties on London's roads is not straightforward. It is possible, however, to make estimated projections based on past casualty rates and trends, the expected effect of current measures, and projections of traffic growth. This approach is in line with the methodology used by the DfT in its SFRS, which contains forecasts of expected casualty reductions at a national level from the 2005-2009 average.

**The new target for London is to achieve a 40 per cent reduction in KSI casualties by 2020, from a baseline of the 2005-2009 average.**

Improving the safety of vulnerable road users – pedestrians, pedal cyclists, and motorcyclists – is a particular focus. These groups experience a higher level of risk and trends and progress for these groups will be monitored and reported throughout the period of the plan.

### 3.4 A new approach

London's steady downward trend in collisions has occurred largely as a result of implementing traditional road safety interventions (such as local safety schemes to address specific, identified risks and problems). Underpinning this trend there have been significant improvements in the safety of the road network, in vehicle safety and in road user behaviour.

More, however, needs to be done. Recent slowing in KSI casualty reductions suggests that the return from some traditional approaches may be beginning to decline. Also, the casualties in London are changing – a higher proportion of serious and fatal casualties involve those walking, cycling and riding motorcycles. In this context, achieving a 40 per cent reduction in KSIs by 2020 is a formidable challenge.

To make progress towards achieving the overall ambition, and to deliver the 2020 casualty reduction target in the medium term, TfL, working with partners, will implement this plan to drive down casualty numbers.

Key principles underpinning the plan are:

#### **'People make mistakes'**

Road users can be unpredictable in their movements and adherence to laws, guidance and accepted behaviour, despite educational and behavioural interventions.

Accepting this means that a system is needed that accommodates human error and unpredictability. Those responsible for delivering road safety in London must strive to accommodate and protect all road users from the impact of human error and unpredictability, as well as seek to minimise it.

**‘There are physical limits to what the human body can tolerate’**

When a collision occurs, the impact energy can lead to trauma. The level of injury experienced is determined by many factors including the speed of impact, the design of vehicles and infrastructure, and the susceptibility to injury, or frailty, of the road user.

Accepting this means that a system is needed that ensures road users are not subjected to impact energy levels sufficient to cause fatal or serious, disabling injury. This requires innovative thinking about the full range of possible interventions, including developing a safe road infrastructure, improving vehicle safety and reviewing speed limits to reduce unacceptably high injury risk.

**‘All those with a role in designing, building, operating, managing and using the road network have a responsibility to improve safety’**

We all have a responsibility to use and share the roads we travel on in a safe and responsible way, mindful of our own safety and the safety of others.

Accepting this means that highway authorities and engineers have a responsibility to design, implement and maintain a safe road network. Police have a responsibility to use enforcement to increase compliance with laws designed to save lives and reduce injury. All those using the roads and footways also have a responsibility for their own safety, and the safety of others, by acting safely and complying with the law.

This Safe Streets for London plan recognises and embraces the valuable work undertaken by the many organisations that contribute to road casualty prevention and reduction in London. Over the period of the plan, stakeholders will need to continue collaborating and a wider group of organisations will need to become involved. This plan calls for all those able to improve the safety of London’s roads to play their part individually and work together to reduce casualties.



### 3.5 Haddon's Matrix

The new approach embraces system thinking to understand how, when and where to act to reduce casualties. A helpful framework for this is the approach, put forward by William Haddon, which identifies the factors, other than the road user, which contribute to traffic collisions and injuries. A tool, known as Haddon's Matrix, was created by applying the basic principles of public health to the issue of road safety.

The matrix divides a traffic collision into three phases: pre-collision, during the collision and post-collision. These are all considered in relation to human, vehicle and environmental

factors. This allows focus to be directed towards effective interventions to reduce casualty numbers and severities across each phase of a collision.

The matrix helps road safety practitioners to identify when they can intervene and prevent a collision, or minimise the effects of one. It can also be used to identify where in the system the different road safety stakeholders and practitioners have a role to play in reducing casualties.

Table 3 uses this approach to show examples of interventions at each of the collision stages in terms of the human, vehicle and environmental factors.



Table 3: Indicative Haddon’s Matrix

	Factor		
	Human	Vehicles and equipment	Environment
Pre-crash (crash prevention)	<ul style="list-style-type: none"> <li>• Training</li> <li>• Education</li> <li>• Police enforcement (mobile phone use, drink and drugs)</li> <li>• Campaigns</li> </ul>	<ul style="list-style-type: none"> <li>• Road worthiness</li> <li>• In-vehicle recorders</li> <li>• Black box technology</li> <li>• Intelligent speed assistance</li> <li>• Brake assist</li> <li>• Anti-lock braking</li> <li>• Proximity sensors</li> <li>• Additional mirrors</li> </ul>	<ul style="list-style-type: none"> <li>• Road design</li> <li>• Road lighting</li> <li>• Safety cameras</li> <li>• Markings</li> <li>• Maintenance</li> <li>• Speed limits/zones</li> <li>• Pedestrian facilities</li> </ul>
Crash (injury prevention during crash)	<ul style="list-style-type: none"> <li>• Use of seat belts and other restraints</li> </ul>	<ul style="list-style-type: none"> <li>• Occupant restraints</li> <li>• Airbags</li> <li>• Crash-protective design</li> <li>• Personal protective equipment</li> <li>• Booster seats and baby carriers</li> <li>• Helmets</li> </ul>	<ul style="list-style-type: none"> <li>• Crash-protective objects</li> <li>• Roadside barriers</li> <li>• Anti-skid surfaces</li> </ul>
Post-crash (life-sustaining)	<ul style="list-style-type: none"> <li>• First aid</li> <li>• Access to medical care</li> <li>• Rehabilitation</li> </ul>	<ul style="list-style-type: none"> <li>• Ease of access</li> <li>• Fire risk</li> <li>• Cutting tools</li> <li>• E-call</li> </ul>	<ul style="list-style-type: none"> <li>• Quality of rescue facilities</li> <li>• Proximity to medical facilities and emergency services</li> <li>• Traffic congestion</li> </ul>

Some of these interventions are tried and tested, while others are more innovative or less widely used. Selecting the right interventions and implementing them effectively are at the core of delivering benefits over the lifetime of this plan. For London, a good intervention is one that is:

- **Effective.** Interventions should result in a reduction in casualties. In particular, the focus should be on interventions that will reduce the number of pedestrian, cyclist and motorcyclist KSIs
- **Targeted.** Good interventions seek to change specific unsafe behaviours or infrastructure. Casualty reductions may be achieved by addressing the behaviour of both parties in a conflict and understanding how each contributed to the collision
- **Deliverable.** An intervention should be of such scale and complexity that it can be delivered within budgets, staff resources, knowledge and time requirements. A good road safety intervention will be acceptable to the local community and will be supported at a political level
- **Sustainable.** Good interventions will be environmentally and economically sustainable. A good road safety intervention should be cost-effective, delivering significantly greater benefit than cost, for example, having a high First Year Rate of Return<sup>20</sup>
- **Integrated.** A good intervention will be integrated with, and in line with, existing key policies such as encouraging growth in walking and cycling, improving air quality, improving bus stop accessibility, and maintaining or improving journey time reliability

To select interventions with these five features, sufficient information is needed to fully understand what is occurring and why. Road safety practitioners need enough knowledge about the issues involved to identify the right problem and make the right choices about how to address that problem.

For London's road safety programme, Haddon's Matrix and the evaluation of interventions in the terms outlined in this plan will be used to inform the prioritisation of resources. This will be supported by monitoring and evaluation.

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20 A First Year Rate of return compares the cost of the intervention with the value of prevention due to casualty reductions associated with the intervention over the first year following its introduction



## 3.6 Programme

In light of Haddon's approach, the plan is structured around consideration of key factors: safe roads, safe vehicles and safe people. The new approach from section 3.4 also highlights the focus on working in partnership, which is included as a fourth area of action – delivering in partnership.

The actions in this plan acknowledge that more can be done with the tools currently known to be effective and that evidence needs to be gathered and trials undertaken of new, more innovative interventions and approaches. The actions in sections 4, 5, 6 and 7 are described in these terms as being actions for near-term focus. Important areas for safety developments are described in the sections looking to the future.

### 3.6.1 Looking to the future

There is a need to continue to innovate to improve road safety in the Capital. In the later stages of the plan currently emerging technologies will be ready for wider use in London.

The need to innovate will also be driven by the changing nature of the city's population, the places where Londoners live, and the travel choices they make. This dynamism can mean that priority locations for road safety engineering interventions or priority groups for casualty reduction may change with time. The plan and TfL's approach will need to respond through the development of new programmes, and by refocusing interventions towards growing or emerging risks.

To understand whether new interventions will deliver benefits, trials will need to be conducted to provide robust evidence on the potential for casualty reduction by emerging road safety technologies.

The following sections describe the actions that will be taken forward to improve road safety in London to 2020 under the four themes identified earlier: safe roads, safe vehicles, safe people and delivering in partnership.



## Chapter 4

# Safe roads

### 4.1 Introduction

London needs roads that are safe and feel safe. Roads like this will encourage people to walk and cycle and enhance the liveability of the Capital. To achieve this, TfL will identify and treat more high casualty locations on the TLRN with effective road safety engineering which focuses on protecting pedestrians, cyclists and motorcyclists. London's boroughs also need the funding, knowledge and information to make their roads safe, and TfL will work with them to help deliver this. New approaches to engineering and technology will be required, including technology to make speeds safe and reduce speed-related casualties, while innovative engineering measures to reduce casualties will need to be trialled. This section describes actions to:

- Identify and treat high-risk locations on the TLRN with effective engineering solutions, focusing on protecting pedestrians, cyclists and motorcyclists
- Provide London's boroughs with the funding, knowledge and information to reduce casualties
- Trial, evaluate, roll out and monitor effective, innovative engineering measures to reduce casualties

- Apply engineering and technology to maximise speed limit compliance and reduce speed-related casualties

Engineering to ensure safe roads involves the physical construction or alteration of road infrastructure to create an environment that encourages safe behaviour by all road users. Through the work of TfL, the boroughs and other partners, London has sought to lead the way in promoting innovative engineering measures that will reduce casualties.

To address collision problems on the Capital's roads, an understanding is needed of where collisions are taking place, which road users are involved, and the underlying behaviours and causal factors. To make London's roads safe through engineering, TfL will ensure that reducing risk is central to its prioritisation approach on the TLRN, and through providing information to the London boroughs, enabling a similar approach.

With changing use of the road network over the period of this plan, locations warranting safety engineering interventions will continue to be identified across the TLRN and on borough roads. TfL will work alongside the boroughs to improve the safety of the roads they manage through the actions set out in this section.

## 4.2 Near-term focus

### 4.2.1 Road safety engineering on the TLRN

Road safety engineering has an important role to play in reducing casualties on the TLRN. The 580km of London's road network that is managed by TfL constitutes only five per cent of London's total road length, but carries more than 30 per cent of traffic. Nearly a third of all road collisions in London occur on the TLRN.

In addition to road safety audits (RSAs), TfL uses the following techniques and processes (described in further detail in subsequent sections) to identify and prioritise locations suitable for improvements through road safety engineering on the TLRN:

- Priority lists
- Collision studies

The number of collisions at any particular site is compared with those occurring at groups of similar sites. This produces an estimate of the divergence from the expected number of collisions at each individual site. A larger divergence from the expected number of collisions suggests a higher priority for treatment.

#### 4.2.1.1 Collision studies

When a site has been identified as a priority through the above approach, a collision study is carried out. This involves plotting the collisions at that site (Figure 3).

Collision studies provide insight into the road safety problems at specific locations, allowing engineers to propose changes to address the specific safety problems. These proposals are incorporated into TfL's programme of works on the TLRN with the aim of reducing future collisions.

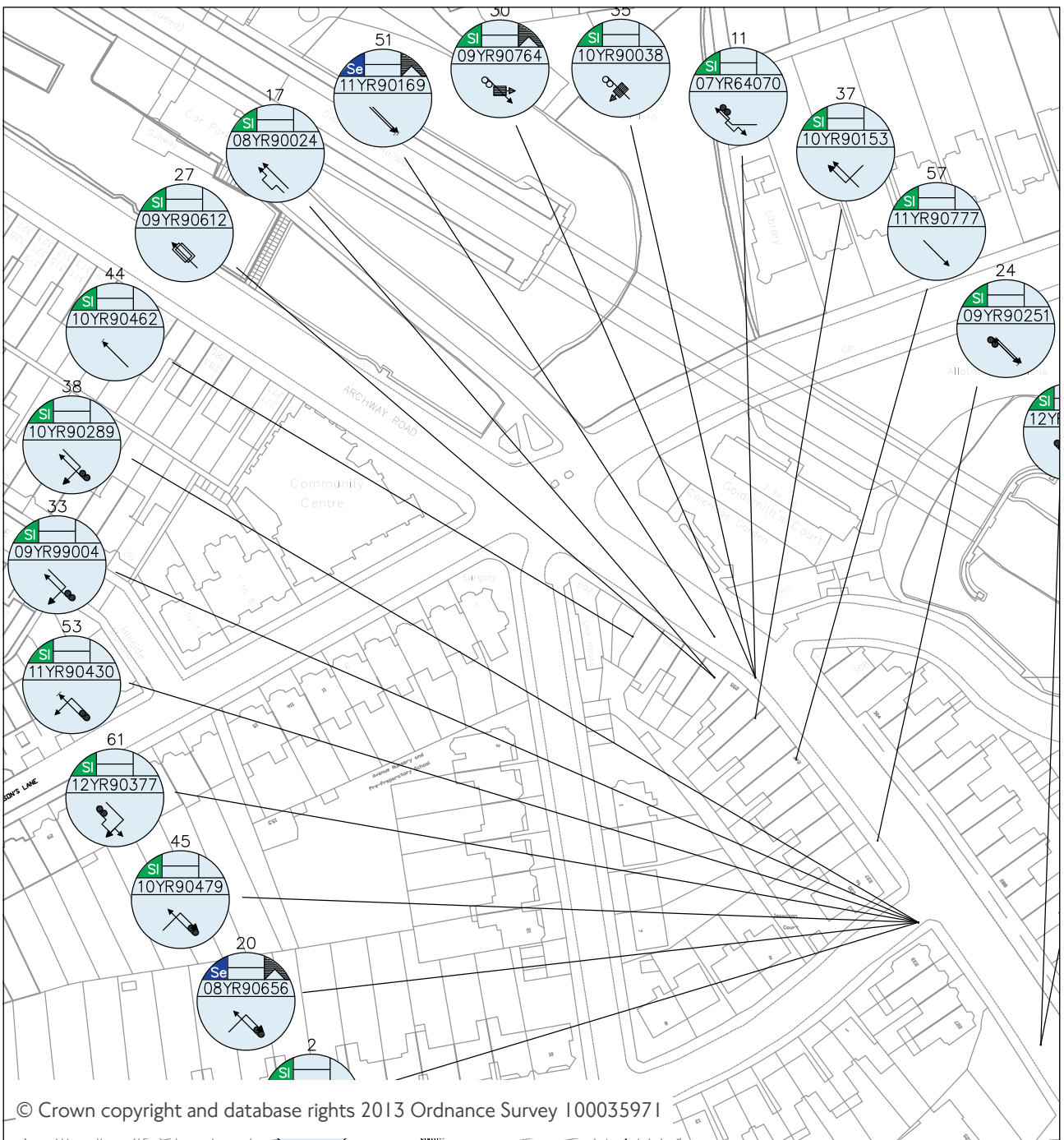
Where road safety schemes are implemented on the TLRN they are monitored using the Traffic Accident Diary System (TADS). This is used to track the collision reduction performance of schemes after installation to ensure that scheme safety objectives are being met.

A review of safety schemes implemented on the TLRN since 2000 shows that they have made a significant contribution to collision reduction, leading to an average 24 per cent fall in collisions.

### Did you know?

In 2011 there were 7,340 collisions on the TLRN resulting in 8,964 casualties, including 846 people killed or seriously injured.

Figure 3: Example of a collision plot from a collision study



## Did you know?

TfL offers an RSA service to all boroughs. Last year, TfL road safety auditors completed audits on 243 schemes, including 56 on borough roads.

### 4.2.1.2 The Better Junctions review

One element of TfL's current activity to make London's roads safe is a review of junctions on Barclays Cycle Superhighways (CS2, CS3, CS7 and CS8) and major junctions on the TLRN. This review is considering the safety of vulnerable road users at those locations and is being steered by a stakeholder group representing the interests of a wide range of road users.

## 4.2.2 Borough road safety engineering

### 4.2.2.1 LIP funding

London boroughs play a vital role in improving road safety as 69 per cent of all collisions occur on the roads managed by them. In 2011, 75 per cent of all pedestrian KSIs and 67 per cent of all pedal cyclist KSIs were in collisions on borough roads<sup>21</sup>.

London boroughs invest LIP funding to undertake road safety engineering improvements to tackle a range of road safety problems on the roads they manage.

Borough-wide collision information for all roads is provided by TfL. Monitoring and reviewing the schemes implemented is also important. This requires two-way sharing of

scheme-level implementation data to monitor and evaluate individual schemes, and generate insight into the effectiveness of different types of intervention. Monitoring shows that schemes, where boroughs made data available, achieved a 30 per cent reduction in collisions.

### 4.2.2.2 Safety audits

All permanent highway schemes on the TLRN undergo a rigorous RSA process during both the pre and post-construction phases to identify and address any potential road safety issues. This process ensures that all TLRN schemes operate safely by minimising future collision numbers and severity. TfL has its own RSA procedure<sup>22</sup> specifically tailored to meet the needs of London's roads. This procedure is updated periodically to ensure that it remains best practice, aligns with the DfT's Design Manual for Roads and Bridges (HD 19/03<sup>23</sup>) and takes account of changes in the use of London's roads.

TfL has its own RSA team, ensuring that audits are conducted to a consistently high standard. The team delivers RSAs on both TLRN and borough schemes, where requested. The team will be looking to increase the number of RSAs that it conducts for borough clients.

21 2011 ACCSTATS data showing that of 980 pedestrian KSIs in London, 735 were on borough roads and of 571 pedal cycle KSIs, 381 were on borough roads

22 TfL (2011) 'Management System Document – Procedure: Road Safety Audit' Issue 4

23 Department of Transport (2003) 'Design Manual for Roads and Bridges' Vol. 5, Section 2, Part 2 HD 19/03

### 4.2.3 Road safety engineering measures

#### 4.2.3.1 Design guidance and innovation

Adherence to regulations such as the DfT's Traffic Signs Regulations and General Directions (TSRGD) ensures a consistent road user experience supporting road user understanding and safe behaviours. However, new ideas to improve safety can conflict with such regulations and guidance documents.

To innovate, TfL will lobby the DfT on the TSRGD forthcoming revisions to encourage allowances for, and promoting trials of, innovative solutions. Early publication will also be pushed for.

Getting design guidance right for road safety is an important strand of system-based thinking. Safety is incorporated into all TfL design guidance issued, such as the London Cycle Design Guidance, Streetscape Guidance and Accessible Bus Stop Design Guidance, and TfL will work to drive forward continued change through such processes.

### Did you know?

London has embraced innovation in roads infrastructure including measures such as pedestrian countdown, cycle superhighways, blind spot safety mirrors, shared space schemes, mass action anti-skid surfacing programmes, cycle advanced stop lines and wide application of side raised entry treatments.

#### 4.2.3.2 Pedestrian guardrails

Pedestrian guardrails (PGRs) are gradually being removed from London's streets as part of an ongoing project which forms part of the MTS to improve the city's environment. Safety benefits include fewer obstacles for pedestrians, a reduction in collisions involving trapped cyclists and guardrails, wider crossings and less overcrowding. PGR removal also improves visibility for all road users, particularly children, and promotes more careful driving and slower speeds. TfL will continue to monitor collisions at sites where PGRs have been removed and use this data to inform future decision-making.

#### 4.2.3.3 Roadworks

As part of his ongoing drive to reduce roadworks, the Mayor has asked TfL, the London boroughs and all those working on the Capital's roads to pledge to do all they can to minimise disruption caused by roadworks and ensure that works are well managed. Road maintenance programmes can provide openings to secure safety benefits and London's highway authorities should seek more opportunities to realise these. The 'Report IT' tool offers an excellent opportunity to do this through encouraging road users to report maintenance issues on the network that may compromise safety.

## Did you know?

Speed awareness courses are an alternative to fines and endorsement points on the driving licences of those caught speeding. Nearly two thirds of the 30,000 drivers offered speed awareness courses each year take them up.

### 4.2.4 Safe speeds

Public consultation by the former Metropolitan Police Authority demonstrates that there is significant public concern about unlawful and unruly behaviour on London's roads. This includes concern about illegal speeding and driving too fast for the conditions.

Reducing speeding can be addressed using a variety of approaches, including engineering measures or enforcement where high-risk offenders are penalised through the courts, and errant road users diverted into education such as speed awareness courses. Engineering to encourage compliance and automatic enforcement, discussed in this section, have a central role to play in delivering safe speeds on London's roads. Section 6.2.3 (p63) describes the role of roads policing.

Public support for safety cameras remains high<sup>24</sup> and to make London's roads safe through improved compliance, TfL will work with the police and London boroughs to ensure the effective management of the safety camera network. New, more flexible guidance from the DfT offers an opportunity to make optimum use of new engineering and speed management approaches.

#### 4.2.4.1 Excessive and inappropriate speed

Excessive or inappropriate speed was a contributory factor in nine per cent of all collisions on London's roads in 2011, and 22 per cent of all fatal collisions. High speeds increase the likelihood of having a collision and lead to more severe injuries. Most pedestrians survive a collision with a vehicle travelling at 20mph, but with higher speeds fewer survive.

Research has shown that average speed is important: a 1mph reduction in average speeds leads to a reduction of six per cent in the number of collisions in urban areas<sup>25</sup>.

Fast and aggressive driving intimidates all road users, particularly pedestrians and cyclists. It deters people from these sustainable modes and may discourage parents from allowing their children to walk and cycle to school and for other journeys.

Evidence suggests that drivers who attend a speed awareness course are less likely to reoffend<sup>26</sup>. TfL will work with the police to ensure that London's safety camera operations focus on educating offenders with less serious breaches of the speed limit, rather than penalising them, to improve their speed compliance. Further research is needed on how best to apply speed awareness and other driver diversion courses.

24 An AA survey published in autumn 2010 that showed, on average over the past eight years, driver acceptance of safety cameras has remained above 70 per cent. A survey titled 'Public Opinions of Speed Cameras, June 2010', conducted by the Institute of Advanced Motorists (IAM) reported that 'The survey of more than 1,000 respondents also shows that support generally for speed cameras is high at 79 per cent. The highest level of support is in London (85 per cent approval) and the lowest in the North East (67 per cent)'

25 Taylor, Lynam and Baruya, (2000) The Effects of Drivers' Speed on the Frequency of Road Accidents

26 Department for Transport (2006). 'Effective Interventions for Speeding Motorists'. Road Safety Research Report No. 66



#### 4.2.4.2 Safety cameras

Safety cameras have proved successful in reducing casualties<sup>27</sup>. TfL and the police operate and manage speed and red light cameras installed at sites with a history of KSI casualties caused by excessive speed or running red lights.

Safety camera policy in London includes three broad strands:

- A programme to manage the transition from wet film to digital safety cameras
- The scope to install safety cameras at new sites on the TLRN, funded by TfL, where new sites are identified with a serious casualty history that justifies such investment
- The scope for boroughs to install safety cameras at new sites on borough roads, including the provision to finance this via their LIPs funding, where new sites are identified with a serious casualty history that justifies such investment

Wet film camera technology will become obsolete by 2015 and these cameras will cease to function. TfL is therefore implementing a programme to manage the transition from wet film to digital safety cameras on London's roads. This is a step forward in making the

Capital's safety cameras sustainable in the longer term. Replacing ageing wet film cameras with digital alternatives will create an efficient safety camera operation capable of maintaining existing KSI reductions and delivering additional casualty reductions.

Three types of digital camera are available to replace the wet film ones. These are:

- Red light cameras which, in addition to red light running, can also monitor speeding during the green phase of the traffic lights, unlike wet film cameras
- Spot speed digital cameras, which can operate in both directions simultaneously on a central reserve, unlike wet film cameras
- Average speed cameras, which monitor speeds over a length of road rather than a specific location

### Did you know?

In 2011, 22 per cent (34 out of 155) of fatal collisions involved speeding as a contributory factor. Nineteen per cent of London's roads have a 20mph limit. London's safety cameras help prevent around 500 deaths and serious injuries each year.

<sup>27</sup> TfL analysis of casualties over a three-year period before and after the installation of speed cameras shows that KSIs fell by more than 50 per cent on the roads on which safety cameras were introduced. On this basis, London's cameras help prevent about 500 deaths and serious injuries each year.

TfL analysis shows there are around 150 roads and more than 100 junctions where the casualty history would warrant the installation of safety cameras to reduce KSIs through speed and red light enforcement.

TfL will continue to fund the maintenance and enforcement of speed through safety cameras, including, via the LIP process, the costs of a network of cameras on borough roads. TfL will work with its stakeholders to ensure this policy remains appropriate and to widen its use, including consideration of 20mph limits enforced by cameras.

The replacement programme embraces economies of scale and borough flexibility. TfL is consulting with boroughs to agree an effective approach to camera deployment and operation on local roads, and to ensure a consistent safety camera operations policy is maintained in London.



#### 4.2.4.3 London's 20mph zones and limits

A study of 20mph zones implemented in London<sup>28</sup> has shown them to deliver:

- A 42 per cent reduction in all casualties
- A 53 per cent reduction in KSI casualties
- The greatest reductions among child and car occupant KSIs

There are more than 400 20mph zones in London (figure 4). These have primarily been implemented on local roads with light traffic which demonstrated higher casualty rates.

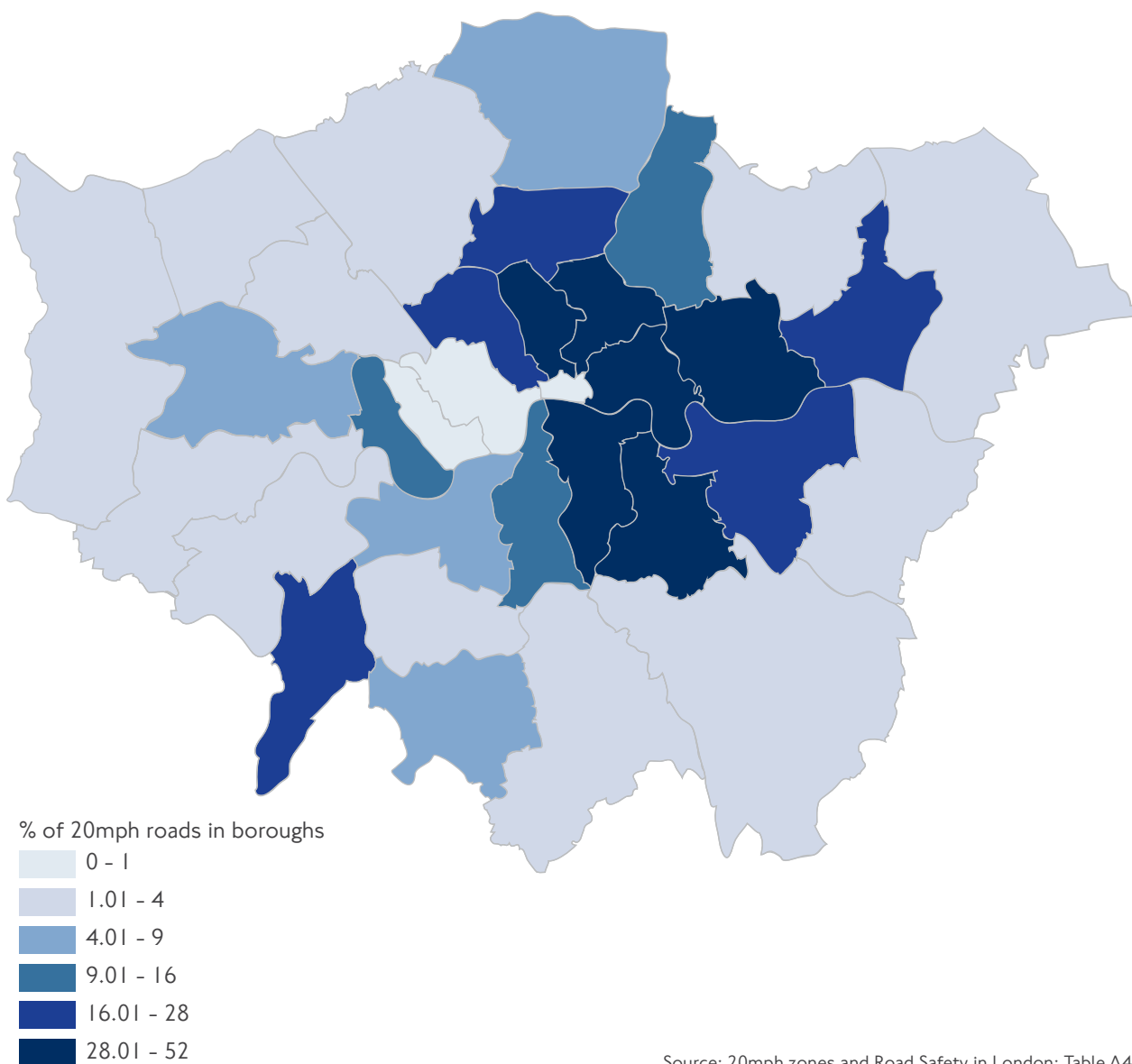
The use of 20mph zones and limits remain an important and effective measure for reducing casualties through lowering speeds on local and residential roads. Ongoing review suggests that, on borough roads, approximately nine per cent of KSI collisions are speed-related.

Boroughs act as the highway authority for the vast majority of London's roads, including the Strategic Road Network (SRN). In line with new DfT guidance<sup>29</sup>, TfL will work with the boroughs to support the installation of 20mph zones and limits on borough roads where appropriate, and in keeping with the wider functions of the local road network. TfL will work with boroughs to

28 London School of Hygiene and Tropical Medicine (2008). 20mph zones and road safety in London

29 Setting Local Speed Limits, Department of Transport Circular 01/2013

Figure 4: Percentage of road length within a 20mph zone



Source: 20mph zones and Road Safety in London: Table A4

monitor the roads where 20mph limits and zones are introduced to ensure safety benefits are realised.

The complexity of the TLRN means that in considering lower speed limits on these routes, the potential benefits in terms of safety and liveability must be considered alongside the TLRN's other functions, including the movement of people and goods.

TfL will continue to be open to a range of speed limits on the main roads in London, including 20mph where appropriate. Limits relevant to key arterial routes are different to those on routes where people live, work and shop. In light of the DfT guidance, and the findings of the Roads Task Force, TfL will continue to consider variable speed limits and 20mph limits where appropriate.

## 4.3 Safe roads actions

The following pages contain the safe roads actions to be delivered over the lifetime of the Safe Streets for London plan, with a focus on the near term.

Safe roads actions	
<p>Identify and treat high-risk locations on the TLRN with effective engineering solutions, focusing on protecting pedestrians, cyclists and motorcyclists</p>	<ol style="list-style-type: none"> <li>1. <b>TfL will identify ‘critical list’ locations on the TLRN and begin to improve them within 12 months of identification.</b> Increased funding will be focused towards road safety schemes that improve the design and operation of these sites, with a particular focus on making walking, cycling and motorcycling safer (ongoing). TfL will publish annual reviews of this programme identifying locations treated (annually).</li> <li>2. <b>With a five-fold increase in budget from £19m to £100m TfL will deliver the Better Junctions review programme</b> in collaboration with boroughs and with the close involvement of user organisations in scheme design. TfL will refocus the review to prioritise early and major improvements at, and around, London’s worst junctions making them safer and less threatening for cyclists. Junctions to be tackled over the next three years include Blackfriars, Vauxhall, Tower Hill, Aldgate, Swiss Cottage and Elephant and Castle, among others (2013-2016).</li> <li>3. <b>TfL will ensure worldwide best practice in road safety audit is defined by London.</b> TfL will commission an external review of London’s RSA procedure (2013) and apply the strengthened procedure to continue to ensure that vulnerable road user safety is intrinsic to the design of all new highway schemes on the TLRN, including major projects (ongoing). TfL will undertake a rolling programme of ‘lessons learnt’ from TLRN road safety audits, which will include ensuring all TfL engineers involved in the delivery of highway schemes are trained in the principles of the procedure (by 2014).</li> <li>4. <b>TfL will monitor the impacts of all TLRN road safety schemes and major projects</b> through continuing to use its comprehensive TADS (ongoing) and information from the traffic camera network (from 2014).</li> </ol>
<p>Provide London’s boroughs with the funding, knowledge and information to reduce casualties</p>	<ol style="list-style-type: none"> <li>5. <b>TfL will ensure boroughs have the best available data</b> by providing each with information about ‘high risk’ locations on their networks and enable boroughs to monitor schemes by supporting use of the TADS to understand the impact of local safety schemes on borough casualty numbers (annually).</li> <li>6. TfL will work with the boroughs to <b>ensure the road safety audit procedure is applied on LIP-funded borough schemes</b> that involve a substantive change to borough roads. TfL will then engage the boroughs in the ‘lessons learnt’ programme based on RSAs of borough schemes (ongoing).</li> <li>7. <b>Ensure that TfL design standards are fully updated and improved</b> by bringing them in line with best national and international practice (London Cycle Design Standards 2013, and Pedestrian Comfort Guidance 2014). TfL will work with the boroughs to embed the use of these design guidelines in all LIP and TfL-funded schemes, and raise the standard of all professionals involved in scheme design and delivery by providing training to TfL and borough engineers (following revision).</li> <li>8. TfL will use ‘crowd sourcing’ techniques through <b>promotion of the Report IT system, empowering members of the public to report safety issues</b> arising from pavement and road defects (ongoing). Through better coordination between boroughs and TfL, customer alerts of safety-critical issues will be used to prioritise the planning and execution of road and pavement maintenance to reduce pedestrian slips, trips, falls and collisions (ongoing).</li> </ol>

Safe roads actions	
<p>Trial, evaluate, roll out and monitor effective, innovative engineering measures to reduce casualties</p>	<p>9. TfL will use cutting-edge engineering and traffic management techniques to <b>ensure that casualty reduction in London incorporates the latest technologies</b> (2014/15). These measures will include:</p> <ul style="list-style-type: none"> <li>• Development of SCOOT using detection of pedestrians and cyclists (2014)</li> <li>• Installing extra blind spot mirrors to boost the 250 currently on roads across London. The mirrors improve visibility for drivers of large goods vehicles (ongoing)</li> <li>• Building on the success of pedestrian countdown technology at around a further 200 locations across the Capital, while monitoring the safety at those locations (under way)</li> </ul>
<p>Apply engineering and technology to maximise speed limit compliance and reduce speed-related casualties</p>	<p>10. Working with partners in the London boroughs and police, TfL will <b>replace old wet film cameras with new digital safety cameras and identify potential new sites</b> where cameras are the most effective solution to reduce speed-related fatalities and collisions, including those on borough roads, to be funded through LIPs.</p> <p>11. Building on the success of more than 400 20mph zone schemes in London, TfL will <b>support the installation of further 20mph zones and limits on borough roads</b> where compatible with the functions of the local road network. This will be delivered through:</p> <ul style="list-style-type: none"> <li>• Funding of new zones and limits through LIPs</li> <li>• Engaging with police and boroughs to establish effective methods of ensuring compliance and maximising casualty reduction impacts, including consideration of enforcement by cameras (2013 onwards)</li> <li>• Supporting boroughs in evaluating ways of ensuring casualty reduction through 20mph limits (2013 onwards)</li> </ul> <p>12. TfL will <b>continue to be open to a range of speed limits on London’s main roads, including 20mph where appropriate</b>, in light of the Roads Task Force’s fundamental review identifying the need to manage the wide range of roads in London in different ways. Limits needed on key arterial routes are different from those on routes where people live, work and shop. In light of the Task Force’s and DfT guidance, TfL will continue to consider variable speed limits and 20mph limits where appropriate, for example Camberwell and Waterloo, where cycle improvements are planned. TfL will also integrate international best practice to ensure the most effective use of 20mph (30kph) limits in city settings (2013).</p>



## 4.4 Looking to the future

Going forward, tried and tested road safety engineering solutions can be expected to yield fewer casualty reductions and new approaches will need to be tried. Innovation is imperative if a falling trend in casualty numbers is to continue. Areas where an improved understanding of the impact of technology advances is needed and trials warranted may include the following:

- **Speed management.** This will continue to be critical, particularly where levels of vulnerable road users are high, and is likely to require a renewed focus on speed management in town centres around London. The safety camera replacement programme is critical for this, allied with lower speeds on borough roads, where around three quarters of pedestrian KSIs and two thirds of cyclist KSIs occur
- **Safe provision for cycling.** With the planned growth in cycling levels, reductions in the risk for cyclists will be required if the road safety target is to be met. This may require new approaches to cycling provision including more space dedicated to cyclists and innovations such as SCOOT for cycles



- **Safe provision for walking.** Planned growth in walking will lead to similar challenges as for cycling. Looking to the future, the safe infrastructure requirements of an ageing population will need to be fully understood. Infrastructure and policy will need to address the higher injury severities experienced by older road users when involved in collisions
- **Infrastructure-based technology.** Current infrastructure-based technology such as vehicle activated signs play a relatively minor role in road safety. Looking ahead, more sophisticated technologies will become available allowing infrastructure and vehicles to communicate. For example, traffic signals could communicate with vehicles to warn drivers, via in-car systems, of upcoming red lights which have yet to change. Similarly, infrastructure could communicate to drivers their proximity to schools or other locations where increased awareness is needed
- **Route-based approaches.** Many collisions, particularly those involving vulnerable road users, occur at junctions. Such collisions may indicate junction-specific safety problems or problems relating to a longer route. Route-based approaches, looking at a wider set of data into potential underlying safety problems (such as signal timings and inconsistent provision) to inform remedial action will allow a more holistic solution to be developed. This may lead to casualty reductions at locations with too few casualties to register as clusters
- **Applications of technology.** The digital speed limit map will be maintained and the potential applications of it considered. It is expected that other safety-specific technologies, such as close following detection, will be developed to inform drivers of unsafe behaviours





## Chapter 5

# Safe vehicles

### 5.1 Introduction

Vehicles that use London's roads should be safe for their occupants and for other road users. This will mean changes to vehicle designs, regulations and use, as well as trials of new technology that can be installed after vehicles leave the factory. This requires TfL to work with manufacturers, and national government to change legislation and to work with technology developers to identify and promote vehicle safety technologies. This section describes actions to:

- Lobby for improvements to vehicle technology and driver safety regimes
- Improve the safety offering of the Fleet Operator Recognition Scheme (FORS) and increase its uptake
- Improve work-related road safety through embedding safety in procurement and planning processes and trialling technology
- Take forward a programme to identify and trial vehicle-related road safety innovations for London

Vehicle technology is developing at a rapid rate, with new technologies on the rise. Improvements in vehicle safety help drivers to avoid collisions (primary or active safety) and protect vehicle occupants and other road users when collisions happen (secondary or passive safety). However, technologies fitted to new vehicles today will take time to pervade the fleet.

TfL will encourage increased uptake of technology to improve the safety of vehicles that use London's roads. Some technology can be retrofitted to existing vehicles so that benefits can be seen more quickly. Other technologies, however, are not suitable for retrofitting and must be included as part of design and type approval.



## 5.2 Near-term focus

### 5.2.1 Lobbying the European Commission and DfT for legislative change

Improvements to vehicle design and new technology have played a key role in reducing casualties and will continue to do so. TfL will seek to challenge existing legislation and regulations to ensure everything possible is being done to raise driving standards and ensure only the safest vehicles are on London's streets. This will include working with and lobbying the DfT, government and EU for changes to legislation, to ensure:

- Exemptions for the fitting of safety devices (such as side guards and mirrors) are minimised

- Commercial vehicles used in urban areas are designed to give the driver the maximum visibility around their vehicle
- Safety devices that reduce the likelihood of collisions with cyclists, such as proximity sensors and side cameras, are fitted to all new vehicles and retrofitted where practical

For example, TfL will push for full adoption of Directives 2009/113/EC and 2006/126/EC regarding eyesight requirements for Group 1 and Group 2 drivers (to reduce risks associated with driving for work by improving driver fitness) and lobby the European Commission (EC) for safety devices including side guards, proximity sensors and visual aids<sup>30</sup> to be included in 'whole vehicle type approval' for all new tippers and skip lorries and to be retrofitted to existing vehicles<sup>31,32,33</sup>.

30 AECOM, (2011a), Barclays Cycle Superhighways HGV Technology Trial Project Report

31 Loughborough Design School and MIRA Ltd, (2010) The development of improvements to drivers' direct and indirect vision from vehicles - phase 1. Report for the Department for Transport TTS Project Ref: S0906/V8. Loughborough: Loughborough University

32 Loughborough Design School and MIRA Ltd, (2011a) The development of improvements to drivers' direct and indirect vision from vehicles - phase 2. Report for Department for Transport TTS Project Ref: S0906/V8. Loughborough: Loughborough University

33 Loughborough Design School and MIRA Ltd, (2011b). The development of improvements to drivers' direct and indirect vision from vehicles - impact assessment. Report for Department for Transport TTS Project Ref: S0906/V8. Loughborough: Loughborough University.

## Did you know?

Through FORS, TfL provides free training to fleet managers and drivers which includes road safety, air quality and congestion relief. To date, the FORS programme has provided training to 2,500 fleet managers and almost 7,500 drivers.

Directive 2003/59/EC on the initial qualification and periodic training of drivers of certain road vehicles for the carriage of goods or passengers requires that Certificates of Professional Competence (CPC) tests are organised by the member states' competent authorities. Periodic training is required to update drivers' knowledge with specific emphasis on road safety and the rationalisation of fuel consumption. The CPC periodic guide syllabus currently contains a section on health, road and environmental safety, but this is not mandatory<sup>34</sup>. TfL will lobby for a mandatory safety element to the EU Driver Certificate of Professional Competence (DCPC) to be introduced to include training on vehicle roadworthiness, mirror alignment, indicating, spatial awareness and blind spots.

### 5.2.2 FORS

In addition to lobbying for change, TfL will also continue to play a role driving improvements on London's roads through FORS. The scheme is designed to help increase fleet operators' awareness of road safety issues, paying particular attention to the safety of pedestrians and cyclists through a structured programme to help change management practices and driver behaviour.

Across the GLA, TfL and Crossrail the use of contractual powers to influence the behaviours of delivery and servicing activity is playing an important role and will continue to do so.

Contracts are being used as a way to ensure that suppliers' vehicles, including those of sub-contractors, conform to the highest practical specifications of safety equipment that protects cyclists, and that all drivers are fully trained in urban driving techniques – gold level accreditation of FORS. Furthermore, the Crossrail Lorry Driver Induction Training programme, specifically developed for lorry drivers working on the Crossrail project, aims to ensure drivers know how to drive carefully near to cyclists and other vulnerable road users.



34 JAUP, (2010) A Guide to periodic training for employers and training providers to the road passenger and road freight industries

FORS has also developed a series of transport manager workshops, which help fleet operators to:

- Understand relevant regulatory responsibilities
- Understand how to raise driver awareness
- Develop risk management procedures

FORS accredited companies have seen a reduction in collisions from 17 per 100,000 vehicle kilometres to eight.

FORS-approved driver training courses for the mandatory DCPC – the safe London driving course and safe urban driving course – have been developed specifically to increase fleet drivers' awareness of vulnerable road users. Ninety per cent of drivers attending intend to change their behaviour and give more consideration to vulnerable road users.

### 5.2.3 Construction logistics and work-related road safety

Those driving for work can have a collision risk up to 50 per cent higher than private motorists<sup>35</sup> so, in addition to FORS, improvements in work-related road safety, including privately owned vehicles being used for work purposes (grey fleet), have the potential to improve the

safety of all London's road users and make a significant contribution towards meeting the casualty reduction target. It is estimated that a third of all collisions in Great Britain involve a vehicle being driven in the course of work<sup>36</sup>.

The safe use of construction vehicles also needs to be addressed. Between 2008 and 2011, 56 per cent of the cycling fatalities in London have involved large commercial vehicles, including a disproportionate number of construction vehicles. A recent TfL report<sup>37</sup> into construction logistics and safety for cyclists identified 12 recommendations, including lobbying the Health and Safety Executive and working with vehicle manufacturers to improve future design. TfL will push for early resolution of the issues highlighted by this report and publish the outcomes.

### 5.2.4 Vehicle safety innovations

FORS and other work-related road safety activities largely focus on how commercial vehicles are used in London. However, it is also vital that TfL works alongside manufacturers to support the design of new technologies and vehicle engineering solutions, acting as an advocate for London's road users in technology development programmes.

These programmes can be informed using collision data held by TfL, so that equipment

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35 Transport Research Laboratory (2003), Work-related road accidents, Report TRL2240

36 Health and Safety Executive, (2003), INDG382 Driving at Work: Managing work-related road safety

37 Construction logistics and cyclist safety (2013), TRL Report, PPR640

designed to reduce risk focuses on urban roads for drivers, pedestrians, cyclists and motorcyclists. Emerging technologies expected to play an increasingly important role include:

- Advanced emergency braking systems, particularly those linked to vulnerable road user detection systems
- Lane departure warnings, blind spot warnings and close following warnings, including radio frequency identification systems
- Technologies which have been largely car-based, such as advanced lighting and anti-lock braking systems adapted for the motorcycle fleet
- Improvements to heavy goods vehicle (HGV) safety realised through changing their frontal shape, the use of active rear steering to improve manoeuvrability and stability, and systems to reduce wet weather spray
- Extending the required field of vision for HGVs by amending mirror standards and increasing in-cab visibility through design and materials improvements
- Intelligent Transport Systems such as vehicle-to-vehicle and vehicle-to-infrastructure communication systems
- Winter tyre advances and enhanced fleet penetration

In the near term, sharing collision and infrastructure information with vehicle manufacturers will serve to engage them with the casualty situation in urban settings such as London. Looking to the future, TfL will seek to influence the vehicle safety innovation roadmap.

Besides vehicle manufacturers, many other organisations are playing a role in improving road safety through technology. For example, insurance companies and fleet operators use in-vehicle data recorders and driver performance feedback systems. TfL needs to work more closely with these other sectors and organisations to understand how widespread use of effective new interventions can be achieved.

TfL will embrace new and emerging technologies and consider how to bring them into wider use where the benefits for London road user safety can be demonstrated.

## Did you know?

Through FORS, TfL has supplied more than 20,000 free 'Fresnel' lenses to fleet operators in London. The lenses are attached to the passenger window and help to improve the driver's view of cyclists in close proximity to the vehicle.

## 5.3 Safe vehicles actions

The following pages contain the safe vehicles actions to be delivered over the lifetime of the Safe Streets for London plan, with a focus on the near term.

Safe vehicles actions	
<p>Lobby for improvements to vehicle technology and driver safety regimes</p>	<p>13. TfL will use its power and influence to <b>push for changes at a national scale</b> to significantly reduce casualties, lobbying the DfT to:</p> <ul style="list-style-type: none"> <li>• Fully adopt European directives regarding eyesight requirements for Group 1 and Group 2 drivers to reduce work-related driving risks by improving driver fitness through regular medicals, including eyesight and driver fatigue checks (2013 onwards)</li> <li>• Change regulations so that advanced stop lines can be properly enforced by the police and measures used widely on the continent, such as low-level signals for cyclists, can be trialled for roll out in the UK (2013 onwards)</li> <li>• Amend regulations in the Road Vehicles (Construction and Use) Regulations 1986 to include the requirement that all vehicles are to be fitted with approved close proximity sensors, additional visual aids to cover blind spots not solved by mirrors, and a system to alert drivers of someone/something in their blind spot (2013 onwards)</li> <li>• Take forward a programme to produce an up-to-date national digital speed limit map to revolutionise speed management and information technologies</li> </ul> <p>14. TfL will use its power and influence to <b>push for changes at a European level</b> that will significantly reduce casualties, lobbying the EC to amend directives and approvals to ensure that:</p> <ul style="list-style-type: none"> <li>• Guidance exempting vehicles from fitting side guards, mirrors and other safety devices is more stringent and less ambiguous</li> <li>• All commercial vehicles used in urban areas are designed to give the driver maximum visibility all around their vehicle</li> <li>• Safety devices that reduce the likelihood of collisions with cyclists, such as proximity sensors and side cameras, are fitted to all new vehicles and retrofitted where practical</li> <li>• Stringent testing standards for car front bonnets that protect pedestrians and cyclists in the event of a crash are in place</li> </ul>
<p>Improve the safety offering of FORS and grow its uptake</p>	<p>15. <b>The GLA, TfL and Crossrail will further develop contractual powers to improve cycle safety</b>, including contracts and sub-contracts that require:</p> <ul style="list-style-type: none"> <li>• Fleet and contracted fleets to be accredited to FORS bronze as a minimum</li> <li>• Construction Logistic Plans (CLPs), incorporating work-related road risk requirements, to be applied as a condition across all relevant planning applications</li> <li>• Local Development Frameworks and related guidance to have robust requirements for cycle facilities and CLPs</li> <li>• All staff involved in the planning, design and auditing of cycling schemes have undertaken London Cycling Design Standards training</li> <li>• A strategy and procedure to be in place to monitor and ensure compliance with these requirements</li> </ul> <p>16. <b>In consultation with business, TfL will study the experience from cities such as Paris and Dublin, where lorries over a certain size are restricted from certain parts of the city, or at certain times of the day.</b></p> <p>17. <b>TfL will continue to encourage operators to sign up to bronze level accreditation and push for gold level accreditation of FORS and then to use FORS membership to embark on a programme of continuous improvement for safety.</b> TfL will review the road safety elements of FORS, seeking improvements to ensure even higher standards of safety (2013). Through ongoing work with the Freight Transport Association, Road Haulage Association, Federation of Small Businesses, Confederation of Passenger Transport, Guild of Coach Operators, Coach Marque and others, a greater uptake and promotion of FORS will be possible, leading to improvements in cycle and pedestrian safety by all fleet operators in London (ongoing).</p>

<b>Safe vehicles actions</b>	
<p>Improve construction and logistics safety using procurement and planning processes and trialling work-related road safety technology</p>	<p>18. <b>TfL will continue to lead the way in improving the safety of the construction and logistics sectors</b>, and the design and use of construction industry lorries in relation to cycling. This will include:</p> <ul style="list-style-type: none"> <li>• Working with regulators, enforcement and planning authorities, property developers, vehicle manufacturers and the construction logistics industry to implement the wide-ranging recommendations of the Transport Research Laboratory (TRL) research</li> <li>• Lobbying government, the Health and Safety Executive and others to ensure the principal contractor takes ownership of the road risk associated with a construction site</li> <li>• Focusing on improvements in the road safety culture within the construction industry through the development of an approved code of practice and education campaigns for managerial staff</li> <li>• Funding driver training to the HGV industry to improve driving standards</li> </ul> <p>19. To further minimise the risk that heavy vehicles pose to vulnerable road users, <b>TfL will push the EC to include safety as a requirement of DCPC training</b>, covering vehicle roadworthiness, mirror alignment, blind spot indicators and a daily check that safety devices are clean, visible and working (aligning this with the CPC Safer Urban Driving and CPC Safer London Driving courses). TfL will also work with DCPC training providers operating in London to ensure their course content addresses the needs of London's vulnerable road users, reducing the danger posed to them (2013 onwards).</p> <p>20. <b>TfL will help improve the skills of borough officers in road safety best practice in relation to CLPs and delivery service plans</b>, to minimise the risks associated from large goods traffic (2014 onwards).</p> <p>21. <b>TfL will extend its campaign on fleet safety by developing, trialling and rolling out a programme, including telematics, focusing on smaller fleets and work trips</b> in employee-owned vehicles or grey fleet. This will include working with those representing car fleet operators, for example, the Association of Car Fleet Operators and the British Vehicle Rental and Leasing Association, to promote effective technologies with businesses and the insurance industry to quicken their uptake in vehicles in London (2014).</p> <p>22. <b>TfL will also engage actively with courier and food delivery companies</b> to improve the safety of professional cyclists and motorcyclists through revising and re-launching the courier code for London (2014).</p>
<p>Take forward a programme to identify and trial road safety innovations for London</p>	<p>23. <b>To support a revolution in intelligent speed assistance technology, TfL will update, maintain, and make freely available a digital speed limit map of all of London's roads</b> and promote its use with technology developers and manufacturers. TfL will keep the map updated in line with changes to speed limits (annually).</p> <p>24. <b>TfL will continue to push the boundaries of innovation in road safety technologies. This will include designing and implementing trials</b> to evaluate emerging technologies such as radio frequency identification tags to alert drivers to the presence of cyclists, technology to reduce the incidence of door opening collisions for cyclists, novel conspicuity aids for cycles and motorcycles, using 'black box' technologies to reduce road risk among high risk driver groups, smartphone road safety apps, and heads-up displays to provide real-time information to drivers (2013 onwards).</p> <p>25. <b>TfL will use its power and influence to shape the safety technology programmes of vehicle manufactures and their representatives</b> (eg the Society of Motor Manufacturers and Traders), lobbying for improvements that will best reduce injuries on London's roads (2013 onwards). TfL will identify current levels of uptake of vehicle safety technologies in London's vehicle fleet, such as electronic stability control and emergency brake-assist, and use its fleet procurement influence to accelerate uptake (2014).</p> <p>26. <b>TfL will bring together vehicle manufacturers and safety technology developers, to establish a London Vehicle Innovation Task Force</b> to push for vehicle safety advances, launching a road safety technology innovation competition to bring the best ideas for safety to London (2014).</p>

## 5.4 Looking to the future

Improvements to vehicle design and new vehicle safety technologies have played a key role in reducing casualties. Further developments and higher fleet penetration of systems already in use will continue to do so.

To improve understanding of the potential of technology advances, and define road safety policy and action in London, the following activities are expected to be key:



- **Vehicle manufacturers.** Many safety advances have focused on stopping collisions from occurring or protecting vehicle occupants when they do. For example, seat belts, side impact protection, electronic stability control. More recently, advances have been made in systems to avoid collisions with pedestrians and other vulnerable road users, and to protect them should a collision occur. TfL will seek further opportunities to support the development of new systems. This is likely to include working with manufacturers to trial innovative new technologies
- **European research.** London will work alongside the EU to influence future vehicle design to continue delivering safety improvements for road conditions in complex urban environments. This could involve supporting EuroNCAP testing developments in line with improving vehicle design for Londoners, or working with the EC to trial new technologies





- **Review technologies.** A multitude of vehicle-based technologies are in use and in development. These will have varying degrees of application and safety benefits in London. Looking to the future, a better understanding is needed of the potential of the various technologies
- **London's fleet.** More in-depth knowledge about the safety features of the vehicles using London's roads is needed to understand the potential for new technologies and the wider use of current safety technologies. This is a complex task, requiring data about the fleet using London's roads, the safety features in that fleet and their effectiveness, some of which is not yet known
- **Vehicle-based solutions.** Going forward, there is an opportunity for the behaviours and attitudes that campaigns have traditionally sought to change to be addressed in-vehicle. For example, research suggests that collisions where drivers looked but failed to see a cyclist, and those where a pedestrian looked but failed to see a motorcyclist, may be grounded in a human inability to accurately judge the speed of oncoming single headlights. Looking to the future, vehicle-based systems may offer solutions by detecting other road users and their oncoming speed



## Chapter 6

# Safe people

### 6.1 Introduction

All road users, regardless of whether they are travelling on roads or pavements, have a responsibility for their own safety and the safety of others, through individual actions and by complying with the law. Marketing, education, training and enforcement all have a role to play in encouraging road users to take responsibility. This plan will keep London's road safety programme up-to-date with changes in how people access information by creating new resources to improve the safety of children, young people and other vulnerable road users. Enforcement agencies will crack down on unsafe, illegal and antisocial road user behaviour to help build public confidence in the safety of London's roads. This section describes actions to:

- Invest in campaigns focusing on reducing road user behaviours that introduce risk and encouraging empathy and taking responsibility
- Develop tailored training resources to improve the road safety of children, young people and vulnerable road users

- Crack down on unsafe, illegal and antisocial road user behaviour
- Address injury inequality across groups needing targeted support

In May 2011, the Government published its new national Strategic Framework for Road Safety. A key theme is to 'make it easier for road users to do the right thing'. Doing the right thing to reduce the likelihood of being involved in a collision means behaving in a safe way. One of the approaches to encouraging safe behaviours is to design and operate roads in a way that makes them easy to use safely. For example, setting speed limits that are in line with the road function and design.

Encouraging safe behaviours is important. TfL runs an extensive programme of activities to promote safe road user behaviour, much of which seeks to reduce risk to vulnerable road users. This programme involves campaigns, education and training aimed at particular road user groups or particular behaviours. It is vital that this investment targets the correct audiences, delivers appropriate information, and uses the most effective ways of engaging with them to drive, ride or walk safely for their own benefit and that of others.

## 6.2 Near-term focus

### 6.2.1 Campaigns

Campaigns are used to encourage safe behaviour among all road users. An extensive programme of activities is targeted at changing the behaviour of all road users to improve the safety of the most vulnerable. It is vital that investment focuses on the correct audiences, delivers appropriate information, and uses the most effective ways of engaging with them.

Road safety campaigns are normally developed using qualitative research with the target audience (the audience for whom behavioural change will lead to improvements in their own safety and that of others), typically through focus groups. They are evaluated using quantitative pre- and post-campaign surveys. Many different channels are used for TfL campaigns. Posters and leaflets are still important, however, audio-visual channels, such as television adverts or internet-based video on-demand services are increasingly used. Peer-to-peer communication of campaign messages can, for certain groups, lead to greater levels of knowledge, as well as attitudinal and behavioural changes. Endorsement is one way of promoting this – the recent Teen campaign used R&B artist and Premiership football club endorsements. Recent campaigns have also included the development of an online game which received hundreds of thousands of internet page hits.

Going forward, TfL will continue to invest in campaigns and road safety education programmes and work to improve the effectiveness of their delivery.

### Did you know?

Road safety campaigns are based on research. TfL's in-depth research into teenage behaviour won an award from the Market Research Society in 2012.

## Did you know?

During 2011/12, 44,919 children received cycle training. This training is delivered through London's boroughs and funded by TfL LIP funding.

### 6.2.2 Education and training

Much of TfL's education and training activity is directed towards reducing child casualties.

Road safety education and training that engages children by increasing their road safety knowledge is important for fostering the development of future generations of safe road users. TfL has a range of road safety educational resources that are divided into specific learning categories. These cover pre-school age children from the Foundation Stage to Key Stages 1, 2, 3, and 4 of the National Curriculum.

#### 6.2.2.1 Safe pre-school age children

TfL and the boroughs begin their road safety education programme with pre-school age children, embedding basic road safety skills at an early age. Information is also provided for parents and carers. This raises awareness of the risks of collisions and provides suitable techniques to teach basic road safety skills, together with guidance on becoming safe road users in the future. TfL engages with nurseries and early years providers to deliver this basic road safety training. In 2012, more than 70 per cent of nursery-age children received information on road safety via this channel.

TfL also works with borough road safety officers to produce tailored educational resources that are used in areas of high deprivation or inequality.



### 6.2.2.2 Safe children

For children between five and 15, and young adults (16-19), considerable work is carried out locally by borough road safety officers, linking into programmes from TfL and the National Curriculum. Resources have been developed so teachers can deliver vital road safety messages during subjects such as English, mathematics and citizenship.

TfL will work with the London boroughs by offering school cycle training to every school across the Capital, each year.

### 6.2.2.3 Safe young drivers

Car drivers and passengers have the largest modal share of trips in London (40 per cent) and the largest share of all casualties (40 per cent), although this share reduces to 18 per cent of London's KSI casualties and 20 per cent of fatalities. Cars driven by 17- to 25-year-olds account for 26 per cent of all car driver and car occupant KSI casualties in London.

Having recently passed their driving test, young car drivers' education and theoretical knowledge should be fresh. However, young drivers' hazard perception may be poorer than that of more experienced drivers, and their lack of driving experience can lead to some taking risks.

TfL will undertake research in 2013 to gain a fuller understanding of the factors that influence the involvement of young car drivers in collisions. TfL will also work with the DfT to understand where further improvements to training and licensing issues may contribute to improved safety.

### 6.2.2.4 Safe buses and coaches

Buses and coaches are among the largest and heaviest vehicles using London's roads. In 2011, collisions involving these vehicles resulted in 2,420 casualties. Various initiatives are aimed at improving the safety of buses and coaches:

- TfL and London's bus operators collaborate to identify and spread safety best practice and develop countermeasures to improve bus safety
- TfL and the Metropolitan Police Service (MPS) hold a twice-yearly forum looking specifically at how bus safety can be improved for passengers and vulnerable road user groups
- To improve pedal cycle safety, bus drivers receive cycle awareness training at a series of roadshows providing the opportunity to experience a cyclist's view when approaching, overtaking and being followed by a bus
- Specific cycle training for drivers was given at bus garages based within the Barclays Cycle Hire zone and Barclays Cycle Superhighway routes CS3: Barking to Tower Gateway and CS7: Merton to the City
- TfL and the London Cycling Campaign have developed a training film, 'Big Bus, Little Bike' which was shown to bus drivers in 2013
- The revision to London Buses 'Big Red Book' (issued to all 24,000 bus drivers) extensively covers the safety of vulnerable road users

## Did you know?

In 2011, 14 per cent of collisions in London involved a hit and run vehicle. Where a cyclist or pedestrian was injured, this number was higher at 17 per cent and 20 per cent respectively.

### 6.2.3 Enforcement

Section 4.2.4 described the role of the police with respect to automatic speed and red light safety camera enforcement. This section focuses on other road policing activities and priorities.

TfL will work with the police to realise the benefits of aligning road safety interventions with the wider agenda to tackle crime. The Cycle Task Force, Motorcycle Tasking Team, driver awareness courses and activities to address risks associated with speeding, drink-driving, drug-driving, mobile phone use, seat belt wearing and uninsured and unlicensed driving all have a role to play.

#### 6.2.3.1 Uninsured driving, illegal driving, hit and run

TfL's analysis has found that the proportion of 'failing to stop' collisions is higher in areas of deprivation. Failure to stop may occur because the driver does not have valid insurance, a valid licence, valid tax or is under the influence of drugs or alcohol.

Targeting uninsured and illegal drivers will remove hazardous driving from London's roads. TfL will work with the police to build on the success of Operation FOIST (a joint awareness and enforcement campaign) and inform the ongoing Operation CUBO.

#### 6.2.3.2 Drink and drugs

In the UK, the alcohol limit for drivers is 80mg of alcohol per 100ml of blood, 35mcg per 100ml of breath or 107mg per 100ml of urine. In most other European countries, the limit is less, usually 50mg per 100ml of blood. Bringing the UK limit in line with European limits could result in a reduction in the number of deaths and injuries on London's roads.

Drinking or taking drugs while driving was a factor in two per cent of collisions in London during 2011. There were 416 collisions where the use of drink and/or drugs by one or more driver or rider was thought to have contributed to the collision. These collisions resulted in 579 casualties (three fatal, 86 serious and 490 slight).

In May 2012, the Government announced plans to crack down on those who drive while under the influence of drugs. Police station based devices to screen for drugs in the body have recently been approved by the Home Office's Centre for Applied Science and Technology. Further development is needed to bring these devices into widespread use or use at the roadside.

### 6.2.3.3 Seat belts

It is a legal requirement to wear a seat belt. Recent surveys in London<sup>38</sup> have tracked trends in seat belt (and mobile phone) use. The most recent survey data from 2009 shows that, at 89 per cent, seat belt wearing rates by car drivers in London remain lower than the rest of urban England, which had wearing rates of 96 per cent.

The London survey also found that wearing rates for taxi drivers and van drivers increased between 2008 and 2009. However, wearing rates for car drivers remained unchanged and wearing rates for front seat passengers in cars fell by five per cent from 2008 to 2009.

### 6.2.3.4 Mobile phones

Using a mobile phone while driving has been shown to increase the chances of causing a collision fourfold. While use of hand-held mobile phones is illegal, 2009 survey data from London shows that 2.8 per cent of car drivers, 1.6 per cent of taxi drivers and 4.5 per cent of van drivers use them. In London in 2009, one fatal, five serious and 66 slight casualties resulted from collisions where one of the contributory factors was 'driver using a mobile phone'. Recent research has also demonstrated the dangers of texting while driving<sup>39</sup>. TfL will continue to work with the police to optimise road safety enforcement.



38 Transport Research Laboratory (2010). Mobile phone and seat belt usage rates in London 2009

39 Transport Research Laboratory (2008). The Effect of Text Messaging On Driver Behaviour. PPR 367





#### 6.2.4 Injury inequality

Nearly 40 per cent of Londoners are from BAME groups, and there are large areas of deprivation in the Capital. Londoners who live in the most deprived areas, and those from BAME groups suffer a disproportionately high number of road casualties<sup>40,41,42</sup>. Research<sup>40</sup> has shown that the strongest relationship between deprivation and injury risk is for pedestrians: the most deprived are more than twice as likely to be injured as the least deprived. In terms of ethnicity, black Londoners are most at risk, with Asian groups at much lower risk of road injury.

TfL will undertake research to identify the most beneficial interventions to improve the safety of those at higher risk and continue to support the work done by its Safety and Citizenship team.

#### Did you know?

It is estimated that around 25 per cent (7,254 out of 29,257 for 2011) of casualties in London are from black, Asian and minority ethnic groups.

40 London School of Hygiene and Tropical Medicine (2006). Deprivation and Road Safety in London

41 London School of Hygiene and Tropical Medicine (2007). Road Safety of London's Black and Asian Minority Ethnic Groups

42 London School of Hygiene and Tropical Medicine (2008). The Effect of 20mph Zones on Inequalities in Road Casualties in London

## 6.3 Safe people actions

The following pages contain the safe people actions to be delivered over the lifetime of the Safe Streets for London plan, with a focus on the near term.

### Safe people actions

Invest in campaigns focusing on reducing road user behaviours that introduce risk and encouraging empathy and taking responsibility

27. **TfL will continue to lead the way in making best use of innovative marketing and education resources for specific audiences.** Children, cyclists, pedestrians, younger and older drivers, and motorcyclists require specific information to make travelling safer for them. There will be a particular focus on the behaviours of all road users which put vulnerable road users at risk, such as speeding, passing too close to cyclists, and failure to look properly (ongoing).
28. **TfL will use market-leading data analytics to improve campaign targeting and delivery.** This will enable a more sophisticated approach to identifying target groups, risk levels and delivery channels by:
  - Increasing collaboration with London boroughs and police on road safety campaigns to improve coordination across London (ongoing). Working with local authorities outside London will ensure that campaign, education and training materials reach those commuting into or visiting the Capital (2013 onwards)
  - Making better use of data from the London Travel Demand Survey, crime reporting and Mosaic UK classifications to better inform campaign design and implementation (2013 onwards)
  - Continuing to work with the police by supplying evidence to inform enforcement activities and coordinate campaign messages to help focus campaigns on illegal and socially unacceptable behaviour (for example drink- and drug-driving, speeding, mobile phone use and careless driving) (2013 onwards)
29. **TfL will continue to create award-winning education resources as part of the wider safety action plans for pedestrians, cyclists and motorcyclists. This will include:**
  - Supporting the Motorcycle Safety Action Plan (MSAP) – create materials to support delivery of MSAP, including data and best practice guidance. Following publication of the MSAP, TfL will publicise the work of the Motorcycle Tasking Team, support the boroughs with their motorcycle safety initiatives and work with the Driver and Vehicle Licensing Agency (DVLA) and criminal justice system to target those riding dangerously (2013 onwards)
  - Supporting the Pedestrian Safety Action Plan (PSAP) – with a particular focus on child pedestrians and older pedestrians. Following publication of the PSAP, TfL will develop pedestrian safety campaigns to encourage drivers to look out for the safety of pedestrians, create new school curriculum resources including the first stage of a pan-London roll out of a secondary school ambassador scheme, and develop secondary school specific projects such as STAR, the School Travel Accredited and Recognised scheme (2013 onwards).
  - Supporting the Cycle Safety Action Plan (CSAP) – following publication of the revised CSAP, TfL will look to double the number of cyclists receiving cycle training each year, offer cycle training to every primary school in London, develop a safe cycling package to deliver to businesses, and increase freight driver training for cycle safety (2013 onwards)

## Safe people actions

Develop tailored training resources to improve the road safety of children, young people and vulnerable road users

30. TfL will continue to ensure that the road safety 'journey' starts from the earliest age, by ensuring London pre-school children are road safety 'savvy'. This will be achieved by continuing a comprehensive programme of engagement with nurseries, other childcare and health care providers, London boroughs, local education authorities, Sure Start and Children's Centres (2013 onwards). This programme will also review and improve Children's Traffic Club and JRSO schemes and offer every primary school in London support in developing a JRSO scheme (2013 onwards). Provide road safety information to London's school children through the London Transport Museum (2013 onwards).
31. TfL will continue to support a comprehensive programme of road safety training for key road user groups. This will include:
  - Continuing to work with boroughs to promote cycle training in schools via their LIPs (2013 onwards)
  - Providing a new procurement framework to make it easier for all London boroughs to deliver child and adult cycle training (2013 onwards)
  - Making TfL road safety marketing materials freely available to London boroughs to maximise the impact of collaborative activity across London (ongoing)
  - Working with cycle manufacturers and retailers (such as the Cycling Retailer and Manufacturer Forum) to promote cycle safety directly to customers (ongoing)
  - Using focus groups with teachers and children, making sure campaigns aimed at improving children's safety reach more children with more effective messages (2013 onwards)
32. TfL will build on existing educational road safety initiatives for riders of motorcycles and scooters to tackle the relatively high casualty rates among this road user group. Use collision and other data to improve the content and targeting of initiatives such as BikeSafe-London and ScooterSafe-London (2013 onwards).
33. TfL will strive for improvements to make new and young drivers safe road users, including pushing for improvements to young driver learning and licensing, developing opportunities to inform young drivers through an Approved Driving Instructor and raising awareness of post-test training (2014 onwards).

## Safe people actions

Crack down on unsafe, illegal and antisocial road user behaviour

34. **TfL will use focused enforcement activities and technologies to crack down on illegal and antisocial road user behaviour.** This will help build public confidence in the safety of London's roads through policing and enforcement activity that reflects community concerns and has victim satisfaction at its centre. For example by:
- Stepping up the level of high visibility, intelligence-led police enforcement in London against illegal and antisocial road use (2013 onwards)
  - Tackling uninsured vehicles and unlicensed driving through supporting police Operation CUBO (2013 onwards)
  - Making the best use of police and the Vehicle and Operator Services Agency's (VOSA's) powers to improve vehicle and driver standards across the commercial vehicle sector (2013 onwards)
35. **TfL will use the best available data analytics to ensure traffic enforcement is data-driven to deliver reductions in collisions, congestion and secure wider crime reductions by:**
- Using timely, accurate collision and traffic camera data, alongside other data, to focus the enforcement activity of the MPS, City of London Police and VOSA at unsafe vehicles and behaviour at problem places and times, to reduce the risk of collisions and congestion (2013 onwards)
  - Exploring further the links between dangerous and antisocial driving and more serious criminality and the benefits of roads policing. Expand joint work between London's police and other enforcement agencies to drive down collisions and crime (2014 onwards)
36. **TfL will fund an increase in the activities of the MPS's Cycle Task Force and its Motorcycle Tasking Team** to improve enforcement against antisocial road user behaviour by all road-user groups, including speeding, careless driving, red light jumping, cycling on pavements, encroachment into advanced stop lines and mandatory cycle lanes, and general traffic violations by:
- Increasing the number of TfL-funded officers in the MPS's Cycle Task Force by 11 (2013 onwards)
  - Increasing the number of TfL-funded officers in the MPS's Motorcycle Tasking Team by five (2013 onwards)

Safe people actions	
Crack down on unsafe, illegal and antisocial road user behaviour	<p>37. TfL will use its power and influence to seek amendments to legislation so that speed awareness courses can be offered to drivers as an alternative to prosecution for exceeding a 20mph speed limit. This will reduce reoffending by drivers and will require working with central government and the police (2013 onwards).</p> <p>38. TfL will continue its innovative work in understanding and extending the impact of penalties on reoffending. TfL will work with the London criminal justice system, coroners, magistrates, Office of the Traffic Commissioner, Ministry of Justice, Crown Prosecution Service, the police and the Sentencing Council to understand what action can be taken through the promotion of specific technologies, such as alcohol interlocks, targeted interventions such as Bikesafe, and driver, rider and cyclist awareness courses. TfL will actively participate in the DfT-hosted comprehensive review of how the criminal justice system functions when people are hurt and killed on the roads (ongoing).</p>
Address injury inequality across groups needing targeted support	<p>39. TfL will build on its ground breaking work to tackle injury inequality through targeted, evidence-led interventions to reduce inequality by ethnic group, deprivation, and for those with mobility impairments and special educational needs (2014 onwards). TfL will ensure new road safety schemes engage those groups with particular road safety needs (eg those with mobility, visual and hearing impairments) (ongoing).</p>

## 6.4 Looking to the future

Engineering and automatic enforcement activities, such as safety cameras, focus on improving safety at specific locations. Wider enforcement activities, campaigns, education and training have the potential to reach a wider audience with key messages. Looking to the future these activities will need to address and respond to a number of challenges:

- **Media developments.** Changes to how people receive information and news are fast-paced. The rise of mobile high-bandwidth access to entertainment, data and information continues and 4G networks will bring new opportunities to inform road users through more interactive and tailored approaches. Looking to the future, grasping the opportunity that this represents will be a key challenge for road safety campaign, education and training professionals
- **Evaluation.** Location-specific interventions lend themselves well to evaluation. Most of the actions around safe people do not. Nevertheless, robust evaluation is necessary to justify investment and prioritise activity. Looking to the future, London's road safety practitioners need to build a stronger evidence base for campaigns, education and training
- **Materials for emerging groups.** London's population is growing and the transport network and its use are changing. With more and different people cycling and more older road users, new materials and approaches will be needed

- **Consumer classification.** Along with developments in media, new opportunities arise to better understand what underlies behaviours of particular groups of road users. Developments in consumer classification tools, such as Mosaic UK, will allow campaign developers to use more tailored messages that 'hit home' more effectively with groups whose behaviours increase risk



- **Awareness courses.** Increasingly, awareness courses are being offered to drivers or riders as an alternative to prosecution for minor infringements. Courses available include those for drivers caught speeding, distracted, using a mobile phone and for cyclists who have committed a road traffic offence. Early work suggests such courses have safety benefits; however, a greater understanding is needed as to what behaviours and which road users can benefit the most
- **Changes to legislation.** Recent government consultations have included proposals to make careless driving a fixed penalty offence and increase the penalty levels for road traffic offences. Changes such as these will bring about changes to enforcement activities. Actions seeking to make people safe will need to respond to such changes in a way to improve safety







## Chapter 7

# Delivering in partnership

### 7.1 A system focused on outcomes

This Safe Streets for London plan recognises and embraces the valuable work undertaken by the many organisations that contribute to road casualty prevention and reduction. Over the period of the plan, stakeholders will need to continue and extend this collaboration, and a wider group of organisations will need to become involved. This plan calls for all those able to improve the safety of London's roads to play their part individually, and to work together. This involves delivering in partnership, but also sharing data, knowledge and information.

Going forward, more rigour is needed to evaluate and report on the effectiveness of interventions and to identify new ways of working. TfL will learn from international best practice and insight, and invest in the development of London's practitioners' knowledge.

Evaluation will play a central role. To improve current interventions, and design new ones, new research, informed by stakeholders, will build the evidence base to better understand the factors that increase road user risk and the root causes of collisions.

This section describes actions to:

- Prioritise safety improvements that reduce the number of vulnerable road users KSIs
- Rigorously evaluate and report on the effectiveness of interventions, identify new ways to mitigate known risks, learn from international best practice and invest in the development of London's practitioners' knowledge
- Actively promote understanding of developments and knowledge in road safety with partner organisations to generate and act on insight
- Mobilise road safety stakeholders' knowledge through new governance of road safety policy in London

The approach and actions in this plan are designed to prioritise road safety improvements that reduce the number of KSI vulnerable road users. The target, of a 40 per cent reduction in KSI casualties by 2020, is a key element in this. Without significant reductions in the number of pedestrian, cyclist or motorcyclist KSIs, this target will not be met. This focus is underlined by the commitment to implement new safety action plans for pedestrians and motorcyclists, as well as updating the CSAP.

## Did you know?

Although deaths and serious injuries across all road user groups were lower in 2011 than at any point in the last 30 years, the proportion of those killed and seriously injured while walking, cycling or riding a motorcycle rose to the concerning level of 77 per cent.

Identifying and implementing effective interventions is essential. To do this, a solid evidence base and a robust process for selecting interventions are needed. Evaluation will play a central role and will support the application of the approach described in section 3.5. Analysis of risk in terms of casualties per distance travelled, as well as casualty numbers, will allow the most vulnerable road users to be identified for protection. Road users' risk can be reduced through interventions addressing infrastructure and the behaviours of those who put vulnerable road users at risk, as well as themselves. In addition, this plan will be kept under review and updated as required.

## 7.2 Generating and sharing knowledge

### 7.2.1 Developing the evidence base

In some cases, there is insufficient understanding of the present road safety problem. TfL and other road safety stakeholders need to identify new and innovative ways of improving road user safety through working in partnership.

Part of this involves developing knowledge from the data available and looking harder at the circumstances around a collision to understand where action could have been taken to prevent it, or reduce its severity. Then, consideration needs to be given to the tried and tested approaches to understand why they may not have worked, considering how to adapt them, or whether to replace them with a different, perhaps previously untried approach.

There are a number of steps to this process. Focus needs to be on the higher risk locations, road user groups or behaviours. As part of this, TfL will prioritise its efforts in research and knowledge generation towards vulnerable groups, road user behaviour that increases risk, and groups with large numbers of casualties. Research to understand the reasons why these are higher risk will lead to an understanding of what different actions are needed, and what potential solutions to reduce the risks might be. New approaches that show potential for London need to be trialled, and their effectiveness evaluated.



#### 7.2.1.1 Using collision and casualty data

Building the evidence to support the new approach to road safety in London will rely on the interrogation of a wide variety of data sources, information and intelligence. Probably the most important data source is the STATS19 data, held by TfL in the ACCSTATS system. Data from this system provides information to support and help target road safety initiatives to reduce collisions and casualties across London. Examples include:

- **Highway scheme development** – both TfL and the boroughs use ACCSTATS data to prioritise, support and inform their programmes of engineering, education and enforcement interventions
- **Analysis** – collision and casualty data from the ACCSTATS system is used to inform research, which helps to shape the development of policy and Mayoral initiatives
- **Road safety-related research** – in addition to analysis of collision and casualty data, research also supports and informs policy, particularly in the development and trial of innovative schemes, many of which are Mayoral priorities
- **Casualty monitoring and reporting** – the ACCSTATS system is the key data source for reporting progress towards the Mayor’s casualty reduction target for London. The system includes information from TADS, which provides casualty and collision data from before and after highway interventions to monitor their effectiveness

Interrogating the data already available helps to identify trends. For example, the data in the ACCSTATS system is being used more innovatively, by linking it with in-depth police fatal files and merging it with other data sets.

TfL will supply all boroughs with casualty and collision data to inform progress towards achieving the casualty reduction targets set out in their LIPs, and where appropriate, provide this information additionally at a sub-regional level. This will identify where boroughs may be falling behind the progress being made by similar boroughs elsewhere, and will inform work to develop new approaches to bridge the gap.

### 7.2.2 International benchmarking and collaboration

TfL will seek to build road safety expertise and knowledge in London as well as learning from international experience. Stakeholders' knowledge of good practice, evidence and innovation will be important for this. TfL's research programme will seek opportunities to use a wider variety of relevant data to undertake more insightful analysis focused on emerging issues. Research will be undertaken annually with a sample of the STATS19 data to understand underlying risks and trends.

TfL will work with other organisations to implement specific programmes of knowledge generation to develop and intensify understanding where further work is required.



### 7.2.3 Practitioner training and annual conference

The ACCSTATS system is used to understand the impact of road safety interventions. This knowledge is shared with stakeholders in London through TfL's website and other channels. TfL needs to make sure this knowledge is more easily accessible to road safety practitioners through sharing of good practice. This will allow TfL, and other road safety organisations, to make more informed decisions about action, leading to more effective interventions and more efficient use of resources.

## 7.3 Partnership working

### 7.3.1 The importance of partnerships

This plan endorses a programme which London's road safety stakeholders can jointly take responsibility for and work together to implement. The preparation of this plan has involved engagement with key road user groups and stakeholders. This approach needs to continue – working in partnership, coordinated to achieve the best possible casualty reductions.

### 7.3.2 Continuing collaboration

#### 7.3.2.1 Working with the police

The MPS and City of London Police are committed to reducing road casualties in accordance with the Association of Chief Police Officers' 'Roads Policing Strategy'. The police have wide ranging road safety responsibilities including the enforcement of traffic legislation against criminal and antisocial road users; collecting and investigating collision data; working with highway authorities to provide engineering solutions; and helping to provide educational interventions.

Successful joint working between TfL and the police will underpin successful delivery of road safety improvements in London. Areas where TfL is working closely with the police already include:

- Educating cyclists to be safe and responsible road users
- Enforcement and education of motorcyclists, especially with regard to access to bus lanes
- Delivery of BikeSafe and ScooterSafe rider skills days on behalf of TfL
- Enforcement of London's safety camera network

Many aspects of road crime overlap with other policing duties and TfL will continue to work in partnership with the police to develop intelligence-led targeting of road users to address common goals. TfL will work in parallel to deliver operational priorities focusing on areas where research has shown activity can have a positive effect on casualty reduction and wider criminality.

#### 7.3.2.2 Working with the boroughs

Joint working between TfL and the London boroughs is essential. In 2011, 69 per cent of KSI casualties were on borough roads. Engineering work and education with schools and other institutions is therefore required at a local level. Borough-level road safety activity is largely funded through the Mayor's LIP Corridor, Neighbourhood and Smarter Travel programmes. Boroughs now have greater freedom to prioritise initiatives based on local knowledge.

Collaborative/sub-regional road safety working between TfL and the boroughs and between the boroughs themselves will facilitate the effective use of resources and the consistent application of safety interventions across London.

It is TfL's aspiration to develop further relationships with each borough in the area of road safety to ensure best practice is shared and local insight learnt. This has already begun and TfL is also keen to encourage cross-borough working in areas such as publicity which would often have greater impact if carried out at a sub-regional level.

The boroughs are required to set KSI casualty reduction targets within the second LIP and to demonstrate how they will be met. While individual circumstances may lead some boroughs to set lower casualty reduction targets than this plan's over-arching 40 per cent reduction in KSIs across London, all boroughs should seek to improve road safety as part of all their engineering schemes, including through the wider application of road safety audit.

### 7.3.2.3 Working with central government

Central government sets policy at a national level, enacts legislation that has an effect on the safety of the roads, and delivers services through organisations such as the Highways Agency, Driving Standards Agency and DVLA.

TfL will use its position and influence as a major local highway authority to ensure that national road safety legislation and policies address London's casualty reduction needs. TfL will meet regularly with the DfT to discuss any emerging road safety issues and continue discussions with central government to enable further progress in road safety.

### Did you know?

Local authorities hold direct responsibility for improving the health of their population, measured against the Public Health Outcomes Framework. This is a list of 68 measurable health outcomes, including 'killed or seriously injured casualties on England's roads'. Many other indicators in this framework relate to road transport and street environments which could be improved through measures to improve road safety. Currently, less than a fifth of London boroughs have included transport in their Joint Strategic Needs Assessment or Health and Wellbeing Strategy.

### 7.3.2.4 Working with user groups

The voluntary sector plays an important role in promoting road safety and supporting the victims of collisions and their families. They are therefore ideally positioned to help develop road safety initiatives and deliver road safety information.

Progress has been made in recent years through effective partnership working. Groups such as Share the Road, the Cycle Safety Working Group and the London Motorcycle Safety Working Group have brought together representatives from a wide range of organisations representing different road user groups. This has helped to inform and strengthen TfL's work and will be central to developing future safety initiatives in London.

Walking and cycling are healthy modes of travel that are known to play a crucial role in reducing the risk of longer-term health problems. TfL will ensure the organisations representing these road users are represented on the proposed RSSG.

Significant progress has been made in improving coordination and partnership working. However, there are other sectors and organisations with which greater coordination is still needed.



### 7.3.3 Forging new partnerships

Greater integration of London's response to the challenge of preventing death and injury on the Capital's roads provides obvious and direct benefits to London hospitals, ambulance and fire services. There are many others who have important roles in road safety, and TfL and its partners need to promote common goals and share best practice. More collaborative working is needed with a wider range of partners:

- **The London Ambulance Service and London Fire Brigade** play vital roles as together with the police they attend collisions, treat patients at the scene and, when necessary, take them to hospital
- **Health providers** including hospitals, health and wellbeing boards and health authorities, who provide information for parents and carers to help protect children below school age from collisions and have a shared objective to reduce avoidable deaths and injuries arising from traffic collisions
- **The EU** has powers to introduce future directives on specific road safety issues such as vehicle standards or roads infrastructure. Member states are then invited to adopt them, with the aim of achieving consistency and minimum road safety standards on Europe's roads. The UK Government is responsible for the adoption of EU directives. It is therefore vital that road safety stakeholders share knowledge of key issues affecting road safety in London and work with the EU to develop directives that will lead to the Capital's roads being safe
- **The Driving Standards Agency** sets the standards and learning process for the driving test and for approved driving instructors
- **The insurance industry** can encourage safe driving through premiums that reward responsible behaviour. It is important that TfL works with the insurance industry to achieve common aims. This can be done by encouraging the sharing of relevant information

- **The wider public sector** can ensure that road safety is at the heart of its procurement policies. TfL will encourage good procurement practices throughout the GLA family and the public sector by ensuring fleet operators are FORS-registered and receive driver training on specific road safety issues. Contracts should include vehicle specification, such as the use of improved safety features
- **The motoring organisations and road user groups** represent the interests of road users to government and provide information on all aspects of road safety
- **Local communities and their representatives** can work with public service providers on enforcement, traffic management, speed limits and other local highway engineering
- **All road users** have a responsibility for their own road safety and that of others and are expected to follow the Highway Code. Furthermore, drivers and riders are expected to regularly assess their fitness to drive and ride by considering the potential adverse effects of health issues, the effects of medication, in-vehicle distractions and fatigue







## 7.4 Monitoring, reporting and governance

### 7.4.1 Road Safety Steering Group

Road safety activity is carried out in London by organisations whose work is coordinated and overseen by a variety of governance arrangements. To build focus, a new Road Safety Steering Group for London (RSSG) will be established. London's road safety stakeholders, through the group and through ongoing partnership working, will contribute to the development and implementation of road safety policies and help oversee continuous improvements in road safety in London. The group will:

- Review and report on progress in implementing road safety policy in London
- Report progress towards achieving the KSI casualty reduction target for London
- Foster links with other organisations to encourage a holistic approach to road safety in London
- Discuss road safety priorities and key road safety issues
- Communicate good practice
- Provide a high profile reference point for all road safety activities in London



TfL will work with its key stakeholders to agree the terms of reference for the group which will steer the implementation of the Safe Streets for London plan, and shape and develop future road safety policy in London. Its membership will include representation from organisations such as:

- MPS
- City of London Police
- London boroughs
- London Ambulance Service and London Fire Brigade
- London Councils
- Local Government Technical Advisers Group
- Non-governmental organisations and charities including road users and road safety charities
- Freight and fleet operators, industry
- Vehicle manufacturers
- Public health
- Groups representing mobility impaired people
- Academics
- GLA
- TfL



#### 7.4.2 Reporting

TfL will monitor the progress made in reducing the number and severity of casualties yearly in an annual report produced for collisions and casualties on London's roads. TfL will continue to publish reports and information describing the casualty situation in London focusing on pedestrians, pedal cyclists, motorcyclists and children.

This plan seeks to develop the road safety elements of the MTS and covers the period up to and including 2020. Its implementation will be reviewed in 2016. It provides an overview of, and framework for, London's future approach to road safety, including the development of detailed implementation plans and other actions to address London's key road safety challenges.

## 7.5 Delivering in partnership actions

The following pages contain the delivering in partnership actions to be delivered over the lifetime of the Safe Streets for London plan, with a focus on the near term.

Delivering in partnership	
Prioritise safety improvements for killed or seriously injured vulnerable road users	<p>40. TfL will continue to lead the way in adopting an integrated approach to delivering safety benefits for particular road user groups by delivering all 52 actions in the Cycle Safety Action Plan, reviewing and updating it (2013).</p> <p>41. TfL will extend this integrated approach by developing and delivering a Pedestrian Safety Action Plan and a Motorcycle Safety Action Plan based on the recent pedestrian and motorcycle fatalities research reports (2013).</p>
Rigorously evaluate and report on the effectiveness of interventions, identify new ways to mitigate known risks, learn from international best practice and invest in the development of London's practitioners' knowledge	<p>42. <b>Maintain TfL's position as a leader in research-based road safety planning.</b> Seek to design better interventions targeting specific causes of collision (for example distraction, the role of alcohol and drugs, speeding and close following) and identify differences in levels of risk across London (for example central/Inner/Outer London, sub-region, borough and highway authority) to better direct interventions and increase their effectiveness (2013 onwards). For example, to better understand:</p> <ul style="list-style-type: none"> <li>• Recent increases in serious cyclist and pedestrian casualties</li> <li>• Collisions involving specific manoeuvres such as right and left turns</li> <li>• Pedal cycle and young driver fatalities</li> <li>• Sites where pedestrian guardrail has been removed</li> <li>• Sites where pedestrian countdown technology is introduced</li> <li>• Locations where 20mph zones and limits are introduced</li> </ul> <p>43. TfL will proactively use 'big data', systematic and rigorous analysis to gain new insights into the causes of collisions. This will focus on understanding the causes of slight collisions using more detailed analysis of wider datasets, for example, traffic flows and speeds, asset information, lifestyle, behavioural and weather datasets (2014).</p> <p>44. TfL will develop innovative new approaches to monitor risk and road safety performance in London. This will be achieved by augmenting collision and casualty data with information on the journeys made, infrastructure data, and behavioural data to better understand and reduce levels of danger. TfL will continue to work with the police to drive improvements in STATS19 data quality to ensure an insightful research programme (ongoing).</p>
Rigorously evaluate and report on the effectiveness of interventions, identify new ways to mitigate known risks, learn from international best practice and invest in the development of London's practitioners' knowledge	<p>45. TfL will ensure it is comparing London's road safety performance with other UK and international cities by benchmarking and reporting nationally and internationally. TfL will learn from successful international approaches to casualty reduction by inviting international experts and leading practitioners to road safety seminars to review best practice. To improve London's road safety performance, TfL will apply the key outcome indicators used in the DfT Strategic Framework for Road Safety (2014).</p> <p>46. TfL will support the widest possible dissemination of best practice in road safety planning and delivery via hosting an annual London road safety conference. TfL will drive forward best practice and knowledge sharing for boroughs and other stakeholders, and hold regular sub-regional level road safety workshops (annually). TfL will seek to continue to improve the skills of London road safety practitioners via the creation of a continuous professional development programme, focused on improving the skills in the key areas in the plan (2013 onwards).</p>

## Delivering in partnership

Actively promote understanding of developments and knowledge in road safety with partner organisations to generate and act on insight

47. **TfL will continue to develop its positive working relationship with the DfT** (ongoing) to promote:
  - Further improvements to driver training, testing and licensing that contribute to improved safety in London including the driving theory test to enhance its ability to promote safer driving behaviour, with particular focus on protecting vulnerable road users
  - Safety-enhancing additions to the compulsory basic training and the motorcycle licence test by working with the Driving Standards Agency
  - The case for Level 2 cycle training to be part of the National Curriculum to help children develop road awareness skills that will be useful as future cyclists and drivers
  - Ensure that the Bikeability training content and materials are correctly tailored towards London's cyclists, including adult commuters, to encourage greater take-up
  - The case for improvements to young driver training, testing and learning, including graduated driver licensing
48. **TfL will maximise the opportunities for reducing road risk by leveraging the knowledge and behavioural influence of the insurance industry.** TfL will work with the Association of British Insurers to share data, carry out technology trials, and gain a better understanding of the collision risks of uninsured vehicles (ongoing).
49. **TfL will capitalise on the recent change in the structure and operation of the NHS in London.** TfL will work with the new Health and Wellbeing Boards to establish a series of workshops to achieve more effective outcomes in terms of public health. TfL will ensure the adoption of transport safety within joint strategic needs assessments. TfL will investigate the application of the World Health Organisation's health economic assessment tool and the concept of disability-adjusted life years to road safety evaluations (2013 onwards).
50. **TfL will pioneer innovative methods of cross-organisational collaboration by extending work with other public agencies involved with road safety and harm reduction by:**
  - Generating insight through sharing knowledge and data with the London Fire Brigade. Use police collision data to support prioritisation of collision prevention work undertaken by the London Fire Brigade (for example driven by consequences) and improve understanding of injury definitions. Learn from the London Fire Brigade's experience of communicating with hard to reach groups to focus lobbying activities and inform campaign messages
  - Collaborating with the London Ambulance Service to improve understanding of injury outcomes and optimise emergency response procedures. Match STATS19 data with London Ambulance Service data to gain insight into the severity of injury to support improved interventions. Ensure the London Ambulance Service has up-to-date information about roadworks and planned network disruption to optimise response times
  - Working in partnership with the NHS and London hospitals. Improve understanding of injury definitions and reporting levels, for example, through combining police collision data with that of the Trauma Audit & Research Network and hospital episode statistics, to develop interventions by investigating mechanism of injury, injury severity scores and survival. (Specifically, comparing injury outcomes for different road user groups). Seek opportunities to promote casualty-reducing supply chain initiatives such as FORS membership requirements (or including side guard clauses in contracts) with London hospitals
51. **Using a 'Compstat'-style approach, TfL will create a Road Fatality Review Group, working with partners across London to learn lessons from fatal collisions.** This will bring together police, emergency services, road designers and operators, non-governmental organisations and others to identify changes needed to reduce vulnerable road user death and serious injury.
52. **TfL will use its industry influence and regulatory role to improve the safety of bus and coach occupants, taxi and private hire customers, and other road users.** TfL will organise safety workshops and support developing training programmes for bus operators. TfL will learn lessons about the interaction between buses, passengers and vulnerable road user groups by undertaking research and supporting a twice-yearly forum between TfL and the police (ongoing).
53. **TfL will use 'open source' techniques to make data simple to access online.** TfL will create new web-based tools to access casualty data online to share information more easily with the public, road safety stakeholders and boroughs to track progress (ongoing).

## Delivering in partnership

Mobilise road safety stakeholders' knowledge through new governance of road safety policy in London

54. TfL will engage key partners in the governance of road safety delivery in London by establishing a new Road Safety Steering Group. Through this group, and through broader partnership working, London's road safety stakeholders, including non-governmental organisations, boroughs, academics and the emergency services will input into the development and delivery of road safety policies, and help oversee continuous improvements in road safety in London (2013 onwards).
55. TfL will provide a comprehensive annual account of progress in casualty and collision reduction in London. TfL will monitor and report on progress against the casualty reduction target, and monitor and report rate-based indicators for pedestrians, cyclists, motorcyclists and children. It will also provide comprehensive detail of progress in each borough (annually).
56. TfL will help mobilise action at a local level by bringing senior elected members together annually for a borough-level review of progress, encouraging knowledge sharing, collective problem solving and best practice (annually).





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