

London Borough of Brent ROAD DANGER REDUCTION PLAN

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Executive Summary and Foreword

Brent Council takes road safety very seriously. For each person killed or injured on the Borough's roads, there may be many other people who are also affected – their families, friends and near communities, and not least, the person(s) who caused the crash.

Traditional reactions and attitudes to road safety are taking us in the wrong direction – towards more, not less, road danger; towards greater dependency on private cars, greater territorial dominance of our streets by motor vehicles and reduced reliance on, and enjoyment of, the healthy and sustainable active travel modes (walking and cycling).

Clearly, this is as unsustainable as it is unethical: greater motorisation leads to more motor traffic, more danger, and more pollution, less physical activity, worse health, loss of our sense of 'community', declining public realm, and social exclusion.

The Road Danger Reduction approach offers a new way forward for Brent. It sets out ways in which the Council can progressively lower the number of casualties (particularly among vulnerable road user groups), raise the quality and amenity of the borough's public spaces, promote the modes (walking and cycling) which impose the least 'costs', including danger, on other people and on the environment, and in the process improve the health and wellbeing of the borough's citizens.

This plan treats the objective of road safety as a means to reduce the amount of danger on the Borough's roads by addressing danger *at source* and thereby increase people's willingness and confidence to walk, cycle and use public transport more often and allow their children to do so independently, and to use their cars for fewer journeys.

The plan is a tool to develop wider sustainable policies for planning and transportation and to change the design and appearance of the borough's road network. The plan is divided into four parts:

- *Part 1* sets out the main principles for road danger reduction in the Borough. It states the Council's commitment to the Road Danger Reduction Charter and to a Hierarchy of Road Users, which places vulnerable road users at the top. It commits the Council to playing its part in developing the *science* that is important to help reduce the amount and perception of danger on the Borough's roads.
- *Part 2* gives a summary of the policy context for the plan. There is much in National, London-wide and Local policy literature to support the development of road danger reduction principles, though the general thrust of the policy context still leans towards a continuation of traditional solutions. By advancing the boundaries of road safety policies

and their implementation, Brent Council may be seen as a leading light for other authorities to follow.

- *Part 3* sets out a framework for delivering the Road Danger Reduction Plan, covering engineering, enforcement, engaging with the public, education, encouragement, health, and modal shift. The framework sets out strategic priorities and policies for engineering and provides strategic design advice that will appear with more detail in *Brent Streetscape and Road Danger Reduction Design Manual*. This document will form the crucial link between the Council's Transportation Strategy and Traffic Management roles, to translate the policies of this plan into reality.
- *Part 4* distils the framework set out in Part 3 into a list of targets, performance measures and actions. This, together with the Streetscape and Road Danger Reduction Design Manual, will guide future bids in the Borough Spending Plan and strategic policies in the Local Implementation Plan.

Brent Road Danger Reduction Plan marks a significant advancement of Brent's approach to transport policy and road safety generally, and the Council is confident that it can be delivered with the support and involvement of the community.

Introduction

- 1 From 1 January to 31 December 2004 there were 1213 recorded injury collisions in Brent, including 155 people killed (6) or seriously injured (149) (KSI). Of the KSI's, 23 (14%) were children and 55 (35%) were vulnerable road users—pedestrians or cyclists.
- 2 Brent Council takes this issue very seriously. Every collision is regrettable, no matter how slight the injuries that might result; those that are fatal or serious have long-term impacts for the individuals and families involved. A single crash resulting in serious injury can in an instant result in at least someone—adult or child—becoming disabled or suffering from the effects of physical and mental trauma for the rest of their life.
- 3 For many road user groups, particularly the more vulnerable, the road environment is unnecessarily hazardous. The perception and reality that 'roads are dangerous places' means that people's willingness to walk and cycle, and indeed to allow their children to do so independently is severely curtailed. Drivers also react to danger by increasing their car dependency and use of larger vehicles that afford greater protection to their occupants. However, larger cars lead to more pollution and more danger, particularly for vulnerable road users, thereby exacerbating the problems.
- 4 In this situation, it would be wholly unacceptable for the Council not to explore measures to reduce the number of crashes on the roads and establish an effective framework for reducing the amount of danger on its roads. At the same time the Council must meet its ongoing commitment to the positive management of the road network, emphasising a shift to less environmentally-damaging modes of transport.

The Council's Approach to Road Safety

"Road Safety for whom? Take for example a typical junction on the Marylebone Road. There are railings designed to prevent pedestrians crossing in the 'wrong place', which incidentally seems to encourage drivers to go faster. Every day, on the way to the Tube, I see children going to school - if they are late, they climb over or walk round the barriers and run like mad across the road, rather than go to the designated crossing point which involves a significant detour and a long wait. Every day I see near misses: I'm just waiting for a child to be killed. Just who are we kidding that this arrangement is for safety reasons rather than to speed up the cars?"

Sir Terry Farrell, speaking at the RTPI Annual Lecture, December 2004.

- 5 Traditional road safety assumptions do not deal effectively with the problems of road danger, 90 per cent of which arise predominantly from driver actions [DETR 2000 / DfT2004]. Instead, they have tended to direct most of their emphasis towards educating vulnerable road users to adapt to dangerous road environments by taking 'sensible' measures in order to protect themselves from danger, such as by using controlled crossing points and designated cycle routes, by being conspicuous and by wearing helmets [RDRF 2001].

- 6 At the same time, little has been done to reverse the situation in which roads and junctions have become *more* dangerous because they have been designed to accommodate, and indeed prioritise, faster vehicle speeds and additional motor traffic volumes and be more forgiving of poor driving. 'Safety' features such as pedestrian guardrailings, forests of signs, traffic signals and associated street furniture act together with improved vehicle technology (seatbelts, anti-lock brakes and airbags for example) to give motorists increased 'certainty' and confidence to drive faster and with less due care, attention and social awareness (risk compensation). Most road environments reinforce the idea that motorists have a territorial priority and status over other road users, leading to and exacerbating aggression and deliberate violations of traffic regulations such as speed limits, banned turns and red traffic lights.
- 7 This situation is in clear conflict with the need to improve safety, reduce car dependency, promote social inclusivity, improve Brent's public realm and manage its infrastructure to a high standard. An alternative scenario, based on identifying and controlling danger at source, would be more compatible with road safety *and* the Council's wider transport policies, and sustainable development and regeneration.
- 8 The Council's decision therefore, to move away from traditional road safety policies and to adopt instead a Road Danger Reduction Plan brings it further into accordance with the Mayor's Transport Strategy and enables changes to be made to the way in which investment is directed towards solutions that deliver both road safety and modal shift.
- 9 In his response to an early draft of this plan, Professor Mayer Hillman of the Policy Studies Institute commented that with its Road Danger Reduction Plan, Brent Council –

"...finds itself in the vanguard of local authorities with a progressive approach to reducing danger on its roads, lowering the number of casualties (particularly among vulnerable road user groups), raising the quality and amenity of the borough's public spaces, promoting the modes (walking and cycling) which impose the least 'costs' on other people and on the environment, and not least in the process, for improving the health and wellbeing of its citizens."

Emeritus Professor Mayer Hillman 2005.

The Road Danger Reduction Forum

- 10 The principal source of influence for the Council's approach is the Road Danger Reduction Forum and its publication, '*Safe routes for all, a guide to Road Danger Reduction*' [RDRF 2001]. The RDRF was established in 1994 to challenge the culture and philosophy of the traditional road safety movement; because many traffic engineers and road safety and transportation professionals felt that the assumptions behind much road safety activity were flawed.

11 The key issues and recommendations raised by the *Guide to Road Danger Reduction* are reflected in the Council's policies and are summarised as follows:

1. The guide highlights the conflict between traditional road safety and policies to promote sustainable transport; for example encouraging walking and cycling may be seen as a threat to good road safety record performance. It recommends adopting the road danger reduction approach, emphasising the greater responsibility of those, namely drivers, who are the source of the most danger to both themselves and others – particularly more vulnerable road user groups.
2. Whilst contextual policy is becoming more supportive, conventional approaches to road safety have constrained the development of progressive measures, due in part to funding mechanisms that narrowly focus on the rate of 'return' for schemes designed to reduce the number of collisions at particular problem locations. This makes it difficult to apply schemes and initiatives that tackle road safety *as well as* tackling fear of traffic and poor road environments in areas with fewer collisions and tackling hidden consequences of road danger such as poor health and social exclusion.

Existing statistics on road safety paint a truthful but incomplete picture of the level of danger on the roads. The guide recommends the adoption of new or additional indicators for measuring both danger and the performance of schemes. These could include, for example (with additional commentary):

- Gaining a more accurate picture of who is killing or injuring whom, for example, by classifying the percentage of pedestrians killed or injured by motor vehicles, or the percentage of cyclists killed or injured by turning motor vehicles whose drivers' actions were the main contributory factor;
- Measuring casualty rates per kilometre or trip by mode so that the statistic does not simply reflect an increase or decline in use of that mode, but instead measures the chances of an individual becoming injured in a collision;
- Taking into account insurance claims for damage-only collisions to give a clearer picture of the level of danger (an allowance is already made for this in the Council's statistical databases);
- Measuring fear of traffic and risk perception before and after implementation of schemes, for example to discover whether parents are allowing their children to travel independently on foot or cycle and whether drivers' perception of risk to themselves and others is changed by new scheme implementation;
- Measuring the amount of dangerous and / or criminal driving behaviour by using, for example, CCTV, driver surveys and statistics on (average) traffic speeds, and road traffic violations;

- Measuring the numbers of hidden casualties of the road environment, including increased deaths and chronic illnesses caused, directly or indirectly, by air pollution, injuries from falls and the diseases of inactivity—obesity, heart disease, type-2 diabetes and strokes; and
 - Measuring the impact of road danger reduction schemes on modal choice, motor traffic volumes and emissions.
3. There is now an increasing emphasis on creating (using public realm design techniques) environments in which danger from motor traffic is suppressed and where environmental quality is often enhanced. If sustainable travel is to be promoted, conditions for walking, cycling and using public transport must be improved.

Reducing motor traffic speeds must lie at the heart of any attempt to create safer communities and reduce road danger. The guide therefore recommends the development of local speed management plans that acknowledge the detrimental effects of speed on community life due to collisions or fear. These plans should be developed with the involvement of local communities and other stakeholders, such as the police and emergency services.

Continued investment in 20mph zones, home zones, safer routes to school, speed cameras, speed management, parking controls and enforcement, and driver retraining are recommended solutions that can deliver significant road danger reduction benefits.

Town centres form the focus of local communities, and investment in them should emphasise the importance of sustainable accessibility in order to help them to compete with out-of-centre alternative destinations that are designed to cater for motor traffic. Town centres provide perhaps the greatest opportunity for investment in high quality urban realm, incorporating the use of quality hard-wearing materials to attract visitors, yet so often they are neglected, shabby and hazardous places.

Road safety and sustainability are compatible because a more benign road environment would be more conducive to the use of more sustainable modes and controlling the source of danger.

The guide also suggests ways in which local authorities could adopt walking plans, cycling plans, travel planning strategies and strategies for education, training and publicity.

- 12 The guide also introduces the Road Danger Reduction Charter to which the Council is committed. The Charter is reproduced as a policy in *Overarching Principles* below.

Part 1 Overarching Principles: Road Danger Reduction

- 1.1 The following principles establish the framework for reducing the amount and perception of road danger in Brent and for promoting more widespread use of the sustainable modes:

Principle 1: Adopting the Road Danger Reduction Charter

- 1.2 *The Council adopts the Road Danger Reduction Charter, which is a pledge to:*
- 1. Seek a genuine reduction in danger for all users by identifying and controlling the principal sources of threat;*
 - 2. Find new measures to define 'danger' [and perceptions and attitudes towards 'risk'] on our roads. These will more accurately monitor the use of and threat to benign modes;*
 - 3. Discourage the unnecessary use of private motorised transport where alternative benign modes or public transport are equally or more viable;*
 - 4. Pursue a transport strategy for sustainable travel based on developing efficient, integrated public transport systems. This would recognise that current levels of motor traffic should not be increased;*
 - 5. Actively promote cycling and walking, which together pose little threat to the environment or other road users. This will be achieved by taking positive and co-ordinated action to increase the safety, priority and mobility of these benign modes; and*
 - 6. Promote the adoption of this charter as the basis of national and international transport policy.*

Principle 2: The Influence of the Charter

- 1.3 *The Road Danger Reduction Plan will underpin the Council's policies in the Local Implementation Plan, Borough Spending Plan and other associated policy documents, and the design and implementation of highway schemes.*
- 1.4 The Council will link Road Danger Reduction principles to sustainable transport, active travel, reduced motor traffic volumes and enhanced public realm, and air quality objectives including noise reduction. This Plan seeks to overcome the conflict between road safety and sustainable transport, and includes a reappraisal of the way in which the road network is designed and managed, taking into account the following hierarchy of highway users which has been successfully pioneered in York and elsewhere:

Principle 3: Adopting a Hierarchy of Road Users

1.5 *The Council adopts the Hierarchy of Road Users as follows:*

1. *Pedestrians and disabled people;*
2. *Cyclists;*
3. *Public transport;*
4. *Freight access;*
5. *Business motorised vehicles;*
6. *Private motor cars.*

1.6 The Traffic Management Act 2004 defines all of the transport users and modes listed above as 'traffic'; thus in Brent's policies, specific modes or users are referred to individually, for example, as 'pedestrian traffic'; 'cycle traffic'; or 'motor traffic'.

Principle 4: Developing the Science of Road Danger Reduction

1.7 *The Council will develop the science of road danger reduction in the Borough to meet and exceed the Government's and Mayor's targets for reducing the number and severity of collisions and release the latent demand for travel on foot and by bicycle which is presently limited by perceptions of danger and which has particular expression in the restrictions parents impose on their children's independent mobility.*

Existing statistical information

1.8 Existing statistical information is taken from Stats 19. This data is collated by the police and relies on:

- The attendance of the police at the scene of a collision, or their awareness of an incident. A high proportion of collisions are not recorded, particularly those involving pedestrians and cyclists.
- Accurate assessments of what actually happened: data collected is often based on the subjective conclusions of the attending officer and differing versions from witnesses and those involved, regarding who might have been 'at fault' and other contributory factors. Information is recorded on a standardised form 'on the basis of information available within a short time of the accident' [Hillman 1992].
- Accurate and consistent input of data that will respond to search fields - this relies on typing accuracy and staff training to ensure proper data input [Hillman 1992].
- Accurate assessments of the geographical location of collisions, such as their proximity to junctions and pedestrian crossing points - though estimations of distance from junctions ('20m') or crossing facilities ('50m') may be subjective.
- Inclusion of information that is statistically significant and accurate, taking into account margins of error. Some potentially useful information is not statistically significant and is therefore rejected.

- 1.9 The usefulness of Stats-19 data is limited to measuring and responding to quantitative analysis of incidents, and does not include qualitative indicators, such as insurance claims, perceptions of danger, health and the threat to benign modes of transport. The data is a precise record of recorded KSI incidents which involve road vehicles on a public highway or footpath, thus a pedestrian who is involved in a collision with a car and dies is counted; however, an elderly person who dies following a serious fall from tripping on a paving flag is excluded. [Hillman 1992].
- 1.10 Collision statistics alone are not a valid measure of the safety or danger of a road—a truer picture can be gained by measuring the extent to which people are responding to signals of danger by retreating from walking or cycling, or by purchasing larger motor vehicles, or by not allowing their children out [John Adams, UCL in LTT]. The Council’s response to this has been to develop for this Road Danger Reduction Plan, a palette of engineering measures (see Engineering - Hierarchy of Design Solutions in Part 3 and Brent Streetscape and Road Danger Reduction Design Manual) that are broadly intended to tackle danger at source and increase people’s willingness and propensity to walk and cycle (including for trips to public transport) and to allow their children to do so independently.

The Cost of Collisions

- 1.11 Brent’s estimates of collision costs are based on Highways Economics Note No.1, Table 4a, which gives an estimate of costs per collision of £72,720 at June 2003 prices. In its calculation of annual costs, the Council makes an allowance for damage-only incidents that are not recorded on Stats-19.

- The total cost of the 1007 collisions at £72,720 for 2004 was £73,229,040.
- This is 24% less than the £96,441,264 per annum from 1994-8 for the average annual count of 1326 incidents.

- 1.12 The cost of investigating and treating collisions is compared with the financial benefit of collision savings. The effectiveness of treatment is monitored by comparing 36 months before and after collision data from the scheme completion date.
- 1.13 However the financial and social costs of road danger are not factored in. These include the health costs of inactivity, pollution and social exclusion.

Developing the science of Road Danger Reduction

- 1.14 Developing the science of road danger reduction and appropriate responses so that they include qualitative as well as quantitative analysis in the investment decision making process, would change the way that features such as pedestrian crossings and traffic calming are justified, thus enabling the Council to more accurately target the provision of these measures to achieve ‘real road safety’. Therefore:

To support and develop the science of road danger reduction, the Council will:

- *Maintain and continually improve its comprehensive collision database and analytical system to inform priorities for action and ensure effective monitoring and evaluation of initiatives;*
- *Find and disseminate new measures that can be used to define danger on the roads, such as fear of motor traffic, the amount of walking and cycling and parental fears about allowing children to travel independently;*
- *More accurately monitor the use of and threat to benign modes;*
- *Develop its balanced transport policies, projects and promotional activities, taking into account the priority aims of reducing road danger and the fear of danger, minimising growth in private motor traffic and responding to the need to promote sustainable travel and reduce the volume of motor traffic;*
- *Relate road danger reduction objectives to health improvement so that the health and safety benefits and risks to individuals are taken into account. For example, the BMA estimates that the risk of a cyclist being involved in a collision is outweighed twenty times by the benefit to that person's health [Hillman 1992]; and*
- *Create virtuous circles for the benefit of all, in terms of the reduction of injuries and their severity, improved health, better environment and public realm, modal shift, private motor traffic reduction and sustainable development.*
- *Develop new design guidance to bridge the gap between policy and implementation, to guide engineering professionals in the design of schemes that will deliver road danger reduction and associated modal shift objectives.*

Update and Review

- 1.15 The plan will be updated every four years and reviewed annually in parallel with the Local Implementation Plan review timetable. Outcomes from specific schemes will be identified in the Borough Spending Plan and scheme monitoring.

Development Control

- 1.16 This Road Danger Reduction Plan is a material consideration in the determination of planning applications and will be taken into account in negotiations with developers regarding obligations under s.278 and 106 of the Town and Country Planning Act 1990.

Part 2 Context

National Policy Context

Transport Act 2000

2.1 Relevant provisions in the Transport Act include:

- Providing, under S.268 of the Act, a new power for local authorities to designate any road for which they are the highway authority as a home zone. The Secretary of State has the power to authorise such designations and provide appropriate guidance; and
- Allowing local authorities to determine the length of time over which school crossing patrols are provided.

Traffic Management Act 2004

2.2 Relevant provisions of the Traffic Management Act include:

- The term 'traffic' includes motor traffic and non-motor traffic;
- Highway authorities are required to appoint traffic managers, whose roles and powers are set out in the Act;
- The requirement of local highway authorities to keep traffic flowing and to co-operate with other authorities to this end;
- An enhanced role for TfL by making provision for strategic roads, though these can only be applied with the agreement of the affected authority;
- The Act makes regulations in relation to civil traffic enforcement legislation covering parking, bus lanes and some moving traffic offences. Local authority powers for the enforcement of moving traffic contraventions in London under the Local Authorities and Transport for London Act 2003 were piloted in June 2004
- Section 95 of the Act empowers local authorities to spend surpluses from their on-street parking accounts on local environmental improvements as well as parking facilities, improvements and provision of public transport services and road improvements.

PPG13 (Transport)

2.3 PPG13 states that people should come before traffic. Boroughs should, in partnership with the police, promote designs and layouts which are safe (both in terms of personal and road safety).

2.4 Emphasis is placed on people being able to travel safely, whatever their choice of mode. The guidance states that the planning system has a substantial influence on the safety of pedestrians, cyclists and vehicle occupants through the design and layout of infrastructure provided by the highway authority or developers. The need for safety for the whole

community should be considered at the outset of development and should be set out in the Transport Assessment accompanying development proposals, taking into account good design.

2004 Road Safety Bill

- 2.5 The Road Safety Bill is in progress and was mentioned in the Queen's Speech (November 2004). The aim of the Bill is to demonstrate the Government's commitments on road safety, casualty reduction and enforcement of road traffic law.
- 2.6 The Bill focuses on enforcing good driver behaviour, for example by raising penalties for mobile phone use and making more extensive use of driver re-training. However the Bill proposes to reduce penalties for minor transgressions of speed limits; the Council has objected to this proposal on the grounds that small increases in speed increase disproportionately the severity of injuries sustained in collisions and that vulnerable road users are more severely affected than car occupants.
- 2.7 The Government also wishes to ensure that it can continue to pilot innovative road safety features at local authority level, for example in association with neighbourhood renewal.

Tomorrow's Roads, Safer for Everyone (DETR 2000) and New Directions in Speed Management, a Review of policy (DfT 2004).

- 2.8 Approximately 3,500 people are killed (up to ten per day) and a further 40,000 seriously injured in the UK each year. In total there are over 300,000 road casualties involved in nearly 240,000 collisions and possibly fifteen times that number of non-injury incidents. The Government recognises that there are serious economic costs to this; the direct cost of deaths and serious injuries comes to the region of £3bn each year (the cost of individual collisions in London is given in *Accidents and Casualties on London's Roads 2003* [TfL Streets 2004]).
- 2.9 The Government's ten year road safety target (2000-2010) is reflected in the Mayor's Transport Strategy as follows:
 - A 40% reduction in the number of people killed and seriously injured (KSIs);
 - A 50% reduction in the number of child KSIs; and
 - A 10% reduction in the number of collisions resulting in slight injuries per 100m kilometres.
- 2.10 Importantly, *Tomorrow's Roads* recognises that Britain's record for child casualties is poor compared to that of other EU states. The suggested reasons for this are that children in the UK are less likely to be accompanied by adults; they also have to cross more major, wide and fast roads than their continental European counterparts. Children in Socio-economic class V are five times more likely to be killed on the road than children in Socio-economic Class I. A high proportion of pedestrians injured are children or elderly people, reflecting both their greater vulnerability and greater dependence on getting around on foot in the presence of road danger.

- 2.11 Additional work has been carried out by Brent Council to investigate collisions and child ethnicity. This is incorporated into 'Local Baseline Data' below.
- 2.12 *Tomorrow's Roads* is based on ten key themes; these are to improve safety in relation to:
- Children;
 - Pedestrians, cyclists and horses riders;
 - Infrastructure (design, 20mph zones, home zones and 'self-explaining' roads which improve or modify behaviour);
 - Drivers (training and testing);
 - Drivers (drink, drugs and drowsiness);
 - Speed;
 - Vehicles (design);
 - Motorcyclists;
 - Enforcement; and
 - Promotional activities.
- 2.13 There are a number of relevant key issues raised in the documents; the full document and its subsequent Review provide additional details. Selected information is as follows with additional commentary in [square brackets]:
- In urban areas, pedestrians accounted for about 20 per cent of casualties, but 36 per cent of those killed or seriously injured. Of all killed and seriously injured children, 61 per cent are injured as pedestrians [50 per cent in Brent in 2004]. (Baseline 1998.)
 - Injuries to cyclists were seven per cent of all casualties and 7.5 per cent of those killed or seriously injured, compared to their having under two per cent modal share. Of these, 31 per cent and 29 per cent respectively were children. (Baseline 1998.)
 - Motorcyclists accounted for 18 per cent of all fatalities in the UK in 2002 and the statistics indicate that a motorcyclist is some 30 times more likely to be killed in a crash than a car user; and four times more likely to be killed than a cyclist. 60 per cent of collisions involved another vehicle, and a third of fatalities occurred in built-up areas. Speed (together with relative lack of protection) appears to be a factor in the nature of other types of collision involving cornering and loss of control, which increased as a proportion of the collisions reported.
 - Taking into account distance travelled by mode, cyclists are about as likely to be injured as motorcyclists. The rate is about 580 casualties for every 100 million vehicle kilometres travelled. For car drivers, the rate is about 36 for every 100 million vehicle kilometres travelled (Baseline 1998; there are some doubts about the reliability of this measure.)
 - For pedestrians, the rate is measured as per 100,000 people. In 1998, there were 78 casualties per 100,000 population, or 18 seriously injured or killed.
 - *"Too many people take a cavalier attitude to speed"* which is a contributory factor in about a third of collisions. Nationally each year,

speed helps to kill around 1,200 people and to injure over 100,000 more. It is by far the biggest contributor to casualties on Britain's roads. In urban areas, approximately four per cent of collisions were directly related to speed; speed-related factors were a contributory factor in a further 21 per cent.

- Collision frequency increases at a rate that is disproportionate with increasing speed, increasing approximately with the square of the average traffic speed. For example, on urban roads, a 21 per cent increase in traffic collisions could result in a ten per cent increase in mean speeds.
- Driver error is a contributory factor in 90 per cent of collisions; driving too fast counts as an error in judging what is safe.
- The likely seriousness of injuries resulting from a collision increases significantly with small changes in impact speed. The probability of serious injury to a belted car occupant becoming seriously injured at 20mph *trebles* at 30mph. For pedestrians and cyclists hit by motor vehicles, the situation is much worse: About 85 per cent of fatalities occur at impact speeds of less than 40 per cent; compared to 45 per cent at less than 30mph and five per cent at speeds of less than 20mph. About 40 per cent of pedestrians struck at below 20mph are seriously injured; however this rises to 90 per cent at speeds of up to 30mph - the biggest changes being seen between 20mph and 30mph impact speeds.
- A one per cent reduction in average speed is expected to reduce collision frequency by between three and six per cent, depending on the road. The greatest gains can be achieved by reducing the speeds of the faster drivers.
- Carbon dioxide emissions are relatively high at low constant speeds, however they begin to decrease as the motor vehicle approaches 30mph. hard acceleration and poor engine tuning are also contributory factors. Reductions in travel speed to the region of 20mph would result in increased emissions, however this should be weighed against the benefits to safety, the amount of potential shift to walking and cycling and motor traffic reduction [and the robustness of the Council's Low Emission Zone, once implemented].
- There is considerable public support for retaining the 30mph speed-limit, however this support is not matched by the level of compliance with the limit in practice.
- A new hierarchy of road defined by function is recommended to help set speed limits. This is as follows:
 - The movement of people and goods by (motor) vehicle;
 - The safe movement of people on foot or pedal cycle; and
 - To cater for both on mixed priority roads.

LTN1: Policy, planning and design for walking and cycling

- 2.14 The Local Transport Note (LTN) sets out the policy context for promoting pedestrian and cycling facilities and describes common design principles for pedestrian and cycle provision, including a hierarchy of provision for cyclists to determine the best solutions for cyclists and pedestrians at any given location; and a hierarchy of users which reflects that which has been adopted for this Road Danger Reduction Plan. The document has relevance to the design of infrastructure and specific measures outlined in this plan (see part 2)

Health White Paper 2004 and general references to health and exercise.

- 2.15 According to the Health Survey for England, 60% of men and 70% of women are not active enough to benefit their health. Young people are increasingly less active too - the National Diet and Nutrition survey in 1999 found that 40% of young males and 60% of young females do not meet the recommended hour a day of physical activity.
- 2.16 One in five adults is obese and most adults are overweight (National Audit Office 2004). Treating obesity and illnesses related to exercise and diet deficiencies costs the NHS at least £1/2bn per annum. The wider costs to the community in terms of lower productivity and lost output are estimated at £2bn per year
- 2.17 The health sector and local authorities could contribute to promoting active travel (cycling and walking) as an integral part of daily journeys. According to the World Health Organisation (WHO),

"The lack of physical activity is a major underlying cause of death, disease and disability. Preliminary data from a WHO study on risk factors suggest that a sedentary lifestyle is one of the ten leading global causes of death and disability." [WHO 2002]

- 2.18 The Department for Health's general recommendation is that adults should take at least half-an-hour's moderate exercise per day, perhaps in bouts of 10 to 15 minutes, allowing for an accumulation of activity throughout the day. Young people should take part in at least one hour's moderate activity per day, made up from a variety of activities including walking and cycling. Of course this is dependent on the particular health needs of individuals [National Cycling Strategy Board / Health Development Agency websites].
- 2.19 The Council considers that the issues raised in the Health White Paper are important in the context of its Road Danger Reduction Plan. People's willingness to walk and cycle is determined to an extent by fear of traffic - this road danger reduction plan seeks to address this issue because road danger reduction and the encouragement of walking and cycling as healthy exercise are compatible objectives.

Department for Transport / Home Office Roads Policing Strategy

- 2.20 The following is an agreed statement issued jointly by the Association of Chief Police Officers, the Department for Transport and the Home Office. Its purpose is to set roads policing in the context of overall police work, establish the issues which are a continuing priority for road policing and identify the principles which should underpin operational practice and the development of policy.

"Virtually everyone in the Country uses roads every day, as drivers [, cyclists] or pedestrians.

"With some 30 million vehicles in Great Britain, the roads are serious and hazardous [sic]. Their unlawful and anti-social use affects people's safety and sense of security. Bad road use also contributes to the 3,500 people killed and 35,000 people seriously injured each year on the roads.

"Roads policing seeks to ensure that people can all use the roads, go about their daily life and get around their towns safely and without being harmed or intimidated by unlawful and anti-social behaviour on the road. This is particularly important for the elderly, for children, and also for the economically and socially disadvantaged, whose children, as noted in the Government's Road Safety Strategy, are five times more likely to be killed than those of the most fortunate.

"Roads policing is therefore an important and visible element in the police's commitment to protect the public, to help maintain safe communities and civil society and to support law-abiding citizens' confidence in the Law.

"The maintenance and development of proactive road policing, in partnership with the other authorities and agencies involved, will contribute to and support the rest of the policing function.

"Road policing will focus on the following actions:

- *Denying criminals the use of the roads, by enforcing the Law;*
- *Reducing road casualties;*
- *Tackling the threat of terrorism;*
- *Reducing anti-social use of the roads; and*
- *Enhancing public confidence and reassurance by patrolling the roads.*

"Proactive road policing, in partnership with the other authorities and agencies involved - local councils, local highway authorities and the Highways Agency, voluntary and community bodies - will contribute to and support the rest of the policing function. It will form part of the police's work in local Crime and Disorder Partnerships and in the development of Local Policing Plans."

- 2.21 The five key priorities in the National Policing Plan 2005-2008 include 'Reducing people's concerns about anti-social behaviour' [National Policing Plan 2005-8, Home Office November 2004]; addressing road crime is part of that priority. Casualty Reduction features specifically in the Policing Enforcement Assessment Framework, together with a performance indicator, namely the number of people killed or seriously injured in a police force area relative to the number of vehicle kilometres travelled [National Strategic Assessment - Roads Policing, ACPO November 2004].

London-wide and local policies

The Mayor's Transport Strategy

- 2.22 The Mayor's Priority areas and Targets will require input from both the Mayor and the London Boroughs. With regard to road safety, Priority 1 is to improve road safety and specifically:

- *"TfL and the Boroughs (obtaining the support of the police where appropriate) are to achieve a reduction of 40% in the numbers killed or seriously injured by 2010 compared with 1994-1998 overall and separately for pedestrians, cyclists and motorcyclists; a 50% reduction in the number of children killed or seriously injured and a reduction of 10% in the slight casualty rate per 100 million vehicle kilometres. This target applies London-wide and to the individual boroughs.*

In London the Government's original targets for collision have been almost met six years ahead of schedule. As a consequence the Mayor is proposing more ambitious targets for reducing casualties from road crashes in London. The Council fully supports the Mayor's new targets as set out in the consultation letter dated 26th August 2005.

The proposals are to raise the targets from 40% to 50% reduction in KSI casualties for the categories of pedestrians, cyclists and total KSIs. This is by 2010 compared with the baseline average for 1994-98. The child KSI casualty reduction target would be raised from 50% to 60% and the slight casualties target would rise from 10% to 25%. For powered two wheelers the target is left unchanged at 40%. The Council strongly supports these raised targets, however casualty reduction alone is not an adequate measure of success. Other methods of measuring road danger are required; the Council will lobby TfL to develop them.

- *"School road safety: Boroughs are to review road safety around all primary and secondary schools by 2008. In addition, boroughs are to work with schools and groups of schools to review travel to all schools by March 2008, with significant progress having been made by March 2006."*

- 2.23 Performance indicators will be applied with regard to road safety:

- Number of adult KSIs overall and separately for pedestrians, cyclists and motorcyclists;
- Number of children seriously injured or killed

- The slight casualty rate (adults and children) per 100m vehicle kilometres.
- Data should additionally be disaggregated by ethnic grouping and vehicle classification and should be measured in calendar years.

2.24 Performance indicators are also set for:

- School road safety - the number of primary and secondary schools reviewed and with schemes indicated;
- The number of schools for which travel plans are necessary and implemented; and
- The number of school trips by modal share other than the car and the number of non-mechanised trips as defined in LTDS.

2.25 The Road Danger Reduction Approach seeks new measures to define danger on the roads; this will form the basis of new performance indicators; other indicators are also relevant, such as the number of cyclists or modal shift.

The Mayor's Road Safety Plan

This plan is due for review and re-issuing in 2004/5 the following information will be updated when the new plan is published.

2.26 The Mayor's road safety plan focuses on strategic initiatives to deliver safer roads across Greater London, in particular on the Transport for London Road Network, where approximately 28% of collisions occur. It also provides useful baseline data for wider trends across London. It states that the cost to society of collisions has been estimated at over £2.3bn per annum from lost earnings, the cost of medical support and property damage.

2.27 The Mayor's Road Safety Plan observes that whilst the number of fatalities in London has fallen to exceed set targets, much of this has been achieved through improved vehicle design and greater use of seat belt restraints. Meanwhile, in the period from 1998-2000 there was an 18% increase in pedestrian fatalities; among powered two wheeler drivers there was a 26% increase in collisions and a 53% increase in fatalities.

2.28 Approximately half of all fatalities and 19% of other casualties across London are pedestrians; cyclists account for 7% of casualties and 19% of collisions yet they only represent 2% of traffic. Powered two-wheeler drivers make represent less than 2% of trips, yet they represent nearly 17% of all casualties and 19% of fatalities.

2.29 The Mayor's Road Safety Plan adopts the targets for the reduction of road collision casualties given in *Tomorrow's Roads, Safer for Everyone* and gives greater attention to the safety of pedestrians, cyclists and motorcyclists. It contains specific proposals that are of particular relevance to Brent Road Danger Reduction Plan. The Plan:

- Supports the Mayor's strategy to increase the amount of walking and at the same time to encourage people to do so in safety. It questions the validity of guardrailings, subways and pedestrian over-bridges and favours the provision of at-grade convenient crossing points and the removal of obstructions;

- Seeks further research into the causes and preventative measures to reduce the number of collisions involving powered two-wheelers;
- Seeks to facilitate training programmes for children, particularly those in age groups, ethnic groups and socio-economic groups, who are the most likely to become involved in collisions. Much of this work will be carried out by health authorities and London boroughs;
- Seeks to extend the provision of cycle training and education for children and adults and to improve the safety of the road network including the LCN for cyclists;
- Supports the development of further safer routes to schools schemes including education and monitoring of schemes' contribution to collision reduction targets;
- Aims to bring about an increase in public transport use and to reduce the numbers of collisions involving bus passengers, particularly the elderly. Proposals include improved driver training and motivation; and
- Supports the effective enforcement of parking and traffic controls and regulations, to overcome problems caused by obstructive parking, loading and waiting; and to reduce the incidence of driving offences.

Brent Unitary Development Plan 2004

2.30 The Adopted Unitary Development Plan (2004) contains specific policies and supporting text relating to road safety, traffic management, traffic calming and highway design. The current UDP includes non-specific reference to the road user hierarchy, environmental quality and urban design:

- Policy TRN12 (Road Safety and Traffic Management) states that, *"In considering traffic management measures, and in assessing planning applications, priority will be given to road safety issues, particularly those affecting the convenience and safety of vulnerable road users such as pedestrians and cyclists.*

"Essential through traffic will be encouraged to use the strategic road network and London Distributor Roads (Policy TRN20); through traffic will be discouraged, as far as practical on local roads, through the use of traffic calming and other measures. Development proposals which conflict with this...will be refused."

Policy TRN13 (Traffic Calming) states that, *"Traffic calming and engineering or urban design measures will be used where there is evidence of a high level of traffic accidents, or vehicle speeds, which cause road safety problems - in particular on local distributor and local access roads.*

"Traffic calming schemes should, where appropriate, include environmental improvement such as hard and soft landscaping, and should be completed before the development is first used or occupied. Such schemes should be of a design and nature so as not to harm the

viability of road based public transport and to maintain access for emergency services.

"New roads servicing residential developments should incorporate traffic calming measures as an integral element of their design, so that where appropriate, design speeds are below 32kph (20mph)

"Home Zones will be introduced in suitable residential areas."

- Policy TRN14 (Highway design) states that, *"New highway layouts, visibility splays and accesses to and within development should be designed to a satisfactory standard in terms of safety, function, acceptable speeds, lighting and appearance.*

"For a site with a new road network the proposal should have efficient internal circulation as well as integrating with the existing road network in a convenient manner; including for emergency service vehicles, cyclists and, where appropriate, buses.

"Where buses would need to use a road, such as in a large development and, where appropriate, through roads, then the access points, roads, stop locations and highway layout should be suitable for the routing of bus services and for pedestrians."

- 2.31 The UDP will be superseded by a suite of documents collectively titled the Local Development Framework. The development of future policies in the LDF will be influenced by the Road Danger Reduction Plan and the hierarchy of road users.

Brent Local Implementation Plan

- 2.32 This Road Danger Reduction Plan forms an integral part of the Local Implementation Plan. It will be reviewed every four years and will be updated in tandem with the LIP Annual Progress Reports.

Brent Cycling Action Plan

- 2.33 Promoting an increase in cycling will help Brent to achieve headline targets for reducing the number of injury collisions involving cyclists. The chance of a cyclist (or pedestrian) being struck by a motor vehicle varies inversely with the amount of cycling (or walking) [BMJ *Injury Prevention* Volume 9 and dft.gov.uk].
- 2.34 A genuine reduction in road danger at source is a central part of the overall aim of increasing the amount of cycling in the Borough and at the same time reducing the number of injury incidents.
- 2.35 Cycle and safety audits of new highway schemes will assess their contribution to road danger reduction in their planning, design and implementation. The plan states that good schemes will make a positive contribution to safety, particularly where they reduce traffic speeds and modify driver behaviour. Good schemes will also contribute to encouraging more people to cycle with greater confidence and safety.

- 2.36 The Action Plan states that the Council continues to invest in free cycle training and will do so in accordance with National Standards for adults, children and people with disabilities. Emphasis will be given in training / course syllabuses to meeting the objective of reducing road danger, by assisting cyclists to integrate confidently with other traffic.

Updating the Council's Road Safety Plan

- 2.37 This plan replaces the Council's existing plan (reproduced in full in the 2005/6 Borough Spending Plan) and introduces a new approach based on the Road Danger Reduction Forum's Charter, as reproduced in the introduction. The Council wishes to build on its past investment and initiatives, taking them forward with design changes that reflect the objectives of road danger reduction.

Local Baseline Data and Observations

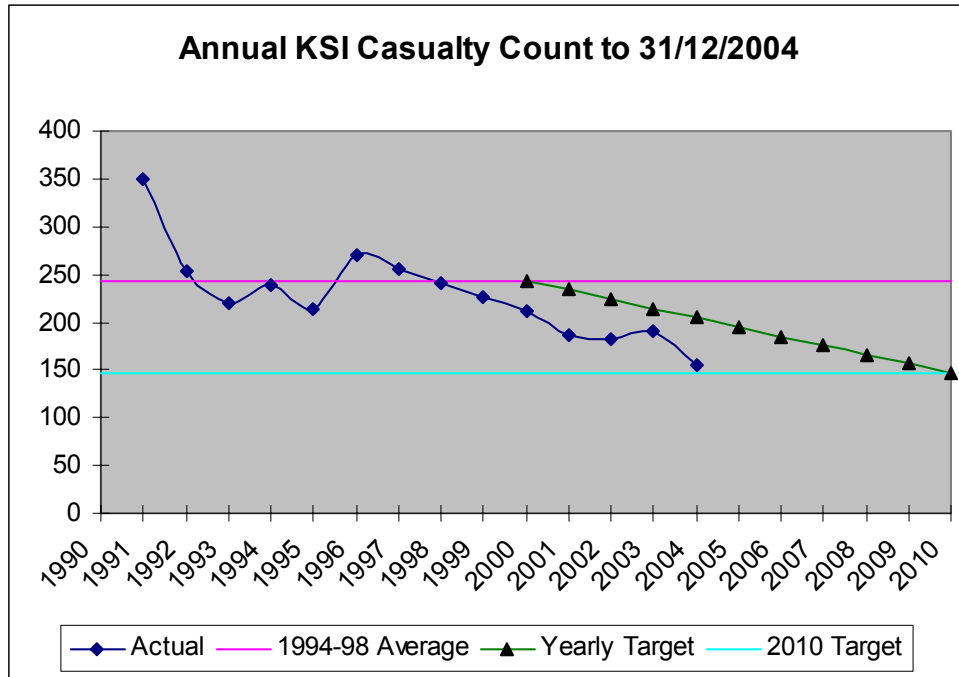
- 2.38 The statistical information given here has been provided by the Accident Prevention Unit at Brent Council. It is based on the collection and interpretation of quantitative Stats-19 data which, until other means of measuring road danger and its impacts are developed, should be treated with some caution.
- 2.39 Principle 4, in the introduction above, states that the Council will find new ways of measuring road danger, to take into account qualitative information, such as the degree to which people have retreated from walking and cycling because of the presence of real or perceived road danger.

Performance against targets for casualty reduction

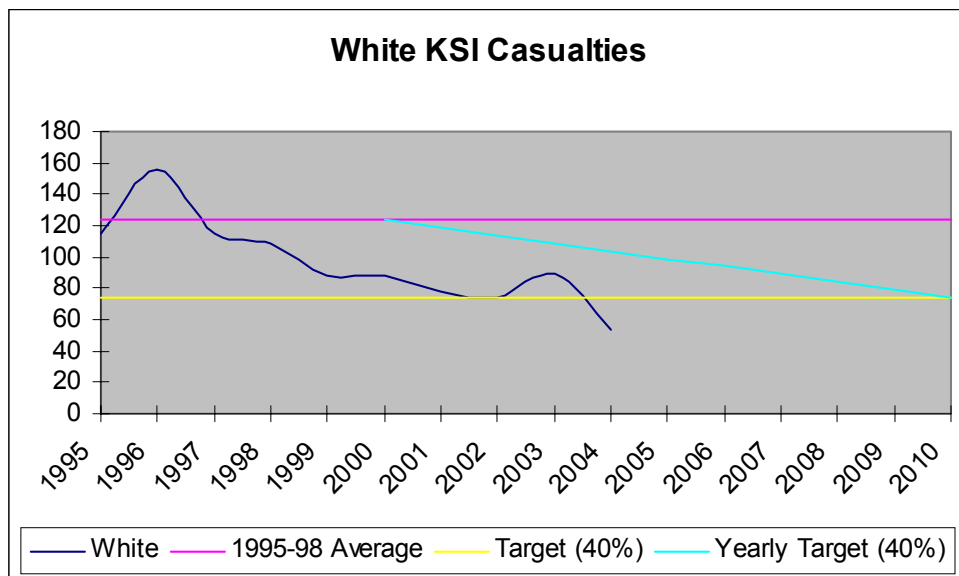
- 2.40 There are six specific targets for casualty reduction in Brent by 2010. In all except one casualty class, Stats-19 Interpreted Data suggests that the Council is exceeding established targets as follows, though numbers remain too high:

1. A 40 per cent reduction in KSI casualties

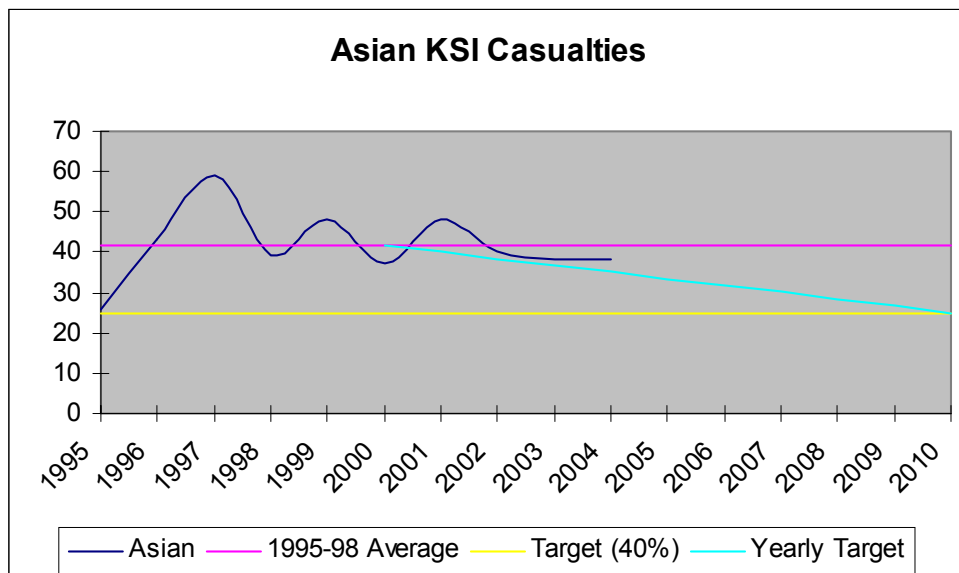
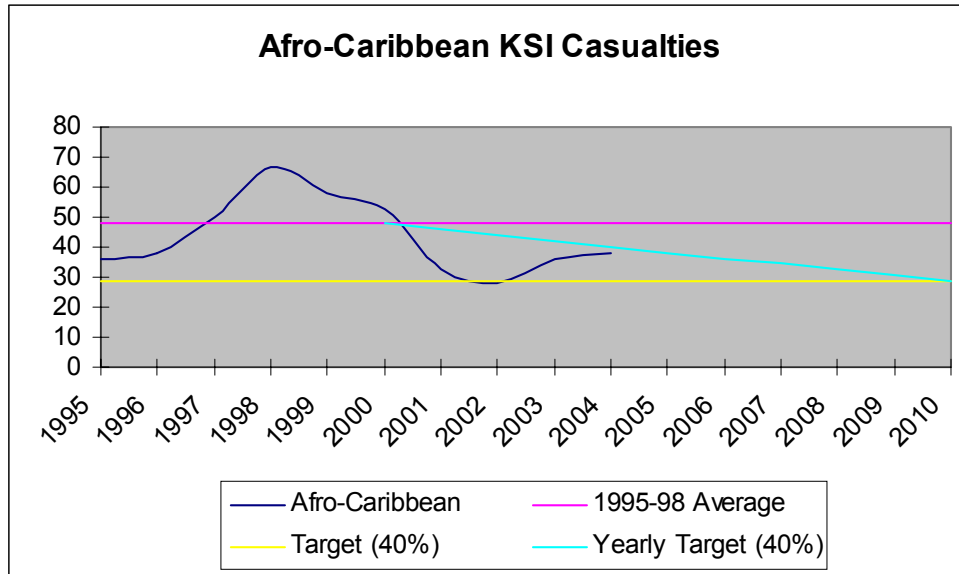
- 2.41 From 1996 to 2002 there has been a year on year reduction in the number of people killed or seriously injured in Brent from 270 to 182. The number of people killed or seriously injured is the most accurate part of this measure, however account should be taken of persons dying 30 days or more following an injury incident, because these individuals are classed by Stats 19 as 'seriously injured'. There was a small increase in the number of KSIs in 2003; however the overall figure remains well below the yearly target line.



2.42 The reduction in white KSI casualties was well ahead of the 2010 target line by the end of 2004; a total of 54 KSI's were recorded compared with the target projection figure for 2004 of almost twice that number (104).

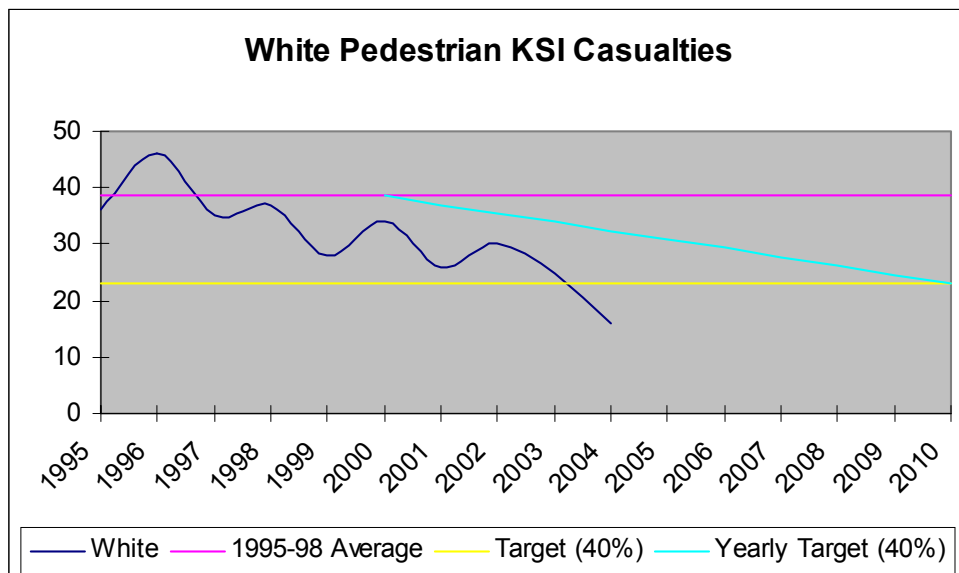
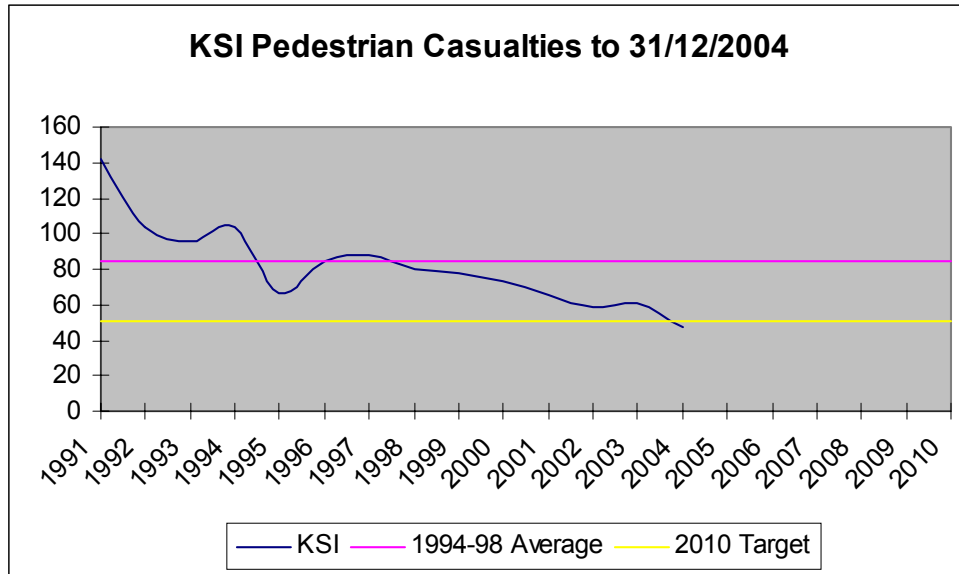


2.43 For Afro-Caribbean and Asian groups, performance against the targets has not been satisfactory. The following charts demonstrate that in 2003-4, the number of Asian casualties (38) has risen above the target projection (35) whilst the number of Afro-Caribbean casualties (38) has risen to near the target projection (40). The trend for Asian casualties has been to remain at approximately the 1994-8 average over the period from 1998 to 2004.

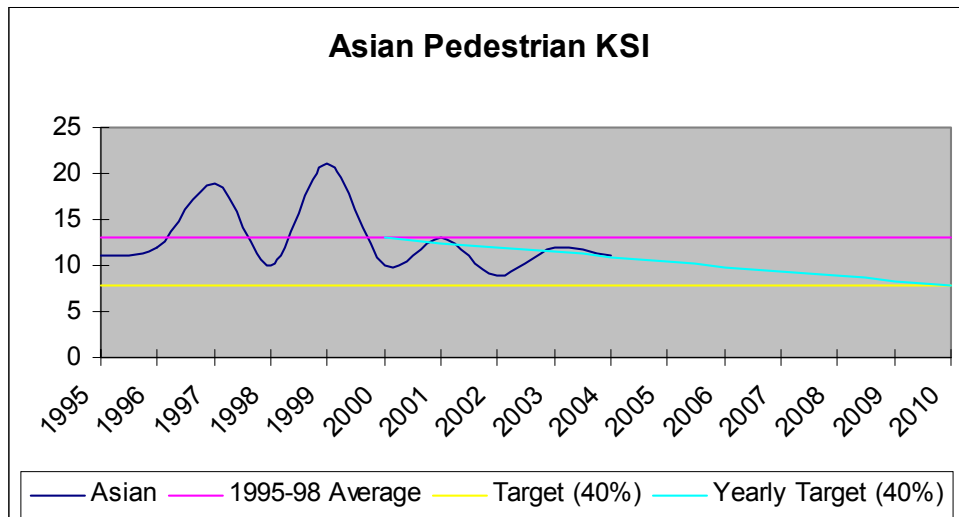
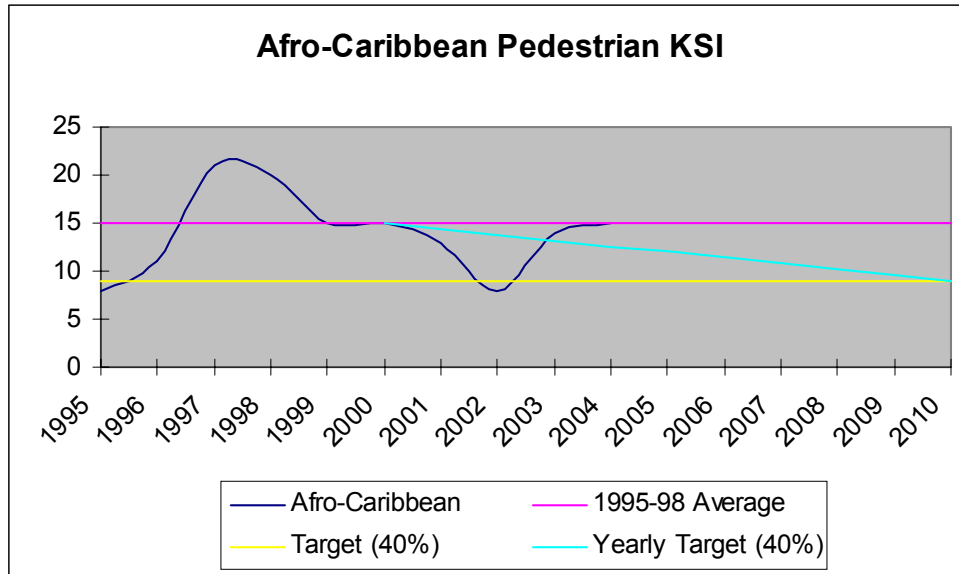


2. A 40 per cent reduction in pedestrian KSI casualties

- 2.44 Of Brent’s pedestrian casualties, 17% (32) were injured when crossing the road at a formal crossing point; and a further 15% (29) were injured crossing a road within 50m of a formal crossing. However, 68% (132) were injured crossing away from a formal crossing or when not crossing the road (i.e. on a footpath or verge or in the carriageway (LRSU 2004)
- 2.45 From 1997 to 2002 there was a year-on-year reduction in pedestrian KSI’s. The year 2004 saw a decrease of 23 per cent on the previous year. The average for 1994-1998 is 85 casualties; the target for 2010 is 51 casualties. Between 2003 and 2004, the actual number of KSI casualties fell from 61 to 47 or by about 44 per cent below the target line, achieving the target six years ahead of schedule.

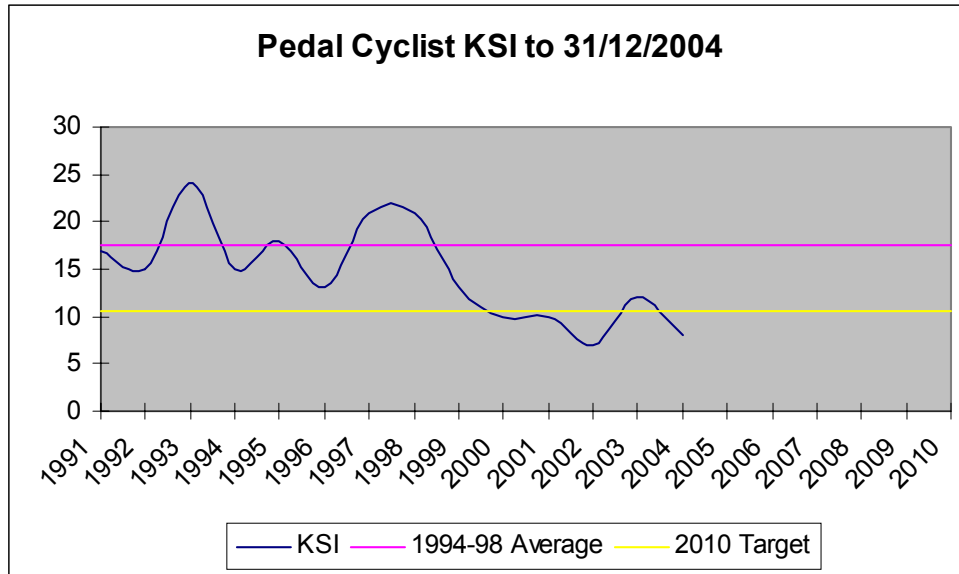


2.46 For Afro-Caribbean and Asian pedestrian KSI's, performance against the targets has not been satisfactory. The number of Afro-Caribbean casualties has increased to the 1994-8 average, having dropped to well below the 40 per cent target by the end of 2002; in the meantime, the number of Asian pedestrian casualties has risen to just above the target projection in 2003-4.



3. A 40 per cent reduction in pedal cyclist KSI casualties

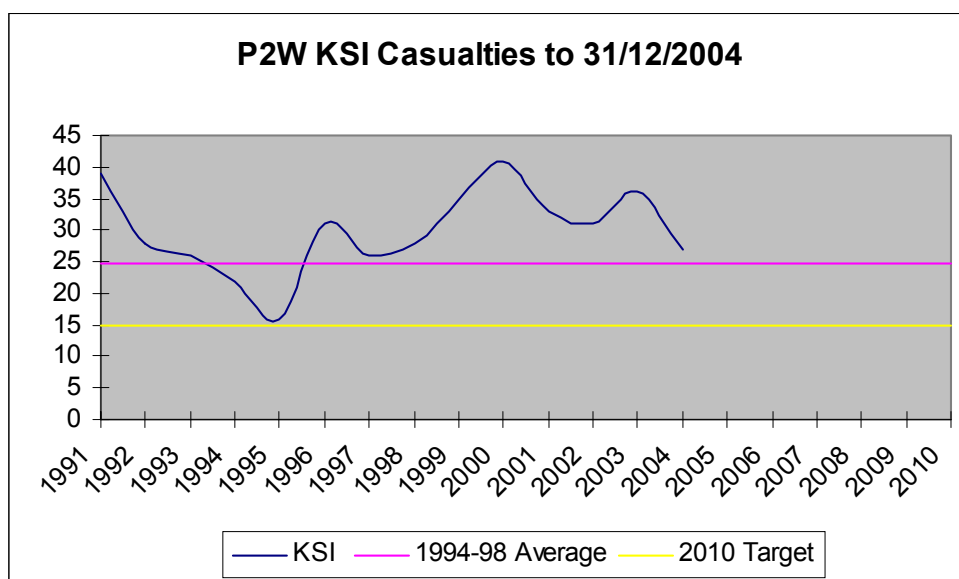
2.47 In Brent, the 2010 target to reduce the number of cyclist KSIs to 11 was achieved in 2000. During 2003 (concurrent with the introduction of the Congestion Charging Zone and the increase in cycling London-wide), the number of cyclist KSI's rose slightly above the 2010 target but remained well ahead of the required projection. In 2004, pedal cyclist KSI's showed a decrease of 55% below the 2010 target line.



4. A 40 per cent reduction in Powered Two Wheeler KSI casualties

2.48 This group continues to suffer problems relating to an increase in death and serious injury. A number of factors may explain this, such as the increase in the number of powered two wheelers due to the Congestion Charge and an increase in the number of food delivery businesses, together with the motorcyclists' combination of speed and lack of protection. A recent advertising campaign has highlighted the 'invisibility' of motorcyclists to drivers (for a variety of reasons not necessarily linked wholly to conspicuity—see below) and the high chance of injury in the event of a crash [TfL 2004].

2.49 The number of Powered Two Wheeler (PTW's) KSI casualties (27) in Brent decreased by 25% (9) in 2004 compared with 2003. This is 10% above the baseline (25) compared with the target for 2010 of 15.

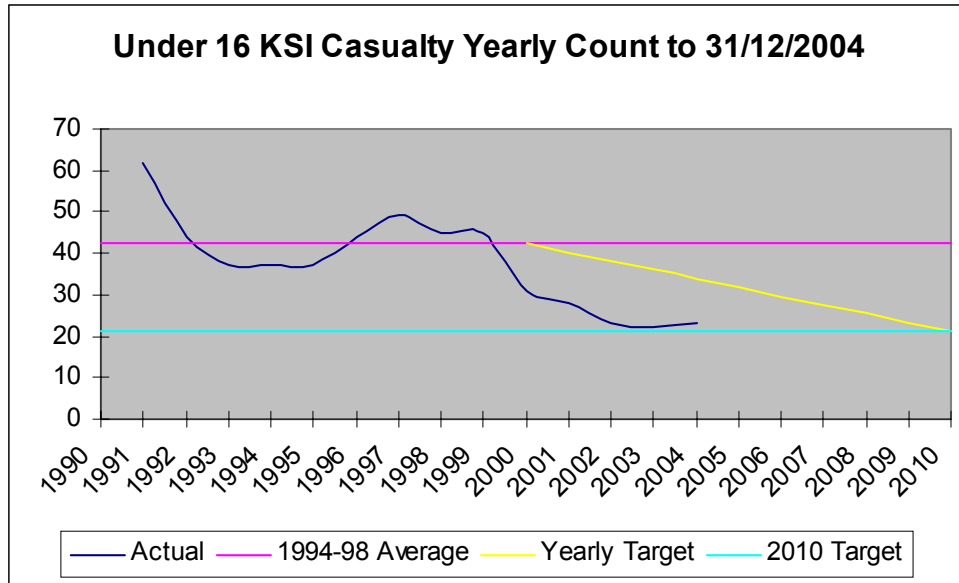


Empirical research—motorcycling

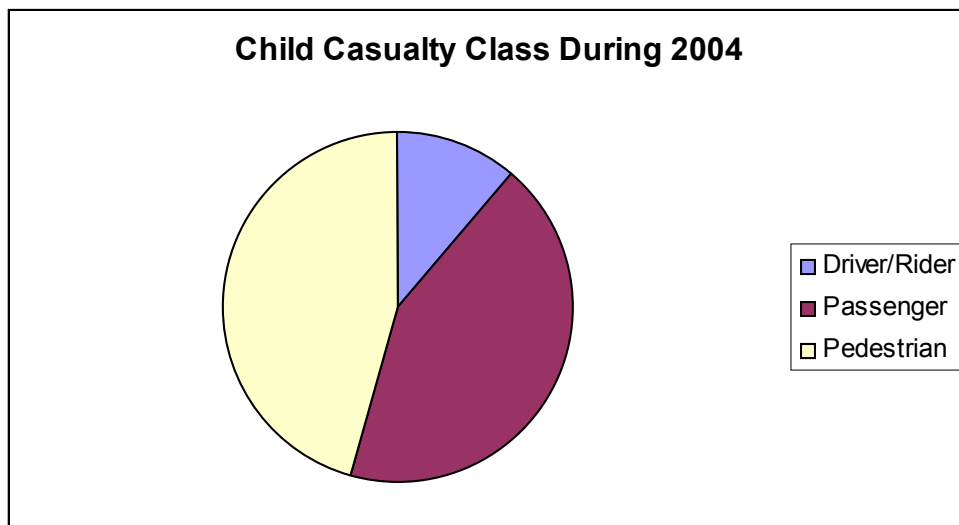
- 2.50 In 1991, Cranfield University conducted research among drivers who had been involved in motorcycle collisions in Bedfordshire, Lincolnshire, Northampton and Thames Valley police areas. The need for the research was based on the inadequacy of the predominant 'conspicuity approach' to resolving driver involvement.
- 2.51 The report highlighted driver error rather than rider error as the major factor in powered two wheeler collisions, stating that, "*the results [of the survey] indicate that some of the most important factors involved in PTW accidents may be accounted for by a lack of driver technical and social awareness*". It cited research from the US and UK which supported the thesis.
- 2.52 The report also cited a lack of research into driver error and states that, "*this is because the majority of safety work in which the involvement of the motorist is recognised, has been carried out on the conspicuity of powered two wheelers and their riders. In conspicuity research, the role of the motorist is generally regarded as passive in nature – the motorist does not see the motorcycle prior to collision, so the rider must become more conspicuous.*
- "As a result, safety work on the involvement of motorists has been directed away from the driver and towards the rider. Little attention is given to the fact that the driver ultimately caused the conflict... There is growing realisation that the basic concept of motorcycle inconspicuity lacks empirical support."* [Brooks 1990]
- 2.53 This research also lends more general support to the Road Danger Reduction baseline, that traditional road safety solutions do not identify or control adequately, the principal source of danger. However, it fails to include commentary on the influence of motorcyclist speed on the chances of riders being involved in a collision resulting in death or serious injury to themselves or other road users and the chances of motorcyclists causing injury to pedestrians and cyclists. The report's findings on conspicuity could equally be applied to cyclists and pedestrians.

5. A 50 per cent reduction in child KSI casualties

- 2.54 There has been a year on year reduction in the number of child casualties since 1997. The 2010 target is 21 casualties; in 2004 there were 23 casualties. This suggests that the 2010 target is expected to be met earlier than the target date.



2.55 It should be noted that some of this reduction will be due to the fact that many parents, being fearful of traffic and strangers, have severely curtailed the freedom of their children to go out independently [John Adams, UCL in LTT]. The success of schemes such as safer routes to schools and pedestrian and cycle training directed at children and adults should be measured in terms of parents' willingness to allow their children to travel independently.

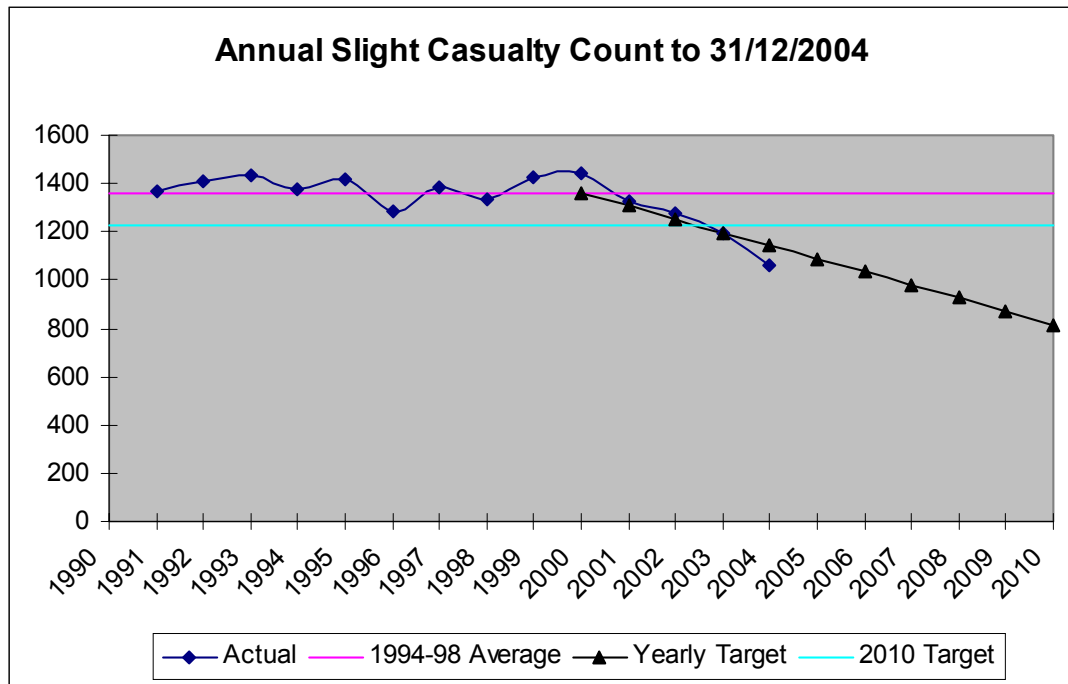


6. A ten per cent reduction in the slight casualty rate (not fully defined)

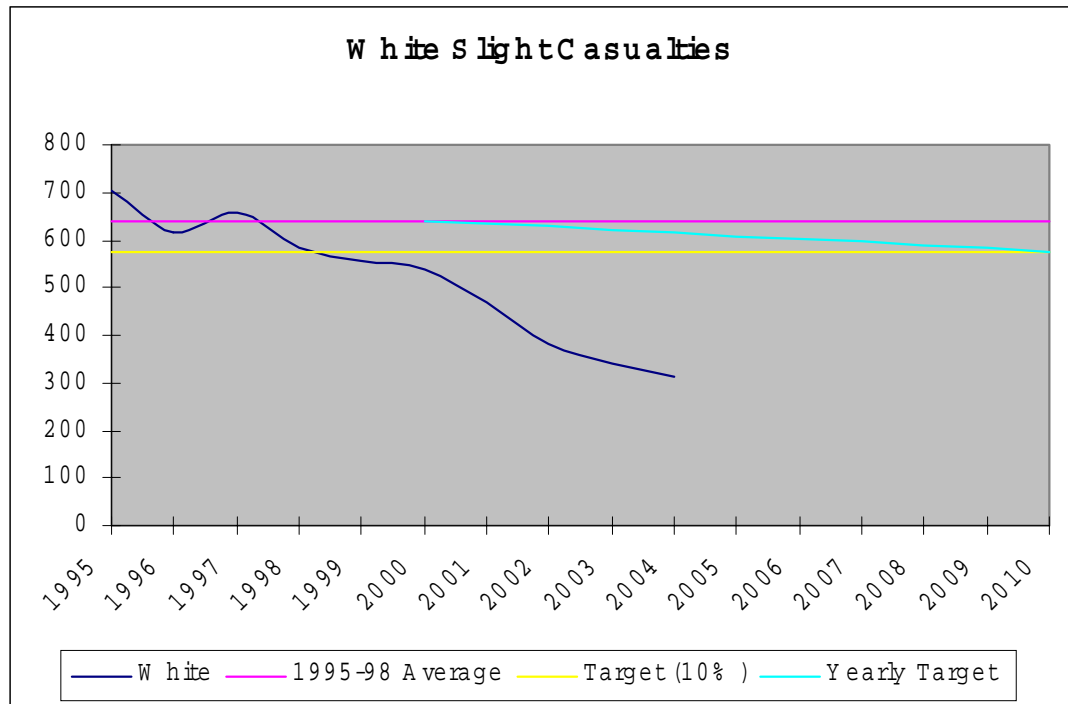
2.56 The number of slight casualties has fallen from 2003 to 2004 from 1191 to 1058 and for this period, the actual number of casualties has closely followed the yearly projection. Brent has met the target for slight casualties six years ahead of schedule.

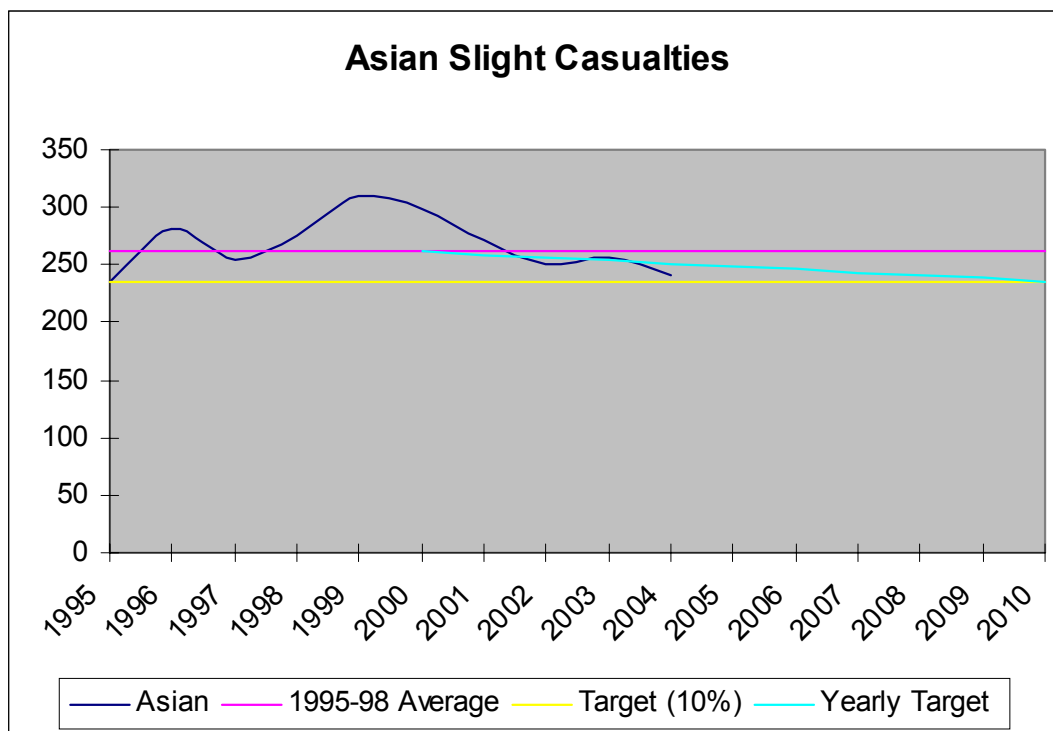
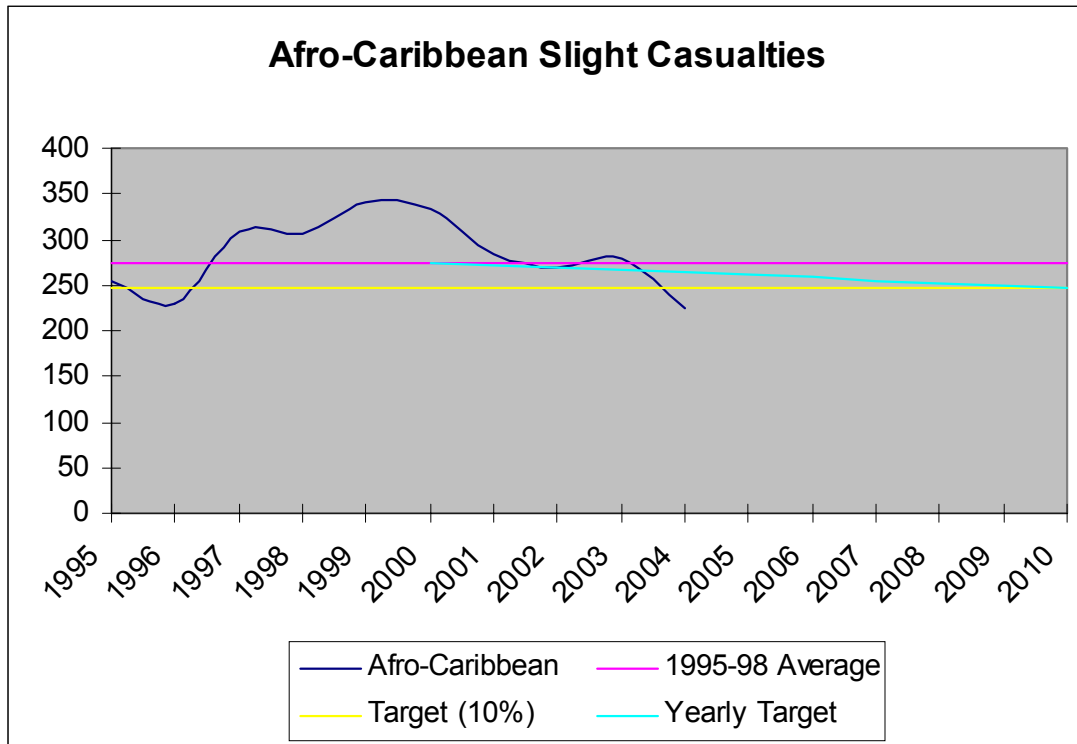
2.57 The Council recognises that there is likely to be a large measure of under-reporting of collisions, including those for simple trips and falls not resulting from interaction with other road users, and there should in addition be

more analysis of damage-only collisions in order to more accurately measure the level of road danger.



2.58 The number of white slight casualties is falling well ahead of the required projection, however the charts for other ethnic groups demonstrates a weaker performance. This is reflected in other data for injury collisions.





Involvement in collisions by mode

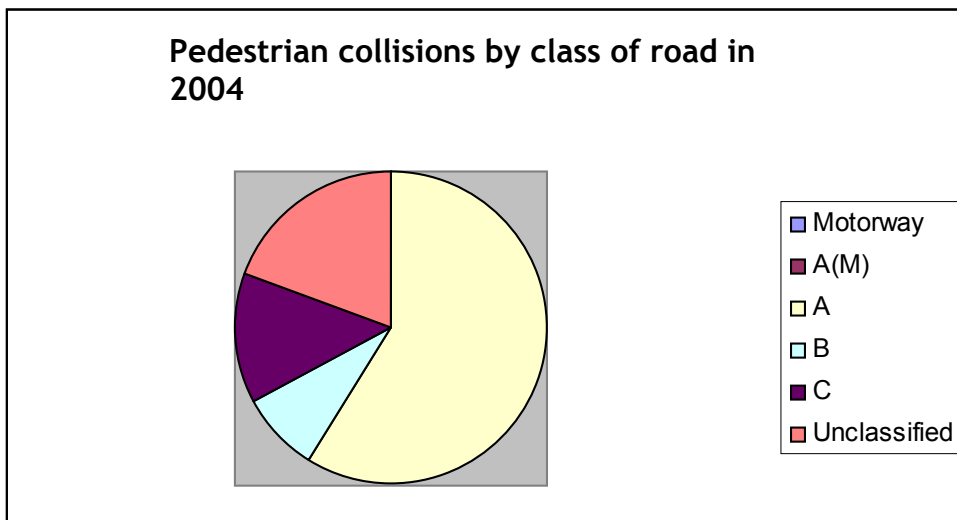
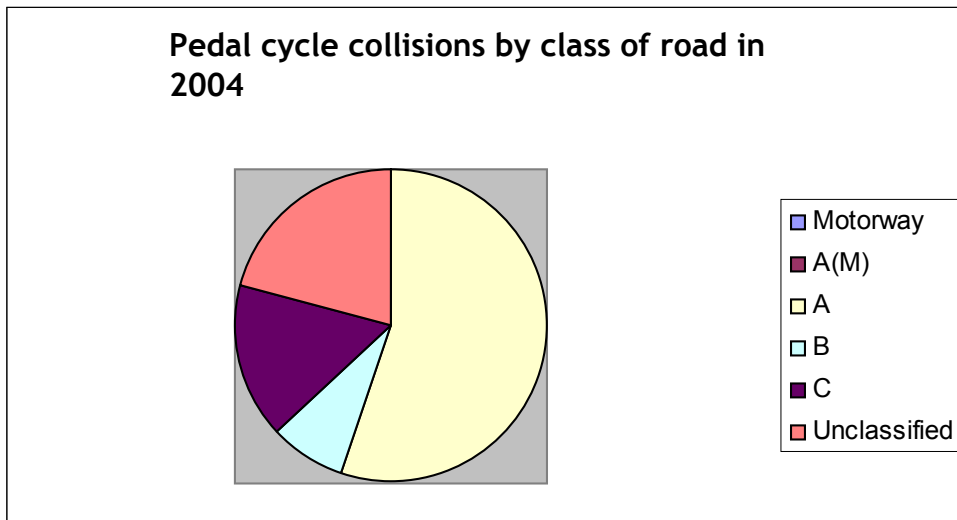
2.59 In 2004 30% (47) of KSIs and 19% (236) of casualties in the Borough were pedestrians; cyclists accounted for 5% (65) of all casualties yet represent only 1% of traffic. Powered two-wheeler drivers represent less than 1% of traffic yet they made up 13% (159) of all casualties. There were six fatalities, one of whom was a pedestrian; and taken together, vulnerable

road user groups made up 38% of casualties in the Borough in 2004 (LRSU / LBB 2005).

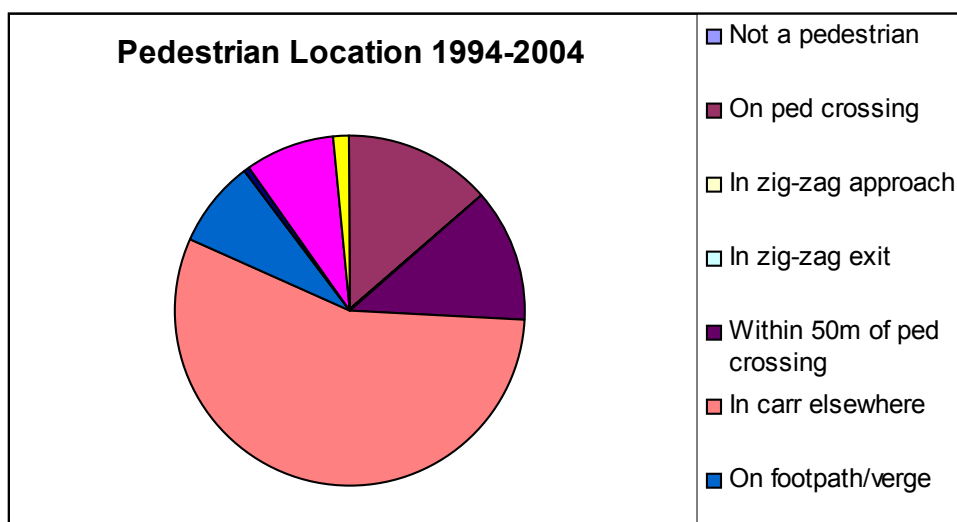
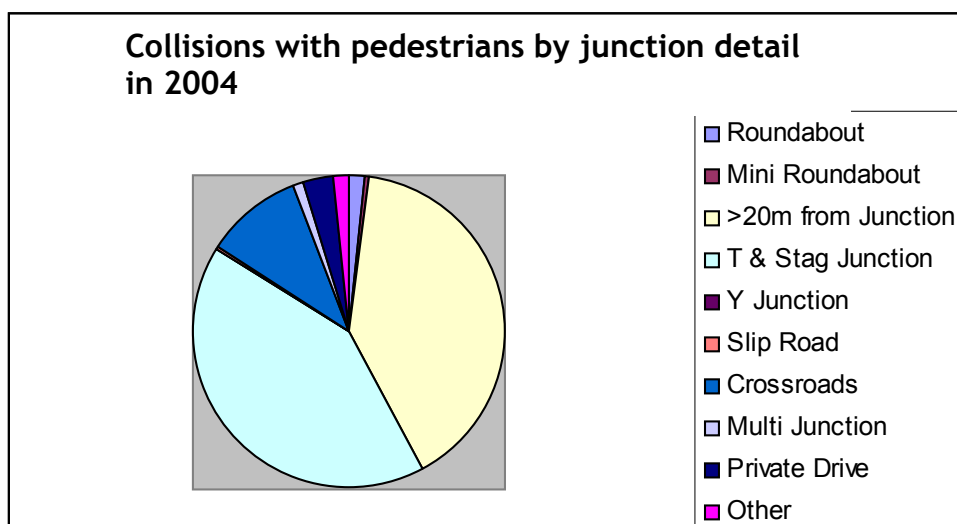
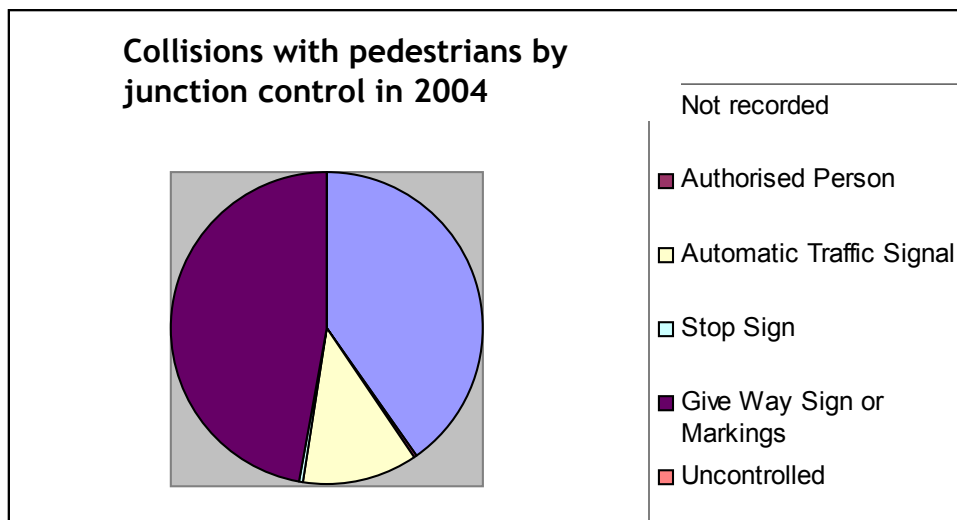
Location of collisions

2.60 A third of collisions involving pedestrians occurred in town, district and local centres, which were also the location of a fifth of cycle casualties and 18 per cent of motorcycle casualties (but eight per cent of motorcycle KSI's). Local collision plot data shows quite clearly that the majority (70%) of collisions are situated on 'A' and 'B' class roads. Across the Borough, 75% of collisions occurred at or within 20m of junctions in 2003 (excluding private driveways and private roads).

2.61 It is clear from the following pie charts for collisions involving pedestrians and cyclists, that the overwhelming majority of collisions take place on 'A' class roads.

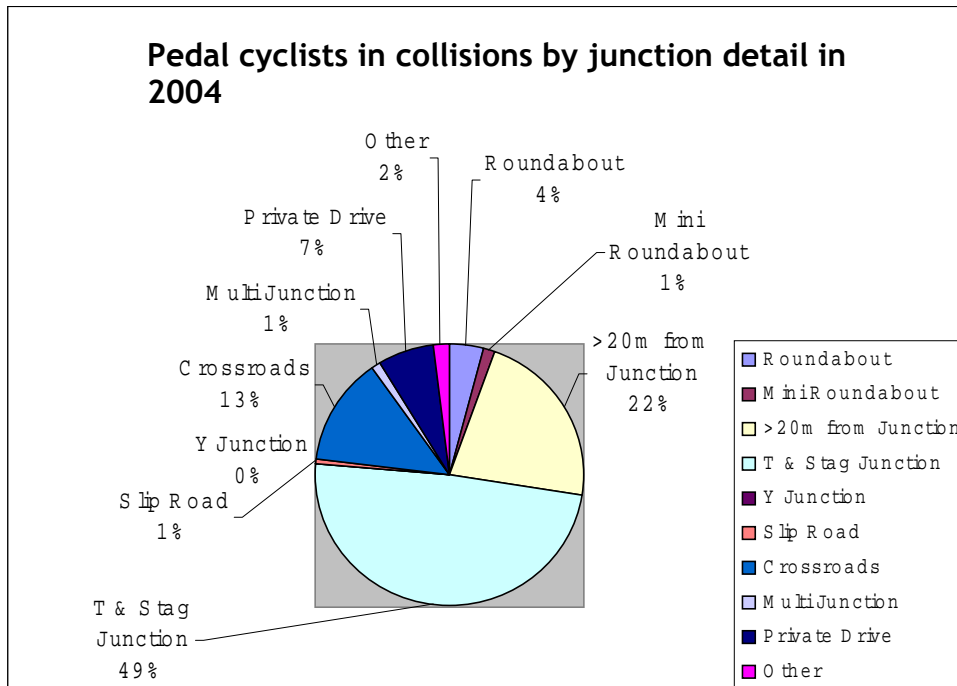


2.62 The following pie chart shows a breakdown of pedestrian collisions by junction control. For those collisions that took place at junctions, approximately three quarters were at Give Way signs or markings.

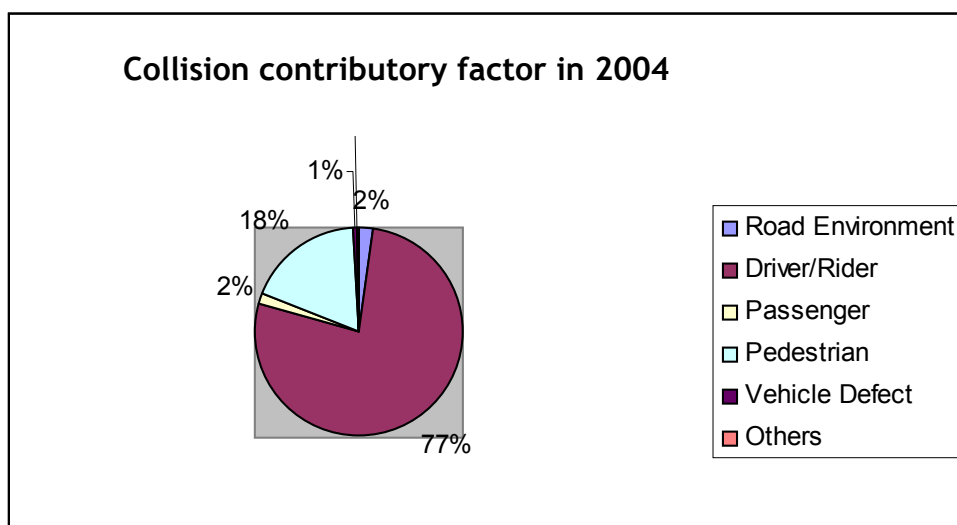


2.63 At junctions, turning movements are a particular problem, bringing motor vehicles, pedestrians and cyclists into conflict. 60 per cent (1973) of collisions occur at junctions of all descriptions; the remaining 40 per cent (1329) occurred more than 20m from a junction.

2.64 Between January 1994 and December 2004, three cyclists were killed in road traffic incidents in Brent. In general, the overwhelming majority of collisions involving cyclists take place at or within 20m of junctions, with half occurring at staggered or T junctions. This demonstrates that there would be a clear benefit from investing in junction treatments and in some cases reducing the number of junctions available to motor vehicles, though it is noted that in many cases, junctions are spaced very closely.

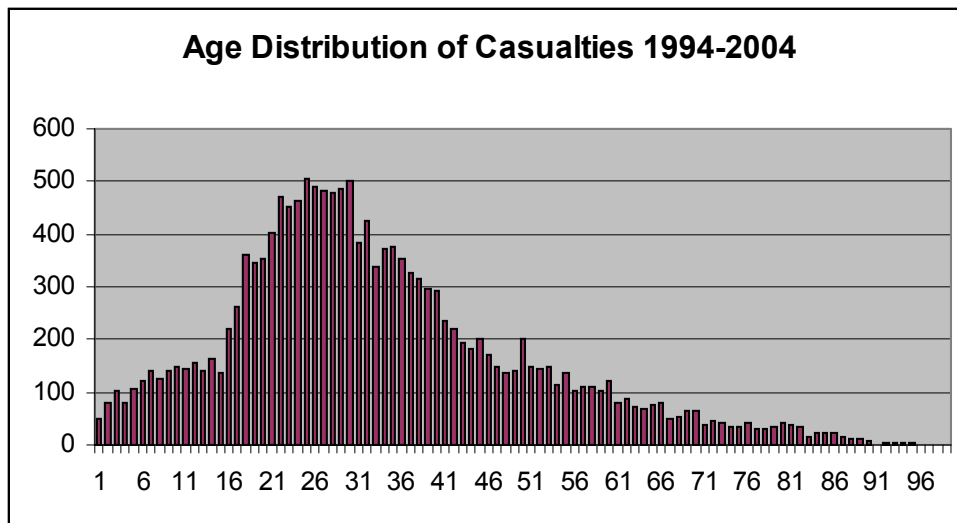


2.65 The influence of other contributory factors is shown in the following chart:



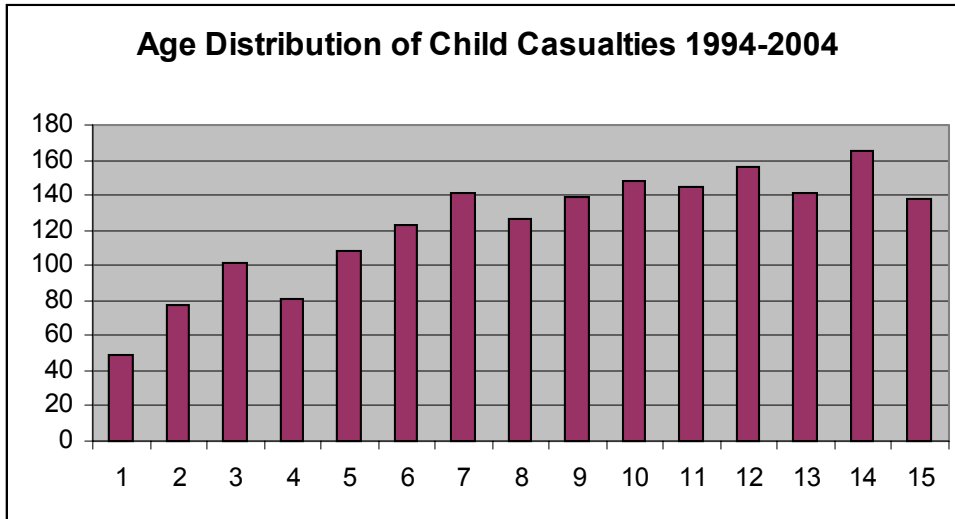
Casualties by age

- 2.66 Those with the greatest chance of being injured in a road traffic incident are within the 14-40 year age bracket. However, 'OAPs' are the most likely to be killed in an incident. Between January 1995 and December 2004, three times as many 'OAPs' (24) were killed in Brent than were children (8). Of the 'OAPs', 21 were pedestrians; of the children, six were pedestrians. This may be accounted for (partly) by the differing abilities of people of different ages to escape or recover from serious injury. The proportion holds up even over a shorter time period.

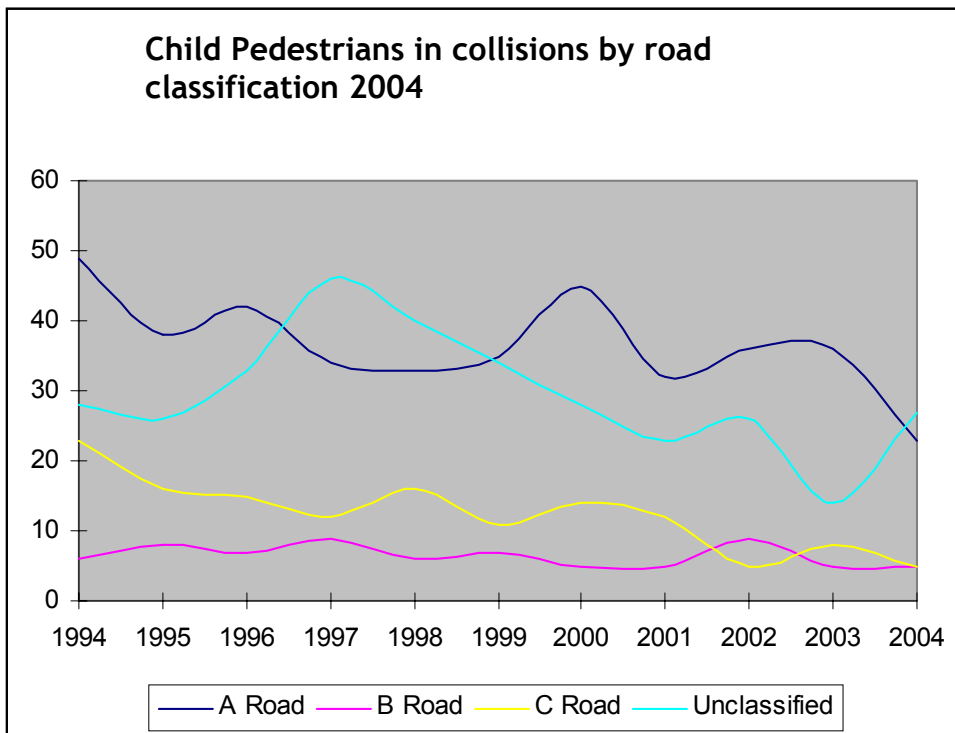


Child casualties

- 2.67 The number of collisions involving children increases in number until the age of 16, with a pronounced 'spike' at the age of 14. We have not identified any particular reason for this, however by observation we note that the source could be traceable to casualties involving BME groups by age (see *Ethnicity: Children under 16* below), however it is unclear why this is the case. To some extent this issue is being tackled through educative campaigns such as Young Transnet, which provides positive advice to young people about safe travel options.

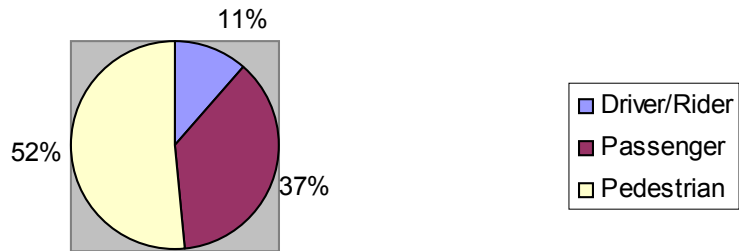


2.68 The following chart shows the trend in collisions involving children on various road types. The biggest fall in collisions is on local or 'C' class roads, with a less pronounced improvement on 'A' class roads. On 'B' class roads, the number of children involved in collisions has remained static. A more useful and accurate statistic would however be gained by measuring the number of collisions per kilometre of road, reflecting the chances of each road length by type being the site of a collision.

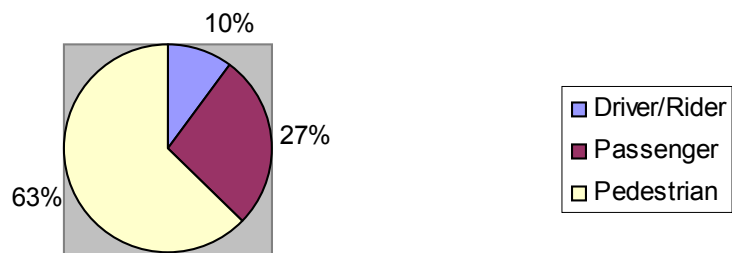


2.69 Child pedestrians were involved in approximately 52% (948) of all child casualties (1842) as demonstrated by the following chart. Child pedestrians represented 63 per cent of child KSI casualties.

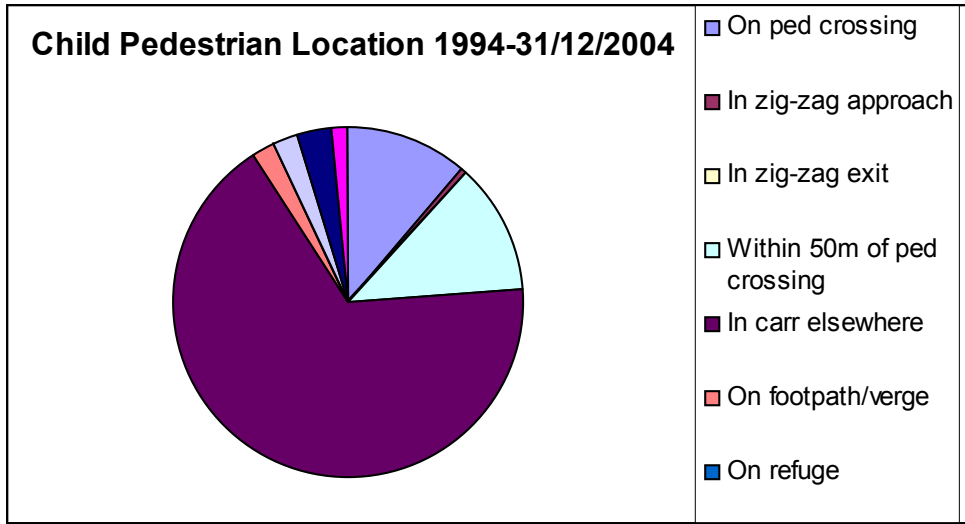
Child Casualty Class between 01/01/94 and 31/12/04



Child KSI Casualty Class between 01/01/94 and 31/12/04

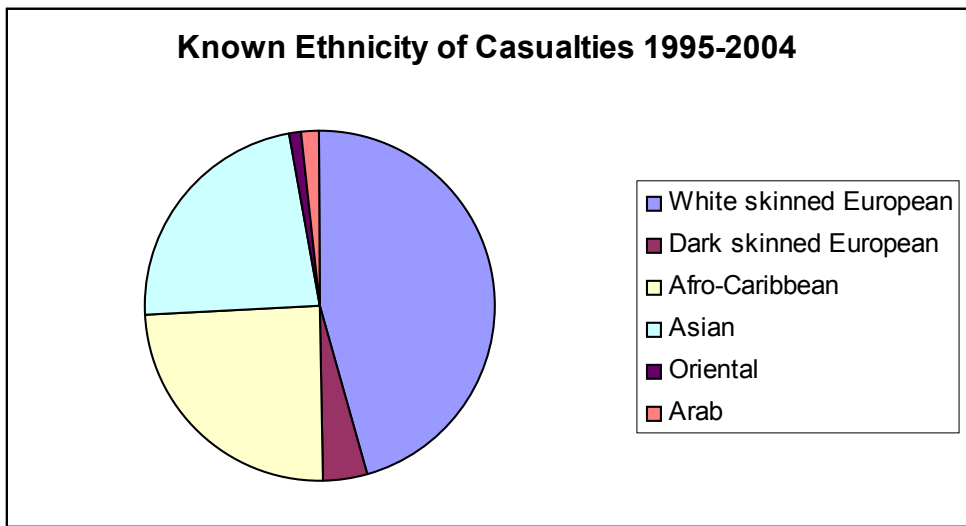


2.70 The location of child pedestrians at the time of collisions is shown by the chart below. In two thirds of cases, their location was 'in the carriageway elsewhere'. It is unclear what this demonstrates about how children want to use their streets (for example as play spaces):



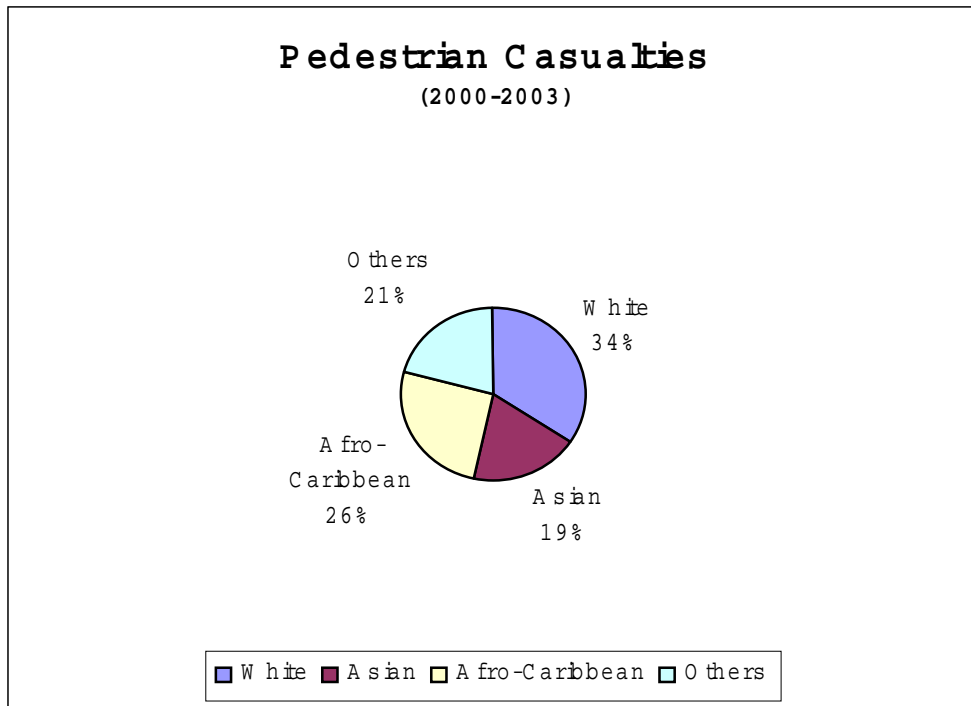
Ethnicity

2.71 Black and ethnic 'minority' groups are approximately 1½ times more at risk of sustaining an injury from a collision than white groups:



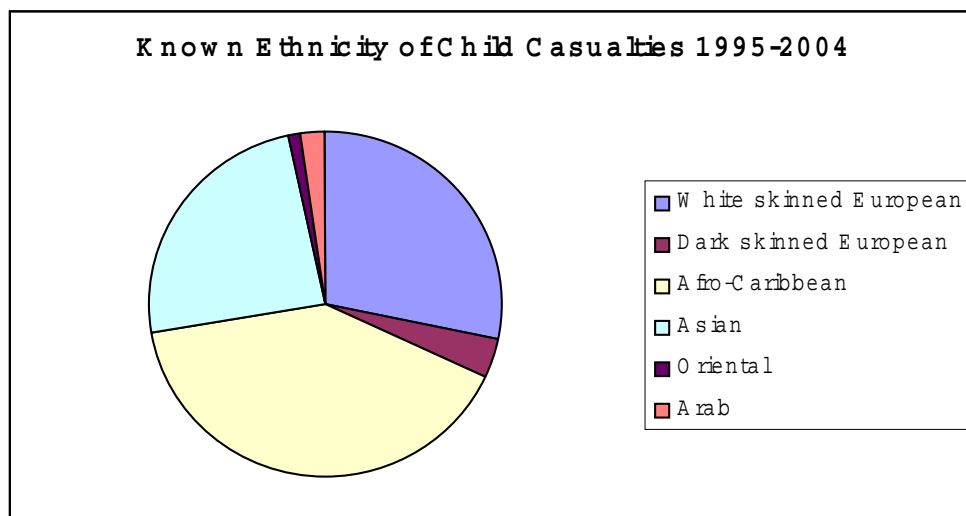
Ethnic grouping for pedestrian casualties

2.72 In the 48 month period between 2000 and 2003, 34% (399) of pedestrian casualties were white; 26% (300) were Afro-Caribbean and 19% (222) were Asian. This compares with Brent's population demographic in which 45% are white; 20% are Afro-Caribbean and 28% are Asian (Census 2001). This clearly demonstrates that non-white groups taken as a whole are disproportionately involved in collisions in the borough.

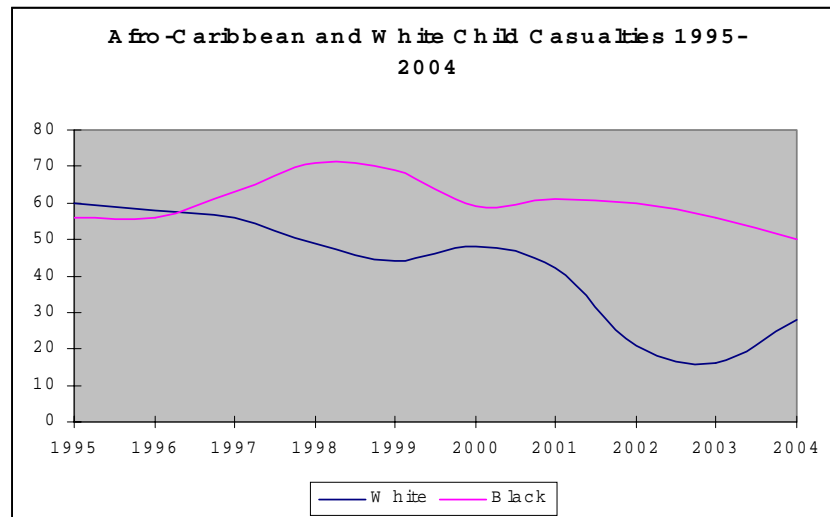


Children under 16

- 2.73 Between 2000 and 2003, the number of white child casualties fell by more than 60 per cent from 48 to 16, but for Afro-Caribbeans, the fall was only five per cent from 59 to 56. In 2003, there were more than three times as many Afro-Caribbean child casualties as there were white, yet Brent's Census population data shows that the Brent population of under-16s comprises 31% white children and 27% Afro-Caribbean children [Census 2001].
- 2.74 Taking seven ethnic child groups together, it emerges that non-white groups have a substantially higher chance of sustaining injury than white groups that is out of proportion with their representation in Brent's population demographic:



2.75 The following chart illustrates the particular difficulties facing child pedestrians in Brent. It suggests that black children may experience more risk of being involved in an injury incident than white children. In Brent there are about twice as many white children as there are Afro-Caribbean. It should be noted that in collisions since 2002, the number of black casualties has begun to fall more quickly and the number of white child casualties has increased slightly:



2.76 For further information on casualties by ethnicity, see 'Performance against targets', from page 22.

Part 3 Engineering, Enforcement, Engagement, Education and Encouragement: a framework for delivering the Road Danger Reduction Plan

Engineering

Functions of the network

- 3.1 *In accordance with the Hierarchy of Road Users, the Council adopts the position that the principal function of most of the borough's streets is a focus of the local community. The function and capacity of these streets as a conduit for motor traffic is important but secondary to their social function as part of the public realm; therefore, and in accordance with the Traffic Management Act 2004, capacity for motor traffic is not an unquestioned priority except on roads (such as the North Circular) whose principal function is for motorised travel.*
- 3.2 The following local hierarchy of road function seeks to reverse conventional thinking and bring social sustainability considerations to the fore. It is important to note that a given road (such as the Harrow Road) may feature one or more of the realms given below along its length:

The Environmental/social realm:

- Social streets (generally home zones and other streets with motor speed and access restricted); and
- Social streets with a distributor function (having a primary social function and appearance but which are also adapted to carry larger volumes of motor traffic. Example: Exhibition Road, Kensington).

The intermediate realm:

- Social streets with a through motor traffic and distributor function where motor traffic has priority, but is not allowed to *dominate* the space. Measures include de-engineering, removal of guardrailing and excessive signage, making wide, direct at-grade pedestrian crossings, providing cycle parking in the median strip and introducing lower speed limits. Examples: Kensington High Street and 20mph zones.

The travel (inter-urban) realm:

- Streets that facilitate the distribution of large volumes of motor traffic. Such streets would include the North Circular, the motorway network and lengths of borough principal roads. Other than on motorways, cyclists and pedestrians would be welcomed and their movement appropriately facilitated, however for those who would wish to avoid using such roads, an alternative well-signed network (for cyclists, comprising alternative roads and connecting (off-road) links to maximise permeability and minimise diversion) should exist.

- 3.3 This hierarchy was agreed as a local principle by Brent's Public Realm Theme Group at its meeting of 7th November 2005. A map of the network will appear in the Streetscape and Road Danger Reduction Design Manual.

General principles for Infrastructure design, Implementation and Auditing

- 3.4 *The Council will design and implement infrastructure to a high standard that meets the overall principles of the road danger reduction plan and has regard to the Functions of the Network (above), and will monitor outcomes in terms of improved safety and priority for sustainable modes.*

- 3.5 In particular:

- *The Council notes that in accordance with the Traffic Management Act 2004, all road users are 'traffic', be they pedestrians, cyclists, public transport users, animals (e.g. horses) or drivers of motorised vehicles. All have an equal legal privilege of access to and use of the highway except where specific prohibitions and restrictions apply. 'Traffic Management' is therefore inclusive of all user groups in accordance with the Hierarchy of Road Users.*
- *The Council's Hierarchy of Highway Users is especially but not uniquely relevant in town centres, areas of high density development, and around schools, colleges, university campuses and hospitals which generate high levels of pedestrian, cyclist and public transport traffic. It forms a foundation for all relevant highway-related investment in the Borough.*

The principles established by this plan will be a material consideration in the assessment of planning applications.

Highway layouts will be designed or redesigned to accord greater priority and improved conditions for pedestrians, disabled people, cyclists and public transport users in accordance with the Council's Hierarchy of Highway Users, especially at junctions and in areas with high levels of pedestrian activity. Highway layouts will contribute to encouraging the use of more sustainable transport options, notably walking and cycling, in particular by removing barriers to sustainable movement and by challenging the assumption that motor traffic capacity is a priority that overrides other considerations including the social functions of street space.

Many highway layouts and contexts, for example wide roads and junctions, gyratories and roundabouts, promote risk taking and fast, aggressive and territorial driving practices which increase vulnerable road users' perception and reality of road danger and leads them to retreat from the road environment. The Council will seek, where possible, to modify highway layouts that currently reinforce the priority and dominance of private motorised traffic over walking, cycling and public transport and act as barriers to those modes.

Highway design will have regard to the principles of good public realm. These include improving the environmental quality and accessibility of

the public realm, increasing permeability and legibility; and creating 'liveable' and 'sociable' urban environments with a sense of place, civic pride and community particularly, but not especially, in conservation areas. Much of this work will involve the omission or removal of unnecessary and aggressive features such as guard railings and 'sheep pens' which are generally unnecessary and inconsistent with the principles of road danger reduction.

The Council will develop a *Streetscape and Road Danger Reduction Design Manual*. The manual will be drawn up and regularly reviewed by Council officers as part of their programme of continuing professional development, with the help of a progressive and experienced external consultant. The Council will also encourage stakeholders to become involved in shaping the future appearance of their Borough (see *Engaging with the Public*, below).

In the process of developing the design manual, the Council may consider it appropriate to invest in CPD site visits to UK and continental European cities to view good practice in operation. Staff will be expected to develop and apply this good practice across the Borough in order to deliver Best Value.

- *Highway infrastructure will be rigorously maintained and cleansed to ensure the safety of all users. The Council will establish or meet targets for the remediation of highway surfaces (including footways and cycle tracks) and street furniture to their original standard.*

According to the Health White Paper, accidental falls are a major cause of disability and mortality for people aged over 75. Broken footway and road surfaces add significantly to road danger and the sense of poor quality run-down environments. Rigorous maintenance of infrastructure is therefore an essential component of ensuring a safe public realm that is conducive to the use of sustainable modes of transport.

- *The success of highway infrastructure design in terms of reducing the number or severity of injury collisions by controlling the sources of danger will be monitored (see *Assessing the Effectiveness of Schemes*, below).*
- *The Council will review its procedures for safety auditing of all schemes to bring them into line with this Plan.*

Hierarchy of design solutions

The bitterness of poor quality is remembered long after the sweetness of the cheapest price is forgotten
Anon

- 3.6 *Highway engineering infrastructure planning and design will have regard to the hierarchy of design solutions to reduce perceived and actual road danger, improve environmental quality, and promote local travel by sustainable modes.*

3.7 *When planning, designing, implementing and auditing highway schemes, both in general and as part of targeted road danger reduction schemes the Council will have regard to the following hierarchy of solutions:*

1. *CONSIDER FIRST: Streets that reduce road danger through design, by promoting and self-enforcing good discipline for all road users, particularly drivers of motor vehicles, and which assist the management of parking, kerbside activity, motor traffic flows and volumes and the evening-out of speeds, and assist wider objectives relating to sustainable transport.*

The layout and appearance of roads can influence road-user behaviour either positively or negatively. In the context of road danger reduction and the need to meet targets for reducing the number of collisions overall, the Council will, with this option, design streets as a tool to *improve* driver behaviour, and as places that are *conducive to more walking and cycling* because of the quality of their public realm. BSP schemes include home zones (Streets for People) and town centre schemes.

The Council will take the opportunity wherever feasible to seek, through road design, to reduce the gap between the convenience, comfort and travel time of journeys by car and those on foot or pedal cycle. For example, it would be desirable to enable pedestrians to cross a signalised junction in one stage rather than, as is often the case, having to wait for two signal phases when they wish to follow a diagonal desire line. It would also be beneficial to improve the attractiveness of local high streets so as to encourage people to shop and enjoy social activities locally.

As part of packages of measures, the Council will remove or not install unnecessary 'aggressive' engineering features and street furniture that emphasise the dominance, speed and priority of motorised vehicles. Options for 'de-engineering' streets could include the removal of unnecessary road markings, sheep pens, multi-stage pedestrian crossings, subways and excessive signing.

High quality materials, landscaping, contextual urban design techniques and improved carriageway layouts, together with minimal street furniture and signage, are features of street environments that 'naturally' calm motor traffic (often by introducing a degree of uncertainty for drivers) whilst encouraging local journeys by more sustainable modes. The design of streets should, where possible, achieve effective and self-enforced management of motor traffic flows, parking and kerbside activity.

Stakeholder involvement is crucial to the design of streets to influence improved behaviour. For example, the Council has worked with Living Streets to identify the problems experienced by pedestrians in Harlesden - this work will form the basis of the regeneration of the town centre's walking environment, drawing on the experience gained by Transport 2000 with its DfT-funded *Revitalising Communities on Main Roads* pilots [Transport 2000 Trust, 2004].

The Council will study and improve the *effectiveness* of high quality solutions in this category with regard to road danger reduction, modal shift, the diversion of motor traffic to neighbouring areas, the impact of measures on road user groups including the emergency services and buses and will assess the influence of stakeholders upon the design and implementation of features.

2. *Application of a simple palette of 'standard' solutions including additional pedestrian crossings and phases, vertical and horizontal traffic calming features, junction tables, speed limits, camera enforcement, and parking, motor traffic and kerbside activity management, taking into account road danger reduction and pedestrian desire lines. The Council will upgrade this solution in the hierarchy if appropriate and as soon as finances and work schedules permit.*

The benefit of this solution is that more immediate and less costly changes can be applied across a wider area; however, without careful thought, it may not meet other objectives, namely to influence road user behaviour, reduce aggression in the street layout, give desired levels of priority and encouragement to walking and cycling, or very significantly improve environmental quality. 20mph zones, safer routes to school, junction treatments, 'main road' traffic calming and targeted traffic calming are examples of the application of standard solutions.

The Council will study and improve the *effectiveness* of standard solutions with regard to road danger reduction, modal shift, the diversion of motor traffic to neighbouring areas, the impact of vertical and horizontal features on cyclists, emergency vehicles and public transport and will assess the influence of stakeholders upon the design and implementation of features.

3. *CONSIDER LAST: 'Road safety' solutions whose primary objective appears to be to make a road environment that is forgiving of poor driving standards and high speeds and which generally reinforces the dominance of motor traffic. Such measures may include for example, guard railing, excessive signage and wider / 'faster' junctions that may also restrict pedestrian movement and increase the risk of injury to cyclists.*

There are circumstances, such as on the North Circular, where the full range of standard 'road safety' solutions that fit this category should be applied in order to deliver a predictable environment for travel that minimises the risk of motor vehicles colliding with vulnerable road users. *Functions of the Network* (Para. 3.2 above) provides further information.

It will also continue to be essential to provide guard railing in specific locations, such as outside schools and at the end of public alleyways where they emerge onto the road. However the Council agrees with the Mayor's Road Safety Plan that in most circumstances guard railing has no proven benefit and should be removed or not implemented.

Walking and Cycling specific schemes

- 3.8 The Department for Transport LTN1, *Policy, Planning and Design for Walking and Cycling* provides useful guidance for Brent in relation to the design of infrastructure. In particular it sets out a useful hierarchy of measures that are consistent with the Road Danger Reduction approach:

Consider first	Pedestrian	Cyclist
	Traffic reduction and Speed reduction	Motor traffic and motor speed reduction including junction treatment, 'hazard' site treatment, traffic management.
	Reallocation of space to pedestrians	Redistribution of the carriageway (bus lanes, widened nearside lanes etc)
	Provision of direct at-grade crossings	Cycle lanes, segregated tracks constructed by reallocation of carriageway space away from motors.
Consider last	Improved pedestrian routes on desire lines	Conversion of footways / footpaths to unsegregated shared use cycle tracks
	New pedestrian alignment or grade separation	

The Council will not consider solutions shown on the grey background in the table without the extended involvement of relevant stakeholder groups.

Enforcement

- 3.9 *The Council will continue to work with the police and other partners to ensure that enforcement is strengthened and remains a strategic priority for road danger and collision (severity) reduction.*
- 3.10 Good road user behaviour is dependent on efficient and effective enforcement of road traffic law as well as the 'messages' conveyed by the travel environment. The contribution made to road danger reduction by the Metropolitan Police, community wardens and parking enforcement personnel is crucial to raising public confidence particularly in relation to increasing travel on foot and cycle, and to reducing the number and severity of injury collisions.
- 3.11 The behaviour of drivers in charge of motorised vehicles makes a majority contribution to the causation, frequency and severity of collisions [ACPO National Strategic Assessment - road policing, November 2004].
- Empirical evidence: driver error, in Autoglass: Road Risk, 1996*
- 3.12 A report by Autoglass [Road Risk 1996] shows the results of an analysis of 300 drivers on the basis of behavioural observations and detailed travel diaries kept by 50 of the respondents. Key findings of the study were as follows:

- Drivers admitted on average to making 2.6 mistakes for each of their 19 weekly trips, a total of 49 errors per week;
- The 22 main errors ranged from reckless driving to drink-driving and 'nodding off' at the wheel;
- Most risks occurred as a result of basic carelessness, including 'Sunday driving', 'thoughtless driving', 'nodding off' or 'getting lost'. Carelessness occurred in almost every journey (98 per cent).
- Bad driving - including using a mobile phone, misjudging the road and swerving occurred in 83 per cent of the trips sampled;
- Thoughtless driving, including failure to signal intentions happened in 28 per cent of trips and contributes to 19 per cent of crashes;
- Reckless driving, including driving too close to the vehicle in front and undertaking occurred in 20 per cent of trips and is a factor in 22 per cent of collisions;
- The most common combination of collision factors involving speed and reckless driving. Bad driving in poor weather was cited as the 'fastest route to an accident'; and
- Drivers aged 16 to 34 are the most likely to speed, drive distracted, talk to passengers, drive thoughtlessly and take risks.

3.13 The baseline data and background information collected for this plan show, in summary, that key factors contributing to the likelihood of collisions include:

- Speed, accounting for between 15% and 22% of injury crashes, depending on the influence of other factors [DfT 2004];
- Dangerous driving (which has a wide definition and can be confused with driving without due care and attention);
- Impatience and aggression (leading to dangerous driving or driving without due care and attention, and inappropriate speed);
- Driving without due care and attention or with a lack of social and technical awareness of driving in the vicinity of other road users, particularly elderly and disabled pedestrians, child pedestrians, cyclists and powered-two-wheelers. This may include failure to keep abreast of changes in the Highway Code;
- Driving whilst under the influence of drugs and alcohol, a problem that may be far more widespread than official statistics suggest [Davis, 1993];
- Illegal manoeuvres, such as making banned turns, and disobeying red lights and other regulations;
- Inadequate or defective eyesight;

- Illegal, careless, inconsiderate and obstructive parking and kerbside activity; and
- Illegal activities. For example, 11 women a week are sexually harassed or assaulted in London having accepted offers of rides in unlicensed minicabs. Minicabs and other private motor vehicles may be uninsured, unlicensed, untaxed and unroadworthy. The road network is also used to facilitate other (unrelated) criminal activity.

Criminal, wilfully dangerous and anti-social driving

- 3.14 According to the Association of Chief Police Officers, the four most significant dimensions of unlawful, disorderly and dangerous road and vehicle use are, drink and drug driving, speeding, failure to use seat belts and driving that is dangerous, careless or threatening to other road users [Policing Performance Assessment Framework Home Office]
- 3.15 In Brent, the percentage of collisions with contributory factors described as 'driving too fast' and 'driving too close to the vehicle in front' have both *risen* and are contributory factors in 30 per cent of collisions, indicating perhaps a degree of risk compensation. Injudicious U-turning and right-turning manoeuvres contributed to 12 per cent of collisions in the borough. However the percentage of collisions with contributory factors 'disobeyed Stop or Give Way markings' has more than halved, from 178 in 1994, to 64 in 2004.

Selection of contributory factors	% in 2004
<i>Main Contributory Factor</i>	
Speed / Driving too close to vehicle in front	31.65
Disobeyed ATS	1.28
Failure to give precedence to pedestrian at zebra/ pelican crossing	1.39
Turning left	0.85
Injudicious U-turn / Right turn	12.29
Disobeyed STOP or GIVE WAY sign	6.84
Drink/Drugs Driver	2.46
Percentage of all collisions in 2004	56.79

- 3.16 At present, the Metropolitan police are responsible for the enforcement of all traffic offences committed by drivers of moving vehicles and in addition certain parking offences on the public highway. However, the Traffic Management Act gives local authorities greater powers to take over from the police the enforcement of a number of moving traffic offences, such as yellow box and banned turn contraventions (following a successful pilot in London under the Local Authorities and Transport for London Act 2003). Other powers also introduced to local authorities include the ability to issue parking penalty charges by post, including for parking in pedestrian crossing areas.

Tackling speed

- 3.17 *Traffic speeds will be evened-out to appropriate levels across the Borough, with a 'default' 20mph limit being applied in most circumstances. The Council will support the work of the Metropolitan Police to enforce appropriate speeds and will work to achieve self-enforcement through the*

implementation of physical features of highway design and specific measures, such as street design that influences improved behaviour. The Council will also lobby for greater enforcement of traffic speed limits and a London-wide 20mph 'default' limit.

3.18 *Targets for evening-out speeds will be set, having regard to:*

- *The Mayor's targets and performance indicators;*
- *The need to raise the traffic status of pedestrians, cyclists and public transport users;*
- *The need to reduce motor traffic speeds in most circumstances, in particular to ensure compliance with existing speed limits;*
- *The need in some circumstances to increase average motor traffic speeds nearer to the prescribed limit to counter increased emissions of carbon dioxide and other negative effects of congestion, whilst at the same time reducing the growth in volume of traffic in accordance with the Mayor's Transport Strategy as a minimum;*
- *The need to reduce the incidence of high 'burst' speeds, such as between traffic signals and on clear roads, and to design and enforce signals to reduce the level of red light running.*

3.19 *Excessive speed was a contributory factor in about 15% of a sample of collisions studied by the Department for Transport in 2004. However the study states that this is likely to be an underestimate because speed will have been a part of the reason for other factors such as a failure to judge another person's path or speed, which caused 623 (22%) of the sampled 2,795 collisions. However, the DfT was unable to quantify these contributions directly.*

3.20 *Speed and close-following were contributory factors in almost 32% of collisions recorded in Brent and, taken as a group, the largest single contributory factor overall.*

Tackling drink-and drug-driving offences, aggressive and anti-social driving, illegal manoeuvres; illegal parking and uninsured, untaxed and unregistered vehicles.

3.21 *The Council supports the work of the Metropolitan Police to control the level of drink and drug driving, illegal manoeuvres, aggressive and anti-social driving. In particular, the Council recognises and supports the role of CCTV enforcement of improved driver behaviour.*

- *The Council will use its enforcement powers to control and manage parking and kerbside activity and supports measures such as CCTV enforcement of bus and compulsory cycle lanes.*
- *The Council will invest in Controlled Parking Zones to relieve parking stress and protect and control residential parking.*

Controlled parking zones (CPZs) are an effective measure for reducing the amount of parking stress in the affected area and protect residents' and business parking. Fees collected for parking are used to fund enforcement staff; surpluses are channelled to fund CPZ extensions, and new schemes.

- *The Council supports the work of the police, community wardens and parking enforcement personnel to reduce the number of uninsured, unregistered and untaxed vehicles through campaigns such as 'Operation Cubit' and by providing a police presence in affected areas.*

Controlled Parking Zones are beneficial to this work because they are regularly monitored by enforcement personnel who are able to identify and report vehicles without VED discs and abandoned vehicles generally.

Tackling poor driving technique, which contributes to dangerous driving, driving without due care and attention; lack of experience and judgement; distraction; driving with poor technical and social awareness; and driving without corrected vision.

- 3.22 *The Council will seek to improve driving standards locally by supporting the work of the police to enforce proper driving technique and by lobbying for increased policing and progressive driver training as an alternative to some penalties.*
- 3.23 *The Council will seek to improve driving standards locally by supporting the work of Transport for London and the Metropolitan Police to educate and inform the public about good driving technique and social awareness.*
- 3.24 A number of potential or existing initiatives fall under this heading—for example, advanced driver training and driving-related anger management courses. Encouraging employers to provide cycle training courses would raise their drivers' awareness of the needs of cyclists when driving.

Additional enforcement and crime and disorder work.

- 3.25 *The Council will in addition to other measures detailed in this Road Danger Reduction Plan:*
- *Incorporate in the Crime and Disorder Reduction Strategy, policies to reduce unlawful and anti-social road use and include discussion of related issues in the Crime and Disorder and Community Safety Partnership;*
 - *Encourage the Metropolitan Police to provide cycle police squads in all policing areas as this has proved to be a highly effective measure;*
 - *Incorporate educational materials with PRNs and CPZ invoices to explain the reasons for traffic regulations and the social and technical consequences of non-compliance;*
 - *Support the work of the licensing authorities and Metropolitan Police to counter illegal minicabs and taxis and ensure the safety, quality and reliability of licensed services;*

- *Continue to improve street lighting in the Borough and support TfL's Safer Travel at Night programme of works and publicity to help reduce crime. This will include monitoring of the outcomes of the Crime and Disorder Strategy which will include traffic offences; and*
- *Continue to ensure that all drivers of community transport vehicles are police-checked and receive driver and customer awareness training.*

3.26 Further details about crime and disorder policies can be found in the Local Implementation Plan and Brent Crime and Disorder Strategy.

Engaging with the Public

3.27 *The Council will engage the assistance of the public and stakeholders in the design and implementation of its road danger reduction projects.*

In 1996, a group of residents in the Methleys area of Leeds decided to turf their street. They also agreed among themselves to keep below 10mph when driving their cars in the local neighbourhood. A week-long 'On-the-Streets' festival followed, giving local people a chance to reclaim space from the car. Children were able to play out in safety, and neighbours chatted and worked together on the street. They hung banners and chalked '10 smiles an hour' road signs on the tarmac...

[Living Streets, a guide to Cutting Traffic and reclaiming Street space, Transport 2000, 1999]

3.28 When people, as individuals or in stakeholder groups, are involved in shaping their environment they can bring additional resources outside the scope of local authorities, including democratic participation and accountability; empowerment, environments that are responsive to people's needs; speedier progress, local knowledge and sustainability. [Nick Wates, 2000]

3.29 Public involvement will be crucial to the development and success of the measures described in this Road Danger Reduction Plan. In particular:

- The public uses the road network on a daily basis in their localities; they are therefore the best commentators on local conditions and their own sense of fear, safety and wellbeing. Disabled people and children are particularly valuable sectors of the population, not least because measures that benefit them are highly likely to benefit the wider public too;
- The public can actively help to plan and design their own environments; this is particularly true in the case of major projects such as streets for people ('home zones') and town centre regeneration schemes. Well-facilitated public involvement tends to result in appropriate schemes that are in tune with what most people want, taking into account their daily needs;

- By involving and empowering the public from the outset of schemes, agreement can be reached earlier and costly mistakes and failures can be avoided. Moreover, communities can begin to take ownership of and pride in their areas, leading to a greater sense of community and better local management and maintenance;
 - Involving the public builds people's confidence, social awareness and knowledge - It can develop their skills and ability to co-operate in the shaping of their environment. This enables them to tackle other challenges individually and collectively and represents an investment in educational and personal development for individuals involved; and
 - The direct involvement of the public in schemes may be considered an important part of attempting to achieve attitudinal change with regard to what constitutes good driving, sustainability and social awareness.
- 3.30 Public engagement cannot happen from scratch however. A respected framework with parameters needs to be introduced first as a baseline for further work. The Road Danger Reduction Plan and associated documents form the policy element of that framework.
- 3.31 Once work has been implemented, the Council will compare the level of public satisfaction with desired outcomes, by measuring indicators such as perceptions of fear or safety, environmental quality and modal shift, by asking people for their views. A record of 'lessons learned' will be maintained. Success will be measured in terms of people's willingness to walk, cycle and use public transport for more of their journeys instead of using the car – and allow their children to do so independently.

Education and Encouragement

3.32 *The Council will support and develop marketing techniques that encourage and enable people to travel safely and sustainably throughout the Borough in accordance with the policies and principles of the Road Danger Reduction Plan, including:*

1. *Greater emphasis will be applied to seeking improvements in drivers' social and technical awareness and attitudes in relation to other road users, particularly elderly and disabled pedestrians, children, cyclists and motorcyclists. At present this can be achieved by providing information and raising the social status of what constitutes good driving and by encouraging take-up of advanced driving courses. The Council supports the provision of driver training as an alternative to penalties for driving offences.*
2. *The Council will seek to increase public understanding of the needs of different modes of transport in relation to one another.*

For example, TfL produced a leaflet entitled '*I hate lorry drivers / I hate cyclists*' to explain to HGV drivers the needs of cyclists and the amount of danger that HGVs represent. The same leaflet explained to cyclists the needs of HGV drivers and the likely consequences of particular cycling manoeuvres around HGVs.

3. *The Council will support initiatives to instil attitudinal changes about driving in young people of pre-driving age, based on good practice elsewhere that is consistent with the general thrust of Road Danger Reduction. Courses will include elements covering social awareness and environmental responsibility.*
4. *The Council will encourage people to travel by sustainable modes of transport, particularly walking and cycling for more of their trips. It will support this by providing progressive street-based pedestrian and cycle training for adults and children.*

Initiatives such as Young Transnet, Walk to School Week and cycle training are opportunities for young people to learn how to get around safely on foot or pedal cycle. The Council will continue to explore other initiatives that are consistent with the Road Danger Reduction approach.

5. *The Council supports TfL's Safer Travel at Night campaign and will facilitate the distribution of publicity information to the public on request.*

TfL's Safer Travel at Night initiative is designed to inform people of the risks incurred by travelling in unlicensed minicabs. The award-winning website and advertising / publicity campaign, aimed principally at women, has been successful at reducing the number of people using unlicensed cabs. A single telephone number for booking taxis is in operation - 0871 871 8710.

More details about this can be found in the Local Implementation Plan and the Crime and Disorder Strategy.

Modal Shift

- 3.33 *The Council will meet the targets for reducing the growth of motor traffic volumes set in Policy 4G.Pr12 of the Mayor's Transport Strategy; it will also set challenging targets to reduce the volume of private motor traffic in ways that are in accordance with the policies and principles set out in the Road Danger Reduction Plan.*
- 3.34 *Consistent with the Mayor's Transport Strategy, the Council will not default to increasing the amount of capacity for private motor vehicles in the Borough (capacity for buses and taxis will be protected or enhanced, provided that this does not result in increased capacity for private motor vehicles or disadvantage pedestrians and cyclists).*
- 3.35 *The Council will encourage the use of sustainable modes of transport as alternatives to the private car; in particular it will enhance people's confidence to walk and cycle and allow their children to do so independently.*
- 3.36 **Local transport matters:** A third of all journeys are under a mile and half are less than five miles in length. [Joseph 2004]. Three quarters of the journeys of under a mile are walked or cycled [DoT in Hillman 1992]. By promoting and facilitating improved local access by the sustainable modes, it should be possible to achieve the rejuvenation of local communities in

terms of their prosperity, local employment and services and social cohesion. More people walking and cycling the streets (including journeys to and from public transport) means less crime; less motor traffic (impact) means more local social interaction [Appleyard, 1978].

- 3.37 A genuine reduction in road danger is a central part of the Council's overall aim of delivering sustainable transport and reducing the number of injury collisions. A number of schemes that meet the Road Danger Reduction Charter objectives (described in the introduction) are already being introduced in the Borough, including 20mph zones; safer routes to school and school travel plans; home zones; and town centre schemes. Increasingly, these will be designed to create environments that are conducive to walking and cycling (the Council notes the importance of walking and cycling as part of trips that incorporate the use of public and private transport).
- 3.38 Reducing the volume and speed of motor traffic will have a direct positive effect on the public perception and amount of danger on Brent's roads. Local Implementation Plan (LIP) proposal 4G.Pr12 (in Chapter 5) sets out how the Council will meet and set challenging targets to exceed the Mayor's targets for reducing the rate of motor traffic growth. On this basis, the Council considers it unwise to implement measures that increase capacity for private motor traffic; instead, walking, cycling and public transport use should be made easier, safer and more attractive.
- 3.39 The Council recognises that the success of its road danger reduction plan will be measured in part by how confident people feel about walking and cycling in their locality. Thus measures of performance will include the amount of walking and cycling, motor traffic volumes and public attitudes to walking and cycling, and allowing their children to travel independently.
- 3.40 Fortunately, experience in the UK and continental Europe and shows us that, particularly with progressive approaches to road safety, increases in walking and cycling are proven to go hand in hand with reductions in the number of collisions. We conclude therefore that our approach to road safety, coupled with measures to encourage modal shift will enable us to meet headline targets for reducing the number of collisions, particularly those resulting in serious injury or death.

Health: Tackling inactivity and improving air quality

- 3.41 The Road Danger Reduction Plan seeks to meet casualty reduction targets whilst increasing the role of the active travel modes. The Council's focus for health is on creating an environment which positively encourages walking and cycling, since the only sustainable forms of exercise for the vast majority of people are those which can be built into their everyday lives [Hillsdon and Thorogood].
- 3.42 *The Council will work with the Primary Care Trust and the London Health Commission to promote active and healthy travel in order to increase the amount of healthy physical exercise undertaken by the population and integrate walking and cycling into daily exercise routines. This will be supported by engineering and urban design measures where appropriate.*

- 3.43 *The Council will introduce a Low Emissions Zone and support proposals for a London-wide zone that will lead to improvements in air quality in the affected areas, and thus to improved health and well-being.*
- 3.44 The Council recognises that motor traffic speed reduction may result in an increase in carbon dioxide from individual motor vehicles. It will seek to offset this disadvantage by encouraging more walking and cycling and by implementing measures to deter excessive motor traffic. The Brent Low Emission Zone will also play an important part, and the Council supports the London-wide Low Emission Zone.
- 3.45 Please refer to Brent Local Implementation Plan for more information on low emissions zones and air quality.

Associated Documents

- 3.46 The Road Danger Reduction Plan forms an integral part of the Local Implementation Plan to 2011. In addition, the Council will draft, taking into account road danger principles and policies, the following policy and design documents:
- *Brent Local Implementation Plan:* The Road Danger Reduction Plan forms an integral part of the Council's policies in relation to the Mayor's Transport Strategy. The Council believes that the approach adopted in the Road Danger Reduction Plan represents the closest possible 'fit' with the Mayor's policies for road safety and sustainable transport. The LIP influences the annual Borough Spending Plan bid to Transport for London for scheme funding.
 - *Brent Streetscape and Road Danger Reduction Design Manual.* This document will translate the policies of the Road Danger Reduction Plan, Walking Plan, Local Implementation Plan and Cycling Action Plan to bridge the gap between policy and implementation and deliver improved engineering and urban design in the borough.
 - *Brent Cycling Action Plan* reflects the policies contained in the London Cycling Action Plan together with the principles and policies of the Road Danger Reduction Plan.
 - *Brent Walking Plan* will reflect both the Mayor's Walking Plan and the principles and policies of the Road Danger Reduction Plan.
 - *Brent School Travel Plan Strategy* seeks to increase the number of schools that are actively involved in promoting measures to reduce car-borne school trips. School Travel Plans are linked to eligibility for measures to improve safety on the journey to school ('Safer Routes to School').
 - *Brent Parking and Enforcement Plan* reflects the principles and policies of the Road Danger Reduction Plan and has regard to the Cycling Action Plan, School Travel Plan Strategy and the Walking Plan. It will be reviewed to have regard to the Streetscape and Road Danger Reduction Manual when it has been developed and adopted.

- *Brent Local Development Framework* will have regard to all of the policy documents issued by Brent's Transportation Policy team.

Part 4 Targets and Actions

OBJECTIVE		RESPONSIBILITY OF		
Overall aim: To develop and evolve Brent's transport policies using the Road Danger Reduction Forum's Charter as the basis for road safety, sustainable transport and building a better borough.				
TARGETS AND PERFORMANCE MEASURES		TIMESCALE AND COMMENTS		
Reduction of 40% in numbers KSI		By 2010 compared with 1994-8 baseline		
Reduction of 50% in number of children KSI		2010		
Reduction of 10% in number of slight injuries per 100 million vehicle kilometres		2010		
Review Road Safety around primary and secondary schools		2008		
Install 20mph zones around schools where schools road safety reviews deem it necessary		2011		
Maintain or increase the proportion of personal travel made by means other than the car whilst maintaining downward trend in collisions, severity of injuries and fear of road danger. Includes a 10% increase in journeys made on foot between 2001-2011 and an increase of at least 80% in cycling in London between 2001 and 2011.		Timescales incorporated in target (left)		
ACTIVITIES TO BE UNDERTAKEN				
Actions	Milestones	By Whom?	When?	Resources
<i>Road Danger Reduction Plan</i>				
Development and adoption of Brent's Road Danger Reduction Plan	• Draft to be produced for inclusion in draft LIP	TS	Done	Council's own resources
	• Consultation, modification and adoption	Members	Mar 2005- Jan 2006 Done	
	• Review	AP	Annual with BSP	
Find and develop new methodologies for measuring road danger	• Established set of methodologies	RSU*	Ongoing	LIP/BSP/ Council
	• Implementation	RSU*		
<i>Engineering</i>				
Integration of RDR proposals into LIP	• Ensure that RDR forms basis of Brent's transport policies in the LIP and future transport policies	TS	Done	LIP

Develop and regularly review Streetscape and Road Danger Reduction Design Manual via CPD seminars and exercises	<ul style="list-style-type: none"> • Draft to be produced in partnership between TS and TM with support of Directors • Consult with transport stakeholder groups and modify • Adoption and annual review 	TS / TM	2006	TS/TM
		TS	2006	TS/TM
			2006-	
Develop programme and implement engineering strategic priorities, principles and hierarchy of solutions with reference to Hierarchy of road user groups.	<ul style="list-style-type: none"> • Develop BSP bids • Design and implement schemes with reference to RDRP, Streetscape and Road Danger Reduction Design Manual and CPD 	TS/TM	Ongoing	LIP
Engaging with the Public				
Engage with the public on all infrastructure schemes. Ongoing--corporate				BSP
Changing behaviour: Enforcement				
Incorporate road crime in Crime and Disorder Plan	<ul style="list-style-type: none"> • Incorporation of text and activities together with work plan 	TS/CDU	Next iteration of C&DP	CDU
Engage with the police and other partners to ensure that enforcement is strengthened and remains a strategic priority for road danger and collision reduction	<ul style="list-style-type: none"> • Ensure that moving traffic offences are included in the Crime, Disorder and Community Safety Strategy • Strengthen or develop working relationships between enforcement agencies and Council. • Develop programmes and initiatives in partnership with TfL 	TS/CDU	2005-	BSP/CDU
		TS/CDU/SC	2005-	TS
		TS/CDU	2005-	TS
Modal Shift				
Implement Local Implementation Plan	<ul style="list-style-type: none"> • Adopt and implement Local 	TS	2005-	LIP

<p>Proposal 4G.Pr12; and</p> <p>Set challenging targets for reducing volumes of private motor traffic in Brent</p>	<p>Implementation Plan proposal 4G.Pr12 including target for reducing the volume growth of private motor traffic</p> <ul style="list-style-type: none"> • Establish challenging targets to achieve real volume reductions in private motor traffic • Develop land use planning policies in the Local Development Framework to reduce car dependency and the need to travel (this is in accordance with PPG13). 	<p>TS/TM</p> <p>PL/TS</p>	<p>From completion of Borough traffic survey</p> <p>2005/6</p>	<p>LIP/TM</p> <p>LIP/LDF</p>
<p>Develop targets and actions for reducing the rate of growth of private motor traffic</p>	<ul style="list-style-type: none"> • Appoint Traffic Manager • Adopt Policy and associated targets for 4G.Pr12 in LIP • Find measures for enhancing capacity, permeability and conditions for walking, cycling, bus and taxi use that do not result in an increase in capacity for private motor traffic. • Support traffic management stance adopted by Councillors in December 2004. • Develop Parking and Enforcement Plan as a tool for reducing volume of private motor traffic. 	<p>ED</p> <p>TS/TM</p> <p>TS/TM</p> <p>TS</p> <p>TS/TM</p>	<p>2005</p> <p>2005-</p> <p>2005-</p> <p>Done</p> <p>Done</p>	<p>TfL</p> <p>LIP</p> <p>LIP/TM</p> <p>TS</p> <p>TS</p>

Health: Tackling inactivity and improving Air Quality				
Develop working relationships with the Primary Healthcare Trust and the London Health Commission to promote active and healthy travel.	<ul style="list-style-type: none"> Establish working relationship with PCT, London Health Commission and Healthcare Trust to obtain their support for sustainable, healthy, active travel. 	TS	2005/6	TS
	<ul style="list-style-type: none"> Incorporate jointly-developed proposals in the BSP process. 	TS	2005 in BSP for 2006/7	TS/BSP

<p>Support and develop marketing techniques that encourage and enable people to travel safely and sustainably throughout the Borough.</p> <p>This includes raising social and technical awareness of drivers, developing people's ability to travel confidently and safely on foot and cycle and measures to improve personal safety.</p>	<ul style="list-style-type: none"> Develop a range of publicity and marketing materials in support of road danger reduction policies and principles for safer and sustainable travel. Arrange, sponsor and attend events such as National Bike Week, National Walk to School Week and European In-Town-Without-my-Car Day. 	TS	2005-	TS/BSP
	<ul style="list-style-type: none"> Develop positive and progressive methods of cycling and pedestrian training for children and adults and support initiatives for increasing social and technical awareness among motorists 	TS	2005-	TS/BSP
	<ul style="list-style-type: none"> Support and develop initiatives under the 'Good Going' banner 	TS	2004-	TS/BSP/ TfL
	<ul style="list-style-type: none"> Support and advise on the development of travel plans for businesses, schools and communities. 	TS	2005-	TS
	<ul style="list-style-type: none"> Lead by example - research and implement best practice for the Council and disseminate lessons learned from experience. 	TS	2005-	TS

Bibliography and Useful References

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Roadpeace;
Transport 2000 Trust – Slower Speeds Campaign; and
London Cycling Campaign.

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Accidents Summary
3 Years to 31/12/2004

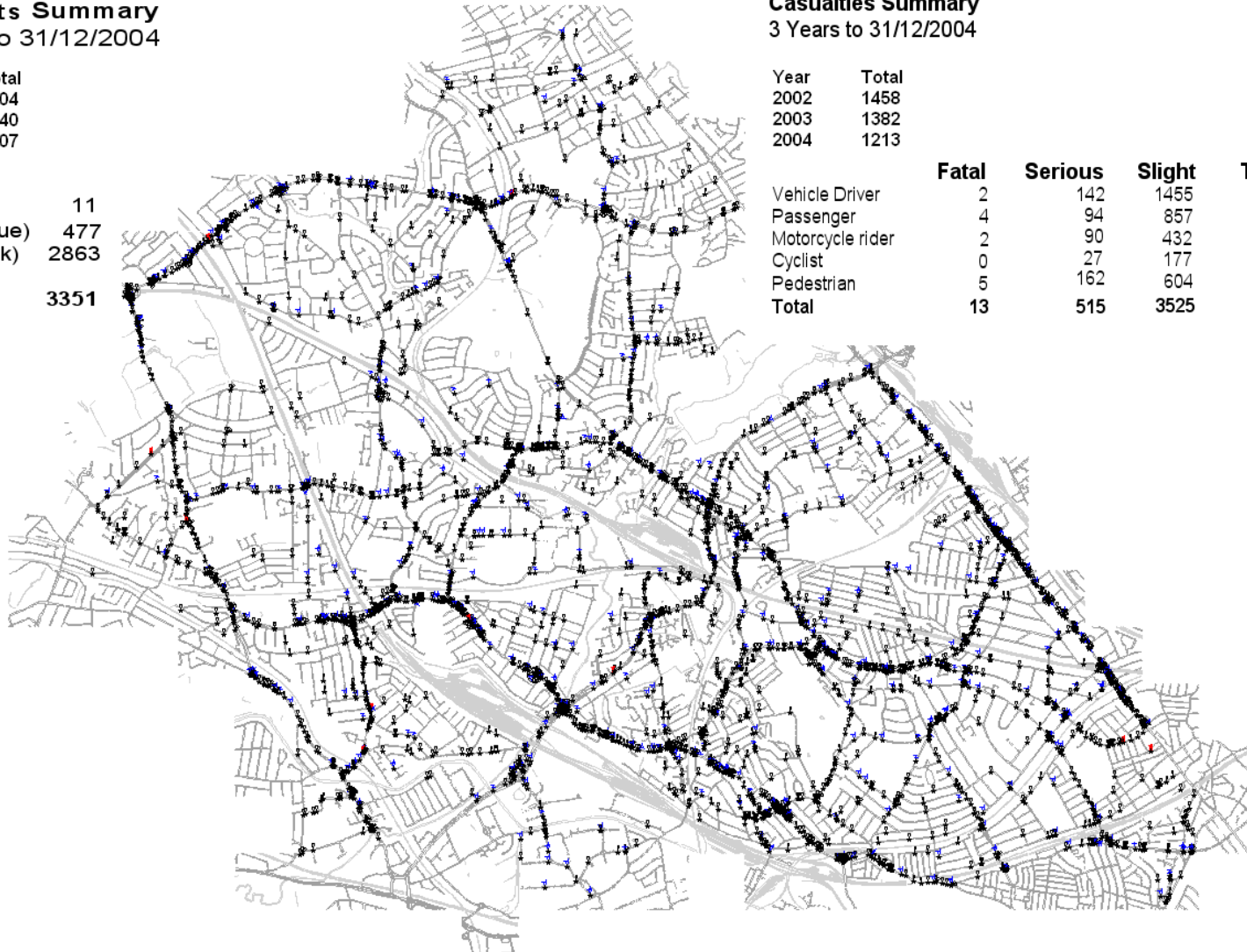
Year	Total
2002	1204
2003	1140
2004	1007

Fatal (Red)	11
Serious (Blue)	477
Slight (Black)	2863
Total	3351

Casualties Summary
3 Years to 31/12/2004

Year	Total
2002	1458
2003	1382
2004	1213

	Fatal	Serious	Slight	Total
Vehicle Driver	2	142	1455	1599
Passenger	4	94	857	955
Motorcycle rider	2	90	432	524
Cyclist	0	27	177	204
Pedestrian	5	162	604	771
Total	13	515	3525	4053



**Monitoring Road Traffic Accident Casualties Towards the Year 2010
(Targets and Actual 2004)**


Severity	Casualty Class	Base 1994-98 Annual average casualties	2010 Target	Target Actual N -National L -London	2001	2002	2003	2004	2005	2006	2007	2008	2009	Target 2010	Casualty Class	Severity
KSI	ALL	244	146	Target(N -40%)	234	224	215	205	195	185	175	166	156	146	ALL	KSI
				Actual	187	182	191	155								
	Children age<15	42.4	21	Target(N -50%)	40	38	36	34	32	29	27	25	23	21	Children age<15	
				Actual	29	23	22	23								
	Pedestrians	85	51	Target(L -40%)	82	78	75	71	68	65	61	58	54	51	Pedestrians	
				Actual	66	59	61	47								
	Pedalcyclists	17.6	11	Target(L -40%)	17	17	16	15	15	14	13	12	12	11	Pedalcyclists	
				Actual	9	7	12	8								
	Powered 2 wheeler	24.6	15	Target(L -40%)	24	23	22	21	20	19	18	17	16	15	Powered 2 wheeler	
				Actual	33	31	36	27								
	Car occupants	102.4	61	Target-40%	98	94	90	86	82	77	73	69	65	61	Car occupants	
				Actual	67	77	61	63								
	Bus or coach occupants	7.4	4	Target-40%	7	6	6	6	6	5	5	5	4	4	Bus or coach occupants	
				Actual	9	4	14	6								
	Other vehicle occupants	7.4	4	Target-40%	7	6	6	6	6	5	5	5	4	4	Other vehicle occupants	
				Actual	3	4	7	4								
Sight	ALL	1361.4	1225	Target(N -10%)	1347	1334	1320	1307	1293	1279	1266	1252	1239	1225	ALL	Sight
				Actual	1324	1272	1191	1058								
	Pedestrians	257.2	231	Target-10%	254	252	249	247	244	241	239	236	234	231	Pedestrians	
				Actual	202	225	188	189								
	Pedalcyclists	87.8	79	Target-10%	87	86	85	84	84	83	82	81	80	79	Pedalcyclists	
				Actual	54	67	53	57								
	Powered 2 wheeler	132.6	120	Target-10%	132	130	129	128	127	125	124	123	121	120	Powered 2 wheeler	
				Actual	167	162	170	132								
	Car occupants	780.2	702	Target-10%	772	764	757	749	741	733	725	718	710	702	Car occupants	
				Actual	777	728	687	597								
	Bus or coach occupants	54.4	49	Target-10%	54	53	53	52	52	51	51	50	50	49	Bus or coach occupants	
				Actual	75	62	68	53								
	Other vehicle occupants	49.2	44	Target-10%	49	48	48	47	47	46	46	45	45	44	Other vehicle occupants	
				Actual	49	28	25	30								

Road Traffic Accident Casualties

Ethnicity (Targets and Actual 2004)

Severity	Casualty Class	Base 1995-98 Annual average casualties	2010 Target	2001	2002	2003	2004	2005	2006	2007	2008	2009	Target 2010
KSI	White	124	74	119	114	109	104	99	94	89	84	79	74
				78	74	90	54						
	African	48	29	46	44	42	40	38	36	34	32	31	29
				33	28	36	38						
	Asian	42	25	40	38	37	35	33	32	30	28	27	25
				48	40	38	38						
Slight	White	641	576	634	628	621	615	608	602	596	589	582	576
				468	380	340	314						
	African	275	247	272	269	266	264	261	258	255	253	250	247
				285	268	279	225						
	Asian	262	236	259	257	254	251	249	246	243	241	238	236
				271	250	256	241						

Monitoring Road Traffic Casualties towards the year 2010: London & Brent
Casualties in 12 months ending December 2004 compared with the 1994-98 average.

	Target reduction by the year 2010 from 1994-98 average	Target (see notes below)	1994-98 Annual average casualties		Target 2010 casualties not to exceed		Casualties 12 months ending December 2004		Change from base to 2004		Target reduction by the year 2010 from 1994-98 average
			London	Brent	London	Brent	London	Brent	London	Brent	
Killed and seriously injured casualties			London	Brent	London	Brent	London	Brent	London	Brent	
All	40%	National	6,684	244	4,010	146	4,169	155	-38%	-36%	40%
Children	50%	National	935	42	467	21	487	23	-48%	-46%	50%
Pedestrians	40%	London	2,137	85	1,283	51	1,334	47	-38%	-44%	40%
Pedal cyclists	40%	London	567	18	340	11	340	8	-40%	-55%	40%
Powered two wheelers	40%	London	933	25	560	15	895	27	-4%	10%	40%
Slight casualties			London	Brent	London	Brent	London	Brent	London	Brent	
All	10%	National	38,997	1,361	35,097	1,225	30,386	1,058	-22%	-22%	10%

Notes

<p>National targets:- By 2010 == ></p>	<p>A 40% reduction in the number of people killed or seriously injured (KSI) in road accidents; A 50% reduction in the number of children killed or seriously injured; and A 10% reduction in the slight casualty rate.</p> <p>(From tomorrow's Roads: safer for everyone published by the government in March 2000); In March 2000, the Secretary of State announced a new 10-year target and published a safety strategy in Tomorrow's Roads Safer for Everyone.</p>
<p>London targets:- By 2010 == ></p>	<p>A 40% reduction in the number of pedestrians killed or seriously injured (KSI) in road accidents; A 40% reduction in the number of cyclists killed or seriously injured (KSI) in road accidents; A 40% reduction in the number of motorcyclists killed or seriously injured (KSI) in road accidents;</p> <p>(Additional targets for London:- London's Road Safety Plan published on behalf of the Mayor of London in November 2001).</p>

